

<Ripped by Subby>

C — RIM

Compact Remote Integrated Multiplexer

**NECTAS Operator's
Handbook
Release 8.2**



3AU 24041 HBAA TCZZA Edition 06

<Ripped by Subby>

<Ripped by Subby>

Status Released

Change Note

Short Title C–RIM R8.2 NECTAS H'book

All rights reserved. Passing on and copying of this document, use and communication of its contents not permitted without written authorization from Alcatel.

<Ripped by Subby>

Contents

	About this Document	xiii
1	Equipment Safety & Care	1–1
1.1	Handling Of Static Sensitive Equipment	1–2
1.2	Safety Precautions – Opto–Electronic Components ..	1–3
1.3	Safety Precautions – Electrical	1–4
2	C–RIM System Overview	2–1
2.1	Function	2–2
2.2	Features	2–3
2.2.1	Customer Services	2–3
2.2.2	Transmission Options	2–5
2.2.3	Remote Housings	2–5
2.2.4	Racks	2–5
2.2.5	Alarm Management Features	2–5
2.2.6	Performance Monitoring Features	2–6
2.2.7	Administration	2–6
2.2.8	FNN Management	2–6
2.2.9	Configuration Features	2–6
2.2.10	Exchange Interfaces	2–7
2.3	Functional Block Diagram	2–8
3	Getting Started	3–1
3.1	Hardware Requirements for the Craft Terminal	3–2
3.2	Installing the NECTAS Software	3–3
3.2.1	NECTAS Installation Procedure	3–3
3.2.2	Uninstalling NECTAS Software	3–9
3.2.3	Setting up the Windows 3.1 WIN.INI File	3–10
3.2.4	COM Port Parameters	3–11
3.2.5	Windows Colour Schemes	3–11
3.3	Connecting Craft Terminals to C–RIM	3–13
3.3.1	Physical Connection to the F Port	3–13
3.3.2	System F Port (EU)	3–13
3.3.3	Remote System F Port (RU)	3–14
3.3.4	Network F Port	3–15
3.3.5	Local F Port (EU or RU)	3–16
3.3.6	Cable – Craft Terminal to C–RIM	3–17
3.4	Starting Up the NECTAS Software	3–18
3.4.1	Entering the Password to Start NECTAS	3–18
3.5	NECTAS Navigation	3–19
3.5.1	Using the Mouse	3–19

3.5.2	Using the Keyboard	3-19
3.6	The Alarm Synthesis Window	3-20
3.6.1	Fields on the Alarm Synthesis Window	3-21
3.6.2	Toggling Menu Options and Selection	3-21
3.6.3	The Alcatel Logo	3-21
3.6.4	The View Menu	3-22
3.6.5	The Bell Menu	3-24
3.6.6	The Application_Choice Menu	3-25
3.6.7	History	3-27
3.6.8	Online Help	3-29
3.6.9	Alarms on the Alarm Synthesis Window	3-30
3.7	The NECTAS Demonstration Mode	3-32
3.8	Exiting NECTAS	3-33
3.9	NECTAS Menu Flow Diagram for the ERMU	3-34
3.10	NECTAS Menu Flow Diagram for the EU/RU	3-36
3.11	Initial C-RIM Configuration Procedure	3-38
4	Configuration Basics	4-1
4.1	The Equipment Configuration Application	4-2
4.1.1	Equipment Configuration – Online Mode ...	4-3
4.1.2	Equipment Configuration – Offline Mode ...	4-4
4.1.3	ERMU Equipment Configuration Window	4-5
4.1.4	EU/RU Equipment Configuration Window ...	4-6
4.1.5	Opening Detail Windows	4-7
4.2	Configuration Application Menus	4-8
4.3	The File Menu	4-9
4.3.1	Creating a New Configuration File	4-10
4.3.2	Opening a Configuration File	4-10
4.3.3	Saving a Configuration File	4-10
4.3.4	Displaying Configuration File Header	4-11
4.3.5	Printing a Configuration File	4-12
4.3.6	Print Preview	4-12
4.3.7	Print Setup	4-12
4.3.8	Sending a Configuration File	4-12
4.3.9	Receiving a Configuration File	4-12
4.3.10	Comparing Configuration Files	4-13
4.4	Other Menus	4-15
4.4.1	View Menu	4-15
4.4.2	Panel Menu	4-15
4.4.3	UserPort Menu	4-16
4.4.4	Window Menu	4-16
5	EU/RU Configuration	5-1
5.1	Main EU/RU Equipment Configuration Window	5-2

5.2	System Configuration	5-3
5.2.1	NE Configuration	5-3
5.2.2	Housing Configuration	5-6
5.2.3	Accepting Changes	5-7
5.3	Main Equipment Configuration	5-8
5.3.1	Main Equipment Slots	5-9
5.4	Access Panel Configuration	5-18
5.4.1	Configuring Access Panel Slots	5-19
5.4.2	Zooming to the next level of detail	5-19
5.4.3	Setting Channel Line / Subscriber Options ..	5-20
5.4.4	User Port Configuration	5-21
5.4.5	Line Settings	5-23
5.4.6	Signalling Options	5-27
5.4.7	PCMCC/PCMCX Configuration	5-33
5.5	Climate Panel Configuration Window	5-39
5.6	Alarm Masks Configuration	5-40
5.6.1	Setting Alarm Masks	5-40
5.6.2	Alarm Masks	5-41
5.6.3	Alarm Processing Setting	5-45
6	ERMU Configuration	6-1
6.1	ERMU Configuration Dialogue	6-2
6.1.1	COMNET Configuration Page	6-3
6.1.2	ERMU Configuration Page	6-5
6.1.3	EU/RU Pairs Configuration Page	6-7
6.1.4	Alarms Page	6-9
6.1.5	Batch Mode Testing Page	6-10
6.2	Local Access Disabled/Enabled	6-11
6.2.1	Local Operations	6-11
6.2.2	COMNET Operations	6-12
7	FNN Applications	7-1
7.1	FNN Administration and FNN Display	7-2
7.1.1	FNN Database	7-2
7.1.2	FNN Admin/Display Application Differences .	7-2
7.1.3	FNN Administration/Display Menus	7-3
7.1.4	Creating a New FNN Database	7-6
7.1.5	Opening an FNN Database	7-7
7.1.6	Saving an FNN Database	7-8
7.1.7	Printing an FNN Database	7-8
7.1.8	FNN Database Version Control	7-8
7.1.9	Sending FNN Databases To ERMU	7-9
7.1.10	Receiving FNN Databases From ERMU	7-10
7.1.11	The Add / Edit FNN Window	7-10
7.1.12	Adding FNNs	7-12

7.1.13	Deleting FNNs	7-12
7.1.14	Editing FNNs	7-13
7.1.15	FNN Database – Save As Text / Load Text ...	7-14
7.1.16	Sorting the FNN List	7-16
7.1.17	Editing Header Information	7-16
7.1.18	Searching for Particular FNNs	7-16
7.2	FNN Test Application	7-17
7.2.1	Function of Units in the Test System	7-18
7.2.2	The Main FNN Test Window	7-20
7.2.3	Batch Mode Testing	7-22
7.2.4	Receive Batch Mode Test Results	7-27
7.2.5	Using the FNN Test Application	7-30
7.2.6	FNN Test Error Messages	7-42
7.3	Test Procedures	7-43
7.3.1	Performing a Subscriber Test	7-43
7.3.2	Running a Test	7-44
7.3.3	Revertive Call Testing	7-45
8	Alarms, Status and Remote Controls	8-1
8.1	Using the AS&C Application	8-2
8.1.1	Alarm Severity Classification	8-3
8.2	First Level AS&C Window	8-4
8.2.1	Alarm Synthesis Block	8-4
8.2.2	Zooming Alarm Detail Windows	8-6
8.2.3	Getting Information on Alarm Indicators ...	8-7
8.2.4	Alarm Indication Colours	8-7
8.3	AS&C Menus	8-8
8.3.1	The View Menu	8-8
8.3.2	The History Menu	8-8
8.3.3	Remote_Controls	8-10
8.3.4	Exiting the AS&C Application	8-16
8.4	V5.2(–) Interface and ICC Alarms	8-17
8.4.1	V5 Interface	8-17
8.4.2	Alarm Descriptions	8-19
8.5	C–RIM 2nd Level Alarm Windows	8-23
8.5.1	The Housing Alarm Window (2nd Level) ...	8-23
8.5.2	The Panel Alarm Windows (2nd Level)	8-25
8.5.3	Climate Control Panel Alarm Window	8-29
8.6	C–RIM 3rd Level Alarms – Introduction	8-30
8.7	Housing 3rd Level Alarms	8-31
8.7.1	1G Housing Alarms	8-31
8.7.2	FAB Alarms	8-37
8.7.3	Ring / Meter Alarms	8-39
8.7.4	External Alarms	8-41

8.8	PCMCX Alarms	8-42
8.8.1	PCMCX Alarms – AC Mode	8-42
8.8.2	PCMCX Alarms – SAC Mode	8-45
8.9	PCMCC Alarms	8-47
8.10	PWRA/T8 PWR Alarms	8-51
8.11	Main Panel – Main Equipment 3rd Level Alarms	8-52
8.11.1	CMX Alarms	8-52
8.11.2	CXDU Alarms	8-56
8.11.3	ECC Alarms	8-58
8.11.4	ERMU Alarms	8-60
8.11.5	ICC Alarms	8-62
8.11.6	Line Transmission Unit Alarms	8-67
8.11.7	CTU Alarms	8-74
8.11.8	ECTU Alarms	8-75
8.12	Channel Unit 3rd Level Alarms	8-77
8.12.1	4/6 Wire Alarms	8-77
8.12.2	64K G.703 EM Alarms (DI-64KB-E&M) ...	8-78
8.12.3	ISDN (4B3T, 2B1Q) Alarms	8-79
8.12.4	P-Phone Unit Alarms	8-81
8.12.5	POTS Unit Alarms	8-83
8.12.6	Universal Unit Alarms	8-85
8.13	Climate Control Panel 3rd Level Alarms	8-87
8.13.1	CLIMCTL Alarms	8-87
8.13.2	CLIMI/O Alarms	8-89
9	Monitoring the C-RIM	9-1
9.1	Performance Monitoring	9-2
9.1.1	Performance Attributes	9-3
9.1.2	Performance Monitoring Menus	9-4
9.1.3	Setting Up Performance Monitoring	9-4
9.1.4	Disabling Performance Monitoring	9-5
9.1.5	Setting Up Polling Time	9-5
9.1.6	Performance Data Collection	9-5
9.2	Unknown Subscribers	9-6
9.2.1	Unknown Subscriber Alarms	9-7
9.3	Traffic Measurement	9-8
9.3.1	V5.2(-) Interface Traffic Measurements	9-8
9.3.2	V5.2(-) Traffic Measurement Collection	9-8
9.3.3	NECTAS Traffic Measurement Application ...	9-9
10	Maintenance & Administration	10-1
10.1	Backup Procedures	10-2
10.1.1	Backing Up Configuration Files	10-2
10.1.2	Backing Up FNN Files	10-3
10.1.3	Backing Up Log Files	10-5

10.2	Restoring Files	10-6
10.2.1	Restoring Configuration Files	10-6
10.2.2	Restoring FNN Files	10-6
10.3	Administrative Application	10-8
10.3.1	The Operator Menu	10-9
10.3.2	Logging Out from the C-RIM	10-10
10.3.3	Changing Your Password	10-11
10.3.4	Viewing an Operator's Parameters	10-12
10.3.5	Creating a New Operator	10-13
10.3.6	Modifying an Operator's Parameters	10-14
10.3.7	Removing an Operator	10-15
10.3.8	Application Group Privileges	10-16
10.3.9	Security Operators	10-18
10.4	NECTAS Version Information	10-19
10.5	Software Download	10-20
10.5.1	Software Download to the PCMCC	10-21
10.5.2	Using the Software Download Application ...	10-22
10.5.3	Software Download Summary	10-28
10.5.4	Unit LED States During Software Download ..	10-29
10.6	Maintenance Procedures	10-31
10.6.1	Performing a Software Download	10-31
10.6.2	Modifying an Operator's Admin Profile	10-33
11	Troubleshooting	11-1
11.1	NECTAS Installation	11-2
11.1.1	Installation Problems Under Windows 3.1 ...	11-2
11.1.2	The Installation Exits Before Completion	11-2
11.2	General NECTAS Problems	11-3
11.2.1	"Craft Terminal Disconnected" Message	11-3
11.2.2	The NECTAS Loader Icon is Blinking	11-4
11.2.3	Equipment Unknown in Configuration File ...	11-4
11.2.4	Line syntax error in parameter number	11-4
11.2.5	Application already loaded	11-5
11.2.6	File reading error	11-5
11.2.7	NECTAS fails to see the C-RIM	11-5
11.2.8	No Response Alarm-Newly Activated Card ..	11-5
11.2.9	NECTAS Starts then Exits	11-5
11.2.10	Can't Save Configuration to Floppy Disk	11-6
11.2.11	Exit NECTAS from Login Prompt Window	11-6
Appendix A	List of Abbreviations	A-1
Appendix B	General Error Messages	B-1
Appendix C	Software Download Errors	C-1
Appendix D	FNN Test Errors	D-1

Appendix E	NECTAS Demonstration Mode	E–1
Appendix F	480 Line 3G Housing	F–1
Appendix G	Mini–RIM	G–1
Index		In–1

Figures

Figure 1–1	Warning Label – Static Sensitive Devices	1–2
Figure 1–2	Warning Label – Opto–electronic Components	1–3
Figure 1–3	Warning Label – Hazardous Voltages	1–4
Figure 2–1	Functional Block Diagram	2–8
Figure 3–1	Selecting NECTAS Directory	3–4
Figure 3–2	Choosing NECTAS Releases to install	3–5
Figure 3–3	Selecting Program Manager group	3–6
Figure 3–4	Selecting Program Group	3–6
Figure 3–5	Selecting a COM port for NECTAS	3–7
Figure 3–6	Updating Windows configuration files	3–7
Figure 3–7	Installation Completed screen	3–8
Figure 3–8	Uninstall Mode Selection	3–9
Figure 3–9	System F Port (Exchange)	3–13
Figure 3–10	Remote System F Port	3–14
Figure 3–11	Network F Port Connections	3–15
Figure 3–12	Local F Port (EU or RU)	3–16
Figure 3–13	CRAFT Terminal Interface Connectors	3–17
Figure 3–14	CRAFT Terminal Serial Cable – System F Port	3–17
Figure 3–15	Password to Enter NECTAS	3–18
Figure 3–16	Alarm Synthesis Window and Menus	3–20
Figure 3–17	Equipment Reference Window	3–23
Figure 3–18	History Synthesis Selection Window	3–27
Figure 3–19	Element History Window	3–28
Figure 3–20	The Help Window	3–29
Figure 3–21	NECTAS Menu Flow (ERMU) – 1/2	3–34
Figure 3–22	NECTAS Menu Flow (ERMU) – 2/2	3–35
Figure 3–23	NECTAS Menu Flow (EU/RU) – 1/2	3–36
Figure 3–24	NECTAS Menu Flow (EU/RU) – 2/2	3–37
Figure 3–25	C–RIM – Initial Configuration Procedure	3–38
Figure 4–1	Application Choice menu	4–3
Figure 4–2	ERMU Configuration – First Window	4–5
Figure 4–3	ERMU Configuration	4–5
Figure 4–4	Main EU/RU Equipment Configuration Window	4–6
Figure 4–5	Opening Configuration File	4–10
Figure 4–6	Configuration File Save	4–11
Figure 4–7	File Header Information	4–11
Figure 4–8	Audit “File Open” Dialogue	4–13
Figure 4–9	Audit Screen	4–14
Figure 4–10	UserPort Display Window	4–16
Figure 5–1	Equipment Configuration Window – EU/RU	5–2
Figure 5–2	System Configuration – NE Configuration Page	5–3
Figure 5–3	System Configuration – Housing Equipment page	5–6
Figure 5–4	Main Panel Configuration Window	5–8
Figure 5–5	CMX Card Configuration Window	5–10

Figure 5-6	CMX Port Configuration Window	5-10
Figure 5-7	Declare the ICC V5.2(-) Interfaces	5-12
Figure 5-8	ICC V5.2(-) Interface Configuration	5-13
Figure 5-9	V5.2(-) Link Configuration	5-14
Figure 5-10	Optical Cards Configuration Window	5-15
Figure 5-11	ECTU Settings	5-17
Figure 5-12	Access Panel Configuration – AP2 to AP8	5-18
Figure 5-13	Access Panel Configuration – AP1	5-18
Figure 5-14	Channel Unit Configuration Window	5-20
Figure 5-15	User Port Configuration	5-21
Figure 5-16	Channel Configuration Window – Line Settings	5-23
Figure 5-17	Typical Transmission Level Diagram	5-24
Figure 5-18	Channel Configuration – Signalling Options	5-27
Figure 5-19	Indial Arrangement	5-31
Figure 5-20	PCMCC and PCMCX – Timeslot Page	5-33
Figure 5-21	ISDN Timeslot Configuration	5-35
Figure 5-22	P-Phone Timeslot Configuration	5-36
Figure 5-23	PCMCX and PCMCC – G.703 Settings Page	5-37
Figure 5-24	Climate Control Panel Configuration Window	5-39
Figure 5-25	Core Boards Alarm Masks – First Screen	5-41
Figure 5-26	Core Boards Alarm Masks – Second Screen	5-41
Figure 5-27	Core Boards Alarm Masks – Third Screen	5-42
Figure 5-28	Transmission Boards Alarm Masks – First Screen	5-42
Figure 5-29	Transmission Boards Alarm Masks – Second Screen	5-43
Figure 5-30	Alarm Masks – Channel Cards	5-43
Figure 5-31	Housing Alarm Masks – First Page	5-44
Figure 5-32	Housing Alarm Masks – Second Page	5-44
Figure 5-33	Alarm Masks – Climate	5-45
Figure 6-1	ERMU Configuration – Main Window	6-2
Figure 6-2	ERMU Configuration Window – COMNET Page	6-3
Figure 6-3	ERMU Configuration Window – ERMU Page	6-5
Figure 6-4	ERMU Configuration Window – EU/RU Pairs Page	6-7
Figure 6-5	ERMU Configuration Window – ERMU Alarm Masks Page ..	6-9
Figure 6-6	ERMU Configuration Window – Batch Mode Testing Page ..	6-10
Figure 7-1	FNN Administration, FNN Display Main Window	7-3
Figure 7-2	Database Header Window	7-6
Figure 7-3	RIM ID Format Window	7-6
Figure 7-4	FNN Add/Edit Window	7-10
Figure 7-5	Delete FNN	7-12
Figure 7-6	Edit FNN Window	7-13
Figure 7-7	FNN Test System	7-17
Figure 7-8	(E)CTU States	7-18
Figure 7-9	FNN Test Application Screen	7-20
Figure 7-10	Batch Mode Test Results Window	7-27
Figure 7-11	BMT Results Filter	7-27
Figure 7-12	Sort BMT Results	7-28

Figure 7-13	Open Test Session Box	7-30
Figure 7-14	Status Report Box	7-31
Figure 7-15	FNN Test Connections	7-31
Figure 7-16	Run Test Box	7-32
Figure 7-17	FNN Test Results	7-39
Figure 7-18	Performing a Subscriber Test	7-43
Figure 7-19	Running a Subscriber Line Test	7-44
Figure 7-20	Revertive Call Testing	7-45
Figure 8-1	Application Choice Menu	8-2
Figure 8-2	AS&C – First Level Window	8-4
Figure 8-3	AS&C Panels Block	8-6
Figure 8-4	Information Window in AS&C	8-7
Figure 8-5	Typical Indication of Remote Control Completion	8-10
Figure 8-6	Channel Training Selection Window	8-14
Figure 8-7	480 Line 1G Housing Alarms (2nd Level)	8-23
Figure 8-8	2G Housing Alarms (2nd Level)	8-24
Figure 8-9	Main Panel – Main Equipment Alarms	8-26
Figure 8-10	Main Panel – Access Panel 1 Alarms (2nd Level)	8-27
Figure 8-11	Access Panel 2 to 8 Alarms (2nd Level)	8-27
Figure 8-12	Climate Control Panel Alarms (2nd Level)	8-29
Figure 8-13	Fan Assembly Alarms – 1G Housings	8-31
Figure 8-14	Main Equipment Alarms – 1G Housings	8-32
Figure 8-15	Power Compartment Alarms – 1G Housings	8-35
Figure 8-16	FAB Alarms – 2G Housings	8-37
Figure 8-17	Ring / Meter Alarms – T8 R/MU	8-39
Figure 8-18	Ring Meter Unit Alarms – RiMU	8-40
Figure 8-19	External Alarms	8-41
Figure 8-20	Access Controller (AC) Alarms	8-42
Figure 8-21	SAC Alarms	8-45
Figure 8-22	PCMCC – First Alarm Detail Window	8-47
Figure 8-23	PCMCC – Second Alarm Detail Window	8-47
Figure 8-24	PWRA/T8 PWR Alarms	8-51
Figure 8-25	Core Matrix (CMX) Alarms – First Screen	8-52
Figure 8-26	Core Matrix (CMX) Unit Alarms	8-52
Figure 8-27	Core Matrix (CMX) G.703 Port Alarms	8-54
Figure 8-28	System Clock (CXDU) Alarms	8-56
Figure 8-29	Enhanced Concentration Controller (ECC) Alarms	8-58
Figure 8-30	Management Unit (ERMU) Alarms	8-60
Figure 8-31	ICC Alarms – First Screen	8-62
Figure 8-32	ICC Unit Alarms	8-63
Figure 8-33	ICC V5.2(-) Interface Alarms	8-65
Figure 8-34	OMX 16x2 Alarms	8-67
Figure 8-35	OMX 16x2 Receive Signal Loss Alarms	8-67
Figure 8-36	OMX 4x2 Alarms	8-70
Figure 8-37	OMX 4x2 Receive Signal Loss Alarms	8-70
Figure 8-38	2M OLTE Alarms	8-72

Figure 8–39	CTU Alarms	8–74
Figure 8–40	ECTU Alarms	8–75
Figure 8–41	4/6 Wire Alarms	8–77
Figure 8–42	64Kb–G.703 Alarms	8–78
Figure 8–43	ISDN Alarms – 2B1Q	8–79
Figure 8–44	ISDN Alarms – 4B3T	8–79
Figure 8–45	P–Phone Alarms	8–81
Figure 8–46	POTS Unit Alarms	8–83
Figure 8–47	Universal Unit Alarms	8–85
Figure 8–48	CLIMCTL Alarms	8–87
Figure 8–49	Climate I/O Alarms – Single Voltage CLIMI/O	8–89
Figure 8–50	Climate I/O Alarms – Dual Voltage CLIMI/O	8–90
Figure 9–1	Performance Monitoring Window	9–2
Figure 9–2	Unknown Subscribers Application	9–6
Figure 9–3	Unknown Subscribers	9–6
Figure 9–4	Traffic Measurement Application	9–9
Figure 9–5	Measurement Data Collection Time Period	9–10
Figure 9–6	Presentation of Traffic Measurement Data	9–12
Figure 10–1	The Administrative Application	10–8
Figure 10–2	Logout Window	10–10
Figure 10–3	The Password Option of the Operator Menu	10–11
Figure 10–4	Operator Parameters	10–12
Figure 10–5	Create option of the Operator Menu	10–13
Figure 10–6	Modify Operator Parameters – Select Operator	10–14
Figure 10–7	Modify Operator’s Profile	10–14
Figure 10–8	Delete Operator Window	10–15
Figure 10–9	Delete Operator Window	10–15
Figure 10–10	NECTAS Version Information	10–19
Figure 10–11	Target Selection Window	10–22
Figure 10–12	Target Version Information List	10–22
Figure 10–13	Open Source File	10–24
Figure 10–14	Code Transfer Progress Window	10–25
Figure 10–15	Service Affecting Stage Message	10–25
Figure 10–16	Code Transfer to Targets Progress Window	10–26
Figure 10–17	Activation Process Message	10–26
Figure 10–18	Software Download	10–28
Figure 10–19	Performing a Software Download – page 1/2	10–31
Figure 10–20	Performing a Software Download – page 2/2	10–32
Figure 10–21	Modifying Operator Admin Profile	10–33
Figure F–1	System Configuration – Housing Equipment page	F–3
Figure F–2	Housing Alarm Masks – First Page, ICS47	F–7
Figure F–3	Housing Alarm Masks – Second Page, ICS47	F–7
Figure F–4	Housing Alarm Masks – First Page, ICS48	F–8
Figure F–5	Housing Alarm Masks – Second Page, ICS48	F–8
Figure F–6	External Alarms – NECTAS ICS47	F–9
Figure F–7	External Alarms – NECTAS ICS48	F–9

Figure F-8	FAB Alarms – 2G and 3G Housings	F-11
Figure G-1	System Configuration – Housing Equipment page	G-2
Figure G-2	Mini-RIM Alarm Cabling – Cabinet Mounted RU	G-4
Figure G-3	Mini-RIM Alarm Cabling –RPS Rack Mounted RU	G-6
Figure G-4	M-Lead Cabling – Rack mount Mini-RIM RU	G-6
Figure G-5	External Alarms – NECTAS ICS48	G-7
Figure G-6	Housing Alarm Masks – Second Page, ICS48	G-9

Tables

Table 2-1	Customer Services Summary	2-4
Table 5-1	Channel Options	5-29
Table 10-1	Software Download States	10-29

About this Document

This handbook describes the NECTAS interface to C–RIM Release 8.2.

This handbook assumes that the operators have a basic understanding of the C–RIM System and have a working knowledge of Microsoft Windows™.

- ▶ Technical details of the C–RIM system are described in the *C–RIM Technical Handbook*.
- ▶ Installation and Maintenance information for C–RIM is described in the *C–RIM Technical Handbook*.

This document is Copyright © 1998 by Alcatel Australia Limited. All rights reserved.

Windows™ is a trademark of the Microsoft Corporation.

Applicability This handbook applies to C–RIM Release 8.2 NECTAS. Separate NECTAS Operator's Handbooks apply to other C–RIM releases.

Using This Handbook This handbook is a guide for C–RIM NECTAS Operators. Its structure follows that of the NECTAS software, with a chapter being devoted to each major application such as *EU/RU Configuration* and *Alarms, Status and Remote Controls*. Other applications are documented under broad headings such as *FNN Administration*, *Monitoring the C–RIM*, and *Maintenance and Administration*.

Configuration There are three main chapters that relate to configuring the equipment:

- Configuration Basics
- EU/RU Configuration
- ERMU Configuration

The *Configuration Basics* and *EU/RU Configuration* chapters explain how to use the Equipment Configuration Application and contain procedural flowcharts for common operations on the C–RIM. The *EU/RU Configuration* chapter has the details of each configuration table.

Use the *Configuration Basics* chapter to get an understanding of what tables need to be altered, then refer to the *EU/RU Configuration* chapter to get an understanding of what each option does.

Other Releases of C–RIM With each release of C–RIM, NECTAS changes in some way. This manual is specifically designed for use with C–RIM Release 8.2. If it is used with other versions of the C–RIM some of the windows and functionality will be different.

If you find that the screen you are looking at does not match the one in the manual, please refer to the version of the handbook that relates to the particular release of C–RIM and NECTAS.

It is possible to tell the release of the equipment being used as the version number will appear next to the Network Element name on the Alarm Synthesis window. In the example illustrated below, the Exchange unit is Release 8.2 (PCC_V82).

Alarm Synthesis									
View Bell		History		Help					
Global synthesis		EFDF	ASAT	UGNG	AFSA	DA	SF	ST	TC
0 Equipment above		EFDF	ASAT	UGNG	AFSA	DA	SF	ST	TC
Management Unit	ERMU_V82	EFDF	ASAT	UGNG	AFSA	DA	SF	ST	TC
Exchange Unit	PCC_V82	EFDF	ASAT	UGNG	AFSA	DA	SF	ST	TC
Remote Unit	PCC_V82	EFDF	ASAT	UGNG	AFSA	DA	SF	ST	TC
0 Equipment below		EFDF	ASAT	UGNG	AFSA	DA	SF	ST	TC

1 Equipment Safety & Care

1.1 Handling Of Static Sensitive Equipment

The procedures given below should be followed when handling any equipment which is marked with a static sensitive device sticker as shown here.

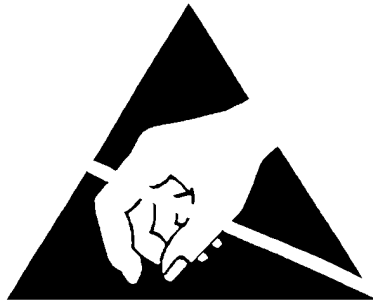


Figure 1 – 1 Warning Label – Static Sensitive Devices

- ▶ Equipment which is to be transported should be packed in an anti-static bag and a suitable carton.
- ▶ Operating personnel should ensure that any electrostatic charge they maybe carrying is dissipated before handling the equipment and that precautionary measures are taken to prevent any further acquisition of charge (e.g. wearing an anti-static wrist strap that is attached to the equipment rack).
- ▶ PBAs should be held by the edge of the board or by the handle(s).

1.2 Safety Precautions – Opto–Electronic Components

The following precautions must be adhered to when dealing with units containing opto–electrical components. These units are marked with a sticker as shown below:

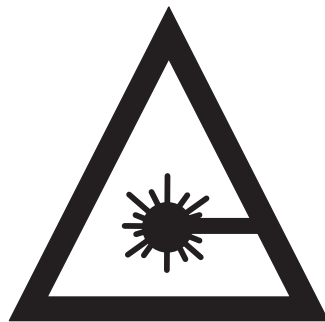


Figure 1–2 Warning Label – Opto–electronic Components

- ▶ These units contain optical connectors which, when delivered from the factory have protective nylon caps that prevent dirt or dust particles from contaminating the connector front face.
- ▶ The protective nylon caps must be pushed onto the optical connectors whenever the optical station cabling is not connected.
- ▶ Do not look directly into the OPT OUT port as it may be harmful to the eye.
- ▶ To minimise the possibility of optical exposure, any unit that incorporates optical components should be unpowered while optical connections to it are being made or broken.

To make or break the optical connections:

- Unplug the unit from the backplane
- Withdraw it halfway from the panel
- Connect or disconnect the optical cable.

1.3 Safety Precautions – Electrical

Some C–RIM equipment contains hazardous voltages.
This equipment is marked with a sticker as shown below:

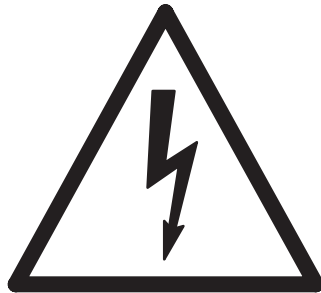


Figure 1–3 Warning Label – Hazardous Voltages

In particular the Rectifier(s) and the Ring Meter Unit(s) contain potentially hazardous voltages.

Particular care should be taken if using Ring Meter Unit(s) on extender cards:

It is also recommended that these units be unplugged from the backplane as well as the from the front connector and then left in the panel for several minutes before removal, to ensure that stored charge has dissipated sufficiently.

Some components within the Remote Unit are connected directly to mains AC power (240V). Caution should be exercised when working in the vicinity of these components.

2 C–RIM System Overview

This handbook describes how to operate, configure and maintain the C–RIM using NECTAS.

This handbook assumes that you are familiar with the functions of C–RIM and have had some exposure to Microsoft Windows™.

2.1 Function

The C–RIM is a versatile, microprocessor based Multiplex system which acts as a delivery vehicle for any mix of voice, data, special services and ISDN.

The C–RIM is, in part, configured and managed through a PC running NECTAS, which is made up of a number of applications:

- ▶ Equipment Configuration
 - Configuration Basics (Chapter 4)
 - EU/RU Configuration (Chapter 5)
 - ERMU Configuration (Chapter 6)
- ▶ Full National Number (FNN) Administration (Chapter 7)
 - FNN Administration
 - FNN Display
 - FNN Test
- ▶ Alarm, Status and Remote Control Application (AS&C) (Chapter 8)
- ▶ Performance Monitoring (Chapter 9)
- ▶ Maintenance and Administration (Chapter 10)
 - Administration
 - Software Download
 - NECTAS Version Information

2.2 Features

The main features of the C-RIM are:

- ▶ Non-integrated, Integrated ESM/RIM, Integrated RSU, and Integrated V5.2(–) protocols.
- ▶ Non-integrated and Hybrid operation modes.
- ▶ Up to 480 customer lines
- ▶ Plain Old Telephone Services (POTS)
- ▶ Payphones
- ▶ Analogue Data Services
- ▶ Digital Data Services
- ▶ PABXs
- ▶ ISDN Services
- ▶ Sophisticated system maintenance software (NECTAS)

2.2.1 Customer Services

Integrated and Non-integrated customer services are provided using Non-Integrated or Hybrid access modes. These access modes are described in detail in the *System Architecture* chapter of the *C-RIM Technical Handbook*.

Support for Integrated and Non-integrated services depends on the Channel Units and protocol being used. The customer services provided in C-RIM Release 8.2 are listed in Table 2–1.

Non-integrated In Non-integrated mode every customer's line at the RU has corresponding physical connection at the EU for cross-connecting to the appropriate service provider.

Hybrid In Hybrid Mode some services are via Non-integrated bearers. Other services are via Integrated ESM/RIM, Integrated RSU, or Integrated V5.2(–) bearers.

- ▶ Services on Non-integrated bearers have corresponding physical connections for each line at the EU and RU.
- ▶ Services on Integrated ESM/RIM, Integrated RSU, or Integrated V5.2(–) bearers are carried by 2 Mbit/s G.703 bearers from the EU to the exchange.

Table 2–1 Customer Services Summary

Customer Service	Integrated [3]	Non– integrated	Channel Unit
POTS (2W PSTN)	X	X	POTS, UNIV
Long Line POTS	X	X	UNIV
Payphones (50 Hz or 12 kHz metering)	X	X	UNIV
Private Metering (50 Hz or 12 kHz metering)	X	X	UNIV
Reversal On Answer	X	X	POTS, UNIV
Unbalanced Feed		X	UNIV
Advanced Analogue Services (e.g. CLASS/CLIP)	X	X	UNIV, POTS
Reverse POTS (2W PABX Ring/Loop Tie line)		X	POTS, UNIV
Loop In / Indial (2W PABX One way Exchange Line)		X	POTS, UNIV
2W Leased Line		X	UNIV
Securitel		X	UNIV
Analogue Data Services 2W (≤ 14.4 kbit/s)		X	UNIV, POTS [1]
Analogue Data Services 4W (≤ 9.6 kbit/s)		X	4/6 Wire
4W VF with E&M Signalling		X	4/6 Wire
ISDN 2B1Q	X [4]	X	ISDN 2B1Q
ISDN 4B3T		X	ISDN 4B3T
Digital data 64 kbit/s		X	DI–64KB–E&M
2 Mbit/s G.703 Services			[2]
Sub–rate Data (2, 4, 8, 16, 32 or 64 kbit/s)		X	ISDN plus NTU
P–Phone		X	P–PHONE

Note [1] Switched services only

[2] If spare 2 Mbit/s tributaries are available on the integral optical transmission system between the EU and RU they can be used to deliver 2 Mbit/s Frame Relay services, PABX connections, etc. These are not managed by the C–RIM.

[3] Integrated bearers – RSU, V5.2(–), or ESM/RIM.

[4] ISDN 2B1Q ABAA variant with V5.2(–) protocol only

2.2.2 Transmission Options

The transmission options supported are as follows:

- ▶ C–RIM built in optical system
 - 2 Mbit/s single fibre
 - 8 Mbit/s single or dual fibre
 - 34 Mbit/s single or dual fibre
 - 34 Mbit/s single or dual fibre with 1+1 redundancy
- ▶ An external system with up to sixteen 2 Mbit/s G.703 connections

2.2.3 Remote Housings

The C–RIM provides environmentally controlled outdoor housings for the Remote Unit, as alternatives to mounting the RU indoors in racks. The housing sizes available are:

- ▶ 180 Line 2G Remote Housing
- ▶ 480 Line 1G Remote Housing
- ▶ 480 Line 2G Remote Housing

The Remote Housings are described in the *C–RIM Technical Handbook*.

2.2.4 Racks

The C–RIM is mounted in racks for both Exchange Unit and indoor Remote Unit applications.

2.2.5 Alarm Management Features

The C–RIM has advanced alarm management features which are accessed through NECTAS. Some of these features are:

- ▶ Alarms may be classified as being:
 - Urgent, or
 - Non–Urgent, or
 - Indication Only.
- ▶ Alarms may be traced directly to a specific area of a unit within the C–RIM.
- ▶ Alarms may be viewed/printed as a historical list with detailed information such as time, date, classification, etc.

- ▶ Alarm search facilities allow information retrieval via the date, location, gravity and category of the alarm or by scrolling through the log window.

2.2.6 Performance Monitoring Features

- ▶ Performance Monitoring can be enabled for any termination points specified by the operator.
- ▶ NECTAS gathers the Performance Monitoring data and records it to a performance log history file.
- ▶ Performance Monitoring data can be printed.

2.2.7 Administration

- ▶ The Administration application allows the system supervisor to maintain groups of operators with various levels of security access.

2.2.8 FNN Management

- ▶ NECTAS provides security access to FNN data through operator databases.

2.2.9 Configuration Features

- ▶ The C–RIM allows configuration of:
 - Panels (Signalling, Timeslots & G.703 Settings)
 - Housing
 - External Inputs
 - Synchronisation
 - OA&M
 - Units
 - Alarm Masks
 - RIM ID
- ▶ Configurations may be saved and loaded from the Craft Terminal (A PC running NECTAS software) and sent and received from the C–RIM.
- ▶ Complete configuration details may be printed.

2.2.10 Exchange Interfaces

C-RIM Release 8.2 supports

- ▶ Non-Integrated access
- ▶ Integrated ESM/RIM access.
ESM/RIM is a non-concentrating integrated protocol
- ▶ Integrated RSU access.
RSU is a concentrating integrated protocol
- ▶ Integrated V5.2(-) access.
V5.2(-) is a concentrating integrated protocol

C-RIM Release 8.2 systems may utilise one of the following combinations of protocols:

- ▶ Non-integrated,
- ▶ Hybrid.

In Hybrid mode some bearers are Non-integrated. The remaining bearers are Integrated ESM/RIM, Integrated RSU, and/or Integrated V5.2(-). All channels on a bearer use the same protocol.

2.3 Functional Block Diagram

A Functional Block diagram of the C-RIM is provided below.

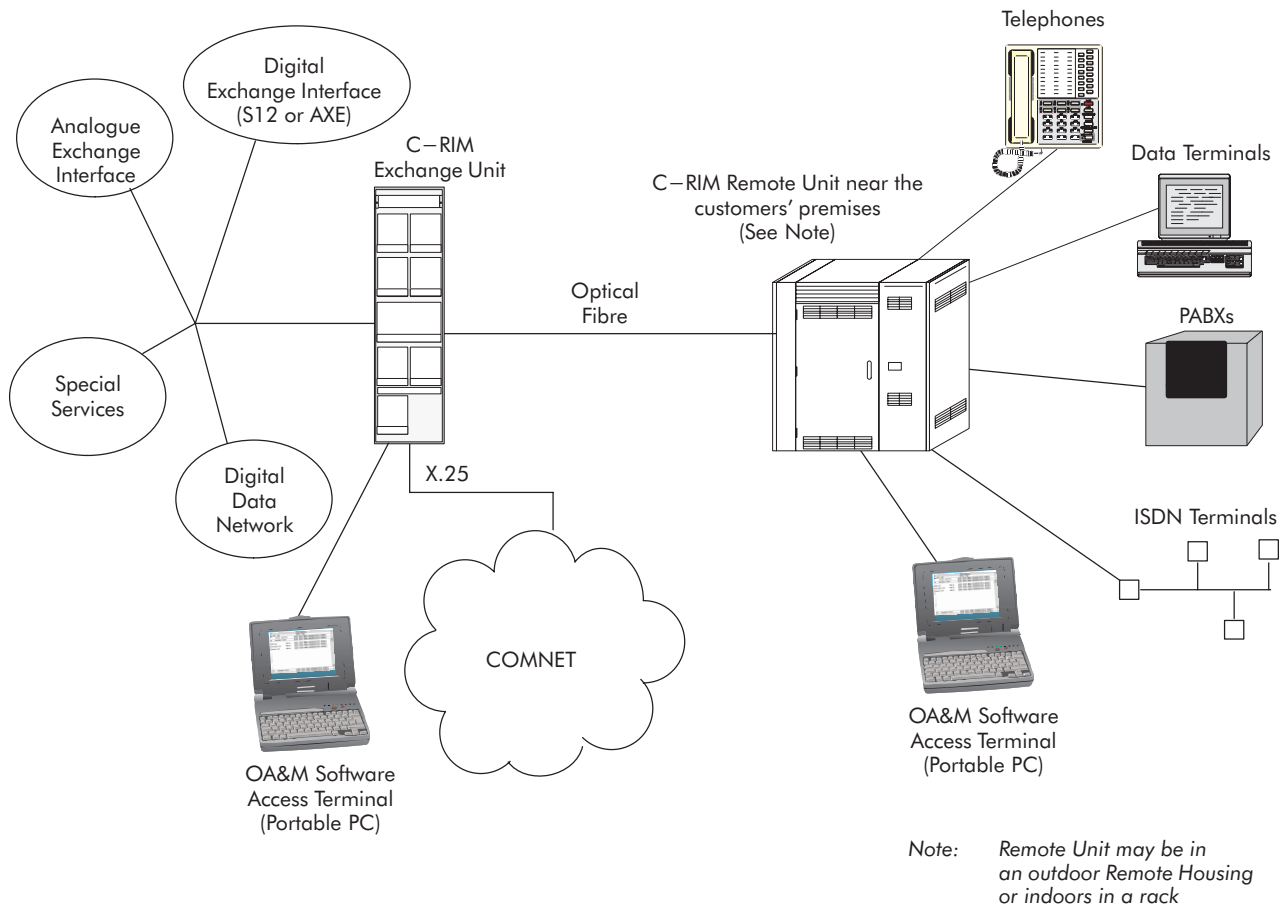


Figure 2-1 Functional Block Diagram

3 Getting Started

Many functions of the C–RIM are accessed through a PC (known as the Craft Terminal (CT)) running network management software. Typical functions accessed in this way are:

- ▶ Software configuration
- ▶ Performance monitoring
- ▶ Alarm management, etc.

The network management software on the CT is called NECTAS (Network Equipment Craft Terminal Application Software).

This chapter details the process of setting up and using NECTAS.

3.1 Hardware Requirements for the Craft Terminal

The Craft Terminal comprises an IBM compatible PC running Microsoft Windows 3.1, 95, or NT 4.0 with the following minimal configuration:

- ▶ Operating system, CPU, RAM and video
 - Windows 3.1
 - 386SX processor minimum, 386DX or 486 processor recommended
 - 8 MB RAM
 - VGA adapter (resolution 640 x 480)
 - Colour or Monochrome VGA monitor or LCD screen.
 - Windows 95 or Windows NT 4.0
 - 486 processor minimum, Pentium or equivalent processor recommended
 - 16 MB RAM minimum, 24 MB recommended.
 - VGA or SVGA adapter (minimum resolution 640 x 480)
 - Colour or Monochrome VGA or SVGA monitor or LCD screen.
- ▶ Common requirements for all above operating systems:
 - Serial communication port
 - Hard disk

Check that there is at least 45 Mbytes of free space available on the hard disk before installing the software.

 - NECTAS requires 39 Mbytes.
 - The remaining 6 Mbytes allow for storage of log files and other data.
 - 3 1/2", 1.44 Mbyte High Density floppy disk drive
 - Mouse

3.2 Installing the NECTAS Software

3.2.1 NECTAS Installation Procedure

Microsoft Windows™ 3.1, Windows 95, or Windows NT 4.0 must be installed on the Craft Terminal before the NECTAS software can be installed. See the Windows™ Manual for details on installing Windows™.

To install the NECTAS software:

- ▶ Run Windows™ 3.1, 95 or NT.
- ▶ Insert NECTAS disk 1 in drive a: (or b:).
- ▶ Windows 3.1:
 - Select **Run** from the **File menu**, then
 - Type: **a:\install** (or b:\install), then
 - Press **Enter** (or click on **OK**)
 - The NECTAS installation program starts (see below).
- ▶ Windows 95 or NT 4.0:
 - Open **My Computer** and then **Control Panel**.
 - Double-click on the **Add/Remove Programs** icon.
 - The NECTAS installation program starts (see below).

(1) NECTAS Installation Program

The NECTAS installation program displays a number of screens which display messages and request user input. The steps in the installation process are:

- ▶ Select NECTAS drive and directory
- ▶ Select the NECTAS releases to install
- ▶ Select the serial (COM) port to install
- ▶ Update Windows configuration files
- ▶ Select Program Manager group for NECTAS icons
- ▶ Installation Complete

Note *For details on the resolution of installation problems, refer to Section 11.1.1.*

(2) Select NECTAS Drive and Directory

Figure 3–1 Selecting NECTAS Directory

The Select Destination Directory window of the installer allows the selection of hard drive and the directory in which to install NECTAS. The default and recommended directory is **C:\Program Files\NECTAS** (Windows 95 or NT) or **C:\NECTAS** (Windows 3.1). If there are already NECTAS files in the selected directory, they will be overwritten.

At the bottom of the screen the following information is shown:

- ▶ The disk space required by NECTAS for a complete installation.
- ▶ The free space on the selected hard drive.

To choose a different drive and/or directory:

- ▶ Click on the **Browse** button in the first window of the installer
- ▶ Select the drive and directory from the dialogue box that appears.

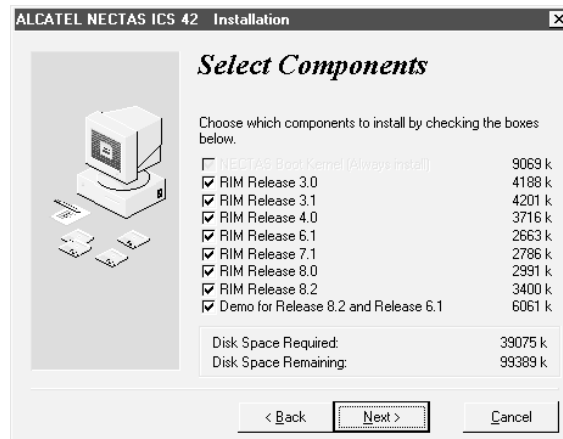
(3) Select NECTAS Releases

Figure 3–2 Choosing NECTAS Releases to install

The **Select Components** window is used to select which Releases of NECTAS are to be installed. This window lists the available Releases, and the disk space required for each.

A checkbox is beside each entry in the list.

- ▶ If a tick is in the checkbox the Release will be installed.
- ▶ If there is no tick the Release will not be installed.

The window also shows:

- ▶ Free space on the selected hard disk
- ▶ Disk space required by each Release
- ▶ Total disk space required by all selected Releases.

If the disk space required exceeds the free disk space you may wish to select a different drive or directory to install NECTAS. Alternatively you may wish to quit the install program, free up hard disk space, and restart the install.

- ▶ Click on the **Back** button to return to the first window and change the drive and/or directory, or
- ▶ Click on the **Cancel** button to quit the install program, then free up disk space and restart the installation.

To copy the NECTAS files to the hard disk, click on the Install button.

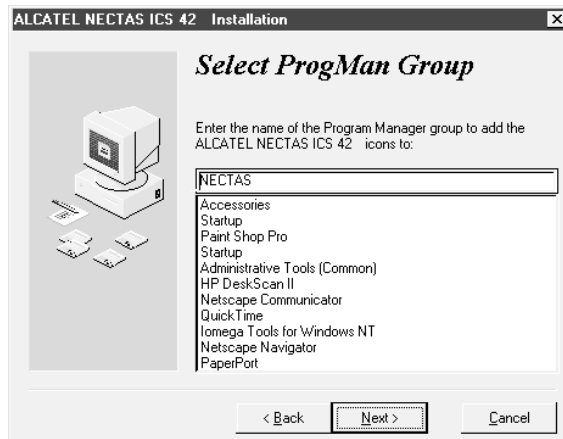
(4) Create Program Manager Icons or Start Menu

Figure 3–3 Selecting Program Manager group

The install program creates icons for the NECTAS program and places them in a group in Windows 3.1 Program Manager or the Start Menu in Windows 95 or Windows NT 4.0.

The **Select ProgMan Group** window is used to accept the default NECTAS group or menu, or to select another group or menu for the icons.

The icons are:

- ▶ B60 Configuration Convertor
- ▶ Equipment Configuration Conversion
- ▶ NECTAS
- ▶ NECTAS Demo
- ▶ FNN Database Conversion
- ▶ ReadMe
- ▶ UnInstall NECTAS

Figure 3–4 Selecting Program Group

(5) Unpack and Copy Files

At this point in the installation process, the installation program automatically unpacks the distribution files and copies the NECTAS files to the target directory.

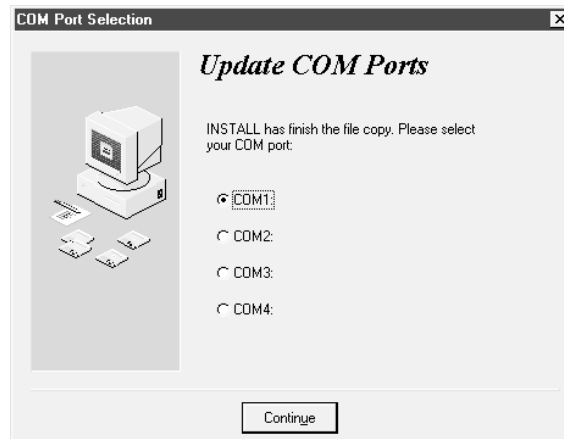
(6) Select Serial Port

Figure 3–5 Selecting a COM port for NECTAS

The **Update COM Ports** window is used to select the serial port, also known as a COM port, to be used by NECTAS.

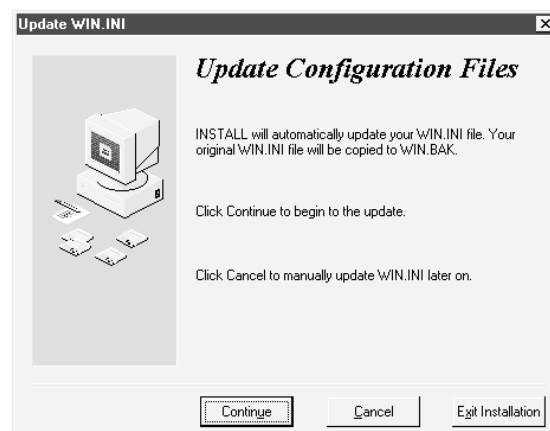
(7) Update Configuration Files

Figure 3–6 Updating Windows configuration files

NECTAS may update your configuration files, or you can manually update the configuration files later. This choice is made on the **Update Configuration Files** window of the install program.

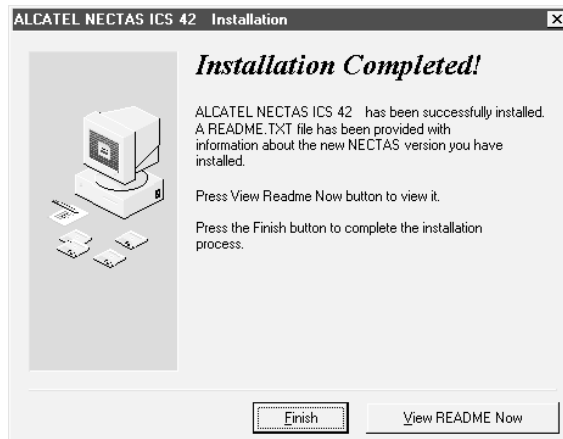
(8) Installation Completed

Figure 3–7 Installation Completed screen

The **Installation Completed** window indicates that installation has been successfully completed. The window gives the option of reading the NECTAS ReadMe file which contains information on software installation plus updated information on NECTAS.

- ▶ Click on the **View README.TXT File Now** button to view the ReadMe file
- ▶ Click on the **Finish** button to complete the installation

In order to load the new WIN.INI or Registry settings, restart Windows™ before running NECTAS.

3.2.2 Uninstalling NECTAS Software

To uninstall NECTAS software from a PC, click on the **NECTAS Uninstall** button in the NECTAS group within Program Manager or the Start Menu. Select the type of uninstall using the radio buttons in the centre of the **Select Uninstall Method** dialogue box.

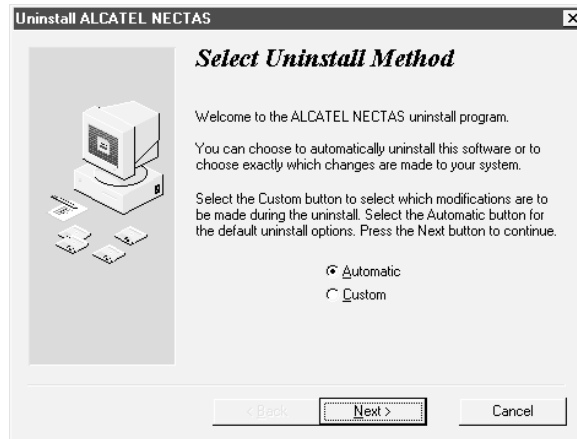


Figure 3–8 Uninstall Mode Selection

Two types of uninstall are available: Automatic and Custom.

- ▶ Automatic Uninstall removes all NECTAS files from the system
If Automatic uninstall is selected, all the NECTAS files are removed from the system without user interaction.
- ▶ Custom Uninstall allows the user to select the files to be removed.

If Custom uninstall is selected, a second dialogue box appears.

- Select all the files in the list by clicking on the **Select All** button, or deselect all files in the list by clicking on the **Select None** button.
- Click on individual files in the list to select or deselect them. More than one file can be selected or deselected by clicking on files one at a time.
- When the files have been selected for removal, click on the **Continue** button to uninstall them from the system.

When the type of Uninstall has been selected, click on the **Next** button to uninstall NECTAS.

3.2.3 Setting up the Windows 3.1 WIN.INI File

In order to run the Craft Terminal software some basic parameters must be added to the Windows 3.1 **WIN.INI** file which detail the NECTAS setup. These values are shown in bold below. Note that some instructions are case sensitive.

These parameters are automatically inserted by the Installation application under the heading **[PEX]**. If the **WIN.INI** file is manually edited for any reason the contents of [PEX] section should not be changed from the values shown below.

[PEX]

COMPEX=COMn: *(Where n is the serial port connected to the C-RIM)*

STORAGE=C:\NECTAS

If NECTAS was installed in another directory, the entry under STORAGE is the name of the actual directory used. Under Windows 95 and Windows NT this will be in the short file name format.

REPEAT=3

APPLICATIONS=n *(Where n is the number of applications that may be run simultaneously under NECTAS. The suggested value is 20)*

Note

- When editing the WIN.INI file, ensure you use a text editor (such as the Windows™ NotePad or Edit in DOS) and not a word processor that saves the file in a special format. The [PEX] section is best added to the end of the WIN.INI file. After the WIN.INI file has been changed, Windows™ must be restarted for the changes to take effect.
- Under Windows 95 and NT 4.0 the registry is automatically updated during NECTAS installation, and WIN.INI is not required.

3.2.4 COM Port Parameters

The communication port settings for NECTAS are defined by the `COMPEX=COMn` statement in the [PEX] section of the WIN.INI file and under the [Ports] section of the WIN.INI file.

This information is set up by the Install application, but it should be noted that if the COM port used by NECTAS is changed, the [Ports] section must also be checked to ensure that the COM port being used is set to:

- ▶ 9600 baud
- ▶ 8 data bits
- ▶ Odd parity
- ▶ 1 stop bit
- ▶ Flow Control=None.

3.2.5 Windows Colour Schemes

Windows™ has many colour schemes which may be used for the display.

(1) Windows 3.1 Colour Schemes

In some Windows 3.1 colour schemes, greyed-out text may merge with the background and not be readable. To avoid this problem the recommended colour scheme is *LCD Default Screen Settings*.

Colour schemes are selected in the Color program within Control Panel. To change the colour scheme:

- ▶ Start Windows™
- ▶ Open the Main Group by double clicking on its icon
- ▶ Open Control Panel by double clicking on its icon
- ▶ Double click on Color to open the Color program
- ▶ On the second line of the Color program is shown the name of the current colour scheme. Click on the arrow at the right-hand end of this line to display a list of colour schemes.
- ▶ Scroll down the list using the scroll bars until the name of the desired scheme is seen.
- ▶ Click on the name of the desired scheme to select it, then click on **OK** to apply the colour scheme.

(2) Windows 95 and NT 4.0 Colour Schemes

In Windows 95 and NT 4.0, select a colour scheme compatible with your display and video adaptor.

- ▶ Right click on an empty area of the Desktop to open a context sensitive menu. In the menu, select Properties.
- ▶ Open the Appearance page of the Properties dialogue by clicking on the Appearance tab.
- ▶ Choose a colour scheme from the Scheme pull–down list.

Note *To modify a selected scheme, or to create a custom scheme, refer to the Windows 95 or NT 4.0 documentation.*

3.3 Connecting Craft Terminals to C–RIM

3.3.1 Physical Connection to the F Port

The Craft Terminal is connected to the C–RIM through one of a number of “F” ports. The options for “F” port connection are:

- ▶ System F Port (Exchange)
- ▶ System F Port (Remote)
- ▶ Network F Port
- ▶ Local F Port (Exchange or Remote)

3.3.2 System F Port (EU)

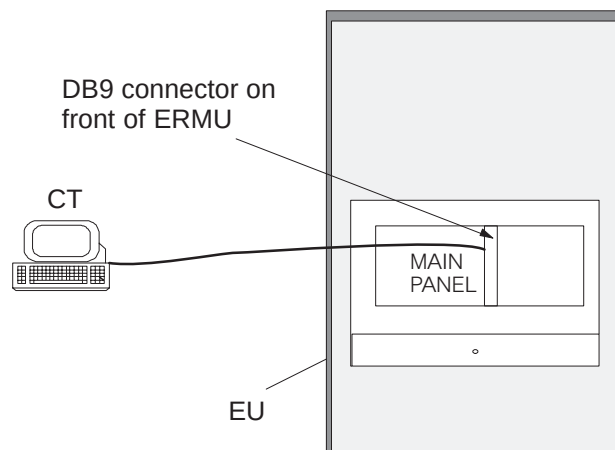


Figure 3–9 System F Port (Exchange)

The System F Port at the EU is the F Port on the ERMU board in the EU. Connecting a CRAFT terminal to this port gives you access to the full C–RIM system. i.e. EU, RU and ERMU.

3.3.3 Remote System F Port (RU)

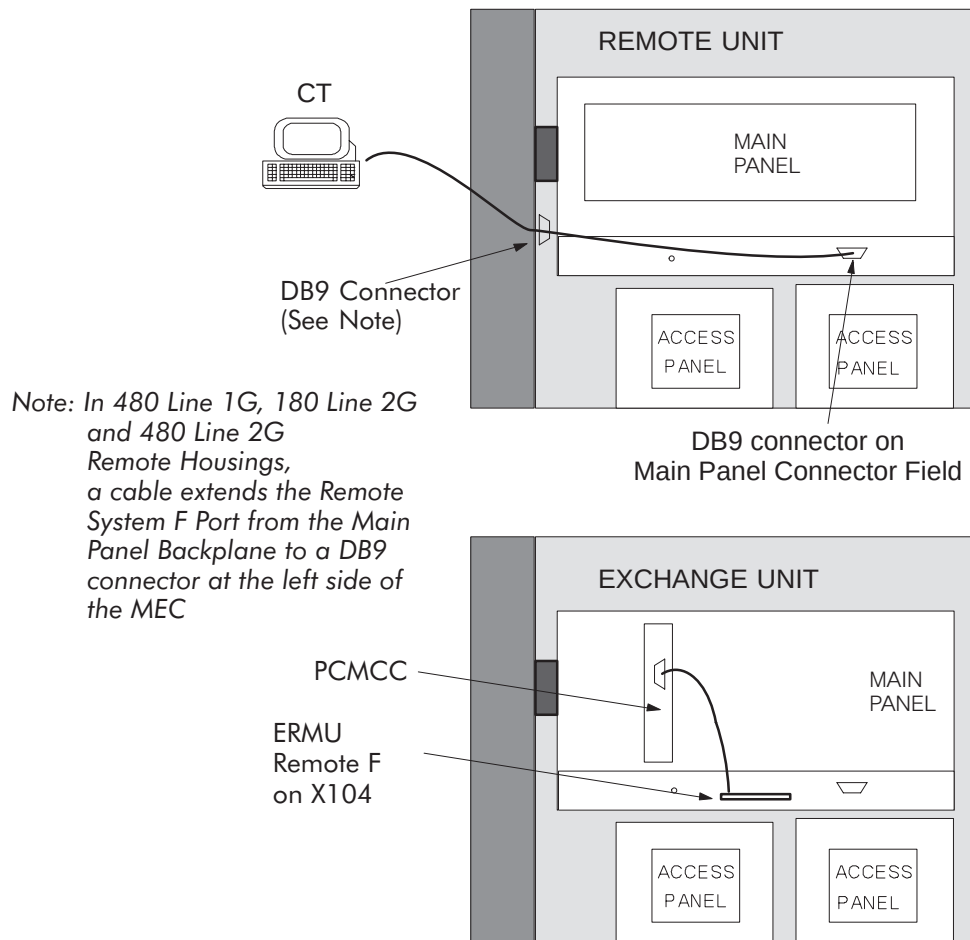


Figure 3–10 Remote System F Port

The Remote System F Port at the RU offers the same functionality as the System Port at the EU, though the physical connection is different.

In order to get System port functionality from a Remote site:

- ▶ The Craft Terminal is connected to the Remote System F Port on the RU Main Panel backplane
- ▶ At the EU Main Panel, a cable is connected from the Local F Port on the front of the PCMCC to the ERMU Remote F position on connector X104 on the backplane.

These connections allow remote access to the ERMU in the EU, and give access to the full C–RIM system.

Note Refer to the C–RIM Technical Handbook for details of cabling within Remote Housings.

3.3.4 Network F Port

A Craft Terminal may be connected remotely via COMNET-2 to the Network X.25 Port on the Main Panel connector field.

Alternatively, the connection may be made via a Mediation Device (MDr) to the Network F Port on the ERMU.

Connection of a Craft Terminal via COMNET-2 gives full access to all facilities of the C-RIM via the network.

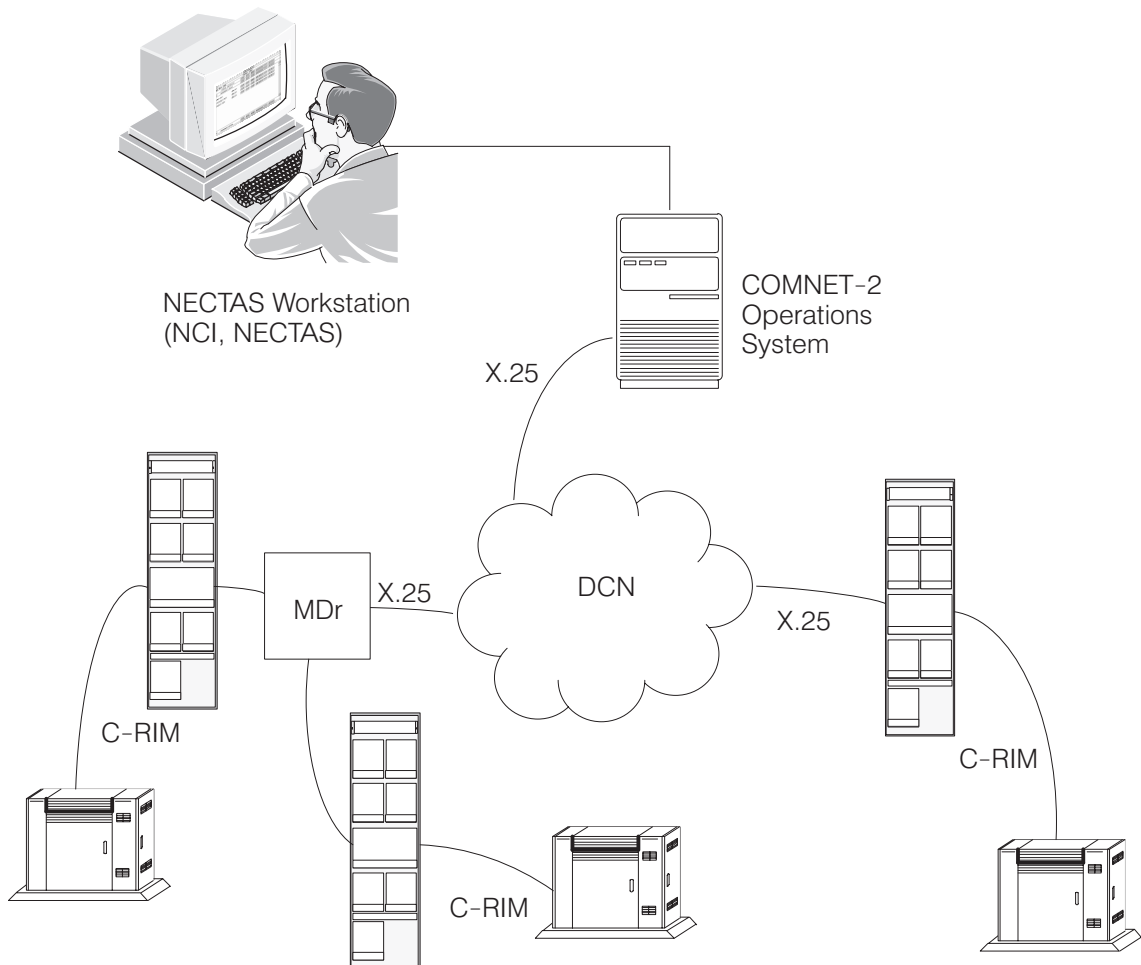


Figure 3-11 Network F Port Connections

Through the Exchange Unit ERMU, access may be gained to all alarms on the EU and connected RU.

3.3.5 Local F Port (EU or RU)

The Local F Port connection may be made at the EU or RU by connecting the Craft Terminal to the front of the PCMCC Board.

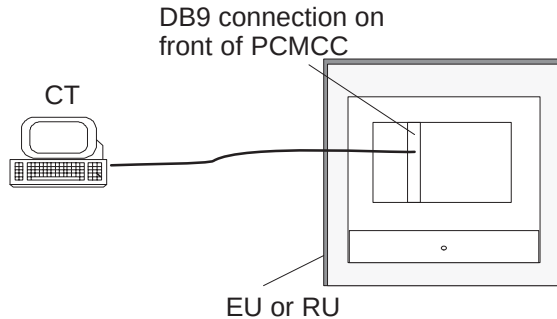


Figure 3–12 Local F Port (EU or RU)

This allows access to local alarms and facilities for that network element only.

Note *At the EU a cable normally connects the ERMU Remote F Port connector on the Main Panel to the Local F Port on the PCMCC. If a Craft Terminal is plugged into the Remote F Port connector at the RU, this cable gives the terminal remote access to the ERMU. The Remote System F Port (RU) is described in section 3.3.3.*

Before connecting a Craft Terminal to the Local F Port at the EU this cable must be unplugged from the PCMCC. After disconnection of the Craft Terminal the cable must be reconnected.

3.3.6 Cable – Craft Terminal to C–RIM

The pinouts and connections of the Craft Terminal to C–RIM connection are as follows:

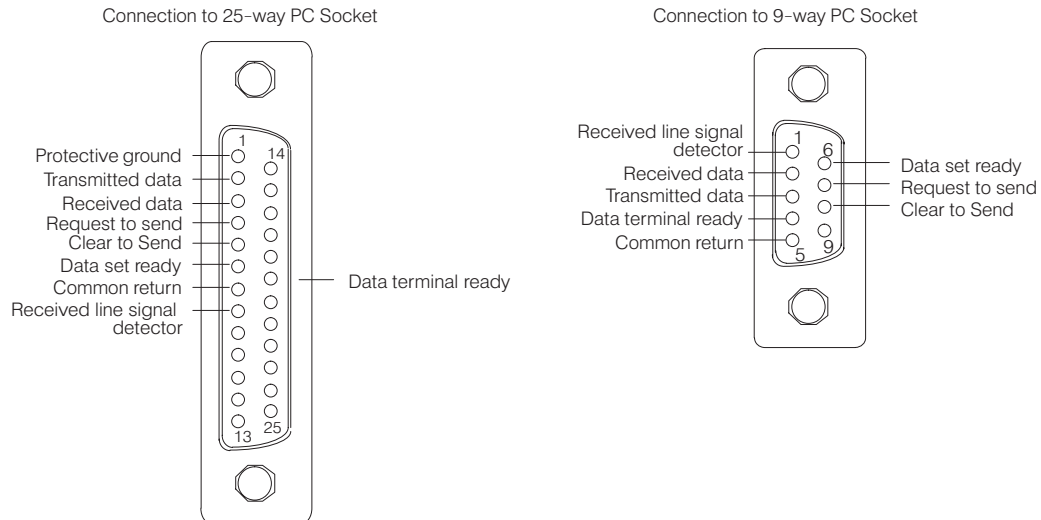


Figure 3–13 CRAFT Terminal Interface Connectors

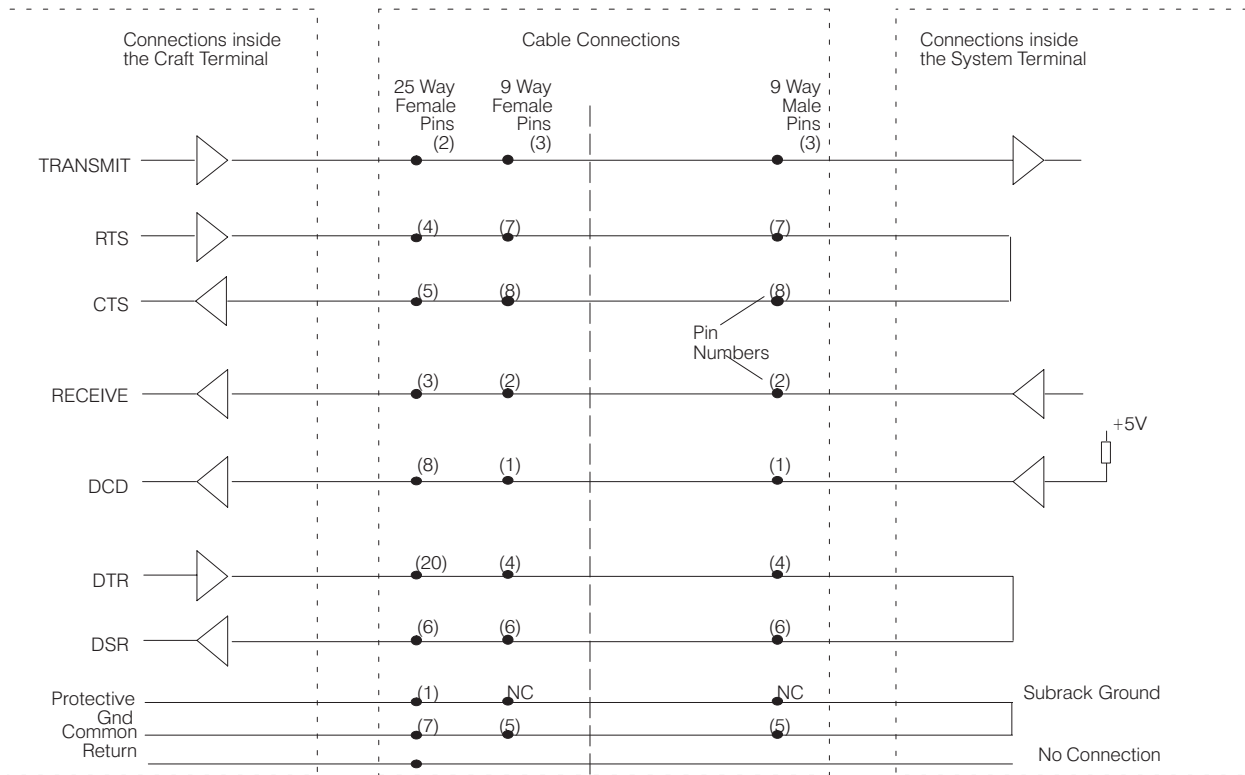


Figure 3–14 CRAFT Terminal Serial Cable – System F Port

3.4 Starting Up the NECTAS Software

To start NECTAS, double click on the NECTAS Application Icon. Alternatively, under DOS/Windows 3.1 the program may be launched by typing **WIN NECTAS** at the DOS prompt (assuming paths to Windows™ and NECTAS have been set up).

3.4.1 Entering the Password to Start NECTAS

Upon entering NECTAS, you will be prompted to enter your operator identifier and password to access the C–RIM (see figure below). Operator Passwords are case sensitive.

You must enter the Operator Identifier then press **Tab** or use the mouse to click in the Password box. Click **OK** or press **Return** when you have entered your identifier and password.

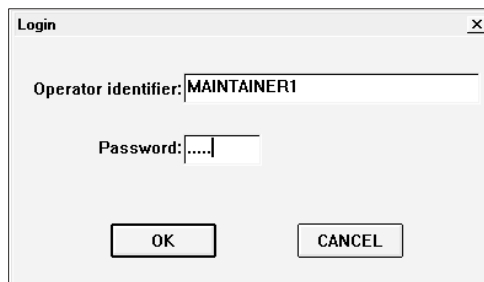


Figure 3–15 Password to Enter NECTAS

Operator Identifiers and Passwords may be set up and altered using the Administration Application described in Chapter 10 *Maintenance and Administration*.

Note *The default Operator Identifier and Password for a C–RIM which has not been configured is 'MAINTAINER1' with a password of 'MAINT1'. It is recommended that this password be changed after initial login to enhance system security.*

While logging in, the screen cursor may disappear. This happens if another window retains the 'focus' (i.e. it is active in the background). To return to the Login window under these circumstances:

- ▶ Hold down the **Alt** key and press the **Tab** key several times until the 1321NX 3.78 icon appears in a grey box.
- ▶ Then release both the **Tab** and **Alt** keys to bring the Login window to the front.

3.5 NECTAS Navigation

3.5.1 Using the Mouse

A Mouse provides quick access to all options. Selections are made by moving to the appropriate area and clicking the left button.

- ▶ The Left Button is usually used for selection
- ▶ The Right button is usually used to go back to a previous screen

3.5.2 Using the Keyboard

Once a NECTAS application has started, function keys F5, F6, F7, F8 and the arrow keys are used to position the cursor (hand image only) on the summary information symbols.

Although a mouse is generally used, the keyboard may be used. In any menu or dialog box where an option contains an underlined letter, pressing the **ALT** key in combination with the letter will perform the function.

Some of the other more useful keyboard functions are:

Return	to confirm a choice made, select the default or execute current menu selection.
ESC	to interrupt an operation in progress or move back to the previous screen.
F1	to activate the on-line Help function.
F10	to jump to the menu bar where arrow keys may be used to move backward or forward through menus.
ALT	Same as F10
Arrow Keys	used to move backward and forward through menus.
TAB	When in dialog boxes, pressing the Tab key will move the cursor to the next field. Pressing Shift at the same time as TAB will move the cursor back to the previous field.
SPACE	Check Boxes are activated/de-activated with the spacebar.

3.6 The Alarm Synthesis Window

The first window in NECTAS is the “Alarm Synthesis Window” (see figure below).

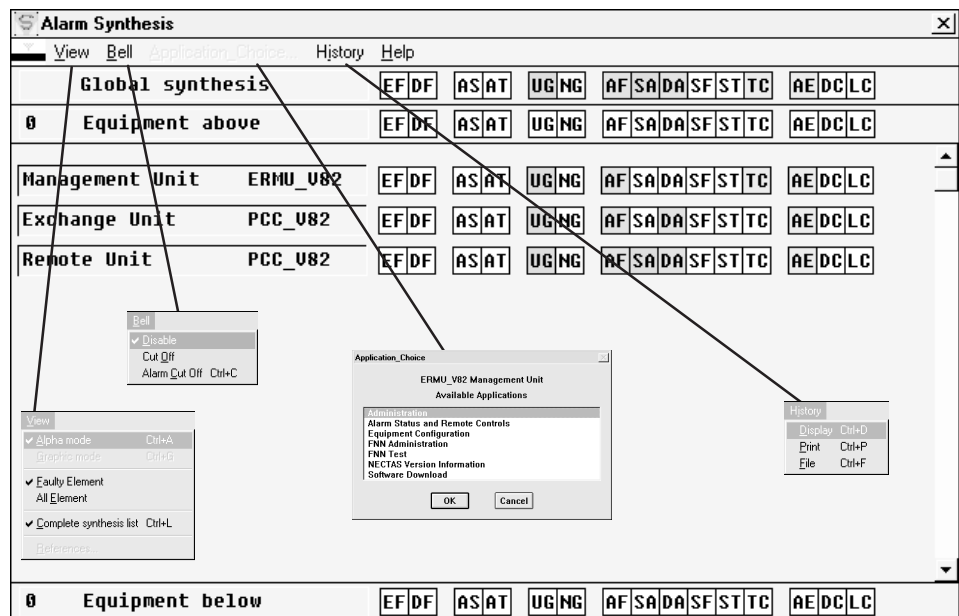


Figure 3–16 Alarm Synthesis Window and Menus

The following menus are available from the Alarm Synthesis window:



Clicking on the Alcatel symbol will display NECTAS Version information.

View

The View menu is used to control which information is displayed in the Alarm Synthesis Window.

Bell

Used to acknowledge alarms and cut off the alarm sound.

Application_Choice

The Application_Choice menu is used to access all the main NECTAS functions.

History

The History menu is used to display or print historical Alarm information.

Help

The Help menu may be used to get information about NECTAS.

3.6.1 Fields on the Alarm Synthesis Window

(1) Network Element List

When the software is first started up, as long as there are no alarms, the main field remains empty (the All Element or Faulty Element command in the View menu is specified by default on starting up the software).

If alarms (or faults) occur, the names of the NE generating the alarms are displayed on screen; conversely, as alarms are cleared, so too are the corresponding NEs (unless View All Element is selected).

The main field has space for up to ten NEs (using a VGA monitor). If, for some reason the available NE list exceeds the space provided, the following two fields become active:

- ▶ The **equipment above** field gives the number of NE located above the main field but not currently visible and the alarm synthesis for those NE.
- ▶ The **equipment below** field gives the number of NE located below the main field, also not visible, and the alarm synthesis for those NE.

As each C–RIM consists of only 3 NEs (ERMU, EU_PCMCC, RU_PCMCC), scrolling is not required to view all alarm synthesis bars unless the craft terminal is connected remotely over the network through a mediation device or directly via X.25 to a number of C–RIM systems.

3.6.2 Toggling Menu Options and Selection

Some menu options may be toggled on and off. Selecting such an item in a menu will toggle its current state. A check mark (✓) alongside the command indicates that it is enabled.

Note *If an option is greyed out (in a menu or dialog box) it cannot be selected.*

3.6.3 The Alcatel Logo



Clicking on the Alcatel logo on the menu bar will display the title of the current application and the Software Release details. This screen is closed by selecting **OK**.

3.6.4 The View Menu

The **View** menu is used to select the type of information displayed in the Network Element list, or reference information for Network Elements. These functions are detailed below. Note that in other applications (such as AS&C), the **View** menu may be used to select different panels or components.

(1) Viewing Only Global Alarms

To display only a summary of the Alarms on all Network Elements:

- ▶ Select the **View** menu in the Alarm Synthesis Window. Ensure **Complete synthesis list** has no check mark (that is, no ✓) alongside the command. If a check mark is showing alongside this command, select **Complete synthesis list** to remove the check mark.

(2) Viewing Only Faulty Elements

To restrict the Network Elements list to show only those with alarm conditions:

- ▶ Select the **View** menu in the Alarm Synthesis Window. Ensure **Complete synthesis list** has a check mark (✓) alongside the command. If no check mark is showing alongside this command, select **Complete synthesis list**.
- ▶ Select **Faulty Element** from the **View** menu. The Alarm Synthesis window is displayed, showing only faulty Elements.

(3) Viewing All Elements

To display the complete list of Network Elements:

- ▶ Select the **View** menu in the Alarm Synthesis Window. Ensure **Complete synthesis list** has a check mark (✓) alongside the command. If no check mark is showing alongside this command, select **Complete synthesis list**.
- ▶ Select **All Element** from the **View** menu. The Alarm Synthesis window is displayed, showing all Elements in the network.

(4) Viewing Reference Information for the PCMCC or ERMU

The 'References' option, when selected, is one way of finding the ERMU or PCMCC version numbers.

To display reference information for a unit:

- ▶ Select the Unit in the Alarm Synthesis window.
- ▶ Select **References** from the View menu. The Equipment References window is displayed.

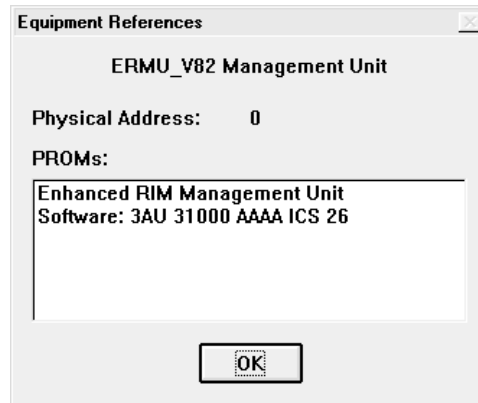


Figure 3–17 Equipment Reference Window

- To close the window, select **OK**.

3.6.5 The Bell Menu

The Bell menu is used to disable the alarm sound and indicate alarms as having been attended to. There are three items in the Bell menu:

- ▶ Disable
- ▶ Cut Off
- ▶ Alarm Cut Off

(1) Disable Craft Terminal Bell

The default status of NECTAS is that when an alarm occurs, a bell sounds on the Craft Terminal. To completely disable the sound of the bell, select **Disable** from the **Bell** menu in the **Alarm Synthesis** window.

A check mark (✓) alongside **Disable** indicates that the bell is disabled and no alarm will sound until the check mark is removed from the **Disable** option by re-selecting it.

(2) Cut Off

Selecting Cut Off disables the bell for alarms that have already been raised, but does not clear the alarms and does not set the alarms to attended. If additional alarms are later raised the bell will sound again.

(3) Alarm Cut Off

Alarms may be indicated as having being attended by selecting **Alarm Cut Off** from the **Bell** menu in the **Alarm Synthesis** window. This will set all existing alarms to have a status of "Attended" and will stop the alarm sound, though any new alarms will respond in the normal way.

After selecting Alarm Cut Off, the Urgent (UG) and Non-Urgent (NG) boxes in the Alarm Synthesis box will be set. Note that individual alarms will still be displayed in the AS&C application. The AT box(es) will clear automatically when all alarms that were present at the time of Alarm Cutoff activation are cleared.

New alarms occurring after the activation of Alarm Cut Off will again generate UG and NG alarms in the Alarm Synthesis bar in the normal way.

3.6.6 The Application_Choice Menu

The **Application_Choice** menu is used to select the different applications available through NECTAS. The available applications depend on the type of element selected (i.e. the ERMU or EU/RU), if neither is selected then the Application_Choice menu will be greyed out and unselectable.

A brief summary of the Applications for the ERMU and EU/RU is given below.

Note *If the **Complete synthesis list** command is deactivated, only the top part of the screen is displayed.*

Note that the available applications will depend on the security level of the user. The configuration of the C-RIM must also be valid in order for all applications to appear.

MANAGEMENT UNIT (ERMU) APPLICATIONS

► **Administration**

Used to maintain system operator information.

► **Alarms, Status and Remote Controls**

Used to Manage and Monitor ERMU Alarms.

► **Equipment Configuration**

Used for configuration of the ERMU.

► **FNN Administration**

Used to enter and maintain FNN information.

► **FNN Display**

Used to view FNN information.

► **FNN Test**

Used to run remote tests on customer lines and equipment and collect ISDN Performance Measurement statistics.

► **NECTAS Version Information**

Displays version information of all NECTAS applications.

► **Software Download**

Used to download software to the FEPROMs on the ERMU.

EU AND RU APPLICATIONS

▶ **Administration**

Used to maintain system operator information.

▶ **Alarms, Status and Remote Controls**

Used to Manage and Monitor EU or RU Alarms.

▶ **Equipment Configuration**

Used for configuration of the EU or RU.

▶ **NECTAS Version Information**

Displays version information of all NECTAS applications.

▶ **Performance Monitoring**

Used to Monitor performance and error rates.

▶ **Software Download**

Used to download software to the FEPROMs on EU or RU ECC, PCMCC and PCMCX Units.

▶ **Unknown Subscribers**

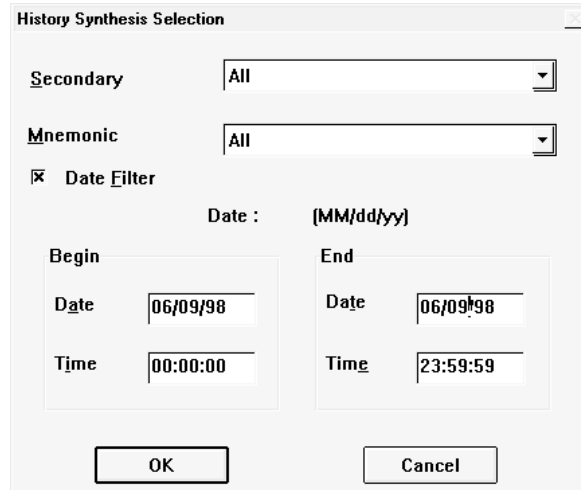
Used at the RU only to view unknown subscribers.

▶ **Traffic Measurement**

Used at the RU only to view the traffic statistics collected by the C-RIM.

3.6.7 History

Selecting **History** from the menu in the Alarm Synthesis screen allows you to display or print alarm history information. This information is stored in a file that contains the last 3000 alarms that have occurred on the C–RIM.



The image shows a 'History Synthesis Selection' dialog box. It contains two dropdown menus for 'Secondary' and 'Mnemonic', both set to 'All'. There is a checked checkbox for 'Date Filter'. Below this, there are two date and time selection groups: 'Begin' and 'End'. The 'Begin' group has a 'Date' field set to '06/09/98' and a 'Time' field set to '00:00:00'. The 'End' group has a 'Date' field set to '06/09/98' and a 'Time' field set to '23:59:59'. At the bottom are 'OK' and 'Cancel' buttons. The date format is indicated as '(MM/dd/yy)'.

Figure 3–18 History Synthesis Selection Window

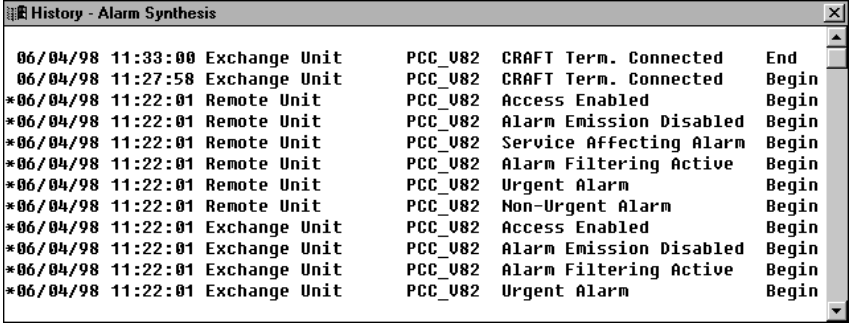
Note

The System Terminal **MUST** be connected to the equipment for logging alarms in real time and storing them to the hard disk.

Alarm logs are not held on the PCMCC ports but activation and de-activation events of each alarm are latched for each ERMU port between log-in clearings. Every time the ERMU port is logged into, these latched alarms are recorded in the Craft Terminal's alarm history buffer with the same time stamp (given by the Craft Terminal) and then the alarm latches are cleared.

The alarm history information may be displayed using the following filters, which are selected on the History Synthesis Selection window:

Secondary	Classification of NE (Management Unit, Exchange Unit, Remote Unit)
Mnemonic	Using a synthesis type as the search criteria (e.g. Attended Alarm)
Date Filter	All the alarms that occurred between two dates. The dates must be entered in MM/dd/yy format.



History - Alarm Synthesis					
06/04/98	11:33:00	Exchange Unit	PCC_V82	CRAFT Term. Connected	End
06/04/98	11:27:58	Exchange Unit	PCC_V82	CRAFT Term. Connected	Begin
*06/04/98	11:22:01	Remote Unit	PCC_V82	Access Enabled	Begin
*06/04/98	11:22:01	Remote Unit	PCC_V82	Alarm Emission Disabled	Begin
*06/04/98	11:22:01	Remote Unit	PCC_V82	Service Affecting Alarm	Begin
*06/04/98	11:22:01	Remote Unit	PCC_V82	Alarm Filtering Active	Begin
*06/04/98	11:22:01	Remote Unit	PCC_V82	Urgent Alarm	Begin
*06/04/98	11:22:01	Remote Unit	PCC_V82	Non-Urgent Alarm	Begin
*06/04/98	11:22:01	Exchange Unit	PCC_V82	Access Enabled	Begin
*06/04/98	11:22:01	Exchange Unit	PCC_V82	Alarm Emission Disabled	Begin
*06/04/98	11:22:01	Exchange Unit	PCC_V82	Alarm Filtering Active	Begin
*06/04/98	11:22:01	Exchange Unit	PCC_V82	Urgent Alarm	Begin

Figure 3–19 Element History Window

- Events are displayed in chronological order, from the most recent to the oldest. You may need to scroll the list.
- After you have finished viewing the history, close the window and you return to the Alarm Synthesis window.

Once you have finished, the Alarm History screen can be closed by double clicking at the left end of the title bar Alarm History window or by clicking the button with a cross at the right end of the title bar.

During the display phase, the alarm window can be moved to a more convenient location if required.

Note Two log files, which can contain up to 3,000 events, are used. After the first file fills up, the second file is used. When the second file becomes full, the first file is cleared and is used again for the next 3,000 events. This process can continue indefinitely.

3.6.8 Online Help

Limited online help is available for some of the NECTAS functions. To get help:

- ▶ Select Help in the menu or press the **F1** key
- ▶ Use the button bar at the top of the help dialog box to move through the information.

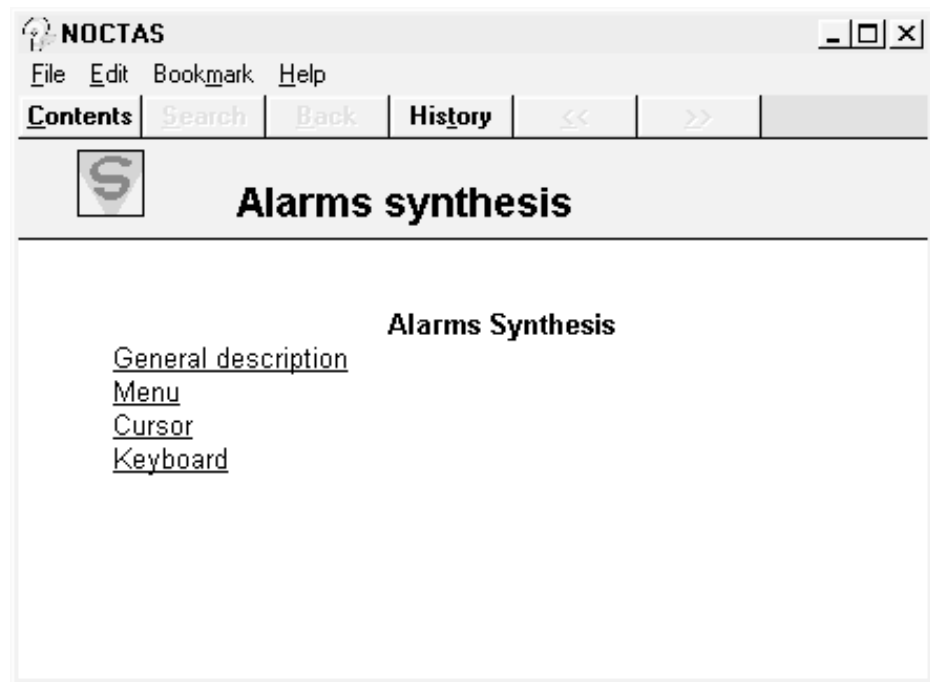


Figure 3–20 The Help Window

3.6.9 Alarms on the Alarm Synthesis Window

The various items of information contained in the boxes in the Network Element alarm synthesis space are listed in the table below. If a particular alarm does not relate to a network element, the box will appear empty.

Abbrev.	Colour	Definition	Notes
EF	RED	Equipment Failure	The equipment is no longer responding or has failed.
DF	RED	Dialogue Failure	Command not understood, transmission error.
AS	GREEN	Alarm Stop	Audible alarm switched off
AT	MAGENTA	Attended Alarm	Alarm acknowledged by an 'Alarm Stop'.
UG	RED	Urgent Alarm	Urgent alarm requiring prompt attention.
NG	YELLOW	Non-urgent Alarm	Alarm not requiring urgent attention.
AF	MAGENTA	Alarm Filtering	Fleeting alarms are latched
SA	RED	Service Affecting	Service affected, confirms the urgent alarm.
DA	MAGENTA	Disabled Alarm	Alarms to COMNET have been disabled
SF	MAGENTA	Signal Failure	Signal fault, excessive error ratio etc.
ST	GREEN	Status	This indicates that send / receive of the configuration tables is in progress. Some applications cannot be accessed while this alarm is active. IMPORTANT: The PCMCC Unit or the Main Panel MUST NOT be powered down if ST is on or the whole configuration may be lost.
TC	GREEN	Craft Terminal Connected	Equipment Craft Terminal connected to the NE.
AE	GREEN	Access Enabled	Indication that COMNET has enabled Local Access.
DC	BLACK	Default Configuration	The equipment has switched to the default configuration – Requires sending of a configuration file.
LC	RED	Loss of Configuration	Loss of configuration following disconnection resulting in a configuration fault. Reconfiguration by sending of a configuration file.

When one of these alarms is present, the tile corresponding to that alarm will change colour. The colours used to indicate Alarm status are consistent throughout the software and are shown in the following table:

The colours used to indicate Alarm status are consistent throughout the software and are as follows:

Alarm	Colour Monitor	Monochrome Monitor
URGENT	RED with WHITE cross	BLACK with WHITE cross
NON – URGENT	YELLOW with BLACK cross	GREY with WHITE cross
STATUS	MAGENTA	LETTERING
NO ACTION	MAGENTA with BLACK cross	GREY with BLACK cross
NONE	No Change or Green	No Change

In order to get further detail on the Alarms, select the Alarm Status and Controls Application from the Application_Choice menu. Alarms are detailed further in Chapter 8 – *Alarms, Status & Remote Control*.

3.7 The NECTAS Demonstration Mode

It is possible to run NECTAS in a demonstration mode without being connected to a system. There are two ways to run the NECTAS demonstration.

► **Windows 3.1**

Open the NECTAS group and double-click on the Nectas Demo icon.

► **Windows 95 or NT 4.0**

Open the Start Menu and select Nectas Demo from the Nectas menu.

This is described further in Appendix E – *NECTAS Demonstration Mode*.

Alarms will soon appear on the screen in the summary bar across the top. Double clicking with the right mouse button on the 'NECTAS Demonstration' icon toggles the alarm demonstration on and off.

3.8 Exiting NECTAS

Before you exit NECTAS, ensure that you have saved any changes you made (particularly when in the Configuration Application), and that you have actually downloaded the changes to the C-RIM equipment if that was required.

The correct procedure for exiting NECTAS is to select Logout from the Operator menu in the Administration Application, then exiting NECTAS itself (as described below).

If you shut down NECTAS without logging off, you will be automatically logged out within 6 minutes. If you (or anyone else) re-connects within this period of time you (or they) will be logged in under your original ID. Therefore it is very important to logout using the Administration application's **Logout** option from the **Operator** menu.

All NECTAS applications (including the Alarm Synthesis Window) may be closed by pressing **ALT F4** or by clicking in the box in the top left corner of the window to bring down the window menu, then selecting **Close**.

When only the Alarm Synthesis window remains, follow the same procedure to close it, then select **OK** to exit the application.

Before turning off the computer it is important that Windows is properly exited before the computer is turned off:

Windows 3.1:

Exit the Windows™ Program Manager. At the DOS prompt, the computer may be turned off.

Windows 95/NT 4.0:

Open the **Start** menu, and select **Shut Down**. In the dialogue box that appears, choose **Shut Down The Computer**. Windows will prompt when it is safe to turn off the computer.

3.9 NECTAS Menu Flow Diagram for the ERMU

On the following pages is a tree diagram illustrating the flow of screens and options in the NECTAS software when the ERMU is selected. The menus and options available depend on the access level of the operator. Unavailable menu items are greyed-out.

Alarm Synthesis Screen

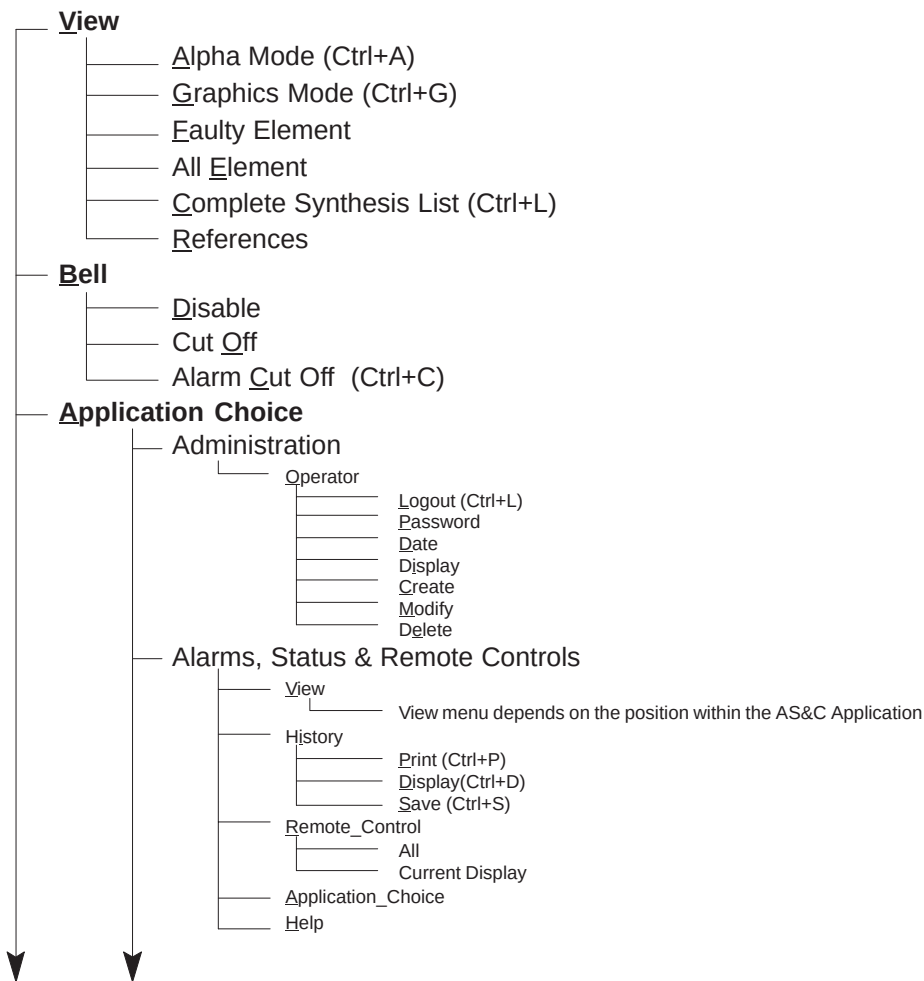


Figure 3–21 NECTAS Menu Flow (ERMU) – 1/2

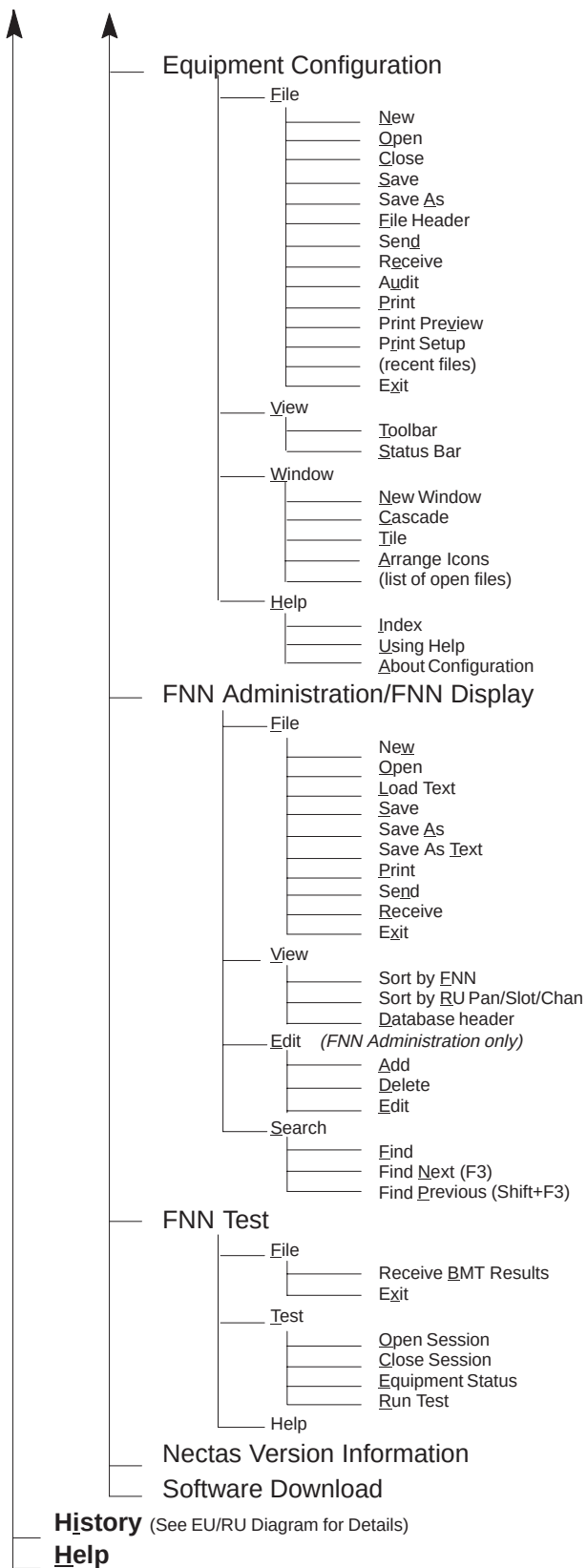


Figure 3–22 NECTAS Menu Flow (ERMU) – 2/2

3.10 NECTAS Menu Flow Diagram for the EU/RU

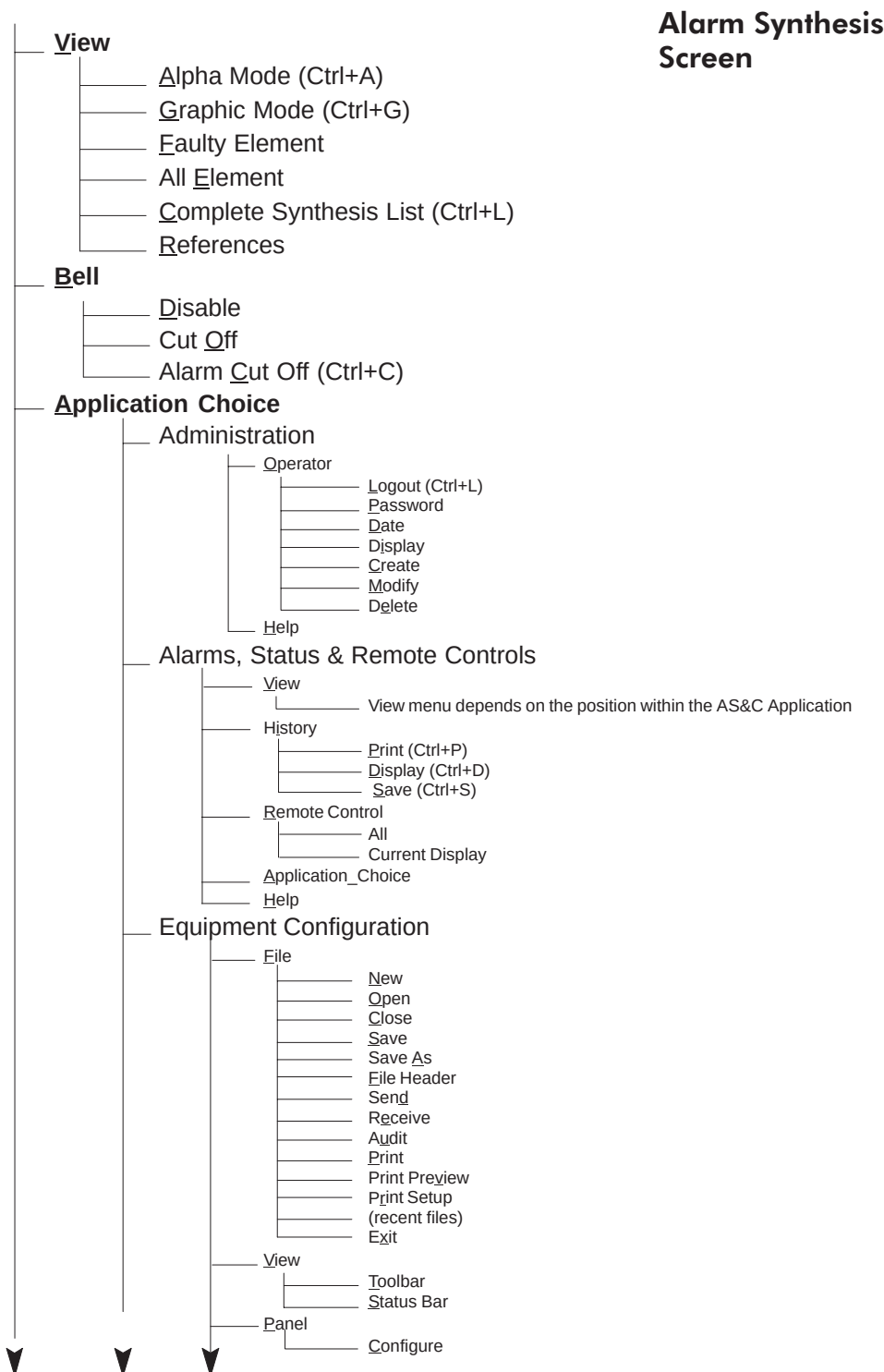


Figure 3–23 NECTAS Menu Flow (EU/RU) – 1/2



3.11 Initial C–RIM Configuration Procedure

Once the C–RIM has been installed, connect the NECTAS Craft Terminal through the F Port. The initial configuration procedure is as follows.

Note *This procedure is a brief outline only. For further details on using the configuration tables see Chapter 4 – Configuration Basics.*

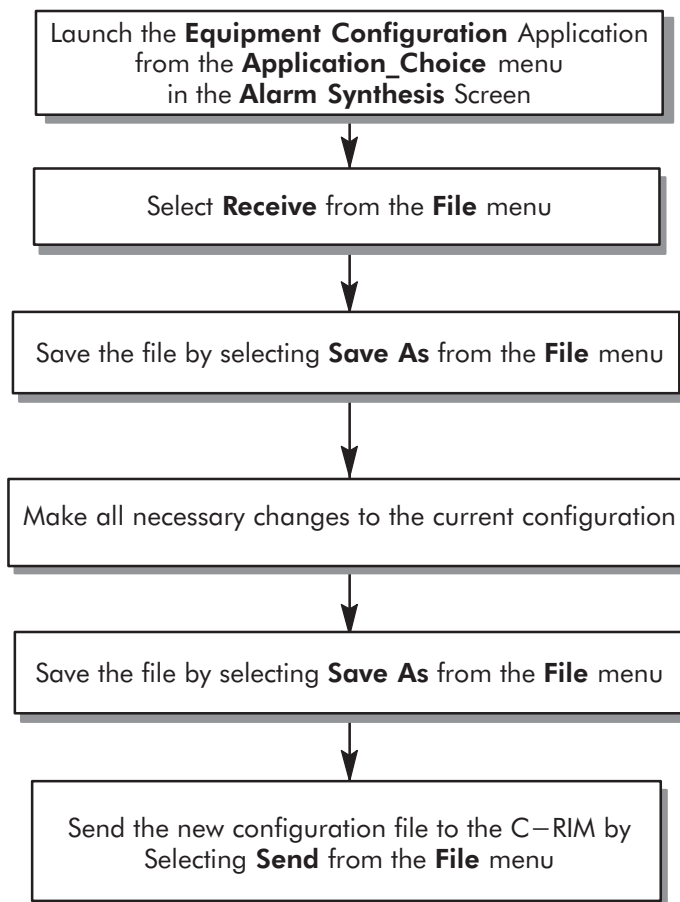


Figure 3–25 C–RIM – Initial Configuration Procedure

4 Configuration Basics

This chapter describes the appearance, menus and basic usage of the NECTAS Equipment Configuration application.

4.1 The Equipment Configuration Application

The C–RIM is configured using configuration tables that are generated from information entered into the Equipment Configuration Application. The C–RIM stores its own configuration locally and these configurations may be sent or received via the Craft Terminal or COMNET.

The Equipment Configuration application has two modes of operation – Online and Offline.

► **Online Mode**

Normally Equipment Configuration is started in online mode, with the Craft Terminal connected to a C–RIM. Section 4.1.1 details the steps required to launch Equipment Configuration in Online mode.

► **Offline Mode**

Equipment Configuration may also be launched in Offline Mode, with the Craft Terminal disconnected from the C–RIM. This allows a configuration to be set up off site, and saved as a file for later download to a C–RIM when on site. Section 4.1.2 details the steps required to launch Equipment Configuration in Offline mode.

4.1.1 Equipment Configuration – Online Mode

The Equipment Configuration application is run in Online mode by:

- ▶ Starting NECTAS in the Windows™ 3.1 Program Manager or from the Start menu in Windows™ 95 or NT 4.0.
- ▶ Opening the **Application Choice** window by either:
 - double clicking on the ERMU (ERMU_V82) or a PCMCC (PCC_V82) in the **Alarm Synthesis** window, or
 - clicking on a PCMCC or ERMU in the Alarm Synthesis window and selecting **Application_Choice** from the menu bar.
- ▶ Selecting **Equipment Configuration** from the **Application Choice** menu.

Note Only authorised personnel have access to the **Configuration** application from the **Application_Choice** menu.

Different **Application_Choice** menus are displayed for a PCMCC or an ERMU, however both have an entry for Equipment Configuration.

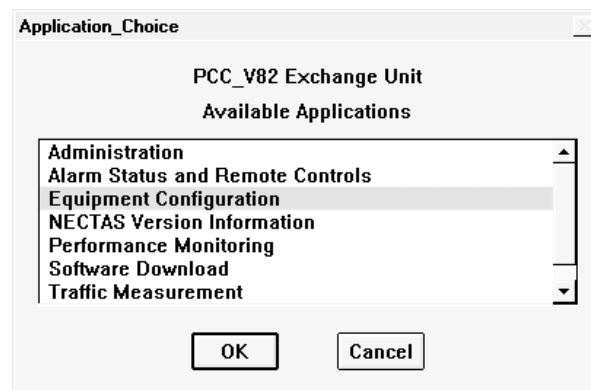


Figure 4–1 Application Choice menu

4.1.2 Equipment Configuration – Offline Mode

To launch Equipment Configuration in Offline mode:

- 1** Start Windows™
- 2** Launch the Equipment Configuration Application:
 - In Windows 3.1.
 - Select File/Run from the Program Manager menu
 - Type in C:\NECTAS\PCC_V82\CONFG82.EXE or C:\NECTAS\ERMU_V82\CONFG82.EXE and click on OK. This launches the Equipment Configuration application.
 - In Windows 95 or NT 4.0.
 - Select Run from the Start menu
 - Type in
C:\“Program Files”\NECTAS\PCC_V82\CONF82.EXE
or
C:\“Program Files”\NECTAS\ERMU_V82\CONF82.E
XE and click on OK. This launches the Equipment Configuration application.
- 3** Choose the Network Element (NE)
 - The first window that appears allows a choice of PCMCC or ERMU as the type of element to be configured. Select the desired type of element and click on OK to continue.
 - An additional message window indicates “Waiting for NECTAS”. Click on OK to continue.
- 4** Configure the Network Element
 - Set up the desired configuration, and save it to file for later download to a C–RIM system.

4.1.3 ERMU Equipment Configuration Window

The first window of the ERMU Equipment Configuration application has a single button in the centre. Click on it to open the five–page ERMU Equipment Configuration window. ERMU configuration is detailed in Chapter 6.

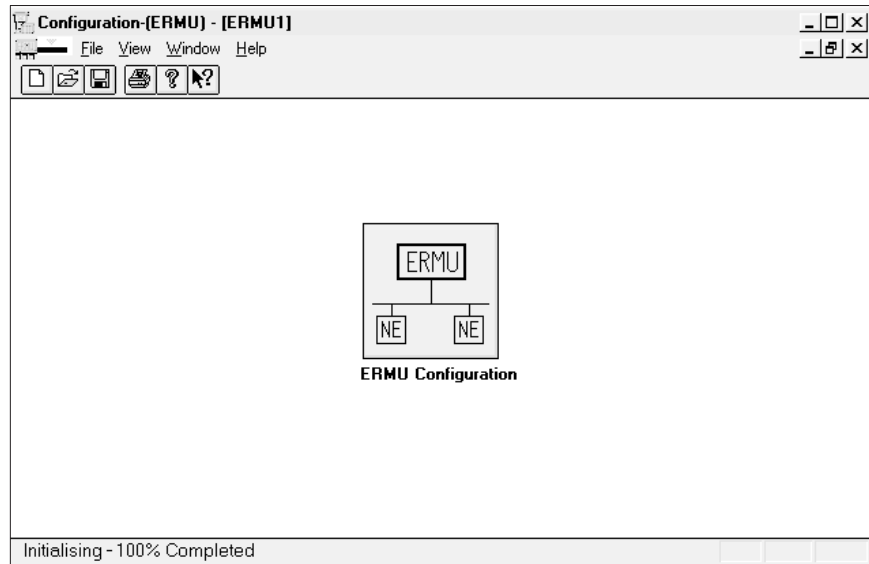


Figure 4–2 ERMU Configuration – First Window

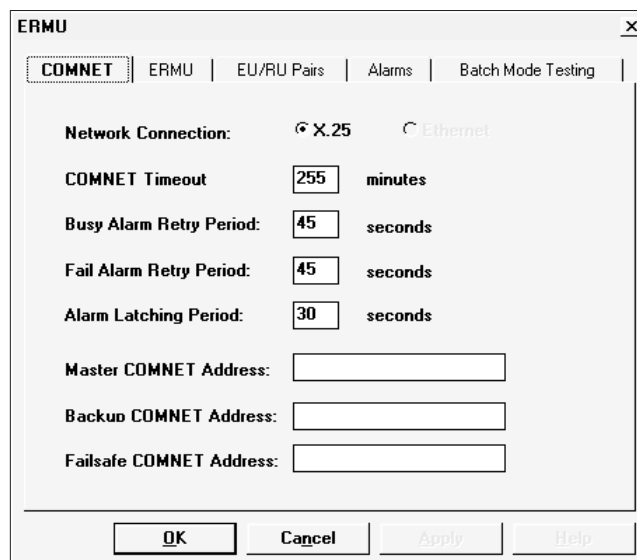


Figure 4–3 ERMU Configuration

4.1.4 EU/RU Equipment Configuration Window

The main window of the EU/RU Equipment Configuration application provides access to the various configuration options. Each area enclosed in a box is an access point to the configuration options listed therein. EU/RU configuration is detailed in Chapter 5.

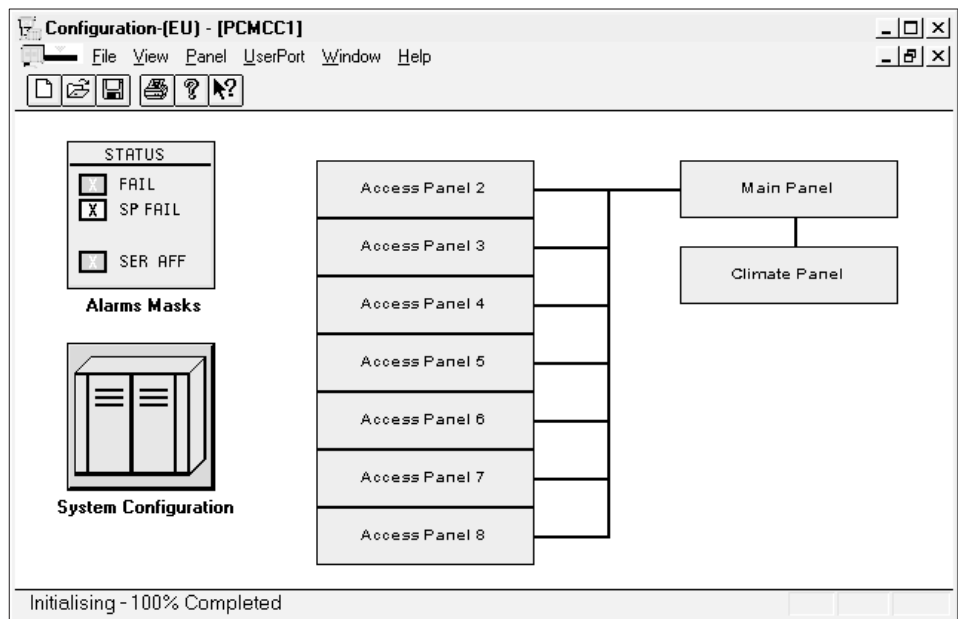


Figure 4–4 Main EU/RU Equipment Configuration Window

Configuration options are set by clicking with the left button on the required option. It is only necessary to click once on the Alarm Masks or System Configuration buttons, but twice on the panel buttons. The Access points are:



Alarm Masks

- ▶ Allows settings of all alarm masks.



System Configuration

- ▶ Displays RIM ID
- ▶ Configures location, OA&M, synchronisation, alarm processing, and alarm latching period.
- ▶ Declares all options related to the housing.

Access Panels

- ▶ Assigns Access Panels, declares units, configures timeslots, specifies line options, etc.

Main Panels / General System Config / Synchronisation

- ▶ Assigns the Access Panel half of the Main Panel, declares units, configures timeslots, specifies line options, etc.
- ▶ Assigns units in the Main Equipment part of the Main Panel, such as line transmission units, CMX, CXDU, ECC, ERMU, etc.

Climate Control Panel

- ▶ Declares units in the Climate Control Panel in 480 Line 1G housings.

4.1.5 Opening Detail Windows

A facility is provided in the ERMU and EU/RU Equipment Configuration applications to quickly zoom to the next level of configuration detail.

- ▶ To zoom in:
 - Point to the item with the mouse and click the left mouse button, or.
 - When configuring Panels or Units, place the cursor at the Panel or Unit position, click the right mouse button, and select "configure".
- ▶ To zoom out, click on the OK button, or click on the Cancel button.

4.2 Configuration Application Menus

The main window for both the ERMU and EU/RU Configuration Applications have similar menus. These menus are as follows:

File

The file menu is used to save and load equipment configurations, send and receive configurations from the C-RIM, print, and compare configuration files. It also shows a list of recently opened files.

View

Allows the toolbar and/or status bar to be displayed or hidden.

Panel

The Panel menu only appears in the EU/RU Configuration application. It opens the configuration window for a panel, as an alternative to double clicking on the panel. This also allows a panel window to be opened with the keyboard rather than the mouse.

UserPort

The UserPort menu has a single entry, Display, which opens an additional window. This lists the Panels/Slots/Channels in the system, along with the protocol configured for each, and details of the protocol configuration.

Window

This menu option creates new windows and manages existing windows within the Equipment Configuration application.

Help

This menu gives version information for the Equipment Configuration application.

Exit

Leaves the Configuration application, prompting for a save if changes were made to the configuration of the C-RIM.

4.3 The File Menu



The **File** menu is illustrated in the figure at left. It is used to access all operations relating to the configuration files.

- New:** Creates a new configuration file.
The file is called **PCMCCn** (where **n** is an integer starting with 1) until saved with a new name.
- Open:** Loads a configuration file for the C–RIM into memory from hard disk or a working diskette.
- Close:** Closes a configuration file for the C–RIM which is in memory.
- Save:** Saves a configuration file to disk.
- Save As:** Saves a configuration file to disk with a new name.
- File Header:** Displays information about the configuration stored in the file.
- Send:** Downloads a configuration file (sends a configuration file to the C–RIM).
- Receive:** Uploads the current configuration of the C–RIM to the Craft Terminal where it may be saved as a file on disk or altered.
- Audit:** Allows the user to compare a configuration file on disk with a configuration file currently in memory.
- Print:** Prints a configuration file currently saved on disk.
- Print Preview:** View output without printing it.
- Print Setup:** Allows the user to select options for a printer.

4.3.1 Creating a New Configuration File

In order to create a new configuration file, select **New** from the **File** menu.

4.3.2 Opening a Configuration File

To modify an existing configuration, select **Open** from the **File** menu to list the available configuration files.

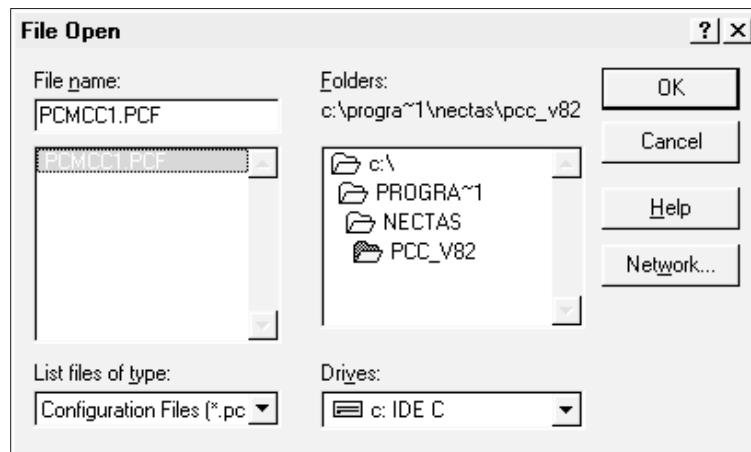


Figure 4–5 Opening Configuration File

4.3.3 Saving a Configuration File

When your changes are complete, select the **Save** or **Save As** option from the **File** menu.

To save a configuration file, select **Save** or **Save As** from the File menu.

- ▶ **Save** will save the current content of memory to disk and uses the same name as the existing file. The previous contents of the file are lost.
- ▶ **Save As** creates a new file with a new name. The original file is retained and its contents are not changed.

Note *Changing configurations in this way does not change the configuration of the C–RIM but rather creates configuration files that may be downloaded to it at a later stage.*

If you are using **Save As** then type the name of the file that you wish to create or press **Enter** to keep the existing file name. The name of the file can have a maximum of eight characters.

Do not specify any file extension – the software uses .PCF as the file type for PCMCC and .ECF for ERMU. Select **OK**. The title of the application window changes to the name of the new file.

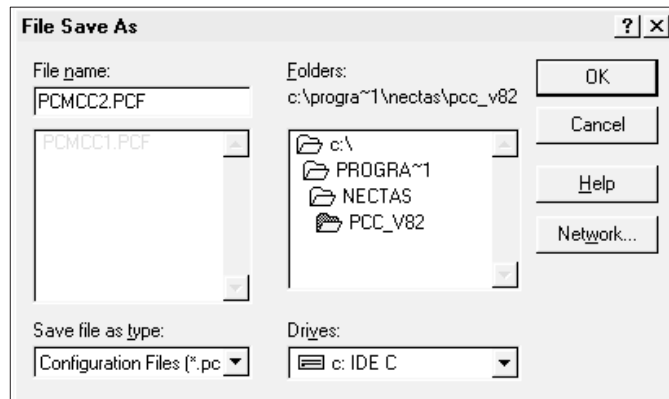


Figure 4–6 Configuration File Save

4.3.4 Displaying Configuration File Header

To display the file header information for the selected Network Element, select **File Header** from the **File** Menu. The following window is displayed:

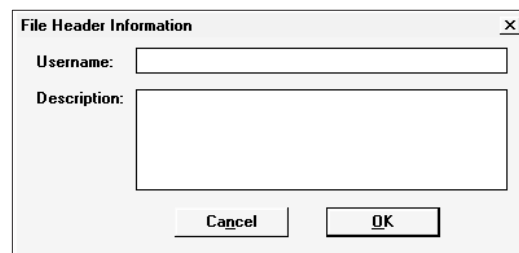


Figure 4–7 File Header Information

This dialog box is used to create, edit or display the following information:

- ▶ The **Username** field, which is used to insert the name or other identification of the person who created or edited the file.
- ▶ The **Description** field, which is used to insert any relevant information to identify the purpose and use of the file

To close the message box, select **OK**.

4.3.5 Printing a Configuration File

To print a configuration file, select **Print** from the **File** menu. Select the name of the file that you require and select **OK**. The configuration details of the file will be printed.

4.3.6 Print Preview

Print Preview displays the configuration on screen, laid out as it would be printed. From the Print Preview display the file can be printed, or the user can close Print Preview and return to the configuration application. To preview a configuration file, select **Print Preview** from the **File** menu.

4.3.7 Print Setup

Print setup is used to select the printer to be used for printing a configuration file, and to set parameters like paper size and paper orientation.

4.3.8 Sending a Configuration File

Sending a configuration file is the process of downloading the configuration file from NECTAS to the C–RIM. To download a configuration file, select **Send** from the **File** menu.

If the file has not been saved to disk before an attempt is made to send it, the user is prompted to save the file.

Note *The ST flag on the alarm synthesis window is active during the configuration download process. Some applications cannot be accessed while this indication is active. The PCMCC Unit or the Main Panel must NOT be powered down if ST is on or the whole configuration may be lost.*

4.3.9 Receiving a Configuration File

The current configuration of the C–RIM may be uploaded and saved on the Craft Terminal. This file may then be modified and downloaded to the C–RIM, or saved as a file on disk. A file is uploaded from the C–RIM using the **Receive** command in the **File** menu.

4.3.10 Comparing Configuration Files

The Equipment Configuration application allows you to compare a configuration on disk with the configuration currently in memory on the Craft Terminal to determine any differences. This function is known as an Audit. To perform an Audit, select **Audit** from the **File** menu. A File Open dialogue box is displayed.

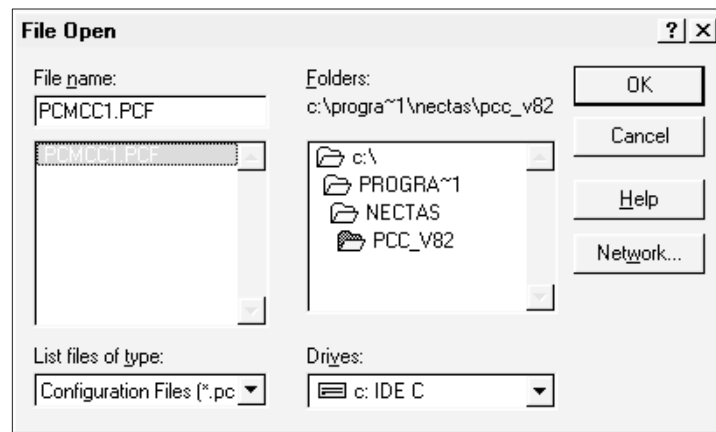


Figure 4-8 Audit "File Open" Dialogue

This window lists the equipment configuration files currently stored. Select the name of the file that you wish to compare with the file in memory, and select **OK**.

The Audit will display a list. This may show all elements, or only those elements that differ between the configuration currently in memory and the one opened from disk. The information can be viewed on screen or printed.

A typical audit example:

- 1** Plug in the Craft Terminal to the PCMCC port and start the NECTAS software.
- 2** After Login, select the Configuration application from the Application_Choice and upload the C-RIM configuration to the Craft Terminal using the Receive command.
- 3** The configuration tables are edited and the file saved to disk using the **Save As** option.
- 4** The changed configuration tables are then sent to the C-RIM equipment using the **Send** option.

If an error occurs during configuration, an alarm will be raised indicating configuration error. To check what the error is, the following steps should be taken:

- 1 Upload the configuration from the C–RIM system using the 'Receive' option.
- 2 Now compare the uploaded configuration with the configuration file saved previously using the **Audit** command. This will indicate the tables which are different. If the tables are different this will be because the system rejected that part of your configuration.

The details of the files are compared and the results of the comparison are displayed in a window. If there are too many items contained in the window, you can scroll through the audit result window by using the scroll bar.

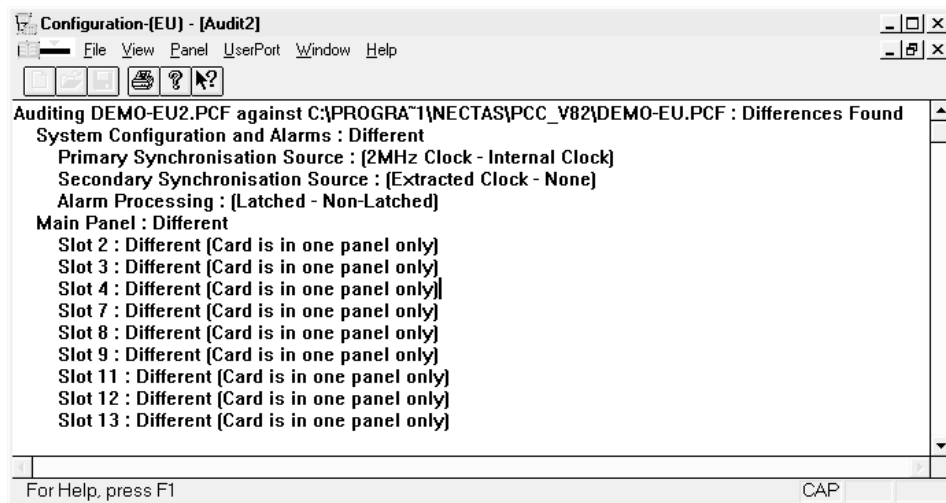


Figure 4–9 Audit Screen

4.4 Other Menus

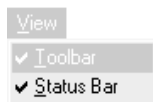
The other menus in the Equipment Configuration Application are:

- ▶ View Menu
- ▶ Panel Menu
- ▶ UserPort Menu
- ▶ Window Menu

4.4.1 View Menu

The **View** menu is used to navigate through the various configuration windows of the Equipment Configuration application.

The options of this menu are:



Toolbar

The **Toolbar** option in the **View** menu is a toggle to display or hide the toolbar (the buttons beneath the menu bar) on the Configuration Application window.

Status Bar

The **Status Bar** option in the **View** menu is a toggle to display or hide the status bar at the bottom of the Configuration Application window. The Status Bar shows the state of the NumLock, CapsLock and ScrollLock keys.

4.4.2 Panel Menu

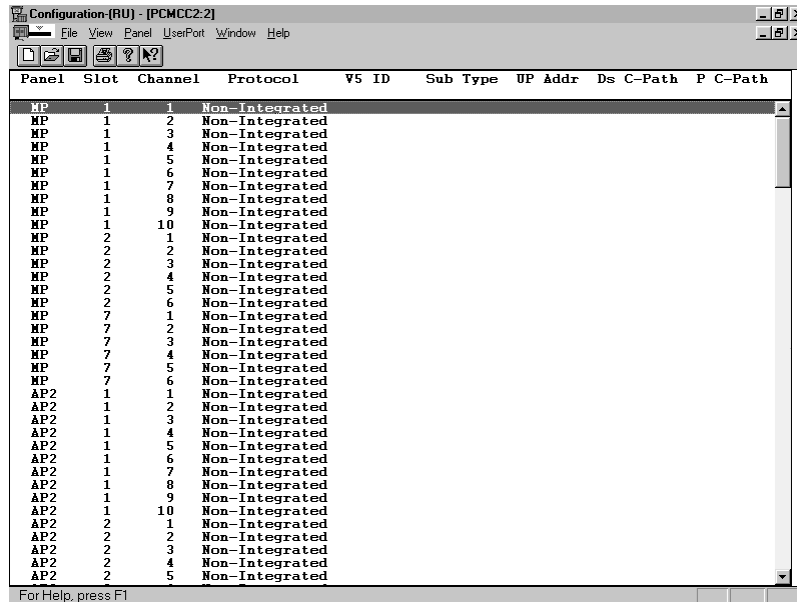


The **Panel** menu (EU/RU configuration only) may be used to open the configuration window for a panel, as an alternative to double clicking on the panel. This also allows a panel window to be opened with the keyboard rather than the mouse.

4.4.3 UserPort Menu



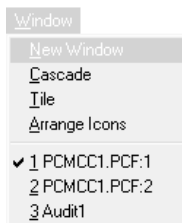
The **UserPort** menu has a single entry, **Display**, which opens an additional window. This lists the Panels/Slots/Channels in the system, along with the protocol configured for each.

A screenshot of the 'UserPort Display Window' titled 'Configuration (RU) - [PCMCC2.2]'. It contains a table with the following columns: Panel, Slot, Channel, Protocol, V5 ID, Sub Type, UP Addr, Ds C-Path, and P C-Path. The table lists configurations for various panels (MP, AP2) across different slots and channels, all with a 'Non-Integrated' protocol.

Panel	Slot	Channel	Protocol	V5 ID	Sub Type	UP Addr	Ds C-Path	P C-Path
MP	1	1	Non-Integrated					
MP	1	2	Non-Integrated					
MP	1	3	Non-Integrated					
MP	1	4	Non-Integrated					
MP	1	5	Non-Integrated					
MP	1	6	Non-Integrated					
MP	1	7	Non-Integrated					
MP	1	8	Non-Integrated					
MP	1	9	Non-Integrated					
MP	1	10	Non-Integrated					
MP	2	1	Non-Integrated					
MP	2	2	Non-Integrated					
MP	2	3	Non-Integrated					
MP	2	4	Non-Integrated					
MP	2	5	Non-Integrated					
MP	2	6	Non-Integrated					
MP	7	1	Non-Integrated					
MP	7	2	Non-Integrated					
MP	7	3	Non-Integrated					
MP	7	4	Non-Integrated					
MP	7	5	Non-Integrated					
MP	7	6	Non-Integrated					
AP2	1	1	Non-Integrated					
AP2	1	2	Non-Integrated					
AP2	1	3	Non-Integrated					
AP2	1	4	Non-Integrated					
AP2	1	5	Non-Integrated					
AP2	1	6	Non-Integrated					
AP2	1	7	Non-Integrated					
AP2	1	8	Non-Integrated					
AP2	1	9	Non-Integrated					
AP2	1	10	Non-Integrated					
AP2	2	1	Non-Integrated					
AP2	2	2	Non-Integrated					
AP2	2	3	Non-Integrated					
AP2	2	4	Non-Integrated					
AP2	2	5	Non-Integrated					

Figure 4–10 UserPort Display Window

4.4.4 Window Menu



The **Window** menu may be used to open additional windows and to tile or cascade them. It also displays a list of open windows, from which a desired window can be selected.

5 EU/RU Configuration

This chapter describes the process of configuring EU and RU parameters. As described in the previous chapter, the Equipment Configuration may be run in a number of modes, though this chapter deals only with using the Configuration application from the main EU/RU window.

Note

- *The EU and RU must be configured separately though the windows used for configuration are very similar. This chapter uses whichever window contains the most detail in order to illustrate how to configure the various options. When using the application, if options are not available they will be greyed out or missing from the window.*
- *In Windows 3.1 a cross appears in an enabled checkbox, while in Windows 95 and NT 4.0 a tick appears.*

5.1 Main EU/RU Equipment Configuration Window

The main EU/RU Equipment Configuration window is shown below. Each area enclosed in a box is an access point to the configuration options listed therein.

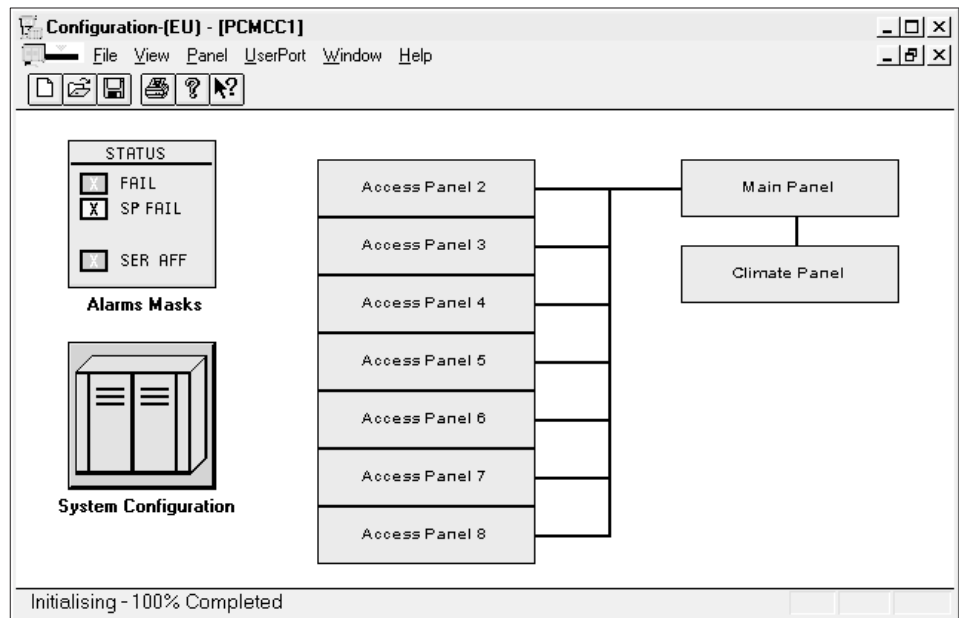


Figure 5–1 Equipment Configuration Window – EU/RU

To select a configuration region, move the cursor to it and click the left mouse button.

An introduction to each of the areas of the main NECTAS Equipment Configuration window is given in the Configuration Basics chapter on page 4–6.

Details of all aspects of EU and RU configuration are given in this chapter.

5.2 System Configuration

Click on the System Configuration button to open a two—page tabbed dialogue.

- ▶ The NE Config page
- ▶ The Housing page

To open a page, click on its tab.

5.2.1 NE Configuration

The NE Config page of the System Configuration window is used to:

- ▶ Read the RIM ID
- ▶ Select the NE location (EU or RU)
- ▶ Set the OA&M method to be used.
- ▶ Set the primary and secondary synchronisation source for the CXDU
- ▶ Set alarm processing to be latched or unlatched
- ▶ Define the alarm latching period.

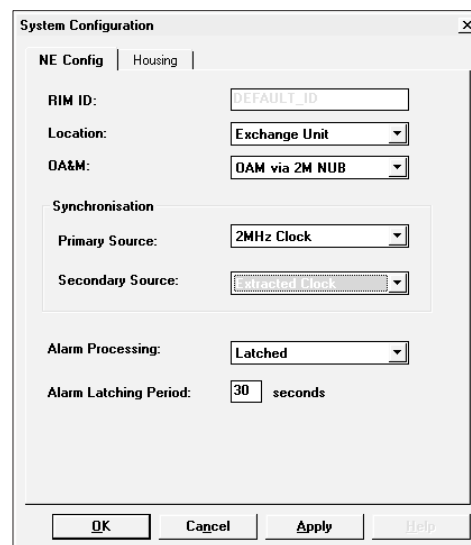


Figure 5–2 System Configuration – NE Configuration Page

(1) RIM ID

The RIM ID is a read—only text box. The content of this text box is set in the FNN administration application.

(2) Location

The Location pull-down list is used to select the NE's location as EU or RU.

If a configuration has been received from an EU or RU using the **Receive** command in the **File** menu of the main Equipment Configuration window, the type of unit displayed will default to the type received from the NE.

(3) OA&M

The OA&M setting is selected from a pull-down list.

For C-RIM Release 8.2 the only option is OA&M via the National Usage Bits (NUB) of the PCMCC 2 Mbit/s bearer. This setting is used at the EU and RU in all access modes.

(4) Synchronisation

C-RIM synchronisation strategies are detailed in the *System Architecture* chapter of the *C-RIM Release 8.2 Technical Handbook*.

The following alternatives are available for primary and secondary synchronisation of the EU and RU CXDU card.

- ▶ Primary
 - 2 MHz Clock (See Note ^[1])
 - Extracted Clock (See Note ^[2])
 - Internal Clock (See Note ^[3])
- ▶ Secondary
 - 2 MHz Clock (See Note ^[1])
 - Extracted Clock (See Note ^[2])
 - None

These settings are chosen from a pull-down list. Set the primary and secondary synchronisation for the EU and RU in accordance with the settings specified in the design specification for the C-RIM installation.

- Note** ^[1] *EU 2 MHz Clock (External) is provided by the exchange.
RU 2 MHz Clock (External) is extracted by an AC or SAC from a 2 Mbit/s G.703 bearer and provided to the CXDU.*
- ^[2] *Extracted by CXDU from a 2 Mbit/s G.703 bearer*
- ^[3] *Primary source at the RU cannot be internal.*

(5) Alarm Processing

Alarm processing operates on the Alarm Synthesis (i.e. alarm summary) bar.

Urgent and Non Urgent alarms in the Alarm Synthesis bar may be latched or non–latched.

- ▶ Non–latched alarms are displayed while the alarm condition is present, and are extinguished if the alarm condition does not persist.
- ▶ Latched alarms are displayed on Alarm Synthesis until the Alarm Cut Off is activated via the Bell menu. Latched alarms will then clear and an Attended Alarm indication (AT) will be set. The Attended Alarm indication will clear automatically if the alarm conditions existing prior to Alarm Cut Off being activated (as indicated on AS&C) have been cleared.

The setting for alarm processing is made from the pull–down list.

Note *Any alarms that occur after the Alarm Cut Off is activated are not considered as Attended Alarms. Alarm Cut Off must be reactivated in this case.*

(6) Alarm Latching Period

Release 8.2 introduces optimisation of alarm events. This minimises the number of fleeting alarms reported to COMNET and NECTAS by latching alarms for the Alarm Latching Period.

When an alarm is first detected, an alarm indication is given and a latching timer started. If an alarm condition ends before the end of the alarm latching period, the alarm indication is maintained until the end of the alarm latching period. If a new alarm condition is detected, the alarm latching timer is restarted.

Fleeting alarms during the alarm latching period do not initiate additional alarm indications.

The range of values for the Alarm Latching Period is 0 to 255 seconds.

Note *If the Alarm Latching Period is set to 0, Alarm Latching is disabled.*

5.2.2 Housing Configuration

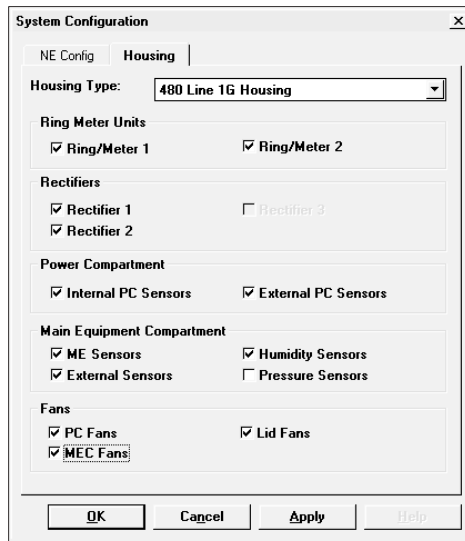


Figure 5–3 System Configuration – Housing Equipment page

The Housing configuration page of the System Configuration Configuration Window is used to:

- Select the type of remote housing at the RU. This is selected from a list in a pull–down box. Available options are:
 - 180 Line 2G Housing
 - 180 Line 2G – Redundant Rectifier
 - 480 Line 1G Housing
 - 480 Line 2G Housing
 - Indoor Unit

Note *The Customer Premises Rack (CP Rack) uses similar equipment to the 480 Line 2G Housing. The setting selected in this screen when configuring a CP Rack is 480 Line 2G Housing.*

- Assign equipment in the following categories
 - Ring Meter Units
 - Rectifiers
 - Power Compartment Sensors
 - Main Equipment Compartment Sensors
 - Fans

Beside the name of each item of housing equipment is a check box. If an item of equipment is not relevant to a particular installation it is greyed-out.

If a tick is seen in the box next to an item, that item has been assigned.

- ▶ Click on an empty box to assign the item.
- ▶ Click on a box containing a tick to cancel assignment of an item.

5.2.3 Accepting Changes

- ▶ To accept changes and close the dialogue, click on the **OK** button.
- ▶ To accept changes and stay in the dialogue, click on the **Apply** button.
- ▶ To abandon changes and close the dialogue, click on the **Cancel** button.
- ▶ If no changes have been made, the dialogue can be closed by clicking on either the **OK** or **Cancel** buttons.

5.3 Main Equipment Configuration

The Main Panel has 19 physical slots.

- ▶ Slots 1 to 10, at the left side of the Main Panel, form a logical Access Panel which functions in the same way as a physical Access Panel. This logical Access Panel is numbered as Access Panel 1.
- ▶ Slots 11 to 18, towards the right side of the Main Panel, are the Main Equipment slots.
- ▶ Slot 19 is for future releases of C-RIM and is not shown on the Main Panel Configuration Window. This slot is not accessible if a RiMU is installed.

The Main Panel configuration window has two pages.

- ▶ The Access Panel 1 configuration page configures the logical Access Panel in the Main Panel.

This page functions in the same way as the Access Panel Configuration Windows

For details of configuration of the logical Access Panel 1 in the Main Panel, refer to Section 5.4 – *Access Panel Configuration*.

- ▶ The Main Equipment configuration page configures the Main Equipment slots in the Main Panel

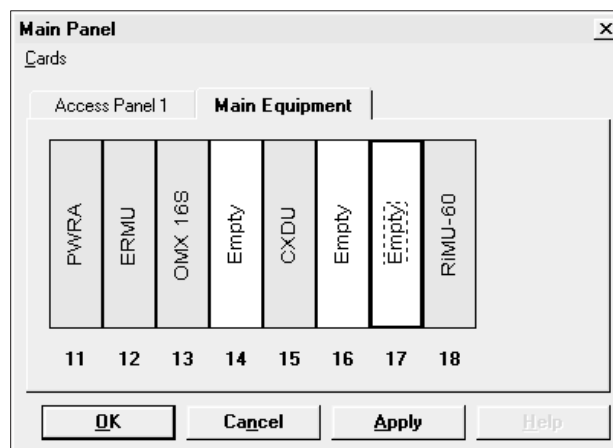


Figure 5–4 Main Panel Configuration Window

5.3.1 Main Equipment Slots

All Main Equipment slots and system options are configured by opening the Main Equipment page of the Main Panel Configuration Window. This is done by:

- ▶ Double clicking on the **Main Panel** button in the main **Equipment Configuration** window.
- ▶ Clicking on the **Main Equipment** tab of the two–page dialogue.

A new or changed unit is assigned to a slot by:

- ▶ Clicking on the slot.
- ▶ Choosing **Add** from the **Cards** menu
- ▶ Selecting a card type from the list that appears.

A unit is removed from a slot by:

- ▶ Clicking on the slot.
- ▶ Choosing **Remove** from the **Cards** menu

To configure an individual unit, it is necessary to open a lower level configuration window. This may be done in either of two ways:

- ▶ Double clicking on the unit in the Main Equipment page of the Main Panel Configuration Window
- ▶ Clicking on the unit in the Main Equipment page of the Main Panel Configuration Window, then choosing **Configure** from the **Cards** menu.

- Notes**
- [1] *The above procedures are software settings only. They do not physically insert units into a slot nor physically remove a unit from a slot.*
 - [2] *Ensure that any changes that are made are applied to the system. This is done by clicking on the **Apply** button.*
 - [3] *As an alternative to using the menus on the menu bar to assign or remove a unit, left click on the slot, then right click to open a menu next to the mouse pointer. Select the desired setting from the menu*

(1) ERMU (EU Only)

ERMU configuration is accessed from the ERMU Application Choice menu. See Chapter 6 – *ERMU Configuration*.

(2) CMX (RU Only)

To configure a CMX unit, click on it in the Main Equipment page of the RU Main Panel configuration window. The CMX Card Configuration window displays a list of 2 Mbit/s G.703 ports.

- ▶ Integrated RSU protocol supports up to four ports.
- ▶ Integrated V5.2(–) protocol supports up to eight ports.

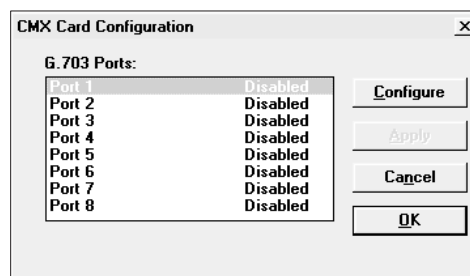


Figure 5–5 CMX Card Configuration Window

Each CMX port is configured separately, using the CMX Port Configuration window.

To open the CMX Port Configuration window, click on the port in the list in the CMX Card Configuration window, then click on the **Configure** button. Alternatively, double-click on the port in the list.

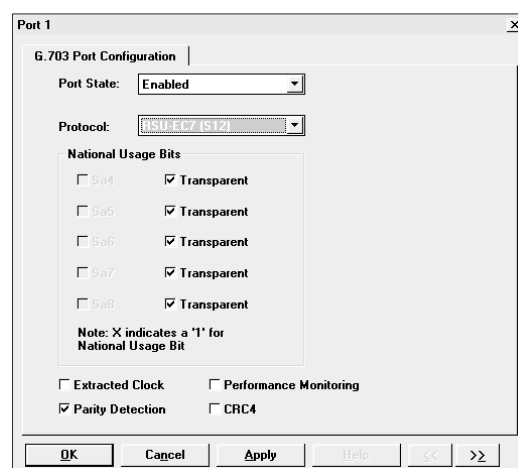


Figure 5–6 CMX Port Configuration Window

The CMX Port configuration window is used to set the following parameters for the port:

► Port State

Port state is enabled or disabled via a pull-down list.

► Protocol

The protocol is set in the pull-down list. The protocols supported in Release 8.2 are:

- RSU-EC7 (ECC required in RU Main Panel slot 16)
- V5.2(-) (ICC required in RU Main Panel slot 16)
- Non-Integrated (displayed only when Port State is Disabled).

► National Usage Bits

National Usage Bits default to Transparent, which is shown by a tick in the Transparent box.

► Extracted Clock

Extracted Clock is enabled or disabled with the Extracted Clock checkbox. Extracted clock can only be enabled for one port. Default is disabled.

► Parity Detection

Parity Detection is set on or off in the bottom checkbox. Default is Parity Detection enabled, with a tick in the checkbox.

► Performance Monitoring

Performance monitoring is enabled or disabled in the Performance Monitoring checkbox. Default is Performance Monitoring enabled, with a tick in the checkbox.

► CRC4

CRC4 is enabled or disabled with the CRC4 checkbox. Default is enabled for V5.2(-) and disabled for RSU.

Setting CRC4 enables Cyclic Redundancy Checking on the 2 Mbit/s G.703 bearer.

(3) ICC (RU Only)

Before configuring the ICC the following information should be obtained:

- ▶ The number of V5.2(–) interfaces from the parent exchange.
- ▶ The V5.2(–) Interface ID number for each of these interfaces

Note

- [1] *The number of V5.2(–) Interfaces declared on the ICC must be the same as the number of G.703 ports enabled on the CMX.*
- [2] *The positions of the G.703 ports do not have to match the positions of the V5.2(–) Interfaces*

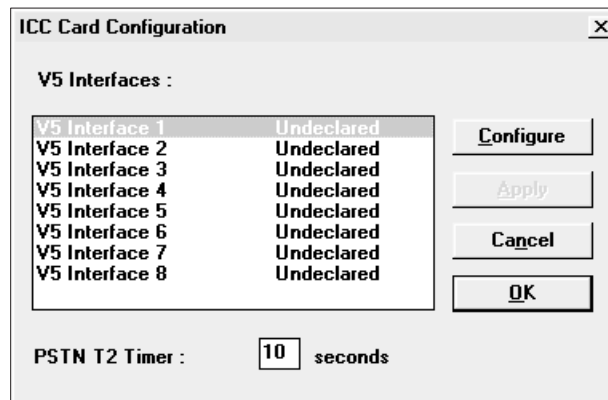


Figure 5–7 Declare the ICC V5.2(–) Interfaces

Each V5.2(–) Interface is configured individually. There are two ways to open the V5.2(–) Interface configuration window for an interface:

- ▶ Click on the interface's row in the ICC Card Configuration window, then click on the **Configure** button.
- ▶ Double click on the interface's row in the ICC Card Configuration window.

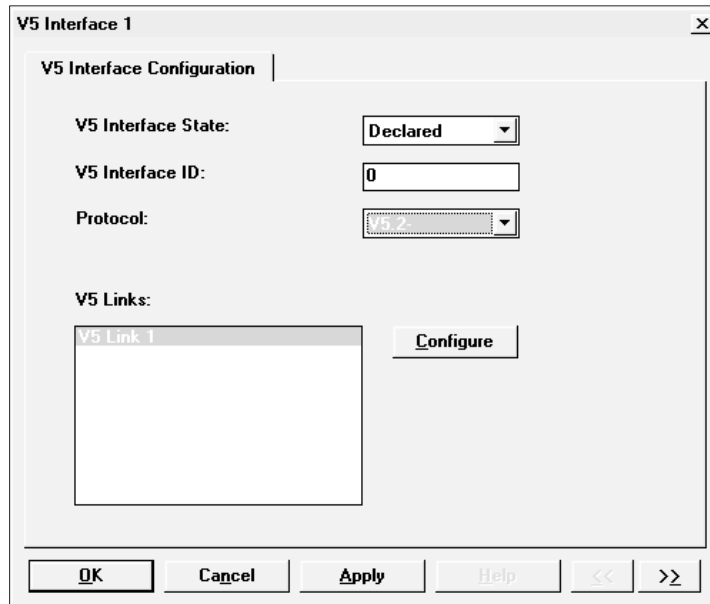


Figure 5–8 ICC V5.2(–) Interface Configuration

The following items are set for each V5.2(–) Interface:

- ▶ V5.2(–) Interface State
Select the V5.2(–) Interface State from the pull–down list.
The options are:
 - Undeclared
 - Declared
 - Blocked
- ▶ V5.2(–) Interface ID
Type in the number of the V5.2(–) interface at the parent exchange. It must be a unique integer in the range from 0 to 16777215.
- ▶ Protocol
The pull–down list only displays V5.2(–).
No other protocols can be selected in Release 8.2.

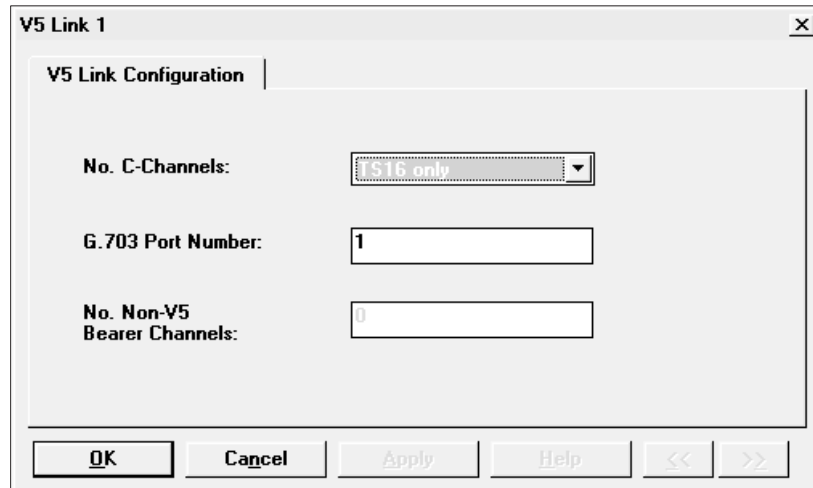


Figure 5–9 V5.2(–) Link Configuration

► V5.2(–) Link

In Release 8.2, each V5.2(–) Interface must be associated with a particular G.703 port on the CMX. To configure the link,

- Click on the **Configure** button on the V5.2(–) Interface window.
- In the V5.2(–) Link Page set the following:
 - No. C–Channels.
This pull–down list has the following options:
 - TS16 only
 - TS15 and TS16
 - TS15, TS16 and TS31
 - G.703 Port Number.
Type in the number of the desired CMX G.703 Port. The number entered must be between 1 and 8, and must be different for each interface on the ICC.
 - No. Non–V5.2(–) Bearer Channels
This defaults to 0 and no changes are possible.
- Click on OK to accept any changes that have been made.

(4) Line Transmission Units

The Main Panel contains two slots for Line Transmission units. One or two Line Transmission units may be installed. If two Line Transmission units are installed they are configured separately.

The types of Line Transmission Units that may be installed are:

- ▶ 2M OLTES
- ▶ OMX 4x2 (single and dual fibre)
- ▶ OMX 16x2 (single and dual fibre)
- ▶ OMXP 16x2 (single and dual fibre)

To configure a Line Transmission Unit, double click on the Line Transmission Unit (LTU) to be configured. This opens the OMX Optical Cards configuration Window.

Note *OMX 16x2 and OMXP 16x2 are both shown as OMX 16x2 in the configuration window.*

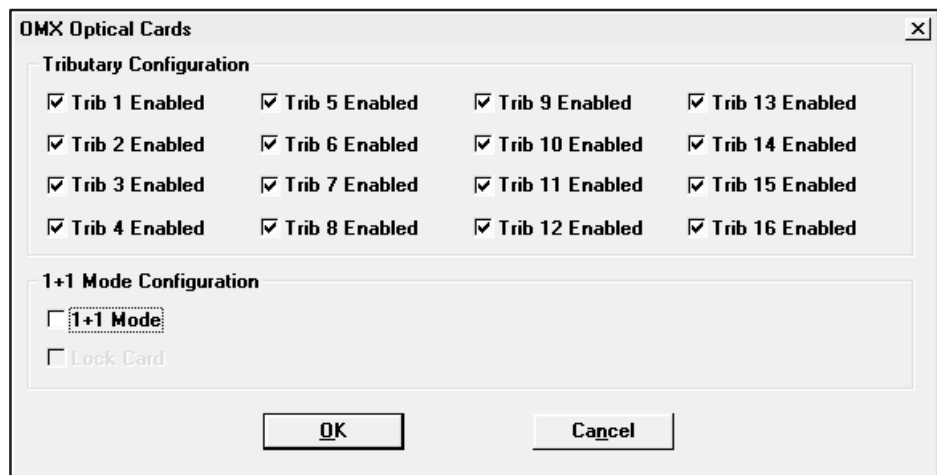


Figure 5–10 Optical Cards Configuration Window

The Optical Cards window is used for settings of optical Line Transmission Units. The same window is used for all Line Transmission Units. Where a unit has fewer than 16 tribs those that are not relevant are greyed-out.

The settings for Line Transmission units are:

- ▶ Tributary (Trib) Configuration
- ▶ 1 + 1 Mode Configuration

Tributary Configuration

The Tributary Configuration area is used to set or clear tributaries (tribs) on Line Transmission Units. If a trib is set a tick appears in the box to the left of its name.

- ▶ To set a trib, click in an empty box next to its name, and a tick appears in the box
- ▶ To clear a trib, click in a box containing a tick to the left of its name, and the tick is removed from the box
- ▶ To accept the changes, click **OK**, or click **Cancel** to abandon changes.

1 + 1 Mode (1 + 1 Optical Unit Redundancy)

OMXP Line Transmission Units provide a redundancy / switching feature and are capable of operating in 1 + 1 mode.

In 1 + 1 mode, two OMXP units are installed at the EU and two at the RU. The two units at the EU have their tributaries connected in parallel, and the two units at the RU have their tributaries connected in parallel.

- ▶ The pair of OMXP Units in slot 13 at EU and RU is the primary pair.
- ▶ The pair of OMXP Units in slot 14 at EU and RU is the secondary pair.

When the system is powered up the primary pair is active and carries traffic, while the secondary pair is standby. An algorithm determines which of the units is best able to handle traffic and a switchover between the two is carried out if necessary.

The 1 + 1 Mode checkbox is used to enable or disable 1 + 1 redundancy. A tick in the checkbox indicates that 1 + 1 mode has been enabled for the unit. If two OMXPs are in the same panel (EU or RU) then setting or clearing the 1 + 1 checkbox enables or disables 1 + 1 for both units.

A tick in the checkbox indicates that 1 + 1 Mode has been enabled for the unit being configured. 1 + 1 Mode must be separately enabled or disabled for all four LTU.

Note *1 + 1 mode operation is only available with OMXP units in BAAA or later variants of the Main Panel. These panels have a DIP switch on the backplane to configure the panel for 1 + 1 mode operation.*

Lock Card.

If 1+1 Mode is enabled, the Lock Card checkbox is available.

If an LTU is configured with Lock Card, that unit will not be used to receive traffic. It will be forced to be the standby unit. The LTU which is connected to the locked card will sense that it is no longer receiving traffic and will generally move to standby as well. If Lock Card is selected on one LTU, the pair of OMXPs with the locked unit no longer carries traffic and the other pair becomes Active.

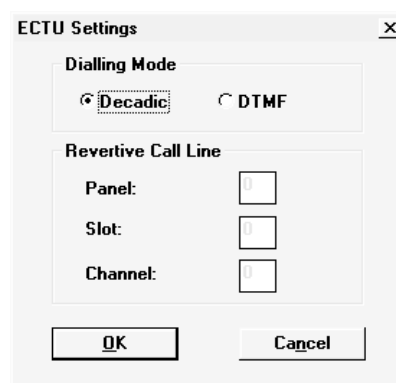
(5) (E)CTU (RU Only)

Figure 5–11 ECTU Settings

Dialling Mode

Decadic or DTMF dialling is selected by clicking in the circle next to the desired option.

Revertive Call Line

The Panel/Slot/Channel settings for Revertive Call Line cannot be changed by NECTAS, and can only be accessed by a future release of COMNET. The default settings are 0/0/0.

(6) Other Core Units

The following units must be assigned to a slot, however no settings need to be configured once they are assigned:

- ▶ CXDU
- ▶ ECC
- ▶ PWRA
- ▶ RiMU

5.4 Access Panel Configuration

Access Panel and subscriber options are set in the Access Panel Configuration Window for that panel. Physical Access Panels are numbered Access Panel 2 to Access Panel 8. Access Panel 1 is embedded within the Main Panel, and uses slots 1 to 10 of the Main Panel.

- ▶ To open the configuration window for Access Panel 2 to 8, double click on the image of an Access Panel in the first windows of the Equipment Configuration application.
- ▶ To open the configuration window for Access Panel 1, double click on the image of the Main Panel in the first windows of the Equipment Configuration application. Then select the Access Panel 1 page in the dialogue that appears.

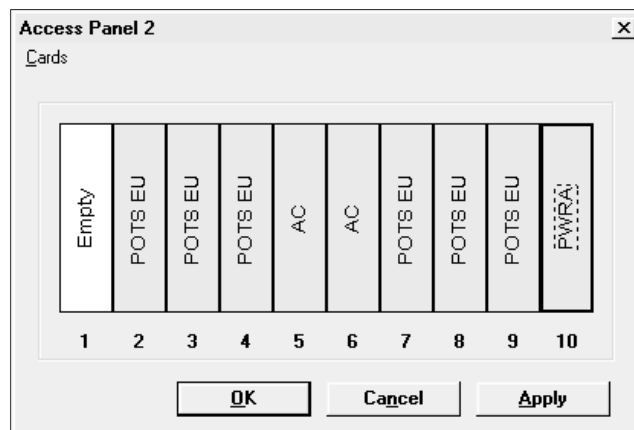


Figure 5–12 Access Panel Configuration – AP2 to AP8

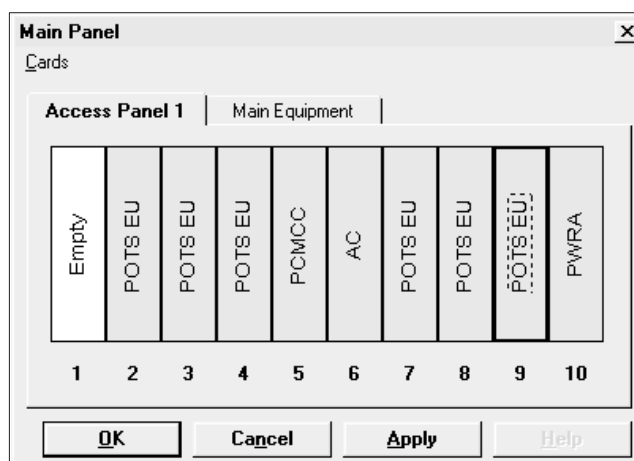


Figure 5–13 Access Panel Configuration – AP1

5.4.1 Configuring Access Panel Slots

Each slot in an Access Panel is configured individually. To set the type of unit in a slot, either a new unit in an empty slot or to change the type of unit in a slot:

- ▶ Click on a slot in the illustrated panel layout
- ▶ Click on **Cards** in the menu bar at the top of the window
- ▶ Choose **Add** from the menu that appears
- ▶ A list opens of the units which may be fitted to that slot. Click on the desired type of unit to assign it to the slot.

To remove a unit from a slot:

- ▶ Click on the unit in the illustrated panel layout
- ▶ Click on **Cards** in the menu bar.
- ▶ Click on **Remove** in the menu that appears

- Notes**
- [1] *The above procedures are software settings only. They do not physically insert units into a slot nor physically remove a unit from a slot.*
 - [2] *Ensure that any changes that are made are applied to the system. This is done by clicking on the **Apply** button or **OK**.*
 - [3] *As an alternative to using the menus on the menu bar to assign or remove a unit, right click on the slot to open a menu next to the mouse pointer. Select the desired setting from the menu.*

5.4.2 Zooming to the next level of detail

To configure the settings of an individual card it is necessary to zoom in to the next level of detail. There are two ways to zoom in:

- ▶ Click on the unit in the Access Panel Configuration Window, then choose **Configure** from the **Cards** menu.
- ▶ Double click on the unit in the Access Panel Configuration Window.

A Configuration Window is displayed for cards that can be configured. Actions that are not available for a particular card are greyed out.

5.4.3 Setting Channel Line / Subscriber Options

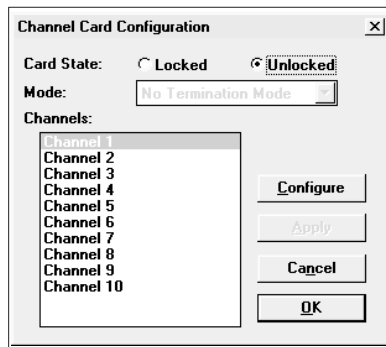


Figure 5–14 Channel Unit Configuration Window

A pair of radio buttons are used to select the Locked or Unlocked options for POTS and UNIV cards.

In Main Panel and Access Panel alarm windows in AS&C, any locked Units are coloured red, while unlocked Units are coloured grey.

The effect of locking or unlocking a channel is:

- ▶ Locked:
 - Allows calls to proceed if currently busy.
 - Subscribers can't make new calls
- ▶ Unlocked:
 - Subscriber can make new calls

The ISDN Mode options, selected from a pull–down list, are:

- ▶ NT (Network Transmission)
- ▶ LT (Line Transmission)

Zooming in on a channel in the Channel Card Configuration Window opens the Channel Configuration Window. There are two ways to Zoom in:

- ▶ Double–click on the channel in the Channel Card Configuration window.
- ▶ Click once on the channel in the Channel Card Configuration window, then click on the **Configure** button.

The Channel Configuration window is a three–page tabbed dialogue. The pages are User Port Configuration, Line Settings, and Signalling Options.

5.4.4 User Port Configuration

Figure 5–15 User Port Configuration

The first page of the Channel configuration window is User Port Configuration. This is used to select the protocol for the channel. If RSU or V5.2(–) is the selected protocol, the same page is used to configure that protocol for the channel.

Select the desired protocol from the pull–down list at the top of the page. The available options are:

- ▶ Non–integrated (available for all units)
- ▶ Integrated ESM/RIM (POTS and UNIV only)
- ▶ Integrated RSU–EC7 (S12) (POTS and UNIV only)
- ▶ Integrated V5.2(–) (POTS, UNIV and ISDN 2B1Q ABAA only)

(1) Active Service

Selecting this checkbox indicates that the service is active on this port. You must have this option checked in order for the protocol specific information to be entered as described below.

- ▶ Active Service must be selected to allow for entry of Terminal Number or V5.2(–) User Port information.
- ▶ Active Service should also be selected for Non–integrated services.

- ▶ Active Service must be correctly set for all channels before a successful FNN Send can be performed. The Active Service flag is automatically set by applications such as COMNET and SASAF. It must be manually set or cleared when activating or deactivating services via NECTAS.

If, when sending an FNN database, the error message "A service was found that does not correspond to an FNN" indicates that an Active Service flag has not been correctly set or cleared. Check the configuration of channels activated or deactivated during the session.

(2) RSU Configuration

If the RSU protocol is selected and active service is checked, this section of the window becomes active, and you are required to specify the RSU terminal number for the port.

The only setting for RSU–EC7 is the Terminal Number (TN). This number is manually entered, and must be in the range 1 to 240 or 513 to 752. Further details of Terminal Number allocation are in the Alcatel 1000 System 12 Technical Manual.

(3) V5.2(–) Configuration

The V5.2(–) section of the window will become active if the V5.2(–) protocol is selected and Active Service is checked. The following settings can be made for V5.2(–) protocol:

- ▶ V5.2(–) Interface
Select the desired interface from the pull–down box displaying the available V5.2(–) Interfaces to the parent exchange.
- ▶ User Port Address
This is manually entered and must match the user port number for the subscriber at the parent exchange.
- ▶ Ds–type C–path and P–type C–path
These are only configurable for integrated ISDN 2B1Q service. The pull–down list boxes display the list of available c–channels on the selected V5.1(–) interface. The items in the list depend on the number of c–channels configured on the V5.2(–) link. The possible settings are:
 - TS15
 - TS16
 - TS31

The default setting is TS16.

5.4.5 Line Settings

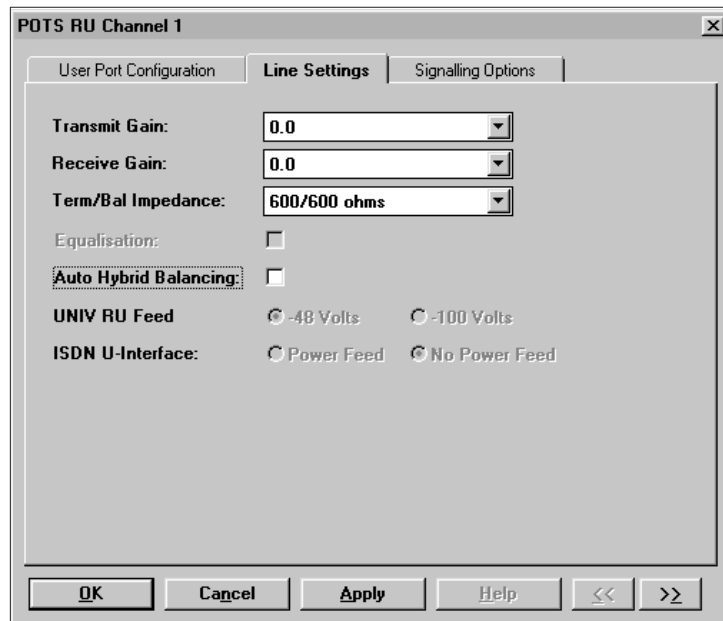


Figure 5–16 Channel Configuration Window – Line Settings

(1) Tx / Rx Level Settings

These pull-down lists are used to set the Transmit and Receive gains for each channel of the Channel Unit. A value is allocated to a channel by selecting the required value from the scrolling list.

The EU and RU channel unit settings should be set such that a 0dBr level is maintained on the digital path between the EU and RU. The EU levels are set such that they meet the requirements of the exchange interface. The RU levels are set such that they provide the correct levels to a customer terminal, when line loss is included (see diagram on next page).

Tx Settings (+5 to –8 dBr)

The Tx settings vary the channel unit gain in the A–D direction. The Tx setting is required to be set to the expected level of the incoming signal. It is set in order to maintain a 0dBr level over the digital path.

Example: *Setting the RU Tx level to –6 means that it is expected that, including the line loss, the signal level reaching the RU channel unit from the cross connect frame will be –6dBr.*

Rx Settings (+2 to –11 dBr)

The Rx settings vary the channel unit gain in the D–A direction. The Rx setting is required to be set such that, including line loss, the required signal level will be provided to the exchange interface or the customer terminal. The Rx setting indicates the amount of attenuation given to the outgoing signal.

Example: What should the Transmit and Receive level settings be for a channel with the following conditions:

- ▶ The exchange transmits at a level of –6 dBr and expects a 0 dBr receive signal
- ▶ The customer's telephone expects a –9 dBr receive signal and transmits at 3 dBr
- ▶ Line Loss (L) is 3 dBr

In Figure 5–17, the following levels would be selected, given a line loss between the RU and customer terminal of 3dB:

$$\begin{array}{ll} \text{EU Tx} = -6 & \text{RU Rx} = -6 \\ \text{EU Rx} = +0 & \text{RU Tx} = +0 \end{array}$$

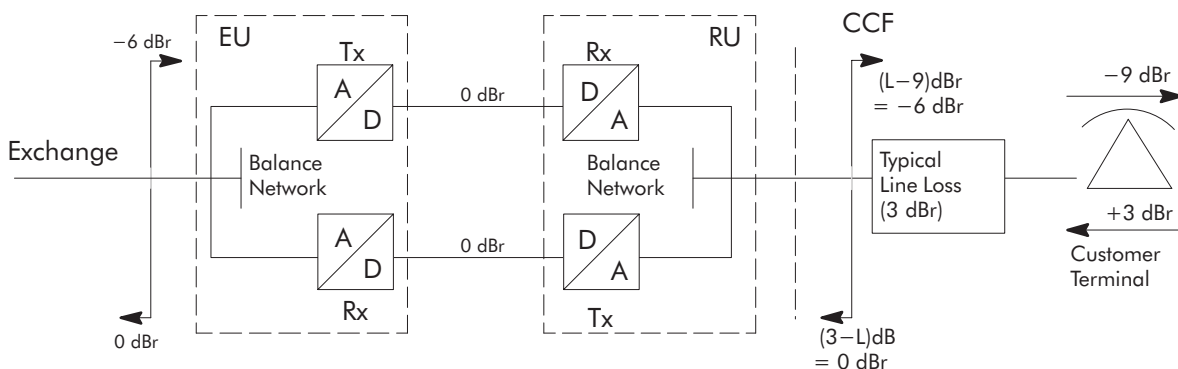


Figure 5–17 Typical Transmission Level Diagram

The diagram is for typical line loss of 3 dBr. Alternative level settings are required if line losses are higher or lower than 3 dBr.

(2) Term/Balance Impedance

The Term/Balance Impedance scroll–down list is used to set the termination impedance value in POTS, Universal, and 4/6 wire Channel Units.

A value is allocated to a channel by selecting the required value from the scrolling list.

The value on the left side of the slash indicates the termination impedance and on the right side indicates the impedance of the balanced network.

The appropriate values must be selected according to the characteristics of the line interface to which the channel unit is being connected.

Possible values are:

- ▶ 600/600 Ohms
- ▶ 1200/1200 Ohms
- ▶ Complex/Complex
- ▶ 600 ohms/Complex
- ▶ Complex/600 ohms

(3) Equalisation

Equalisation settings provide a gain of 3 dB at 3 kHz in both the transmit and receive directions. Equalisation is only available for UNIV RU units, and for the following impedances:

- ▶ Complex/Complex
- ▶ 600 ohms/Complex

The equalisation checkbox is greyed-out and inaccessible for other Channel Units and for other impedances on the UNIV Unit.

When Equalisation is enabled, a tick appears in the Equalisation checkbox. To set or clear the tick, click on the checkbox.

(4) Auto Hybrid Balancing

When enabled, Auto Hybrid Balancing optimises the hybrid balance of the customer's line at the beginning of each call. During the call the hybrid balance is monitored and adapted to any subsequent changes.

Auto Hybrid balancing is only available for POTS RU and UNIV RU units, and this option is grayed-out for other units. When enabled, a tick appears in the Auto Hybrid Balancing checkbox. To set or clear the tick, click on the checkbox.

Note *In Windows 3.1 a cross appears in an enabled checkbox, while in Windows 95 and NT 4.0 a tick appears.*

(5) UNIV RU Feed

A pair of radio buttons are used to select a line voltage of –48V or –100V for the UNIV RU unit only. They are greyed out for other units which do not require these settings. They are used to set the line feed for the UNIV–RU to either normal (–48V) or long line (–100V).

(6) ISDN U–interface

A pair of radio buttons is used to select U–Interface Power Feed or No Power Feed for an ISDN card. They are used to enable or disable the –100V power feed on ISDN cards. The buttons are greyed out for other units which do not require this setting.

5.4.6 Signalling Options

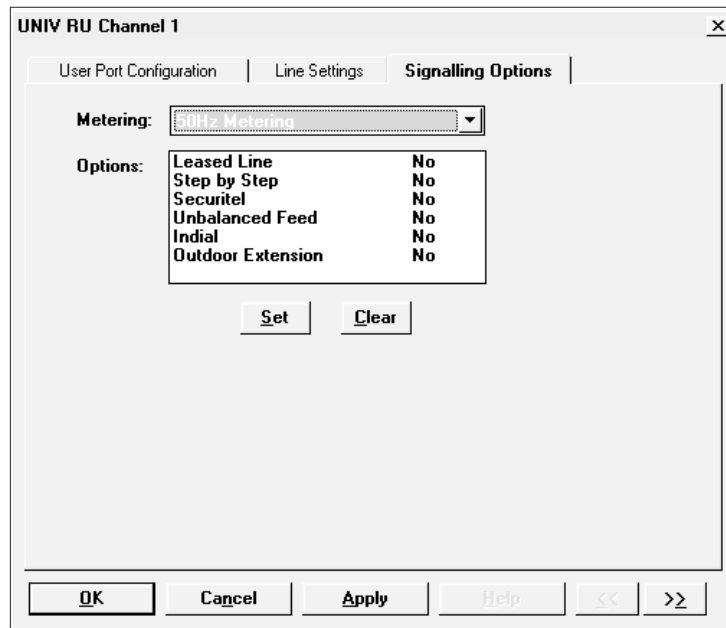


Figure 5–18 Channel Configuration – Signalling Options

Two types of signalling options can be set:

- ▶ Metering
- ▶ Options

(1) Metering

UNIV RU Units have the following options for metering.

- ▶ If RSU is the selected protocol, metering options are controlled by the exchange.
- ▶ If Non–integrated, Integrated V5.2(–), or Integrated ESM/RIM protocols are selected, the metering options may be selected from the pull–down list:
 - No Metering
 - 50Hz Metering
 - 12 kHz Metering

All other units only have the single option of No Metering.

Non–Integrated

Metering must be selected on UNIV EU Units and UNIV RU Units in the case of Non–integrated channels.

ESM/RIM and V5.2(–)

For ESM/RIM and V5.2(–), the same metering should be selected at the exchange and at the RU. If metering is enabled at the exchange, and No Metering is selected at the RU, the metering at the RU will default to 12 kHz and metering pulses will be forwarded to the subscriber.

RSU

RSU only supports 50 Hz Metering on every fourth TN.

- ▶ In the upper range this is 1, 5, 9, 13, ...
- ▶ In the lower range this is 513, 517, 521, 525, ...

(2) Options

Each of the Channel Cards has a different range of options available for channels on it. The table below shows the options available for each of the different types of channel cards which have signalling options.

Options are chosen from the Options list on the Signalling Options page of the Channel Configuration dialogue. The only options shown for a channel are those available for channels on that type of channel unit.

To set an option either:

- ▶ Double–click on it, or
- ▶ Click on it, then click on the **Set** button

To clear an option either:

- ▶ Double–click on it, or
- ▶ Click on it, then click on the **Clear** button

Table 5–1 Channel Options

Channel Option	POTS		UNIV		4/6 Wire	ISDN 2B1Q With LT Mode (Non-integrated)
	EU	RU	EU	RU		
E&M – Cailho					✓	
Indial	✓	✓	✓	✓		
Leased line			✓	✓		
Outdoor Extension		✓		✓		
Permanent Activation						✓
Securitel			✓	✓		
Step by step	✓	✓		✓		
Unbalanced feed				✓		

(✓ = option available for channels on this type of unit)

(3) Notes on Channel Options

- 1 For POTS units, when the Indial option is selected, Step by Step is ignored.
- 2 Interaction of POTS units to UNIV units is NOT supported.
- 3 If Securitel is required on a service, it must be selected at both the EU and RU. Securitel enables VF in both directions in the idle state.
- 4 On the UNIV units, the following priorities apply:
 - If Leased Line option is selected then all other options are ignored.
 - If Leased Line option is not selected but Indial is selected, all other options are ignored.
- 5 For the 4/6Wire Unit and 64K unit, all options are ignored. The E&M option is only used by the 4/6 wire unit to select between single E&M or Cailho signalling.

- 6** *In all cases except the note below, the best available SDL is selected in accordance with the notes above.*

No configuration alarm is raised for any of these combinations. For example if Indial and Leased Line are selected, the above description states that the Leased_Line SDL should be selected. No indication is given that the Indial option has been ignored.

- 7** *Securitel is not available for the AAAA variant of the Universal Unit (3AU 00840 AAAA).*
- 8** *The Leased Line option selects a similar SDL to the indial SDL at both exchange and remote end. However, different to the normal indial SDLs, VF is ON for Idle and No Feed states. This means that the only signalling supported by a Leased Line is Battery reflection at the remote end and loop.*
- 9** *Note that a POTS service on either a POTS or UNIV Unit does not support VF during Idle. The only exception to this is when Securitel is selected. The Indial service also has no VF during Idle or No Feed.*
- 10** *With Integrated RSU protocol, no signalling options are available to the user. They are controlled by the exchange.*

(4) Service Configuration Descriptions

Configuration descriptions of some service types are as follows:

Step x Step (SxS)

This option is to be used for SxS exchanges at the RU end. The only operational difference is that the SDL does not perform a Fleeting Test Reversal (FTR) when the Remote goes offhook.

Indial

An Indial service provides an incoming call service for selected lines on a PABX. Outgoing calls (PABX → Exchange) cannot be made on these lines.

For this service a POTS RU or UNIV RU channel unit is required at the C-RIM EU and the matching EU channel unit is required at the C-RIM RU.

When an Indial number is dialled, the Exchange passes on the last three digits of the telephone number to the PABX by looping the line and transmitting the digits decadically or using DTMF tones.

The RU channel unit detects the looped condition and passes the information to the EU channel unit at the Remote Unit. The PABX provides feed for Indial lines, detects the looped condition of the EU channel unit, and then receives the digits. The PABX will then ring the appropriate telephone extension.

If an extension is faulty/not available, the PABX may reverse the feed or remove feed (No Feed) to indicate a blocked circuit.

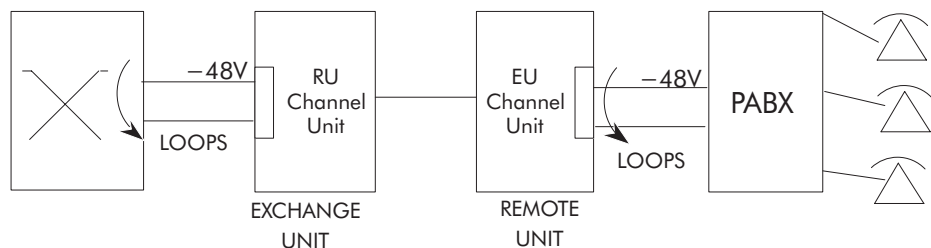


Figure 5–19 Indial Arrangement

Leased Lines

Leased lines are effectively Indial Lines with VF ON for Idle and No Feed line states. e.g. For the Line to work with modems, VF must be passed in the No Feed state.

Unbalanced Feed

This SDL is used at the remote end only to provide unbalanced feed to a PABX. It is only available in Non—integrated protocol and is applied in the idle state. On looping the line, this line returns to balanced feed and proceeds as a normal call. On call completion, unbalanced feed is reapplied to the line after 6 seconds. This provides a guard time in which the PABX cannot allocate that line immediately to another phone extension.

Permanent Activation

For Non—integrated ISDN Units only.

This option sets the link from the RU to the to the NT1 to always active. This minimises the possibility of the exchange timing out when attempting to activate ISDN. The link from the exchange to the EU activates and deactivates as necessary.

Outdoor Extension

Identifies Outdoor Extensions.

If a line is an Outdoor Extension, then re—timing of ring cadence by the PCMCX/PCMCC is disabled.

5.4.7 PCMCC/PCMCX Configuration

(1) Timeslot Configuration

TS	Unit	Chan	TS	Unit	Chan	TS	Unit	Chan	TS	Unit	Chan
0	Reserved		10	0	0	20	0	0	30	0	0
1	0	0	11	0	0	21	0	0	31	0	0
2	0	0	12	0	0	22	0	0			
3	0	0	13	0	0	23	0	0			
4	0	0	14	0	0	24	0	0			
5	0	0	15	0	0	25	0	0			
6	0	0	16	Reserved		26	0	0			
7	0	0	17	0	0	27	0	0			
8	0	0	18	0	0	28	0	0			
9	0	0	19	0	0	29	0	0			

Unit Number: 1-7
 AP Units: 1-7
 No. of Channels: 10
 POTS EU/RU: 6
 UNIV EU/RU: 4
 ISDN 4B3T/2B1Q: 5
 DI-64KB-EM: 4
 4/6 Wire: 4
 P-Phone: 5

OK Cancel Apply Help

Figure 5–20 PCMCC and PCMCX – Timeslot Page

The timeslot assignment page of the configuration window is the same for AC or SAC Units, with the only variation being the title bar. The timeslots assignment page is used to assign a timeslot to a particular channel of one Unit.

In order to configure timeslots:

- ▶ Open the Access Panel or Main Panel configuration window
- ▶ Open the configuration window for the AC or SAC. This may be done by either:
 - Double clicking on the Unit in the Main Panel or Access Panel configuration window, or
 - Clicking on the Unit in the Main Panel or Access Panel configuration window, then choosing **Configure** from the **Cards** menu, or from the right–button menu.

This will bring up the Timeslot Assignment window illustrated in Figure 5–20.

Note The default configuration for Timeslots is 0.

Each AC or SAC can manage up to 30 timeslots.

There are three columns (numbered 0 to 31) for each Unit. The three columns are as follows:

TS 'TS' stands for Timeslot and represents the 32 timeslots on the interconnecting bus between the Access controller and the channel units.

Unit To each timeslot, except TS0 and TS16, you can allocate a Channel Unit Number (from 1 to 7). The channel unit number for each slot in an Access Panel or Main Panel is shown in the following table.

Unit Number	Slot Number
1	1
2	2
3	3
4	4
5	7
6	8
7	9

Chan This column represents the channel number of the selected unit (i.e. from 1 to x, where x is the maximum number of channels on that unit – the list on the right of the window contains values for x).

If you do not want to allocate a channel to a particular timeslot, enter the value 0 as the unit number and channel number.

Note

- *Timeslots for ISDN and P–Phone units must be declared in blocks of consecutive timeslots. The requirements for ISDN and P–Phone Units are detailed on pages 5–35 and 5–36.*
- *Timeslots for other units do not have to be consecutive, and may be declared as required.*

(2) Timeslot Configuration for ISDN

TS	Unit	Chan	TS	Unit	Chan	TS	Unit	Chan	TS	Unit	Chan
0	Reserved		10	0	0	20	0	0	30	4	9
1	2	1	11	3	1	21	0	0	31	4	10
2	0	0	12	0	0	22	4	1	Unit Number: 1-7 AP Units: 1-7 No. of Channels: 10 POTS EU/RU: 6 UNIV EU/RU: 4 ISDN 4B3T/2B1Q: 5 DI-64KB-EM: 4 4/6 Wire: 4 P-Phone: 5		
3	0	0	13	0	0	23	4	2			
4	0	0	14	0	0	24	4	3			
5	0	0	15	0	0	25	4	4			
6	2	3	16	Reserved		26	4	5			
7	0	0	17	3	3	27	4	6			
8	0	0	18	0	0	28	4	7			
9	0	0	19	0	0	29	4	8			

OK Cancel Apply Help

Figure 5–21 ISDN Timeslot Configuration

Each channel on an ISDN 4B3T or ISDN 2B1Q unit requires $2\frac{1}{2}$ timeslots. ISDN channels must be allocated in pairs, with each pair taking 5 timeslots. This block of 5 timeslots must be one of 1 to 5, 6 to 10, 11 to 15, 17 to 21, 22 to 26, or 27 to 31.

The unit and channel number is entered next to the first timeslot of one of the 6 groups listed above (i.e. 1, 6, 11, 17, 22 or 27). The settings for the other timeslots in that group of five timeslots are left as '0'.

Figure 5–21 shows a timeslot allocation screen for two ISDN Units in slots 2 and 3, and a POTS Unit in slot 4. In this example:

- ▶ The ISDN unit in slot 2 uses timeslots 1 to 5 and 6 to 10.
- ▶ The ISDN Unit in slot 3 uses timeslots 11 to 15 and 17 to 21.
- ▶ The POTS unit in slot 4 uses timeslots 22 to 31.

Note For Integrated ISDN the first pair of channels *MUST* be allocated before the second pair of channels is allocated.

(3) Timeslot Configuration for P–Phone

TS	Unit	Chan	TS	Unit	Chan	TS	Unit	Chan	TS	Unit	Chan
0	Reserved		10	0	0	20	0	0	30	0	0
1	0	0	11	2	0	21	0	0	31	0	0
2	0	0	12	2	1	22	0	0			
3	0	0	13	2	2	23	0	0			
4	0	0	14	2	3	24	0	0			
5	0	0	15	2	4	25	0	0			
6	0	0	16	Reserved		26	0	0			
7	0	0	17	2	5	27	0	0			
8	0	0	18	0	0	28	0	0			
9	0	0	19	0	0	29	0	0			

Unit Number:	
AP Units	1-7
No. of Channels	
POTS EU/RU	10
UNIV EU/RU	6
ISDN 483T/281Q	4
64K	5
4/6W	4
PPhone	5

Figure 5–22 P–Phone Timeslot Configuration

P–Phone Units have five VF channels and one signalling channel, and require a total of six timeslots.

Between the exchange and the EU, and between the RU and the P–Phone telephone, out–of–band modems are used to transfer display information and other signals. The signalling channel is used to transfer this signalling information between the EU and RU for all the VF channels.

The timeslots for P–Phone Units must be consecutive, with the signalling channel having the lowest numbered timeslot. The signalling channel is Channel 0, with the five VF channels being Channel 1 to Channel 5.

The block of timeslots for P–Phone can start at any timeslot, and can span Timeslot 16. At least two channels must be declared:

- ▶ Channel 0 for signalling
- ▶ Channel 1 for the first VF channel

Figure 5–22 shows timeslot configuration for one P–Phone Unit in slot 2, and no other Units in the same half of the Panel. In this example:

- ▶ The P–Phone channels are declared starting at Timeslot 11.
- ▶ Timeslot 11 is used for signalling (Channel 0)
- ▶ Timeslot 12 to 15 are used for VF channels 1 to 4
- ▶ Timeslot 17 is used for VF channel 5.

(4) G.703 Settings for the Access Panel

The G.703 Settings page is used to configure G.703 settings for SAC or AC Units. The page for PCMCC is basically the same as the PCMCX page, however the PCMCC is always an Access Controller and has a single radio button for AC.

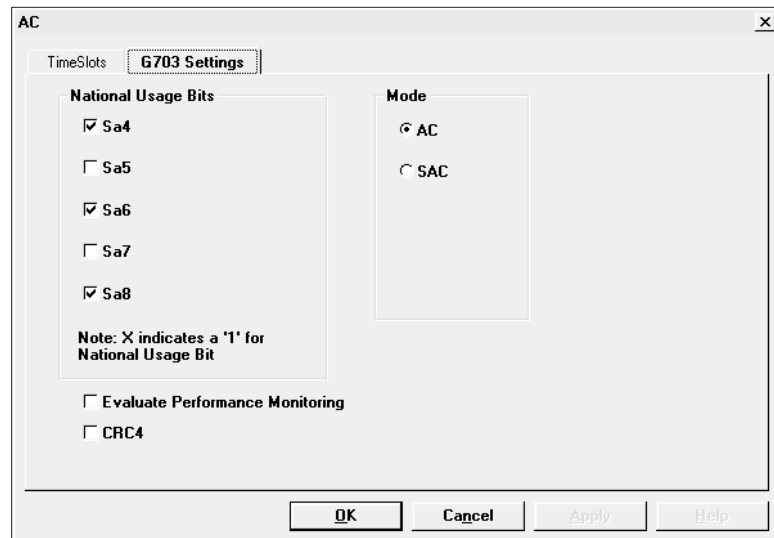


Figure 5–23 PCMCX and PCMCC – G.703 Settings Page

There are 3 options:

- ▶ National Usage Bits
- ▶ Evaluate Performance Monitoring
- ▶ CRC4

The Mode settings radio buttons for the PCMCX are:

- ▶ Access Controller (AC)
- ▶ Subscriber Access Controller (SAC)

National Usage Bit

The G.703 National Usage Bits in Timeslot 0 may be set for the PCMCX or the PCMCC as follows:

- On a PCMCX, the NUB may be set with this dialogue box if equipment connected requires it. A tick in the box indicates that the Bit is set to **1**, otherwise it is set to **0**.
- On a PCMCC, the Bit cannot be set as NUB is reserved for an embedded OA&M channel between the PCMCC at the EU and the PCMCC at the RU.

Evaluate Performance Monitoring

This option is used in conjunction with the Performance Monitoring application to report and calculate 2 Mbit/s G.703 error rates and statistics. For this to be enabled, both Evaluate Performance Monitoring and CRC4 options must be checked.

For details on Performance Monitoring, refer to Section 9.1.

Note

If CRC4 is enabled at an EU PCMCX it must also be enabled at the corresponding RU PCMCX.

- *If "evaluate Performance Monitoring" or "CRC4" is enabled at an EU (or RU) PCM controller, it must also be enabled at the corresponding RU (or EU) PCM controller.*
- *For an integrated service CRC4 must be enabled at the exchange G.703 interface and at the RU PCMCX.*

CRC4

Setting CRC4 enables Cyclic Redundancy Checking on the 2 Mbit/s G.703 bearer. It is primarily used in conjunction with Performance Monitoring to allow the generation of G.821 statistics. CRC4 can be enabled on its own, however if Evaluate Performance Monitoring is enabled CRC4 must also be enabled.

For details on Performance Monitoring, refer to Section 9.1.

(5) G.703 Settings with ESM/RIM

If an Access Controller is configured for the ESM/RIM protocol, CRC4 must be enabled on that AC and the exchange G.703 interface. CRC4 carries information about the channel to and from the ESM/RIM exchange and must be enabled to ensure that the exchange knows that the link is operating correctly.

It is also necessary that the Sa4 National Usage Bit be disabled as the exchange is configured to use this bit as an indication of the service affecting alarm status of the C-RIM. If the Sa4 bit is checked, the exchange may generate a remote alarm.

5.5 Climate Panel Configuration Window

The Climate Panel Configuration Window is used to assign units to the Climate Control Panel in the 480 Line 1G Remote Housing.

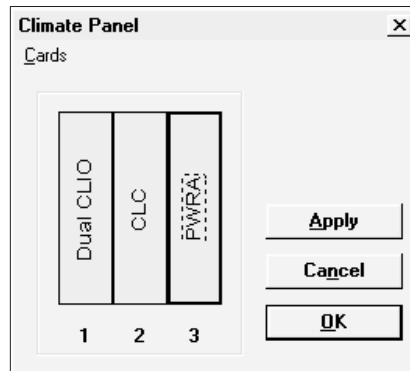


Figure 5–24 Climate Control Panel Configuration Window

Each slot in a Climate Control Panel is assigned individually.

To set the type of unit in a slot:

- ▶ Click on a unit in the illustrated panel layout
- ▶ Click on **Cards** in the menu bar at the top of the window
- ▶ Choose **Add** from the menu that appears
- ▶ A list opens of the units that may be fitted to that slot. Click on the desired type of unit to assign it to the slot.

If a unit is removed from a slot:

- ▶ Click on the unit in the illustrated panel layout
- ▶ Click on **Cards** in the menu bar.
- ▶ Click on **Remove** in the menu that appears

None of the units in the Climate Control Panel require configuration.

5.6 Alarm Masks Configuration

To configure Alarm Masks click on the **Alarm Masks** button in the main Equipment Configuration window. This opens the Alarm Masks Configuration Window, an 9–page tabbed dialogue box.

The pages of the Alarm Masks Configuration Window are:

- ▶ Core Boards 1, 2 & 3
- ▶ Transmission Boards 1 & 2
- ▶ Channel Cards
- ▶ Housing Alarms 1 & 2
- ▶ Climate

To select a page of the dialogue, click on the tab.

Alarm masks for the ERMU are set in the ERMU Configuration application. See page 6–9 for details.

Details of all alarms are in Chapter 8 – *Alarms, Status and Remote Controls*.

5.6.1 Setting Alarm Masks

The Alarm Mask Configuration windows all operate in a similar way. There are three possible alarm priorities that may be assigned to each alarm which are:

Urgent	☐ U
Non–Urgent	☐ N
Indicative	☐ I

These options are selected by clicking with the left mouse button on the small icon next to each alarm name. With each click the alarm priority changes in the order

Urgent–>Non–Urgent–>Indicative–>Urgent.

- ▶ **Urgent** alarms are red in the AS&C application, and cause the Urgent Alarm summary alarm to be lit in the Alarm Synthesis screen
- ▶ **Non–Urgent** alarms are yellow in the AS&C application. They cause a Non–urgent summary alarm in the Alarm Synthesis screen.
- ▶ **Indicative** alarms are purple in AS&C but do not light alarms in the Alarm Synthesis application.

5.6.2 Alarm Masks

(1) Alarm Masks – Core Boards

There are three Core Boards pages. These are used to set alarm masks for PCMCC, PCMCX, PWRA, CMX, CXDU, ECC, ICC and RiMU.

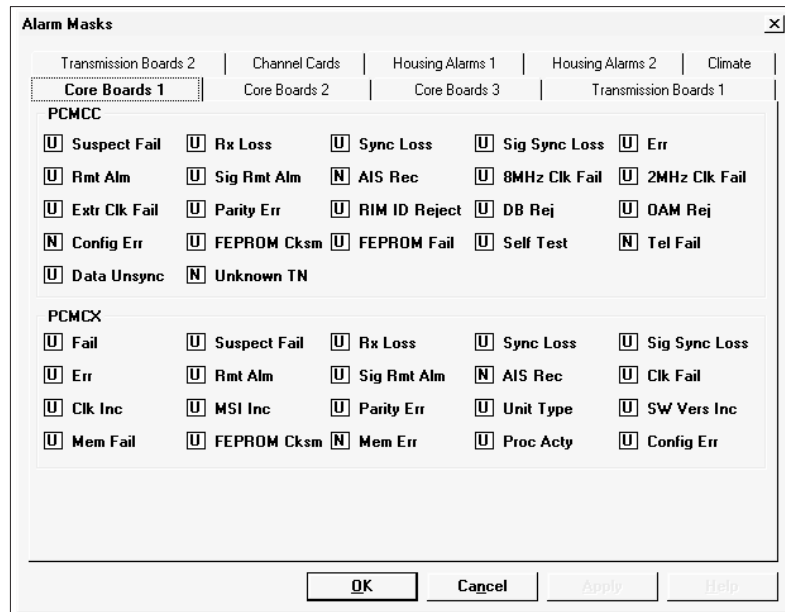


Figure 5–25 Core Boards Alarm Masks – First Screen

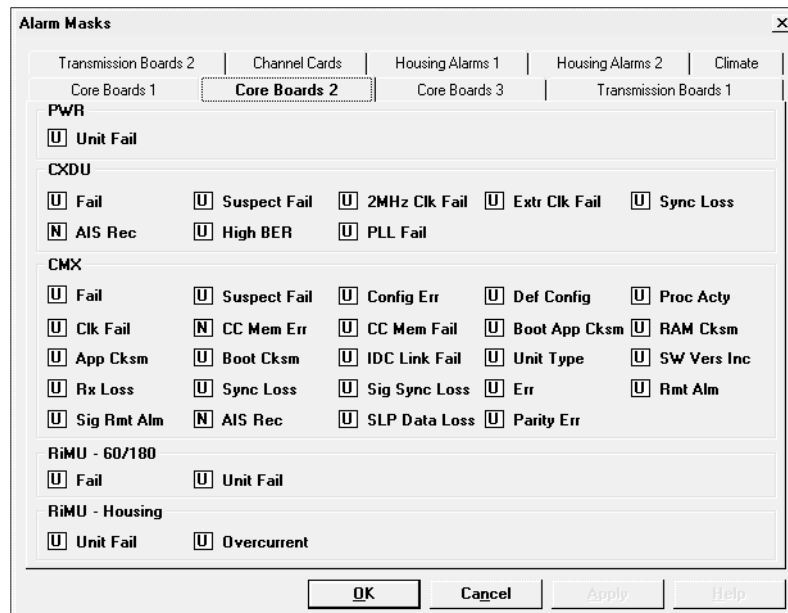


Figure 5–26 Core Boards Alarm Masks – Second Screen

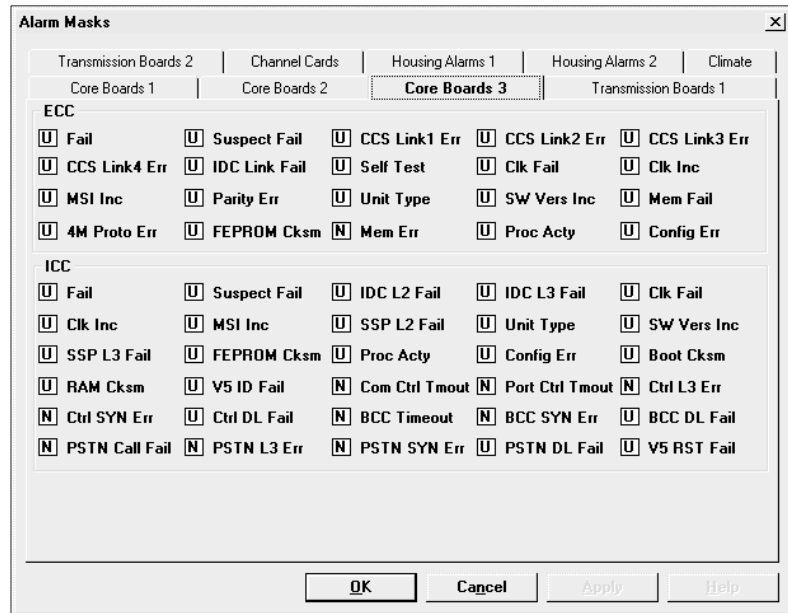


Figure 5-27 Core Boards Alarm Masks – Third Screen

(2) Alarm Masks – Transmission Boards

The two Transmission Boards pages are used to set the alarm masks for OMX 4x2 and OMX 16x2 single and dual fibre Optomux Units.

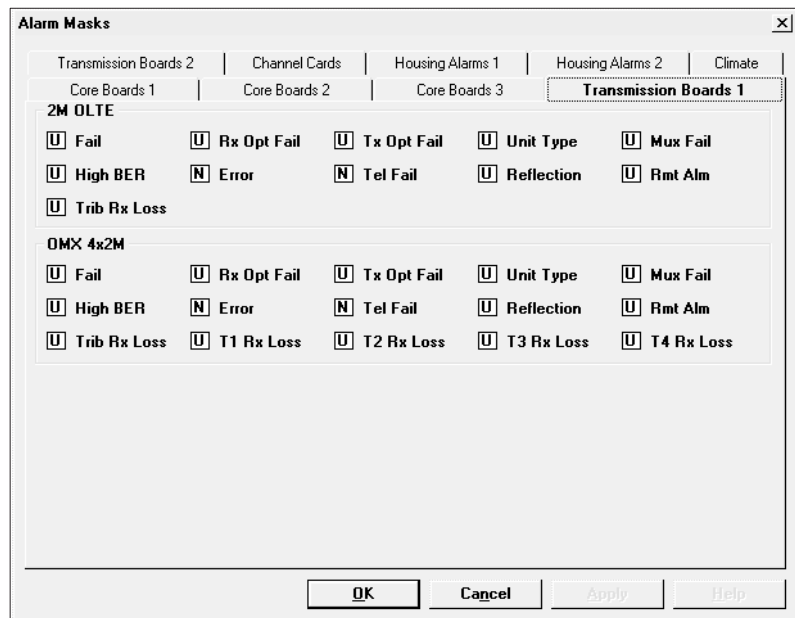


Figure 5-28 Transmission Boards Alarm Masks – First Screen

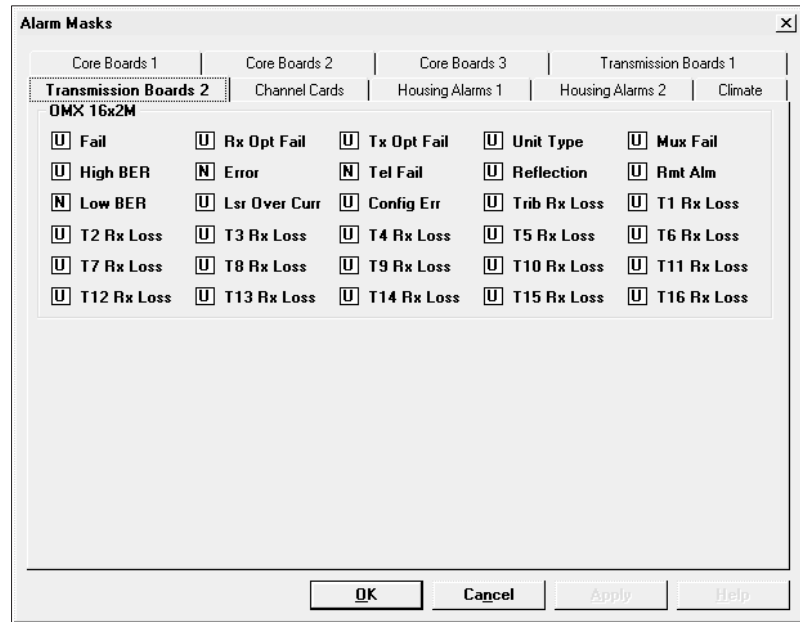


Figure 5–29 Transmission Boards Alarm Masks – Second Screen

(3) Alarm Masks – Channel Cards

The Channel Cards page is used to configure alarms for Channel Units and CTU.

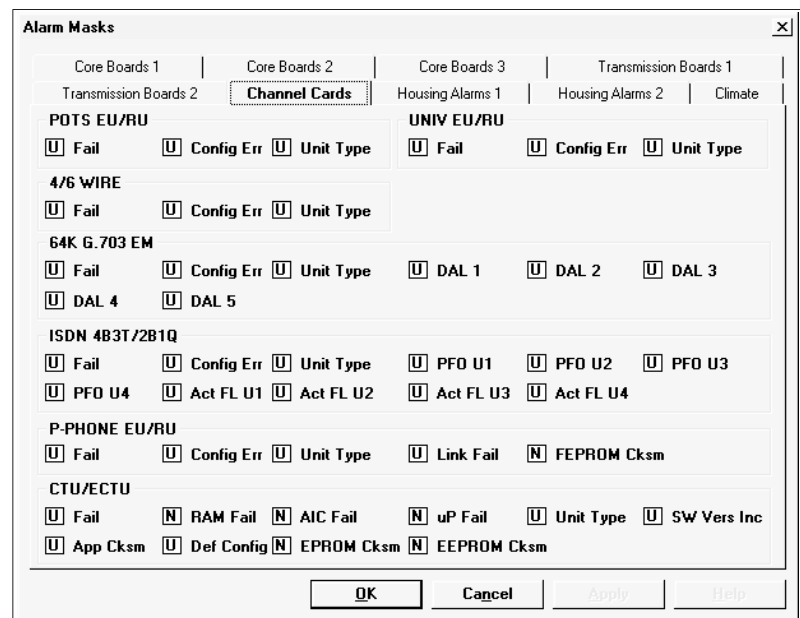


Figure 5–30 Alarm Masks – Channel Cards

(4) Alarm Masks – Housing

The two Housing pages set alarm masks for Power Compartment, FABC or FABD, Fans, and MEC. The items that can be set will vary for 480 Line 1G, 480 Line 2G, and 180 Line 2G Remote Housings.

Alarm Masks

Core Boards 1 | Core Boards 2 | Core Boards 3 | Transmission Boards 1
 Transmission Boards 2 | Channel Cards | **Housing Alarms 1** | Housing Alarms 2 | Climate

Power Compartment

☒ Mains Off ☒ Batt Test Fail ☒ Batt Shutdown ☒ Rectifier Fail ☒ DC Trip
☒ Batt Disc ☒ DC Volt Fail ☒ Hi In Temp ☒ VHi In Temp ☒ In Temp Sens
☒ In Temp Oride ☒ Hi Ex Temp ☒ VHi Ex Temp ☒ Ex Temp Sens ☒ Ex Temp Oride

Main Equipment Compartment

☒ PC Open ☒ ME Open ☒ CCF Open ☒ Cab Lid Open ☒ Hi Ex Temp
☒ VHi Ex Temp ☒ Ex Temp Sens ☒ Hi ME Temp ☒ VHi ME Temp ☒ ME Temp Oride
☒ ME Temp Sens ☒ Hi Pres ☒ Pres Oride ☒ Pres Sens ☒ Hi Humid
☒ Humid Sens ☒ Humid Oride

External Alarms

☒ Ext 1 - Power A ☒ Ext 2 - Enviro/Climate A ☒ Ext 3 - Transmission A
☒ Ext 4 - Other Equipment A ☒ Ext 5 - Power B ☒ Ext 6 - Enviro/Climate B
☒ Ext 7 - Transmission B ☒ Ext 8 - Other Equipment B

OK Cancel Apply Help

Figure 5-31 Housing Alarm Masks – First Page

Alarm Masks

Core Boards 1 | Core Boards 2 | Core Boards 3 | Transmission Boards 1
 Transmission Boards 2 | Channel Cards | Housing Alarms 1 | **Housing Alarms 2** | Climate

FABC

☒ Fail ☒ ME Open ☒ CCU Open ☒ Hi Temp ☒ Int Fan Fail
☒ Ext Fan Fail ☒ Var Vt Fan Fail ☒ M Lead ☒ Mains Off ☒ Batt Test Fail
☒ Batt Shutdown ☒ Batt Disc ☒ Rect 1 Fail ☒ Rect 2 Fail ☒ Rect 3 Fail
☒ DC Trip 1 ☒ DC Trip 2 ☒ DC Volt Fail ☒ Batt Temp Sens

Fan Alarms

☐ Fan 0 Fail ☐ Fan 1 Fail ☐ Fan 2 Fail ☐ Fan 3 Fail ☐ Fan 4 Fail
☐ Fan 5 Fail ☐ Fan 6 Fail ☐ Fan 7 Fail ☐ Fan 8 Fail ☐ Fan 9 Fail
☐ Fan 10 Fail ☐ Fan 11 Fail ☐ Fan 12 Fail ☐ Fan 13 Fail ☐ Fan 14 Fail
☐ Fan 15 Fail ☐ Fan 16 Fail ☐ Fan 17 Fail ☐ Fan 18 Fail ☐ Fan 19 Fail
☐ Fan 20 Fail ☐ Fan 21 Fail ☐ Fan 22 Fail

OK Cancel Apply Help

Figure 5-32 Housing Alarm Masks – Second Page

(5) External Alarm Inputs

The first Housing page is also used to set alarm masks for external alarms. The default for each of these alarms is Indicative. There are eight external inputs.

For sensors to generate alarms in the AS&C Alarm windows they must be configured as Urgent (U) or Non-urgent (N). To disable an external alarm, configure it as Indicative (I)

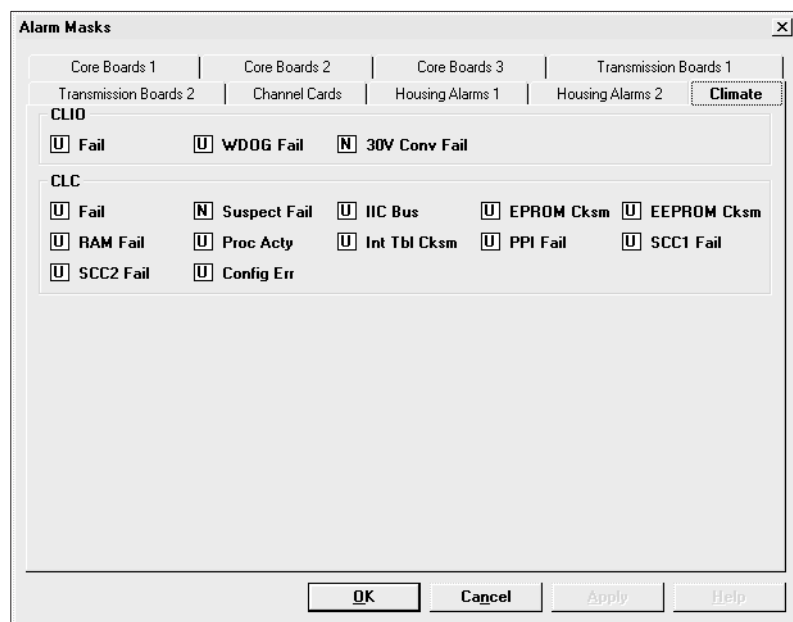
(6) Alarm Masks – Climate

Figure 5–33 Alarm Masks – Climate

The Climate page sets alarm masks for CLIMCTL, and CLIMI/O

5.6.3 Alarm Processing Setting

Alarms may be latched or unlatched.

Alarms are set as latched or unlatched on the NE Configuration page of the System Configuration window. See page 5–5.

6 ERMU Configuration

This chapter describes the process of configuring ERMU parameters.

This chapter deals only with using the Configuration application from the ERMU window. The previous chapter covers with configuring the EU and RU, using the Configuration application from the main EU/RU window.

6.1 ERMU Configuration Dialogue

The ERMU Configuration application has a five—page tabbed dialogue. To open it from the Alarm Synthesis screen:

- ▶ Click on the Management Unit to select it
- ▶ Choose Equipment Configuration from the Application Choice menu.

The main ERMU Configuration window opens.

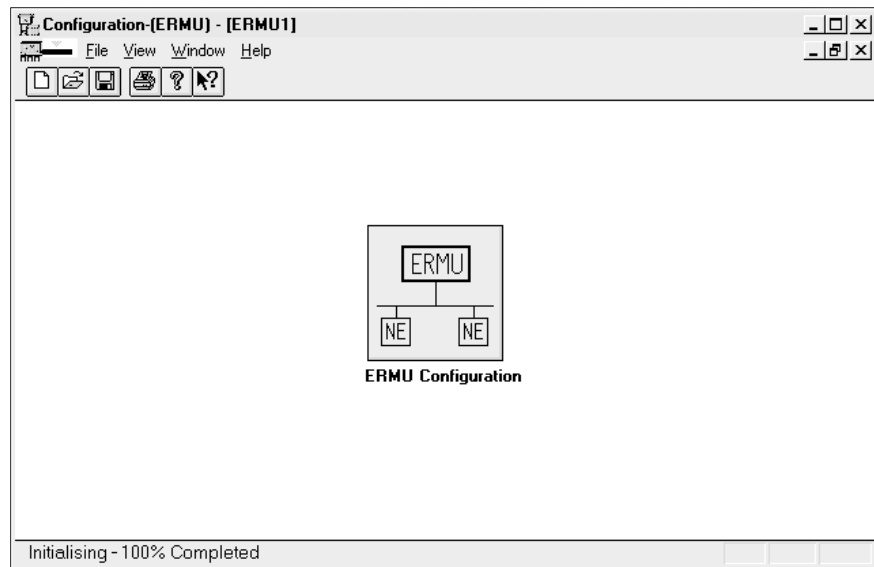


Figure 6—1 ERMU Configuration — Main Window

Click on the button in the main ERMU Configuration window to open the five pages of the ERMU Configuration tabbed dialogue box. The pages in this dialogue box are:

- ▶ COMNET
- ▶ ERMU
- ▶ EU/RU Pairs
- ▶ Alarms
- ▶ Batch Mode Testing

6.1.1 COMNET Configuration Page

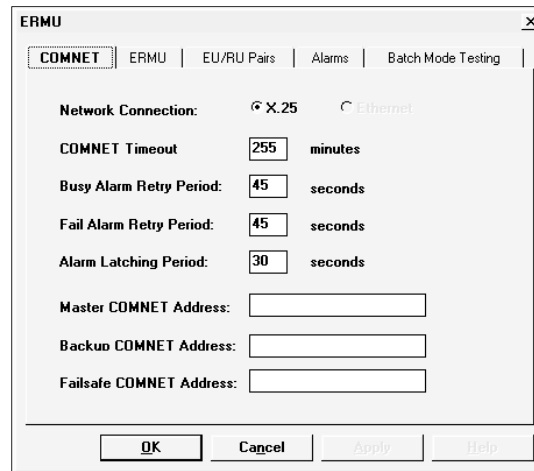


Figure 6–2 ERMU Configuration Window – COMNET Page

(1) Network Connection

The dialogue makes provision for the following types of network connection:

- ▶ X.25
- ▶ Ethernet

X.25 is the only Network Connection supported by the C–RIM. The Ethernet radio button will be greyed out.

(2) Timeouts and Retry Intervals

Three Timeout and Alarm Retry Periods are displayed. These are:

- ▶ COMNET Timeout
- ▶ Busy Alarm Retry Period
- ▶ Fail Alarm Retry Period

COMNET Timeout

Timeout starts when a message or response is received from COMNET. The setting is the period after which the ERMU considers communication with COMNET has been lost and raises a COMNET LOSS alarm.

Busy Alarm Retry Period

The period after which the ERMU attempts to resend a message that has not received an acknowledgement from COMNET.

Fail Alarm Retry Period

The period after which the ERMU clears down the session with the current X.25 address. The ERMU attempts to use the Master, Backup and Failsafe addresses in a cyclic manner until an X.25 address responds.

Timeout and Period Ranges

The maximum and minimum values for these parameters are:

	Minimum	Maximum
COMNET Timeout	1 (minute)	255 (minutes)
Busy Alarm Retry Period	45 (seconds)	255 (seconds)
Fail Alarm Retry Period	45 (seconds)	255 (seconds)

(3) Alarm Latching Period

Release 8.2 introduces optimisation of alarm events. This minimises the number of fleeting alarms reported to COMNET or NECTAS by latching alarms for the Alarm Latching Period.

When an alarm is first detected, an alarm indication is given and a latching timer started. If an alarm condition ends before the end of the alarm latching period, the alarm indication is maintained. If a new alarm condition is detected, the alarm latching timer is restarted.

Fleeting alarms during the latching period do not initiate additional alarm indications.

The range of settings for Alarm Latching Period is 0 seconds to 255 seconds. If the Alarm Latching Period is set to 0, Alarm Latching is disabled.

(4) COMNET Address

COMNET uses X.25 servers to collect alarms. The addresses for the Master, Backup and Failsafe servers are shown in the three boxes towards the bottom of this page. The address fields allow a maximum of 20 numeric characters.

Modification of the COMNET addresses will cause the ERMU to reset after the configuration has been written to the ERMU configuration database.

6.1.2 ERMU Configuration Page

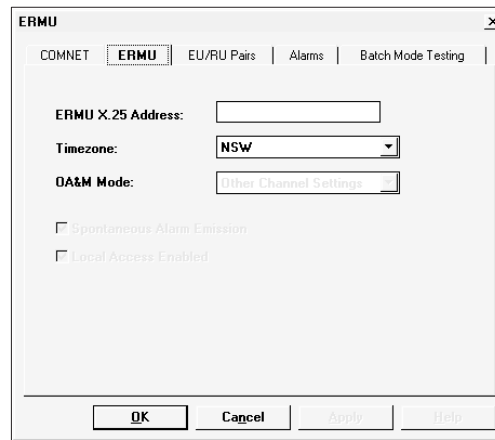


Figure 6–3 ERMU Configuration Window – ERMU Page

(1) ERMU X.25 Address

The ERMU X.25 Address is manually entered. Modification of the ERMU X.25 Address will cause the ERMU to reset after the configuration has been written to the ERMU configuration database. The ERMU X.25 address allows a maximum of 20 numeric characters.

(2) Timezone

The timezone in which the system is located is selected from a pull–down list. The timezone is used by COMNET to correlate alarms.

(3) OA&M Mode

The OA&M Mode setting used for C–RIM is “Other Channel Settings”. OA&M Mode is greyed out on this page as no other settings are available for C–RIM.

(4) Spontaneous Alarm Emission

ERMU alarms may be stored in a buffer until queried by COMNET, or may be spontaneously emitted to COMNET as they occur.

- ▶ If the Spontaneous Alarm Emission checkbox is empty, alarms are stored until queried by COMNET.
- ▶ If the Spontaneous Alarm Emission checkbox contains a cross, alarms are sent to COMNET as they occur.

Spontaneous Alarm Emission can only be configured through COMNET.

(5) Local Access Enabled

Local Access Enabled on the ERMU page refers to access to the ERMU via the System F Port (on the ERMU) or the Remote System F Port (on the RU Main Panel backplane).

Local Access is disabled except in exceptional circumstances. This option can only be configured via a NECTAS session through COMNET.

If the Local Access Enabled checkbox contains a cross, Local Access is enabled. In this case there are no restrictions on updating the ERMU databases or performing a software download to the ERMU.

If the Local Access Enabled checkbox is empty, Local Access is disabled.

If ERMU Local Access is disabled:

- ▶ It is not possible to update the ERMU databases, send ERMU equipment configuration to the RIM, send FNN databases to the ERMU, or perform a software download to the ERMU.
- ▶ It is not possible to change the configuration of the EU or RU via the ERMU System F–Port or the Remote System F–Port
- ▶ It is not possible to carry out a software download via the System F–Port or Remote System F–Port.

Note

- *When there is no communication with COMNET, the COMNET connection will timeout (after the configured time) and Local Access will be enabled. This is not shown on the configuration screens, however it is shown in AS&C.*
- *Enabling/disabling Local Access to the ERMU, EU and/or RU affects operations performed locally and via COMNET. For more information, refer to Section 6.2.*

6.1.3 EU/RU Pairs Configuration Page

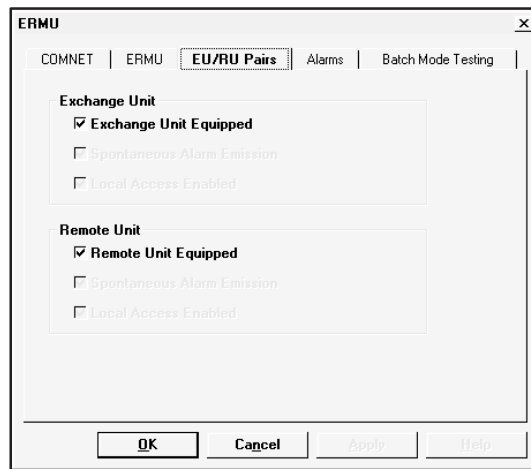


Figure 6–4 ERMU Configuration Window – EU/RU Pairs Page

(1) EU Equipped and RU Equipped

These two check boxes indicate if C–RIM equipment has been installed at the EU and/or RU.

Typically both of these will be set, and the check boxes will each contain a tick. They can be deselected to match the physical configuration.

(2) Spontaneous Alarm Emission

EU/RU alarms may be stored in a buffer until queried by COMNET, or may be spontaneously emitted to COMNET as they occur.

- ▶ If the Spontaneous Alarm Emission checkbox is empty, alarms are stored until queried by COMNET.
- ▶ If the Spontaneous Alarm Emission checkbox contains a tick, alarms are emitted to COMNET as they occur.

Spontaneous Alarm Emission can only be configured through COMNET.

(3) Local Access Enabled

Local Access Enabled on the EU/RU Pairs Configuration page refers to access by NECTAS on a CRAFT terminal to the EU or RU via the Local F Port on the PCMCC at EU or RU.

Local Access is disabled except in exceptional circumstances. This option can only be configured via a NECTAS session through COMNET.

If the Local Access Enabled checkbox contains a tick, Local Access is enabled. In this case there are no restrictions on updating the PCMCC databases or performing a software download to the PCMCC via a Craft Terminal connected to the Local F–Port on the relevant PCMCC.

If the Local Access Enabled checkbox is empty, Local Access is disabled. In this case it is not possible to update the PCMCC databases or perform a software download to the PCMCC.

Note

- *When there is no communication with COMNET, the COMNET connection will timeout (after the configured time) and Local Access will be enabled. This is not shown on the configuration screens, however it is shown in AS&C.*
- *Enabling/disabling Local Access to the ERMU, EU and/or RU affects operations performed locally and via COMNET. For more information, refer to Section 6.2.*

6.1.4 Alarms Page

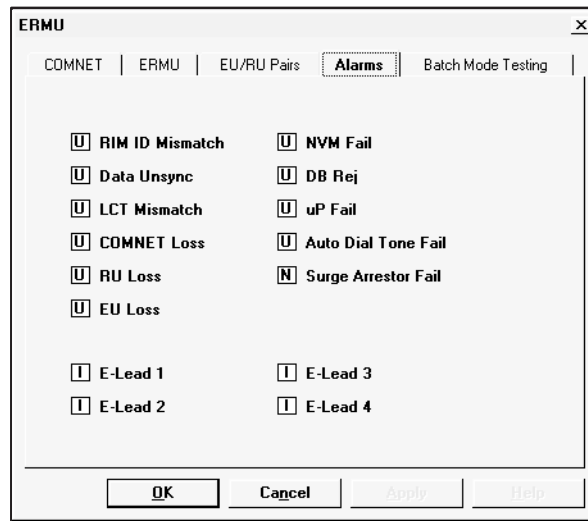


Figure 6–5 ERMU Configuration Window – ERMU Alarm Masks Page

The Alarms page of the ERMU Configuration Window is used to configure the alarm masks for the ERMU.

Alarm masks may be set as Urgent, Non–urgent, and Indicative. These priorities are described in section 5.6.1 – *Setting Alarm Masks* on page 5–40. Default priority is Urgent.

Details of the AS&C alarm screen for the ERMU, and details of the alarms, are shown on page 8–60.

6.1.5 Batch Mode Testing Page

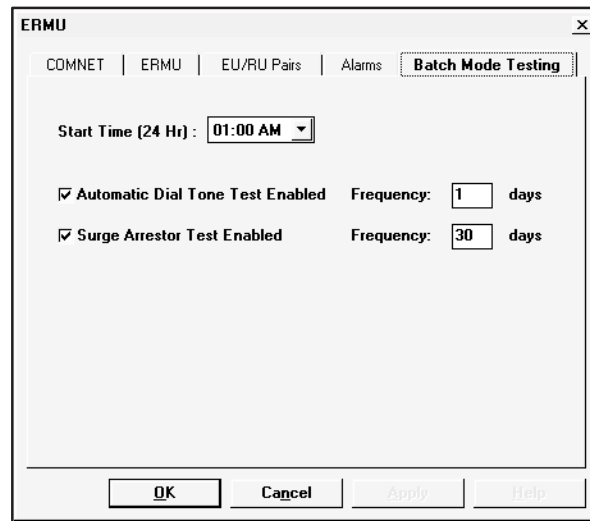


Figure 6–6 ERMU Configuration Window – Batch Mode Testing Page

Batch Mode Testing (BMT) provides the following automatic tests:

- ▶ Automatic Dial Tone test.
The automatic dial tone test is an inwards test towards the exchange. It loops the line and confirms presence of a dial tone.
- ▶ Surge Arrestor test.
The Surge Arrestor test applies voltages to the line to validate that a surge arrestor is present and is performing within the specified rating, i.e that it fires within the correct range of voltages.

The following BMT parameters can be configured:

- ▶ Start Time
This is the time that BMT will automatically start running. The start time is set via a pull–down list. The range is from midnight to 4:00 AM. The default is 1:00 AM
- ▶ Enable/Disable Test
Click on the checkboxes to enable or disable the tests.
- ▶ Test Frequency
Set the test frequencies by entering a numeric value in the box. The range of test frequencies is 1 to 255 days. If a test is disabled its frequency is set to 0 and greyed out.

6.2 Local Access Disabled/Enabled

Enabling or disabling Local Access to the ERMU, EU PCMCC or RU PCMCC affects operations performed locally at the C–RIM and also affects operations performed via COMNET.

Local Access can only be enabled or disabled via COMNET. In addition, should there be no communication with COMNET, the COMNET connection will timeout (after the configured time) and Local Access will be enabled. This is not shown on the configuration screens, however it is shown in AS&C.

6.2.1 Local Operations

Local Access must be enabled on a per–NE (Network Element) basis to carry out the following operations:

Action	ERMU	EU PCMCC	RU PCMCC
Send ERMU Equipment Configuration to C–RIM	Enable	–	–
Send FNN Database to C–RIM	Enable	Enable	Enable
Software Download to ERMU	Enable	–	–
Send EU Equipment Configuration	–	Enable	–
Software Download to EU	–	Enable	–
Send RU Equipment Configuration	–	–	Enable
Software Download to RU	–	–	Enable
ERMU Administration	Enable	–	–
EU Administration	–	Enable	–
RU Administration	–	–	Enable
RU Hybrid Training	–	–	Enable

Note

'Enable: means Local Access MUST be enabled on this NE for the specified action to be successful.

'–': means that the state of Local Access Enabled is not significant.

6.2.2 COMNET Operations

COMNET requires Local Access to be disabled to perform some functions. For these functions Local Access must be *disabled* on all NEs (ERMU, EU PCMCC and RU PCMCC).

NECTAS functions fall into two categories:

NCI/NECTAS Pass–Through

Commands are passed transparently from NECTAS through COMNET to the C–RIM.

For Pass–Through functions the state of Local Access does not impact function availability i.e the COMNET function can be performed if Local Access is enabled or disabled.

NCI/NECTAS Non Pass–Through

Commands are passed from NECTAS to COMNET, and COMNET then interprets those commands.

For Non Pass–Through function, the state of Local Access does impact function availability, as shown in the following table. For Non Pass–Through functions, COMNET requires Local Access to be disabled for all C–RIM NEs with the exception of ERMU Equipment Configuration downloads.

The ERMU Equipment Configuration download is an exception because it is where the state of Local Access is stored. Therefore downloads from the NCI Control window or from NCI/NECTAS ERMU Equipment Configuration application are possible regardless of the state of Local Access for that C–RIM.

Action	ERMU	EU PCMCC	RU PCMCC
NCI/NECTAS Non Pass–Through			
Send ERMU Equipment Configuration to C–RIM	–	–	–
Send FNN Database to C–RIM	Disable	Disable	Disable
Send EU Equipment Configuration to C–RIM	Disable	Disable	Disable
Send RU Equipment Configuration to C–RIM	Disable	Disable	Disable
NCI/NECTAS Pass–Through			
ERMU Administration	–	–	–
Software Download to ERMU	–	–	–
Software Download to EU	–	–	–
Software Download to RU	–	–	–
EU Administration	–	–	–
RU Administration	–	–	–
RU Hybrid	–	–	–
Other Downloads			
Service Activation	Disable	Disable	Disable
NCI Control	–	–	–
Batch Software Download	Disable	Disable	Disable
Master Upload/Download	Disable	Disable	Disable

Note

'Disable': means Local Access MUST NOT be enabled on this NE for the specified action to be successful.

'–' means that the state of Local Access Enabled is not significant.

7 FNN Applications

This chapter describes the Full National Number (FNN) Administration, FNN Display and FNN Test applications. These applications are used to setup, view and test the mappings from the customer to the exchange.

As the Administration and Display applications share a common interface, they are documented in a generic fashion with exceptions noted where applicable. As some functionality is not available in the Display application, and there are slight screen differences according to the selected protocol, the illustrations of screens are only indicative of what might actually appear.

7.1 FNN Administration and FNN Display

When the FNN application is first launched, there is no FNN database opened and therefore the display is blank.

The only options available are to create a new database (FNN Admin only), open an existing database, or receive a database from a C-RIM. These options are accessed via the **New**, **Open**, **Load Text**, and **Receive** options respectively in the **File** menu.

7.1.1 FNN Database

The Full National Number (FNN) database has a mapping for all channels of the C-RIM. Generally a C-RIM system will be delivered with a dummy database stored in the ERMU.

A “new” ERMU will have an empty database which must be set up by an operator who has access to network configuration information. This operator must set up all customer telephone numbers on the C-RIM system, including which channel card and channel is serving each number on the remote (RU) side of the C-RIM.

The database is stored in non-volatile memory (EEPROM) on the ERMU and consists of two parts: the FNNs and header information. Each part of the FNN database is saved as a separate file:

- ▶ FNN (DOS suffix *.FNN*)
- ▶ Header information (DOS suffix *.HDR*)

FNN databases can also be saved to disk as ASCII files for modification with an external editor, and text files can be loaded into the FNN Administration application.

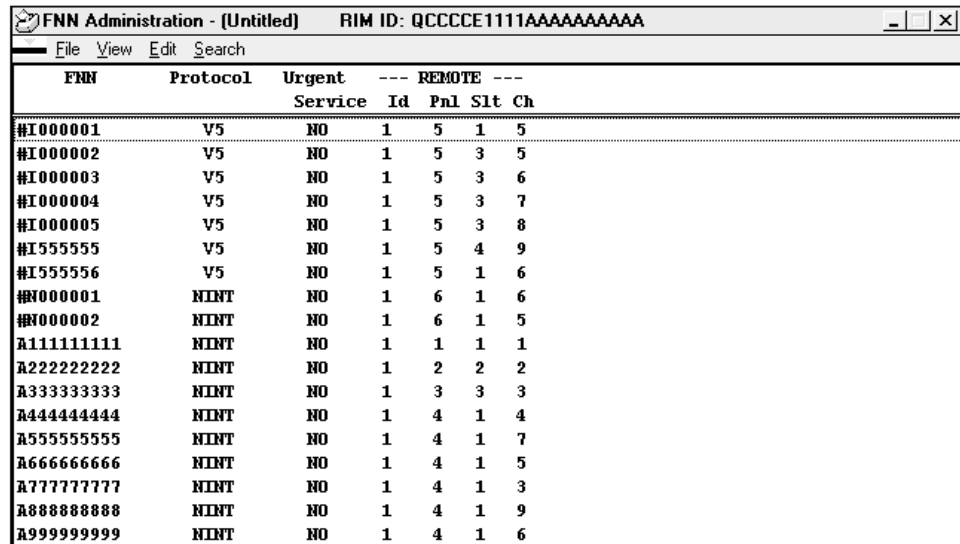
7.1.2 FNN Admin/Display Application Differences

Depending on the Access Level to which the user belongs, they will be given access to either FNN Administration or FNN Display.

Operation	FNN Admin	FNN Display
Receive or view Header or FNNs	Y	Y
Send Header and FNN	Y	N
Edit Header and FNN	Y	N
Save Header and FNN	Y	N

7.1.3 FNN Administration/Display Menus

The main screen of the FNN applications appears as follows:



FNN	Protocol	Urgent	Service	Id	Pnl	Slt	Ch
#I000001	V5	NO		1	5	1	5
#I000002	V5	NO		1	5	3	5
#I000003	V5	NO		1	5	3	6
#I000004	V5	NO		1	5	3	7
#I000005	V5	NO		1	5	3	8
#I555555	V5	NO		1	5	4	9
#I555556	V5	NO		1	5	1	6
#N000001	NINT	NO		1	6	1	6
#N000002	NINT	NO		1	6	1	5
A111111111	NINT	NO		1	1	1	1
A222222222	NINT	NO		1	2	2	2
A333333333	NINT	NO		1	3	3	3
A444444444	NINT	NO		1	4	1	4
A555555555	NINT	NO		1	4	1	7
A666666666	NINT	NO		1	4	1	5
A777777777	NINT	NO		1	4	1	3
A888888888	NINT	NO		1	4	1	9
A999999999	NINT	NO		1	4	1	6

Figure 7–1 FNN Administration, FNN Display Main Window

There are four menus in these applications:

File

Used to Create, Open, Print, Save, Receive and Send a databases to disk and the ERMU.

View

Used to view or edit the header, or select the order in which FNN information is displayed.

Edit

Used to Modify, Add or Delete FNN records from the database.

Search

Used to find specific FNNs in the database.

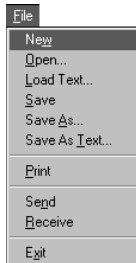
Note In Release 8.2 the ID field is unused, and values in this column are always set to 1.

(1) The FNN File Menu

The following options appear on the FNN applications **File** menu.

Note

If a menu item is invalid or unavailable, it still appears in the menu, though it is greyed out.

**New (FNN Admin Only)**

This file option is only accessible from the FNN Administration application. This option allows you to create a new FNN database.

Open

The **Open** option behaves differently for the two applications though it is used to access existing FNN databases.

Load Text

The **Load Text** option loads a FNN database that has been saved to disk by the **Save As Text** option. The file format must be Comma Separated Values (CSV) with the same sequence of fields as saved by the **Save As Text** option.

Save/Save As

The operator may save the database to a floppy/hard disk using the **Save** or **Save As** options on the File menu.

Save As Text (FNN Admin Only)

The **Save As Text** option saves the FNN database to a file on disk in CSV format. The CSV file can then be edited in a spreadsheet such as Excel or in an ASCII editor such as the Windows Notepad.

Print

When the **Print** option is selected, the Header and FNNs are printed.

Send (FNN Admin Only)

The **Send** command downloads the FNN database to the ERMU.

Receive

The Receive option loads the database from the ERMU into the application.

(2) The FNN View Menu

The View menu is identical for FNN Administration and FNN Display.

The **View** menu provides the following functions:

Sort by FNN

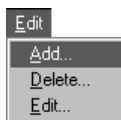
View FNNs in alphabetical order

Sort by RU Pan/Slot/Chan

View FNNs in RU Panel/Slot/Channel order

Database Header

View and edit the Database header information

(3) The Edit Menu

Only the FNN Administration application allows addition, editing and deletion of FNNs.

Add

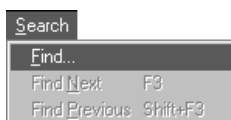
Add is used to add additional records to the database.

Delete

Delete is used to remove records from the database.

Edit

Edit is used to alter existing records in the database.

(4) The FNN Search Menu

The Search menu is used to find a particular FNN in the list without having to scroll through the list.

Find

Find is used to enter search parameters and search for a record.

Find Next

Find Next is used to find the next record that corresponds to the current search criteria.

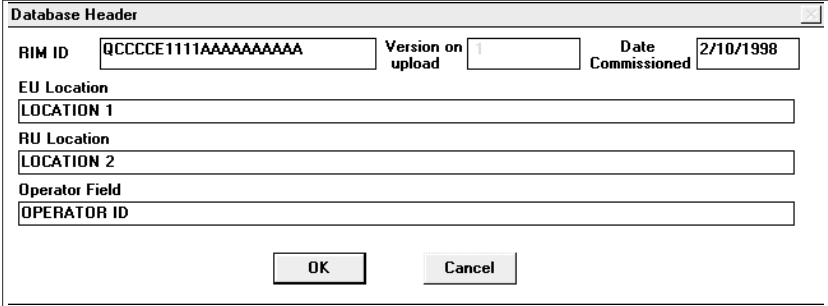
Find Previous

Find Previous searches in a reverse direction through the database for the next record that corresponds to the current search criteria.

7.1.4 Creating a New FNN Database

A new database is created with the **FNN Administration** application.

Select **New** from the **File** menu. This will cause the following window to appear for entering header information:



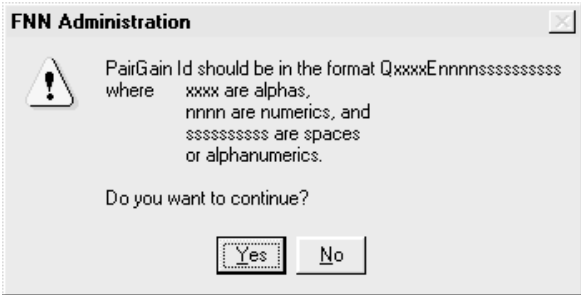
The screenshot shows a window titled "Database Header". It has several input fields: "RIM ID" with the value "QCCCCET111AAAAAAAA", "Version on upload" with the value "1", and "Date Commissioned" with the value "2/10/1998". Below these are "EU Location" with "LOCATION 1", "RU Location" with "LOCATION 2", and "Operator Field" with "OPERATOR ID". At the bottom are "OK" and "Cancel" buttons.

Figure 7–2 Database Header Window

The fields on the database header window are:

► RIM ID

The RIM ID is used to uniquely identify the RIM. It can be 20 alphanumeric characters. If the RIM ID is entered in an incorrect format, then the following window appears:



The screenshot shows a window titled "FNN Administration". It contains a warning icon and a message: "PairGain Id should be in the format QxxxxEnnnnnssssssssss where xxxx are alphas, nnnn are numerics, and sssssssss are spaces or alphanumerics." Below the message is the question "Do you want to continue?" and two buttons: "Yes" and "No".

Figure 7–3 RIM ID Format Window

Selecting **No** will return you to the Database Header window, allowing the RIM ID to be entered in the correct format. Selecting **Yes** will allow the invalid format.

► Version On Upload

This is a read only field which defines the edition of the database. (i.e. this field is incremented every time the database is uploaded from the ERMU)

► Date Commissioned

The Date Commissioned is used to manually record the current date. This allows the next user of the database to see the last time that the database was modified.

► EU Location

This optional field is used to describe the physical location of the EU. This field may be up to 70 alphanumeric characters.

► RU Location

This optional field is used to describe the physical location of the RU. This field may be up to 70 alphanumeric characters.

► Operator Field

This optional field may contain any comments you wish. This field may be up to 70 alphanumeric characters.

When the header information is complete, click on **OK** to continue.

Note *After the database has been created records must be added to it. This may be done in two ways:*

- *Use the FNN Administration application to add all records, as detailed in Sections 7.1.11 and 7.1.12.*
- *Add a small number of records with the FNN Administration application, and add other records with an external editor. This process is described in Section 7.1.15.*

7.1.5 Opening an FNN Database

To open a FNN database, click on the **File** entry in the menu bar of the FNN Administration application. Click on the **Open** option in the File menu to open a dialogue box from which a FNN database file can be selected. Opening a file will display the Database Header window illustrated in Figure 7–2.

7.1.6 Saving an FNN Database

In the FNN Administration applications, databases may be saved to a floppy/hard disk using the **Save**, **Save As**, or **Save As Text** options on the **File** menu.

Note ***Save** uses the current file name whereas **Save As** allows the name to be changed.*

7.1.7 Printing an FNN Database

When the **Print** option is selected from either the FNN Administration or FNN Display applications, the Header and FNNs are printed. The FNNs are printed in the same order as they appear on the screen.

7.1.8 FNN Database Version Control

The database header record contains a field for the database version number. This is used to guard against concurrent multiple updates to the database.

Before the CRAFT Terminal (FNN Administration application) sends the database to the ERMU, it requests the current version number from the ERMU.

- ▶ If the number is the same as when it was **Received** from the ERMU, the number is incremented and returned to the ERMU in the header record.
- ▶ If the number returned by the ERMU is not the same, the user is alerted and given the option to continue or cancel.

While the database is being transferred to the ERMU, the ERMU locks the database to prevent concurrent database updates. The lock is held until the ERMU has completed storing the database in non-volatile memory.

7.1.9 Sending FNN Databases To ERMU

The **Send** command sends (downloads) the FNN database to the ERMU.

When a **Send** request is made, the RIM ID and database version about to be written is compared with the RIM ID and version of the database currently in use in the ERMU. Any differences are pointed out to the user so the user can decide to overwrite the old database contents or cancel the operation.

If the user chooses to continue with the **Send**, a new Line Code Table (LCT) is constructed with a new signature. This will then be sent to the RU PCMCC via the ERMU. Once this is complete, the application will send the FNN database to the ERMU – with the Header sent last. The application will then read the LCT signature back to confirm that the transfer was successful.

Before the **Send** process starts, a warning is given that it may take up to five minutes and then an hour glass is displayed, and the ST box is lit to indicate a configuration update. If the LCT send fails, a message box will indicate that the **Send** process has been cancelled. If the process is successful, the database version and LCT signature in the header is updated automatically.

Note

- *The LCT is an internal mapping used by the RU PCMCC for integrated subscribers. It relates to the FNN and timeslot configuration of the C–RIM so that individual subscribers may be identified to/from the exchange during call establishment.*
- *Active Service must be correctly set for all channels before a successful FNN Send can be performed. The Active Service flag is automatically set by applications such as COMNET and SASAF. It must be manually set or cleared when activating or deactivating services via NECTAS.*

If the error message "A service was found that does not correspond to an FNN" appears when sending an FNN database, this indicates that an Active Service flag has not been correctly set or cleared. Check the configuration of channels activated or deactivated during the session.

7.1.10 Receiving FNN Databases From ERMU

The database may be received (uploaded) from the C–RIM using the **Receive** command from the **File** menu. It is strongly recommended that the FNN database be received from the ERMU before editing, rather than editing files on disk.

If the file is received from the ERMU then you can be assured that the right file is being edited.

7.1.11 The Add / Edit FNN Window

All the information associated with the FNN are entered or modified via the **Add FNN** or **Edit FNN** window. The fields on this window are described below.

Figure 7–4 FNN Add/Edit Window

(1) FNN

The Full National Number (FNN) is used to uniquely identify the customer line. In the edit window, the FNN consists of a Prefix, a Body and a Suffix.

Prefix

The Prefix of the FNN indicates the type of the service. In addition to the list of 1 or 2 character Telstra service codes, there are three valid options for an FNN Prefix. These are:

- ▶ **#N** – A dummy (non–active), Non–integrated FNN.
- ▶ **#I** – A dummy (non–active), Integrated FNN.
- ▶ **A** – An active service.

The FNNs are checked against certain rules, and the Panel, Slot and Channel fields will only allow valid numeric entries. No duplicate FNNs are allowed, and the number of FNNs is restricted to 480.

FNN Body

The Body of the FNN contains the main (and mandatory) part of the FNN. It may be 8, 9 or 10 characters depending on the FNN prefix and whether or not a suffix is used.

FNN Suffix

The suffix is an optional field.

(2) Set Urgent Flag

The Set Urgent Flag is used to mark particularly important services. If the Set Urgent Flag checkbox is checked, then **YES** will appear next to the FNN in the Set Urgent Flag field on the main FNN window. Otherwise, the field will display **NO**.

(3) Protocol

There are four possible options for the Protocol

- ▶ Non–Integrated
- ▶ ESM
- ▶ RSU
- ▶ V5

Note *RSU only supports 50 Hz Metering on every fourth TN.*

- *In the upper range this is 1, 5, 9, 13, ...*
- *In the lower range this is 513, 517, 521, 525, ...*

(4) RU Panel/Slot/Channel

The RU settings are used to specify the Panel / Slot / Channel in the RIM RU to which the service is connected.

7.1.12 Adding FNNs

There are two ways to add records to the FNN database

- ▶ With the Add function in the FNN Administration application.
- ▶ By exporting the FNN database as a text file, editing it in a spreadsheet or text editor, and importing the edited file into the FNN Administration application. This process is described in Section 7.1.15.

To use the FNN Administration application to add records to the FNN database:

- ▶ Start the FNN Administration application.
- ▶ Open a database file on disk, or receive a FNN database from the C-RIM with the **File/Receive** command.
- ▶ Add records to the database by selecting **Add** from the **Edit** menu. This invokes the **Add FNN** Window which is similar to the **Edit FNN** window illustrated in Section 7.1.11.
- ▶ Send the updated database to the C-RIM with the **File/Send** command in the FNN Administration application.

7.1.13 Deleting FNNs

In the FNN Administration applications, a FNN may be deleted by first selecting it in the list, and then clicking on the **Delete** item from the Edit menu. The record to be deleted is displayed and the operator can confirm the deletion by clicking **OK**.

Figure 7–5 Delete FNN

ATTENTION

When deleting integrated FNNs the subscriber's line **MUST** be idle

7.1.14 Editing FNNs

Figure 7–6 Edit FNN Window

A FNN may be changed by either:

- ▶ Selecting the FNN and then selecting Edit from the Edit Menu item, or
- ▶ Double clicking on the FNN in the list.

An edit window will appear (see figure 7–4). Upon clicking **OK**, the changes made will immediately be displayed in the window.

Note *If any of the data entered is invalid (e.g. invalid FNN, duplicated slot/panel, etc) a message explaining the problem will be displayed.*

The FNN Prefix and suffix must conform to the standard rules. There are two types of dummy FNNs.

- ▶ Non–Integrated dummy FNNs are of the format #Nnnnnnn, where 'n' is a numeric.
- ▶ Integrated dummy FNNs are of the format #Innnnnn, where 'n' is a numeric.

7.1.15 FNN Database – Save As Text / Load Text

All C–RIMs are shipped from the factory with a default FNN database. This must be modified to contain the customers' directory numbers.

NECTAS Release 8.2 allows for the export of the FNN database as a text file in Comma Separated Value (CSV) format. The CSV file can then be edited using a spreadsheet such as Excel or a text editor such as Windows Notepad more rapidly than using the FNN Administration Application. The CSV file can then be imported to the C–RIM.

(1) Fields – FNN Database CSV File

The fields in the FNN Database CSV file are:

Field	Description	Valid Values
FNN	The Directory Number	
PROTOCOL	The protocol used for this FNN	ESM RSU–EC7 NON–INT
RP	Panel Number at RU	1 to 8
RS	Slot Number in RU Panel	1, 2, 3, 4, 7, 8, 9
RC	Channel Number on RU Unit	1–10 (depends on type of unit)
RU	RU Number.	Always 1 in Release 8.2
US	Urgent Service Flag Set	Y or N

Note *The RU and US fields can be omitted if desired. They will be set to the default values of RU = 1 and US = N.*

(2) Create New FNN Database

To create a new FNN database with an external editor:

- ▶ Start the FNN Administration Application.
- ▶ Create a new database as detailed in Section 7.1.4.
 - If any Non–integrated services are required, create one Non–integrated entry.
 - If any Integrated services are required, create one Integrated entry, making sure that the correct Integrated protocol has been selected.

- ▶ Export the CSV file
 - Open the File Menu in the FNN Administration application.
 - Choose the Save As Text option
 - Enter the name for the file
- ▶ Add the remaining records to the CSV file as detailed below.

Note *Creation of one of each type of entry ensures that the header and records in the CSV file have the correct structure.*

(3) Edit CSV File

To edit a FNN database which has been exported:

- ▶ Start a spreadsheet such as Excel or a text editor such as Windows Notepad.
- ▶ Load the CSV file into the editor.
- ▶ Add or edit records in the CSV file, making sure that the structure of new or modified records matches the structure of the existing records in the file.
- ▶ When the changes are complete:
 - Save the modified CSV file by using the **File/Save** or **File/Save As** functions in the editor. Make sure that the file type selected is CSV.
 - Import the CSV file into the FNN Administration application by starting the FNN Administration application and using the **File/Load Text** function.
- ▶ Save the FNN Database with the **Save** function in the FNN Administration application.

Note: ^[1] *If desired, the modified FNN Database may be sent to the C–RIM with the **File/Send** function in the FNN Administration application.*

^[2] *The following must be considered when generating and modifying the FNN database with an external editor:*

If there are more than 480 Directory Numbers in the CSV file the import function will ignore the extra entries. After creating or editing the CSV file make sure that there are no more than 480 entries present.

7.1.16 Sorting the FNN List

There are two of options for sorting the list of FNNs. These are accessible from the **View** menu.

7.1.17 Editing Header Information

Header Information may be viewed (and edited if the application allows it) by selecting the **Database Header** option from the **View** menu.

7.1.18 Searching for Particular FNNs

To find a particular FNN in the list without having to scroll through the list, the operator can select the **Find** menu option, and enter in the FNN desired, or a pattern using wildcard characters. If a match is found the FNN will be highlighted in the list. Further matches can be found by choosing the **Find Next** or **Find Previous** menu items. The search will wrap around once no more matches are found in a particular direction.

Note *The following wildcards may be used in the search parameters:*

'*' (to represent any string)

'?' (to represent any character)

7.2 FNN Test Application

The FNN Test application provides the operator a facility to run tests remotely on customer lines and equipment. The application also allows the operator to review Batch Mode Test (BMT) results.

Testing is performed by the (E)CTU (Customer Test Unit). The (E)CTU is linked to the PCMCC bus and also connects to a system test bus which runs to each channel unit. Before tests can be made, the channel unit controlling the customer line must activate its test relays, to connect the line to the test bus.

The PCMCC co-ordinates and routes messages flowing between the operator interface, the (E)CTU and the channel unit involved in the testing. Commands are initiated from the operator interface, translated and then relayed onto either the (E)CTU or channel unit.

Batch Mode Tests (BMT) are conducted automatically by C-RIM, usually in a low traffic period of the day. BMT results can be read from the ERMU by any number of operators simultaneously, however only one test session can be established at any one time using FNN Test. This is because running tests requires exclusive use of the (E)CTU.

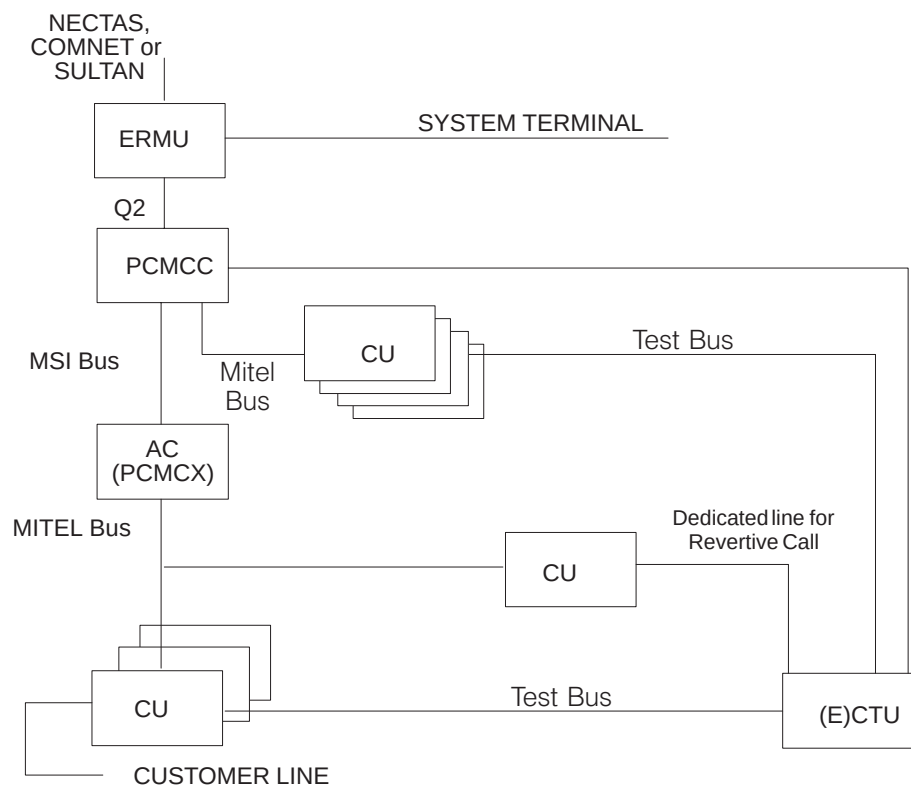


Figure 7–7 FNN Test System

7.2.1 Function of Units in the Test System

(E)CTU: The (E)CTU performs the actual customer line tests.

The (E)CTU has three states of operation: idle, session open and test running. The PCMCC keeps track of the state that the (E)CTU is in.

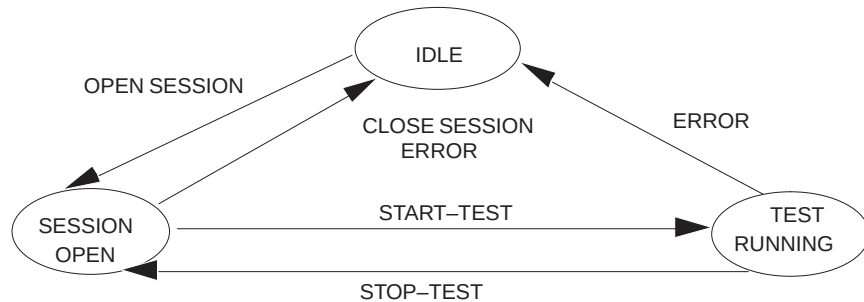


Figure 7–8 (E)CTU States

- The session open state is entered when the operator enters a FNN.

The ERMU converts this to a panel / slot / channel and sends an open session message to the PCMCC which sends it to the (E)CTU.

- The test running state is entered when the operator selects a test to perform.

The ERMU sends the test message to the PCMCC which sends it to the (E)CTU.

- When the test has completed or the operator cancels the test, the (E)CTU drops back to the session open state.
- When the operator closes the session, the (E)CTU drops back to the idle state.
- If an error occurs the (E)CTU will revert to the idle state.

ERMU: The ERMU contains the FNN database which is used to map an FNN to a panel/slot/channel which the C–RIM system needs to locate a particular customer line. Customer Line Testing is co–ordinated and controlled by the ERMU over the Q2–Interface to the RU.

AC/SAC: The AC or SAC (PCMCX or PCMCC) monitors the status of the line under test and sends the appropriate command to the channel under test to switch its test relays.

PCMCC: The PCMCC performs various functions when the (E)CTU is being used:

- It polls the PCMCX for line state when the (E)CTU is in the session open state. This line state is returned to the CRAFT Terminal (CT).
- It polls the (E)CTU for line state and test results when the (E)CTU is in the test running state. These are returned to the CT.
- It instructs the PCMCX to tell the channel unit to open the relays on the test bus when a test is complete or stopped.

Note *The line state is supplied by the PCMCX when a test is not running because the (E)CTU requires the channel unit relay to be switched onto the test bus before it can check line state.*

7.2.2 The Main FNN Test Window

The main screen of the FNN Test application appears as follows:



Figure 7–9 FNN Test Application Screen

There are three entries in the menu bar in the main FNN Test window:

- ▶ File
- ▶ Test
- ▶ Help

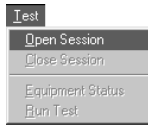
Each of these menus are described in detail in the following sections.

(1) File Menu



There are two entries in the File menu.

- ▶ **Receive Batch Mode Test Results**
This entry allows the user to view the most recent set of Batch Mode Test results.
- ▶ **Exit**
This entry exits from the FNN Test application.

(2) Test Menu

There are four entries in the Test menu:

- ▶ **Open Session**
Used to set up a test session.
This is required before tests can be performed by FNN Test on subscribers' lines.
- ▶ **Close Session**
Used to terminate the test session.
- ▶ **Equipment Status**
Used to display the operational status of the equipment being tested.
- ▶ **Run Test**
Used to select the test to be run and the test mode.

(3) Help

- ▶ Opens the online help for the FNN Test application.

ATTENTION

Subscribers line out of service during test

Prior to running the first test on a line, the subscriber's line is fully functional. From the time the test session is opened until the test session is closed the subscribers line will be out of service.

7.2.3 Batch Mode Testing

The C–RIM Release 8.2 ERMU has the capability to automatically conduct Batch Mode Testing (BMT) on the C–RIM without the aid of an operator. These tests are performed at a specified time, usually in a low–traffic period, and stored in the ERMU.

BMT results are stored in volatile memory in the ERMU. If the ERMU is reset then the BMT results table is reset to the default values. A full test will be performed that night as long as a heartbeat from COMNET has been received. All frequency counters are considered to have expired.

The user can retrieve BMT results data via the NECTAS FNN Test application

(1) Priority

Batch Mode Testing does not inhibit normal operation of the C–RIM. Customer traffic is expected at any time, and has priority over BMT. Other activities which have priority over BMT include the following:

- ▶ Software downloads.
- ▶ Configuration downloads
- ▶ FTARS
- ▶ A normal FNN test session.
- ▶ SULTAN is communicating with the RIM.
- ▶ The line under test is busy.

If at any time throughout the BMT session a priority activity occurs, the BMT session will cease as soon as any currently running test finishes, and wait for five minutes before running the next test.

For example, if an FNN test is requested while a BMT is running then the initial request will be rejected. The ERMU will then stop the BMT after the currently running test has completed and return the system to an idle state ready to accept another FNN test request. The BMT task will wait for five minutes before attempting to run the next test. If the FNN test session is still open then BMT will wait a further five minutes before trying to test again. BMT will wait a maximum of 20 consecutive minutes (4 x 5 minutes) before ceasing testing for the day. If after a five minute wait the test session has closed, BMT will continue to run the next test.

(2) BMT Alarms

Batch Mode Testing alarms are reported on the ERMU AS&C screen. The alarms reported are:

- ▶ Automatic Dial Tone Test Fail
BMT did not detect dial tone on at least one subscriber's line.
- ▶ Surge Arrestor Fail
BMT detected that the surge arrestor on at least one subscriber's line is missing or defective.

Alarms are only displayed after all FNNs have been tested and at least one line has failed. Alarms are not automatically cleared until all lines have been tested and all lines have passed that particular test.

Alarms can also be manually cleared by the ERMU's Clear BMT Results remote control.

(3) Calculating Lines To be Tested

COMNET is responsible for calculating whether or not a BMT type can be run on a particular FNN. These RUN TEST or NO TEST calculations are exercised by a COMNET process on all FNNs during Service Activation, Modification, Tempdisc, Softdisc or Disconnection. This new field is kept in the FNN database and cannot be read. By default each FNN will have this field set to NO TEST.

Only those COMNET processes listed above will set this field. Therefore if a FNN is added to the RIM via the NECTAS FNN Administration application (either locally or from NCI) this new field will NOT be written to even if the FNN is first received from the RIM then resent back to the RIM.

- ▶ If COMNET has set this new field to NO TEST for a particular BMT type (e.g. ADT) then when BMT runs it will not attempt to actually run the test and set the Result field to NOT APPLICABLE and the CAUSE field to NOT TESTED.
- ▶ IF COMNET sets this new field to RUN TEST, then when BMT runs it will attempt to run the test. The RESULT field can be set to either PASS, FAIL or UNKNOWN.

(4) Configuration

The ERMU holds all the necessary information for BMT. This information is received from NECTAS or COMNET and is used to automatically run a BMT session.

The configuration data is split between the ERMU Configuration tables and the FNN Administration Configuration tables. Both sets of tables are held within the ERMU in FLASH memory.

BMT is configured in the ERMU Equipment Configuration application. For further details, refer to Section 6.1.5.

(5) BMT Results

NECTAS is able to retrieve BMT results from the C-RIM. COMNET can also retrieve alarms and pass them through to NCI NECTAS. All alarms will be automatically sent to ALMA. The BMT Results table is not stored in COMNET's database.

The BMT Results Table keeps the results of BMTs on a FNN basis. This table is kept in volatile memory and can be read by NECTAS FNN Test, to retrieve the result information. The results table can also be reset, which sets all FAIL results to PASS.

The BMT Results table contains the following information for each FNN:

- ▶ The FNN
- ▶ Panel/Slot/Channel information for the RU
- ▶ The date and time that the test was run (or tried to run) on that FNN
- ▶ The Result field.
BMT results can have the following values for each BMT type:
 - PASS – the test passed last time it was run
 - FAIL – the test failed last time it was run
 - UNKNOWN – the test was not run on that FNN for some reason (eg. Line was busy, SULTAN test session opened) or has not been tested yet
 - N/A (NOT APPLICABLE) – COMNET has determined that this test is not valid to run on that FNN.
- ▶ The Cause field.
This field gives additional information on why the test FAILED, was UNKNOWN, or was N/A.

Upon ERMU start-up the results table is reset to the default values.

- ▶ The default RESULTS field is set to UNKNOWN
- ▶ The CAUSE field is set to NOT TESTED.
- ▶ The time and date stamp is derived directly from the ERMU real-time clock (RTC) and upon reset is set by default to 01/01/95 10:00.

(6) Test Initialisation

The ERMU considers three main things when initialising a BMT session:

- ▶ When to start testing
- ▶ The types of tests to run
- ▶ The lines to test.

Time Considerations

There are two different ways to start a BMT:

- ▶ By the ERMU Real Time Clock reaching the Start Time
The ERMU knows from the BMT Config Table the time of day to start the BMT. The ERMU will then start a BMT process when the RTC reaches this value. The RTC is synchronised by the heartbeat sent from COMNET and should be accurate to within a few seconds.
- ▶ By the NCI NECTAS operator requesting an immediate BMT
If the NCI NECTAS operator requests an immediate BMT then the ERMU starts the BMT process as if the Start Time had been reached on all lines with a Result of UNKNOWN or FAIL.

Determining the type of test for BMT to run

After the ERMU starts a BMT session, it then needs to decide which types of tests should be run on all applicable FNNs. This is done by checking a Frequency Timer for each type of test. This timer will determine whether that test type should be run that day on all applicable FNNs.

For the Surge Arrestor BMT in outdoor housings, in addition to the test frequency timer, a RETEST flag will be set in the PCMCC whenever the CCF door has been opened and closed between

one day's start time and the next day's start time (ie. someone has performed work on the RIM and possibly a surge arrestor has been removed or dislodged).

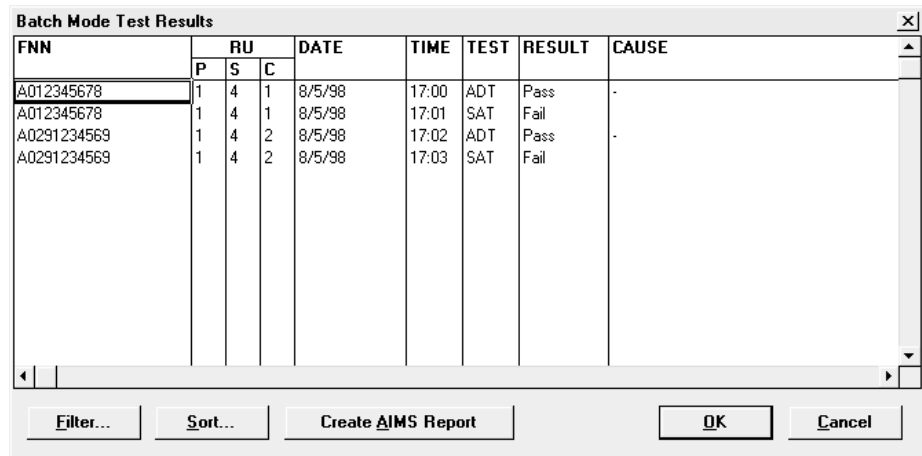
The ERMU will poll the PCMCC at the RU and the PCMCC will send a response back to the ERMU indicating that the CCF door has opened and re-closed since it was last asked by the ERMU.

If the CCF door has been opened and the Surge Arrestor Test frequency is not zero then the ERMU will set the frequency timer for the Surge Arrestor Test to 1 day. Thus the timer has effectively expired and therefore the Surge Arrestor BMT will be executed that day on all applicable FNNs.

Also any tests with a Result of FAIL or UNKNOWN will be tested regardless of the frequency timer values. Finally, if any of the above processes determine that a test should run, then the ERMU will check the BMT field (set by COMNET) in the FNN database to see if the test is applicable to the line under test. If this test is applicable a test will run else no test will run.

7.2.4 Receive Batch Mode Test Results

Selecting **Receive BMT Results** from the **File** menu receives the results from the ERMU and presents them on screen. Scroll bars can be used to view the data



The screenshot shows a window titled "Batch Mode Test Results" with a table of test data. The table has columns: FNN, P, RU (S, C), DATE, TIME, TEST, RESULT, and CAUSE. There are four rows of data. Below the table are buttons for "Filter...", "Sort...", "Create AIMS Report", "OK", and "Cancel".

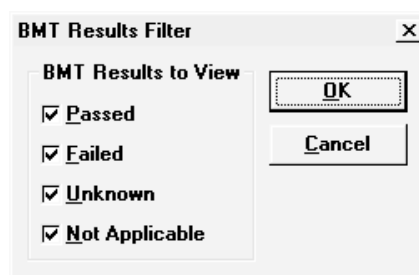
FNN	P	RU		DATE	TIME	TEST	RESULT	CAUSE
		S	C					
A012345678	1	4	1	8/5/98	17:00	ADT	Pass	-
A012345678	1	4	1	8/5/98	17:01	SAT	Fail	-
A0291234569	1	4	2	8/5/98	17:02	ADT	Pass	-
A0291234569	1	4	2	8/5/98	17:03	SAT	Fail	-

Figure 7–10 Batch Mode Test Results Window

There are five buttons in a row at the bottom of the screen:

- ▶ Filter
- ▶ Sort
- ▶ Create AIMS Report
- ▶ OK
- ▶ Cancel

(1) Filter



The screenshot shows a dialog box titled "BMT Results Filter". It has a section "BMT Results to View" with four checked checkboxes: "Passed", "Failed", "Unknown", and "Not Applicable". To the right of the checkboxes are "OK" and "Cancel" buttons.

Figure 7–11 BMT Results Filter

Clicking on the Filter button selects the categories of test results to be displayed.

The categories of test results are:

PASSED:

The test passed last time it was run

FAILED:

The test failed last time it was run

UNKNOWN:

The test was not run on that FNN for some reason (eg. Line was busy, SULTAN test session opened) or has not been tested yet

NOT APPLICABLE:

The test is not valid to run on that FNN because the test was not applicable for this line, as determined by COMNET.

A checkbox next to the name of each category is used to enable or disable test results in that category. More than one category can be enabled at a time.

(2) Sort

Clicking on the Sort button opens a window which is used to set the sort sequence for the display.

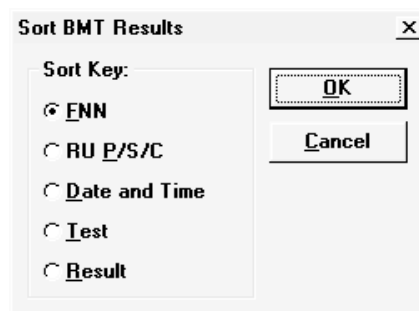


Figure 7–12 Sort BMT Results

The Sort BMT Results window contains five radio buttons which are used to set the sort sequence. Only one can be selected at a time. The available sort sequences are:

- ▶ **FNN**
Displays results sorted by ascending order of FNN.
- ▶ **RU Panel/Slot/Channel (RU P/S/C)**
Displays results sorted by ascending order of RU Panel, Slot and Channel. This sort key is very useful as the FNNs are sorted in RU Panel/Slot/Channel order from 1/1/1 to 8/9/10.

- ▶ Date and Time
Results are show sorted by date and time.
- ▶ Test
Results are sorted by the type of test (Automatic Dial Tone Test, then Surge Arrestor Test), then within each type of test are sorted by result. BMT always runs the Automatic Dial Tone tests first on a line, then the Surge Arrestor tests on that line. It will then test the next line.
- ▶ Result
Test results are displayed sorted by result. The sort is in the following sequence:
 - FAIL
 - NOT APPLICABLE
 - PASS
 - UNKNOWN

(3) Create AIMS Report

The Create AIMS Report button copies the data presented on the screen to the clipboard, allowing it to be pasted into a report. If there is too much data it will be copied to a text file which the user can access using an editor of their choice.

7.2.5 Using the FNN Test Application

(1) Opening a Test Session

The first step in using the FNN Test application is to open a Test Session by selecting **Open Session** from the **Test** menu. Once selected, the **Open Session** option will be greyed out from the menu (as illustrated in figure 7–9), and the following window will be displayed:

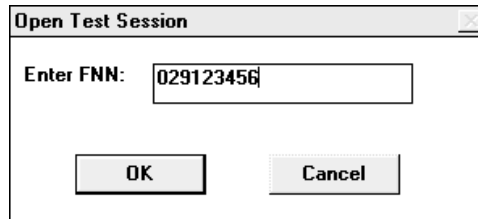


Figure 7–13 Open Test Session Box

Enter the FNN you require to be tested and click on **OK**.

Note *This must correspond to a valid FNN of the FNN database stored in the ERMU and contain the corresponding FNN prefix.*

When the FNN Test Session is opened, the ERMU requests information regarding the units present from both the EU and RU PCMCCs. The alarms for these units are then read from the ERMU.

A status box in the bottom right hand corner of the FNN Test window contains:

FNN being tested.

Line State: idle
 busy
 unknown
 (will result if the Channel Unit is unplugged or if it is an ISDN Unit)

Ring Back: the operator's telephone number used for testing.

(2) Checking Equipment Status

The ERMU will check the known alarms from the NEs to find if there are any equipment faults in either the EU or RU which will affect the selected FNN. Once a test session is opened, selecting **Equipment Status** from the **Test** menu item causes a message box to appear giving the operational status of the equipment. e.g.:

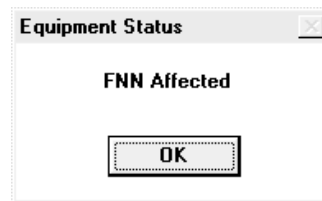


Figure 7–14 Status Report Box

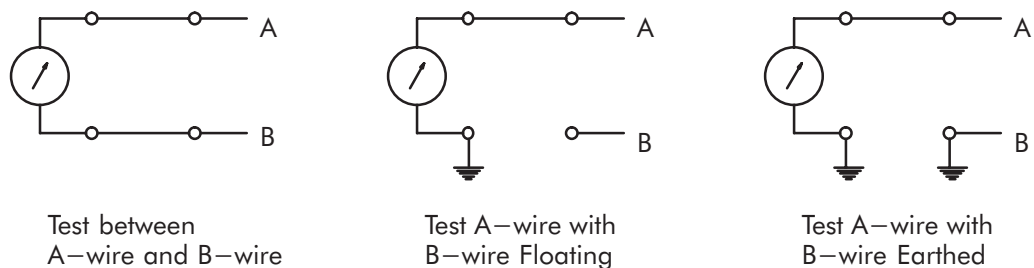
There are four possible Equipment Status messages:

- ▶ Equipment OK
- ▶ FNN Affected
- ▶ FNN possibly affected
- ▶ Unknown

The Equipment Status should be checked before proceeding to the “Run Test” menu item. If the Equipment Status returns any response other than “Equipment OK”, then FNN Testing may not operate or may return incorrect test results.

(3) Test Connections

The connections made between the (E)CTU and the line are as shown in the diagram below.



Note: The connections are reversed to test B-wire with A-wire floating or B-wire with A-wire Earthed.

Figure 7–15 FNN Test Connections

(4) Running a Test

Selecting **Run Test** from the **Test** menu will cause a list box to appear, containing a selection of tests:

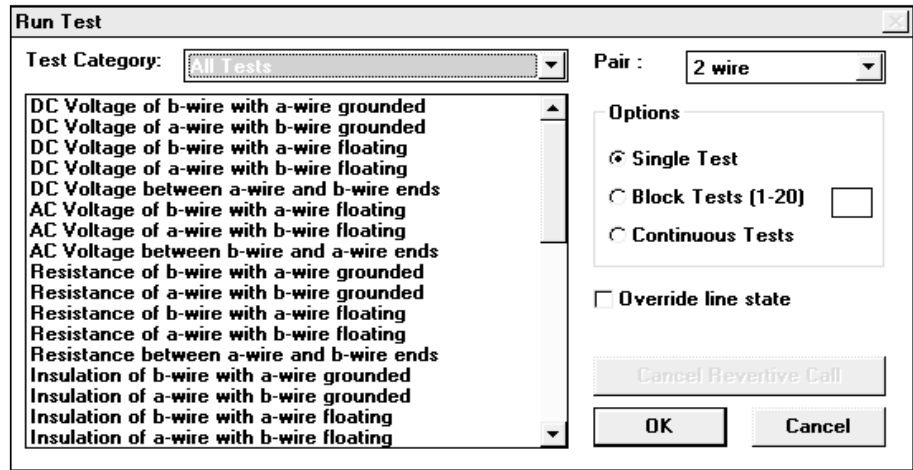


Figure 7–16 Run Test Box

Test Category

The Test Category is used to choose a category of tests to be displayed in the Run Test window. The categories are:

- ▶ All
- ▶ Line Test
- ▶ Speech Path Tests
- ▶ Service Assurance Tests
- ▶ System Enquiries

Pair

Four alternatives can be selected from the Pair pull–down list:

- ▶ 2 Wire
- ▶ 4 Wire Tx
- ▶ 4 Wire Rx
- ▶ 4 Wire E&M

2 Wire is normally selected. The other three modes are exclusive to units which use more than a single pair, such as the 4/6 Wire Unit and the DI–64KB–E&M Unit.

To test pairs connected to a 4/6 Wire Unit or a unit with an E&M pair:

- ▶ Select 4 Wire Tx to test the Tx pair
- ▶ Select 4 Wire Rx to test the Rx pair
- ▶ Select E&M to test the E&M pair.

Options

Three testing options are available:—

Single Test

This will run the selected test once.

Block Test (1 – 20)

The selected test will be run from one to twenty times depending on the number entered into the box beside the option.

Continuous Test

This runs the test repeatedly until cancelled by the operator.

Override Line State

Most tests will not continue if the customer's telephone is off-hook. By selecting the *Override Line Status* checkbox when FNN Test is started, the line state will be overridden.

This selection is in effect for a single test, and can be changed on a test by test basis.

Line Test	Single	Block	Contin	Results
DC Voltage of b–wire with a–wire grounded	Y	Y	Y	voltage
DC Voltage of a–wire with b–wire grounded	Y	Y	Y	voltage
DC Voltage of b–wire with a–wire floating	Y	Y	Y	voltage
DC Voltage of a–wire with b–wire floating	Y	Y	Y	voltage
DC Voltage between a–wire and b–wire ends	Y	Y	Y	voltage
AC Voltage of b–wire with a–wire floating	Y	Y	Y	voltage
AC Voltage of a–wire with b–wire floating	Y	Y	Y	voltage
AC Voltage between b–wire and a–wire ends	Y	Y	Y	voltage
Resistance of b–wire with a–wire grounded	Y	Y	Y	resist.
Resistance of a–wire with b–wire grounded	Y	Y	Y	resist.
Resistance of b–wire with a–wire floating	Y	Y	Y	resist.
Resistance of a–wire with b–wire floating	Y	Y	Y	resist.
Resistance between a–wire and b–wire ends	Y	Y	Y	resist.
Insulation of b–wire with a–wire grounded	Y	Y	Y	resist.
Insulation of a–wire with b–wire grounded	Y	Y	Y	resist.
Insulation of b–wire with a–wire floating	Y	Y	Y	resist.
Insulation of a–wire with b–wire floating	Y	Y	Y	resist.
Insulation between a–wire and b–wire ends	Y	Y	Y	resist.
Capacitance of b–wire with a–wire grounded	Y		Y	capacit.
Capacitance of a–wire with b–wire grounded	Y		Y	capacit.
Capacitance of b–wire with a–wire floating	Y		Y	capacit.
Capacitance of a–wire with b–wire floating	Y		Y	capacit.
Capacitance between b–wire and a–wire ends	Y		Y	capacit.
Low Scale Resistance of b–wire with a–wire grounded		Y (20)		voltage
Low Scale Resistance of a–wire with b–wire grounded		Y (20)		voltage
Package Test	Y			Note 1
Surge Arrestor Test	Y			

Speech Path Test	Single	Block	Contin	Results
Ring Back Telephone No.	Y			Note 2
Monitor a Busy Line	Y			Note 7
Ring and Speak to Customer	Y			Note 2
Ring Pulse	Y			Note 3
Decadic Dial Test	Y			Note 4
Tone Dial Test	Y			Note 5
Apply Howler	Y			Note 6
Automatic Dial Tone Test	Y			Note 8
Manual Dial Tone Test	Y			Note 8

Service Assurance Test	Single	Block	Contin	Results
Display ISDN PM Counters	Y			Note 9
Reset ISDN PM Counters	Y			Note 9
ISDN NT1 Loopback Test	Y			Note 9
ISDN NT1 Reset	Y			Note 9
ISDN Line Status	Y			Note 9

System Enquiries	Single	Block	Contin	Results
Identify (E)CTU Type and SW Version	Y			

Note 1: *The Package Test performs the following tests:*

- a) DC Voltage of b–wire, a–wire floating*
- b) DC Voltage of a–wire, b–wire floating*
- c) Resistance of b–wire, a–wire grounded*
- d) Resistance of a–wire, b–wire grounded*
- e) Capacitance of b–wire, a–wire grounded*
- f) Capacitance of a–wire, b–wire grounded*

Note 2: *This step is used to set up a revertive call between the customer and operator where a speech path is established.*

See the “Revertive Call” section on page 7–41 for more information.

Note 3: *The Ring Pulse test produces a single 800ms burst of ring on the customer’s phone. The operator is informed via a message box that the phone is ringing.*

Note 4: *The Decadic Dial test can be run without establishing a revertive call, but generally the revertive call will be established so the operator can ask the customer to dial certain digits. The operator selects the test, and then asks the customer to dial a number. The operator will observe the make and break times measured in milliseconds.*

Note 5: *The Tone Dial Test can similarly be run without establishing a revertive call. This test returns the digit pressed (i.e. 0–9, * or #).*

Note 6: *The howler test causes a howler on the customer’s phone if it is off hook. The output level slowly increases from –10dbm to +10dbm over a 20 second time period. The howler output consists of a sawtooth waveform whose frequency is swept from 1.5kHz to 3.2kHz every 0.5 sec. This provides for a penetrating signal. The howler can be stopped by the operator, or it will be stopped when the customer hangs up.*

Note 7: *The monitor test can only be run after a revertive call is established. The Ring Back Telephone No. test must be complete and then the operator selects the Monitor test. This will enable the operator to listen in on the customer’s line. No results are returned, except that the operator is informed that they are in monitor mode. This mode must be cancelled before proceeding with any other test.*

Note 8: C–RIM offers two types of dial tone test. Both use the Get Dial Tone and Break Dial Tone functions of the (E)CTU.

Automatic Dial Tone Test. The (E)CTU loops the line and attempts to detect dial tone (Get Dial Tone), then dials a digit and attempts to detect lack of dial tone (Break Dial Tone). The results are reported to the operator.

Manual Dial Tone Test. The operator sets up a revertive call with the Ring Back Telephone Number option in FNN Test, then initiates a Manual Dial Tone test. The (E)CTU loops the line, then the operator is asked to listen for dial tone and confirm if it is heard. A digit is then dialled, and the operator asked to listen for lack of dial tone. Finally, the operator cancels the revertive call.

Note 9: C–RIM offers the following ISDN tests:

Display ISDN PM Counters:

Displays elapsed time since last reset, and activated time plus the following statistics for both directions on the selected channel: Errored Seconds, Severely Errored Seconds, Degraded Minutes.

Reset ISDN PM Counters:

Resets the channel's counters for the above statistics.

ISDN NT1 Loopback Test:

Performs an integrity test by requesting a loopback by the NT1 and performing a checksum test on the line.

ISDN NT1 Reset:

Removes power from the ISDN interface for a short time to reset the NT1.

ISDN Line Status:

Displays line status – activated / deactivated / partially activated / activation fail on S or U interface / synchronisation loss on S or U interface.

(5) General Notes on Tests

- 1** There is an option to override line state before running a test so that, if the customer's phone is off-hook, the test may proceed. Otherwise, the test will not be allowed to run if the customer's phone is off-hook. The line state is continually displayed on the screen.

Note *Once a test has been run the line state will be continually overridden until Override Line State is cancelled. The customer will not be able to make calls during this time.*

- 2** Where the above tests are indicated as only running in either single/block/continuous mode, the CT automatically selects the correct mode for the test selected, so the user doesn't have to select the mode. In Block mode, the selected test will be run from 1–20 times depending on the number entered in the run test "Options" box.
- 3** All tests may be cancelled after they have been initiated. Continuous tests will keep running until they are cancelled.
- 4** Test results which are measurements (voltage, capacitance, resistance, make/break time) may be printed.
- 5** For ISDN Units, the line state returned is always unknown, hence the override option must be selected to run any tests.
- 6** Test sessions may not be run on reverse POTS or reverse UNIV services.

(6) Test Results

Once you have specified the test, click on **OK** and the test results dialog box, such as the one illustrated in figure 7–17, will appear:

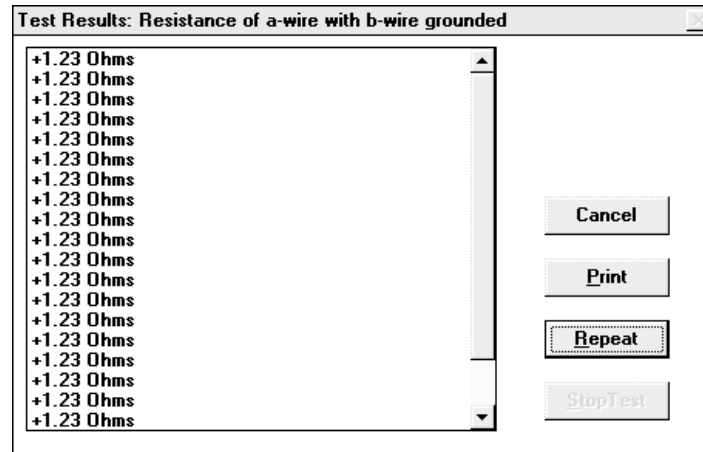


Figure 7–17 FNN Test Results

Messages are displayed showing the results of the test.

All the results are written to these boxes as they arrive. Any test can be stopped by selecting the **Stop Test** button. While the test is running, the **Print** button will be disabled, but once the test has stopped the results may be printed if desired. Similarly the **Repeat** button is enabled once the test has stopped to allow the test to be rerun.

To exit from the screen the **Cancel** button is pressed, however all results from that test are then lost and cannot be recovered.

Certain tests are complete at the following stages:

- 1** Ring Back – when the (E)CTU has completed its dialling
- 2** Monitor a Busy Line – when the test is stopped via the dialog box
- 3** Ring Pulse – when the pulse has rung
- 4** Apply Howler – when the customer hangs up their phone
- 5** Ring and Speak – when the customer answers, but the relays are still in Ring and Speak mode.

The Monitor test must be stopped before the operator can run another test. The Howler test must also be stopped if the customer does not hang up.

(7) Test Details**Monitor a Busy Line / Ring and Speak**

If a revertive call has not been established 'Monitor a Busy Line' and 'Ring and Speak' tests will not function. 'Ring Back Telephone No.' must be run first to establish a revertive call.

Decadic and Tone Dial

'Decadic Dial' and 'Tone Dial' tests warn the operator if a revertive call is not established, and give the option of continuing without a revertive call, or cancelling the test so that the 'Ring Back Telephone No.' test can be done first.

Ring Back

'Ring Back' prompts the operator for the telephone number of the phone at the operator's end which will be used in testing.

(8) Interpretation of Tests

Test	Measuring Range of (E)CTU	Comments
DC Voltage (Foreign Battery)	+200Vdc to –200Vdc ±2% of reading + 2 digits	A good result is around 0V as no foreign battery should be present on customer line
AC Voltage (Noise Test)	0 to 200Vrms ±3% of reading + 2 digits	A good result is around 0V indicating minimal noise on line
Resistance	0 to 9.99MΩ ±5% of reading + the greater of 10Ω or 2 digits	A good result to ground would be very high. Measurement is done using a low voltage source (20V)
Insulation	100K to 9.99MΩ ±5% of reading + 2 digits	Gives a resistance measurement using a high voltage source (185Vdc), hence will indicate any breakdown problems on the line that may not appear using Resistance test. Again a good result is very high.
Capacitance	0 to 0.99μF ±5% of reading + 1 digit	May be used to determine the capacitance of the line (typically 45nF/km) or how many phones attached (typically 1.5μF per phone.)
Low Scale Resistance (Line Charge)	0 to 48Vdc ±5% of reading + 100mV	Used to determine the capacitance (e.g. phone) across the line. The line charge characteristics are determined by performing a block test (reading every 50ms) while the line is charged through a 200K resistor, resulting in a voltage profile

(9) Polling

During the test session the CT will continually poll the ERMU for line status and test result information. The ERMU has a timeout for communications failure at the application layer. If the ERMU does not detect polls from System Terminal within the timeout period then the ERMU will close the current test session.

This poll is relayed to the PCMCC. If the PCMCC does not receive a poll from the ERMU within its timeout period it will timeout.

When a test session is opened by the ERMU, the PCMCC will start independently polling the (E)CTU every 0.5s and PCMCX every 5s for test results and line status.

If the (E)CTU does not receive a Test_Poll within a timeout period it will cancel any test that it is currently running and return to idle state. This timeout period is 60s.

(10) Revertive Call

Setting up a revertive call establishes a speech path between the operator and the customer via the (E)CTU.

To set up a revertive call the following steps must be taken:

- 1** Connect the (E)CTU to a two wire channel unit (via a front access Burndy connector) so that the (E)CTU can dial out over the PSTN to a given telephone number.
- 2** Run the Ring Back Telephone Number Test. This will require you to enter the telephone number of the operator's phone. The (E)CTU dials this number using either decadic or DTMF dialling depending on the configuration, i.e. the (E)CTU is acting like a phone.
- 3** The operator's phone will ring, so the operator should pick it up.
- 4** Then run the Ring and Speak to Customer test. The (E)CTU will then ring the customer's phone, and the customer hopefully will answer. This will provide a speech path between customer and operator.
- 5** Once a revertive call is established, measurement tests may be run, which will temporarily cause the speech path to disappear, but once the test is complete the speech path will be restored.

7.2.6 FNN Test Error Messages

FNN Test error messages are detailed in Appendix D

7.3 Test Procedures

The following flowcharts detail the operations required to perform a subscriber test and perform reverive call testing.

7.3.1 Performing a Subscriber Test

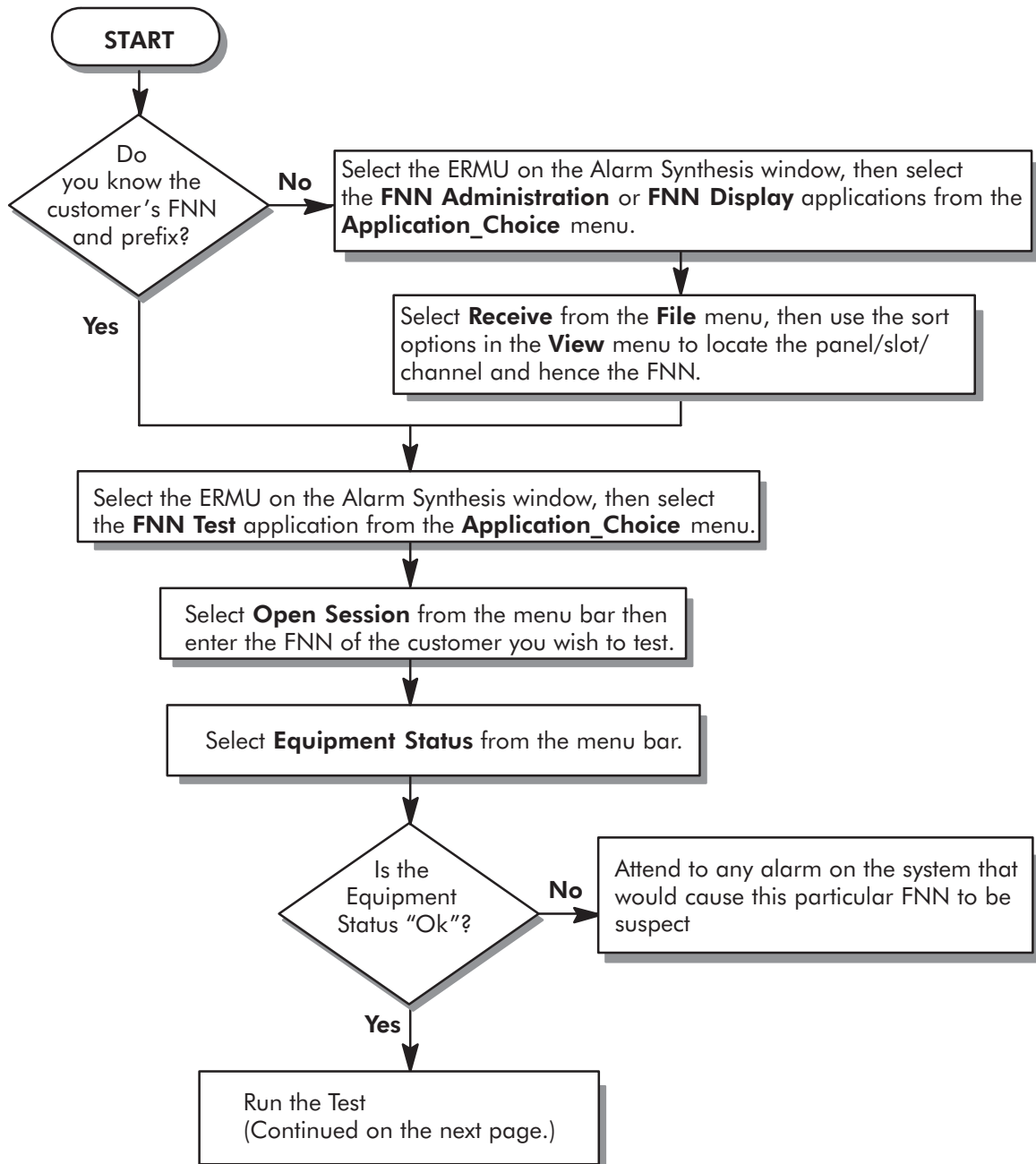


Figure 7–18 Performing a Subscriber Test

7.3.2 Running a Test

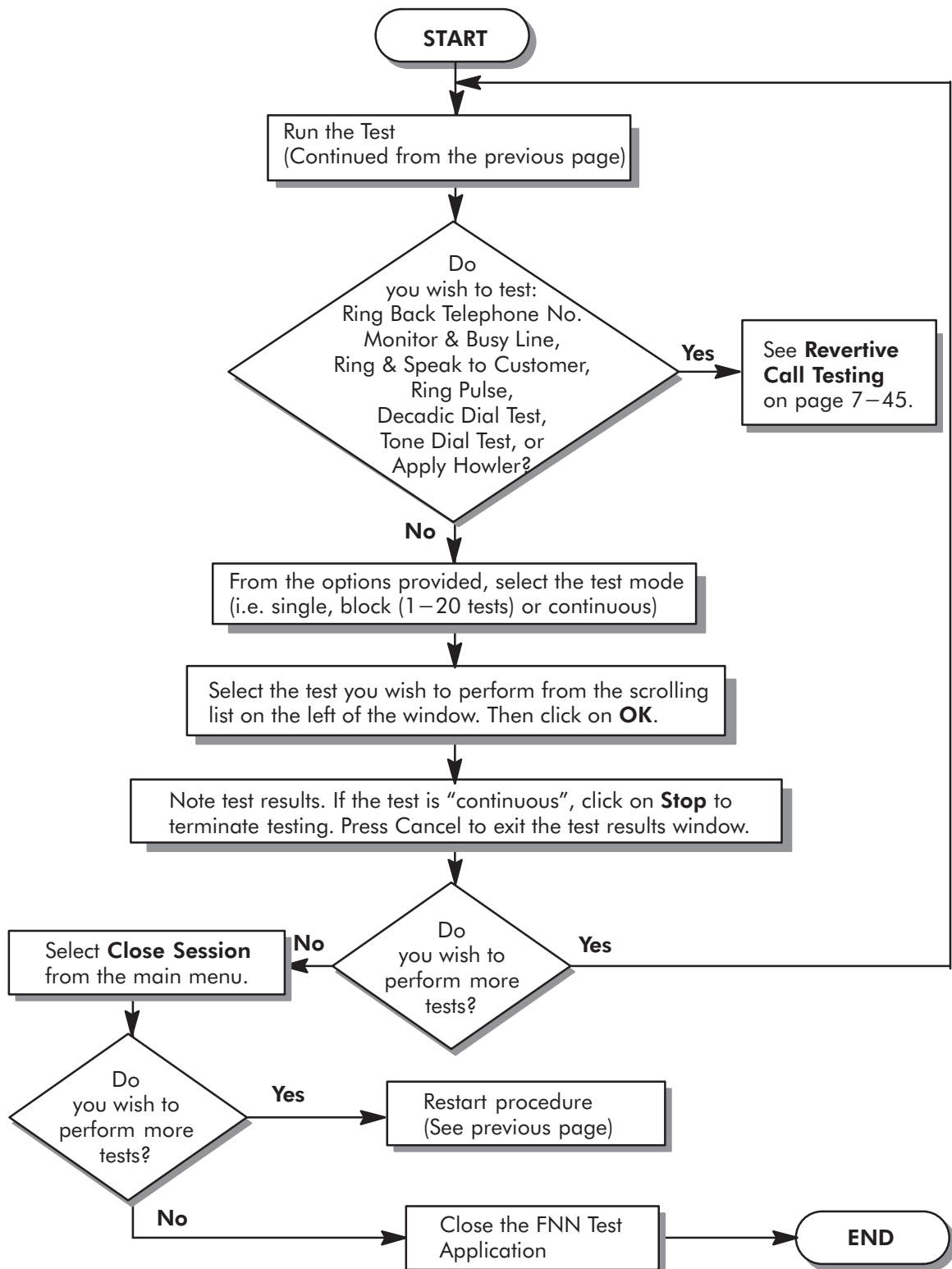


Figure 7–19 Running a Subscriber Line Test

7.3.3 Revertive Call Testing

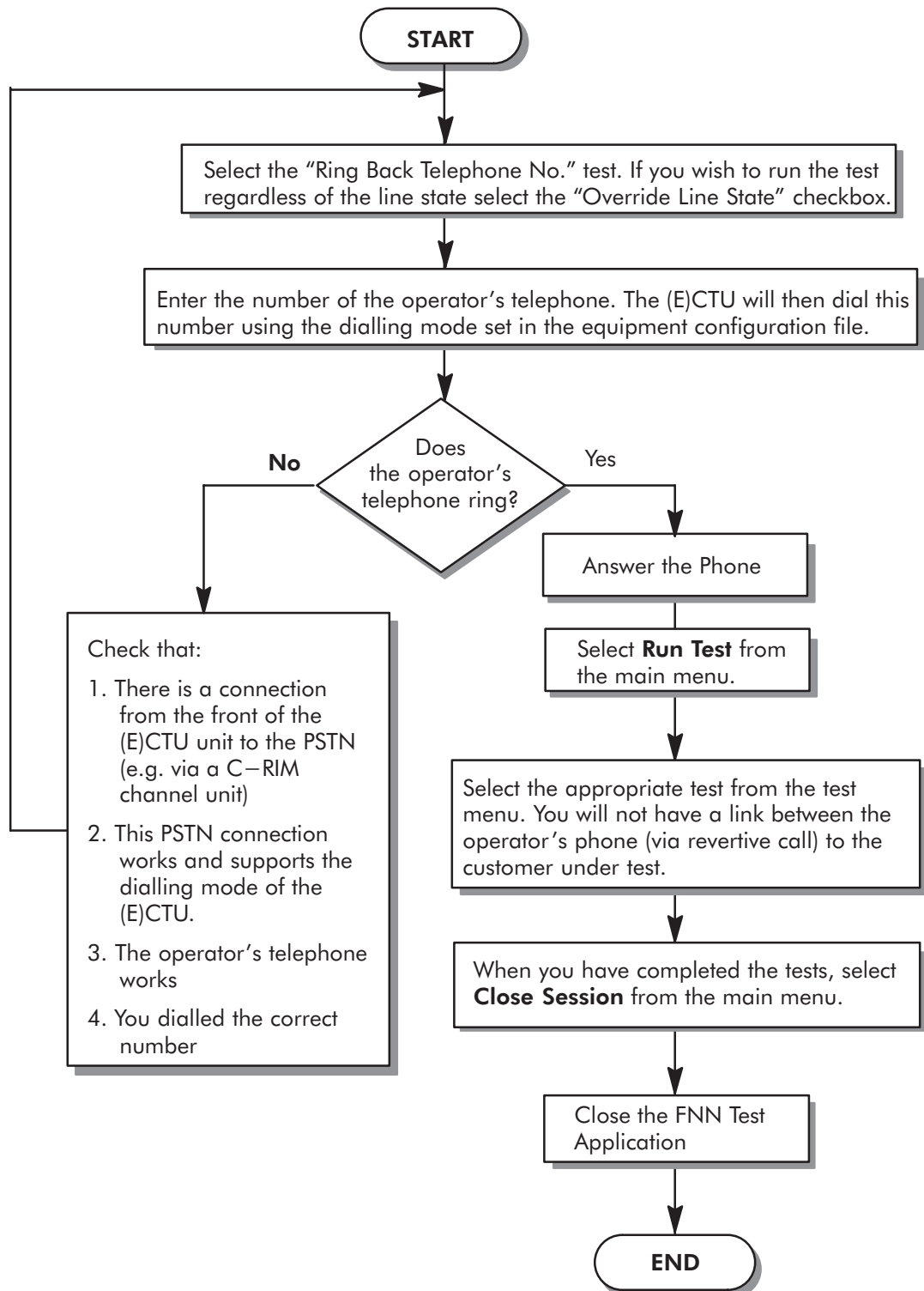


Figure 7–20 Revertive Call Testing

8 Alarms, Status and Remote Controls

The **Alarms, Status and Remote Controls** (AS&C) application provides the operator with information regarding the current status of the local C–RIM equipment and also provides an instantaneous control facility.

The main alarm windows are accessed by selecting the **Alarms, Status and Remote Controls** application from the **Application_Choice** menu of the **Alarm Synthesis** window. The first window of this application shows a graphic representation of the panels installed, and gives a general overview of the alarm status of the C–RIM.

The PCMCC is continually polling and monitoring the equipment and detects any appearance or disappearance of alarms and status. These are stored in the PCMCC and are available to the operator. The alarm information is grouped on a unit basis and is presented to the operator in blocks of information called “articles”.

The alarm stores are maintained in RAM and are reset when a restart or loss of configuration occurs.

8.1 Using the AS&C Application

In order to get detailed information on any alarm on the C–RIM, the Alarms, Status and Remote Controls Application is used. This application is accessed by:

- ▶ Selecting the Management Unit, Exchange Unit or Remote Unit from the Alarm Synthesis screen
- ▶ Opening the **Application_Choice** menu
- ▶ Selecting Alarms, Status and Remote Controls

The **Application_Choice** menu is illustrated below.

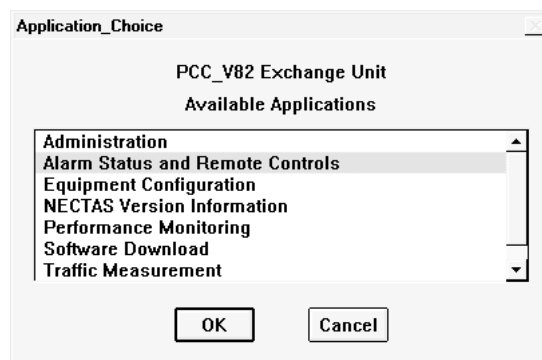


Figure 8–1 Application Choice Menu

The **Alarms, Status and Remote Controls** application allows:

- ▶ displays the alarm and status
- ▶ displays or prints the alarm and status history
- ▶ initiate remote control actions

The AS&C application regularly polls the equipment for:

- ▶ alarms/alarm clearing
- ▶ entity status changes
- ▶ answers to the remote controls sent to the C–RIM by the CRAFT Terminal.

Once the AS&C application has been opened, a top level window is displayed showing a functional view of the C–RIM system. As the mouse pointer is moved around the window, the pointer changes from an arrow, to a help pointer or a magnifying glass.

This window shows:

- ▶ The General Alarm Status of the C–RIM
- ▶ The physical structure of the C–RIM with the equipped cards

8.1.1 Alarm Severity Classification

Note that an alarm severity classification for most alarms may be user-defined through the alarm mask tables in the Equipment Configuration application.

Further details on configuration of alarm masks is given in Section 5.6 – *Alarm Masks Configuration*.

8.2 First Level AS&C Window

The first level window of the AS&C application displays the first level of alarm information. It may be broken into three main areas:

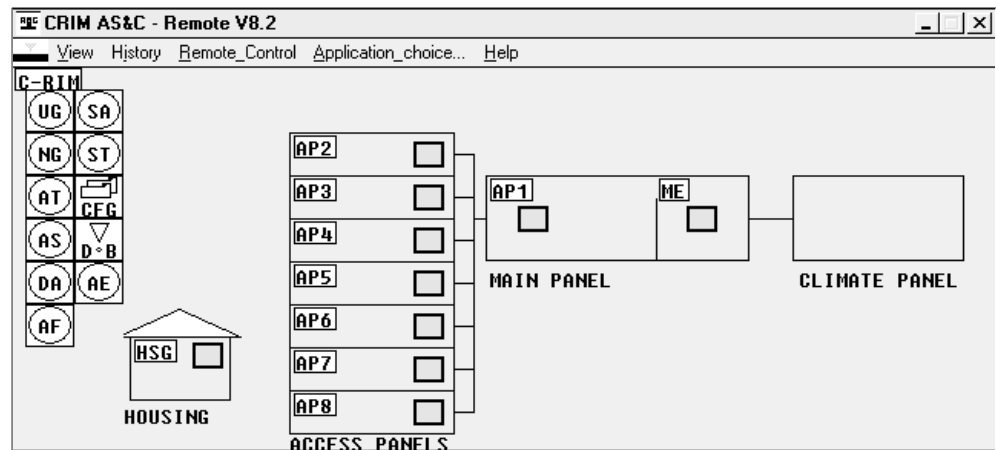
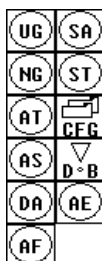


Figure 8–2 AS&C – First Level Window

- ▶ **Alarm Synthesis Block**
 - Shows a summary of the Alarm status of the C–RIM
- ▶ **Housing Block**
 - Shows a summary of the housing alarms, including external Ring/Meter and External Alarm Input.
- ▶ **Panels Block**
 - Illustrates each panel in the C–RIM System. Unit specific alarms are reached by zooming on the panel section of the main alarm window

8.2.1 Alarm Synthesis Block



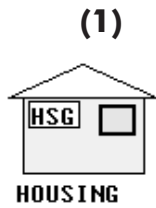
The **Synthesis Block** displays the general alarm status of the C–RIM (pictured left). This block remains for all levels of the alarm windows.

The alarm indicators in the Alarm Synthesis Block of the AS&C application are described in the following table.

Symbol	Definition	Notes
	Urgent Alarm	Urgent alarm requiring prompt attention.
	Non-urgent Alarm	Alarm not requiring urgent attention.
	Attended Alarm	Alarm acknowledged by an 'Alarm Stop', indicating that it is been attended to or the bell has been "Cut off" on the CRAFT Terminal.
	Alarm Stop	Audible alarm switched off
	Disabled Alarms to COMNET	Spontaneous reporting of alarms from the C-RIM to COMNET has been disabled
	Alarm Filtering	Fleeting Alarms are latched. (i.e. Optimisation of Alarm Events)
	Service Affecting	Service affected, confirms the urgent, non-urgent or no action alarms.
	Status	This indicates that a send / receive of the configuration tables is in progress. Some applications cannot be accessed while this alarm is active. IMPORTANT: <i>The PCMCC Unit or the Main Panel must NOT be powered down if ST is on or the whole configuration may be lost.</i>
	Configuration Tables are locked	The tables cannot be accessed because the configuration is currently being accessed.
	Database Error on configuration change	Some portion of the configuration data that has just been sent is rejected. An Audit must be performed to determine what has been rejected.
	Access Enabled	Read and Write access to the C-RIM from a local CRAFT terminal has been enabled. When this indicator is off, SWD, FNN DB Download, CFG DB Download or Administration Download must be through COMNET, and cannot be done locally through the CRAFT Terminal.

Any alarm that occurs on the C-RIM will be indicated in the Alarm Synthesis Block in one of the alarm tiles.

The Housing and Panels Blocks of the window (described below) show more specific information about the alarm. Refer to section 8.2.4 for the meanings of the various alarm indications in the Housing and Panel Blocks.



Housing Block

The Housing Block on the main AS&C window (see left) gives a summary of all the alarms relating to the C-RIM cabinet. It also summarises external alarm and ring/meter details.

More detailed information may be obtained by “zooming” into the next level of alarm window (see *Zooming Alarm Detail Windows* below for details).

(2)

Panels Block

The Panels Block on the main AS&C window gives a summary of the alarms for all units and panels and is used to access detailed alarm information about individual cards. Specific panel and card information may be obtained by “zooming” into the next level of alarm window (see section below for details). The Panels Block of the AS&C Window is illustrated below.

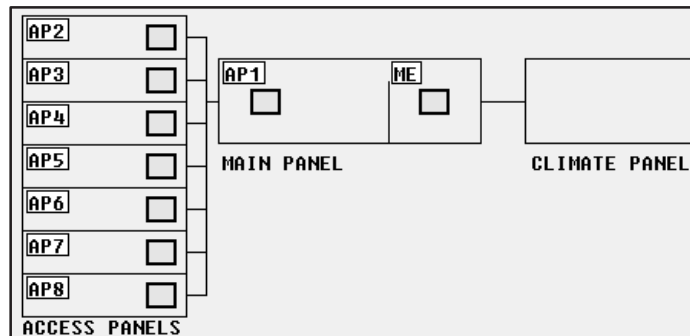


Figure 8–3 AS&C Panels Block

8.2.2 Zooming Alarm Detail Windows



A facility is provided in the AS&C application to quickly zoom to the next level of alarm detail. The View menu can also be used to zoom.

If there is additional alarm information on an alarm box, when the cursor is moved over it, it will become a magnifying glass. Clicking on the left mouse button when the cursor is a magnifying glass (see figure left) will take you to the next level of alarm detail.

If you have zoomed in on a fault, such as opening an Access Panel that is reporting a fault, the unit reporting the fault will display an alarm indication.

To zoom back to the level above the current unit, press **<ESC>** or the Right Mouse Button. If the current window is the Main AS&C window it will be minimised.

8.2.3 Getting Information on Alarm Indicators



A help feature is available to get information on alarm indication boxes. In order to find the meaning of an alarm indicator, move the cursor over the area until the cursor becomes a hand pointer as illustrated left.

After you select an alarm indicator, a dialog box such as the following appears.



Figure 8–4 Information Window in AS&C

8.2.4 Alarm Indication Colours

As with the Alarm Indication Window, if an alarm is received, the alarm indication box will change colour according to the following table:

Alarm	Colour Monitor	Monochrome Monitor
URGENT	RED with WHITE cross	BLACK with WHITE cross
NON-URGENT	YELLOW with BLACK cross	GREY with WHITE cross
STATUS	MAGENTA with status	LETTERS indicating status
NO ACTION	MAGENTA with BLACK cross	GREY with BLACK cross
NONE	No Change or Green	No Change

8.3 AS&C Menus

8.3.1 The View Menu

At any point, the View Menu will contain all the available alarm window destinations. To jump to a particular alarm detail window, select it from the **View** menu.

8.3.2 The History Menu

The History menu is used to display or print Alarm History information, including fleeting alarms. It is similar to the Alarm Synthesis History Menu described on page 3–27 in *Chapter 3 – Getting Started*.

Note

- 1** The System Terminal **MUST** be connected to the equipment for logging alarms in real time and storing them to the hard disk.
- 2** To log all alarms on a C–RIM system, AS&C must be running on the ERMU and the EU and RU PCMCCs.
- 3** AS&C may be iconised and still log the alarm history – to iconise, click on the down arrow in the top–right hand corner of the window (the minimise button). The application becomes an icon.

(1) Alarm History Files

Alarm History files for Alarm Synthesis and AS&C for the ERMU, EU and RU are stored as shown below:

- 1** For ECT (Equipment CRAFT Terminal – connected to PCMCC).

Synthesis history files (In C:\NECTAS\PCC_V82 directory or C:\Program Files\NECTAS\PCC_V82 directory)

SY_MEMO1.0

SY_MEMO2.0

AS&C history files (In C:\NECTAS\PCC_V82 directory or C:\Program Files\NECTAS\PCC_V82 directory)

AL_MEMO1.0

AL_MEMO2.0

2 For OCT (Office CRAFT Terminal – connected via ERMU)

Synthesis history files (in C:\NECTAS or
C:\Program Files\NECTAS directory)

SY_MEMO1.0 (ERMU)

SY_MEMO1.32 (EU)

SY_MEMO1.33 (RU)

SY_MEMO2.0 (ERMU)

SY_MEMO2.32 (EU)

SY_MEMO2.33 (RU)

AS&C history files (in C:\NECTAS\ERMU_V82 or
C:\Program Files\NECTAS\ERMU_V82 directory)

AL_MEMO1.0 (ERMU)

AL_MEMO1.32 (EU)

AL_MEMO1.33 (RU)

AL_MEMO2.0 (ERMU)

AL_MEMO2.32 (EU)

AL_MEMO2.33 (RU)

When NECTAS is initially run these history files are created and are empty.

The alarms are saved in the AL_MEMO1.x and SY_MEMO1.x files (3000 events).

When these xxxxxx1.* files are full (in 33Kbytes), the alarms are saved in the xxxxxx2.* files. When the xxxxxx2.* files are also full, the alarms are saved in the xxxxxx1.* files again and the old alarms are deleted.

If the history files are present when NECTAS is run, the alarms are appended in the most recent file.

- Note** [1] *These files contain binary data and MUST NOT be changed by the operator. The operator can only print the Alarm History from the NECTAS application.*
- [2] *The transportation of history files from one CT to another is not recommended.*
- [3] *Connecting to a different C–RIM will still append new alarms to the previous, most recent history file. Thus, care should be taken when viewing alarm history information.*

8.3.3 Remote_Controls

Remote Controls are accessed from the **Remote_Controls** menu in the AS&C Application and send control information to the PCMCC. Remote control information is grouped by unit type.

ERMU

Remote Control	Unit
Activate E-Lead 1–4	ERMU
Deactivate E-Lead 1–4	ERMU
Clear BMT Results	ERMU
Start Immediate BMT	ERMU

EU and RU

Remote Control	Unit
Activate Internal loop	PCMCX and PCMCC
Deactivate Internal loop	PCMCX and PCMCC
Activate External loop	PCMCX and PCMCC
Deactivate External loop	PCMCX and PCMCC
Initiate 2 Hour Battery Test	FAB (RU Only)
Initiate 2 Minute Battery Test	FAB (RU Only)
Clear Battery Test	FAB (RU Only)
Train Channels 1–10	POTS
Save Channels 1–10 to buffer	POTS
Copy buffer to Channels 1–10	POTS
Use Default Channels 1–10	POTS
Train Channels 1–6	UNIV
Save Channels 1–6 to buffer	UNIV
Copy buffer to Channels 1–6	UNIV
Use Default Channels 1–6	UNIV



Figure 8–5 Typical Indication of Remote Control Completion

(1) Activate/Deactivate E–Lead

The ERMU has four E–Lead connections. When an E–lead is activated it applies an earth to an external circuit.

Individual Activate and Deactivate Remote Controls are provided for each ERMU E–Lead to activate or deactivate individual E–Leads independently of the other E–Leads.

(2) Batch Mode Testing

The Batch Mode Testing (BMT) Remote Controls available from the ERMU AS&C window are:

- ▶ Clear BMT Results – BMT Control
This control changes all Batch Mode Testing (BMT) results that are currently FAIL to PASS in the ERMU's buffer. It also clears (i.e. turns off) all BMT alarms that are in the AS&C window.
- ▶ Start Immediate BMT – BMT Control
This control starts Batch Mode Testing immediately on all FNNs which have a BMT result that is currently UNKNOWN or FAIL.

(3) G.703 Loopback

Two kinds of G.703 loopbacks can be used on the PCMCX for fault localisation. These loopback tests have to be executed by operator command as they will disrupt the traffic.

1 Internal Loopback of G.703 signal

Internal Loopback isolates the EU or the RU for testing. i.e.: Channel Unit <—> AC. AIS is transmitted on the outgoing G.703 in either case.

The internal loopback is activated by sending an IPL command to the microcontroller on the PCMCX, so that it drives an AIS and loopback circuit.

Alarms on AS&C: AC – INT Loopback will have an "L"

2 Remote Loopback of G.703 signal (external loopback)

The PCMCX loops the incoming digital receive signal to the transmit line. It is up to the remote side to inject and detect the test pattern. The test pattern will go through the local PCMCXs' G.703 input circuit, and then G.703 output circuit.

Alarms on AS&C: AC – EXT Loopback will have an "L"

External loopback can be used to verify the integrity of the G.703 link. An External loopback at the EU can be used to check operation of RU equipment and EU equipment up to the relevant AC.

Similarly, External loopback at the RU can be used to check EU equipment and RU equipment up to the relevant Access Controller (AC).

- Note** ^[1] *The results obtained by using these loopback tests can be obtained by using the Performance Monitoring Application and AS&C Application in a way that is NOT service affecting to the customer. PM is used to monitor the integrity of the G.703 link between EU and RU ACs. Correct understanding of AS&C alarms gives fault localisation to unit level.*
- ^[2] *A G.703 loopback (internal or external) is not supported on the PCMCC as failure of the OA&M channel would result.*

(4) Battery Test

Three types of battery test remote controls are available for Customer Premises Racks and 2G Remote Housings fitted with a FABD.

- ▶ **Initiate 2 Hour Battery Test**
Selecting the Long Battery Test causes the Remote Unit to transfer to battery supply for two hours. Battery voltage is monitored. If battery voltage under load falls below a threshold a Battery Test Fail alarm is raised.
- ▶ **Initiate 2 Minute Battery Test**
Selecting the Short Battery Test causes the Remote Unit to switch to battery supply for two minutes. If battery voltage under load is below threshold (due to missing or flat battery) the test is terminated, the battery is considered to have failed, and a Battery Test Fail alarm is raised.

- ▶ Clear Battery Test
After rectifying a battery defect, a Battery Test Fail alarm is cleared via the Clear Battery Test Remote Control.

(5) Hybrid Balancing

Hybrid balancing is used to modify the filtering on POTS and UNIV units to minimise echo. It is provided on a per channel basis.

Why is trans–hybrid balancing required?

Trans–hybrid balancing is required to cancel that portion of the receive signal that travels across the hybrid into the transmit path in order to minimise echo.

The adaptive mode uses some pre–programmed coefficients and generates new ones using an algorithm which, by a series of iterations, minimises the receive signal that is echoed in the transmit signal.

Adaptive balancing (hybrid training) can be performed to obtain the optimum echo cancellation for a particular channel – customer combination.

What happens when a channel is trained?

Training a channel normally occurs when a line is brought into service. The algorithm is switched on and is allowed to converge with the received signal, which is a band limited white noise signal generated and switched in by the PCMCX or PCMCC.

The noise signal needs to be injected for less than a second to yield convergent coefficients.

Hybrid Training Remote Control Options

The following commands can be selected:

- ▶ Train Channel (POTS 1–10 / UNIV 1–6)
- ▶ Save Channel to Buffer (POTS 1–10 / UNIV 1–6)
- ▶ Copy Buffer to channel (POTS 1–10 / UNIV 1–6)
- ▶ Use Default Channel (POTS 1–10 / UNIV 1–6)

Train Channel (POTS 1–10 / UNIV 1–6)

When a channel no. is selected for training, another selection window appears which allows the operator to choose the appropriate AP number and Channel Unit number.

Note *The customer line must be looped (off–hook) to allow training to occur successfully.*

- *For telephones, the mouthpiece should be covered to reduce background noise.*
- *Fax machines must be off–hook and silent (i.e. not sending or receiving data) during hybrid training.*
- *Modems must be configured to be off–hook and silent during hybrid training.*

The procedure for modems is:

- *Using a terminal application such as the Windows Terminal program, send the off–hook command (ATH1) to the modem.*
- *Train the channel.*
- *Using the terminal application, send the on–hook command (ATH0) to the modem.*

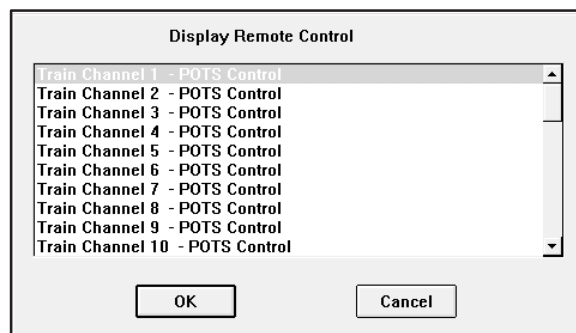


Figure 8–6 Channel Training Selection Window

When Channel, Panel and Slot have been selected, click on **<OK>**. The following events occur:

- ▶ The PCMCC
 - Initiates hybrid training for its own channels, or
 - Sends a message to PCMCXs to start Hybrid Training.

► This causes:

- the white noise source on the PCMCC/PCMCX to be switched to the appropriate timeslot of the channel to be trained.
- training to be done on the POTS or UNIV Unit and channel coefficients to be stored in the PCMCC/PCMCX working database.
- the non–default field is set and sent as an alarm to PCMCC/PCMCX alarm handler task.
- the coefficient change is reported to the PCMCC.

Save Channel to Buffer (POTS 1–10 / UNIV 1–6)

The PCMCX/PCMCC has a default coefficient database (in FEPRM) and a hybrid database (RAM). When a channel has been trained, the new coefficients are read from the POTS or UNIV Unit and placed in the hybrid database.

When the SAVE command is selected (presumably for a channel that has just been trained) a copy of the coefficients are taken from the Hybrid database and placed in a temporary Buffer on the PCMCC/PCMCX.

Copy Buffer to Channel (POTS 1–10 / UNIV 1–6)

When the copy command is selected, the coefficients that are in the temporary buffer are copied to the Hybrid database for the selected channels. The channel units are updated as is the PCMCC hybrid database (NVM)

If the PCMCX is reset, the PCMCC will re–configure the PCMCX and send the hybrid database. The PCMCX knows whether to use the default or hybrid database by the configuration information sent by the PCMCC.

The SAVE and COPY commands enable an operator to quickly optimise a set of channels using the trained coefficients of one channel. This avoids having every subscriber in an area go off–hook while their channel is trained.

Use Default Channel (POTS 1 – 10 / UNIV 1 – 6)

The PCMCC/PCMCX will use its default coefficient database for the channels selected.

Replacing/Resetting POTS / UNIV Units

Resetting a POTS or UNIV channel Unit will not default trained channels. The PCMCC or PCMCX will reconfigure the trained channels with the previously trained coefficients.

Replacing a POTS or UNIV channel Unit will not default trained channels unless the new channel unit exhibits different line characteristics. This generally corresponds to the new unit being a different variant to the replaced unit, such as replacing a UNIV RU AAAA variant with a BAAA variant.

8.3.4 Exiting the AS&C Application

To close the AS&C application, click on the bar in the top–left hand corner of the AS&C window (the control box) and then select 'Close' from the option list or press **<Alt> <F4>**.

8.4 V5.2(–) Interface and ICC Alarms

This section provides a detailed description of the meaning and causes of the V5 Interface alarms which can be raised by the ICC in a Release 8.2 C–RIM. Section describes the ICC alarm screens and lists the alarms that may be raised.

8.4.1 V5 Interface

There are three different layers in a V5 interface and each layer must be established successfully before the next layer can start up. Different messages between the C–RIM and the Exchange are associated with each layer.

(1) Layer 1 (Physical Layer)

Layer 1 (also called the Physical Layer) is the physical G.703 bearer between C–RIM and exchange. The bearer presence and performance is reported with alarms on the CMX such as RX Loss, Sync Loss, ERR, Remote alarm etc.

(2) Layer 2 (Data Link Layer)

Once the Physical Layer is operating correctly, Layer 2 (also called the Data Link Layer) can begin. The function of layer 2 is to establish the necessary data links between the C–RIM and the Exchange. There are three different protocols used in V5.2(–) to communicate between the C–RIM and the Exchange. Each of the protocols uses a separate Data Link Layer to send messages, so there are three separate Data Link Layers which must be established:

- ▶ Control Data Link
- ▶ BCC Data Link
- ▶ PSTN Data Link.

The function of each of the protocols is part of layer 3.

(3) Layer 3 (Network Layer)

Once the Data Link Layer has been established, Layer 3 (also called the Network Layer), can begin. The purpose of layer 3 is to convey information about the user ports (each customer is connected to their own user port). The information is carried by three protocols, described below.

Control Protocol

The **Control** Protocol can be divided into 2 functional areas, port control and common control. Common control functions include verification of V5 interface ID and V5 interface startup procedure. Port control functions include the blocking and unblocking of user ports.

Bearer Channel Connection Protocol

The **BCC** (Bearer Channel Connection) protocol is used by the exchange for dynamically allocating user port bearer channels to time slots on the V5.2 interface. The C–RIM uses the information in the BCC message to perform cross connects from the user port to the timeslot requested by the exchange. When a call is finished the exchange uses the BCC protocol to deallocate the user port bearer channel.

PSTN Protocol

The **PSTN** protocol is used to carry messages concerned with analogue line signalling events. The types of messages include: on hook, off hook, numbers dialled and metering pulses.

(4) Restarting V5 Interface

The following sections describe the various V5 alarms that may be raised. The descriptions of some of the alarms indicate if it may be necessary to restart the V5 interface to clear the alarm. If this is required it can be done by either of the methods below:

- ▶ Break the bearer connection to the C–RIM for 120 seconds.
- ▶ Block and unblock the DIPs at the exchange.

8.4.2 Alarm Descriptions

Most of the V5 Interface alarms, which appear on the ICC, indicate that there is a problem with communication between the C–RIM and the exchange in either layer 2 or layer 3.

The alarms are listed below, along with an explanation of possible causes of the alarm. Suggested methods for clearing the alarms are also given.

The alarms are divided into two sections: layer 2 and layer 3. The heading for each alarm is given as it appears in the C–RIM Release 8.2 NECTAS handbook, with the name as it appears in AS&C given in brackets.

(1) Layer 2 Alarms

All layer 2 alarms indicate a failure to establish one of the V5 protocols.

Control Data Link Fail (CTRL DL FAL)

This alarm indicates that the Control protocol has not successfully started up. This is the first protocol which starts when the V5 link is activated so this alarm implies that the link has not started up at all. A way to try clearing this alarm is to restart the V5 interface, as described on page 8–18.

BCC Data Link Fail (BCC DL FAL)

Once the Control protocol has started up the C–RIM and the Exchange attempt to start up the BCC protocol. If the Exchange does not respond to the C–RIMs attempt to start up the BCC protocol then the BCC Data Link Fail will appear. A method to try to clear this alarm is to restart the V5 interface, as described in i) and ii) above.

PSTN Data Link Fail (PSTN DL FAL)

Similar to BCC Data Link Fail, except that this alarm refers to the PSTN protocol not successfully starting up. The same methods given in BCC Data Link Fail can be used to try to clear the alarm. Also, if the exchange has no user ports configured, it may not attempt to start up the PSTN data link, and this alarm will appear. The way to clear the alarm in this case is to put a dummy user port in the exchange configuration.

(2) Layer 3 Alarms**V5 ID Fail (V5 ID FAIL)**

The first layer 3 messages sent between the C–RIM and the exchange involve the request for V5 variant and interface ID. In C–RIM release 8.2 the variant is always set to 0. The V5 Interface ID is set for each V5 interface configuration. Also note that the V5 Interface ID corresponds to the box in the channel card configuration, labelled V5 Interface.

If the C–RIM does not receive the correct IDs back from the exchange then the alarm raised is V5 ID Fail. As this is a common control message, it is also possible to receive a Common Control Timeout alarm at the same time.

A known limitation of the exchange is that if you change the V5 ID while the bearer is plugged in, it might take up to 5 minutes for the link to start up. If the alarm does not clear after 5 minutes, restart the V5 interface as described on page 8–18.

V5 Restart Fail (V5 RST FAIL)

Once the V5 variant and Interface ID have been verified by both the C–RIM and the exchange then a common control message is sent by both the C–RIM and the exchange to restart PSTN. The V5 Restart Fail alarm occurs if the PSTN Restart Request message sent by the C–RIM is not acknowledged by the exchange. This is also a common control message, so it is possible to receive a Common Control Timeout alarm at the same time. To try to clear the alarm, restart the V5 interface as described on page 8–18.

Common Control Timeout (COM CTRL TIME)

This alarm can occur in conjunction with V5 ID Fail and V5 Restart Fail as these are both alarms which indicate that a common control message has failed.

Control Syntax Error (CTRL SYN ERR)

User ports are started up after the PSTN restart is completed. This alarm appears if more than 5 control messages have been sent to the C–RIM which are out of sequence or have the wrong content. These control messages include the blocking and unblocking of user ports. When this alarm appears all user ports are blocked but the C–RIM would keep attempting to start the user ports.

Control L3 Error (CTRL L3 ERR)

Each user port on the C–RIM is identified to the exchange by an L3 address. This alarm appears when the exchange has sent more than five message to the C–RIM for user ports which the C–RIM cannot acknowledge. This is usually because that particular user port is not configured in the C–RIM. The alarm will remain until the same user port is configured on the C–RIM.

BCC L3 Syntax Error (BCC SYN ERR)

If this alarm persists then no calls can be made. This alarm means that a BCC message has been sent to the C–RIM out of sequence or has the wrong content. The alarm is based on a counter – 5 incorrect BCC messages would have to be sent for the alarm to appear. The C–RIM blocks all user ports when this alarm is raised, so no more calls can be made. A number of methods can be used to try to clear the alarm:

- ▶ Reset the ICC at the RU, or
- ▶ Restart the V5 interface as described on page 8–18.

PSTN L3 Error (PSTN L3 ERR)

This alarm occurs when the C–RIM receives more than five messages for V5 user ports that aren't configured in the C–RIM. This can occur for example when you remove a user port via the configuration, and then the exchange attempts to send a message to that user port. The C–RIM blocks the port before removing it. The alarm will stay up until the same user port is removed from the exchange configuration.

PSTN Syntax Error (PSTN SYN ERR)

Similar to BCC L3 Syntax Error. This alarm means that a PSTN message has been sent to the C–RIM out of sequence or has the wrong content. The C–RIM blocks all user ports, so calls cannot be made. The alarm can be cleared by performing the same procedures mentioned in BCC L3 Syntax Error.

Port Control Timeout (PORT CTL TIME)

The C–RIM has sent a message to the exchange for a user port which the exchange has not acknowledged. This is usually because that particular user port is not configured in the exchange. This alarm can be seen when configuring a new user port on the C–RIM. The alarm will remain until the same user port is configured on the exchange.

PSTN Call Handler Fail (PSTN CALL FAL)

The PSTN Call Handler refers to the software which looks after the PSTN messages required during a call (such as 'on hook' and 'number dialled' etc). This alarm means that a valid PSTN message was sent to the C–RIM but the message was not appropriate for the current stage of the call in progress.

BCC Timeout (BCC TIMEOUT)

This error is not raised in Release 8.2.

8.5 C–RIM 2nd Level Alarm Windows

When an item is selected from the First Level AS&C Window with the cursor in the shape of a magnifying glass, a second level of alarm detail is provided.

- ▶ In the case of the Housing Block, a window with the layout of the housing is displayed, from which particular sections of the housing items may be selected.
- ▶ In the case of panels, the alarm window displays a graphic representation of the panel selected, including all declared units in that panel. From here the unit detail window may be invoked by zooming into the required unit.

8.5.1 The Housing Alarm Window (2nd Level)

(1) 1G Remote Housing Alarms

Zooming on the housing block in the main AS&C window invokes the following window if the housing is a 480 Line 1G Remote Housing.

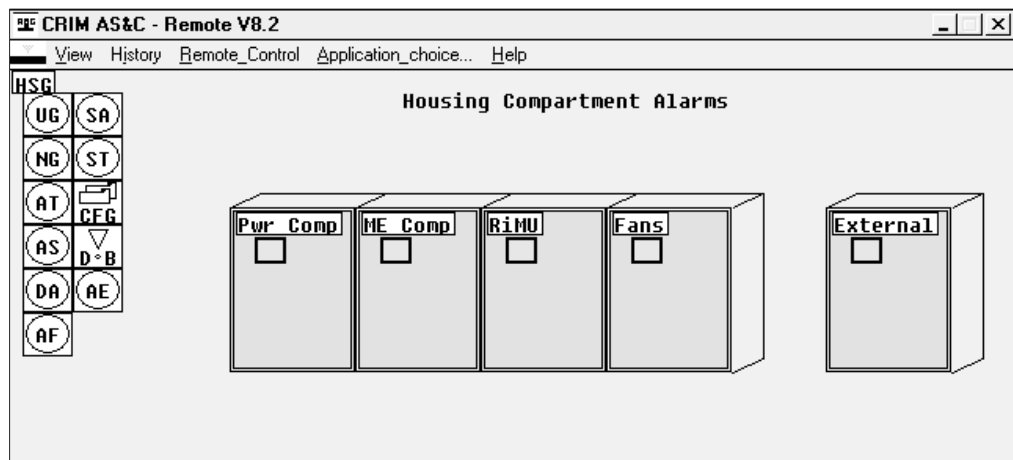


Figure 8–7 480 Line 1G Housing Alarms (2nd Level)

The housing alarm detail windows that may be accessed through the main window are:

- ▶ Power Compartment – (Page 8–35)
- ▶ Main Equipment Compartment – (Page 8–32)
- ▶ Ring/Meter Unit – (Page 8–39)
- ▶ Fan Assembly – (Page 8–31)
- ▶ External Alarms – (Page 8–41)

(2) 2G Remote Housing and CP Rack Alarms

Zooming on the housing block in the main AS&C window invokes the following window if the housing is one of the following:

- ▶ 180 Line 2G Remote Housing
- ▶ 480 Line 2G Remote Housing
- ▶ Customer Premises Rack (CP rack)

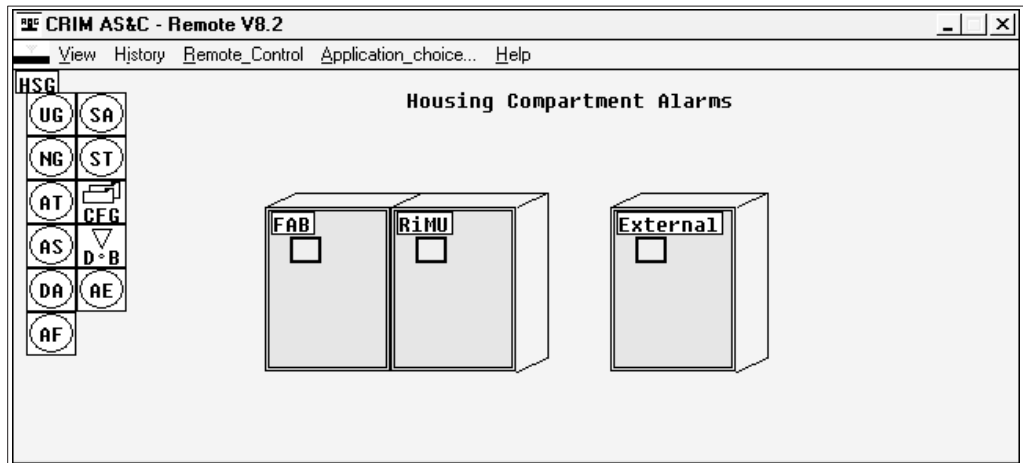


Figure 8–8 2G Housing Alarms (2nd Level)

The alarm detail windows that may be accessed through the main window are:

- ▶ Fan and Battery alarms (FAB) – (Page 8–37)
- ▶ Ring/Meter Unit Alarms – (Page 8–39)
- ▶ RiMU Alarms – (Page 8–40)
- ▶ External Alarms – (Page 8–41)

8.5.2 The Panel Alarm Windows (2nd Level)

The main AS&C window shows each Access Panel. It also shows the two components of the Main Panel (Access Panel 1, and the Main Equipment), and the Climate Panel.

In Main Panel and Access Panel alarm windows in AS&C, any locked Units are coloured red, while unlocked Units are coloured grey. Locking and unlocking Units is described in section 5.4.3.

Zooming on the Panels block of the main AS&C window invokes the detail window of the selected Panel. If a Panel has no Units assigned, zooming on the panel is disabled.

- ▶ Zooming into the Main Equipment block of the Main Panel opens a detail window for the Main Equipment slots of the Main Panel. Refer to figure 8–9.
- ▶ Zooming into the block for a physical Access Panel (AP2 to AP8) or the logical Access Panel in the Main Panel (AP1) shows the detail window for the selected panel. The alarm screens for physical and logical Access Panels are shown on page 8–27.

(1) Main Panel – Main Equipment Alarm Window

An example of the Main Panel – Main Equipment Alarm Window is illustrated below. The units displayed in this window vary according to the units that have been configured. The window illustrated is for a typical RU.

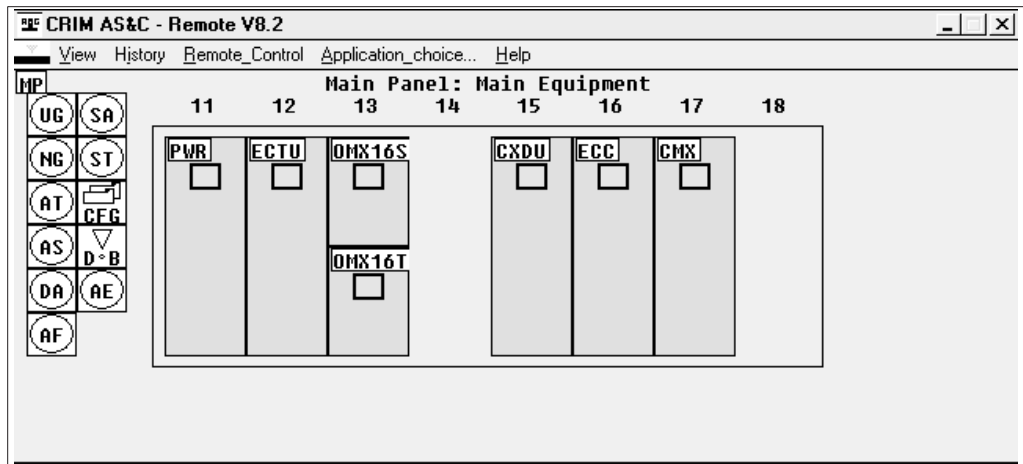


Figure 8–9 Main Panel – Main Equipment Alarms

The alarm detail windows that can be accessed via the Main Equipment window are:

- ▶ Customer Test Unit (CTU) – (Page 8–74)
- ▶ Core Matrix (CMX) – (Page 8–52)
- ▶ Clock Extraction and Distribution Unit (CXDU) – (Page 8–56)
- ▶ Enhanced Concentration Controller (ECC) – (Page 8–58)
- ▶ Enhanced Customer Test Unit (ECTU) – (Page 8–75)
- ▶ Integrated Concentration Controller (ICC) – (Page 8–62)
- ▶ Line Transmission Units – (Page 8–67)
(OMX 4x2S, OMX 4x2D SC, OMX 16x2S, & OMX 16x2D SC)
- ▶ Power Unit (PWRA) – (Page 8–51)
- ▶ Ring/Meter Unit (RiMU) – (Page 8–40)

Note Alarms for the Enhanced RIM Management Unit (ERMU) are accessed via the ERMU AS&C application.

(2) The Access Panel Alarm Window

An example of the Access Panel alarm window is illustrated below.

Similar windows are used for physical Access Panels and for the logical Access Panel 1 in the Main Panel. Both have two Access Controllers (AC). The difference is that both ACs in physical Access Panels are PCMCXs, while the logical Access Panel 1 in the Main Panel has one PCMCX and one PCMCC.

Note *The units displayed in this window varies according to the units that have been configured.*

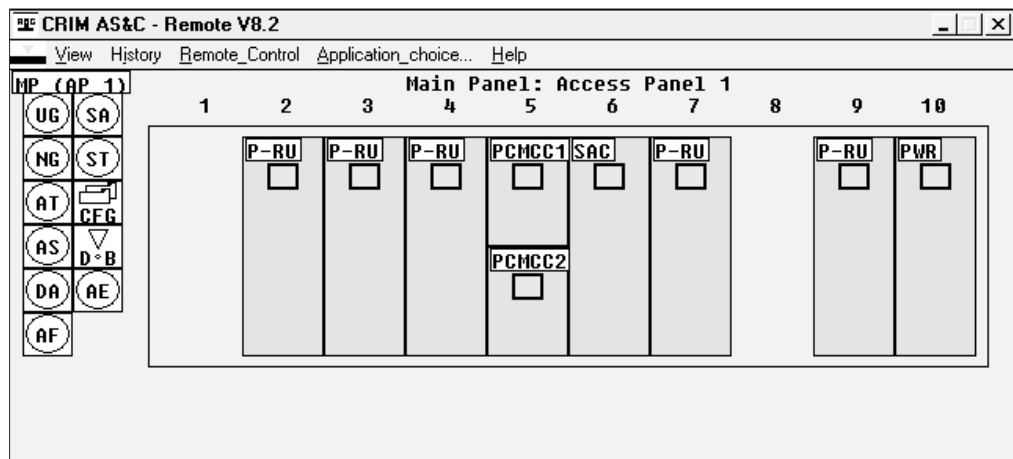


Figure 8–10 Main Panel – Access Panel 1 Alarms (2nd Level)

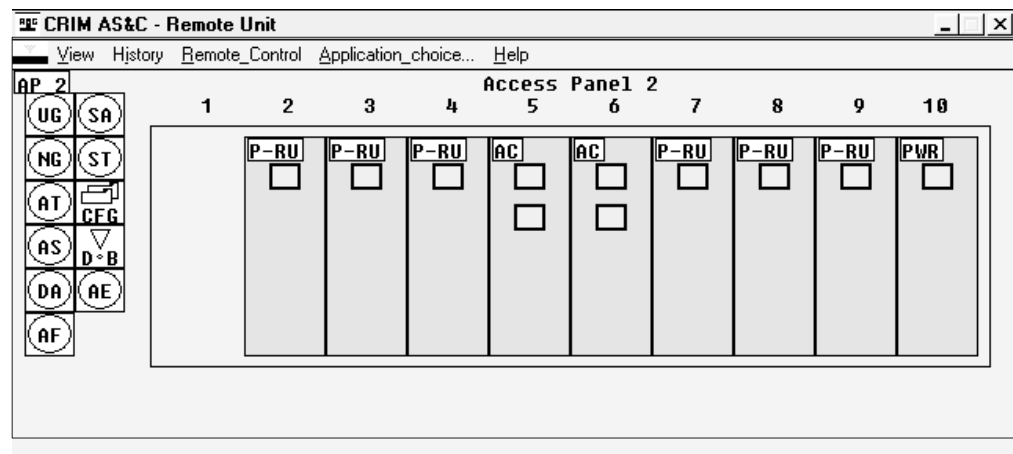


Figure 8–11 Access Panel 2 to 8 Alarms (2nd Level)

The unit alarm detail windows that may be accessed through Access Panel Alarm windows are:

- ▶ PCMCX
 - Access Controller (AC) mode – (Page 8–42)
 - Subscriber Access Controller (SAC) mode – (Page 8–45)
- ▶ PCMCC (In Access Panel 1 in Main Panel only)
AC or SAC modes – (Page 8–47)
- ▶ 4/6 Wire Unit – (Page 8–77)
- ▶ DI–64KB–E&M – (Page 8–78)
- ▶ ISDN 4B3T Unit – (Page 8–79)
- ▶ ISDN 2B1Q Unit – (Page 8–79)
- ▶ POTS RU – (Page 8–81)
- ▶ POTS EU – (Page 8–81)
- ▶ PWRA Unit – (Page 8–51)
- ▶ P–Phone Unit – (Page 8–81)
- ▶ Universal RU – (Page 8–85)
- ▶ Universal EU – (Page 8–85)

8.5.3 Climate Control Panel Alarm Window

The Climate Control Panel is only used in 480 Line 1G RU housings. An example of the Climate Control Panel Alarm Window is shown in figure 8–12.

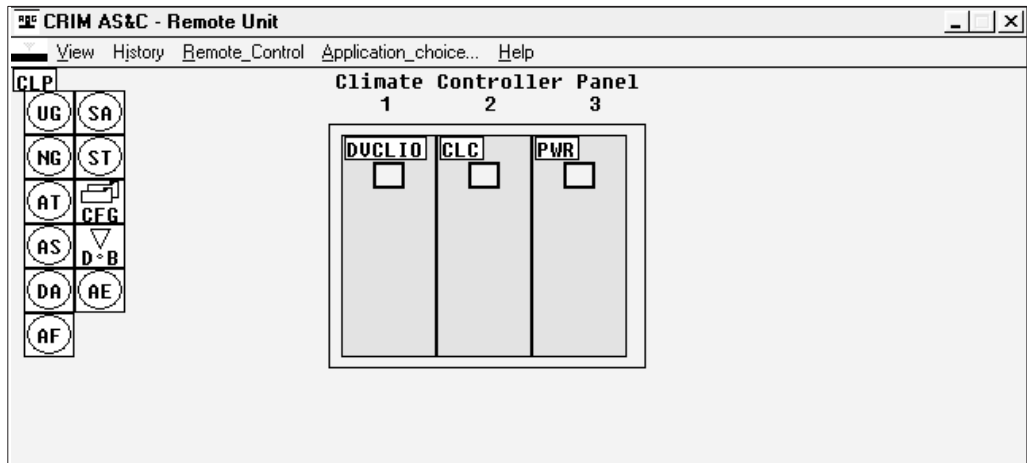


Figure 8–12 Climate Control Panel Alarms (2nd Level)

The unit alarm detail windows that may be accessed through Climate Control Panel Alarm windows are:

- ▶ CLIMI/O Unit – (Page 8–89)
- ▶ DV CLIMI/O Unit – (Page 8–90)
- ▶ CLIMCTL Unit – (Page 8–87)
- ▶ PWR Unit – (Page 8–51)

8.6 C–RIM 3rd Level Alarms – Introduction

The Unit level alarm detail windows are accessed through the 2nd Level Panel alarm windows. In the following sections, the alarm detail window of each unit is provided, along with a table describing the possible alarms. The fields of these tables are:

Description

This column provides the full name of the alarm and a brief description of its consequences/probable causes.

Abbreviation

The Abbreviation field is the abbreviation used on the alarm window to represent the alarm.

Alarm Priority

Two sections are given in this column relating to the priority of the alarm.

Default: The default priority of the alarm.

U = Urgent

NU = Non–Urgent

NA = No Action

Prg: Defines if the Priority of the alarm may be set by NECTAS, if 'Y' then appropriate alarm masks can be set in the Equipment Configuration application.

Alarm Display

This is the method by which the alarm is displayed on the CRAFT Terminal.

- A Alarm is indicated with a cross in the alarm box.
- +
- Alarm is indicated in the additional information alarm box on the panel windows.
- * Alarm will cause the Red LED on the front of the unit to be lit.
- E Alarm is not displayed on the CRAFT Terminal for ACs (i.e. 4M bus alarms)

Note *The following descriptions of alarm detail windows are in order of Housing, Main Panel, Access Panel, then Climate Control Panel.*

8.7 Housing 3rd Level Alarms

8.7.1 1G Housing Alarms

(1) Fan Assembly Alarms – 1G Housings

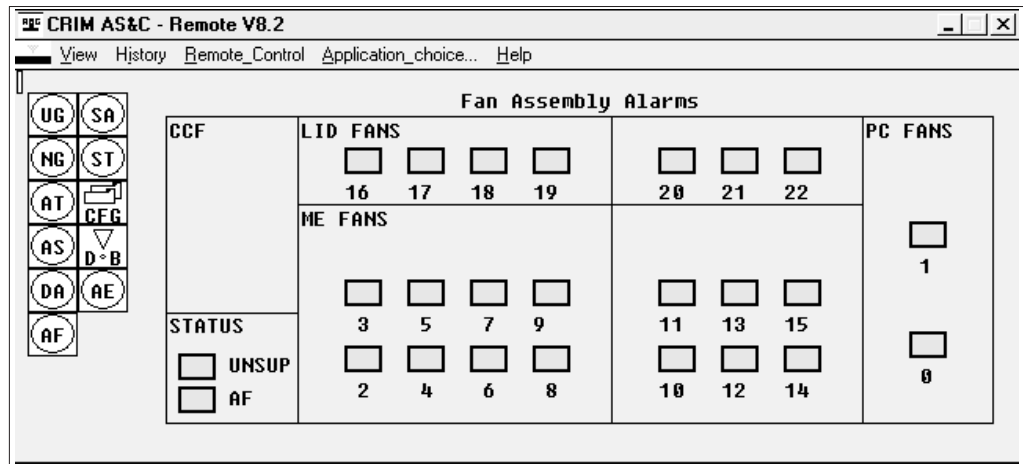


Figure 8–13 Fan Assembly Alarms – 1G Housings

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Unsupervised Alarm The unit controlling the fans (i.e. the CLIMCTL) has failed leaving the fans unsupervised.	UNSUP	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Fan <i>n</i> Operating Incorrectly Nominal Speed of Rotation = 3100rpm Faulty Fan = <2170rpm (70% of nominal) Fan Off = <1000rpm	<i>n</i> (<i>n</i> =0..22)	NU	Y	A

- Note**
- The CRAFT Terminal displays the fan alarms in a box representing their location in a remote housing.
 - Fan speed of every fan is measured every 3 seconds (actions taken on the average of three consecutive samples). Fan rotation occurs every 5 minutes where one group of fans stops and another starts. No measurement is taken in the first or last minute of operation (Spin up or spin down)

(2) Main Equipment Alarms – 1G Housings

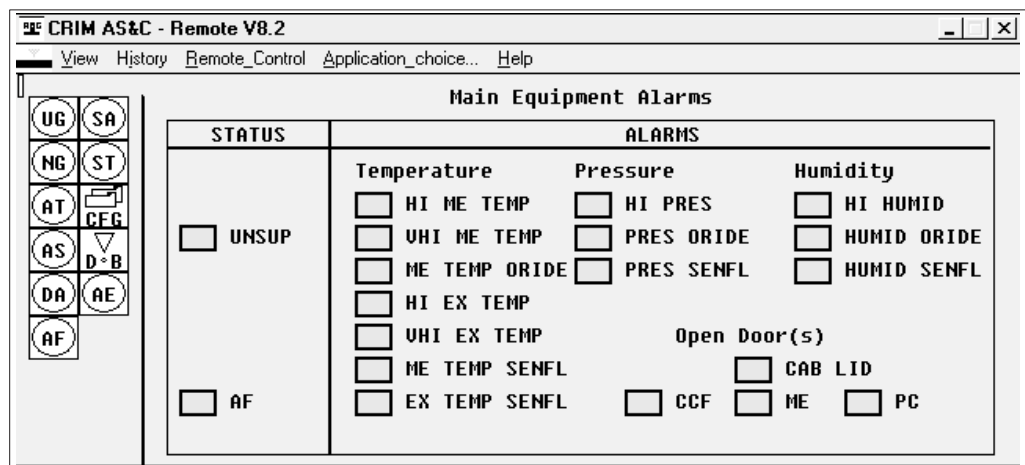


Figure 8–14 Main Equipment Alarms – 1G Housings

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Unsupervised Alarm The unit controlling the MEC climate system (i.e. the CLIMCTL) has failed leaving the MEC unsupervised.	UNSUP	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
High Main Equipment Temperature The average of the temperatures of the two MEC temp sensors (in the top of the MEC) is >60 °C	HI ME TEMP	NU	Y	A
Very High Main Equipment Temperature The average of the temperatures of the two MEC temp sensors (in the top of the MEC) is >65 °C	VHI ME TEMP	U	Y	A
Main Equipment Temperature Over—Ride Hardware override by Climate I/O as Temperature in MEC>67 °C	ME TEMP ORIDE	U	Y	A
High External Temperature The sensor for the External Temperature (in the Lid above the MEC) reads a temperature of >60 °C	HI EX TEMP	NU	Y	A
Very High External Temperature The sensor for the External Temperature (in the Lid above the MEC) reads a temperature of >65 °C	VHI EX TEMP	U	Y	A

Alarm Description (ctd)	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Main Equipment Temperature Sensor Failure Temperature in MEC > 80 °C	ME TEMP SENFL	U	Y	A
External Temperature Sensor Failure The sensor for the External Temperature (in the Lid above the MEC) reads a temperature of > 80 °C	EX TEMP SENFL	U	Y	A
High Pressure Differential Difference in pressure reading between the input and output of the filter in the cabinet lid is > 20pa	HI PRES	NU	Y	A
Pressure Differential Over—Ride Not implemented in Release 8	PRES ORIDE	U	Y	A
Pressure Sensor Fail Pressure Diff > 62pa	PRES SENFL	U	Y	A
High Relative Humidity Humidity sensor (bottom RHS of MEC) report high humidity (>=90%).	HI HUMID	U	Y	A
Relative Humidity Over—Ride 97.5% HW Override.	HUMID ORIDE	U	Y	A
Relative Humidity Sensor Fail Humidity > 100% or < 0% reading.	HUMID SENFL	U	Y	A
Cabinet Lid Open M—lead Microswitch for the Cabinet Lid door has been tripped.	CAB LID	U	Y	A
Cross Connect Facility Door Open M—lead Microswitch for the CCF door has been tripped.	CCF	U	Y	A
Main Equipment Door Open M—lead Microswitch for the MEC door has been tripped.	ME	U	Y	A
Power Compartment Door Open M—lead Microswitch for the PC Door has been tripped.	PC	U	Y	A

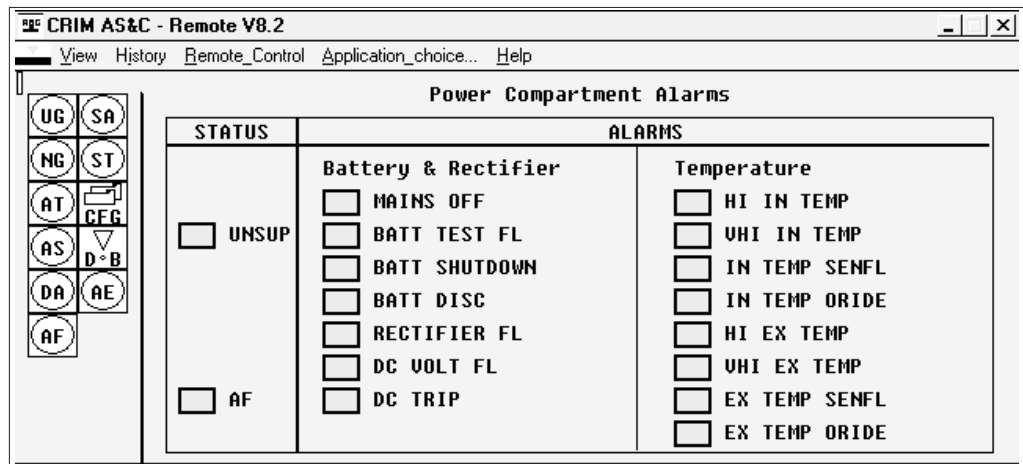
(3) Power Compartment Alarms – 1G Housings

Figure 8–15 Power Compartment Alarms – 1G Housings

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Unsupervised Alarm The unit controlling the PC climate system (i.e. the CLIMCTL) has failed leaving the PC unsupervised.	UNSUP	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Mains Power Off M—lead to CLIMCTL – No mains connected to rectifier/Power Compartment.	MAINS OFF	U	Y	A
Battery Test Failure M—lead to CLIMCTL	BATT TEST FL	U	Y	A
Battery Shutdown is Imminent M—lead to CLIMCTL	BATT SHUT-DOWN	U	Y	A
Battery Disconnected M—lead to CLIMCTL	BATT DISC	U	Y	A
Rectifier Failure M—lead to CLIMCTL	RECTIFIER FL	U	Y	A
Hi or Low DC voltage M—lead to CLIMCTL >57.6V or <48V	DC VOLTAGE FL	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
DC Circuit Breaker Trip M—lead to CLIMCTL	DC TRIP	U	Y	A
High Internal Temperature The sensor for the internal Temperature reads a temperature of >60 °C	HI IN TEMP	NU	Y	A
Very High Internal Temperature The sensor for the internal Temperature reads a temperature of >65 °C	VHI IN TEMP	U	Y	A
Internal Temperature Sensor Fail The sensor for the internal Temperature reads a temperature of >80 °C	IN TEMP SENFL	U	Y	A
Internal Temperature Over—Ride Hardware override occurs at 67 °C	IN TEMP ORIDE	U	Y	A
High External Temperature The sensor for the external Temperature (at vent in PC) reads a temperature of >66 °C	HI EXT TEMP	NU	Y	A
Very High External Temperature The sensor for the external Temperature (at vent in PC) reads a temperature of >70 °C	VHI EXT TEMP	U	Y	A
External Temperature Sensor Fail The sensor for the external Temperature (at vent in PC) reads a temperature of >80 °C	EX TEMP SENFL	U	Y	A
External Temperature Over—Ride If the sensor for the external Temperature (at vent in PC) reads a temperature of >72 °C, the Climate I/O controller performs a hardware override.	EX TEMP ORIDE	U	Y	A

8.7.2 FAB Alarms

FAB alarms are for Main Equipment (including fans), battery and rectifier alarms in:

- ▶ 180 Line 2G and 480 Line 2G Remote Housings
- ▶ Customer Premises Racks (CP racks)

The FAB Alarms window is shown below:

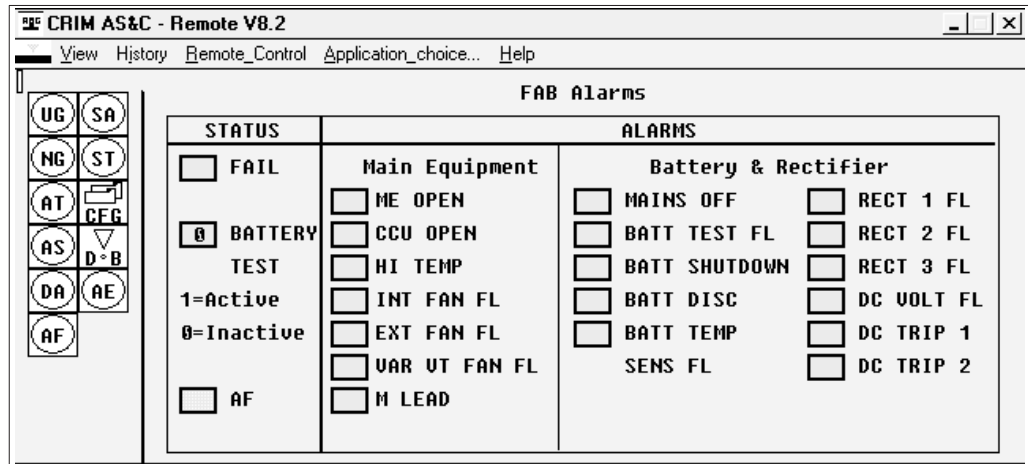


Figure 8–16 FAB Alarms – 2G Housings

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm	FAIL	U	Y	A
Battery Test Indication A battery test is in progress	BATT TEST IND	U	Y	A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Main Equipment Compartment Door Open (a) 2G Housing – Microswitch for the MEC door has been tripped. (b) CP Rack – Door on Rack 1 and/or Rack 2 is open.	ME OPEN	U	Y	A
Cross Connect Unit Door Open (a) 2G Housing – Microswitch for the CCU door has been tripped. (b) CP Rack – Termination missing from FABD.	CCU OPEN	U	Y	A
High Main Equipment Temperature (a) 2G Housing – Temperature of the MEC temp sensor is >60 °C (b) CP Rack – Temperature of the rack temp sensor is >52 °C	HI TEMP	NU	Y	A
Internal Fans Operating Incorrectly One or more internal fans have failed	INT FAN FL	NU	Y	A
External Fans Operating Incorrectly (a) 2G Housing – One or more fans have failed (b) CP Rack – Temperature of rack temperature sensor is >48 °C. This alarm is only seen on a local NECTAS terminal and is masked from COMNET.	EXT FAN FL	NU	Y	A
Variable Fan Fail Variable voltage fan supply has failed	VAR VT FAN FL	NU	Y	A
M Lead Signalling Input M Lead input has been detected	M LEAD	NU	Y	A
Mains Power Off No mains supply to rectifier	MAINS OFF	U	Y	A
Battery Test Failure Battery test has indicated a defective battery	BATT TEST FL	NU	Y	A
Battery Shutdown is Imminent Battery voltage is approaching minimum threshold	BATT SHUTDOWN	U	Y	A
Battery Disconnected Battery contactor has opened	BATT DISC	NU	Y	A
Battery Temperature Sensor Fail Battery temperature sensor has failed	BATT TEMP SENS FL	NU	Y	A
Rectifier <i>n</i> Failure Rectifier not operating normally	RECTIFIER <i>n</i> FL (<i>n</i> = 1 .. 3)	U	Y	A
High or Low DC Voltage DC voltage out of range (55.9V – 48V)	DC VOLTAGE FL	U	Y	A
DC Circuit Breaker Trip (a) 2G Housing – DC circuit breaker or battery circuit breaker 1 has tripped or is OFF (a) CP Rack – DC circuit breaker has tripped or is OFF or one or both battery circuit breakers is OPEN.	DC TRIP <i>n</i> (<i>n</i> = 1 .. 2)	U	Y	A

8.7.3 Ring / Meter Alarms

(1) Ring / Meter Alarms – T8 R/MU

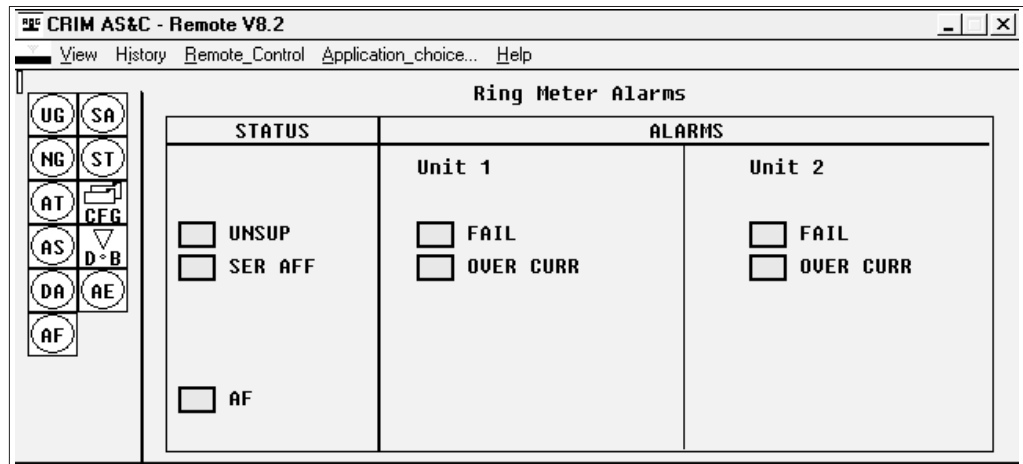


Figure 8–17 Ring / Meter Alarms – T8 R/MU

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Unsupervised Alarm The unit controlling the R/MU (CLIMCTL in 1G housings, PCMCC in racks and 2G housings) has failed and the R/MU is unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Ring/Meter n Fail ($n = 1 \dots 2$) A Hardware fault has been detected on the unit.	FAIL	U	Y	A
Ring/Meter n Over Current ($n = 1 \dots 2$) Ring, 50Hz/12kHz Meter, or –100V is into over–current condition.	OVER CURR	NU	Y	A

Note If a T8 Ring /Meter Unit is withdrawn from the Ring/Meter Panel, NECTAS will display both FAIL and OVER CURR alarms.

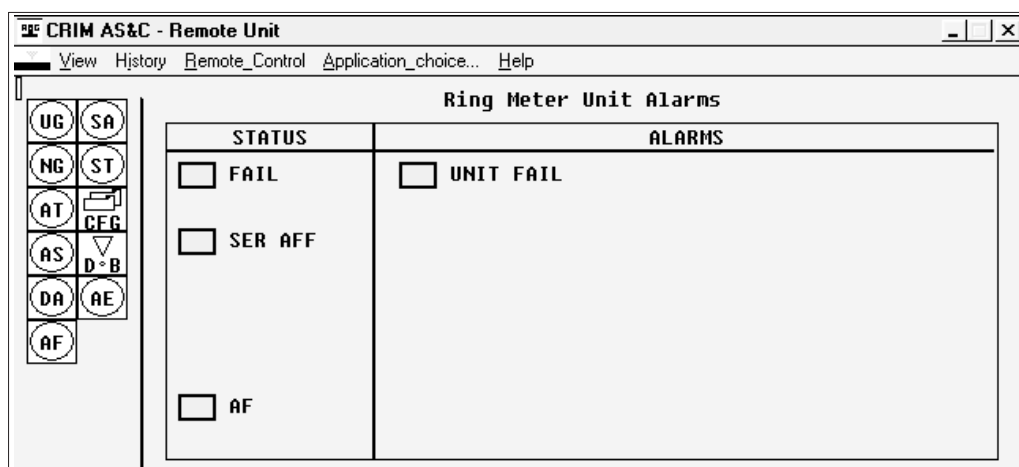
(2) Ring / Meter Alarms – RiMU

Figure 8–18 Ring Meter Unit Alarms – RiMU

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a fail alarm	FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Unit Fail A Hardware fault has been detected on the unit.	UNIT FAIL	U	Y	A

8.7.4 External Alarms

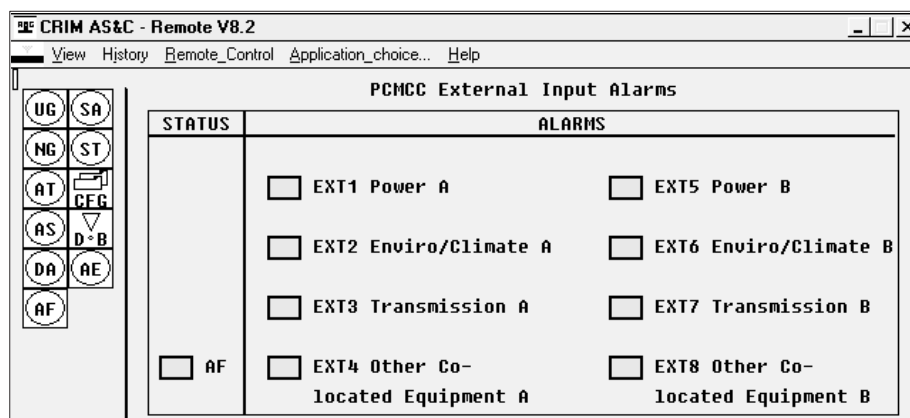


Figure 8–19 External Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
External Input 1	EXT 1 – POWER A	NU	Y	A
External Input 2	EXT 2 – ENVIRO/CLIMATE A	NU	Y	A
External Input 3	EXT 3 – TRANSMISSION A	NU	Y	A
External Input 4	EXT 4 – OTHER CO–LOCATED EQUIPMENT A	NU	Y	A
External Input 5 – (see Note 2)	EXT 5 – POWER B	NU	Y	A
External Input 6 – (See Note 2)	EXT 6 – ENVIRO/CLIMATE B	NU	Y	A
External Input 7 – (see Note 2)	EXT 7 – TRANSMISSION B	NU	Y	A
External Input 8 – (see Note 2)	EXT 8 – OTHER CO–LOCATED EQUIPMENT B	NU	Y	A

Note:

- [1] External alarms can't be directly disabled, however they are effectively disabled if the alarm mask is Indicative (I).
- [2] For indoor systems without a CCP and for 2G housings with a Ring/Meter Panel, PCMCC M–Leads 5 to 8 are reserved for collection of Ring/Meter alarms and no external alarms will be indicated in these positions.

8.8 PCMCX Alarms

8.8.1 PCMCX Alarms – AC Mode

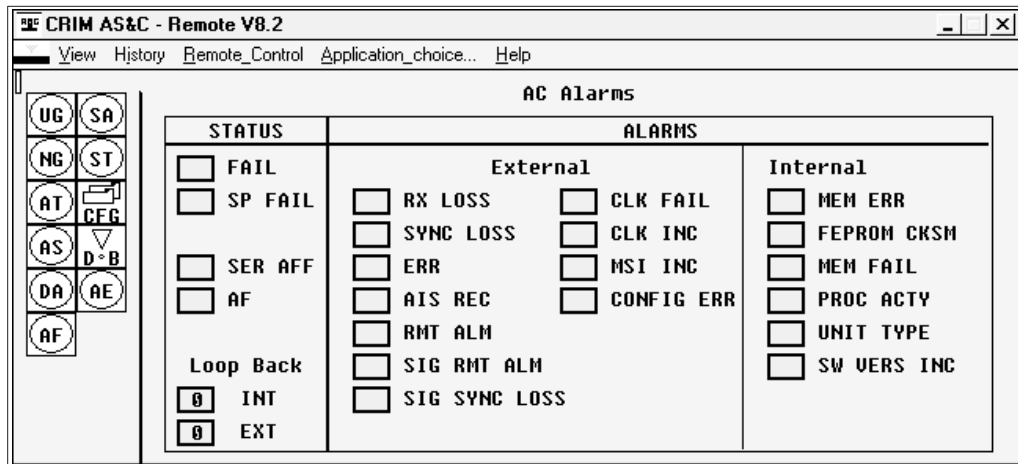


Figure 8–20 Access Controller (AC) Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed as all of the units which it controls (such as channel units and PWRA) are reporting failures.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
Loopback Enabled G.703 Internal or External Loopback has been enabled.	Loop Back INT/EXT	NA		+

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
G.703 Receive Signal Loss Loss of incoming signal. Absence of 8 or more consecutive marks. Source External: G.703 Port Source Internal: Timeslot 18/Bit 1	RX LOSS	U	Y	A
Frame Alignment Loss Loss of frame alignment – received 3 consecutive incorrect frame alignment signals. Source External: G.703 Port Source Internal: Timeslot 18/Bit 7	SYNC LOSS	U	Y	A
Excessive Error Rate Excessive Bit Error Rate – Detected 16 or more errors in a period of 4 seconds in a frame alignment signal. Source External: G.703 Port Source Internal: Timeslot 18/Bit 5	ERR	U	Y	A
Alarm Indication Signal Received Receiving alarm indication signal – All ones. Source External: G.703 Port Source Internal: Timeslot 8/Bit 3	AIS REC	NU	Y	A
Remote Alarm Remote Junction Alarm – A 1 is detected in channel 0, bit 3 in frames not containing the frame alignment pattern. Source External: G.703 Port Source Internal: Timeslot 17/Bit 5	RMT ALM	U	Y	A
Remote Signalling Alarm Bit 6 in timeslot 16 of Frame 0 of the CAS multiframe is received as a logic 1 Source External: G.703 Port Source Internal: Timeslot 0/Bit 2	SIG RMT ALM	U	Y	A
Multi-frame Alignment Loss Loss of Multi-frame alignment – detected 2 errors in multi-frame signal or loss of frame alignment signal. Source External: G.703 Port Source Internal: Timeslot 18/Bit 6	SIG SYNC LOSS	U	Y	A
Main Panel Clock Fail Clock Loss Source External: CXDU Source Internal: uC/CAL	CLK FAIL	U	Y	A
Clock Selection Inconsistency Clock selection inconsistency – Enable A and Enable B are the same. Source External: PCMCC Source Internal: uC/SEL A and/or SEL B	CLK INC	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
MSI Bus Selection Inconsistency SEL A and SEL B are the same. Source External: PCMCC Source Internal: uC/SEL A and/or SEL B	MSI INC	U	Y	A
Configuration Error Bad PCMCC Configuration – Configurations rejected. – 2 or more TS assigned to channel.	CONFIG ERR	U	Y	A
Configuration Memory Error Not Implemented – for future use.	MEM ERR	NU	Y	A
FEPRM Checksum Error The PCMCC SW (stored on FLASH devices) has the incorrect checksum. This will cause the PCMCC to run boot SW. The PCMCC will need new SW to be downloaded using the Software Download Application.	FEPRM CKSM	U	Y	A
Configuration Memory Fail Not Implemented – for future use.	MEM FAIL	U	Y	A*
Process Activity Failure Bad Boot (EPRM) Checksum, Interrupt Table Checksum or RAM corruption.	PROC ACTY	U	Y	A*
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Software Version Inconsistency Unit software version is not compatible with PCMCC software version	SW VERS INC	U	Y	A

8.8.2 PCMCX Alarms – SAC Mode

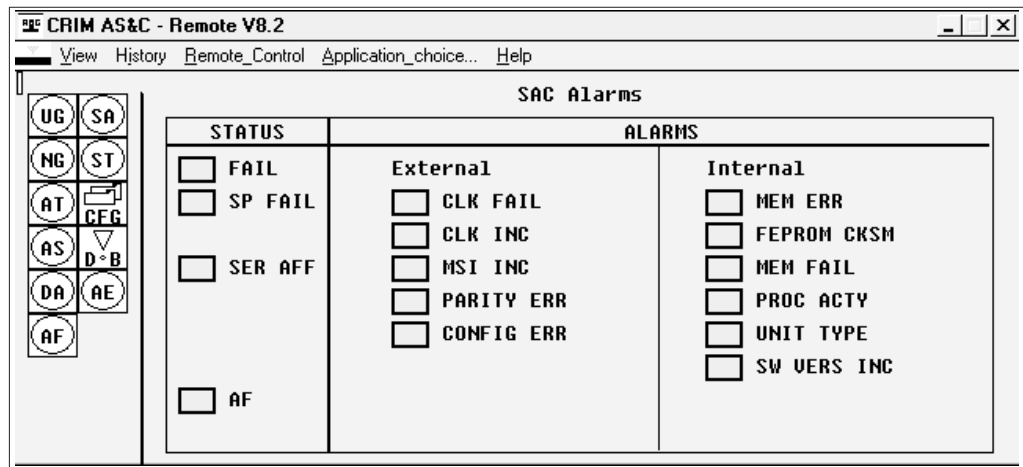


Figure 8–21 SAC Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed as all of the units which it controls (such as channel units and PWRA) are reporting failures.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description (ctd)	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Main Panel Clock Fail Clock Loss Source External: CXDU Source Internal: uC/CAL	CLK FAIL	U	Y	A
Clock Selection Inconsistency Clock selection inconsistency – Enable A and Enable B are the same. Source External: PCMCX Source Internal: uC/SEL A and/or SEL B	CLK INC	U	Y	A

Alarm Description (ctd)	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
MSI Bus Selection Inconsistency SEL A and SEL B are the same. Source External: PCMCC Source Internal: uC/SEL A and/or SEL B	MSI INC	U	Y	A
Parity Error Bit Parity Error Source External: 4M Port, Missing PCMCX 4MHz Cable Source Internal: Faulty Parity Detector/Parity Generator	PARITY ERR	U	Y	AE
Configuration Error Bad PCMCX Configuration – Configurations rejected. – 2 or more TS assigned to channel.	CONFIG ERR	U	Y	A
Configuration Memory Error Not Implemented – for future use.	MEM ERR	NU	Y	A
FEPROM Checksum Error The PCMCX SW (stored on FLASH devices) has the incorrect checksum. This will cause the PCMCX to run boot SW. The PCMCX will need new SW to be downloaded using the Software Download Application.	FEPROM CKSM	U	Y	A
Configuration Memory Fail Not Implemented – for future use.	MEM FAIL	U	Y	A*
Process Activity Failure Bad Boot (EPROM) Checksum, Interrupt Table Checksum or RAM corruption.	PROC ACTY	U	Y	A*
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Software Version Inconsistency Unit software version is not compatible with PCMCC software version	SW VERS INC	U	Y	A

8.9 PCMCC Alarms

The PCMCC alarm detail windows are illustrated below.

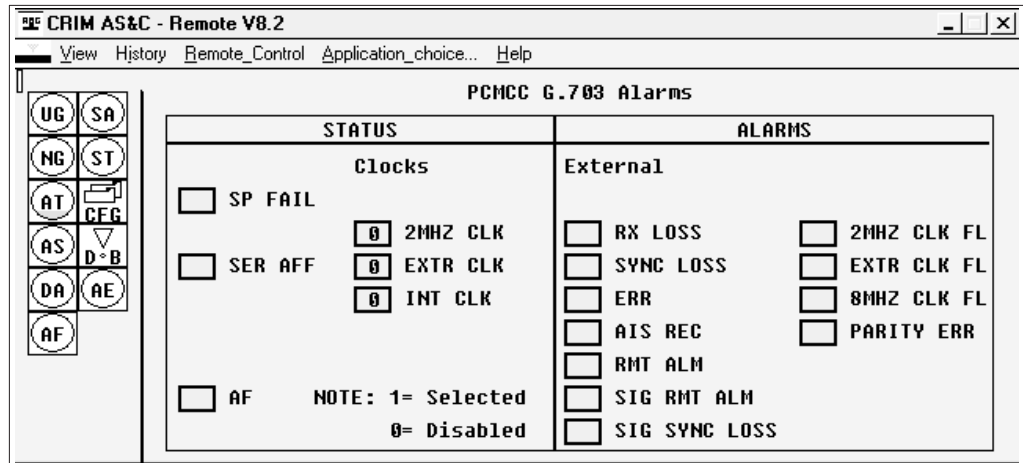


Figure 8–22 PCMCC – First Alarm Detail Window

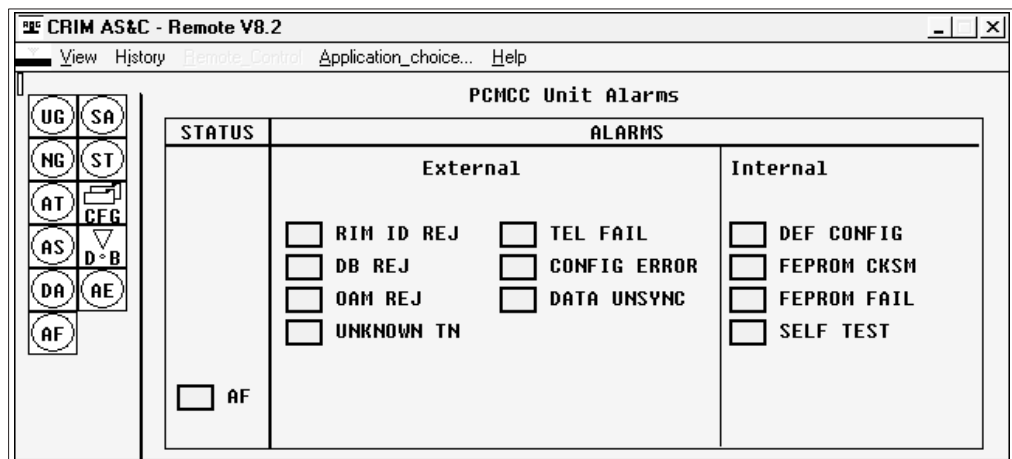


Figure 8–23 PCMCC – Second Alarm Detail Window

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Suspected Board Failure Alarm It is suspected that the unit has failed as all of the units which it controls are reporting failures.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
2MHz Clock Input Active External clock input is active	2MHZ CLK	NA		
Extracted Clock Input Active Extracted clock input is active	EXTR CLK	NA		
Internal Clock Input Active The internal clock source is selected.	INT CLK	NA		

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
G.703 Receive Signal Loss Loss of incoming signal. Absence of 8 or more consecutive marks. Source External: G.703 Port Source Internal: Timeslot 8/Bit 1	RX LOSS	U	Y	A
Frame Alignment Loss Loss of frame alignment – received 3 consecutive incorrect frame alignment signals. Source External: G.703 Port Source Internal: Timeslot 18/Bit 7	SYNC LOSS	U	Y	A
Excessive Error Rate Excessive Bit Error Rate – Detected 16 or more errors in a period of 4 seconds in a frame alignment signal. Source External: G.703 Port Source Internal: Timeslot 18/Bit 5	ERR	U	Y	A
Alarm Indication Signal Received Receiving alarm indication signal – All ones. Source External: G.703 Port Source Internal: Timeslot 8/Bit 3	AIS REC	NU	Y	A
Remote Alarm Remote Junction Alarm – A 1 is detected in channel 0, bit 3 in frames not containing the frame alignment pattern. Source External: G.703 Port Source Internal: Timeslot 17/Bit 5	RMT ALM	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Remote Signalling Alarm Bit 6 in timeslot 16 of Frame 0 of the CAS multiframe is received as a logic 1 Source External: G.703 Port Source Internal: Timeslot 0/Bit 2	SIG RMT ALM	U	Y	A
Multi-frame Alignment Loss Loss of Multi-frame alignment – detected 2 errors in multi-frame signal or loss of frame alignment signal. Source External: G.703 Port Source Internal: Timeslot 18/Bit 6	SIG SYNC LOSS	U	Y	A
2MHz Clock Input Fail The 2MHz external clock source has failed	2MHZ CLK FL	U	Y	A
Extracted Clock Input Fail The extracted clock source has failed.	EXTR CLK FL	U	Y	A
8 MHz Clock Input Fail The internal clock source has failed.	8MHZ CLK FL	U	Y	A
Parity Error A Bit Parity Error has occurred Source Ext: 4M Port missing 4 Mbit/s cable Source Int: Faulty parity detector/parity generator	PARITY ERROR	U	Y	A
RIM ID Reject Database rejected due to RIM ID mismatch.	RIM ID REJECT	U	Y	A+
Database Rejected The Database sent from the NECTAS Equipment Configuration application has been rejected because the configuration is not valid. To find the incorrect setting, use the Equipment Configuration Audit function to compare the received database to the one which was sent.	DB REJ	U	Y	A
OAM Configurations Cannot be Changed Remotely An EU configuration has been sent to the RU or vice versa.	OAM REJ	U	Y	A
Unknown Terminal Number Call attempt to a System 12 Terminal Number (TN) that has not been assigned to a subscriber. Use the Unknown Subscribers application to identify invalid Terminal Numbers.	UNKNOWN TN	NU	Y	
Telemetry Fail Failure of telemetry link to remote site.	TEL FAIL	NU	Y	A
Configuration Error An invalid timeslot allocation has been sent.	CONFIG ERROR	NU	Y	A

Alarm Description (ctd)	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Data Synchronisation Error PCMCC configuration data and hybrid trained coefficients are not synchronised with the backups on the ERMU	DATA UNSYNC	U	Y	A
Default Configuration in Use The default Configuration is being used as the previous settings have been lost or corrupted.	DEF CONFIG	U	Y	A*
FEPRM Checksum Error The PCMCC SW (stored on FLASH devices) has an incorrect checksum. This will cause the PCMCC to run boot SW. The PCMCC will need new SW to be downloaded using the Software Download Application.	FEPRM CKSM	U	Y	A
FEPRM Write Fail A failure has occurred in reading from or writing to the FEPRM.	FEPRM FAIL	U	Y	A
Self Test Failure The Microprocessor has detected an unexpected condition or failure during startup	SELF TEST	U	Y	A

8.10 PWRA/T8 PWR Alarms

An illustration of the PWRA and T8 PWR Unit alarm detail window is provided below:

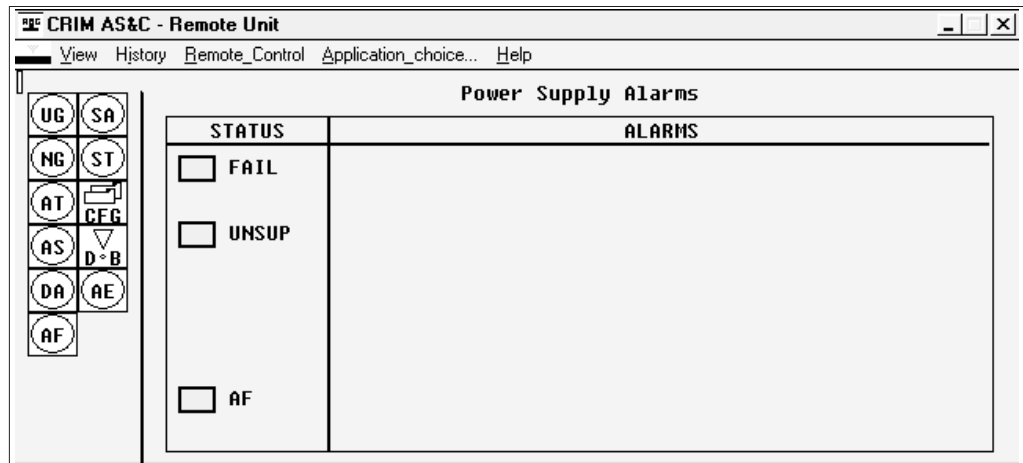


Figure 8–24 PWRA/T8 PWR Alarms

A description of the Alarms that appear on the Power Unit alarm detail window is provided below:

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Unit Fail (Voltage Out of Range) The Power Unit has failed. This means that the PWR Unit is not responding to SW polls.	FAIL	U	Y	A
Unsupervised Alarm The PCMCC has detected that the PCMCX or CLIMCTL supervising a PWRA or T8PWR has failed.	UNSUP	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

8.11 Main Panel – Main Equipment 3rd Level Alarms

8.11.1 CMX Alarms

(1) CMX Alarms – First Screen

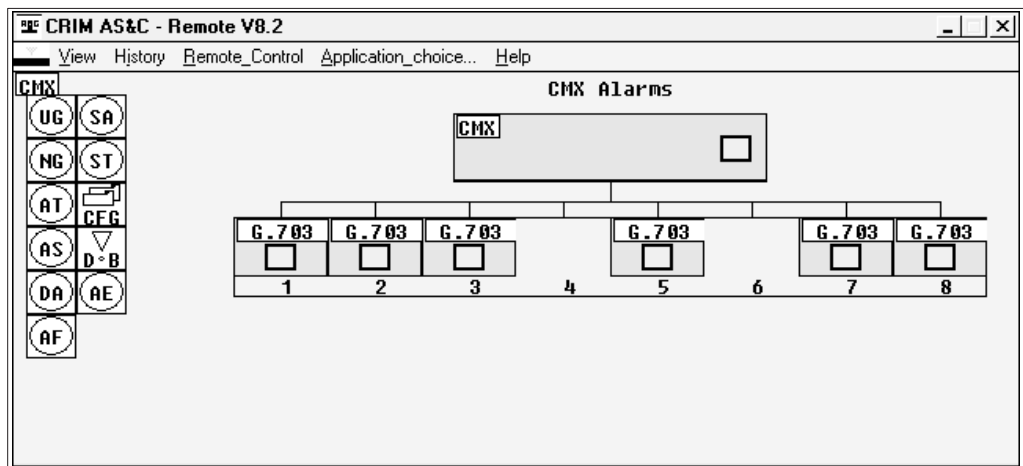


Figure 8–25 Core Matrix (CMX) Alarms – First Screen

The first CMX alarm screen is a synthesis of lower level alarm screens. Click on CMX or a port to open a lower level alarm window. These are:

- ▶ CMX Alarms. See Page 8–52.
- ▶ G.703 Port Alarms. See Page 8–54.

(2) CMX Unit Alarms

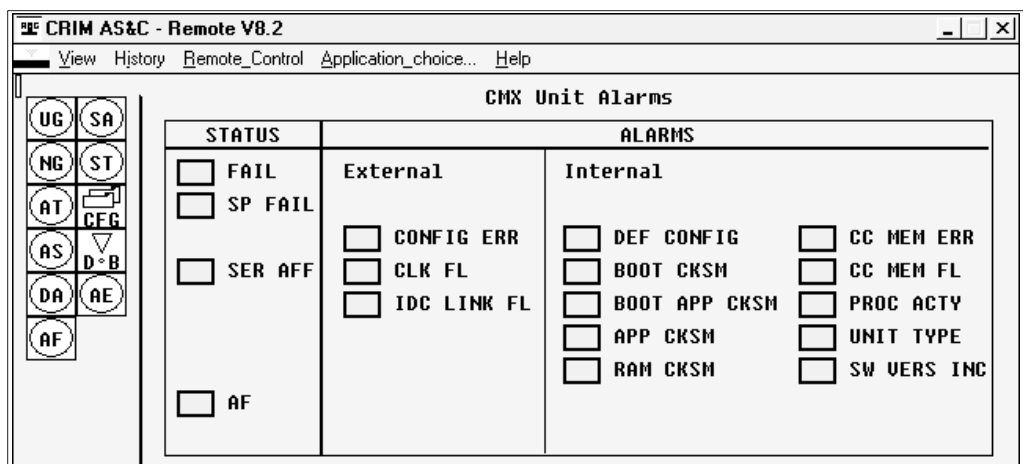


Figure 8–26 Core Matrix (CMX) Unit Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed as all of the units which require the CXDU clock output are reporting clock failure.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error An illegal configuration has been sent to the CMX, e.g. more than four RSU ports have been configured.	CONFIG ERR	U		A
Main Panel clock failure Loss of 8MHz clock source on the Main Panel	CLK FAIL	U	Y	A
IDC Link Failure IDC Link to the concentration controller has failed	IDC LINK FL	U	Y	A
Default Cross Connection Configuration in use. The default Cross Connection Configuration is being used as previous settings have been lost or corrupted	DEF CONFIG	U	Y	A*
Boot Checksum Error Checksum of the Boot partition of the FEPRM is incorrect	BOOT CKSM	U	Y	A
Boot Application Checksum Error The checksum of the Boot Application portion of the FEPRM is incorrect	BOOT APP CKSM	U	Y	A
Application Checksum Error Checksum of the Application portion of the FEPRM is incorrect	APP CKSM	U	Y	A
RAM Checksum Error Checksum of the Application section of the RAM is incorrect	RAM CKSM	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Cross Connection Memory Error Data read from the connect memory does not match data written to it	CC MEM ERR	NU	Y	A
Cross Connection Memory Fail Re-writing the same data to connect memory did not correct a Cross Connection Memory Error	CC MEM FAIL	U	Y	A
Process Activity Fail A task has stopped responding to Process Activity polls	PROC ACTY	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Software Version Inconsistency Unit software version is not compatible with PCMCC software version	SW VERS INC	U	Y	A

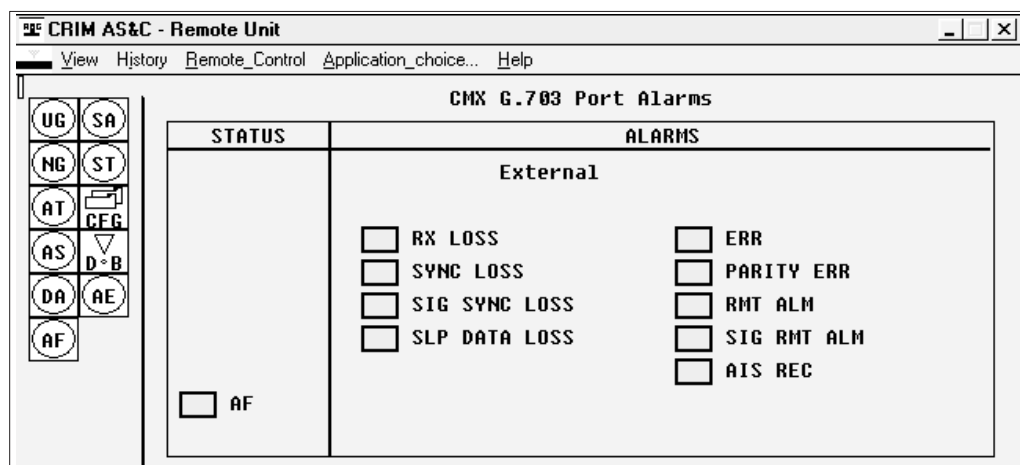
(3) CMX G.703 Port Alarms

Figure 8–27 Core Matrix (CMX) G.703 Port Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
G.703 Receive Signal Loss Loss of incoming signal on a 2 Mbit/s G.703 port	RX LOSS	U	Y	A
Frame Alignment Loss Received three consecutive incorrect frame alignment signals	SYNC LOSS	U	Y	A
Multiframe Alignment Loss Loss of multi-frame alignment. Detected errors in two multi-frame signals or loss of frame alignment signal	SIG SYNC LOSS	U	Y	A
Slip Data Loss Loss of data due to slip of more than two frames between the two clock sources	SLP DATA LOSS	U	Y	A
Excessive Error Rate More than 64 incorrect frame alignment signals have been received in a four second period	ERR	U	Y	A
Parity Error The 4M Bus has parity errors	PARITY ERR	U	Y	A
Remote Alarm A 1 is detected in bit 3, timeslot 0, in frames not containing the frame alignment pattern	RMT ALM	U	Y	A
Remote Signalling Alarm A 1 is detected in bit 6, timeslot 16 of frame 0	SIG RMT ALM	U	Y	A
Alarm Indication Signal Received Less than three 0s have been received in two consecutive frames	AIS REC	NU	Y	A

8.11.2 CXDU Alarms

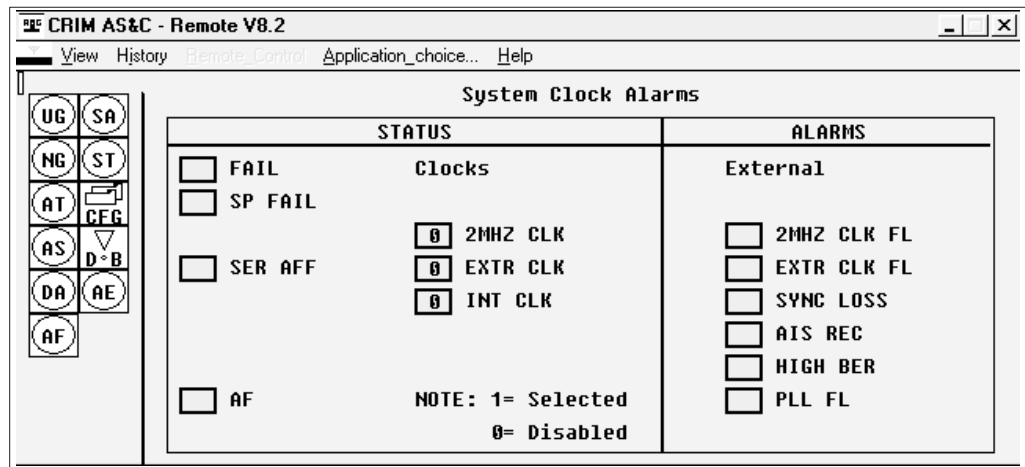


Figure 8–28 System Clock (CXDU) Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed as all of the units which require the CXDU clock output are reporting clock failure.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
2MHz Clock Input Active External clock input is active	2MHZ CLK	NA		
Extracted Clock Input Active Extracted clock input is active	EXTR CLK	NA		
Internal Clock Input Active The internal clock source is selected.	INT CLK	NA		

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
2MHz Clock Input Fail Loss of 2 MHz clock input signal	2MHz CLK FL	U	Y	A
Extracted Clock Input Fail Loss of extracted clock input signal. This is the result of a G.703 Receive Signal loss.	EXTR CLK FL	U	Y	A
Frame Alignment Loss Loss of G.703 frame alignment – received 3 consecutive incorrect frame alignment words	SYNC LOSS	U	Y	A
Alarm Indication Signal Received Receiving alarm indication signal – All ones in G.703 data stream.	AIS REC	NU	Y	A
High Bit Error Rate G.703 data error rate exceeds 10^{-3} .	HIGH BER	U	Y	A
Phase Locked Loop Fail Internal phase locked loop failed	PLL FL	U	Y	A

8.11.3 ECC Alarms

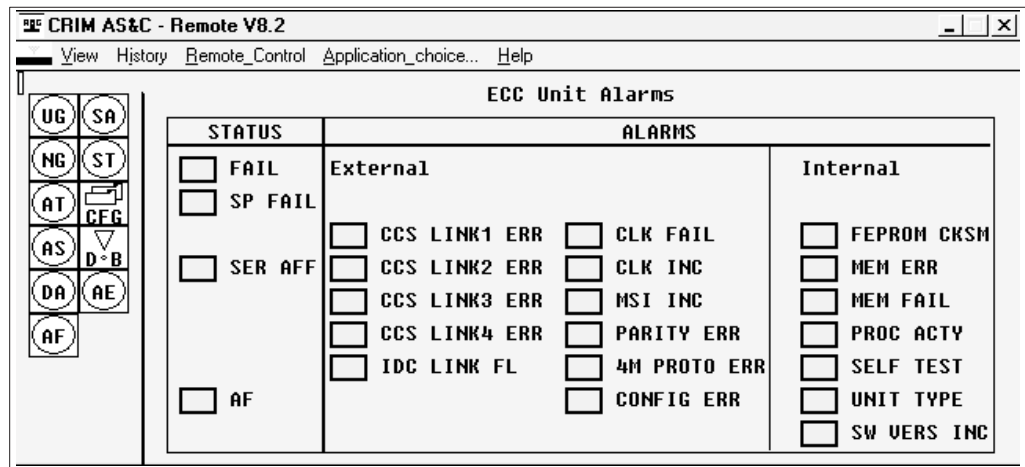


Figure 8–29 Enhanced Concentration Controller (ECC) Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Error on CCS Link <i>n</i> Common Channel Signalling link <i>n</i> to exchange is out of service	CCS LINK <i>n</i> ERR (<i>n</i> = 1 ... 4)	U	Y	A
IDC Link Failure IDC Link between ECC and CMX has failed	IDC LINK FL	U	Y	A
Main Panel Clock Fail Main Panel clock loss	CLK FAIL	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Clock Selection Inconsistency Clock Enable A and Clock Enable B are the same	CLK INC	U	Y	A
MSI Bus Selection Inconsistency MSI Selection A and MSI Selection B are the same	MSI INC	U	Y	A
Parity Error A Parity Error has occurred on the 4M bus	PARITY ERR	U	Y	A
4M Protocol Error An Error has occurred on the 4M Bus	4M PROTO ERR	U	Y	A
Configuration Error Bad ECC configuration – configuration rejected. Two or more timeslots assigned to channel	CONFIG ERR	U	Y	A
FEPROM Checksum Error The ECC SW (stored on FLASH devices) has the incorrect checksum. This will cause the ECC to run boot SW. The ECC will need new SW to be downloaded.	FEPROM CKSM	U	Y	A
Configuration Memory Error Not implemented in this Release	MEM ERR	NU	Y	A
Configuration Memory Fail Not implemented in this Release	MEM FAIL	NU	Y	A
Processor Activity Failure Bad Boot (EPROM) Checksum, Interrupt Table Checksum, or RAM Corruption	PROC ACTY	U	Y	A *
Self Test Failure The Microprocessor has detected an unexpected condition or failure during startup	SELF TEST	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configured Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	
Software Version Inconsistency Unit software version is not compatible with the PCMCC software version	SW VERS INC	U	Y	A

8.11.4 ERMU Alarms

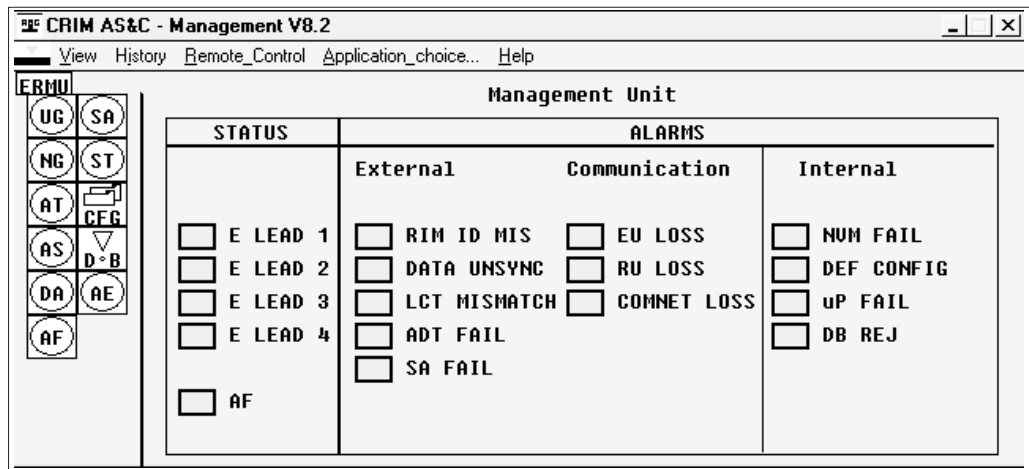


Figure 8–30 Management Unit (ERMU) Alarms

Note This screen is accessed via the ERMU AS&C application

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
E Lead <i>n</i> Activated The E Lead output has been activated	E LEAD <i>n</i> (<i>n</i> = 1 to 4)	I	Y	
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
RIM ID Mismatch RIM ID of the ERMU does not match the RIM ID of the configuration (PCMCC). Ensure that the FNN database is uploaded and downloaded with the correct RIM ID.	RIM ID MIS	U	Y	A
Data Synchronisation Error PCMCC configuration data and hybrid trained coefficients are not synchronised with the backups on the ERMU	DATA UNSYNC	U	Y	A
Line Code Table Mismatch There is a Line Code Table mismatch between the ERMU database and the ECC/ICC database	LCT MISMATCH	U	Y	A
Automatic Dial Tone Test Fail Batch Mode Test has not detected dial tone on at least one subscriber's line	ADT FAIL	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Surge Arrestor Fail Batch Mode Test has detected that the surge arrestor on at least one subscriber's line is missing or defective.	SA FAIL	NU	Y	A
Loss of Communication with EU The ERMU cannot communicate with the EU PCMCC. (i.e. OA&M problems).	EU LOSS	U	Y	A
Loss of Communication with RU The ERMU cannot communicate with the RU PCMCC. (i.e. OA&M problems).	RU LOSS	U	Y	A
Loss of Communication with COMNET The ERMU cannot communicate with COMNET	COMNET LOSS	U	Y	A
NVM Write Fail Cannot write to ERMU's Non-volatile Memory (Storage area for databases) and should be replaced immediately. If power fail occurs one or more databases would be affected.	NVM FAIL	U	Y	A
Default Configuration in Use ERMU is using the default configuration because the previous configuration was lost or corrupted.	DEF CONFIG	U	Y	A
Watchdog Alarm Occurred The watchdog timer was not reset by the ERMU SW. HW fault with μ P or connected components.	μ P FAIL	U	Y	A
Database Rejected The Database sent from the NECTAS Equipment Configuration application has been rejected because the configuration is not valid based on the selected OA&M setting. To find the incorrect setting, use the Equipment Configuration Audit function to compare the received database to the one which was sent.	DB REJ	U	Y	A

8.11.5 ICC Alarms

(1) ICC Alarms – First Screen

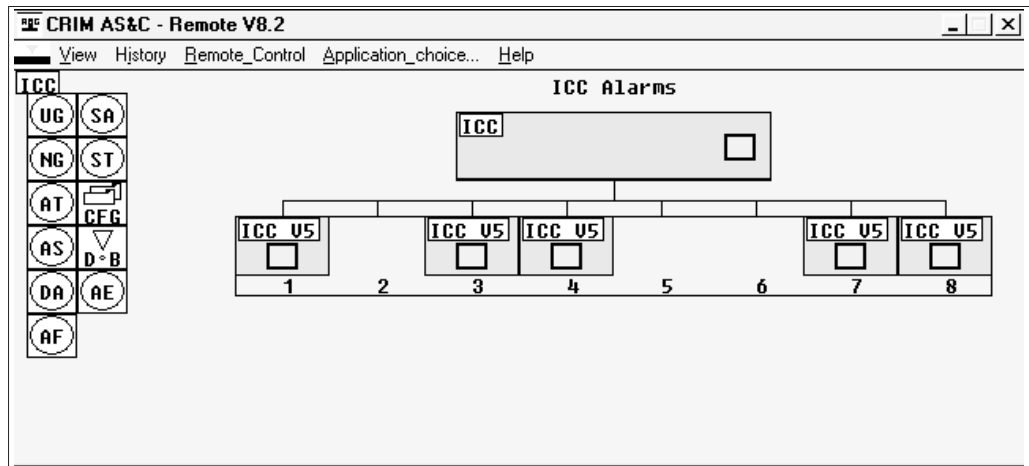


Figure 8–31 ICC Alarms – First Screen

The first ICC Alarms screen indicates if there are alarms on the ICC unit or on the ICC V5.2(–) interfaces.

- ▶ Clicking on the ICC box at the top of the screen opens the ICC Unit Alarms page.
- ▶ Clicking on a V5.2(–) Interface in the row towards the bottom of the screen opens the ICC V5.2(–) Interface Alarms page for that interface.

Note For additional information on the V5 interface and V5 alarms, refer to Section 8.4.

(2) ICC Unit Alarms

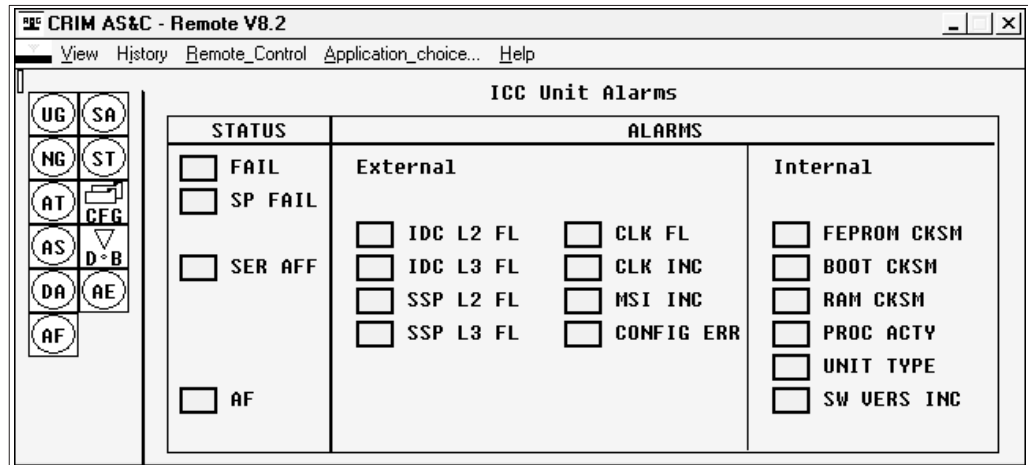


Figure 8–32 ICC Unit Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed.	SP FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
IDC Link Error Errors have been detected in the IDC link between the ICC and the CMX	IDC Ln FAIL (n = 2 ..3)	U	Y	A
SSP Interface Fail Errors have been detected in the SSP interface to the SACs	SSP Ln FAIL (n = 2 .. 3)	U	Y	A
Main Panel Clock Fail Main Panel clock loss	CLK FAIL	U	Y	A
Clock Selection Inconsistency Clock Enable A and Clock Enable B are the same	CLK INC	U	Y	A
MSI Bus Selection Inconsistency MSI Selection A and MSI Selection B are the same	MSI INC	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error Bad ICC configuration – configuration rejected.	CONFIG ERR	U	Y	A
FEPROM Checksum Error The ICC SW (stored on FLASH devices) has an incorrect checksum. This will cause the ICC to run boot SW. The ICC will need new SW to be downloaded.	FEPROM CKSM	U	Y	A
Boot Checksum Error Checksum of the Boot EPROM is incorrect	BOOT CKSM	U	Y	A
RAM Checksum Error Checksum of the Application section of the RAM is incorrect	RAM CKSM	U	Y	A
Process Activity Failure A task has stopped responding to process activity polls	PROC ACTY	U	Y	A *
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Software Version Inconsistency Unit software version is not compatible with the PCMCC software version	SW VERS INC	U	Y	A

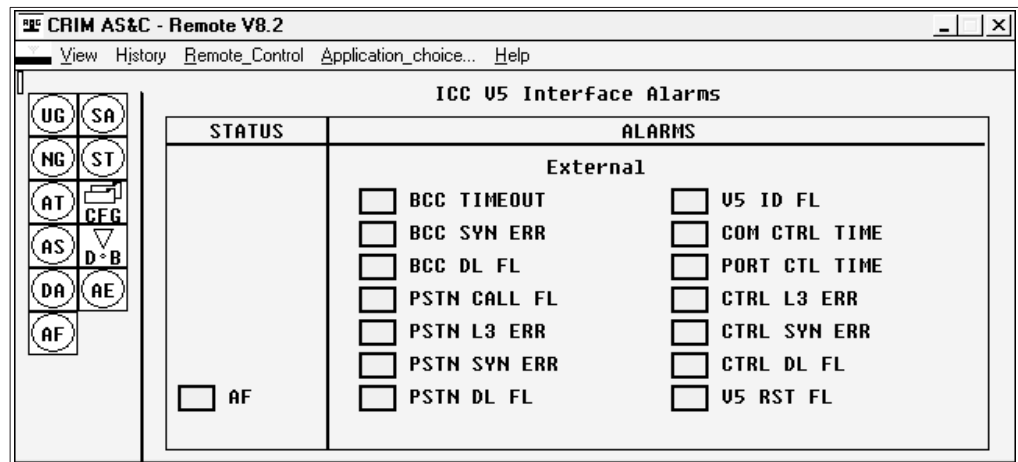
(3) ICC V5.2(–) Interface Alarms

Figure 8–33 ICC V5.2(–) Interface Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
BCC Timeout An unexpected event occurred in the BCC Resource Manager	BCC TIMEOUT	NU	Y	A
BCC L3 Syntax Error A BCC message sent to the C–RIM is out of sequence or has wrong content. Restart the ICC or restart the V5 interface. (See Note)	BCC SYN ERR	NU	Y	A
BCC Data Link Fail Data link not established for the BCC protocol. The exchange may not have responded to the C–RIM attempt to start the BCC protocol. Restart the V5 interface (See Note).	BCC DL FAL	U	Y	A
PSTN Call Handler Fail An unexpected event occurred in the PSTN Call Handler. A valid PSTN message was sent to the C–RIM but the message was not appropriate for the current stage of the call in progress.	PSTN CALL FAL	NU	Y	A
PSTN L3 Error C–RIM has received more than five messages for V5 user ports that are not configured in the C–RIM. Remove the User Port from the exchange configuration.	PSTN L3 ERR	NU	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
PSTN Syntax Error A PSTN message has been sent to the C–RIM out of sequence or with wrong content.. Restart the ICC or restart the V5 interface. (See Note)	PSTN SYN ERR	NU	Y	A
PSTN Data Link Fail PSTN protocol has not started successfully or the exchange has no user ports configured. Restart the V5 interface or reconfigure the exchange.	PSTN DL FAL	NU	Y	A
V5.2(–) ID Fail The Variant and Interface ID configured on the C–RIM do not match the ID provisioned in the exchange. If the alarm persists for more than 5 minutes, restart the V5 interface (see Note).	V5 ID FAIL	U	Y	A
Common Control Timeout A Common Control message has failed.	COM CTRL TIME	NU	Y	A
Port Control Timeout C–RIM has sent a message to the exchange for a user port that the exchange has not acknowledged. The port may not be correctly configured at the exchange.	PORT CTL TIME	NU	Y	A
Control L3 Error More than 5 messages sent from exchange to C–RIM which the C–RIM cannot acknowledge. A user port may not be correctly configured in the C–RIM.	CTRL L3 ERR	NU	Y	A
Control Syntax Error More than 5 control messages have been sent to the C–RIM that are out of sequence or have wrong content.	CTRL SYN ERR	NU	Y	A
Control Data Link Fail The Control protocol has not started successfully. Restart the V5 interface. (See Note)	CTRL DL FAL	U	Y	A
V5.2(–) Restart Fail The V5 PSTN Restart Request sent by the C–RIM was not acknowledged by the exchange. Restart the V5 interface. (See Note)	V5 RST FAIL	U	Y	A

Note

- For additional information on the V5 interface and V5 alarms, refer to Section 8.4.
- To restart a V5 interface, either break the bearer connection to the C–RIM for 120 seconds or block and unblock the DIPs at the exchange.

8.11.6 Line Transmission Unit Alarms

Four groups of Optical Line Transmission Units are used in Release 8.2:

- ▶ OMXP 16x2 – single and dual fibre
- ▶ OMX 16x2 – single and dual fibre
- ▶ OMX 4x2 – single and dual fibre
- ▶ 2M OLTE – single fibre

(1) OMX 16x2 and OMXP 16x2

Single Fibre 16x2M OMX Alarms		
STATUS	ALARMS	
☐ FAIL	External	
☐ SER AFF	☐ RX OPT FAIL	☐ RMT ALARM
☐ ACTIVE	☐ HIGH BER	☐ TRIB RX LOSS
☐ 1+1 MODE	☐ ERROR	☐ LOW BER
☐ M-D MODE	☐ TEL FAIL	☐ CONFIG ERR
☐ O/W AVAIL	☐ REFLECTION	
☐ AF	Internal	
		☐ TX OPT FAIL
		☐ UNIT TYPE
		☐ MUX FAIL
		☐ LSR OVER CURR

Figure 8–34 OMX 16x2 Alarms

Single Fibre 16x2M OMX Tributary Alarms	
STATUS	ALARMS
	External
☐ T1 RX LOSS	☐ T5 RX LOSS
☐ T2 RX LOSS	☐ T6 RX LOSS
☐ T3 RX LOSS	☐ T7 RX LOSS
☐ T4 RX LOSS	☐ T8 RX LOSS
☐ AF	☐ T9 RX LOSS
	☐ T10 RX LOSS
	☐ T11 RX LOSS
	☐ T12 RX LOSS
	☐ T13 RX LOSS
	☐ T14 RX LOSS
	☐ T15 RX LOSS
	☐ T16 RX LOSS

Figure 8–35 OMX 16x2 Receive Signal Loss Alarms

Status Box Description	Abbreviation	Default	Prg.	Alarm Display
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Active Normal Operation	ACTIVE	NA		A
1 + 1 Mode 1 + 1 Optical Unit Redundancy Active This is a direct indication that the Main Panel 1 + 1 DIP switch is set to 1 + 1 mode. It can only be raised if an OMXP has been inserted into the corresponding slots.	1 + 1 MODE	NA		A
Multidrop Mode Multidrop mode active	M – D MODE	NA		A
OrderWire Available OrderWire available from EU to RU It can only be activated if two OMXP units are present.	O/W AVAIL	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Receive Signal Loss Receive Optical Failure.	RX OPT FAIL	U	Y	A
High Bit Error Rate Error rate exceeds 10^{-3} .	HIGH BER	U	Y	A
Single Bit Error Detected A single error has been detected.	ERROR	NU	Y	A
Telemetry Fail Failure of telemetry link to remote site.	TEL FAIL	NU	Y	A
Reflection Alarm Reflection on optical path.	REFLECTION	U	Y	A
Remote Alarm Alarm detected at other end.	RMT ALARM	U	Y	A
G.703 Receive Signal Loss Synthesis of "Tributary n Receive Signal Loss" alarms	TRIB RX LOSS	U	Y	A
Low Bit Error Rate Bit Error Rate exceeds 10^{-6}	LOW BER	NU	Y	A
Configuration Error Bad Configuration – Configuration rejected. – 1+1 configured and OMX equipped – 1+1 configured, OMXP configured, Main Panel DIP switch NOT set to 1+1 – 1+1 NOT configured, OMX P equipped, Main Panel DIP switch set to 1+1 – Both 1+1 and Multi-Drop modes are set – Units are operating in unprotected mode and user attempts to lock an OMX unit.	CONFIG ERR	U	Y	A
Transmit Signal Failure Transmit Optical Failure.	TX OPT FAIL	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Multiplexer Fail Multiplexer sub-system failure	MUX FAIL	U	Y	A
Laser Overcurrent OMXP Only. Laser is drawing current over the expected amount	LSR OVERCURR	U	Y	A
Tributary n Receive Signal Loss Tributary input failure	T_n RX LOSS (PORT x) $n=1..16$: OMX(P) 16x2	U	Y	A

(2) OMX 4x2

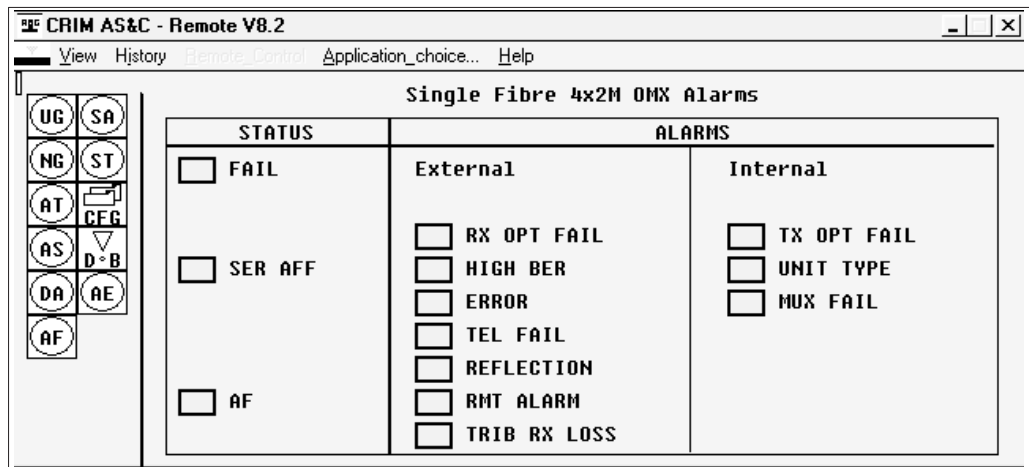


Figure 8–36 OMX 4x2 Alarms

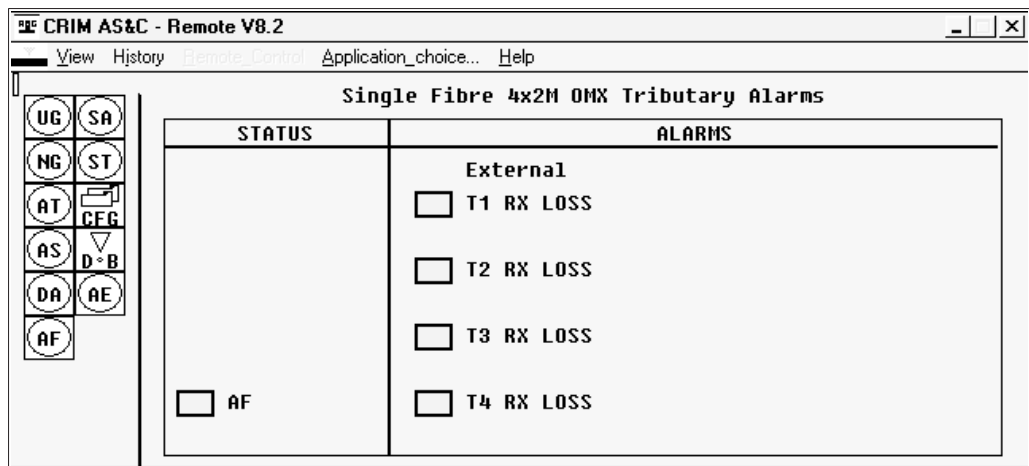


Figure 8–37 OMX 4x2 Receive Signal Loss Alarms

A description of the Alarms that appear on the Optical Line Transmission Unit alarm detail window is provided below:

Status Box Description	Abbreviation	Default	Prg.	Alarm Display
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Receive Signal Loss Receive Optical Failure.	RX OPT FAIL	U	Y	A
High Bit Error Rate Error rate exceeds 10^{-3} .	HIGH BER	U	Y	A
Single Bit Error Detected A single error has been detected.	ERROR	NU	Y	A
Telemetry Fail Failure of telemetry link to remote site.	TEL FAIL	NU	Y	A
Reflection Alarm Reflection on optical path.	REFLECTION	U	Y	A
Remote Alarm Alarm detected at other end.	RMT ALARM	U	Y	A
G.703 Receive Signal Loss Synthesis of "Tributary n Receive Signal Loss" alarms	TRIB RX LOSS	U	Y	A
Transmit Signal Failure Transmit Optical Failure.	TX OPT FAIL	U	Y	A
Incorrect Unit Type Installed Unit type mismatch — configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Multiplexer Fail Multiplexer sub-system failure	MUX FAIL	U	Y	A
Tributary n Receive Signal Loss Tributary input failure	T_n RX LOSS (PORT x) $n=1..4$	U	Y	A

(3) 2M OLTE

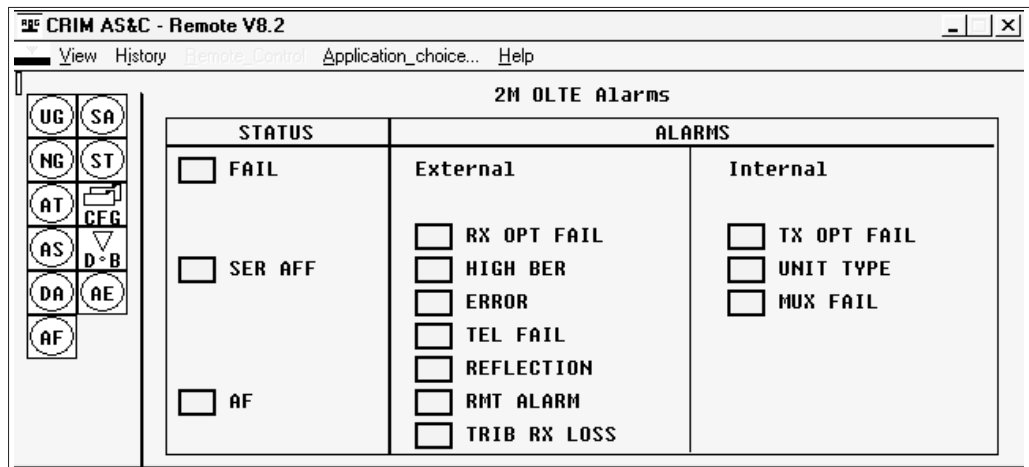


Figure 8–38 2M OLTE Alarms

A description of the Alarms that appear on the Optical Line Transmission Unit alarm detail window is provided below:

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Receive Signal Loss Receive Optical Failure.	RX OPT FAIL	U	Y	A
High Bit Error Rate Error rate exceeds 10^{-3} .	HIGH BER	U	Y	A
Single Bit Error Detected A single error has been detected.	ERROR	NU	Y	A
Telemetry Fail Failure of telemetry link to remote site.	TEL FAIL	NU	Y	A
Reflection Alarm Reflection on optical path.	REFLECTION	U	Y	A
Remote Alarm Alarm detected at other end.	RMT ALARM	U	Y	A
G.703 Receive Signal Loss Tributary signal failure	TRIB RX LOSS	U	Y	A
Transmit Signal Failure Transmit Optical Failure.	TX OPT FAIL	U	Y	A
Incorrect Unit Type Installed Unit type mismatch — configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Multiplexer Fail Multiplexer sub—system failure	MUX FAIL	U	Y	A

8.11.7 CTU Alarms

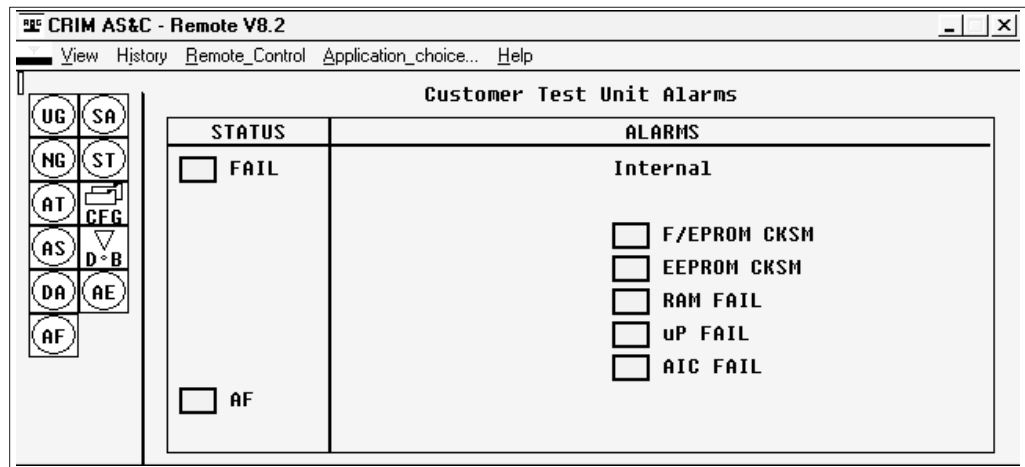


Figure 8–39 CTU Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
F/EPROM Checksum Error Bad checksum on the SW (F/EPROM). The CTU is running in boot. Return the CTU to Alcatel Warranty Repair.	F/EPROM CKSM	NU	Y	A
EEPROM Checksum Error Bad Checksum on the non–volatile memory (EEPROM). Possible CTU problems may occur.	EEPROM CKSM	NU	Y	A
RAM Read/Write Test Failure RAM Read/Write Failure. Internal CTU Fault.	RAM FAIL	NU	Y	A
Watchdog Alarm Occurred The Watch dog timer was not reset by the SW. The CTU has had a warm restart.	uP FAIL	NU	Y	A
Analogue Interface Circuit Failure Analogue Interface Circuit has failed. Possible causes are: Ring Meter unit cable fault, or Ring Meter Unit fault Possible AIC fault in the CTU hardware	AIC FAIL	NU	Y	A

8.11.8 ECTU Alarms

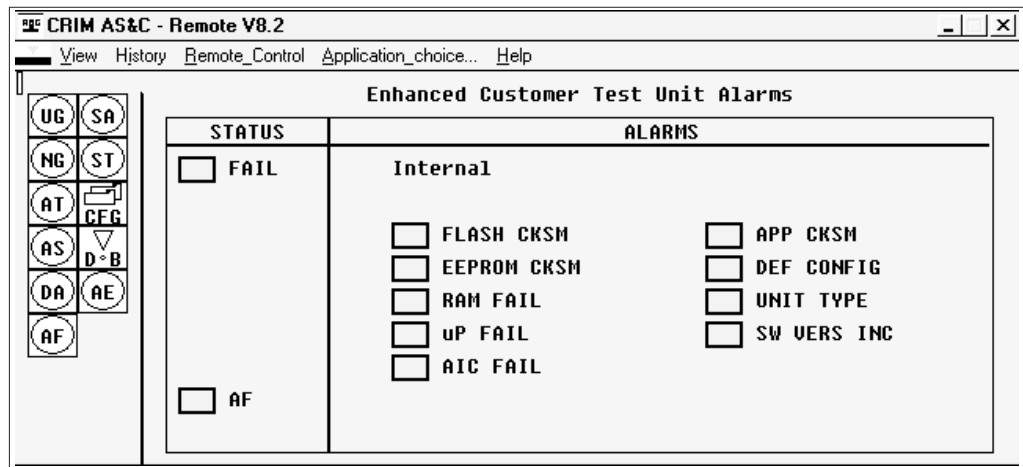


Figure 8–40 ECTU Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
FLASH Checksum Error Bad checksum on the SW (FLASH).	FLASH CKSM	NU	Y	A
EEPROM Checksum Error Bad Checksum on the non-volatile memory (EEPROM). Possible ECTU problems may occur.	EEPROM CKSM	NU	Y	A
RAM Read/Write Test Failure RAM Read/Write Failure. Internal ECTU Fault.	RAM FAIL	NU	Y	A
Watchdog Alarm Occurred The Watch dog timer was not reset by the SW. The ECTU has had a warm restart.	uP FAIL	NU	Y	A
Analogue Interface Circuit Failure Analogue Interface Circuit has failed. Possible causes are: Ring Meter unit cable fault, or Ring Meter Unit fault Possible AIC fault in the ECTU hardware	AIC FAIL	NU	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Boot Application Checksum Error The checksum of the Boot Application portion of the FEPROM is incorrect	APP CKSM	U	Y	A
Default Configuration in Use The default Configuration is being used as the previous settings have been lost or corrupted.	DEF CONFIG	U	Y	A*
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
Software Version Inconsistency Unit software version is not compatible with PCMCC software version	SW VERS INC	U	Y	A

8.12 Channel Unit 3rd Level Alarms

8.12.1 4/6 Wire Alarms

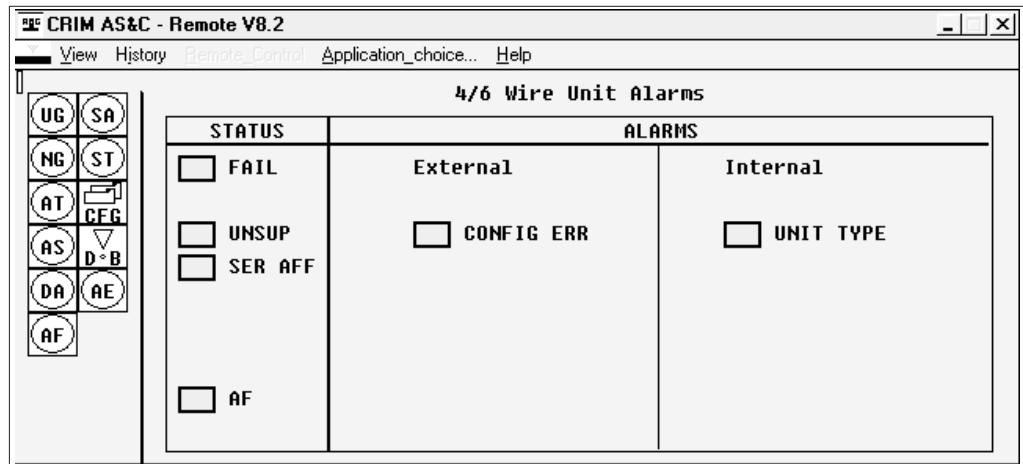


Figure 8–41 4/6 Wire Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The PCMCX or PCMC unit controlling the 4/6 wire unit has failed leaving it unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error Bad Configuration – Configuration rejected. Too many Timeslots assigned to the unit. Number of channels assigned is out of range.	CONFIG ERR	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A

8.12.2 64K G.703 EM Alarms (DI–64KB–E&M)

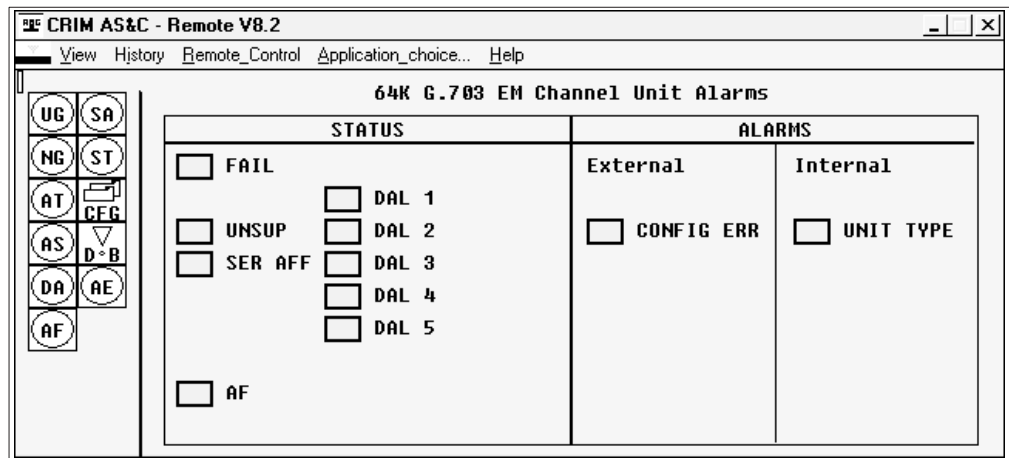


Figure 8–42 64Kb–G.703 Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The PCMCX or PCMCC unit controlling the 64K G.703 EM has failed leaving it unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
Data Access Loss Channel <i>n</i> Rx loss on channel <i>n</i> . This only applies to the 64 kbit/s G.703 data, and not to the E and M leads	DAL <i>n</i> (<i>n</i> =1..5)	U	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error Bad Configuration – Configuration rejected. Too many Timeslots assigned to the unit. Number of channels assigned is out of range.	CONFIG ERR	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A

8.12.3 ISDN (4B3T, 2B1Q) Alarms

STATUS		ALARMS	
☐ FAIL		External	Internal
☐ UNSUP	☐ U1	☐ PFO U1	☐ ACT FL U1
☐ SER AFF	☐ U2	☐ PFO U2	☐ ACT FL U2
	☐ U3	☐ PFO U3	☐ ACT FL U3
	☐ U4	☐ PFO U4	☐ ACT FL U4
☐ AF		☐ CONFIG ERR	☐ UNIT TYPE

Figure 8-43 ISDN Alarms – 2B1Q

STATUS		ALARMS	
☐ FAIL		External	Internal
☐ UNSUP		☐ PFO U1	☐ UNIT TYPE
☐ SER AFF		☐ PFO U2	
		☐ PFO U3	
		☐ PFO U4	
☐ AF		☐ CONFIG ERR	

Figure 8-44 ISDN Alarms – 4B3T

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The PCMCX or PCMCC unit controlling the ISDN unit has failed leaving it unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
User Port Blocked The parenting PCMCX has detected that the V5.2(–) channel <i>n</i> is blocked at the exchange.	BLOCKED Un (<i>n</i> =1..4)	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Power Feed Overcurrent for U–Interface <i>n</i> Power Feed over–current has occurred on U–Interface <i>n</i> when power feed enabled	PFO <i>n</i> (<i>n</i> =1..4)	U	Y	A
Configuration Error Bad Configuration – Configuration rejected. Too many Timeslots assigned to the unit. Number of channels assigned is out of range.	CONFIG ERR	U	Y	A
Activation Fail The line failed to activate on last attempt	ACT FL Un (<i>n</i> =1..4)	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A

8.12.4 P–Phone Unit Alarms

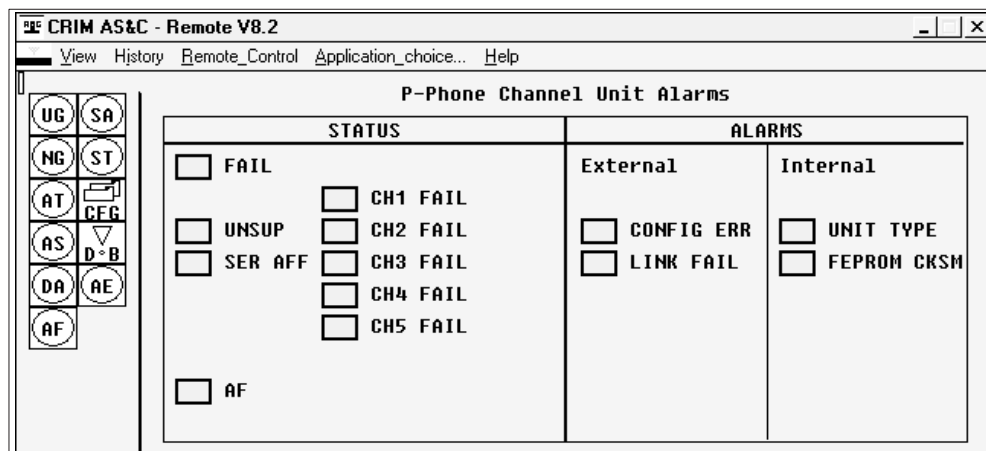


Figure 8–45 P–Phone Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The PCMCX or PCMCC unit controlling the P–Phone unit has failed leaving it unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
Channel Failure The Unit has detected that Channel n is not functioning correctly e.g. the P–Phone equipment in the customer’s premises has been disconnected.	CHn FAIL (n=1..5)	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error Bad Configuration – Configuration rejected. Too many Timeslots assigned to the unit. Number of channels assigned is out of range.	CONFIG ERR	U	Y	A
Link Failure The EU and RU P–Phone Units cannot communicate. A Unit may not be installed or may be configured incorrectly	LINK FAIL	U	Y	A
Incorrect Unit Type Installed Unit type mismatch – configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A
FEPROM Checksum Error The P–Phone Unit software stored on FEPROM devices has the incorrect checksum.	FEPROM CKSM	U	Y	A

8.12.5 POTS Unit Alarms

POTS EU AND RU have the same alarm screen.

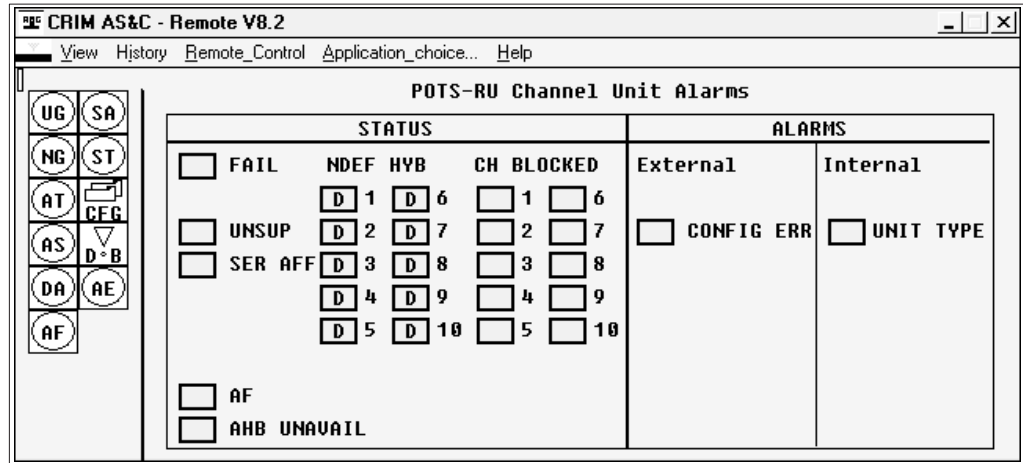


Figure 8–46 POTS Unit Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The PCMCX or PCMC unit controlling the POTS has failed leaving it unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
Automatic Hybrid Balancing Unavailable Automatic Hybrid Balancing is not available on this Channel Unit	AHB UNAVAIL	NA		A
Non Default Trans—Hybrid Settings in Use n Non-Default Coefficients are in use for channel n . That is, the channel has been trained.	NDEF HYB n ($n=1..10$)	NA		+
Channel Blocked The parenting PCMCX has detected that the V5.2(–) channel n is blocked at the exchange	CH BLOCKED n ($n=1..10$)	NA		+

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error Bad Configuration — Configuration rejected. Too many Timeslots assigned to the unit. Number of channels assigned is out of range.	CONFIG ERR	U	Y	A
Incorrect Unit Type Installed Unit type mismatch — configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A

8.12.6 Universal Unit Alarms

Both the Universal EU and Universal RU Units have similar alarm details.

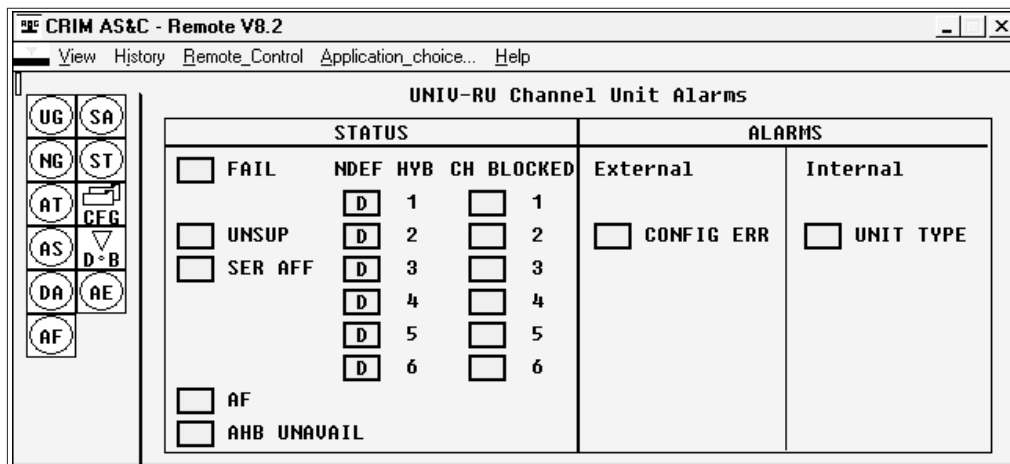


Figure 8–47 Universal Unit Alarms

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The PCMCX or PCMCC unit controlling the Universal unit has failed leaving it unsupervised.	UNSUP	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A
Automatic Hybrid Balancing Unavailable Automatic Hybrid Balancing is not available on this Channel Unit	AHB UNAVAIL	NA		A
Non Default Trans—Hybrid Settings in Use n Non—Default Coefficients are in use for channel n . That is, the channel has been trained.	NDEF HYB n ($n=1..6$)	NA		+
Channel Blocked The parenting PCMCX has detected that the V5.2(–) channel n is blocked at the exchange	CH BLOCKED n ($n=1..6$)	NA		+

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error Bad Configuration — Configuration rejected. Too many Timeslots assigned to the unit. Number of channels assigned is out of range.	CONFIG ERR	U	Y	A
Incorrect Unit Type Installed Unit type mismatch — configuration Unit type does not match the Unit plugged into the system.	UNIT TYPE	U	Y	A

8.13 Climate Control Panel 3rd Level Alarms

8.13.1 CLIMCTL Alarms

An illustration of the Climate Controller (CLIMCTL) alarm detail window is provided below:

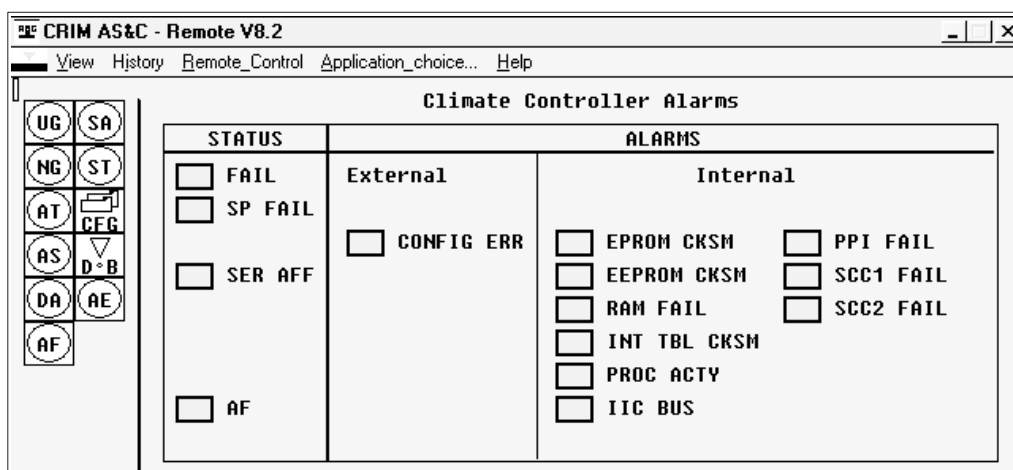


Figure 8–48 CLIMCTL Alarms

A description of the Alarms that appear on the CLIMCTL alarm detail window is provided below:

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Suspected Board Failure Alarm It is suspected that the unit has failed as all of the units which it controls are reporting failures.	SP FAIL	NA		A
Service Affecting Status A Service Affecting fault has occurred	SER AFF	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Configuration Error The CLIMCTL has been sent an invalid configuration from the PCMCC. SW fault.	CONFIG ERR	U	Y	A
EPROM Checksum Error The EPROM that contains the code has a HW fault.	EPROM CKSM	U	Y	A
EEPROM Checksum Error The EEPROM that contains the configuration is bad. HW/SW fault.	EEPROM CKSM	U	Y	A
RAM Read/Write Test Failure Either a HW problem with a RAM chip or the software has written where it shouldn't.	RAM FAIL	U	Y	A
Interrupt Table Checksum Error Software has overwritten the interrupt table. SW fault.	INT TBL CKSM	U	Y	A
Process Activity Failure Some tasks have failed to execute when they should have. SW fault.	PROC ACTY	U	Y	A
IIC Bus Failure The CLIMCTL cannot communicate with other units within the panel. Alarms and configuration cannot be done on the CCP units.	IIC BUS	U	Y	A
Peripheral Interface Failure Interface hardware has failed. HW fault.	PPI FAIL	U	Y	A
Serial Communications Controller 1 Failure Serial chip 1 has failed. HW fault.	SCC1 FAIL	U	Y	A
Serial Communications Controller 2 Failure Serial chip 2 has failed. HW fault.	SCC2 FAIL	U	Y	A

8.13.2 CLIMI/O Alarms

An illustration of the Climate I/O alarm detail window is provided below:

(1) Single Voltage CLIMI/O

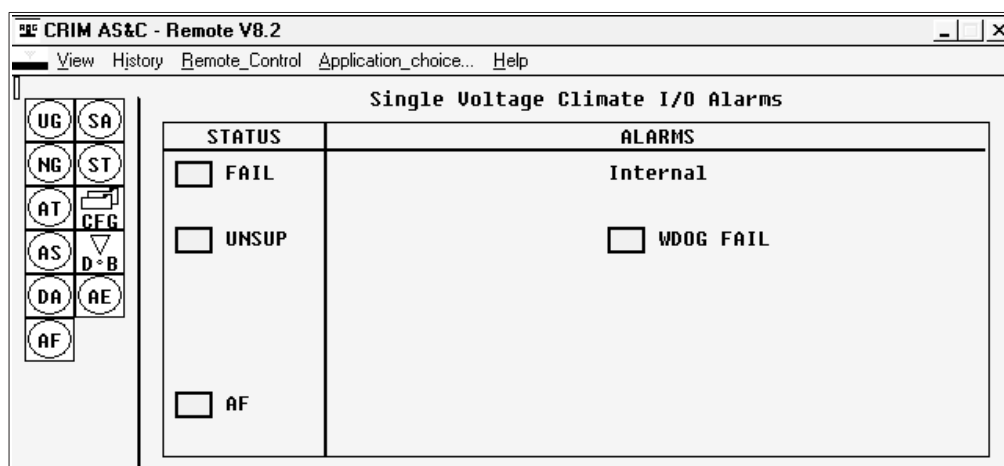


Figure 8–49 Climate I/O Alarms – Single Voltage CLIMI/O

A description of the Alarms that appear on the Climate I/O alarm detail window is provided below:

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The CLIMCTL unit controlling the unit has failed leaving it unsupervised.	UNSUP	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Failed to receive poll from CLIMCTL This alarm occurs when the CLIMCTL has not communicated with the CLIMI/O. The CLIMI/O has a LED on the front that shows this alarm.	WDOG FAIL	U	Y	A*

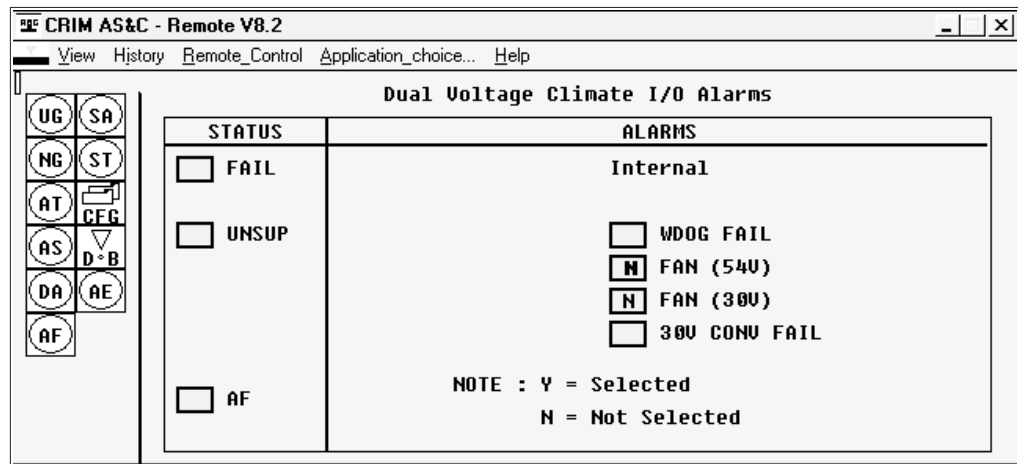
(2) Dual Voltage CLIMI/O

Figure 8–50 Climate I/O Alarms – Dual Voltage CLIMI/O

A description of the Alarms that appear on the Climate I/O alarm detail window is provided below:

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm.	FAIL	U	Y	A
Unsupervised Alarm The CLIMCTL unit controlling the unit has failed leaving it unsupervised.	UNSUP	NA		A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Failed to receive poll from CLIMCTL This alarm occurs when the CLIMCTL has not communicated with the CLIMI/O. The CLIMI/O has a LED on the front that shows this alarm.	WDOG FAIL	U	Y	A*
Fan operating at 54V The fans are operating at 54V	FAN (54V)	NA		
Fan operating at 30V The fans are operating at 30V	FAN (30V)	NA		
30V Converter Fail The 30V converter on the DV CLIMI/O has failed	30V CONV FAIL	NU	Y	

9 Monitoring the C–RIM

This chapter details the Performance Monitoring, Unknown Subscribers and Traffic Measurement applications that are used to monitor the C–RIM.

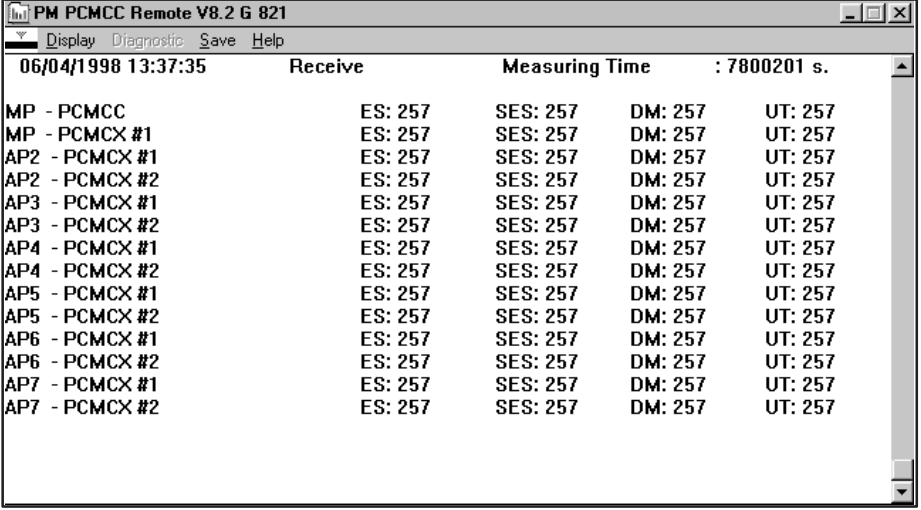
These applications are accessed by:

- ▶ Selecting a PCMCC in the **Alarm Synthesis** window
- ▶ Opening the **Application_Choice** menu
- ▶ Selecting: **Performance Monitoring** (EU or RU), **Unknown Subscribers** (RU only), or **Traffic Measurement** (EU or RU).

9.1 Performance Monitoring

The **Performance Monitoring** application is used to observe error rates on the C-RIM system.

The main window of the Performance Monitoring application appears in the G.821 format:



PM PCMC Remote V8.2 G 821					
Display Diagnostic Save Help					
06/04/1998 13:37:35		Receive	Measuring Time : 7800201 s.		
MP - PCMC	ES: 257	SES: 257	DM: 257	UT: 257	
MP - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP2 - PCMCX #2	ES: 257	SES: 257	DM: 257	UT: 257	
AP2 - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP3 - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP3 - PCMCX #2	ES: 257	SES: 257	DM: 257	UT: 257	
AP4 - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP4 - PCMCX #2	ES: 257	SES: 257	DM: 257	UT: 257	
AP5 - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP5 - PCMCX #2	ES: 257	SES: 257	DM: 257	UT: 257	
AP6 - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP6 - PCMCX #2	ES: 257	SES: 257	DM: 257	UT: 257	
AP7 - PCMCX #1	ES: 257	SES: 257	DM: 257	UT: 257	
AP7 - PCMCX #2	ES: 257	SES: 257	DM: 257	UT: 257	

Figure 9–1 Performance Monitoring Window

Statistics are provided for the PCMCs and Non-integrated PCMCXs that have their PM and CRC4 configuration options selected. These statistics are collected on the Receive (Rx) G.703 signal and conform with ITU-T recommendations for G.821.

The first line of the message on the screen has the following information:

- ▶ Date and Time the errors were detected
- ▶ Indication whether the errors are for Transmit or Receive
- ▶ Measuring time – the period over which the statistics have been collected for display on the CT.

The second line gives:

- ▶ The name of the equipment
- ▶ Display of Errored Seconds (ES)
- ▶ Display of Severely Errored Seconds (SES)
- ▶ Display of Degraded Minutes (DM)
- ▶ Display of Unavailable Time in seconds (UT)

- Note**
- 1** *If the symbol '>=' appears in this second line it indicates that there was loss of data. The first statistic collected after the resetting of the PCMCC or PCMCX may indicate loss of data.*
 - 2** *The latest Performance Monitoring results will appear at the bottom of the window and hence scrolling to the bottom of the window may be necessary to view the latest statistics.*
 - 3** *Performance Monitoring statistics for any C-RIM NE to which you can connect are appended to the previous statistics in the PM_MEMO file. Take care when using the PM statistics to ensure that you are viewing the results from the C-RIM to which you are currently connected.*
 - 4** *Refer to Performance Data Collection section on page 9-5 for more information on Performance Data Collection.*

9.1.1 Performance Attributes

The performance of a Network Element is measured in terms of the number of errors that occur. There are several parameters that are used with G.821 performance monitoring. These are listed below:

ES (Errored Seconds)

A second with at least one error.

SES (Severely Errored Seconds)

A second with Bit Error Rate (BER) $> 10^{-3}$.

DM (Degraded Minutes)

A minute with BER $> 10^{-6}$

UT (Unavailable Time)

A period of unavailable time begins when the BER in each second is worse than 10^{-3} for a period of 10 consecutive seconds. These 10 seconds are considered unavailable time. From this point onwards every second is considered to be "Unavailable Time". When the BER $< 10^{-3}$ for ten consecutive seconds unavailable time will cease.

9.1.2 Performance Monitoring Menus

The following menus are available from the main window of the Performance Monitoring application:



Display

The Display menu allows the selection of different data viewing formats. The only option for display of Performance Monitoring Statistics for C-RIM is the G.821 format.



Save

The **Save** menu is used to save or print Performance Monitoring data.

The **Save** menu contains the **File** and **Print** options.

File

Performance monitoring data can be saved to disk for later analysis. Information on disk is stored as a tab-delimited text file so you can access it through a variety of commercially available spreadsheet or word processing applications. The Performance Monitoring data is stored in two files:

PM_MEMO1.x
PM_MEMO2.x

At the EU x = 32. At the RU x = 33.

Print

The Print option sends the PM data to the default Windows™ printer.

9.1.3 Setting Up Performance Monitoring

Performance Monitoring may be enabled or disabled for each PCMCC or Non-integrated PCMCC unit in the C-RIM system. This is done through the Access Panel G.703 Configuration table described on page 5-37.

9.1.4 Disabling Performance Monitoring

The operator can disable the PM option for any PCMCX or PCMCC in the Equipment Configuration application on the Craft Terminal. A PCMCX or PCMCC stops PM collection as soon as the PM option is disabled. Refer to page 5–37 for additional information on disabling Performance Monitoring.

9.1.5 Setting Up Polling Time

The polling time (interval between Craft Terminal collections of Performance Monitoring information from the PCMCC) is user-selectable. This is specified using the statement:

POLPM=xxx

in the [PEX] section of the Windows™ WIN.INI file, where xxx is from 20 to 999 seconds. If, for example, the interval is set to 900 seconds, the CT will collect and display PM information on the screen every 900 seconds (15 minutes). The PM polling time is set to 60 seconds by default.

9.1.6 Performance Data Collection

Each PCMCX sends PM information to the PCMCC every 20 seconds. If performance monitoring is enabled for the PCMCC, it also collects PM information for its own G.703 signal every 20 seconds. The PCMCC then stores this information and sends it to the Craft Terminal when requested (once per Poll period).

Note *CRAFT Terminal polling is not synchronised with the system's internal collection time. Therefore Measured Time will not correspond exactly with the data and time stamps*

The PM measurement time is the actual measured time since the last time (in seconds) that NECTAS polled the PCMCC. As this time is stored in three bytes as seconds, its limit is 16777215 seconds, which is about six months. Each error counter has a size of two bytes, so it has a maximum of 65535.

If the operator starts PM application and disconnects the Craft Terminal longer than the PM polling time, the PM measurement time in the PM report is the time since the last CT poll.

As the PM statistics are accumulated in the PCMCC and only cleared by a poll from the Craft Terminal, the PM application can be closed and a summary result obtained the next time the application is opened.

9.2 Unknown Subscribers

This option displays the Unknown Subscribers (USs). It can be used to obtain the details of any USs that have been received by the C-RIM which have raised a US alarm on the PCMCC. Upon viewing the USs, the AS&C alarm is cleared. USs are deleted by the PCMCC once they have been read by the application so a warning message is given asking if you want to proceed.

Note *The Unknown Subscriber list is reset when the application is stopped.*

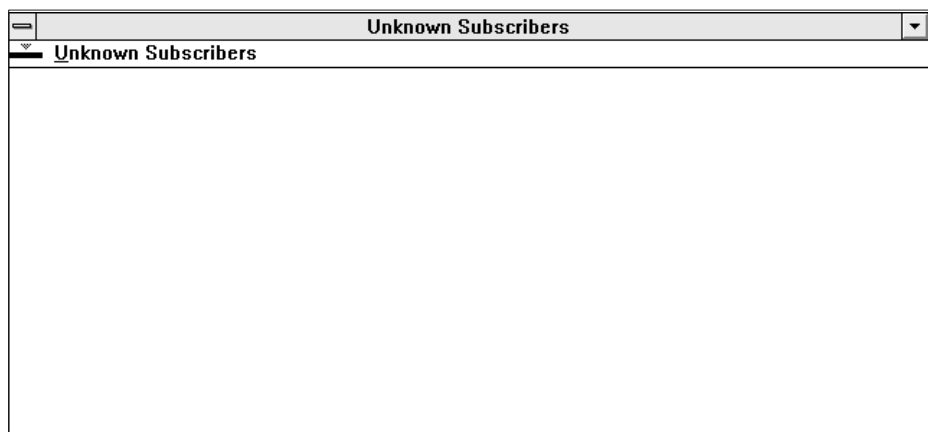


Figure 9–2 Unknown Subscribers Application

If there are unknown subscribers, selecting the Unknown Subscribers menu on the main window will bring up the following window.

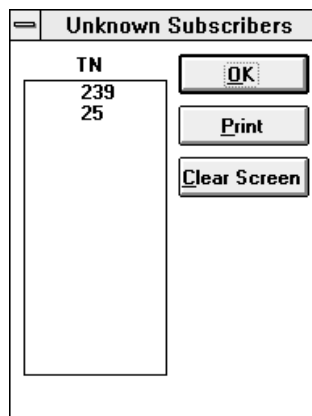


Figure 9–3 Unknown Subscribers

USs may be cleared or printed. If USs are present you will be informed that there are USs to view.

9.2.1 Unknown Subscriber Alarms

When a US is received, a US alarm will be raised on the PCMCC via the AS&C application. The alarm will be cleared when the Unknown Subscribers application collects the USs. This alarm alerts the operator that USs have been received.

An Unknown Subscriber alarm indicates that the Alcatel 1000 System 12 exchange has attempted to make an incoming call to the C-RIM system, and the C-RIM system has not been configured to the subscriber.

This means that the S12 TN has not been assigned to a panel/slot/channel in the FNN database. Either the subscriber should not be in service at the S12, or the subscriber should be assigned in the C-RIM FNN database using the FNN Administration application.

9.3 Traffic Measurement

9.3.1 V5.2(–) Interface Traffic Measurements

C-RIM Release 8.2 provides traffic measurement and reporting facilities for V5.2(–) interfaces. For each declared V5.2(–) interface, the ICC collects traffic measurement data every five minutes intervals, and maintains it for up to 48 hours.

The traffic measurement data held by C-RIM is uploaded by COMNET-2 and passed to TSAR using the appropriate format. It can also be accessed by a NECTAS *Traffic Measurement* application for a display of measurement results.

When the buffer is full, the ERMU overwrites the oldest data. The ERMU always collects traffic measurements irrespective of receiving polls from COMNET.

9.3.2 V5.2(–) Traffic Measurement Collection

The raw traffic measurements to be collected by the C-RIM for each V5.2(–) interface are:

- 1** Total number of bearer channel allocations bothways.
The number of bearer channel allocations to user ports in the C-RIM per V5 interface for calls terminating or originating at subscriber terminals which are connected to these ports.
- 2** Total sum of bearer channel holding times bothways.
The total sum of bearer channel allocation duration for calls terminating or originating at subscriber terminals which are connected to user ports in the C-RIM and can be reached via this V5 interface.
- 3** Total sum of bearer channel in-service times
This measurement gives the total sum of in-service times of all V5 time slots which can be used for bearer channels during the measurement interval.

9.3.3 NECTAS Traffic Measurement Application

Selecting Traffic Measurement from the **Application Choice** menu displays the following screen:

The screenshot shows the 'Traffic Measurement-Remote V8.2 - [TM1]' application window. It features a menu bar with 'File', 'Options', 'View', and 'Help'. Below the menu is a toolbar with icons for file operations and a status bar at the bottom that says 'Ready'. The main area is a large table with columns for 'Date Time' and eight interfaces (Interface 1 through Interface 8). Each interface has sub-columns for 'Traffic', 'Alloc', 'Mean', and 'Hold'. The table displays a series of data rows for the date 16 Jun 1998, with times ranging from 12:05 to 15:05. The data values are numerical, representing traffic measurements. The status bar at the bottom indicates 'Ready'.

Figure 9–4 Traffic Measurement Application

File

The File menu is used to export Traffic Measurement data to a file, print traffic measurement data, and exit the application.

Options

The Options menu reads Traffic Measurement data from the C—RIM or clears the buffer.

View

Allows the toolbar and/or status bar to be displayed or hidden.

Help

This menu gives version information for the Traffic Measurement application.

(1) File Menu

The File menu has the following entries:

Export Data

Writes to an ASCII file the data currently displayed in the Traffic Measurement application. The ASCII file can then be opened in a spreadsheet to analyse the data.

Print

Prints the data displayed in the Traffic Measurement application.

Exit

Closes the Traffic Measurement application.

(2) Options Menu

The Options menu has the following entries:

History

The History entry opens the Measurement Data Collection Time Period dialogue box. This is used to select the start and end date and time for the data to be displayed. Both these times must be within the 48 hour period for data stored in the C-RIM.

Data for the selected period is then uploaded from the C-RIM to the Craft Terminal.

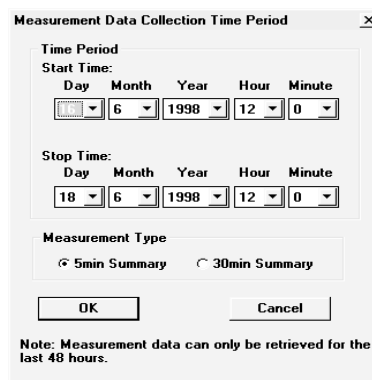


Figure 9–5 Measurement Data Collection Time Period

Clear Buffer

The Clear Buffer option clears the traffic measurement buffer within NECTAS. It does not clear the buffer in the C-RIM.

(3) View Menu

The **View** menu is used to navigate through the various configuration windows of the Traffic Measurement application.

The options of this menu are:

Toolbar

The **Toolbar** option in the **View** menu is a toggle to display or hide the toolbar (the buttons beneath the menu bar) on the Configuration Application window.

Status Bar

The **Status Bar** option in the **View** menu is a toggle to display or hide the status bar at the bottom of the Configuration Application window. The Status Bar shows the state of the NumLock, CapsLock and ScrollLock keys.

(4) Button Bar

Four buttons are located on the button bar. This bar can be displayed or hidden via the Toolbar entry in the View menu.

The buttons on the button bar are:

Save

Saves the displayed data to an ASCII file for analysis in a spreadsheet or other program.

Print

Prints the displayed data.

History

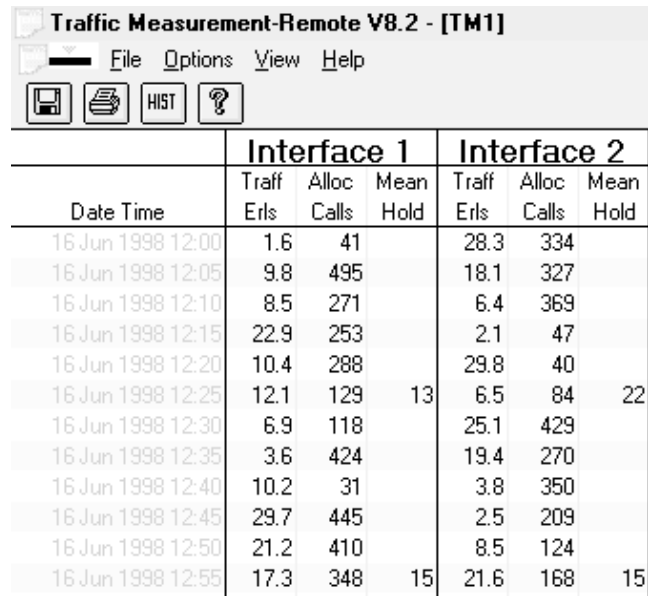
Opens the Measurement Data Collection Time Period dialogue box

Help

Opens the Help screen for the Traffic Measurement application

(5) Presentation of Measurement Data

Every 5 minutes, the ICC collects a new set of measurements for each V5.2(–) interface. To view new Traffic Measurements, select the **History** entry from the **Options** menu in the Traffic Measurement application's display.



The screenshot shows a window titled "Traffic Measurement-Remote V8.2 - [TM1]" with a menu bar (File, Options, View, Help) and icons for Save, Print, History (HIST), and Help (?). Below the menu is a table with the following data:

Date Time	Interface 1			Interface 2		
	Traff Erls	Alloc Calls	Mean Hold	Traff Erls	Alloc Calls	Mean Hold
16 Jun 1998 12:00	1.6	41		28.3	334	
16 Jun 1998 12:05	9.8	495		18.1	327	
16 Jun 1998 12:10	8.5	271		6.4	369	
16 Jun 1998 12:15	22.9	253		2.1	47	
16 Jun 1998 12:20	10.4	288		29.8	40	
16 Jun 1998 12:25	12.1	129	13	6.5	84	22
16 Jun 1998 12:30	6.9	118		25.1	429	
16 Jun 1998 12:35	3.6	424		19.4	270	
16 Jun 1998 12:40	10.2	31		3.8	350	
16 Jun 1998 12:45	29.7	445		2.5	209	
16 Jun 1998 12:50	21.2	410		8.5	124	
16 Jun 1998 12:55	17.3	348	15	21.6	168	15

Below the table, three labels with arrows point to specific columns: "Traffic (Erlangs)" points to the first column of Interface 1, "Allocations" points to the second column of Interface 1, and "Mean Holding Time" points to the third column of Interface 2.

Figure 9–6 Presentation of Traffic Measurement Data

Each line of the display indicates the 5 minute results for all V5.2(–) interfaces supported by a C-RIM. The left column indicates the starting time of the measurement period. For each interface, three measurement parameters are presented. These are

- ▶ Traffic (Erlangs)
- ▶ Allocations
- ▶ Mean Holding Time (seconds).

This result is only presented every half hour. Measurements of mean holding time over a 5 minute period will not produce an accurate result as this time period is of the order of magnitude of typical mean holding times. A greater measurement period is required for an accurate result.

10 Maintenance & Administration

This chapter details the basic administrative procedures and applications of NECTAS on the C–RIM. These are:

- ▶ Backup Procedures
- ▶ The Administration Application
- ▶ The NECTAS Version Information Application
- ▶ Software Download Application

10.1 Backup Procedures

There are two set of files that should be regularly backed up:

- ▶ ERMU Configuration files
- ▶ PCMCC Configuration files
- ▶ FNN files
- ▶ Log files

10.1.1 Backing Up Configuration Files

To back up the configuration files the NECTAS directory structure has to be replicated on the floppy disk that will be used for the backup. Then all the configuration files have to be copied to the floppy disk. The process is as follows:

- 1** Select the configuration directory that contains the files that you need to back up. The configuration file extensions are .PCF for the PCMCC and .ECF for the ERMU.
- 2** Insert a floppy disk into the floppy disk drive.
- 3** Go to the directory on the hard drive where the configuration files are being stored using the **cd** command.
- 4** Use the **md** command to create directories on the floppy disk with the same names and structure as the NECTAS directories on the hard drive.
- 5** Change to the directory on the floppy that has the same name as the directory on the hard drive.
- 6** To back up a file, type the command:

copy c:filename.?cf a:

where *filename* is the name of the file that you need to copy.

The specified file is copied to the floppy disk in the A drive.

Repeat this command for each file that you need to back up.

- 7** Configuration files are very small and it may be easier to back up all configuration files. To back up all configuration files in a directory, type the following command:

copy *.*cf a:

All configuration files are copied to the floppy disk in the A drive.

You can also execute this procedure using the **File Manager** or **Windows Explorer** program in Windows™. In this case, the file names are the same and the same rules apply except you need to select the **Copy** command from the **File** menu.

- 8** Label the disk as a Backup and date it. It is best to store backups off-site for extra security.

10.1.2 Backing Up FNN Files

To back up the FNN files:

- 1** Select the directory that contains the FNN files. The file extensions will be .FNN for the main database and .HDR for the header.
- 2** Insert a disk into the floppy disk drive.
- 3** Go to the directory on the hard drive where the FNN files are being stored using the **cd** command. Create a matching directory on the floppy with the **md** command, and change to it with the **cd** command.
- 4** To back up one file at a time, type the commands:

copy filename.fnn a: (FNN binary file)
copy filename.hdr a: (Header file)
copy filename.txt a: (FNN text file)

where *filename* is the name of the database, header, and text files respectively.

The specified files are copied to the floppy disk in the A drive. Repeat this command for each file that you need to back up.

You can also execute this procedure using the **File Manager** or **Windows Explorer** programs in Windows™. In this case, the file names are the same and the same rules apply except you need to select the **Copy** command from the **File** menu.

- 5** Label the disk as a FNN Backup and date it. It is best to store backups off-site for extra security.

10.1.3 Backing Up Log Files

The log files contain historical alarm information for the (E)RMU and the EU and RU NMQs. The format of the filename for the log files is:

AL_MEMO*.*

SY_MEMO*.*

The location of the log files is:

► Windows 3.1

ERMU: \NECTAS\ERMU_V82

PCMCC: \NECTAS\PCC_V82

► Windows 95 or Windows NT 4.0

ERMU: \Program Files\NECTAS\ERMU_V82

PCMCC: \Program Files\NECTAS\PCC_V82

To back up the Log files:

- 1** Select the directory that contains the ERMU log files.
- 2** Insert a disk into the floppy disk drive.
- 3** Go to the directory on the hard drive where the FNN files are being stored using the **cd** command. Create a matching directory on the floppy with the **md** command, and change to it with the **cd** command.
- 4** To back up log files, type the command:

copy ??_memo*.*

The specified files are copied to the floppy disk in the A drive.

You can also execute this procedure using the **File Manager** or **Windows Explorer** programs in Windows™. In this case, the file names are the same and the same rules apply except you need to select the **Copy** command from the **File** menu.

- 5** Label the disk as a log file backup and date it. It is best to store backups off-site for extra security.
- 6** Repeat for the PCMCC log files

10.2 Restoring Files

10.2.1 Restoring Configuration Files

If a configuration file on a C–RIM becomes corrupt, you will need to restore the file from the backup diskette.

- 1 Select the directory to which you need to restore the file.
- 2 Insert the backup diskette into the floppy disk drive.
- 3 Using the **cd** command, go to the directory on the hard drive and floppy disk where the files you wish to restore are kept.

Note *The directory structure usually starts in the C:\NECTAS directory (Windows 3.1) or the C:\Program Files\NECTAS directory (Windows 95 or NT 4.0).*

- 4 To restore a configuration file, type: **copy a: filename.?cf**
- 5 Repeat this procedure for each file that you need to restore.

Note *This process restores files from the backup to the hard disk on the CRAFT Terminal. If the configuration within the C–RIM is corrupt it will then be necessary to send the configuration to the C–RIM.*

10.2.2 Restoring FNN Files

To restore a FNN file:

- 1 Select the directory to which you need to restore the file.
- 2 Insert the FNN backup diskette into the floppy disk drive.
- 3 Use the **cd** command to go to the directory on the hard drive where the files you wish to restore are kept.
- 4 To restore a configuration file, type:

copy a:filename.fnn

copy a:filename.hdr

FNN files may also be stored in text format for modification by an external editor. These files have a .txt extension.

- 5** The FNN database may be opened in the FNN administration application then downloaded to the ERMU.

10.3 Administrative Application

The ERMU, PCMCC–EU & PCMCC–RU each have a database of users and their level of access privilege. This user password/privilege data is stored in the security database in non–volatile, on–board memory (FEPRM). The Administrative application in NECTAS is used to manage all operators, allowing them to change their passwords, and allows Security Operators to set up operators and their privileges.

Up to 20 operators may be defined per NE and each Operator is defined by the following parameters:

- ▶ Operator Identifier (name $\leq$ 16 characters)
- ▶ Password (4 to 8 characters – additional characters are ignored)
- ▶ Application Group (eg. Access Level 1, Access Level 2, etc.)

Note *Both the Operator ID and the password are case sensitive.*
When the Administrative Application is run, the main window appears:

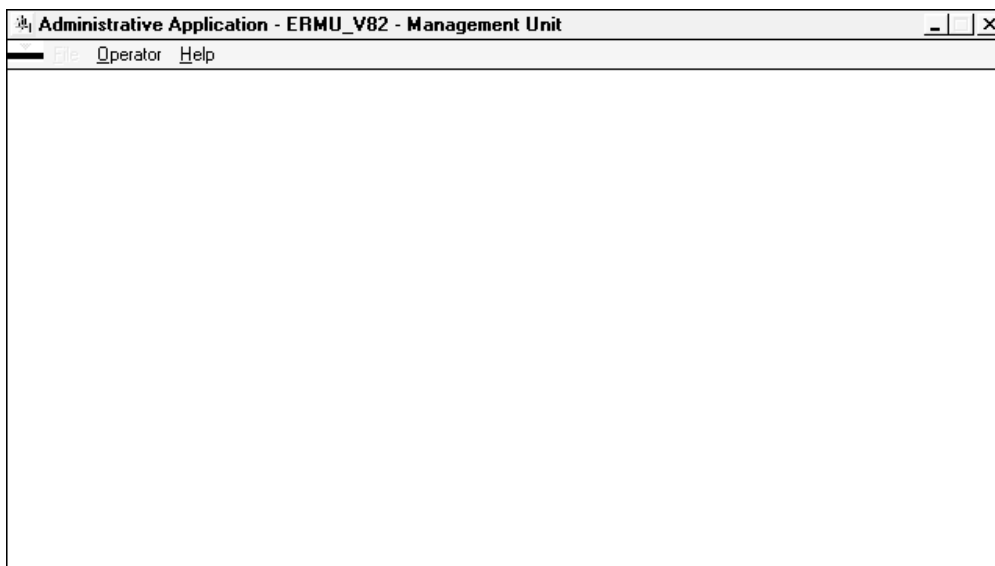


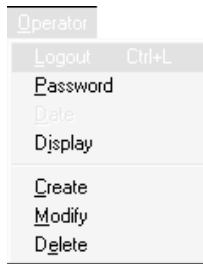
Figure 10–1 The Administrative Application

In addition to Help, the following menu is available from the **Administration** Application window.

Operator

Used to change passwords, set up operators and logout from the C–RIM.

10.3.1 The Operator Menu



The Operator menu includes commands that enable you to logout from network equipment, change your password, change your operator date on the NE, display operator profile(s). In addition, Security Operators can create, modify or delete operators.

The 'Operator Identifier' and 'Password' entries are case sensitive.

The following functions are available in the **Operator** menu:

Logout

To Logout from the C–RIM without terminating NECTAS.

Password

To change a password.

Display

To display Operator information.

Create

For the Security Operators to Create new Operators.

Modify

For the Security Operators to alter Operator's information.

Delete

For the Security Operators to delete Operators.

These options are described in greater detail below.

10.3.2 Logging Out from the C–RIM

The correct way to log off from the C–RIM is to select **Logout** from the **Operator** menu. The following dialog box will appear:

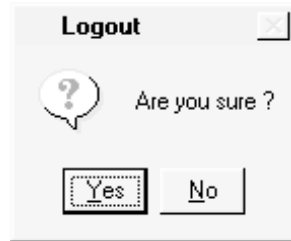


Figure 10–2 Logout Window

Logging out correctly will ensure that the session is closed immediately at the ERMU and PCMCCs. Another operator attempting to login immediately afterwards via the same F–port will get a login window and have to enter User ID and password to gain access to C–RIM.

If NECTAS is closed without an explicit **Logout** command being sent, then the PCMCC/ERMU will timeout after around 5 minutes. Upon restarting a logon prompt will appear.

This means that if an operator simply closes the NECTAS window (using the control box) the PCMCC/ERMU will timeout and log the operator out. If another operator runs NECTAS on that F–Port before this timeout period has occurred then they will gain immediate access to the C–RIM and will not have to login.

10.3.3 Changing Your Password

The **Password** option is only available to Security Operators. To change a password, select **Password** from the **Operator** menu. This will bring up the following dialog box:

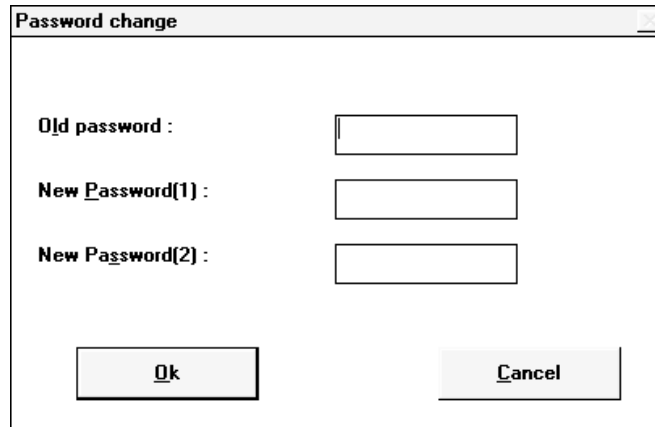
A screenshot of a 'Password change' dialog box. The dialog has a title bar with the text 'Password change'. Inside, there are three text input fields. The first is labeled 'Old password :'. The second is labeled 'New Password(1) :'. The third is labeled 'New Password(2) :'. At the bottom of the dialog, there are two buttons: 'Ok' on the left and 'Cancel' on the right.

Figure 10–3 The Password Option of the Operator Menu

To change a password, enter the existing password in the Old Password box then enter the new password in both of the New_Password boxes. New_Password(2) is used to verify the new password. When you have finished click **OK** to set the password or **CANCEL** to exit without changing it.

Message boxes will inform you if a mistake has been detected and you will have to start from the beginning of this item again. After you have altered the password or finished with the box select **OK** or **CANCEL** as appropriate.

10.3.4 Viewing an Operator's Parameters

To view the information about an operator, select **Display** from the **Operator** menu. Using this option, Security Operators may view all operator information.

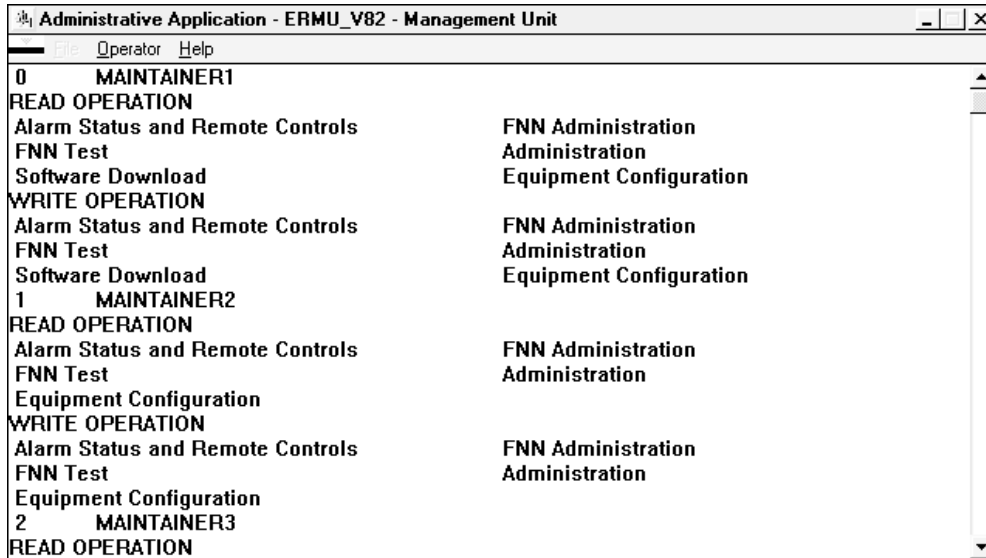
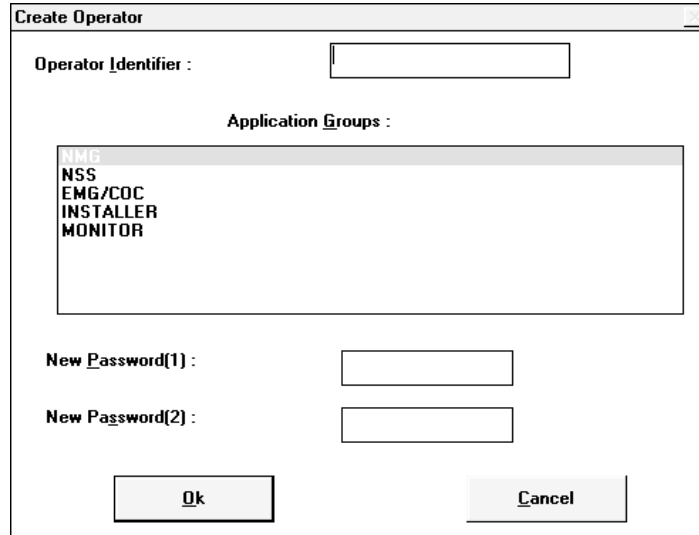


Figure 10–4 Operator Parameters

10.3.5 Creating a New Operator

The Security Operators can create a new operator, by selecting **Create** from the **Operator** menu.



The screenshot shows a 'Create Operator' window. At the top is the title 'Create Operator'. Below it is a label 'Operator Identifier :' followed by a text input field. Underneath is a label 'Application Groups :' followed by a list box containing five items: 'NMG', 'NSS', 'EMG/COC', 'INSTALLER', and 'MONITOR'. Below the list box are two labels: 'New Password(1) :' and 'New Password(2) :', each followed by a text input field. At the bottom of the window are two buttons: 'Ok' and 'Cancel'.

Figure 10–5 Create option of the Operator Menu

A new Operator may only be created by the Security Operators (who have read and write privilege for all applications). As illustrated on the window above, there are 5 operator levels. Each operator level has access to a predefined selection of applications.

The Operator Identifier uniquely identifies each operator in the system with a field of up to 16 characters. The password may be between 4 and eight alphanumeric characters.

When the operator selects **OK**, NECTAS checks that the operator identifier does not already exist and that both password entries agree. It then sends the new operator profile table to the NE.

Note *There are five Security Operators pre-defined on the C–RIM (Detailed on page 10–16). Their passwords can be altered but these operators cannot be deleted.*

10.3.6 Modifying an Operator's Parameters

Only Security Operators can modify another operator's parameters.

To alter the profile of any operators, select **Modify** from the **Operator** menu. This will bring up the window in Figure 10–6, which allows an existing operator's parameters to be modified. Enter the operator's ID and click on OK.

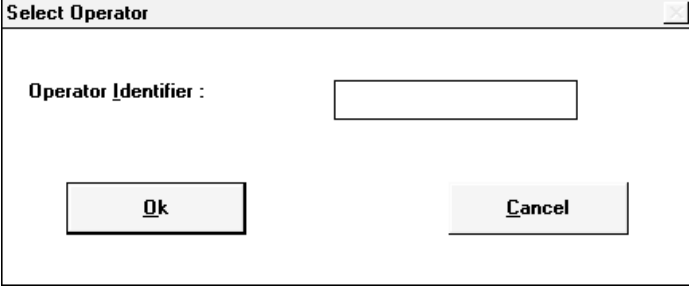
A dialog box titled "Select Operator" with a standard window control bar. It contains a label "Operator Identifier :" followed by a text input field. At the bottom, there are two buttons: "Ok" and "Cancel".

Figure 10–6 Modify Operator Parameters – Select Operator

After the operator's ID has been entered, the Modify Operator's Profile window appears. This is shown in Figure 10–7. With the exception of the title bar this is identical to the Create Operator window.

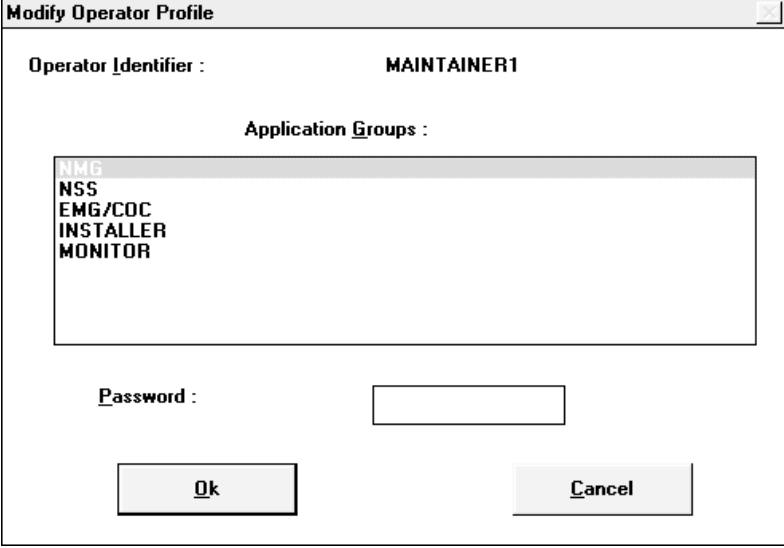
A dialog box titled "Modify Operator Profile" with a standard window control bar. It contains a label "Operator Identifier :" followed by the text "MAINTAINER1". Below this is a label "Application Groups :" followed by a list box containing the following items: NMG, NSS, EMG/COC, INSTALLER, and MONITOR. At the bottom, there is a label "Password :" followed by a text input field, and two buttons: "Ok" and "Cancel".

Figure 10–7 Modify Operator's Profile

The Security Operator must select the new application group for the operator and have the operator enter the password. If the password is verified, the new operator profile table is sent to the NE.

10.3.7 Removing an Operator

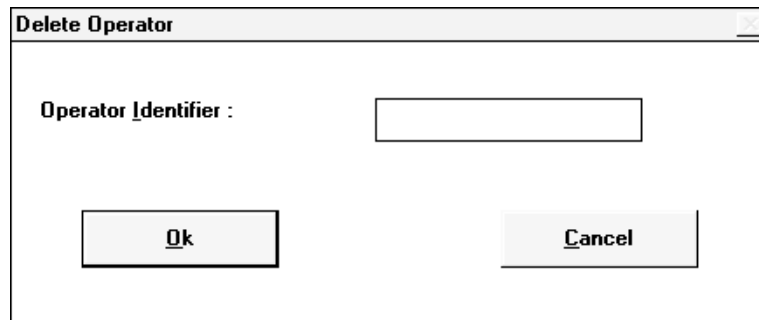


Figure 10–8 Delete Operator Window

A Security Operator may delete an operator from the database. To delete an operator:

- ▶ Select **Delete** from the **Operator** menu.
- ▶ Enter the Operator Identifier into the Delete Operator dialogue box.
- ▶ If the Operator Identifier is valid, a dialogue box appears with a request to confirm deletion of the operator.



Figure 10–9 Delete Operator Window

10.3.8 Application Group Privileges

The Administration Application allows a number of groups to be defined, each with access to specific NECTAS applications. The application groups are:

NMG

PCMCC	ERMU
AS&C	AS&C
Performance Monitoring	FNN Test
Software Download	FNN Administration
Administration	Administration
Equipment Configuration	Equipment Configuration
Unknown Subscribers	Software Download
Traffic Measurement	

NSS

PCMCC	ERMU
AS&C	AS&C
Performance Monitoring	FNN Test
Administration	FNN Administration
Equipment Configuration	Administration
Unknown Subscribers	Equipment Configuration
Traffic Measurement	

EMG / COC

PCMCC	ERMU
AS&C	AS&C
Performance Monitoring	FNN Test
Administration	FNN Display
Equipment Configuration	Administration
Traffic Measurement	Equipment Configuration

INSTALLER

PCMCC	ERMU
AS&C	AS&C
Performance Monitoring	FNN Test
Administration	FNN Display
Traffic Measurement	Administration

MONITOR

PCMCC	ERMU
AS&C	AS&C
Performance Monitoring	FNN Display
Administration	Administration
Unknown Subscribers	
Traffic Measurement	

10.3.9 Security Operators

There is a Security Operator defined for each of the five user-groups on the system. These are:

User ID	User Group
MAINTAINER1	NMG
MAINTAINER2	NSS
MAINTAINER3	EMG / COC
MAINTAINER4	INSTALLER
MAINTAINER5	MONITOR

These operators have access to all functions of the **Operator** menu whilst other users are limited to using **Display** and **Logout**.

Note *The Security Operators are the only operators that can create, delete or modify operator profiles.*

10.4 NECTAS Version Information

When this application is selected, the applications installed on the Craft Terminal are displayed along with their version numbers.

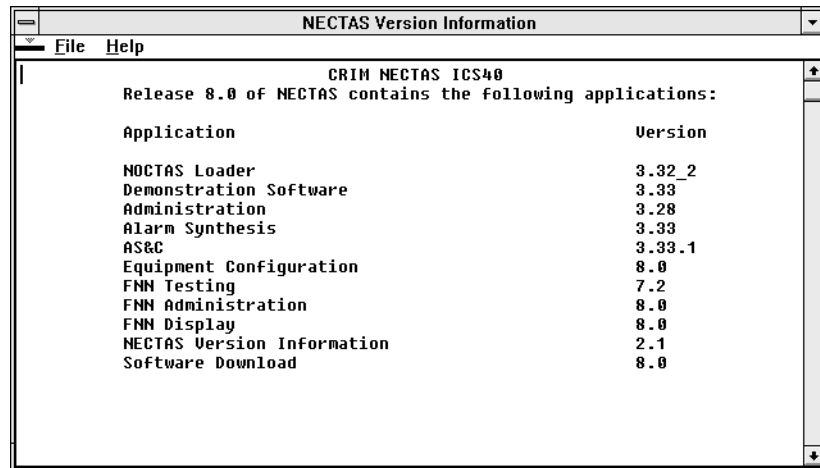


Figure 10–10 NECTAS Version Information

There is a print file option which, when selected, outputs to the printer port the displayed version listing.

10.5 Software Download

The Software Download application (SWD) is used to download operating software to the FEPRM of the following units:

- ▶ CMX
- ▶ ECC
- ▶ ECTU
- ▶ ERMU
- ▶ ICC
- ▶ PCMCC
- ▶ PCMCX

To download software to an ERMU, log into it and select the Software Download Application.

To download software to any combination of PCMCC and PCMCX targets, first log into the PCMCC at the desired end (EU or RU), and then select the Software Download Application.

Upon power up the unit performs some start up tests from the EPROM, then a checksum test on the Flash software. If a valid checksum is obtained the Flash software is executed, otherwise the unit will await SWD to be performed.

Note *Before commencing a software download, contact the local Alcatel office to determine if you have the latest software variant.*

10.5.1 Software Download to the PCMCC

The PCMCC is required to handle two forms of Software Download (SWD):

- ▶ Code download to itself
- ▶ Code download to the PCMCX

The SWD mechanism is divided into 4 phases:

- 1** The Craft Terminal checks the integrity of the SWD file.
- 2** Code is downloaded from the operator's Craft Terminal and stored in the PCMCC RAM
- 3** Code is transferred to the targets.
- 4** Code is swapped, the PCMCC resets and begins executing the new code.

Note

- *Phases 1 to 3 are not service affecting.*
- *Phase 4 is service affecting*

If any PCMCXs are being downloaded, the PCMCC and the nominated targets stop their normal functions to exclusively transfer the data from the PCMCC. If multiple PCMCXs have been nominated as targets, the PCMCC will use a group broadcast method to speed up the transfer.

When the transfer is complete and the data is verified by the PCMCXs, the PCMCC will revert to its normal operating mode. If the transfer cannot complete for any reason, the PCMCXs will time out and reboot.

The PCMCX will enter software download mode under any of the following situations:

- ▶ when a software download request is received from the PCMCC in normal operating mode.
- ▶ when a software download request is received from the PCMCC in the start-up phase. In the start-up phase of the PCMCX, it will go through a software download pending stage, in which it sends an inquiry to the PCMCC to check if there is any software download ready for the PCMCX. If there is none, it can proceed with the start-up sequence.

- ▶ after the software download pending phase, if the PCMCX finds the code in the FEPROM is invalid, it will stay in the software download pending mode, awaiting software download.

10.5.2 Using the Software Download Application

When the Software Download application is invoked, the 'Target Selection' window is displayed. This window allows selection of the units that require software download.

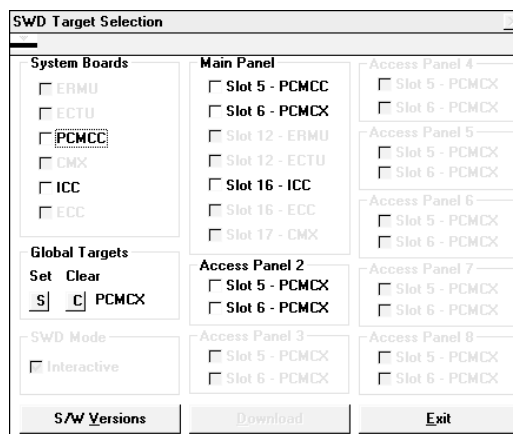


Figure 10–11 Target Selection Window

Selecting **S/W Versions** invokes a 'Target Version Information' window to display the current software version information of all declared targets.

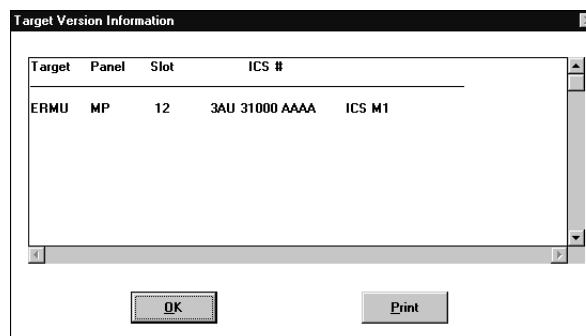


Figure 10–12 Target Version Information List

The information provided for each target is the panel, slot, and ICS number. Also, this window provides a **PRINT** button. Selecting this option will output the information to the printer port of the Craft Terminal.

Selecting **DOWNLOAD** enables the download to proceed, but before it is selected the download targets must be defined. On the 'Target Selection' window all possible download targets will be highlighted. Undeclared units are "greyed out" and cannot be selected. The combination of download targets required can be selected out of this highlighted group individually, or by using the **Global Set/Clear** buttons. All selected targets will be annotated with a cross in the box to the left of their slot number.

Selecting **EXIT** exits the application.

(1) Interactive / Non-Interactive Downloads

As mentioned earlier, there are several phases in the software download process. Normally, the user is alerted at the end of these phases to indicate that the next stage is about to begin and is requested to press an **OK** button to continue. This is known as Interactive mode.

In non-interactive mode, the software download application does not display the service affecting warning dialogues and continues through the whole procedure un-interrupted.

When in non-interactive mode, a log file is kept of the software download process. This file is called **swd_msg.log** and is stored in the \NECTAS directory or the \Program Files\NECTAS directory. It is a text file which is created upon entering a non-interactive SWD session, or appended to if it already exists. The SWD log contains all messages and any errors encountered during the SWD process.

(2) Continuing with the Download

When the target set is defined, the **DOWNLOAD** button should be activated. This will cause the 'Open Source File' window to be invoked. Source files may be on a floppy drive, or in a directory on a network or hard drive.

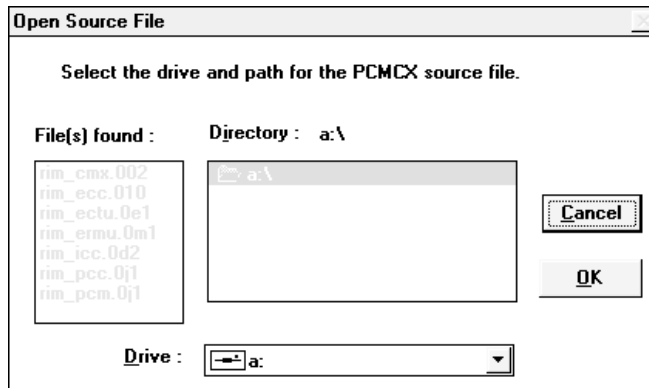


Figure 10–13 Open Source File

This window should be used to define which disk drive and directory has the software files to be downloaded. These files should have the following names for the following targets (where XXX is a version number):

Target	Filename
CMX	RIM_CMX.xxx
ECC	RIM_ECC.xxx
ECTU	RIM_ECTU.xxx
ERMU	RIM_ERMU.xxx
ICC	RIM_ICC.xxx
PCMCC	RIM_PCC.xxx
PCMCX	RIM_PCM.xxx

For any one target, only one version of a download file must exist in the selected directory. An error message will be given if this is not the case. Once the required download directory is selected, the **OK** button should be selected to move to the 'Code Transfer Progress' window.

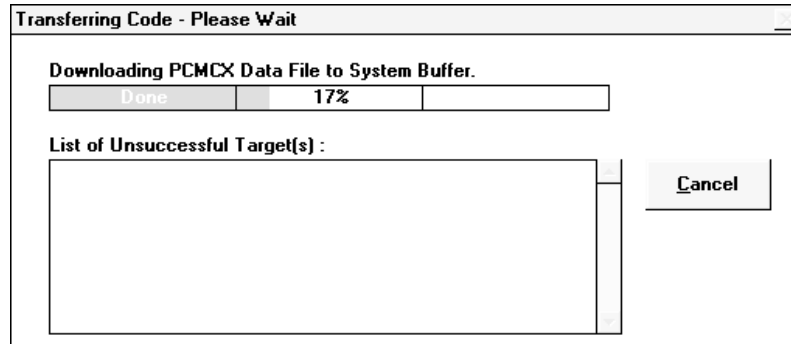


Figure 10–14 Code Transfer Progress Window

This window displays a three-part bar that indicates the progress of code transfer to the targets. Progress is indicated in terms of percentage completed.

The first bar indicates that the download files are being checked to verify that they are of the correct download format. The time taken for this stage is dependent on the number of selected targets and the selected source drive.

The second bar indicates that the download files are being sent from the Craft Terminal to the C-RIM's buffer in the ERMU/PCMCC. This stage is not service affecting as it only involves the ERMU/PCMCC and the Craft. The time taken for this stage is dependent on the number of selected targets and will range from 5 to 15 minutes.

If the download has been performed in Interactive mode, when this stage is completed a 'Service Affecting' dialog box will be displayed to verify that the third (and service affecting) stage should be commenced.

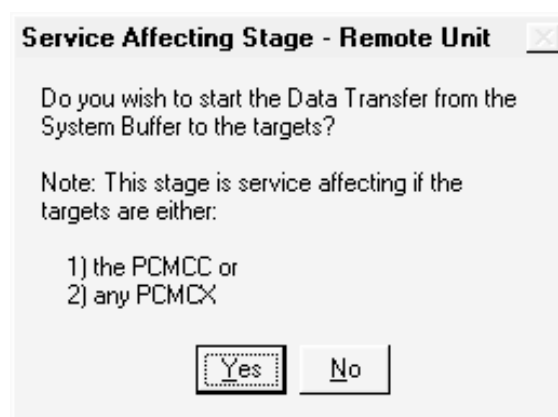


Figure 10–15 Service Affecting Stage Message

On this window the download can be cancelled by selecting **NO**, or it can proceed into the Service Affecting stage by selecting **YES**. If **YES** is selected, the 'Code Transfer Progress' window will be returned.

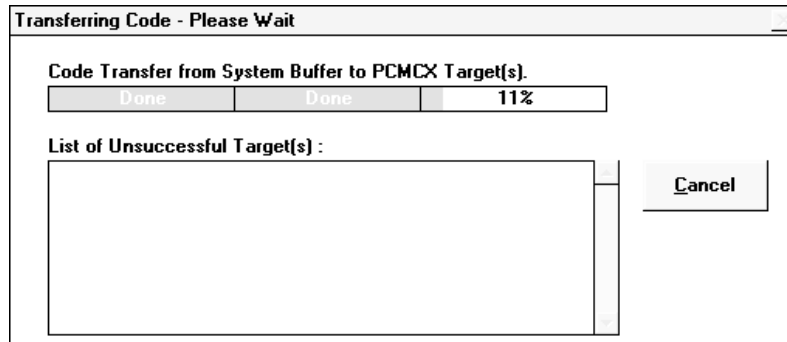


Figure 10–16 Code Transfer to Targets Progress Window

The third bar reflects the progress of the data transfer from the C-RIM's buffer to a buffer on the target. Any target that fails to accept the new code will appear on the list of unsuccessful targets. The time taken for this stage is dependent on the number of selected targets and will range from 5 seconds to 5 minutes.

When this stage is completed 'Done' will be written on the third bar, and each target (apart from those defined as Unsuccessful) will have a copy of the new code in a buffer. If the download has been performed in Interactive mode, NECTAS will give a warning that a swap is about to take place:

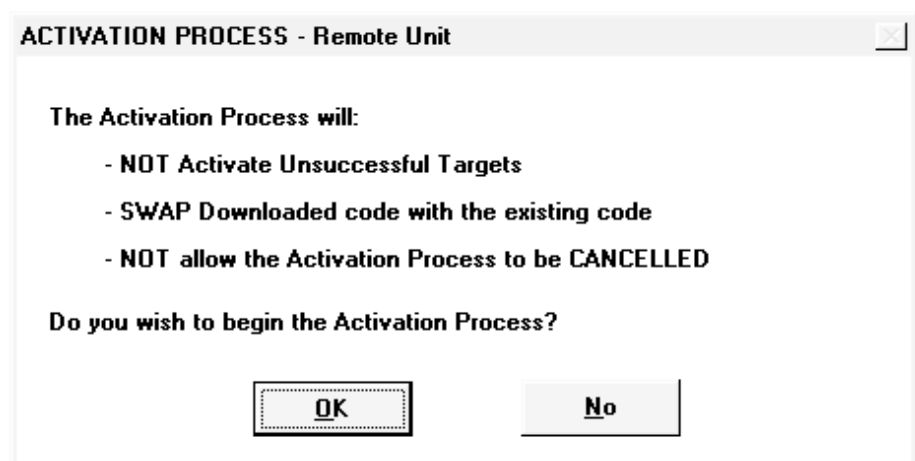


Figure 10–17 Activation Process Message

If **NO** is entered the software download application will be exited. If **OK** is entered, the targets will swap their new code with their existing code and then reset. It will be about 5 minutes before all

targets are re-booted. During this time the SA alarms will appear on the PCMCC alarm synthesis bar.

When this re-booting is completed, the download is over and the results should be verified by activating the **S/W Versions** function on the 'Target Selection' window to verify that the operational software of each target is the expected version.

ATTENTION

Premature termination of Software Download

For system safety, the software download targets are designed to cease any software download activities in the event of any communications protocol errors or system timeouts

To prevent this occurring:

- (1) the system should not be tampered with during a software download.*
- (2) the user should move between each download stage within 3 minutes. i.e. A response to the Activation Process window should be given before the PCMCC timeout period.*

*System timeouts: PCMCC 3 – 5 min
PCMCCX 15 min*

Note

If all targets have valid operating software, then SWD can be performed on all units in one operation. However, if, for example, the PCMCC has a corrupted FEPROM it will require SWD before other PCMCCs can be selected.

10.5.3 Software Download Summary

(1) Order of Priority when Downloading Software

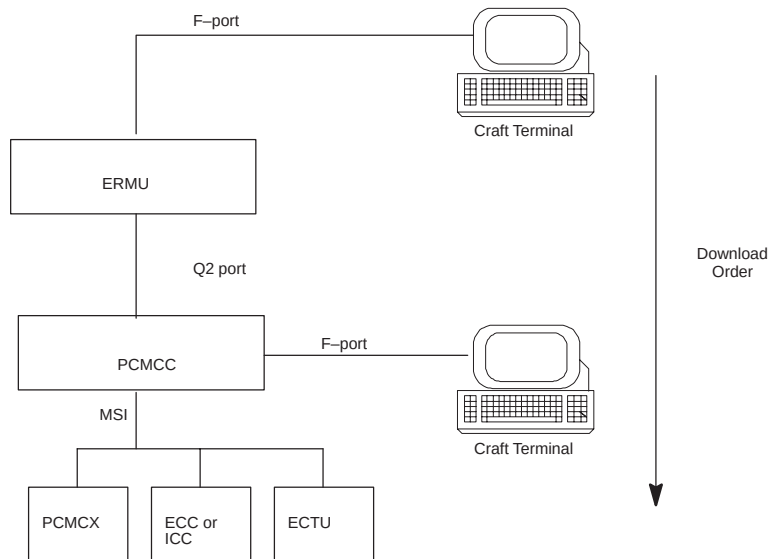


Figure 10–18 Software Download

(2) Download Stages

Stage 1: File Verification (on CT)

Stage 2: Downloading of Data:
CT → PCMCC (RAM buffer)

Stage 3: Transfer of Data:
PCMCC → PCMCX(s) (RAM)

Stage 4: Activation Process:
The successful targets transfer the SWD data from RAM to FLASH. i.e. volatile to non volatile memory.

At the completion of SWD, the Units reboot.

10.5.4 Unit LED States During Software Download

The various states of the LEDs during software download are shown in Table 10–1.

Table 10–1 Software Download States

Unit	Stage	Red LED	Green LED	Orange LED
ECC	1	OFF*	ON*	OFF
	2	OFF	ON	OFF
	3	SLOW FLASH**	SLOW FLASH**	OFF
	4	FAST	ON	ON
	Initialisation Starts – See Unit description			
ERMU	1	OFF*	ON*	OFF
	2	OFF	ON	OFF
	3	OFF	ON	OFF
	4(a)	OFF	ON	ON
	4(b)	OFF	OFF	ON
	4(c)	OFF	OFF	OFF
	Initialisation Starts – See Unit description			
ICC	1	OFF*	ON*	OFF
	2	OFF	ON	OFF
	3	SLOW FLASH**	SLOW FLASH**	OFF
	4(a) ^[1]	ON	ON	ON
	4(b) ^[2]	FLASH	ON	ON
	4(c)	OFF	ON	OFF
	Initialisation Starts – See Unit description			

- Note**
- ^[1] Erasing ICC FEPROM
 - ^[2] Writing ICC FEPROM
 - ^[3] * LED pattern also indicates normal operation of the unit.
 - ^[4] ** Stage 3 on the PCMCX, ECC and ICC is indicated by the green and red LEDs alternating on and off.

Unit	Stage	Red LED	Green LED	Orange LED
PCMCC	1	OFF*	ON*	OFF
	2	OFF	ON	OFF
	3	OFF	ON	OFF
	4 (a)	OFF	ON	ON
	4 (b)	FLASH	FLASH	OFF
	Initialisation Starts – See Unit description			
PCMCX	1	OFF*	ON*	
	2	OFF	ON	
	3	SLOW FLASH**	SLOW FLASH**	
	4	FAST FLASH	ON	
	Initialisation Starts – See Unit description			

Note * LED pattern also indicates normal operation of the unit.

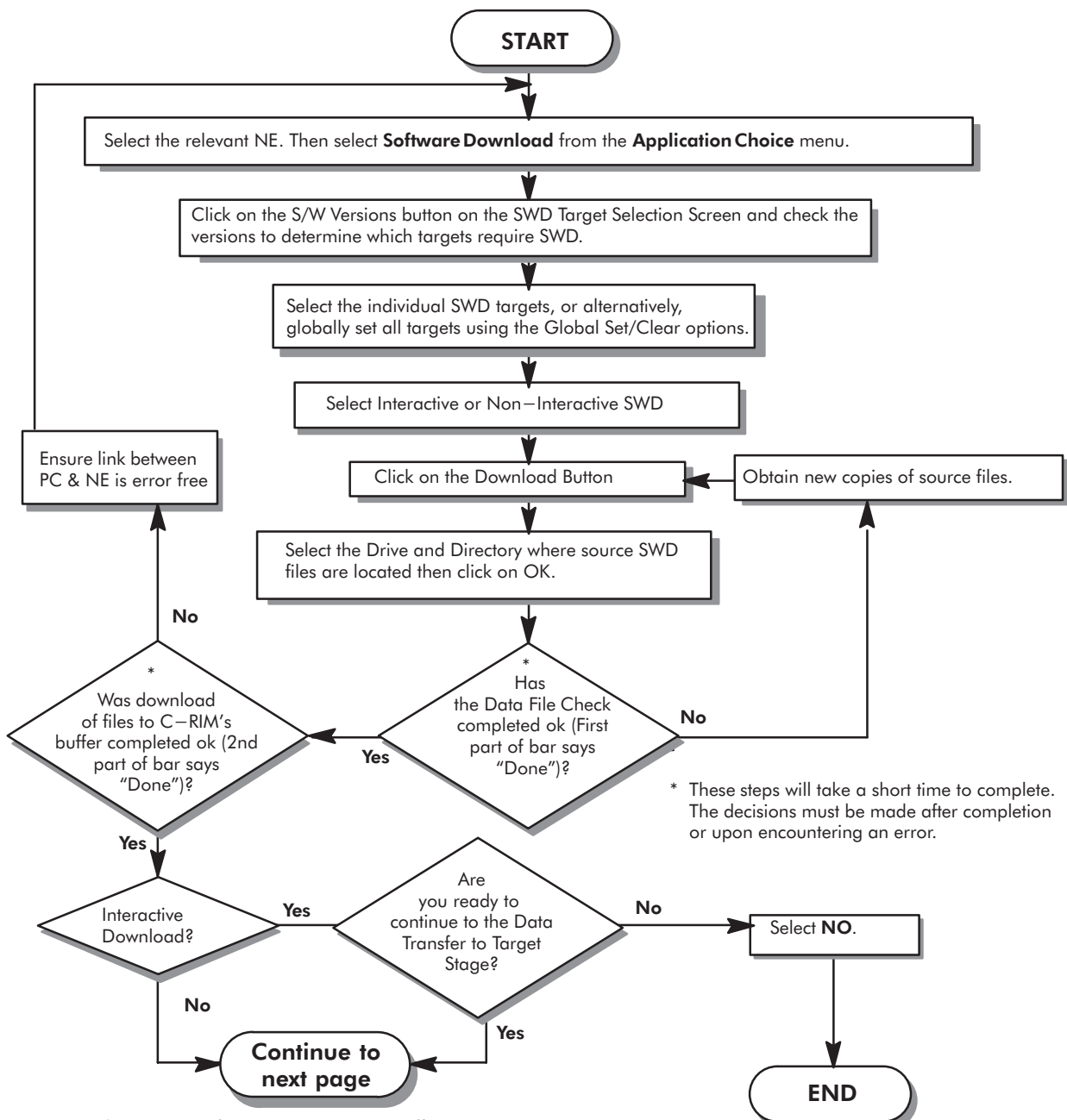
Unit	Stage	LED Colour	
		Red	Green
ECTU	1	OFF	OFF
	2	OFF	OFF
	3	OFF	ON
	4	OFF	ON
	Initialisation Starts – See Unit description		

Note Flashing green LED indicates SWD in progress to the ECTU however there is a problem with the downloaded software.

10.6 Maintenance Procedures

Procedures for Software download and modifying an Operator's administration profile are shown below.

10.6.1 Performing a Software Download



Note: The Data Transfer to Target stage may affect customer services. If you are sure you wish to continue select **YES**.

Figure 10–19 Performing a Software Download – page 1/2

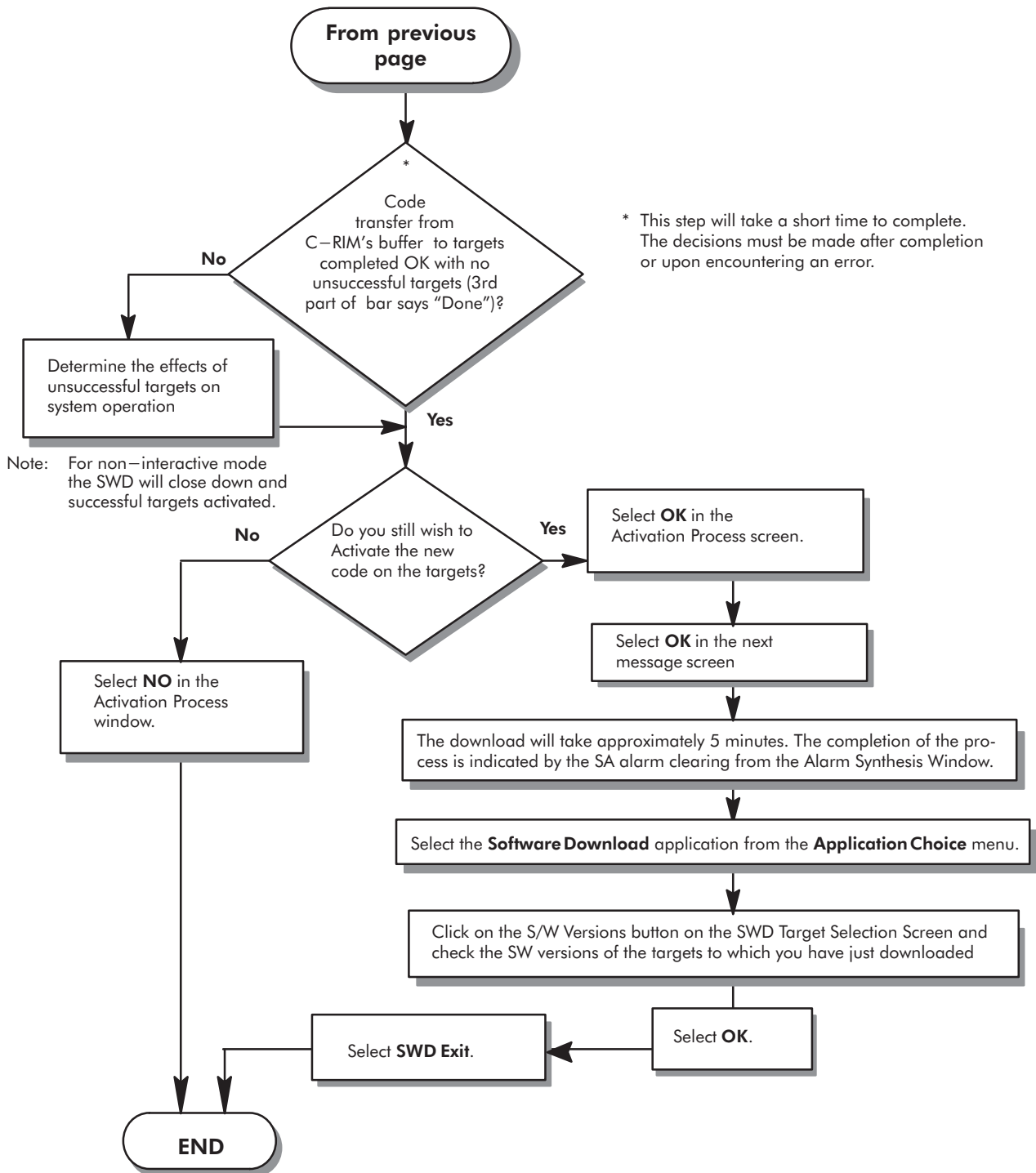


Figure 10–20 Performing a Software Download – page 2/2

10.6.2 Modifying an Operator's Admin Profile

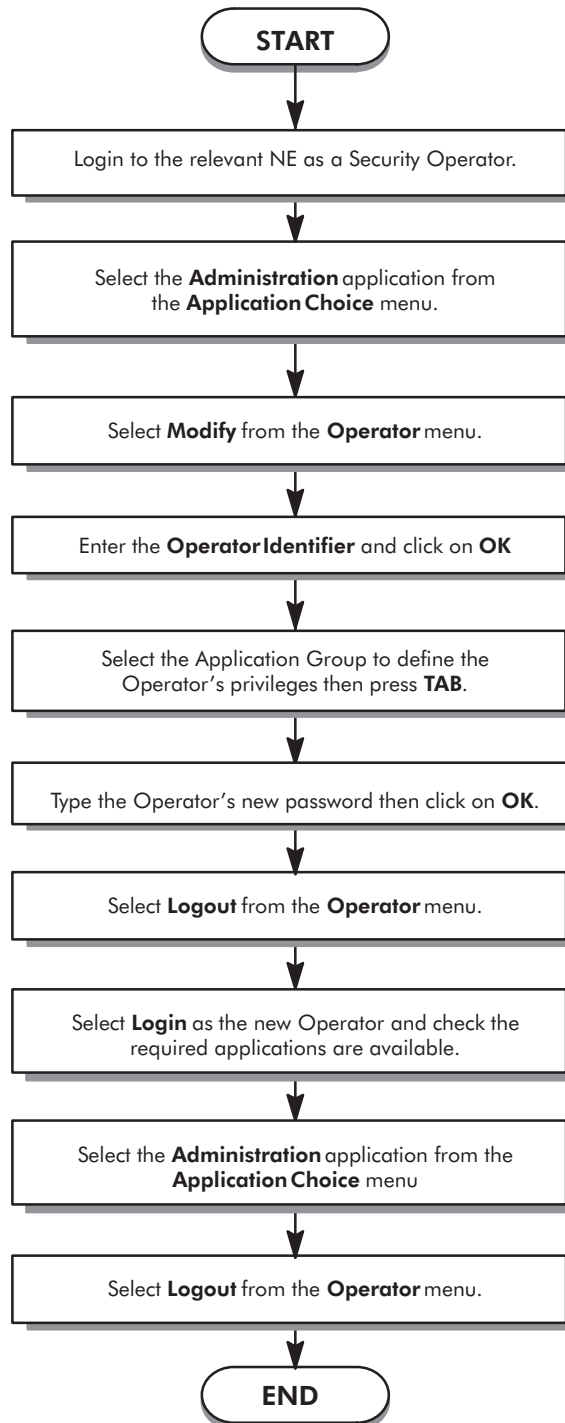


Figure 10–21 Modifying Operator Admin Profile

11 Troubleshooting

This section details a number of potential problems and how to solve them.

11.1 NECTAS Installation

11.1.1 Installation Problems Under Windows 3.1

Before installing NECTAS under Windows 3.1 the following points should be noted:

- ▶ TSR (Terminate and Stay Resident) programs may interfere with the install process. If the Installation process fails, remove TSRs from CONFIG.SYS and AUTOEXEC.BAT files.
- ▶ Some custom Windows™ screen drivers may cause problems with NECTAS. Use standard VGA display mode with screen resolution of 640x480 when running NECTAS.

11.1.2 The Installation Exits Before Completion

Check the files in the NECTAS directory. If there are one or two very large files, check:

- 1** That SHARE.EXE is not running (look at the AUTOEXEC.BAT file). If it is running, remove it, clear the \NECTAS or \Program Files\NECTAS directory and start the installation process again.

Under Windows 3.1 the NECTAS directory defaults to C:\NECTAS.

Under Windows 95 or NT, the NECTAS directory defaults to C:\Program Files\NECTAS

- 2** If SHARE.EXE is not installed, check for other TSRs. Ensure that all TSRs are removed.
- 3** Check that the disk is not full.

11.2 General NECTAS Problems

11.2.1 “Craft Terminal Disconnected” Message

This indicates the PC–NE interface cable is disconnected or faulty. Connect the cable.

If you start NECTAS by mistake, or wanted to run the Demo mode but left off the **/s** at the end of the command (see Appendix E), NECTAS can be closed by:

- ▶ exiting Windows™, or
- ▶ Windows 3.1
 - End the relevant NECTAS tasks by:
 - Double clicking the mouse on the Windows™ background to bring up the Task List (also achieved by hitting **Ctrl Alt Esc** keys simultaneously)
 - Select **1321NX 3.78** from the Task List
 - Click on the **End Task** button or press Alt–E to close Noctas
 - Select **NECTAS Link** from the Task List
 - Click on the **End Task** button or press Alt–E to close NECTAS Link
 - Click on **Cancel** to close the Task List
- ▶ Windows 95 / NT 4.0
 - Right click the bottom toolbar and select **Task Manager** from the menu that appears.
 - From the **Applications** tab select **1321NX 3.78** then **End Task**.
 - Close **Task Manager**

Note *You must terminate the NECTAS Link task before “Craft Terminal Disconnected” Window reappears.*

11.2.2 The NECTAS Loader Icon is Blinking

The NECTAS loader icon is displayed and the COM icon appears blinking.

This indicates that the CT is attempting to set up the link. If it continues to do this it indicates that:

- ▶ Power is not connected to the NE, or
- ▶ The NE has failed, or
- ▶ The communication port parameters are invalid, or
- ▶ The cable is connected to the wrong COM port on the CRAFT Terminal

11.2.3 Equipment Unknown in Configuration File

The *Equipment Unknown in Configuration File* message occurs if the CT does not recognise the equipment type. This may mean that the NECTAS software on the CRAFT Terminal does not include the release in the equipment.

One of the APP or EQT files cannot be read in the equipment directory which are:

- ▶ Windows 3.1
 - \NECTAS\ERMU_V82
 - \NECTAS\PCC_V82
- ▶ Windows 95 or NT 4.0
 - \Program Files\NECTAS\ERMU_V82
 - \Program Files\NECTAS\PCC_V82

The solution is to check which releases of NECTAS are installed on the CRAFT Terminal, and install the required release or NECTAS.

11.2.4 Line syntax error in parameter number

Syntax error in APP or EQT file.

Solution is to re-install NECTAS.

11.2.5 Application already loaded

The user has attempted to restart NECTAS although it is already running. NECTAS cannot share a COM port with other programs. The user must first quit the previous NECTAS and then restart Windows™ and/or the PC.

11.2.6 File reading error

Error reading the APP or EQT file.
Re-install NECTAS.

11.2.7 NECTAS fails to see the C-RIM

Check the following:

- ▶ Ensure the serial cable is connected and wired correctly
- ▶ Ensure the communications port is set correctly on the PC. e.g.
 - Cable is in the correct COM Port (See *Setting up the WIN.INI File* on page 3–10 for details).
 - COM port parameters are set correctly (9600 Baud, 8 Data, Odd Parity, 1 Stop) (See *Setting up the COM Port Parameters* on page 3–10 for details)

11.2.8 No Response Alarm-Newly Activated Card

If a “No Response” alarm appears for a newly activated card:

- ▶ Ensure the unit is configured correctly
- ▶ Ensure the card is in the correct slot
- ▶ Remove and firmly re-insert the unit.

11.2.9 NECTAS Starts then Exits

Check that the **STORAGE** parameter is set correctly in the **WIN.INI** file. This must be a valid directory in order for NECTAS to operate correctly.

11.2.10 Can't Save Configuration to Floppy Disk

If configuration files cannot be saved to floppy disk, check the following:

- ▶ Ensure that the directory structure for the NECTAS software (including all subdirectories) is replicated on the floppy disk.

11.2.11 Exit NECTAS from Login Prompt Window

(1) Windows 3.1

- 1** Double click mouse on the Windows™ background to bring up the Task List (also achieved by hitting the **Ctl**, **Alt** and **Esc** keys simultaneously).
- 2** Select '1321 NX V3.78'.
- 3** Click on the **End Task** button or press Alt–E.
- 4** Select **Cancel** on the Login Window.
- 5** Double click mouse on the Windows™ background to bring up the Task List (also achieved by typing hitting the **Ctl**, **Alt** and **Esc** keys simultaneously).
- 6** Click on NECTAS Link.
- 7** Select the **End Task** button or press Alt–E.

The system software handles the loading, running and stopping of applications for the connected equipment.

When the NE link is set up, the Craft Terminal polls the NE to identify it and identify the applications supported.

If the link is physically disconnected, all applications currently running are immediately stopped. This is because the applications are no longer being polled by the CT for results. However, actual operator logout will not occur until the NE times out (3–6 min), if the operator has not logged out correctly. (See Chapter 10 – *Maintenance and Administration* for Logout details).

(2) Windows 95 or Windows NT 4.0

- 1** Click on Cancel in the Login dialogue box.
- 2** Close Alarm Synthesis by clicking on the icon at the left of the title bar, and selecting Close from the menu that appears.

Appendix A List of Abbreviations

AC	Access Controller
ARA	Alarm Receiving Attention
AS&C	Alarms, Status and remote Control
ASIC	Application Specific Integrated Circuit
BER	Bit Error Rate
BMT	Batch Mode Testing
CCITT	International Consultative Committee for Telephone and Telegraph
CU	Channel Unit
CCC	Cross Connect Compartment
CCF	Cross Connect Facility
CCU	Cross Connect Unit
CLIMI/O	Climate Input/Output
CLIMCTL	Climate Controller
CMX	Core Matrix
CRC	Cyclic Redundancy Check
CT	Craft Terminal (A PC running NECTAS software)
CTU	Customer Test Unit
CXDU	Clock eXtraction and Distribution Unit
DB	Database
ECC	Enhanced Concentration Controller
EEPROM	Electronically Erasable/Programmable Read Only Memory
ERMU	Enhanced RIM Management Unit
EXT	External Alarm
EU	Exchange Unit
FABC	Fan And Battery Controller
FABD	Fan And Battery Device
FNN	Full National Number

ICC	V5.2(–) Concentration Controller
ICS	Item Change Status
INT	Internal Alarm
ISDN	Integrated Subscriber Digital Network
LCT	Line Code Table
LED	Light Emitting Diode
LTU	Line Transmission Unit
MEC	Main Equipment Compartment
MSI	Master Slave Interface
NE	Network Element
NECTAS	Network Equipment Craft Terminal Application Software
NOCTAS	Network Office Craft Terminal Application Software
NU	Non–Urgent Alarm
NUB	National Usage Bit
NVM	Non–Volatile Memory
OA&M	Operations, Administration and Maintenance
OLTE	Optical Line Terminal Equipment
OMX	Optical Multiplexer
OPT	OPTical
PABX	Private Automatic Branch Exchange
PBA	Printed Board Assembly
PC	Personal Computer
PCM	Pulse Coded Modulation
PCT	Power Compartment
PCMCC	Pulse Code Modulation Controller
PCMCX	PCM Controller eXtended
PM	Performance Monitoring
POTS	Plain Old Telephone Service
PSU	Power Supply Unit (rectifier, circuit breaker, etc.)
PWRA	Power Supply Unit (PBA)

RAM	Random Access Memory
RIM	Remote Integrated Multiplexer
RiMU	Ring Meter Unit (in Main Panel)
R/MU	Ring Meter Unit (in Ring/Meter Panel)
RU	Remote Unit
Rx	Receive
SAF	Service Affecting
SCK	System Clock
SSB	Serial Supervision Bus
SW	Software
SWD	Software Download
TMN	Telecommunications Management Network
TN	Terminal Number
TS	Time Slot
TSn	Time Slot “n”
TSR	Terminate and Stay Resident PC software
Tx	Transmit
UA	Urgent Alarm
UNIV	Universal Channel Unit
URG	Urgent Alarm

Appendix B General Error Messages

When using NECTAS the following error messages may be encountered:

Text of Message	Explanation	Solution
Application already loaded	The user has attempted to restart NECTAS although already running. NECTAS cannot share a COM port with other programs.	The user must first quit the previous NECTAS and then restart Windows™ and/or the PC.
Application not present	Either: a) Windows resources may be low, preventing the application from starting b) The module named in the message box title is missing.	a) Free Windows resources by closing other other Windows applications b) Re–install NECTAS
Initialisation file not present	One of the APP or EQT files cannot be read in the equipment directory.	Re–install NECTAS.
Line syntax error: In parameter number:	Syntax error in APP or EQT file.	Re–install NECTAS. Contact Alcatel Support
Invalid request or parameter	Protocol problem.	Contact Alcatel support.
Parameter out of limits	Protocol problem	Contact Alcatel support.
Sequencing problem	Protocol problem	Contact Alcatel support.
Previous request not received	Protocol problem.	Contact Alcatel support.
Request not allowed	Protocol problem.	Contact Alcatel support.
Invalid response	The equipment has responded with an application number which cannot be found in the tables.	Restart the equipment. Contact Alcatel support.
Invalid data length	The response frame length is invalid.	Restart and re–initialise the equipment. Contact Alcatel support.

Text of Message	Explanation	Solution
No response from equipment	The equipment is no longer responding, even with an operating configuration.	Restart and re-initialise the equipment. Contact Alcatel support.
Equipment not accessible: craft terminal connected	Protocol problem.	Contact Alcatel support.
Application not selected	The user has clicked OK in the Application choice dialogue box without selecting an application.	Reopen Application choice. Select an application. Click OK .
Maximum number of applications reached	The number of equipment zooms is limited.	Close one or more other Windows™ applications. Increase Application variable in Win.Ini to avoid recurrence.
Equipment not present in file.ini	The equipment cannot be recognised by NECTAS because it has not been installed.	Install the applications for this equipment.
Craft terminal not connected	The physical link between the craft terminal and the NE is defective or non-existent.	a) Connect the craft terminal to the NE b) Check the condition of the connecting cable. c) Check that the COM port set in [PEX] section of Win.ini is the same as the COM port on the CRAFT terminal to which the cable is connected d) In the Ports applet in Windows' Control Panel, check the COM port settings are 9600, 8, O, 1, N
Please run NECTAS.EXE	The user has run eqtlink.exe (for example).	Run NECTAS.exe
Line syntax error	Syntax error in the APP or EQT file.	Re-install NECTAS.
File reading error:	Error reading the APP or EQT file.	Re-install NECTAS.

Text of Message	Explanation	Solution
File writing error:	Error in attempting to write to the file.	Check space available on disk. Delete unnecessary files or try another disk.
No alarm in this selection	There are no alarms corresponding to the requested selection.	Select a valid alarm.
Cannot print	The printer is not recognised.	Set up the printer correctly under Windows™. (See the Windows™ user manual).
Cannot begin printing	The printer is unavailable.	Check the printer status.
Make–Proc–Instance: Failure	Export function not available.	The user must restart Windows™ and/or the PC.
Remote control correct	Indicates that the remote control function has been correctly sent.	Click <OK> .
Remote control not allowed	Indicates that the remote control function is not allowed by the equipment.	Click <OK> .
No remote control	Indicates that there is no remote control associated with the item.	Click <OK> .
No alarm in this selection	Indicates that there is no alarm corresponding to the selection.	Click <OK> .
Access denied	The password is incorrect, access to remote control is denied.	Click <OK> .
Memory error	Memory allocation fault.	Restart the system.
Response length invalid for equipment	The number of configuration items received does not match the number expected.	Contact Alcatel after sales support.

Text of Message	Explanation	Solution
Cannot open file	Impossible to open the history log file.	Click OK . Check the definition of the storage parameter in the win.ini file.
Please wait. No error	No counter yet received.	Wait.
Unknown application	The module named in the title of the message box is missing.	Click OK .
Local Access Disabled	COMNET has disabled local access	Configure the equipment via COMNET
Write failed as local lockout set by COMNET	COMNET has disabled local access	Configure the equipment via COMNET

Appendix C Software Download Errors

C.1 Visual Basic Error Messages

Window Title: "SWD ERROR #SYS [System Error Number]"

For explanations, see the Visual Basic Error lists (system error)

C.2 SWD Application Error Messages

Window Title: "SWD ERROR #APP [SWD Error Number]"

Fault Number	Message	Description
Fault # 10	Request not expected by equipment	The NE did not expect the request from SWD
Fault # 11	Data transfer to equipment failed	Frame data failed (corrupted)
Fault # 12	Equipment has no data	The NE says that there is no SWD data in its RAM; the NE or SWD App out of sync.
Fault # 13	No session active. Quit SWD application and try again	There is no SWD session active, the NE or SWD App out of sync.
Fault # 20	Configuration in progress, unable to start SWD	The NE is doing configuration updates with the PCMCC, unable to SWD.
Fault # 21	Another SWD session is active. Cannot begin your SWD Session	Another user logged in has already started a SWD session with the NE.
Fault # 22	Previous SWD session still active	A previous SWD Session was not closed correctly (3–5 minute timeout)
Fault # 30	Cannot download data due to equipment	
Fault # 31	Source file too big for the equipment's buffer	The NE cannot fit the SWD data in its RAM
Fault # 41	Equipment found data end, bad source file or data transfer	The NE thinks there is no more data to receive, but the SWD Application is still sending data, the NE or SWD App is out of sync.
Fault # 42	Checksum error return by equipment during download	The NE has found a checksum error in the SWD data
Fault # 51	PCMCC has reset, SWD application closing	The PCMCC has reset, SWD has failed

Fault Number	Message	Description
Fault # 100	Request/response frame mismatch	The Request Frame # <> Response frame #, the NE or SWD App out of sync
Fault # 101	No data found in response frame from equipment	No data in the NE frame, the NE or SWD App out of sync
Fault # 102	Unable to download this combination of targets because there is not enough free memory available in the equipment	The NE has not enough free RAM
Fault # 103	BAD FILE : Checksum error found in source file	The SWD Application found a checksum error in source file
Fault # 104	Cannot find source file	* File may not exist on specified hard disk, floppy disk or network drive * The network drive may be inaccessible * Floppy disk may be unreadable or not inserted in drive.
Fault # 105	Bad panel and slot location returned by equipment	Bad panel and slot number returned by the NE, the NE or SWD App out of sync.
Fault # 106	More than one version of source code found on the drive	There are 2 or more source files found, cannot transfer file. To control source release, we advise Telstra to keep versions in separate locations to minimise risk of confusion and avoid downloading of wrong ICS SW
Fault # 107	Drive not ready	The disk drive not ready.
Fault # 108	Cannot read file	Unable to read file from drive
Fault # 109	BAD FILE : File name inconsistent with file contents	The contents of the file does not match up with the file name
Fault # 110	Timed out waiting for a response frame from the equipment	The SWD application did not receive the response frame from the NE.
Fault # 111	BAD FILE : Corrupt file due to data length inconsistency	File data length field <> turn data length
Fault # 153, 154, 155	SWD application is closing due to link error	

Fault Number	Message	Description
Fault # 156	Unable to find the STORAGE path in your NECTAS configuration – cannot write SWD log file	
Fault # 230	Invalid request/parameter	
Fault # 231	Parameter value exceeds limits	
Fault # 235	Unauthorised request	
Fault # 240	Response in progress	
Fault # 256	Write failed as database is being updated by another user	
Fault # 257	Write failed as local lockout set by COMNET	
Fault # 260	Communications failure between ERMU and the NE	
Fault # 500	Invalid SWD Response code received. Application will now terminate	

Note

Any other faults will result in the message “UNRECOVERABLE ERROR, TERMINATING SWD APPLICATION” error. This indicates that there is a problem with the application. Please report this fault to Alcatel support.

Appendix D FNN Test Errors

- 1 Q2 communication error.**

The ERMU cannot correctly communicate with the PCMCC via the Q2 bus. Check for EU or RU loss alarms. Correct any transmission faults that may exist between the EU and RU.
- 2 MSI communication error.**

The PCMCC is unable to communicate correctly via the MSI bus with the PCMCX which supervises the channel under test. Check that MSI bus cabling is correctly installed in the Common Panel and Access Panels. Check that MSI bus termination is correctly installed in the last Access Panel.
- 3 AUXbus communication error.**

The PCMCC cannot correctly communicate with the (E)CTU. Check that the AUXbus cabling is correctly installed as shown in the AUXbus cabling diagrams in the *C-RIM Release 8.2 Technical Handbook*. If the error persists, check alarms on the (E)CTU and PCMCC. If no alarms exist, reset or replace the (E)CTU.
- 4 (E)CTU busy:**

Only one operator at a time may open an (E)CTU test session.
- 5 Test code invalid:**

Check that the (E)CTU and CT are compatible for the release. Otherwise the CT may be requesting a test which the (E)CTU doesn't handle in that release. Note that some tests require ICS-04 version EPROMS to run correctly.
- 6 FNN Invalid:**

When opening a test session, if the FNN entered is not in the FNN database, you'll get this message, and you won't be able to open the session until a valid FNN is entered.
- 7 Test session already open:**

You shouldn't be able to get this error. If you try to open a test session and get this message, then the test session previously established hasn't been closed for some reason. This could only happen in an error situation, but when the operator tries to open a test session, if the CT receives this message in response, it then closes the test session and re-attempts to open the session, transparent to the operator.

8 Test Session Not Open:

If a test session is open, and there is a problem bad enough to close the test session, (eg communication errors), the operator will first get the appropriate error message, and then the "The test session has been closed" message.

9 Repetitions Invalid

The requested repetitions for a test is not in the correct range (>0 and <= 20)

10 No test running:

If the operator attempts to cancel a test, but the test has already finished at the (E)CTU, the (E)CTU will get the cancel message and respond that no test is running. This doesn't cause any problems.

11 Subscriber Line Busy

When the test was initiated the subscriber's line was busy and override line state was not selected.

12 FNN Mapped To Invalid Panel/Slot/Channel

The LCT has interpreted a FNN as an invalid Panel/Slot/Channel.

13 Can't Set Relay.

If you try to run a test while the customer's phone is off-hook, and the line-state has not been over-ridden, you will be unable to run the test. Select the "override line status" checkbox on the "Run Test" screen and try again.

14 Relay not reset:

The PCMCX cannot reset the channel relay.

15 Cannot run (E)CTU test:

(E)CTU/PCMCX is not in the correct state to perform the test.

There may be many reasons why this message appears. One of them is that the (E)CTU has detected a voltage on the line*. It will cancel any revertive call you previously had. Close the test session and start again.

To localise where the voltage on the line is originating from, the test bus cables can be removed one at a time from between the access panels until the alarm disappears when the test is re-run.

If the fault is localised to a AP, then the channel units can be removed one at a time to discover which one is faulty.

16 AIC Failure:

AIC hardware failure or no ring/meter connection.
Check that the ring/meter cable is installed correctly

17 Failed attempt to discharge test—bus:

The (E)CTU has detected a voltage on the line, and will not allow tests to proceed*. Close the test session and start again.

18 PSTN connection not detected:

Revertive cable not connected for ring—back telephone number when attempting to run a Ring Back Telephone No. test. Check the connection between the (E)CTU and the Channel unit.

19 Could not detect dial tone

After initiating Automatic Dial Tone test, dial tone was not detected.

20 Digit did not break dial tone

After Automatic Dial Tone test has successfully detected dial tone and a digit is dialled, dial tone is still present and silence is not detected.

21 (E)CTU can't loop line

During auto/manual dial tone test, (E)CTU attempts to go off—hook with TNR network on ring bus. Loop was not detected.

22 (E)CTU can't release line

23 Tone duration too short

After initiating Automatic Dial Tone test, dial tone was detected but duration was too short.

24 (E)CTU hardware fail

(E)CTU hardware has failed.

25 Voltage across line exceeded limit

During Foreign Battery test, voltage > 200V

26 Revertive line busy

Cannot run test due to revertive line being busy.

27 Cross–Connect Compartment is open

CCF door is open. Cannot run Surge Arrestor test.

28 ISDN NT1 is not present

The ISDN NT1 is not present for the FNN.

29 No power feed to ISDN NT1

There is no power feed to the ISDN NT1 hence it cannot be reset by FNN test.

30 Cannot run test – wrong channel unit type

The FNN test selected is not supported by the channel unit.

31 ISDN NT1 loopback not achieved

Cannot achieve loopback on the ISDN NT1.

32 Software download or configuration in progress

MSI bus is unavailable as a software download or configuration is in progress.

33 (E)CTU busy doing FTARS

A test request was received by the (E)CTU while the (E)CTU was busy doing FTARS.

34 Too much signal

Excess voltage detected while performing automatic dial tone test.

35 Power feed overcurrent

Power Feed Overcurrent line state on the ISDN FNN.

36 Activation fail on U–interface

Activation Fail U state on the ISDN FNN

37 Cannot run test. Wrong ISDN channel unit variant

Wrong ISDN channel unit variant on the current FNN for the ISDN test selected.

38 Cannot run test. ISDN channel unit failure

There is an ISDN channel unit failure for the current ISDN FNN.

39 Excess line leakage

The resistance of the subscriber line is too low or the subscriber's telephone is off-hook.

40 Excess line capacitance

The capacitance of the subscriber's line is too high.

41 No card present

The ISDN card has been removed

42 Not Tested

The Batch Mode Test did not run for this FNN

43 No Cause

There is no Cause for this FNN

44 Initial request not received

The initial request was not received.

45 Database was in use by another application

The database was in use by another application

46 Bad or Missing description file:

\Program Files\NECTAS\ERMU_V82\FAULT.DES or
\NECTAS\ERMU_V82\FAULT.DES is missing or corrupted.
Re-install Nectas.

Appendix E NECTAS Demonstration Mode

NECTAS has a demonstration mode which allows the simulation of Network Elements. This document describes some of the basic procedures for running demonstrations.

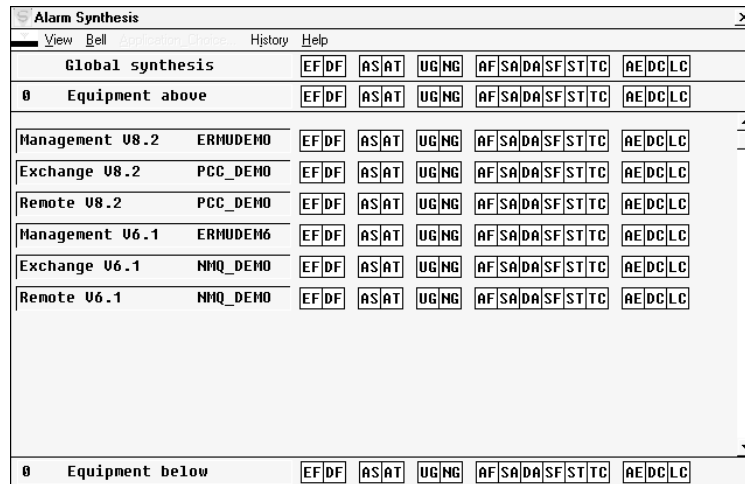


Figure E–1 NECTAS Demonstration Mode – Alarm Synthesis Screen

In demonstration mode the AS&C screen may display NEs for more than one NECTAS release. Refer to the NECTAS handbook for the particular release for details of alarms, system configuration, and other applications.

E.1 Starting NECTAS in Demo Mode

The NECTAS installation diskettes install the demonstration as part of the installation process.

There are several ways to start the Nectas Demonstration:

- ▶ Windows 3.1
 - Open the NECTAS group in Windows™ 3.1 and double click on the NECTAS Demo icon, or
 - Select **Run** from the **File** menu, then type in:

 \nectas\nectas /s.
- ▶ Windows 95 or NT 4.0

Open the Start menu, then the NECTAS folder, and click on NECTAS Demo.

E.2 Limitations with the Demo

On starting Demo mode it is not necessary to login, unlike normal mode which does require a login.

To observe login functionality in the Demo, you must first close all applications of that Network Element (NE) and log out of the NE via the Administration application.

You will then be able to login within the Demo. User IDs and passwords in the Demo are shown in the following table

Demo User ID	Demo Password
MAINTAINER1	MAINT1
MAINTAINER2	MAINT2
MAINTAINER3	MAINT3
MAINTAINER4	MAINT4
MAINTAINER5	MAINT5

E.3 Stopping and Starting the Simulation

The NECTAS demonstration mode simulates alarms that may occur on a live system. This simulation may be stopped and started as follows:

E.3.1 Windows 3.1

Double-click the right mouse button on the 'NECTAS Demonstration' icon. Doing this toggles the state of the simulation.

E.3.2 Windows 95 and NT 4.0

Right click on the **Demo** icon in the Taskbar. Select **Setting** to open the **Demo Errors Box**.

Click on **Step** to start the alarms demonstration, and click again on **Step** to change the alarms displayed.

Click on **Automatic Mode** to have alarms continuously changing in the demonstration.

Appendix F 480 Line 3G Housing

F.1 Introduction

The 480 Line 3G Remote Housing was introduced in mid 1999.

This appendix describes configuration and alarms for the 480 Line 3G Remote Housing. Insert this appendix in the *Alcatel C–RIM Release 8.2 NECTAS Operator's Handbook*.

For more information on configuration and alarms relating to the 480 Line 3G Remote Housing refer to the following:

- ▶ Section F.3 of this Appendix describes configuration in NECTAS of the transformer and REGA(s).
- ▶ Section F.4 of this Appendix describes 480 Line 3G Remote Housing alarms, and the mapping of alarms to the AS&C screens in NECTAS. Refer also to the AS&C chapter of this handbook.
- ▶ For other matters relating to equipment configuration and alarms refer to the EU/RU Configuration and AS&C chapters of this NECTAS handbook.

Note *The 480 Line 3G Remote Housing is described in Appendix D of the Alcatel C–RIM Release 8.2 Technical Handbook (Edition 4).*

F.2 NECTAS and COMNET Support

In NECTAS and COMNET the 480 Line 3G Remote Housing may appear as either a 480 Line 2G Remote Housing or as a 480 Line 3G Remote Housing.

- ▶ Initial variants of Release 8.2 NECTAS (ICS46 or earlier) and C–RIM software (PCMCC software ICS 22 or earlier) do not have configuration options and alarm screens specifically designed for the 480 Line 3G Remote Housing. If these software variants are used the configuration options and alarm screens for the 480 Line 2G Remote Housing are used.
- ▶ Release 8.2 NECTAS software ICS47 or later and PCMCC software ICS25 or later have 480 Line 3G Remote Housing configuration options and alarm screens. If these software releases are used the configuration option chosen is 480 Line 3G Remote Housing.

F.3 Transformer and Regulator (REGA) Configuration

The configuration of the transformer and regulator(s) depends on the release and variant of NECTAS and the system software.

- ▶ Initial variants of Release 8.2 NECTAS (prior to ICS47) did not have configuration options specifically for the 480 Line 3G Remote Housing.
 - The housing is configured in NECTAS as a 480 Line 2G Remote Housing.
 - Rectifier 1 **MUST** be configured, and the RECT 1 FL alarm represents a TRANS FL.
 - Rectifier 2 **MUST** be configured and the RECT 2 FL alarm represents a REGA 1 FL.
 - If REGA 2 is installed Rectifier 3 is configured and RECT 3 FL alarm represents a REGA 2 FL.
- ▶ Variants of Release 8.2 NECTAS released after the introduction of the 480 Line 3G Remote Housing (ICS47 or later) have configuration options for the 480 Line 3G Remote Housing.
 - The housing is configured in NECTAS as a 480 Line 3G Remote Housing.
 - REGA 1 is automatically configured.
 - REGA 2 can be configured if desired.
 - Separate alarms are provided for:
 - TRANS FL Failure of ferro—resonant transformer.
 - REGA 1 FL Failure of first regulator (REGA 1).
 - REGA 2 FL Failure of second regulator (REGA 2).

Figure F–1 shows the amended housing configuration screen for NECTAS Release 8.2 ICS47. For details of screens for earlier ICS of NECTAS refer to Section 5.2.2 of the C–RIM Release 8.2 NECTAS Operator’s Handbook.

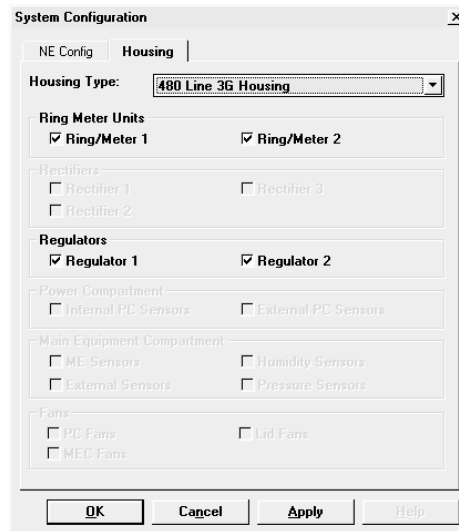


Figure F–1 System Configuration – Housing Equipment page

The Housing configuration page of the System Configuration Configuration Window is used to:

- ▶ Select the type of remote housing at the RU. This is selected from a list in a pull–down box. Available options are:
 - 180 Line 2G Housing
 - 180 Line 2G – Redundant Rectifier
 - 480 Line 1G Housing
 - 480 Line 2G Housing
 - 480 Line 3G Housing (NECTAS ICS47 or later)
 - Indoor Unit
 - Customer Premises Rack (NECTAS ICS48 or later)
 - Wideband Mini–RIM (NECTAS ICS48 or later)
 - Narrowband Mini–RIM (NECTAS ICS48 or later)
- ▶ Other options on this page depend on the type of housing or rack selected. Options are greyed out if they are not relevant. The categories are:
 - Ring Meter Units
 - Rectifiers
 - Regulators
 - Power Compartment
 - Main Equipment Compartment
 - Fans

F.4 Alarms

All the Power and Housing Alarms are detected via the Fan And Battery Controller (FABD) which transfers them via the SSB bus to the PCMCC.

Alarms are reported for the following items:

- ▶ Power Supply functions
- ▶ Maximum temperature sensor thresholds and function
- ▶ MEC or PC door open.
- ▶ CCC door open

Four LEDs are on the front of the FABD. Alarms which activate a LED are:

- ▶ Mains Fail (MAINS OFF)
- ▶ Battery Test Request
- ▶ Battery Disconnect (BATT DISC)

Note *The names in brackets are the alarms shown when using a NECTAS configuration for a 480 Line 2G housing with a 480 Line 3G housing.*

Most alarms have the same functionality in the 480 Line 3G Remote Housing as they do in the 480 Line 2G Remote Housing. The alarms with differing functionality are:

- TRANS FL (Rectifier 1 FL)
- REG 1 FL (Rectifier 2 FL)
- REG 2 FL (Rectifier 3 FL)
- ME OPEN

Details of these alarms are given below. Details of all alarms relating to this housing are in Appendix G of the Alcatel C–RIM Release 8.2 Technical Handbook (Edition 3).

F.4.1 Interfaces – Modified Alarms

The following paragraphs describe the individual alarms which are different in 480 Line 3G Remote Housings and 480 Line 2G Remote Housings. The names for the alarms are those which appear in NECTAS screens.

Note *The names in brackets are the alarms which are the names displayed when using a NECTAS configuration for a 480 Line 2G housing with a 480 Line 3G housing.*

- *Variants of Release 8.2 NECTAS (ICS46 or earlier) which were released before the introduction of the 480 Line 3G Remote Housing (do not have configuration settings or alarms for the 480 Line 3G Remote Housing. The names in brackets are seen with these variants of NECTAS.*
- *Variants of Release 8.2 NECTAS (ICS47 or later) which were released after the introduction of the 480 Line 3G Remote Housing have configuration settings and alarm screens for the 480 Line 3G Remote Housing. The alarm names preceding the brackets are used with these variants.*

TRANS FL (Rectifier 1 FL)

REG 1 FL (Rectifier 2 FL)

REG 2 FL (Rectifier 3 FL)

If the output from the ferro–resonant transformer fails or if a REGA fails an alarm is raised by the FABD and forwarded to the PCMCC via the SSB bus.

- ▶ A ferro–resonant transformer failure raises a TRANS FL (Rectifier 1 FL) alarm.
- ▶ A REGA 1 failure raises a REG 1 FL (Rectifier 2 FL) alarm.
- ▶ A REGA 2 failure raises a REG 2 FL (Rectifier 3 FL) alarm.

ME OPEN

Switches on the MEC and PC doors indicate if either is open. These are connected in a wired "OR" so that if either or both is open an alarm is sent by the FABD to the PCMCC via the SSB bus.

Note *Appendix G in the Alcatel C–RIM Release 8.2 Technical Handbook (Edition 3) contains full details of the 480 Line 3G Remote Housing, including descriptions of all alarms and their interfaces to the rest of the power subsystem.*

F.5 Alarm Masks – Housing and External Alarms

This section shows the screens displayed in NECTAS Release 8.2 ICS47. For screens for earlier ICS of NECTAS refer to Sections 5.6 (4) and 5.6 (5) of the C–RIM Release 8.2 NECTAS Operator's Handbook.

The two Housing pages set alarm masks for Power Compartment, FABC or FABD, Fans, and MEC. The items that can be set will vary for 480 Line 1G, 480 Line 2G, and 180 Line 2G Remote Housings.

The first Housing page is also used to set alarm masks for external alarms. The default for each of these alarms is Indicative. There are eight external inputs.

For sensors to generate alarms in the AS&C Alarm windows they must be configured as Urgent (U) or Non–urgent (N). To disable an external alarm, configure it as Indicative (I)

- ▶ NECTAS ICS47 introduced alarm mask pages that support the 480 Line 3G Remote Housing.
- ▶ NECTAS ICS48 introduced alarm mask pages that support the Customer Premises Rack and Mini–RIM (Wideband and Narrowband).

F.5.1 Housing and External Alarm Masks – NECTAS ICS47

Figure F–2 Housing Alarm Masks – First Page, ICS47

Figure F–3 Housing Alarm Masks – Second Page, ICS47

F.5.2 Housing and External Alarm Masks – NECTAS ICS48

Alarm Masks

Core Boards 1 | Core Boards 2 | Core Boards 3 | Transmission Boards 1
 Transmission Boards 2 | Channel Cards | **Housing Alarms 1** | Housing Alarms 2 | Climate

Power Compartment

☐ Mains Off	☐ Batt Test FI	☐ Batt Shutdown	☐ Rectifier FI	☐ DC Trip
☐ Batt Disc	☐ DC Volt FI	☐ Hi In Temp	☐ VHi In Temp	☐ In Temp Sens
☐ In Temp Oride	☐ Hi Ex Temp	☐ VHi Ex Temp	☐ Ex Temp Sens	☐ Ex Temp Oride

Main Equipment Compartment

☐ PC Open	☐ ME Open	☐ CCF Open	☐ Cab Lid Open	☐ Hi Ex Temp
☐ VHi Ex Temp	☐ Ex Temp Sens	☐ Hi ME Temp	☐ VHi ME Temp	☐ ME Temp Oride
☐ ME Temp Sens	☐ Hi Pres	☐ Pres Oride	☐ Pres Sens	☐ Hi Humid
☐ Humid Sens	☐ Humid Oride			

FAB

☐ Fail	☐ ME/Door Open	☐ CCU Open	☐ Hi Temp	☐ Int Fan FI
☐ Ext Fan FI	☐ Var Vt Fan FI	☐ M Lead	☐ Mains Off	☐ Batt Test FI
☐ Batt Shutdown	☐ Batt Disc	☐ Rect 1 FI	☐ Rect 2 FI	☐ Rect 3 FI
☐ DC Trip 1	☐ DC Trip 2	☐ DC Volt FI	☐ Reg 1 FI	☐ Reg 2 FI
☐ Transf FI	☐ PC Open	☐ Batt Temp Sens		

OK Cancel Apply Help

Figure F–4 Housing Alarm Masks – First Page, ICS48

Alarm Masks

Core Boards 1 | Core Boards 2 | Core Boards 3 | Transmission Boards 1
 Transmission Boards 2 | Channel Cards | Housing Alarms 1 | **Housing Alarms 2** | Climate

Fan Alarms

☐ Fan 0 Fail	☐ Fan 1 Fail	☐ Fan 2 Fail	☐ Fan 3 Fail	☐ Fan 4 Fail
☐ Fan 5 Fail	☐ Fan 6 Fail	☐ Fan 7 Fail	☐ Fan 8 Fail	☐ Fan 9 Fail
☐ Fan 10 Fail	☐ Fan 11 Fail	☐ Fan 12 Fail	☐ Fan 13 Fail	☐ Fan 14 Fail
☐ Fan 15 Fail	☐ Fan 16 Fail	☐ Fan 17 Fail	☐ Fan 18 Fail	☐ Fan 19 Fail
☐ Fan 20 Fail	☐ Fan 21 Fail	☐ Fan 22 Fail		

External Alarms

☐ Power Urg	☐ Water Ingress	☐ Trans Urg	☐ CAN Trans Urg
☐ Surge Diverter	☐ Air Con FI/Hi Temp	☐ Trans Non Urg	☐ CAN Trans Non Urg

Wideband Mini-RIM Alarms

☐ Rect FI	☐ Hi/Lo Volts	☐ AC Mains FI	☐ Hi/Lo Float
☐ Fuse FI	☐ Door Alm	☐ Urg	☐ Non Urg

Narrowband Mini-RIM Alarms

☐ Rect FI	☐ Hi/Lo Volts	☐ AC Mains FI	☐ Hi/Lo Float
☐ Fuse FI	☐ Door Alm	☐ Batt Test FI	☐ Batt Shutdown

OK Cancel Apply Help

Figure F–5 Housing Alarm Masks – Second Page, ICS48

F.6 External Alarms

This section shows the External Alarms window for NECTAS ICS47 and ICS48. For alarm screens for earlier ICS of NECTAS refer to Section 8.7.4 of the C-RIM Release 8.2 NECTAS Operator's Handbook.

Alarms relating to Wideband Mini-RIM and Narrowband Mini-RIM are described in Appendix G.

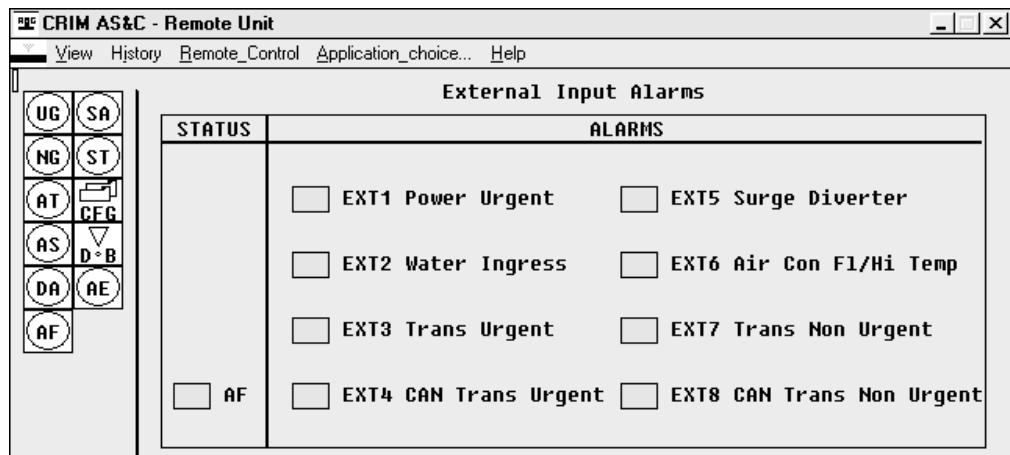


Figure F-6 External Alarms – NECTAS ICS47

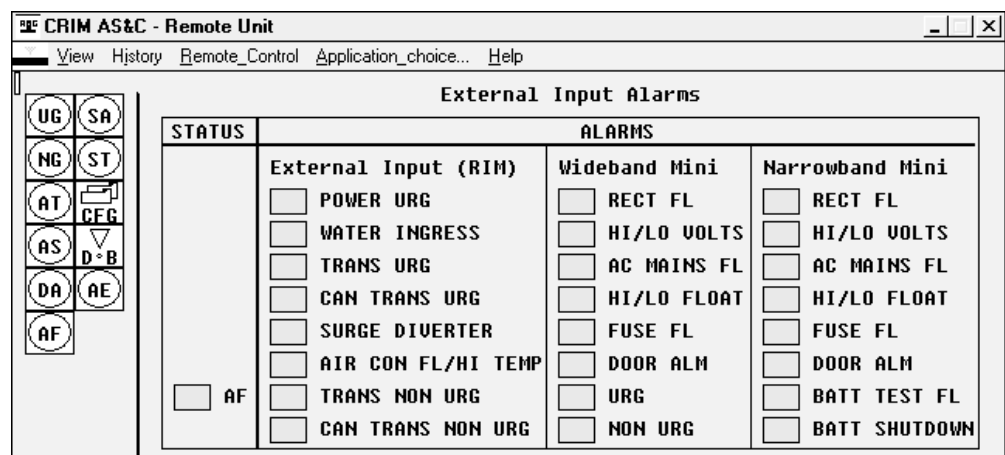


Figure F-7 External Alarms – NECTAS ICS48

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
External Input 1	EXT 1 – Power Urgent	NU	Y	A
External Input 2	EXT 2 – Water Ingress	NU	Y	A
External Input 3	EXT 3 – Trans Urgent	NU	Y	A
External Input 4	EXT 4 – CAN Trans Urgent	NU	Y	A
External Input 5	EXT 5 – Surge Diverter	NU	Y	A
External Input 6	EXT 6 – Air Con FI/Hi Temp	NU	Y	A
External Input 7	EXT 7 – Trans Non Urgent	NU	Y	A
External Input 8	EXT 8 – CAN Trans Non Urgent	NU	Y	A

F.7 FAB Alarms

This section shows the FAB alarms for NECTAS ICS47 and ICS48. For details of FAB alarms for earlier ICS of NECTAS refer to Section 8.7.2 of this handbook.

FAB alarms are for Main Equipment (including fans), battery and rectifier alarms in:

- ▶ 180 Line 2G Remote Housings
- ▶ 480 Line 2G Remote Housings
- ▶ 480 Line 3G Remote Housings
- ▶ Customer Premises Racks (CP racks)

The FAB Alarms window is shown below:

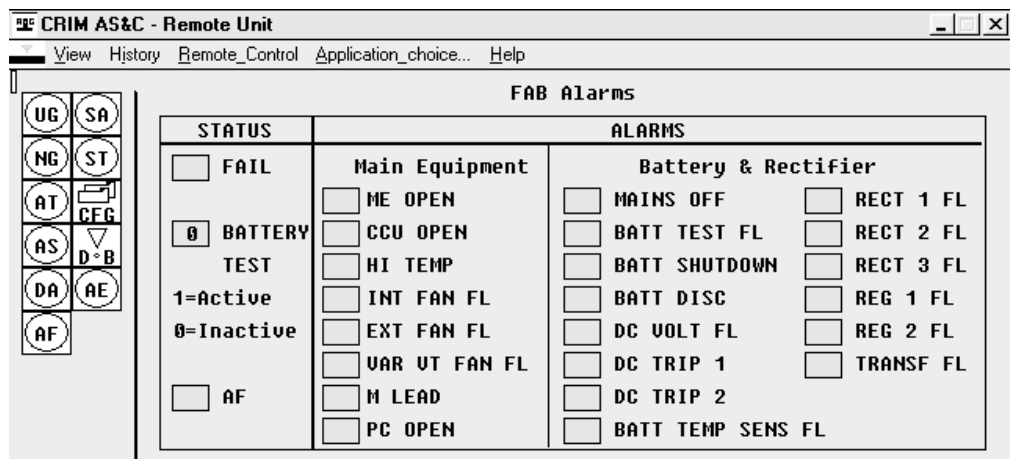


Figure F-8 FAB Alarms – 2G and 3G Housings

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Response Fail The unit is not responding or has reported a Fail alarm	FAIL	U	Y	A
Battery Test Indication A battery test is in progress	BATT TEST IND	U	Y	A
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Main Equipment Compartment Door Open (a) 2G Housing – Microswitch for the MEC door has been tripped. (b) CP Rack – Door on Rack 1 and/or Rack 2 is open.	ME OPEN	U	Y	A
Cross Connect Unit Door Open (a) 2G Housing – Microswitch for the CCU door has been tripped. (b) CP Rack – Termination missing from FABD.	CCU OPEN	U	Y	A
High Main Equipment Temperature (a) 2G Housing – Temperature of the MEC temp sensor is >60 °C (b) CP Rack – Temperature of the rack temp sensor is >52 °C	HI TEMP	NU	Y	A
Internal Fans Operating Incorrectly One or more internal fans have failed	INT FAN FL	NU	Y	A
External Fans Operating Incorrectly (a) 2G Housing – One or more fans have failed (b) CP Rack – Temperature of rack temperature sensor is >48 °C. This alarm is only seen on a local NECTAS terminal and is masked from COMNET.	EXT FAN FL	NU	Y	A
Variable Fan Fail Variable voltage fan supply has failed	VAR VT FAN FL	NU	Y	A
M Lead Signalling Input M Lead input has been detected	M LEAD	NU	Y	A
Power Compartment Door Open The Power Compartment door in the 480 Line 3G Remote Housing is open.	PC OPEN	NU	Y	A
Mains Power Off No mains supply to rectifier	MAINS OFF	U	Y	A
Battery Test Failure Battery test has indicated a defective battery	BATT TEST FL	NU	Y	A
Battery Shutdown is Imminent Battery voltage is approaching minimum threshold	BATT SHUTDOWN	U	Y	A
Battery Disconnected Battery contactor has opened	BATT DISC	NU	Y	A
High or Low DC Voltage DC voltage out of range (55.9V – 48V)	DC VOLT FL	U	Y	A
DC Circuit Breaker Trip (a) 2G Housing – DC circuit breaker or battery circuit breaker 1 has tripped or is OFF (a) CP Rack – DC circuit breaker has tripped or is OFF or one or both battery circuit breakers is OPEN.	DC TRIP <i>n</i> (<i>n</i> = 1 .. 2)	U	Y	A
Battery Temperature Sensor Fail Battery temperature sensor has failed	BATT TEMP SENS FL	NU	Y	A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Rectifier <i>n</i> Failure Rectifier not operating normally	RECTIFIER <i>n</i> FL (<i>n</i> = 1 .. 3)	U	Y	A
Regulator <i>n</i> Failure Regulator not operating normally	REG <i>n</i> FL (<i>n</i> = 1 .. 2)	U	Y	A
Transformer Failure Transformer not operating normally	TRANSF FL	U	Y	A

Appendix G Mini–RIM

G.1 Introduction

The Mini–RIM was introduced in mid 1999.

This appendix describes configuration and alarms for Narrowband Mini–RIM RU and Wideband Mini–RIM RU. Insert this appendix in the *Alcatel C–RIM Release 8.2 NECTAS Operator's Handbook*.

For more information on configuration and alarms relating to the 480 Line 3G Remote Housing refer to the following:

- ▶ Section G.3 of this Appendix describes configuration in NECTAS of the Mini–RIM rack or cabinet.
- ▶ Section G.4 of this Appendix describes Mini–RIM alarms and the mapping of alarms to the AS&C screens in NECTAS. Refer also to the AS&C chapter of this handbook.
- ▶ For other matters relating to equipment configuration and alarms refer to the EU/RU Configuration and AS&C chapters of this NECTAS handbook.

Note *The Mini–RIM is described in Appendix C of the Alcatel C–RIM Release 8.2 Technical Handbook (Edition 4).*

G.2 NECTAS and COMNET Support

Depending on the ICS of NECTAS the Mini–RIM may appear as one of the following:

- ▶ NECTAS ICS47 or earlier.

The Mini–RIM is configured as an Indoor unit.

Alarms appear on the External alarms page in AS&C.

- ▶ NECTAS ICS48 or later.

The Mini–RIM is configured as one of the following:

- Narrowband Mini–RIM
This is located in a compact cabinet and can carry narrowband and wideband services.
- Wideband Mini–RIM
This is located in a rack and carries only wideband services. No narrowband services are carried.

Alarms appear on the External Input Alarms page in AS&C.

G.3 Equipment Configuration – Housing Page

Figure G–1 shows the amended housing configuration screen for NECTAS Release 8.2 ICS48.

For details of screens shown by earlier ICS of NECTAS refer to Section 5.2.2 of the C–RIM Release 8.2 NECTAS Operator's Handbook.

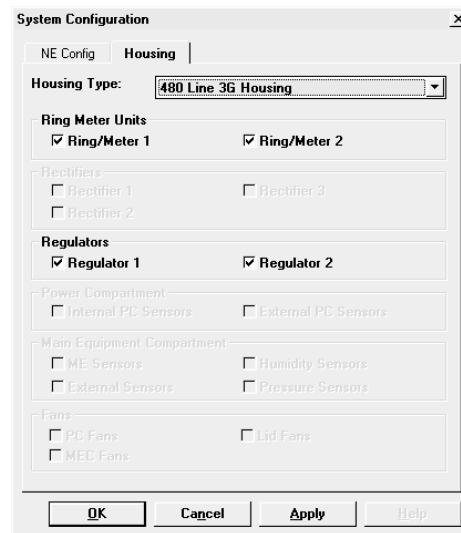


Figure G–1 System Configuration – Housing Equipment page

The Housing configuration page of the System Configuration Configuration Window is used to:

- Select the type of remote housing at the RU. This is selected from a list in a pull-down box. Available options are:
 - 180 Line 2G Housing
 - 180 Line 2G – Redundant Rectifier
 - 480 Line 1G Housing
 - 480 Line 2G Housing
 - 480 Line 3G Housing (NECTAS ICS47 or later)
 - Indoor Unit
 - Customer Premises Rack (NECTAS ICS48 or later)
 - Wideband Mini-RIM (NECTAS ICS48 or later)
 - Narrowband Mini-RIM (NECTAS ICS48 or later)

- Other options on this page depend on the type of housing or rack selected. Options are greyed out if they are not relevant. The categories are:
- Ring Meter Units
 - Rectifiers
 - Regulators
 - Power Compartment
 - Main Equipment Compartment
 - Fans

G.4 Mini-RIM Alarms

G.4.1 Alarms – Narrowband Mini-RIM RU in Cabinet.

Where a Narrowband RU is installed in a Mini-RIM cabinet the alarms are collected by M-Lead inputs on the RU PCMCC. They are transported to the EU via OA&M embedded in the optical fibre. Alarms are forwarded to COMNET via X.25.

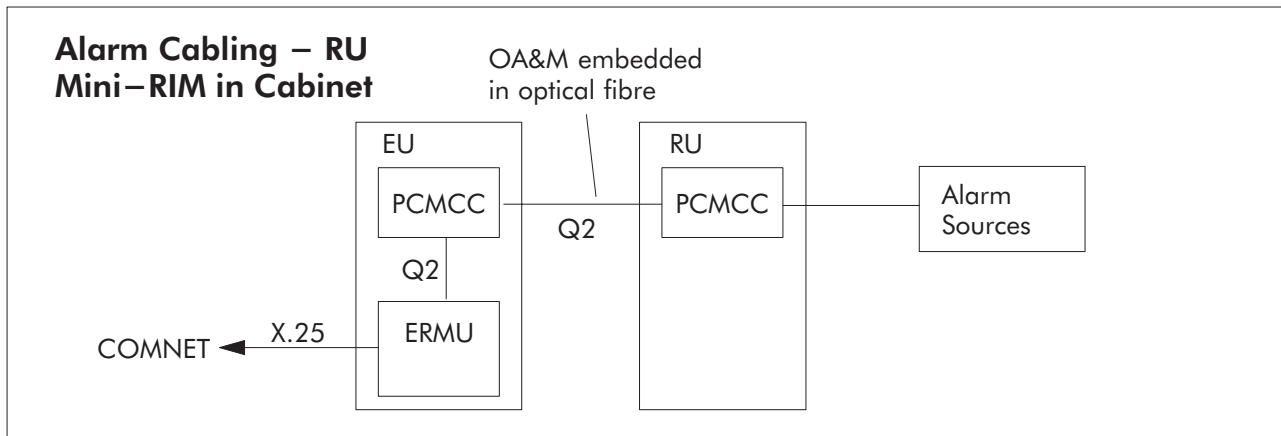


Figure G-2 Mini-RIM Alarm Cabling – Cabinet Mounted RU

Where a Narrowband Mini-RIM is installed in a cabinet the alarms in NECTAS are:

- ▶ RECT FL
- ▶ HI/LO VOLTS
- ▶ AC MAINS FAIL
- ▶ HI/LO FLOAT
- ▶ FUSE FL
- ▶ DOOR ALM
- ▶ BATT TEST FL
- ▶ BATT SHUTDOWN

Details of these alarms are in the table in Section G.4.3.

G.4.2 Alarms – Wideband Mini–RIM RU in RPS Rack

The ERMU Unit, located in the EU Main Panel, is the Management Unit for the system. One of its functions is to collect alarms from the system. The front connector of the ERMU includes pins for station alarm outputs for the following alarms:

- ▶ Urgent
- ▶ Non–Urgent
- ▶ Alarm Receiving Attention.

The alarms are cabled as follows:

- ▶ At rack–mounted RU the alarms are cabled from the RPS Alarm Krone Block to the M–Lead inputs on the PCMCC.
- ▶ At the RU in a Mini–RIM cabinet, alarm outputs on the power supply and cabinet are cabled to the M–Lead inputs on the PCMCC.
- ▶ At the EU an alarm cable must be fitted from the ERMU to the Alarm and Power Distribution Panel (A&PD).
- ▶ The A&PD at the EU has alarm outputs which are cabled to the TESAMS Alarm Point Scanner.

The ERMU will raise an Urgent or Non–Urgent alarm (configurable) for any one of the eight M–Lead alarm inputs available at the remote PCMCC. For further details of the pinouts of the ERMU and PCMCC refer to the *C–RIM Release 8.2 Technical Handbook*. The pinouts are also shown on the back of the Main Panel cover.

Security codes should be assigned to the TESAMS scanner ports for wideband Mini–RIM. These are:

Urgent "5"	LB0101
Non–Urgent "4"	LB0102
ARA "3"	LB0103

When interworking into the Mini–RIM, the RPS alarm block must be configured to be Normally Open.

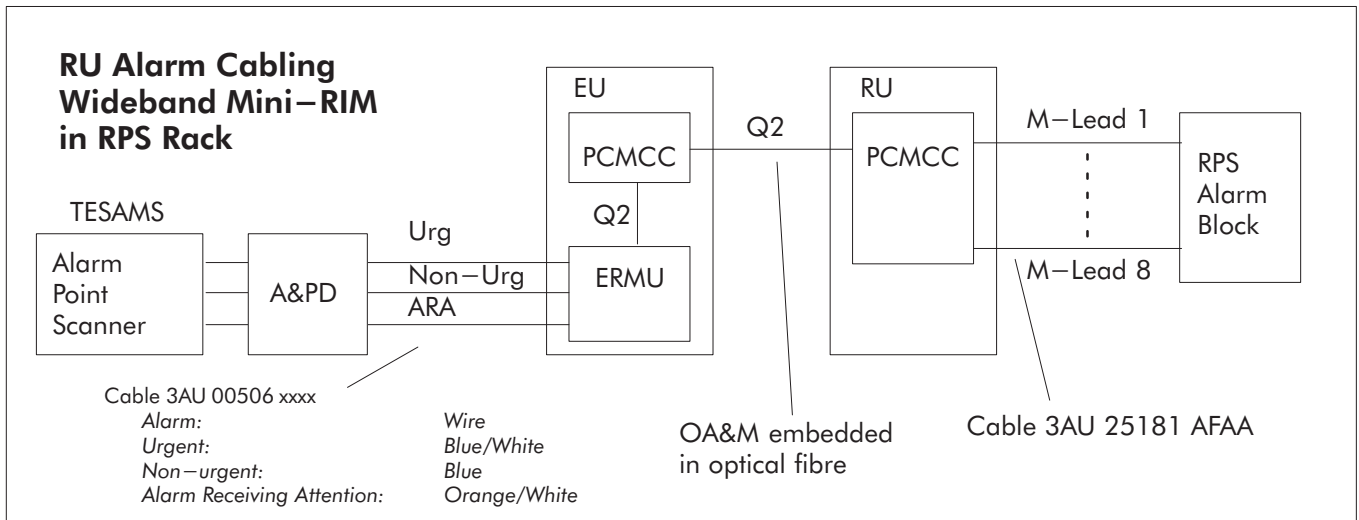


Figure G-3 Mini-RIM Alarm Cabling –RPS Rack Mounted RU

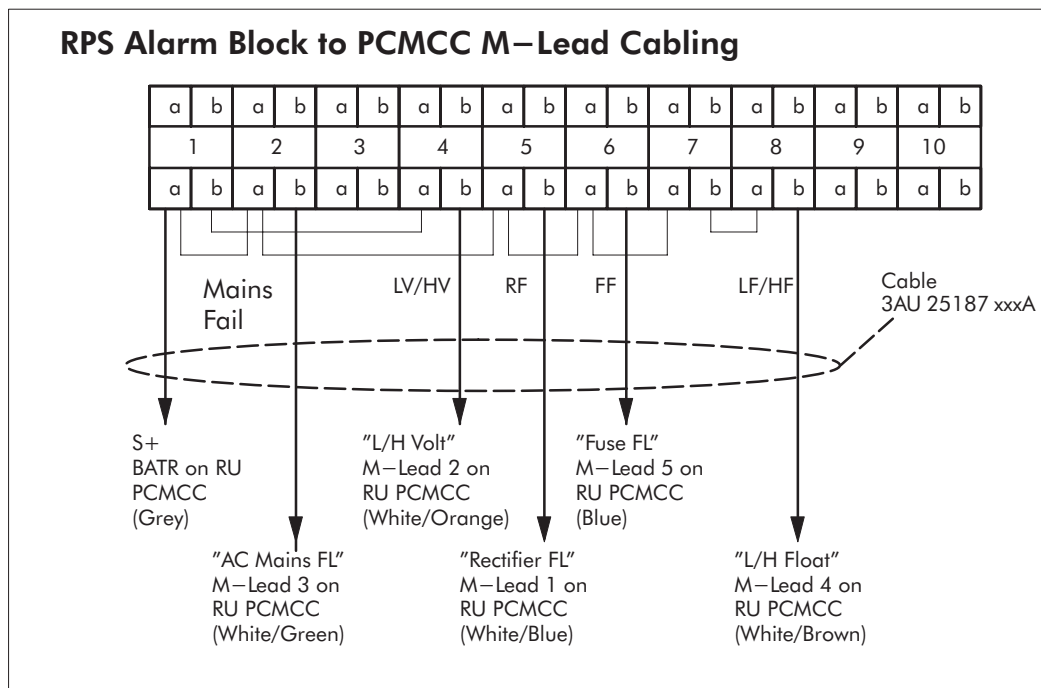


Figure G-4 M-Lead Cabling – Rack mount Mini-RIM RU

Where a Wideband Mini-RIM RU is installed in a rack the alarms in NECTAS are:

- ▶ RECT FL
- ▶ HI/LO VOLTS
- ▶ AC MAINS FAIL
- ▶ HI/LO FLOAT
- ▶ FUSE FL
- ▶ DOOR ALM
- ▶ URG
- ▶ NON URG

Details of these alarms are in the table in Section G.4.3.

G.4.3 AS&C – Mini-RIM Alarm Page

This section shows the External Alarms window for NECTAS ICS48. For alarm screens for earlier ICS of NECTAS refer to Section 8.7.4 of the C-RIM Release 8.2 NECTAS Operator's Handbook.

External Input (RIM) alarms do not apply to Mini-RIM.

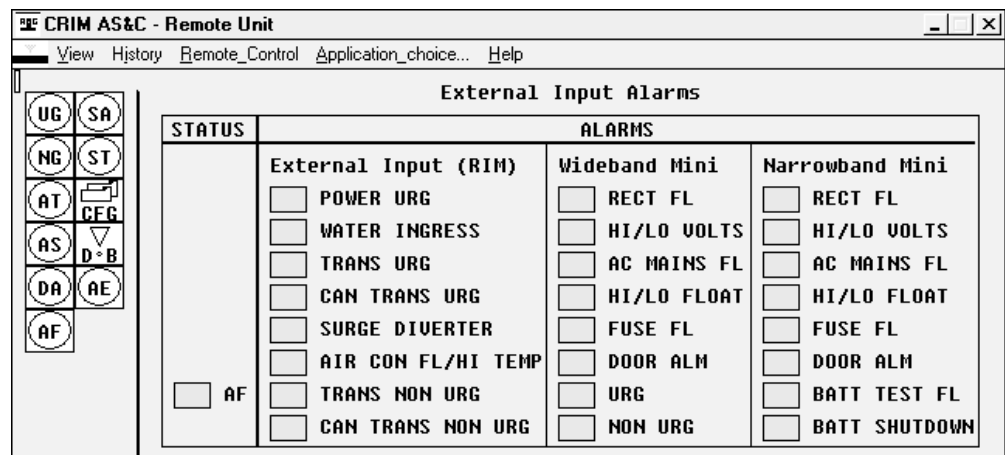


Figure G-5 External Alarms – NECTAS ICS48

Status Box Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Alarm Filtering Fleeting alarms are latched	AF	NA		A

Alarm Description	Abbreviation	Alarm Priority		Alarm Display
		Default	Prg.	
Rectifier Fail The rectifier has failed	RECT FL	U	Y	A
High or Low DC Volts. DC voltage is out of range.	HI/LO VOLTS	U	Y	A
AC Mains Failure. No AC supply to power supply unit.	AC MAINS FAIL	U	Y	A
High or Low DC Volts DC voltage is out of range	HI/LO FLOAT	NU	Y	A
Fuse Fail DC fuse or circuit breaker is open	FUSE FL	U	Y	A
Door Alarm. The cabinet door is open	DOOR ALM	U	Y	A
Battery Test Fail Battery test has indicated a defective battery. (Narrowband Mini-RIM only)	BATT TEST FL	U	Y	A
Battery Shutdown is imminent Battery voltage is approaching minimum threshold (Narrowband Mini-RIM only)	BATT SHUTDOWN	U	Y	A
Urgent Alarm An urgent alarm has been received from external equipment. (Wideband Mini-RIM only)	URG	U	Y	A
Non-urgent Alarm A non-urgent alarm has been received from external equipment. (Wideband Mini-RIM only)	NON URG	NU	Y	A

G.4.4 Alarm Masks – Mini-RIM Housing and External Alarms

NECTAS Release 8.2 ICS48 introduced support for Mini-RIM in the Equipment Configuration application and in the AS&C application.

This section shows the screens displayed in NECTAS Release 8.2 ICS48. For screens for earlier ICS of NECTAS refer to Sections 5.6.2 (4) and 5.6.2 (5) of the C-RIM Release 8.2 NECTAS Operator's Handbook.

There are two pages of housing alarm masks. Alarm masks for Mini-RIM are configured on the second housing alarm mask page. The default for each of these alarms is as shown in the table in Section G.4.3.

For sensors to generate alarms in the AS&C Alarm windows they must be configured as Urgent (U) or Non-urgent (N). To disable an external alarm, configure it as Indicative (I),

Alarm Masks			
Core Boards 1	Core Boards 2	Core Boards 3	Transmission Boards 1
Transmission Boards 2	Channel Cards	Housing Alarms 1	Housing Alarms 2
Fan Alarms			
☐ Fan 0 Fail	☐ Fan 1 Fail	☐ Fan 2 Fail	☐ Fan 3 Fail
☐ Fan 4 Fail	☐ Fan 5 Fail	☐ Fan 6 Fail	☐ Fan 7 Fail
☐ Fan 8 Fail	☐ Fan 9 Fail	☐ Fan 10 Fail	☐ Fan 11 Fail
☐ Fan 12 Fail	☐ Fan 13 Fail	☐ Fan 14 Fail	☐ Fan 15 Fail
☐ Fan 16 Fail	☐ Fan 17 Fail	☐ Fan 18 Fail	☐ Fan 19 Fail
☐ Fan 20 Fail	☐ Fan 21 Fail	☐ Fan 22 Fail	
External Alarms			
☐ Power Urg	☐ Water Ingress	☐ Trans Urg	☐ CAN Trans Urg
☐ Surge Diverter	☐ Air Con FI/Hi Temp	☐ Trans Non Urg	☐ CAN Trans Non Urg
Wideband Mini-RIM Alarms			
☐ Rect FI	☐ Hi/Lo Volts	☐ AC Mains FI	☐ Hi/Lo Float
☐ Fuse FI	☐ Door Alm	☐ Urg	☐ Non Urg
Narrowband Mini-RIM Alarms			
☐ Rect FI	☐ Hi/Lo Volts	☐ AC Mains FI	☐ Hi/Lo Float
☐ Fuse FI	☐ Door Alm	☐ Batt Test FI	☐ Batt Shutdown

OK Cancel Apply Help

Figure G-6 Housing Alarm Masks – Second Page, ICS48

Index

Numbers

1G Remote Housing, alarms, 8–23

2G Remote Housing, alarms, 8–24

480 Line 3G Remote Housing
alarms, F–4, G–4
door open alarm, F–4
power supply alarms, F–4
REGA configuration, F–2
transformer configuration, F–2

A

Abbreviations, A–1

Access, local, 6–6, 6–8, 6–11

Access Level
EMG / COC, 10–16
installer, 10–17
monitor, 10–17
NMG, 10–16
NSS, 10–16

Access Panel
alarms, 8–27
configuration, 5–18
G.703 settings, 5–37

Activation, permanent, 5–32

Active service, 5–21

Address, COMNET, 6–4

Administration, 10–8
features, 2–6

Alarm
480 line 3G remote housing, F–4, G–4
AC, 8–42
door open, 480 line 3G remote housing, F–4
latch, 5–45
latching period, 6–4
masks, 5–40
power supply, 480 line 3G remote housing, F–4
processing, 5–5
SAC, 8–45
spontaneous alarm emission, 6–5, 6–7
unknown subscribers, 9–7

Alarm Masks
Channel Cards, 5–43

climate, 5–45
core boards, 5–41
ERMU configuration, 6–9
external alarms, 5–45
480 line 3G remote housing, F–6, G–9
Housing, 5–44
480 line 3G remote housing, F–6, G–9
transmission boards, 5–42

Alarm Synthesis, 3–20
fields, 3–21

Alarm tile definitions, 8–4

Alarm Window
climate control panel, 8–29
first level, 8–4
panel, second level, 8–25
second level, 8–23
third level, 8–30

Alarms, 8–1
1G Remote Housing, 8–31
1G remote housing, 8–23
2B1Q, 8–79
2G Remote Housing, 8–37
2G remote housing, 8–24
2M OLTE, 8–67
4/6 wire, 8–77
480 line 3G remote housing, F–11
4B3T, 8–79
64K G.703 EM, 8–78
abbreviation, definition, 8–30
abbreviations, 8–4
access panel, 8–27
classifications, 8–3
climate controller, 8–87
climate I/O, 8–89
CLIMCTL, 8–87
CLIMI/O, 8–89
CMX, 8–52
colours, 3–30, 3–31, 8–7
CTU, 8–74
CXDU, 8–56
date, 3–27
definitions, 3–30, 8–4
detail windows, 8–30
DI–64KB–E&M, 8–78
display, definitions, 8–30
ECC, 8–58
ECTU, 8–75
ERMU, 8–60

- exiting AS&C, 8–16
- external, 8–41
 - 480 line 3G remote housing, F–9, G–7
- FAB, 8–37
 - 480 line 3G remote housing, F–11
- fan assembly, 8–31
- features, 2–5
- getting detail, 8–1
- history, 3–27, 8–8
- housing, 8–23
- housing block, 8–4, 8–6
- ICC, 8–62
- ISDN, 8–79
- latching period, 5–5
- main equipment, 1G housing, 8–32
- main panel, 8–26
- menus, 8–8
- Mini_RIM, wideband, G–5
- mnemonic, 3–27
- OMX 16x2, 8–67
- OMX 4x2, 8–67
- P–Phone, 8–81
- panels block, 8–4, 8–6
- PCMCC, 8–47
- PCMCX, 8–42
- POTS, 8–83
- power compartment, 8–35
- power supply, 8–51
- priority, 8–30
- remote controls, 8–10
- ring/meter, 8–39
- severity, 8–3
- synthesis block, 8–4
- universal, 8–85
- using AS&C application, 8–1
- zooming, 4–7, 8–6

Alcatel, logo, 3–21

Applicability, i

Application groups, 10–16

Application loaded, 11–5

Applications, 3–25

- ERMU, 3–25
- exchange unit, 3–26
- management unit, 3–25
- PCMCC, 3–26
- remote unit, 3–26

AS&C, 2–2, 8–2

Audit, 4–9, 4–13

B

Backup, 10–2

Balancing, auto hybrid, 5–25

Batch Mode Test, 7–22, 8–11

- ERMU configuration, 6–10

Battery, test, 8–12

Bell, menu, 3–24

Blinking icon, 11–4

Busy Alarm, retry period, 6–3

C

Channel, options, 5–20, 5–28

Climate Control Panel

- alarm window, 8–29
- configuration, 5–39
- third level alarms, 8–87

Close, 4–9

CMX

- alarms, 8–52
- configuration, 5–10

colour schemes, Windows, 3–11

COM port parameters, 3–11

COMNET

- address, 6–4
- configuration, 6–3
- timeout, 6–3

Comparing configurations, 4–13

Complete synthesis list, 3–22

Components, opto–electronic, 1–3

Configuration, 2–2, 3–38, 4–10, 4–12

- access panel, 5–18
- climate control panel, 5–39
- CMX, 5–10
- COMNET, 6–3
- CTU, 5–17
- CXDU, 5–17
- ECC, 5–17
- ECTU, 5–17
- equipment, 4–1, 4–2
- ERMU, 4–5, 5–10, 6–1, 6–2, 6–5
- EU, 5–1
- EU/RU, 4–6, 5–2
- EU/RU Pairs, 6–7

files

backup, 10–2

restore, 10–6

housing, 5–6

housing equipment, 5–3

ICC, 5–12

Line Transmission Units, 5–15

main equipment, 5–8

main panel, 5–8, 5–18

NE, 5–3

PCMCC, 5–33

PCMCX, 5–33

PWRA, 5–17

RiMU, 5–17

RSU, 5–22

RU, 5–1

saving and loading, 4–9, 4–10

service, 5–31

uploading and downloading, 4–9, 4–10

user port, 5–21

V5, 5–22

Configuration application, menus, 4–8

Configure, ERMU, 6–9

Connect, CRAFT terminal to C–RIM, 3–13

Connecting the CT, 3–17

Connection, network, 6–3

Consideration, timeslot, 5–33

Copy buffer, 8–15

Craft Terminal, 3–2

CRC4, 5–38

CTU, configuration, 5–17

Customer Services, 2–3

Integrated, 2–3

Non–integrated, 2–3

CXDU

alarms, 8–56

configuration, 5–17

D

Databases, FNN, 7–2, 7–6, 7–7

Demonstration Mode, NECTAS, 3–32

Door, open alarm, 480 line 3G remote housing,
F–4

Download, FNN databases, 7–9

E

E–Lead

activate, 8–11

de–activate, 8–11

ECC

alarms, 8–58

configuration, 5–17

ECTU, configuration, 5–17

Edit

FNNs, 7–5

header, 7–16

EMG / COC, 10–16

Equalisation, 5–24

Equipment

configuration, 4–2

safety and care, 1–1

static sensitive, 1–2

Equipment Configuration, basics, 4–1

Equipment configuration application

access via NECTAS, 4–3

offline access, 4–4

ERMU

alarms, 8–60

applications, 3–25

configuration, 5–10, 6–1, 6–2, 6–5

FNN applications, 7–2

X.25 address, 6–5

Error messages, B–1

ESM, G.703 settings, 5–38

EU, configuration, 5–1, 5–2, 6–7

Exchange Interfaces, 2–7

Exchange Unit, applications, 3–26

Exiting, 3–33

Extension, outdoor, 5–32

F

F port, 3–13

local, 3–16

network, 3–15

Fail Alarm, retry period, 6–4

Faulty elements, 3–22

Features, 2–3
 alarms, 2–5
 configuration, 2–6
 performance monitoring, 2–6

File header, 4–9, 4–11

File read error, 11–5

FNN

- add, 7–10
- adding, 7–12
- administration, 2–2, 7–1, 7–2
 - file menu, 7–4
- application differences, 7–2
- database version control, 7–8
- databases, 7–2, 7–6, 7–7
- deleting, 7–12
- display, 2–2, 7–1, 7–2
 - file menu, 7–4
- edit, 7–10
- editing, 7–13
- file prefixes, 7–2
- files, backup, 10–3
- menus, 7–3
- search, 7–16
- send databases, 7–10
- sorting, 7–16
- test, 2–2, 7–1, 7–20
 - checking equipment, 7–31
 - connections, 7–31
 - CTU functions, 7–18
 - ERMU functions, 7–18
 - error messages, 7–42
 - errors, D–1
 - functions, 7–18
 - opening session, 7–30
 - PCMCC functions, 7–18
 - PCMCX functions, 7–18
 - polling, 7–41
 - running a test, 7–32
 - test results, 7–39
- test application, 7–17
- test details, 7–40
- test procedures, 7–43
- upload databases, 7–10

FNN management, features, 2–6

Function, 2–2

G

G.703 loopback, 8–11

G.703 settings
 access panel, 5–37
 ESM, 5–38

G.821 Performance monitoring, 9–2

Global alarms, 3–22

H

Hardware requirements, 3–2

Header, edit, 7–16

Help, 3–29

History log files, 3–28

Housing

- alarm, 8–23
- configuration, 5–6
- Remote, 480 line 3G, F–1

Housing equipment, configuration, 5–3

Housings, remote, 2–5

Hybrid, auto balancing, 5–25

Hybrid balancing, 8–13

I

ICC

- alarms, 8–62
- configuration, 5–12

Impedance, term/balance, 5–25

Indial, 5–31

Information pointer, 8–7

Installation, procedure, 3–3

Installer, access level, 10–17

Installing software, 3–3

Interactive, SWD, 10–23

Interfaces, exchange, 2–7

ISDN

- power feed, 5–26
- timeslots, 5–35
- U–interface, 5–26

K

Keyboard, 3–19

L

Latch, alarms, 5–45

Latching period
alarm, 6–4
alarms, 5–5

LCT, 3–2

Leased lines, 5–30, 5–32

LED patterns, software download, 10–29

Level Settings, Tx/Rx, 5–23

Line options, 5–20

Line Settings, 5–23

Line syntax, 11–4

Line Transmission Units, configuration, 5–15

Line Voltage, 5–26

Local Access, 6–6, 6–8, 6–11

Local F port, 3–16

Location, 5–4

Log, files, backup, 10–5

Logging on, 3–18

Logo, Alcatel, 3–21

Logout, 10–10

Loopback, 8–11

M

Main Equipment
configuration, 5–8
slots, 5–9

Main Panel
alarms, 8–26
configuration, 5–8, 5–18
main equipment slots, 5–9

Maintenance, 10–1

Maintenance Procedures, 10–31

Management Unit, applications, 3–25

Measurement, traffic, 9–8

Menu
application_choice, 3–25
bell, 3–24

configuration
file, 4–9
panel, 4–15
userport, 4–16
view, 4–15
window, 4–16

configuration application, 4–8

diagram
ERMU, 3–34
EU/RU, 3–36

FNN, 7–3

history, 3–27

performance monitoring, 9–4

view, 3–22

Metering

ESM, 5–27

Non-integrated, 5–27

RSU, 5–27

UNIV, 5–27

Microswitch, door alarm, 480 line 3G remote
housing, F–4

Mini-RIM

See also 480 Line 1G Remote Housing

wideband alarms, G–5

Mnemonic, 3–27

Monitor, access level, 10–17

Mouse, 3–19

N

National usage bit, 5–37

Navigation, NECTAS, 3–19

NE, configuration, 5–3

NECTAS

demonstration, E–1

demonstration mode, 3–32

navigation, 3–19

troubleshooting, 11–3

uninstall, 3–9

version information, 10–19

Network, connection, 6–3

Network Element, performance, 9–1

Network elements, 3–21

Network port, 3–15

NMG, 10–16

NSS, 10–16

O

OA&M, 5–4
mode, 6–5

Open, 4–9

Operation, 10–1

Operator, 10–9
changing password, 10–11
creating new, 10–13
groups, 10–16
identifier, 3–18
modify profile, 10–33
modifying, 10–14
removing, 10–15
security, 10–18
viewing parameters, 10–12

Options
line / subscriber, 5–20
signalling, 5–27
transmission, 2–5

Opto–electronic components, 1–3

Other releases, ii

Outdoor extension, 5–32

Overview, 2–1

P

P–Phone, timeslots, 5–36

Password, 3–18

PCMCC
alarms, 8–47
applications, 3–26
configuration, 5–33
software download, 10–20

PCMCX
alarms, 8–42
configuration, 5–33

Performance monitoring, 2–2, 5–38, 9–1
attributes, 9–3
data collection, 9–5
features, 2–6
files, 9–4

G.821 format, 9–2
printing data, 9–4
saving data, 9–4
menus, 9–4
POLPM, 9–5
setup, 9–4

Performance statistics, 9–2

Permanent Activation, 5–32

Ports, 3–17

POTS, reset/replace, 8–16

Power Feed, ISDN, 5–26

Power supply, alarm, 480 line 3G remote housing,
F–4

Precautions
electrical safety, 1–4
handling equipment, 1–2

Print, 4–9
configuration file, 4–12
FNN databases, 7–8
preview, 4–9, 4–12
setup, 4–9, 4–12

Problems, avoiding, 11–2

PWRA, configuration, 5–17

R

Racks, 2–5

Receive, 4–9

Reference, 3–22

Release, i
identification, ii

Remote controls, 8–10

Remote Housing, 480 line 3G, F–1
See also 480 Line 1G Remote Housing

Remote Housings, 2–5

Remote Unit, applications, 3–26

Requirements, 3–2

Restore, configuration files, 10–6

Retrieve, 4–12

Retry Intervals, 6–3

Retry Period
busy alarm, 6–3
fail alarm, 6–4

Revertive call, 7–41
 RIM ID, 5–3, 7–6
 RiMU, configuration, 5–17
 RSU, configuration, 5–22
 RU, configuration, 5–1, 5–2, 6–7
 Running a test, 7–32
 Rx Level Setting, 5–23

S

Safety, 1–1
 electrical, 1–4
 opto–electronic, 1–3
 Save, 4–9
 configuration file, 4–10
 FNN databases, 7–8
 Search, FNN, 7–5, 7–16
 Security operators, 10–18
 Selection, 3–21
 Send, 4–9
 FNN databases, 7–9
 Serial cable, 3–17
 Service
 active, 5–21
 configuration, 5–31
 Settings, line, 5–23
 Shutting down, 3–33
 Signalling, options, 5–27
 Slots, main equipment, 5–9
 Software download, 10–20
 application, 10–22
 code transfer, 10–26
 led patterns, 10–29
 service affecting, 10–26
 summary, 10–28
 Starting the software, 3–18
 Static sensitive equipment, 1–2
 Step by Step, 5–31
 SWD
 errors, C–1
 Interactive, 10–23

Non–Interactive, 10–23
 SxS. See Step by Step
 Synchronisation, 5–4
 Synthesis, 8–4
 System F port
 EU, 3–13
 RU, 3–14
 System overview, 2–8

T

Term/Balance Impedance, 5–24
 Test, battery, 8–12
 Testing, 7–32
 batch mode, 8–11
 Timeout, COMNET, 6–3
 Timeouts, 6–3
 Timeslot
 configuration, 5–33
 ISDN, 5–35
 P–Phone, 5–36
 Timezone, 6–5
 Traffic, Measurement, 9–8
 Transmission Options, 2–5
 Troubleshooting, 11–1
 Tx Level Setting, 5–23

U

U–interface, ISDN, 5–26
 Unbalanced feed, 5–32
 Uninstall, NECTAS, 3–9
 UNIV
 reset/replace, 8–16
 RU, feed, 5–26
 Unknown Subscribers, 9–6
 alarm, 9–7
 Uploading, 4–12
 User Port, configuration, 5–21
 Using the handbook, i

V

V5, configuration, 5–22

Version, i

Version information, NECTAS, 10–19

View, FNNs, 7–5

View Menu, 3–22

Voltage, line, 5–26

W

WIN.INI, 3–10

Window, alarm synthesis, 3–20

Windows, colour schemes, 3–11

X

X.25 Address, ERMU, 6–5

Z

Zooming, 4–7, 8–6

<Ripped by Subby>

<Ripped by Subby>