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Schedule of Site
Commissioning Tests
SCT 33
Issue 4
July 1998

Newbridge Networks

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SCHEDULE OF SITE COMMISSIONING TESTS

NEWBRIDGE NETWORKS EQUIPMENT

Station:

Circuit:

Manufacturer's Contract No:

Contractor's Signature:

NGC Contract No:

Accepted by:
(Engineer's Signature)

Contractor:

Date:

NEWBRIDGE NETWORKS

1 INTRODUCTION

The purpose of this schedule is to define and record the Site Commissioning Tests for the Newbridge Networks 3600 Bandwidth Managers and Newbridge Networks 3664 Mainstreet Fractional Access Multiplexer (the equipment).

This Site Commissioning Test (SCT) applies to all personnel when commissioning Newbridge equipment.

The 3600 equipment is compatible with Release 3 of 3600 Generic 1113 products.
The 3664 equipment is compatible with Release 1 of 3664 Generic Q1114 products.

2 GLOSSARY

BERT	Bit Error Rate Tester	CAS	Channel Associated Signalling
CCS	Common Channel Signalling	CPSS	Control Packet Switching System
DCC	Direct Connect Card	DCE	Data Communications Equipment
DDF	Digital Distribution Frame	DNIC	Data Network Interface Card
DPU	Digital Patching Unit	DSP	Digital Signal Processing
DTE	Data Terminal Equipment	DTU	Data Termination Unit
FCR	Fault Control Redundancy	GFC	General Facilities Card
LOS	Loss Of Sync	NMC	Network Management Centre
NMTI	Node Management Terminal Interface	NTU	Network Terminating Unit
POS	Point of Service	PRI	Primary Rate Interface
PSU	Power Supply Unit	SPI	Serial Port Interface
SRM	Sub Rate Merge	UCS	Universal Card Slot

3 TEST OBJECTIVE

The objective of the Site Commissioning Tests is:

- (i) To ensure that the equipment has been installed in accordance with the Newbridge Networks Ltd Technical Practices and The National Grid Company plc (NGC) Installation Instruction.
- (ii) To ensure that the equipment is working to specification.

4 SHELF CONFIGURATION

Shelf commissioning for single and dual 3600 shelves and 3664 shelves is basically the same. When configuring slots on dual shelves the procedure is to enter the configuration of the expander card slot before going on to enter the configuration of the other slots.

The body of this document assumes that the configuration of the node has been decided and that it only remains to enter the details via the NMTI/4602 session. A copy of the node configuration sheets should be supplied with the 3600/3664 and is to be used as reference for the node commissioning.

5 TEST RECORDS

Before commissioning commences, record all shelf and card details on the tick sheet in Appendix A.

All results from the commissioning tests are to be recorded on the sheets in Appendix B, and held on site.

Note: A copy of the results to be returned to GSM: Telecommunications.

6 TEST REQUIREMENTS

The following Test Equipment is required to complete commissioning as per Section 8.1 to 8.9.

Bit Error Rate Tester.
Audio test set.
Digital Multimeter.
BNC Adaptor.
Co-ax 'U' link.
External Alarm Cable.

7 CALIBRATED TEST EQUIPMENT

	Manufacturer and Type	Serial No.	Date Last Calibrated	Date Next Calibration Due
Insulation Resistance Tester				
Voltmeter or Multimeter				
Ammeter or Multimeter				
Timer				
Others (state function)				

The following documentation is required to complete commissioning as per Section 8.1 to 8.9.

Newbridge 3600 Bandwidth Managers Technical Practices Volume 1 to 3.
Newbridge 3664 Mainstreet Fractional Access Multiplexer Technical Practices Volume 1 to 3.
Newbridge Installation Instruction Issue 4.
Newbridge Equipment General Cabling Details.

8 SYSTEM COMMISSIONING

This section describes the step by step procedure to commission a 3660/3664 Node. The process should be followed line by line and results recorded in Appendix A and Appendix B. Once the procedure is completed, the NMC should be informed of the status of the Node, so that the new Node can be integrated into the Network.

8.1 Power Rail and Earth Test

8.1.1 Primary Checks

8.1.1.1 Before connecting the power earth ensure that there is no continuity between the Power earth, safety and signalling earths.

8.1.1.2 With the system power turned off, check that all cards listed on the config. sheet in Appendix A are plugged into the 3600/3664 and that the configuration is as per Node Configuration Sheet.

8.1.1.3 Ensure that the 3660/3664 is bonded to earth (safety).

8.1.1.4 Ensure that the input Voltage level is within limits as defined in the Technical Practices.

- 8.1.1.5 Check that there is no short circuit between the positive and negative terminals.
- 8.1.2 Redundant Power Shelf Checks
 - 8.1.2.1 Switch on the Power Distribution Unit by flipping 'UP' the main circuit breaker switch.
 - 8.1.2.2 Switch on the Power Supply Unit (PSU) Circuit Breaker PS1 by flipping the PS1 circuit breaker into the 'UP' position.
 - 8.1.2.3 Using a Multimeter check that the PSU outputs on the GFC Test Points conform to Table A..
 - 8.1.2.4 Switch off PS1 and switch on PS2. Repeat 7.1.2.3.
 - 8.1.2.5 Switch on PS1 and Repeat 7.1.2.3.
 - 8.1.2.6 Repeat for Shelf B if applicable.

Table A

Positive 5 Volts D.C.	+5.05 V to +5.15 V
Negative 5 Volts D.C.	-4.8 V to -5.75 V
Positive 12 Volts D.C.	+11.4 V to +13.8 V
Negative 12 Volts D.C.	-11.4 V to -13.8 V
Negative 48 Volts D.C.	-42 V to -57 V
Zero Volts D.C. (+/-2 V)	+0.2 V / -0.2 V

8.2 Control Card Tests

The following tests assume a blank database (ie no cards configured).

- 8.2.1 Turn the power on and check that the control card initialisation sequence completes correctly.

Note: The seven segment indicator on the control card front panel should display a single segment rotating rapidly around the periphery. This will change to a 'd' (after a briefly flashed 'p') as the database is initialised, then the indicator will change to display a flashing number (with a 0.5 s/0.5 s on/off duty cycle).

- 8.2.2 Check that the status LEDs on all UCS and expander cards remain off.
- 8.2.3 Check that the status LEDs on the control cards go solidly on.
- 8.2.4 Check that the status LEDs on all tributary cards are off.

8.3 Serial Port Access

- 8.3.1 Set up a terminal for the default 3600 serial port parameters (9600 bps, 8 data bits, no parity, 1 stop bit, VT100 mode) and connect it to the serial port on the back plane of Shelf A in a single shelf system, or on the SPI card for dual shelf systems and hit a carriage return.

- 8.3.2 Verify that the system start-up Herald is displayed ie:-
"Newbridge 3600 (or 3664) MainStreet" followed by the prompt
"Enter Level".

- 8.3.3 Type a "5 <return> (other permitted entries are 1,2,3, and 4). The system will respond with the prompt "Enter password".

8.3.4 Type any text string other than "MainStreet". The system will respond with "Invalid password".

8.3.5 Type "5 <return>", followed by "MainStreet" using any random mix of upper and lower case characters.

8.3.6 Check that the system permits entry into Node Management Terminal Interface. The screen will be cleared, and will present the primary level menu display.

8.3.7 Check the following.

The header line must display:

- (i) The product name and correct release number.
- (ii) The elapsed time since system start-up, in hours and minutes followed by the suffix "R" (eg 00:03R).
- (iii) The date field must display the text string "No date".
- (iv) The data area must be blank.
- (v) The command line must be blank.
- (vi) The diagnostics/warning line must be blank.
- (vii) The command line must present the following soft key choices:
 - (a) (<1 CONFIG> <2 HOUSE> <3 MAINT> <4 STATS> <5 ALARMS> <9 QUIT>).

8.3.8 Enter the menu and view the contents of the prompt alarm queue. (<ALARMS> <PROMPT>).

8.3.9 Confirm that the only alarms present are "Wrong card in slot" alarms and "Sync Source Changed" (appears twice). Ensure that the slot numbers declared as parameters with these alarms match the slots for which cards are in fact installed.

8.3.10 Check that the number of alarms in the queue matches the number flashing on the control card seven segment display.

8.3.11 Delete all of the alarms. (<ALARMS> <PROMPT> <DEL.ALL>). The data display area will contain the string "The alarm queue is empty". The control card seven segment display will commence flashing zero.

8.3.12 Return to the primary menu, then view the card recognition status under the "CONFIG SLOT" menu. (<CANCEL> <CONFIG> <SHOW ALL> <ret.>).

8.3.13 Ensure that the slot statuses displayed are correct, and match the card types plugged in.

8.3.14 Perform background diagnostic Test 1, 2 and 3. If the control card fails any of these test it is not suitable for service and should be returned to the repair centre at Newbridge.