

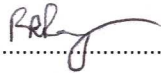
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Level 2

Specification for the Maintenance of Electronic PABX Concentrators

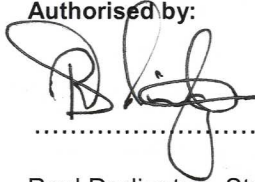
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Issue record

Issue	Date	Comments
1	June 2006	First Issue
2	March 2009	Renumbered, was NR/WI/TEL/30085. Responsibilities previously denoted with each appendix is now removed and place within section 4 (Responsibilities). Appendix I (Tenovis) added. Press to talk check added to appendix H clause A4. Link to the maintenance of TSSUs added into section 2 (Scope). Appendix F, requirement to functionally test spare handsets removed. Cleaning of the Stratus server and Shoe box P.C added together with the need to recalibrate the signallers terminal(s). Requirements for system backup in service B clarified.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 05/09/2009.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

Reference documentation

NR/SP/TEL/30002	Signal Post Telephone Concentrator System
NR/SP/TEL/31001	Telecommunications Maintenance Testing & Failure Investigation
NR/L2/TEL/31002	Maintenance of Telecommunications Equipment.
NR/L2/TEL/30081	Maintenance of Telecoms Power Plant and Batteries
NR/L2/TEL/30083	Maintenance of Telephones Instruments in Operational Buildings.
NR/L2/TEL/30084	Maintenance of Lineside Telephones and Tail Cables

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1 Purpose

This instruction defines the maintenance requirements for Electronic PABX concentrators used by Network Rail.

The purpose of maintaining and testing operational concentrators is to decrease the incidence of failures through deterioration and to identify potential failures before they become service affecting.

2 Scope

This instruction applies to those Network Rail switches which are configured to act as concentrators and are primarily installed to support Network Rail's operational requirements such as Signal Boxes and Electrical Control Room applications.

Electronic PABX switches which are installed to meet a business need, such as offices and ICCs are to be maintained as detailed in NR/WI/TEL/30122 Maintenance of Electronic PABX Business Switches.

The switch installation may, by design, be constructed from a number of remote nodes or shelves. These shall be considered as separate switches and subject to the applicable procedures in the relevant appendix.

The maintenance requirements for the Power Plant and Batteries used to support Electronic PABX switches is detailed in NR/L2/TEL/30081.

The maintenance requirement for Keltek Timeslot Sharing Units (TSSUs) used to support circuits is detailed in NR/L2/TEL30076 Appendix D Service B.

The maintenance requirements for Voice Recorders are detailed in NR/L2/TEL/30082.

3 Definitions (in addition to those defined in NR/L2/TEL/31002).

AC

Alternating Current

CDR

Call Detail Recording

DC

Direct Current

DC/AC

A device that converts DC input into an AC output also includes ringers.

ESSD

Electrostatic Sensitive Devices

ESP

Electrostatic Sensitive Precautions

Electronic PABX Concentrator

A telephone concentrator utilising digital switching technology, controlled by software held locally on a storage device.

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HMI

Human Machine Interface

EMC

Electro Magnetic Compatibility

ICC

Integrated / Infrastructure Control centre

LED

Light Emitting Diode

PABX

Private Automatic Branch exchange

TSSU

Time Slot Sharing Unit

4 Responsibilities

The maintainer must come to a clear understanding with the Network Rail signaller or Control centre of the effects of the work to be undertaken has on the operation of the equipment before maintenance or testing is undertaken.

The maintainer shall put in place precautions (ESP) to prevent damage to ESSD before work or inspection activities commence.

Where there is a requirement to provide a backup copy of the system data to be held at a secure location away from site, the location chosen is such that if the backup copy is required, it can be accessed to meet the system SLA for restoration of service.

All defects identified during maintenance shall be reported to fault control for entry into the fault recording database for further investigation.

All actions taken to correct deficiencies identified during maintenance shall be recorded on the maintenance work return.

All tests shall be performed in accordance with the equipment manufacturer's documentation. The revision number and issue status of the documentation shall be recorded on the maintenance work return.

Indicators and meter displays on the equipment are to be regarded as indication only and shall not be relied upon for measurements required within this appendix.

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The maintainer shall follow the procedures and frequencies as detailed in the attached appendices.

Appendix A – Maintenance of V-Band

Appendix B – Maintenance of Meridian

Appendix C – Maintenance of Syntegra

Appendix D – Maintenance of Realitis / iSDX

Appendix E – Maintenance of MD110

Appendix F – Maintenance of Hicom (Hipath)

Appendix G – Maintenance of BP50

Appendix H – Maintenance of Mitel Imagination

Appendix I – Maintenance of Tenovis.

Where more than one service has been scheduled for a maintenance visit, the services shall be performed in reverse alphabetic order.

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Appendix A Maintenance of V-Band

Frequencies of Maintenance	
	<u>Default</u>
Service A	6 Monthly
Service B	12 Monthly

SERVICE A – Inspection and Test of User Console

- A1. Check the wiring to each operator's position console including terminations, check that the wiring and connectors are in good order and connector clips and fastenings are functional.
- A2. Check circuit identification labelling at each operator's position console, check each circuit description is clear, legible, correctly located and securely affixed.
- A3. Check, visually on all user consoles, that no spare, unused or unusable circuits are configured.
- A4. Request the users to provide all spare handsets.
- A5. Check that all handsets and cords are in good condition.
- A6. Test functionally all operators' position keyboards checking that speech quality is clear with no significant line noise, crackling or audible crosstalk between handset positions.
- A7. Test functionally all system handsets, checking that speech quality is clear with no significant line noise or crackling.
- A8. Test, if provided, that the 'press-to-talk' feature is functioning correctly on all system handsets.
- A9. Test, making sufficient calls to and from the concentrator, that the ringing generator, tone generator, sounder and lamp calling functions are working correctly.
- A10. End of Service A.

SERVICE B – Inspection, Clean, Check of Equipment and System Data Backup

- B1. Check that all cabinets are visibly bonded to safety earth.
- B2. Check that all ESD provided studs are secure and clearly identified.
- B3. Check the condition of the wiring to the concentrator control cabinets including terminations, check that the cabling is secure and no damage is visible.
- B4. Check that all connectors and internal cabling within the control cabinets are secure and undamaged.
- B5. Check that all cabinet labelling is legible and securely affixed.
- B6. Check that all line cards and circuit packs are securely installed in the equipment.
- B7. Test and record all DC/DC and DC/AC input and output voltages, check that all voltages are within allowable tolerances; this shall be by reference to manufacturer's documentation.

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- B8. Check that all cabinet doors are secure, lockable and remain closed when shut.
- B9. Clean the cabinets with a clean line-free cloth and, where necessary, a soft brush and/or vacuum cleaner that has non-conductive pipes, hoses or attachments.
- B10. Check the system date and time are correct. Adjust, if necessary, by referring to a suitable standard time source.
- B11. Test that the local and, if provided, remote alarm facilities are functioning correctly.
- B12. Backup the system data onto a removable media. A clearly labelled copy shall be left securely on site and another shall be held at a secure location away from site. The location of the backup held off site shall be clearly indicated in the system site documentation.
- B13. End of Service B.

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