NOKIA

DNT2Mi-fp
Data Network Terminal
User manual

C33999.21 B0

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CE

The following products comply with the protection requirements of the European Union Council Directive 89/336/EEC relating to electromagnetic compatibility (EMC), provided that installed using EMC-compatible installation practices (installation in mechanical housings stated to be EMC-compatible and using cabling material [at least as well shielded] and practices as stated in relevant Nokia user manuals):

Product code	Product versions
T65690.01	DNT2Mi-fp 2w G.704
T65690.02	DNT2Mi-fp 4w G.704

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Summary of changes

Document	Date	Comment
DN0445814 issue 2–0 en	Aug 2005	
DN0445814 Issue 1–0 en	Mar 2004	

Product collection and disposal within the European Union

Guidelines for product collection and safe disposal of the equipment are indicated with a sticker placed on the equipment, shown in the figure below.

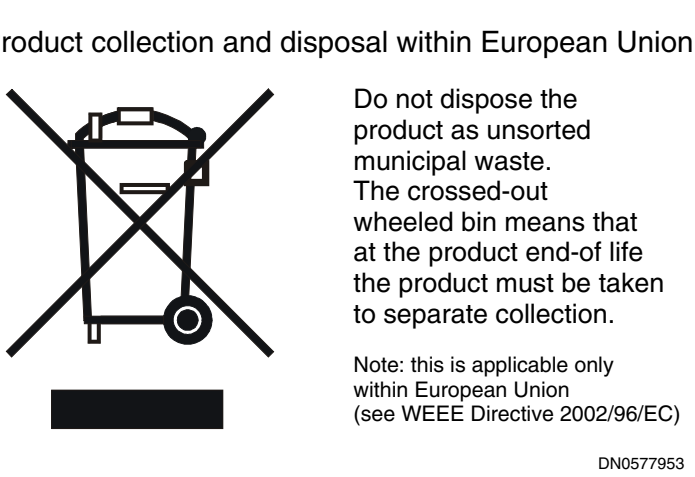

Figure 1. Product collection and disposal within the European Union

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1 About this document

This manual introduces the DNT2Mi-fp network terminal and provides information needed for its installation and use.

This manual is intended for those who use DNT2Mi-fp as a network terminal. If you use it in a ACL2i-DNT2Mi-fp connection, refer to the *ACL2i User Manual*, which contains descriptions of the ACL2i, its functions and Q1 menus.

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2 Introduction to DNT2Mi-fp

Nokia DNT2Mi-fp is a fixed port data access network terminal intended for customer premises. It provides a two-wire or four-wire SHDSL line interface (ITU-T G.991.2) and symmetrical 2M data interface (ITU-T G.704).

The DNT2Mi-fp Data Network Terminal can be used for example for BTS and PABX (E1) connections (see Figure 2). DNT2Mi-fp can be controlled, configured, and tested using Nokia's common network management system (NMS). It can also be controlled locally using MSTE or Craft Terminal running on a PC or ST (hand held service terminal).

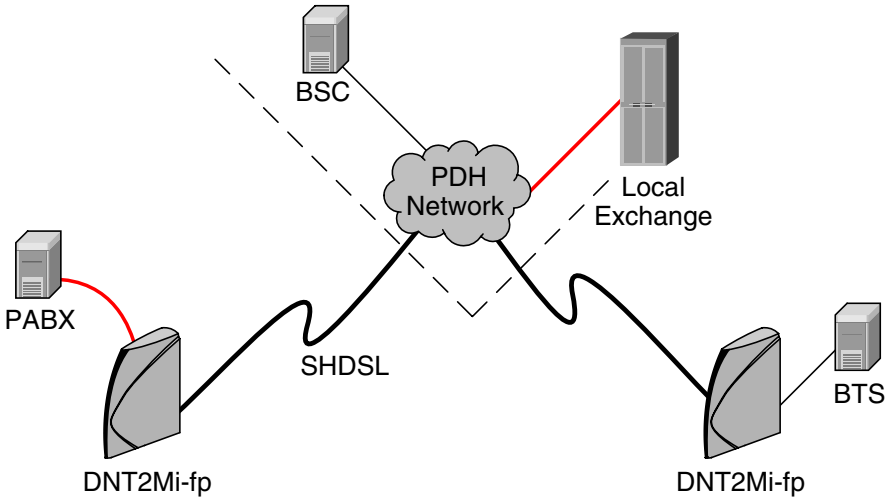

Figure 2. Example of DNT2Mi-fp connection

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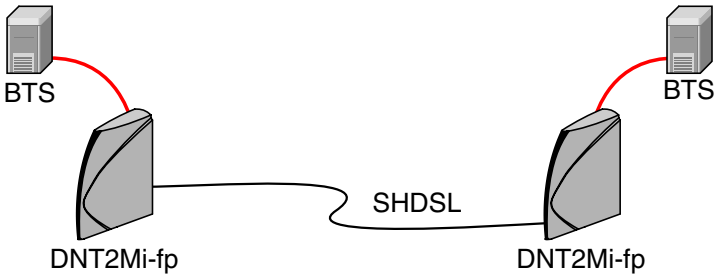

Figure 3. DNT2Mi-fp used in a point-to-point application

DNT2Mi-fp can also be used in point-to-point connections with a DNT2Mi-fp terminal at both ends of the line (see Figure 3)

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3 Front view

Figure 4 presents DNT2Mi-fp front view with LED indicators.

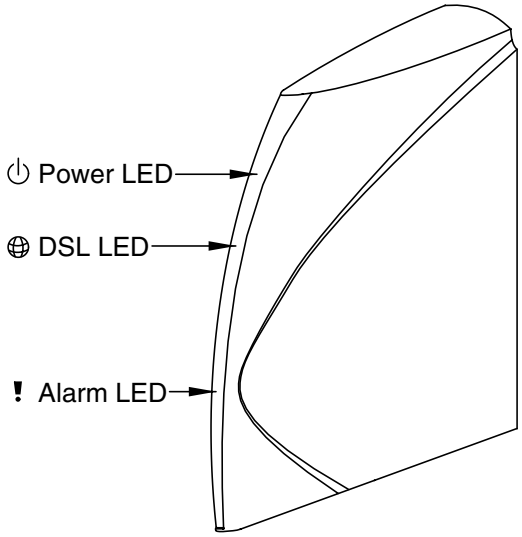

Figure 4. Front view of DNT2Mi-fp

When power is switched on, the unit performs an automatic self test, which is used to check the most vital operational functions of the equipment. After the test, the device is ready for use.

During the power-up test, the LEDs are lit in the following sequence:

1. All 3 LEDs are lit for 10 seconds.
2. The green power LED is blinking and others are off for 10 seconds during startup and self test.
3. The green power LED is lit and DNT2Mi-fp is ready for use.

The green DSL LED indicates state of the line.

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- If there is no line signal, the DSL LED is off.
- If line is handshaking, the DSL LED is blinking.
- If the line is up and running, the DSL LED is lit.

The yellow Alarm LED indicates alarm situation.

- If there is no alarm situation, the LED is off.
- The Alarm LED is lit for instance if:
    - no line signal or handshaking is ongoing or too high bit error ration (BER).
    - no E1 data signal or framing error or too high bit error ration (BER).

For more information see the Maintenance chapter.

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4 Rear panel

Figure 5 shows connector locations on the rear panel of a DNT2Mi-fp.

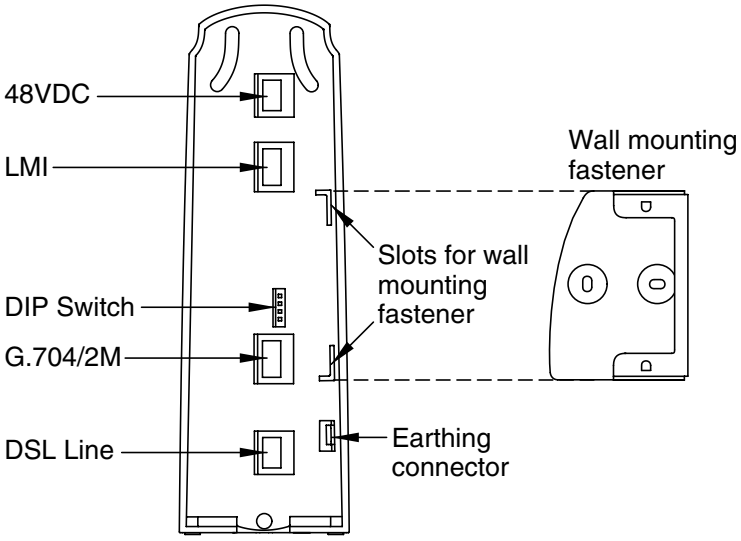

Figure 5. Rear panel connectors of the DNT2Mi-fp unit

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4.1 Line interface

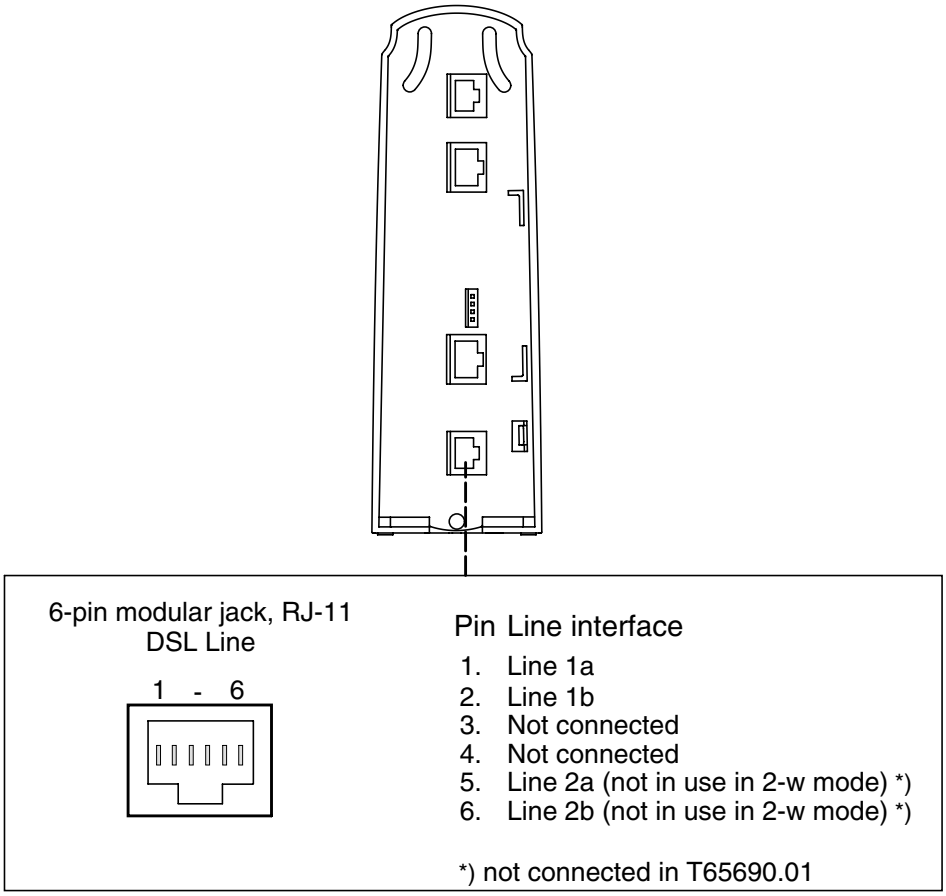

Figure 6. Line interfaces of DNT2Mi-fp

4.2 Power supply

DNT2Mi-fp can be fed with either, 48VDC or remotely via ACL2i through the line. It is also possible to use a AC to DC converter (110/230VAC to 48VDC) to feed power to the DNT2Mi-fp.

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Selection of Power Supply option is done by strapping

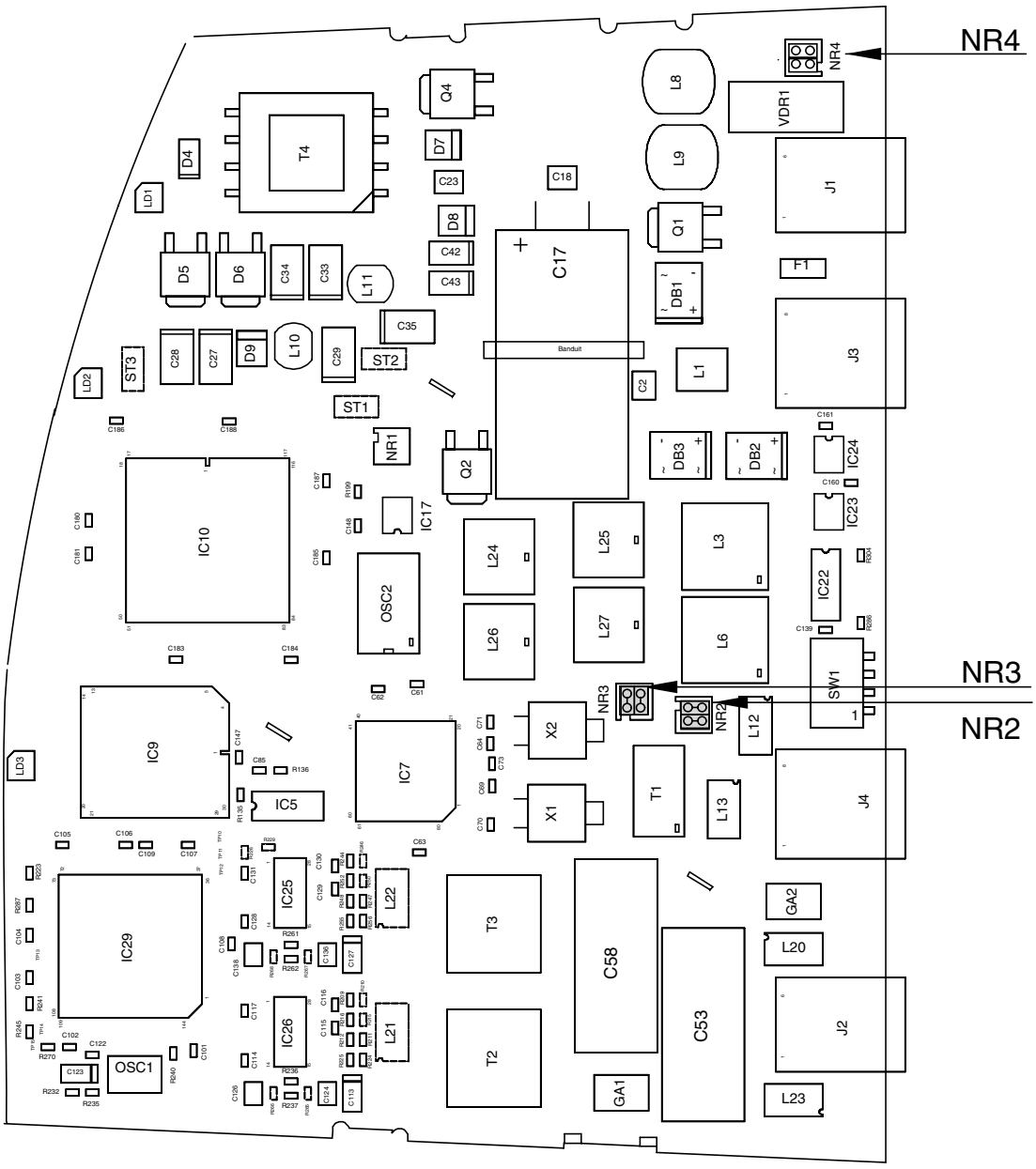

Figure 7. Strapping instruction for Power Supply

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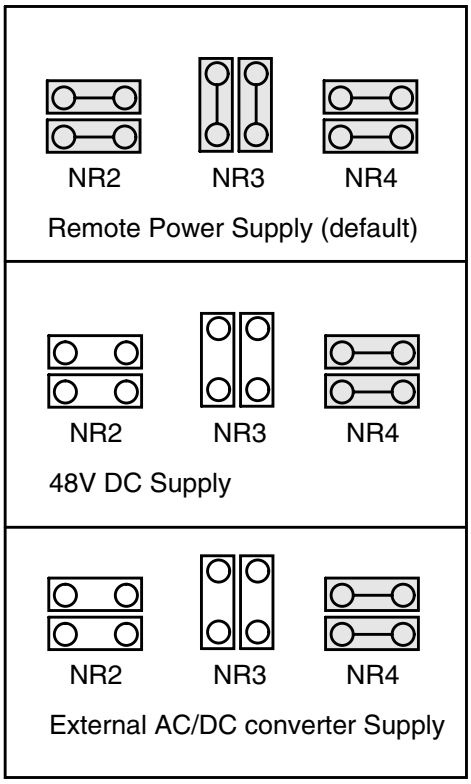

Figure 8. Power supply options

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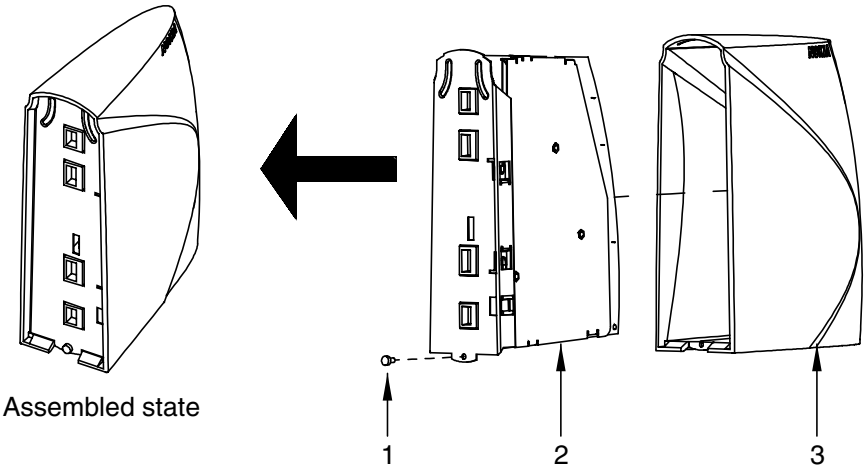

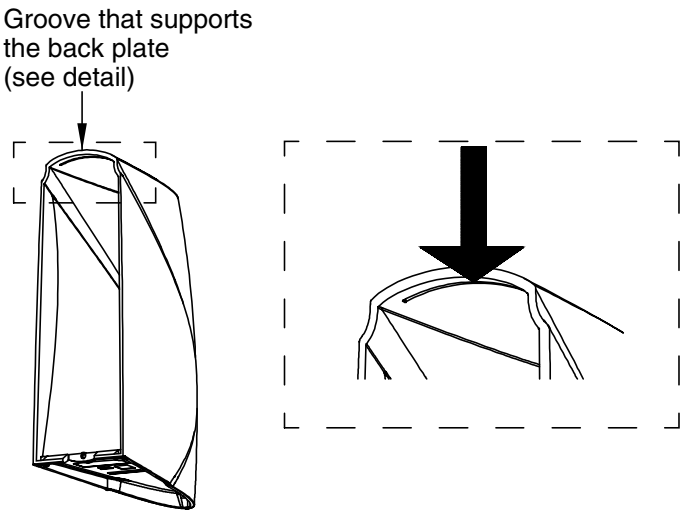

Removal instruction:

1. Remove torx-screw with specified tool
2. Pull back plate along with motherboard using reasonable force out of the shell
3. Note that the back plate is supported from its upper end to the shell

Figure 9. How to open the DNT2Mi-fp

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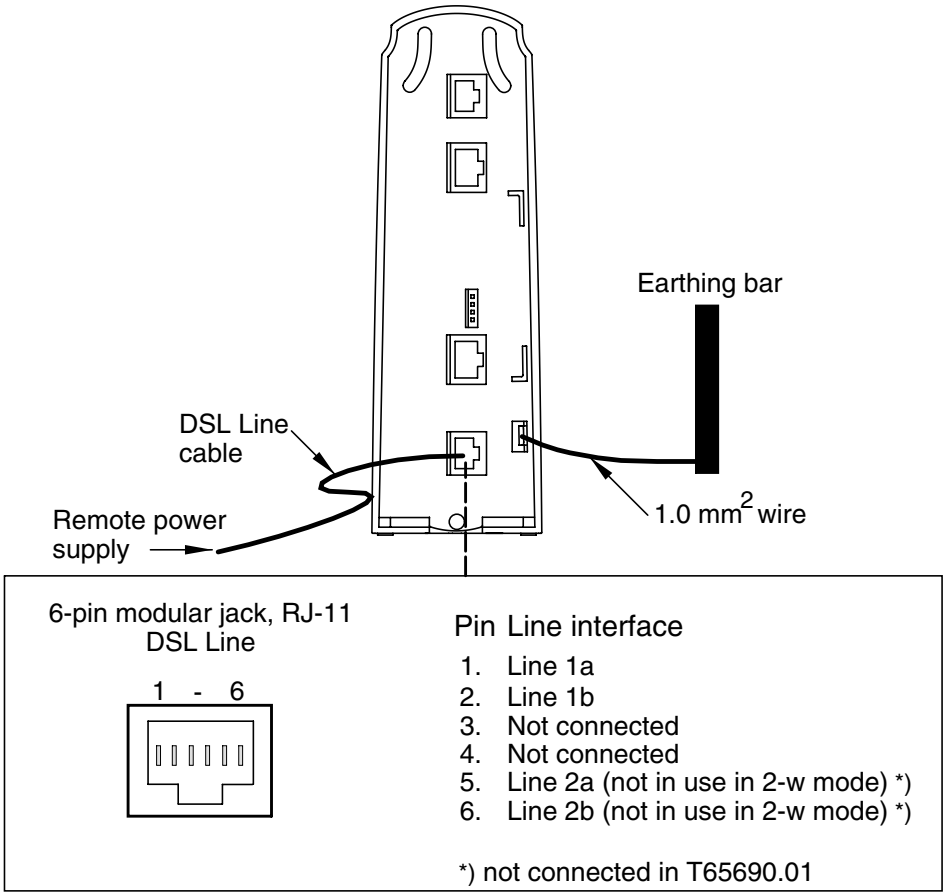

Figure 10. Remote power feed through line

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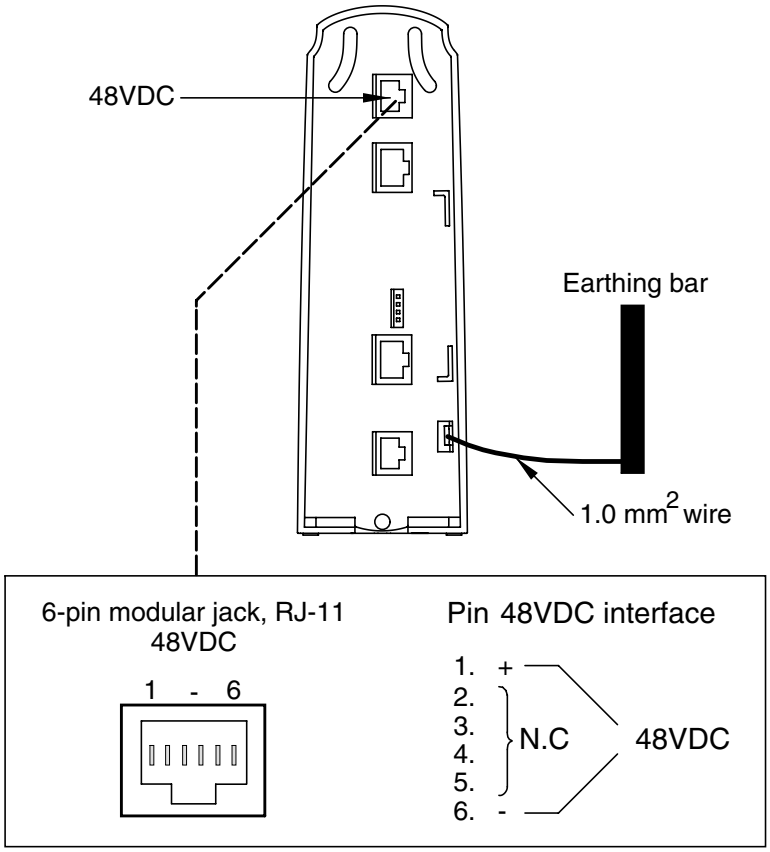

Figure 11. 48VDC supply connector

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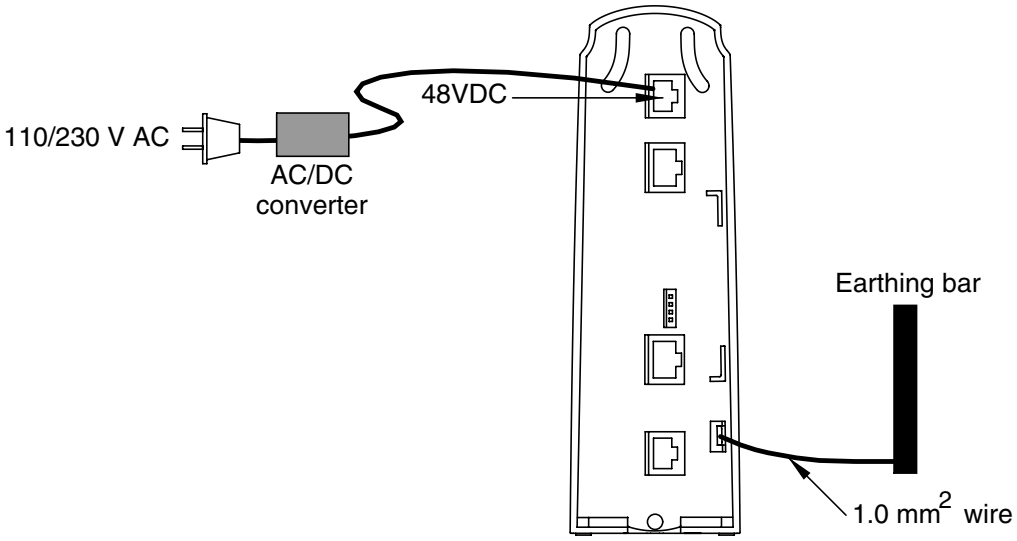

Figure 12. AC 110/230V supply through external AC/DC converter

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4.3 Terminal interface

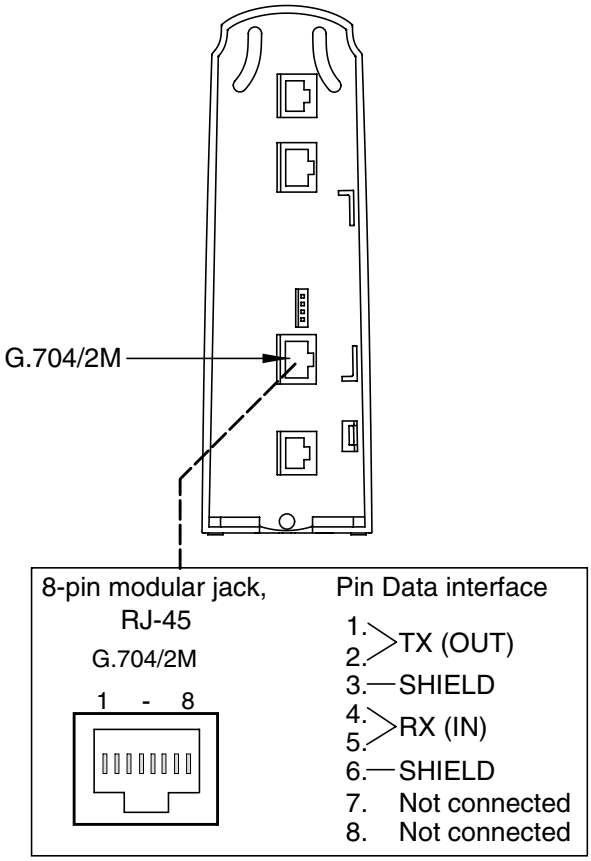

Figure 13. Symmetrical G.704/2M interface

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5 Management

The Local Management Interface (LMI) is located at the rear panel (see Figure 12). The interface is used to manage DNT2Mi-fp with Service Terminal (V.11) and Macro Service Terminal Emulator (typically V.28) running on a PC or with other Nokia management software.With ST it is also possible to manage other network elements through the DNT2Mi-fp

Use of signal 108 when using MSTE

If signal 108 is on it will disconnect the DNT2Mi-fp from the management network and no other network elements can be managed through the DNT2Mi-fp.

If signal 108 is off then it is possible to manage the network elements through the DNT2Mi-fp.

Electrically, management interface signals comply with ITU-T V.28 or V.11. The selection is made using rear panel DIP switch.

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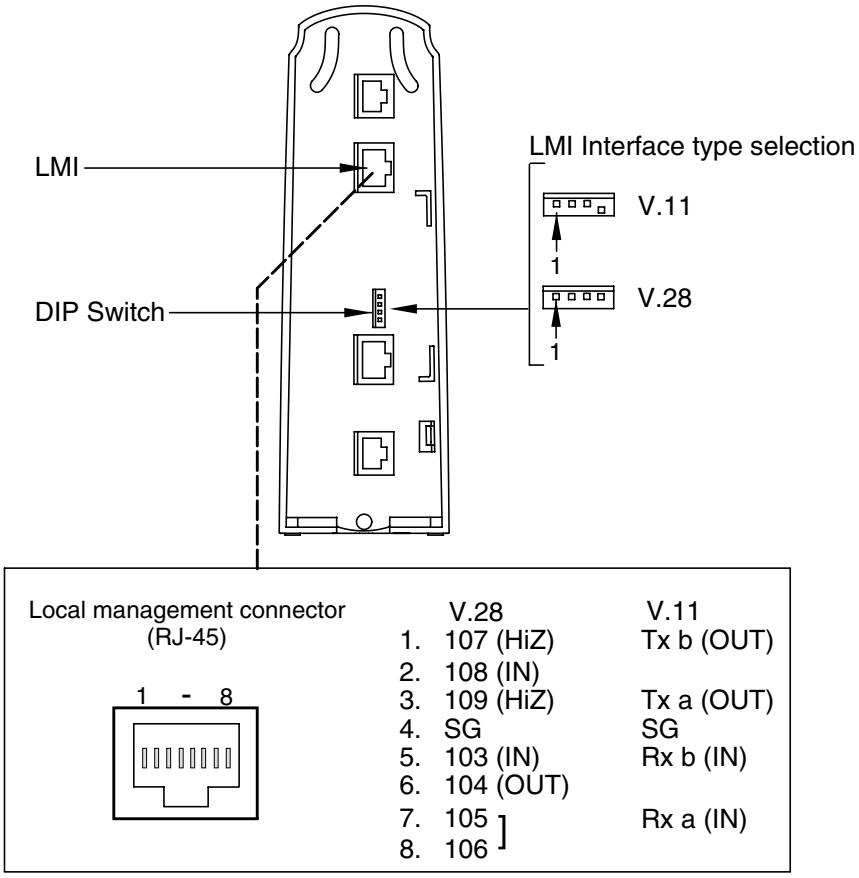

Figure 14. Local management connector

Table 1. Management interface cables

Code	Name	Connector type	Length
E64320.01	Management cable (PC –> DNT2Mi-fp)	D9F/RJ45	3 m
E62731.01	Management cable (ST –> DNT2Mi-fp)	D15/RJ45	3 m
ST = Service Terminal PC = PC + Service Terminal Emulator			

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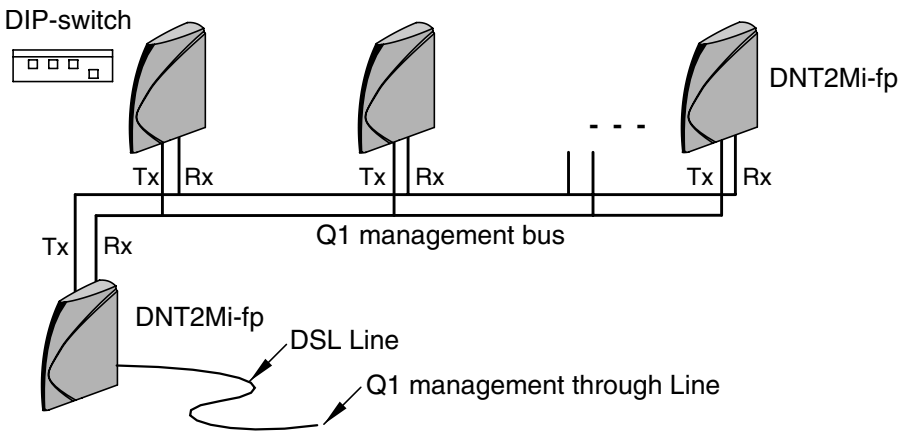

Figure 15. Q1 management bus

Up to 32 DNT2Mi-fp units can be connected to the same Q1 bus of V.11-type via a local management interface.

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6 Commissioning

This chapter describes the most common items that need to be checked before DNT2Mi-fp is taken into use.

DNT2Mi-fp is ready to operate after the power supply (AC/DC converter, DC or remote power) and port and line cables are connected. However, identifications and settings should be checked and, if required, statistics and error counter should be reset.

DNT2Mi-fp can be configured, tested and controlled via:

- Service Terminal (using Q1)
- Macro Service Terminal Emulator or Craft Terminal running on a PC (using Q1)
- Other Nokia management products, such as Nokia NMS, can be used for the same purpose.

Menu structure for Q1 management is shown in chapter Factory Settings.

Note

It can take up to 60 seconds to save the altered settings. If the power is switched off during this time, the new settings will be lost. During the saving process, you can use the equipment normally.

Automatic power-up test

When the power is switched on, the unit performs an automatic self test, which is used to check the most vital operational functions of the equipment.

During the power-up test, the LEDs are lit in the following sequence:

1. All 3 LEDs are lit for 10 seconds.
2. The green power LED is blinking and other are off for 10 seconds during startup and self test.
3. The green power LED is lit and DNT2Mi-fp is ready for use.

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If errors were found during the power-up test, more information on this can be found in the Self test menu (Q1: 5,4,0).

6.1 Management

DNT2Mi-fp can be managed through the line connection or local management port LMI.

The following items need to be checked:

Q1 transmission speed (Q1: 6,1,1)

The Q1 transmission speed needs to be set to match the system management speed.

Q1 address (Q1: 6,1,2)

The equipment needs a Q1 address to be visible in the NMS systems. You must give a unique address to each equipment.

You can also enter a name for the equipment by using the command 4,7,2,1

Q1 management via line (Q1: 6,1,3)

The routing of the management must be defined to correspond with the system.

Note

The address setting has the following restrictions:

- The address 4095 must not be given if the equipment is connected to an NMS bus. This address is a common (broadcast) address.
- The address 4094 is reserved for PC-TMC/STE use (general address for the PC interface unit).
- The address 0 is reserved for PC-TMC/STE use (default address for the PC interface unit).

6.2 Timing source

Before connecting DNT2Mi to a network, you need to know how the network is timed.

DNT2Mi-fp can receive timing information through the **Line** or **Port** interfaces.

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DNT2Mi-fp can also be used as a network timing source using the unit's **Internal timing** circuits.

DNT2Mi-fp can also be used as **Transparent timing**. This means that both E1 transmission directions are independent.

6.3 Line settings

You have to check the following items:

Line interface (Q1: 6,3,3)

The line interface settings determine line SHDSL mode, connection rate and use of wires.

Typically, DNT2Mi-fp is configured as STU-R, Rate Adaptive. The Rate Adaptive mode automatically adapts the requested fixed line rate to STU-C.

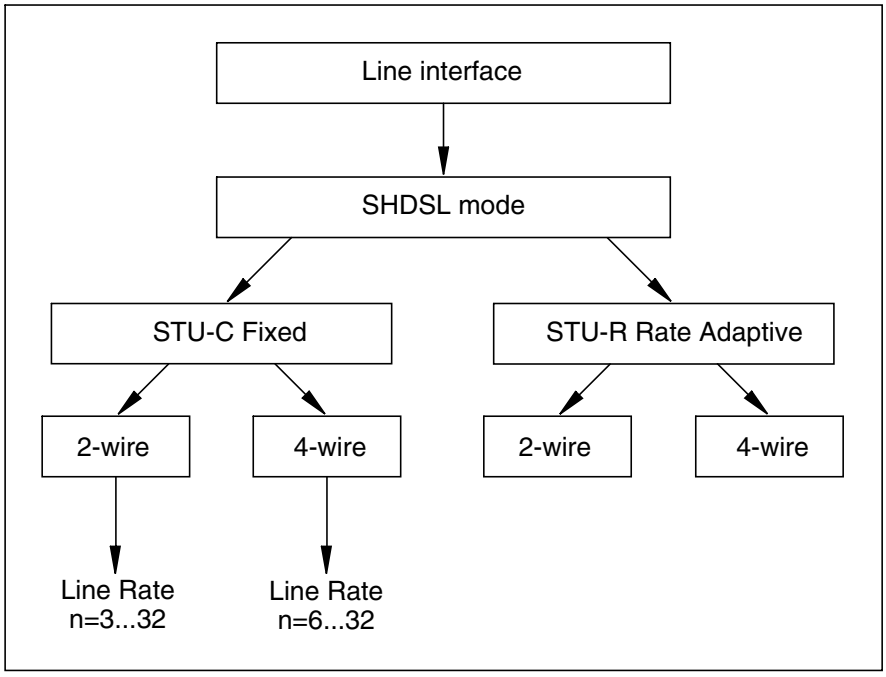

Figure 16. Principle of the line interface menu

Power backoff (Q1: 6,3,6)

Select this option to enable or disable transmit power reduction on short loops.

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Line alarms (Q1: 6,3,8 and 6,3,9)

The BER alarm limit and alarm severity have to be checked.

6.4 Port settings

You have to check the following items:

Port framing (Q1: 6,4,1)

Check that the 2M data interface settings are compatible with the equipment they are connected to.

No frame (Q1: 6,4,1,1)

Alternative if full 2M is needed and no framing is required. Port statistics is **not** available. Only UAT is calculated if there is no G.703 signal present at the port.

Basic frame of CRC multiframe (Q1: 6,4,1,2 or 6,4,1,3)

Alternative if fractinal 2M is needed. In this case payload rate is n*64 (n = 1 to 31) and one time slot is reserved for framing. Frame is terminated at DNT2Mi-fp port interface. Port statistics is available.

Monitoring Basic frame or CRC multiframe (Q1: 6,4,1,4 or 6,4,1,5)

Alternative if fractinal 2M is needed. In this case payload rate is n*64 (n = 1 to 31) and one time slot is reserved for framing. Frame is **not** terminated at DNT2Mi-fp port interface, and all T0 bits (Sa, A, E and framing bits) goes through the port interface. Port statistics is available.

Port alarms (Q1: 6,4,8 and 6,3,9)

The BER alarm limit and alarm severity have to be checked.

6.5 Protection settings

Password (Q1: 10,1 and 10,4)

DNT2Mi-fp settings can be protected with a password.

If password is required (Q1: 10,4,2,2) and correct password has given (Q1: 10,1,[password]), then the Q1 user has privileges to make configurations. Privileges time out is defined by Q1 menu 10,4,1 (1 to 1000 min).

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Default password for DNT2Mi-fp protection is DNT2Mi, and it can change by menu option (Q1: 10,4,3).

6.6 Measurements

After all the settings have been checked, it is recommended that you carry out a line quality and BER test.

Note

Before starting the BER test, reset all statistics and error counters. Read statistics and error counters after the BER test.

Noise margins, Rx and Tx line levels, and attenuations (Q1: 7,1...4)

Establish a link between two units. After the line is up, check the noise margin, Rx level, and line attenuation from the **Measurements** menu.

After the tests

Check that all alarms have disappeared and the statistics are still correct.

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7 Maintenance

This chapter describes what general information and statistics you can get on the equipment to be monitored. It also deals with possible alarms and faults. You can access all this information using Q1 menus. The menus are described in figure 20 and onwards.

7.1 Getting general information

The Identifications menu, branch 4 on the Q1 main menu, gives the name and type of the unit to be monitored, the codes and versions of HW unit and program to be used and some installation information.

```
Identifications
Equipment type:
        DNT2Mi-fp G.704 2w (T65690)
Equipment name:
        DNT2Mi-fp
Installation date
        First:
        Last:
Installed by

HW:
        E65691.01
ASW:
        S65692.01 A0
Serial number:
        4H0415...
```

Figure 17. Example of general information

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In this menu the name of the supervised unit, installation date and installer are changeable. To change these parameters select Modify: Q1 menu option 4,7,2,1 for name, 4,7,4,1,1 for date and 4,7,4,1,2 for installer. Note that the maximum lengths are 15 characters for date and name and 20 characters for installer. There are two dates for installation date, First and Last. In very first time the First and Last gets the same date (Q1: 4,7,4,1,1), and after that only the Last gets new value (Q1: 4,7,4,1,1).

7.2 Monitoring alarms

The Fault display (see the figure below) gives error information concerning the unit chosen. The information includes the name, which the user has given to the supervised device, supervision block, for example line or port, the type of a fault, and the fault status shown by the alarm class (A = urgent, B = non-urgent, AS = urgent, service alarm).

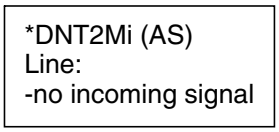

Figure 18. Example of Fault display

In the example above, the first line consists of the name given to the supervised device and alarm class (AS), the second line shows the supervision block, and the third line the type of the fault.

Table below shows alarm information from Port and Line interfaces and alarms from the equipment itself.

DNT2Mi-fp

SB 0, MODEM		
Code	**Severity**	**Q1 message**
0x7c	AS	Sync. fault in clock recovery
0x80	AS	Fault equipment
0x91	A,B	Temperature error

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SB 1, Port		
Code	Severity	Q1 message
0x15	B	Loop to interface
0x32	AS	Loss of incoming 2 M signal
0x42	B	Ais 2 M
0x51	AS	Loss of frame alignment
0x56	B	CRC multiframe alignment lost
0x63	AS, A, B	BER > 1 E-3
0x66	AS, A, B	BER > 1 E-6
0xb3	B	Far-end alarm

SB 2, Line		
Code	Severity	Q1 message
0x15	B	Loop to interface
0x30	AS	Loss of incoming signal
0x51	AS	Loss of frame alignment
0x63	AS, A, B	BER > 1 E-3
0x66	AS, A, B	BER > 1 E-3
0xb0	B	Far-end alarm 1
0xb3	B	Far-end alarm

7.3 Testing

DNT2Mi-fp tests can be controlled using Q1 menus. The following tests are available for testing a DNT2Mi terminal:

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	Q1 management	Automatic controll	Note
Equipment tests			
Power up test		After power is switched on	
Self test	Self test (5.4)		During self test management and line connection is disconnected.
Line interface test			
Network test loop Data coming from the line is looped back to the line.	Loop to Line(5,3,2)		See Figure “Network test loop” after this table.
Port interface test			
Local test loop Data coming from the DTE is looped back to the DTE.	Loop to Port(5,2,3)		See Figure “Local test loop” after this table.

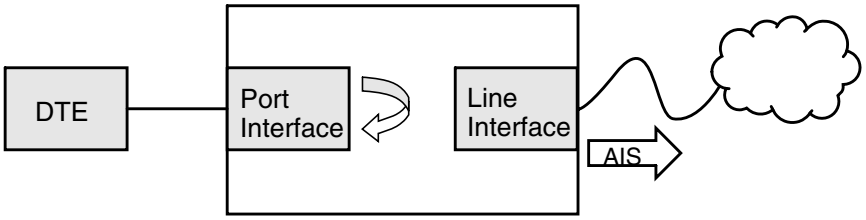

Figure 19. Local test loop

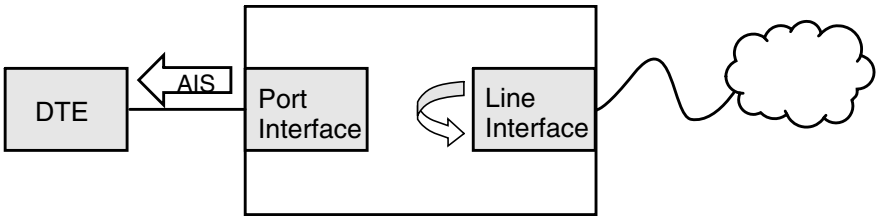

Figure 20. Network test loop

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7.4 Checking measurements and statistics

The parameters that can be viewed through the Q1 menus Measurement (main menu branch 7 and Statistics (main menu branch 8) are listed below.

Measurements via Q1

- Noise margin
- Rx level
- Tx level
- Line attenuation
- Line voltage (remote-powered)

  Attenuation can be 0 to 41 dB.

Monitoring a line		
Tx level Line 1 or 2: xx dBm	xx = +7.5 to +14.5 dBm	
Rx level Line 1 or 2: xx dBm	xx = +14.5 to -35 dBm	
Noise margin Line 1 or 2: xx dB	xx = 0 to +15 dB	Noise margin +15...1 dB, expected BER < 10^{-7} 0 dB, expected BER 10^{-7}
Attenuation Line 1 or 2: xx dB	xx = 0 to 50 dB	

DNT2Mi-fp statistics

Signal qualities of the selected 15-minute periods (100) and 24-hour periods (30) and since the last reset, according to Rec. G.826, are indicated by the quality parameters in the table below.

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Table 2. Statistics values via Q1

Information	Abbreviation and/or ratio	Description
Total time	TT	Time passed since the last reset.
Unavailability time	UAT (Rx, Tx)	Time during which severely errored seconds have occurred.
Errored seconds	ES (Rx, Tx)	Number of errored seconds.
Severely errored seconds	SES (Rx, Tx)	Number of seconds during which e 30% blocks are errored.
Background block errors	BBE (Rx)	Number of errored blocks except blocks during severely errored seconds and unavailable time. The block size depends on the used line rate.
Unavailability time ratio	UATR (Rx, Tx)	Ratio of unavailability time to the total time during the last 15 minutes or 24 hours.
Errored seconds ratio	ESR (Rx, Tx)	Ratio of errored seconds to the total of seconds in the available time during the last 15 minutes or 24 hours.
Severely errored seconds ratio	SESR (Rx, Tx)	Ratio of severely errored seconds to the total of seconds in the available time during the last 15 minutes or 24 hours.
Background block error ratio	BBER (Rx)	Ratio of background block errors to the total of blocks during the last 15 minutes or 24 hours, except blocks during severely errored blocks and unavailable time.

System counters (Q1: 8,3)

Number of CPU resets and the time passed since the last reset.

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8 Technical specifications

Table 3. DNT2Mi-fp dimensions

Width	56 mm
Height	173 mm
Depth	138 mm
Weight	510g

Table 4. Environmental and mechanical

Storage	ETSI ETS 300 019-2-1 class 1.2
Operation	ETSI ETS 300 019-2-3 class 3.2
Transportation	ETSI ETS 300 019-2-2 class 2.3

Table 5. Line interface (in accordance with ITU-T G.991.2 Recommendation)

Connector	RJ-11
Line type	2 – wire or 4 – wire
Nominal impedance	135 ohms
Line code	TC-PAM
Tx power (0 dB power backoff)	11,5 dBm @ 135 ohm (192 and 256 kbit/s) 13,5 dBm @ 135 ohm (320 to 1984 kbit/s) 14,5 dBm @ 135 ohm (2048 kbit/s)
Signal bandwidth	0...300 kHz (2048 kbit/s, 2-w, -3 dB)
Line interface 192 kbit/s to 2048 kbit/s (n x 64 bit/s)	

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Table 6. 2 M data interface

Interface type	G.703 (2 Mbit/s) 120-ohm symmetrical
Maximum allowed timing jitter at receiver timing	According to ITU-T G.823
Maximum generated timing jitter at receiver timing	According to ITU-T G.823
Frame structure	According to ITU-T G.704
Relevant ETSI ONP standards	ETS 300 246, ETS 300 247, ETS 300 418, ETS 300 419
Electrical characteristics	According to ITU-T G.703 2048 kbit/s
Common mode rejection	50 dB
Return loss (120 or 75 ohms;1 kHz to 4.5 MHz)	20 dB
Connector	RJ-45

Data lead time

Data lead-time means the time which is needed to transfer the data from the incoming 2M data interface of ACL2i to the outgoing 2M data interface of DNT2Mi-fp at the other end of the line.

The lead-time of the data from ACL2i to DNT2Mi-fp depends on the line rate selected as follows:

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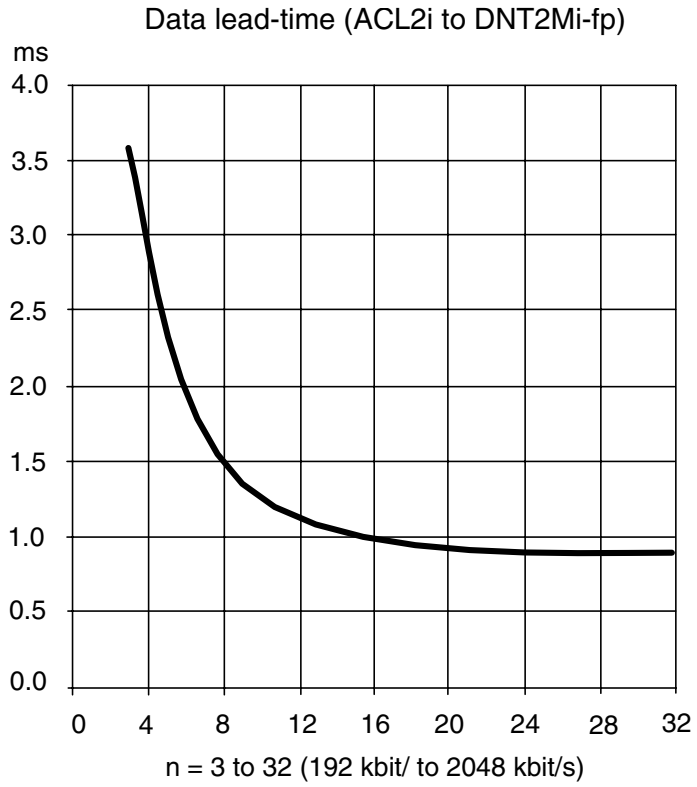

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Max reach													
Cable		ACL2i-pf (110 V), n=32, rpf on								Local powered (rpf off) ACL2i-ACL2i/DNT2Mi			
Diameter mm	Loop resistance ohm/km	ACL2i-rp		DNT2Mi-fp		DNT2Mi-sp & G.703		DNT2Mi-mp & 3xV.35		2-w		4-w	
		2-w	4-w	2-w	4-w	2-w	4-w	2-w	4-w	reach	Att.	reach	Att.
0.4	288	**2.1 km**	**3.7 km**	**2.6 km**	**5.3 km**	**2.1 km**	**3.7 km**	**0.6 km**	**2.1 km**	4.7 km	41dB	6.0 km	48dB
0.5	184	**3.4 km**	**5.8 km**	**4.1 km**	**8.3 km**	**3.4 km**	**5.8 km**	**0.9 km**	**3.5 km**	6.5 km	41dB	8.5 km	49 dB
0.6	128	**4.9 km**	**8.4 km**	**5.9 km**	9.2 km	**4.9 km**	**8.4 km**	**1.3 km**	**5.1 km**	8.0 km	40dB	9.2 km	47dB
0.8	72	**8.7 km**	**15.0 km**	10.5 km	16.5 km	**8.7 km**	**15.0 km**	**2.3 km**	**9.0 km**	10.5 km	35dB	16.5 km	47dB

Max reach													
Cable		ACL2i-pf (145 V), n=32, rpf on								Local powered (rpf off) ACL2i-ACL2i/DNT2Mi			
Diameter mm	Loop resistance ohm/km	ACL2i-rp		DNT2Mi-fp		DNT2Mi-sp & G.703		DNT2Mi-mp & 3xV.35		2-w		4-w	
		2-w	4-w	2-w	4-w	2-w	4-w	2-w	4-w	reach	Att.	reach	Att.
0.4	288	**3.8 km**	6.0 km	**4.6 km**	6.0 km	**3.8 km**	6.0 km	**1.1 km**	**3.9 km**	4.7 km	41dB	6.0 km	48dB
0.5	184	**5.9 km**	8.5 km	6.5 km	8.5 km	**5.9 km**	8.5 km	**1.5 km**	**6.2 km**	6.5 km	41dB	8.5 km	49 dB
0.6	128	4.9 km	9.2 km	8.0 km	9.2 km	8.0 km	9.2 km	**2.2 km**	**8.9 km**	8.0 km	40dB	9.2 km	47dB
0.8	72	8.7 km	16.5 km	10.5 km	16.5 km	10.0 km	16.5 km	**4.0 km**	**15.8 km**	10.5 km	35dB	16.5 km	47dB

Reach with 6dB margin													
Cable		ACL2i-pf (110 V), n=32, rpf on								Local powered (rpf off) ACL2i-ACL2i/DNT2Mi			
Diameter mm	Loop resistance ohm/km	ACL2i-rp		DNT2Mi-fp		DNT2Mi-sp & G.703		DNT2Mi-mp & 3xV.35		2-w		4-w	
		2-w	4-w	2-w	4-w	2-w	4-w	2-w	4-w	reach	Att.	reach	Att.
0.4	288	**2.1 km**	**3.7 km**	**2.6 km**	5.3 km	**2.1 km**	**3.7 km**	**0.6 km**	**2.1 km**	4.0 km	35dB	5.3 km	42dB
0.5	184	**3.4 km**	**5.8 km**	**4.1 km**	7.5 km	**3.4 km**	**5.8 km**	**0.9 km**	**3.5 km**	5.5 km	35dB	7.5 km	43 dB
0.6	128	**4.9 km**	8.0 km	**5.9 km**	8.0 km	**4.9 km**	8.0 km	**1.3 km**	**5.1 km**	6.8 km	34dB	8.0 km	41dB
0.8	72	8.7 km	14.5 km	8.7 km	14.4 km	8.7 km	14.4 km	**2.3 km**	**9.0 km**	8.7 km	29dB	14.4 km	41dB

Reach with 6dB margin													
Cable		ACL2i-pf (145 V), n=32, rpf on								Local powered (rpf off) ACL2i-ACL2i/DNT2Mi			
Diameter mm	Loop resistance ohm/km	ACL2i-rp		DNT2Mi-fp		DNT2Mi-sp & G.703		DNT2Mi-mp & 3xV.35		2-w		4-w	
		2-w	4-w	2-w	4-w	2-w	4-w	2-w	4-w	reach	Att.	reach	Att.
0.4	288	**3.8 km**	5.3 km	4.0 km	5.3 km	**3.8 km**	5.3 km	**1.1 km**	**3.9 km**	4.0 km	35dB	5.3 km	42dB
0.5	184	5.5 km	7.5 km	5.5 km	7.5 km	5.5 km	7.5 km	**1.5 km**	**6.2 km**	5.5 km	35dB	7.5 km	43 dB
0.6	128	6.8 km	8.0 km	6.8 km	8.0 km	6.8 km	8.0 km	**2.2 km**	8.0 km	6.8 km	34dB	8.0 km	41dB
0.8	72	8.7 km	14.5 km	8.7 km	14.4 km	8.7 km	14.4 km	**4.0 km**	14.4 km	8.7 km	29dB	14.4 km	41dB

Figure 21. Max SHDSL reach with Remote Powering

The values marked in bold means that remote powering is limiting maximum length.

Table 7. DNT2Mi-fp power supply

Power consumption	
DNT2Mi-fp	5,5 W 4 - wire mode 4,5 W 2 - wire mode
Power supply (external AC/DC converter).	

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Table 7. DNT2Mi-fp power supply (Continued)

Voltage	90 to 264 V_{AC}
Frequency	47 to 65 Hz
DC power supply	
Voltage	48V (40V to 70V)
Remote power supply	
Voltage	50 to 150 V on both pairs as generated through ACL2i at central site
Start-up voltage	Min. 90 V_{DC}

Table 8. Mean time between failure (MTBF)

DNT2Mi-fp	> 75 years

Electromagnetic compatibility (EMC) of DNT2Mi-fp complies with the following specifications:

Table 9. Electromagnetic compatibility

EN 55022: 1998 Class B	Emission, Information technology equipment
EN 55024: 1988	Immunity, Terminal equipment
EN 300286: 2000	EMC, Telecommunications equipment

Table 10. Safety

Safety IEC 60950-1 and IEC 60950-21 RFT-C • Protective earthing and Basic insulation
AC Power supply: • Surge protection: 2.5kV according to ITU-T Rec. K.45
DC Power supply: • Surge protection: 0.5kV according to EN61000–4–5
Line Interface: • Surge protection: 1.5kV according to ITU-T Rec. K.45 • 50 Hz common mode test according to ITU-T Rec. K.45 • 600V RMS common mode according to ITU-T Rec. K.45

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9 Factory settings

The factory default values can be recalled from the Q1 menu path 6,7. The default values are marked bold in Q1 menu chart.

Note

Recalling of factory settings can take up to 60 seconds.

Table 11. Service settings

Q1 speed:	4800
Q1 address:	2
Q1 via line:	On

Table 12. Line interface settings

PSD symmetric
2 – wire
STU – R
Power backoff: On

Table 13. Data interface settings (E1)

No frame
National bits: 11111
Timing source: Line

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Table 14. Alarm limits

Temperature alarm:	Limit: 75 °C
	Severity: No alarm
Port BER alarm:	Limit: E-3
	Severity: B-level
Line BER alarm:	Limit: E-3
	Severity: B-level

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Appendix A. Q1 menu diagrams

General

The Q1 Main menu level contains the following 11 menus, of which those available in DNT2Mi-fp are typed in boldface in the list below:

1. **Fault display**
2. Local alarm cancel
3. Reset local cancel
4. **Identifications**
5. **Controls**
6. **Settings**
7. **Measurements**
8. **Statistics**
9. Testing
10. **User priviliges**
11. Miscellaneous

Factory settings are marked within brackets on the Q1 menus diagrams below.

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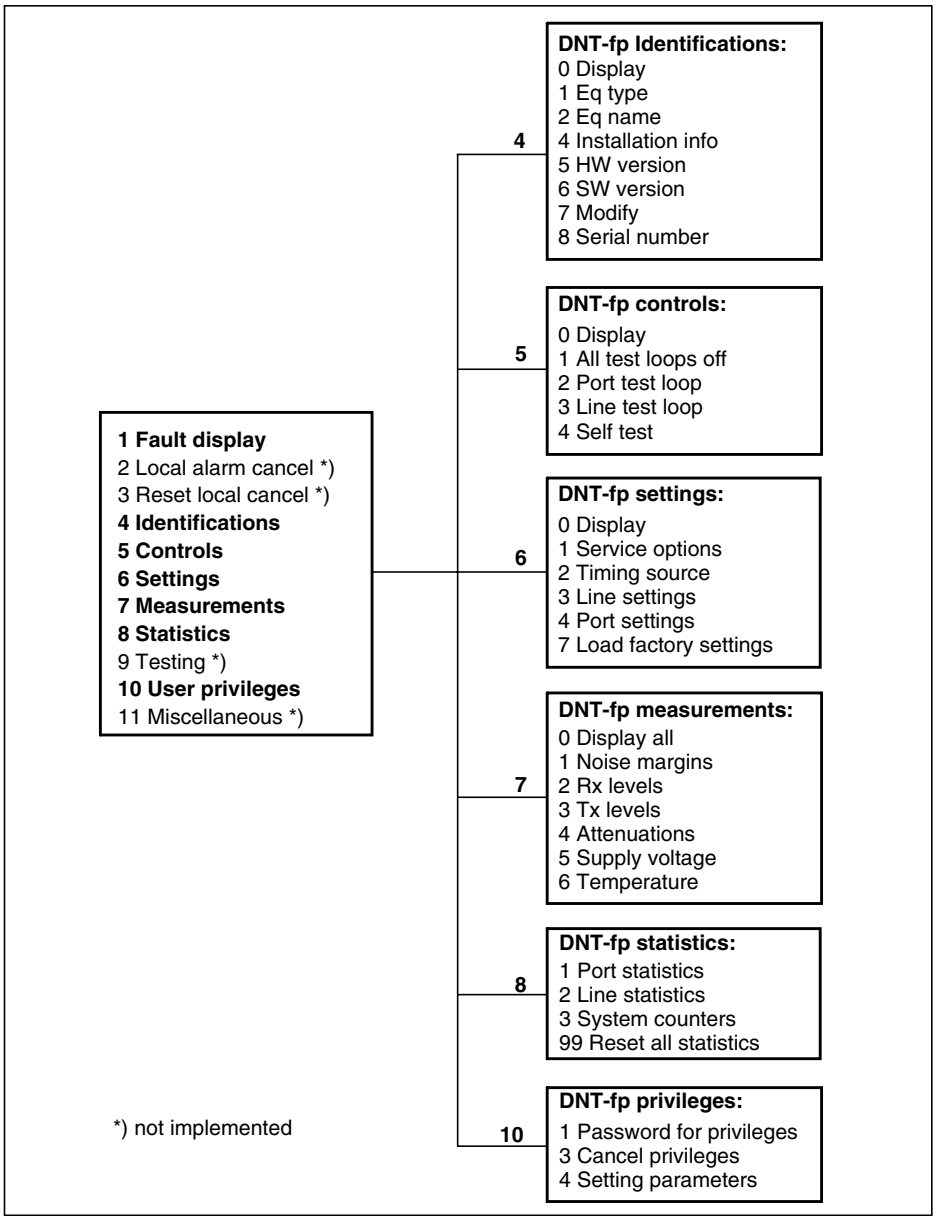

Figure 22. Main Q1 menu structure

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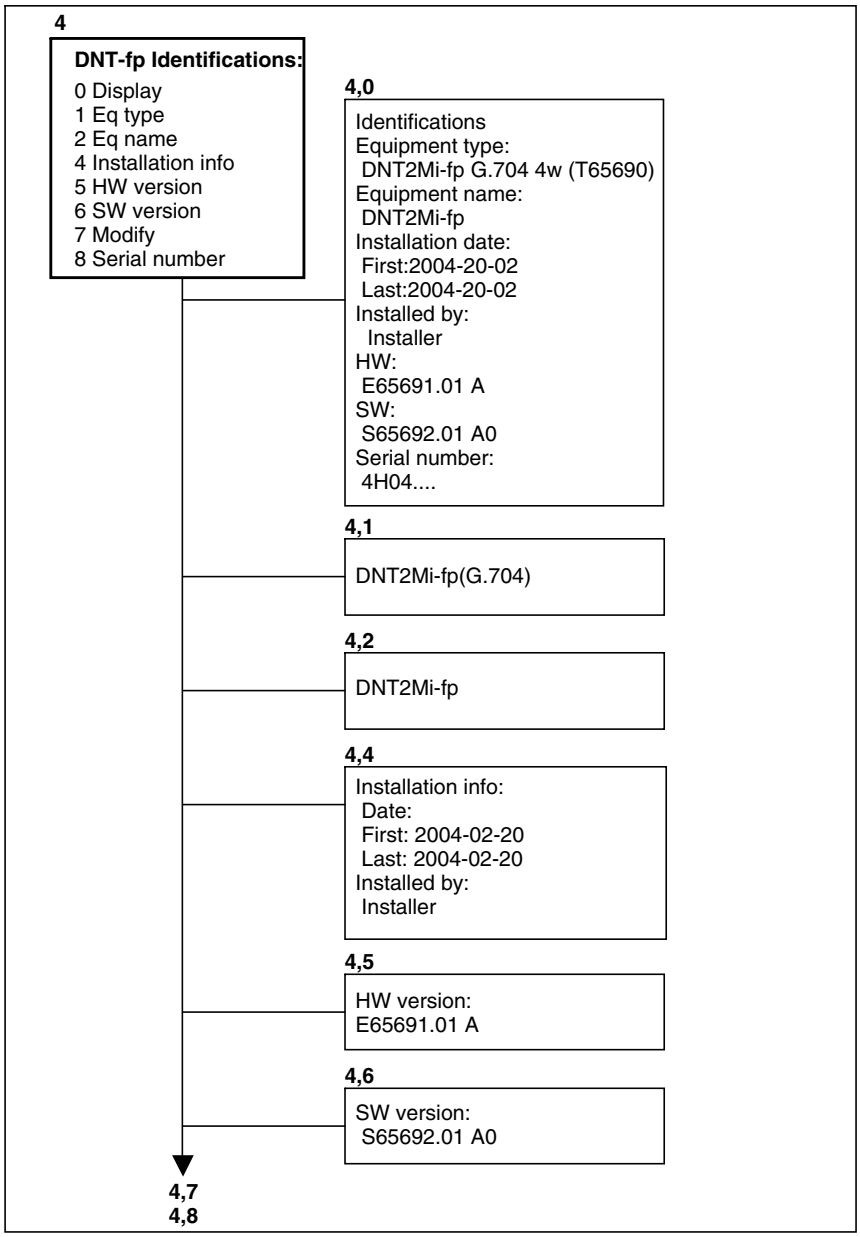

Figure 23. Identifications menu

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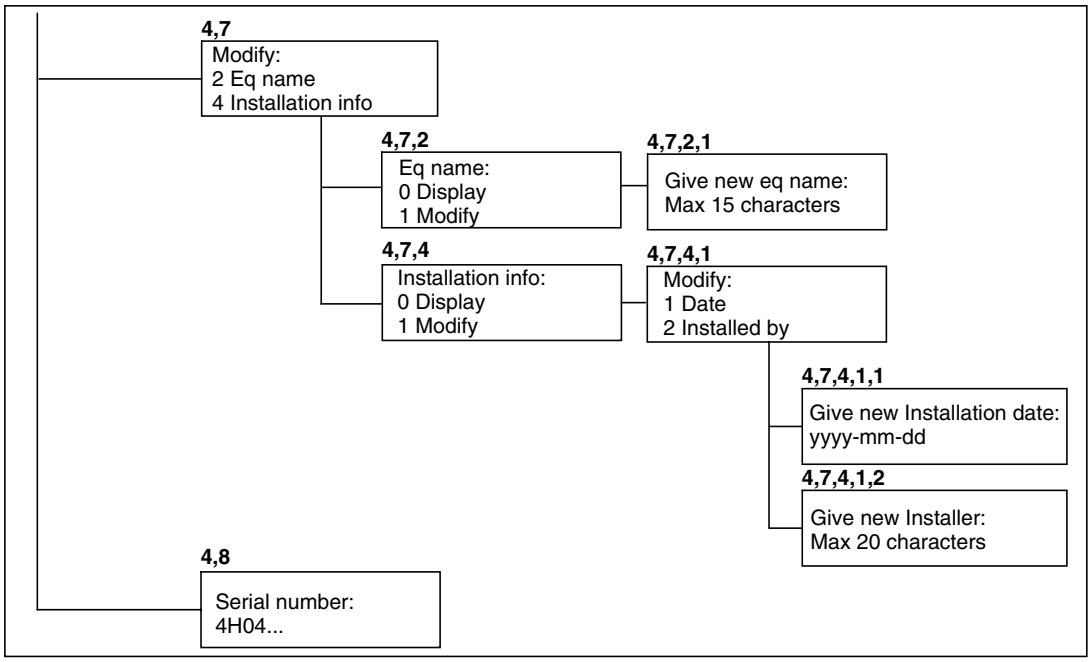

Figure 24. Identifications menu (continued)

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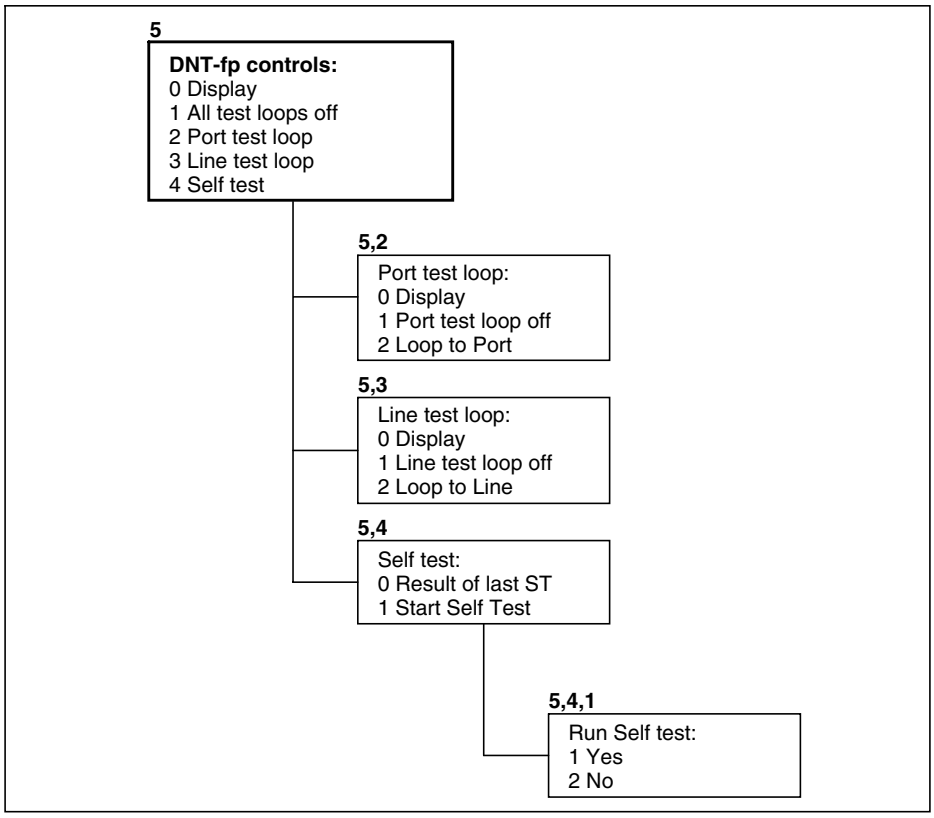

Figure 25. Controls menu

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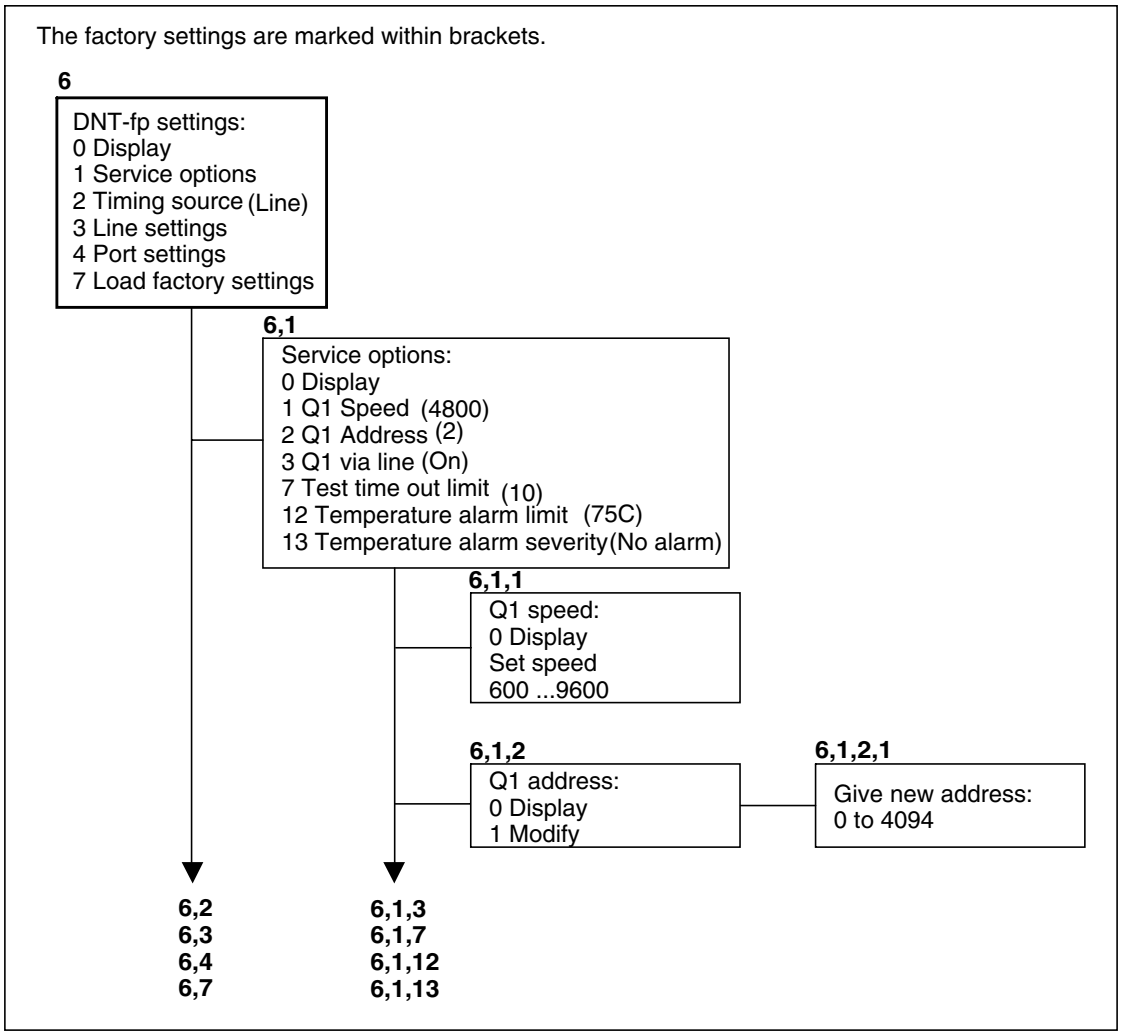

Figure 26. Settings menu structure

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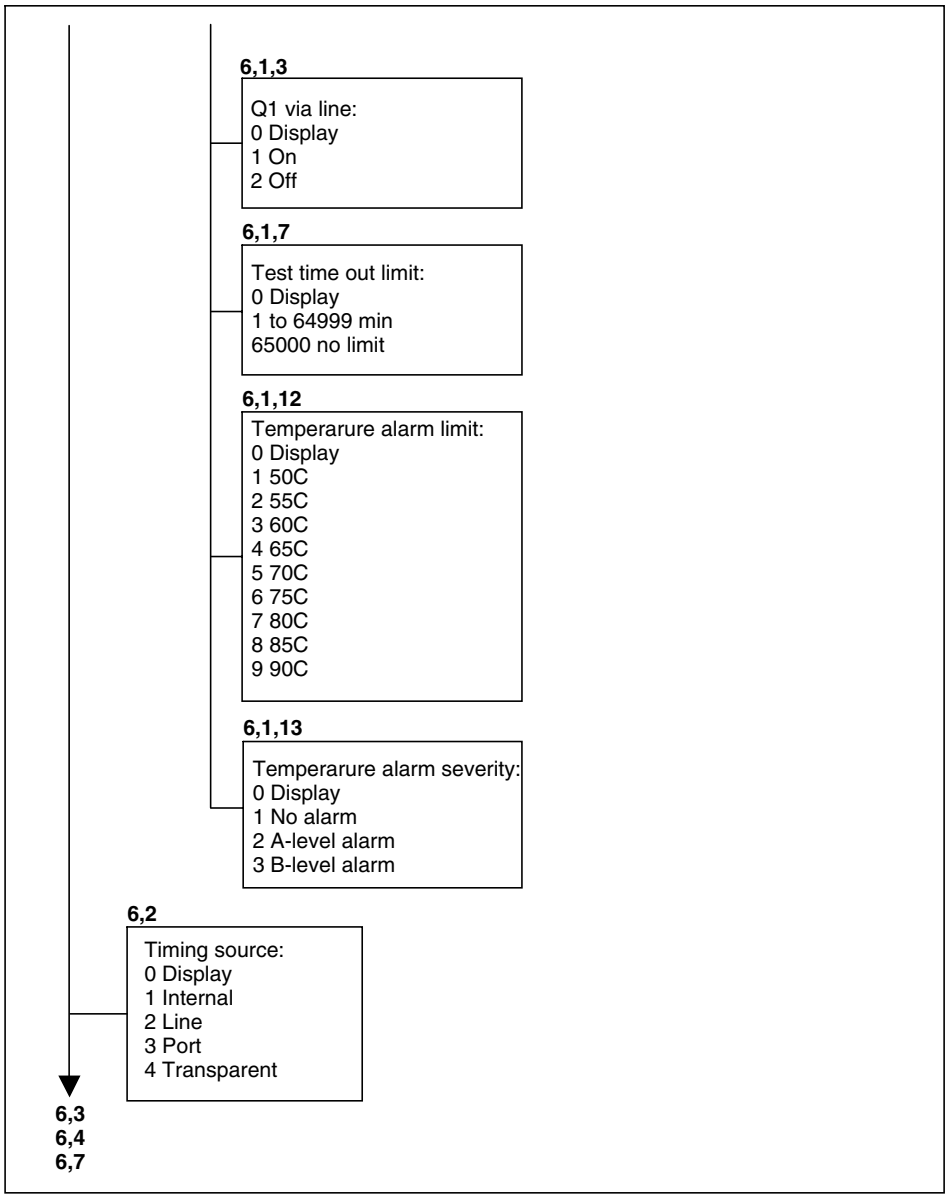

Figure 27. Settings menu structure (continued)

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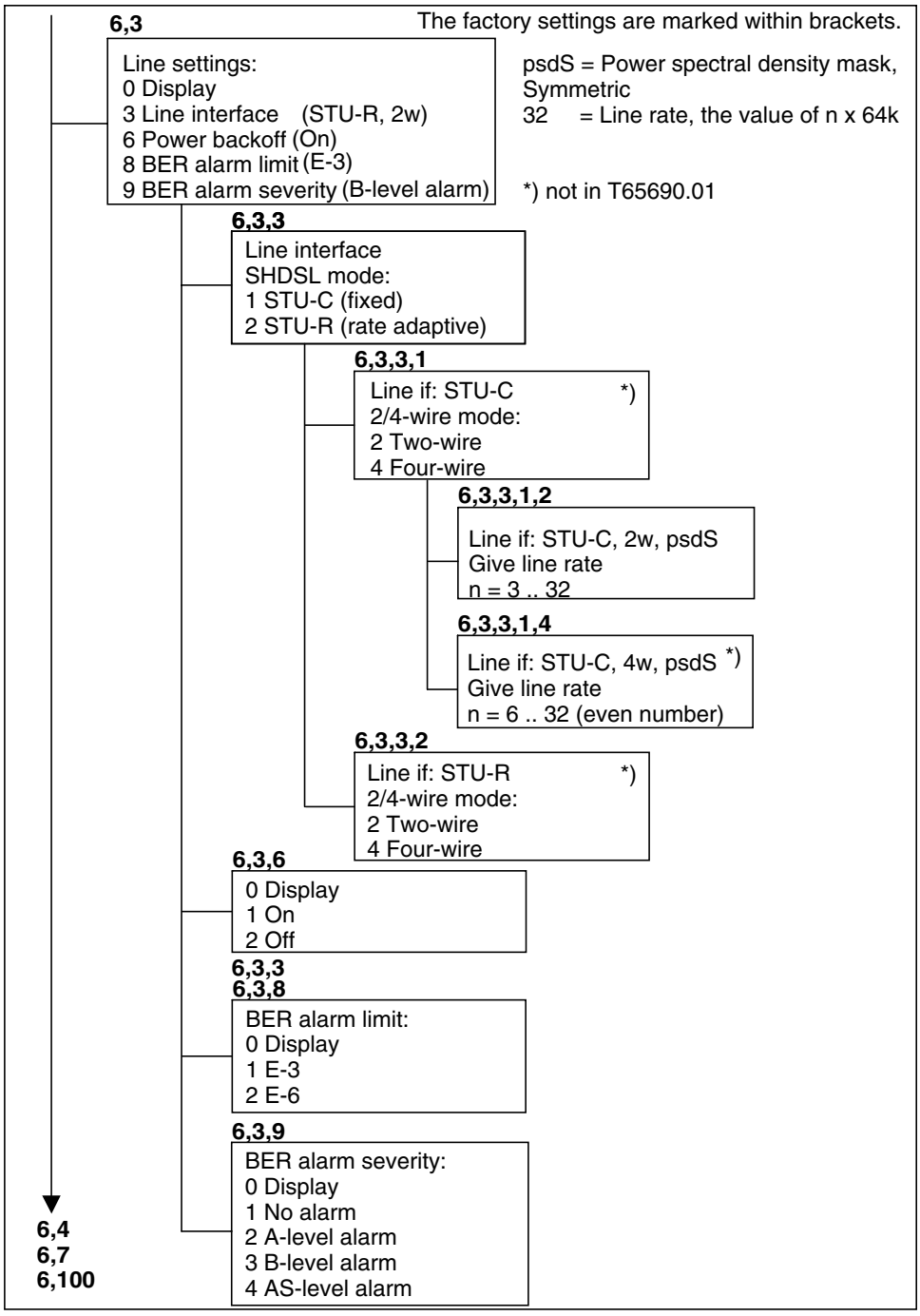

Figure 28. Settings menu structure (continued)

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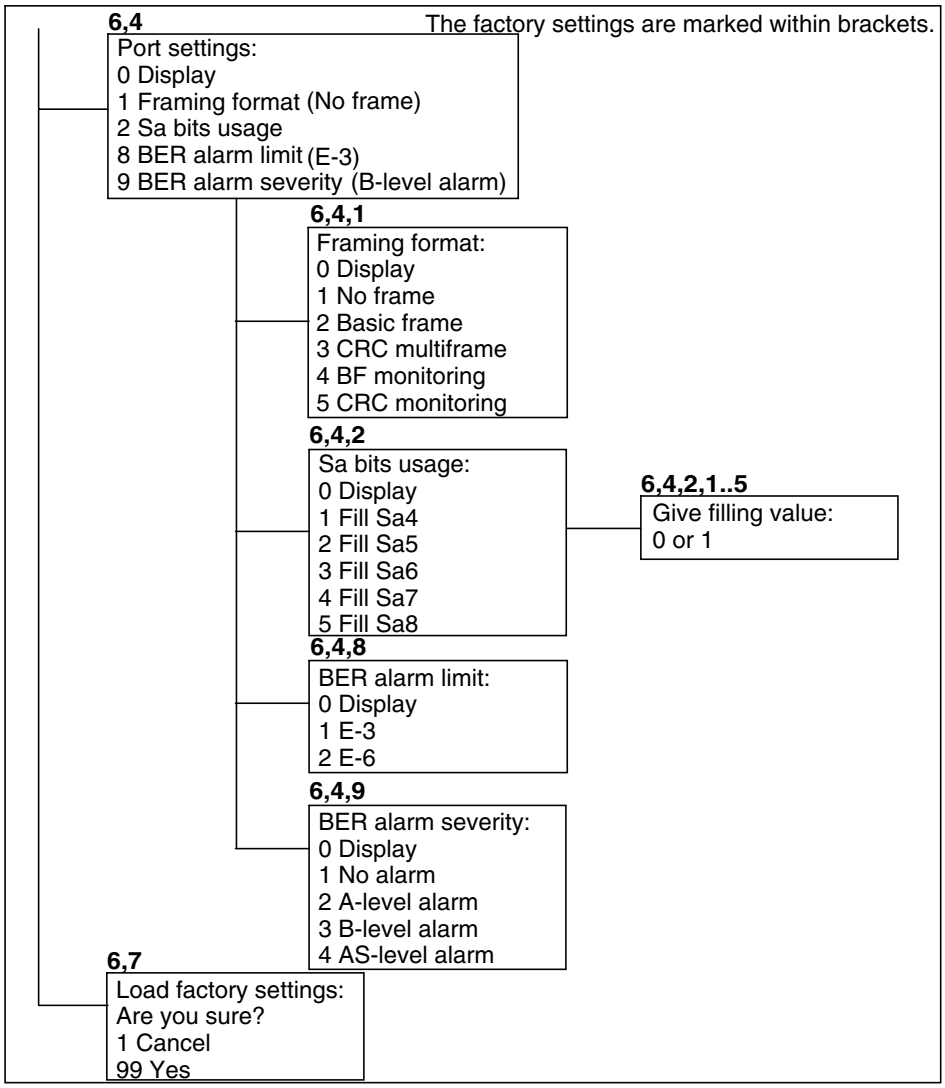

Figure 29. Settings menu structure (continued)

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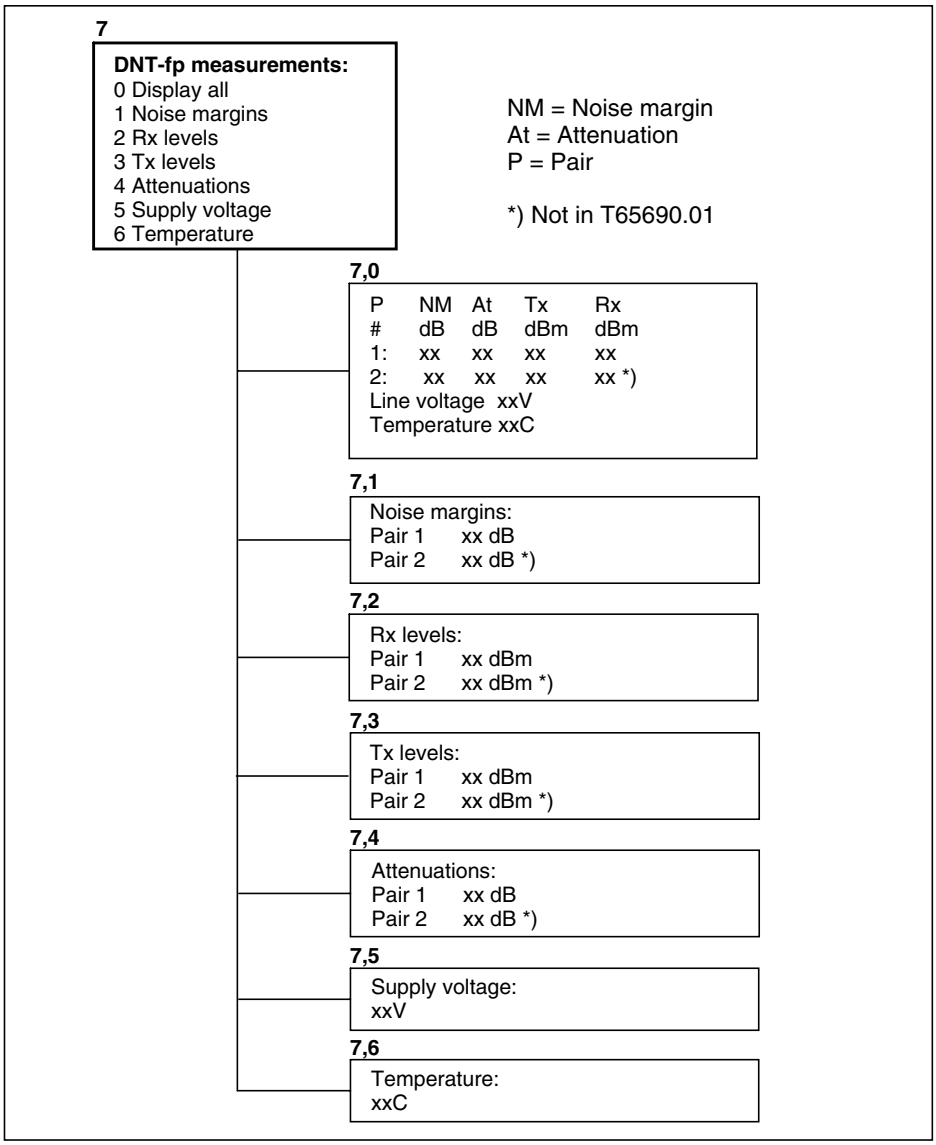

Figure 30. Measurements menu structure

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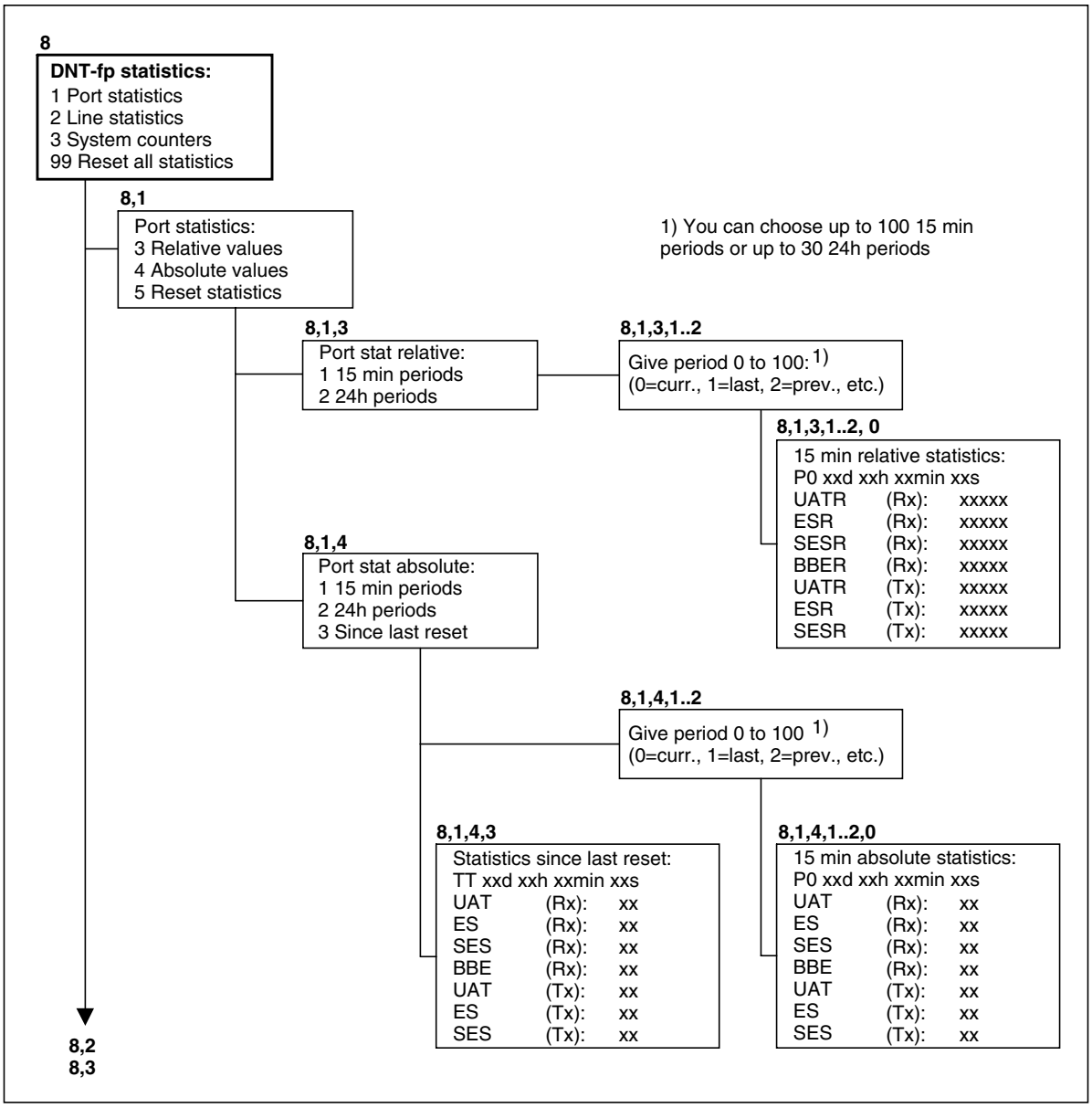

Figure 31. Statistics menu structure

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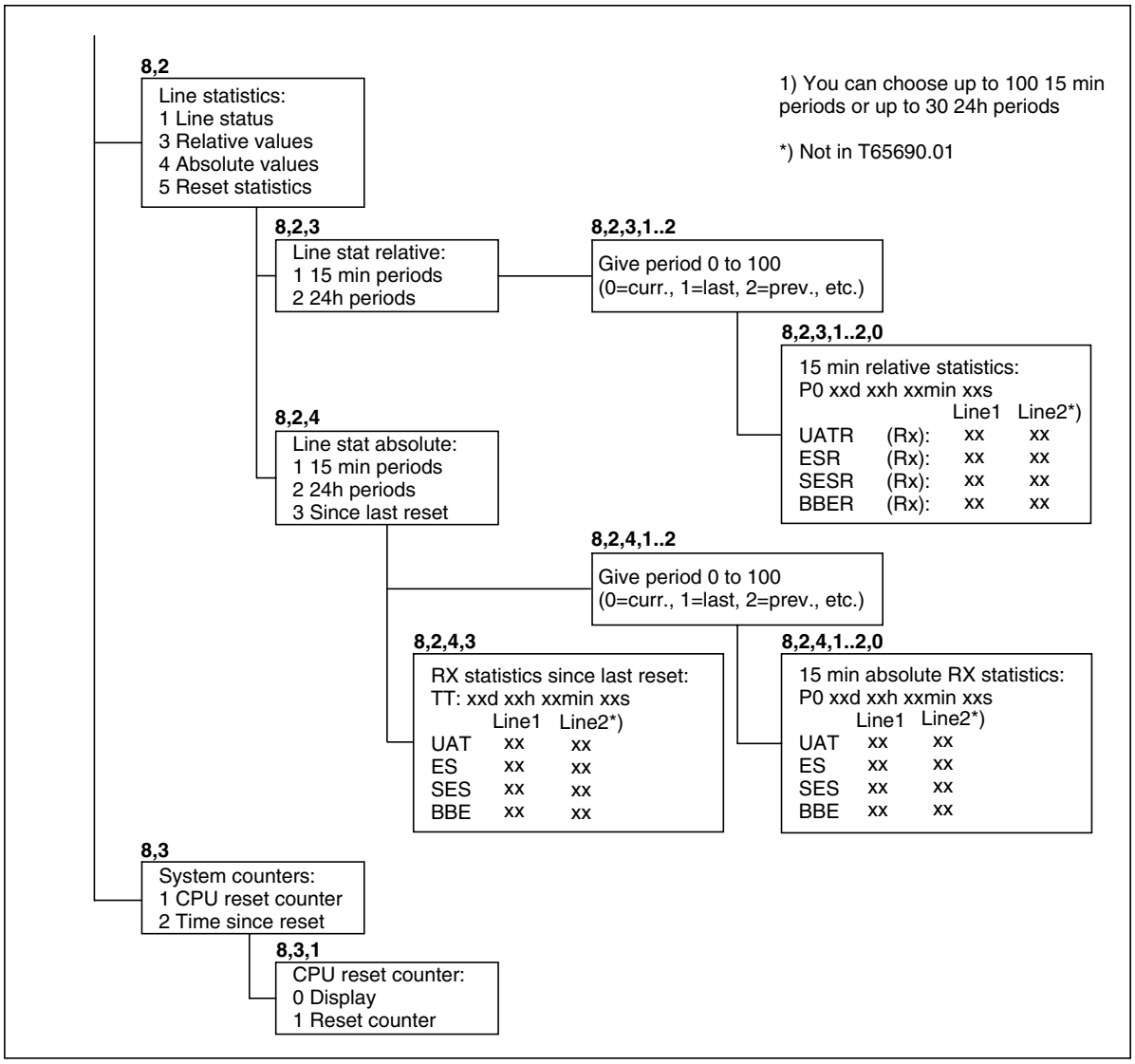

Figure 32. Statistics menu structure (continued)

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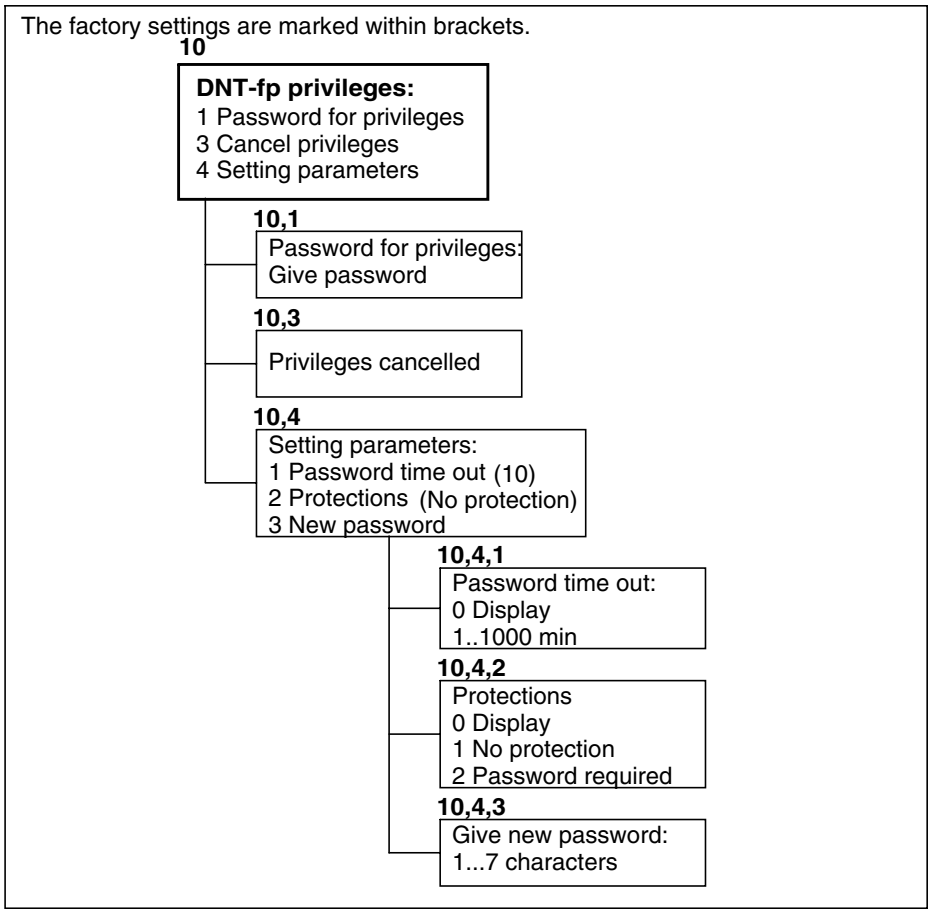

Figure 33. Privileges menu structure

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