



OM25

USER GUIDE

atl telecom



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COMPLIANCE NOTES & SAFETY INSTRUCTIONS



Caution: - Hazardous voltages inside the equipment

Safety Instructions:

This apparatus must be installed and maintained by SERVICE PERSONNEL only

There are NO user serviceable parts inside the modem.

The mains plug on the equipment serves as the disconnect device, therefore a socket outlet shall be installed near the equipment and shall be easily accessible



Caution: - Electrostatic sensitive devices inside the equipment

Electrostatic discharge (ESD) Warning:

Antistatic precautions should be observed at all times.

Power Rating Information - AC unit:

Voltage Range 85V-250V

Current Range 50mA

Frequency Range 50/60Hz

Power Rating Information - DC Unit:

Voltage Range -18V to -72V

Current Range 200mA

Safety Statements classification - NON traffic ports

The AC Mains input has a safety status of PRIMARY CIRCUIT

The OM25 AC unit is defined as a class 1 equipment and must be connected to a reliable earth connection.

If the mains earth cannot be guaranteed to be PROTECTIVE EARTH, then a PROTECTIVE EARTH conductor must be connected to the M3 stud on the rear panel of the unit.

The DC input has a safety status of TNV-2

The OM25 DC unit is defined as class II equipment, an EARTH conductor must be connected to the M3 stud on the rear panel of the unit when using the G.703 interface in accordance with ITU-T G.703 requirements.

Statement Safety Statements traffic ports:

The Optical Interface has a safety status of CLASS 1 LASER PRODUCT

The Terminal Port has a safety status of EARTHED SELV.

The G.703 Port Connection Port has a safety status of SELV when connected to Unexposed Environments:

The G.703 Port Connection Port has a safety status of TNV-1 when connected to Exposed Environments:

Definitions:

Exposed Environment

A TELECOMMUNICATIONS NETWORK is considered to be an exposed environment if one or more conditions for an unexposed environment are not fulfilled.

Unexposed Environment

A TELECOMMUNICATIONS NETWORK is considered to be an unexposed environment if the following conditions apply to all parts of the network.

- a) The possible effect of indirect lightning has been reduced by measures described in IEC 61312-1.
- b) The possibility of having different earth potentials has been reduced by connecting all equipment within the network to the same equipotential bonding system (see HD 384).
- c) The possibility of power cross/contact has been reduced (see HD 384).
- d) The possibility of induced transients and voltages has been reduced.



Manufacturers Declaration*

ATL Telecom Limited declares that this product is in conformity with the essential requirements of the 'R&TTE directive 1999/5/EC'.

*A copy of the Declaration of Conformity is available upon request from ATL Telecom Ltd.

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1 INTRODUCTION

This User Guide applies to the OM25 optical modem designed and manufactured by ATL Telecom Limited in the U.K. It provides guidance for installation, commissioning and operation of the modem as well as reference information covering maintenance, specification and compliance.

OM25 is an optical standalone modem providing a single V35 or G703 interface to the user. It delivers framed & unframed E1, fractional E1 and N*64kbps services. Protocol conversion (e.g. G.703 at the CO and V.35 at the CPE) is handled automatically.

The OM 25 Long Haul version can transmit data typically up to 75km. The OM25 Short Haul version can transmit data typically up to 15km.

Management control is provided locally via the RS232 connector. Alternatively the OM25 can be set-up locally using the loop buttons on the front of the unit.

Power is via a universal 85 to 250V ac connector or a -48V dc connector.

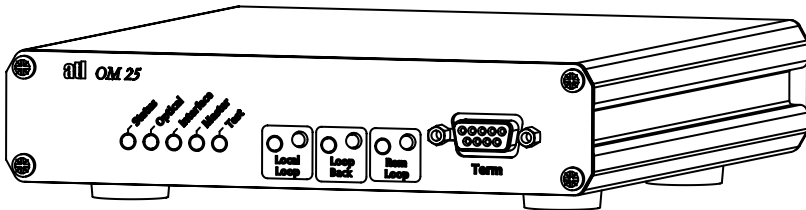


Figure 1 OM25

2 EXAMPLE APPLICATIONS

Two OM25s may be linked via a dual fibre single mode optical link to provide end-to-end electrical interfaces, either of like type (ie G703 to G703) or of different type (G703 to V35). One of the units is configured as timing source (CO), the other as timing sink (CPE).

Additionally, one of the units is configured as 'master', the other as 'slave'. The 'master' unit is the source of link management and is able to configure and monitor the slave settings but not vice versa.

Either master or slave can be set to be CO.

A simple point-to-point network between two terminals is shown in Fig 2.

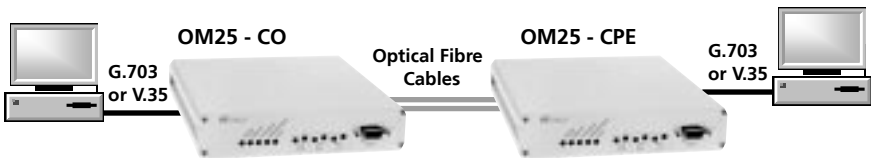


Figure 2

A tandem section, where the modems are connected in series with another transmission system or equipment that is the source of timing, is shown in Fig 3.

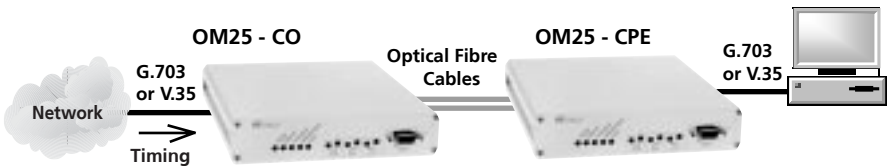


Figure 3

3 CONSTRUCTION

The front panel controls have a dual purpose. For normal operation, the LED indicators display status information and the push buttons are used for applying test loops. These controls can however, also be used to configure the modems without the need to plug in a VT100 terminal or PC. To do this, the front panel controls must be enabled for "Full Control" (default setting) and the unit set to Programming Mode, section 7.

3.1 FRONT PANEL

The front panel of the OM25 contains a RS232 9 way D-Type terminal connection, eight status LEDs and three front panel buttons

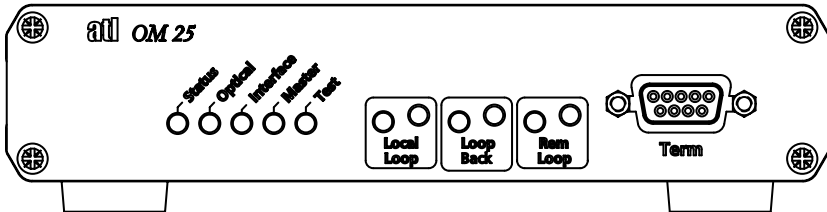


Figure 4 Front Panel

3.1.1 LEDS

3.1.1.1 STATUS

Red - An urgent alarm is present in the system.

Amber - A non-urgent alarm is present in the system.

Green - No alarms are present in the system.

3.1.1.2 OPTICAL

Red - An urgent alarm is present on the Optical Port.

Amber - A non-urgent alarm is present on the Optical Port.

Green - No alarms are present on the Optical Port.

3.1.1.3 INTERFACE

Red - An urgent alarm is present on the User Interface.

Amber - A non-urgent alarm is present on the User Interface.

Green - No alarms are present on the User Interface.

In the 'green' state the state of the received data (data output from the modem on the user interface) is indicated. The LED is green for 1's and off for 0's.

3.1.1.4 MASTER (GREEN)

When lit, this LED indicates that the unit has been configured to operate as a management 'master'. The default setting is for the unit to be a 'slave', in which case the LED will be turned off.

3.1.1.5 TEST (RED)

This will be illuminated whenever a loop test is active on the unit.

3.1.1.6 LOOPS (AMBER)

These will be illuminated whenever a test loop has been selected.

3.1.2 BUTTONS

There are three buttons on the front of the OM25, Local Loop, Loop Back and Remote Loop. In Normal mode the buttons can be used to setup various test loops. In Programming mode the buttons are used to configure the OM25, refer to section 7.

3.1.3 TERMINAL PORT

The terminal port allows the OM25 to be configured via a VT100 terminal or PC running a VT100 emulation program.

Alternatively, the port may be used as an auxiliary RS-232 link carried transparently across the fibre. See section 7.4.

3.2 REAR PANELS

The OM25 is supplied with either a -48V d.c. or a 110/230V a.c. power supply connector.

3.2.1 DC VARIANT

The DC unit

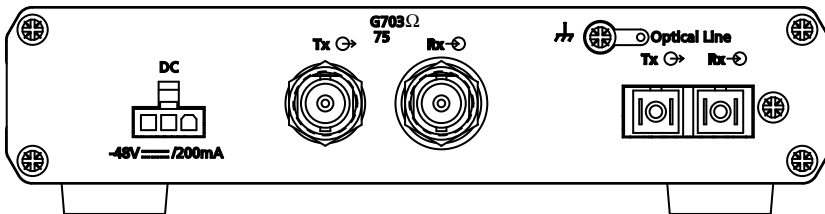


Figure 5 OM25 DC G.703 75Ω with SC Optical Connectors

3.2.2 AC VARIANTS

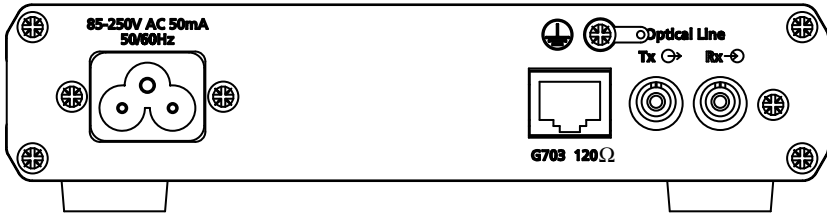


Figure 6 OM25 AC G.703 120Ω with FCPC Optical Connectors

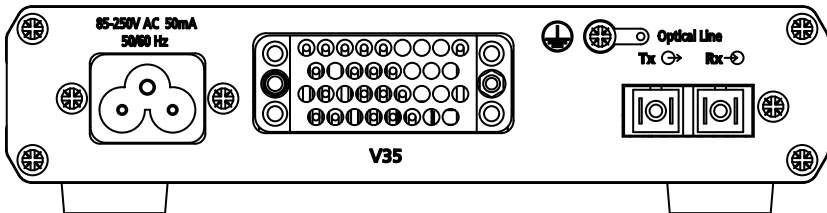


Figure 7 OM25 AC V.35 with SC Optical Connectors

3.2.3 REAR CONNECTORS COMMON TO AC & DC VARIANTS

Optical Connector (depending on variant)

User Data Ports (depending on variant)

OM25 Long Haul G.703 75 ohms	FC/PC & 2*BNC
OM25 Long Haul G.703 120 ohms	FC/PC & RJ45
OM25 Long Haul V.35	FC/PC & 34 way MRAC
OM25 Short Haul G.703 75 ohms	SC & 2*BNC
OM25 short Haul G.703 120 ohms	SC & RJ45
OM25 Short Haul V.35	SC & 34 way MRAC

4. INSTALLATION

This chapter describes the basic steps that are required to set up a system using the OM25 Optical modem.

It is recommended that if two desktop units are to be connected they should be tested back to back to check for operation before deployment.

Choose a cool, dry location away from direct sunlight. A cold, air conditioned room will give maximum service life.

4.1 PROTECTIVE EARTH

If a G.703 port needs to be connected to a circuit that is defined as TNV, then a protective earth must be connected to the earth bond stud on the rear panel. See the Safety Statements at the front of this User Guide.

4.2 POWER ON SEQUENCE

The power up sequence will begin after power is applied.

Desktop units require a -48V dc or 110/230V ac input (depending on the variant).

The unit must be connected to a protective earth using a suitable bonding conductor.

On the desktop unit, there are eight LED's: Status, Optical, Interface, Master, Test, Local loop, Loop back and Remote loop. When power is applied to the unit, the front panel LED's are illuminated as follows;

1. Test LED will illuminate for around 5 seconds.
2. Test LED extinguished, Status and Optical LED's should then be illuminated. The Master LED may be illuminated if the unit is set to master. Plus the Interface LED may be illuminated if 1's are present.

The unit will then be in a ready state for customer configuration.

4.3 DEFAULT SETTINGS

The OM25 is supplied set with the following default settings.

General

Mode	Slave CPE
User Port Rate	n = 32, 2048kbps

V.35 Interface

Enable Loops	Enabled
End to End Signalling	Off
Circuits 106, 107 & 109	On
Timing	Loop

G.703 Interface

Timing	Through
Frame	Unframed
TS0	Regenerated
Channelisation	Disabled

5. INTERFACES & TIMING OPTIONS

5.1 V.35 INTERFACE

5.1.1 USER RATE

User rates from 64K to 2304K (n = 1 to 36) can be configured; however, if the remote end is using G703, the maximum data rate at the V35 end is 2048K (n = 32).

5.1.2 END TO END SIGNALLING

When On

Circuits 105 and 109 are transmitted end-to-end across the link, ie the state of 105 at one end is mirrored by the state of 109 at the other.

When Off

Circuits 105 and 109 are not transmitted across the link. Their states are only relevant to the local unit.

5.1.3 SIGNALLING CIRCUIT OPTIONS

106 Normal / Set On

107 Normal / Set On

109 Normal / Set On

Circuits 106, 107 and 109 can act according to X21bis V35, or can be set permanently ON.

5.1.4 EXTERNAL TIMING

Tandem sections require an adaptor cable (not supplied, wiring information shown in section 8.7.4) so that two OM25s can be plugged together back to back via their user interfaces. Selecting External Timing ON on one of the units will then allow the two CO's to lock timing.

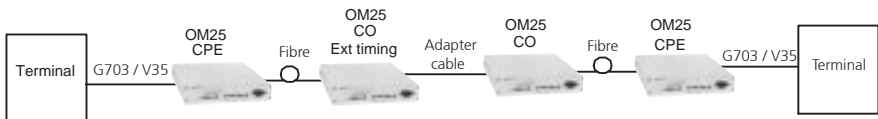


Fig 8 - External Timing

5.1.5 ENABLE LOOPS

When OFF, loop activation via control lines 140 and 141 is disabled. Also incoming V54 patterns from the fibre are ignored. This allows end to end loop activation in tandem sections. For example, the two modems connected by an adaptor cable in Fig 8 would have this option set to OFF, so that the far left-hand modem could set a remote loop on the far right-hand unit via V54.

Loop activation is still possible via front panel / VT100.

5.1.6 FUNCTIONAL OPERATION

When circuits 105 and 109 are being transferred across the link (End to End signalling ON), the behaviour is as follows:

Case	Conditions				V.35 Outputs				Line Outputs	
	105	In Sync	Loc Loop	Loop Back	106	107	109	104	Tx Sig	Tx Data
1	X	X	On	Off	105	On	105	103	Off	1
2	X	Yes	On	On	105	On	105	103	Rem 105	Rem 103
3	X	Yes	Off	On	Off	Off	Off	1	Rem 105	Rem 103
4	X	No	Off	Off	Off	Off	Off	1	X	X
5	X	Yes	Off	Off	105	On	Rem 105	Rem 103	105	103

Table 1 - V35 operation

'Tx sig' refers to the state of the signalling bit sent on the fibre to the remote end. Similarly, 'Tx data' refers to the state of the data sent on the fibre to the remote end.

'Rem' is used to denote the state of the appropriate signal at the remote end.

For '106 Set On', 106 is ON in all cases. This is the factory default. When 106 is following 105, there is a delay of 16ms in the OFF-to-ON transition.

For '107 Set On', 107 is ON in all cases. This is the factory default.

For '109 Set On', 109 is ON in all cases. This is the factory default.

When circuits 105 and 109 are not transferred across the link (End to End signalling OFF), 109 and Tx sig are ON in line 5. This is the factory default.

Switching circuit 140 ON triggers a V54 sequence to activate a remote loop. Circuit 141 activates a local loop.

Circuit 142 is active when local loop or loopback is active and also at both ends when remote loop is active.

5.2 G.703 INTERFACE

5.2.1 TIMING MODES

There are three timing modes - Through, Local and Loop.

5.2.1.1 THROUGH TIMING

Through mode is plesiochronous - the two directions have independent timing and can transfer at differing rates. The connected terminals are the source of timing. Each modem receives timing from its terminal and passes it to the far end.

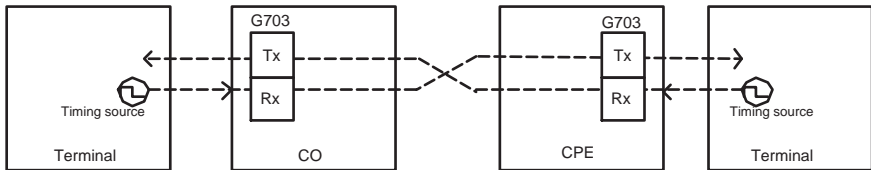


Fig 9 - Through timing

5.2.1.2 LOCAL TIMING

In Local timing mode, the clock source inside the CO is the reference clock for the system. Transmission on the fibre is locked to this clock. Both terminals lock to this clock and return the clock to the OM25s.

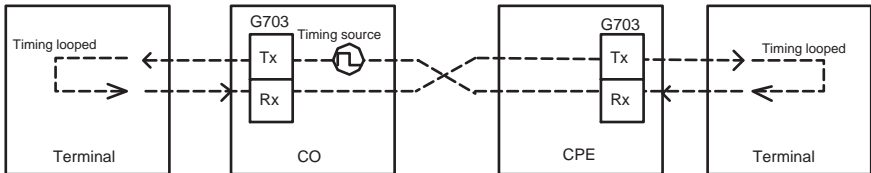


Fig 10 - Local timing

5.2.1.3 LOOP TIMING

In Loop timing mode, the reference clock for the system is provided by the terminal (or network) connected to the CO.

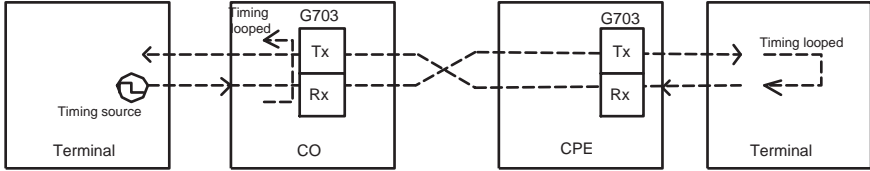


Fig 11 - Loop timing

The timing mode in the CPE depends on that selected in the CO:

CO	Through	CPE	Through
CO	Local	CPE	Local
CO	Loop	CPE	Local

5.2.2 FRAMING MODES

There are two framing modes - unstructured and structured.

5.2.2.1 UNSTRUCTURED MODE

In unstructured mode, the user data passes transparently through the system. There are no Loss of Frame Alignment (LOFA), Alarm Indication Remote (AIR) or Alarm Indication Signal (AIS) alarms. The only alarm relevant to this mode is the Loss of Signal (LOS).

5.2.2.2 STRUCTURED MODE

In structured mode, the modem aligns to the incoming G703 frame from the terminal and extracts the data from the selected timeslots. It also generates a G703 frame towards the terminal and inserts the data payload into the selected timeslots.

LOFA is raised if the modem cannot achieve frame lock. Recognition of this alarm complies with G706.

AIS is raised if there are less than 3 zeros in 512 bits on the G703 interface.

AIR is raised if bit 3 in the Not Frame Alignment Word (NAFW) is set to 1 for 3 consecutive occurrences.

CRCs may be enabled or disabled. When enabled, errored blocks are indicated back to the terminal by use of the E bits in timeslot 0. The CRC Fail alarm is active if CRC multiframe alignment cannot be attained.

The CAS multiframe may be enabled or disabled. When enabled, validation of the incoming CAS multiframe signal in TS16 is performed. The outgoing TS16 contains a generated multiframe incorporating idle signal codes. There is no processing of signalling data.

Individual timeslots may be selected for transmission using the DS0 selection page on the VT100 screen, however this function cannot be accessed using the front panel.

TS0 is always selected; it is either regenerated by the OM25 or passed transparently (inverted) in both directions. It is possible to have different timeslots configured at the two ends for mixed timeslot mapping.

5.2.3 PERFORMANCE

The following performance attributes may be viewed on the VT100 User Performance screen:

Errored Seconds

Severely Errored Seconds

Unavailable Seconds

Severely Errored Frame Seconds

Line Errored Seconds

These are derived from RFC2495, the E1 MIB definition document.

6. CONFIGURATION VIA THE TERMINAL PORT

6.1 LOGIN

The OM25 can be configured via the terminal port on the front of the unit. Connect a VT100 terminal (or a PC running a Tera Term emulation program) to the 9-way Terminal port. Configure the serial port settings of the VT100 terminal or Tera Term to 19,200 baud, 8 bits, no parity, 1 stop bit and Xon/Xoff.

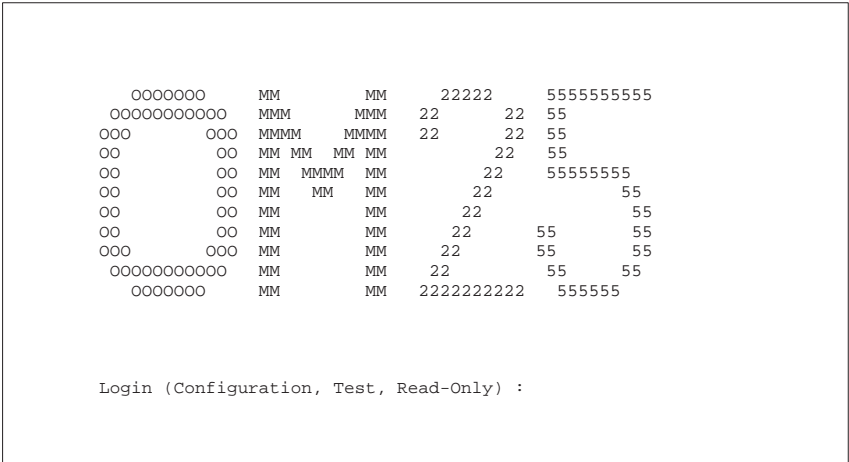
The following screen will be displayed once the the OM25 has completed its power-on sequence.

Press the spacebar to display the Login screen.

```

      0000000   MM      MM      22222   5555555555
    00000000000  MMM      MMM  22      22  55
  000      000  MMMM      MMMM  22      22  55
  00      00   MM  MM  MM  MM      22      55
  00      00   MM  MMMM  MM      22      55555555
  00      00   MM      MM      22      55
  00      00   MM      MM      22      55
  00      00   MM      MM      22      55  55
  000      000  MM      MM      22      55  55
  00000000000  MM      MM      22      55  55
    0000000   MM      MM      2222222222  555555

      Press space-bar to continue
    
```



You can now login using one of three modes

Configuration Mode - Allows the user full access to configure the OM25. To access this mode press 'C' then <return> to enter this mode

Test Mode - This is a limited access mode that only allows the user to setup test loops. To access this mode press 'T' then <return> to enter this mode

Read-Only Mode - This is a limited access mode that only allows the user to view the current status of the unit. To access this mode press 'R' then <return> to enter this mode

The Screen will now prompt you to enter a password. There is no default password. Press the <return> key.

```

      OOOOOO      MM      MM      22222      555555555
    OOOOOOOOOO    MMM      MMM      22      22      55
    OOO      OOO  MMMM      MMMM      22      22      55
    OO      OO   MM MM      MM MM      22      55
    OO      OO   MM MMMM      MM      22      5555555
    OO      OO   MM      MM      MM      22      55
    OO      OO   MM      MM      22      55      55
    OO      OO   MM      MM      22      55      55
    OOO      OOO  MM      MM      22      55      55
    OOOOOOOOOO    MM      MM      22      55      55
      OOOOOO      MM      MM      222222222      555555
    
```

Login (Configuration, Test, Read-Only) : *

Password :

A help screen is now displayed explaining the operation required to set the various management fields. Press <y> to skip this screen the next time you login, otherwise press <n>. The Main Menu screen will now be displayed.

```

OM25                                     Thur 01 Apr 2004 00:25:18
                                     Main Menu
Urgent Alarm:On   Non-Urgent Alarm:Off
    
```

```

      A Alarms
      C Configuration
      I Information
      L Logout
      P Performance
      S Security
      T Test
    
```

Type selection:

```

F1 Help
    
```

6.2 LOGOUT

You can only logout when the main menu is displayed. Press the F4 function key to close the existing menu or option screen and open the main menu screen

Press <L> to initiate the logout process.

The screen will the prompt you to to select 'y' on 'n'. Press <y> to logout or press 'n' to return to the main menu.

```
OM25                                     Thur 01 Apr 2004 00:51:16
                                     Main Menu
Urgent Alarm:Off   Non-Urgent Alarm:On
-----
                                     A Alarms
                                     C Configuration
                                     I Information
                                     L Logout
                                     P Performance
                                     S Security
                                     T Test

                                     Type selection:L
-----
Are you sure ? (y/N)
```

If the monitoring mode has been set to off (default setting) then the following message will be displayed for around 5 seconds before the screen reverts to the initial OM25 screen.

Monitoring Mode is off.

If the monitoring mode has been set to ON then the screen will display any alarms as they are generated

6.3.2 INFORMATION SCREEN

This screen provides version, alarm and performance information about the system. It is particularly useful in helping locate problems.

A master unit can view information about itself and about the remotely connected slave unit. A slave unit can only view its local information.

OM25		Thu 01 Jan 1970 00:03:33x	
Performance > Optical		Urgent Alarm:On Non-Urgent Alarm:On	
Subsystem: Slave		View: Local Statistics	
Table	ES	SES	UAS
Current	0	0	212
Total	0	0	0
Interval	ES	SES	UAS
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
Press Escape to Exit			
F1 Help F2 View F3 Previous Menu F4 Main Menu F5 Next Interface F6 Previous Interface F9 Next Intervals F10 Previous Intervals			

6.3.3 CONFIGURATION SCREENS

6.3.3.1 ENTERING INFORMATION

```

OM25                               Fri 02 Jan 1970 17:47:10
                                Configuration > User Port
Urgent Alarm:On   Non-Urgent Alarm:Off

Subsystem:      Slave
Port Type:      OM25-V35

                                Rate (nx64):      <32>      Enable Loops:      [X]

Timing
Internal:       ( )      106 Clamp On:      [X]
External:       ( )      107 Clamp On:      [ ]
Loop:           (* )     109 Clamp On:      [X]

                                End-to-end Signalling: [ ]

                                Press Return to Accept or Escape to Cancel

F1 Help  F3 Previous Menu  F4 Main Menu
  
```

6.3.3.2 MOVING BETWEEN CHECK BOXES

Select check boxes and radio buttons in the same way.

Pressing either the right cursor key, or the <TAB> key cycles through the check boxes. Use the left cursor, or <BACK TAB> key to cycle backwards.

6.3.3.3 TURNING FUNCTIONS ON AND OFF

Find the appropriate check box associated with the function you want to change. Move the cursor to that check box. Then press the space bar to change the box. Repeat for all other required changes. Press the <return> key to accept the configuration.

Note: The configuration is not accepted until the <return> key is pressed. In this way mistakes can be corrected before the data is entered. Beware though, if you exit the screen before pressing <return> the changes will be cancelled. Pressing the <return> key makes the changes and exits the screen, so you may want to make more than one change to the screen before pressing the <return> key.

For example: To disable a port – move the cursor to the check box, press the space bar and then press <return>.

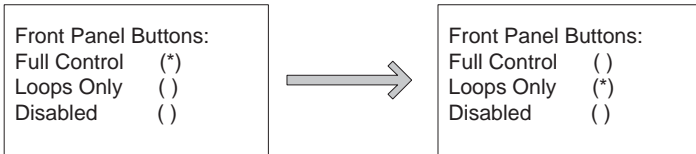
Enable Loops:	[X]
---------------	-----

Enable Loops:	[]
---------------	-----

6.3.3.4 HOW RADIO BUTTONS WORK

These are multiple choice check boxes. Only one can be active (mutually exclusive).

In this example the “Front Panel Buttons” operation can be set to one of three possible options; Full Control, Loops Only, or Disabled. It would not make sense to set it to be both Full Control and Disabled at the same time, so we only allow one of the three options to be set.



To change the Front Panel Controls from Full Control to Disabled – move the cursor to the Disabled box, and press the space bar. Remembering to press <return>, once any other changes have been made.

6.4 MENU STRUCTURE

The following table shows the top level and sub level menu structures. The proceeding pages will explain the operation of each option.

Top Level	Sub level	Description
Alarms	→ Status	Displays the current alarm status.
	→ History	Review the fault log. View recorded alarm events.
Configuration	→ Master/Slave	Master / slave configuration
	→ User Port	Configure User Port
	→ DS0 Selection	Timeslot selection for G703
	→ Reboot	Allows you to reboot the system
	→ System	Set date, time and menu timeout
	→ Subsystem Names	Enter name, description and location of this unit.
	→ Monitoring	Configures monitoring mode
	→ Serial Communications	Terminal set-up - baud rate, parity and handshake
	→ Front Panel	Allows configuration of Front Panel controls
Information	→	Displays the designation of the unit.
Logout	→	Logout of the menus and enter the monitoring mode
Performance	→ Optical	→ Performance & Status of the optical lines.
	→ Userport	→ Performance & Status of the user interface

F10 Update

This screen is set to automatically update by default. However if the Status = Off/Update field has been set to off, it may be necessary to update this screen manually by pressing F10.

Display Filters: Level 1 [] 2 [] 3 [] 4 [X] 5 [X]

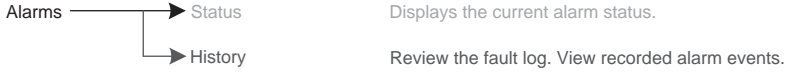
If many alarms are active the user may wish to concentrate on investigating the higher priority alarms first. To show alarms, select the appropriate display filter boxes with 'X', however, hidden alarms will still generate Urgent and Non-urgent alarms.

Status = Off/Update [X]

To turn off automatic updates of this screen. Use the cursors to select the Status = Off/Update [X] field. Pressing the space bar toggles the setting. The screen will not update until manually refreshed – press F10 to manually update.

Field	Description
No.	Each entry is given a number.
Subsystem	Identifies which unit the alarm occurred on. The name is configured in the Configuration->Subsystem name screen.
Alarm description	A description of the alarm
Level	Shows the alarm severity.
Status	ON = alarm currently active. OFF = Transient alarm. Alarm is currently inactive, but has previously <input type="checkbox"/> been active. Press F5 to clear.
A	Indicates that the alarm has been acknowledged, this mutes the alarm source.

6.5.2 ALARM HISTORY SCREEN



OM25		Thu 01 Jan 1970 00:02:45			
Alarm > History					
Urgent Alarm:On		Non-Urgent Alarm:Off			
Display Acknowledged Faults [X] Subsystem []					
No.	Subsystem	Fault Description	Time	Date	A
001	Master	Cold Boot	00:00:01	01/01/1970	
002	Master	Optical Port 0 - LOS	ON 00:00:03	01/01/1970	
003	Master	Optical Port 0 - Loss Of Synch	ON 00:00:03	01/01/1970	
Press Escape to Exit					
F1 Help F2 Show Id/Name F3 Previous Menu F4 Main Menu F5 Clear History					
F7 Previous Page F8 Next Page F9 Dump F10 Update					

This screen is used to view the last 15 alarms recorded by the system. If there is more than one screen's worth of information, the up and down arrow keys may be used to scroll through the list.

The Master will report all of its alarms and those of its connected Slave unit.

To scroll between check boxes, use the left and right cursor keys.

To scroll between the alarm entries, use the up and down cursor keys.

F2 Show Id/Name

Toggles the 'subsystem' display field between name and ID.

F5 Clear History

Removes ALL entries from the fault log.

F9 Dump

Produces a continual listing of the fault log. Useful when capturing to a file.

F10 Update

The screen is not updated in real time. Events that occur after first entering the screen are not displayed. To manually update the screen with recent events, press F10.

Field	Description
No.	Each entry is given a number.
Subsystem	Identifies which unit the alarm occurred on. The name is configured in the Configuration->Subsystem name screen.
Fault description	A description of the alarm. The 'ON' suffix indicates the recorded time and date the alarm went active. OFF indicates when the alarm became inactive.
Time	Records the exact time the event occurred.
Date	Records the date the event occurred.
A	Indicated that the alarm has been acknowledged, this mutes the alarm source.
Display Ack'd. Faults [X]	This checkbox controls the display of alarms that have been acknowledged in the Alarm Screen. An 'A' in the 'A' (acknowledge) column indicates acknowledged alarms.
Subsystem []	This checkbox enables the display of only those events on the same subsystem as the currently highlighted alarm entry.

6.6 CONFIGURATION

6.6.1 MASTER/SLAVE CONFIGURATION

Configuration	→ Master/Slave	Master / slave configuration
	→ User Port	Configure User Port
	→ Reboot	Allows you to reboot the system
	→ System	Set date, time and menu timeout
	→ Subsystem Names	Enter name, description and location of this unit.
	→ Monitoring	Configures monitoring mode
	→ Serial Communications	Terminal set-up - baud rate, parity and handshake
	→ Front Panel	Allows configuration of Front Panel controls

```

OM25                               Thu 01 Jan 1970 00:00:43
Configuration > System Operation
Urgent Alarm:On   Non-Urgent Alarm:On

Management      Mode
                 Master ( )
                 Slave (*)
                 Independant ( )

DSL Gender      Co (*)
                Cpe ( )

Management Mode changes will cause unit to reboot

F1 Help  F3 Previous Menu  F4 Main Menu
    
```

The OM25 unit default setting is as a slave.

In order for a pair of units to operate correctly, one end must be set as a master, the other end as a slave. Normally the unit connected to the customer will be configured as a slave.

The master unit is in charge of managing the optical link, it is also the 'master' from a network management point of view. It contains the database of configuration information for itself and the slave unit. The alarm and performance monitoring history is saved at the master.

When the management terminal is connected to the master it can read all of the information from the local and remote units, whereas when the management terminal is connected to the slave, only the local information is obtainable.

CO & CPE are also set on this screen.

Independent Mode - Requires both ends to be set up independently with compatible settings for the desired data rate. Neither end configures the other in this mode.

6.6.2 USER PORT CONFIGURATION

Configuration	→ Master/Slave	Master / slave configuration
	→ User Port	Configure User Port
	→ Reboot	Allows you to reboot the system
	→ System	Set date, time and menu timeout
	→ Subsystem Names	Enter name, description and location of this unit.
	→ Monitoring	Configures monitoring mode
	→ Serial Communications	Terminal set-up - baud rate, parity and handshake
	→ Front Panel	Allows configuration of Front Panel controls

6.6.2.1 V35 USER PORT

```

OM25                                     Thu 01 Jan 1970
                                Configuration > User Port
Urgent Alarm:On   Non-Urgent Alarm:Off
-----
Subsystem:      Master
Port Type:      OM25-V35

                                Rate (nx64):      <32>      Enable Loops:
                                Timing
                                Internal:          ( * )      106 Clamp On:
                                External:           ( )       107 Clamp On:
                                Loop:              ( )       109 Clamp On:

                                                End-to-end Signalling

                                Press Return to Accept or Escape to Cancel
-----
F1 Help  F3 Previous Menu  F4 Main Menu  F7 Previous Subsystem
F8 Next Subsystem

```

Data Rate: The data rate can only be set by the 'master' unit and is set in increments of 64kbps. The data rate is set by entering the desired value of N from 1 (64kbps) to 36 (2304kbps). The default value of N is 32.

Timing Options: The timing options can only be set by the 'master' unit.

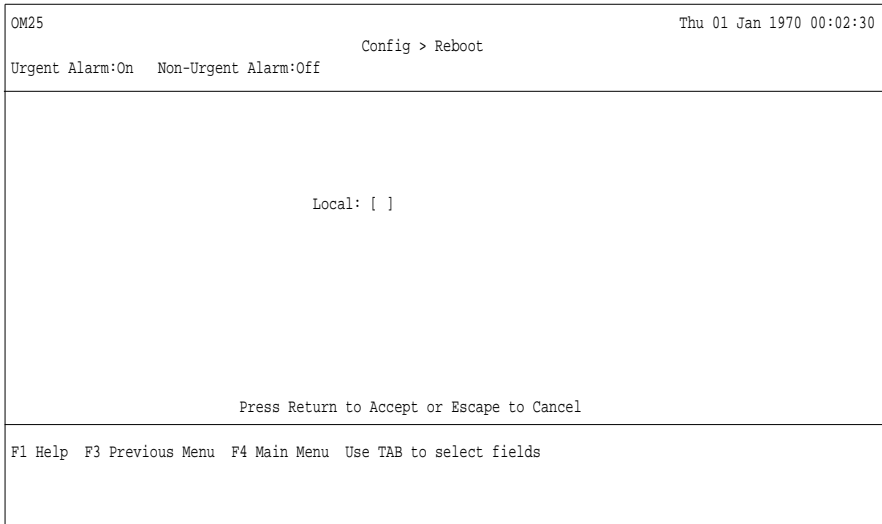
6.6.2.2 G703 USER PORT

OM25	Thu 01 Jan 1970 00:01:15	
Configuration > User Port		
Urgent Alarm:On Non-Urgent Alarm:On		
Subsystem: Master		
Unit Type: OM25-G703 75 Ohm		
Timing	Framing:	TSO Control
Through: (*)	E1Unframed: (*)	Regenerated: (*)
Local: ()	E1: ()	Inverted: ()
Loop: ()	E1Crc: ()	Channelisation
	E1Mf: ()	Disabled: ()
	E1CrcMf: ()	Enable DSO: (*)
Press Return to Accept or Escape to Cancel		
F1 Help F2 Change Port Type F3 Previous Menu F4 Main Menu		
F7 Previous Subsystem F8 Next Subsystem		

All options can only be set by the 'master' unit.

6.6.3 REBOOT

Configuration	→ Master/Slave	Master / slave configuration
	→ User Port	Configure User Port
	→ Reboot	Allows you to reboot the system
	→ System	Set date, time and menu timeout
	→ Subsystem Names	Enter name, description and location of this unit.
	→ Monitoring	Configures monitoring mode
	→ Serial Communications	Terminal set-up - baud rate, parity and handshake
	→ Front Panel	Allows configuration of Front Panel controls



To reboot the unit press the space bar to select the local option and the the return key to activate the reboot.

6.6.4 SYSTEM

Configuration	<ul style="list-style-type: none"> ➤ Master/Slave ➤ User Port ➤ Reboot ➤ System ➤ Subsystem Names ➤ Monitoring ➤ Serial Communications ➤ Front Panel 	<p>Master / slave configuration</p> <p>Configure User Port</p> <p>Allows you to reboot the system</p> <p>Set date, time and menu timeout</p> <p>Enter name, description and location of this unit.</p> <p>Configures monitoring mode</p> <p>Terminal set-up - baud rate, parity and handshake</p> <p>Allows configuration of Front Panel controls</p>
---------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```

OM25                                     Thu 01 Jan 1970 00:28:19
                                Configuration > System
Urgent Alarm:On   Non-Urgent Alarm:Off
-----
                                Date <01/01/1970>
                                Time (24Hr) <00:28>
                                Inactive Time-Out (min) <30>
-----
                                Press Return to Accept or Escape to Cancel
F1 Help  F3 Previous Menu  F4 Main Menu
    
```



This section allows the user to set the current date and time. The inactive time out setting can also be set. Use the arrow keys or the tab key to navigate to required option. Once you have made the required changes use the return key to accept the changes or use the escape key to cancel any changes

6.6.5 SUBSYSTEM NAMES

Configuration	<ul style="list-style-type: none"> ➤ Master/Slave ➤ User Port ➤ Reboot ➤ System ➤ Subsystem Names ➤ Monitoring ➤ Serial Communications ➤ Front Panel 	<ul style="list-style-type: none"> Master / slave configuration Configure User Port Allows you to reboot the system Set date, time and menu timeout Enter name, description and location of this unit. Configures monitoring mode Terminal set-up - baud rate, parity and handshake Allows configuration of Front Panel controls
---------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```

OM25                                     Thu 01 Jan 1970 00:32:16
                                Configuration > Subsystem Names
Urgent Alarm:On   Non-Urgent Alarm:Off
-----
Subsystem No: 1

                                Name <Slave           >
                                Description <Unknown     >
                                Location <Unknown       >

                                Press Return to Accept or Escape to Cancel
-----
F1 Help  F3 Previous Menu  F4 Main Menu
  
```

This section allows the user to set the name, description and location of the unit. Use the arrow keys or the tab key to navigate to required option. Once you have made the required changes use the return key to accept the changes or use the escape key to cancel any changes

6.6.6 MONITORING

Configuration	→ Master/Slave	Master / slave configuration
	→ User Port	Configure User Port
	→ Reboot	Allows you to reboot the system
	→ System	Set date, time and menu timeout
	→ Subsystem Names	Enter name, description and location of this unit.
	→ Monitoring	Configures monitoring mode
	→ Serial Communications	Terminal set-up - baud rate, parity and handshake
	→ Front Panel	Allows configuration of Front Panel controls

```

OM25                                     Thu 01 Jan 1970 00:52:52
                                Configuration > Monitoring
Urgent Alarm:On   Non-Urgent Alarm:Off
-----
Monitoring Mode

                                Report Faults [ ]

                                With Warning Bell [ ]

                                Press Return to Accept or Escape to Cancel

F1 Help  F3 Previous Menu  F4 Main Menu
  
```



This screen is concerned with the monitoring mode of the master or slave units. This facility causes system faults to be reported to a dumb terminal or printer whilst the operator is logged out.

Monitoring mode is a special mode that can operate when the user has logged off. It is designed to connect to a printer or an unattended terminal. As alarms and faults are detected they are printed on the screen (one line per fault). Over time a complete list of faults will be seen.

Should the VT100 terminal remain connected whilst logged out, and provided that certain options (in the Configuration > Monitoring Screen) have been set, warning messages indicating alarm conditions will be displayed. These warning messages may be accompanied by an audible beep.

The VT100 terminal may at this point be replaced by a printer with a serial interface, allowing hard copy of all alarms to be obtained.

It is envisaged that a dumb terminal may be left continuously connected to the master or slave after the operator has logged out. This mode may then be used to register the indication of alarms externally. The dumb terminal may be used to report alarm situations. These external indications would consist of warning messages and/or alarm bells.

Format of warnings displayed in Monitor Mode is as follows:

```
Master:F4:Line - Loss of Recovered Clock ON:Thu 01 Jan 2002 00:27:57
Slave:F5:User Port - Input Signal Loss OFF:Thud 01 Jan 2002 00:27:59
```

The format should match that used to display the fault in the VTMS Menu System status line.

Note: The fault log can also be viewed and printed from the Alarms->History menu - as shown in section 6.5.2.

6.6.7 SERIAL COMMUNICATIONS

Configuration	<ul style="list-style-type: none"> ➤ Master/Slave ➤ User Port ➤ Reboot ➤ System ➤ Subsystem Names ➤ Monitoring ➤ Serial Communications ➤ Front Panel 	<ul style="list-style-type: none"> Master / slave configuration Configure User Port Allows you to reboot the system Set date, time and menu timeout Enter name, description and location of this unit. Configures monitoring mode Terminal set-up - baud rate, parity and handshake Allows configuration of Front Panel controls
---------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```

OM25                                     Thu 01 Jan 1970 02:10:15
      Configuration > Serial Communications
Urgent Alarm:On   Non-Urgent Alarm:Off
-----
      Baud Rate      Data Bits      Parity      Stop Bits      Handshake
      2400 ( )       7 ( )         None (*)     1              None ( )
      4800 ( )       8 (*)         Odd ( )     Xon/Xoff (*)
      9600 ( )
      19200 (*)

      Press Return to Accept or Escape to Cancel

F1 Help  F3 Previous Menu  F4 Main Menu  F5 Default
    
```



Field	Description
Baud rate	Speed at which characters are sent and received from the local terminal. Higher numbers mean faster speed. If characters are being corrupted try a lower speed.
Data bits	Some terminals require 7 bit data if parity is turned on. Most prefer 8 bit data.
Parity	Provides a means of checking characters for errors (but does not correct them).
Stop bits	1 stop bit is standard.
Handshake	Turning this on allows your local terminal to control the rate at which characters are being sent. This is useful if your terminal cannot keep up with the rate at which characters are produced. Note: if characters are being corrupted, turning on handshaking will not help – choose a slower baud rate instead.

6.6.7.1 PROCEDURE TO FOLLOW WHEN CHANGING SETTINGS

1. Make all the desired changes to this menu by using the cursor to move to the appropriate check box, then press the space bar to change the selected field.
2. Once all the desired changes have been made, press the <return> key to accept the changes. The unit will now implement these changes.
3. A message will appear: "Change your terminal to new settings.... Press Escape to continue".
4. Referring to the user manual for your terminal – change its communications set-up in the same way you changed this menu.
5. Press the <Escape> key.

Notes:

- a) The OM25 tries to change baud rates smoothly. However if the new screen is not displayed correctly you may have to reset your local terminal.
- b) If the characters still appear corrupt then choose a lower baud rate.

6.6.8 FRONT PANEL

Configuration	<ul style="list-style-type: none"> → Master/Slave → User Port → Reboot → System → Subsystem Names → Monitoring → Serial Communications → Front Panel 	<ul style="list-style-type: none"> Master / slave configuration Configure User Port Allows you to reboot the system Set date, time and menu timeout Enter name, description and location of this unit. Configures monitoring mode Terminal set-up - baud rate, parity and handshake Allows configuration of Front Panel controls
---------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```

OM25                               Thu 01 Jan 1970 02:13:22
                                Configuration > Front Panel
Urgent Alarm:On   Non-Urgent Alarm:Off

Subsystem: Slave

                                Front Panel Buttons:
                                Full Control   (*)
                                Loops Only     ( )
                                Disabled        ( )

                                Press Return to Accept or Escape to Cancel

F1 Help  F3 Previous Menu  F4 Main Menu
    
```

Field	Description
Full Control	Front panel buttons may be used for testing loops, and unit configuration
Loops Only	Buttons can be used for testing loops, but not for unit configuration
Disabled	Buttons are disabled

6.7 INFORMATION

Information  Displays the designation of the unit.

```

OM25                                     Thu 01 Jan 1970 02:42:19
                                     Information
Urgent Alarm:On   Non-Urgent Alarm:Off

Subsystem: Slave

                                     Unit Type: OM25-V35
                                     Hardware Id: Issue A
                                     Mod Status: Mod 4

                                     Booter Version: 0.0a 2004 04 05 AM29LV800T Boot
                                     Software Version: 0.0h%2004 04 08 OM25
                                     Firmware Version: 1.00 2004 04 07 Iss 128

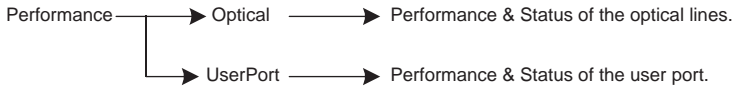
                                     Press Escape to Exit

F1 Help  F3 Previous Menu  F4 Main Menu
    
```

Field	Description
Unit type	Displays the unit's product name and type.
Hardware Id	Indicates the build number for the hardware platform
Mod Status	Relates to the modification status of the unit
Software version	Displays the version number for the software being run
Booter version	Displays the version number for the boot-strap loader
Firmware version	Displays the version number for the firmware

Please quote these figures when contacting our technical support department.

6.8 PERFORMANCE



6.8.1 PERFORMANCE OPTICAL LINES

OM25		Thu 01 Jan 1970 00:03:33x			
Performance > Optical					
Urgent Alarm:On		Non-Urgent Alarm:On			
Subsystem: Slave		View: Local Statistics			
Table	ES	SES	UAS	BBE	Time Elapsed
Current	0	0	212	0	212
Total	0	0	0	0	0
Interval	ES	SES	UAS	BBE	Valid
1	0	0	0	0	No
2	0	0	0	0	No
3	0	0	0	0	No
4	0	0	0	0	No
5	0	0	0	0	No
6	0	0	0	0	No
Press Escape to Exit					
F1 Help F2 View F3 Previous Menu F4 Main Menu F5 Next Interface F6 Previous Interface F9 Next Intervals F10 Previous Intervals					

Field	Description
UAS Unavailable seconds	Total time this optical link has been out of service
SES Severely errored seconds	Total time this optical link has suffered heavy errors
ES Errored seconds	Total time this optical link has suffered light errors
BBE Background Block Errors	CRC errors when no SES have occurred

6.8.2 PERFORMANCE USER PORT

```

OM25                                     Thu 01 Jan 1970 00:26:33
Performance > USER
Urgent Alarm:On   Non-Urgent Alarm:On

Subsystem: Slave                               View: Local Statistics

Table | ES | SES | UAS | SEFS | LES | Time Elapsed
Current | 0 | 0 | 1592 | 0 | 0 | 1592
Total | 0 | 0 | 0 | 0 | 0 |
Interval | ES | SES | UAS | SEFS | LES | Valid
 1 | 0 | 0 | 0 | 0 | 0 | No
 2 | 0 | 0 | 0 | 0 | 0 | No
 3 | 0 | 0 | 0 | 0 | 0 | No
 4 | 0 | 0 | 0 | 0 | 0 | No
 5 | 0 | 0 | 0 | 0 | 0 | No
 6 | 0 | 0 | 0 | 0 | 0 | No

Press Escape to Exit

F1 Help F2 View F3 Previous Menu F4 Main Menu F5 Next Interface
F6 Previous Interface F9 Next Intervals F10 Previous Intervals
    
```

Field	Description
UAS Unavailable seconds	Total time this optical link has been out of service
SES Severely errored seconds	Total time this optical link has suffered heavy errors
ES Errored seconds	Total time this optical link has suffered light errors
SEFS Severely errored framing seconds	Total time this optical link has suffered from framing errors
LES Line errored seconds	Total line errored seconds

6.9 SECURITY

Security → Change passwords

```

OM25                                     Thu 01 Jan 1970 05:00:56
                                Security > System
Urgent Alarm:On   Non-Urgent Alarm:Off

                                Old Password [      ]
                                New Password [      ]
                                Confirm Password [    ]

                                Press Return to Accept or Escape to Cancell

F1 Help  F3 Previous Menu  F4 Main Menu
    
```

Field	Function
Old Password	This field accepts the password currently attributed to the system. When the password is recognised (on entry of the final password character) the password field is enabled.
New Password	This field always displays its contents as asterisks, and has a maximum length of 10 characters. This field defaults to null after initial power on
Confirm Password	This field is enabled when the operator enters text into the password field

This section deals with the security of the system. Access to the OM25 is password protected. All password characters are displayed as asterisks (*), with <RETURN> as the default password.

FORGOTTEN YOUR PASSWORD

Fax Atl Telecom technical support on: +44 2920 500 850

or send an e-mail to: support@atltelecom.com

6.10 TEST

Test → Enables various loops

```
OM25                                     Thu 01 Jan 1970 05:22:45
                                     Test > Loopbacks
Urgent Alarm:On   Non-Urgent Alarm:Off
-----
Subsystem: Slave

                                     Local Loop   : [ ]
                                     Loopback     : [ ]
                                     V54 Remote Loop: [ ]

                                     Press Return to Accept or Escape to Cancel
-----
F1 Help  F3 Previous Menu  F4 Main Menu
```

Test Options

Local Loop - Loops the traffic back to the user interface

Loopback - Loops the traffic back to the optical line

V.54 Remote Loop - Sets a loopback on the remote unit.

7. CONFIGURATION VIA THE FRONT PANEL BUTTONS

7.1 INTRODUCTION

For users that prefer to configure the OM25 without the need of a PC, the operating parameters can be configured using the front panel controls.

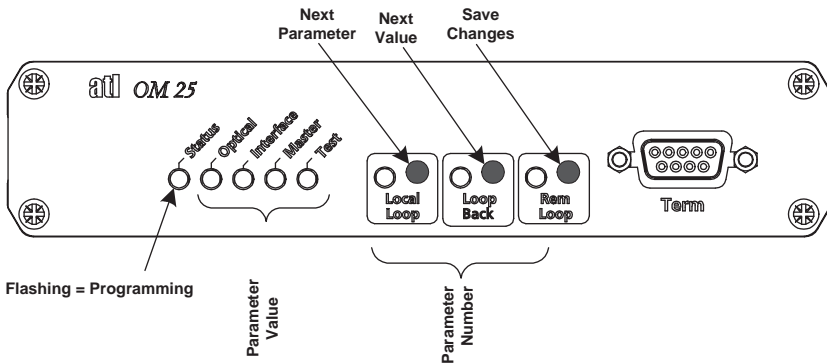
Front panel programming is carried out by placing the unit into Programming Mode by pressing the "Local Loop" and Loop Back" buttons simultaneously and then releasing them. Programming mode will be indicated by the Status LED flashing Amber. The Local Loop, Loop Back and Remote LED indicators will display the parameter being configured. The Optical, Interface, Master and Test LED indicators will display the parameter value. Sections 7.2.1 to 7.2.3 show the full lists of parameters and their corresponding values that can be programmed.

Note: If the front panel controls have been previously set to "Loops only" or "Input disabled" from the VT100 Front Panel configuration screen, it will not be possible to enter Programming Mode.

7.2 OPERATION

The "Local Loop" button is used to change the "Parameter Number". The "Loop Back" button is used to change the "Parameter Value". Once programming is completed, the "Remote Loop" button is pressed to store the new parameter value (this must be done within 30 seconds of the last programming action or the modem will automatically leave programming mode and discard the new values). When "Remote Loop" is pressed, the modem reboots into its new configuration.

All of the configurable parameters have a "Parameter Number" displayed as a 3-bit binary number on the loop active indicators (Local Loop = MSB). The "Parameter Values" that can be selected are displayed as a 4 bit binary number on the Optical, Interface, Master and Test indicators (Optical = MSB).



7.2.1 GENERAL

Parameter Number	LL	LB	RL	Parameter Value	Meaning
1	0	0	1	0000	Slave (Default)
				0001	Master CO
				0010	Master CPE
2	0	1	0	0000	User Port Rate 1 (n=1, 64kbps)
				0001	User Port Rate 2 (n=2, 128kbps)
				0010	User Port Rate 3 (n=4, 256kbps)
				0011	User Port Rate 4 (n=8, 512kbps)
				0100	User Port Rate 5 (n=10, 640kbps)
				0101	User Port Rate 6 (n=12, 768kbps)
				0110	User Port Rate 7 (n=16, 1024kbps)
				0111	User Port Rate 8 (n=32, 2048kbps)
				1000	User Port Rate 9 (n=36, 2304kbps)
				1111	Rate not selectable via Front Panel
				7	1
0001	Set Default Operation (value returns to 0000 after saving)				

7.2.2 G.703 OPTIONS

Parameter Number	LL	LB	RL	Parameter Value	Meaning
3	0	1	1	0000	Timing Through
				0001	Timing Local
				0010	Timing Loop
4	1	0	0	0000	Unframed
				0001	E1, CRC disabled
				0010	E1, CRC enabled
				0011	E1 CAS, CRC disabled
				0100	E1 CAS, CRC enabled
5	1	0	1	0000	Regenerate TS0
				0001	Invert TS0

7.2.3 V.35 OPTIONS

Parameter Number	LL	LB	RL	Parameter Value	Meaning
3	0	1	1	0000	Enable Loops (Default)
				0001	Disable Loops
4	1	0	0	0000	End to End Signalling Off (Default)
				0001	End to End Signalling On
5	1	0	1	0000	Clamp 106 Off, 107 Off, 109 Off
				0001	Clamp 106 Off, 107 Off, 109 On
				0010	Clamp 106 Off, 107 On, 109 Off
				0011	Clamp 106 Off, 107 On, 109 On
				0100	Clamp 106 On, 107 Off, 109 Off
				0101	Clamp 106 On, 107 Off, 109 On
				0110	Clamp 106 On, 107 On, 109 Off
6	1	1	0	0000	Timing Internal (default CO)
				0001	Timing External
				0010	Timing Loop (CPE)

7.3 KEYPAD LOCK

Pressing the Local Loop, Loop Back and the Remote Loop buttons simultaneously for a minimum of 5 seconds will lock the front panel buttons. The Loop LEDs will flash amber during this period. Repeating this action will unlock the buttons again.

7.4 AUXILIARY PORT OPERATION

Pressing the Local Loop and Remote Loop buttons simultaneously for a minimum of 5 seconds (the left most 3 LEDs flash amber) converts the Terminal Port into an Auxiliary Port which can be used to transport an RS-232 link transparently across the fibre path, independently from the main data payload. Repeating this action converts the port back to its management function (the 3 left most LEDs flash red).

8. SPECIFICATIONS

8.1 DIMENSIONS

The overall dimensions of the unit are:

Height = 45mm

Width = 165mm

Depth = 185mm

8.2 TRANSMISSION PERFORMANCE

8.2.1 JITTER

To G.823

8.2.2 TRANSMISSION RANGE

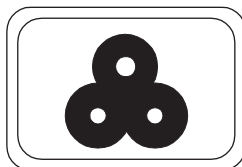
The range achieved will depend upon to optical fibre used. The better the quality of fibre the further the range achieved. Typical figures given below.

Loss budget - Long Haul = 31dB

Short Haul = 16dB

8.3 AC POWER INLET

AC power is fed via a standard 3-pin 250V 2.5A IEC/EN 60320-1/C6 socket. A power cord fitted with a country specific mains plug is supplied with the unit. This should be plugged into a suitable power supply with earth protection to provide ESD protection for the unit.



8.4 DC POWER INLET

DC power is fed in via the three-pin socket on the rear panel. The cable assembly is shown in section 8.5. A connection from CGND to earth is required for ESD protection of the unit.

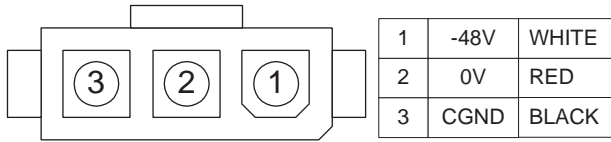
Mating connector

Molex Minifit Junior Receptacle

Molex Part Number: 39-01-4031

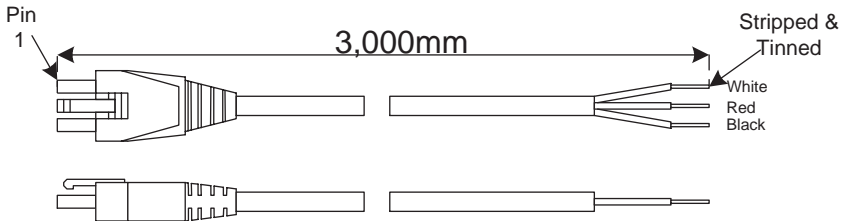
Molex female contact

Molex Part Number: 39-00-0039



8.5 DC MAINS CABLE

The DC Power Cable can be ordered from ATL, ATL Part Number 6/910/000/423 (See ACCESSORIES).



8.6 OPTICAL CONNECTIONS

8.6.1 SAFETY WARNING

Class 1 laser product.

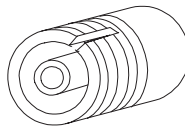
Exposure to the optical beam will not result in eye damage, however it is never advisable to look into the optical port or fibre. The laser light is invisible and prolonged exposure should be avoided as the human eye cannot respond to its presence.

8.6.2 OPTICAL CONNECTOR CLEANING

The vast majority of problems are caused by dust contamination of the optical window. Before installing the optical plug, its end must be cleaned with an approved disposable optical wipe. The optical connector on the unit must be cleaned by blowing clean (oil and dust free) compressed air down the centre of the optical connector.

8.6.3 FC.PC CONNECTOR

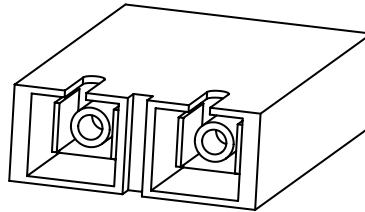
This connector is more commonly used on single-mode cable. To connect – align the centre of the fibre plug with the centre of the optical connector (on the rear panel). Push the plug in gently. Rotate to align the keyway. The plug should now go in a little more. Make sure the keyway is correctly located by rotating the plug to the left and to the right. Only a little movement should be allowed. Once in place secure the plug by turning the locking ring clockwise. Taking care not to over-tighten the locking ring – excessive pressure will cause misalignment, finger tight is more than ample.



FC/PC Connector

8.6.4 SC CONNECTOR

Align the key on the connector plug with the keyway in the top of the optical connector (on the rear panel). Gently push the plug into the connector until an audible 'click' is heard. This type of plug is fitted with an anti pull out feature, this prevents the accidental removal of the plug from the connector.

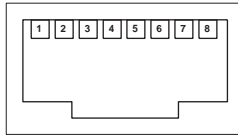


SC Connector

8.7 INTERFACE CONNECTIONS

8.7.1 G.703 120 OHM INTERFACE

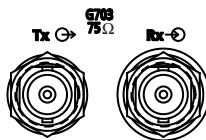
The G703 120 Ohm connector on the OM25 is an 8-way RJ45 socket



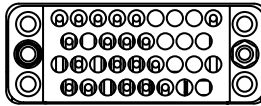
1	TxA
2	TxB
3	screen
4	RxA
5	RxB
6	screen
7	n.c.
8	n.c.

8.7.2 G.703 75 OHM INTERFACE

Two BNC connectors are used on the back of the unit to give the 75-ohm connection



8.7.3 V.35 INTERFACE



V35

Pin			Circuit	Description
A-wire	B-wire	Unbal		
		B	102	Common Return
P	S		103	Transmit Data
R	T		104	Receive Data
		C	105	Request To Send
		D	106	Ready For Sending
		E	107	Data Set Ready
		F	109	Received Signal Detector
U	W		113	Terminal Signal Element Timing
Y	AA		114	Transmitter Signal Element Timing
V	X		115	Receiver Signal Selement Timing
		N	140	Remote Loopback
		L	141	Local Loopback
		NN	142	Test Indicator

8.7.4 V.35 EXTERNAL TIMING ADAPTOR CABLE PINOUT

CCITT circuit	Timing Source (DCE)	Timing Sink (DTE)	CCITT circuit
103-A	P	R	104-A
103-B	S	T	104-B
104-A	R	P	103-A
104-B	T	S	103-B
105	C	F	109
109	F	C	105
115-A	V	U	113-A
115-B	X	W	113-B
GND	B	B	GND

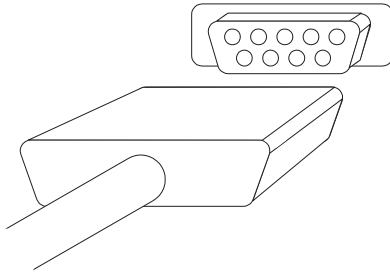
8.8 TERMINAL CONNECTION

A VT100 compatible terminal can be plugged into the 9-way D-type connector on the front panel.

The socket is wired to allow a straight connection to a PC serial port.

The serial port setting is 19200 baud, 8 bits, no parity, 1 stop bit and Xon/Xoff flow control.

The RS232C interface complies with the CCITT V24/V28 standards. The maximum length of cable between communicating devices is limited to 15.2 metres (50 feet).



8.9 ENVIRONMENTAL

8.9.1 TRANSPORTATION

ETS 300 019-1-2 Class 2.3

Transportation using normal public transport when stored in its normal transport packaging.

Temp range -40 to +70°C

Humidity +5 to +95% (non condensing)

8.9.2 STORAGE

ETS 300 019-1-1 Class 1.1

Storage in a totally weatherproof and partially temperature controlled environment in its standard packaging.

Temp range -5 to +45 OC

Humidity 95% @ 45 OC (non condensing)

8.9.3 OPERATIONAL

ETS 300 019-1-3 Class 3.2

Operation in a totally weatherproof and partially temperature controlled environment.

Temp range -0 to +45 OC

Humidity +5 to +90% (non condensing)

9. ORDERING INFORMATION

9.1 OM25 AC POWERED

Description	Order Number
OM25 Long Haul V.35	1/356/111
OM25 Long Haul G.703 75 ohms	1/356/112
OM25 Long Haul G.703 120 ohms	1/356/113
OM25 Short Haul V.35	1/356/211
OM25 Short Haul G.703 75 ohms	1/356/212
OM25 short Haul G.703 120 ohms	1/356/213

9.2 OM25 DC POWERED

Description	Order Number
OM25 Long Haul V.35	1/356/121
OM25 Long Haul G.703 75 ohms	1/356/122
OM25 Long Haul G.703 120 ohms	1/356/123
OM25 Short Haul V.35	1/356/221
OM25 Short Haul G.703 75 ohms	1/356/222
OM25 short Haul G.703 120 ohms	1/356/223

9.3 ACCESSORIES

Description	Order Number
OM25 DC Power Cable	6/910/000/423
OM25 AC UK Power Cable	6/910/000/531
OM25 AC Euro Power Cable	6/910/000/532
OM25 RS232 Cable	6/910/000/429