

Quick Start Guide

OmniBER 718

Agilent Technologies

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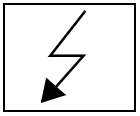
WARNING

For details of safety, see Safety information at the front of the Verification manual.

Warning Symbols Used on the Product



The product is marked with this symbol when the user should refer to the instruction manual in order to protect the apparatus against damage.



The product is marked with this symbol to indicate that hazardous voltages are present



The product is marked with this symbol to indicate that a laser is fitted. The user should refer to the laser safety information in the Verification Manual.

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OmniBER 718

About This Book

This Quick Start Guide demonstrates the basic operation of the OmniBER 718, by showing you how to select displays and use them to change the instrument settings, and includes the following sections:

- Introducing the OmniBER Front Panel
- Introducing Smart Test
- Viewing Single or Multiple Windows
- Changing Instrument Settings
- Using the Pop-up Menu
- Viewing Settings on an External Monitor
- Status Alarms

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Manual Conventions

The conventions used in this manual to illustrate instrument keys and display information are as follows:

TRANSMIT

This is an example of a hardkey. Hardkeys (located to the right of the display) are used to give access to different sets of instrument settings, or select dedicated instrument functions. The key shown here displays the transmit settings.

PARALLEL

This is an example of a softkey. Softkeys (located below the display) are used to select instrument settings. The values associated with softkeys change as you move the display cursor from one instrument setting to another.



These are the cursor control keys. They are used to move the display cursor from one instrument setting to another.



This is an example of a pop-up menu. Pop-up menus are an alternative way of selecting instrument settings (instead of using softkeys). To access a pop-up menu, highlight an instrument setting, then use the **SET** key to complete the selection.



This symbol (when it appears next to settings on the display) indicates that there is a pop-up application associated with the instrument setting. To access a pop-up application, highlight the instrument setting which has this symbol, then use the **SET** key.



This symbol appears at the bottom right of the display when an optical transmit module is fitted to the instrument. The symbol's background changes from black to yellow when the optical output is switched on.

Introduction

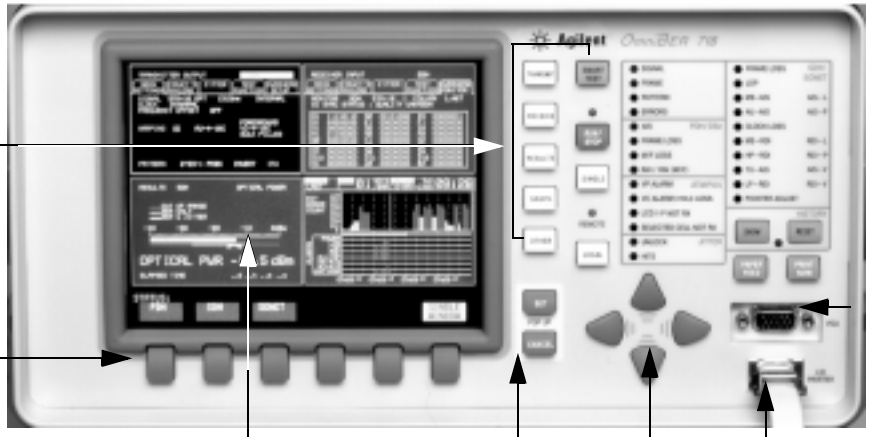
Agilent's OmniBER Communications Performance Analyzer provides all the test capability you need to fully verify the performance of today's high-capacity transmission systems and networks.



The main features of this instrument are:

- Multi-rate BER and Jitter testing from 64 kb/s to 2.5 Gb/s (STM-16/OC-48).
- Packet over SONET/SDH (POS) and ATM payloads up to 2.5 Gb/s.
- Concatenated payload testing up to STM-16c/OC-48c.
- Full PDH/T-carrier test capability.
- Measurement capabilities including protection switching tests, mixed payload generation and analysis, and pointer processing.
- Fast access to key measurement tasks using Smart Test.
- Tandem path test capability.
- Powerful thru-mode testing for SDH/SONET ring turn-up.

Introducing the OmniBER Front Panel



External Monitor Connector

In-lid Printer Connector

Display
Operates in either single or

Softkeys
Select instrument settings. The values displayed on the softkeys are associated with the instrument control currently highlighted by the cursor.

Pop-up menu keys
An alternative way to select instruments settings (instead of using softkeys).

Cursor control keys
Move the display cursor from one instrument setting to another.

Hardkeys

SMART TEST Press this key to access Smart Test settings.

TRANSMIT Press this key to access settings associated with the transmitter.

RECEIVE Press this key to access settings associated with the receiver.

RESULTS Press this key to access settings associated with the test timing and graph storage, and to display measurement results.

GRAPH Press this key to access settings associated with stored graphical results.

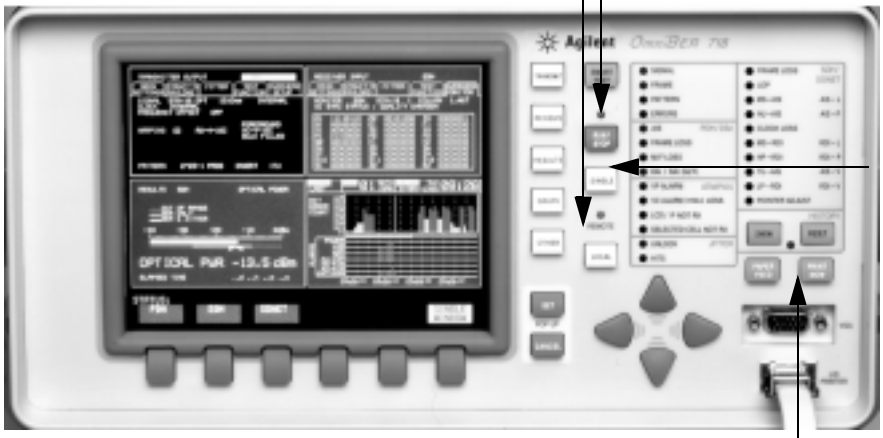
OTHER Press this key to access the following instrument utilities:
Stored Settings; Settings Control; Floppy Disk, Logging (printing); Remote Control; Time & Date; Miscellaneous (settings); Options (and s/w revisions); Self Test; Trigger Output; Calibration and Color Control.

LOCAL

Press this key to return the instrument from Remote to Local control. The indicator above the key lights when the instrument is under Remote control.

RUN/STOP

Press this key to start a new test period or terminate the current test period. The indicator above the key lights when a test period is in progress.



SINGLE

Press this key to add a single error to the transmitted signal. The type of error added is selected on the Error & Alarm display.

PRINT NOW

Press this key to immediately log selected results or screen dumps to the printer.

PAPER FEED

Press this key to advance the paper in the internal printer.

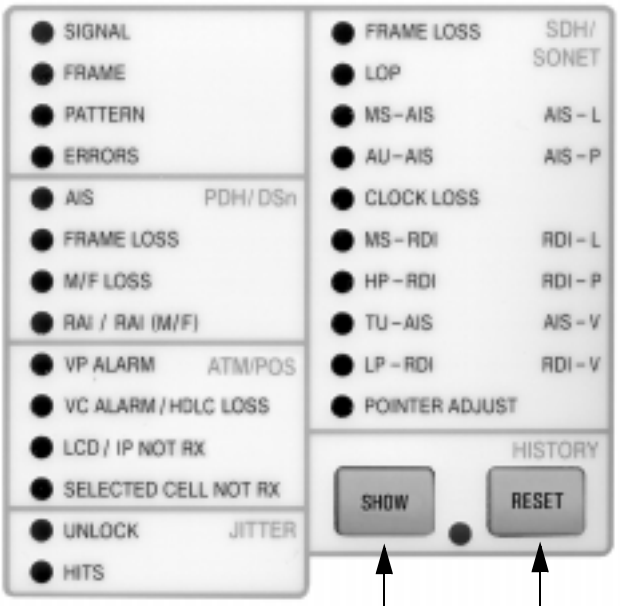
CAUTION

Do not press **PAPER FEED** while loading a new roll of paper in the printer. Wait until the paper is fed through the printer mechanism. A paper jam could result which would disable the printer.

Monitoring Status Alarms

The LED indicators provide information about the current status of the instrument's receiver. If an alarm has occurred during the current test period, the HISTORY indicator lights up. The figure below shows the status indicators for the dual standard SONET/SDH option (Option 002).

These three indicators change from green to red when an alarm conditions occurs.



SHOW

Press and hold this key to view the alarm history. When this key is released the status indicators return to displaying the current status.

The HISTORY indicator lights when an alarm has occurred during the current test period.

RESET

Press this key to reset the HISTORY store (all lit indicators extinguish). If an alarm condition is present during the reset, then the indicators associated with that alarm will remain lit after the reset. The resetting of the HISTORY store also occurs when you start a new test period.

Introducing Smart Test

The Smart Test feature simplifies instrument operation by:

- Allowing the instrument to auto-configure on the incoming signal (Smart Setup). It will attempt to identify signal structure, and detect mixed payload signal structures.
- Allowing you to quickly access the most commonly used instrument features (Smart Tests):
  - Signal quality.
  - Functional tests.
  - ATM tests.
  - POS tests
  - Jitter tests.
  - Settings (stored, logging, Tx/Rx coupling and trigger output enable).

To run Smart Setup:

1 Ensure a valid signal is connected to one of the instrument's Receive ports.

2 Press **SMART TEST**.



3 With Smartsetup highlighted, press **START** to auto-discover information about the receive signal. Or press **CANCEL** to exit Smart Tests.

To run a Smart Test (Signal Quality - Frequency Measurement):

1 Ensure a valid signal is connected to one of the instrument's Receive ports.

2 Press **SMART TEST**.

3 Use the down cursor control keys to select Signal Quality.

4 Use the right cursor control keys to access the tests.

5 Use the up and down cursor control keys to select Frequency Measurement.



6 Press **SELECT** to display the frequency screen. Or press **CANCEL** to exit Smart Tests.

Viewing Single or Multiple Windows

The instrument display can operate in either single or multiple window mode. A key at the bottom right of the display allows you to switch between modes.

Multiple Window Operation

In this mode, four windows of instrument settings appear simultaneously on the display. The active window has a black background, the others have a blue background. The active window in the figure below is the TRANSMITTER OUTPUT.

To make another window active, press either **RECEIVE**, **RESULTS**, **GRAPH** or **OTHER**. Note that the OTHER and GRAPH windows appear at the same location (they cannot be displayed simultaneously).

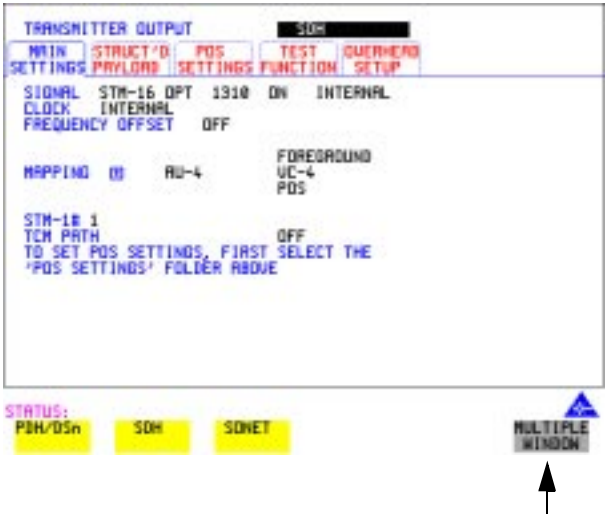


Press this key to select single window mode. The active window is then displayed (in this example - TRANSMITTER OUTPUT would be displayed).

Single Window Operation

In this mode, only one window of instrument settings will appear on the display. The TRANSMITTER OUTPUT is shown in the figure below.

To select another window, press either **RECEIVE**, **RESULTS**, **GRAPH** or **OTHER**.



Press this key to select multiple windows.

Changing Instrument Settings

Instrument settings that can be changed are displayed using white text (the cursor marks the currently selected setting field).



To change instrument settings:

1 Use the cursor control keys to move from one instrument setting to another. When you select a setting, the associated values are displayed on the softkey labels located at the bottom of the display.

2 Press the appropriate softkey to make your selection. When a setting has more than five values, press **MORE** to access the other values.





Alternatively, you can use the instrument's pop-up menu feature to make your selection. With the cursor on the required setting field, press **SET** to display a pop-up menu containing the associated values. Use the up or down cursor control keys to make your selection, then press **SET**.



Or press **CANCEL** to retain the current settings.

In some cases when you press **SET**, instead of a pop-up menu you get a pop-up alphanumeric keypad. Examples of settings associated with the keypad are: selecting user defined Path Trace messages (in the Overhead Setup screen of the **Transmitter Output** window), or assigning a name to a stored configuration (in the Stored Settings screen of the **Other** *window)*.

To access the pop-up keypad (to assign a name to stored a configuration):

1 Press **OTHER**.



2 Press **STORED SETTINGS**.

3 Use the down cursor control key to move the cursor into the STORED SETTING NUBMER field. Press the appropriate soft key to make a selection between 1 and 4.

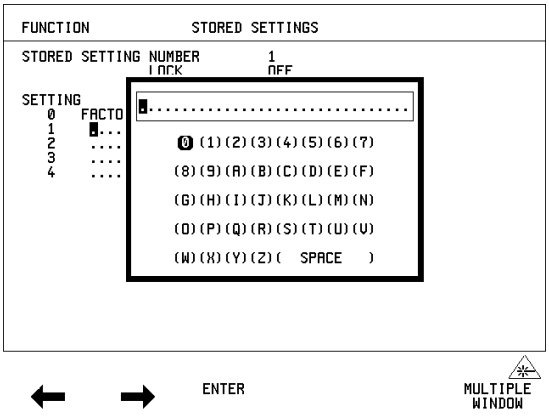
4 Use the down cursor control key to move to the LOCK field and set to OFF

5 Use the up or down cursor control keys to place the cursor on the store location to be assigned a name.

6 Press **SET**.



7 Use the cursor control keys to select the character you want from the keypad, then press **SET**.



8 Repeat the previous step till you complete the name.



If you need to change any of the characters in the name, use the left and right softkeys to select the appropriate character, then repeat the previous step to select the character you want from the keypad.

9 Press **ENTER** to apply the name to the stored setting.

Viewing the Contents of Folders

The instrument settings in the *Transmitter Output, Receiver Input, Results* windows are contained in folders. The figure below shows the folders in the *Transmitter Output* window.

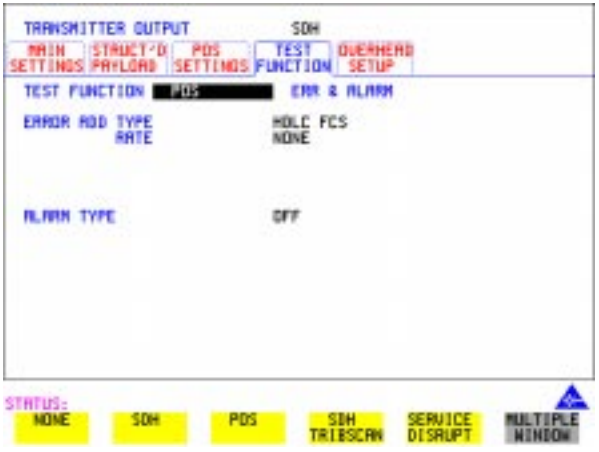
To view the contents of the Test Function folder:

1 Press **TRANSMIT**.





2 Use the down or up cursor control keys to place the cursor on the currently selected folder name. Now use the left or right cursor control keys to select the Test Function folder.



Using the Pop-up Application



This symbol indicates that there is a pop-up application associated with the instrument setting.

A pop-up application is used to simplified the setting up of complex instrument configurations. In a pop-up application, instrument settings are presented to you as a pictorial or graphic “map” display.

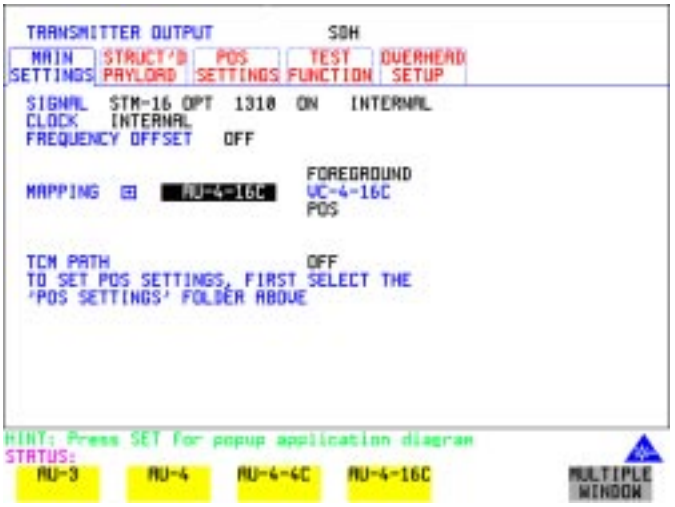
NOTE The modules and options fitted to your instrument determine the pop-up application that will be available to you.

To set up the SDH/SONET Payload Mapping (using the pop-up application):

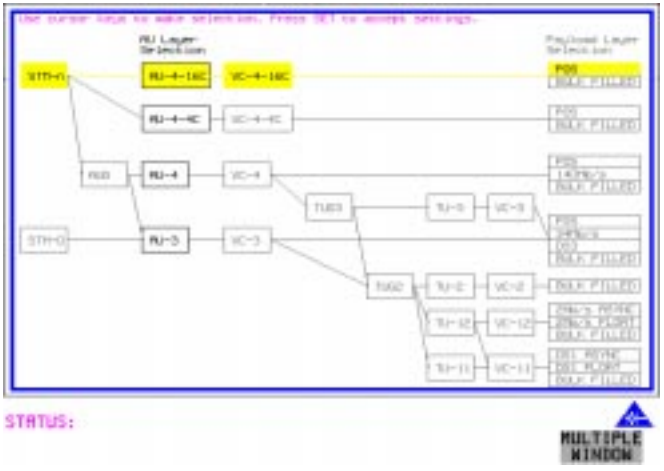
1 Press **TRANSMIT**.



2 Use the cursor control keys to select the Main Settings folder, then the MAPPING settings.



3 Press **SET** to display the payload map.



To change between AU/SPE-layer, TU/VT-layer and Payload layer selections:

4 Use the left and right cursor control keys.

To select the mapping you want:

5 Use the up and down cursor control keys.

To select the new value:

6 Press **SET**.
or
Press **CANCEL** to exit the pop-up application without making the change.

Viewing Settings on an External Monitor

For easier viewing, the instrument settings may be viewed on an external standard VGA monitor or projector.

To view instrument settings on an external monitor:

1 Connect the external monitor to the instruments front panel VGA connector.

2 Switch-on the external monitor.

3 The instrument settings will now appear on the external monitor.

Status Alarms

General Alarm Indicators

The SIGNAL, FRAME, and PATTERN indicators are green if the signal is good, and red during an alarm condition.

SIGNAL	**Green:** Valid signal (level; data transitions) detected at input. **Red:** No data transitions detected at input.
FRAME	**Green:** Correct framing detected at all levels of the received signal (on the line signal plus all levels down to the selected test channel). **Red:** Frame alignment lost at one or more levels of the received signal.
PATTERN	**Green**: Correct detection of expected test pattern. **Red:** Expected test pattern not received.
ERRORS	A measured error has occurred. The indicator will remain lit for 100 ms.

PDH / DSn Alarm Indicators

These are active when a PDH / DSn signal is received

AIS	AIS detected.
FRAME LOSS	Frame alignment lost or out of alignment condition.
M/F LOSS	Multiframe alignment lost.
RAI/ RAI (M/F)	Remote alarm (x-bit or yellow alarm bit is set) or Remote Multiframe Alarm bit is set.

ATM/POS Alarm Indicators

This group of red LED's is active when an ATM or POS signal is received.

VP ALARM	Virtual Path AIS or FERF has been detected.
VC ALARM /	Virtual Channel AIS or FERF has been detected.
HDLC LOSS	Applies to POS signals when the receiver detects 4 consecutive frames with FCS errors, or No activity (2^{17} bytes without a flag octet (0x7E))
LCD/	Loss of Cell Delineation has been detected. This occurs when 7 consecutive header errors have occurred.
IP NOT RX	Applies to POS signals when no IP packets were receivd in the last 100ms.
SELECTED CELL NOT RX	The selected cell has not been received.

Jitter Alarm Indicators

UNLOCK	The jitter receiver has lost phase lock. Jitter measurement is suspended until lock is regained.
HITS	A jitter hit has been detected.

SDH Alarm Indicators

These are active when an SDH signal is received.

FRAME LOSS	Loss of Frame has been detected.
LOP	Loss of pointer has been detected.
MS-AIS	Multiplexer Section AIS has been detected.
AU-AIS	Path AIS has been detected.
CLOCK LOSS	The transmitter clock is not synchronized to the selected reference.
MS-RDI	Multiplexer Section RDI (FERF) has been detected.
HP-RDI	Path RDI (FERF) has been detected.
TU-AIS	TU Path AIS has been detected.
LP-RDI	TU Path RDI (FERF) has been detected.
POINTER ADJUST	A pointer change in the foreground signal has been detected.

SONET Alarm Indicators

These are active when an SONET signal is received.

FRAME LOSS	Loss of Frame or Severely Errored Frame has been detected. Status message on bottom of display states which has occurred.
LOP	Loss of Pointer has been detected.
AIS-L	Line AIS has been detected.
AIS-P	STS Path AIS has been detected.
CLOCK LOSS	The transmitter clock is not synchronized to the selected reference.
RDI-L	Line RDI (FERF) has been detected.
RDI-P	Path RDI (FERF) has been detected.
AIS-V	VT Path AIS has been detected.
RDI-V	VT Path RDI (FERF) has been detected.
POINTER ADJUST	A pointer change associated with the foreground test channel has been detected (either STS pointer or VT pointer).

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Sales and Service Offices

An up-to-date list of Agilent Offices is available through the Agilent Technologies Website at URL:
http://www.agilent.com.

In This Book

This guide tells you about the front panel key functions, the indicators and the connectors.

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