

Quick Start Guide

OmnIBER 719



Agilent Technologies

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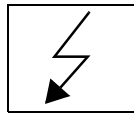
WARNING

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



EN 60825 1991

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.

OmniBER 719

About This Book

This Quick Start Guide demonstrates the basic operation of the OmniBER 719, 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

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.

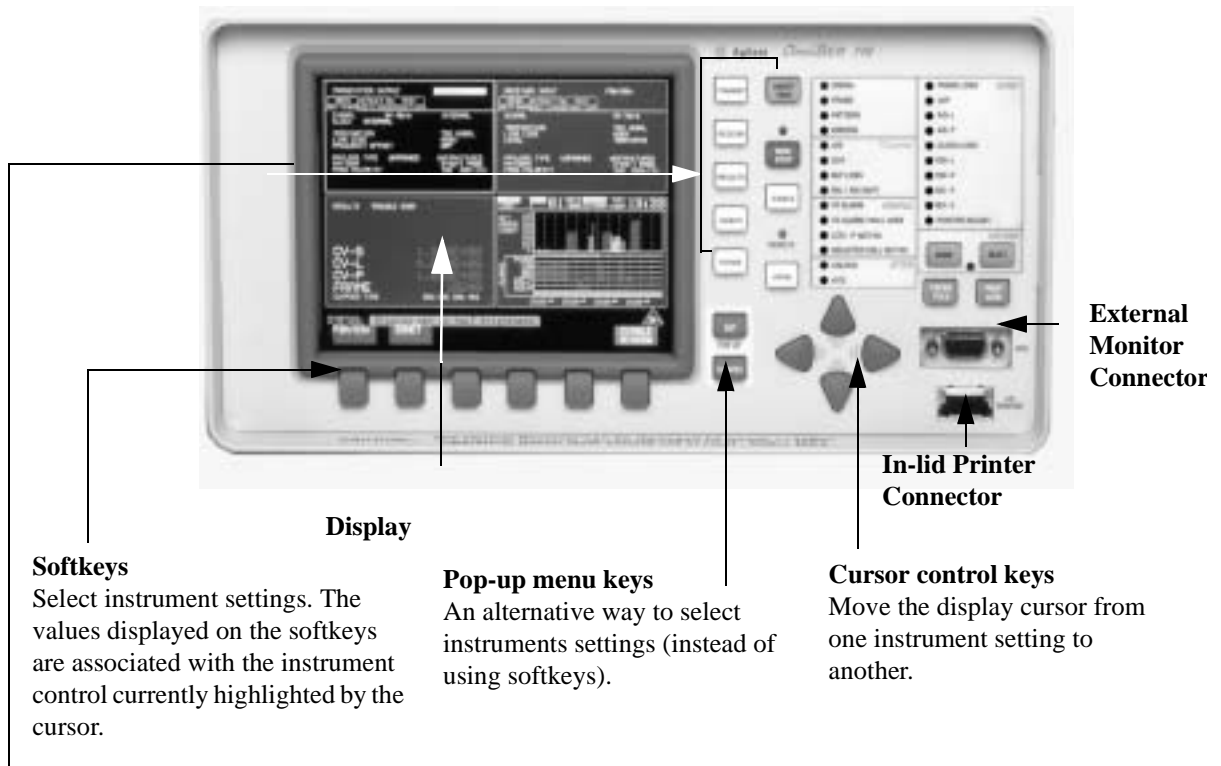


The main features of this instrument are:

- Multi-rate BER and Jitter transmission testing from DS0 to OC-48.
- Supports concatenated payloads to OC-48c.
- T-carrier testing.
- Direct measurement of protection switching time.
- Powerful thru-mode testing for SONET ring turn-up.
- Comprehensive SONET overhead testing.
- Packet over SONET/SDH (POS) and ATM payloads up to 2.5 Gb/s.
- Fast access to key measurement tasks using Smart Test.

Introducing the OmniBER Front Panel

Introducing the OmniBER Front Panel



Softkeys

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

Display

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.

External Monitor Connector

In-lid Printer Connector

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.

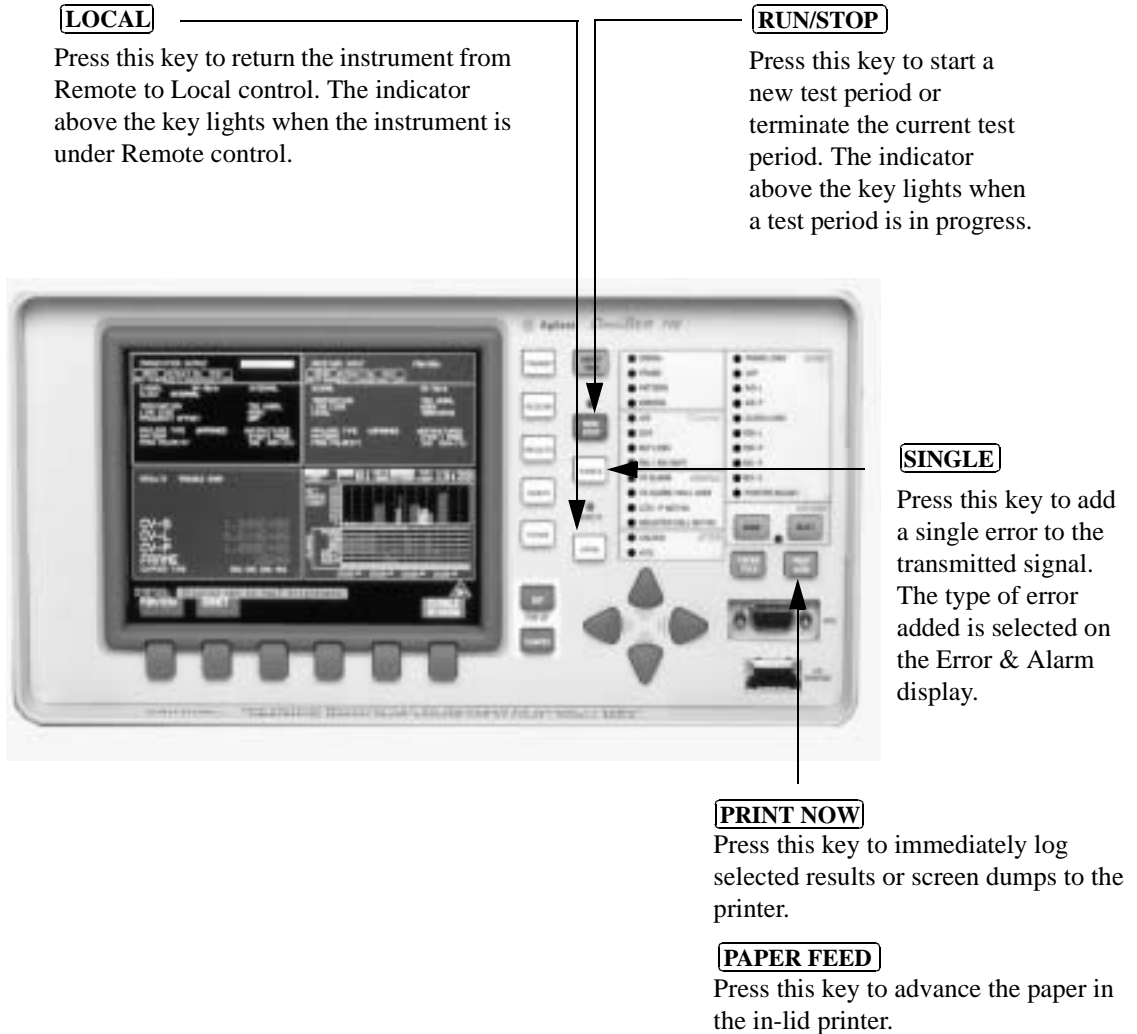
GRAPH

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.

Introducing the OmniBER Front Panel



CAUTION

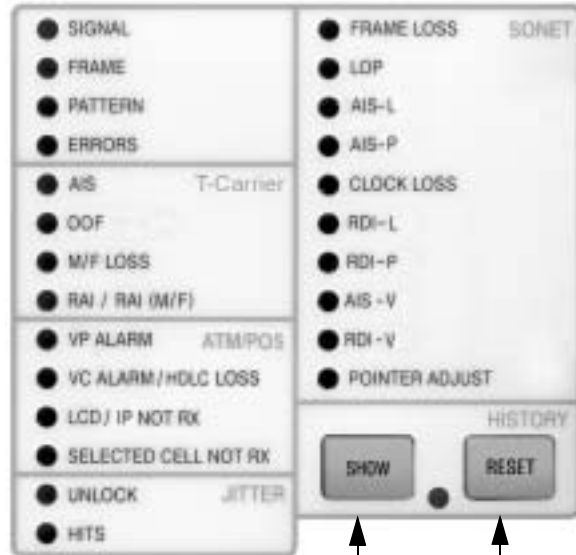
Do not press **PAPER FEED** while loading a new roll of paper in the printer. Wait until the paper is fed through the printer mechanism. A paper jam could result which would disable the printer.

Introducing the OmniBER Front Panel

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.

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

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**.

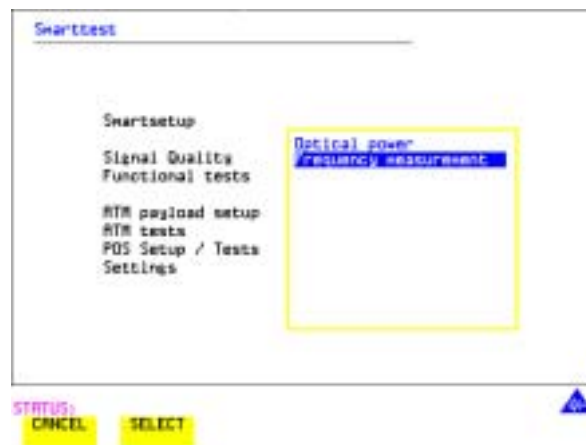


- 3 With Smartsetup highlighted, press **START** to auto-discover information about the receive signal. Or press **CANCEL** to exit Smart Tests.

Introducing Smart Test

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

Viewing Single or Multiple Windows

The instrument display can operate in either single or multiple window mode. The softkey 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).

Viewing Single or Multiple Windows

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

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.

Changing Instrument Settings

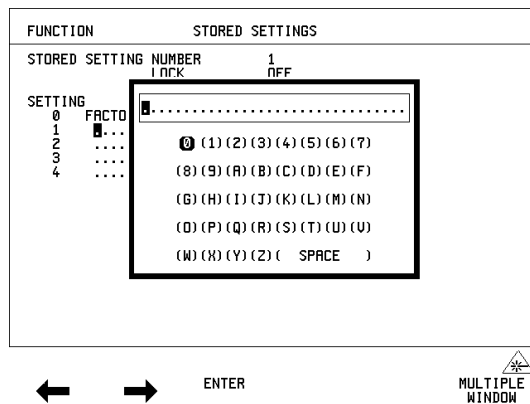
In some cases when you press **SET**, instead of a pop-up menu you get a pop-up alphanumeric keypad. Examples of settings associated with the keypad are: selecting user defined Path Trace messages (in the Overhead Setup screen of the **Transmitter Output** window), or assigning a name to a stored configuration (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 up or down cursor control keys to place the cursor on the store location to be assigned a name.



- 4 Press **SET**.
- 5 Use the cursor control keys to select the character you want from the keypad, then press **SET**.



- 6 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.

- 7 Press **ENTER** to apply the name to the stored setting.

Changing Instrument Settings

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 **TRANSMT** .



- 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

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 simplify 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 SONET Payload Mapping (using the pop-up application):

- 1 Press **TRANSMIT** .

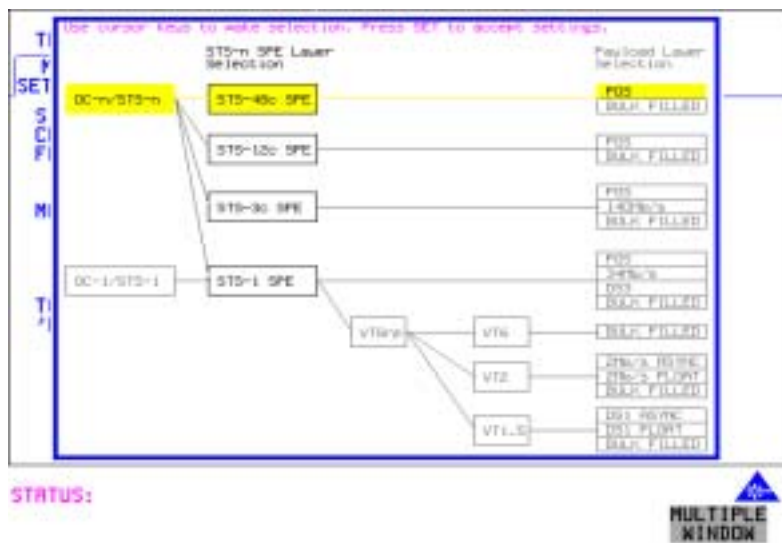


Using the Pop-up Application

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



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



To change between SPE-layer selections and the Payload- layer selections:

- Use the left and right cursor control keys.

Viewing Settings on an External Monitor

To select the mapping you want:

- 5 Use the up and down cursor control keys.

To select the new settings:

- 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 instrument's front panel VGA connector.
- 2 Switch-on the external monitor.
- 3 The instrument settings will now appear on the external monitor.

Status Alarms

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.

T-carrier Alarm Indicators

This group of red LED's is active when a DS_n (or E_n) signal is received (either as a line signal or as mapped SONET payload).

AIS	AIS detected.
OOF	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.

Status Alarms

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	The instrument 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	No IP packets received in the last 100ms.
SELECTED CELL NOT RX	The selected cell has not been received.

SONET Alarm Indicators

This group of red LED's is active when a SONET signal is received.

FRAME LOSS	Loss of Frame or Severely Errored Framing has been detected. Status message on display states which has occurred.
LOP	Loss of pointer has been detected (at either STS Path or VT Path level).
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).

Status Alarms

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.

Status Alarms

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<http://www.agilent.com>.

In This Book

This guide demonstrates the basic operation of the instrument. It tells you how to select the displays that you want and how to use them to modify the instrument functions.

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

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