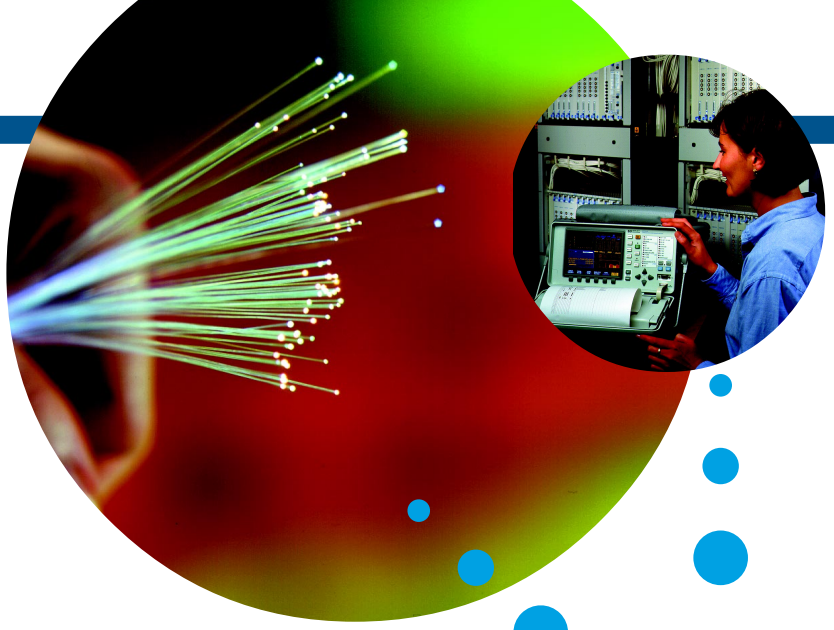

Quick Start Guide

OmniBER 720

Agilent Technologies

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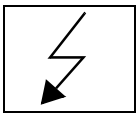

The product is marked with this symbol to indicate that hazardous voltages are present

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 720

About This Book

This Quick Start Guide demonstrates the basic operation of the Agilent Technologies OmniBER 720, 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

Contents

Manual Conventions

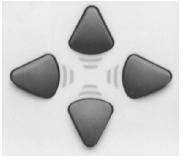
The conventions used in this manual to illustrate instrument keys and display information are as follows:

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.

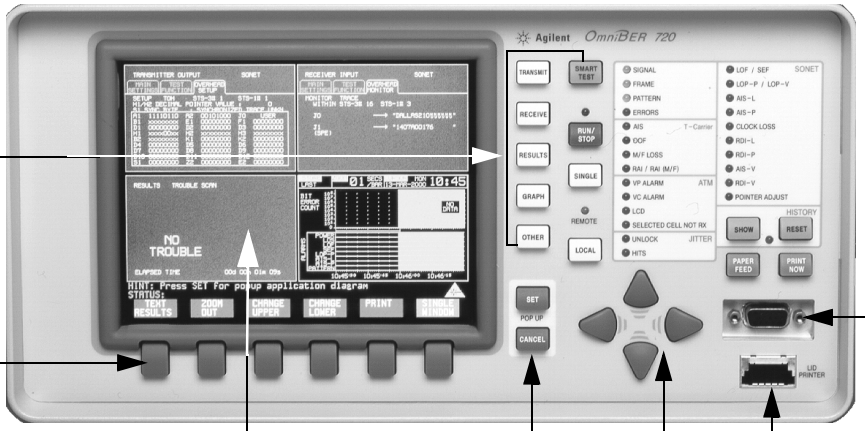
Introduction

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

The main features of a dual standard (SDH/SONET) instrument are as follows:

- Multi-rate transmission testing from OC-1 to OC-48 and STM-0 to STM-16 optical.
- Supports concatenated payloads of STS-48c to VT 1.5 and AU-4-16c to TU-11.
- Optical power and line frequency measurements.
- Powerful thru-mode testing for SDH/SONET ring turn-up.
- Comprehensive SDH/SONET overhead testing.
- Fast access to key measurement tasks via Smart Test.
- Tandem path test capability (TCM).

Introducing the OmniBER Front Panel



Display
Operates in either single or multiple window mode.

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.

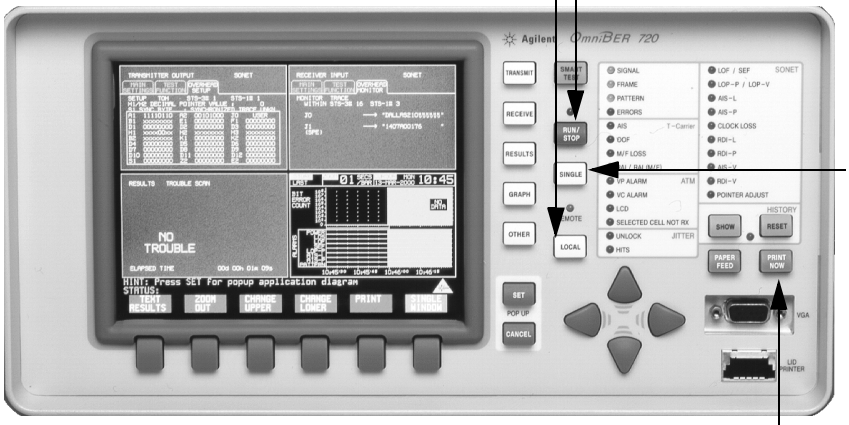
OTHER Press this key to access the following instrument utilities:
Stored Settings; Settings Control; Floppy Disk, Logging (printing); Remote Control; Time & Date; Miscellaneous (settings); Options (and s/w revisions); Self Test; Trigger Output; Calibration and Color Control.

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 in-lid printer.

CAUTION

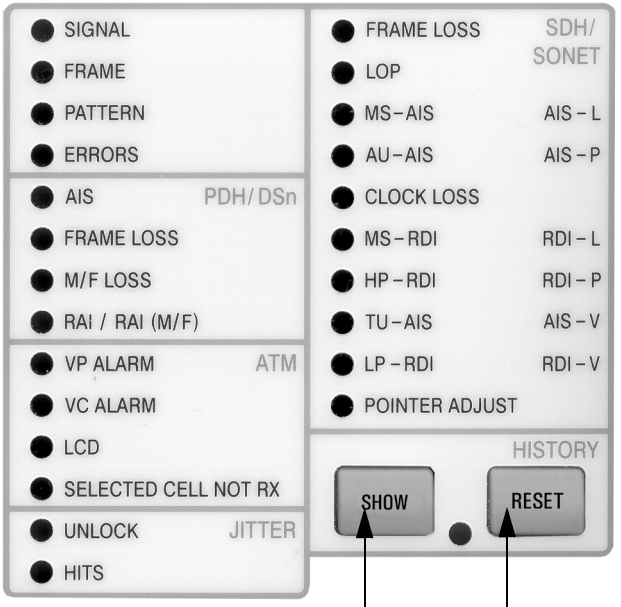
Do not press **PAPER FEED** while loading a new roll of paper in the printer. Wait until the paper is fed through the printer mechanism. A paper jam could result which would disable the printer.

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.

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

The PDH/DSn, ATM and JITTER alarm indicators are not used by the OmniBER 720.



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

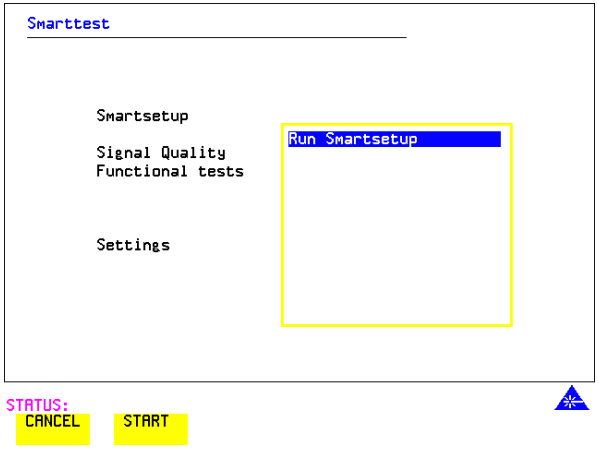
The Smart Test feature simplifies instrument operation by:

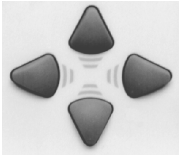
- Allowing the instrument to auto-configure on the incoming signal (Smartsetup). It will attempt to identify signal structure, and detect mixed payload signal structures.
- Allowing you to quickly access the most commonly used instrument features (Smart Test):
  - Signal quality
  - Functional tests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

To run Smartsetup:

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

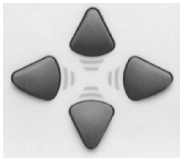
2 Press **SMART TEST**.





3 Use the right cursor key to highlight Run Smartsetup, 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):



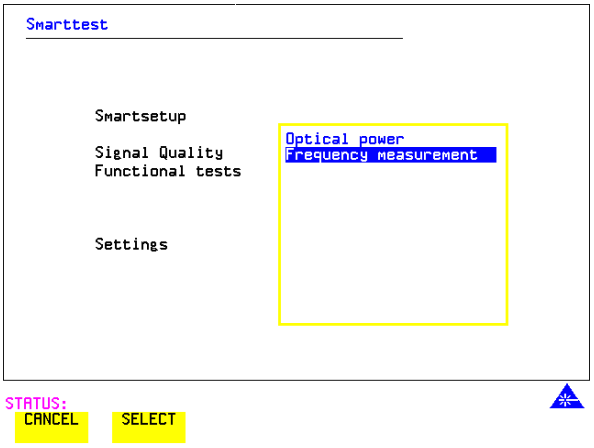
1 Ensure a valid signal is connected to one of the instrument's Receive ports.

2 Press **SMART TEST**.

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

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

5 Use the down cursor control key to select Frequency Measurement.



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

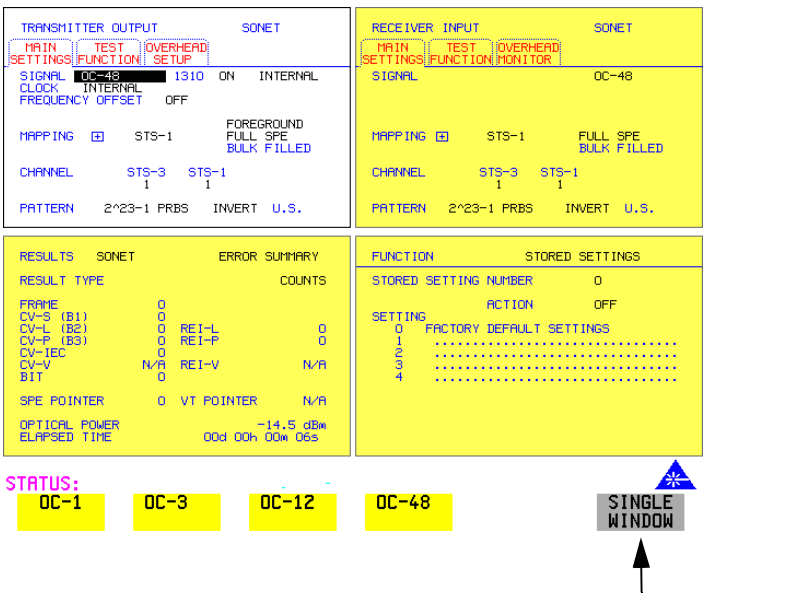
Viewing Single or Multiple Windows

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

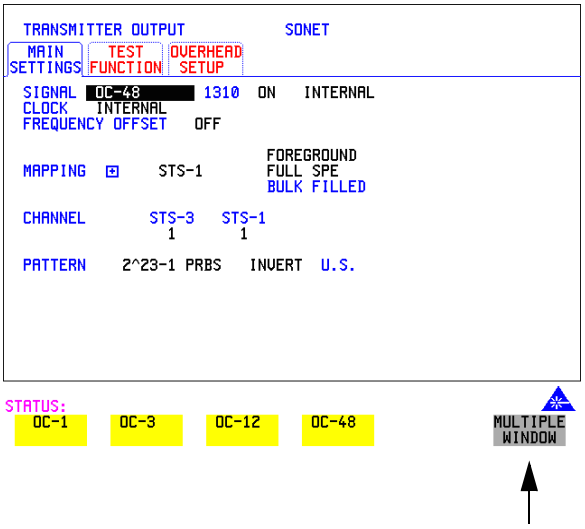


Press this key to select single window mode. The active window is then displayed (in this example TRANSMITTER OUTPUT would be displayed).

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.

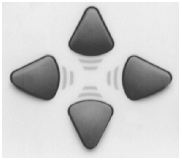
To select another window, press either **RECEIVE**, **RESULTS**, **GRAPH** or **OTHER**.



Press this key to select multiple windows.

Changing Instrument Settings

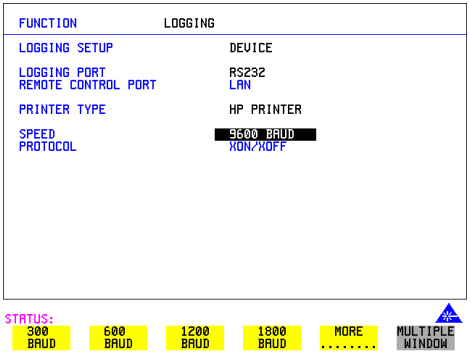
Instrument settings that can be changed are displayed using white text (the cursor marks the currently selected setting field).



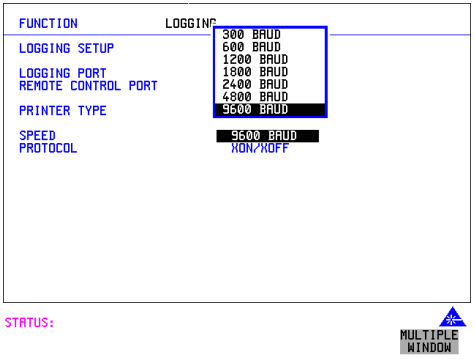
To change instrument settings:

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**.



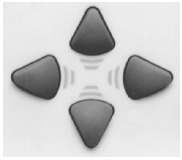
Or press **CANCEL** to retain the current settings.

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**.

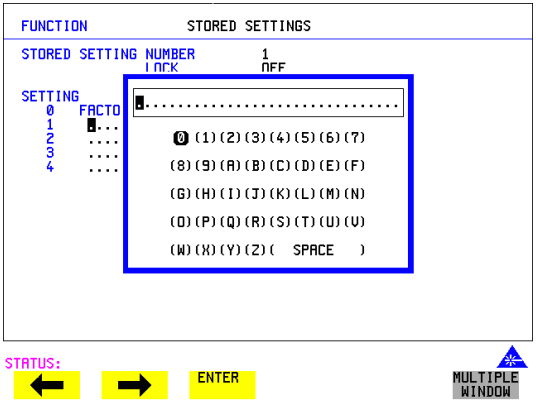


3 Use the down cursor key to place the cursor on STORED SETTING NUMBER, then select the store location number that you want to name (1 through 4). Ensure that LOCK is set to OFF.

4 Use the down cursor control key to place the cursor on the store location number selected in the previous step.

5 Press **SET** to view the pop-up keypad.

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



7 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.

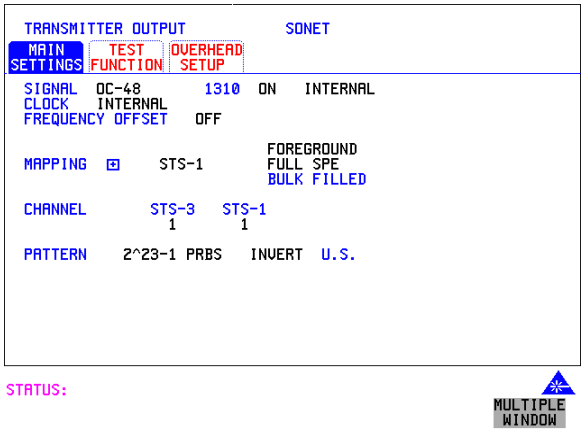
8 Press **ENTER** to apply the name to the stored setting.

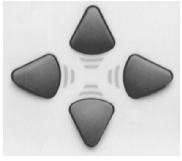
Viewing the Contents of Folders

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.

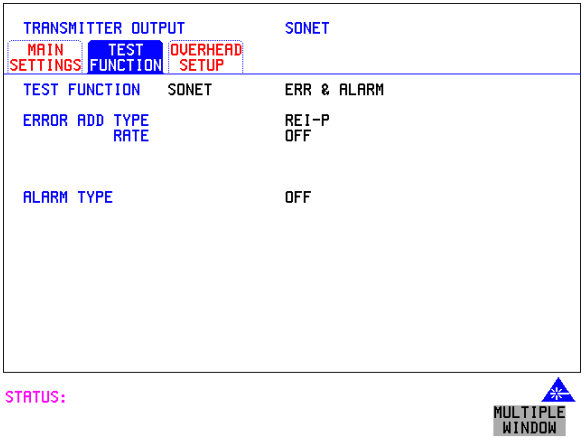
To view the contents of the Test Function folder:

1 Press **TRANSMIT** .





2 Use the 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.

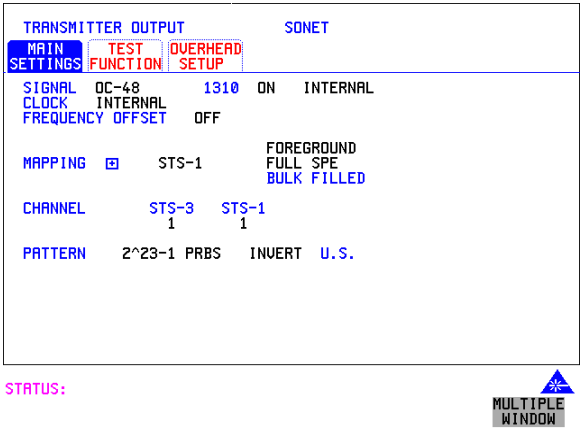
A pop-up application is used to simplify setting up of complex instrument configurations. In a pop-up application, instrument settings are presented to you as a pictorial or graphic “map” display.

NOTE

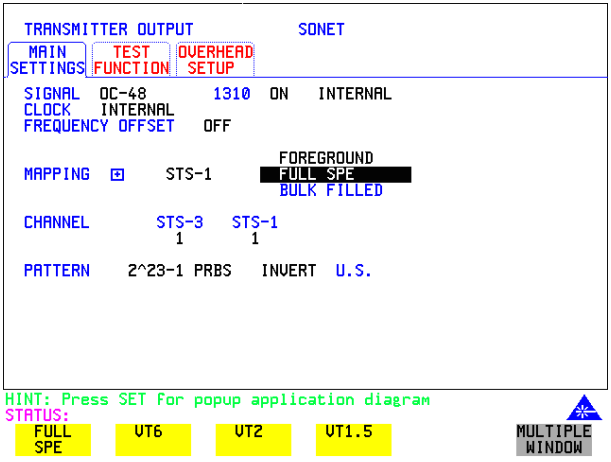
The modules and options fitted to your instrument determine the pop-up application that will be available to you.

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

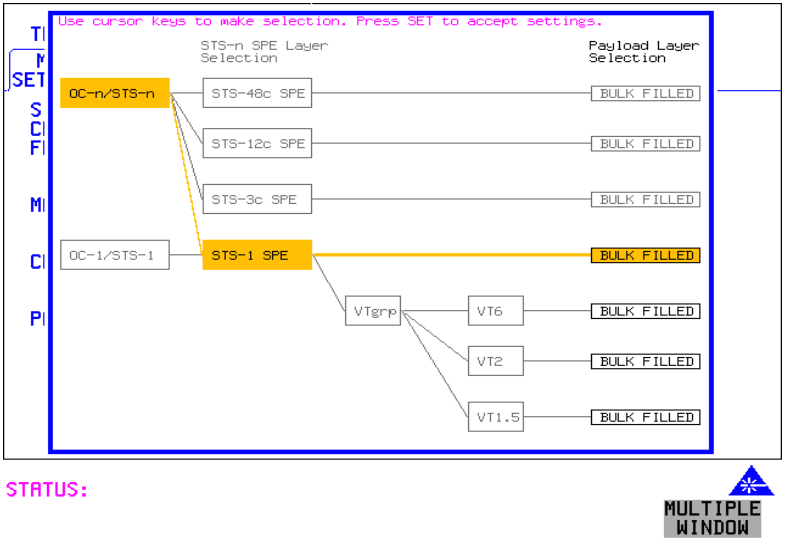
1 Press **TRANSMIT** .



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 selections and the 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 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

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 and data transitions) detected at input. **Red:** No data transitions detected at the input, or input power level too low.
FRAME	**Green:** Correct framing detected on all levels of the received signal. **Red:** Frame alignment lost on any level of the received signal.
PATTERN	**Green**: Correct detection of expected test pattern. **Red:** Expected test pattern not received.
ERRORS	An error has been detected. The indicator will remain lit for 100 ms.

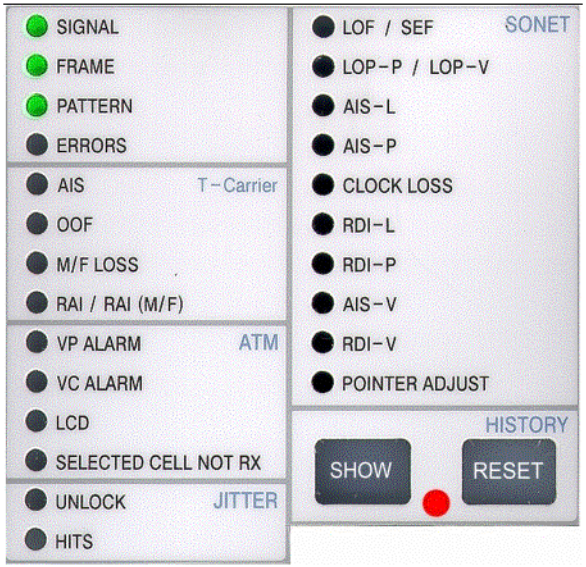
SDH Alarm Indicators

These are active when an SDH signal is received.

FRAME LOSS	Loss of Frame has been detected.
LOP	Loss of pointer has been detected (either AU or TU).
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 (either AU or TU).

SONET Alarm Indicators

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



LOF/SEF	Loss of Frame or Severely Errored Framing has been detected.
LOP-P/LOP-V	Loss of pointer has been detected (at either STS Path or VT Path level).
AIS-L	Line AIS has been detected.
AIS-P	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).

Index

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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