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Quick Start
Guide

# HP 37717C
# Communications
# Performance Analyzer

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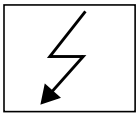
**WARNING**

For details of safety, see Safety information at the front of the Calibration 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




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Quick Start Guide

# HP 37717C Communications Performance Analyzer

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# About This Book

The Quick Start Guide demonstrates the basic operation of the instrument.

This guide 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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# Getting Started

This chapter shows you how to select and change displays

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# Getting Started

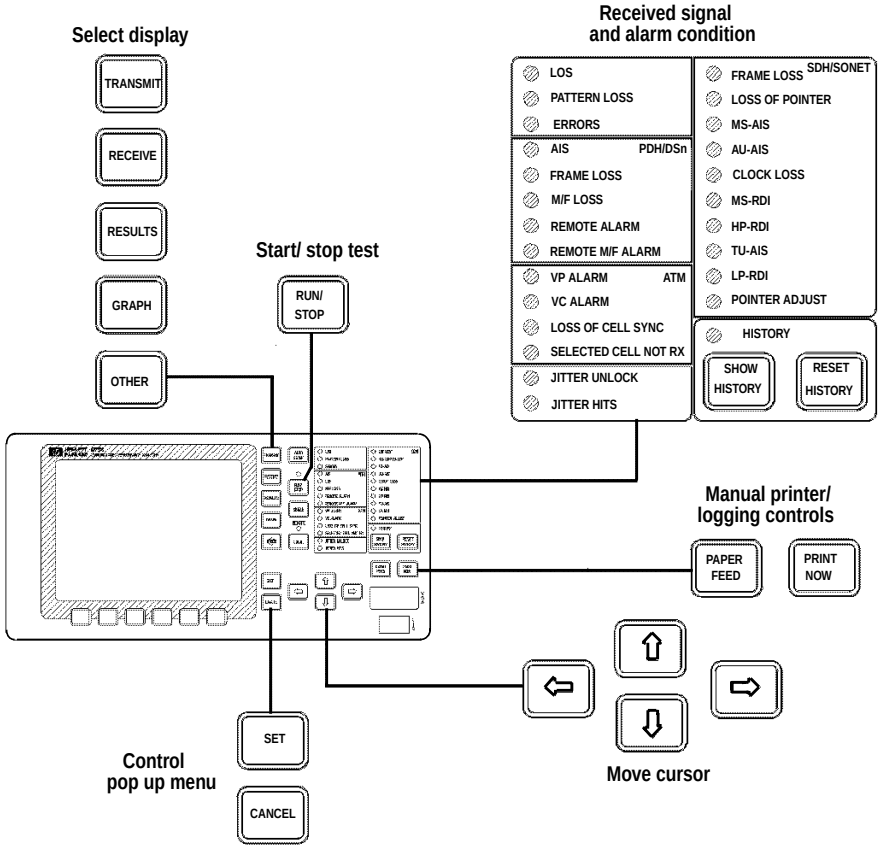
Getting Started shows you how to select displays and use them to change the instrument settings. Getting started includes the following:

- How to select single or multiple windows
- How to obtain the required display using the display select keys, TRANSMIT ; RECEIVE ; RESULTS ; GRAPH ; OTHER
- How to modify the display information, using ↓ ↑ → and ← and the display softkeys or pop-up menus
- How to use the other front panel keys
- How to interpret the front panel status indicators
- How to connect to external equipment



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# Introduction to the 37717C Front Panel




The operator interface is provided by the display and the front panel keys.

The display may be multiple windows or a single window.

When the display is multiple windows, the "active" window is indicated with a color which is different from the color of the three "inactive" windows.



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# Selecting Displays

A multiple window display is available. The displayed pages are: Transmitter Output, Receiver Input, Results and either Graph or Other (Function).




**TRANSMIT** Allows control of the settings associated with the generated signal.

**RECEIVE** Allows control of the settings associated with the received signal.

**RESULTS** Allows control of the test timing and graph storage and displays the selected measurement results.

**GRAPH** Allows management of the stored graphical results.

**OTHER** Allows control of Stored Settings, Settings Control, Floppy Disk, Logging, Remote Control, Time & Date, Miscellaneous (Keyboard Lock, Beep on Received Error, Suspend Test on Signal Loss), Option and Option Enable, Calibration, Autosetup and Color Control.

A list of Options fitted is also displayed.



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## Selecting Multiple or Single Windows

To select single window, use the display keys [TRANSMIT]; [RECEIVE]; [RESULTS]; [GRAPH] and [OTHER] , to select the display required and then press **SINGLE WINDOW**.

Most examples in this manual use SINGLE window. To return to multiple windows, press **MULTIPLE WINDOW**.

Example: To obtain a single window transmit display, Use [TRANSMIT] to make the transmit window active.






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Use **SINGLE WINDOW** to obtain a single transmit window display



To change the page displayed in the single window, press the page key for the page required (e.g. RECEIVE, RESULTS, GRAPH or OTHER) .

When returning to multiple windows, the current single window display will become the active display within the multiple windows.

## Moving Around Multiple Windows

To move the cursor to another of the displayed windows, press the display selection key for that window.

**Example**: The cursor is in the TRANSMITTER OUTPUT window at the top left of the display.

.






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If you want to make changes to the receive display, you need to make the receive display "active". To move the cursor to the RECEIVER INPUT window at the top right of the display, press **RECEIVE**.




## Selecting the Graph or Other Display in Multiple Windows

Press **OTHER** or **GRAPH** for the display that you want.

**Example:** To change the display from **OTHER** to **GRAPH**. Press **GRAPH** .

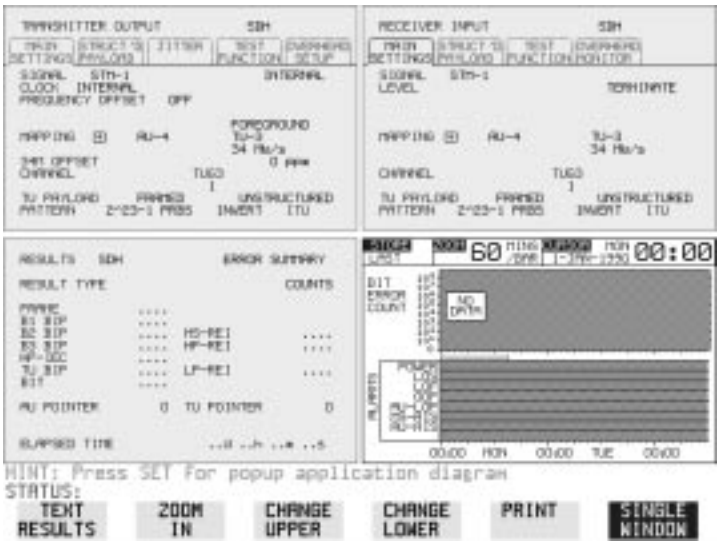


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Display with **OTHER** FUNCTION




Press **GRAPH** to change to the graph display






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## Changing the Displayed Folder

Many windows displayed with the TRANSMIT ; RECEIVE ;and RESULTS keys contain a number of "folders" which may be selected with ➡ and ⬅ .

For example, in the display given below there are five "folders" MAIN SETTINGS, STRUCT'D SETTINGS, JITTER and TEST FUNCTION. In this example MAIN SETTINGS is the current selection.




**Example:**

To change the PDH display shown from MAIN SETTINGS to STRUCTURED SETTINGS.



**Use ➡.**



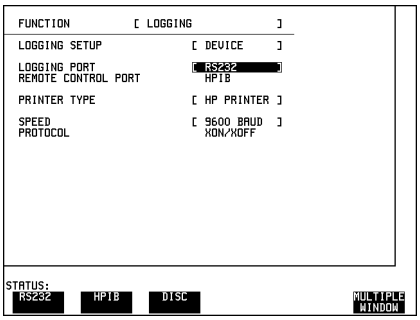


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# Changing the Instrument Settings

Settings which may be changed are displayed in a different color to those which are fixed. In this manual, variable settings are shown on the displays in [ ].

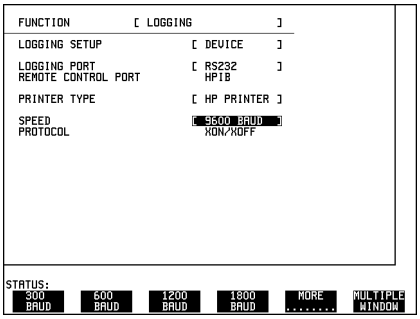
In each of the display areas the field currently able to be changed is marked by a highlighted cursor.




The highlighted cursor is moved around the display using ↓ ↑ → and ←.

The menu of selections available, for the highlighted field, appears at the bottom of the display: **RS232**; **HP IB** ; **DISK**. The choice from the menu is made using the display softkeys situated immediately below the display.

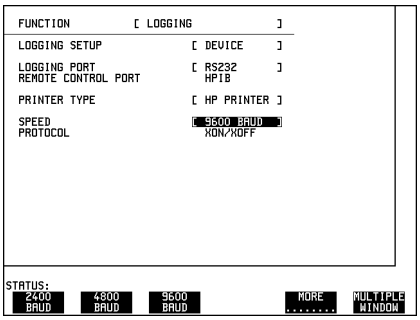
When a field has more than five choices, as in SPEED shown here, a softkey labelled **MORE** is provided.






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When **MORE** is chosen the remainder of the menu is revealed.






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## Modifying Displays with Pop-up Menus

Although the method of modifying the displays with softkeys is always available, it is easier in many cases to use the Pop-up menus.

The pop-up menus are particularly useful for:

- Text entry
- Date/time entry
- Integer, Hexadecimal and Binary entry
- Trace data entry
- Menu selection when there are a large number of choices
- SDH/SONET payload mapping
- ATM physical and adaptation layer selections
- Jitter mask selections

If an attempt is made to set out of range values, the instrument will adopt the nearest possible legal value.

### Text, Trace Data, Date and Time, Integer and Hexadecimal Selection.

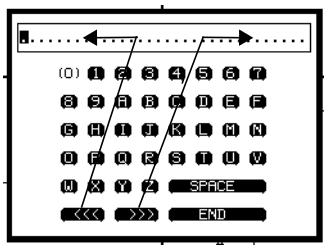
Move the cursor to the field to be changed.

Press SET for the pop-up menu.

The current selection is shown in a window at the top of the pop-up menu.

To move through the current setting in the window use ↓ ↑ → and ← to select <<< or >>>.

Use SET to move to the required field.

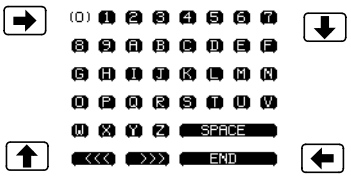





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## Changing the Instrument Settings

Select the required character or function on the pop-up menu with ↓ ↑ → and ←.



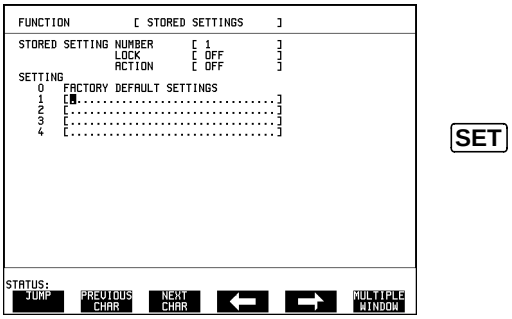

Press **SET** to set the selection in the window at the top of the pop-up menu.

When the required content is displayed in the window at the top of the pop-up menu, select **END** and press **SET** to change the instrument setting to the new value.

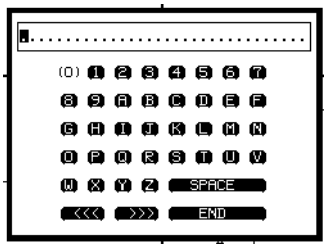
To exit the menu display without making the change, press **CANCEL**.

**Example:**

The pop-up menu provides a more convenient method of entering stored setting titles. Move the cursor into one of the title fields and press **SET**.




**SET**






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### Binary Entry

For fields which require binary data entry, use SET to display the pop-up menu.

The current setting is shown in a window at the top of the pop-up menu.

To move through the selected entry with the pop-up menu use <<< and >>> see page 16.

Binary selection is achieved with ← = 0 and → = 1. This operation enters the selected character, 0 or 1, and moves to the next character.

This method allows rapid setting of binary words. For example:

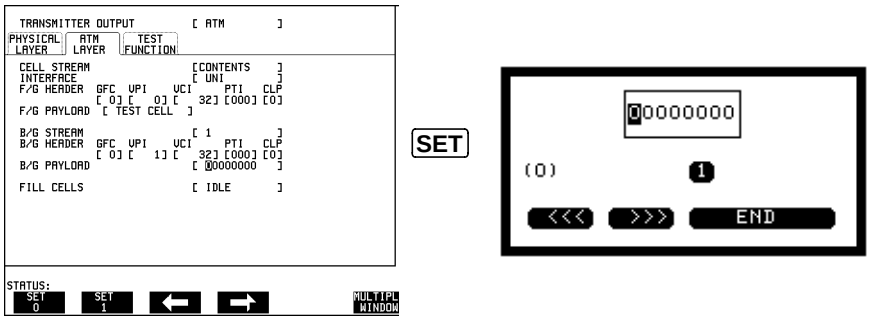
To set the word 11110011 Use → → → → ← ← → →.

Selection of the last character changes the instrument setting to the new value.

To exit the menu display without making the change, press CANCEL.

Example:

The binary pop-up menu maybe used to set up a user defined word. In this example the user defined word is an ATM payload background byte.





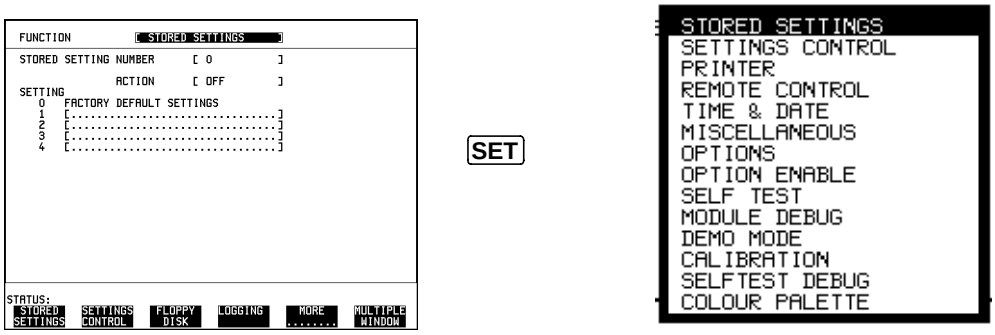

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### Menu Selection

There is a menu selection available as an alternative to any group of soft keys. Display the menu with SET. Use ↑ and ↓ to make the selection.

To change to the new value, press SET . To exit the display without making the change, press CANCEL.

**Example:**






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## Making Selections using Pictorial and Graphic Displays.

In some cases selection is simplified with a pictorial or graphic "map" display. This facility is available where the display has a ⊞ symbol. These displays are obtained in the same way as the pop-up menus using SET. Some of these displays include menus which allow the settings to be changed.

**NOTE** Details of the pictorial display depend on the optional modules fitted to the instrument.

### SDH Payload Mapping

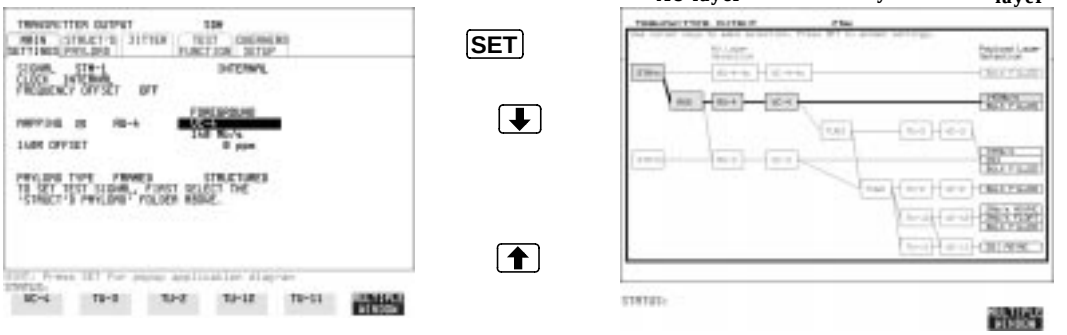
With the cursor in the MAPPING field, press SET to display the payload map.

To change between AU- layer, TU-layer and Payload layer selections, use ← and → .

To select the mapping you want, use ↑ and ↓ .

To change to the new value, press SET . To exit the map display without making the change, press CANCEL.

.**Example:**






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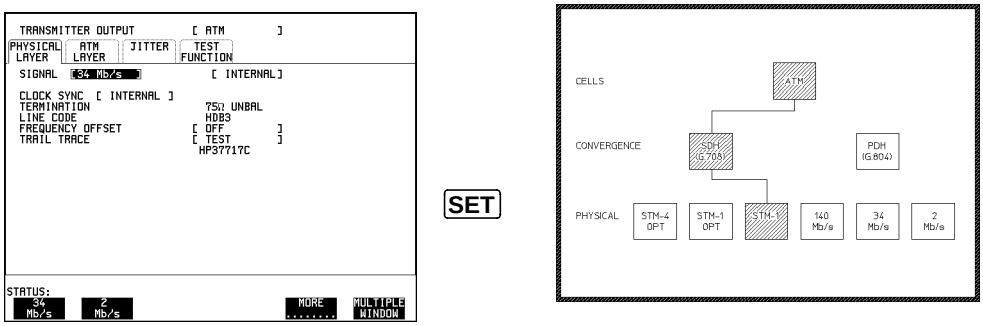
### ATM Physical Layer Selections

With the cursor in the ATM, PHYSICAL LAYER, SIGNAL field, press SET to display the physical interface. Use ← and → to select the interface you want.

To change to the new value, press SET .

To exit the map display without making the change, press CANCEL.

**Example:**






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### Jitter Mask Selection

Graphical displays of jitter mask selections are available. The current settings are shown by a marker on the graphical display.

### Jitter Mask set to Off

To obtain a graphical display, move the cursor to RANGE, MODULATION FREQUENCY, or AMPLITUDE and press SET.

To change a value, use ← → ↑ and ↓ to select the parameter you want to change, RANGE, MOD FREQ OR AMPLITUDE.

Press SET for a pop-up menu.

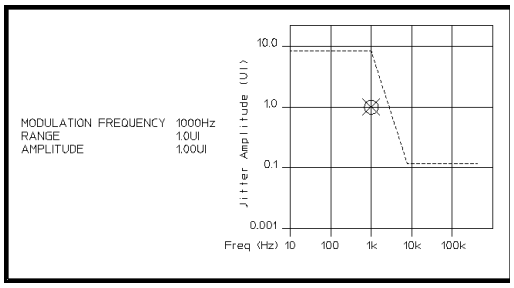
Make your selection from the pop-up menu as described in Modifying Displays with Pop-up Menus page 16 and press SET again to select the new value.

The marker on the graphical display will move to the new position and set the new value.

To exit the graphical display with the new value set, press CANCEL.



SET






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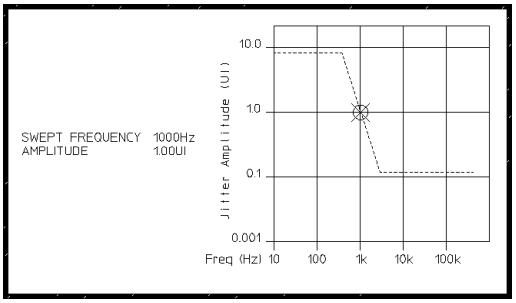
### Jitter Mask set to Swept

To obtain a pictorial display, move the cursor to JITTER MASK [SWEPT] and press **SET**. The marker moves continuously through the sweep range.

To exit the pictorial display use **CANCEL**.



**SET**




To change the frequency, press **SET** for a pop-up menu.

Use ← → ↑ and ↓ to make your selection from the pop-up menu and press **SET** again to select the new value

To exit the graphical display with the new value set, press **CANCEL**



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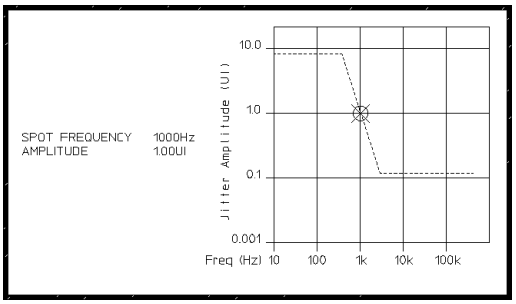
### Jitter Mask set to Spot

To obtain a graphical display, move the cursor to SPOT FREQUENCY and press SET.

.



SET




To change the frequency press SET for a pop-up menu of the values available.

Use ← → ↑ and ↓ to make your selection from the pop-up menu and press SET again to select the new value.

The marker on the graphical display will move to the new position and update the value.

To exit the graphical display with the new value set, press CANCEL

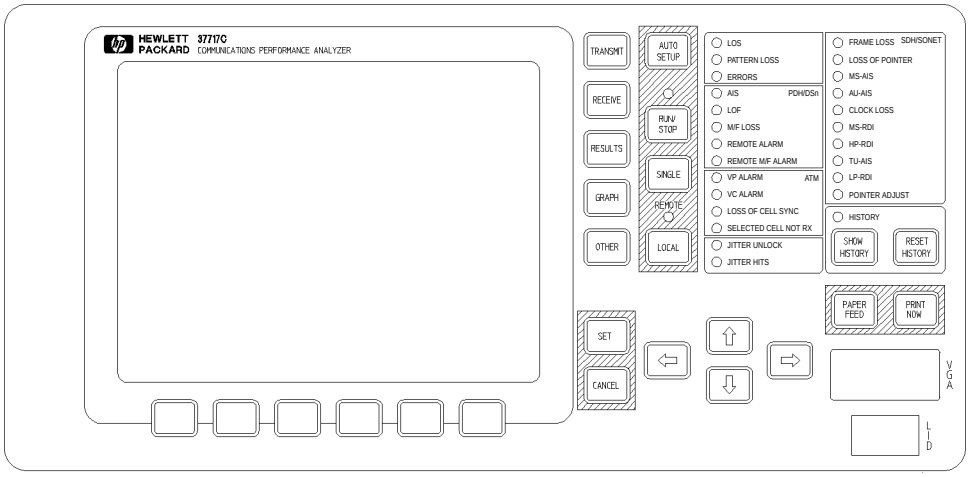
## Using with a Monitor

For ease of viewing at a distance, the instrument display may be presented on a monitor. The monitor should be connected to the HP 37717C front panel VGA connector.



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# Using the Other Front Panel Keys




**AUTO SETUP** The test set attempts to match the settings to the received signal.

**RUN/STOP** Terminates the current test period if one is in progress. Starts a new test period. The indicator above the key is lit when a test period is in progress.

**SINGLE** Adds a single bit error to the output data pattern each time the key is pressed.

**LOCAL** Returns the instrument from remote operation to Local (keyboard) operation. The indicator above the key is lit when the instrument is under Remote Control.

**SET** Displays the pop-up menu for the currently highlighted field. This key also confirms the selection made.

**CANCEL** Clears the pop-up menu without changing the selection.

**PRINT NOW** The selected measurement results are logged, immediately, to the selected printer.

**PAPER FEED** The paper in the internal printer is advanced.



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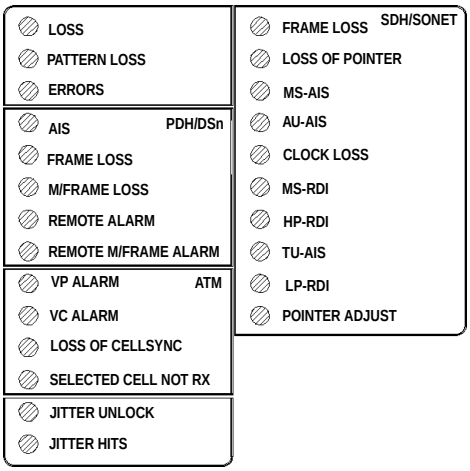
**CAUTION**

Do not press **PAPER FEED** while attempting to load a new roll of paper in the printer. It could result in a paper jam and disable the printer. Wait until the paper is fed through the printer mechanism before pressing **PAPER FEED**.



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# Monitoring Status




## Displaying Status History

The Status indicators on the front panel convey information regarding the current status of the instrument. If an alarm has occurred during the current Test Period, the indicator above **SHOW HISTORY** is lit. To view which alarms have occurred, press and hold **SHOW HISTORY**. When **SHOW HISTORY** is released the status indicators return to displaying the current status.

**SHOW HISTORY** When pressed and held, the Status indicators display any alarms which have been set during the current Test Period. This continues until **SHOW HISTORY** is released at which time the current status is displayed. The indicator above the key is lit to signify that an alarm has occurred during the current Test Period.

**RESET HISTORY** Resets the history store such that the historical and present status are the same. This can also be achieved by starting a new Test Period.



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## General Alarm Indicators

| | |
|---|---|
| **Loss** | No data transitions at the input port. |
| **Pattern Loss** | The received data pattern is not in synchronization with the internally generated reference data. |
| **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** | The All Ones AIS signal is detectable in the presence of a 1 in $10^{-3}$ error rate. |
| **Frame Loss** | Frame alignment lost or out of alignment condition. |
| **M/Frame Loss** | Multiframe alignment lost. |
| **Remote Alarm** | Remote alarm, x-bit or yellow alarm bit is set. |
| **Remote M/ Frame Alarm** | Remote Multiframe Alarm bit is set. |

## ATM Alarm Indicators

These are active when an ATM signal is received.

| | |
|---|---|
| **VP Alarm** | Virtual Path AIS or FERF has been detected. |
| **VC Alarm** | Virtual Channel AIS or FERF has been detected. |
| **Loss of Cell Sync** | Cell Sync Loss has been detected. |
| **Selected Cell Not RX** | The selected cell has not been received.Selected cell not received. |

## Jitter Alarm Indicators

| | |
|---|---|
| **Jitter Unlock** | The jitter receiver has lost phase lock. Jitter measurement is suspended until lock is regained. |
| **Jitter Hits** | A jitter hit has been detected. |



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## SDH Alarm Indicators

These are active when an SDH signal is received.

| | |
|---|---|
| **FRAME LOSS** | Loss Of Frame has been detected. |
| **LOSS OF POINTER** | 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 (Option 120)

These are active when a SONET signal is received.

| | |
|---|---|
| **LOF/SEF** | Loss of Frame or Severely Errored Frame has been detected. Status message on bottom of display states which has occurred. |
| **LOP-P/LOP-V** | 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 Remote Defect Indication (RDI) has been detected. |
| **RDI-P** | STS Path RDI has been detected. |
| **AIS-V** | Virtual Tributary path AIS has been detected. |



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| | |
|---|---|
| **RDI-V** | VT path RDI has been detected. |
| **POINTER ADJUST** | A pointer change in the foreground signal has been detected. |



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**In This Book**

This book 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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