PDH
SONET
SDH
JITTER
ATM
POS

## Quick Reference Guide

**OmniBER 718**

**∴ Agilent Technologies**

**Agilent** *OmniBER 718*

Display screen:

TRANSMITTER OUTPUT
MAIN SETTINGS | STRUCT'D PAYLOAD | JITTER | TEST FUNCTION | OVERHEAD SETUP
SIGNAL STM-16 OPT 1310nm INTERNAL
CLOCK INTERNAL
FREQUENCY OFFSET OFF

MAPPING ⊠ AU-4-16C
FOREGROUND
VC-4-16C
BULK FILLED

PATTERN 2^23-1 PRBS INVERT ITU

RECEIVER INPUT SDH
MAIN SETTINGS | STRUCT'D PAYLOAD | JITTER | TEST FUNCTION | OVERHEAD MONITOR
MONITOR SDH STM-16 : COLUMN 1,487
S1 SYNC STATUS : QUALITY UNKNOWN

RESULTS SDH OPTICAL POWER
OUT OF RANGE
BER & JITTER
-40 -30 -20 -10 0dBm

OPTICAL PWR -13.5 dBm
ELAPSED TIME .d .h .m .s

LAST 01 SECS THU 09:26
BIT ERROR COUNT

STATUS:
PDH | SDH | SONET

SINGLE WINDOW

Buttons:
TRANSMIT
RECEIVE
RESULTS
GRAPH
OTHER

SMART TEST
RUN/ STOP
SINGLE
REMOTE
LOCAL

SET
POP UP
CANCEL

Alarm indicators:
LOS
PATTERN LOSS
ERRORS
AIS                PDH/DSn
FRAME LOSS
M/F LOSS
REMOTE ALARM
REMOTE M/F ALARM
VP ALARM            ATM
VC ALARM
LCD
SELECTED CELL NOT RX
UNLOCK             JITTER
HITS

FRAME LOSS         SDH/
LOP                SONET
MS-AIS             AIS-L
AU-AIS             AIS-P
CLOCK LOSS
MS-RDI             RDI-L
HP-RDI             RDI-P
TU-AIS             AIS-V
LP-RDI             RDI-V
POINTER ADJUST

HISTORY
SHOW | RESET

PAPER FEED | PRINT NOW

VGA

LID PRINTER

## Introduction

Use this book to quickly access the main instrument functions and tasks.

## Setting the Interfaces

### Setting the Transmit Interfaces

| | |
|---|---|
| Setting PDH Transmit Interface | TRANSMIT [PDH/DSn] **MAIN SETTINGS** |
| Setting SDH Transmit Interface | TRANSMIT [SDH] **MAIN SETTINGS** |
| Setting Jitter Transmit Interface | TRANSMIT [SDH] **JITTER** OR TRANSMIT [PDH/DSn] **JITTER** |
| Setting Wander Transmit Interface | TRANSMIT [SDH] **JITTER** OR TRANSMIT [PDH/DSn] **JITTER** |
| Setting SDH THRU Mode | TRANSMIT [SDH] **MAIN SETTINGS** SIGNAL [THRU MODE] |
| Setting PDH THRU Mode (DS1/DS3 only) | TRANSMIT [PDH/DSn] **MAIN SETTINGS** DS1/DS3 [THRU MODE] |
| Setting ATM in the Transmitter | TRANSMIT [SDH] **MAIN SETTINGS** MAPPING [ ] [ ] [ATM]<br>TRANSMIT [PDH/DSn] **MAIN SETTINGS** MAPPING [ ] [ ] [ATM]set ATM in the Receiver first |
| Setting POS in the Transmitter | TRANSMIT [SDH/SONET] **MAIN SETTINGS** MAPPING [ ] [ ] [POS] |
| Setting TCM in the Transmitter | TRANSMIT [SDH] **MAIN SETTINGS** TCM PATH [ ] |

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**Setting the Receive Interfaces**

| | |
|---|---|
| Using Smart Test | `Smart Test` [RUN TEST] |
| Setting PDH Receive Interface | `RECEIVE` [PDH/DSn] `MAIN SETTINGS` |
| Setting SDH Receive Interface | `RECEIVE` [SDH] `MAIN SETTINGS` |
| Setting Jitter Receive Interface | `RECEIVE` [SDH] `JITTER` **OR** `RECEIVE` [PDH/DSn] `JITTER` |
| Setting ATM in the Receiver | `RECEIVE` [SDH] `MAIN SETTINGS` MAPPING [ ] [ ] [ATM]<br>`RECEIVE` [PDH/DSn] `MAIN SETTINGS` MAPPING [ ] [ ] [ATM] |
| Setting POS in the Receiver | `RECEIVE` [SDH/SONET] `MAIN SETTINGS` MAPPING [ ] [ ] [POS] |
| Setting TCM in the Receiver | `RECEIVE` [SDH] `MAIN SETTINGS` TCM PATH |

## Selecting Test Features

### Selecting and Using Overhead Features

| | |
|---|---|
| Using Transmit Overhead Setup | TRANSMIT [SDH] OVERHEAD SETUP |
| Using Receive Overhead Monitor | RECEIVE [SDH] OVERHEAD MONITOR |
| Setting Overhead Trace Messages | TRANSMIT [SDH] OVERHEAD SETUP SETUP [TRACE MESSAGES] |
| Generating Overhead Sequences | TRANSMIT [SDH] TEST FUNCTION TEST FUNCTION [SDH] [SEQUENCES] |
| Using Receive Overhead Capture | RECEIVE [SDH] TEST FUNCTION TEST FUNCTION [SDH] [O/H CAPTURE] |
| Setting TCM APId Messages | TRANSMIT [SDH] OVERHEAD SETUP SETUP [TCM MESSAGE] |
| Using Transmit Overhead BER Test Function | TRANSMIT [SDH] TEST FUNCTION TEST FUNCTION [SDH] [OVERHEAD BER] |

## Selecting and Using Signal Features

| | |
|---|---|
| Adding Frequency Offset to the SDH Signal | **TRANSMIT** [SDH] **MAIN SETTINGS** CLOCK [INTERNAL] FREQUENCY OFFSET [ON] |
| Adding Frequency Offset to the PDH Signal | **TRANSMIT** [PDH/DSn] **MAIN SETTINGS** FREQUENCY OFFSET [<select>] |
| Setting up Signaling Bits | **TRANSMIT** [PDH/DSn] **MAIN SETTINGS** SIGNAL [2Mb/s] PAYLOAD TYPE [PCM30] STRUCTURED <br> **STRUCT'D SETTINGS** 2M CAS ABCD BITS [<select>] |
| Setting Transmit Structured Payload/Test Signal | **TRANSMIT** [SDH] **STRUCT'D PAYLOAD** **OR** **TRANSMIT** [PDH/DSn] **STRUCT'D SETTINGS** |
| Setting Receive Structured Payload/Test Signal | **RECEIVE** [SDH] **STRUCT'D PAYLOAD** **OR** **RECEIVE** [PDH/DSn] **STRUCT'D SETTINGS** |
| Connecting A Telephone Handset | **TRANSMIT** [SDH] **STRUCT'D PAYLOAD** TEST SIGNAL [64 kb/s] HANDSET [<select>] <br> **TRANSMIT** [PDH/DSn] **STRUCT'D SETTINGS** TEST SIGNAL [64 kb/s] HANDSET [<select>] |
| Setting Transmit N X 64 kb/s Structured Payload/Test Signal | **TRANSMIT** [SDH] **STRUCT'D PAYLOAD** TEST SIGNAL [Nx64kb/s] <br> **TRANSMIT** [PDH/DSn] **STRUCT'D SETTINGS** TEST SIGNAL [Nx64kb/s] |
| Setting Receive N X 64 kb/s Structured Payload/Test Signal | **RECEIVE** [SDH] **STRUCT'D PAYLOAD** TEST SIGNAL [Nx64kb/s] <br> **RECEIVE** [PDH/DSn] **STRUCT'D SETTINGS** TEST SIGNAL [Nx64kb/s] |

**Selecting and Using Signal Features (cont'd)**

| | |
|---|---|
| Inserting an External PDH Payload/Test Signal | **TRANSMIT** [SDH] **STRUCT'D PAYLOAD** 2M PAYLOAD [INSERT 2Mb/s] |
| | **TRANSMIT** [PDH/DSn] **STRUCT'D SETTINGS** 2M PAYLOAD [INSERT 2Mb/s] |
| Dropping an External Payload/Test Signal | **RECEIVE** [SDH] **STRUCT'D PAYLOAD** 2M PAYLOAD [DROP 2Mb/s] |
| | **RECEIVE** [PDH/DSn] **STRUCT'D SETTINGS** 2M PAYLOAD [DROP 2Mb/s] |
| Adding Errors & Alarms at the SDH Interface | **TRANSMIT** [SDH] **TEST FUNCTION** TEST FUNCTION [SDH] [ERR & ALARM] |
| Adding Errors & Alarms to the PDH Interface/PDH Payload | **TRANSMIT** [SDH] **TEST FUNCTION** TEST FUNCTION [PDH PAYLD] [ERR & ALARM] |
| Using FEAC Codes in OmniBER | **TRANSMIT** [PDH/DSn] **TEST FUNCTION** |
| Setting PDH Spare Bits | **TRANSMIT** [SDH] **TEST FUNCTION** TEST FUNCTION [PDH PAYLD] [SPARE BITS] |
| Adding Pointer Adjustments | **TRANSMIT** [SDH] **TEST FUNCTION** TEST FUNCTION [SDH] [ADJUST PTR] |
| Using Pointer Graph Test Function | **RECEIVE** [SDH] **TEST FUNCTION** TEST FUNCTION [SDH] [PTR GRAPH] |

**Selecting and Using Signal Features (cont'd)**

| | | |
|---|---|---|
| Generating Automatic Protection Switch Messages | `TRANSMIT` | [SDH] `OVERHEAD SETUP` SETUP [APS MESSAGES] |
| Inserting Data Communications Channel | `TRANSMIT` | [SDH] `TEST FUNCTION` TEST FUNCTION [SDH] [DCC INSERT] |
| Dropping Data Communications Channel | `RECEIVE` | [SDH] `TEST FUNCTION` TEST FUNCTION [SDH] [DCC DROP] |
| Setting ATM Transmitter Scrambling | `TRANSMIT` | [SDH] `ATM SETTINGS` SETUP [CONV SUBLAYER] SCRAMBLING [<select>] |
| | `TRANSMIT` | [PDH/DSn] `ATM SETTINGS` SETUP [CONV SUBLAYER] SCRAMBLING [<select>] |
| Setting ATM Receiver Scrambling | `RECEIVE` | [SDH] `ATM SETTINGS` SETUP [CONV SUBLAYER] SCRAMBLING [<select>] |
| | `RECEIVE` | [PDH/DSn] `ATM SETTINGS` SETUP [CONV SUBLAYER] SCRAMBLING [select] |
| Setting up an ATM Foreground Signal | `TRANSMIT` | [SDH] `ATM SETTINGS` SETUP [FOREGROUND] |
| | `TRANSMIT` | [PDH/DSn] `ATM SETTINGS` SETUP [FOREGROUND] |
| Receiving an ATM Signal | `RECEIVE` | [SDH] `ATM SETTINGS` SETUP [HEADERS/PAYLOAD] |
| | `RECEIVE` | [PDH/DSn] `ATM SETTINGS` SETUP [HEADERS/PAYLOAD] |

**Selecting and Using Signal Features (cont'd)**

| | | |
|---|---|---|
| Setting up ATM Errors and Alarms | TRANSMIT | [SDH] `TEST FUNCTION` TEST FUNCTION [ATM] |
| | TRANSMIT | [PDH/DSn] `TEST FUNCTION` TEST FUNCTION [ATM] |
| Setting ATM Policing Function | RECEIVE | [SDH] `ATM SETTINGS` SETUP [POLICING] |
| | RECEIVE | [PDH/DSn] `ATM SETTINGS` SETUP [POLICING] |
| Setting POS Transmitter HDLC Framing | TRANSMIT | [SDH/SONET] `POS SETTINGS` HDLC FRAMING <SELECT> |
| Setting POS Transmitter Scrambling | TRANSMIT | [SDH/SONET] `POS SETTINGS` SCRAMBLING <SELECT> |
| Setting POS Transmitter HDLC FCS | TRANSMIT | [SDH/SONET] `POS SETTINGS` HDLC FCS <SELECT> |
| Setting POS Transmitter IP Header | TRANSMIT | [SDH/SONET] `POS SETTINGS` SETUP [IP HEADER] <SELECT> |
| Setting POS Transmitter Packet Size/Gap | TRANSMIT | [SDH/SONET] `POS SETTINGS` SETUP [PACKET SIZE/GAP] <SELECT> |

**Selecting and Using Signal Features (cont'd)**

| | | | |
|---|---|---|---|
| Setting up POS Transmitter IP Address | TRANSMIT | [SDH/SONET] POS SETTINGS | SETUP [IP ADDRESS] <SELECT> |
| Setting up POS Transmitter IP Payload | TRANSMIT | [SDH/SONET] POS SETTINGS | SETUP [IP PAYLOAD] <SELECT> |
| Setting POS Errors and Alarms | TRANSMIT | [SDH/SONET] TEST FUNCTION | TEST FUNCTION [POS] |
| Setting POS Receiver HDLC Framing | RECEIVE | [SDH/SONET] POS SETTINGS | HDLC FRAMING <SELECT> |
| Setting POS Receiver Descrambling | RECEIVE | [SDH/SONET] POS SETTINGS | DESCRAMBLING <SELECT> |
| Setting POS Receiver HDLC FCS | RECEIVE | [SDH/SONET] POS SETTINGS | HDLC FCS <SELECT> |
| Setting up POS Receiver payload | RECEIVE | [SDH/SONET] POS SETTINGS | PAYLOAD <SELECT> |

**Making Measurements**

| | |
|---|---|
| Using Overhead BER Test Function | **RECEIVE** [SDH] **TEST FUNCTION** TEST FUNCTION [SDH] [OVERHEAD BER] |
| Test Timing | **RESULTS** RESULTS [TIMING CONTROL] |
| Making SDH Analysis Measurements | **RESULTS** RESULTS [SDH] [ERROR ANALYSIS] |
| Making PDH Analysis Measurements | **RESULTS** RESULTS [PDH PAYLOAD] [ERROR ANALYSIS] |
| Measuring Jitter | **RESULTS** RESULTS [JITTER] |
| Measuring Frequency | **RESULTS** RESULTS [SDH] [FREQUENCY] |
| Measuring Optical Power | **RESULTS** RESULTS [SDH] [OPTICAL POWER] |
| Measuring Round Trip Delay | **RESULTS** RESULTS [PDH PAYLOAD] [TRIP DELAY] |
| Measuring Service Disruption Time | **RESULTS** RESULTS [SRVC DISRUPT] |

**Making Measurements (cont'd)**

| | |
|---|---|
| Performing an SDH Tributary Scan | TRANSMIT [SDH] [TEST FUNCTION] TEST FUNCTION [TRIB SCAN] |
| | RESULTS RESULTS [SDH TRIB SCAN] |
| Performing an SDH Alarm Scan | RESULTS RESULTS [SDH ALM SCAN] |
| Performing a PDH Alarm Scan | RESULTS [PDH ALM SCAN] |
| Measuring Jitter Tolerance | TRANSMIT [PDH/DSn] [JITTER] JITTER [TOLERANCE] |
| Measuring Jitter Transfer | TRANSMIT [PDH/DSn] [JITTER] JITTER [TRANSFER FN] |
| Measuring ATM Source Disruption | RESULTS RESULTS [SRVC DISRUPT] |
| Measuring ATM Results | RESULTS RESULTS [ATM PAYLOAD] |
| Measuring POS Results | RESULTS RESULTS [POS PAYLOAD] |

**Storing, Logging and Printing**

| | | |
|---|---|---|
| Saving Graphics Results to Instrument Store | RESULTS | [TIMING CONTROL] GRAPH STORAGE [1 MIN RESOL'N] |
| Recalling Stored Graph Results | GRAPH | TEXT RESULTS   STORE STATUS |
| Viewing the Bar Graph Display | GRAPH | GRAPH RESULTS |
| Viewing the Graphics Error and Alarm Summaries | GRAPH | TEXT RESULTS |
| Test Period Logging | OTHER | FUNCTION [LOGGING]  TEST PERIOD LOGGING [ON] |
| Logging Results to Centronics Printer | OTHER | FUNCTION [LOGGING] SETUP [DEVICE]<br>LOGGING PORT [PARALLEL] |
| Logging Results to HP-IB Printer | OTHER | FUNCTION [LOGGING]  SETUP [DEVICE]<br>LOGGING PORT [GPIB] |
| Logging Results to Internal Printer | OTHER | FUNCTION [LOGGING] SETUP [DEVICE]<br>LOGGING PORT [INTERNAL] |

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**Storing, Logging and Printing (cont'd)**

| | |
|---|---|
| Logging Results to RS-232-C Printer | OTHER  FUNCTION [LOGGING]  SETUP [DEVICE]<br>LOGGING PORT [RS232] |
| Logging  Results Content | OTHER  FUNCTION [LOGGING] SETUP [CONTENT] |
| Logging Results Period | OTHER  FUNCTION [LOGGING] SETUP [PERIOD] |

**Using Instrument and Disk Storage**

| | | |
|---|---|---|
| Storing Configurations in Instrument Store | OTHER | FUNCTION [STORED SETTINGS] |
| Storing Current Configurations on Disk | OTHER | FUNCTION [FLOPPY DISK] |
| Setting up a Title for Configurations in Instrument Store | OTHER | FUNCTION [STORED SETTINGS] |
| Recalling Configurations from Instrument Store | OTHER | FUNCTION [STORED SETTINGS] |
| Formatting a Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [DISK] [FORMAT] |
| Labeling a Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [DISK] [LABEL] |
| Managing Files and Directories on Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [FILE] |
| Adding Descriptors to Disk Files | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [DISK] |
| Saving Graphics Results to Disk | RESULTS | [TIMING CONTROL] GRAPH STORAGE [DISK] |
| Saving Data Logging to Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [SAVE] |
| Recalling Configuration from Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [RECALL] FILE TYPE [CONFIGURATION] |

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**Using Instrument and Disk Storage (cont'd)**

| | | |
|---|---|---|
| Recalling Graphics Results from Disk | OTHER | FUNCTION [FLOPPY DISK]<br>DISK OPERATION [RECALL] FILE TYPE [GRAPHICS] |
| Copying Configuration from Instrument Store to Disk | OTHER | FUNCTION [FLOPPY DISK]<br>DISK OPERATION [FILE] [COPY] [FROM:] [CONFIGURATION] |
| Copying Configuration from Disk to Instrument Store | OTHER | FUNCTION [FLOPPY DISK]<br>DISK OPERATION [FILE] [COPY] [TO:] [CONFIGURATION] |
| Copying Graphics Results from Instrument Store to Disk | OTHER | FUNCTION [FLOPPY DISK]<br>DISK OPERATION [FILE] [GRAPHICS] |
| Deleting a File on Disk | OTHER | FUNCTION [FLOPPY DISK]<br>DISK OPERATION [FILE] [DELETE] [DELETE FILE] NAME [<select>] |
| Deleting a Directory on Disk | OTHER | FUNCTION [FLOPPY DISK<br>DISK OPERATION [FILE] [DELETE] [DELETE DIRECTORY] |
| Renaming a File on Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [FILE] [RENAME] |
| Creating a Directory on Disk | OTHER | FUNCTION [FLOPPY DISK] DISK OPERATION [FILE] [CREATE DIRECTORY] |

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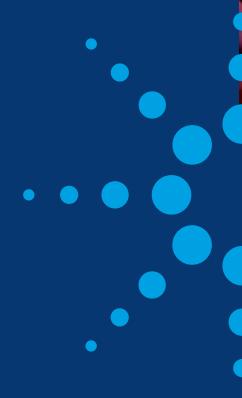**Selecting and Using "Other" Features**

| | | |
|---|---|---|
| Coupling Transmit & Receive Settings | OTHER | FUNCTION [SETTINGS CONTROL] TRANSMITTER AND RECEIVER [COUPLED] |
| Suspending Test on Signal Loss | OTHER | FUNCTION [MISCELLANEOUS] SUSPEND TEST ON SIGNAL LOSS [ON] |
| MS-REI Results Enable | OTHER | FUNCTION [MISCELLANEOUS] MS-REI RESULT ENABLE |
| Inband DS1 Loopcode 156MTS Compatibility | OTHER | FUNCTION [MISCELLANEOUS] INBAND DS1 LOOPCODE 156MTS COMPATIBILITY |
| Setting Time & Date | OTHER | FUNCTION [TIME & DATE] |
| Enabling Keyboard Lock | OTHER | FUNCTION [MISCELLANEOUS] KEYBOARD LOCK [ON] |
| Enabling Beep on Received Error | OTHER | FUNCTION [MISCELLANEOUS] BEEP ON RECEIVED ERROR [ON] |
| Setting Error Threshold Indication | OTHER | FUNCTION [COLOR CONTROL] |

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**Selecting and Using "Other" Features (cont'd)**

| Dumping Display to Disk | OTHER | FUNCTION [LOGGING]  SETUP [DEMAND] LOG ON DEMAND [SCREEN DUMP] |
|---|---|---|
| Setting Screen Brightness and Color | OTHER | FUNCTION [COLOR CONTROL] |
| Running Self Test | OTHER | FUNCTION [SELF TEST] |
| Selecting Trigger Output | OTHER | FUNCTION [TRIGGER OUTPUT] |