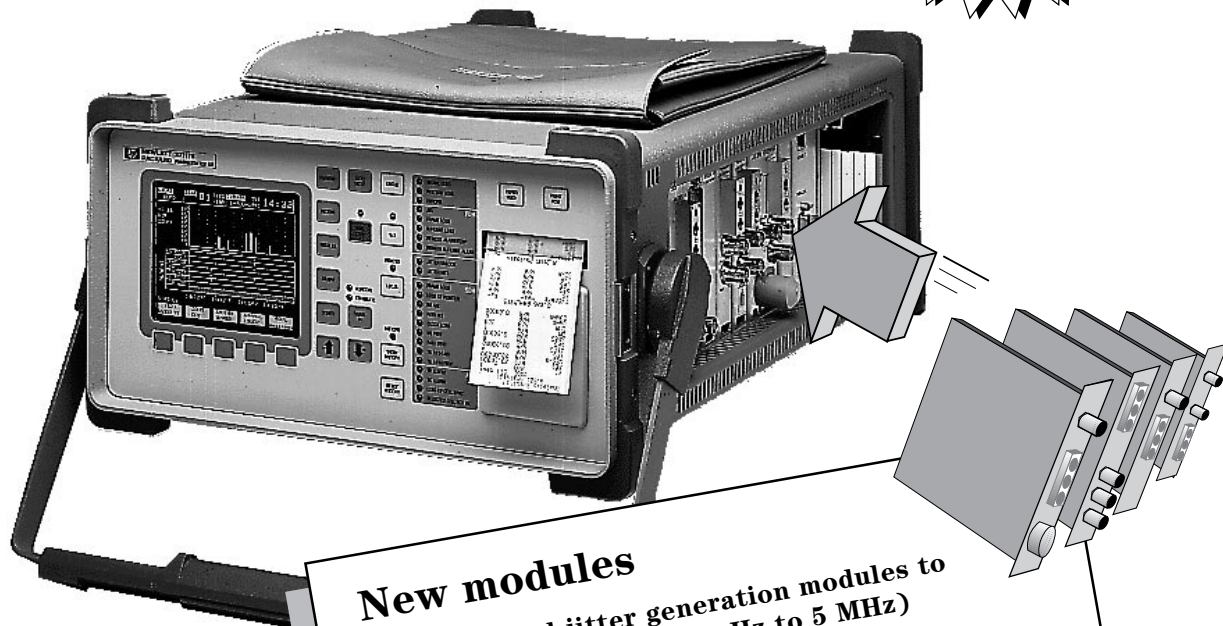

HP 37717B communications performance analyzer

Configuration guide

Effective from November 1996



**3-year
warranty
as
standard**



New modules

- Wander and jitter generation modules to ITU-T G.825/O.171 (10 μ Hz to 5 MHz)
- RMS, peak-to-peak and auto jitter transfer measurement modules to ITU-T O.171/G.825

Introduction

Contents

Introduction 2

Example configurations 3

Configuring the HP 37717B communications performance analyzer 4

Other options and accessories 8

Small Siemens cross-reference

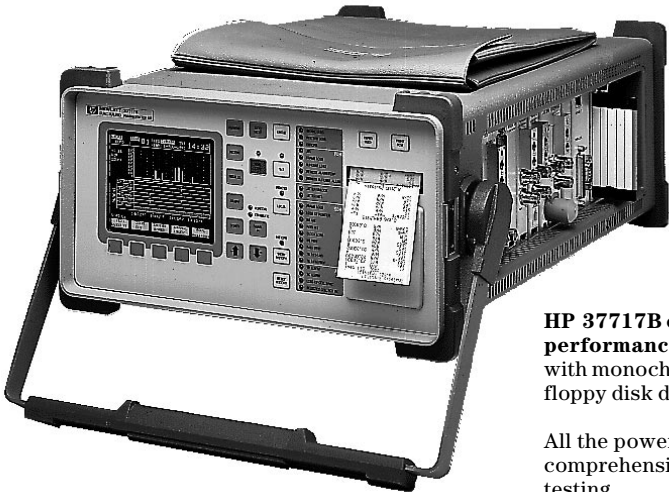
All options listed in the following pages are BNC. If you need small Siemens connectors, use the table below to select equivalent Siemens option.

BNC		Small Siemens
UKK	→	USB
UKJ	→	USA
UKN	→	USE
US1	→	US5
A1T	→	A1U
140	→	141
A3K	→	A3Q
UHN	→	US9
A3L	→	A3M
A3V	→	A3W
A3N	→	A3P
UH3	→	US7
UH1		not applicable
UH2		not applicable
URU		not applicable
USN		not applicable
UKT		not applicable
0YH		not applicable
UHC	→	US6
A3D		not applicable
A3B		not applicable
UH4		not applicable
UH5		not applicable
UH6		not applicable
UH7		not applicable
UH8		not applicable
UKP		not applicable
UKQ		not applicable

Your choice of test capability

The HP 37717B communications performance analyzer supports comprehensive functional test and jitter capability to help you test your PDH, SDH and ATM networks or network equipment. The analyzer comprises a mainframe with built-in printer, integral floppy disk drive, and includes power cord and operating manuals. You add the test capability you require by selecting from the optional test modules.

To meet your specific test needs, just order the capability you require. Simply order the HP 37717B analyzer and a single option per module type, where required, from the tables in the pages that follow. Remember, you can configure your analyzer to simultaneously include PDH, SDH, ATM and jitter, or you can configure it to contain PDH only, SDH only, ATM only or any combination.



HP 37717B communications performance analyzer with monochrome display, floppy disk drive.

All the power you need for comprehensive performance testing.

Select optional PDH, SDH, ATM cell layer and jitter modules for the analyzer:

- ATM cell layer generation and measurement
- STM-1/STM-4 optical interfaces (1310 and 1550 nm)
- STM-1/STM-4 binary interfaces
- PDH and SDH jitter/wander Tx and Rx
- Multiple PDH outputs
- PDH testing (704 kb/s to 140 Mb/s)
- PDH binary interfaces with external clock input
- Printer/remote interfaces.

Example configurations

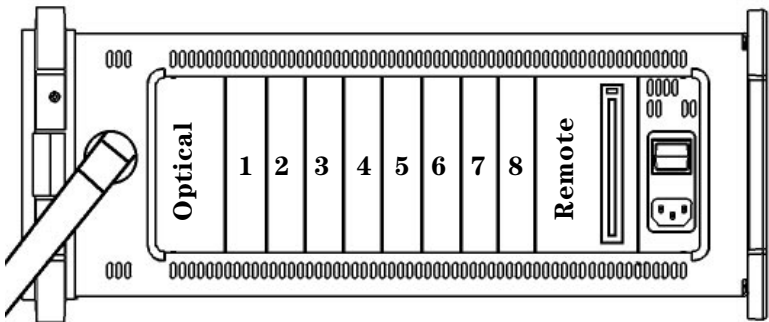
1. STM-4o/STM-1o plus jitter		Option code	Slots used
Example user requirements <ul style="list-style-type: none"> ● PDH (2, 8, 34, 140 Mb/s) – full mux/demux capability ● STM-1e (155 Mb/s) electrical interfaces ● STM-4o/STM-1o (1310 nm) optical interfaces ● Optical power measurement ● Jitter and wander generation ● Jitter measurement (at all above interface rates) ● FC/PC optical adapters. 	1. PDH and ATM test and interfaces option	UKJ	2
	2. STM-1e test and interfaces option	A1T	2
	3. Wander and jitter generation option	A3K	1
	4. Wander and jitter measurement option	A3N	2
	5. PDH binary interfaces option		
	6. Optical interfaces option	UKT	Reserved
	7. SDH binary interfaces option		
	8. Multiple PDH interfaces option		
	9. Remote-control/external-printer interfaces option		Reserved
	10. Optical adaptor option	UH4	—

2. STM-1e unstructured, no jitter		Option code	Slots used
Example user requirements <ul style="list-style-type: none"> ● PDH (2, 8, 34, 140 Mb/s) – no mux/demux capability ● STM-1e (155 Mb/s) electrical interfaces ● PDH bit error output (for digital radio testing) ● RS-232-C remote control ● Remote PC operation (needs HP E4540A distributed network analyzer software). 	1. PDH and ATM test and interfaces option	UKK	2
	2. STM-1e test and interfaces option	A1T	2
	3. Wander and jitter generation option		
	4. Wander and jitter measurement option		
	5. PDH binary interfaces option		
	6. Optical interfaces option		Reserved
	7. SDH binary interfaces option		
	8. Multiple PDH interfaces option		
	9. Remote-control/external-printer interfaces option	A3D	Reserved
	10. Optical adaptor option		—
	Distributed network analyzer firmware	USS	—

3. PDH structured, plus jitter		Option code	Slots used
Example user requirements <ul style="list-style-type: none"> ● PDH (2, 8, 34, 140 Mb/s) – full mux/demux capability ● Jitter generation ● Jitter measurement (at all above interface rates) ● PDH NRZ interfaces plus external clock input ● Three additional 2, 8, 34 and 140 Mb/s outputs. 	1. PDH and ATM test and interfaces option	UKJ	2
	2. STM-1e test and interfaces option		
	3. Wander and jitter generation option	140	1
	4. Wander and jitter measurement option	UHN	1
	5. PDH binary interfaces option	UH3	1
	6. Optical interfaces option		Reserved
	7. SDH binary interfaces option		
	8. Multiple PDH interfaces option	UHC	1
	9. Remote-control/external-printer interfaces option		Reserved
	10. Optical adaptor option		—

Configuring the HP 37717B communications performance analyzer

There are reserved slots for optical interfacing and remote-control modules. In addition, you have a maximum of **eight** user-configurable slots to add PDH, SDH, ATM and jitter capability. Ensure that the number of slots used does not exceed **eight**.



- Step 1

Review sections 1 to 10 in the following pages to determine the capability you require. In each section, select one option as required and tick the option box.
- Step 2

Enter the option code and slots used in the table below. Confirm slots used does not exceed eight slots.

	Option code	No. of slots	Slots used
1. PDH and ATM test and interfaces option		2	
2. STM-1e test and interfaces option		2	
3. Wander and jitter generation option		1	
4. Wander and jitter measurement option		1 or 2	
5. PDH binary interfaces option		1	
6. Optical interfaces option		—	Reserved
7. SDH binary interfaces option		1	
8. Multiple PDH interfaces option		1	
9. Remote-control/external-printer interfaces option		—	Reserved
10. Optical adaptor options		—	—
Total number of slots used			

- Step 3

Check that you have specified both test and interfacing for all required capabilities.
- Your local HP sales representative will be happy to help you configure the HP 37717B analyzer to match your specific needs.*

	Option code	No of slots	Tick one
1. PDH and ATM test and interfaces options			

Choose one option (if required). All options provide PDH interfaces and PDH test capability. Also order option A3K or 140 (section 3) if you require jitter transmit capability.

● Unstructured PDH testing: 0.7, 2, 8, 34 and 140 Mb/s interfaces plus an error output.	UKK	2	<input type="checkbox"/>
● Structured PDH testing: 2, 8, 34 and 140 Mb/s interfaces (64 kb/s and $n \times 64$ kb/s testing).	UKJ	2	<input type="checkbox"/>
● ATM cell generation and analysis: 2, 34 and 140 Mb/s interfaces [†] – includes all capability of option UKJ (structured PDH testing).	UKN	2	<input type="checkbox"/>

[†] If you need ATM cell generation and analysis at STM-1, then also order STM-1e test and interfaces option A1T (section 2).

	Option code	No of slots	Tick one
2. STM-1e test and interfaces option			

Choose if required. This option provide STM-1e interfacing and SDH test capability.

● STM-1 (155 Mb/s) electrical interface: TU-12, VC-3 and VC-4 mappings, frequency offset generation, plus alarm and error generation/detection.	US1	2	<input type="checkbox"/>
● STM-1 (155 Mb/s) electrical interface: All the capability of option US1 plus STM-1 overhead access, thru mode and pointer sequence generation, and TU-2 mapping.	A1T	2	<input type="checkbox"/>

	Option code	No of slots	Tick one
3. Wander and jitter generation options			

Choose if required. For PDH jitter generation, also order option UKK or UKJ or UKN (section 1). For SDH jitter generation, also order option A1T (section 2) plus appropriate optical interfaces and adaptor options (sections 6 and 10).

● PDH jitter generation: 2, 8, 34 and 140 Mb/s up to 80 UI (2 Mb/s). SDH jitter generation: STM-1 (155 Mb/s) and STM-4 (622 Mb/s) up to 200 UI (STM-4).	140	1	<input type="checkbox"/>
● All the capability of option 140 plus wander generation: 2 Mb/s, STM-1 (155 Mb/s) and STM-4 (622 Mb/s) up to 14400 UI (STM-4).	A3K	1	<input type="checkbox"/>

	Option code	No of slots	Tick one
4. Wander and jitter measurement options			

Choose one jitter measurement option (if required). SDH jitter measurement options provide dedicated SDH jitter measurement interfacing (STM-1e, STM-1o or STM-4o). If you need PDH jitter measurement (2, 8, 34 and 140 Mb/s electrical interfaces) then also order PDH option UKK, UKJ or UKN (section 1). All optical interfaces receive at 1310 and 1550 nm. Also order appropriate optical adaptor options (section 10).

● PDH (tributary) jitter and wander measurement: 2, 8, 34, 140 Mb/s, plus 2 Mb/s wander and estimated frame slip measurement with HP1, HP2 and LP filters to ITU-T O.171.	UHN	1	<input type="checkbox"/>
● STM-1e line jitter and PDH (tributary) jitter; rms, peak-to-peak, auto jitter transfer and wander measurement: 155 Mb/s electrical interface with HP1, HP2 and LP filters to ITU-T O.171/G.825.	A3L	2	<input type="checkbox"/>
● STM-1o/STM-1e, plus all the capability of option A3L.	A3V	2	<input type="checkbox"/>
● STM-4o/STM-1o/STM-1e, plus all the capability of option A3L.	A3N	2	<input type="checkbox"/>

	Option code	No of slots	Tick one
5. PDH binary interfaces option			

Choose if required. Must also order a PDH and ATM test option (section 1).

- PDH NRZ interfaces: Adds binary Tx clock and data, binary Rx clock and data, UH3 1 ☐
- plus external clock input.

	Option code		Tick one
6. Optical interfaces options			

Choose one option (if required). All optical interfaces receive at 1310 and 1550 nm.*

Provides optical interfaces. Must also order STM-1e test and interfaces option AIT (section 2), and appropriate optical adaptor options (section 10).

STM-1 optical interfaces only (for testing STM-1 only)

- STM-1 (155 Mb/s) optical interface: 1310 nm, -9 dBm output. UH1 reserved optical slot ☐

STM-1/STM-4 optical interfaces (for testing STM-1 at STM-1 and STM-4)

- Combined STM-1/STM-4 (155/622 Mb/s) optical interfaces: 1310 nm, -10 dBm output. UH2 ☐
- Combined STM-1/STM-4 (155/622 Mb/s) optical interfaces: 1550 nm, -1 dBm output. URU ☐

Provides optical interfaces, plus optical power measurement and STM-4 test functionality, ie, for STM-4 overhead access. Must also order STM-1e test and interfaces option AIT (section 2), and appropriate optical adaptor options (section 10).

STM-4 test and optical interfaces

- STM-1/STM-4 (155/622 Mb/s) optical interfaces: dual wavelength at 1310 nm, -10 dBm output plus 1550 nm, -1 dBm output; includes STM-4 overhead access, thru mode and optical power measurement. USN ☐
- STM-1/STM-4 (155/622 Mb/s) optical interfaces: 1310 nm, -10 dBm output; includes STM-4 overhead access, thru mode and optical power measurement (easily upgradeable to dual wavelength). UKT ☐

* If multimode fiber compatibility is required, contact your HP sales representative.

Option code	No of slots	Tick one
-------------	-------------	----------

7. SDH binary interfaces option

Choose if required. Must also order STM-4 test and optical interfaces option USN or UKT (section 6).

- STM-1/STM-4 NRZ interfaces. 50 ohm ECL Tx data and Tx clock outputs, plus 0YH 1 ☐
Rx data and Rx clock inputs.

Option code	No of slots	Tick one
-------------	-------------	----------

8. Multiple PDH interfaces option

Choose if required. Must also order a PDH and ATM test and interface option UKK, UKJ or UKN (section 1).

- Three additional 2, 8, 34 and 140 Mb/s outputs. UHC 1 ☐

Option code		Tick one
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9. Remote-control/external-printer interfaces options

Choose one option (if required).

- RS-232-C and HP-IB remote-control/external-printer interfaces. A3D reserved remote ☐
- LAN remote control, RS-232-C and HP-IB remote-control/external-printer interfaces. A3B slot ☐

Option code		Tick as required
-------------	--	------------------

10. Optical adaptor options

If specifying an SDH optical interface and/or wander and jitter measurements, choose the connector adaptor type(s) to suit your particular requirements:

- FC/PC UH4
 - DIN47526 UH5
 - ST UH6
 - Biconic UH7
 - NEC D4 UH8
 - SC UKP
 - HMS-10/HP UKQ
- Not applicable ☐
↓ ☐
☐
☐
☐
☐
☐
☐

Other options and accessories

Optical coupler

HP15744A: Optical coupler.*

**Order the appropriate option. For full details of the HP 15744A optical coupler, please ask your local HP representative for a brochure.*

HP 15722A: Telephone handset for options UKJ or UKN.

Remote, interactive control of analyzers

To operate the HP 37717B analyzer remotely from your PC using MS Windows® via a graphical user interface, order option USS distributed network analyzer firmware for the analyzer. Also order an RS-232-C interface.

Option USS: HP distributed network analyzer firmware – needs HP E4540A distributed network analyzer software.†

† For full details of centralized testing using the HP 37717B analyzer and other telecom testers from HP, please ask your local HP representative for brochure 5964-2240E (distributed network analyzer software).

Carrying cases and rack mount kit

HP 15910B: Soft, vinyl carrying case.
HP 15772B: Hard, robust transit case.
HP 15770A: Rack mount kit.

HP 15777B upgrade kit

Enhance the capabilities of the HP 37717B analyzer at a later date. To order HP 15777B upgrade kit options, contact your local HP sales representative.

Internal printer paper

Printer paper: Part number 9270-1299.

Warranty

3-year warranty as standard.

Manuals and calibration certificate

Option AVA: Calibration manual.

Option OB2: One additional operating manual.

Option OBF: One additional remote operation manual.

Option UK6: Calibration certificate.

Standards conformance

CE mark:* The HP 37717B communications performance analyzer has full CE mark compliance and meets the following standards:

- ESD/mains fast transients/radiated susceptibility: meets EN50082-1 (1991).
- Radiation emissions/conducted emissions: meets EN55011 (1991).

Product safety: The HP 37717B communications performance analyzer meets the following safety standards:

- IEC 348/EN61010.

** All products sold in EC and ETSI countries must have the CE mark.*

For more information on Hewlett-Packard Test & Measurement products, applications or services please call your local Hewlett-Packard sales offices. A current listing is available via Web through AccessHP at <http://www.hp.com>. If you do not have access to the internet please contact one of the HP centers listed below and they will direct you to your nearest HP representative.

United States:

Hewlett-Packard Company
Test and Measurement Organization
5301 Stevens Creek Blvd.
Bldg. 51L-SC
Santa Clara, CA 95052-8059
1 800 452 4844

Canada:

Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario
L4W 5G1
(905) 206 4725

Europe:

Hewlett-Packard
European Marketing Centre
P. O. Box 999
1180 AZ Amstelveen
The Netherlands

Japan:

Hewlett-Packard Japan Ltd.
Measurement Assistance Center
9-1, Takakura-Cho, Hachioji-Shi
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Tel: (81-426) 56-7832
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Hewlett-Packard Australia Ltd.
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17-21/F Shell Tower, Times Square
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MS Windows is a US trademark of Microsoft Corporation.

HP manufactures the HP 37717B communications performance analyzer under a quality system approved to the international standard ISO 9001 plus TickIT (BSI Registration Certificate No FM 10987).

Class 3a laser product
EN60825-1:1994

Class 1 laser product
FDA 23 CER CH.1 1040.10 (1994)



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