Agilent E5061B
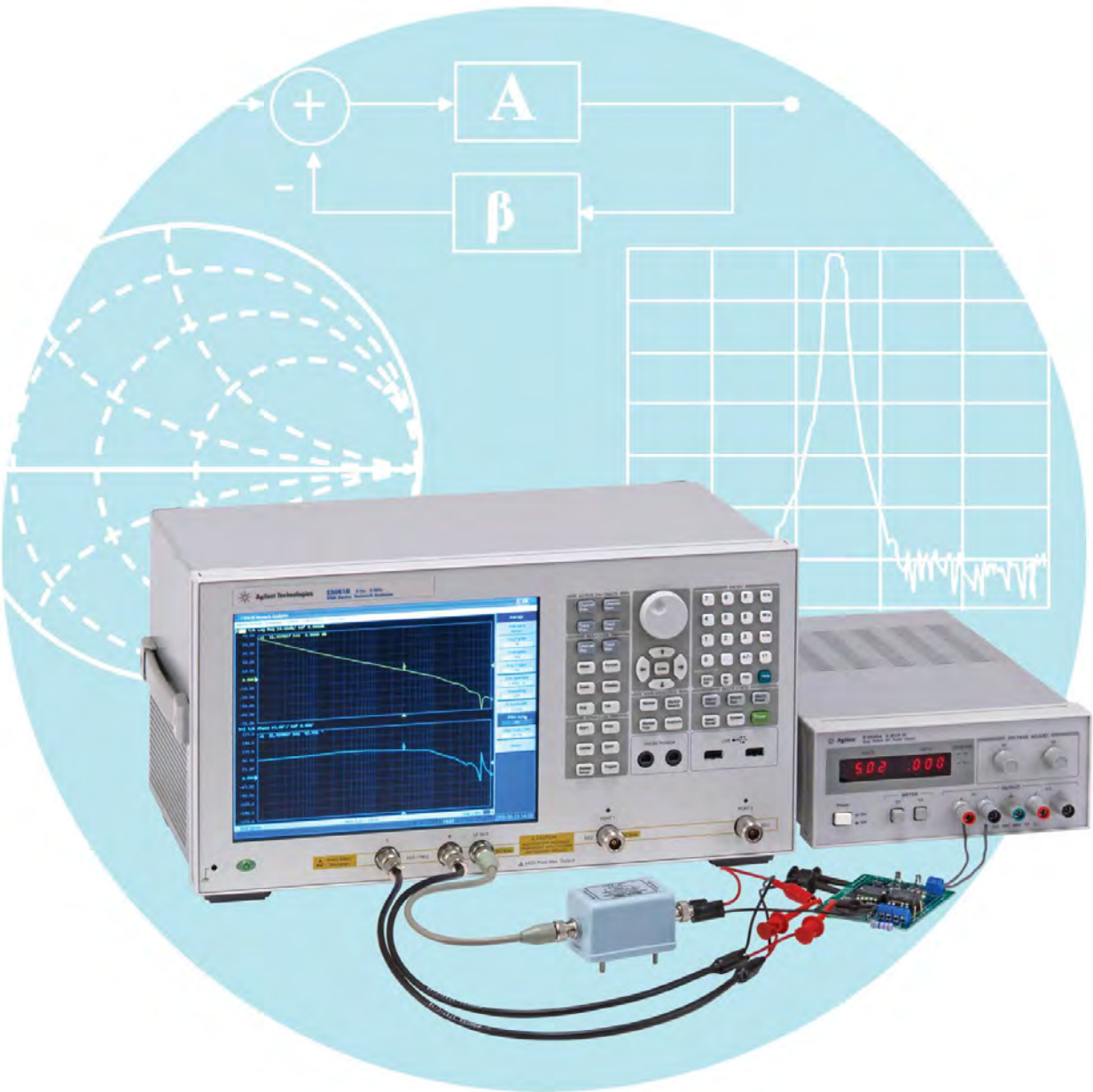# Network Analyzer

Configuration Guide

Ordering guide

The following steps will guide you through configuring your E5061B.

Standard furnished item	
Description	Additional information
Installation guide	Contains the information necessary to start up with the E5061B.
CD ROM IO libraries	
Power cable	
Certificate of calibration	

Note: Keyboard and mouse are not furnished as standard. Refer to "Step 5. Accessory option" for the selection of these items.

Step 1. Choose test set option (mandatory)				
Description	Option No.	Requires	Not compatible	Additional information
LF-RF network analyzer with DC bias source, 5 Hz to 3 GHz	E5061B-3L5	None	None	This option has the following features. - S-parameter test port (5 Hz to 3 GHz) - Gain-phase test port (5 Hz to 30 MHz) - Built-in DC bias source

Note: The E5061B-3L5 is the only one test set option as of Sep. 2009.

Step 2. Choose hardware option (If not required, go to step 3)				
Description	Option No.	Requires	Not compatible	Additional information
High stability timebase	E5061B-1E5	None	None	This option improves the frequency accuracy and stability of the E5061B.

Note: Refer to "Hardware upgrade" section for retrofit information on the above options.

Step 3. Choose hard disk drive option (mandatory)				
Description	Option No.	Requires	Not compatible	Additional information
Standard hard disk drive	E5061B-019	None	None	

Note: The E5061B-019 is the only one hard disk drive option. Removable hard disk drive is not provided for the E5061B.

Step 4. Choose software option (If not required, go to step 5)				
Description	Option No.	Requires	Not compatible	Additional information
Time domain/fault location analysis	E5061B-010	None	None	Adds time domain and fault location analysis function.

Note: Refer to "Software upgrade" section for retrofit information on the above options.

Step 5. Choose accessory option (If not required, go to step 6)

Description	Option No.	Requires	Not compatible	Additional information
Add keyboard	E5061B-810	None	None	Adds a keyboard.
Add mouse	E5061B-820	None	None	Adds a mouse.
Rack mount Kit	E5061B-1CM	None	E5061B-1CP	Adds a rack mount kit.
Front Handle Kit	E5061B-1CN	None	E5061B-1CP	Adds a front handle kit.
Rack mount and front handle kit	E5061B-1CP	None	E5061B-1CM E5061B-1CN	Adds a rack mount kit and a front handle kit.

Step 6. Choose calibration option

Description	Option No.	Additional information
ISO 17025 compliant calibration	E5061B-1A7	Certificate of calibration compliant with ISO 17025 and test data is supplied.
ANSI Z540 compliant calibration	E5061B-A6J	Certificate of calibration compliant with ANSI Z540 and test data is supplied.

E5061B with mouse and keyboard

Test accessories and calibration kits

Test accessories and calibration kits that can be used with the E5061B are listed in this section. A complete line of test accessories and calibration kits can be found at the Agilent RF and Microwave Test Accessories Web site: **www.agilent.com/find/accessories**

Test accessories
Test accessories such as test port cable are necessary for a complete measurement system using the E5061B. Order test accessories in accordance with the desired measurement system.

Calibration kits
Calibration is an accuracy enhancement procedure that effectively reduces the system errors that cause uncertainty in network measurement. Calibration kit is necessary to perform the calibration.

- **Mechanical calibration kits** include standards, such as opens, shorts and loads, which are measured by the network analyzer. Choose a calibration kit for each connector type to be used.

- **Electronic calibration (ECal) modules**[1] replace mechanical calibration standards with one solid-state calibration module that is controlled by the network analyzer via USB. ECal modules provide many different impedances to the test ports which enables a full two-port calibration to be performed quickly with a single connection. This technique reduces operator errors and connector wear and abrasion.

Mechanical calibration kits   *Electronic calibration (ECal) modules*

1. ECal modules don't cover the whole frequency range of the E5061B.
    Check whether the frequency range of each ECal module meets your
    measurement needs.

Test accessories (for 50 Ω devices)			
Description	Model No.	Requires	Additional information
Test Port Cable	N6314A	None	50 Ω type-N (m) to type-N (m) cable, DC to 12.4 GHz, 61 cm (24 in)
Test Port Cable	N6315A	None	50 Ω type-N (m) to type-N (f) cable, DC to 12.4 GHz, 61 cm (24 in)
Test Port Cable	11500E	None	3.5 mm (m) to 3.5 mm (m) cable, 61 cm (24 in)
Test Port Cable	11500F	None	3.5 mm (m) to 3.5 mm (m) cable, 150 cm (24 in)
Test Port Cable	11857D	None	50 Ω 7 mm to 7 mm cable, 300 kHz to 6 GHz, 61 cm (24 in)
Test Port Cable	8120-1838	None	50 Ω BNC (m) to BNC (m) cable, 30 cm (12 in)
Test Port Cable	8120-1839	None	50 Ω BNC (m) to BNC (m) cable, 61 cm (24 in)
Adapter	1250-0780	None	50 Ω type-N (m) to 50 Ω BNC (f) adapter
Adapter	1250-1200	None	50 Ω BNC (f) to SMA (m) adapter
Adapter	1250-2015	None	50 Ω BNC (m) to SMA (f) adapter

N6314A

N6315A

11500E

11500F

11857D

8120-1838

8120-1839

1250-0780

1250-1200

1250-2015

Test accessories (for 50 Ω devices, continued)

Description	Model No.	Requires	Additional information
Accessory Kit	11853A	None	50 Ω type-N accessory kit. Includes; - Type-N (f) to type-N (f) adapter (2 qty.) - Type-N (m) to type-N (m) adapter (2 qty.) - Type-N (f) short - Type-N (m) short
Accessory Kit	11854A	None	50 Ω BNC accessory kit. Includes; - BNC (m) to Type-N (m) adapter (2 qty.) - BNC (f) to Type-N (f) adapter (2 qty.) - BNC (f) to Type-N (m) adapter (2 qty.) - BNC (m) to Type-N (f) adapter (2 qty.) - BNC (m) short
Adapter Kit	11878A	None	50 Ω type-N to 3.5 mm adapter kit. Includes; - 3.5 mm (m) to type-N (m) adapter - 3.5 mm (f) to type-N (f) adapter - 3.5 mm (f) to type-N (m) adapter - 3.5 mm (m) to type-N (f) adapter
Power Splitter	11667A	None	Type-N (f) connectors, DC to 18 GHz
DC Block	N9398C	None	3.5 mm (m) and 3.5 mm (f) connectors, 50 kHz to 26.5 GHz
DC Block	N9399C	None	3.5 mm (m) and 3.5 mm (f) connectors, 700 kHz to 26.5 GHz

11878A

11667A

N9398C and N9399C

11667A and E5061B: 8120-1838 cables and 1250-0780 adapters are used (refer to page 5.)

Test accessories (for 50 Ω devices, continued)

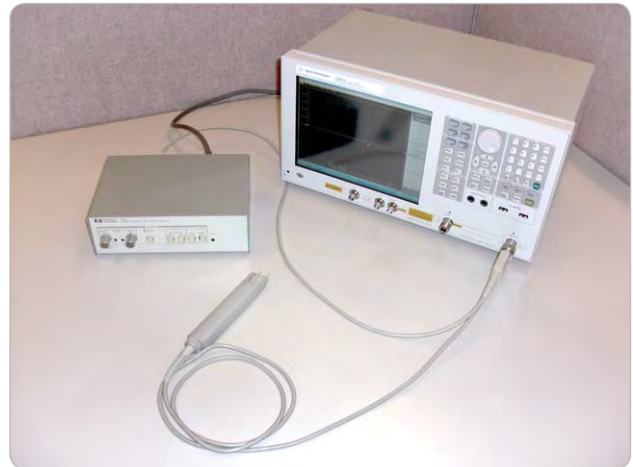| Description	Model No.	Requires	Additional information
Active Probe	41800A	None	Hz to 500 MHz active probe, 100 kΩ (probe alone) / 1 MΩ (with 10:1 or 100:1 divider). Includes; - Probe to BNC adapter - Hook tip adapter - Slip-on tip adapter - 10:1 and 100:1 divider
	41800A-001	None	Adds a cable to connect the probe with an external power supply. This option is not necessary for the E5061B-3L5 since it is equipped with the probe power.
	41800A-UK6	None	Commercial cal certificate with test data
Active Probe	85024A	None	300 kHz to 3 GHz active probe. Includes; - Probe tip to type-N Adapter - 10:1 divider - Hook tip adapter - Slip-on tip adapter - Leads

41800A

41800A and E5061B

85024A

Test accessories (for 50 Ω devices, continued)			
Description	Model No.	Requires	Additional information
Differential Active Probe	1141A	1142A	DC to 200 MHz differential active probe. The 1142A is required. Includes; - 10x and 100x attenuator adapter - AC coupling adapter - Two-inch extension leads - Mini-grabbers (2 qty.) - Five-inch ground lead - Shielded signal lead - Test board - Flat-blade alignment tool - Circuit connection post
Probe Control and Power Module	1142A	1141A	Probe control and power module for the 1141A Differential Active Probe.
Passive probe	–	–	For passive probe, general probes for oscilloscope can be used for the E5061B.

1141A

1141A, 1142A, and E5061B

Non-Agilent test accessories (for 50 Ω devices)

Description	Model No.	Requires	Additional information
Power Splitter	Aeroflex / Weinschel 1507R	None	DC to 4 GHz; 50 Ω SMA (f) connectors.
Wideband Transformer	North Hills Signal Processing 0017CC	None	10 Hz to 5 MHz, 50 Ω BNC (f) input - 50 Ω BNC (f) output wideband transformer. Suitable for the use as an injection transformer in the measurement such as loop-gain measurement of a DC-DC converter.
50 Ω feed through	Pasternack Enterprises PE6008-50	None	DC to 1 GHz, 50 Ω BNC (m) - BNC (f) feed through.
DC Blocking Capacitor	Picosecond Pulse Labs 5508	None	700 Hz to 26 GHz, 50 Ω SMA - SMA DC blocking capacitor. The sexes of SMA connectors can be chosen as an option.
DC Blocking Capacitor	Mini-Circuits BLK-89	None	100 kHz to 8 GHz, 50 Ω SMA (m) - SMA (f) DC blocking capacitor.

Aeroflex / Weinschel 1507R

North Hills Signal Processing 0017CC

Picosecond Pulse Labs 5508

Pasternack Enterprises PE6008-50

Mini-Circuits BLK-89

North Hills Signal Processing 0017CC and Agilent E5061B

Aeroflex / Weinschel web page: **http://www.aeroflex.com/ams/weinschel/micro-weinschel-prods.cfm**
North Hills Signal Processing web page: **http://www.northhills-sp.com/index.html**
Mini-Circuits web: **http://www.minicircuits.com/index.html**
Picosecond Pulse Labs web page: **http://www.picosecond.com/**
Pasternack Enterprises web page: **http://www.pasternack.com/**

Calibration kits (for 50 Ω devices)

Description	Model No.	Requires	Additional information
Economy calibration kit, type-N, 50 Ω	85032E	None	50 Ω economy calibration kit, DC to 6 GHz. Includes; - Type-N (m) fixed load - Type-N (m) combined open/short
Standard calibration kit, type-N, 50 Ω	85032F	None	50 Ω standard calibration kit, DC to 9 GHz. Includes; - Type-N (m) fixed load - Type-N (f) fixed load - Type-N (m) Open - Type-N (f) Open - Type-N (m) Short - Type-N (f) Short
	85032F-100	None	Adds 50 Ω type-N (f) to type-N (f) adapter
	85032F-200	None	Adds 50 Ω type-N (m) to type-N (m) adapter
	85032F-300	None	Adds 50 Ω type-N (m) to type-N (f) adapter
	85032F-500	None	Adds; - 50 Ω type-N (m) to 7 mm adapter (2 qty.) - 50 Ω type-N (f) to 7 mm adapter (2 qty.)
RF ECal module, Type-N, 50 Ω	85092C[1]	None	2-port (50 Ω type-N), 300 kHz to 9 GHz. The sexes of the connectors depend on the option.
	85092C-M0F[2]	None	Type-N (f) to Type-N (m) RF ECal module
	85092C-00M[2]	None	Type-N (m) to Type-N (m) RF ECal module
	85092C-00F[2]	None	Type-N (f) to Type-N (f) RF ECal module
	85092C-00A	None	Adds; - Type-N (f) to Type-N (f) adapter - Type-N (m) to Type-N (m) adapter
Standard calibration kit, 3.5 mm	85033E	None	50 Ω standard calibration kit, DC to 9 GHz. Includes; 3.5 mm (m) Load / 3.5 mm (m) Open / 3.5 mm (m) Short - 3.5 mm (f) Load / 3.5 mm (f) Open / 3.5 mm (f) Short - Torque wrench
	85033E-100	None	Adds 3.5mm (f) to 3.5 mm (f) adapter
	85033E-200	None	Adds 3.5mm (m) to 3.5 mm (m) adapter
	85033E-300	None	Adds 3.5mm (f) to 3.5 mm (m) adapter
	85033E-400	None	Adds; - 3.5 mm (m) to 50 Ω type- N (m) adapter - 3.5 mm (f) to 50 Ω type- N (f) adapter - 3.5 mm (f) to 50 Ω type- N (m) adapter - 3.5 mm (m) to 50 Ω type- N (f) adapter
	85033E-500	None	Adds; - 3.5 mm (m) to 7 mm adapter (2 qty.) - 3.5 mm (f) to 7 mm adapter (2 qty.)

1. *ECal doesn't cover the whole frequency range of the E5061B. Check whether the frequency range of the ECal module meets your measurement needs.*

2. *Mixed connector options are also available. Visit our website for more details about the ECal: www.agilent.com/find/ecal*

Calibration kits (for 50 Ω devices, continued)

Description	Model No.	Requires	Additional information
RF ECal module, 3.5 mm	85093C[1]	None	2-port (3.5 mm), 300 kHz to 9 GHz. The sexes of the connectors depend on the option.
	85093C-M0F[2]	None	3.5 mm (f) to 3.5 mm (m) RF ECal module
	85093C-00M[2]	None	3.5 mm (m) to 3.5 mm (m) RF ECal module
	85093C-00F[2]	None	3.5 mm (f) to 3.5 mm (f) RF ECal module
	85093C-00A	None	Adds; - 3.5 mm (f) to 3.5 mm (f) adapter - 3.5 mm (m) to 3.5 mm (m) adapter
RF ECal module, selectable connector type	N4431B[1]	None	4-port, 9 kHz to 13.5 GHz. The connector type depends on the option.
	N4431B-010[2]	None	Four 3.5 mm (f) connectors.
	N4431B-020[2]	None	Four 50 Ωtype-N (f) connectors
Standard calibration kit, 7-16, 50 Ω	85038A	None	50 Ω standard calibration kit, DC to 7.5 GHz. Includes; - 7-16 (m) Load / 7-16 (m) Open / 7-16 (m) Short - 7-16 (f) Load / 7-16 (f) Open / 7-16 (f) Short - Torque wrench - Open-end wrench
Standard calibration kit, 7-16, 50 Ω	85038F	None	50 Ω standard calibration kit, DC to 7.5 GHz. Includes; - 7-16 (f) Load / 7-16 (f) Open / 7-16 (f) Short - 7-16 (f) to 7-16 (f) adapter
Standard calibration kit, 7-16, 50 Ω	85038M	None	50 Ω standard calibration kit, DC to 7.5 GHz. Includes; - 7-16 (m) Load / 7-16 (m) Open / 7-16 (m) Short - 7-16 (m) to 7-16 (m) adapter
RF ECal module, 7-16	85098C[1]	None	2-port (7-16), 300 kHz to 7.5 GHz. The sexes of the connectors depend on the option.
	85098C-M0F[2]	None	7-16 (m) to 7-16 (f) RF ECal module
	85098C-00F[2]	None	7-16 (f) to 7-16 (f) RF ECal module
	85098C-00M[2]	None	7-16 (m) to 7-16 (m) RF ECal module
	85098C-00A	None	Adds; - 7-16 (m) to 7-16 (m) adapter - 7-16 (f) to 7-16 (f) adapter
Economy calibration kit, 7 mm, 50 Ω	85031B	None	50 Ω economy calibration kit, DC to 6 GHz. Includes; - 7 mm Load (2 qty.) - 7 mm combined Open/Short

1. *ECal doesn't cover the whole frequency range of the E5061B. Check whether the frequency range of the ECal module meets your measurement needs.*

2. *Mixed connector options are also available. Visit our website for more details about the ECal: www.agilent.com/find/ecal*

Test accessories (for 75 Ω devices)			
Description	Model No.	Requires	Additional information
Test Port Cable	11857B	None	75 Ω type-N cable set, 61 cm (24 in), 300 kHz to 2 GHz. Includes; - Type-N (m) to type-N (m) cable - Type-N (m) to type-N (f) cable
Test Port Cable	11857F	None	75 Ω type-N to type-F cable set, 61 cm (24 in).
	11857F-M0F	None	Includes; - Type-N (m) to type-F (m) cable - Type-N (m) to type-F (f) cable
	11857F-00F	None	Includes; - Type-N (m) to type-F (f) cable
	11857F-00M	None	Includes; - Type-N (m) to type-F (m) cable
Minimum Loss Pad	11852B	None	Type-N minimum loss pad. DC to 3 GHz, 50 Ω type-N (f) to 75 Ω type-N (m)
	11852B-004	None	50 Ω type-N (m) to 75 Ω type-N (f)

11857B

11852B

Calibration kits (for 75 Ω devices)

Description	Model No.	Requires	Additional information
Standard calibration kit, type-N, 75 Ω	85036B	None	75 Ω standard calibration kit, DC to 3 GHz. Includes; - Type-N (m) broadband load - Type-N (f) broadband load - Type-N (m) short - Type-N (f) short - Type-N (m) open - Type-N (f) open body - Type-N (f) open center conductor extender - Type-N (m) to type-N (m) adapter - Type-N (f) to type-N (f) adapter - Type-N (m) to type-N (f) adapter
Economy calibration kit, type-N, 75 Ω	85036E	None	75 Ω economy calibration kit, DC to 3 GHz. Includes; - Type-N (m) broadband load - Type-N (m) combined Open/Short
RF ECal module, Type-N, 75 Ω	85096C[1]	None	2-port (75 Ω type-N), 300 kHz to 3 GHz. The sexes of the connectors depend on the option.
	85096C-M0F	None	Type-N (m) to Type-N (f) RF ECal module
	85096C-00F	None	Type-N (f) to Type-N (f) RF ECal module
	85096C-00M	None	Type-N (m) to Type-N (m) RF ECal module
	85096C-00A	None	Adds; - Type-N (f) to Type-N (f) adapter - Type-N (m) to Type-N (m) adapter
Economy calibration kit, type-F, 75 Ω	85039B	None	75 Ω economy calibration kit, DC to 3 GHz.
	85039B-M0F	None	Includes; - Type-F (m) Load / Type-F (m) Open / Type-F (m) Short - Type-F (f) Load / Type-F (f) Open / Type-F (f) Short - Type-F (m) to type-F (m) adapter - Type-F (f) to type-F (f) adapter - Type-F (f) to type-N (m) adapter - Type-F (m) to type-N (f) adapter
	85039B-00F	None	Includes; - Type-F (f) Load - Type-F (f) Short - Type-F (f) Open - Type-F (f) to type-F (f) adapter
	85039B-00M	None	Includes; - Type-F (m) Load - Type-F (m) Short - Type-F (m) Open - Type-F (m) to type-F (m) adapter
RF ECal module, Type-F	85099C[1]	None	2-port (type-F), 300 kHz to 3 GHz. The sexes of the connectors depend on the option.
	85099C-M0F	None	Type-F (m) to Type-F (f) RF ECal module
	85099C-00F	None	Type-F (f) to Type-F (f) RF ECal module
	85099C-00M	None	Type-F (m) to Type-F (m) RF ECal module
	85099C-00A	None	Adds; - Type-F (f) to Type-F (f) adapter - Type-F (m) to Type-F (m) adapter

1. *ECal doesn't cover the whole frequency range of the E5061B. Check whether the frequency range of the ECal module meets your measurement needs.*

General accessories

Description	Model/Part No.	Requires	Additional information
GPIB Cable, 1 m (3.3 ft)	10833A	None	Provides a connection from a GPIB port to GPIB port.
GPIB Cable, 2 m (6.6 ft)	10833B	None	
GPIB Cable, 4 m (13.1 ft)	10833C	None	
GPIB Cable, 0.5 m (1.6 ft)	10833D	None	
GPIB Cable, 6 m (19.7 ft)	10833F	None	
GPIB Cable, 8 m (26.2 ft)	10833G	None	
GPIB to USB Interface	82357B	None	Provides a direct connection from a USB port to GPIB port.
Rack Mount Kit	5063-9216	None	Rack mount kit for use without handles. Can be ordered as option 1CM.
Front Handle Kit	5063-9229	None	Front handle kit. Can be ordered as option 1CN.
Rack mount and front handle kit	5188-4430	None	Rack mont kit and front handle kit are included. Can be ordered as option 1CP.
Rack mount rail kit	E3663AC	None	Rack mount rail kit for use with 5063-9216 or 5188-4430.
Transit case	–	–	Transit case for the E5061B is not provided.
Testmobile Scope Cart	1180CZ	None	Provides convenient mobility of test equipment.

10833A

82357B

1180CZ

Instrument upgrade

The following options of the E5061B are available as an upgrade option. You can add these options to the existing E5061B by ordering an upgrade kit.

Hardware upgrade (Installed by the Agilent service center)					
Option No.	Description	Upgrade kit No. (Order with this No.)	Customer installable	Requires	Not compatible
E5061B-1E5	High stability timebase	E5061BU-1E5	No	None	None

Software upgrade					
Option No.	Description	Upgrade kit No. (Order with this No.)	Customer installable	Requires	Not compatible
E5061B-010	Time domain/fault location analysis	E5006A-1FP	Yes	None	None

Literature resources

You can find detail information about the key features, application examples, and technical specifications of the E5061B.

Literature resources for the E5061B-3L5	
Literature title	Literature number
Agilent E5061B Network Analyzer Technical Overview	5990-4390EN
Agilent E5061B Network Analyzer Data Sheet	5990-4392EN

Web resources

Have access to the following website to acquire the latest news, product and support information, application literature and more. **http://www.agilent.com/find/ena**

Agilent Email Updates

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LXI

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LXI is the LAN-based successor to GPIB, providing faster, more efficient connectivity. Agilent is a founding member of the LXI consortium.

Remove all doubt

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www.agilent.com/find/removealldoubt

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	*0.125 €/minute
Germany	07031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
Switzerland	0800 80 53 53
United Kingdom	44 (0) 118 9276201

Other European Countries:
www.agilent.com/find/contactus
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