



## Agilent ESA/EMC Spectrum Analyzer Configuration Guide



This configuration guide will help you select the right options to optimize the ESA or EMC analyzer for your application. In addition, it includes information for upgrading your existing ESA or EMC analyzer. For additional product and application information, please see the information listed at the end of this guide.

The ESA analyzer is available in three “express option” choices that each have a simplified set of the most frequently ordered options. Express options are favorably priced and provide faster delivery.

The EMC analyzer is available in two models, which include the most frequently ordered options.

For unique requirements, the ESA analyzer may be custom configured from the complete set of available options.



## Express Analyzers - best delivery and price

### Basic Analyzer – ESA-L Series (Express Option BAS/BTG)

Note: All basic analyzers include a 50 ohm RF input port.

Available models		
E4411B (9 kHz to 1.5 GHz)		The BAS express option is only available on the ESA-L Series models. For a basic analyzer with tracking generator, order Option BTG instead of Option BAS.
E4403B (9 kHz to 3.0 GHz)		
E4408B (9 kHz to 26.5 GHz)		
Included options		Comments
IF sweep, and video output ports	A4J	Occupies one expansion slot
PIB connection	A4H	Occupies one expansion slot
IntuiLink PC connectivity software	***	Connects to Microsoft® Word and Excel
Available options		Comments
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with Option A4H; occupies one expansion slot
Narrow resolution bandwidths	1DR	100 Hz minimum on ESA-L Series
50 ohm tracking generator (9 kHz to 3.0 GHz)	BTG	TG operates to 1.5 GHz on E4411B; equivalent to Option BAS with 1DN
8590 Series programming code compatibility	290	Free download on Web at <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
Accessories shown on page 6		
Future upgrades		
Only limited upgrades are available on ESA-L Series		See page 8

## Express Analyzers - best delivery and price

### Standard Analyzer – ESA-E Series (Express Option STD/STG)

Available models		
E4402B (9 kHz to 3.0 GHz)		The STD express option is only available on the ESA-E Series models. For a standard analyzer with tracking generator, order Option STG instead of Option STD.
E4404B (9 kHz to 6.7 GHz)		
E4405B (9 kHz to 13.2 GHz)		
E4407B (9 kHz to 26.5 GHz)		
Included options		Comments
Fast time domain sweep, IF and video output ports	AYX	
FM demodulation / deviation	BAA	Occupies one expansion slot
GPIB Connection	A4H	Occupies one expansion slot
IntuiLink PC connectivity software	***	Connects to Microsoft Word and Excel
Available options		Comments
Performance option bundle	B75	Includes Options 1D5, 1DR, 1DS
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with Option A4H; occupies one expansion slot
High stability frequency reference	1D5	
Time-gated spectrum analysis	1D6	
50 ohm tracking generator (9 kHz to 3.0 GHz)	STG	Equivalent to Option STD with 1DN
Narrow resolution bandwidths	1DR	10 Hz minimum with Option 1DR or 1 Hz minimum with Options 1DR and 1D5
Preamplifier built-in for enhanced sensitivity	1DS	
Noise figure measurement application	219	Option 1DS recommended; occupies two expansion slots
Cable fault location measurement application	225	Requires Option 1DN or STG; recommended Option B7K
Phase noise measurement application	226	For phase noise measurements ≤ 10 kHz requires Option 1DR
Cable TV service and installation application	227	
Benchlink Web remote control software	230	Requires Option A4H
HP 8566/68 programming code compatibility	266	Free download on Web at <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
8590 Series programming code compatibility	290	Free download on Web at <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
Accessories shown on page 6		
Future upgrades		
Available expansion slots in the “standard” analyzer for future upgrades: E4402B – 3 expansion slots E4402B with Option 219 – 2 expansion slots E4404/5/7B – 2 expansion slots E4404/5/7B with Option 219 – 1 expansion slot		Future upgrades on the “standard” analyzer are available, given the necessary configuration requirements are met. See page 7.

## Express Analyzers - best delivery and price

### Communications Test Analyzer – ESA-E Series (Express Option COM)

Available models		
E4402B (9 kHz to 3.0 GHz) E4404B (9 kHz to 6.7 GHz) E4405B (9 kHz to 13.2 GHz) E4407B (9 kHz to 26.5 GHz)		The COM express option is only available on the ESA-E Series models.
Included options		Comments
High stability frequency reference	1D5	
Narrow resolution bandwidths	1DR	1 Hz minimum
ESA to 89601A vector signal analysis software link utility	231	
FM demodulation /deviation	BAA	Occupies one expansion slot
Digital demodulation hardware	B7D/B7E	Occupies two expansion slots
GPIO connection	A4H	Occupies one expansion slot
IntuiLink PC connectivity software	***	Connects to Microsoft Word and Excel
Available options		Comments
Replace GPIO connection (A4H) with serial port	1AX	Not compatible with Option A4 or Option 231; occupies one expansion slot
Time-gated spectrum analysis	1D6	Recommended selection
Preamplifier built-in for enhanced sensitivity	1DS	Recommended selection
Noise figure measurement personality	219 <sup>1</sup>	Option 1DS recommended with this option; occupies one expansion slot
Phase noise measurement personality	226 <sup>1</sup>	For phase noise measurements ≤ 10 kHz requires Option 1DR
Cable TV service and installation personality	227 <sup>1</sup>	
Modulation analysis personality	229 <sup>1</sup>	
Benchlink Web remote control software	230	Requires Option A4H
EDGE upgrade to GSM measurement personality	252 <sup>1</sup>	Requires Option BAH
cdmaOne measurement personality	BAC <sup>1</sup>	
GSM/GPRS measurement personality	BAH <sup>1</sup>	Requires Option 1D6
HP 8566/68 programming code compatibility	266 <sup>1</sup>	Free download on Web, <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
8590-Series programming code compatibility	290 <sup>1</sup>	Free download on Web, <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
Accessories shown on page 6		
Future upgrades		
Available expansion slots in “communications test” analyzer for future upgrades: E4402B – 2 expansion slots E4402B with Option 219 – 1 expansion cardslots E4404/5/7B – 1 expansion slot E4404/5/7B with Option 219 - no expansion slots		Future upgrades on the “communications test” analyzer are available given the necessary configuration requirements are met. See page 7.

1. If more than two or three measurement personalities are ordered, memory size limitations may limit the number that may be loaded into the ESA at any one time. For detailed information about memory size limits, please see the web site:  
<http://sa.tm.agilent.com/ESA/memory/>

## Custom Configurations

### ESA-L Series

Note: All custom ESA-L Series configurations include a 75 ohm RF input port.

Available models		
E4411B (9 kHz to 1.5 GHz)		Custom configuration not available for E4403B or E4408B
Included options		Comments
GPIB connection	A4H	Standard on every instrument unless Option 1AX is ordered; occupies one expansion slot
IntuiLink PC connectivity software	***	Connects to Microsoft Word and Excel
75 ohm impedance	1DP	Not compatible with Option 1DN
Available options		Comments
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with Option A4H; occupies one expansion slot
IF sweep, and video output ports	A4J	Occupies one expansion slot
Narrow resolution bandwidths	1DR	100 Hz minimum on ESA-L Series
75 ohm tracking generator (1 MHz to 1.5 GHz)	1DQ	Requires Option 1DP; not compatible with Option 1DN
8590 series programming code compatibility	290	Free download from <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
Accessories shown on page 6		
Future Upgrades		
Only limited upgrades are available on ESA-L Series		See page 8

## Custom Configurations

### ESA-E Series

Available models		
E4402B (30 Hz to 3.0 GHz) E4404B (30 Hz to 6.7 GHz) E4405B (30 Hz to 13.2 GHz) E4407B (30 Hz to 26.5 GHz)		Frequency range shown is with Option UKB installed The E4402B has six expansion slots The E4404/5/7B have five expansion slots
Included options		Comments
GPIB connection	A4H	Standard on every instrument unless 1AX is ordered; occupies one expansion slot
IntuiLink PC connectivity software	***	Connects to Microsoft Word and Excel
Available options		Comments
High stability frequency reference	1D5	Recommended option
Narrow resolution bandwidths	1DR	1 Hz minimum; recommended option
Low emissions shielding	060	Not compatible with Option B7B
Wide offset phase noise improvement and ACPR dynamic range extension	120	Occupies one expansion slot
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with Option A4H; occupies one expansion slot
Time-gated spectrum analysis	1D6	
50 ohm tracking generator (9 kHz to 3.0 GHz)	1DN	
Preamplifier built-in for enhanced sensitivity	1DS	
Noise figure measurement personality plus hardware	219 <sup>1</sup>	Occupies one expansion slot. Option 1D5 recommended
Cable fault location measurement personality	225 <sup>1</sup>	Requires Option 1DN; not compatible with Option BAH; recommended accessory Option B7K
Phase noise measurement personality	226 <sup>1</sup>	For phase noise measurements ≤ 10 kHz requires Option 1DR
Cable TV field service and analog broadcast measurement personality	227 <sup>1</sup>	
Modulation analysis personality	229 <sup>1</sup>	Requires Options B7D, B7E, A4H,1D5; includes capability of Option 231 <sup>2</sup>
Benchlink Web remote control software	230	Requires Option A4H
ESA to 89601A vector signal analysis software link utility	231	Requires Options B7D, B7E, A4H,1D5; Option 229 includes capability of Option 231 <sup>2</sup>
EDGE upgrade to GSM measurement personality	252 <sup>1</sup>	Requires Option BAH
HP 8566/68 programming code compatibility	266	Free download on Web, <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
8590 Series programming code compatibility	290	Free download on Web, <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a> ; no license required
Bluetooth measurement analyzer FSK demodulator (Option 106) Bluetooth measurement personality (Option 228)	304 <sup>1</sup>	Includes Options 228, 106, B7D, B7E, 1DS, 1D5; occupies three expansion slots
EMI detectors and FM demodulation	AYQ	Occupies one expansion slot; requires Option 1DR
Fast time domain sweep; IF, sweep, and video output ports	AYX	Occupies one expansion slot
External mixing	AYZ	Available on E4407B only
TV trigger and picture on screen	B7B	Requires Option BAA; not compatible with Option 060
Digital demodulation hardware	B7D / B7E	Requires Option 1D5; occupies two expansion slots
FM demodulation / deviation	BAA	Not compatible with Option 304, or 106; occupies one expansion slot
APC 3.5 mm input connector	BAB	Available on the E4407B only
cdmaOne measurement personality	BAC <sup>1</sup>	Requires Options B7D, B7E, 1D5
GSM/GPRS measurement personality	BAH <sup>1</sup>	Requires Options B7D, B7E, 1D5, 1D6; includes capability of Option 225
26.5 GHz uncalibrated built in preamp	H26	Performance not specified; available on E4407B only
70 MHz IF output	H70	Recommended for use with 89611A VSA; occupies one expansion slot
FM deviation personality enhancement	J36	Requires Option BAA. Measure peak-to-peak deviation, positive and negative peaks
100 Hz (30 Hz usable) frequency range extension	UKB	Requires Option 1DR
Accessories shown on page 6		

1. If more than two or three measurement personalities are ordered, memory size limitations may limit the number that may be loaded into the ESA at any one time. For detailed information about memory size limits, please see the web site: <http://sa.tm.agilent.com/ESA/memory/>

2. The 89601A software is available for download at: [www.agilent.com/find/89600](http://www.agilent.com/find/89600)

## Supplemental Option Information Equivalent Options and Bundles

Option	Equivalent Option(s)	Comments
<i>ESA-L Series</i>		
BAS - Basic analyzer	A4J	Order BAS or BTG to get best delivery and price
BTG - Basic analyzer with TG	A4J, 1DN	
<i>ESA-E Series</i>		
STD - Standard analyzer	AYX, BAA	Order STD, STG, or COM to get best delivery and price
STG - Standard analyzer with TG	AYX, BAA, 1DN	
COM - Communication test analyzer	B7D, B7E, 1D5, 1DR, BAA, 231	
B75 - Performance bundle	1DR, 1DS, 1D5	Only available with Express Analyzer Option STD or STG
304 - Bluetooth premium bundle	228, 106, B7D, B7E, 1DS, 1D5	Options 106 and 228 are not available outside of the Option 304 bundle

## Express Analyzers

### EMC Standard Analyzer - E7400A Series EMC Analyzer (Express Option STD/STG)

Available models		
E7402A (30 Hz to 3.0 GHz)		The standard EMC analyzer (option STD) contains all the included options listed below. To receive a standard analyzer with a tracking generator order options STG.
E7405A (30 Hz to 26.5 GHz)		
Included options		Comments
GPIB connection	A4H	Occupies one expansion slot
EMI detectors and FM demodulation	AYQ	Occupies one expansion slot
Fast time domain sweep, IF and video output ports	AYX	
100 Hz (30 Hz usable) frequency range extension	UKB	
Low emissions shielding	060	
Narrow resolution bandwidths	1DR	1 Hz resolution
Preamplifier built-in for enhanced sensitivity	1DS	Operates to 3 GHz
High stability frequency reference	1D5	
EMC measurement firmware	***	Automated EMC measurements
IntuiLink PC connectivity software	***	Connects to Microsoft Word and Excel
Available options		Comments
50 ohm tracking generator (9 kHz to 3.0 GHz)	STG	Equivalent to Option 1DN
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with Option A4H or E7415A EMI measurement software: occupies one expansion slot
Time-gated spectrum analysis	1D6	
Accessories shown on page 6		
Future upgrades		
Available expansion slots in the standard analyzer for future upgrades:		
E7402A - 3 expansion slots		
E7405A - 2 expansion slots		

## Accessories

### ESA and EMC Accessories

Options	Description	Comment	Part number <sup>1</sup>
<b>ESA specific accessories</b>			
A5D	12 VDC power cable	DC power connection available on every ESA	E4401-60066
AXT	Hard transit case		E4401-60101
AYT	Gray soft carrying/operation case		E4401-60117
AYU	Yellow soft carrying/operation case		E4401-60118
B7K	Cable fault measurement kit (50 ohm)	Requires Option 1DN or STG, and Option 225 or BAH	
042	Gray backpack carrying case		9300-2465
044	Yellow backpack carrying case		9300-2470
1CP	Rack mount kit with handles	This kit is designed to fit into Agilent racks only. For non-Agilent racks, additional end brackets are required and are available by ordering part number: 1494-0061	E4401-60057
1D7	50 to 75 ohm minimum loss pad		0955-1020
E1779A	Rechargeable snap-on battery and charger	Order as separate model number, not option number	
UK9	Front panel cover		E4401-60193
<b>Software / Firmware</b>			
B70	Benchlink spectrum analyzer, PC software	Also orderable as E4444A; requires A4H or 1AX	
230	Benchlink Web remote control software	Requires A4H	
***	IntuiLink software (shipped with every instrument)	Available on Web site for download	
UE2	Firmware upgrade	Firmware updates also available on Web site for free download <a href="http://www.agilent.com/find/esa_firmware">http://www.agilent.com/find/esa_firmware</a>	
<b>Documentation</b>			
OB1	Add extra manual set	Available for Web download	
UK6	Commercial calibration certificate with test data		
OBO	Delete manual set (retains CD-ROM version)		
OBV	Service documentation, component level CLIP	Component level information package	
OBW	Service documentation, assembly level	Performance verification and adjustment software included	
AB0	Taiwan-Chinese user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
AB1	Korea-Korean user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
AB2	China-Chinese user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
ABD	Germany-German user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
ABE	Spain-Spanish user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
ABF	France-French user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
ABJ	Japan-Japanese user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
ABZ	Italy-Italian user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
AKT	Russia-Russian user's guide	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	
<b>Warranty, service, and calibration (<a href="http://www.home.agilent.com/USeng/nav/-12217.0/pc.html">www.home.agilent.com/USeng/nav/-12217.0/pc.html</a>)</b>			
R-51B-001-C	1 year return-to-Agilent warranty and service	Standard	
R-51B-001-3C	3 year return-to-Agilent warranty and service	Default	
<b>General spectrum analyzer accessories</b>			
11970	Harmonic mixer series (26.5, 40, 50, 60, 75, 110 GHz)	For use in E4407B Option AYZ	
11974	Preselected millimeter mixer series (40, 50, 60, 75 GHz)	For use in E4407B Option AYZ	
11909A	Low noise amplifier to 1 GHz		
8447A/D	Amplifiers to 400 MHz and 1.3 GHz		
8449B	Preamplifier to 26.5 GHz		

Note: Pictures of certain accessories can be found in the ESA Series Brochure (5468-3278E).

1. For new instrument orders, accessories are ordered the same way as other options. For example, to order Option 1CP (rack mount and handle kit) for a new E4402B, order: E4402B-1CP.

There are two ways to order upgrades:

Method 1: Add the letter U to the end of the model number. For example, to order an Option 1CP for an existing E4402B, order: E4402BU-1CP

Method 2: Order the part number. For example, to order the rack mount and handle kit (equivalent to Option 1CP), order E4401-60057.

Depending on availability, faster delivery of upgrades may be possible by ordering the part number instead of the option number.

See [www.agilent.com/find/sa\\_upgrades](http://www.agilent.com/find/sa_upgrades) and [www.parts.agilent.com](http://www.parts.agilent.com) for more information.

# Upgrades ESA-E Series

<b>Available models:</b> E4401BU (9 kHz to 1.5 GHz) E4402BU (30 Hz to 3.0 GHz) E4404BU (30 Hz to 6.7 GHz) E4405BU (30 Hz to 13.2 GHz) E4407BU (30 Hz to 26.5 GHz)		Customer upgradeable	Customer upgradeable w/ test	Customer upgradeable with adjustment software	Return to service center	Return to factory
<b>Ordering instructions</b> To upgrade an existing ESA-E Series spectrum analyzer, order the corresponding model number followed by a 'U' and the desired option number. (ie. E440xBU-xxx)	For more information see: <a href="http://www.agilent.com/find/esa-e_upgrades">http://www.agilent.com/find/esa-e_upgrades</a>					

Hardware capabilities and performance						
Replace GPIB connection (A4H) with serial port GPIB connection	1AX	Not compatible with Option A4H; occupies one expansion slot		X		X
	A4H	Not compatible with Option 1AX; occupies one expansion slot		X		X
Wide offset phase noise improvement and ACPR dynamic range extension	120	Occupies one expansion slot		X		X
Time-gated spectrum analysis	1D6			X		X
50 ohm tracking generator (9 kHz to 3.0 GHz)	1DN	Operates to 1.5 GHz on E4401B		X		X
Narrow resolution BW	1DR			X		X
TV trigger and picture on screen	B7B	Requires BAA; not compatible with Option 060		X		X
Cable fault location accessory kit (50 ohm)	B7K	Requires Option 1DN and Option 225 or BAH	X			
FM demodulation/deviation	BAA	Not compatible with Options 304, or 106; occupies one expansion slot		X		X
Fast time domain sweep; IF, sweep, and video output ports	AYX	Not compatible with Options B7D, 304; occupies one expansion slot. Includes capability of Option A4J		X		X
Low emissions shielding	060	Not compatible with B7B		X		X
Preamplifier built-in for enhanced sensitivity	1DS	Operates to 3 GHz			X	X
100 Hz (30 Hz usable) frequency range extension	UKB	Requires Option 1DR			X	X
Digital demodulation hardware	B7D/ B7E	Requires Option 1D5; not compatible with Option AYX; occupies two expansion slots			X	X
APC 3.5 mm input connector	BAB	Available on the E4407B only			X	X
Bluetooth FSK demodulator	106	Requires Options B7D, 228; occupies one expansion slot		X		X
External mixing	AYZ	Available on E4407B only			X	X
EMI detectors quasi-peak and FM demodulation	AYQ	Occupies one expansion slot; requires Option 1DR		X		X
70 MHz IF out	H70	Occupies one expansion slot		X		X
26.5 GHz uncalibrated built in preamp	H26	Occupies one expansion slot				X
Memory extension to 10 MB	B72	Included on all new instruments starting with SN US4144 or MY4144; required for firmware version A.08.00 or higher	X			X
High stability frequency reference	1D5	E4401B			X	X
		E4402B/04B/05B/07B (SN prefix before 4421) <sup>2</sup>				X
		SN prefixes US4421, MY4421, SG4421 or later <sup>3</sup>			X	X
IF sweep, video output ports	A4J	Not compatible with AYX; occupies one expansion slot		X		X

Applications and firmware						
Noise figure measurement personality and hardware	219 <sup>1</sup>	Occupies one expansion slot; requires license key; Option 1DS recommended		X		X
Cable fault location measurement personality	225 <sup>1</sup>	Requires Option 1DN; recommended accessory Option B7K; firmware available on Web, requires license key	X			
Phase noise measurement personality	226 <sup>1</sup>	Firmware available on Web, requires license key	X			
Cable TV service and installation personality	227 <sup>1</sup>	Firmware available on Web, requires license key	X			
Bluetooth measurement personality	228 <sup>1</sup>	Requires Option B7D; requires Option 106 for full functionality	X			
Modulation analysis personality	229 <sup>1</sup>	Requires Options B7D/B7E, A4H,1D5; includes capability of Option 231; firmware available on Web, requires license key	X			
ESA to 89601A vector signal analysis software link utility	231 <sup>1</sup>	Requires Options B7D/B7E, A4H,1D5; Option 229 included capability of Option 231; free download from Web; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	X			
EDGE upgrade on GSM	252 <sup>1</sup>	Requires Options BAH, B7D/B7E, A4H, 1D5; requires Option 1DN for cable fault test	X			
HP 8566/68 programming code compatibility	266 <sup>1</sup>	Free download from Web; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	X			
8590 Series programming code compatibility	290 <sup>1</sup>	Free download from Web; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	X			
GSM/GPRS measurement personality	BAH <sup>1</sup>	Requires Options B7D/B7E, A4H,1D5; 1D6 firmware available on Web, requires license key	X			
cdmaOne measurement personality	BAC <sup>1</sup>	Requires Options B7D/B7E, A4H,1D5; firmware available on Web, requires license key	X			
FM deviation personality enhancement	J36 <sup>1</sup>	Requires Option BAA	X			

- If more than two or three measurement personalities are ordered, memory size limitations may limit the number that may be loaded into the ESA at any one time. For detailed information about memory size limits, please see the web site: <http://sa.tm.agilent.com/ESA/memory/>
- For serial number prefixes less than US4421, MY4421, or SG4421, order E440xBK-1D5
- For serial number prefixes US4421, MY4421, or SG4421 and later, order E440xBL-1D5

## Upgrades ESA-L Series

Available models:			Customer upgradeable	Customer upgradeable w/ test	Customer upgradeable with adjustment software	Return to service center	Return to factory
E4411BU (9 kHz to 1.5 GHz) E4403BU (9 kHz to 3.0 GHz) E4408BU (9 kHz to 26.5 GHz)		Options not listed are not available for upgrade on the ESA-L Series Analyzer					
Ordering instructions							
To upgrade an existing ESA-L Series spectrum analyzer, order the corresponding model number followed by a 'U' and the desired option number. Ex. E44xxBU-xxx		For more information see: <a href="http://www.agilent.com/find/esa-l_upgrades">http://www.agilent.com/find/esa-l_upgrades</a>					
HW capabilities and performance							
Color display upgrade	049	Requires B72 plus firmware version A11.00 or higher	X				
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with A4H; occupies one expansion slot		X		X	
GPIB connection	A4H	Not compatible with 1AX; occupies one expansion slot		X		X	
50 ohm tracking generator ( 9 kHz to 3.0 GHz)	1DN	Incompatible with 1DP; Operates to 1.5 GHz on E4411B; included in Option BTG		X		X	
75 ohm tracking generator (1 MHz to 1.5 GHz)	1DQ	E4411B only, requires Option 1DP		X		X	
Narrow resolution bandwidths	1DR	Requires B72 plus firmware version A11.00 or higher; 100 Hz minimum on ESA-L Series		X		X	
Memory extension to 10 MB	B72	Included on instrument prefixes $\geq$ US4144 or MY4144 Required for firmware version A.08.00 or higher	X			X	
IF sweep, video output ports	A4J	Included in all ESA-L analyzers with Option BAS or BTG; occupies one expansion slot		X		X	
APC 3.5 mm input connector	BAB	E4408B only			X	X	
Applications and firmware							
8590-series programming code compatibility	290	Available for Web download; <a href="http://www.agilent.com/find/esa">www.agilent.com/find/esa</a>	X				

## Upgrades E7400A series EMC analyzer

Available models:			Customer upgradeable	Customer upgradeable w/ test	Customer upgradeable with adjustment software	Return to service center	Return to factory
E7401AU (9 kHz to 1.5 GHz) E7402AU (30 Hz to 3.0 GHz) E7403AU (30 Hz to 6.7 GHz) E7404AU (30 Hz to 13.2 GHz) E7405AU (30 Hz to 26.5 GHz)		Options not listed are not available for upgrade on the EMC analyzers					
Ordering instructions							
To upgrade an existing EMC Series spectrum analyzer, order the corresponding model number followed by a 'U' and the desired option number. Ex. E740AU-xxx		For more information see: <a href="http://www.agilent.com/find/emc_upgrades">http://www.agilent.com/find/emc_upgrades</a>					
HW capabilities and performance							
Replace GPIB connection (A4H) with serial port	1AX	Not compatible with A4H or E7415A; occupies one expansion slot		X		X	
GPIB connection	A4H	Not compatible with 1AX; occupies one expansion slot		X		X	
Time-gated spectrum analysis	1D6			X		X	
IF sweep, video output ports	A4J	Occupies one expansion slot		X		X	
50 ohm tracking generator ( 9 kHz to 3.0 GHz)	1DN	Operates to 1.5 GHz on E7401A;		X		X	
Fast time domain sweep; IF, sweep, and video output ports	AYX	Occupies one expansion slot, standard in all E7400 analyzers with Option STD or STG		X		X	
100 Hz (30 Hz usable) frequency range extension	UKB	Included in all E7400 analyzers with Option STD or STG			X	X	
APC 3.5 mm input connector	BAB	Available on the E7405A only			X	X	
High stability frequency reference	1D5	Included in all E7400 analyzers with Option STD or STG				X	

**USED4TEST**

Телефон: +7 (499) 685-7744

used@used4test.ru

[www.used4test.ru](http://www.used4test.ru)