Options

Option		ESA E-Series					ESA L-Series		
		E4401B	E4402B	E4404B	E4405B	E4407B	E4411B	E4403B	E4408B
042	Gray Backpack Carrying Case	•	•	•	•	•	•	•	•
044	Yellow Backpack Carrying Case	•	•	•	•	•	•	•	•
049	Color Display[a]						•	•	•
060	Low Emission[bc]	•	•	•	•	•			
106	Bluetooth™ FM Demodulation[d]		•	•	•	•			
120	ACPR Dynamic Range Extension		•	•	•	•			
219	Noise Figure Measurement Personality and Hardware	•	•	•	•	•			
225	Distance to Fault Measurement Personality	•	•	•	•	•			
226	Phase Noise Measurement Personality	•	•	•	•	•			
227	Cable TV Measurement Personality	•	•	•	•	•			
228	Bluetooth™ Measurement Personality		•	•	•	•			
229	Modulation Analysis		•	•	•	•			
230	Benchlink Web Remote Control Software[e]	•	•	•	•	•			
231	ESA to 89600 Series Software Link Utility		•	•	•	•			
252	EDGE Upgrade GSM to Personality[f]		•	•	•	•			
266	8566 Series Programming Code Compatibility [e]	•		•	•	•		•	
290	8590 Series Programming Code Compatibility [g]	•	•	•	•	•	•	•	•
304	Bluetooth™ Premium Bundle		•	•	•	•			
0B0	Delete Manual Set	•	•	•	•	•	•	•	•
0B1	Add Manual Set	•	•	•	•	•	•	•	•
0BV	Service Documentation, Component Level	•	•	•	•	•	•	•	•
0BW	Service Documentation, Assembly Level	•	•	•	•	•	•	•	•
1AX	RS-232 and Parallel Interface[h]	•	•	•	•	•	•	•	•
1CP	Rack Mount with Handles	•	•	•	•	•	•	•	•

Option		ESA E-Series					ESA L-Series		
		E4401B	**E4402B**	**E4404B**	**E4405B**	**E4407B**	**E4411B**	**E4403B**	**E4408B**
1D5	High Stability Frequency Reference	•	•	•	•	•			
1D6	Time-Gated Spectrum Analysis	•	•	•	•	•			
1D7	50 to 75 Ohm Matching Pad	•	•	•	•	•	•	•	•
1DN	50 Ohm Tracking Generator	•	•	•	•	•	•	•	•
1DP	75 Ohm input[i]	•					•		
1DQ	75 Ohm Tracking Generator[j]	•					•		
1DR	Narrow Resolution Bandwidths	•	•	•	•	•	•	•	•
1DS	RF Preamplifier	•	•	•	•	•			
8ZE	Refurbished Analyzer	•	•	•	•	•	•	•	•
A4H	GPIB and Parallel Interface[k]	•	•	•	•	•	•	•	•
A4J	IF, Video and Sweep Ports[l]	•	•	•	•	•	•	•	•
A5D	DC Power Cable	•	•	•	•	•	•	•	•
AXT	Hard Transit Case	•	•	•	•	•	•	•	•
AYQ	FM Demod / Quasi Peak Detector[m]		•	•	•	•			
AYT	Gray Soft Carrying/Operating Case	•	•	•	•	•	•	•	•
AYU	Yellow Carrying/Operating Case	•	•	•	•	•	•	•	•
AYX	Fast Time Domain Sweeps	•	•	•	•	•			
AYZ	External Mixing					•			
B70	Benchlink Spectrum Analyzer Connectivity Software	•	•	•	•	•	•	•	•
B72	Enhanced Memory[n]	•	•	•	•	•	•	•	•
B74	RF and Digital Communications Hardware[i]		•	•	•	•			
B75	Performance Bundle[h]	•	•	•	•	•			
B7B	TV Trigger and Picture on Screen[o]	•	•	•	•	•			
B7D	Digital Signal Processing and Fast ADC[p]		•	•	•	•			
B7E	RF Communications Hardware[q]		•	•	•	•			
B7K	Distance to Fault Accessory Kit	•	•	•	•	•			

Option		ESA E-Series					ESA L-Series		
		E4401B	E4402B	E4404B	E4405B	E4407B	E4411B	E4403B	E4408B
BAA	FM Demodulation[r]	•	•	•	•	•			
BAB	APC 3.5 Input Connector					•			•
BAC	cdmaOne Measurement Personality		•	•	•	•			
BAH	GSM Measurement Personality		•	•	•	•			
BAS	Express Option: Basic Analyzer[i]						•	•	•
BTG	Express Option: Basic Analyzer with Tracking Generator[i]						•	•	•
COM	Express Option: Communications Test Analyzer[i]		•	•	•	•			
HD4	Bundled Options (A4H, A4J and 1DP, and 227)						•		
HD5	CATV Service and Installation Analyzer enhanced bundle option						•		
H70	70 MHz IF Output		•	•	•	•			
STD	Express Option: Standard Analyzer[i]		•	•	•	•			
STG	Express Option: Standard Analyzer with Tracking Generator[i]		•	•	•	•			
UE2	Firmware Upgrade Kit	•	•	•	•	•	•	•	•
UKB	Low Frequency Extension[s]		•	•	•	•			
UK6	Commercial Calibration[h]	•	•	•	•	•	•	•	•
UK9	Front Panel Cover	•	•	•	•	•	•	•	•
R-50C-011-3: 3 Year Inclusive Calibration Contract		•	•	•	•	•	•	•	•
R-50C-011-5: 5 Year Inclusive Calibration Contract		•	•	•	•	•	•	•	•
R-51B-001-3C: 3 Year Service Support		•	•	•	•	•	•	•	•
R-51B-001-5C: 5 Year Service Support		•	•	•	•	•	•	•	•

a. Included with new analyzer purchase.
b. This option is incompatible with Option B7B and Option 1DP.
c. Option 060 performance is obtained only when using ac input power. Standard performance is obtained when using battery or dc power.
d. Option 106 is incompatible with Option BAA and AYQ.
e. This option requires Option A4H.
f. Option 252 requires Option BAH.
g. This option requires Option A4H or Option 1AX.

h. Option 1AX is incompatible with Option A4H
i. This option is only available at time of purchase.
j. This option has a 75 Ohm output impedance, and is only available with Option 1DP.
k. Option A4H is incompatible with Option 1AX.
l. Option A4J is incompatible with Option AYX (Option AYX contains functionality of Option A4J).
m. Option AYQ is incompatible with Option BAA and 106.
n. Standard on analyzers with serial numbers greater than US41440000 or MY41440000
o. Option B7B requires Option BAA.
p. Option B7D requires Options B7E and 1D5, and contains Fast ADC compatibility of Option AYX, but does not contain functionality of Option A4J.
q. Option B7E requires Options B7D and 1D5.
r. Option BAA is incompatible with Option 106 and AYQ.
s. Option UKB requires Option 1DR.

Option Descriptions

Option Number	Name	Description
STD	Express Option: Standard Analyzer	Option STD simplifies ordering and speeds delivery of ESA-E Series analyzers with the following included options: • Fast Digitized Time Domain Sweeps with additional IF, Video, and Sweep Ports (Option AYX) • FM Demodulation (Option BAA)
STG	Express Option: Standard Analyzer with Tracking Generator	Option STG includes the 50 Ohm Tracking Generator (Option 1DN) with the same included options listed in the Option STD description.
BAS	Express Option: Basic Analyzer	Option BAS simplifies ordering and speeds delivery of ESA-L Series analyzers with the following option: • IF, Video, and Sweep Ports (Option A4J)
BTG	Express Option: Basic Analyzer with Tracking Generator	Option BTG includes the 50 Ohm Tracking Generator (Option 1DN) with the IF, Video, and Sweep Ports (Option A4J) listed in the Option BAS description.
COM	Express Option: Communications Test Analyzer	Option STD simplifies ordering and speeds delivery of ESA-E Series analyzers with the following included options: • Digital Signal Processing & Fast ADC (Option B7D) • FM Demodulation (Option BAA) • High Stability Frequency Reference (Option 1D5) • Narrow Resolution Bandwidth (Option 1DR) • RF Communications Hardware (Option B7E)

Option Number	Name	Description
HD4	Bundle Options	E4411B Option HD4 consists of the standard options A4H, A4J, 1DP, and 227. For information concerning the operation and connections, reference the standard user's and service guides for the E1799A under Option 227. You will need to refer to the E4411B User's and Service Guide under Options A4H, 1DP, and A4J. Option HD4 includes the following: • E4411B Opt A4H GPIB Parallel Interface • E4411B Opt 1DP (75Ω RF Input Impedance) • E4411B Opt A4J (IF and Sweep Ports) • E4411B Opt 227, Cable TV Measurement Personality User's Guide and Disk
HD5	Bundle Options	E4411B Option HD5 consists of the standard options A4H, A4J, 1DP, 227, along with special option HDS. For information concerning the operation and connections, reference the standard user's and service guides for the E1799A under Option 227. You will need to refer to the E4411B User's and Service Guide under Options A4H, 1DP, and A4J. Option HD5 includes the following: • E4411B Opt A4H (GPIB Parallel Interface) • E4411B Opt 1DP (75Ω RF Input Impedance) • E4411B Opt A4J (IF and Sweep Ports) • E4411B Opt 227, Cable TV Measurement Personality User's Guide and Disk • E4411B Opt HDS (Special Option Internal Preamplifier)

<table>
<tr><th>Option Number</th><th>Name</th><th>Description</th></tr>
<tr><td>H70</td><td>70 MHz IF Output Upgrade</td><td>E440xB Option H70 provides an analog 70 MHz IF Output to the rear panel of the ESA by down-converting the 321.4 MHz IF signal. The70 MHz IF is always “ON” while the ESA is powered up.

For all conversion loss parameters listed below, the attenuator setting is 0 dB. In highband, the preselector center routine must be performed to achieve the conversion loss listed below. If applicable, when Option 1DS (100 kHz to 3 GHz Preamp) is on, there will be a 28 dB to 30 dB of gain in the 70 MHz IF Output on the rear panel of the ESA. With the Preamp ON the conversion loss outlined below will be +22 dB.

While performing the “Align All” routine on the ESA, the 70 MHz IF Output will be corrupted due to the systems variable gain circuit stepping through the alignment routine.

There are no flatness corrections for the 70 MHz IF Out.

Nominal Characteristics for the 70 MHz IF
<table><tr><th>Parameter</th><th>70 MHz IF</th></tr><tr><td>Frequency</td><td>70 MHz</td></tr><tr><td>Conversion Loss < 3 GHz</td><td>–6 dB (± 2 dB)</td></tr><tr><td>Conversion Loss > 3 GHz</td><td>–8 dB (± 6 dB)</td></tr><tr><td>IF Bandwidth[a]:</td><td></td></tr><tr><td>Lowband < 3 GHz</td><td>30 MHz</td></tr><tr><td>Highband ≥ 3 GHz</td><td>30 to 60 MHz</td></tr></table>a. Lowband has a fixed 30 MHz filter that determines the IF bandwidth. Highband IF bandwidth is dependent on the internal RF YIG filter.

In all other respects this instrument is identical to the standard instrument specifications.</td></tr>
<tr><td>B72</td><td>Enhanced Memory Upgrade</td><td>Option B72 provides 2 SIMMS which increases the analyzer’s RAM to 32 MBytes and its flash or data storage memory to 16 MBytes (8 MBytes of which are available to the user for data storage and measurement personalities). Note, this option is standard in analyzers with prefixes of US4144 and MY4144 and above.</td></tr>
<tr><td>UE2</td><td>Firmware Upgrade Kit</td><td>Option UE2 provides the most current ESA spectrum analyzer firmware on 3-1/2 inch floppy disks.</td></tr>
</table>

Option Number	Name	Description
1D7	50 Ω to 75 Ω Matching Pad	This option provides a 50 Ω to 75 Ω matching pad with dc block to be used on the analyzer input. The pad has a frequency range of 9 ≤ MHz to 2 GHz. It adapts your standard 50 Ω analyzer to be compatible with a 75 Ω system under test. Connector types are 50 Ω Type-N (m) to 75 Ω BNC (f).
1DN	50 Ω Tracking Generator	Option 1DN provides a 9 kHz to 1.5 GHz built-in tracking generator for the Agilent E4401B and the Agilent E4411B. Option 1DN provides a 9 kHz to 3 GHz built-in tracking generator for the Agilent E4402B, E4403B, E4404B, E4405B, E4407B and E4408B. This source creates a source-receiver combination that allows insertion-loss, frequency response, and return-loss measurements. The source-receiver combination has a wide distortion-free dynamic range, plus good sensitivity and selectivity.
1DP	75 Ω Input Impedance	This option provides a 75 Ω input impedance instead of the standard 50 Ω impedance. Analyzers with this option use cables, circuit boards, and front panels that are different from the standard units. Option 1DP is only available on the Agilent E4401B and E4411B. Option 1DP is not available after the purchase of your analyzer.
1DQ	75 Ω Tracking Generator	Option 1DQ provides a 1 MHz to 1.5 GHz built-in tracking generator for the Agilent E4401B and the Agilent E4411B. This source creates a source-receiver combination that allows insertion-loss, frequency response, and return-loss measurements. The source-receiver combination has a wide distortion-free dynamic range, plus good sensitivity and selectivity. Option 1DQ has a 75 Ω output impedance, and is only available with Option 1DP.
1D6	Time-Gated Spectrum Analysis	Option 1D6 allows you to selectively measure the spectrum of signals that may overlap in the frequency domain, but are separated in the time domain. By adjusting a time gate based on a user-supplied trigger signal, you can significantly increase the diagnostic capability of your spectrum analyzer for time-interleaved signals.

Option Number	Name	Description
B7B	TV Trigger and Picture on Screen	*Option B7B requires Option BAA.* Option B7B allows you to trigger the analyzer sweep on a TV line of a demodulated TV waveform and view TV images in NTSC, PAL and SECAM standards on the analyzer display. Option B7B provides the following additional ports: EXT VIDEO IN/TV TRIG OUT - provides a shared baseband video input and a TTL output for the TV trigger (output through 75 Ω source impedance). EXT VIDEO OUT - provides a detected video output (before the analog-to-digital conversion) proportional to the vertical deflection of the trace (similar to Option BAA alone), and provides pass through of the signal at EXT VIDEO IN/TV TRIG OUT, if selected (75 Ω).
120	ACPR Dynamic Range Extension	Option 120 provides extended dynamic range for ACPR measurements by improving phase noise at offsets 800 kHz to 8 MHz.
BAB	APC 3.5 Input Connector	The type-N female connector is replaced with an APC 3.5 mm male connector. An APC 3.5 (f) to APC 3.5 (f), and BNC (f) to SMA (m) adapters are included for alignment purposes.
049	Color Display	Option 049 changes the monochrome display in the ESA L-Series to a color display. Included with new analyzer purchases.
B7D	Digital Signal Processing and Fast ADC	Option B7D provides digital signal processing, fast ADC, and a faster RMS detector. This option is required for many of the mobile communication measurements in the GSM and cdmaOne measurement personalities. Option B7D must be ordered with Option B7E (RF communications hardware) and Option 1D5 (high stability frequency reference). For A.07.00 firmware revisions and later, either this option or Option AYX (Fast Digitized Time Domain Sweeps) is required to perform the PowerStat Complementary Cumulative Distribution Function (PowerStat CCDF) for all radio standards.
AYZ	External Mixing	Option AYZ allows the use of Agilent 11970 Series, and Agilent 11974 external mixers with the Agilent E4407B analyzer to extend the frequency range to 110 GHz. Operation to 325 GHz is also possible with non-Agilent mixers.

Option Number	Name	Description
AYX	Fast Digitized Time Domain Sweeps	Option AYX allows fast digitized sweep times as fast as 20 µsec in spans of 0 Hz. Refer to the **Sweep** key description in your User's guide for information about possible sweep times. It also provides the following additional inputs and outputs: SWP OUT - sweep ramp output, provides a voltage ramp proportional to the sweep of the analyzer (0 V to 10 V). HI SWP OUT (TTL) - provides the HI SWP TTL signal as an output (TTL high during a sweep, TTL low during a retrace). It indicates when the analyzer is sweeping HI SWP IN (TTL) - allows external sweep control. It can be grounded to stop and reset the sweep. AUX VIDEO OUT - provides detected video output (before the analog-to-digital conversion) proportional to vertical deflection of the trace. AUX IF OUT - provides a 50 Ω, 21.4 MHz IF output that is the down-converted signal of the RF input of the analyzer. For A.07.00 firmware revisions and later, either this option or Option B7D (Digital Signal Processing and Fast ADC) is required to perform the PowerStat Complementary Cumulative Distribution Function (PowerStat CCDF) for all radio standards. It is also required to perform the ACP measurement when the NADC radio standard is selected.
1D5	High Stability Frequency Reference	Option 1D5 improves the frequency reference accuracy. The analyzer's synthesizer is phase locked to an oven controlled crystal oscillator (OCXO), instead of the standard VCXO. When present with narrow resolution bandwidth (Option 1DR) it provides 1 Hz and 10 Hz resolution bandwidths.
A4J	IF, Sweep and Video Ports	Option A4J provides the analyzer with additional inputs and outputs. They are as follows: SWP OUT, HI SWP OUT (TTL), HI SWP IN (TTL), AUX VIDEO OUT, and AUX IF OUT. SWP OUT - sweep ramp output, provides a voltage ramp proportional to the sweep of the analyzer (0 V to 10 V). HI SWP OUT (TTL) - provides the HI SWP TTL signal as an output (TTL high during a sweep, TTL low during a retrace). It indicates when the analyzer is sweeping. HI SWP IN (TTL) - allows external sweep control. It can be grounded to stop sweeping. AUX VIDEO OUT - provides detected video output (before the analog-to-digital conversion) proportional to vertical deflection of the trace. AUX IF OUT - provides a 50 Ω, 21.4 MHz IF output that is the down-converted signal of the RF input of the analyzer.

Option Number	Name	Description
060	Low Emission	Option 060 provides reduced radiated and conducted emissions to comply with EN55011 Class B requirements. The reduced emissions applies during ac operation only. Option 060 is incompatible with TV Trigger (Option B7B) and 75Ω input impedance (Option 1DP).
UKB	Low Frequency Extension	Option UKB extends the frequency range of the analyzer on the low end to 100 Hz when DC coupling is selected. This option requires installation of Option 1DR and is only available on ESA models E4402B, E4404B, E4405B, and E4407B.
1DR	Narrow Resolution Bandwidth	This option provides additional narrow resolution bandwidths of 10 Hz, 30 Hz, 100 Hz, and 300 Hz and 200 Hz EMI. These bandwidths improve the analyzer sensitivity and allow you to resolve closely spaced signals. If high stability frequency reference (Option 1D5) is also installed then 1 Hz and 3 Hz resolution bandwidth filters are available.
1DS	Preamplifier	The preamplifier improves the analyzer's sensitivity (lowers the noise floor) by approximately 16 dB.
B74	RF and Digital Communications Hardware	Option B74 includes: • RF Communications Hardware (Option B7E), • Digital Signal Processing and Fast ADC (Option B7D), • Time-Gated Spectrum Analysis (Option 1D6), • Memory Extension (Option B72), • High Stability Frequency Reference (Option 1D5), • Preamplifier (Option 1DS), • Narrow Resolution Bandwidth (Option 1DR). These options are required for optimum performance of the cdmaOne (Option BAC) or GSM measurement personality (Option BAH).
B75	Performance Bundle	Option B75 provides: • RF Preamplifier (Option 1DS) • Narrow Resolution Bandwidths (Option 1DR) • High Stability Frequency Reference (Option 1D5) Refer to Options 1DS, 1DR, and 1D5 for details. *This option is only available at time of purchase.*
B7E	RF Communications Hardware	Option B7E provides the communications hardware required for many digital communication measurements. Option B7E must be ordered with Option B7D (digital signal processing and fast ADC) and Option 1D5 (high stability frequency reference). This provides burst carrier trigger capability.

Option Number	Name	Description
BAA	FM Demodulation	Option BAA allows you to demodulate, display and measure deviation of FM modulated signals. You can listen to audio signals on a built-in speaker or with an earphone. Option BAA provides the following additional port: EXT VIDEO OUT - provides a detected video output (before the analog-to-digital conversion) proportional to the vertical deflection of the trace (75 Ω).
AYQ	FM Demodulation with Quasi-Peak Detector	Option AYQ allows you to demodulate, display and measure deviation of FM modulated signals. You can listen to audio signals on a built-in speaker or with an earphone. Option AYQ also provides your analyzer with squelch and quasi-peak detector capabilities.
A4H	GPIB and Parallel Interface	Allows you to control your analyzer from a computer that uses a general purpose interface bus (GPIB). Option A4H includes a GPIB connector, a parallel interface connector for printers, a CD-ROM containing IntuiLink Toolbar software, and the programmer's guide for you analyzer. The IntuiLink software allows you to download spectrum analyzer display or data files to a personal computer using Microsoft Word or Microsoft Excel. IntuiLink Toolbar installation instructions are included with the CD-ROM. Option A4H allows the analyzer to copy its display to a printer connected to the parallel interface connector. Option A4H is included with, or can be replaced with Option 1AX with all new analyzer orders. This option was formerly available as a separate option with previous analyzers.
1AX	RS-232 and Parallel Interface	Allows you to control your analyzer from a computer that uses an RS-232 interface. It includes a 2.5 meter 9-pin (f) to 9-pin (f) connector RS-232 cable (Agilent 5182-4794), a parallel interface connector for printers, a CD-ROM containing IntuiLink Toolbar software, and the programmer's guide for your analyzer. IntuiLink Toolbar allows you to download spectrum analyzer display or data files to a personal computer using Microsoft Word or Microsoft Excel. Option 1AX allows the analyzer to copy its display to a printer connected to the parallel interface port. Option 1AX can replace Option A4H, which is included with all new analyzer orders. This option was formerly available as a separate option with previous analyzers.
B7K	Distance to Fault Accessory Kit	Option B7K includes the 86205A (RF bridge), 11636A (power divider), 909A (coax termination), 11512A (coax short), 8120-8687 (coax cable), in a padded case.

Option Number	Name	Description
225	Distance to Fault Measurement Personality	Performs a Fast Fourier Transform to calculate the distance to a cable fault. This option must be ordered with tracking generator (Option 1DN). This measurement includes on-screen instructional dialog to guide set up and calibration. Velocity factor and cable loss can be user-defined or selected from several different pre-defined cable types.
106	Bluetooth™ FM Demodulation	Option 106 is required to perform FM demodulation on signals measured with the Bluetooth™ Measurement Personality (Option 228). Option 106 allows you to demodulate, display and measure deviation of Bluetooth™ FM modulated signals. You can listen to audio signals on a built-in speaker or with an earphone. Option 106 provides the following additional port: EXT VIDEO OUT - provides a detected video output (before the analog-to-digital conversion) proportional to the vertical deflection of the trace (75 Ω).
228	Bluetooth™ Measurement Personality	Provides transmitter and receiver measurements required to test Bluetooth™ devices. The set of Bluetooth™ measurements includes: • Modulation Overview • Output Power • Carrier Frequency Drift • Monitor Band/Channel • Initial Carrier Frequency Tolerance • Modulation Characteristics Option 228 includes: Bluetooth™ user's guide, Bluetooth™ quick reference card, Bluetooth™ measurement guide, and Bluetooth™ programming commands manual. Bluetooth™ FM Demodulation (Option 106) is required for full functionality of this personality.
304	Bluetooth™ Premium Bundle	Provides the following: • Bluetooth™ FM demodulator (Option 106) • Bluetooth™ measurement personality (Option 228) • high stability frequency reference (Option 1D5) • digital signal processing and fast ADC (Option B7D) • RF communications hardware (Option B7E) • enhanced memory upgrade (Option B72) • RF preamplifier (Option 1DS)
227	Cable TV Measurement Personality	Provides measurement capabilities necessary for installation and service of cable TV systems.

Option Number	Name	Description
BAC	cdmaOne Measurement Personality	Provides transmitter and receiver measurements that comply with various international digital communications standards. The measurements include: • channel power • receiver channel power • modulation accuracy (RHO) • code domain power • receiver spurious • out-of-band spurious • harmonics • occupied bandwidth • monitor channel/band • close-in spur For optimum performance of this personality, Option COM with RF Preamplifier (Option 1DS) is recommended.
BAH	GSM Measurement Personality	Provides transmitter and receiver measurements that comply with various international digital communications standards. The measurements include: • Transmit power • Power steps • Power versus time • Spurious emissions suite • Intermodulation attenuation suite • Phase and frequency error • Cable fault location suite • Slow frequency hopping cycle verification • Monitor suite • Output RF spectrum suite For optimum performance of this personality, Option COM with Time-Gated Spectrum Analysis (Option 1D6) and RF Preamplifier (Option 1DS) are recommended.
252	EDGE Measurement Personality	This option works with the GSM personality, Option BAH. It provides additional transmitter and receiver measurements that comply with the digital communications standards. The measurements include: • EDGE power versus time • EDGE EVM (error vector magnitude) • EDGE output RF spectrum suite

Option Number	Name	Description
229	Modulation Analysis Personality	Adds demodulation and analysis of the following base-band modulation formats. • QPSK • Offset QPSK • pi/4 dQPSK • QAM 16, 32, 64, 128, and 256 • GMSK (GSM standard compliant only) • 8 FSK (EDGE standard compliant only) This option also includes the ability to connect the analyzer to a Windows NT 4.0 or Win2000 based PC running Agilent 89600 VSA software. The Agilent 89600 VSA software is not included with this option, it is available separately.
219	Noise Figure Measurement Personality and Hardware	Provides noise figure measurements including: • Limit lines • Loss compensation • Extended frequency (measures up/down converters) To have specified performance below 3 GHz, you need the preamp Option 1DS.
226	Phase Noise Measurement Personality	Option 226 is an automated phase noise (dBc/Hz) measurement solution. It provides the ability to measure SSB noise, RMS noise, DANL, as well as the real-time generation of a phase noise vs. log offset frequency, and phase noise vs. time. High Stability Frequency Reference (Option 1D5) is recommended. Narrow resolution bandwidth (Option 1DR) is highly recommended. Without Option 1DR, the minimum offset frequency will be 10 kHz.
266	HP 8566B/8568B Programming Code Compatibility	Option 266 allows use of a limited set of 8566B/8568B programming commands to control the ESA Series analyzers. When this option is enabled, SCPI commands are disabled if the remote language selected is not SCPI.
290	8590 Series Programming Code Compatibility	Option 290 allows use of a limited set of 8590 Series programming commands to control the ESA Series analyzers. When this option is installed on an ESA analyzer, remote programming using SCPI commands is not possible. This option must be uninstalled to restore SCPI programming functionality.
231	ESA to 89600 Series Software Link Utility	Option 231 adds connectivity of an ESA analyzer to a Windows NT 4.0 or Windows 2000 based PC running Agilent 89600 VSA software. The Agilent 89600 VSA software is not included with this option. It is available separately.

Option Number	Name	Description
B70	Benchlink Spectrum Analyzer	Option B70 provides the Benchlink Spectrum Analyzer software which can be used to capture screen images and trace data using a personal computer (PC). The captured information can then be used in other PC applications, including word processors and spread sheets.
230	Web Remote Control Software	Option 230 provides software which can be used to control the analyzer remotely over the web. When the analyzer is connected via GP-IB to one personal computer (PC), access to the analyzer is available through any internet connection by specifying the IP address of the physically connected PC. The following analyzer functions are available through remote web access: • front panel control • capture screen images • capture trace data • remote programming commands (SCPI)
A5D	12 Vdc Power Cable	Option A5D provides a 12 Vdc power cable that allows your analyzer to be powered from 12 V automotive or truck batteries.
UK9	Front Panel Protective Cover	The cover assembly snaps onto the front of your analyzer to protect the front panel during travel and when the unit is not in use. The front panel protective cover includes a storage compartment to house small accessories or cables.
042 044	Backpack Operating and Carrying Cases	Options 042 and 044 are protective soft operating and backpack carrying cases. Option 042 is made of gray rip-stop nylon and Option 044 is made of yellow rip-stop nylon. An outside pocket holds manuals or other accessories. Reinforced adjustable padded shoulder straps provides ergonomic distribution between your shoulders. The front and rear panel soft covers adjust to be compatible with the front panel protective hard cover (Option UK9) and snap on battery pack (HP/Agilent E1779B). Side ventilation allows for operation without removal, but the maximum operating temperature is reduced to 45 °C.
AYT AYU	Operating and Carrying Cases	Options AYT and AYU are protective soft operating and carrying cases. Option AYT is made of gray rip-stop nylon and Option AYU is made of yellow rip-stop nylon. An outside pocket holds manuals or other accessories. A reinforced adjustable padded shoulder strap provides ergonomic distribution between your hand and shoulder. The front and rear panel soft covers adjust to be compatible with the front panel protective hard cover (Option UK9) and snap on battery pack (Agilent E1779B). Side ventilation allows for operation without removal, but the maximum operating temperature is reduced to 45 °C.

Option Number	Name	Description
AXT	Hard Transit Case	Option AXT provides a hard transit case. The hard transit case will survive commercial transportation. This rugged case has two wheels and an extendible handle for easy transport. The case can also accommodate two battery packs and ac adapters.
1CP	Rack Mount Kit with Handles	Option 1CP provides the parts necessary to mount the analyzer in a standard 19 inch (482.6 mm) equipment rack. It includes front handles and rack slides for added convenience. Rack mount height is 8.75 in (222.3 mm).
0B1	Additional Manual Set	Option 0B1 provides an additional copy of the User/Programmer, Measurements and Specifications documentation for your instrument.
0B0	Delete Manual Set	Option 0B0 deletes copies of the User's/Programmer's, Specifications and Measurements guides.
0BW	Service Documentation and Performance Verification and Adjustment Software	Option 0BW provides a copy of the *Agilent ESA Spectrum Analyzers Service Guide* and PC-based performance verification and adjustment software on CD-ROM. The service guide describes assembly level troubleshooting procedures, provides a parts list, and documents the adjustment procedures.
0BV	Component Level Service Documentation	Option 0BV provides a copy of the *Agilent ESA/EMC Spectrum Analyzers Component-Level Information*. The component-level information includes parts lists, component-location diagrams, and schematic diagrams for selected assemblies.
UK6	Commercial Calibration with Test Data	Option UK6 provides the factory calibration test data on a floppy disk and the standard commercial calibration certificate on the initial analyzer shipment. *Option UK6 is only available at time of purchase.*
R-50C-011-3	3 Year Inclusive Calibration Contract	Provides your analyzer with a 3 year analyzer calibration contract.
R-51B-001-3C	3 Year Service Support	Provides your analyzer with a total of 3 years of service support. This adds a 2 year service contract to the analyzer's base 1 year warranty.
R-50C-011-5	5 Year Inclusive Calibration Contract	Provides your analyzer with a 5 year analyzer calibration contract.
R-51B-001-5C	5 Year Service Support	Provides your analyzer with a total of 5 years of service support. This adds a 4 year service contract to the analyzer's base 1 year warranty.
8ZE	Refurbished Analyzer	Refurbished ESA E-Series and L-Series Spectrum Analyzers with various hardware options can be ordered subject to availability. Measurement personalities may be included or upgraded with Option 8ZE orders.