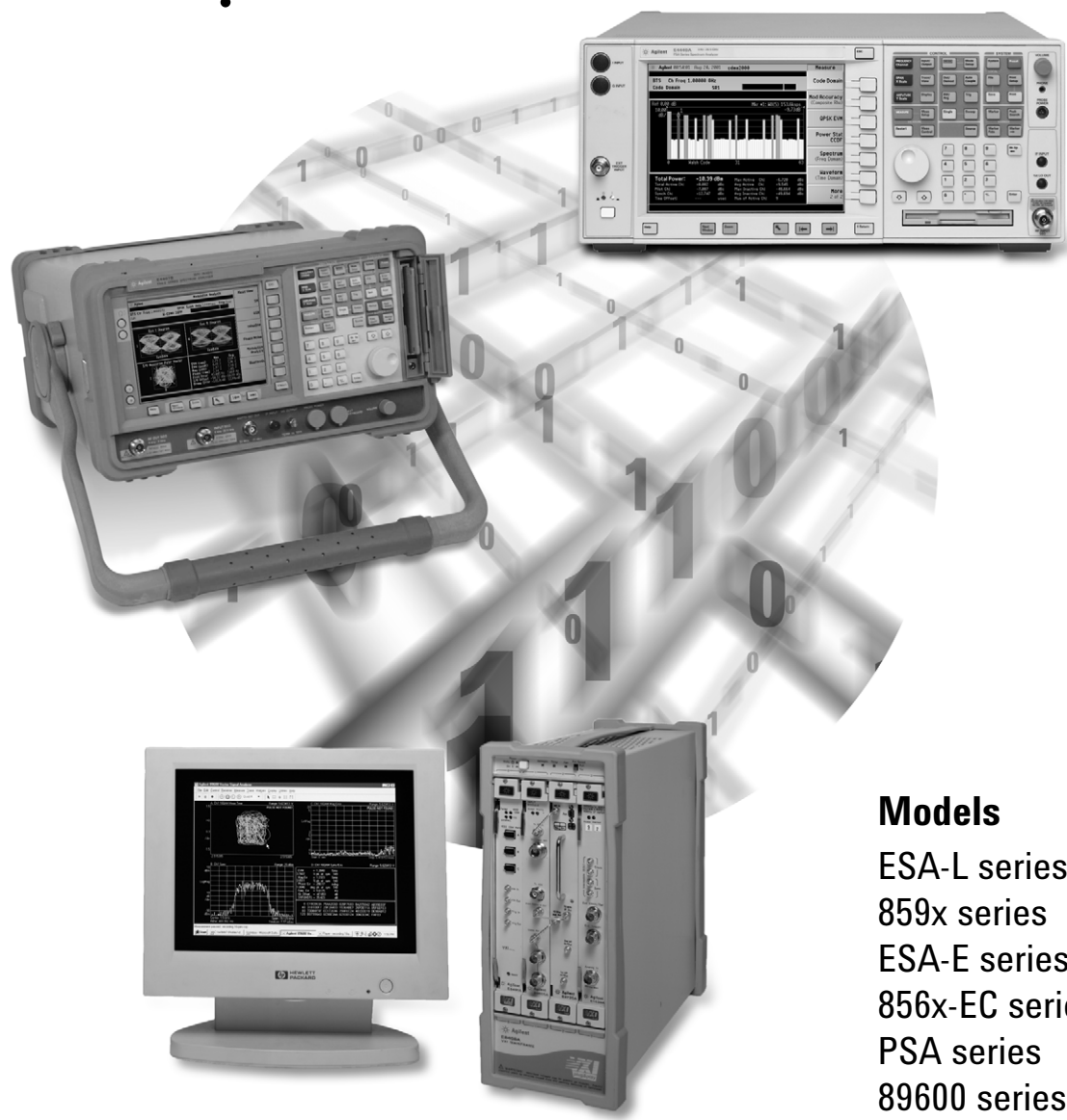


# Agilent Select the Right Signal Analyzer for Your Needs

Selection Guide



## Models

- ESA-L series
- 859x series
- ESA-E series
- 856x-EC series
- PSA series
- 89600 series
- 89400 series
- E4406A



Agilent Technologies



## Table of contents

Quick comparison of spectrum analyzer families . . . . .	4
Quick comparison of vector signal analyzer families . . . . .	4
Frequency ranges at a glance . . . . .	5
Recommended spectrum analysis solutions for your application . . . . .	6
Recommended vector signal analysis solutions for your application . . . . .	7
Spectrum analyzer comparison table . . . . .	8
Vector signal analyzer comparison table . . . . .	10
Agilent product literature and application notes . . . . .	11
Warranty information, contact information . . . . .	16

## How does a vector signal analyzer differ from a spectrum analyzer?

Traditional spectrum analyzers have a swept-tuned architecture, have a higher frequency range and wider dynamic range than vector signal analyzers, and usually have better RF characteristics overall.

However, a vector signal analyzer's strength lies in its ability to perform signal analysis separately from signal acquisition, its ability to demodulate complex and time-varying signals, and to preserve both the magnitude and phase information of a signal in order to perform advanced time-, frequency-, and modulation-domain analysis.

## Quick comparison of spectrum analyzer families

### PSA series

- Agilent's most advanced high performance spectrum analyzer
- comprehensive spectrum and one-button format-based modulation analysis for 2G/3G communications systems and components
- Power suite toolset allows for fast and accurate one-button, format-based power measurements
- leading edge performance, flexibility, and connectivity

### 856x-EC series

- high performance portable analyzers suited for R&D, field service, and manufacturing
- adaptable to specific applications with optional measurement personality cards
- outstanding phase noise, sensitivity, 1 Hz RBW
- up to 50 GHz continuous sweep spans
- mil-rugged, color display

### ESA-E series

- scalable, mid-performance platform with exceptional speed, accuracy, and dynamic range
- both general purpose and communication focused measurement personalities and 6-slot card cage to accept optional hardware cards
- designed to replace the popular 8590 series
- portable, ideal for field installation and maintenance with 12 Vdc power cable or snap-on battery
- 8590 series programming code compatibility for ease of migration

### 859x-E series

- scalable mid-performance platform for general purpose spectrum analysis
- broad range of measurement personalities available for specific applications
- portable, sturdy design

### ESA-L series

- Agilent's lowest-cost solution for basic spectrum analysis needs
- designed to be rugged, reliable, and easy to use
- fast, accurate results
- built-in floppy disk drive
- ready-to-go with minimal options

## Quick comparison of vector signal analyzer families

### E4406A

- optimized for wireless manufacturing and final design verification with one-button standards-based measurements
- extremely fast measurements and ease of use allow for increased production and throughput
- optional measurement personalities support up to seven wireless formats
- baseband IQ inputs allow you to test the complete signal path
- measure signals at up to 4 GHz

### 89400 series

- flexible in-depth vector modulation analysis
- optimized for in-depth R&D diagnostic analysis and troubleshooting
- quickly identify and quantify modulation impairments with extensive, flexible built-in tools
- superb phase noise, built in arbitrary source
- 8 MHz information bandwidth from DC up to 2.65 GHz

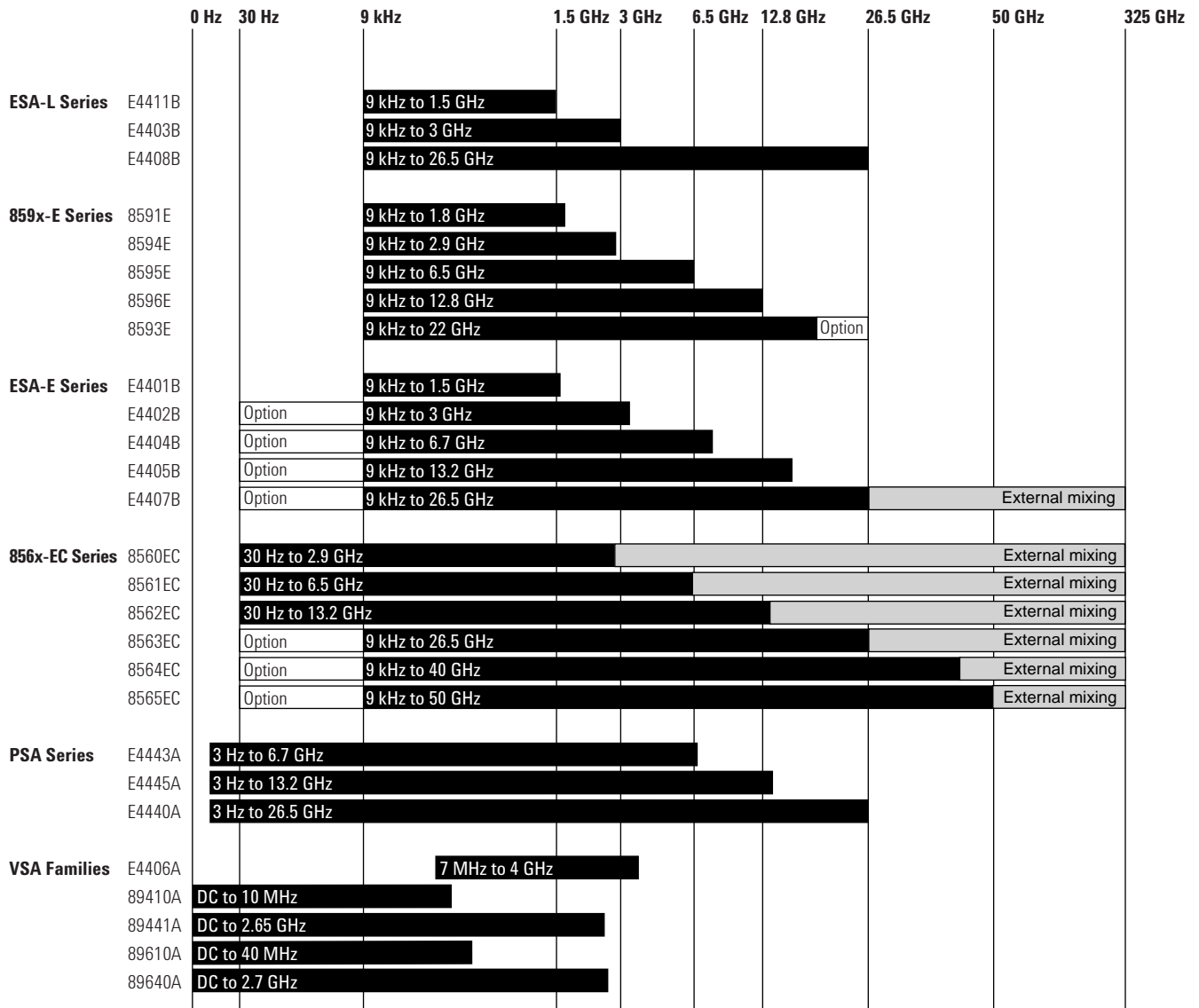
### 89600 series

- flexible in-depth vector modulation analysis
- powerful time, frequency, and modulation domain analysis
- extensive, flexible demodulation tools
- seamless integration with PC-based tools for unparalleled flexibility in simulation, troubleshooting, and diagnostics
- test your system even with missing hardware through links to simulation tools
- bridge the gap between virtual design world and real physical hardware
- 36 MHz information bandwidth
- PC software with RF front end hardware to 2.7 GHz

### E4406A + 89600 software

- use the E4406A as an RF front end to 89600 software
- perform one-button wireless standards-based design tests and flexible in-depth vector modulation analysis with one configuration
- extend troubleshooting capability of 89600 hardware up to 4 GHz

# Frequency ranges at a glance



# Recommended spectrum analysis solutions for your application

Optional application specific solutions <sup>1</sup>	ESA-L series	859x-E series	ESA-E series	856x-EC series	PSA series
Bluetooth			X		
Broadcast TV		X	X		
Cable TV	X	X	X		
Cable fault location			X		
cdma2000					X
cdmaOne		X	X		X
CT2-CAI		X			
DECT		X			
Digital radio		X		X	
EDGE					X
EMI Precompliance	X <sup>2</sup>	X	X <sup>2</sup>		
GSM/DCS1800/PCS1900		X	X		X
GPRS			X		
Microwave links		X			
Modulation analysis			X		
NADC (includes PCS)		X			X
Noise figure		X			
PDC		X			X
Phase noise			X	X	X
PHS		X			
Scalar analysis		X			
Spurious response				X	
W-CDMA					X

1. Generally available as a combination of optional hardware and measurement personalities  
 2. Available in E7400 series

# Recommended vector signal analysis solutions for your application

	E4406A	89400 series	89600 VSA Series
<b>Application specific solutions</b>			
Flexible vector modulation analysis <sup>1</sup>	x <sup>3</sup>	x	x
Wideband R&D analysis			x
Narrowband R&D troubleshooting		x	
Standard-compliant production and design verification	x		
Non-standard signal analysis		x	x
Software simulation, integration, and analysis <sup>2</sup>			x
Base station transmitter test	x		
Mobile transmitter test	x		

	E4406A	89400 series	89600 VSA series
<b>Standard-based preset measurements</b>			
802.11a			x
802.11b			x
APCO 25		x	x
Bluetooth		x	x
cdma2000	x		x
cdmaOne	x	x	x
CDPD		x	x
DECT		x	x
DTV8		x	x
DTV16		x	x
DVB16		x	x
DVB32		x	x
DVB64		x	x
EDGE	x	x	x
GSM	x	x	x
HIPERLAN Type 1 (high bit rate)			x
HIPERLAN Type 1 (low bit rate)			x
HIPERLAN Type 2			x
iDEN	x		
NADC	x	x	x
PDC	x	x	x
PHP (PHS)		x	x
TETRA		x	x
W-CDMA	x	x	x

1. Flexible modulation analysis refers to an analyzer's ability to demodulate non-standard or custom-made signals

2. With link to Agilent Advanced Design System (ADS)

3. Through 89601A software

# Spectrum analyzer comparison table

	<b>ESA-L series</b> Basic spectrum analysis	<b>859x-E series</b> Mid-performance tailored solutions	<b>ESA-E series</b> Mid-performance platform	<b>856x-EC series</b> High performance portable	<b>PSA series</b> Advanced high performance platform
<b>Overview</b>					
Performance	★	★★	★★★	★★★★	★★★★★
Price	\$	\$\$	\$\$	\$\$\$	\$\$\$\$
Application Specific Solutions		★★★★★	★★★	★	★★★
Expandable Platform		Standard	Standard		Standard
Performance Options		Available	Available	Standard	Standard
Frequency range	9 kHz to 26.5 GHz	9 kHz to 26.5 GHz	30 Hz to 26.5 GHz <sup>1</sup>	30 Hz to 50 GHz	3 Hz to 26.5 GHz
with external mixing			30 Hz to 325 GHz <sup>1,2</sup>	30 Hz to 325 GHz <sup>1,2</sup>	
<b>Specification summary</b>					
<b>Speed</b>					
Minimum RF sweep time	4 ms	20 ms	1 ms	50 ms	1 ms
Minimum zero span sweep time	4 ms	20 μs	25 ns <sup>1</sup>	50 ms	1 μs
Local measurement rate <sup>11</sup>	≥ 28/second	9/second	≥ 40/second	10/second	≥ 50/second
Remote measurement rate over GPIB <sup>11</sup>	≥ 30/second	7/second	≥ 40/second	7/second	≥ 22/second
RF center frequency tuning time <sup>11</sup>	≤ 90 ms		≤ 75 ms		
Warm-up time	5 minutes	30 minutes	5 minutes	5 minutes	30 minutes
<b>Phase noise</b>					
Phase noise at 1 GHz (10 kHz offset)	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz	-113 dBc/Hz	-114 dBc/Hz
Phase noise at 1 GHz (1 MHz offset)			-133 dBc/Hz <sup>1</sup>	-132 dBc/Hz <sup>10</sup>	-144 dBc/Hz
Phase noise at 1 GHz (10 MHz offset)			-137 dBc/Hz <sup>1</sup>		-157 dBc/Hz <sup>11</sup>
<b>Dynamic range</b>					
Maximum third-order dynamic range at 1 GHz	83 dB	88 dB	108 dB <sup>1,10</sup>	108 dB	113 dB
Maximum second-order dynamic range at 1 GHz	78.5 dB	78.5 dB	97.5 dB <sup>1,10</sup>	95 dB	99 dB
1 dB gain compression <sup>5</sup>	0 dBm	-5 dBm	0 dBm	-5 dBm	+3 dBm
Maximum safe input	+30 dBm	+30 dBm	+30 dBm	+30 dBm	+30 dBm
Attenuator range and step size	0 to 65 dB <sup>3</sup> in 5 dB steps	0 to 70 dB in 10 dB steps	0 to 65 dB <sup>3</sup> in 5 dB steps	0 to 70 dB <sup>4</sup> in 10 dB steps	0 to 70 dB in 2 dB steps
Displayed average noise level (DANL) at 1 GHz	-117 dBm	-127 dBm <sup>1</sup>	-150 dBm <sup>1,10</sup> / -166 dBm <sup>6,10</sup>	151 dBm <sup>1</sup>	-155 dBm / -169 dBm <sup>6</sup>
Calibrated display range (log amplifier)	85 dB	70 dB	85 dB to 120 dB <sup>1</sup>	100 dB <sup>7</sup>	> 110 dB
<b>Accuracy</b>					
Overall amplitude accuracy (9 kHz to 3 GHz)	± 1.1 dB	± 2.1 dB	± 1.0 dB	± 1.9 dB	± 0.65 dB
Span accuracy	± 1.0 %	± 2% to ± 3%	± 0.5 %	± 1% to ± 5%	± 0.2%
Frequency accuracy at 1 GHz <sup>9</sup>	± 2001 Hz	± 210 Hz	± 101 Hz	± 103 Hz	± 100 Hz
<b>Resolution</b>					
RBW range	1 kHz to 5 MHz	30 Hz <sup>1</sup> to 3 MHz	1 Hz <sup>1</sup> to 5 MHz	1 Hz to 2 MHz	1 Hz to 8 MHz
Best selectivity	15:1	10:1	5:1	5:1	4.1:1
RBW step size	1, 3, 10	1, 3, 10	1, 3, 10	1, 3, 10	10% steps <sup>8</sup>
Residual FM	≤ 150 Hz	≤ 30 Hz <sup>1</sup>	≤ 2 Hz <sup>1</sup>	< 1 Hz	< 1 Hz
EMI resolution bandwidths	9 kHz & 120 kHz	200 Hz <sup>1</sup> , 9 & 120 kHz	200 Hz <sup>1</sup> , 9 & 120 kHz		

1. Optional  
2. To 110 GHz with Agilent mixers  
3. 0 to 60 dB in 1.5 GHz models  
4. 0 to 60 dB for 40 & 50 GHz models

5. At frequencies < 3 GHz  
6. With optional built-in preamp  
7. RBW ≤ 100 Hz, 90 dB for RBW ≥ 300 Hz  
8. From 1 Hz to 3 MHz

9. Doesn't include settability or temperature stability  
10. Typical  
11. Nominal



# Spectrum analyzer comparison table

continued

Features	ESA-L Series	859x-E series	ESA-E series	856x-EC series	PSA series
Agilent ADS software link	Available		Available		
AM/FM demodulation	AM only	Available	Available	Standard	
Background auto-alignment	Standard		Standard	Standard	Standard
Battery (snap-on)/12 V operation	Available		Available		
BenchLink PC software	Available	Available	Available	Available	
BenchLink Web Remote software	Available		Available		Available
IntuiLink PC software	Standard		Standard		Standard
8590 - programming code compatibility	Available		Available		
Calibration interval	1 year	1 year	1 year	2 years <sup>3</sup>	1 year
Calibration / adjustment software	N2717A	Available	N2717A	Available	Available Dec. 1, 2001
Card cage		4-slot	6-slot		2-slot
Digital demodulation		Standard based	Standard based		Standard based
Display size	Monochrome 16.8 cm	Monochrome 13.5 cm	Color 16.8 cm	Color 16 cm	Color 21.3 cm
Expandable display	Standard		Standard	Standard	Standard
FFT mode		Standard		Standard	
Help built-in	Standard		Standard		
High stability frequency reference		Available	Available	Standard	Standard
Measurement personalities		Available	Available	Available	Available
Monitor output	VGA	NTSC or PAL	VGA	VGA	VGA
Power suite*	Standard	ACP, occupied bandwidth, third order intermodulation, and channel power only	Standard	ACP, occupied bandwidth, and channel power only	Standard
Preamplifier built-in			Available		Available
Remote interface	GPIO, RS-232 <sup>1</sup>	GPIO, RS-232 <sup>1</sup>	GPIO, RS-232 <sup>1</sup>	GPIO	GPIO, LAN
Remote programming	SCPI	Available	SCPI	Standard	SCPI
Removable storage	3.5" floppy disk	Memory card	3.5" floppy disk	Memory card	3.5" floppy disk
RMS detector	Standard		Standard		Standard
Segmented sweep			Standard		
Log sweep			Standard		
Split-screen display	Standard	Standard	Standard		
Sweep (trace) points	401	401	range <sup>4</sup> 101 to 8192	601	601
Time gating		Available	Available	Standard	FFT gating
Tracking generator built-in	Available	Available	Available	Available <sup>2</sup>	
TV trigger		Available	Available		
VXI plug&play drivers	Standard	Standard	Standard	Standard	Standard
Standard warranty	3 year global	1 year global	3 year global	1 year global	3 year global
Weight (nominal)	13.2 to 17.1 kg (29.1 to 37.7 lbs)	15.4 to 17.7 kg (34 to 39 lbs)	13.2 to 17.1 kg (29.1 to 37.7 lbs)	20 kg (44 lbs)	23 kg (50 lbs)
Zero span offset trigger	Pre/post		Pre/post	Pre/post	Post

\* **Power suite includes the following one-button measurements:**

multi-offset ACP	third order intermodulation
burst power	occupied bandwidth
CCDF (PSA and ESA-E only)	multi-carrier power
channel power	spectrum emission mask
harmonic distortion	spurious emissions

1. Optional
2. 8560-EC only
3. 1 year for 8564-EC and 8565-EC
4. 2 to 8192 for zero span

# Vector signal analyzer comparison table

	<b>E4406</b>	<b>89400 series</b>	<b>89600 series</b>
<b>Specification summary</b>			
Frequency range	7 MHz to 314 MHz, 329 MHz to 4 GHz	DC to 2.65 GHz	DC to 2.7 GHz
Information bandwidth	8 MHz	8 MHz	36 MHz
RBW range	10 Hz to 7.5 MHz	< 1 Hz to 3 MHz	< 1 Hz to 10 MHz
Phase noise at 1 GHz (10 kHz offset)	-99 dBc/Hz	-116 dBc/Hz	-99 dBc/Hz <sup>2</sup>
Third order intercept	24 dBm	6.5 dBm	4.0 dBm
Time capture	> 900 ksamples <sup>3</sup>	1 Msample	192 Msamples
Sensitivity at 1 GHz	-136 dBm/Hz <sup>4</sup>	-159 dBm/Hz	-159 dBm/Hz
Maximum safe input	+ 35 dBm	+ 25 dBm	+ 20 dBm
Attenuator range and step size	0 to 40 dB in 1 dB steps	0 to 75 dB in 5 dB steps	0 to 75 dB in 5 dB steps
Amplitude accuracy	± 0.6 dB	± 1.1 dB	± 2.1 dB
Frequency accuracy <sup>4</sup>	± 100 Hz <sup>5</sup>	± 100 Hz	± 100 Hz
RBW step size	arbitrary	arbitrary	arbitrary
Warm-up time	1 hour	30 minutes	30 minutes
<b>Features</b>			
Agilent ADS software link		Standard (file Only)	Dynamic <sup>1</sup>
Analog demodulation		AM/FM/PM	AM/FM/PM
Calibration interval	1 year	1 year	2 years
Digital demodulation	standard-based <sup>1</sup>	flexible	flexible
Flexible vector modulation analysis	(via 89601A software link)	Standard	Standard
Help built-in		Standard	Standard
Monitor output	VGA	VGA	User PC
Preamplifier built-in		Standard	Standard
Remote interface	GPIB, LAN	GPIB, RS232, LAN	GPIB, RS232, LAN
Removable storage	3.5" floppy disk	3.5" floppy disk	User PC
Source		Internal source <sup>1</sup>	(via ESG link)
Spectrogram	via 89601 software	Available	Standard
Split-screen display	Available	Standard	Standard
Time gating		Standard	Standard
User interface	Front panel	Front panel	User PC
Warranty (standard)	3-year global	1-year global	3-year global
Weight	19 kg (42 lbs)	25 kg (55 lbs)	16 kg (36 lbs)

1. Optional
2. Typical
3. Nominal
4. With +24 dB ADC gain
5. Doesn't include temperature drift, or settability

# Agilent product literature and application notes

## 8560 series

*8560-EC Series*, Brochure, literature number 5968-9571E  
*8560-EC Series*, Technical Specifications, literature number 5968-8156E  
*Agilent 8560 EC-Series Spectrum Analyzers and Accessories*, Configuration Guide, literature number 5968-8155E  
*Comparing Power Measurements on Digitally Modulated Signals*, Product Note, literature number 5968-2602E

## 8590 series

*8590 E-Series Portable Spectrum Analyzers*, Brochure, literature number 5963-6908E  
*8590 E-Series Portable Spectrum Analyzers*, Technical Specifications, literature number 5963-6909E  
*8590EM Series EMC Analyzers and Precompliance Systems*, Brochure, literature number 5964-6091E  
*Agilent 8590 C/E/L/Q and EM Series Spectrum Analyzers and Accessories*, Configuration Guide, literature number 5963-6858E  
*Scalar Network Analysis With The Agilent 8590 Series Spectrum Analyzers*, Product Note, literature number 5091-1338E  
*Digital Cable TV Carrier Power Measurement Personality*, Product Overview, literature number 5963-6885E  
*Transmitter Power Measurements*, Product Note, literature number 5091-4055E  
*Measuring Complex Burst Signals with Time-Gated Spectrum Analysis*, Product Note, literature number 5091-4053E  
*Measuring Close-in AM in Presense of FM*, Product Note, literature number 5091-4049E  
*Sorting Signals Using Multiple Markers, Maker Tables and Peak Tables*, Product Note, literature number 5091-4050E  
*View Two Different Frequency or Time Spans Simultaneously*, Product Note, literature number 5091-4051E  
*Obtaining Analog Spectrum Analyzer Characteristics with a Digital Display*, Product Note, literature number 5091-4054E  
*Portable NADC-TDMA Transmitter Tester*, Product Overview, literature number 5962-6217E

## ESA series

*ESA-E Series Spectrum Analyzer*, Brochure, literature number 5968-3278E  
*ESA-E Series*, Technical Specifications, literature number 5968-3386E  
*ESA-L Series Spectrum Analyzers*, Product Overview, literature number 5965-6309E  
*Agilent ESA Series Spectrum Analyzer Self Guided Demo*, Product Note, literature number 5968-3658E  
*ESA-E Series Measuring Signals Above 26.5 GHz*, Product Overview, literature number 5968-6873E  
*Modulation Analysis Measurement Personality*, Product Overview, literature number 5988-2116EN  
*GSM/GPRS Measurement Solutions for the Agilent ESA-E Series Spectrum Analyzers*, Product Overview, literature number 5968-6871E  
*cdmaOne Measurement Solutions for ESA-E Series Spectrum Analyzers*, Product Overview, literature number 5968-6869E  
*ESA-E Series TV Transmission Quality Measurements*, Product Overview, literature number 5968-6874E  
*Bluetooth Measurement Solution for ESA-E Series Spectrum Analyzers*, Product Overview, literature number 5980-2786EN  
*ESA-E Series Spectrum Analyzer Bluetooth Measurement Option*, Self-Guided Demo, literature number 5980-2577EN  
*Cable Fault Location Measurement Personality*, Product Overview, literature number 5980-1915E  
*Cable TV Service and Installation Analyzer*, Product Overview, literature number 5980-0845E  
*Phase Noise Measurement Personality*, Product Overview, literature number 5980-1191E  
*8590-Series Programming Code Compatibility for ESA-E and ESA-L Series Spectrum Analyzers*, Product Overview, literature number 5988-2900EN  
*ESA BenchLink Spectrum Analyzer Software*, Product Overview, literature number 5966-0676E  
*Agilent E1779A Snap-on Battery Pack*, Product Overview, literature number 5966-1851E  
*N2717A Performance Verification and Adjustment Software*, Product Overview, literature number 5968-5478E  
*EMC Analyzers and EMI Software*, Brochure, literature number 5968-2516E  
*Agilent E7400 A-series EMC Analyzers*, Technical Specifications, literature number 5968-3662E  
*ESA/EMC Spectrum Analyzer*, Configuration Guide, literature number 5968-3412E

## PSA series

*PSA Series -The Next Generation*,  
brochure, literature number 5980-1283E

*PSA Series*,  
data sheet, literature number 5980-1284E

*W-CDMA Measurement Personality*,  
product overview, literature number 5988-2388EN

*GSM with EDGE Measurement Personality*,  
product overview, literature number 5988-2389EN

*cdma2000 Measurement Personality*,  
product overview, literature number 5988-3694EN

*NADC/PDC Measurement Personality*,  
product overview, literature number 5988-3697EN

*Phase Noise Measurement Personality*,  
product overview, literature number 5988-3698EN

*cdmaOne Measurement Personality*,  
product overview, literature number 5988-3695EN

*Self-Guided Demonstration for Spectrum Analysis*,  
product note, literature number 5988-0735EN

*Self-Guided Demonstration for W-CDMA Measurements*,  
product note, literature number 5988-3699EN

*Self-Guided Demonstration for GSM &EDGE Measurements*,  
product note, literature number 5988-3700EN

*Self-Guided Demonstration for cdma2000 Measurements*,  
product note, literature number 5988-3701EN

*Self-Guided Demonstration for cdmaOne Measurements*,  
product note, literature number 5988-3702EN

*Self-Guided Demonstration for NADC and ADC Measurements*, product note,  
literature number 5988-3703EN

*Phase Noise Self-Guided Demonstration for the PSA Series*,  
product note, literature number 5988-3704EN

*PSA Series Demonstration CD*,  
CD-ROM, literature number 5988-2390EN

*Optimizing Dynamic Range for Distortion Measurements*,  
product note, literature number 5980-3079EN

*PSA Series Amplitude Accuracy*,  
product note, literature number 5980-3080EN

*PSA Series Swept and FFT Analysis*,  
product note, literature number 5980-3081EN

*PSA Series Measurement Innovations and Benefits*,  
product note, literature number 5980-3082EN

## External mixing

*R/Q/U/V281A,B mm-Wave-to-Coax-Adapters*, Product  
Overview, literature number 5965-1225E

*Agilent 11970 Series Preselected Millimeter Mixers*,  
Product Overview, literature number 5952-2748

*11970 Series Harmonic Mixers*, Technical  
Specifications, literature number 5968-1445E

*IntuiLink Software*, Data Sheet,  
literature number 5980-3115EN

## E4406A

*E4406A Vector Signal Analyzer*, Brochure,  
literature number 5968-7618E

*E4406A Vector Signal Analyzer*, Technical  
Specifications, literature number 5968-3030E

*E4406A Vector Signal Analyzer Self-Guided Demo*,  
Product Note, literature number 5968-7617E

*Performance Guide for the E4406A VSA with 89601A  
Vector Signal Analysis Software*, Product Note,  
literature number 5988-2906E

*GSM/EDGE Base Station Test with the E4406A VSA  
and ESG-D Series RF Signal Generators*,  
Product Overview, literature number 5968-8333E

*N2714A Performance Verification and Adjustment  
Software for the Agilent E4406A VSA-Series  
Transmitter Tester*, Product Overview,  
literature number 5968-4021E

## 89400 series

*Powerful Solutions to Complex Measurement Problems*,  
Brochure, literature number 5965-8554E

*Agilent 89400 Series*, Product Overview, literature  
number 5967-6271E

*Agilent 89441A dc to 2.6 GHz Vector Signal Analyzer*,  
Technical Specifications, literature number 5965-5425E

*Agilent 89410A dc to 10 MHz Vector Signal Analyzer*,  
Technical Specifications, literature number 5965-5427E

*Agilent 89400 Series Vector Signal Analyzers*,  
Configuration Guide, literature number 5964-3630E

*Time-Capture Capabilities of the Agilent 89400 Series  
Vector Signal Analyzers*, Product Note, literature  
number 5091-8686E

*Using Vector Modulation Analysis in the Integration,  
Troubleshooting and Design of Digital RF  
Communications Systems*, Product Note, literature  
number 5091-8687E

*Frequency and Time-Selective Power Measurements  
with the Agilent 89410A and 89440A*, Product Note,  
literature number 5091-7194E

*10 Steps to a Perfect Digital Demodulation Measurement*,  
Product Note, literature number 5966-0444E

## 89600 series

*Agilent 89600 Series*, Brochure, literature  
number 5968-9350E

*89600A Vector Signal Analyzer CD*, Compact disk  
software, literature number 5980-1989E

*Agilent 89610A dc to 40 MHz Vector Signal Analyzer*,  
Technical Specifications, literature number 5980-1259E

*Agilent 89610A dc to 2700 MHz Vector Signal Analyzer*,  
Technical Specifications, literature number 5980-1258E

*Agilent 89600 Series Vector Signal Analyzers*,  
Configuration Guide, literature number 5968-9350E

## Application notes

*Spectrum Analysis Basics*, Application Note 150, literature number 5952-0292

*8 Hints for Making Better Spectrum Analyzer Measurements*, Application Note 1286-1, literature number 5965-7009E

*Optimizing Spectrum Analyzer Amplitude Accuracy*, Application Note 1316, literature number 5968-3659E

*Optimizing Spectrum Analyzer Dynamic Range*, Application Note 1315, literature number 5968-4545E

*Optimizing Spectrum Analyzer Measurement Speed*, Application Note 1318, literature number 5968-3411E

*Spectrum Analyzer Measurements and Noise*, Application Note 1303, literature number 5966-4008E

*Understanding GSM Transmitter and Receiver Measurements for Base Transceiver Stations and their Components*, Application Note 1312, literature number 5968-2320E

*Measuring EDGE Signals - New & Modified Techniques & Measurement Requirements*, Application Note 1361, literature number 5980-2508EN

*Designing and Testing cdma2000 Mobile Stations*, Application Note 1358, literature number 5980-1237E

*Designing and Testing cdma2000 Base Stations*, Application Note 1357, literature number 5980-1303E

*Designing and Testing 3GPP W-CDMA User Equipment*, Application Note 1356, literature number 5980-1238E

*Designing and Testing 3GPP W-CDMA Base Stations*, Application Note 1355, literature number 5980-1239E

*Performing Bluetooth RF Measurements Today*, Application Note 1333, literature number 5968-7746E

*Wireless 3G Solutions*, Brochure, literature number 5968-5860E

*Connected Solutions for 3G*, Configuration Guide, literature number 5968-5031E

*Tools For Digital Microwave Radio Installation And Maintenance*, Application Note 355-1, literature number 5962-9920

*Digital Modulation in Communication Systems-An Introduction*, Application Note 1298, literature number 5965-7160E

## For further information

For the latest product, support and application information, visit our Web sites at:

<http://www.agilent.com/find/psa>  
<http://www.agilent.com/find/esa>  
<http://www.agilent.com/find/8560>  
<http://www.agilent.com/find/8590>  
<http://www.agilent.com/find/89400>  
<http://www.agilent.com/find/89600>  
<http://www.agilent.com/find/vsa>  
<http://www.agilent.com/find/emc>  
<http://www.agilent.com/find/IntuiLink>  
<http://www.agilent.com/find/eesof>  
<http://www.agilent.com/find/notifyme>





## **Agilent Technologies Test and Measurement Support, Services, and Assistance**

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

### **Our Promise**

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

### **Your Advantage**

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

*T&M Support and Service Overview*, literature number 5968-7149E, is a 12-page extract from the Test & Measurement catalog section on hardware and software support, describing engineering services, support, repair, and training available through out the lifecycle of customer test systems.

By internet, phone, or fax, get assistance with all your test and measurement needs

**Online assistance: [www.agilent.com/find/assist](http://www.agilent.com/find/assist)**

Phone or Fax

**United States:** (tel) 1-800-452-4844

**Canada:** (tel) 1-877-894-4414  
(fax) (905)-282-6495

**China:** (tel) 800-810-0189  
(fax) 1-0800-650-0121

**Europe:** (tel) (31 20)-547-2323  
(fax) (31 20)-547-2390

**Japan:** (tel) (81)-426-56-7832  
(fax) (81)-426-56-7840

**Korea:** (tel) (82-2)-2004-5004  
(fax) (82-2)-2004-5115

**Latin America:** (tel) (305)-269-7500  
(fax) (305)-269-7599

**Taiwan:** (tel) 080-004-7866  
(fax) (886-2)-2545-6723

### **Other Asia Pacific**

**Countries:** (tel) (65)-375-8100  
(fax) (65)-836-0252  
Email: [tm\\_asia@agilent.com](mailto:tm_asia@agilent.com)

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2001  
Printed in USA, October 12, 2001  
5968-3413E



**Agilent Technologies**