

## KEYSIGHT TECHNOLOGIES (AGILENT HP)

# 8560EC

The Keysight Agilent 8560EC is a high-performance, portable RF spectrum analyzer covering a frequency range from 30 Hz to 2.9 GHz. Engineered with a bright, active-matrix color LCD display, synthesized tuning, outstanding phase noise, and fast digital resolution bandwidths from 1 Hz to 3 MHz, the 8560EC provides laboratory-grade measurement capability in a rugged, MIL-PRF-28800 Class 3 compliant portable package. It is highly optimized for adjacent-channel power (ACP) testing of digital modulation formats and occupied bandwidth measurements.

## SPECIFICATIONS

### General

|         |                                              |
|---------|----------------------------------------------|
| Display | 6.4 in (16.3 cm) active matrix color TFT LCD |
|---------|----------------------------------------------|

### Physical

|              |                                                                                       |
|--------------|---------------------------------------------------------------------------------------|
| Power Supply | 90 to 140 VAC (47 to 440 Hz), 180 to 250 VAC (47 to 66 Hz), < 180 W power consumption |
|--------------|---------------------------------------------------------------------------------------|

|                       |                  |
|-----------------------|------------------|
| Operating Temperature | -10 to +55 °C °C |
|-----------------------|------------------|

|                    |                             |
|--------------------|-----------------------------|
| Dimensions (W×H×D) | 337 mm x 187 mm x 461 mm mm |
|--------------------|-----------------------------|

### Frequency Specifications

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| Frequency Range | 30 Hz to 2.9 GHz (DC-coupled), 100 kHz to 2.9 GHz (AC-coupled) |
|-----------------|----------------------------------------------------------------|

|                      |                                     |
|----------------------|-------------------------------------|
| Frequency Span Range | 0 Hz (zero span), 100 Hz to 2.9 GHz |
|----------------------|-------------------------------------|

|                         |             |
|-------------------------|-------------|
| Frequency Span Accuracy | ±1% of span |
|-------------------------|-------------|

|                                            |                                      |
|--------------------------------------------|--------------------------------------|
| RBW Shape Factor (Digital, 1 Hz to 100 Hz) | < 5:1 (60 dB / 3 dB bandwidth ratio) |
|--------------------------------------------|--------------------------------------|

### Amplitude Specifications

|                             |                 |
|-----------------------------|-----------------|
| Amplitude Measurement Range | DANL to +30 dBm |
|-----------------------------|-----------------|

|                                    |     |
|------------------------------------|-----|
| Maximum Safe DC Input (DC-Coupled) | 0 V |
|------------------------------------|-----|

|                                    |      |
|------------------------------------|------|
| Maximum Safe DC Input (AC-Coupled) | 50 V |
|------------------------------------|------|

|                             |                                                         |
|-----------------------------|---------------------------------------------------------|
| Maximum Safe RF Input Power | +30 dBm (1 W) continuous with ≥ 10 dB input attenuation |
|-----------------------------|---------------------------------------------------------|

|                        |            |
|------------------------|------------|
| Input Attenuator Range | 0 to 70 dB |
|------------------------|------------|

|                            |       |
|----------------------------|-------|
| Input Attenuator Step Size | 10 dB |
|----------------------------|-------|

### Amplitude Accuracy

|                                           |                            |
|-------------------------------------------|----------------------------|
| Frequency Response (Flatness, DC-Coupled) | ±1.0 dB (30 Hz to 2.9 GHz) |
|-------------------------------------------|----------------------------|

|                                           |                              |
|-------------------------------------------|------------------------------|
| Frequency Response (Flatness, AC-Coupled) | ±1.0 dB (100 kHz to 2.9 GHz) |
|-------------------------------------------|------------------------------|

|                                      |                             |
|--------------------------------------|-----------------------------|
| Calibrator Output Accuracy (300 MHz) | ±0.3 dB (at -10 dBm output) |
|--------------------------------------|-----------------------------|

|                                            |                                   |
|--------------------------------------------|-----------------------------------|
| Resolution Bandwidth Switching Uncertainty | ±0.5 dB (referred to 300 kHz RBW) |
|--------------------------------------------|-----------------------------------|

## Phase Noise and Purity

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Phase Noise at 10 kHz Offset  | <-113 dBc/Hz (at 1 GHz)                            |
| Phase Noise at 30 kHz Offset  | <-113 dBc/Hz (at 1 GHz)                            |
| Phase Noise at 100 kHz Offset | <-117 dBc/Hz (at 1 GHz)                            |
| Phase Noise at 1 MHz Offset   | <-130 dBc/Hz (at 1 GHz)                            |
| Residual Responses            | <-90 dBm (with no input signal, 10 MHz to 2.9 GHz) |

## Sweep and Triggering

|                                 |                                 |
|---------------------------------|---------------------------------|
| Sweep Time Range (Span > 0 Hz)  | 50 ms to 100 s                  |
| Sweep Time Range (Zero Span)    | 50 us to 6000 s                 |
| Sweep Time Accuracy (Zero Span) | ±1%                             |
| Sweep Trigger Sources           | Free Run, Line, External, Video |
| Sweep Modes                     | Continuous, Single              |

## Inputs and Outputs

|                                     |                         |
|-------------------------------------|-------------------------|
| RF Input Connector Type             | Type-N female           |
| RF Input Impedance                  | 50 ohms (nominal)       |
| 1st LO Output Connector             | SMA female (rear panel) |
| 1st LO Output Frequency             | 3.0 to 6.81 GHz         |
| IF Input/Output Connector           | SMA female (rear panel) |
| IF Input/Output Frequency           | 310.7 MHz               |
| External Reference Input Connector  | BNC female (rear panel) |
| External Reference Input Frequency  | 10 MHz (nominal)        |
| External Reference Output Connector | BNC female (rear panel) |
| External Reference Output Frequency | 10 MHz (nominal)        |
| External Trigger Input Connector    | BNC female (rear panel) |

## General and Environmental

|                                          |                                                                           |
|------------------------------------------|---------------------------------------------------------------------------|
| Operating Temperature Range              | -10 °C to +55 °C                                                          |
| Relative Humidity Range                  | 95% at 40 °C for 5 days                                                   |
| Calibration Cycle                        | 1 year (recommended)                                                      |
| Height                                   | 187 mm (7.4 in)                                                           |
| Width                                    | 337 mm (13.3 in)                                                          |
| Depth                                    | 461 mm (18.1 in)                                                          |
| Adjacent Channel Power (ACP) Measurement | Standard built-in capability for digital modulation burst carrier testing |
| Occupied Bandwidth Measurement           | Standard built-in capability with percentage measurement capability       |

## Options and Configurations

|                                        |                                                         |
|----------------------------------------|---------------------------------------------------------|
| Option 002 Built-in Tracking Generator | Built-in tracking generator option (300 kHz to 2.9 GHz) |
|----------------------------------------|---------------------------------------------------------|

Performance

|                                            |                                                                                    |
|--------------------------------------------|------------------------------------------------------------------------------------|
| Image, Multiple, and Out-of-Band Responses | <-80 dBc (10 MHz to 2.9 GHz)                                                       |
| Reference Level Range (Log)                | -120 dBm to +30 dBm in 0.1 dB steps                                                |
| Amplitude Units                            | dBm, dBmV, dBuV, V, W                                                              |
| Detector Modes                             | Peak, Sample, Negative Peak, Normal (Rosenfell)                                    |
| Maximum Safe Pulse Peak Power              | +50 dBm (100 W) for <10 us pulse width, <1% duty cycle with<br>>=30 dB attenuation |

Inputs & Outputs

|                      |                                    |
|----------------------|------------------------------------|
| Blanking/Gate Output | TTL level, BNC female (rear panel) |
|----------------------|------------------------------------|

Options

|                                               |                    |
|-----------------------------------------------|--------------------|
| Option 002 Tracking Generator Frequency Range | 300 kHz to 2.9 GHz |
|-----------------------------------------------|--------------------|

Power Requirements

|                                  |                                |
|----------------------------------|--------------------------------|
| AC Input Voltage (115V)          | 90 to 140 V rms (47 to 440 Hz) |
| AC Input Voltage (230V)          | 195 to 250 V rms (47 to 66 Hz) |
| AC Input Frequency Range (115 V) | 47 Hz to 440 Hz                |
| AC Input Frequency Range (230 V) | 47 Hz to 66 Hz                 |

Sweep Specifications

|                                            |                             |
|--------------------------------------------|-----------------------------|
| Option 007 Fast Digitized Sweep Time Range | 50 μs to 6000 s (zero span) |
| Number of Sweep Points                     | 601                         |

Demodulation

|                    |           |
|--------------------|-----------|
| Demodulation Modes | AM and FM |
|--------------------|-----------|

TECHNOLOGY

Superheterodyne Spectrum Analyzer

APPLICATIONS

RF Transmitter Testing, Wireless Communications, Adjacent-Channel Power (ACP) Measurements, Field Maintenance

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