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Data Sheet

August 3, 2026

KEYSIGHT

Keysight E8663B 509 9 GHz PSG Analog Signal Generator OPTS 509 AND HAR

Keysight E8663B PSG Analog Signal Generator OPTS 509 AND HAR The Agilent/Keysight E8663B is a fully synthesized PSG analog signal generator with low phase noise and high output power. This configuration includes Option 509 (frequency range 100 kHz to 9 GHz) and Option HAR (improved phase noise below 500 MHz, as listed in Agilent/Keysight option guides). CW frequency resolution is 0.001 Hz. Analog modulation (AM, FM, Φ M, pulse) is supported per installed modulation options. Radar and satellite LO/stimulus; low-noise local oscillator and reference signals; ATE requiring 8662A/8663A code compatibility and high spectral purity through 9 GHz. The Agilent/Keysight E8663B is a fully synthesized PSG analog signal generator with low phase noise and high output power. This configuration includes Option 509 (frequency range 100 kHz to 9 GHz) and Option HAR (improved phase noise below 500 MHz, as listed in Agilent/Keysight option guides). CW frequency resolution is 0.001 Hz. Analog modulation (AM, FM, Φ M, pulse) is supported per installed modulation options. Radar and satellite LO/stimulus; low-noise local oscillator and reference signals; ATE requiring 8662A/8663A code compatibility and high spectral purity through 9 GHz.

No photo

MODEL

Keysight E8663B

CALIBRATION

**N/A — off-catalog
OEM datasheet**

CONDITION

**See OEM
documentation**

STATUS

**Not listed on
Aumictech
inventory**

RFQ / SKU

E8663B

LISTING

**Off-catalog — OEM dat
asheet only**

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

Features & description

From manufacturer datasheet

Features

- Option 509: 100 kHz to 9 GHz frequency coverage
- Option HAR: Improved phase noise below 500 MHz
- CW resolution: 0.001 Hz; sweep modes 0.01 Hz
- CW switching speed: < 11 ms typical (7 ms nominal)
- High output power with step attenuator (0 dB and 5–115 dB in 10 dB steps)
- Output power (Opt 509): up to +15 dBm (+18 typ) to 3.2 GHz; up to +21 dBm (+22 typ) >3.2–9 GHz
- Low close-to-carrier SSB phase noise (see tables)
- 10 MHz reference I/O; GPIB; 8662A/8663A command compatibility

E8663B Characteristics / Specifications

PARAMETER	VALUE
Model	E8663B
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	PSG Analog Signal Generator
Alias	E8663B; Agilent E8663B; E8663B-509 Installed Options (this configuration)
Range (Option 509)	100 kHz to 9 GHz
CW Resolution	0.001 Hz; sweep modes 0.01 Hz
Sweep Mode Resolution	0.01 Hz
CW Switching Speed	< 11 ms typical (7 ms nominal)
Phase Offset	Adjustable in nominal 0.1° increments Frequency Bands (N factor)
Band	>3.2–9 GHz (N=1) Timebase
Aging	< $\pm 3 \times 10^{-8}$ /year or < $\pm 2.5 \times 10^{-10}$ /day after 30 days
Temperature Effects (typ)	< $\pm 4.5 \times 10^{-9}$ (0 to 55 °C)
External Reference	10 MHz only; lock range ± 1.0 ppm
Reference Output	10 MHz, > +4 dBm into 50 Ω (typ) Output Power (Option 503/509) 100–250 kHz: –135 to +10 dBm (nom) 250 kHz–3.2 GHz: –135 to +15 dBm (+18 typ); with Option UNW –135 to +10 (+13) >3.2–9 GHz: –135 to +21 dBm (+22 typ)
Step Attenuator	0 dB and 5 dB to 115 dB in 10 dB steps
Level Resolution	0.01 dB
Output Impedance	50 Ω (nom)
Max Reverse Power	1/2 W, 0 VDC
Option 509	100 kHz to 9 GHz frequency coverage
Option HAR	Improved phase noise below 500 MHz
Output power (Opt 509)	up to +15 dBm (+18 typ) to 3.2 GHz; up to +21 dBm (+22 typ) >3.2–9 GHz

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
Specifications	
PARAMETER	VALUE
Model	E8663B
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	PSG Analog Signal Generator
Alias	E8663B; Agilent E8663B; E8663B-509
Installed Options (this configuration)	
Option 509: Frequency range 100 kHz to 9 GHz	
Option HAR: Improved phase noise below 500 MHz	
Frequency	
Frequency	
PARAMETER	VALUE
Range (Option 509)	100 kHz to 9 GHz
CW Resolution	0.001 Hz
Sweep Mode Resolution	0.01 Hz
CW Switching Speed	< 11 ms (typ), 7 ms (nom)
Phase Offset	Adjustable in nominal 0.1° increments
Frequency Bands (N factor)	
Frequency Bands (N factor)	
PARAMETER	VALUE
Band 1	100 kHz–250 MHz (N=1/8)
Band 2	>250–500 MHz (N=1/16)
Band 3	>500 MHz–1 GHz (N=1/8)
Band 4	>1–2 GHz (N=1/4)
Band 5	>2–3.2 GHz (N=1/2)
Band 6	>3.2–9 GHz (N=1)
Timebase	
Specifications	

PARAMETER	VALUE
Aging	< $\pm 3 \times 10^{-8}$ /year or < $\pm 2.5 \times 10^{-10}$ /day after 30 days
Temperature Effects (typ)	< $\pm 4.5 \times 10^{-9}$ (0 to 55 °C)
External Reference	10 MHz only; lock range ± 1.0 ppm
Reference Output	10 MHz, > +4 dBm into 50 Ω (typ)

Output Power (Option 503/509)

100–250 kHz: –135 to +10 dBm (nom)

250 kHz–3.2 GHz: –135 to +15 dBm (+18 typ); with Option UNW –135 to +10 (+13)

>3.2–9 GHz: –135 to +21 dBm (+22 typ)

Specifications

PARAMETER	VALUE
Step Attenuator	0 dB and 5 dB to 115 dB in 10 dB steps
Level Resolution	0.01 dB
Output Impedance	50 Ω (nom)

SWR (internally leveled, typ): <1.4:1 (250 kHz–2 GHz); <1.6:1 (>2–9 GHz)

Max Reverse Power: 1/2 W, 0 VDC

Level Accuracy (examples, Opt 509, 15–35 °C)

250 kHz–2 GHz: ± 0.6 dB (many level bands)

>2–9 GHz: ± 0.8 dB (many level bands); see datasheet for –70 to –90 dBm bands

Spectral Purity

Harmonics (at +10 dBm or max specified, whichever lower):

<10 MHz: –28 dBc (typ below 1 MHz)

10 MHz–2 GHz: –30 dBc

>2–9 GHz: –55 dBc

Sub-harmonics 100 kHz–9 GHz: None

Non-harmonics (examples, offsets >300 Hz): 250 kHz–250 MHz –65 dBc; >250 MHz–1 GHz –80 dBc; >3.2–9 GHz –62 dBc

Absolute SSB Phase Noise (CW, dBc/Hz) – Spec (Typ) examples

250 kHz–250 MHz @ 10 kHz offset: –128 (–132)

>250–500 MHz @ 10 kHz: –132 (–136)

>500 MHz–1 GHz @ 10 kHz: –130 (–134)

>1–2 GHz @ 10 kHz: –124 (–129)

>2–3.2 GHz @ 10 kHz: –120 (–124)

>3.2–9 GHz @ 10 kHz: –110 (–114) (Option HAR improves phase noise below 500 MHz relative to standard; use installed option performance / cal data for warranted HAR deltas.)

Operational Notes

Confirm Option 509 and HAR on the instrument option list / rear panel. Do not confuse with E8663D successor.

Prefer Agilent E8663B datasheet for full phase-noise, modulation, and pulse option tables (UNW, UNX, etc.).

Ordering Information

OPTION	DESCRIPTION
Option 509	(frequency range 100 kHz to 9 GHz) and Option HAR (improved phase noise below 500 MHz, as listed in Agilent/Keysight option guides). CW frequency resolution is

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: N/A — off-catalog OEM datasheet. See OEM documentation · Not listed on Aumictech inventory.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

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NIST-traceable calibration · SAM registered ·
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.