CONFIGURATION GUIDE

E8257D PSG Microwave Analog Signal Generator

KEYSIGHT TECHNOLOGIES

This guide assists in the ordering process of the E8257D PSG microwave analog signal generator. Standard product includes installation guide, electronic documentation set (CD-ROM), adapters, and country specific power cord.

Keysight Technologies, Inc. PSG Microwave Analog Signal Generator Options

Step 1. Choose a frequency range (required)

All frequency range options support underrange to 100 kHz. However, performance specifications are not provided between 100 kHz and 250 kHz. Additionally, Option 567 supports overrange to 70 GHz. Typical performance specifications are provided between 67 GHz and 70 GHz.

Ordering number	Description	Purpose	Requires
E8257D-513	Frequency range from 250 kHz to 13 GHz	Selects the maximum frequency of the signal generator	
E8257D-520	Frequency range from 250 kHz to 20 GHz	Selects the maximum frequency of the signal generator	
E8257D-532	Frequency range from 250 kHz to 31.8 GHz	Selects the maximum frequency of the signal generator	
E8257D-540	Frequency range from 250 kHz to 40 GHz	Selects the maximum frequency of the signal generator	
E8257D-550	Frequency range from 250 kHz to 50 GHz	Selects the maximum frequency of the signal generator	
E8257D-567	Frequency range from 250 kHz to 67 GHz	Selects the maximum frequency of the signal generator	

Step 2. Choose ultra-high output power model

Ordering number	Description	Purpose	Requires
E8257D-521 [1]	Ultra-high output power model frequency range from 10 MHz to 20 GHz	Selects the frequency range of the ultra-high output power signal generator	

Step 3. Choose modulation

Ordering number	Description	Purpose	Requires
Standard	CW signal generation	Generates continuous wave (CW) signals (i.e. no modulation)	
E8257D-UNT	AM, FM, phase modulation, and LF output	Generates analog modulated signals	
E8257D-UNU [2]	Pulse modulation	Generates pulse modulated signals (150 ns minimum pulse width)	
E8257D-UNW [2]	Narrow pulse modulation	Generates pulse modulated signals (20 ns minimum pulse width)	
E8257D-1SM [3]	Scan modulation	Provides deep AM capability	E8257D-520 and -UNT

Step 4. Choose step attenuator

Ordering number	Description	Purpose	Requires
Standard	No step attenuator	Generates signals with output power levels ranging from –20 dBm to maximum power	
E8257D-1E1	Step attenuator	Generates signals with output power levels below –20 dBm (20, 31.8, and 40 GHz models range from –135 dBm to their maximum power, and 50 and 67 GHz models range from –110 dBm to their maximum power)	

1. E8257D-521 is not compatible with E8257D-513, -520, -532, -540, -550, -567, 1SM, or 1EU. E8257D-521 includes E8257D-1EH.
2. Option E8257D-UNU and E8257D-UNW are mutually exclusive; choose one or the other or neither. However, option E8257D-UNU can be upgraded to E8257D-UNW.
3. E8257D-1SM is not compatible with E8257D-521, -532, -540, -550, 567, or 1EM.

Step 5. Choose high output power

Ordering number	Description	Purpose	Requires
Standard	Standard output power	Generates standard level RF output power	
E8257D-1EU	High output power	Generates high power signals	

Step 6. Choose spectral purity

Ordering number	Description	Purpose	Requires
Standard	Standard spectral purity	Provides low phase noise	
E8257D-UNX [2]	Ultra-low phase noise frequency offsets ranging from 1 Hz to 10 kHz	Improves phase noise performance close-to-carrier	
E8257D-UNY [2]	Enhanced ultra-low phase noise	Improves phase noise for carrier offsets from 1 Hz to 300 kHz	
E8257D-1EH	Improved harmonics below 2 GHz	Improves harmonic performance for carrier frequencies below 2 GHz	
E8257D-HY2 [2]	Enhanced Ultra Low Phase Noise Level 2	Up to 8 dB improvement in phase noise performance at offsets > 1 MHz from carrier compared to option UNY	

Step 7. Choose ramp sweep

Ordering number	Description	Purpose	Requires
E8257D-007	Analog ramp sweep	Generates a fully synthesized ramp (analog) sweep of frequency and amplitude	

Step 8. Choose instrument security

Ordering number	Description	Purpose	Requires
E8257D-008	Removable flash memory	Provides 8 GB of removable compact flash memory. All user-accessible files are located on this memory card	

Step 9. Choose custom options [1]

Custom options add unique capabilities to the signal generator for specific applications.

Ordering number	Description	Purpose	Requires
8257D-HCC	Add input and output of phase reference LO	Provides multi-source phase coherency	U3035P distribution network is recommended
E8257D-H1S	Add 1 GHz external frequency reference input and output. Incompatible with HCC	Enables use of an external frequency reference to improve spectral purity	E8257D-UNX or E8257D-UNY
E8257D-HGT	Add compatibility with GT-8003 scalar network analyzer	Provides operation with Gigatronics SNA	E8257D-007
E8257D-HNS [3]	Modified narrow pulse modulation	Provides the pulse performance of Option UNW below 31.8 GHz and the performance of Option UNU above 31.8 GHz	E8257D-540, 550, or 567
E8257D-HNY [3]	Enhanced ultra-low phase noise, phase noise, modified version. Incompatible with 1EM, 1ED, 1SM, or any custom hardware options	Provides improved phase noise performance approximately midway between Option UNX and Option UNY performance levels	E8257D-1E1 and 520, 532, or 540

1. All specified performance attributes of custom options are tested at 25 °C (± 3 °C) unless otherwise noted. For more information contact Keysight Technologies.
2. E8257D-UNX, E8257D-UNY and E8257D-HY2 are mutually exclusive. Choose one or the other or neither.
3. Recommended for customers in countries subject to export regulations.

Step 10. Choose instrument connector configuration and accessories

Note:

- Option 513, 520 and 521 instruments ship with a 3.5 mm (m) RF output connector on the front panel.
- Option 532, 540, and 550 instruments ship with a 2.4 mm (m) RF output connector on the front panel.
- Option 567 instruments ship with a 1.85 mm (m) RF output connector on the front panel.

Ordering number	Description	Purpose	Requires
Standard with E8257D 513, 520 and -521	3.5 mm (f) to 3.5 mm (f) connector adapter	Adapter is included with the purchase of the 20 GHz models to connect to 3.5 mm (m)	
Standard with E8257D-532, -540	2.4 mm (f) to 2.4 mm (f) and 2.4 mm (f) to 2.9 mm (f) connector adapter(s)	Adapter set is included with the purchase of the 32, 40 and 50 GHz models to connect to 2.4 mm (m)	
Standard with E8257D-567	1.85 mm (f) to 1.85 mm (f) and 2.4 mm (f) to 2.9 mm (f) connector adapter(s)	Adapter set is included with the purchase of the 67 GHz models to connect to 1.85 mm (m)	
E8257D-1ED [1]	Type-N (f) RF output connector	Type-N (m) to 3.5 mm (f) adapter is included with the purchase of the type-N (m) connector	
E8257D-1EM [2]	Moves all front panel connectors to the rear panel	Simplifies cable management in rack mount environments	
E8257D- C09	Moves all front panel connectors to the rear panel except the RF output connector	Simplifies cable management in rack mount	E8257D-1EM
E8257D-1CM114A	Rackmount flange kit (Palette 2015)	Provide a flange kit to mount the signal generator into a standard EIA 19" rack	
E8257D-1CN103A	Front handle kit (Palette 2015)	Provides front handles for carrying the instrument (not for rack mount)	
E8257D-1CP106A	Rackmount kit with front handles (Palette 2015)	Provides front handles and a flange kit to mount the signal generator into a standard EIA 19" rack	
E8257D-1CR100A	Rack slide kit (Palette 2015)	Provides a non-tilting rack slide kit	
E8257DS15	OML Inc. [3] model number S15MS-AG at +8 dBm	Millimeter source module, 50 GHz to 75 GHz	E8257D-1EU
E8257DS12	OML Inc. [3] model number S12MS-AG at +6 dBm	Millimeter source module, 60 GHz to 90 GHz	E8257D-1EU
E8257DS10	OML Inc. [3] model number S10MS-AG at +5 dBm	Millimeter source module, 75 GHz to 110 GHz	E8257D-1EU
E8257DS08	OML Inc. [3] model number S08MS-AG at –5 dBm	Millimeter source module, 90 GHz to 140 GHz	E8257D-1EU
E8257DS06	OML Inc. [3] model number S06MS-AG at –9 dBm	Millimeter source module, 110 GHz to 170 GHz	E8257D-1EU
E8257DS05	OML Inc. [3] model number S05MS-AG at –15 dBm	Millimeter source module, 140 GHz to 220 GHz	E8257D-1EU
E8257DS03	OML Inc. [3] model number S03MS-AG at –25 dBm	Millimeter source module, 220 GHz to 325 GHz	E8257D-1EU
E8257DS02	OML Inc. [3] model number SM02MS-AG	Millimeter source module, 325 GHz to 500 GHz at –27 dBm	E8257D-1EU
E8257DV15 [4]	VDI model number WR15 SGX	Millimeter frequency extension module, 50 to 75 GHz at +20 dBm	
E8257DV12 [4]	VDI model number WR12 SGX	Millimeter frequency extension module, 60 to 90 GHz at +15 dBm	
E8257DV10 [4]	VDI model number WR10 SGX	Millimeter frequency extension module, 75 to 110 GHz at +14 dBm	
E8257DV08 [4]	VDI model number WR08 SGX	Millimeter frequency extension module, 90 to 140 GHz at +9 dBm	
E8257DV06 [4]	VDI model number WR6.5 SGX	Millimeter frequency extension module, 110 to 170 GHz at +8 dBm	
E8257DV05 [4]	VDI model number WR5.1 SGX	Millimeter frequency extension module, 140 to 220 GHz at +4 dBm	
E8257DV03 [4]	VDI model number WR3.4 SGX	Millimeter frequency extension module, 220 to 330 GHz at –6 dBm	
E8257DV2B [4]	VDI model number WR2.8 SGX	Millimeter frequency extension module, 260 to 400 GHz at –6 dBm	
E8257DV02 [4]	VDI model number WR2.2 SGX	Millimeter frequency extension module, 325 to 500 GHz at –10 dBm	
E8257DV1B [4]	VDI model number WR1.5 SGX	Millimeter frequency extension module, 500 to 750 GHz at –21 dBm	
E8257DV01 [4]	VDI model number WR1.0 SGX	Millimeter frequency extension module, 750 to 1100 GHz at –23 dBm	
U3035P	Distribution network - PSG	Distribute master LO signal to multiple signal	E8257D-HCC

1. Option 1ED is not compatible with frequency options E8257D-532, -540, -550, or -567.
2. Not compatible with Option 1SM (scan modulation).
3. Oleson Microwave Labs, Inc.
4. E8257DVxx frequency extension modules require an N5262VDI-175 external power supply.

Step 11. Choose documentation

Standard products ship with an installation guide and an electronic documentation set (CD-ROM). The CD-ROM includes: user's guide, installation guide, programming guide, service guide, SCPI command reference, error messages, key reference, data sheets, and additional product literature.

Ordering number	Description
E8257D-CD1	CD-ROM containing the English documentation set
E8257D-ABA	Printed copy of the English documentation set (user's guide, programming guide, SCPI reference, key reference, and data sheets)
E8257D-AB2	Printed copy of the Chinese User's Guide
E8257D-ABD	Printed copy of the German User's Guide
E8257D-ABJ	Printed copy of the Japanese User's Guide

Step 12. Choose a calibration plan

Ordering number	Description
E8257D-UK6	Commercial calibration certificate with test data
E8257D-A6J	ANSI Z540-1-1994 calibration
E8257D-AMG	Keysight Cal + Uncertainties + Guardbanding (accredited cal)
E8257D-1A7 (Opt 550 and 567 only)	Keysight Cal + Uncertainties + Guardbanding
R-50C-011-3	Calibration Assurance Plan, Return-to-Keysight, 3 years
R-50C-011-5	Calibration Assurance Plan, Return-to-Keysight, 5 years
R-50C-016-3	Keysight Calibration + Uncertainties + Guardbanding, 3 years
R-50C-016-5	Keysight Calibration + Uncertainties + Guardbanding, 5 years
R-50C-021-3	ANSI Z540-1-1994 Calibration, 3 years
R-50C-021-5	ANSI Z540-1-1994 Calibration, 5 years

Step 13. Choose start-up assistance options

Ordering number	Description
PS-S10	Remote scheduled assistance 1-999 hours
PS-S20	Daily productivity assistance
PS-T10-ASG	Signal generator and source basics; .5 day, max. 8 students on site
PS-X10	Custom services to be qualified by Keysight

Upgradeable Options

For complete upgrade details, including firmware, visit: www.keysight.com/find/E8257d_upgrade_table

Customer-installable and service center-installable upgrade kits are available for the E8257D signal generators. If an option is not mentioned that you would like to have upgraded on your PSG, please contact your local Keysight representative about our customized upgradeable options.

Product	Order number	Description	Upgrade contains	Additional requirements	Incompatible with
007	E8257DK-007	Enables fully synthesized continuous analog frequency and power sweeps	Customer installable–license key	None	None
008	E8257DK-008	Adds 8 GB removable flash memory	Customer installable–license key	S/N ≥ 4928	S/N < 4928
1E1	E8257DK-1E1	Adds a step attenuator to provide calibrated minimum output power levels of –135 dBm (up to 40 GHz) and 110 dBm (up to 70 GHz) while maintaining superior level accuracy	Customer installable–hardware, license key	None	None
1EA	E8257DK-1EA	Provides increased output power performance up to 67 GHz	Customer installable–License key	S/N < 4928	Option 1EU or S/N ≥ 4928
1ED	E8257DK-1ED	Replaces the option 520 standard APC 3.5 mm(m) RF output connector with a precision type-N (f) RF output connector	Customer installable–hardware, license key	Option 520	Frequency options other than 520
1EH	E8257DK-1EH	Adds improved harmonic distortion performance for carrier frequencies ranging from 10 MHz to 2 GHz	Customer installable–hardware, license key	S/N < 4928	Option 1EU or S/N ≥ 4928
2EH	E8257DK-2EH	Adds improved harmonics below 2 GHz for units with Option 1EU or SN prefix greater than or equal to 4928	Customer installable–license key	Option 1EU or S/N ≥ 4928	None
1EU	E8257DK-1EU	Adds high output power for SN prefix greater than or equal to 4928	Customer installable–license key	S/N ≥ 4928	Option 1EM, HAR S/N < 4928
2EU	E8257DK-2EU	Adds high output power (Option 1EU) for SN prefix less than 4928 without Option 1EA	Factory installation only	S/N < 4928	Option 1EA, 1EM, S/N ≥ 4928
3EU	E8257DK-3EU	Adds high output power (Option 1EU) for SN prefix less than 4928 with option 1EA	Factory installation only	Option 1EA and S/N < 4928	Option 1EM, HAR or S/N > 4928
UNX	E8257DK-UNX	Adds improved close in phase stability and phase noise at offsets less than 10 KHz from the carrier	Customer installable–hardware, license key	None	None
UNT	E8257DK-UNT	Adds internally or externally driven AM, FM and ØM signals and an internal low frequency modulation generator (LF); see data sheet for details	Customer installable–license key	None	None
UNU	E8257DK-UNU	Adds standard pulse modulation; see data sheet for details	Customer installable–license key	None	Option UNW
UNW	E8257DK-UNW	Adds narrow pulse modulation; see data sheet for details	Customer installable–hardware, license key	S/N < 4928	Option UNU, 1EU or S/N ≥ 4928
2NW	E8257DK-2NW	Adds narrow pulse modulation for units with Option 1EU or SN prefix greater than or equal to 4928	Customer installable–license key	Option 1EU or S/N ≥ 4928	S/N < 4928
UNY	E8257DK-UNY [1]	Add enhanced ultra-low phase noise	Customer installable–harware, license key	S/N ≥ 5042	S/N < 5042, Option H42
2NY	E8257DK-2NY [2]	Add enhanced ultra-low phase noise	Customer installable–harware, license key	S/N = 4928	S/N ≥ 5042, Option H42
R2C	E8257DK-R2C	Core instrument firmware enhancements	Customer installable–license key	None	None

1. Keysight service center installation only.
2. Keysight factory installation only. Requires an additional factory installation and calibration charge (E8257DK-700).

Web Resources

- For additional product information, visit: www.keysight.com/find/psg
- For information about renting, leasing or financing Keysight's latest technology, visit: www.keysight.com/find/buyalternatives
- For accessory information, visit: www.keysight.com/find/accessories

Related Keysight Literature

Publication name	Publication number
Keysight PSG Signal Generators - Brochure	5989-1324EN
E8257D PSG Microwave Analog Signal Generator - Data Sheet	5989-0698EN
E8267D PSG Vector Signal Generator - Data Sheet	5989-0697EN
E8267D PSG Vector Signal Generator - Configuration Guide	5989-1326EN
E8663D PSG RF Analog Signal Generator - Data Sheet	5990-4136EN
E8663D PSG RF Analog Signal Generator - Configuration Guide	5990-4137EN

Learn more at: www.keysight.com

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