Application Mapping Hot Sheet

S-Series- SGD

Product Overview

- Compact (4U, half-rack), lightweight (<9 kg) 3 and 6 GHz digital signal generator for R&D, manufacturing and the field, complemented by add-on modules to enhance applicability and performance. Complementary signal analyzer, SVA, for source/analysis total solution.
- SGD-3 100 kHz - 3 GHz digital signal generator
- SGD-6 100 kHz - 6 GHz digital signal generator
- Option 002 Reverse Power Protection (SGA-3 only)
- Option 003 High Power (+20 dBm)
- Option 004 Fast Pulse Modulation
- Option 005 Removable Memory
- Option 007 Rear Panel Connectors
- Option 010 AWG with 128 MSample Memory
- Option 011 AWG with 512 MSample Memory
- Option 012 AWG with 1 GSample Memory
- Option 1xx Single, Grouped or Bundled Wireless Options. Details in datasheet.

Key Features

- ***LOCK-OUT!*** Large 8 ½ inch touch screen LCD offering unparalleled ease of use
- ***LOCK-OUT!*** Low phase noise: -135 dBc/Hz *and* fast frequency switching speed: 5 ms in SCPI mode, 100 µs in list mode
- ***LOCK-OUT!*** Employs Aerolock™ interlocking mechanism to expand applicability using multiple S-Series instruments and modules
- ***LOCK-OUT!*** Generic modulation, IQCreator and AWGN as standard with any AWG option
- RF Level: -130 to +13 dBm, optional +20 dBm, accuracy ±0.5 dB
- Embedded IQCreator waveform creation tool for multi-technology waveform creation
- 3GPP ALCR: -71 dBc
- IQ Modulator bandwidth: 300 MHz
- Repeatable, monotonic, linear RF level performance with excellent VSWR
- Wide bandwidth AM and FM
- Synthesizer I/O for phase locking multiple signal generators for phase coherent applications
- Frequency and amplitude sweep capability
- Modular design – high MTBF, fast repair time, low cost of ownership
- Rugged lightweight package
- Low cost of ownership through modular design
- Optional fast pulse modulator with built-in pulse generator
- Optional removable hard disk drive for secure environments

Key Markets

- RF, wireless and broadcast communications
- Military, military contractors, aerospace, avionics
- Public utilities – electricity, gas, fire, water, police
- Scientific research establishments, colleges and universities
- Hospitals and medical research establishments
- General purpose benchtop product which will appeal to all customers where signal purity and speed of test are paramount, but owing to its “mid-range” price, will appeal to customers who will now be able to afford top-end performance

Applications

- Receiver and RF sub-assembly stimulation; amplifiers, mixers, filters, “front-ends”
- Typical measurements; BER; sensitivity; intermodulation; adjacent channel power
- RF and digital device stimulation and characterisation
- Telemetry

	Modulation / RF Bandwidth	*3GPP ACLR (typ) (dBc/Hz)*	*Phase Noise dBc/Hz (1 GHz, 20 kHz offset)*	*Speed – typ. (list mode)*	*Price USD (6 GHz / 3 GHz base models)*	*Comparison*	
						For:	Against:
SGD Series	**160 / 300 MHz**	**-71**	**-130, -135 typ**	**100 µs**	**24,000 / 17,000**	**Sets new standard in price / performance** **Modern, innovative design, light, compact**	**IQCreator does not have full and comprehensive features at present**
R&S SMBV100A Mid range. 2U high, ~⅔ rack width.	120 / 500 MHz	-69	-122, -128 typ	1 ms	26,200 / 15,300	Real-time baseband Highly featured WinIQSim2 options	Costly WinIQSim options
R&S SMJ100A Mid range. 4U high, full rack width.	120 / 200 MHz	-69	-122, -133 typ	450 µs	30,000 / 25,000	Real-time baseband Highly featured WinIQSim2 options	Costly. Large and heavy, 18kg.
Agilent MXG N5182A Mid range. 2U high, full width.	100 / 300 MHz	-65, -73 (opt)	-121 typ	5 ms 700 µs (opt)	28,000 / 21,200	Best ACLR Highly featured SignalStudio options	Small display. Performance. Options add to cost.
Agilent ESG 4438C Mid-top range. 3U high, full width	80 / 250 MHz	-68	-118 -130, -134 typ (opt)	9 ms	35,000 / 24,000	Real-time baseband Highly featured SignalStudio options	Costly. Performance.

Primary Competitors

All the above are available as 3 and 6 GHz signal generators.
All competitors' products will look dated and feel cumbersome when compared with the SGD.
Aeroflex has again raised the bar with a completely new concept.

Any Overlap with Other Aeroflex Products

- 2050 Series: Remains the industry-standard for avionics but at end of life. Superseded by SGD except for real-time baseband capability.
- 3410 Series: Expected to translate sales to SGD but still offers the ultimate 3GPP ACLR.
- 3000 Series (PXI): Still the choice for smallest and fastest signal generator in manufacturing test systems.

Six reasons a customer should buy the SGD

- Top-end performance at mid-range price
- Wide choice of good value wireless generation options
- Ease of use and totally touch screen
- Size and weight
- Modular concept for low cost of ownership and secure for future development and expansion of the S-Series range of products
- Test solution creation using Aerolock™ interlocking mechanism

Some basic questions for a signal generator customer:

(1) What frequency range do you require now and for the future?
(2) What aspects of performance are important?
(3) What maximum power is required?
(4) How much modulation bandwidth do you require?
(5) Which wireless systems do you need to generate?
(6) Are new and young engineers likely to use the instrument?
(7) Do you use multiple sources for any applications?
(8) Do you require a signal analyzer with complementary features and performance?

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