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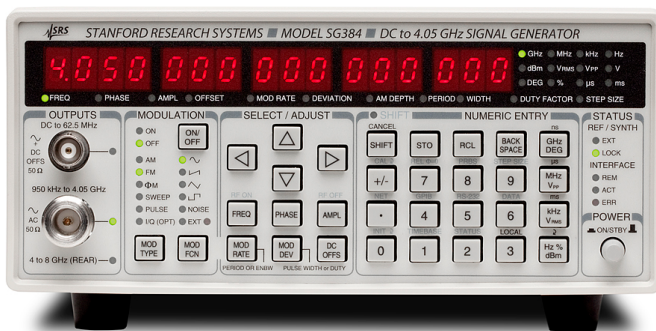
Data Sheet

August 13, 2026

STANFORD RESEARCH

Stanford Research SG386 6 GHz Signal Generator

Stanford Research Systems SG386 6 GHz RF Signal Generator The SRS SG386 is the 6 GHz analog member of the SG380 Series. RAFS synthesis provides 1 uHz resolution with AM, FM, phase, pulse, and sweep modulation from DC to 6.075 GHz. Optional Opt. 02 extends the rear SMA to 8.10 GHz. N-type full power of +16.5 dBm to -110 dBm is specified below 4 GHz. Typical phase noise at 20 kHz offset is -114 dBc/Hz at 1 GHz (versus -116 dBc/Hz on SG382/SG384). Microwave RF stimulus to 6 GHz (8.1 GHz with Opt. 02); LO and clock generation; analog modulation and octave-plus sweeps; optional external I/Q (Opt. 03); automated ATE. The SRS SG386 is the 6 GHz analog member of the SG380 Series. RAFS synthesis provides 1 uHz resolution with AM, FM, phase, pulse, and sweep modulation from DC to 6.075 GHz. Optional Opt. 02 extends the rear SMA to 8.10 GHz. N-type full power of +16.5 dBm to -110 dBm is specified below 4 GHz. Typical phase noise at 20 kHz offset is -114 dBc/Hz at 1 GHz (versus -116 dBc/Hz on SG382/SG384). Microwave RF stimulus to 6 GHz (8.1 GHz with Opt. 02); LO and clock generation; analog modulation and octave-plus sweeps; optional external I/Q (Opt. 03); automated ATE.



MODEL	CALIBRATION
Stanford Research SG386	Available on request
CONDITION	STATUS
Used	In stock
RFQ / SKU	LISTING
SG386	https://aumictechlabs.com/products/sg386-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Stanford Research SG386 is a 6 GHz RF signal generator delivering precision frequency synthesis, low phase noise, and versatile modulation in a single instrument. Built on Rational

Approximation Frequency Synthesis architecture, it generates signals from 950 kHz to 6.075 GHz with 1 μ Hz resolution and phase noise of -116 dBc/Hz at 20 kHz offset (1 GHz carrier). Frequency switching completes in less than 8 ms to within 1 ppm accuracy. The instrument supports AM, FM, phase modulation, and pulse modulation with internal sources (sine, ramp, saw, square, pulse, noise) and external modulation inputs. AM modulation reaches 0 to 100% depth with 0.1% resolution. Output from the front-panel N-type connector ranges from +16.5 dBm to -110 dBm, equivalent to 1 Vrms to 0.707 μ Vrms into 50 Ω . A secondary BNC output delivers DC to 62.5 MHz signals at amplitudes from 1.00 Vrms to 0.001 Vrms with $\pm 5\%$ accuracy and ± 1.5 VDC offset capability. Spurious content remains below -70 dBc typical (within 10 kHz offset), while harmonics measure less than -25 dBc at output levels below +7 dBm. An optional frequency doubler (Opt. 02) extends maximum output to 8.10 GHz. Fast frequency switching, excellent spectral purity, and flexible modulation options position this generator for RF/microwave component testing, communication system validation, and wideband signal applications where signal integrity is critical.

Technical Specifications

Frequency Range: 950 kHz to 6.075 GHz (standard); up to 8.10 GHz with Opt. 02

Frequency Resolution: 1 μ Hz

Frequency Switching Speed: < 8 ms (to within 1 ppm)

Phase Noise (SSB): -116 dBc/Hz at 20 kHz offset, 1 GHz carrier

Spurious Content: < -70 dBc typical (< 10 kHz offset); harmonics < -25 dBc at $< +7$ dBm output

N-Type Output Power: +16.5 dBm to -110 dBm (1 Vrms to 0.707 μ Vrms into 50 Ω)

BNC Output Frequency Range: DC to 62.5 MHz

BNC Output Amplitude: 1.00 Vrms to 0.001 Vrms; $\pm 5\%$ accuracy

BNC Output Offset: ± 1.5 VDC (5 mV resolution)

Output Impedance: 50 Ω

Key Features

AM modulation 0–100% with 0.1% resolution

FM, phase modulation, and pulse modulation modes

Internal modulation waveforms: sine, ramp, saw, square, pulse, noise

External modulation input: ± 1 V for full deviation (AM, FM, Φ M)

Fast switching performance with 1 μ Hz tuning resolution

Low phase noise scaling 6 dB/octave to alternate carrier frequencies

Typical Applications

RF and microwave component characterization

Communication system testing and validation

Signal integrity assessment in receiver chains

Modulated signal generation for transceiver development

Compatibility & Integration

N-type and BNC front-panel connectors support standard 50 Ω coaxial cables and unterminated loads.

Features & description

From manufacturer datasheet

Features

- N-type RF 950 kHz to 6.075 GHz; BNC DC to 62.5 MHz
- Optional rear doubler 6.075 GHz to 8.10 GHz with DC bias (Opt. 02)
- Typical -114 dBc/Hz phase noise at 20 kHz offset, 1 GHz carrier
- AM, FM, PhiM, pulse/blank, and phase-continuous sweeps
- Standard SC-cut OCXO; optional rubidium (Opt. 04)
- Optional differential clocks (Opt. 01) and external I/Q (Opt. 03)

SG386 Characteristics / Specifications

PARAMETER	VALUE
Model	SG386
Manufacturer	Stanford Research Systems
Instrument Type	RF Signal Generator
Series	SG380
Alias	SG386; SRS SG386
Synthesis Method	Rational Approximation Frequency Synthesis (RAFS)
BNC Output Frequency Range	DC to 62.5 MHzNType Output Frequency Range: 950 kHz to 6.075 GHz
Doubler Frequency Range	6.075 GHz to 8.10 GHz (Opt. 02, rear SMA)
Frequency Resolution	1 uHz at any frequency
Switching Speed	less than 8 ms (to within 1 ppm)
Frequency Error	less than (1e-18 + timebase error) times carrier frequency
Frequency Stability	1e-11 (1 s Allan variance)
BNC Amplitude Range	1.00 Vrms to 0.001 Vrms
BNC Offset Range	+/-1.5 VDC
BNC Offset Resolution	5 mV
BNC Amplitude Accuracy	+/-5 %
BNC Harmonics	less than -40 dBc
BNC Output Coupling	DC, 50 ohm +/-2 %
N Type Power Range	+16.5 dBm to -110 dBm (below 4 GHz)
N Type Voltage Range	1.5 Vrms to 0.7 uVrms (below 4 GHz)
Power Resolution	0.01 dBm
Power Accuracy	+/-1 dB (+/-2 dB above 4 GHz and above +5 dBm or below -100 dBm)
N Type Output Coupling	AC, 50 ohm
User Load Impedance	50 ohm
Output VSWR	less than 1.6

PARAMETER	VALUE
Reverse ProtectionNType	30 VDC, +25 dBm RF
RF Harmonics	less than -25 dBc (below +7 dBm, N-type)
Close In Spurious	less than -65 dBc (offset below 10 kHz)
Far Spurious	less than -75 dBc (10 kHz to 12 MHz offset)
Phase Noise at Ten Hz	-80 dBc/Hz typical (referenced to 1 GHz)
Phase Noise at One kHz	-102 dBc/Hz typical (referenced to 1 GHz)
Phase Noise at Twenty kHz	-114 dBc/Hz typical (SG386, 1 GHz)
Phase Noise at One MHz	-124 dBc/Hz typical (SG386, 1 GHz)
OCXO Stability	less than +/-0.002 ppm (0 to 45 C)
OCXO Aging	less than +/-0.05 ppm/year
Rubidium Option Stability	less than +/-0.0001 ppm (0 to 45 C, Opt. 04)
Timebase Input Frequency	10 MHz, +/-2 ppm
Timebase Output Amplitude	1.75 Vpp +/-10 % (8.8 dBm +/-1 dB)
AM Modulation Range	0 to 100 % (decreases above +7 dBm)
Pulse On Off RatioNType	57 dB at or below 1 GHz; 40 dB from 1 GHz to 4 GHz; 35 dB at or above 4 GHz
Doubler RF Amplitude Low Band	-10 dBm to +13 dBm (4 GHz to 7 GHz, Opt. 02)
Doubler RF Amplitude High Band	-10 dBm to +7 dBm (7 GHz to 8 GHz, Opt. 02)
Doubler Phase Noise at Eight GHz	-98 dBc/Hz at 20 kHz offset typical (Opt. 02)
Bias Source Voltage Range	+/-10 V (comes with Opt. 02)
Bias Source Resolution	5 mV
Bias Source Current Limit	20 mA
External IQ Carrier Range	400 MHz to 6.075 GHz (Opt. 03)
External IQ Bandwidth	200 MHz (-3 dB, Opt. 03 analog I/Q)
Interfaces	Ethernet; GPIB IEEE-488.2; RS-232
Line Power	less than 90 W, 90 to 264 VAC, 47 to 63 Hz with PFC
Dimensions	8.5 in x 3.5 in x 13 in (WHD)
Weight	10 lbs

PARAMETER	VALUE
Stored Configurations	9 instrument setups in non-volatile memory Notes Specs from SRS SG380 Series catalog. Confirm Opt. 01/02/03/04 on the option label. Full N-type power range is specified below 4 GHz.
Bandwidth	200 MHz (-3 dB, Opt. 03 analog I/Q)

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	
Technical Specifications	
PARAMETER	VALUE
Model	SG386
Manufacturer	Stanford Research Systems
Instrument Type	RF Signal Generator
Series	SG380
Alias	SG386; SRS SG386
Synthesis Method	Rational Approximation Frequency Synthesis (RAFS)
BNC Output Frequency Range	DC to 62.5 MHz
N Type Output Frequency Range	950 kHz to 6.075 GHz
Doubler Frequency Range	6.075 GHz to 8.10 GHz (Opt. 02, rear SMA)
Frequency Resolution	1 uHz at any frequency
Switching Speed	less than 8 ms (to within 1 ppm)
Frequency Error	less than (1e-18 + timebase error) times carrier frequency
Frequency Stability	1e-11 (1 s Allan variance)
BNC Amplitude Range	1.00 Vrms to 0.001 Vrms
BNC Offset Range	+/-1.5 VDC
BNC Offset Resolution	5 mV
BNC Amplitude Accuracy	+/-5 %
BNC Harmonics	less than -40 dBc
BNC Output Coupling	DC, 50 ohm +/-2 %
N Type Power Range	+16.5 dBm to -110 dBm (below 4 GHz)
N Type Voltage Range	1.5 Vrms to 0.7 uVrms (below 4 GHz)
Power Resolution	0.01 dBm
Power Accuracy	+/-1 dB (+/-2 dB above 4 GHz and above +5 dBm or below -100 dBm)
N Type Output Coupling	AC, 50 ohm
User Load Impedance	50 ohm
Output VSWR	less than 1.6

PARAMETER	VALUE
Reverse Protection N Type	30 VDC, +25 dBm RF
RF Harmonics	less than -25 dBc (below +7 dBm, N-type)
Close In Spurious	less than -65 dBc (offset below 10 kHz)
Far Spurious	less than -75 dBc (10 kHz to 12 MHz offset)
Phase Noise at Ten Hz	-80 dBc/Hz typical (referenced to 1 GHz)
Phase Noise at One kHz	-102 dBc/Hz typical (referenced to 1 GHz)
Phase Noise at Twenty kHz	-114 dBc/Hz typical (SG386, 1 GHz)
Phase Noise at One MHz	-124 dBc/Hz typical (SG386, 1 GHz)
OCXO Stability	less than +/-0.002 ppm (0 to 45 C)
OCXO Aging	less than +/-0.05 ppm/year
Rubidium Option Stability	less than +/-0.0001 ppm (0 to 45 C, Opt. 04)
Timebase Input Frequency	10 MHz, +/-2 ppm
Timebase Output Amplitude	1.75 Vpp +/-10 % (8.8 dBm +/-1 dB)
AM Modulation Range	0 to 100 % (decreases above +7 dBm)
Pulse On Off Ratio N Type	57 dB at or below 1 GHz; 40 dB from 1 GHz to 4 GHz; 35 dB at or above 4 GHz
Doubler RF Amplitude Low Band	-10 dBm to +13 dBm (4 GHz to 7 GHz, Opt. 02)
Doubler RF Amplitude High Band	-10 dBm to +7 dBm (7 GHz to 8 GHz, Opt. 02)
Doubler Phase Noise at Eight GHz	-98 dBc/Hz at 20 kHz offset typical (Opt. 02)
Bias Source Voltage Range	+/-10 V (comes with Opt. 02)
Bias Source Resolution	5 mV
Bias Source Current Limit	20 mA
External IQ Carrier Range	400 MHz to 6.075 GHz (Opt. 03)
External IQ Bandwidth	200 MHz (-3 dB, Opt. 03 analog I/Q)

Specifications

PARAMETER	VALUE
Model	SG386
Manufacturer	Stanford Research Systems
Instrument Type	RF Signal Generator
Series	SG380
Alias	SG386; SRS SG386
Synthesis Method	Rational Approximation Frequency Synthesis (RAFS)

PARAMETER	VALUE
BNC Output Frequency Range	DC to 62.5 MHzType Output Frequency Range: 950 kHz to 6.075 GHz
Doubler Frequency Range	6.075 GHz to 8.10 GHz (Opt. 02, rear SMA)
Frequency Resolution	1 uHz at any frequency
Switching Speed	less than 8 ms (to within 1 ppm)
Frequency Error	less than (1e-18 + timebase error) times carrier frequency
Frequency Stability	1e-11 (1 s Allan variance)
BNC Amplitude Range	1.00 Vrms to 0.001 Vrms
BNC Offset Range	+/-1.5 VDC
BNC Offset Resolution	5 mV
BNC Amplitude Accuracy	+/-5 %
BNC Harmonics	less than -40 dBc
BNC Output Coupling	DC, 50 ohm +/-2 %
N Type Power Range	+16.5 dBm to -110 dBm (below 4 GHz)
N Type Voltage Range	1.5 Vrms to 0.7 uVrms (below 4 GHz)
Power Resolution	0.01 dBm
Power Accuracy	+/-1 dB (+/-2 dB above 4 GHz and above +5 dBm or below -100 dBm)
N Type Output Coupling	AC, 50 ohm
User Load Impedance	50 ohm
Output VSWR	less than 1.6
Reverse ProtectionType	30 VDC, +25 dBm RF
RF Harmonics	less than -25 dBc (below +7 dBm, N-type)
Close In Spurious	less than -65 dBc (offset below 10 kHz)
Far Spurious	less than -75 dBc (10 kHz to 12 MHz offset)
Phase Noise at Ten Hz	-80 dBc/Hz typical (referenced to 1 GHz)
Phase Noise at One kHz	-102 dBc/Hz typical (referenced to 1 GHz)
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OCXO Stability	less than +/-0.002 ppm (0 to 45 C)
OCXO Aging	less than +/-0.05 ppm/year
Rubidium Option Stability	less than +/-0.0001 ppm (0 to 45 C, Opt. 04)
Timebase Input Frequency	10 MHz, +/-2 ppm
Timebase Output Amplitude	1.75 Vpp +/-10 % (8.8 dBm +/-1 dB)

PARAMETER	VALUE
AM Modulation Range	0 to 100 % (decreases above +7 dBm)
Pulse On Off RatioType	57 dB at or below 1 GHz; 40 dB from 1 GHz to 4 GHz; 35 dB at or above 4 GHz
Doubler RF Amplitude Low Band	-10 dBm to +13 dBm (4 GHz to 7 GHz, Opt. 02)
Doubler RF Amplitude High Band	-10 dBm to +7 dBm (7 GHz to 8 GHz, Opt. 02)
Doubler Phase Noise at Eight GHz	-98 dBc/Hz at 20 kHz offset typical (Opt. 02)
Bias Source Voltage Range	+/-10 V (comes with Opt. 02)
Bias Source Resolution	5 mV
Bias Source Current Limit	20 mA
External IQ Carrier Range	400 MHz to 6.075 GHz (Opt. 03)
External IQ Bandwidth	200 MHz (-3 dB, Opt. 03 analog I/Q)

Optional Clock Frequency Range: DC to 4.05 GHz (Opt. 01)

Specifications

PARAMETER	VALUE
Interfaces	Ethernet; GPIB IEEE-488.2; RS-232
Line Power	less than 90 W, 90 to 264 VAC, 47 to 63 Hz with PFC
Dimensions	8.5 in x 3.5 in x 13 in (WHD)
Weight	10 lbs
Stored Configurations	9 instrument setups in non-volatile memory

Notes
Specs from SRS SG380 Series catalog. Confirm Opt. 01/02/03/04 on the option label. Full N-type power range is specified below 4 GHz.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

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

Aumictech

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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.