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**Data Sheet**
August 13, 2026

STANFORD RESEARCH SYSTEMS

# Stanford Research SG382 2 GHz Signal Generator

Stanford Research Systems SG382 2 GHz RF Signal Generator The SRS SG382 is the 2 GHz analog member of the SG380 Series RF signal generators. RAFS synthesis provides 1 uHz resolution, low phase noise, and AM, FM, phase, pulse, and sweep modulation from DC to 2.025 GHz. A BNC output covers DC to 62.5 MHz with DC offset; an N-type output covers 950 kHz to 2.025 GHz at +16.5 dBm to -110 dBm. Optional rear-panel clocks (Opt. 01), external I/Q (Opt. 03), and rubidium timebase (Opt. 04) extend capability. The frequency doubler (Opt. 02) is not offered on SG382. The SRS SG382 is the 2 GHz analog member of the SG380 Series RF signal generators. RAFS synthesis provides 1 uHz resolution, low phase noise, and AM, FM, phase, pulse, and sweep modulation from DC to 2.025 GHz. A BNC output covers DC to 62.5 MHz with DC offset; an N-type output covers 950 kHz to 2.025 GHz at +16.5 dBm to -110 dBm. Optional rear-panel clocks (Opt. 01), external I/Q (Opt. 03), and rubidium timebase (Opt. 04) extend capability. The frequency doubler (Opt. 02) is not offered on SG382. RF and IF stimulus to 2 GHz; clock and LO generation; AM/FM/phase/pulse modulation test; swept-frequency measurements; automated test via GPIB, Ethernet, and RS-232.

| | |
|---|---|
| MODEL<br>**Stanford Research Systems SG382** | CALIBRATION<br>**Available on request** |
| CONDITION<br>**Used** | STATUS<br>**In stock** |
| RFQ / SKU<br>**SG382** | LISTING<br>**https://aumictechlabs.com/products/sg382-2/** |

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NAICS 423690 · 811210 · 541380

## This unit

The Stanford Research Systems SG382 is a 2 GHz analog RF signal generator delivering high-resolution frequency synthesis across DC to 2.025 GHz via dual outputs. Built on Rational

Approximation Frequency Synthesis architecture, it achieves 1 µHz frequency resolution, -116 dBc/Hz phase noise at 20 kHz offset (1 GHz carrier), and $1 \times 10^{-11}$ frequency stability. The instrument supports six modulation typesAM, FM, ΦM, PM, Pulse, and Blank - with internal waveform sources and external input capability, making it suitable for precision RF characterization and demanding test environments.Technical Specifications Frequency Generation Frequency range: DC to 62.5 MHz (BNC output); 950 kHz to 2.025 GHz (N-type output) Frequency resolution: 1 µHz Frequency stability: $1 \times 10^{-11}$ (1 second Allan variance) Switching speed: <8 ms to within 1 ppm Output Characteristics BNC output: 1 mVrms to 1 Vrms amplitude, ±1.5 VDC offset, 5 mV offset resolution N-type output: +16.5 dBm to -110 dBm power range, 1.60:1 VSWR, 62.5 MHz) I/Q modulation option available (400 MHz to 2.025 GHz carrier range, >40 dBc carrier suppression) Timebase Standard: OCXO; optional rubidium timebase available Interfaces Ethernet, GPIB, RS-232Key Features Dual-output architecture supports low-frequency (DC–62.5 MHz) and RF (950 kHz–2.025 GHz) applications Optional low-jitter differential clock outputs Benchtop configuration with front-panel controlTypical Applications Precision RF testing, phase noise measurement, modulation characterization, and frequency synthesis in research and production environments.Compatibility & Integration Network and legacy instrument control via Ethernet, GPIB, and RS-232 interfaces.

## Features & description

From manufacturer datasheet

### Features

• Dual overlapping outputs: BNC DC to 62.5 MHz and N-type 950 kHz to 2.025 GHz • 1 uHz frequency resolution at any frequency • Typical phase noise -116 dBc/Hz at 20 kHz offset, 1 GHz carrier • AM, FM, PhiM, pulse/blank, and phase-continuous octave-plus sweeps • Standard third-overtone SC-cut OCXO; optional rubidium (Opt. 04) • Optional low-jitter differential clocks (Opt. 01) and external I/Q (Opt. 03)

## SG382 Characteristics / Specifications

| PARAMETER | VALUE |
|---|---|
| **Model** | SG382 |
| **Manufacturer** | Stanford Research Systems |
| **Instrument Type** | RF Signal Generator |
| **Series** | SG380 |
| **Alias** | SG382; SRS SG382 |
| **Synthesis Method** | Rational Approximation Frequency Synthesis (RAFS) |
| **BNC Output Frequency Range** | DC to 62.5 MHzNType Output Frequency Range: 950 kHz to 2.025 GHz |
| **Frequency Doubler Option** | not available on SG382 (Opt. 02 is SG384/SG386 only) |
| **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 Maximum Excursion** | 1.817 V (amplitude plus offset) |
| **BNC Amplitude Accuracy** | +/-5 % |
| **BNC Harmonics** | less than -40 dBc |
| **BNC Spurious** | less than -75 dBc |
| **BNC Output Coupling** | DC, 50 ohm +/-2 % |
| **BNC Reverse Protection** | +/-5 VDCNType Power Range: +16.5 dBm to -110 dBmNType Voltage Range: 1.5 Vrms to 0.7 uVrms |
| **Power Resolution** | 0.01 dBm |
| **Power Accuracy** | +/-1 dBNType Output Coupling: AC, 50 ohm |
| **User Load Impedance** | 50 ohm |

| PARAMETER | VALUE |
| --- | --- |
| **Output VSWR** | less than 1.6 |
| **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** | -116 dBc/Hz typical (SG382 and SG384, 1 GHz) |
| **Phase Noise at One MHz** | -130 dBc/Hz typical (SG382 and SG384, 1 GHz) |
| **Residual FM** | 1 Hz rms typical (300 Hz to 3 kHz BW) |
| **Residual AM** | 0.006 % rms typical (300 Hz to 3 kHz BW) |
| **Maximum Phase Step** | +/-360 deg |
| **OCXO Oscillator Type** | oven controlled, 3rd OT, SC-cut crystal |
| **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 Input Amplitude** | 0.5 to 4 Vpp (-2 dBm to +16 dBm) |
| **Timebase Output Amplitude** | 1.75 Vpp +/-10 % (8.8 dBm +/-1 dB) |
| **AM Modulation Range** | 0 to 100 % (decreases above +7 dBm) |
| **AM Bandwidth** | greater than 100 kHz |
| **Pulse On Off Ratio BNC** | 70 dB |
| **Pulse On Off RatioNType** | 57 dB at or below 1 GHz |
| **External IQ Carrier Range** | 400 MHz to 2.025 GHz (Opt. 03) |
| **Interfaces** | Ethernet 10/100 Base-T; GPIB IEEE-488.2; RS-232 4800 to 115200 baud |
| **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) |

| PARAMETER | VALUE |
| --- | --- |
| **Weight** | 10 lbs |
| **Stored Configurations** | 9 instrument setups in non-volatile memory Notes Specs from SRS SG380 Series catalog. SG382 is analog (vector models are SG392/SG394/SG396). Confirm Opt. 01/03/04 on the option label; Opt. 02 doubler is not applicable. |
| **Dual overlapping outputs** | BNC DC to 62.5 MHz and N-type 950 kHz to 2.025 GHz |
| **Bandwidth** | greater than 100 kHz |

# 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** | SG382 |
| **Manufacturer** | Stanford Research Systems |
| **Instrument Type** | RF Signal Generator |
| **Series** | SG380 |
| **Alias** | SG382; SRS SG382 |
| **Synthesis Method** | Rational Approximation Frequency Synthesis (RAFS) |
| **BNC Output Frequency Range** | DC to 62.5 MHz |
| **N Type Output Frequency Range** | 950 kHz to 2.025 GHz |
| **Frequency Doubler Option** | not available on SG382 (Opt. 02 is SG384/SG386 only) |
| **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 Maximum Excursion** | 1.817 V (amplitude plus offset) |
| **BNC Amplitude Accuracy** | +/-5 % |
| **BNC Harmonics** | less than -40 dBc |
| **BNC Spurious** | less than -75 dBc |
| **BNC Output Coupling** | DC, 50 ohm +/-2 % |
| **BNC Reverse Protection** | +/-5 VDC |
| **N Type Power Range** | +16.5 dBm to -110 dBm |
| **N Type Voltage Range** | 1.5 Vrms to 0.7 uVrms |
| **Power Resolution** | 0.01 dBm |
| **Power Accuracy** | +/-1 dB |

| PARAMETER | VALUE |
|---|---|
| **N Type Output Coupling** | AC, 50 ohm |
| **User Load Impedance** | 50 ohm |
| **Output VSWR** | less than 1.6 |
| **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** | -116 dBc/Hz typical (SG382 and SG384, 1 GHz) |
| **Phase Noise at One MHz** | -130 dBc/Hz typical (SG382 and SG384, 1 GHz) |
| **Residual FM** | 1 Hz rms typical (300 Hz to 3 kHz BW) |
| **Residual AM** | 0.006 % rms typical (300 Hz to 3 kHz BW) |
| **Maximum Phase Step** | +/-360 deg |
| **OCXO Oscillator Type** | oven controlled, 3rd OT, SC-cut crystal |
| **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 Input Amplitude** | 0.5 to 4 Vpp (-2 dBm to +16 dBm) |
| **Timebase Output Amplitude** | 1.75 Vpp +/-10 % (8.8 dBm +/-1 dB) |
| **AM Modulation Range** | 0 to 100 % (decreases above +7 dBm) |
| **AM Bandwidth** | greater than 100 kHz |
| **Pulse On Off Ratio BNC** | 70 dB |
| **Pulse On Off Ratio N Type** | 57 dB at or below 1 GHz |

## Specifications

| PARAMETER | VALUE |
|---|---|
| **Model** | SG382 |
| **Manufacturer** | Stanford Research Systems |
| **Instrument Type** | RF Signal Generator |
| **Series** | SG380 |
| **Alias** | SG382; SRS SG382 |

| PARAMETER | VALUE |
| --- | --- |
| **Synthesis Method** | Rational Approximation Frequency Synthesis (RAFS) |
| **BNC Output Frequency Range** | DC to 62.5 MHzNType Output Frequency Range: 950 kHz to 2.025 GHz |
| **Frequency Doubler Option** | not available on SG382 (Opt. 02 is SG384/SG386 only) |
| **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 Maximum Excursion** | 1.817 V (amplitude plus offset) |
| **BNC Amplitude Accuracy** | +/-5 % |
| **BNC Harmonics** | less than -40 dBc |
| **BNC Spurious** | less than -75 dBc |
| **BNC Output Coupling** | DC, 50 ohm +/-2 % |
| **BNC Reverse Protection** | +/-5 VDCNType Power Range: +16.5 dBm to -110 dBmNType Voltage Range: 1.5 Vrms to 0.7 uVrms |
| **Power Resolution** | 0.01 dBm |
| **Power Accuracy** | +/-1 dBNType Output Coupling: AC, 50 ohm |
| **User Load Impedance** | 50 ohm |
| **Output VSWR** | less than 1.6 |
| **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) |
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| **Phase Noise at Twenty kHz** | -116 dBc/Hz typical (SG382 and SG384, 1 GHz) |
| **Phase Noise at One MHz** | -130 dBc/Hz typical (SG382 and SG384, 1 GHz) |
| **Residual FM** | 1 Hz rms typical (300 Hz to 3 kHz BW) |
| **Residual AM** | 0.006 % rms typical (300 Hz to 3 kHz BW) |
| **Maximum Phase Step** | +/-360 deg |
| **OCXO Oscillator Type** | oven controlled, 3rd OT, SC-cut crystal |

| PARAMETER | VALUE |
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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 Input Amplitude** | 0.5 to 4 Vpp (-2 dBm to +16 dBm) |
| **Timebase Output Amplitude** | 1.75 Vpp +/-10 % (8.8 dBm +/-1 dB) |
| **AM Modulation Range** | 0 to 100 % (decreases above +7 dBm) |
| **AM Bandwidth** | greater than 100 kHz |
| **Pulse On Off Ratio BNC** | 70 dB |
| **Pulse On Off RatioNType** | 57 dB at or below 1 GHz |

Optional Clock Frequency Range: DC to 4.05 GHz (Opt. 01, rear SMA)
Optional Clock Transition Time: less than 35 ps typical (20 % to 80 %, Opt. 01)

## Specifications

| PARAMETER | VALUE |
| --- | --- |
| **External IQ Carrier Range** | 400 MHz to 2.025 GHz (Opt. 03) |
| **Interfaces** | Ethernet 10/100 Base-T; GPIB IEEE-488.2; RS-232 4800 to 115200 baud |
| **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. SG382 is analog (vector models are SG392/SG394/SG396). Confirm Opt. 01/03/04 on the option label; Opt. 02 doubler is not applicable.

## 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

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