Product Datasheet

Model RFS-1220 and RFS-1420

RF & Microwave Signal Generators

The RFS-1220 and RFS-1420 are compact, high-performance RF and microwave signal generators designed for lab testing, automated systems, and RF development. Offering precise frequency control, low phase noise, and a broad operating range, these generators provide a cost-effective solution for engineers and researchers.

Applications

- **Automated Testing Environments**
  Suitable for integration into automated test setups.
- **General RF Lab Use**
- **Flexible LO Sourcing**
  Can be used as a local oscillator source in different configurations.
- **Antenna Design**
  Useful in the development and testing of antenna systems.
- **EMC Testing**
  Can be used as a local oscillator source in different configurations.
- **Production Verification and Test Setups**
  Useful in the development and testing of antenna systems.
- **Educational / University Lab Use**
  Can be used as a local oscillator source in different configurations.
- **Aerospace / Defense Research**
- **802.11n Development / Testing**
  Useful in the development and testing of 802.11n wireless standards.
- **Ku-band Satellite Link Testing**
- **X-Band Radar Applications**
- **Ka-band Development** (RFS-1420 only)
- **Up-converting and Down-converting**
  Can be used in frequency conversion applications
- **Line of Sight Link Testing**
- **Transponder Verification**
- **5G Testing**
  Useful in the development and testing of antenna systems.
- **mm-Wave Technology** (RFS-1420 only)
  Suitable for millimeter-wave technology applications.

Features

- **Wide frequency coverage**
  0.1 GHz to 42 GHz
- **Compact and ruggedised design**
  Small, portable aluminum enclosure ideal for lab and field use.
- **High output power**
  Up to +15 dBm with fine power control.
- **Low phase noise**
  Excellent spectral purity for demanding applications.
- **Precision frequency control**
  Ultra-fine tuning with small frequency step sizes (<2 Hz or 10 Hz).
- **Dual powering options**
  USB-C powered (no bulky DC adapters required).

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Specifications

RFS-1220 (22 GHz)	
Frequency Range	0.1 – 20 GHz (calibrated) 0.1 – 22 GHz (settable)
Output Power Range	-40 to +15 dBm (0-13 GHz) -22 to +15 dBm (13-22 GHz)
Power Output Accuracy	±1.0 dB typical
Phase Noise	-92 dBc @ 20 GHz (10 kHz offset)
Frequency Step Size	<2 Hz
Harmonic Content	< -25 dBc (typical)
Reference Source	Ultra-low-noise 100 MHz VCXO locked to internal TCXO or external 10 MHz Reference
Control Interface	USB and Ethernet, SCPI command
Power Supply	USB-C (5V - 2.0A)
Site and Enclosure	4.25"(W) x 2.50"(H) x 6.75"(D) (Aluminum)

RFS-1420 (42 GHz)	
Frequency Range	0.1 – 40 GHz (calibrated) 0.1 – 42 GHz (settable)
Output Power Range	-20 dBm to +13 dBm (0.1 – 20 GHz) -13 dBm to +15 dBm (20 – 40 GHz)
Power Output Accuracy	±1.0 dB (LF-20 GHz) ±2.0 dB (20-40 GHz)
Phase Noise	-90 dBc @ 40 GHz (10 kHz offset)
Frequency Step Size	<10 Hz
Harmonic Content	1 ns+.0001 x setpoint
Reference Source	Ultra-low-noise 100 MHz VCXO locked to internal OCXO or external 10 MHz reference (±10 PPB stability oven-controlled oscillator)
Control Interface	USB and Ethernet, SCPI command
Power Supply	USB-C (5V - 2.0A)
Site and Enclosure	4.25"(W) x 2.50"(H) x 6.75"(D) (Aluminum)

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