STZ-22-I1

Rev. 1.0

Full Waveguide Band, Q-Band Noise Source with Isolator

Description:



Model STZ-22-I1 is a Q-Band noise source that delivers a 13 dB ENR with extreme flatness across the frequency range of 33 to 50 GHz. The noise source is integrated with SAGE Millimeter's high quality Faraday isolator (STF-22-S1) to improve the port VSWR and load pull for more reliable and accurate noise figure measurements. The noise source can work in either CW or pulse AM mode by applying a TTL triggering signal via a female SMA connector. This feature can also be used in automatic test systems to remotely turn the noise source on and off. In addition, a toggle switch (power/triggering inversion switch) is provided to turn the noise source on and off manually.

Features:

- Full Waveguide Band Operation
- TTL or Manual On and Off Switches
- CW or Pulsed AM Operation Modes
- Precision Calibrated and Flat ENR

Applications:

- Test Labs
- Instrumentations
- Radiometric Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	33.0 GHz		50.0 GHz
ENR		13.0 dB	
ENR Flatness		±1.5 dB	
Temperature Stability		0.01 dB/°C	
Long Term Temperature Stability		0.05 dB/day	
AM Modulation Trigger		TTL	
AM Modulation Rate		1.0 KHz	
Port Return Loss		14 dB	
DC Bias	+18 V_{DC}/35 mA	+28 V_{DC}/60 mA	+30 V_{DC}/75 mA
Specification Temperature		+25˚C	
Case Temperature	0˚C		+50˚C

Mechanical Specifications:

Item	Specification
RF Output	WR-22 Waveguide with UG-383/U Flange
Bias Port Connector Type	BNC (F)
AM Modulation Connector Type	SMA (F)
Size	6.44" (L) x 1.97" (Ø)
Waveguide Flange Material	Brass
Noise Source Finish	Silver Plated and Black Paint
Isolator Finish	Gold Plated and Black Anodized
Weight	15.0 Oz
Outline	TZ-WQ

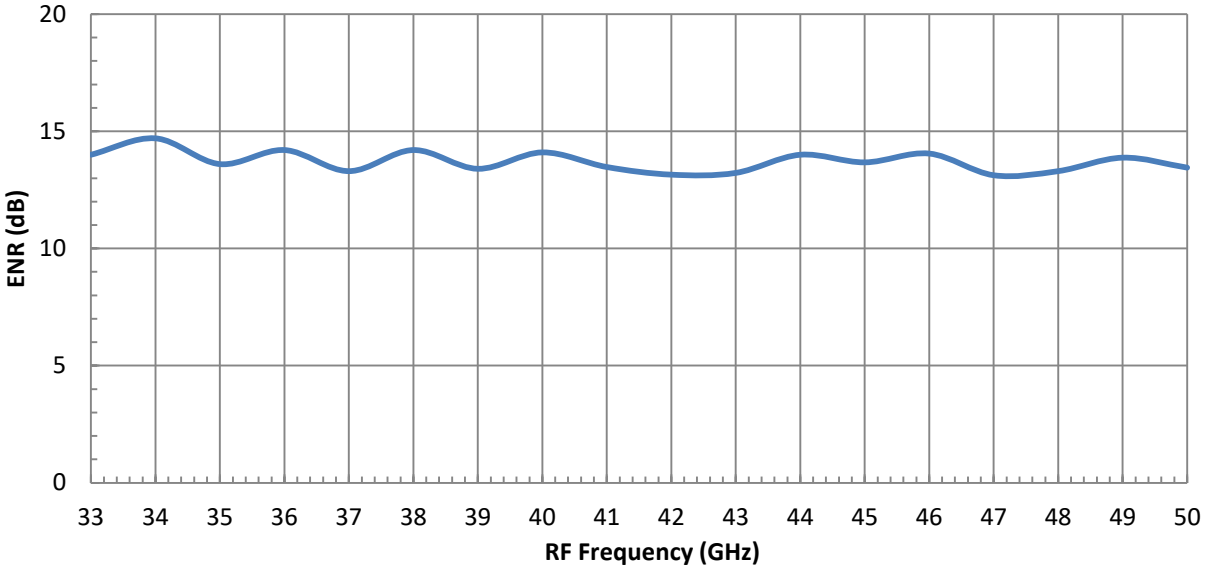
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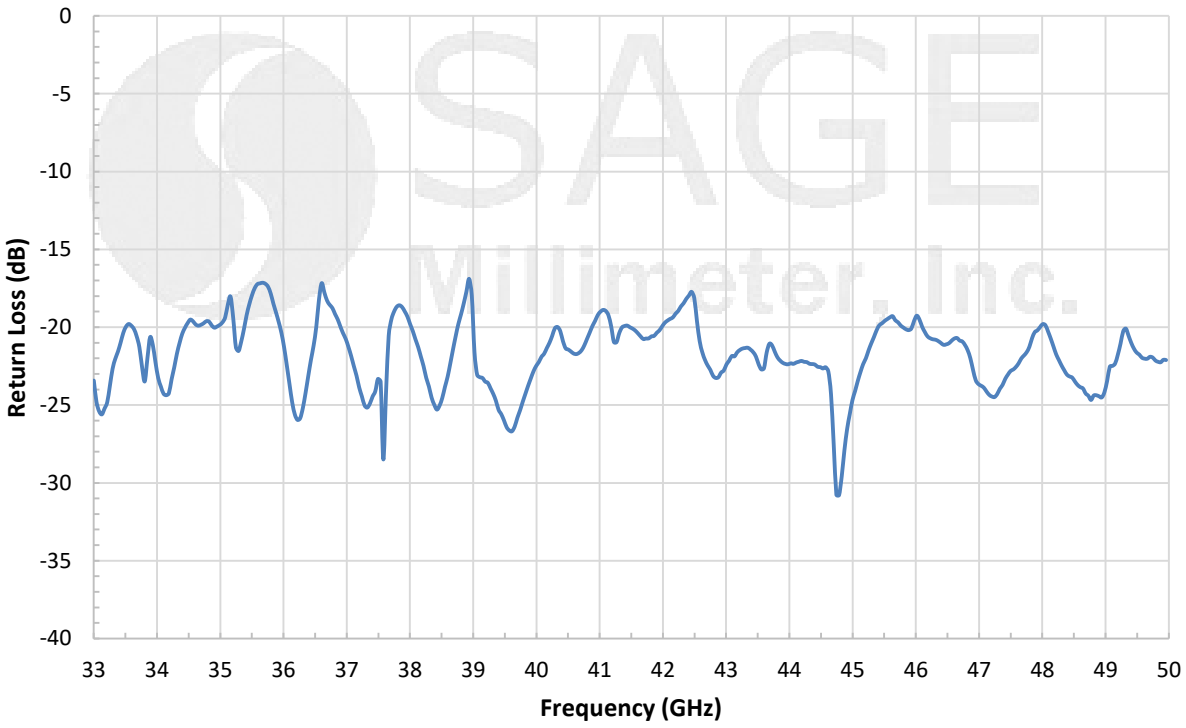
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Typical ENR vs. Frequency

V_{DC} = +18 V, I_{DC}= 35 mA



Typical Return Loss vs. Frequency

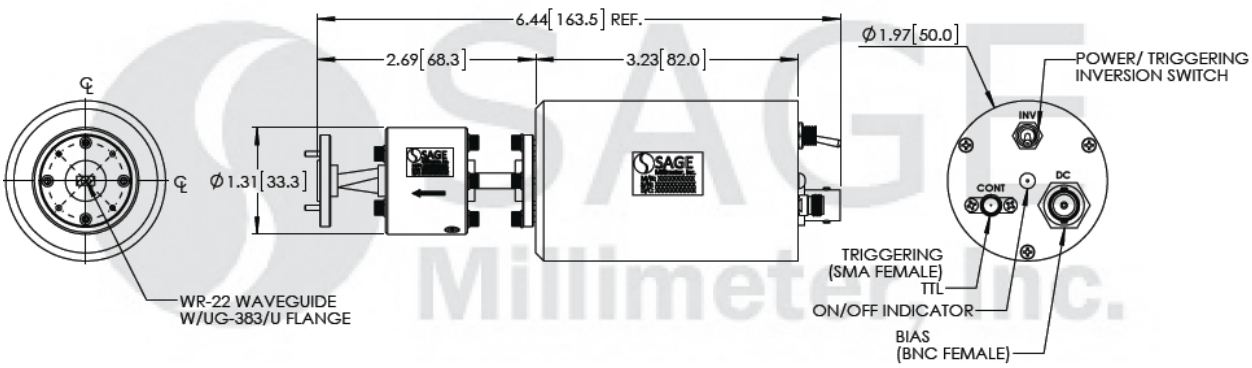


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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)



Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25˚C case temperature.
- The **Triggering Port** (female SMA connector) of the noise source is provided to turn the noise source on and off via a TTL control signal any time the **Bias** is applied. The switching frequency is limited to 1 KHz.
- The **Power/Triggering Inversion Switch** of the noise source is provided to manually turn the noise source on and off any time the **Bias** is applied. When the switch is in the "ON" position, the LED light will be illuminated.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.

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