STR-243-42-D1

Rev. 1.1

Radar Target Simulator, Direct Reading, 24.125 GHz

Description:



Model STR-243-42-D1 is a radar doppler simulator that operates at 24.125 GHz with a bandwidth of ±100 MHz and a WR-42 waveguide input/output. The simulator utilizes a single-sideband-modulator to modulate the incoming signal transmitted by the radar under test and sends back either a higher or lower band signal through a diplexer. The frequency-shifted signal is transmitted back to the radar under test as a Doppler signal. Target characteristics are adjusted by changing the I and Q channel frequency and phase. The routing attenuation is adjusted by the direct reading attenuator.

Features:

- Single Sideband Output
- Simulated Target Speed and Size Adjustable
- Simulated Target Moving Direction Switchable
- Instrumentation Grade

Applications:

- Doppler Target Simulations
- Radar System Testing

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		24.125 GHz	
RF Bandwidth		±100 MHz	
Carrier Rejection		25 dB	
Image Rejection		20 dB	
Routing Loss Range		25 to 125 dB	
I/Q Frequency Range	DC		100 MHz
I/Q Voltage			±10 V_{p-p}
I/Q Current			10 mA
I/Q Phase Error		±5°	
Specification Temperature		+25 ˚C	
Operating Temperature	0 ˚C		+50 ˚C

Mechanical Specifications:

Item	Specification
RF Port	WR-42 Waveguide with UG-595/U Flange
I/Q Ports	SMA(F)
Case Finish	Black Anodized
Size	6.98” (W) x 15.68” (L) x 5.10” (H)
Outline	TR-KD

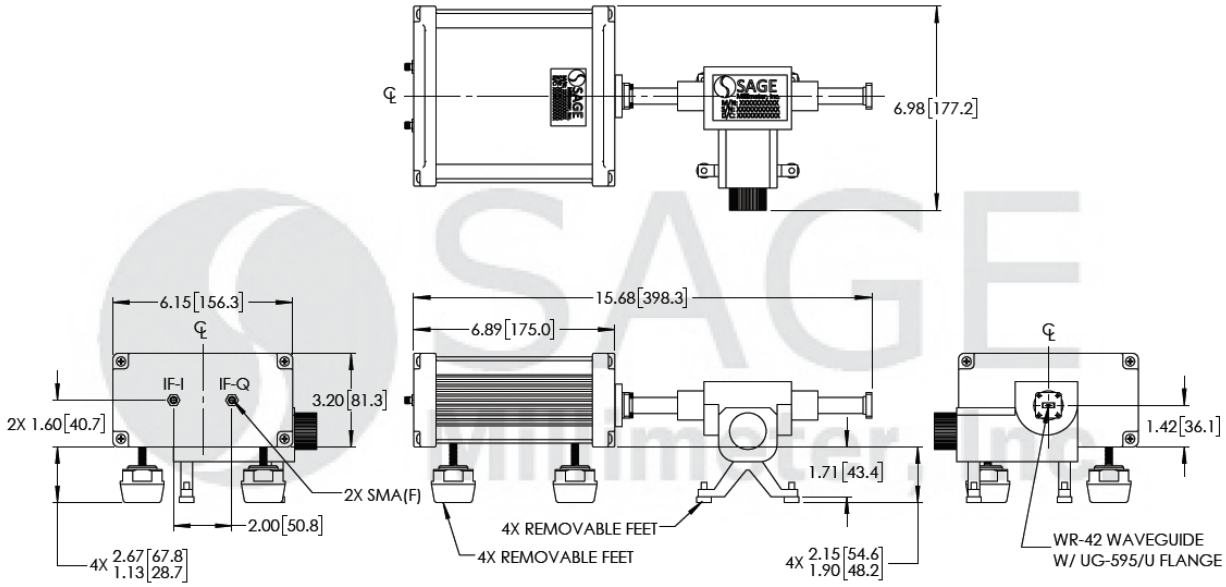
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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches[millimeters])



Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Models with different operation frequencies are available under a different model numbers.
- A 24.125 GHz Radar Target Simulator with a **level setting attenuator**, instead of a direct reading attenuator, is available as model **STR-243-42-L1**.

Caution:

- Exceeding absolute maximum ratings of the device will damage the device.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.92 ± 0.05 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**
- Any foreign objects in the waveguide will cause performance degradation and may damage the device.

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