E-Band Extended Waveguide Band Down-Converter

STC-58390305-12-C1 is an extended E-Band down-converter that converts millimeterwave signals from the frequency range of 58 to 90 GHz to the baseband at 4 to 36 GHz. The down-converter has a built-in phase locked oscillator (PLO), which is externally referenced at 10 MHz. The down converter also integrates a PIN diode based SPDT swith at the RF input for receiving signal level monitoring. The switch is controlled by TTL signal and the bypassing "on" is at TTL "low." The bypassing loss is 4 dB typical and 6 dB maximum. The RF ports for the downconverter are WR-12 waveguides with UG-387/U anti-cocking flange. The IF output is a 2.92 mm (F) connector and PLO reference signal input connector is an SMA (F) connector. A wall mount AC adapter is included for AC powering.

Electrical Specifications:

equency Output 4 GHz 36 GHz version Gain -1 dB 5 dB 13 dB bined Harmonic Power -1 dB 5 dB -70 dBm ious -40 dBc -40 dBc e Figure 10 dB 15 dB ass Insertion Loss 4 dB 6 dB ass "ON" TTL "Low" - verter Mode TTL "Low" +0.8 Vpc Low 0 Vpc +0.8 Vpc High +2.7 Vpc +5.0 Vpc ch Isolation 15 dB 25 dB t PrdB -20 dBm - nal LO Multiplication X4 - t PrdB -20 dBm - rence Frequency 10 MHz - rence Frequency -5 dBm +10 dBm amage Level (Bypassing) -5 dBm +10 dBm amage Level (Converting) -10 dBm -10 dBm m Loss 100 VAc 10 dB -				
equency Output 4 GHz 36 GHz version Gain -1 dB 5 dB 13 dB bined Harmonic Power -1 dB 5 dB -70 dBm ious -40 dBc -40 dBc e Figure 10 dB 15 dB ass Insertion Loss 4 dB 6 dB ass 'ON" -TTL "Low" TTL "Low" verter Mode TTL "Low" +0.8 Vpc Low 0 Vpc +0.8 Vpc High +2.7 Vpc +0.8 Vpc High -20 dBm +5.0 Vpc ch Isolation 15 dB 25 dB t PridB -20 dBm - nal LO Multiplication x4 - tock LED Indicator 10 MHz - rence Frequency -5 dBm +10 dBm Damage Level (Bypassing) -6 dB -10 dBm m Loss Ino dB -10 dBm m Loss 100 VAc 240 VAc	Parameter	Minimum	Typical	Maximum
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ass "ON"TTL "Low"TTL "Low"verter ModeTTL "High" or NoILow0 Vbc1<0 Nbc	Noise Figure		10 dB	15 dB
verter ModeTTL "High" or NoLow0 Vbc+0.8 VbcHigh+2.7 Vbc+5.0 Vbcch Isolation15 dB25 dBt P1dB-20 dBmx4Lock LED Indicator-20 dBmx4Lock LED Indicator10 MHzrence Frequency-5 dBm+3 dBmPamage Level (Bypassing)-5 dBm10 dBmDamage Level (Converting)100 Vac10 dBer Supply (AC Adapter Provided)100 Vac240 Vaccification Temperature100 Vac+25°C	Bypass Insertion Loss		4 dB	6 dB
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rn Loss 10 dB er Supply (AC Adapter Provided) 100 Vac 240 Vac sification Temperature +25°C	RF Damage Level (Bypassing)			+10 dBm
er Supply (AC Adapter Provided) 100 V _{AC} 240 V _{AC} cification Temperature +25°C	RF Damage Level (Converting)			-10 dBm
cification Temperature +25°C	Return Loss		10 dB	
•	Power Supply (AC Adapter Provided)	100 Vac		240 Vac
	Specification Temperature		+25°C	
rating Temperature 0°C +50°C	Operating Temperature	0°C		+50°C

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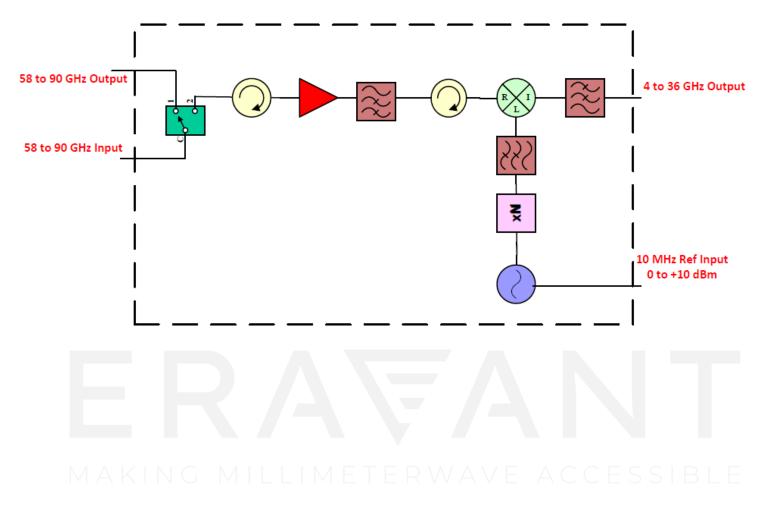


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Mechanical Specifications:

Item	Specification
RF Input/Output Ports	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
10 MHz Reference Port	SMA (F)
TTL Port	SMA (F)
IF Port	2.92 mm (F)
Bias Port	2.5 mm DC Jack (AC-to-DC power converter included)
Finish	Black Anodized
Weight	4.4 lbs
Size	10.0" (L) x 6.0" (W) x 1.90" (H)
Outline	TC-E-A-2

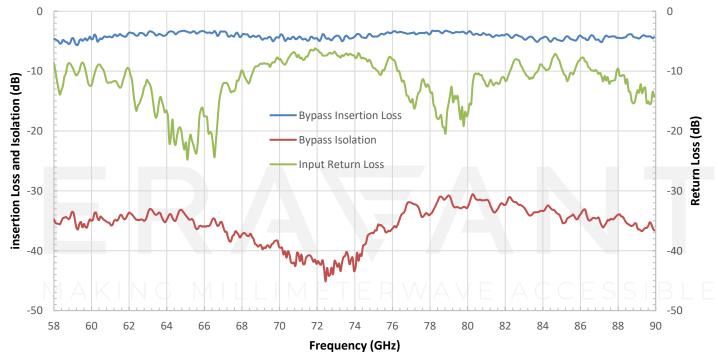
Block Diagram:



Gain Noise Figure Noise Figure (dB) Gain (dB) -5 -5 -10 -10 Frequency (GHz)

Gain and Noise Figure vs. Frequency

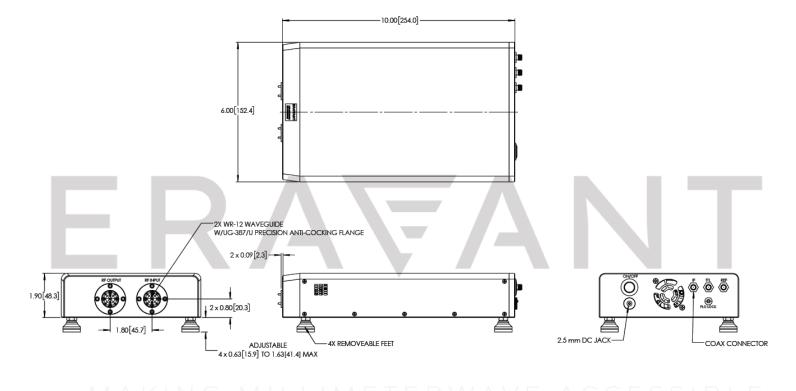




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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



NOTE:

- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum ratings of the device will damage the device.
- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model <u>SCH-08008-S1</u> is highly recommended

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