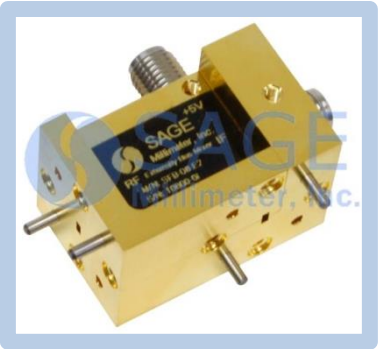
SFU-08-E2

Rev. 1.0

F-Band Externally Biased Balanced Up-Converter

Description:



Model SFU-08-E2 is an F-Band, externally biased, balanced up-converter. The up-converter supports the full waveguide band operation for both LO and RF frequencies from 90 to 140 GHz with an extremely broad IF output from DC to 20 GHz. The up-converter offers a typical conversion loss of 13 dB and a high IF to LO port isolation. The main advantage of using an externally biased up-converter is that it only requires a local oscillator (LO) power of 0 to +5 dBm when a bias of +5 V_{DC} is applied. This eliminates the need for an expensive local oscillator, making system integrations more affordable.

Features:

- Full Waveguide Band Coverage
- Low LO Power Requirement
- Low Conversion Loss
- High IF Frequency up to 20 GHz

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	90 GHz		140 GHz
LO Frequency	90 GHz		140 GHz
IF Frequency	DC		20 GHz
LO Pumping Power	+0 dBm	+3 dBm	+5 dBm
Conversion Loss		13 dB	15 dB
RF to LO Isolation		30 dB	
Combined IF and LO Power			+18 dBm
External Bias Voltage		+5 V_{DC}	
Bias Current		2 mA	
Specification Temperature		+25 °C	
Case Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-08 Waveguide with UG-387/U-M Flange
LO Port	WR-08 Waveguide with UG-387/U-M Flange
IF Port	K(F)
External Bias	SMA(F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Size	1.40” (L) X 0.75” (W) X 0.75” (H)
Outline	FB-EF-2

www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

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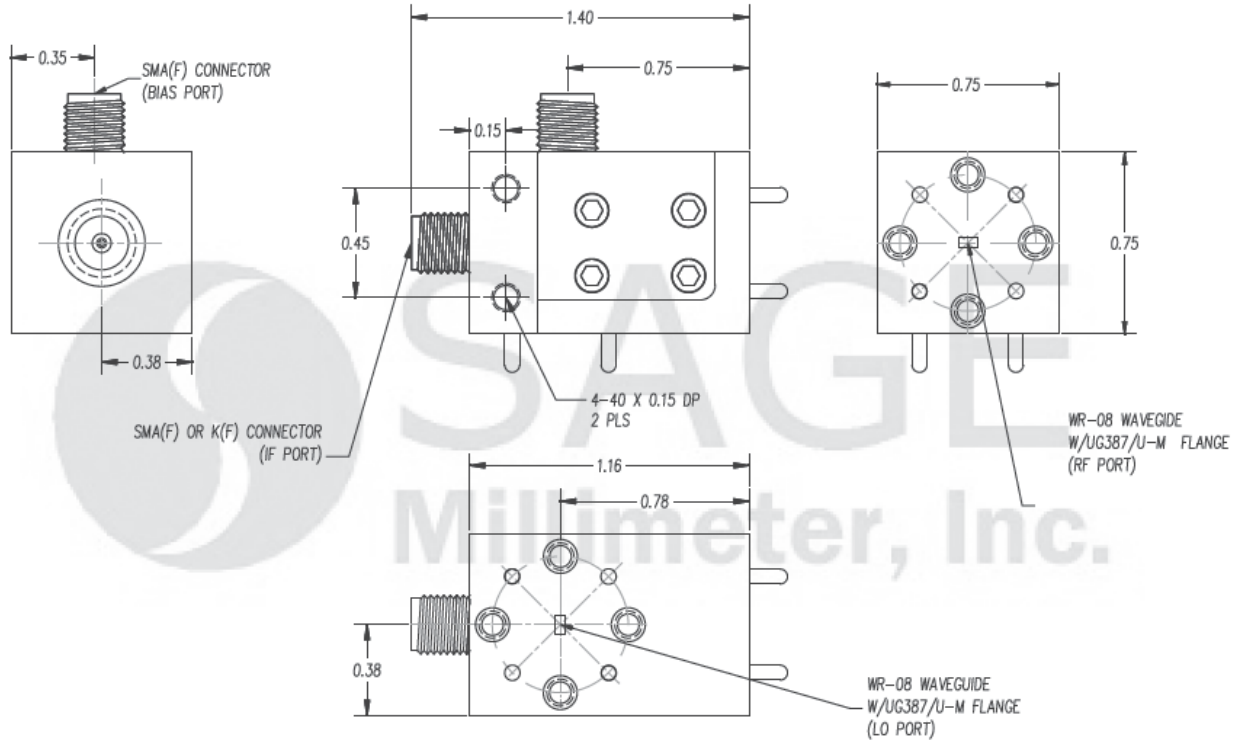
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)



Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Any foreign objects in the waveguide will cause performance degradation and can possibly 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.**