

FMCW Transceiver Assembly, 76.0 to 86.4 GHz

Description:

Model SSK-SC763863-12-C1 is an E band, FMCW bi-static radar transceiver assembly. The transceiver input is 9.5 GHz to 10.8 GHz at 0 dBm. It converts this to 76.0 to 86.4 GHz through a X2 and X4 multiplier for LO and TX signals. A waveguide filter is implemented to clean the unwanted harmonic and spurious, and a directional coupler is used to separate the transmitter and receiver LO paths. The transceiver includes two rectangular horns with 20 dB typical gain. The typical transmitting power is +10 dBm and the conversion gain and noise figure of the receiver are 16 dB and 6.0 dB typically. The transceiver assembly requires +8 V_{DC} at 1,000 mA DC bias. The assembly uses SMA (F) connectors for both LO and IF ports.



Features:

- 76 to 86.4 GHz Operation
- Broad FM Bandwidth
- High TX/RX Isolation

Applications:

- True Ranging Radar Systems
- Military Surveillance System

Electrical Specifications:

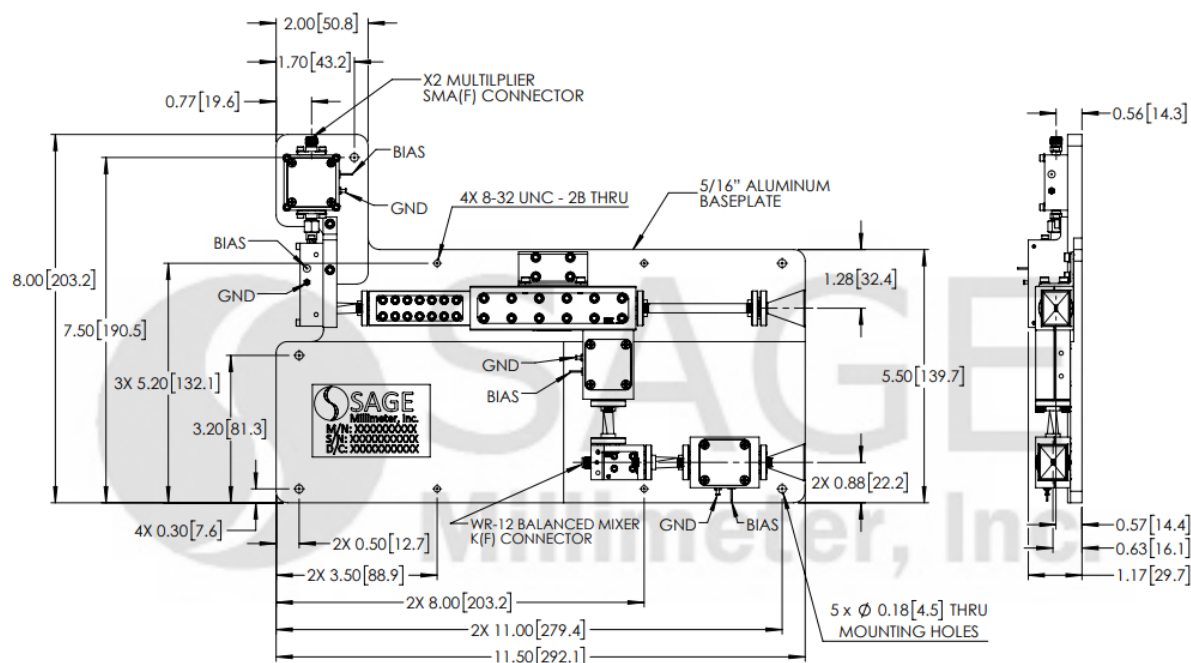
Parameter	Minimum	Typical	Maximum
TX Frequency	76.0 GHz		86.4 GHz
TX Power		+10 dBm	
Input Frequency	9.5 GHz		10.8 GHz
Input Power		+0 dBm	+1 dBm
RX Frequency	76.0 GHz		86.4 GHz
RX Noise Figure		6.0 dB	
RX Conversion Gain		16 dB	
IF Frequency	DC		10 GHz
DC Supply Voltage		+8 V _{DC} /1,000 mA	

Mechanical Specifications:

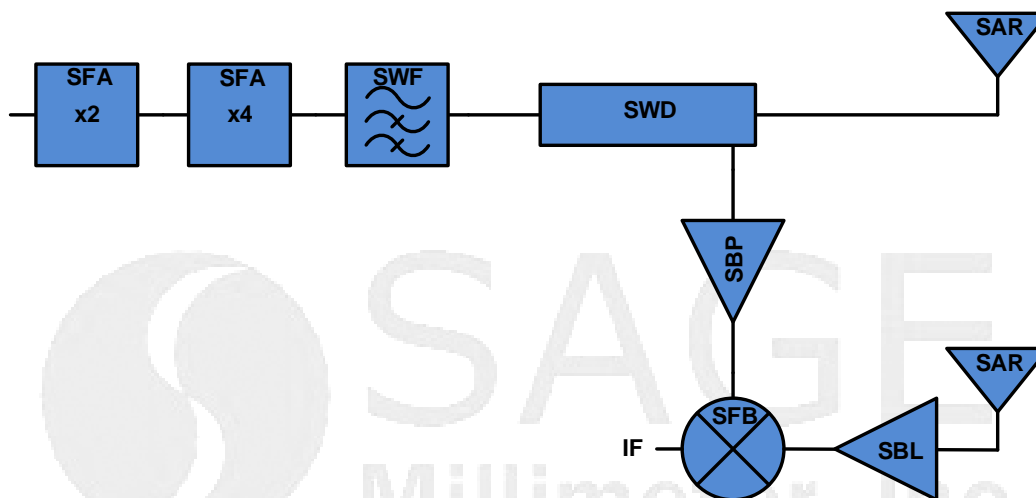
Item	Specification
IF Input	SMA(F)
LO Input	SMA(F)
Bias and Others	Solder Pins
Weight	2.8 Lbs
Size	8.0" (W) X 11.5" (L) X 1.17" (H)
Outline	SK-SC-SC-C1

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



Block Diagram:



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.
- The case temperature of the device shall never exceed +50°C. Use additional heatsink or fan if necessary.