

E-Band Transceiver

Description:

Model SSC-7737731200-1212-C1 is an E-Band transceiver. The transceiver has a minimum transmit output power of -30 dBm across the frequency range of 76 to 78 GHz with an IF input power of 0 dBm in the frequency range of 550 to 950 MHz. The typical receive conversion loss is -12 dB with a typical RF input power of -20 dBm in the frequency range of 76 to 78 GHz and a IF output frequency range of 550 to 950 MHz. The required LO power and frequency range are +5 dB and 19.0 to 19.5 GHz typically for both the transmit and receive functions. The LO port is equipped with a female K connector, the IF ports are both female SMA connectors and the RF port is a WR-12 waveguide with a UG-387/U flange. Although the module is offered in a monostatic version, bi-static version is available per request.



Features:

- Compact Size
- High Performance
- Low Cost
- Fully Integrated Module

Applications:

- Radar Target Systems
- Communication Systems
- Radar Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
TX RF Output Frequency	76 GHz		78 GHz
TX RF Output Power	-30 dBm		
TX IF Input Frequency	550 MHz		950 MHz
TX IF Input Power			0 dBm
RX RF Input Frequency	76 GHz		78 GHz
RX RF Input Power		-20 dBm	+3 dBm
RX IF Output Frequency	550 MHz		950 MHz
RX Conversion Loss		-12 dB	
LO Frequency	19.0 GHz		19.5 GHz
LO Input Power		+5 dBm	
TX Mixer DC Voltage Supply		+5V _{DC}	+6 V _{DC}
TX Mixer Current Supply		2.0 mA	2.5 mA
RX Mixer DC Voltage Supply		+5 V _{DC}	+6 V _{DC}
RX Mixer Current Supply		2.0 mA	2.5 mA
LO DC Voltage Supply		+6 V _{DC}	
LO Current Supply		300 mA	

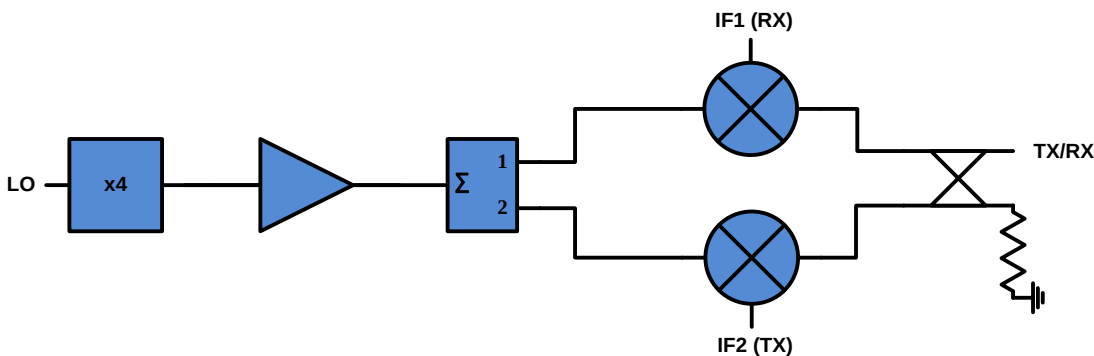


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Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
TX IF Port	SMA(F)
RX IF Port	SMA(F)
LO Port	K(F)
Bias	Solder Pin
Size	1.10" (W) X 1.80" (L) X 0.50" (H)
Weight	1.5 Oz
Finishing	Gold Plated
Outline	SE-EC-ITS

Block Diagram:



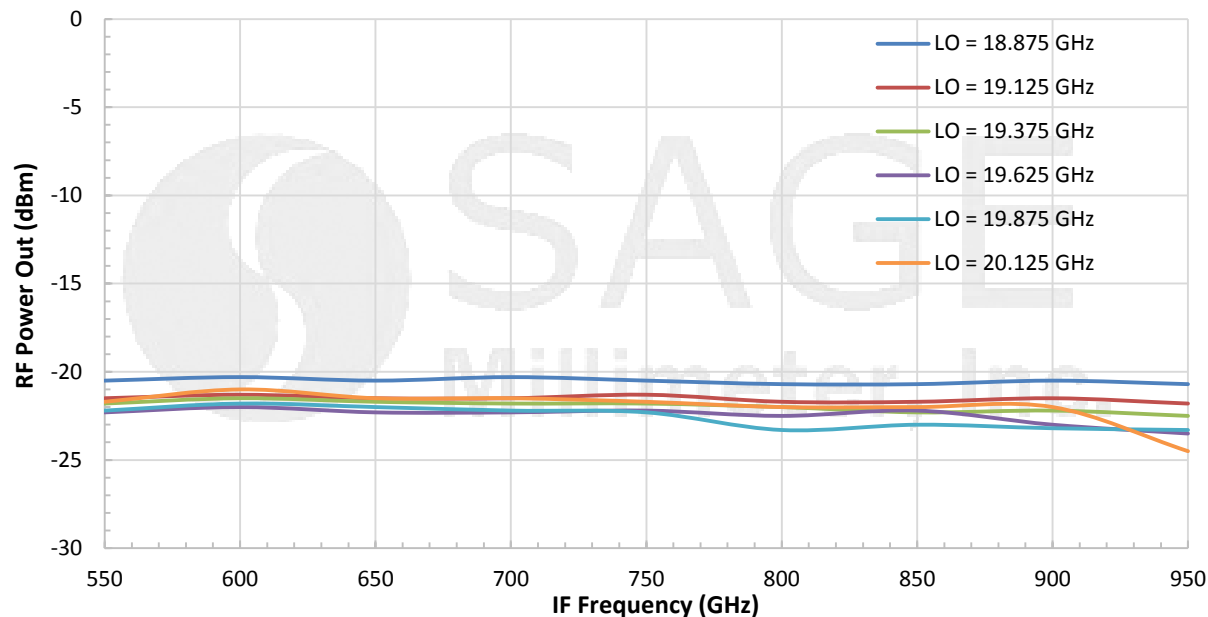


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Typical TX Output Power vs. IF Frequency

LO Multiplier Bias: $+6 V_{DC}/300 \text{ mA}$, Mixer Bias: $+2.9 V_{DC}/2 \text{ mA}$

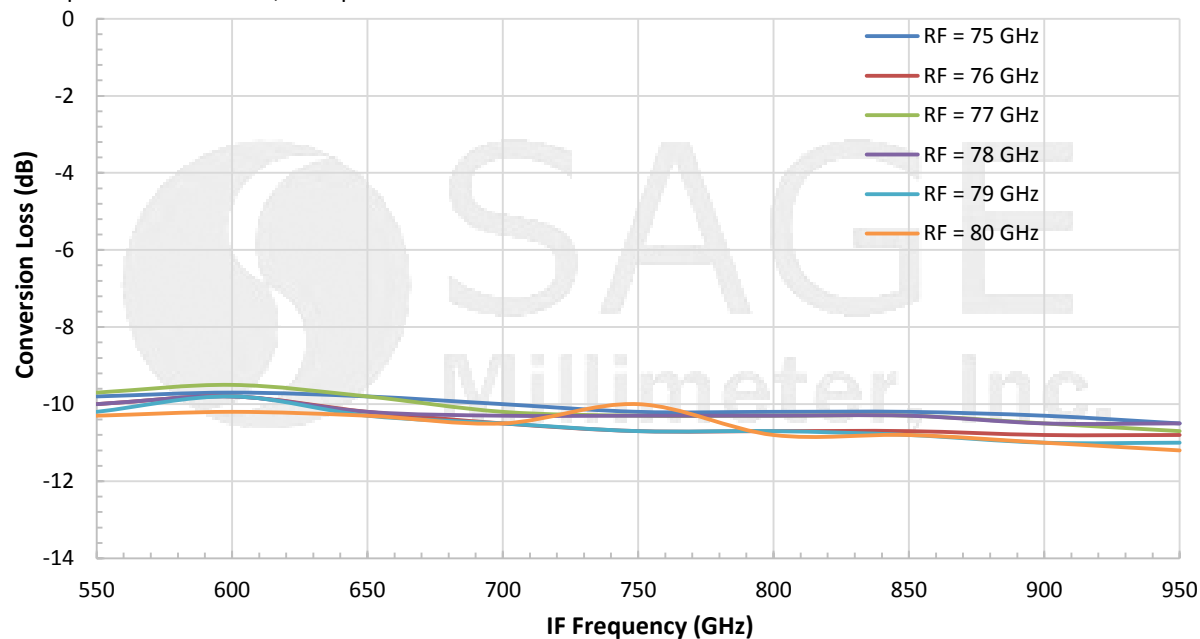
LO Input Power: $+5 \text{ dBm}$, IF Input Power: 0 dBm



Typical RX Conversion Loss vs. IF Frequency

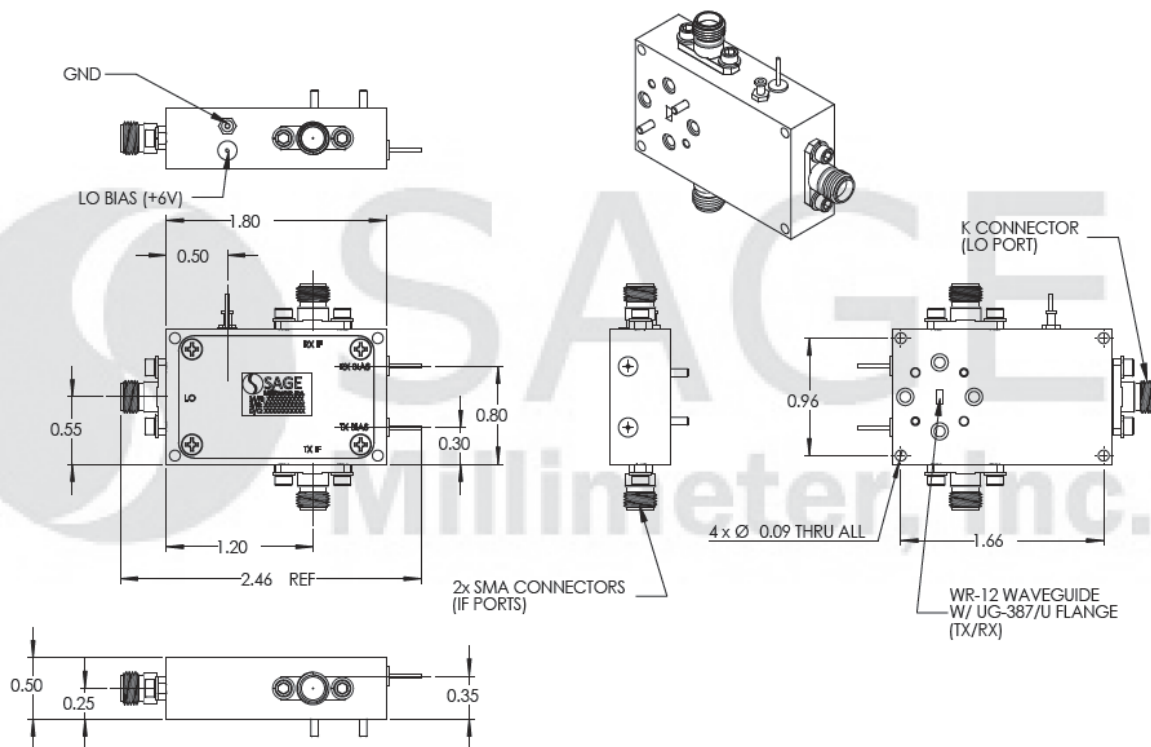
LO Multiplier Bias: $+6 V_{DC}/300 \text{ mA}$, Mixer Bias: $+2.9 V_{DC}/2 \text{ mA}$

LO Input Power: $+5 \text{ dBm}$, RF Input Power: -20 dBm



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



Note:

- All data are presented using a limited sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Other mechanical configurations are available under different model number.

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 into the waveguide will cause performance degradation and possible device damage.
- The case temperature of the device shall never exceed +50°C. Use proper Heatsink or fan if necessary.