SSC-7438437016-1212-SR1

Advanced Rev 1.1

E-Band Transceiver, RX 71 to 76 GHz, and TX 81 to 86 GHz

Description:

Model SSC-7438437016-1212-SR1 is an E-Band transceiver. The transceiver has a typical transmit output power of +16 dBm across the frequency range of 81 to 86 GHz with an IF input power of +0 dBm and frequency range of DC to 5 GHz. The receiver has a typical receiving linear conversion gain of 25 dB and noise figure of 5.0 dB in the frequency range of 71 to 76 GHz with a IF output frequency range of DC to 5 GHz. The receiver signal linear range is from -100 to -20 dBm. The required LO power and frequency range are +5 dBm, 13.5 GHz for the transmitter and 11.83 GHz for receiver channels typically. The LO and IF ports are equipped with a 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:

- E Band Communication Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
TX RF Output Frequency	81 GHz		86 GHz
TX RF Output Power, P-1 dB		+16 dBm	
TX IF Input Frequency	DC		5 GHz
TX IF Input Power			0 dBm
TX LO Input Frequency		13.5 GHz	
TX LO Input Power		+5 dBm	
RX RF Input Frequency	71 GHz		76 GHz
RF Noise Figure		5 dB	
RX RF Input Power	-100 dBm	-20 dBm	+3 dBm
RX IF Output Frequency	DC		5 GHz
RX Conversion Gain		25 dB	
RX LO Frequency		11.83 GHz	
RX LO Input Power		+5 dBm	
TX and RX Isolation		55 dB	
DC Voltage Supply	+6 V_{DC}	+8V_{DC}	+12 V_{DC}
DC Current Supply		1,000 mA	
Specification Temperature		+25 °C	
Operation Temperature	0 °C		+50 °C
Storage Temperature	-40 °C		+85 °C

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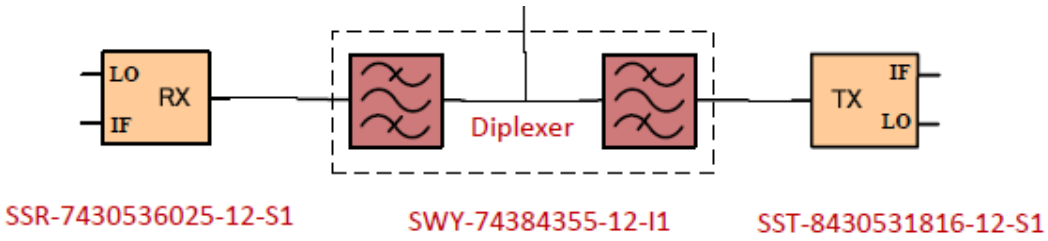
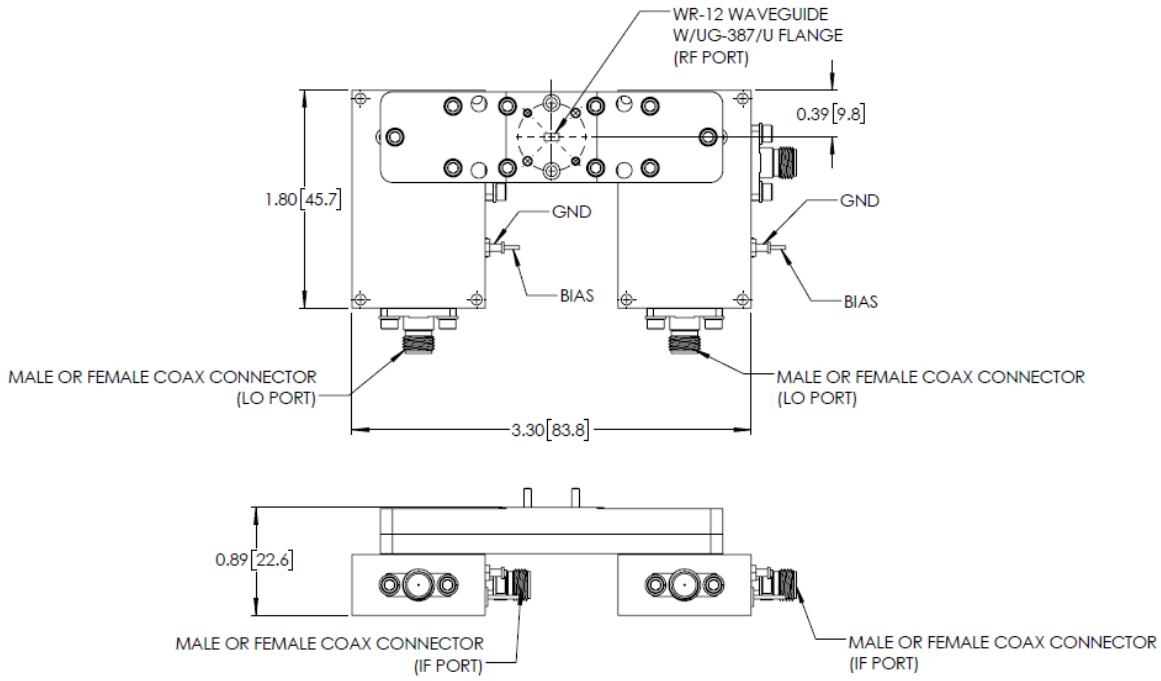
Mechanical Specifications:

Item	Specification
TX/RX Port	WR-12 Waveguide with UG-387/U Flange
TX IF Port	SMA(F)
RX IF Port	SMA(F)
TX LO Port	SMA(F)
RX LO Port	SMA(F)
Bias	Solder Pin
Size	3.30” (W) X 1.80” (L) X 0.89” (H)
Weight	8 Oz
Finishing	Gold Plated
Outline	SC-EC

Block Diagram:



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



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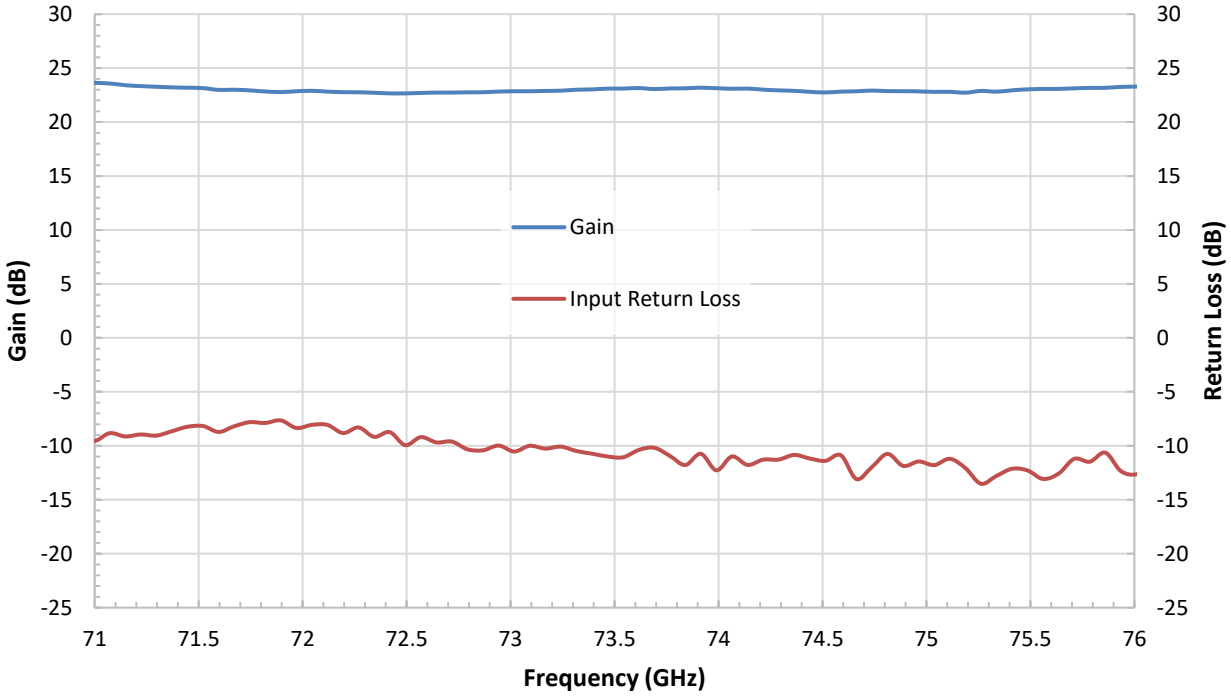
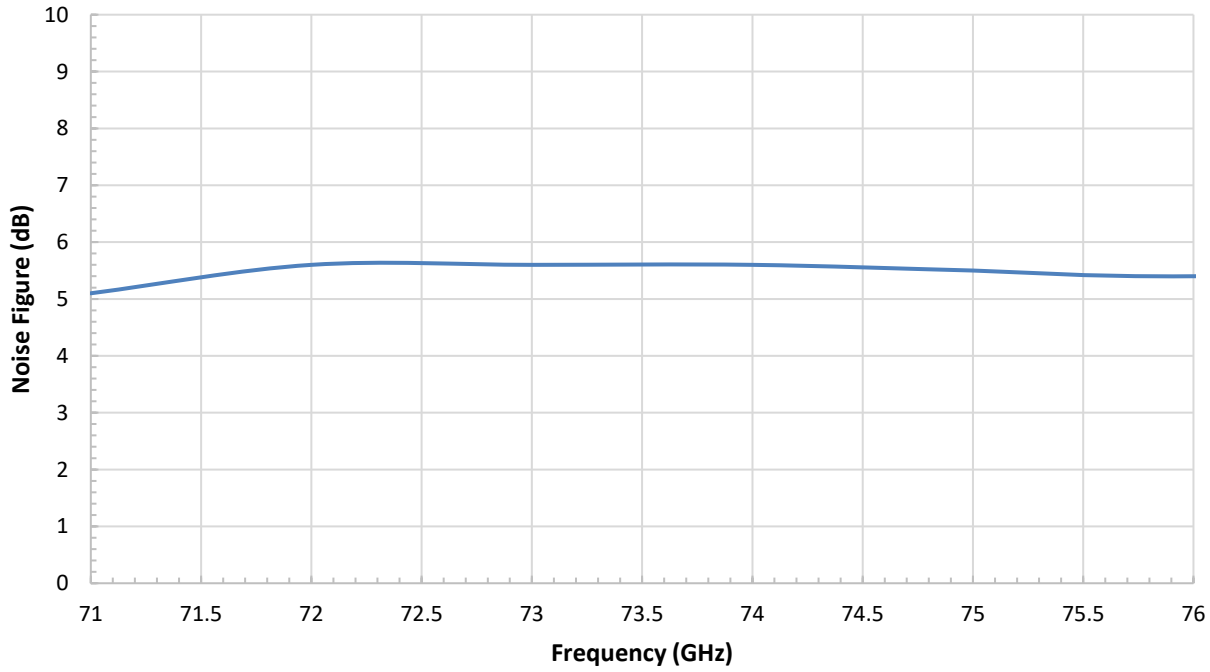
Typical RX Gain and Return Loss vs. Frequency

Bias = + 8 V_{DC}/1,000 mA



Typical RX Noise Figure vs. Frequency

Bias: + 8 V_{DC}/1,000 mA



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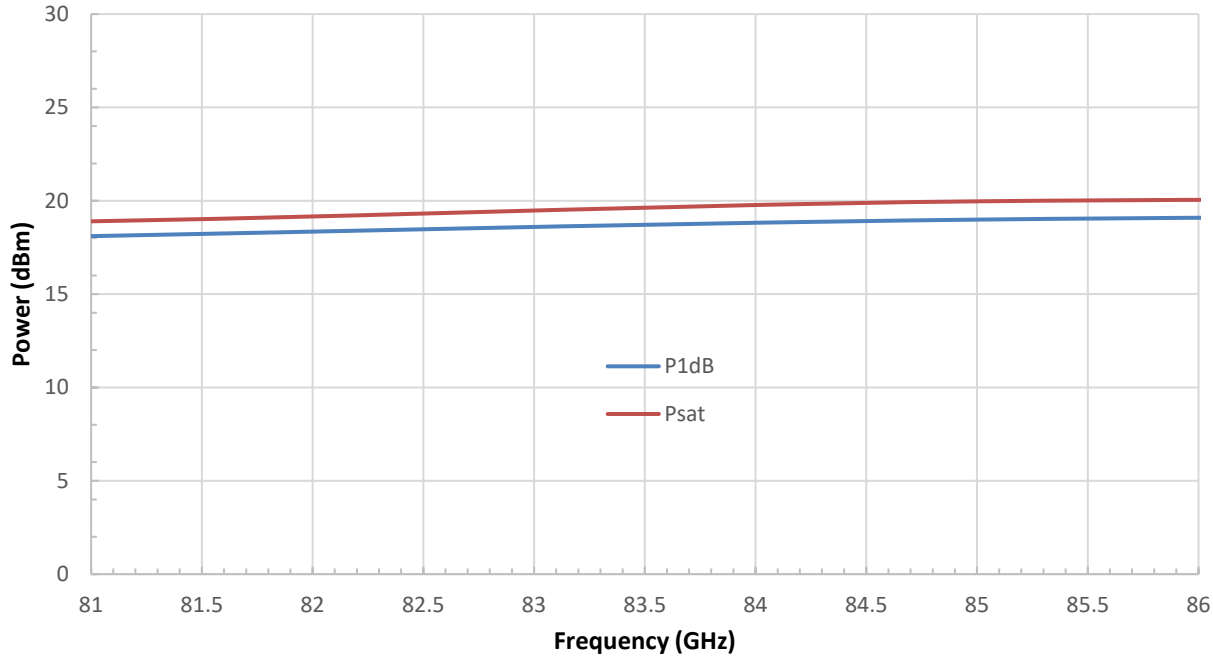
E-Band Transceiver, RX 71 to 76 GHz, and TX 81 to 86 GHz

Typical TX Output Power vs. Frequency

Bias: +8 V_{DC}/1,000 mA



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.
- Eravant 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.

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