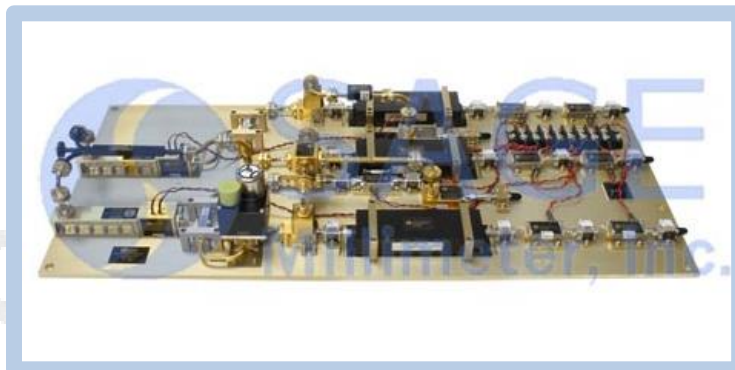




## E Band Dual-Channel Down Converter, 72 or 84 GHz

### Description:

**Model SSK-SR723843-12-C1** is an E band, dual-channel down converter. The down converter takes a 72 or 84 GHz signal at -100 dBm power and down converts each signal to 6 GHz. The system incorporates a leading LNA to minimized noise figure and a diplexer so that 72 and 84 GHz can be down converted to separate IF ports. The LO uses an externally source at 9.75 GHz and an internal 8x multiplier to reach 78 GHz to pump its down converters. Two stages of IF amplification provide 70 dB of gain. The 6 GHz coaxial filter is implemented to clean any unwanted harmonic or spurious signals. The down converter assembly has a nominal IF output power of 0 dBm and the conversion gain of 100 dB and noise figure of 4.5 dB, respectively. The down converter assembly requires +8 V<sub>DC</sub>/875 mA and +12 V<sub>DC</sub>/700 mA DC bias typically. The ports are WR-12 waveguides for the input RF and female SMA connectors for both LO and IF ports.



### Features:

- 72 or 84 GHz Operation
- 100 dB RF to IF Gain
- 5 dB Noise Figure
- Bread Board Configuration

### Applications:

- High Sensitivity Receiving Systems
- Low Noise Receiver Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Rx Frequency	72.0 GHz		84.0 GHz
Rx Input Power		-100 dBm	
Rx Noise Figure		4.5 dB	
LO Frequency		9.75 GHz	
LO Power		+6.0 dBm	+10.0 dBm
IF Frequency		6.0 GHz	
IF Power		0 dBm	+10.0 dBm
Rx Conversion Gain		100 dB	
VSWR		2:1	
DC Supply 1		+8 V <sub>DC</sub> /875 mA	
DC Supply 2		+12 V <sub>DC</sub> /700 mA	
Specification Temperature		+25 °C	
Case Temperature	0 °C		+50 °C

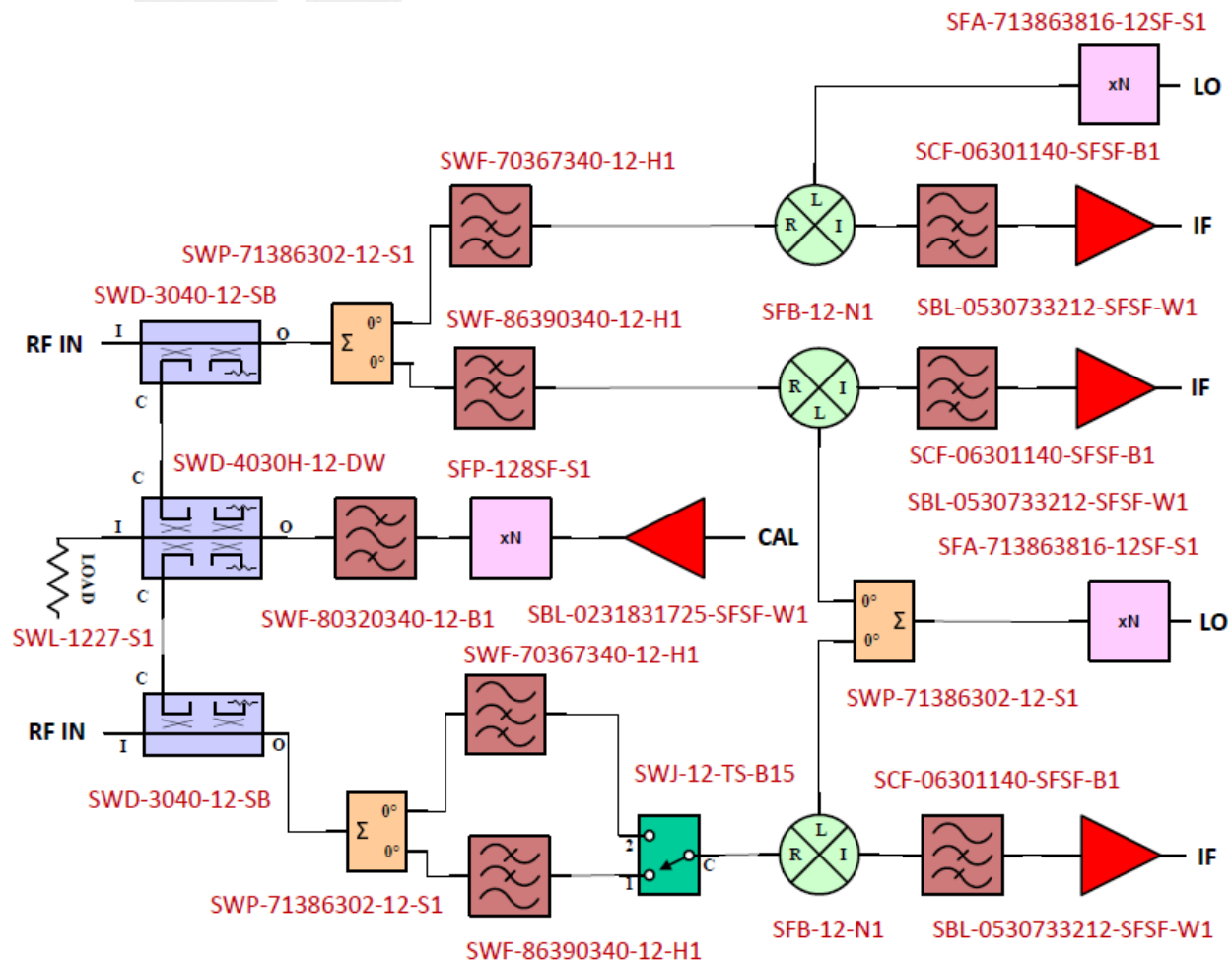


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### Mechanical Specifications:

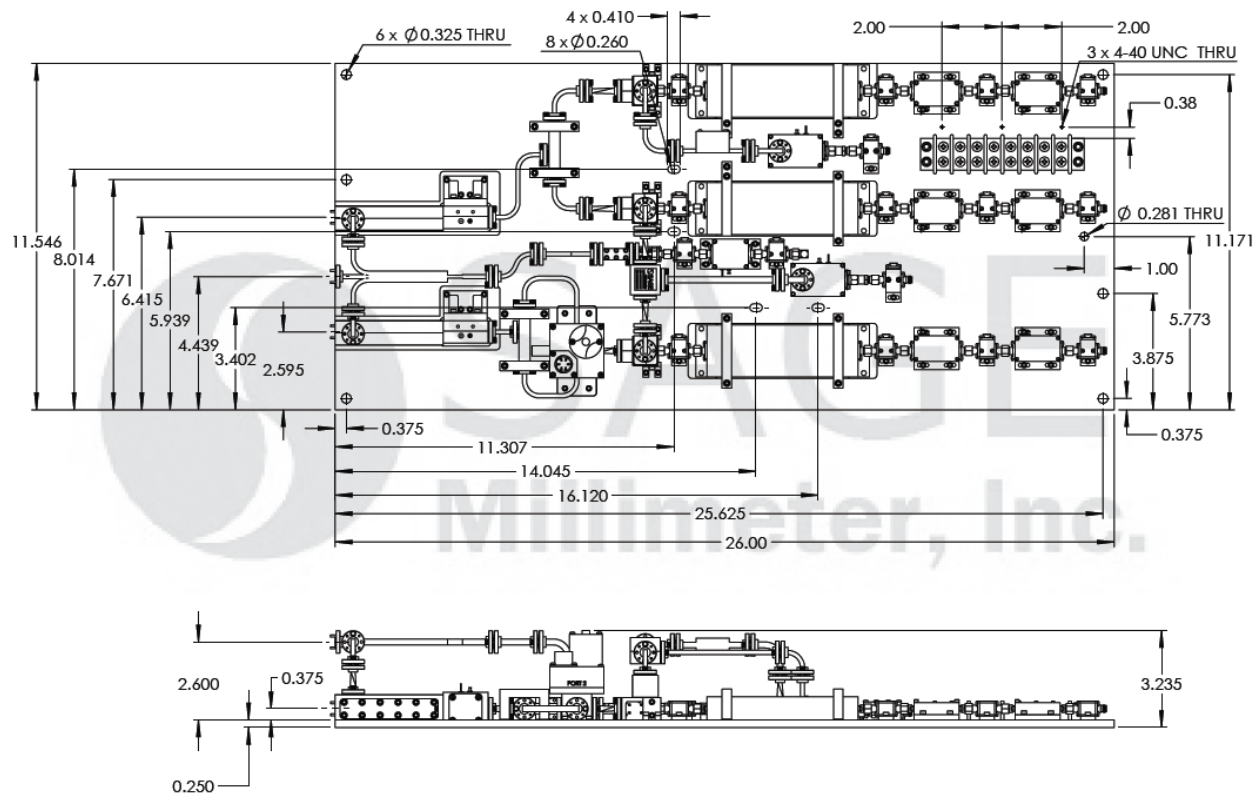
Item	Specification
IF Output	SMA (F)
LO Input	SMA (F)
RF Input	WR-12 Waveguide with UG-387/U Flange
DC Bias Ports	Feedthroughs
Weight	12 Pounds
Size	11.55" (W) X 26.00" (L) X 3.24" (H)
Outline	SK-SR-C1

### Block Diagram:



## E Band Dual-Channel Down Converter, 72 or 84 GHz

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