2016-04A L-band Downconverter

**2016-04A L-Band Downconverter** - Converts 950 to 2150 MHz to 140 MHz in 1 MHz steps with low group delay and flat frequency response. The 2016-04A Input and Output levels have been optimized to support transmit from an L-band modem to a 140 MHz IF upconverter. Multi-function push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), and remote operation (yellow). The gain is adjustable from 0 to +50 dB. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Standard connectors are BNC female for IF output and the optional external reference input and reference output, and Type F female for the RF input. A high stability (±0.01ppm) reference, LNB +24 VDC, 0.4 Amps power and 10 MHz reference (includes a 10 MHz output connector), are available Options. The unit is powered by a 100-240 ±10% VAC power supply, and housed in a 1.75” X 19” X 16” 1RU chassis.

### EQUIPMENT SPECIFICATIONS*

**Input Characteristics**
- Impedance/Return Loss: 75Ω / 12 dB
- Frequency: 950 to 2150 MHz
- Noise Figure, Max.: 15 dB (max gain)
- Input Level range: -60 to - 10 dBm
- Input 1 dB compression: -5 dBm

**Output Characteristics**
- Impedance/Return Loss: 75Ω / 18 dB
- Frequency: 70 ± 18 MHz
- Output Level/max. linear: -10 to 0 dBm
- Output 1 dB compression: +5 dBm

**Channel Characteristics**
- Gain: 0.0 to 50.0 dB, 1 dB steps (manually adjustable)
- Image Rejection: > 50 dB, min.
- Spurious Response: < -45 dBc in band (± 36 MHz) at -20 dBm out
- Frequency Response: ±1.5 dB, 950 -2150 MHz; ± 0.5 dB, 72 MHz BW
- Group Delay, max.: 0.0035 ns/MHz 2 parabolic; 0.025 ns/MHz linear; 1 ns ripple
- Frequency Sense: Non-inverting

**Synthesizer Characteristics**
- Frequency Accuracy: ± 1.0 ppm max over temp (± 0.02 ppm optional) internal reference; ext. ref. input, optional
- Frequency Step: 1.0 MHz minimum

<table>
<thead>
<tr>
<th>Phase Noise @ Freq</th>
<th>100Hz</th>
<th>1kHz</th>
<th>10kHz</th>
<th>100kHz</th>
<th>1MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**Controls, Indicators**
- Frequency Selection: direct readout LCD; pushbutton switches or remote selection
- Gain Selection: direct readout LCD; pushbutton switches or remote selection
- PWR; Alarm; Rem: Green LED; Red LED; Yellow LED
- Remote: RS232C, 9600 baud

**Other**
- RF, IF, 10MHz Connectors: Type F, female, BNC, female, BNC, female
- Connector, Alarm, Remote: DB9 - NO or NC contact closure on Alarm
- Size: 19 inch standard chassis 1.75” high X 16.0” deep
- Power: 100 - 240 ±10% VAC, 47 - 63 Hz, 25 watts max.

**MODELS, OPTIONS**
- 2016-04: 950-2150 Input, 140 MHz Output
  - E: Allows external 10 MHz reference input, 10 MHz reference can be inserted on the RF in
  - L: LNB +24 VDC, 0.4 Amps with readout of current
  - H: High Stability (± 0.02 ppm) internal reference

---

*www.crosstechnologies.com  •  770.886.8005
6170 Shiloh Road  •  Alpharetta, GA 30005  •  FAX 770.886.7964*