2016-25 Downconverter, 2.0 - 2.5 GHz to 70 MHz

The 2016-25 Downconverter converts 2000 to 2500 MHz to 70 ± 18 MHz in 1 MHz step (0.5 MHz to 1 kHz step options available) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), remote operation (yellow), and PLL alarm (red). Variable attenuators for the RF input provide a gain range of 0 to +50 dB as adjusted by the front panel pushbutton switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC female for RF, IF and the optional external reference input and output. The -E external 10 MHz option includes a 10 MHz output connector which contains either the internal or external 10 MHz reference signal. A -H high stability (±0.01ppm) option is also available. The unit is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4” X 19” X 16” rack mount chassis.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics (RF)**
- Impedance/Return Loss: 50Ω / 12 dB
- Frequency: 2.0 to 2.5 GHz
- Noise Figure, max.: 15 dB (max gain)
- Level Range: -70 to -20 dBm

**Output Characteristics (IF)**
- Impedance/Return Loss: 75Ω / 18 dB
- Frequency: 70 ± 18 MHz
- Level Range: -30 to -20 dBm
- Output 1 dB compression: -15 dBm

**Channel Characteristics**
- Gain range (adjustable): 0.0 to +50.0 dB
- Image Rejection: > 50 dB, min.
- Frequency Response: ±1.5 dB, 2.0 - 2.5 GHz; ± 0.5 dB, 36 MHz BW
- Spurious Response: < -45 dBc, in band
- Group Delay, max: 0.015 ns/MHz parabolic; 0.05 ns/MHz linear; 1 ns ripple
- Frequency Sense: Inverting or Non-inverting (selectable)

**Synthesizer Characteristics**
- Frequency Accuracy: ±1.0 ppm internal reference (±0.01 ppm, option H)
- Frequency Step: 1.0 MHz (0.5 MHz to 1 kHz step options available)
- 10 MHz In/Out Level: +3 dBm ± 3 dB (option E)

**Phase Noise @ F (Hz) >**

<table>
<thead>
<tr>
<th>dBc/Hz</th>
<th>10</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-55</td>
<td>-70</td>
<td>-70</td>
<td>-80</td>
<td>-95</td>
<td>-105</td>
</tr>
</tbody>
</table>

**Controls, Indicators**
- Freq/Gain Selection: direct readout LCD; manual or remote selection
- Pwr; Alarm; Rem; Mute: Green LED: Red LED; Yellow LED: Red LED
- Remote: RS232C, 9600 baud (RS485, Ethernet Optional)

**Other**
- RF, IF Connectors: 50Ω BNC (female), 75Ω BNC (female)
- 10MHz Connectors: BNC (female), **75Ω, works with 50 or 75 ohms** (option E)
- Alarm/Remote Connector: DB9 (female) - NO or NC contact closure on Alarm
- Size: 19 inch, 1RU standard chassis 1.75” high X 16.0” deep
- Power: 100-240 ± 10% VAC, 47-63 Hz, 45 Watts max. (24 and 48 VDC Optional)

*10°C to 40°C; Specifications subject to change without notice*