2016-95 Downconverter, 250 - 950 MHz, 70 MHz IF

The 2016-95 Downconverter converts 250 to 950 MHz to 70 ± 18 MHz in 1 MHz steps with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Multi-function push button switches select the input frequency, gain, and other parameters. Front panel LEDs provide indication of DC power, PLL alarm or Remote operation. Gain is adjustable manually (MGC) over a 0 to 50 dB range. The frequency and gain are remotely selectable. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are Type F female for the RF, and BNC female for the IF and optional external 10 MHz reference input and output (option E). Other connector options are available. The 2016-95 is powered by a 100-240 ±10%VAC power supply, and is contained in a 1 3/4” X 19” X 16” rack mount chassis.

**Equipment Specifications**

**Input Characteristics (RF)**
- Impedance/Return Loss: 75Ω/12 dB
- Frequency: 250 to 950 MHz
- Noise Figure, max.: 15 dB (max gain)
- Input Level Range: -70 to -20 dBm
- Input 1dB compression: -15 dBm

**Output Characteristics (IF)**
- Impedance/Return Loss: 75Ω/18 dB
- Frequency: 70 ± 18 MHz
- Output level Range: -20 to -10 dBm
- Output 1 dB compression: -5 dBm

**Channel Characteristics**
- Gain range (adjustable): 0.0 to +50.0 dB, 1dB steps
- Image Rejection: > 50 dB, min.
- Frequency Response: ±1.5 dB, 250 to 950 MHz ; ± 0.5 dB, 36 MHz BW; ±1.0 dB, 40 MHz BW
- Spurious Response: < -50 dBc, in band
- Group Delay, max: 0.02 ns/MHz2 parabolic; 0.06 ns/MHz linear; 1 ns ripple
- Frequency Sense: Inverting or Non-inverting (user selectable)

**Synthesizer Characteristics**
- Frequency Accuracy: ± 1.0 ppm internal reference (±.01 ppm, option H)
- Frequency Step: 1.0 MHz minimum
- 10 MHz In/Out Level: 3 dBm ± 3 dB (option E)

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

<table>
<thead>
<tr>
<th>dBc/Hz</th>
<th>-70</th>
<th>-70</th>
<th>-80</th>
<th>-90</th>
<th>-105</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1K</td>
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**Controls, Indicators**
- Freq/Gain Selection: direct readout LCD; manual or remote selection
- Power; Alarm; Remote: Green LED; Red LED; Yellow LED
- Remote: RS232C, 9600 baud (RS485, option Q)

**Connectors/Impedance**

<table>
<thead>
<tr>
<th>RF, IF Connectors</th>
<th>10MHz Connectors</th>
<th>Alarm/Remote Connectors</th>
<th>Size</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type F, 75Ω (female), BNC, 75Ω (female)</td>
<td>BNC (female), 50Ω/75Ω (option E)</td>
<td>DB9 (female) - NO or NC contact closure on Alarm</td>
<td>19 inch, 1RU standard chassis 1.75” high X 16.0” deep</td>
<td>100 - 240 ±10% VAC, 47 - 63 Hz, 45 watts max.</td>
</tr>
</tbody>
</table>

**Available Options**
- E - External 10 MHz ref input & output
- H - High Stability (±0.01) Internal Ref
- Q - RS422/485 Remote Interface
- T - Temperature Sensor
- W8 - Ethernet M & C Remote Interface
- X - 125 kHz step size

**Specifications Subject to Change Without Notice**

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