2016-0510 Downconverter, 0.50 - 1.00 GHz to 70 MHz

The 2016-0510 Downconverter converts 500 to 1000 MHz to 70 ± 18 MHz in 1 MHz steps (125 kHz to 1 kHz step options available). Synthesized local oscillators (LO) provide frequency selection. Push button switches select the input frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), and Remote operation (yellow). Gain is adjustable manually (MGC) over a 0 to 50 dB range. 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 IF and the optional external reference input and output, and Type F female for the RF input. The external 10 MHz option E includes a 10 MHz output connector which contains either the internal or external 10 MHz reference signal. A high stability option H (±0.01ppm) is also available. The unit is powered by a 100-240 ± 10% VAC power supply, and housed in a 1.75” X 19” X 16” rack mount chassis.

**Equipment Specifications**

**Input Characteristics (IF)**
- Impedance/Return Loss: 75 Ω /10 dB
- Frequency: 500 to 1000 MHz
- Input Level: -70 to -20 dBm

**Output Characteristics (RF)**
- Impedance/Return Loss: 75 Ω /18 dB
- Frequency: 70 ± 18 MHz
- Output level: -20 to -10 dBm
- Output 1 dB comp.: -5 dBm at maximum gain

**Channel Characteristics**
- Gain range (adjustable): 0.0 to +50.0 dB
- Image Rejection: > 50 dB, min.
- Frequency Response: ±1.5 dB, 500 - 1000 MHz; ± 0.5 dB, 36 MHz BW: ±1.0 dB, 40 MHz BW
- Spurious Response: < -50 dBc, in band
- Group Delay: max 0.015 ns/MHz² parabolic; 0.05 ns/MHz linear; 1 ns ripple
- Frequency Sensitivity: Inverting or Non-inverting, selectable

**Synthesizer Characteristics**
- Frequency Accuracy: ± 1.0 ppm max over temp (±0.01 ppm, option H)
- Frequency Step: 1.0 MHz (125 kHz to 1 kHz step options available)

<table>
<thead>
<tr>
<th>Phase Noise @ F (Hz) &gt;</th>
<th>10</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard-1 MHz steps: dBC/Hz</td>
<td>-55</td>
<td>-70</td>
<td>-70</td>
<td>-80</td>
<td>-90</td>
<td>-110</td>
</tr>
<tr>
<td>X1001-1kHz steps: dBC/Hz</td>
<td>-60</td>
<td>-75</td>
<td>-85</td>
<td>-90</td>
<td>-105</td>
<td>-120</td>
</tr>
</tbody>
</table>

**10 MHz Level (In or Out):** 3 dBm, ± 3 dB, 75 ohms (option E)

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

**Other**
- RF, IF Connectors: Type F (female), BNC (female)
- 10 MHz 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" H X 16.0" D
- Power: 100-240 ±10% VAC, 47-63 Hz, 25 W max.; 24, 48 VDC Opt.

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