The 2016-10 Downconverter converts 500 to 1000 MHz to 200 ± 55 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 BNC 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 2016-10 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: 50Ω / 14 dB
- Frequency: 500 to 1000 MHz
- Noise Figure, max.: 15 dB (max gain)
- Input Level Range: -55 to -5 dBm
- Input 1dB compression: 0 dBm, 0 dB gain

**Output Characteristics (IF)**
- Impedance/Return Loss: 50Ω / 18 dB
- Frequency: 200 ± 55 MHz
- Output level: -25 to -5 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, 500 to 1000 MHz ; ± 0.5 dB, 100 MHz BW; ± 1.0 dB, 110 MHz BW
- Spurious Response: <-50 dBc, in band
- Group Delay, max: 0.0015 ns/MHz² parabolic (<5ns at 55 MHz); 0.025 ns/MHz linear (<3ns across 110 MHz BW); 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 @ Freq**

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>100 Hz</th>
<th>1 kHz</th>
<th>10 kHz</th>
<th>100 kHz</th>
<th>1 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>dBC/Hz</td>
<td>-70</td>
<td>-70</td>
<td>-80</td>
<td>-90</td>
<td>-100</td>
</tr>
</tbody>
</table>

**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)

**Other**
- RF, IF Connectors: BNC (female)
- 10MHz Connectors: BNC (female), 50Ω/75Ω (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 W max

**Available Options**
- E - External 10 MHz ref input & output
- H - High Stability (±0.01) Internal Ref
- Q - RS485 Remote Interface

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