2016-35-140 Downconverter, 3.4 - 4.2 GHz, 140 MHz IF

The 2016-35-140 Downconverter converts 3.4 to 4.2 GHz to 140 ± 36 MHz in 125 kHz steps (1 kHz steps, option X1005) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide low phase noise and ±0.01 ppm stability frequency selection. 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). Gain is adjustable manually over a +30 to +50 dB range as adjusted by the front panel multi-function push-button 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 IF output and the 10MHz reference input and output, and Type N (female) for the RF input. External 10 MHz is standard. A 10 MHz output connector contains either the internal or external 10 MHz reference signal. 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/20 dB typ; 18 dB min.
- Frequency: 3.4 to 4.2 GHz
- Noise Figure, max.: 15 dB (max gain)
- Level: -70 to -30 dBm

#### Output Characteristics (IF)
- Impedance/Return Loss: 75Ω/20 dB typ, 18 dB min.
- Frequency: 140 ± 36 MHz
- Level: -20 to 0 dBm
- 1dB compression: +10 dBm

#### Channel Characteristics
- Gain range (adjustable): +30 to +50 dB, 0.5 ±0.5 dB steps
- Image Rejection: > 50 dB, min
- Spurious Response: <55 dBC, typical; <50 dBC, maximum
- Frequency Response: ±1.5 dB, 3.4-4.2 GHz ; ± 0.7 dB, 72 MHz BW
- Group Delay, max: 0.0035 ns/MHz parabolic; 0.025 ns/MHz linear, 1 ns ripple
- Frequency Sense: Non-inverting

#### Synthesizer Characteristics
- Frequency Accuracy: ± 0.01 ppm internal reference; external reference input
- Frequency Step: 125 kHz minimum; (1 kHz steps, option X1005)
- 10 MHz In/Out Level: 3 dBm ± 3 dB

<table>
<thead>
<tr>
<th>Phase Noise @ F (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>Standard-125kHz steps: dBC/Hz</td>
<td>-65</td>
<td>-70</td>
<td>-75</td>
<td>-80</td>
<td>-95</td>
<td>-105</td>
</tr>
<tr>
<td>X1005-1kHz 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>

#### Controls, Indicators
- Freq/Gain Selection: direct readout LCD; pushbutton switches or remote selection
- Power; Alarm; Remote: Green LED; Red LED; Yellow LED
- Remote: RS232C, 9600 baud; RS485/422 or Ethernet optional

#### Other
- RF / IF Connectors: RF - Type N (female) / IF - BNC (female)
- 10 MHz Connectors: BNC (female), 75Ω, works with 50 or 75 ohms
- Alarm/Remote Connector: DB9 - 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

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