The 2016-02-720-400 Downconverter converts signals in the 950 to 2300 MHz range to 720 MHz in 125 kHz steps. The center frequency is selectable from 1050 to 2250 MHz. Synthesized local oscillators (LO) provide frequency selection. Multi-function 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 +30 dB range. The frequency and gain are remotely selectable. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are Type N female for the RF, and BNC female for the IF and external 10 MHz reference input and output. External 10 MHz is standard. A 10 MHz output connector contains either the internal or external 10 MHz reference signal whichever is selected by the user. The 2016-02-720-400 is powered by a 100-240 ±10% VAC, 47-63 Hz power supply, and is contained in a 1 3/4" X 19" X 16" rack mount chassis.

## EQUIPMENT SPECIFICATIONS*

### Input Characteristics
- **Impedance/Return Loss**: 50Ω/10 dB
- **Frequency**: 950 to 2300 MHz
- **Noise Figure, Max.**: 20 dB max. gain
- **Input Level range**: -50 to -20 dBm

### Output Characteristics
- **Impedance/Return Loss**: 50Ω/12 dB
- **Frequency**: 720 ± 200 MHz
- **Output Level Range**: -20 to -10 dBm
- **Output 1 dB compression**: 0 dBm, max. gain

### Channel Characteristics
- **Gain range (adjustable)**: 0.0 to +30.0 dB, ±1 dB steps
- **Image Rejection**: > 45 dB, min, 50 dB typical
- **Frequency Response**: ±2.0 dB, 950 to 2300 MHz; ±1.0 dB, 400 MHz BW
- **Spurious Response**: < -45 dBc, typical, < -40 dBc max., in band
- **Group Delay, max**: 10 ns total, Max. (parabolic + linear + ripple), 400 MHz BW
- **Frequency Sense**: Non-inverting

### Synthesizer Characteristics
- **Frequency Accuracy**: ± 1.0 ppm max. over temp (± 0.01 ppm option -H)
- **Frequency Step, Fc range**: 125 kHz; Fc=1050 to 2250 MHz

<table>
<thead>
<tr>
<th>Phase Noise @ Freq</th>
<th>100Hz</th>
<th>1kHz</th>
<th>10kHz</th>
<th>100kHz</th>
<th>1MHz</th>
<th>10MHz Level (In or Out)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dB/Hz</td>
<td>-70</td>
<td>-70</td>
<td>-80</td>
<td>-90</td>
<td>-100</td>
<td>3 dBm, ± 3 dB, 75 ohms</td>
</tr>
</tbody>
</table>

### Controls, Indicators
- **Frequency Selection**: Direct readout LCD; manual or remote selection
- **Gain Selection**: Direct readout LCD; manual or remote selection
- **Power; Alarm; Remote**: Green LED; Red LED; Yellow LED
- **Remote**: RS232C, 9600 baud (RS485, Ethernet Optional)

### Other
- **RF Connector**: Type N (female)
- **IF, 10 MHz Connectors**: BNC (female)
- **Alarm/Remote Connector**: DB9 (female) - NO or NC contact closure on Alarm
- **Size**: 19 inch, 1RU chassis 1.75" high X 16.0" deep
- **Power**: 100-240 ± 10% VAC, 47-63 Hz; 30 watts max.

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