The 2016-37 Downconverter, 3.625 - 4.2 GHz to 70 ± 18 MHz

The 2016-37 Downconverter converts 3.625 to 4.2 GHz to 70 ± 18 MHz in 125 kHz steps (1 kHz steps, option X1005) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection with ±0.01 ppm stability. 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 by the front panel push-button switches. Remote M&C allows selection of the 10 MHz reference, frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC (female) for IF output and the 10 MHz reference input and output, and Type N (female) for the RF input (other connector configurations available). A 10 MHz output connector contains either the internal or external 10 MHz reference signal. The 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/14 dB min
- Frequency: 3.625 to 4.2 GHz
- Noise Figure, max.: 15 dB (max gain)
- Level: -70 to -30 dBm

### Output Characteristics (IF)
- Impedance/Return Loss: 75Ω/18 dB
- Frequency: 70 ± 18 MHz
- Level: -20 to 0 dBm
- 1dB compression: +10 dBm

### Channel Characteristics
- Max. Gain; range: +50 ± 2 dB; +30 to +50 dB, 0.5 ± 0.5 dB steps
- Image Rejection: > 50 dB, min
- Spurious Response: < -50 dBC, maximum
- Intermodulation: < -50 dBC for two carriers at 4 MHz spacing, each at -5 dBm out, Gain +50
- Frequency Response: ±1.5 dB, 3.625-4.2 GHz ; ± 0.5 dB, 36 MHz BW
- Group Delay, max: 0.015 ns/MHz² parabolic; 0.05 ns/MHz linear, 1 ns ripple
- Frequency Sense: Non-inverting

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

### Phase Noise @ Freq
- 100 Hz: -70 dBc/Hz
- 1 kHz: -75 dBc/Hz
- 10 kHz: -80 dBc/Hz
- 100 kHz: -95 dBc/Hz
- 1 MHz: -110 dBc/Hz

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

### Other
- RF / IF Connectors: RF - Type N (female), 50Ω / IF - BNC (female), 75Ω
- 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

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