2016-03A L-Band Downconverter

The 2016-03A L-band Downconverter converts 950-1525 MHz to 70 (±18) MHz in 1 MHz steps with low group delay and flat frequency response. The 2016-03A Input and Output levels have been optimized to support transmit from an L-band modem to a 70 MHz IF Upconverter. Multi-function 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). The gain is adjustable from 0 to +50 dB. Remote operation allows selection of frequency and gain. Parameter selection and gain settings appear on the LCD display. Standard connectors are BNC female for IF output and the optional external reference input and reference output, and Type F female for the RF input. LNB +24 VDC, 0.4 Amps and 10 MHz reference can be inserted on the RF line as added options. The 10 MHz option also includes a 10 MHz output connector, which contains either the internal or external 10 MHz reference signal. A high stability (±0.01ppm) option 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" 1RU chassis.

### Equipment Specifications*

**Input Characteristics**
- Impedance/Return Loss: 75Ω/10 dB
- Frequency: 950 to 1525 MHz
- Noise Figure, Max.: 15 dB
- Input Level range: -60 to -10 dBm
- Input 1 dB compression: -5 dBm

**Output Characteristics**
- Impedance/Return Loss: 75Ω/18 dB
- Frequency: 70 ± 18 MHz
- Output Level/max linear: -10 to 0 dBm
- Output 1 dB compression: -5 dBm

**Channel Characteristics**
- Gain range (adjustable): 0 to +50 dB
- Image Rejection: > 50 dB, min.
- Frequency Response: ±1.5 dB, 950 to 1525 MHz; ± 0.5 dB, 36 MHz BW
- Spurious Response: < -50 dBc, in band, f > 970 MHz
- Group Delay, max: 0.1 ns/MHz2 parabolic; 0.03 ns/MHz linear; 1 ns ripple
- Freq Sense (selectable): 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 (as low as 1 kHz steps available)

### Controls, Indicators
- Frequency Selection: direct readout LCD; manual or remote selection
- Gain Selection: direct readout LCD; manual or remote selection
- PWR; Alarm;Rem: Green LED; Red LED; Yellow LED
- Remote: RS232C, 9600 baud (RS485 Option Q)

**Available Options**
- E – External 10 MHz ref input & output w/ RF insertion
- H – High Stability (±0.01 ppm) internal reference
- L – LNB Voltage, +24VDC, 0.4 Amps
- Q – RS485 Remote Interface
- T – Temperature Sensor
- Connectors/Impedance
- B – 75Ω BNC (RF), 75Ω BNC (IF)
- C – 50Ω BNC (RF), 75Ω BNC (IF)
- D – 50Ω BNC (RF), 50Ω BNC (IF)
- N – 50Ω N-type (RF), 75Ω BNC (IF)
- M – 50Ω N-type (RF), 50Ω BNC (IF)

*+10 to +40 degrees C; Specifications subject to change without notice

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**2016-03A Downconverter Block Diagram**

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