The 2015-04 L-band Upconverter converts 140 ± 36 MHz to 950 to 2150 MHz in 1 MHz steps. Synthesized local oscillators (LO) provide 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), remote operation (yellow) and TX carrier MUTE (yellow). Variable attenuators for the IF input and output provide a gain range of -10 to +30 dB as adjusted by the front panel push-button switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. 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 (IF)
- Impedance/Return Loss: 75 Ω/18 dB
- Frequency: 140 ± 36 MHz
- Input Level: -40 to -10 dBm

### Output Characteristics (RF)
- Impedance/Return Loss: 75 Ω/12 dB
- Frequency: 950 to 2150 MHz
- Output level: 0 to -20 dBm
- Output 1 dB comp.: +5 dBm

### Channel Characteristics
- Gain range (adjustable): -10.0 to +30.0 dB
- Frequency Response: ±1.5 dB, 950 - 2150 MHz; ± 0.5 dB, 72 MHz BW; ±1.0 dB, 80 MHz BW
- Spurious Response: < -50 dBc, in band
- Group Delay, max: 0.0035 ns/MHz² parabolic; 0.035 ns/MHz linear; 1 ns ripple
- Frequency Accuracy: ±1.0 ppm max over temp (±0.01 ppm, option H)
- Frequency Step: 1.0 MHz (125 kHz to 1 kHz step options available)

### Synthesizer Characteristics
- Phase Noise @ F (Hz) > dBc/Hz:
  - 10: -55, -70, -70, -80, -90, -110
  - 100: -55, -70, -70, -80, -90, -110
  - 1K: -55, -70, -70, -80, -90, -110
  - 10K: -55, -70, -70, -80, -90, -110
  - 100K: -55, -70, -70, -80, -90, -110
  - 1M: -55, -70, -70, -80, -90, -110
- 10 MHz Level (In or Out): 3 dBm, ± 3 dB, 75 ohms (option E)

**Available Options**
- E - External 10 MHz ref in & out; RF Ins.
- H - High Stability (±0.01ppm) Internal Ref
- V - SSPB Voltage, +24VDC, 2.5 amps
- V48 - SSPB Voltage, +48VDC, 1.25
- V41 - SSPB Voltage, +48VDC, 2.10
- X or X1: 125 kHz or 100 kHz step size
- X1002 - 1 kHz step, includes option H
- Z5 - Attenuator 0.5 dB ± 0.5 Steps

**Comm. Interface/Standard RS232**
- Q - RS485 Remote Interface
- W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WB & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet

**Connectors/Impedance**
- B - 75Ω BNC (RF), 75Ω BNC (IF)
- C - 50Ω BNC (RF), 75Ω BNC (IF)
- D - 50Ω BNC (RF), 50Ω BNC (IF)

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