2009-122 12.25-12.75 GHz Upconverter

2009-122 Upconverter - Converts a 950 - 1450 MHz signal to 12.25 - 12.75 GHz with a low side local oscillator (LO) (non-inverted spectrum) for loop-back applications. Featuring low phase noise, this unit is used to upconvert 950 - 1450 MHz signals to 12.25 - 12.75 GHz for test purposes. The 950 - 1450 MHz input is mixed with a synthesized local oscillator (LO) signal to 12.25 - 12.75 GHz. The mixer output is applied to the output attenuator providing a nominal gain of -30 dB. Connectors are 75 ohm F female for the 950 - 1450 MHz input and 50 ohm SMA, female for the RF output. Front panel LEDs light when DC power is applied (green) and when a PLL alarm occurs (red). DC power is provided by an external 115 VAC, 60 Hz wall mount power supply. A 90-240 VAC, 47-63 Hz wall mount power supply (option -P4) is available. The 2009 can be mounted on an 1 3/4" X 19" rack mount panel (option -R).

![2009-122 Upconverter Block Diagram and Chassis](image)

**2009-122 Upconverter Block Diagram and Chassis**

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/RL: 75 Ω/10 db
- Frequency Band: 950 - 1450 MHz
- Input Impedance/RL: 75 Ω/10 db
- Input Level: -10 to -20 dBm
- Input 1 dB: +0 dBm

**Output Characteristics**
- Frequency: 12.25-12.75 GHz
- Output Level: -40 to -50 dBm
- Impedance/RL: 50 Ω/14 db

**Channel Characteristics**
- Gain at band center: -30 dB ±2 dB
- Spurious Response: < -40 dBC, 12.25-12.75 GHz
- Frequency Response: ± 2 dB, 12.25-12.75 GHz; ± 0.5 dB, any 10 MHz increment

**Synthesizer Characteristics**
- Frequency Accuracy: ± 5 ppm max
- Phase Noise: @ Freq 100Hz 1kHz 10kHz 100kHz 1MHz dBc/Hz < -60 < -70 < -80 < -90 < -100

**Indicators**
- DC Power; Alarm: Green LED; Red LED

**Other**
- RF In, RF Out Connectors: Type F, female SMA, female
- Size, Bench Top: 4.7" wide X 1.75" high X 6.5" deep
- Size, Rack Mount: (-R) 19 inch standard chassis 1.75"high X 7.0" deep (Optional)
- Power: 120 ± 10% VAC, 60 Hz, 15 watts max, wall mt PS
  - P4 Option, 90-260 VAC, 47-63 Hz, 15 watts max, wall mt PS

**Models**
- 2009-122: 950 - 1450 MHz in, 12.25-12.75 GHz Out, 120 ± 10% VAC Wall Power Supply
- 2009-122P4: 950 - 1450 MHz in, 12.25-12.75 GHz Out, 90-260 VAC Wall Power Supply

*+10 to +40 degrees C; 2000 meters max elevation; 80% max humidity; Specifications subject to change without notice.*