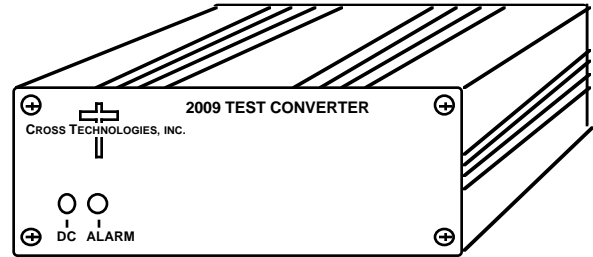
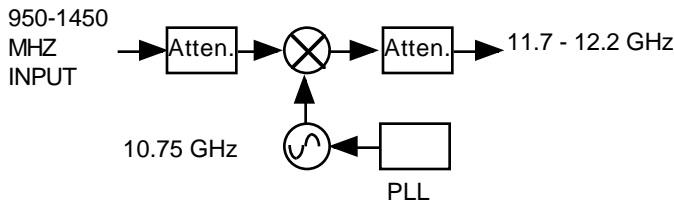


2009-117 11.7-12.2 GHz Upconverter

2009-117 Upconverter - Converts a 950 - 1450 MHz signal to 11.7 - 12.2 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 11.7 - 12.2 GHz for test purposes. The 950 - 1450 MHz input is mixed with a synthesized local oscillator (LO) signal to 11.7 - 12.2 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**).



2009-117 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 | 11.7-12.2 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, 11.7-12.2 GHz |
| Frequency Response | ± 2 dB, 11.7-12.2 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

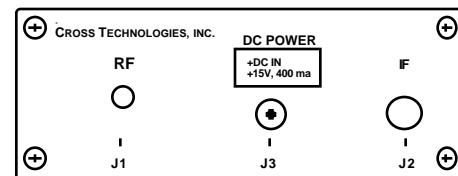
| | |
|-----------------|--------------------|
| DC Power; Alarm | Green LED; Red LED |
|-----------------|--------------------|

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, 100-240 ±10% VAC, 47-63 Hz, 15 watts max, wall mt PS |

Models

| | |
|------------|---|
| 2009-117 | 950 - 1450 MHz in, 11.7-12.2 GHz Out, 120 ± 10% VAC Wall Power Supply |
| 2009-117P4 | 950 - 1450 MHz in, 11.7-12.2 GHz Out, 90-260 VAC Wall Power Supply |



2009 REAR PANEL

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

