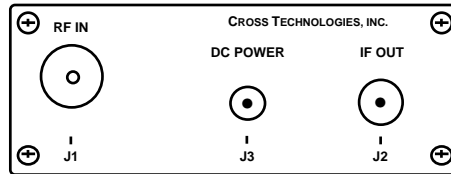
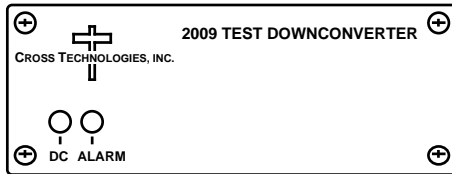


**2009-138 Downconverter, 13.75 - 14.5 GHz**

The 2009-138 Downconverter converts a 13.75 - 14.5 GHz signal to 950 - 1700 MHz with a low side local oscillator (LO) (non-inverted spectrum) for loop-back applications. Featuring low phase noise and high stability, this unit is used to down convert “clean” (having only this frequency) 13.75 - 14.5 GHz signals to 950 - 1700 MHz for test purposes. The 13.75 - 14.5 GHz input is mixed with a synthesized local oscillator (LO) signal to 950 - 1700 MHz. The mixer output is applied to the output **amplifier** providing a nominal gain of **+25 dB**. Connectors are 75Ω type-F (female) for the 950 - 1700 MHz output and 50Ω type-N (female) for the RF input. Front panel LEDs light when DC power is applied (green) and when a PLL alarm occurs (red). DC power is provided by the LNB voltage from the receiver under test or by an external wall mount power supply (**option -P or -P4**). The 2009 can be mounted on an 1 3/4” X 19” rack mount panel (**option -R**).



Front and Rear Panels

**EQUIPMENT SPECIFICATIONS\***

**Input Characteristics**

Impedance / Return Loss 50Ω / 12 db  
 Frequency 13.75-14.5 GHz  
 Level **-50 to -35 dBm**

**Output Characteristics**

Impedance / Return Loss 75Ω / 12 db  
 Frequency 950 to 1700 MHz  
 Level **-25 to -10 dBm**

**Output 1 dB compression**

**0 dBm**

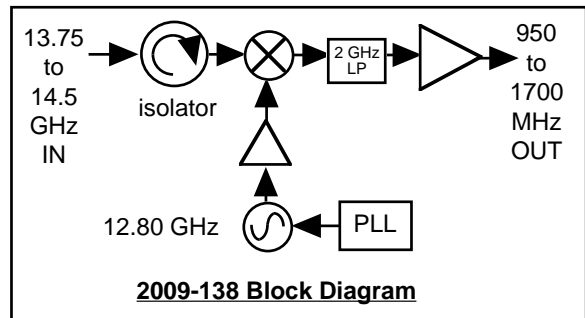
**Channel Characteristics**

Gain at band center **+25 dB ±3 dB**  
 Spurious Response <-40 dBC, 950-1700 MHz out  
 Spectrum Sense Non-inverting  
 Frequency Response ± 2 dB, 950-1700 MHz; ± 0.5 dB, any 10 MHz increment

**Synthesizer Characteristics**

LO Frequency 12.80 GHz  
 Frequency Accuracy ± 2.5ppm max

Phase Noise @ F (Hz) >	100Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	-60	-75	-85	-100	-110



**Indicators**

DC Power Green LED  
 Alarm Red LED

**Other**

RF In Connector Type-N (female), 50Ω  
 IF Out Connector Type-F (female)  
 Size, Bench Top 4.7” wide X 1.75” high X 6.5” deep  
 Size, Rack Mount (-R) 19” standard chassis, 1.75” high X 7.0” deep (optional)  
 Power +15 to +18 VDC, 250 ma on RF Out (Wall mount power supply unit optional)

**Options**

**-M** Type N RF, 50Ω BNC L-band out  
**-P** 120 VAC Wall Power Supply, +15 VDC  
**-P4** 100-240 ± 10% VAC Wall Power Supply, +15 VDC  
**-R** 1RU Rack Mounting  
**-C** Power Supply not included. Requires Cross 2000-01 Power Supply  
**-W42** Alarm Contact Terminal Strip, Dry Contact, NC-C-NO Terminations

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