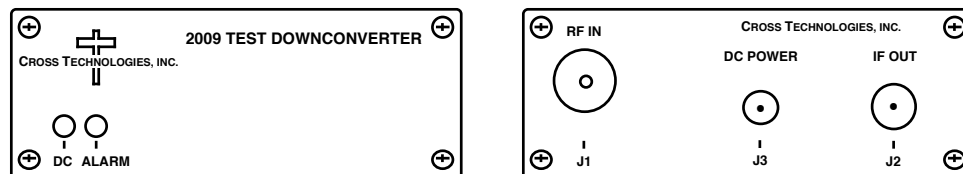


## 2009-138 Downconverter, 13.75 - 14.5 GHz

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 (no filter on the input)**. This unit is used to down convert “clean” (having only this frequency) 13.75 - 14.5 GHz signals to 950 - 1700 MHz for loop back 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 -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
LO (12.80 GHz) out the input	<-35 dBm

#### Output Characteristics

Impedance / Return Loss	75Ω / 12 db
Frequency	950 to 1700 MHz
Level	-25 to -10 dBm, at Fc
Output 1 dB compression	0 dBm, at Fc

#### Channel Characteristics

Gain at band center	+25 dB ±3 dB, at Fc
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 incr.

#### 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

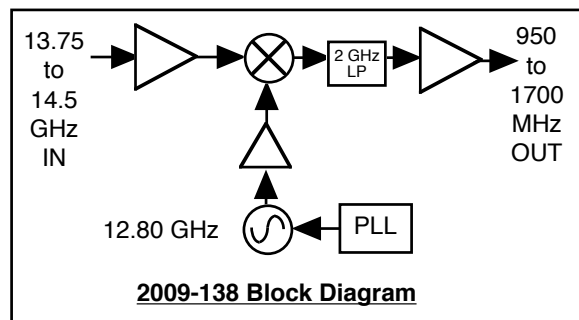
#### Indicators

DC Power	Green LED
Alarm	Red LED

#### Other

RF In Connector	Type-N (female), 50Ω
IF Out Connector	Type-F (female), 75Ω
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 In (Wall mount power supply unit optional)

#### Options -See Chart



2009-138 Block Diagram

#### Available Options

P4 - 100-240 VAC Wall Pwr Supply, +15 VDC  
R - 1RU Rack Mounting  
C - No PS, Cross 2000-01 Power Supply req.  
W42 - Alarm Contact Terminal Strip, Dry Contact, NC-C-NO Terminations

#### Connectors/Impedance

Std. - 50Ω N (RF IN), 75Ω F (RF OUT)  
M - 50Ω N (RF IN), 50Ω BNC (RF OUT)  
N - 50Ω N (RF IN), 75Ω BNC (RF OUT)  
S - 50Ω SMA (RF IN), 50Ω BNC (RF OUT)  
S7 - 50Ω SMA (RF IN), 75Ω BNC (RF OUT)  
SF - 50Ω SMA (RF IN), 75Ω F (RF OUT)  
SS - 50Ω SMA (RF IN), 50Ω SMA (RF OUT)

#### Contact Cross for other options

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