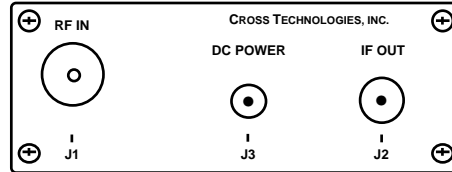
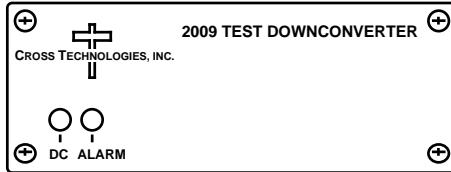


## 2009-137 Downconverter, 13.75 - 14.5 GHz

The 2009-137 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 attenuator providing a nominal gain of -20 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**). **Option -H** allows the 2009-137 to be operated over an extended -20°C to +60°C temperature range.



Front and Rear Panels

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics

Impedance / Return Loss	50Ω / 12 db
Frequency	13.75-14.5 GHz
Level	-15 to 0 dBm
Input 1 dB compression	+5 dBm

#### Output Characteristics

Impedance / Return Loss	75Ω / 12 db
Frequency	950 to 1700 MHz
Level	-35 to -20 dBm

#### Channel Characteristics

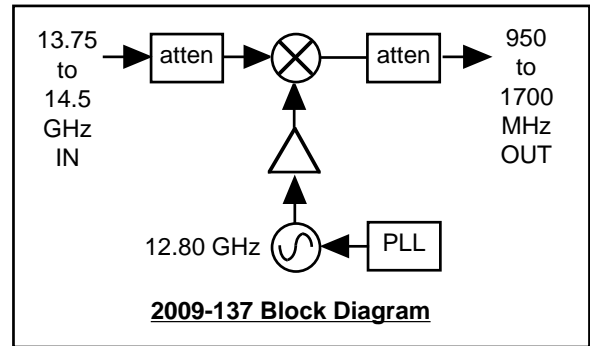
Gain at band center	-20 dB ±2 dB
Spurious Response	<-40 dBC, 950-1700 MHz out
Spectrum Sense	Non-inverting
Frequency Response	± 2 dB, 950-1700 MHz; ± 0.5 dB, any

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

-H	Operates over an extended -20°C to 60°C temp range
-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