CROSS TECHNOLOGIES, INC.

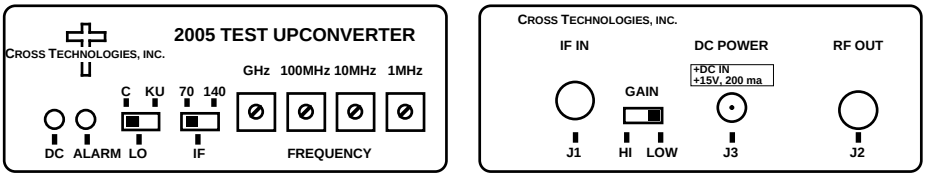
DATA SHEET

REV C
08/29/17

2005-02/03 Upconverters

The **2005-02/03** converts a 70 MHz signal to a 950-2050 MHz output signal range in 1 MHz steps utilizing a high-side LO (C-band) that ranges from 1020 to 2120 MHz for loop-back applications. The 2005-02 can also operate over a limited output frequency range converting a 70 MHz signal to 1090-2050 MHz utilizing a low-side LO (Ku-band), a 140 MHz signal to 950-1980 MHz utilizing a high-side LO, and a 140 MHz signal to 1160-2050 MHz utilizing a low-side LO. The **2005** converts a 70 or 140 MHz signal to the full 950-1450 MHz output signal range in 1 MHz steps with either a high-side LO (C-band) or a low-side LO (Ku-band). The LO frequency ranges from 810 to 1590 MHz.

Featuring low phase noise, these units are used to loop 70 or 140 MHz modulators to L-band receivers in uplinks. The 70 or 140 MHz "clean" carrier input (containing only the desired 70 or 140 MHz signal) is mixed with a synthesized local oscillator (LO) signal. The output frequency is selected with four BCD switches which control the synthesized LO. Front panel LEDs light when DC power is applied (green) and when a PLL alarm occurs (red). The mixer output is applied to the output attenuator providing a nominal gain of -10 dB (high gain) or -30 dB (low gain). Power is provided by the LNB voltage from the receiver under test and connectors are BNC (female) for the IF input and type F (female) for the RF output. Optionally, the 2005 can be powered by an external wall mount power supply (**option -P or -P4**). The 2005 can be mounted on a 1 3/4" X 19" rack mount panel (**option -R**).



Front and Rear Panels

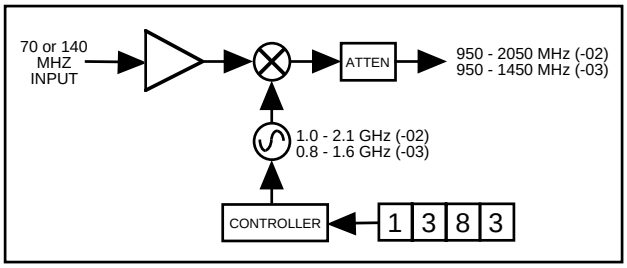
EQUIPMENT SPECIFICATIONS*

Input Characteristics

Impedance	75 Ω / 15 dB
Return Loss	12 dB
Frequency	70 or 140 MHz center
Input Level	-10 to -40 dBm
1 dB comp / 3rd order	0/+10 dBm(low gain); -20/-10 dBm (high gain)

Output Characteristics

Impedance	75 Ω
Return Loss	8 dB
Frequency Band	950 - 2050 MHz (-02); 950 - 1450 MHz (-03)



Block Diagram

Channel Characteristics

Gain (at 1200 MHz)	**-20** ± 3 dB (low gain); **-5** ± 3 dB (high gain)
Spurious Response	NA; output not filtered
Frequency Response	±4 dB, 950-2050 MHz (-02); ±3 dB, 950-1450 MHz (-03); ±0.5 dB, any 10 MHz increment

Synthesizer Characteristics

Frequency Accuracy	± 25 kHz max
Frequency Step	1.0 MHz minimum

Phase Noise @ Freq	10kHz	100kHz	1 MHz
dBC/Hz	-80	-90	-100

Controls

L-Band Freq. Selection	BCD switches with direct readout
LO, IF Freq. Selection	SPDT slide switches

Indicators

DC Power; Alarm	Green LED; Red LED

Other

RF, IF Connector	F type (female), BNC (female)
Size (Bench Top)	4.7" wide X 1.75" high X 6.5" deep ; (**option -R**) 19-inch standard 1RU chassis 1.75"H x 7.0"D
Power, Standard (**P**)	+14 to +20 VDC, 200ma on RF IN from Receiver under test.
Power Supply Options:	
(Option **P**)	120 ± 10% VAC, 60Hz (+15VDC unregulated, 600 ma.) Wall Mount Power Supply.
(Option **P4**):	100-240 ±10% VAC, 47-63Hz (+15VDC unregulated, 600 ma.) Wall Mount Power Supply.
(Option **C**):	No power supply. Requires external 2000-01 power supply.

*+10˚C to +40˚C; 2000 meters max elevation; 80% max humidity; Pollution Degree 2; Specifications subject to change without notice

Cross Technologies, Inc. • www.crosstechnologies.com
6170 Shiloh Road • Alpharetta, GA 30005 • 770.886.8005 • FAX 770.886.7964