CROSS TECHNOLOGIES, INC.

DATA SHEET
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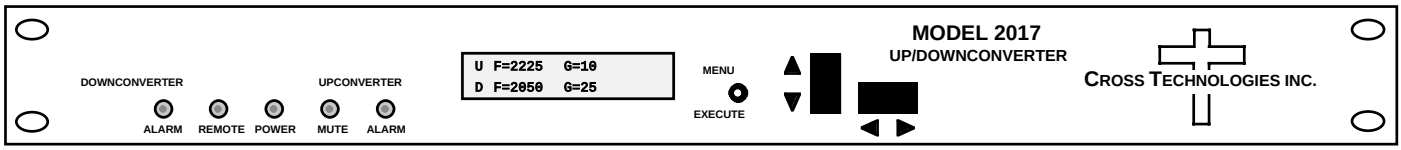
2017-25-02 Up/Downconverter, 2.0 to 2.6 GHz

The 2017-25-01 Up/Downconverter converts 70 MHz to **2.0 to 2.6 GHz** (Up) and **2.0 to 2.6 GHz** to 70 MHz (Down) in 1 MHz steps with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Multi-function push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm for up and downconverters (red), remote operation (yellow), and upconverter mute (yellow). Gain is manually controlled over a –10 to +30 dB range for the upconverter and over a 0 to +50 dB range for the downconverter as adjusted by the front panel multi-function push-button switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC female (75Ω) for IF and the optional external reference input and output, and BNC female (50Ω) for RF. A high stability (±0.01ppm) option is also available. The unit is powered by a 100-240 ±10% VAC power supply and housed in a 1.75" X 19" X 16" rack mount chassis.



Front Panel

EQUIPMENT SPECIFICATIONS*

UPCONVERTER

Input Characteristics (IF)

Impedance/Return Loss	75Ω /18 dB
Frequency	70 ± 18 MHz
Input Level Range	-40 to -10 dBm

Output Characteristics (RF)

Impedance/Return Loss	50Ω/12 dB
Frequency	**2.0 to 2.6 GHz**
Output level	-20 to 0 dBm
Output 1 dB compression	+5 dBm

Channel Characteristics

Gain range (adjustable)	-10 to +30 dB
Frequency Sense	Non-inverting

DOWNCONVERTER

Input Characteristics (RF)

Impedance/Return Loss	50Ω /12 dB
Frequency	**2.0 to 2.6 GHz**
Noise Figure, max.	15 dB (max gain)
Input Level Range	-70 to -20 dBm
Input 1dB compression	-15 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω/18 dB
Frequency	70 ± 18 MHz
Output level/max linear	-20dBm / -10dBm
Output 1 dB compression	-5 dBm

Channel Characteristics

Gain range (adjustable)	0.0 to +50.0 dB, 1dB steps
Frequency Sense	Inverting or Non-inverting (selectable)

UP AND DOWNCONVERTER

Channel Characteristics

Frequency Response	±1.5 dB, in band ; ± 0.5 dB, 36 MHz BW
Spurious Response	< -50 dBc, in band
Group Delay, max	0.01 ns/MHz^2 parabolic; 0.03 ns/MHz linear; 1 ns ripple

Synthesizer Characteristics

Frequency Accuracy	± 1.0 ppm internal reference (±.01 ppm, Option H)
Frequency Step	1.0 MHz minimum (125 KHz, Option X)
10 MHz In/Out Level	3 dBm ± 3 dB (option E only)

Phase Noise

@ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	< -70	< -70	< -80	< -95	< -105

Controls, Indicators

Freq/Gain Selection	direct readout LCD; manual or remote selection
Power; Alarm; Up Mute	Green LED; Red LED; Yellow LED
Remote	Yellow LED; RS232C, 9600 baud (RS485, Option Q)

Other

RF, IF Connectors	BNC (female), BNC (female)
10MHz Connectors	BNC (female), 50Ω/75Ω (Option E)
Alarm/Remote Connector	DB9 (female) - NO or NC contact closure on Alarm
Size	19 inch, 1RU standard chassis 1.75"high X 16.0" deep
Power	100-240 ±10% VAC, 47-63 Hz, 45 W max

*10˚C to 40˚C; Specifications subject to change without notice

Available Options

E - External 10 MHz ref input & output
H - High Stability (±0.01) Internal Ref
Q - RS485 Remote Interface
T - Temperature Sensor
X - 125 KkHz Frequency Steps
Z - 0.1 dB Attenuator Steps on Upconverter

Connectors/Impedance
B - 75Ω BNC (RF), 75Ω BNC (IF)
C - 50Ω BNC (RF), 75Ω BNC (IF)
D - 50Ω BNC (RF), 50Ω BNC (IF)
N - 50Ω N-type (RF), 75Ω BNC (IF)
M - 50Ω N-type (RF), 50Ω BNC (IF)
S - 50Ω SMA (RF), 75Ω BNC (IF)

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