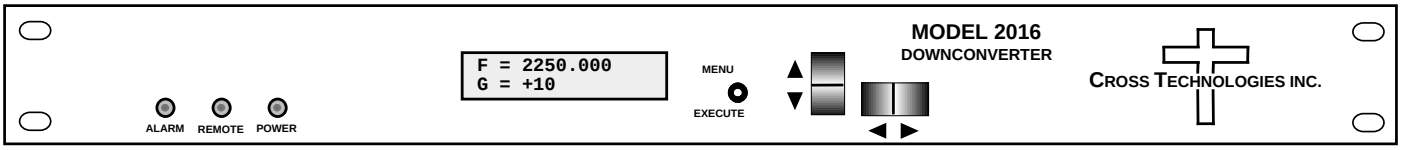
CROSS TECHNOLOGIES, INC.

DATA SHEET
REV. H
12/20/18

2016-25 Downconverter, 2.0 - 2.5 GHz to 70 MHz

The 2016-25 Downconverter converts 2000 to 2500 MHz to 70 ± 18 MHz in 1 MHz step **(0.5 MHz to 1 kHz step options available)** with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), remote operation (yellow), and PLL alarm (red). Variable attenuators for the RF input provide a gain range of 0 to +50 dB as adjusted by the front panel pushbutton 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 for RF, IF and the optional external reference input and output. The **-E external 10 MHz option** includes a 10 MHz output connector which contains either the internal or external 10 MHz reference signal. A **-H** 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 3/4" X 19" X 16" rack mount chassis. .



Front Panel

EQUIPMENT SPECIFICATIONS*

Input Characteristics (RF)

Impedance/Return Loss	50Ω / 12 dB
Frequency	2.0 to 2.5 GHz
Noise Figure, max.	**15 dB (max gain)**
Level Range	-70 to -20 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω / 18 dB
Frequency	70 ± 18 MHz
Level Range	-30 to -20 dBm
Output 1 dB compression	-15 dBm

Channel Characteristics

Gain range (adjustable)	0.0 to +50.0 dB
Image Rejection	> 50 dB, min.
Frequency Response	±1.5 dB, 2.0 - 2.5 GHz; ± 0.5 dB, 36 MHz BW
Spurious Response	< -45 dBC, in band
Group Delay, max	**0.015** ns/MHz parabolic; **0.05** ns/MHz linear; 1 ns ripple
Frequency Sense	Inverting or Non-inverting (selectable)

Synthesizer Characteristics

Frequency Accuracy	±1.0 ppm internal reference (±0.01 ppm, **option H**)
Frequency Step	1.0 MHz **(0.5 MHz to 1 kHz step options available)**
10 MHz In/Out Level	+3 dBm ± 3 dB (**option E**)

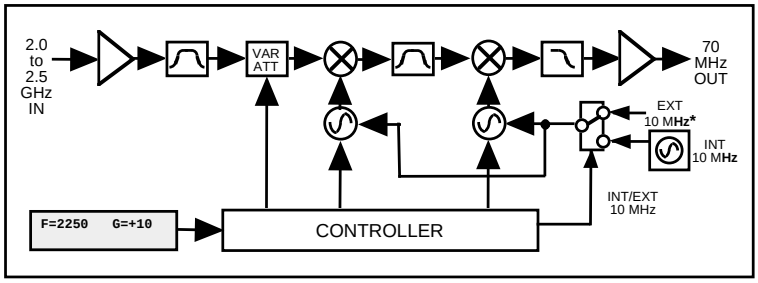
Phase Noise @ F (Hz) >	*10*	*100*	*1K*	*10K*	*100K*	*1M*
dBC/Hz	***-55***	***-70***	***-70***	*-80*	*-95*	*-105*

Controls, Indicators

Freq/Gain Selection	direct readout LCD; manual or remote selection
Pwr; Alarm; Rem; Mute	Green LED; Red LED; Yellow LED; Red LED
Remote	RS232C, 9600 baud **(RS485, Ethernet Optional)**

Other

RF, IF Connectors	50Ω BNC (female), 75Ω BNC (female)
10MHz Connectors	BNC (female)**, 75Ω, works with 50 or 75 ohms** (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 Watts max. **(24 and 48 VDC Optional)**



Block Diagram

Available Options

E - External 10 MHz ref input & output
H - High Stability (±0.01ppm) Internal Ref
-5 - 0.5 MHz Frequency Steps
X - 125 kHz step size
X1004 - 1 kHz step, includes option -H

Comm. Interface/Standard RS232

Q - RS485 Remote Interface
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet

Connectors/Impedance

B - 75Ω 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)
Contact Cross for other available options

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

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