



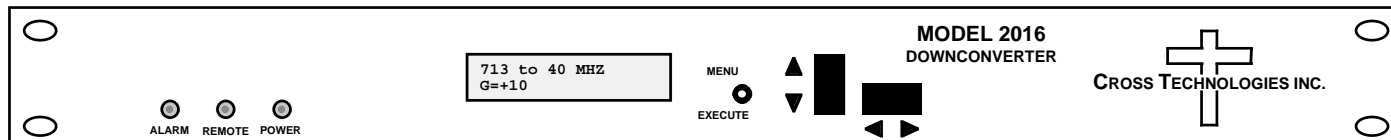
# DATA SHEET

REV. 0

5/08/08

## 2016-75-40 Downconverter, 713 MHz to 40 MHz

The 2016-75-40 Downconverter converts **713 MHz** to **40 ± 6 MHz** with low group delay and flat frequency response. Synthesized local oscillators (LO) provide fixed frequency downconversion. Multi-function push button switches select the 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 **+40 dB** as adjusted by the front panel multi-function pushbutton switches. Remote operation allows selection of gain. Parameter selection and frequency translation and gain settings appear on the LCD display. Connectors are Type F female for the RF and BNC female for IF (see chart below for other connector options) and optional 10 MHz input and output signals (option -E). A high stability ( $\pm 0.01\text{ppm}$ ) option (-H) is also available. The unit is powered by a  $100\text{-}240 \pm 10\%$  VAC power supply, and housed in a  $1\frac{3}{4} \times 19 \times 16$  rack mount chassis.



Front Panel

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (RF)

Impedance/Return Loss 75Ω / 12dB  
Frequency **713 MHz ± 6 MHz**  
Noise Figure, max. 15 dB (max gain)  
Level Range **-60 to -20 dBm**  
Input 1dB compression **-15 dBm, min gain**

#### Output Characteristics (IF)

Impedance/Return Loss 75Ω / 12dB  
Frequency **40 ± 6 MHz**  
Level Range **-30 to -20 dBm**  
Output 1 dB compression **-10 dBm**

#### Channel Characteristics

Gain range (adjustable) 0.0 to **+40.0 dB**  
Image Rejection > 50 dB, min.  
Frequency Response **40 ± 6 MHz out ; ±0.5 dB**  
Spurious Response **< -45 dBC**, in band  
Group Delay, max 0.01 ns/MHz<sup>2</sup> parabolic; 0.03 ns/MHz linear; 1 ns ripple  
Frequency Sense **Non-inverting**

#### Synthesizer Characteristics

Frequency Accuracy  $\pm 1.0$  ppm internal reference ( $\pm 0.01$  ppm, **option H**)  
Frequency Step None, 40 MHz out  
10 MHz In/Out Level  $\pm 3$  dBm ± 3 dB (**option E**)

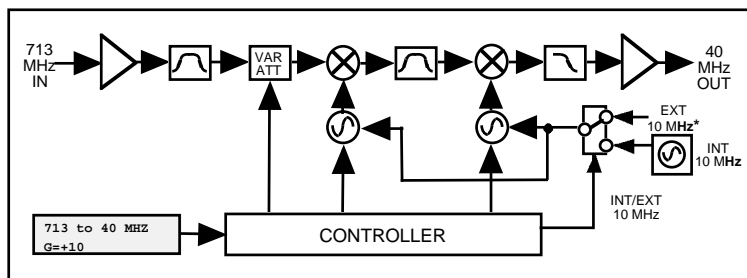
Phase Noise @ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	70	70	80	95	-110

#### 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, **option Q**)

#### Other

RF, IF Connectors Type F, 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  $100\text{-}240 \pm 10\%$  VAC, 47-63 Hz, 45 W max



Block Diagram

#### Available Options

E - External 10 MHz ref input & output  
H - High Stability Internal Ref ( $\pm 0.01$  ppm)  
Q - RS485 Remote Interface

#### 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), 50Ω BNC (IF)

\*10°C to 40°C; Specifications subject to change without notice

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