



200 MHz  
LP Filter

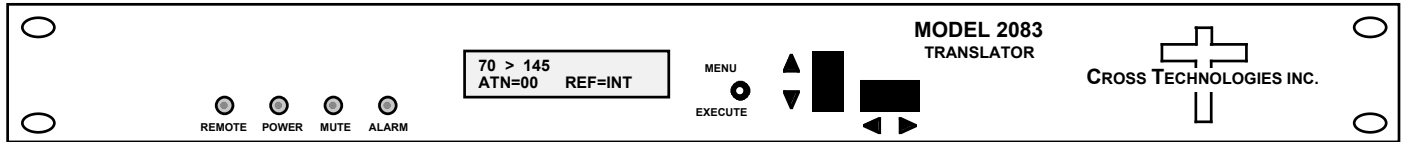
140  
or  
70  
MHz  
OUT

# DATA SHEET

REV\_B  
03/28/2007

## 2083-714A Agile IF-to-IF Translator

The 2083-714A Frequency Translator converts 70 MHz to 110-170 MHz or 110-170 MHz to 70 MHz with no spectrum inversion, low group delay, and flat frequency response. The IF input signal is mixed with synthesized local oscillator (LO) signals, first to 1750 MHz and finally to the IF output signal. Multifunction push button switches select the frequency translation, attenuation (0 to 10 dB, adjustable), and 10 MHz reference. Three settings appear on the LCD display. Front panel LEDs light when DC power is applied (green), a PLL alarm occurs (red), the signal is muted (yellow), or remote control is active (yellow). A 10 MHz input allows for connection of an external 10 MHz reference. The 10 MHz output contains the 10 MHz reference signal (be it internal or external). Connectors are BNC female for the IF input and output and 10 MHz input and output. The 2083-714A is housed in a 1 3/4" X 19" X 16" deep rack mount chassis. Option -H provides a  $\pm 0.01$  ppm high stability reference.



Front Panel

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics

Input Impedance/RL	75 $\Omega$ /18 dB
Frequency, 70 to 140	70 $\pm$ 18 MHz
Frequency, 140 to 70	110 to 170 MHz
Input Level	-20 to -10 dBm
Input 1 dB compression	0 dBm

#### Available Options

- H - High Stability ( $\pm 0.01$ ) Internal Ref
- O - RS485 Remote Interface

<b>Output Characteristics</b>	
Impedance/RL	75 $\Omega$ /18 dB
Frequency, 70 to 140	110 to 170 MHz
Frequency, 140 to 70	70 $\pm$ 18 MHz
Connectors/Impedance	D - 50 $\Omega$ BNC (RF), 50 $\Omega$ BNC (IF)

#### Channel Characteristics

Attenuation	0 to 10 dB; selectable in 1dB steps
Spurious Response	<-50 dBC
Bandwidth	$\pm 18$ MHz, $\pm 0.5$ dB; $\pm 40$ MHz, $\pm 1.0$ dB
Group Delay, max	0.01 ns/MHz <sup>2</sup> parabolic; 0.03 ns/MHz linear; 1 ns ripple
10MHz In/Out Level	3 dB $\pm$ 3 dB
Frequency Sense	Non-inverting

#### Synthesizer Characteristics

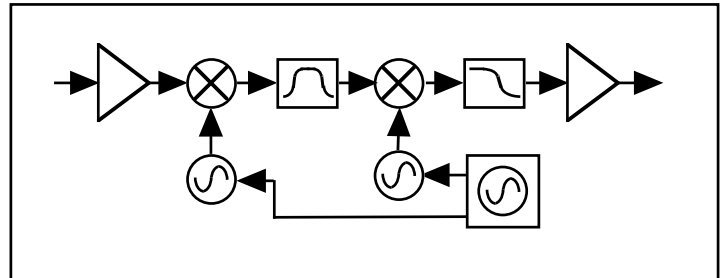
Frequency Accuracy	$\pm 1.0$ ppm internal reference ( $\pm 0.01$ ppm <b>option -H</b> )
Step Size	1 MHz, 110 to 170 MHz center frequency (140MHz side)
10 MHz In/Out Level	3 dBm $\pm$ 3 dB
Phase Noise	@ Freq   1kHz   10kHz   100kHz   1MHz
	dBC/Hz   < -80   < -85   < -100   < -110

#### Controls, Indicators

Frequency Translation	Direct readout LCD display; push-button switches or remote selection
Gain Selection	Direct readout LCD display; push-button switches or remote selection
Power; Alarm; Mute	Green LED; Red LED; Yellow LED
Remote	Yellow LED; RS232C, 9600 baud

#### Other

IF Connectors	BNC (female), 75 $\Omega$
10MHz Connectors	BNC (female), 50 $\Omega$ /75 $\Omega$
Alarm Connector	DB9 - NO or NC contact closure on Alarm
Size	19 inch standard chassis 1.75" high X 16.0" deep
Power	100-240 $\pm$ 10% VAC, 47 - 63 Hz, 45 watts max.



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