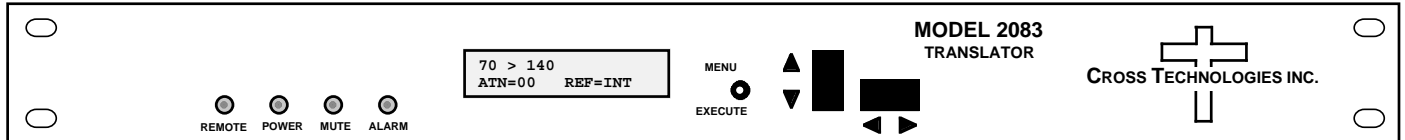


## 2083-714A Agile IF-to-IF Translator

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. These 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

#### Output Characteristics

Impedance/RL 75 $\Omega$ /18 dB  
 Frequency, 70 to 140 110 to 170 MHz  
 Frequency, 140 to 70 70  $\pm$  18 MHz

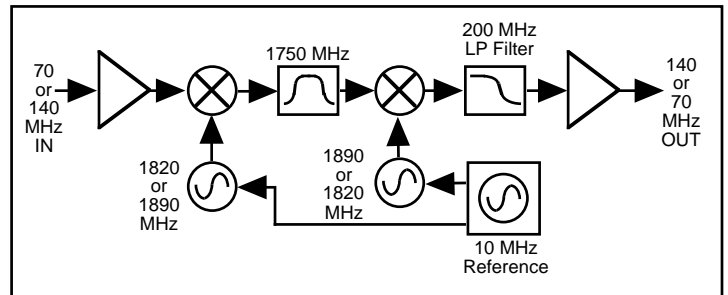
#### Channel Characteristics

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 (100 MHz through 180 MHz)  
 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 **option -H**)  
 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 | 100Hz | 1kHz | 10kHz | 100kHz | 1MHz |
|--------------------|-------|------|-------|--------|------|
| dBC/Hz             | -75   | -80  | -85   | -100   | -110 |



**Block Diagram**

#### 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.

#### Available Options

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

Connectors/Impedance  
 D - 50 $\Omega$  BNC (RF), 50 $\Omega$  BNC (IF)

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