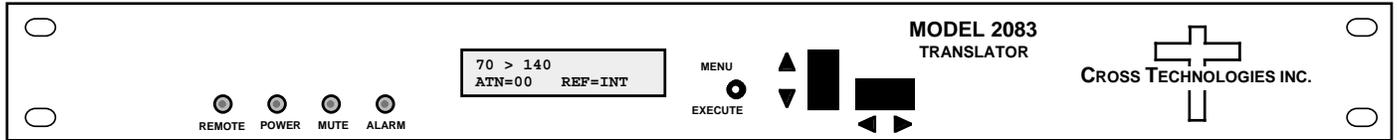


2083-714A Agile IF-to-IF Translator

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 ± 0.01 ppm high stability reference.



Front Panel

EQUIPMENT SPECIFICATIONS*

Input Characteristics

Input Impedance/RL 75 Ω /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 Ω /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 ± 18 MHz, ± 0.5 dB; ± 40 MHz, ± 1.0 dB (100 MHz through 180 MHz)
 Group Delay, max 0.01 ns/MHz² 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 ± 1.0 ppm internal reference (± 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

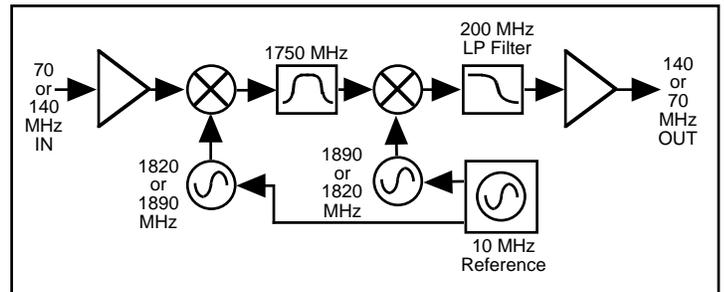
Phase Noise @ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	-75	-80	-85	-100	-110

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 Ω
 10MHz Connectors BNC (female), 50 Ω /75 Ω
 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.



Block Diagram

Available Options

H - High Stability (± 0.01) Internal Ref.
 Q - RS485 Remote Interface
X - 125 kHz step size
X1 - 100 kHz step size
Connectors/Impedance
 D - 50 Ω BNC (RF), 50 Ω BNC (IF)

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