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.

EQUIPMENT SPECIFICATIONS*

Input Characteristics
- Input Impedance/RL: 75Ω/18 dB
- Frequency, 70 to 140 MHz: 70 ± 18 MHz
- Frequency, 140 to 70 MHz: 110 to 170 MHz
- Input Level: -20 to -10 dBm
- Input 1 dB compression: 0 dBm

Output Characteristics
- Impedance/RL: 75Ω/18 dB
- Frequency, 70 to 140 MHz: 110 to 170 MHz
- Frequency, 140 to 70 MHz: 70 ± 18 MHz

Channel Characteristics
- Attenuation: 0 to 10 dB; selectable in 1dB steps
- Spurious Response: <50 dB
- Bandwidth: ±18MHz, ±0.5dB; ±40MHz, ±1.0dB (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 ± 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 ± 3 dB

Phase Noise @ Freq (dBC/Hz)
- 100Hz: -75
- 1kHz: -80
- 10kHz: -85
- 100kHz: -100
- 1MHz: -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), 75Ω
- 10MHz Connectors: BNC (female), 50Ω/75Ω
- 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 ± 10% VAC, 47 - 63 Hz, 45 watts max.

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 - 50Ω BNC (RF), 50Ω BNC (IF)

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

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