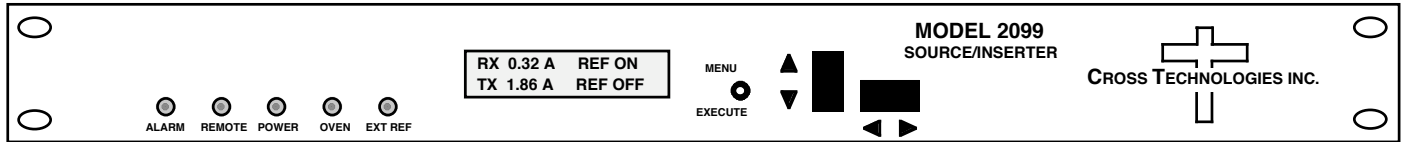


2099-17 10MHz Source/Inserter

The 2099-17 10 MHz Source/Inserter is a 10 MHz, ± 0.01 ppm oven controlled crystal oscillator (OCXO) with circuitry to insert the 10MHz signal and DC voltage on L-band lines for an LNB and SSPB. Multi-function push button switches select internal or external 10 MHz and insertion of 10 MHz on the L-band lines. LEDs indicate DC power (green), alarm (red), remote operation (yellow), and OCXO oven warm-up (yellow). Remote control allows remote configuration of front panel commands and monitoring LNB and SSPB current. Parameter selection and LNB and SSPB current appear on the LCD display. Connectors are BNC female for RF and 10 MHz external input and output signals. LNB or SSPB +24 VDC can be inserted on the RF lines by installing the fuses. AC power is 100-240 $\pm 10\%$ VAC, 47-63 Hz. The chassis is 1 RU, 16" deep.



Front Panel

EQUIPMENT SPECIFICATIONS*

-----10 MHz Reference-----

Output Characteristics (on L-band RF)

Level	+2 dBm ± 2 dB
Harmonics	<-30 dBC, <-40 dBC typ
Level to non-insert end	<-20 dBm, <-30 dBm typ

Input/Output Characteristics (on BNC connectors)

Impedance, Return Loss	50 Ω /75 Ω , 18 dB
Level	+3 dBm ± 3 dB
Harmonics (Output)	< -30 dBC, < -40 dBC typ.

Oscillator

Stability	± 0.01 ppm max over temp
Aging, per day	± 0.001 ppm
Aging, per year	± 0.1 ppm
Warm up, 4 minutes	± 0.1 ppm
Warm up, 1 hour	± 0.01 ppm
Tuning Adjust	± 0.5 ppm
Phase Noise	@ Freq 10Hz 100Hz 1kHz 10kHz
	dBc/Hz <-110 <-140 <-149 <-149

-----Chassis / Other-----

Controls, Indicators

INT/EXT 10 MHz Select	direct readout LCD; manual or remote selection
10 MHz Insert Select	direct readout LCD; manual or remote selection
LNB, SSPB Current	direct readout, remote monitor
Power, Alarm, Remote	Green LED; Red LED; Yellow LED;
Oven Warm-up, Ext Ref	Yellow LED; Yellow LED
Remote	RS232C, 9600 baud (RS485, option Q)

Other

RF Connectors	BNC, 50 Ω (female)
10 MHz Connectors	BNC, 75 / 50 (female)
Alarm/Remote Connector	DB9 (female) - NO or NC closure on Alarm
Size	19 inch, 1RU chassis 1.75"H X 16.0"D
Power	100-240 $\pm 10\%$ VAC, 47-63 Hz, 90 watts max

Available Options

- Q - RS485/RS422 Remote Interface
- Connectors/Impedance
- B – 75 Ω BNC (RF)
- F – 75 Ω Type F (RF)

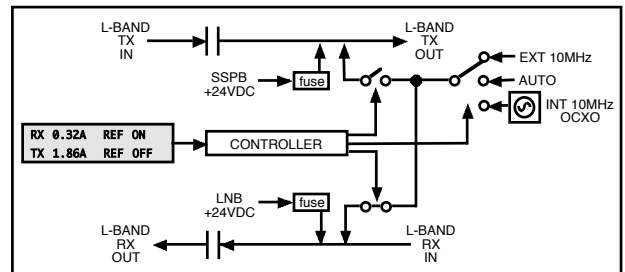
-----RX and TX L-band Insertion-----

RF Input/Output Characteristics

Frequency	950 - 2150 MHz
Impedance	50 Ω
Return Loss	>12 dB, 0.95-1.5 GHz
	>10 dB, 1.5-2.15 GHz
Insertion Loss	< 1 dB, 0.95-1.5 GHz
	< 2 dB, 1.5-2.15 GHz
Frequency Response	± 1.0 dB, 950 - 2150 MHz;
	± 0.5 dB, 36 MHz BW

LNB, SSPB DC Power Characteristics

Voltage/Current	LNB +24 VDC, 0.5 A, max. SSPB +24 VDC, 2.5 A, max.
Load Regulation	Call for other voltages $\pm 5\%$



Block Diagram

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