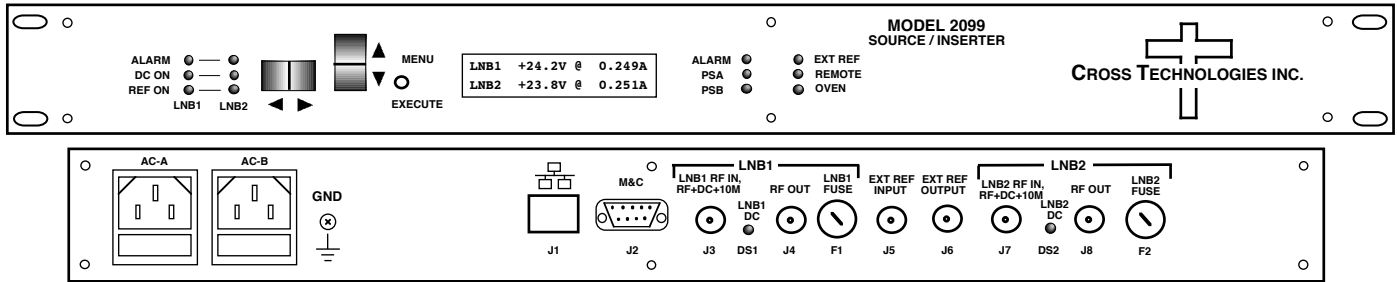


2099-24 10MHz, 24V Source/Inserter, Redundant Power

The 2099-24 10 MHz Source/Inserter **provides** a 10 MHz, ± 0.01 ppm oven controlled crystal oscillator (OCXO) with circuitry to insert the 10MHz signal and **+24** on **two** L-band lines for two LNBs. Multi-function switches select **+24 VDC LNB power for insertion on either/both LNB lines**, internal or External (**Option E**) 10 MHz, and insertion of 10 MHz on the L-band lines. LEDs indicate DC power (green), Reference insertion (green), alarm (red), remote operation (yellow), and OCXO oven warm-up (yellow). The External Reference option (**Option E**) provides an external reference input which can be used to lock the internal 10 MHz source to a high stability external frequency reference or it may be inserted directly into the L-Band lines. Remote control allows remote configuration of front panel commands and monitoring **LNB1 and LNB2** voltage and current. Parameter selection and **each** LNB voltage and current appear on the LCD display. Connectors are BNC female for RF and 10 MHz input and output signals. **Redundant** AC power is 100-240 $\pm 10\%$ VAC, 47-63 Hz. The chassis is 1 RU, 12" deep.



Front and Rear Panels (Shown with option -E)

EQUIPMENT SPECIFICATIONS*

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

Output Characteristics (on L-band RF)

Level	+2 dBm \pm 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 , 14 dB
Level	+3 dBm \pm 3 dB
Harmonics (Output)	< -30 dBC, < -40 dBC typical

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	10 Hz	100 Hz	1kHz	10kHz
> dBC/Hz	110	140	149	149

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

Controls, Indicators

INT/EXT 10 MHz Select	FP Switch or M&C select; Ext. Yellow LED
10 MHz Insert Select	FP Switch or M&C select; Green LED
LNB1, LNB2 Insert	FP Switch or M&C select; Green, rear Yellow LED
LNB1, LNB2 Volts, Amps	Front panel display and M&C
Power, Alarm, Ref.	Green LED; Red LED; Green LED
Oven, Ext Ref, Remote	Yellow LED; Yellow LED; Yellow LED

Other

RF Connectors	BNC, 50 Ω (female)
10 MHz Connectors	BNC, 50 (female) (WORKS FOR 50Ω OR 75Ω)
Alarm/Remote Connector	DB9 (female) - NO or NC closure on Alarm
Size	19 inch, 1RU chassis 1.75"H X 12.0"D
Power, Redundant Std.	100-240 $\pm 10\%$ VAC, 47-63 Hz, 50 watts max

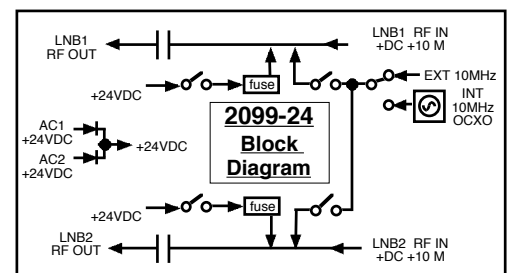
----- L-band Insertion -----

RF Input/Output Characteristics

Frequency	950 - 2150 MHz and 10 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

LNB1, LNB2 DC Power Characteristics

Voltage/Current	+24 \pm 1 VDC, 0.5 A, max.
Load Regulation	$\pm 5\%$



E - Ext 10 MHz ref, Auto Det & Restore

Comm. Interface/Standard RS232
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet®

Connectors/Impedance

B - 75 Ω BNC
F - 75 Ω F-type
NN- 50 Ω N-type
SS- 50 Ω SMA

OPTION S

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