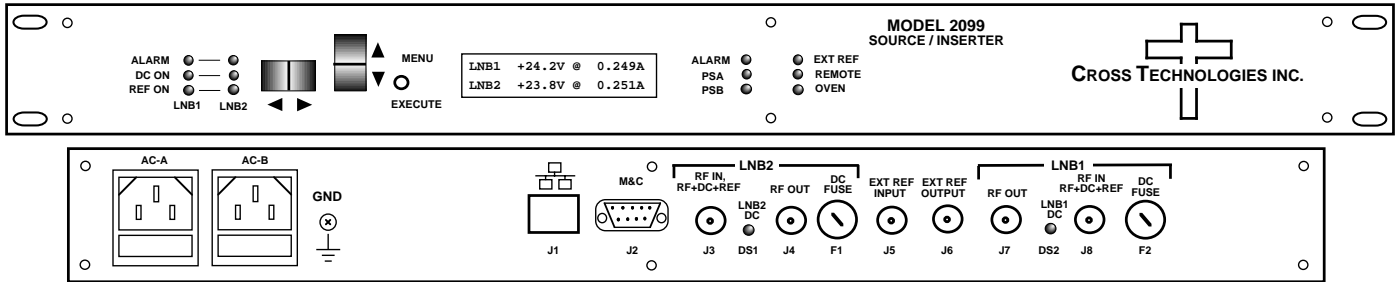


2099-24 10MHz, 24V Source/Inserter, Redundant Power

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 $+2 \text{ dBm} \pm 2 \text{ dB}$
 Harmonics $< -30 \text{ dBC}, < -40 \text{ dBC typ}$
 Level to non-insert end $< -20 \text{ dBm}, < -30 \text{ dBm typ}$

Input/Output Characteristics (on BNC connectors)

Impedance, Return Loss $50\Omega/75\Omega, 14 \text{ dB}$
 Level $+3 \text{ dBm} \pm 3 \text{ dB}$
 Harmonics (Output) $< -30 \text{ dBC}, < -40 \text{ dBC typical}$

Oscillator

Stability $\pm 0.01 \text{ ppm max over temp}$
 Aging, per day $\pm 0.001 \text{ ppm}$
 Aging, per year $\pm 0.1 \text{ ppm}$
 Warm up, 4 minutes $\pm 0.1 \text{ ppm}$
 Warm up, 1 hour $\pm 0.01 \text{ ppm}$
 Tuning Adjust $\pm 0.5 \text{ ppm}$

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 50 Ω OR 75 Ω)**
 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**

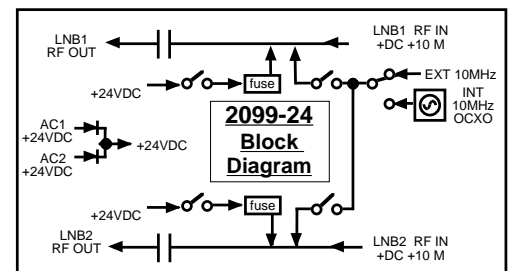
----- L-band Insertion -----

RF Input/Output Characteristics

Frequency 950 - 2150 MHz and 10 MHz
 Impedance 50 Ω
 Return Loss $> 12 \text{ dB}, 0.95\text{-}1.5 \text{ GHz}$
 $> 10 \text{ dB}, 1.5\text{-}2.15 \text{ GHz}$
 Insertion Loss $< 1 \text{ dB}, 0.95\text{-}1.5 \text{ GHz}$
 $< 2 \text{ dB}, 1.5\text{-}2.15 \text{ GHz}$
 Frequency Response $\pm 1.0 \text{ dB}, 950 - 2150 \text{ MHz};$
 $\pm 0.5 \text{ dB}, 36 \text{ MHz BW}$

LNB1, LNB2 DC Power Characteristics

Voltage/Current $+24 \pm 1 \text{ VDC}, 0.5 \text{ A, max.}$
 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

OPT I O N S

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