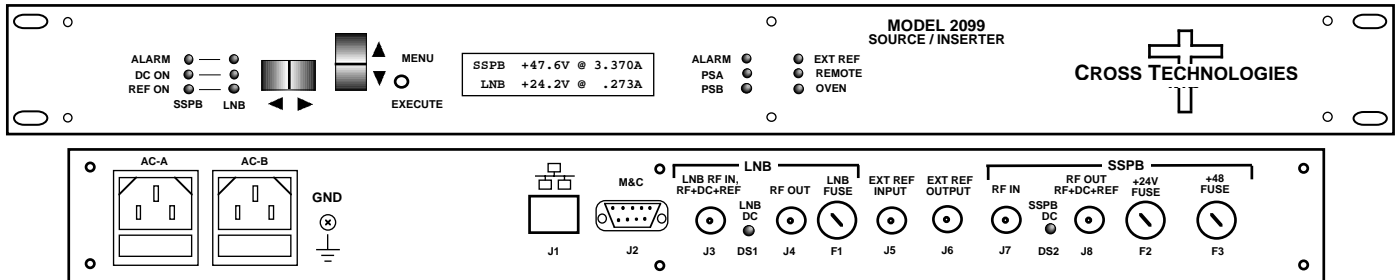


2099-2448 10MHz, 24V, and 48 V Source/Inserter, Redundant Power

The 2099-2448 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 switches select LNB and SSPB DC Power, 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 (**-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. For SSPB power, the user can switch between +24VDC @2.5A or +48VDC @ 4.2A DC insertion. Remote control allows remote configuration of front panel commands and monitoring LNB and SSPB voltage and current. Parameter selection and LNB and SSPB 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 ± 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 ± 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
SSPB, LNB Insert	FP Switch or M&C select; Green, rear Yellow LED
SSPB, LNB 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, 300 watts max

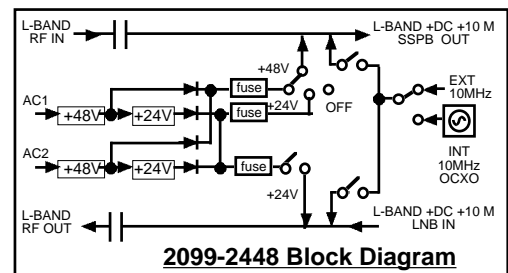
----- L-band Insertion -----

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

SSPB1, SSPB2 DC Power Characteristics

Voltage/Current SSPB	+24 ± 2 VDC, 2.5 A, max. OR +48 ± 4 VDC, 4.2 A, max.
Voltage/Current LNB	+24 ± 2 VDC, 0.5 A, max.
Load Regulation	$\pm 5\%$



2099-2448 Block Diagram

E - Ext 10 MHz ref, Auto Det & Restore

Comm. Interface/Standard RS232

Q	RS485 Remote Interface
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

OPT I O N S

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