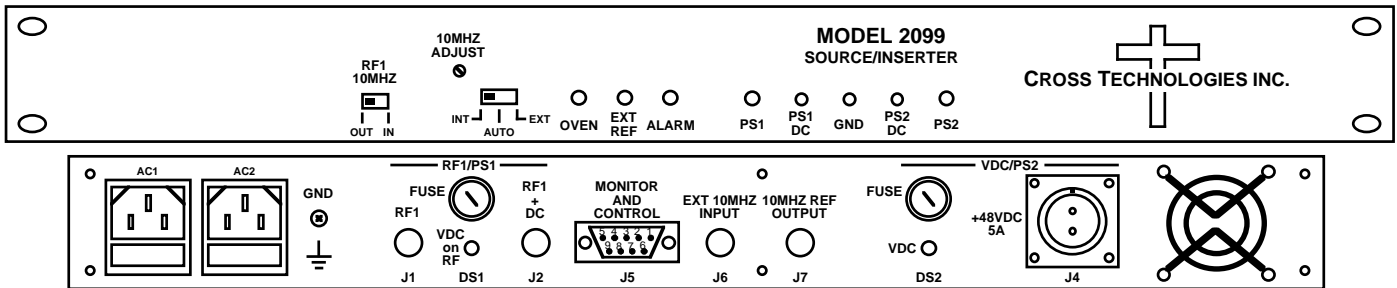


2099-1748 Source/Inserter

The 2099-1748 10MHz Source/Inserter is a 10MHz, ± 0.01 ppm oven controlled crystal oscillator (OCXO) with circuitry to insert the 10MHz signal and DC voltage (PS1) on the L-band, RF1 line. A DC connector also provides a +48VDC, 5A output (PS2). Two front panel switches switch the 10MHz reference in or out on RF1 and select internal, external or auto 10MHz. Front panel LEDs indicate DC power (green), alarm (red), external 10MHz (yellow), and OCXO oven warm-up (yellow). Rear panel LEDs indicate the presence of voltage on either RF1 or the DC connector. A summary alarm contact closure or open on alarm is available on a DB9 connector. Connectors are BNC female for RF and 10MHz output and external input signals, and an Amphenol MS connector provides the +48VDC, 5A DC output from PS2. +24VDC can be inserted on the RF1 line, and +48VDC is available on the DC connector by installing separate fuses for each. The unit is powered by a 100-240 $\pm 10\%$ VAC, 47-63 Hz supply, and housed in a 1RU x 15"D chassis.



Front and Rear Panels

EQUIPMENT SPECIFICATIONS*

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

Oscillator

Frequency	10 MHz				
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 Adjustment	± 1 ppm				
Phase Noise	@ Freq	10Hz	100Hz	1kHz	10kHz
	dBC/Hz	< -110	< -140	< -149	< -149

10 MHz Output Characteristics (on L-band RF)

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

Ext 10 MHz Input Characteristics

Impedance/Return Loss	75 Ω / 50 Ω , 18 dB
Level	$+3$ dBm ± 3 dB

10 MHz Reference Output Characteristics

Impedance, Return Loss	75 Ω / 50 Ω , 18 dB
Level	$+3$ dBm ± 3 dB
Harmonics	<-30 dBC, < -40 typical

Available Options

- B - 75 Ω BNC (RF) Connectors/Impedance for L-band
- F - 75 Ω Type F (RF) Connectors/Impedance for L-band

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

RF Input/Output Characteristics

Impedance/Return Loss	50 Ω / 12 dB
Frequency	950 - 2150 MHz
Insertion Loss	1 ± 0.5 dB
Frequency Response	± 1.0 dB, 950 - 2150 MHz; ± 0.5 dB, 36 MHz BW

DC Power Characteristics

Voltage/Current, PS1/RF1	+24 VDC, 2.5 A, max.
Voltage/Current, PS2/MS	+48 VDC, 5 A, max.
Call for other voltages	
Load Regulation	$\pm 5\%$

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

Controls, Indicators

INT/EXT/AUTO 10 MHz	front panel SP3T switch
RF1 10MHz Insert	front panel SPDT switch
PS1, PS2 Voltage	front panel test point monitor
Power, Alarm	Green LEDs; Red LED
Oven Warm-Up, Ext Ref	Yellow LED; Yellow LED
VDC on RF1/MS	Yellow LEDs

Other

RF Connectors	BNC, 50 Ω (female)
10 MHz Connectors	BNC, 75 Ω / 50 Ω (female)
Alarm/Remote Connector	DB9 (female)
Size	19 inch, 1RU, 1.75"H X 15.0"D
Power, PS1	90-260 VAC, 47-63 Hz, 150W
Power, PS2	90-260 VAC, 47-63 Hz, 350W

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