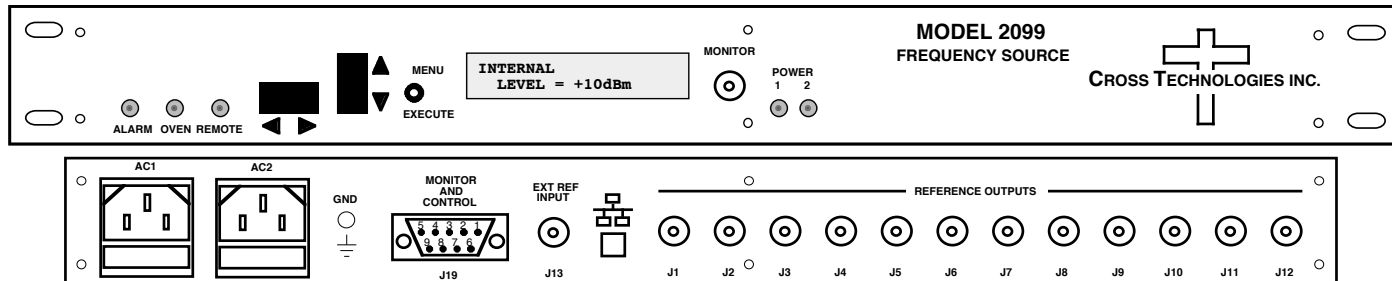


**2099-10XX Frequency Source**

The Model 2099-10XX Frequency Source provides four (xx=04), eight (xx=08) or twelve (xx=12) 10MHz reference outputs from a 0.01 ppm high stability oven controlled crystal oscillator (OCXO). Front panel LEDs indicate alarm (red), oven warm-up (yellow), remote (yellow), and power from the two redundant power supplies (green). The output level is +13 dBm (max), and the 2099-10XX works into either a 75Ω or 50Ω load. An available 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 redistributed with an adjustable pass-through gain of -10 to +10 dB. An LCD display shows the 10MHz output level (or pass-through gain, mode setting, lock reference frequency, and AUTO fault (Option E only). Connectors are BNC female. A relay contact closure or open indicates when an alarm occurs. The 2099-10XX is mounted in a 1RU rack mountable chassis, and is powered by redundant power supplies fed by separate fused 100-240 ±10% VAC AC input connectors. An RS232/422/485 (selectable) (Ethernet optional) M&C interface provides remote control of the unit.



**EQUIPMENT SPECIFICATIONS\***

**Front and Rear Panel (Shown with optional Ethernet)**

**Output Characteristics (RF)**

Number of outputs	5, 9, or 13 (including monitor)
Impedance	50Ω/75Ω
Return Loss	>18dB
Frequency	10.0000 MHz
Level, adjustable (int ref)	-7 dBm to +13 dBm
Harmonics	< -30 dBC, < -40 typ.
Spurious	< -75 dBC

**External Reference Input Characteristics**

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

**Oscillator Characteristics**

Frequency Stability	± 0.01 ppm max 0°C to +50°C
Aging	± 0.001 ppm per day; ±0.1 ppm per year
Warm up	± 0.1 ppm in 4 minutes; ±0.01 ppm in 1 hour
Tuning Adjustment	± 1 ppm

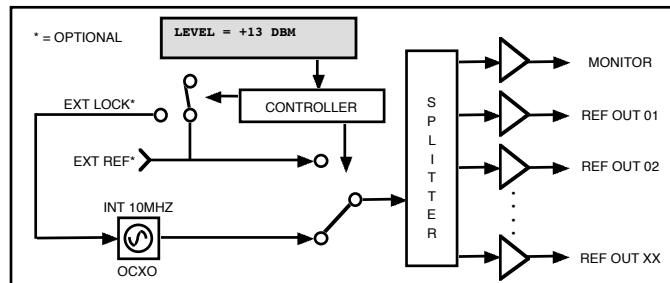
Phase Noise @ Freq	10Hz	100Hz	1kHz	10 kHz
dBC/Hz	-110	-140	-155	-160

**Controls, Indicators**

Output Level Adjust	Direct readout LCD; push-button switches or remote selection
Power	Green LEDs
Remote	Yellow LED, RS232C/422/485
Oven Warm-Up	Yellow LED
Alarm	Red LED, External contact closure

**Other**

10 MHz Connectors	BNC (female), 50Ω/75Ω impedance
Alarm/Remote Conn.	DB9 (female) - NO or NC contact closure on Alarm
Size	19 inch standard chassis 1.75" high X 12.0" deep
Power	Redundant 100-240 ± 10% VAC, 47 - 63 Hz, 20 watts max.



**2099-10XX BLOCK DIAGRAM**

**Available Options**

W31 - 0 to +50 degrees C operation  
 E - External Reference Input (includes INTERNAL, EXT LOCK, and EXT LOCK AUTO modes)

**Remote M&C Ethernet Options**

W8 - Ethernet w/web browser Interface  
 W18 - Ethernet w/SNMP (and MIB) Interface  
 W28 - Ethernet w/direct TCP/IP Interface  
 W828 - W8 +W18 +W28

**Connectors**

Std. - 50/75Ω BNC

**Contact Cross for other options**

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