2099-100XX Frequency Source

The Model 2099-100XX Frequency Source provides four (xx=04), eight (xx=08) or twelve (xx=12) 100 MHz reference outputs from a 0.1 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 +7 dBm (max), and the 2099-100XX 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 100 MHz source to a high stability external reference. An LCD display shows the 100 MHz output level (and mode setting, gain, lock reference frequency. Connectors are 50/75 Ohm BNC female. A relay contact closure or open indicates when an alarm occurs. The 2099-100XX is mounted in a 1RU rack mountable chassis with redundant power supplies fed by separate fused 100-240 ± 10% VAC AC input connectors and provides RS232/422/485 M&C Interface.

**2099-100XX EQUIPMENT SPECIFICATIONS**

**Output Characteristics**
- Number of outputs: 4, 8 or 12 (including monitor)
- Impedance; Return Loss: 50Ω/75Ω; >18dB
- Frequency: 100 MHz
- Level, adjustable (int ref): -7 dBm to +7 dBm
- Gain, adjustable (ext ref): -10 dB to +3 dB (option -E only)
- Harmonics: < -40 typ.
- Spurious: < -75 dB

**External Reference Input Characteristics**
- Impedance; Return Loss: 50Ω/75Ω; >18dB
- Level: +3 dBm ± 3 dB

**Oscillator Characteristics**
- Over temperature: ± 0.03 ppm max 0˚C to +50˚C
- Aging: ± 0.01 ppm per day; ±0.5 ppm per year
- Warm up: ± 1.0 ppm in 4 minutes; ±0.1 ppm in 1 hour
- Tuning Adjustment: ±0.5 ppm
- Phase Noise: @ Freq | 10Hz 100Hz 1kHz 10kHz dB/Hz | < -90 < -125 < -145 < -155

**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 Connector: 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, 410 - 63 Hz, 45 W max. power supplies

**Options**
- E: External Reference Input (includes INTERNAL, EXTERNAL LOCK, and EXTERNAL LOCK- AUTO modes)

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