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 auto10MHz. 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 ±10% VAC, 47-63 Hz supply, and housed in a 1RU x 15"D chassis.

**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 dBC/Hz
  - 10Hz: -110
  - 100Hz: -140
  - 1kHz: -140
  - 10kHz: -149

**10 MHz Output Characteristics (on L-band RF)**
- Level: +2 dBm ± 2 dB
- Harmonics: <-30 dB, <-40 typ
- Level to non-insert end: <-20 dBm, <-30 typ

**Ext 10 MHz Input Characteristics**
- Impedance/Return Loss: 75Ω / 50Ω, 18 dB
- Level: +3 dBm ± 3 dB

**10 MHz Reference Output Characteristics**
- Impedance, Return Loss: 75Ω / 50Ω, 18 dB
- Level: +3 dBm ± 3 dB
- Harmonics: <-30 dB, <-40 typical

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

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

**RF Input/Output Characteristics**
- Impedance/Return Loss: 50Ω / 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: ± 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, 50Ω (female)
- 10 MHz Connectors: BNC, 75Ω / 50Ω (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*