The 2099-1318 10 MHz Source/Inserter provides a 10 MHz, ± 0.01 ppm oven controlled crystal oscillator (OCXO) with circuitry to insert the 10MHz signal and either of two DC voltages (+13 or +18 VDC) on two L-band lines for two LNBS. Multi-function switches select either +13 or +18 VDC LNB power for insertion on either/both LNB lines, 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 (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. Remote control allows remote configuration of front panel commands and monitoring LNB1 and LNB2 voltage and current. Parameter selection and each LNB 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 ± 10% VAC, 47-63 Hz. The chassis is 1 RU, 12” deep.

**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: 50Ω, 75Ω, 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: 110 dBc/Hz
- 100 Hz: 140 dBc/Hz
- 1 kHz: 149 dBc/Hz
- 10 kHz: 149 dBc/Hz

--- L-band Insertion ---

**RF Input/Output Characteristics**
- Frequency: 950 - 2150 MHz and 10 MHz
- Impedance: 50Ω
- 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

**LNB1, LNB2 DC Power Characteristics**
- Voltage/Current: PWR1, +13 ± 1 VDC, 0.5 A, max. OR
- Voltage/Current: PWR2, +18 ± 1 VDC, 0.5 A, max.
- Load Regulation: ± 5 %

**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
- LNB1, LNB2 Insert: FP Switch or M&C select; Green, rear Yellow LED
- LNB1, LNB2 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

**RF Connectors**
- BNC, 50Ω (female)
- 10 MHz Connectors: BNC, 50Ω (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 ± 10% VAC, 47-63 Hz, 50 watts max

--- Chassis / Other ---

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