

SSM-2000 100 MHz Standard Temperature OCXO Source Module

Specifications

ELECTRICAL SPECIFICATIONS

MODULE

| | |
|---|--|
| 1 PPS Accuracy | ±35ns rms to external reference, 16.66ns resolution |
| Frequency Accuracy | Better than ±8E-10 to external reference after 20 minutes |
| Holdover Stability | ±20µs/3 hrs @25.0°C, no airflow or motion, with 2 hrs reference lock |
| ADEV | 1s: <1E-11, 10s: <4E-11 |
| 1 PPS Outputs (OCXO Flywheel Generated) | LVDS rising-edge aligned, ultra low jitter, sawtooth removed |
| 100MHz Outputs MMCX | 2 x LVDS differential pairs at 100MHz, 4 x 100MHz sine wave, +6dBm into 50Ω |
| RS-232 Control | Full control via SCPI-99 control commands, TTL or RS-232 |
| External Reference Input | 1PPS LVDS or 10MHz sine, auto-switchover or manual select |
| TTL Alarm Output | Holdover and event indicator (low active, 3.3V CMOS) |
| Warm Up Time / Stabilization Time | <15 min to <1.0E-09 accuracy at +25°C, with onboard reference only (typical) |
| Supply Voltage (Vdd) | 13.8V to 15.5V DC, 15V nominal, ≤100ms rise-time |
| Power Consumption | < 3.2W at +25°C, steady-state |
| Operating Temperature | -25°C to +75°C |
| Environmental Conformance | MIL-STD-202, method 204, condition I-A |
| Storage Temperature | -55°C to +90°C |
| Weight | < 55 grams |

OSCILLATOR SPECIFICATION

| | |
|--|---|
| Frequency Output | 4x 100MHz, MMCX connectors, 2x LVDS differential pairs, Samtec connector |
| 100MHz Retrace | ±5E-08 after 24. hrs. on, 24 hrs. off, 1 hr. on @ 25°C (no reference lock) |
| Frequency Stability | ±1.2E-08 temperature coefficient ±2.5E-9/g/axis, acceleration sensitivity, 10MHz ±3.0E-09/g/axis acceleration sensitivity, 100MHz |
| Output Amplitude | 6dBm ±2dB into 50Ω |
| Frequency adjustment range (SCPI control or to external reference) | At least ±40Hz @ 100MHz |
| Harmonics (Sine Output) | <-45dBc |
| Aging | <0.5ppm in 10 years |
| Warm Up Time at 25°C | < 8 min to ±2E-8 (ref. to frequency after 1 Hr) |

PHASE NOISE 100MHz OUT

| | |
|--------|------------|
| 1Hz | -65dBc/Hz |
| 10Hz | -85dBc/Hz |
| 100Hz | -118dBc/Hz |
| 1kHz | -140dBc/Hz |
| 10kHz | -155dBc/Hz |
| 100kHz | -160dBc/Hz |

Connector Type: Samtec, PN: TFML-115-01-S-D-LC

| PIN | DESCRIPTION | LEVEL | IN/OUT |
|-----|-----------------|---------------------|--------|
| 1 | GND | GND | IN |
| 2 | GND | GND | IN |
| 3 | +15V Power | 13.8V to 15.5V | IN |
| 4 | +15V Power | 13.8V to 15.5V | IN |
| 5 | GND | GND | IN |
| 6 | GND | GND | IN |
| 7 | SCPI TXD TTL | 3.3V CMOS | OUT |
| 8 | SCPI TXD RS232 | RS232 | OUT |
| 9 | GND | GND | IN |
| 10 | SCPI RXD RS232 | RS232 | IN |
| 11 | SCPI RXD TTL | 3.3V CMOS | IN |
| 12 | GND | GND | IN |
| 13 | RESET# | 3.3V Open Collector | IN |
| 14 | 100MHz LVDS-A P | LVDS | OUT |
| 15 | EVENT# | 3.3V CMOS | OUT |
| 16 | 100MHz LVDS-A N | LVDS | OUT |
| 17 | GND | GND | IN |
| 18 | GND | GND | IN |
| 19 | TTL#/RS232 | 3.3V CMOS | IN |
| 20 | 100MHz LVDS-B P | LVDS | OUT |
| 21 | ENTER ISP# | 3.3V CMOS | IN |
| 22 | 100MHz LVDS-B N | LVDS | OUT |
| 23 | GND | GND | IN |
| 24 | GND | GND | IN |
| 25 | 1PPS REF-IN P | LVDS | IN |
| 26 | 1PPS OUT P | LVDS | OUT |
| 27 | 1PPS REF-IN N | LVDS | IN |
| 28 | 1PPS OUT N | LVDS | OUT |
| 29 | GND | GND | IN |
| 30 | GND | GND | IN |

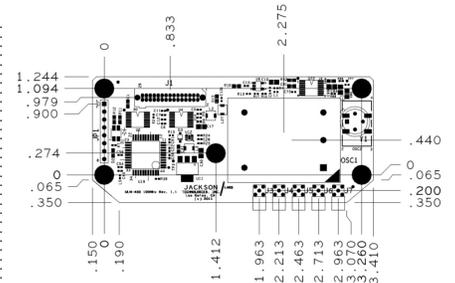


Figure 1: Connector Pinout Schematic

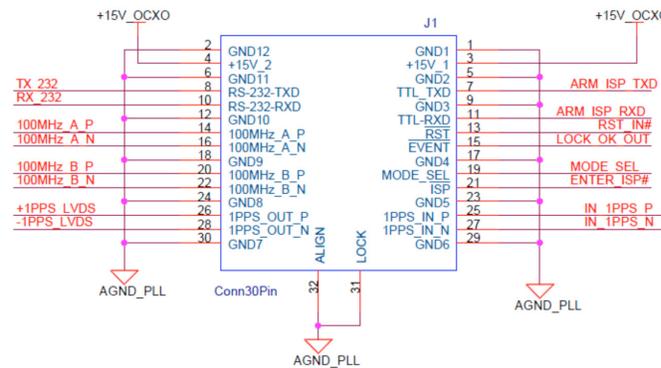


Figure 2: Connector Pinout Schematic