



System Interface Products

MOS - Master Oscillator



10MHz Master Oscillator

How to order an MOS - Master Oscillator

Module

MOS - Master Oscillator

J-1: DC Output
(+15 to +24 VDC)

J-2: 10MHz Output Connector (in phase with other 10 MHz output)

J-3: To DC supply Connector
(+15 to +24 VDC)

MOS-BSBS

J-4: 10MHz Output Connector
(in phase with other 10 MHz output)

Connectors available:

J2, J4: 10MHz

B - BNC (industry standard)
S - SMA (recommended for outdoor use)
N - N

J1, J3: DC Supply

B - BNC (preferred)
F - F
N - N

BNC-to-pigtail adapters and BNC-to-binding post adapters sold separately. See SIP price list for part number and price.

Quiet, Stable, Pure, and Enduring

The Orbital **MOS - Master Oscillator** can be used alone or combined with other Orbital products such as the MT25/40 - Mux/Tee, RPT - Redundant Power Tee or SP10 - 10MHz Splitter to provide the 10 MHz source to synchronize your entire system. See our **MOM** brochure.

You can lock the signals of your LNB, BDC, BUC, modem or VSAT to the same precise signal. You can even combine it with a pair of Mux / Tees to lock both the horizontal and vertical polarity feeds to the same timebase. See our **MODM** brochure.

J1 is a feedthrough from the DC in J3 so that you can send power to any components attached or adjacent to the MOS such as the components mentioned above.

J2 and J4 has an output level of +7 dBm for insertion into splitters to feed the rest of the system or, with an attenuator, input into a BUC, BDC or LNB.

MOS Features

Oscillator

- Great phase noise: -147 dBc/Hz @ 1kHz
- Excellent thermal stability: $\pm 1.5 \times 10^{-8}$, +10 to +40°C
- Sine wave purity, low harmonic content
- Good aging: $\pm 1 \times 10^{-6}$ per day after 30 days

Functional

- Will operate with LNBs, BDCs, VSATs, BUCs, and Modems
- Will filter and condition the DC power to eliminate extraneous signals coming in through the power supply.

Structural

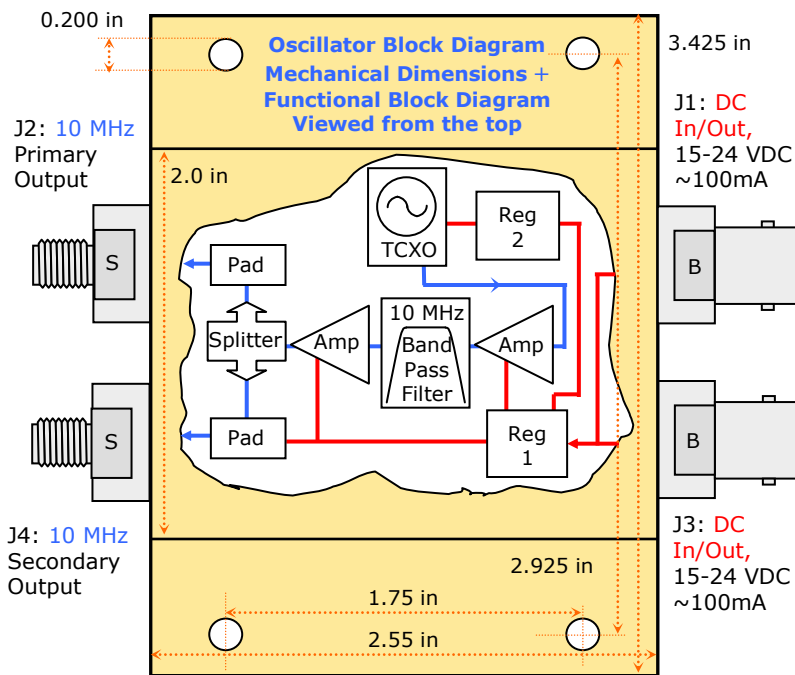
- Machined from solid aluminum billet for strength & stability
- Allodyne finish for corrosion protection and excellent RF shielding/grounding
- 'Back O Rack' mounting for ease of installation and lead dress (Reduces the mess of cables at the back of the rack and provides stability for cables)
- Connectors are 'O' ring sealed for weather resistant operation

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System Interface Product (SIP): MOS - Specifications



Electrical Specifications

10 MHz

Passband: 1-100 MHz (3 dB down)
 Thru Loss: 0.1 dB 10 MHz to LNB port
 Isolation: >90 dB 10 MHz to Rx port

DC

Filtering: Hash filter, low pass filter

10 MHz Oscillator

Frequency: 10 MHz
 Output Level: J2: +7 dBm
 J4: +7 dBm
 Stability: $\pm 1.5 \times 10^{-7}$, 0 to +40°C
 Aging: $\pm 1 \times 10^{-6}$ per day after 30 days
 $\pm 5 \times 10^{-6}$ per year after 180 days
 Phase Noise: 100Hz -130 dBc/Hz
 1kHz -147 dBc/Hz
 10kHz -148 dBc/Hz
 100kHz -148 dBc/Hz
 2nd Harmonic: <-30 dBc

Power Specifications

Input DC Voltage: +15 to +24 V supplied via DC input connector
 Current Drain: Approximately 100 mA

Mechanical Specifications

Voltage Interface: F, N, BNC
 10MHz Interface: BNC, SMA or N
 Size (case): 3.425l x 2.55w x 0.88h in.
 Size (with conn): 3.425l x 3.8w x 0.88h in.
 Weight: 5 oz
 Paint / Colour: Gold Allodyne finish
 Mounting holes: 3/8" (5mm)
 Accepts standard rackmounting screws: 10/32 or 10/34

Environmental Specifications

Operating Temp: 0 to +40° Celsius
 Relative Humidity: Up to 100% condensation and frost

Switching Power Supply

(not included with Oscillator)

See: PS1 brochure for North America
 PS2 brochure for Global



PS30-B18 Switching Power Supply, pigtail and binding post adaptors (not included with Oscillator)

The Master Oscillator has been designed specifically for the satellite industry. Its sturdy case, allodyned finish, small size and back-o-rack mounting system make it both enduring and easy to use. The replaceable, Murray-style connectors guarantee the best possible connections for the life of the product.

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