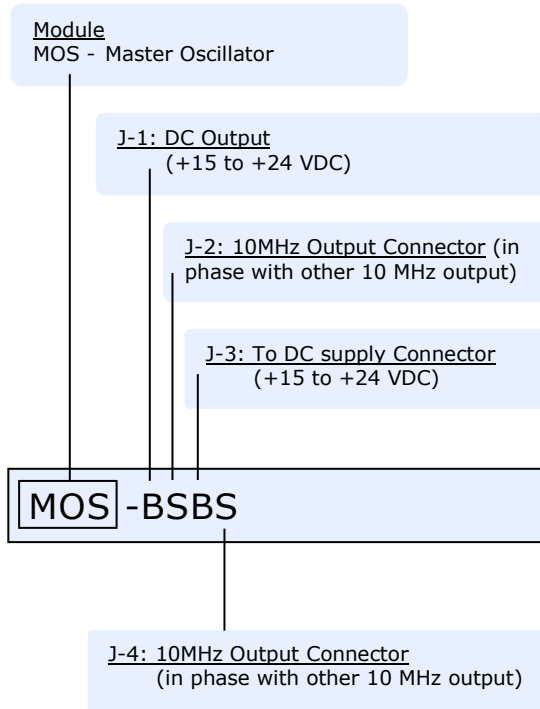# System Interface Products

MOS - Master Oscillator

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10MHz TCXO Master Oscillator

How to order a 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)   S - SMA
T - TNC   N - N
ft - feedthru

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 have 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.

Temperature Compensated Crystal Oscillator (TCXO)
- Great phase noise: -147 dBc/Hz @ 1kHz
- Excellent thermal stability: ±1.5 ppm, 0 to +40°C
- Sine wave purity, low harmonic content
- Good aging: $\pm 1 \times 10^{-6}$ per day after 30 days

Functional
- Operate with LNBs, BDCs, VSATs, BUCs, and Modems
- Filters and conditions the DC power to eliminate extraneous signals coming in through the power supply.

Structural
- Machined from solid aluminum billet for strength & stability
- Anodized 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)
- Connectors are 'O' ring sealed for weather resistant operation
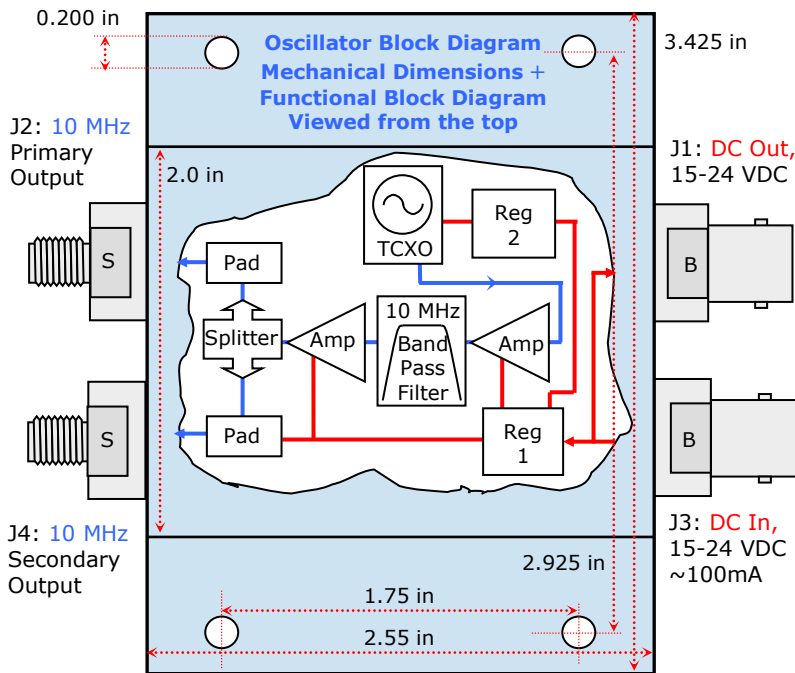- RoHs & REACH Compliant

Sales contact:

sales@orbitalresearch.net

1 604 419-8585

www.orbitalresearch.net

Orbital Oscillator: MOS – Master Oscillator Specifications

0.200 in

Oscillator Block Diagram
Mechanical Dimensions +
Functional Block Diagram
Viewed from the top

3.425 in

J2: 10 MHz Primary Output

S

2.0 in

TCXO

Reg 2

Pad

Splitter

Amp

10 MHz Band Pass Filter

Amp

Pad

Reg 1

J1: DC Out, 15-24 VDC

B

S

B

J4: 10 MHz Secondary Output

2.925 in

J3: DC In, 15-24 VDC ~100mA

1.75 in

2.55 in

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

10 MHz Oscillator

Frequency: 10 MHz
Output Level: J2:   +2 dBm (standard)
                  J4:   +2 dBm (standard)
 (can be set to min of 0.5dBm and max of 3.5dBm)
Stability: ±1.5 ppm, 0 to +40°C
Aging: ±1 x 10^{-6} per day after 30 days
                  ±5 x 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

Measurements: Tolerance ±.005 in.
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: Blue Anodized finish
Mounting holes: 3/8" (5mm)
                   Accepts standard
                   rackmounting screws:
                   10/32 or 10/34

RoHs & REACH Compliant

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

The Master Oscillator has been designed specifically for the satellite industry. Its sturdy case, anodized 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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