

2020 Product Catalog



**Where Real Quality Counts
WE ARE THERE**



WORLD LEADER IN MICROWAVE AND MM-WAVE COMPONENTS

www.microwave-dynamics.com



Microwave Dynamics (MD) **2020 Product Catalog** features our complete range of standard RF, Microwave and MM-Wave products. In addition to standard products, MD also does custom parts and custom sub-assemblies. If there is anything you need that you don't see here, contact us with your full specifications and our engineers will work with you to find the best solution.

MD has been a leader in the microwave industry since 1993. With applications on land, sea, air and space, MD products are designed to perform under extreme environmental conditions, such as intense shock vibration and high temperature variance. Designs are geared to maximize stability and minimize noise. We take pride in our excellent customer service and rapid turnaround R&D for customized sub-assemblies. We also offer 48 hour expedited delivery on most of our standard catalog products.

Please visit our website at www.microwave-dynamics.com for additional product information or contact us directly at info@microwave-dynamics.com or 949-679-7788.

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Space

- AURA/MLS Satellite (2004 – now)
- COMSAT
- Uplink / Downlink
- Ku / K / Ka bands
- mmW applications
- Extremely high-reliability parts, assembly processes, and quality tests (acceleration, temperature, shock, etc.)



Defense / Military

- Sole-source supplier for F-22 Raptor
- U-2 Planes
- UAVs
- Radars
- Missile Guidance
- Rockets
- Navy Communications
- Air Force Simulations
- Target Deterrent Simulators
- Frequency Jammers
- Frequency Converters
- Point to Point Relays
- Satellites



Commercial

- | | |
|---|--|
| <ul style="list-style-type: none">• Satellite Communications• Cable TV Links• Local Area Networks• Global Positioning Systems (GPS)• Test Equipment• Point to Point Links• Up/Down Converters | <ul style="list-style-type: none">• Transmitter & Receivers• Low Power Radar Test Transmitters• Digital Radios• Fiber Optics• X-Band & K-Band Radiometer• Test Beacons & Doppler Transceivers• Transceiver |
|---|--|

OSCILLATORS



Product features

Datasheet

Oscillators

MD dielectric resonator oscillators are available from 1-50 GHz with up to +25 dBm output power. Optional operating temperature range from -55 to +105 deg C is available. Features include: internal voltage regulator, low phase noise, MIC fabrication, 150 MHz bandwidth, low microphonics and low power consumption.

Models: DRO-1000, DRO-1500, DRO-1070, PLO-2000, PLO-2070, PLO-3000, PLO-3070, PLO-4000, PLO-4070, PLO-4200, PLO-4270, OCXO-200, OCXO-300, TCXO-100, TCXO-200, PLO-5000, TCDRO-1060, MDS (Synthesizer),

DRO-1000 *Free Running DRO*

DRO-1500 *Mini DRO*

PLO-2000 *Ext Ref 100 MHz*

PLO-3000 *Int Reference*

PLO-4000 *Ext Ref 10 MHz*

PLO-4200 *Dual Loop Ext Ref 10 MHz* 

OCXO-300 *Ovenized Crystal* 

TCXO-100 *Temp Comp Crystal*

TCXO-200 *Temp Comp Crystal* 

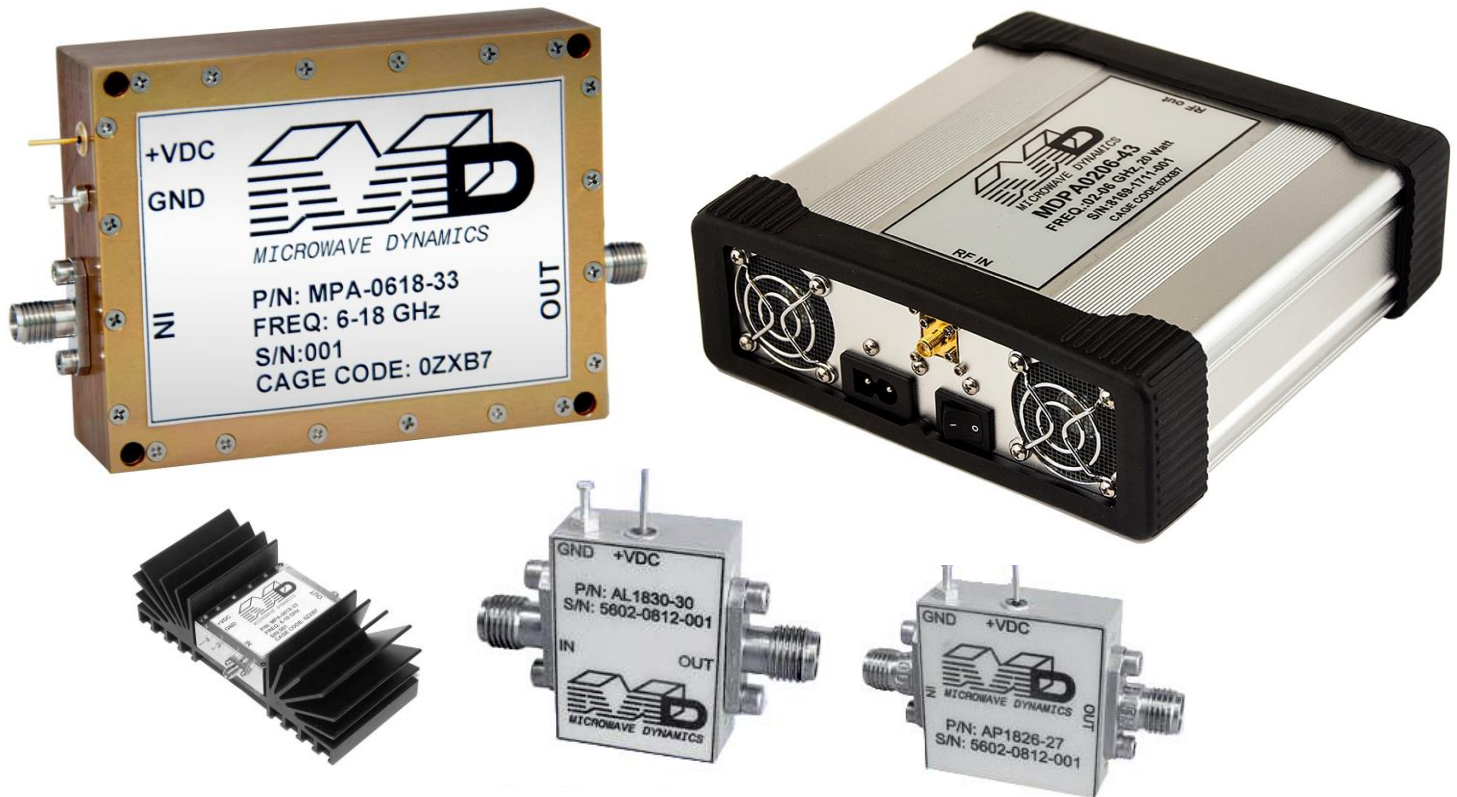
TCDRO-1060 *Temp Comp Oscillator*

PLO-5000 *Int/Ext Ref Oscillator*

Synthesizer *Synthesizer*

MLO *Pulse Modulated Oscillator*

AMPLIFIERS



Product features

Datasheet

Amplifiers

MD offers high power, medium power and low noise amplifiers from 2 to 46 GHz, including a new compact bench top power amplifier design (MDPA).

Models: ALXXXX, APXXXX, MPA, MDPA

[Low Noise Amp](#)

[High Power Amp](#)

[High Power 20 W \(MPA\)](#) 

[Bench Top Power Amp \(MDPA\)](#) 

UP / DOWN CONVERTERS



Product features

Up and Down Converters

MD offers upconverters, downconverters, and our new product line. The LO-MIX Series which is an up or down converter with an LO inside one compact package.

Models: AUCXXXX, ADCXXXX, LO-MIX100, LO-MIX101, LO-MIX200, LO-MIX201, LO-MIX300, LO-MIX301, LO-MIX400, LO-MIX401

Datasheet

[Up Converter](#)

[Down Converter](#)

[LO-MIX](#)  Mixer with LO inside

MULTIPLIERS



Product features

Multipliers

MD offers X2, X3 and X4 multipliers with power output up to +20 dBm and high harmonic isolation (50 dBc minimum; 60-65 typical). MD multipliers offer low VSWR (2.5:1 max), with connector options 2.92 mm, 2.4 mm or 1.85 mm.

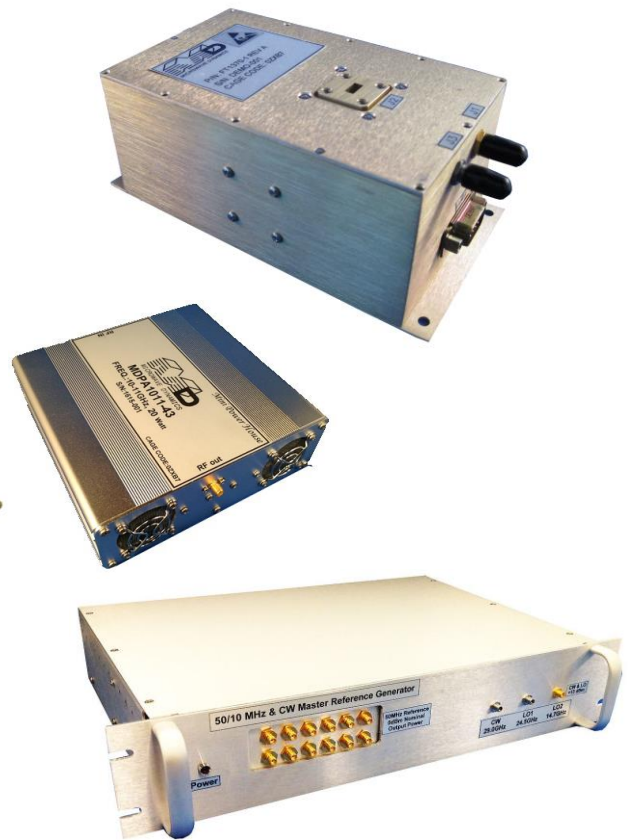
Models: A2X, A3X, A4X

Datasheet

[Millimeter Wave Mult](#)

[High Isolation Mult](#)

SUB-ASSEMBLIES



Product features

Sub-Assemblies / Integrated MW Assemblies

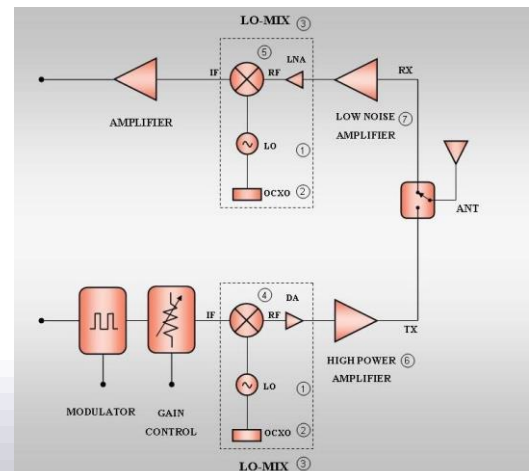
MD offers rapid turnaround R & D for customized products designed to meet unique customer requirements for microwave components and subsystems. MD excels in customization with our innovative designs, high-precision engineering, and hands-on technical support throughout the life of the project. A typical transceiver using all MD products, packaged to meet customer requirements, is available.

Models: ASSY-XXXX-XX or Custom

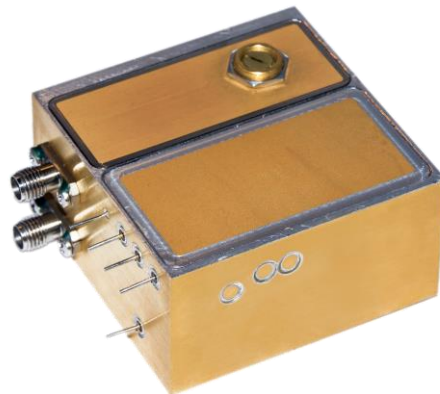
Datasheet

Sub-Assembly

Flight Hardware



SPACE QUALIFIED PARTS



Product features

Space Qualified / Hi-Reliability Parts

Capabilities

Models: Oscillators, Amplifiers, Up/Down-converters, Custom Sub-assemblies

Screening / Testing : Element of Evaluation, Group A,B,C and D, Device Screening, Qualification Testing, Acceptance Test

Program Management

AS9100 Rev D Qualified Quality System

MD conforms with Quality Management System standard ISO 9001:2015 and AS9100D (Technically Equivalent to EN 9100:2016 and JISQ 9100:2016) and has been audited in accordance with the requirements of AS9104/1:2012.

SPACE HERITAGE

- Space qualified PLDRO for AURA (EOS CH-1) Satellite with NASA (2003)
- H-IIB Rocket with JAXA and Mitsubishi (2009)
- Dual redundant space qualified DRO with Orbital Sciences
- MetOp-SG Study Program with ESA (2015)
- Space qualified up/down converters with John Hopkins University
- MARS 2020 Study Program with JPL
- Mini DRO-1500 for GEMS Low-orbit Radiometer Satellite for Orbital Micro Systems (2019)
- Northrop Grumman ASL/QML Fully Class K DRO

Datasheet

Space Hardware 

DRO-1087 Space Qualified DRO 

ABOUT US

- Incorporated in 1993
- 100% U.S. Made
- SBA Small Business Certified
- ITAR Certified
- Hybrid/discrete assembly
- Full test & measurement systems
- 10,000 ft² facility
- 10k & 100k lab
- Solo Source Military and Space Supplier
- 48 Hour Delivery on STD catalog items
- Full Documentation Control & Quality Assurance Systems
- AS9100D CERTIFIED
- Rapid turnaround R&D and excellent customer service on customized products
- Design, engineering & manufacturing in a non-segregated U.S. facility





CONTACT US

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- RFQ: <http://microwave-dynamics.com/request-a-quote/>
- ADDRESS: 16541 Scientific Way/ Irvine, CA 92618

Request a Quote

48 HOUR DELIVERY

- SHORT LEAD TIME for non-standard (non-STD) and custom products
- **48 HOUR SHIPPING:** Shipping for standard (STD) products, free-running DRO, external ref phase locked DRO and certain internal ref DRO's. Whether you have a customer changing frequency just before shipment or a failure of some kind, check with us on our 48 hour shipment.
- **RESTRICTIONS:** Offer applies to Microwave Dynamics' Free-Running DRO's and PLDRO's with an output frequency divisible by 100 MHz. The customer, in most cases, must accept Microwave Dynamics' standard specs. Quantities will generally be limited to the 1-4 piece range.
- **CONTACT US** regarding larger quantities. Credit must be previously established or order prepaid. Although every effort will be made to ship within 48 hours (working days), Microwave Dynamics will not be held liable for delays beyond our control. 48 hour time period will begin the day after the order is placed.

DATASHEETS

The following pages contain MD Datasheets for all standard product. Please inquire for any further information on our products and/or if your requirements are not met by those set forth in the datasheets. Engineering will review your specs and let you know if we can provide a solution. For high quality copies of our datasheets, please download each individually from our website at <http://microwave-dynamics.com/product/>.