

*Commercial and Industrial
Hi-Reliability Crystals & Oscillators*



FMI

FMI offers innovative and efficient Frequency Control solutions that have been developed for demanding Commercial | Industrial Applications.

Our latest product offerings are available on our website. Although it is updated regularly, only the most standard products are shown. If you don't see it, please inquire, there is a great chance that we have the right solution or the desired product that you require.



Crystals, Oscillators, Frequency Control & Timing Devices

Offering engineered solutions that are reliable, innovative, and focused on the ever expanding customer requirements for contemporary industrial frequency and timing control.



FREQUENCY MANAGEMENT | International

The FMI Quality System is Certified to ISO 9001:2008

Our unique design solution advantages:

- **Smallest Package | Footprint**
- **Wide Frequency Range**
- **Widest Available Operating Temperature Ranges**
- **Lowest Current & Low Voltage Designs**
- **Unparalleled Design, Reliability, & Customer Service**
- **Fast Turn Around for Custom Prototypes**
- **Solutions for Every Temp. Range; -55°C to +150°C**



www.FrequencyManagement.com

Tel: 714 373 8100 | 800 800 9825 [XTAL]

FMI is a global leader in the design and manufacturing of high reliability – extreme environment and commercial grade – frequency control and hybrid electronic solutions. Committed to the industry's highest level of service and total customer satisfaction, we help our customers achieve competitive advantages and strategic differentiation in their product applications.

Our foremost commitment is to complete customer satisfaction. This ideal is consistently reflected throughout our superior product performance, QA systems, prompt product delivery and effective customer assistance.

As an industry leader focusing on reliable and compelling design solutions, our engineers are well positioned to respond to all custom requirements. Contact us and let our engineers help you with all of your standard and custom specifications.

Quality Assurance Program

FMI's dedication to customer satisfaction is the backbone of our total quality assurance program. Our 100% testing and inspection procedures are compliant to:



ISO 9001-2008 (Registered - Certified Quality System)
MIL-STD-790 (Certified and Qualified)
MIL-PRF-3098
MIL-PRF-55310 (QPL - Qualified & Approved)
MIL-STD-883
MIL-PRF-38534
MIL-STD-202
ESD: JESD625-A



**Commercial | Industrial
Medical | Wireless | Automotive
Product Offering**



Commercial

Capabilities & Features

- Crystals, Oscillators, VCXOs, TCXOs, VCTCXOs, OCXOs
- Smallest Package Footprints
- High-Reliability
- Operating Voltage- 1.2V, 1.8V, 2.5V, 3.3V, & 5V
- Temperature Range -55°C to +150°C
- Tight Stability Over Temperature
- Full Class B Screening in compliance with MIL-PRF-55310 Oscillators / MIL-PRF-3098 Crystals
- Fast Turn Prototypes
- CMOS, Sine-wave, PECL, & LVDS
- Low Phase Jitter
- Wide Frequency Range
- Low Cost / High Volume
- Low Long Term Drift (aging)
- Rugged | Configurable
- Industry Standard Package & Pin Connections

Crystals Oscillators VCXOs TCXOs VCTCXOs OCXOs



Applications | Markets Served

Transportation
Medical
Wireless
Sensors
High-Speed Networking

Test & Measurement
Fiber Optics
Microwaves & RF
Motion Control
GPS
High Resolution Display

Smart Utilities
Data Storage
Embedded Processing
Energy
Automotive

Featured Products



Oscillators

Crystal - 2 x 1.6 mm Ceramic SMD



FMXMC16S Series
24 MHz to 60 MHz
-40°C to +85°C
±10 ppm / ±10 ppm

XO - 2.5 x 2.0 mm Ceramic SMD



FMXCS20 Series
CMOS, 1-50 MHz
-40°C to +85°C
+1.8V, 2.5V, 3.3V

VCTCXO - 3.2 x 2.5 mm Ceramic SMD



FMVTCXS2 Series
Clipped Sine
13 MHz to 52 MHz
to ±0.5 ppm
-40°C to +85°C
+1.8V, 2.5V, 3.0V

Crystal - 2 x 1.2 mm Ceramic SMD



FMXMC12S Series
32.768 KHz
-40°C to +85°C
±20 ppm

Crystal - 13 x 5 mm HC-49/US SMD

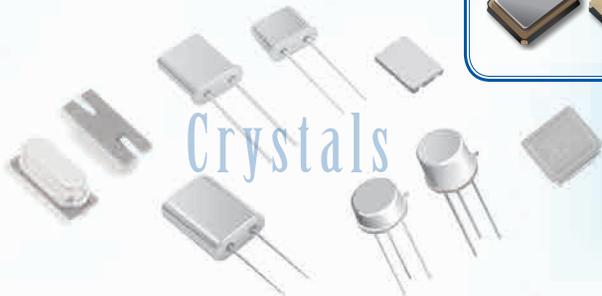


FMXMSB Series
Tight Stability Crystal
3.2 MHz to 70 MHz
±10 ppm / ±10 ppm

XO - 3.2 x 2.5 mm Ceramic SMD



FMCHTSW Series
CMOS, 32.768 KHz
-55°C to +150°C
+1.8V to +5.5V



Crystals

Defense | Avionics | Aerospace

Extreme Environment MIL & Space Grade Products

- Extreme Operating Conditions; Offering most Rugged Solutions
- Targeting both New System Designs and Legacy Replacements
- Complies to Operating Conditions Beyond Industry Standards
- Wide Operating Temperature Range | Tight Stability
- Smallest Available Product Footprints
- Lowest Available Power Consumption
- Fixed, Variable, & Multiple Frequency
- Sensors and DSP Applications
- High-Performance - Low Phase Jitter
- COTS & Customized Solutions
- Deep Space & Commercial Space Solutions
- QPL per MIL-PRF-55310 | Various Screening Options | DC to 950 MHz
- Solutions for new Jet Engine Controllers and Sensors at Higher Temperatures



Oil & Gas | Energy Exploration

Extreme Environment Products for Oil, Gas, Geothermal

We are proactive in planning new solutions for the next generation down-hole, geothermal, and other extreme environment system applications.

The US DOE selected FMI to develop then next generation of crystal oscillators for their geothermal tools. This has allowed FMI to set the industry standard for the highest crystal and oscillator operating temperatures.

- Lowest Power Consumption
- Longest Operating Life at the Highest Temperature
- Smallest Product Foot Prints
- Best Available Frequency Stability vs. Temperature Range Options
- Highest Operating Temperatures
- Industry Standard and Custom Operating Voltages
- Industry Standard Packages and I/O Connections
- Widest Frequency Range | DC to 110 MHz
- Wide Range of Product Offerings
- Temperature Sensing Devices
- Customized High Temperature MCM & Sensor Driver Modules
- Globally Recognized High Temperature Products and Performance



The information provided in this brochure reflects our Commercial & Industrial products and manufacturing capabilities. Our web site offers up-to-date product data sheets for a wide range of frequency control solutions for general purpose commercial, industrial, and wireless applications.

www.FrequencyManagement.com



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LOW COST | HIGH VOLUME | FAST DELIVERY
EXCELLENCE IN CUSTOMER SERVICE
QUICK TURN PROTOTYPES
ENGINEERING SUPPORT



High quality, competitive frequency control products for broad based volume applications meeting the most stringent cost / performance trade offs.



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FMI

World Class Manufacturing and First Class Customer Service

CRYSTALS
OSCILLATORS
VCXOs
TCXOs
VCTCXOs
OCXOs

Located within easy reach from 3 major airports, our headquarters is located in Huntington Beach, CA with more than 16000 sq. feet of operating space for manufacturing and test equipment, clean room, & administration.

