DATASHEET

RFM3102 Ultra-Wideband Microwave Dual Downconverter

Versatile and scalable 3U OpenVPX™

- **Rugged, compact and full open-systems compliance**
- **Excellent phase-noise performance and high dynamic range**
- **System lockable, built-in generation or external reference points**

The ultra-wideband RFM3102 is a dual downconverter optimized for advanced electronic warfare (EW) applications with high-performance operation from 6–18 GHz, low phase noise and an internal local oscillator (LO). Compliant with the OpenVPX™ (VITA 65) architecture standards to support rapid system integration, this modular dual downconverter also defines the mechanical and electrical interfaces, simplifying product installation and enabling low-cost system upgrades.

This ruggedized module is packaged in a low-SWaP, compact 3U OpenVPX form factor and contains highly integrated up and down conversion blocks. It is ideal for broadband, volume-limited applications requiring high performance in harsh environments. Developed as a microwave tuner for demanding EW applications, the RFM3102 is also an ideal option for ELINT and beamforming systems, as well as any application requiring broadband performance in a flexible, open-architecture-compliant package.

Open system architecture for RF processing - OpenRFM

The challenges of digital and RF convergence, spectrum-fusion and maneuverability, complementary system interoperability and affordability are solved with OpenRFM. This open architecture approach standardizes and streamlines the design, integration and testing of RF and digital capabilities within embedded processing subsystems that are compatible with prevailing computing industry standards.

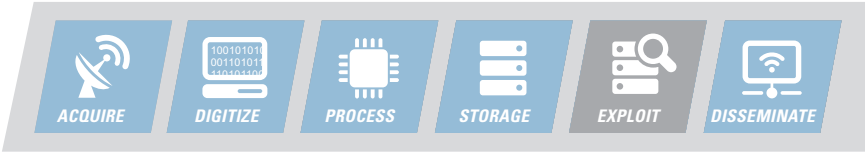
Mercury Systems is the better alternative for affordable, secure processing subsystems designed and made in the USA. These capabilities make us the first commercially based defense electronics company built to meet rapidly evolving next-generation defense challenges.

Open RFM

- Standardizes the electromechanical, software, control plane and thermal interfaces used by integrated microwave assemblies (IMAs) to streamline the design and integration of RF and digital capabilities.
- Is both modular and scalable in its approach to design, test, and control plane practices for interfacing RF and digital subsystems within embedded architectures and is wholly interoperable with ANSI/VITA standards including 3U and 6U OpenVPX and VME/VXS.
- Defines standard interfaces and leverages IP reuse across applications to drive overall investment value, efficient SWaP-C utilization and expedited time to solution/market.

Subsystem building blocks

Mercury's OpenRFM downconverters, processing and A/D conversion building blocks are easily integrated into low-risk, turnkey, real-time signal processing subsystems. These subsystems comprise complete receiver/analysis solutions for communication and electronic intelligence, enabling practitioners to react quickly from resulting information.



Signal collection, digitization and processing domain expertise

Mercury leverages 35 years of high-frequency wide-bandwidth signal acquisition, digitizing and decimation experience to produce performance-optimized and balanced RF processing subsystems. We commit our proven hardware and software expertise to interoperable, scalable open-system components that minimize risk and utilize the best commercial technology to drive performance and affordability. Our application and system engineers integrate these proven components in to sophisticated EW processing subsystems that can be refreshed at the speed of technology.

Specifications

Packaging

Format/size: 3U OpenVPX, single slot
Power: 45W maximum
Control interface: 1GbE (consult factory for more options)
Weight: <1kg (rugged air-cooled)
Commercial and rugged air-cooled or rugged conduction-cooled
OpenRFM interoperability

RF Independent Downconverter Specifications

RF input coverage: 6GHz to 18GHz
Noise figure: 14 dB typical (17 dB max)
Gain: (max RF to IF) 25 dB
Max RF: (without damage) 20 dBm
OP1dB (with max gain) 16 dBm
OIP3 (with max gain) 30 dBm

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Mercury Systems – Innovation That Matters®
Mercury Systems is the leader in making trusted, secure mission-critical technologies profoundly more accessible to the aerospace and defense industries. Optimized for customer and mission success, our innovative solutions power more than 300 critical aerospace and defense programs. Headquartered in Andover, Mass., and with manufacturing and design facilities around the world, Mercury specializes in engineering, adapting and manufacturing new solutions purpose-built to meet the industry's current and emerging high-tech needs. Our employees are committed to Innovation that Matters®. To learn more, visit mrcy.com, or follow us on Twitter.

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