

RFM3112 Ultra-Wideband Microwave Dual Downconverter

Versatile and scalable 3U open architecture

- **SOSA-aligned architecture**
- **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 RFM3112 is a dual downconverter optimized for advanced electronic warfare (EW) applications with SOSA-aligned architecture. The dual downconverter offers high-performance operation from 6-18 GHz, low phase noise and an internal local oscillator (LO). The open architecture design supports 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 compact 3U SOSA-aligned form factor and contains highly integrated 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 RFM3112 is also an ideal option for ELINT and beamforming systems, as well as any application requiring broadband performance in a low-SWaP, open-architecture-compliant package.

SOSA alignment

Built to meet SOSA specifications as they emerge, open systems-focused users can exploit the architecture commonality benefits immediately. The design streamlines the deployment of the latest technology by increasing efficiency and maintaining interoperability and configurability. Open architecture alignment is achieved without compromising Mercury's high standards for security and ruggedness.

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.

Subsystem building blocks

Mercury's SOSA-aligned 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 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
Attenuation	31 dB in .5 dB steps
Linear dynamic range	91 dB (with 1MHz BW)
Single-tone, signal related spurious	-60 dBc (@ -15 dBm Input)
Single-tone, internally generated spurious	-80 dBc (@ -15d Bm Input)
IF output center frequency*	1.875GHz
IF bandwidth	1.375GHz to 2.375GHz
IF band flatness	+/-1.5dB typical
Tuning speed	25 usecs typical (To within 10 kHz)
Tuning resolution	10MHz
VSWR (In/out)	2:1
IF Rejection	-70dBc
Image Rejection	-70dBc
LO Leakage	-80dBm typ (-70dBm max)

What SOSA Delivers



Speed

Rapid technology insertions at the speed of innovation



SWaP

Effectively addresses size, weight and power constraints (SWaP)



Low Cost

Reductions in sustainment costs enable more and better systems to be deployed



Competition

Increased competition to drive affordability and innovation



Compatibility

Enhanced compatibility so systems can scale across platforms and domains



Security

Improved security to enable better threat mitigation

Need more help? Need a variant of this product?

Contact Mercury's Mixed Signal Engineering team at: digital.rf@mrchy.com or visit www.mrchy.com/sosa for detailed listing of SOSA-aligned products.

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 mrchy.com, or follow us on Twitter.

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INNOVATION THAT MATTERS®

CORPORATE HEADQUARTERS

50 Minuteman Road • Andover, MA 01810 USA
(978) 967-1401 • (866) 627-6951 • Fax (978) 256-3599

MERCURY SYSTEMS ESP

555 Discovery Drive NW • Huntsville, AL 35806 USA
(256) 721-1911

