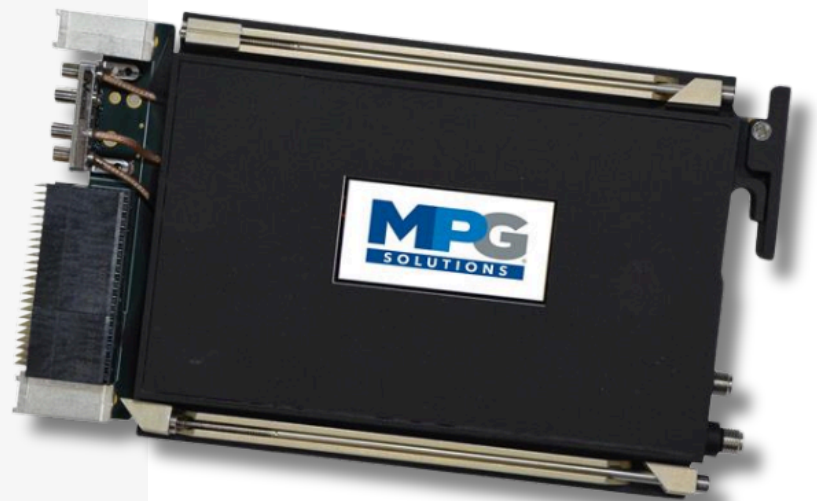# EW Tuner

High Performance Wideband Superheterodyne Tuner

This compact, high performance microwave tuner features front end preselection and multi frequency conversion to reject unwanted signals within a 1GHz wide instantaneous bandwidth at the lower intermediate frequency for easier processing of complex modern wideband radar signatures. It offers performance comparable to larger superheterodyne receivers and is ideal for ESM/ELINT applications.
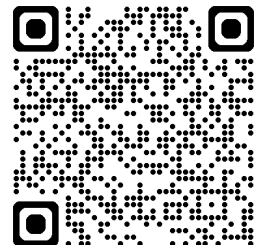
Standard SOSA-aligned open VPX architecture offers a scalable, modular design for scalable systems, optimizing performance, reducing costs and ensuring high speed data-transfer.

SPECIAL FEATURES

- Wide RF Input (0.5 to 18 GHz)
- High Resolution (1 MHz)
- NF 14 dB (typical)
- 1GHz Wide Instantaneous Bandwidth
- 50 dB 2 tone SFDR
- Fast Tuning
- Compact Single Slot 3U Form factor
- SOSA Aligned Open VPX Interface
- Other form factor and control option available
- Phase Coherent Multi Channel Configuration Option Available
- Suitable for advanced ELINT, SIGINT & RESM operations

Connect with our engineers, anytime!

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ph. 410-749-2424   GENERAL INQUIRIES
support@mpgdover.com

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SPECIFICATIONS:

Operating Frequency:	0.5 — 18 GHz (40 GHz extension available via option of additional 3U card)
Frequency Resolution:	1 MHz
IF Output:	1 GHz BW at 1.7 GHz IF (User selectable BW 250 MHz, 500 MHz & 1GHz)
Passband VSWR: (In/Out)	2.0:1 Nominal, 2.5:1 max
Gain	20 ±2 dB
Noise figure	14 dB Nominal (16 dB max)
P1dB: (Input)	-5 dBm min
Spurious Free Dynamic Range: (1 GHz Noise Bandwidth)	50 dB min
Tune Speed:	10µs
Phase Noise:	1 kHz -85 dBc/Hz 10 kHz -90 dBc/Hz 100 kHz -95 dBc/Hz 1 MHz -95 dBc/Hz 10 MHz -115 dBc/Hz
Interface:	SOSA Aligned Open VPX (Available as conduction cooled rear panel RF connection or card rail front panel RF connection)
External Dimensions: excluding connectors	Single Slot 3 U form factor
Operating Termperature:	-40ºC to +80ºC

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MODULAR ARCHITECTURE

MPG's EW Tuner consists of following three highly integrated building blocks:

Front End Preselector: This component is responsible for filtering incoming signals. It utilizes thin-film filtering technology to achieve exceptional broadband filtering. By selectively allowing specific frequency ranges to pass through, it ensures that only relevant signals reach the subsequent stages.

Local Oscillator (LO): The LO generates the reference frequency needed for down-conversion. In this design, a novel concept has been employed to achieve a small size while maintaining high performance. The LO relies on DDS (Direct Digital Synthesis) technology, which allows precise frequency control. Additionally, micro-miniature proprietary microwave tunable filtering technology plays a crucial role in achieving the desired performance.

Down Converter: The down converter is responsible for converting the incoming high-frequency signal to a lower intermediate frequency (IF). The architecture and frequency plan have been carefully designed to maximize SFDR (Spurious-Free Dynamic Range) while still offering a wide Instantaneous Bandwidth (IBW). The flexibility in final IF output frequency and bandwidth ensures compatibility with various system-level implementations.

FUNCTIONAL BLOCK DIAGRAM

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