Inertial Labs
a VIAVI Solutions company

ANTI-JAMMING

CRPA ANTENNA SOLUTION FOR ASSURED POSITIONING NAVIGATION AND TIMING (A-PNT)

M-AJ-QUATRO PRIME

UP TO 70 DB
SUPPRESSION
WIDE-BAND
IN-BAND

- GPS L1, L2, L5
- GLONASS G1, G2, G3
- GALILEO E1, E5
- BEIDOU B1, B2
- QZSS L6
- IRIDIUM

ITAR FREE

The **M-AJ-QUATRO PRIME** Anti-Jamming Advanced Antenna System, designed and engineered for Assured Positioning, Navigation, and Timing across diverse and GNSS jammed, spoofed and denied environments. This system incorporates Controlled Radiation Pattern Antenna (CRPA) technology alongside state-of-the-art signal processing capabilities, delivering enhanced performance and accuracy for critical applications. The M-AJ-QUATRO PRIME Anti-Jam Antenna System is operational in all L1, L2, L5 and L6 GNSS bands.

BENEFITS

Superior Performance: low latency; high interferences suppression; all GNSS constellations: GPS, GLO, GAL, BDS, QZSS plus LEO IRIDIUM and all frequency bands: L1, L2, L5, L6 protection; adaptive digital nulling; jammer direction finding

Enhanced Accuracy: The CRPA technology minimizes signal distortions, resulting in superior GNSS positioning accuracy

Robust Performance: All functions in one single enclosure. Designed to maintain reliable performance in challenging and dynamic environments

KEY FEATURES

Optimized Signal Reception and Transmission

Radiation Pattern Control: The CRPA technology ensures that the antenna's radiation pattern is precisely controlled, optimizing both signal reception and transmission. This allows the system to focus on desired signals while minimizing interference from unwanted sources.

Compatibility

M-AJ-QUATRO PRIME is very easy to integrate solution and compatible with all produced by Inertial Labs single and dual GNSS antenna-based GPS-aided Inertial Navigation Systems and commercially available GNSS receivers

Enhanced Signal Integrity

Resistance to interference: the CRPA technology significantly improves the system's resistance to interference and jamming. By dynamically adjusting the radiation pattern, it can nullify or reduce the impact of interfering signals, maintaining high signal quality.

Mitigation of Multipath Effects

Multipath effects, where signals reflect off surfaces and create multiple signal paths, can degrade signal quality. CRPA technology mitigates these effects, ensuring that the strongest, most direct signal is used for positioning, thus enhancing overall signal integrity and accuracy.

Secure Signal Processing

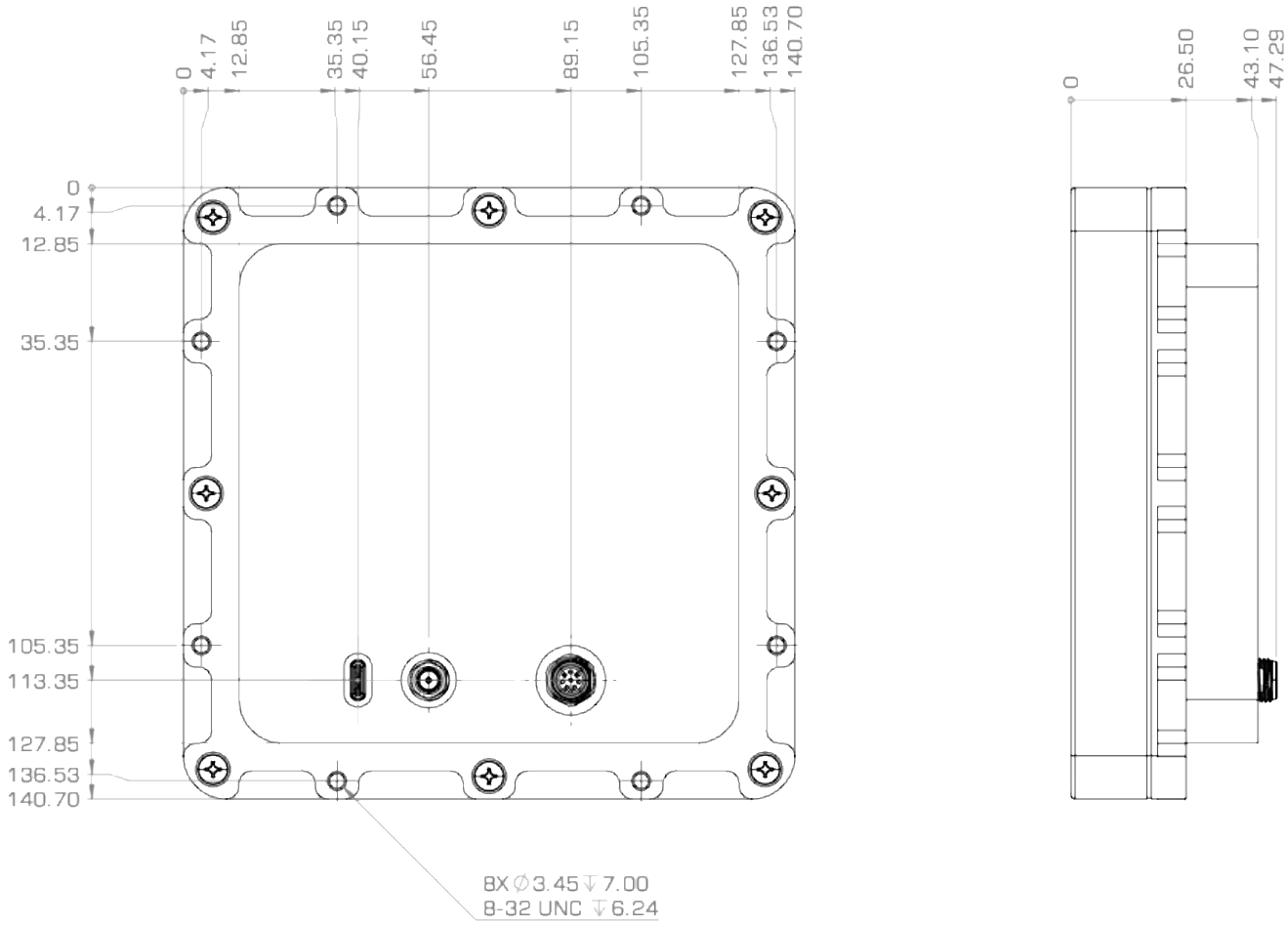
Incorporation of FPGA-Based Secure Signal Processing. Encryption and Anti-Spoofing: Utilizes FPGA technology to implement advanced encryption and anti-spoofing features, ensuring the integrity and security of GNSS signals.

Compliance with Stringent Security Standards. Defense and Sensitive Commercial Applications: Meets stringent security standards, making it suitable for defense and sensitive commercial applications requiring high levels of signal integrity and protection against unauthorized access and spoofing.

M-AJ-QUATRO PRIME Specifications

Size Weight and Power	Size: 140 x 140 x 43 mm
	Weight: 365g
	Power: < 30W
External Interfaces	Power: 12 to 32 V DC
	RF connectors: SMA output
	Data/Power connector: 25-pin Micro-D, MIL-DTL-83513
	Data interface: USB-C, RS-485, serial over USB-C
GNSS Performance	Bands: GNSS L1, L2, L5 Optional: GNSS L6 and LEO IRIDIUM
	Polarization: RHCP (AR< 3dB above 15 deg elevation)
	Gain: 2dBic > 15 deg elevation
	Interference sources: 3
	Suppression level: up to 70 dB
	Interference types: wideband, in-band
INS/GNSS compatibility	Any produced by Inertial Labs INS or commercially available GNSS receivers
Environmental	Operating temperature: -40degC to +85 degC
	Storage temperature: -45degC to +90 degC
	Altitude: >18000 feet AGL
	Shock & Vibration: MIL-STD-810
	EMC/EMI: MIL-STD-461

M-AJ-QUATRO PRIME mechanical drawings



Notes:
- Single enclosure for all functions
- All dimensions are in millimeters
- All dimensions within this drawing are subject to change without notice
- Customers should obtain final drawings before designing any interface hardware