



Serving the Missions of Tomorrow

MX12B MODE 5 IFF LEVEL 2B TRANSPONDER

CHALLENGE

The invasion of Ukraine by Russia has added to the already broad range of global security concerns, particularly regarding military forces of authoritarian states with advanced technological capabilities. This presents a significant challenge for the United States and its allies, requiring updated strategies, strengthened collaborations between states, and innovative technologies to determine the approach to current and future conflicts. So-called “Near Peer” adversaries possess similar hardware and technologies to our own. The ability to distinguish between friends and foes on the battlefield will be crucial in determining the outcome of such conflicts; in addition, situational awareness and airborne deconfliction solutions to expand airspace capabilities are ever more important for defense ministries. **Having a Mode 5, IFF Level 2B product, that is low SWaP and fully compliant with DoD AIMS Mk XIIB specification is crucial to minimizing fratricide and maximizing our air superiority.**



EXPECTED IMPACTS

Mode 5 Level 2B Identification Friend or Foe (IFF) solutions that are fully compliant with the Department of Defense (DoD) AIMS Mk XIIB specification are essential for effective military operations. The military can benefit from having a Mode 5 Level 2B transponder with ADS-B In and Out capabilities in a few different ways:

Increased Situational Awareness

In current combat environments crewed aircraft can't see drones and therefore must maintain tactical deconfliction via horizontal, vertical and/or temporal separation by a Joint Terminal Attack Controller or Airspace Manager. Adding Sagetech's Mode 5 Level 2B-Out to drones and Sagetech's Mode 5 Level 2B-In to helicopters and other crewed aircraft enables the Army and other defense services to use all their assets, including drones more effectively by enabling situational awareness and allowing for efficient tactical deconfliction.

Improved interoperability

Having a Mode 5 IFF transponder with ADS-B in/Out capabilities can improve interoperability between military and civilian aircraft. This can be particularly useful in joint operations with federal, state, local, and civilian agencies, such as law enforcement, search and rescue, and wildfires as well as military training missions. Furthermore, future hostilities will likely coincide

with civilian airspace usage, initially, making proper identification and classification of all airborne traffic crucial to eliminating civilian collateral damage.

Manned & Unmanned Teaming

Over-the-horizon and contested airspace operations will require robust avionics and autonomy packages and the ability for manned and unmanned teaming. Mode 5 IFF Level 2B in and out will enable encrypted surveillance and enable aircraft to autonomously deconflict while responding to Mode 5 Interrogations. When equipped with ACAS X-based DAA, the unmanned aircraft flights will have the ability to autonomously avoid collisions while providing IFF status and identity to airborne interrogators and other Allied airspace users.

Compliance with Civilian Airspace Requirements

To comply with civil airspace requirements for use during military training missions within the National Airspace System, many countries are transitioning to ADS-B, as the primary means of air traffic control, and most require military aircraft to be equipped with ADS-B Out. ADS-B In and Out allow military aircraft to integrate into National Airspace Systems safely and fully. The MX12B includes civilian ADS-B; therefore, there is no requirement to change hardware configuration once equipped with our product.

SOLUTION | MX12B MODE 5 IFF, LEVEL 2B TRANSPONDER

Sagetech's next-gen MX12B transponder is fully compliant with DOD AIMS Mk XIIB specification and is the **only all-in-one micro IFF transponder that offers ADS-B In and Out.**

We offer:

- One micro-box, full suite solutions for ease of use
- Complete with ADS-B In and Out
- Integration with major autopilots
- Pressure altitude encoder
- Antenna Diversity
- Communications flexibility: Ethernet, RS-232, RS-422
- Efficient aircraft integration
- Native compatibility with our ACAS X-Based Detect and Avoid
- STANAG 4193 Compliance
- Remote Zeroize

RESULTS

Compared to traditional Mode 5 Transponders, the MX12B offers:

- The only micro mode 5 transponder with Mode 5 Level 2B In and Out* capability
- 93% smaller (3.4"H x 2.25" W, 1.0" D)
- 10x lighter (190g without KIV Emulator)
- 6x less expensive
- Mode 5 Level 2B In enables passive reception to provide situational awareness of Mode 5 equipped aircraft.
- Integration with a wider range of avionics systems

** Mode 5 Level 2B Out available now, Level 2B In expected late 2024.*

NEXT STEPS

Our team can assist you with proven situational awareness solutions small enough for Group 2 military UAVs, but fully compatible with all requirements for manned aircraft. We are a fast, efficient, cost-effective solution, with 10+ years' experience serving militaries worldwide for no-fail missions.



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