

M424B1

MKXA AND MODE S IFF TRANSPONDER



The equipment is derived from a family of MkIIA (MkXII + Mode 5) equipment developed under the NGIFF program in order to provide a state of the art IFF capability.

Military identification is available with Modes 1, 2 and National Secure Mode (M4-like) can be achieved by means of an external GFE crypto or an internal cryptomodule according to Customer requirements (growth capability).

Compatibility with the latest ATC standards is provided by a Mode S (up to Enhanced Surveillance) that includes an ADSB-OUT capability. The equipment has been designed for all applications including avionic (fixed or rotary wings) and ships.

The transponder is packed in a rugged single LRU intended for hard mounting, and has the popular formfactor of APX 100.

Integration with the platform can be via 1553 Bus, ARINC 429 or RS485 interfaces, that are self configuring to allow a common IFF implementation on platforms with different architectures. A conventional Control Panel (M910N) is available for legacy applications.

MAIN FEATURES

- Full MkXA and Mode S capability
- Compatible with National Secure Mode
- Compliant to STANAG 4193, Ed2
- ADSB-OUT capability
- Multiple, self-configuring system interfaces

OPERATION

The equipment is fully solid state and of modular construction to facilitate maintenance. Replies are transmitted on two RF connectors to provide full diversity operation, supported by a receive section that provides two matched channels.

Multiple options are available in order to interface the Host platform; all interfaces are available in the same unit and are automatically selected at power-up.

These options are:

- MIL-STD-1553 to interface an avionic bus
- RS 485 to interface an FMS or dedicated Control Panel
- ARINC 429 to interface an FMS

For integration on legacy platforms that do not include a Data Bus or FMS a Control Panel (M910N) has been developed; it has the same footprint of existing MkXII panels in order to facilitate aircraft upgrade.

For Mode S operation the equipment is capable of providing Enhanced Surveillance operation with its own interfaces, without the need of an additional ADLP; an Extended Squitter capability is also provided to support ADSB-OUT.

The equipment is also capable of operating in conjunction with a TCAS II (V7) interrogator. An ACC function is included in Modes 1 and 3 to facilitate preflight initialization and reduce User workload (when operating in association with the M910N Control Panel).

Extensive BITE is provided, including Power-Up, Continuous and Initiated BIT; test results and diagnostic information are available on the control interface.

CONFIGURATION

In addition to the IFF equipment, a transponder system includes a mounting tray and two omni antennas (Top, Bottom) for diversity operation.

For applications where the antennas are not already present in the platform, the company can provide a complete configuration with OEM components.

In order to support the system, we can provide a full range of solutions covering:

- Diagnostic SW (on OTS platform) for troubleshooting, calibration and Operational SW loading
- Special Test Equipment
- Automatic Test Equipment

OPERATING MODES

- MXA (1, 2, 3/A, C) i.a.w. STANAG 4193 Part I to III; ACC for Modes 1 and 3
- NSM i.a.w. STANAG 4193 Part I to III, embedded or external crypto
- Mode S (Enhanced Surveillance) i.a.w. STANAG 4193 Part IV and ICAO10 (Am 77), including Extended Squitter and TCAS II (V7)



TECHNICAL SPECIFICATION

- System Interface: BUS-1553B, ARINC 429, RS 485
- Sensitivity: -78dBm 1030MHz SIF, Mode 4
- Output Power: 27dBW 1090MHz
- Reliability: 3200h ARW 40°C, i.a.w. MIL-HDBK-217F
- Maintainability: Mtrr < 10m LRU level
- Testability: 95% fault isolation 2 SRUs
- Environmental conditions: MIL-STD-810E
- Operating temperature: -40°C +71°C, -54°C after warm-up
- Electromagnetic compatibility: MIL-STD-461E
- Dimensions: APX 100
- Weight: < 6.5Kg
- Input power: 28 VDC i.a.w. MIL-STD-704D
- Cooling: No cooling air is required
- Mounting: Hard mounted

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