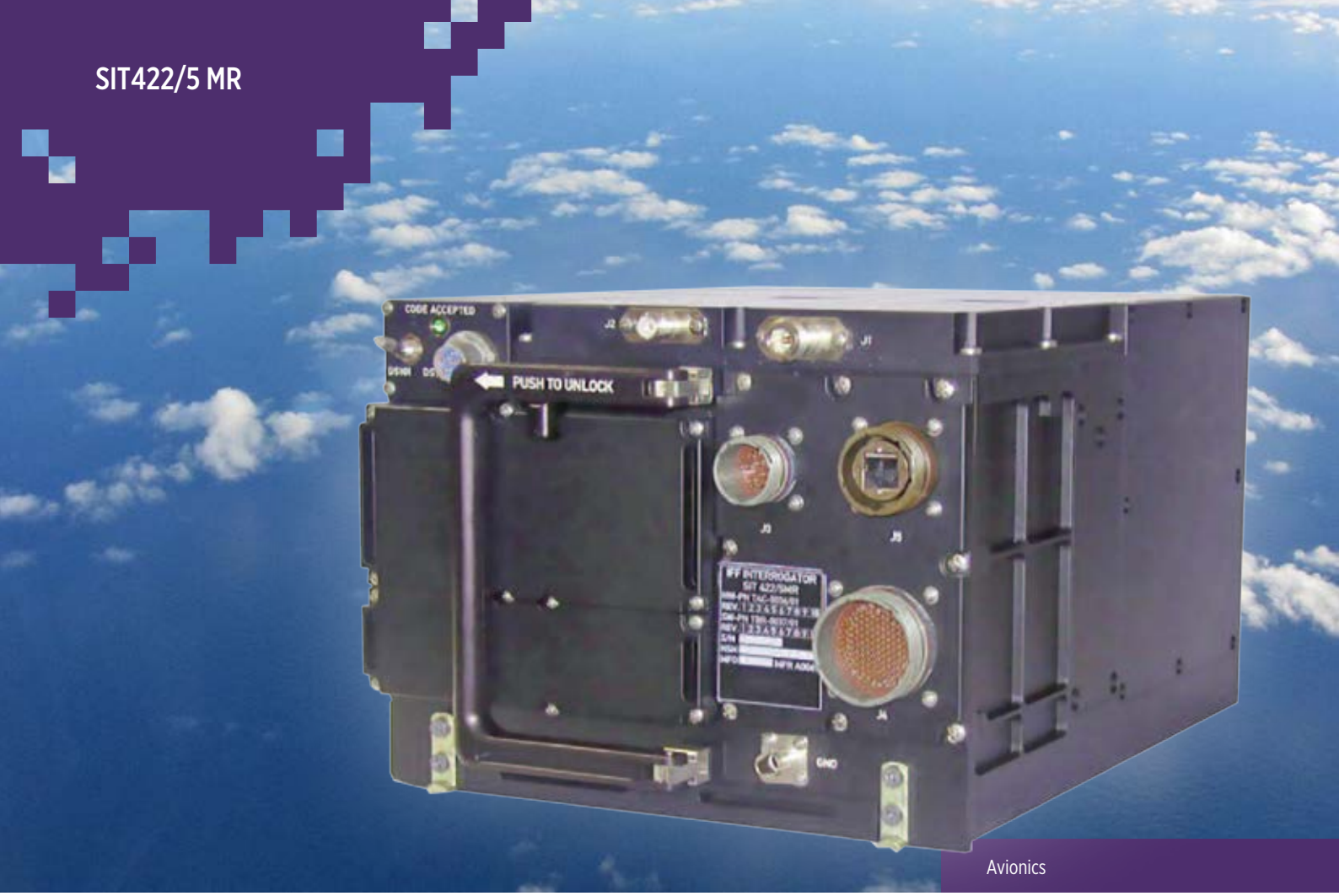
SIT422/5 MR



Avionics

MKXIIA/MS SURFACE INTERROGATOR

The SIT422/5 MR is part of a family of MkXIIA (MkXII + Mode 5) and Mode S interrogators developed under the NGIFF program in order to provide a state-of-the-art IFF capability.

Military identification is available with Modes 4 and 5, supported by an embedded crypto module entirely designed by the company and qualified by NATO Authorities (SECAN). Variants of the equipment can be provided for non-NATO applications, with a M4-only or National Secure Mode capability.

Mode S is also provided in order to monitor civilian air traffic for Situational Awareness purposes. The equipment has been designed for surface applications. Typical applications are medium/long range air systems.

The interrogator is packaged in a rugged single LRU, intended for hard mounting, it needs forced cooling; integration with the platform is mainly via Ethernet.

The equipment is currently in use on mobile radar systems by NATO and Coalition Nations.

MAIN FEATURES

- Full MkXII, Mode S and Mode 5 capability
- Embedded crypto certified by SECAN
- Enhanced Surveillance Mode S operation with dual TX
- Monopulse processing
- Digital plot extractor and friend evaluator
- Ethernet Control/Target Report interfaces
- Certified by DoD AIMS

SIT422/5 MR

OPERATION

The equipment is fully solid-state and of modular construction to facilitate maintenance. A dual channel transmitter is included to provide full ISLS operation for Mode S surveillance. The receive section provides two matched channels to support both RSLS and azimuth calculation capabilities.

Multiple options are available to schedule interrogations, including continuous challenge, multi-sector and on target operation. Fully controllable range filtering is available in all modalities.

Data processing is hosted in an open architecture set of boards based on programmable hardware and standard microcontrollers implementing the following main functions:

- Fully automatic interlace of interrogation Modes, based on platform configuration constraints, including SuperMode capabilities
- Azimuth determination based on Monopulse processing, supported by a calibration facility
- Friend evaluation (in M4 and M5) to improve identification reliability
- Plot extraction providing coordinates, target ID, full decode of replies and special codes processing (Emergency, I/P)

Control of the interrogator is via an Ethernet interface. Extensive BITE is provided, including power-up, continuous and initiated BIT.

Test results and diagnostic information are available on the control interface.

CONFIGURATION

An interrogator system includes, in addition to the IFF equipment, a sum/difference directive antenna used to send interrogations and receive replies.

These antennas can be:

- Integrated into the radar
- Separate but mechanically mounted on the radar
- Independent

For applications where the antenna is not already present in the platform, we can provide a complete configuration with OEM components.

In order to support the system, the company provides a full range of solutions covering:

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

TECHNICAL SPECIFICATION

Operating Modes	MXA (1, 2, 3/A, C) i.a.w. Stanag 4193 Part I to III Mode 4 i.a.w. Stanag 4193 Part I to III, embedded or external crypto Mode S ELS and EHS i.a.w. Stanag 4193 Part IV and ICAO 10 (Am 77) Mode 5 Level 1 and 2, i.a.w. Stanag 4193 Part V and VI; embedded crypto
System Interface	Ethernet
Sensitivity	-79dBm @ 1090MHz SIF, Mode 4, Mode S
Output Power	>31dBW @ 1030MHz
Reliability	>8600h @ GF, 35°C
Maintainability	Mttr < 10m @ LRU level
Testability	95% fault isolation @ 2 SRUs
Environmental conditions	Mil-Std-810E
Operating temperature	-40°C to +71°C (-54°C after warm-up)
Electromagnetic compatibility	Mil-Std-461C
Dimensions (W x H x D)	256mm x 194mm x 324mm
Weight	<19Kg (with embedded crypto)
Input power	15V 400Hz i.a.w. Mil-Std-704A 180W (max)
Cooling	Cooling air is required
Mounting	Hard mounted

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