



TSC 2050

Digital IFF transponder



Identification Friend or Foe

- STANAG 4193 & DoD 97-1000
- Modes 1, 2, 3/A, C, S and 4
- Mode S level 3
- Mode 5 growth
- Automatic Code Change (ACC)
- Supports interface to TCAS II
- ADS-B capability
- MCAS growth
- MIDS compatible
- Diversity processing
- 1553 bus and/or remote control unit
- Appliqué or external crypto
- Pre-programmed interfaces for major platforms



TSC 2050

PRESENTATION

The TSC 2050 is an advanced remote controlled Digital IFF Transponder suitable for all airborne and naval platforms.

Its low volume and ruggedized design is ideally appropriate for the replacement of the APX-100 (V) class of transponders.

The TSC 2050 is available in many configurations including:

- Standard MKXII Discrete Remote control interface
- MKXII/Mode S RS 485 Remote control interface
- 1553 B Remote control interface (optional)

Each of the hereabove configurations can be fitted with either an external or an applique crypto computer.

The TSC 2050 provides full compliance with STANAG 4193 and DoD 97-1000 as well as proven growth to Mode 5.

Depending upon the host platform sensors suite, the TSC 2050 offers up to the full Mode S Level 3 capability. Interface with ATC related peripherals (Air Data Computer, Enhanced Surveillance, TCAS) is provided by means of Arinc 429 I/O ports.

The ADS-B Capability is implemented in the transponder and requires geographical position data for operation.

TECHNOLOGY

Thanks to the use of DSP, FPGA and microprocessor technology, all MKXII/Mode S processing and I/O functions have been implemented on only three boards, improving significantly the reliability.

As an option, the TSC 2050 can be fitted with appropriate filtering and processing devices ensuring MIDS compatibility.

Interfacing the TSC 2050 with the platform is greatly simplified by having interface configuration features and processing parameters easily programmable through the equipment serial port.

TSC 2050's future growth and performance improvements are facilitated by chassis growth capabilities, software based architecture and memory provisions which ensure a high level of flexibility and versatility regarding either future upgrades such as Mode 5 and MCAS/ADS-B receiver platforms adaptation requirements.

TESTABILITY

Each SRU is fitted with a powerful BIT ASIC detecting failures down to the chip level and reporting to the Central Processing Unit, according to the latest IEEE 1149.1 BIT techniques.



GENERAL CHARACTERISTICS

Transmitter: Solid State

Frequency: 1090 +/- 0.5 MHz

Output Power: 27 dBW @ 1% Duty Cycle

Receiver: Dual channel superheterodyne

6 dB Bandwidth: > 8 MHz @ 1030 +/- 0.5 MHz

Minimum Triggering Level (MTL): - 77 dBm typical

Dynamic Range: > 55 dB

Processing: DSP, FPGA & Microprocessor, STANAG 4193 & ICAO Annex 10

- Modes: 1, 2, 3/A, C, S Lev.3, 4 /Secure

- Decoder: 3 Channels: MKXA, M 4, Mode S

- Diversity: < 3 dB comparison threshold

- AOC: Cross MKXA & M 4, Mode S, Automatic Code Change (Optional)

- Mode 5 Growth: 2 slots for RF & digital SRUs

Interface:

- Control: Discrete, RS 485, 1553B

- Peripherals: Gillham, ADC, ADLP, TCAS, ADS-B, enhanced surveillance

Crypto: Appliqué or external, (M 4/Secure, M5)

BITE: PBIT, CBIT & IBIT

- Passive Monitoring: Power, VSWR, T°, processing

- Active Monitoring: Sensitivity, Decoding, Encoding, Power, VSWR

PHYSICAL

Dimensions: (W x H x D) 136 x 124 x 212 mm

Weight: 4 kg

Power requirement: 28 V DC @ 1.2 A typ.

ENVIRONMENT

Temperature: Operating - 40°C to +71°C

Altitude: 70 000 ft

Shocks, Vibrations: MIL STD 810 E

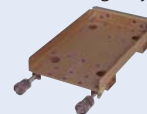
EMC: MIL STD 461C & 462 C

OPTIONS & ANCILLARIES

CBU 402
Control Unit



MTR401 / MTR 403
Mounting trays



QRTK-3 or TSK 4035
Crypto computer



CBU 404
Emerg. Control Unit

Thales

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