



TSC 1430

Lightweight, Compact Identification Friend or Foe (IFF) Transponder



- Specifically Designed for UAVs and Light Helicopters
- STANAG 4193 and DoD 97-1000
- Modes 1, 2, 3/A, 4/Secure, C, S Level 2
- Mode 5 Ready
- Diversity Processing
- External or Appliqué Crypto

The Smallest and Lightest IFF Transponder in the World



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Lightweight, Compact Identification Friend or Foe (IFF) Transponder

PRESENTATION

The TSC 1430 is an advanced remote controlled MKXIIA/Mode S Digital IFF Transponder. Its low-volume, low-weight, and low-power consumption design is ideally suited to tactical Unattended Airborne Vehicles (UAVs) and light helicopters.

The TSC 1430 is available in multiple configurations:

- Discrete remote control interface
- RS 485 remote control interface
- 1553B remote control interface (optional)

Each of the above configurations can be fitted with either an external or appliqué crypto computer.

The TSC 1430 provides full compliance with the STANAG 4193 and DoD 97-1000 for all aircraft flying up to 15,000 feet. Mode 5 can be activated through software loading.

The TSC 1430 is qualified in accordance with the latest ICAO Annex 10 Amendment 77 requirements. Depending upon the host platform sensors suite, the TSC 1430 offers up to the full Mode S Level 2 capability.

TECHNOLOGY

Thanks to the use of DSP, FPGA, and microprocessor technology, all MKXIIA/Mode S processing and I/O functions have been implemented on only two boards, improving the reliability significantly. The latest technology used in the TSC 1430 has drastically reduced the weight and size of the equipment. This gives the opportunity for the platform manufacturer to increase the payload or the mission duration of the platform for tactical UAVs and light helicopters. Interfacing the TSC 1430 with the platform is greatly simplified by having interface configuration features and processing parameters easily programmable through the equipment serial port.

TESTABILITY

Each smallest repairable unit (SRU) is fitted with powerful BIT detection for failures and reporting to the central processing unit.

ANCILLARIES

An IFF Message Simulator (IMS) that fully reproduces the message protocol of the TSC 1430 is available. This allows platform suppliers to make early and efficient integration / interface tests to reduce technical risks. The IMS is composed of a PC with dedicated software, and Ethernet / RS485 / adapter box for specific signal interfaces.

- Non-U.S. Government sales are subject to U.S. Government approval.
- Specifications are subject to change without notice.

GENERAL CHARACTERISTICS

Transmitter: Solid state

Center Frequency: 1090 +/- 0.1 MHz

Output Power: 21.7 dBW @ 1% Duty Cycle

Receiver: Dual channel superheterodyne

Center Frequency: 1030 +/- 0.05 MHz

Minimum Triggering Level (MTL)

- IFF MKII: Minimum triggering level (>90% decoding)
-72 dBm to -78 dBm
- Mode S: Minimum triggering level (>99% decoding rate)
-76 dBm ± 3 dB

Dynamic Range

- IFF MKXII: (>90% decoding rate)
from -22 dBm to MTL
- Mode S: (>99% decoding rate)
from -21 dBm to MTL

Processing

- FPGA & Microprocessor
- STANAG 4193 & ICAO
- Annex 10 Amdt 77

Modes

- 1, 2, 3/A, C, S Level 2
- 4/Secure, Mode 5 Ready

AOC: Cross MKXA & M4, Mode S

INTERFACE

Control: Discrete, RS485, 1553B (optional)

Peripherals: Gillham, ADC, ARINC429

Crypto: Appliqué or External (M4, Secure, M4/M5)

BIT: PBIT, CBIT & IBIT

Passive Monitoring: Power, VSWR, T°, processing

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

PHYSICAL

Dimensions (WxHxD): 7.24 x 2.4 x 8.88 in.
(184 x 60 x 225 mm)

Weight: Approx. 3.5 lbs. (< 1.6 kg)

Power Requirement: 28V DC less than 30 W

ENVIRONMENT

Temperature: Operating -40°C to +71°C -
MIL-STD-810F

Shock, Vibration: Propeller aircraft and helicopters
MIL-STD-810F

EMC: MIL-STD-461E
DEFSTAN 594



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