

# IFF / Mode S Enhanced Surveillance Transponder

## PT-2000

# Tellumat



The PT-2000 is one of Tellumat's most successful electronic identification product families, adding to a proven track record in supplying high quality avionics with state of the art microwave and digital signal processing.

The PT-2000HE is Tellumat's latest IFF / Mode S transponder product, providing enhanced surveillance (EHS), extended squitter (ES) and TCAS II version 7.1 compatibility in accordance with RTCA DO-181E. Full Mode S Extended Length Message (ELM) capability is available by software upgrade.

In common with its other family members, the PT-2000HE accommodates an applique National Secure Mode (NSM) cryptographic computer or Mode 4 Crypto Computer Adaptor within its 3/8 ATR form factor. The NSM mode has an automatic key changing facility, as well as other advanced cryptographic features.

Control and data interfacing via dual-redundant MIL-STD-1553B data bus or ARINC 429 and interfaces to a TCAS II Surveillance Processor and on-board Airborne Data Link Processor (ADLP) via high speed ARINC 429 links.

### FEATURES

- Replies to ATRBS interrogation modes 1, 2, 3/A and C
- Replies to valid Secure Mode interrogations (Mode 4, custom National Secure Mode)
- Replies to Mode S Level 2 Enhanced Surveillance (EHS) interrogations, including elementary Surveillance (ELS)
- Broadcasts own-aircraft data via Extended Squitter (ES)
- Accommodates Appliqué Crypto Computer within volume

### BENEFITS

- Reliable hardware, proven on Western & Eastern platforms
- Highly cost-effective
- Plug and play crypto ready
- Non-aligned manufacturer, no ITAR restrictions
- Easily upgradeable to emerging standards

## FUNCTIONAL CHARACTERISTICS

Standard Reply Modes:	1, 2, 3/A, C and S
Secure Modes:	Mode 4, National Secure Mode, Automatic Key Changing
Mode S Level:	Level 2 Data link Transponder with EHS and ES per DO-181E, Upgradeable to full ELM capability
Interfaces:	MIL-STD-1553B Primary Control / Data ARINC 429 Control / Data (Option) TCAS Surveillance Processor: 100 kbps ARINC 429 per ARINC 735 Airborne Data Link Processor: ARINC 429 per ARINC 718 Air Data Computer / Encoding Altimeter Parallel Altitude: per ARINC 572

## RECEIVER / TRANSMITTER

Receiver Frequency	Centre 1,030 MHz $\pm$ 0.5 MHz
Receiver Sensitivity	-75 dBm Minimum Trigger Level
Dynamic Range	Minimum Trigger Level to -21 dBm
Transmitter Frequency	1,090 MHz $\pm$ 0.5 MHz
Transmitter Power	500 W (+57 dBm) Nominal Peak

## RELIABILITY

Mean Time Between Failures	4,000 hours (MIL-HDBK-217F) calculated
Integrity Monitoring:	Comprehensive Built-in Test (BIT) Power-Up BIT Continuous BIT Initiated BIT System and module status indication

## PHYSICAL CHARACTERISTICS

Mass	< 6.5 kg
Dimensions	317 mm x 90 mm x 190 mm (l x w x h – 3/8 ATR Short)
Cryptographic Module	Included in volume above
Mounting Tray Standard	3/8 ATR tray available
Cooling	Convection (no special cooling arrangements required)

## ENVIRONMENTAL AND EMC

Operating Temperature- Range	-40 °C to +70 °C (+85 °C intermittent)
Maximum Altitude	70,000 ft
Environmental Qualification	per MIL-STD-810E
Electromagnetic Compatibility	per MIL-STD-461 and MIL-STD-462

## POWER SUPPLY

Power Supply Input	(Nominal) 28 Vdc to MIL-STD-704D
Power Consumption	(Nominal) 35 W
Power Consumption	(Maximum) 60 W



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