GEC-Marconi Electronic Systems

ESD6817

Shipborne IFF/SSR Transponder

- *IFF Mk XII compliant*
- *Comprehensive B.I.T.E.*
- *Modular design*
- *Solid state transmitter*
- *High reliability*
- *Classified when keyed*

The ESD6817 transponder provides operation in modes 1, 2, 3/A and 4 when used in conjunction with a GFE KIT-1C mode 4 cryptographic computer. It provides the capability to identify the platform to which it is fitted in response to interrogations from ground, shipborne and airborne secondary radars. The ESD6817 transponder has been designed to be compliant with the IFF Mk XII requirements of STANAG 4193.

The design techniques, state of the art technology and modular construction of the ESD6817 transponder place great emphasis on reliability and ease of maintenance. The ESD6817 transponder includes comprehensive Built-In-Test (BIT) facilities, including self interrogation in various modes, which allows fault finding down to module level using only standard test equipment.

The transponder operates in conjunction with the ESD6807 control unit which is designed to fit into the Versatile Console System (VCS). The ESD6807 control unit may be installed remote from the ESD6817 transponder.

Transponder operation is controlled by a combination of controls on the transponder front panel and control unit. The mode controls, the mode 1 and 3/A code controls and the KIT-1C mode 4 cryptographic computer controls are housed in the control unit. The mode 2 code controls, the power control and the key operated transmit/standby/remote (control unit) safe to transmit control are all situated in the transponder.

The self-test facility is controlled from the ESD6817 transponder front panel but indicators are provided on the transponder and control unit to allow monitoring of transponder operation.

Transponder reliability is enhanced by the use of a solid state power amplifier and the extensive use of analogue and digital integrated circuits. All necessary IFF signal processing is performed by a 113,000 gate digital Application Specific Integrated Circuit (ASIC), with general transponder operation controlled by a microprocessor using software, resident in Programmable Read Only Memory (PROM).

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Power output

Nominal power output: 27 dBW
Minimum power output: 25 dBW

Reply rate

1200 replies/sec. each containing up to 15 reply pulses

Triggering sensitivity (min)

-72 to -80 dBm

Environmental characteristics

Vibration

NES 1004, data sheet 25, figure 25.2

Temperature and relative humidity (rh)
Operational

Transponder

+15°C to +45°C, 30% to 85% rh continuous.

Control unit

+15°C to +40°C, 30% to 70% rh continuous.

Storage

-40°C to +70°C with rh not exceeding 75%.

Dimensions and weight

Transponder unit

Width: 324mm (12.76in)

Height: 272mm (10.71in)
(Less vibration mounts)

Depth: 487mm (19.17in)
(including connectors and handles)

Weight: 14.0kg (approx)

Control unit

Width: 152.4mm (6.0in)

Height: 152.4mm (6.0in)

Depth: 200mm (7.87in)
(including connectors and controls)

Weight: 1.8kg (approx)

Cryptographic computer mounting tray

Width: 140mm (5.51in)
(excluding fixings)

Height: 85mm (3.35in)
(excluding fixings)

Depth: 310mm (12.2in)
(excluding locking arrangements)

Weight: 1.0kg (approx)

Power requirements
Operational

115V AC, 60Hz, single phase to DEF STAN 61-5, part 4, issue 1, amendment 1, table A.

Power consumption

100 Watts max

Anti condensation heaters

115V AC, 60Hz, single phase to DEF STAN 61-5, part 4, issue 1, amendment 1, table A.

Power consumption

12 Watts max.

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