

I-Band Transponder System

2010 Datasheet v1

COBHAM

The most important thing we build is trust



I-Band Transponder System

2009 Datasheet v1



Function

The Cobham Sensor Systems I-Band Transponder System provides a highly effective means of locating, identifying and providing navigational assistance for a variety of aircraft outside normal radar coverage and range.

The system is effectively employed to provide accurate surveillance, tracking and approach control information, not only at low altitudes and beyond the normal radar horizon, but also at close range, in bad weather and in severe clutter environments.

While being more accurate, physically robust and more cost effective than competitive secondary radar systems, the Cobham Sensor Systems system is also less complex and easier both to install and to support operationally.



Description

The Cobham Sensor Systems I-Band Transponder System makes use of any I-Band surveillance radar, both for interrogation and for reception of the coded transponder replies. By transmitting any one of 16 different coded reply sequences, friendly aircraft can individually identify themselves to the controlling radar. Upon reception, the transponder reply is filtered from the radar echo and is channelled to the RRB Receiver.

With the addition of Video Code Suppression Units, the code information may be removed from a video feed while retaining the essential target enhancement. This switchable feature can reduce display clutter in high target environments.

The I-Band Transponder includes a built in test facility to prove both receive and transmit functions for operator confidence.

The systems consists of two main elements:-

- A Transponder (and it's associated Control Unit) installed on board the aircraft.
- A Receiver (RRB) fitted to the controlling radar, tuned to the transponder reply frequency (9310 MHz).

Applications

- Close range, precision approach / control
- Long range navigation and control
- Search and rescue
- Individual identification of aircraft
- Enhanced radar track / position reporting
- Oil rig identification / navigation
- Coastal navigation and surveillance
- Air-to-Air identification / surveillance
- Marine navigation / beacon systems

The Transponder range consists of:

- Manual aerial switching units:
 - Transponder Part No. 41200-A NSN 5895-99-638-8888
 - Control Unit Part No. 41260-A NSN 5895-99-638-8905
- Automatic aerial switching units:
 - Transponder Part No. 45300-A NSN 5895-99-219-7829
 - Transponder Part No. 45400-A NSN 5895-99-052-4994
 - Control Unit Part No. 45380-A NSN 5895-99-846-1967

The Transponders have automatic switching between both aerals at approx. 1kHz.

The 45400-A IBT EMC performance is compliant to BS2G100 part 2, section 2.

The 45300-A IBT EMC performance is compliant to Def Stan 59-41 part 3, issue 3.

A night vision compatible Control Unit is available as an option.

Performance

Transponder - 45300-A NSN 5895-99-219-7829
- 45400-A NSN 5895-99-052-4994

| Electrical Characteristics | |
|-------------------------------|--------------------------------------|
| Receive Frequency Range | 9190 to 9290 MHz 9360 to 9460 MHz |
| Receive Sensitivity | -93 dBw |
| Transmit Frequency | 9310 MHz ±7 MHz |
| Transmit Power | 135 to 300W peak |
| Pulse Width | 0.45 us |
| Power Supply | 28V d.c., 40W |
| Mechanical Characteristics | |
| RF Connector | N-type |
| Suppression Connectors | BNC |
| DC / Control Connectors | Patt 602 |
| Size | 217 x 160 x 87 mm |
| Weight | 2.8kg |
| Environmental Characteristics | |
| Operating Temperature Range | -40 C to +70 C |
| Storage Temperature Range | -40 C to +90 C |

Cockpit Control Unit - 45380-A NSN 5895-99-846-1967

| Electrical Characteristics | |
|-------------------------------|--|
| Power | Off / Standby / Low Tx Power / High Tx Power |
| Self Test | Lamp Test / Off / Self Test |
| Code Select | Codes 1 to 16 |
| Code Set | Code On /Code Off / Code On (while position held) |
| Antenna Select | Upper (Right) /Alternate / Lower (Left) |
| Mechanical Characteristics | |
| DC / Control Connectors | Patt 602 |
| Size | 148 x 117 x 48 mm |
| Weight | 450g |
| Environmental Characteristics | |
| Operating Temperature Range | -40°C to +70°C |
| Storage Temperature Range | -40 C to +90 C |

Transponder



Cockpit Control Unit



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For further information please contact:

Cobham Sensor Systems

Featherstone Road

Wolverton Mill

Milton Keynes, MK12 5EW

England

Tel: +44 (0) 1908 574200

Fax: +44 (0) 1908 574300

E-mail - cobham.mal@cobham.com