

I-BAND TRANSPONDER SYSTEM

Communication, Navigation & Identification



- Safety of Life
- 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
- European Manufacture

The RF2M Microwave Ltd 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 RF2M Microwave Ltd system is also less complex and easier both to install and to support operationally.

Description

The RF2M Microwave Ltd 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).

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 aerials 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 µs
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

Transponder



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 Connector	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

Cockpit Control Unit



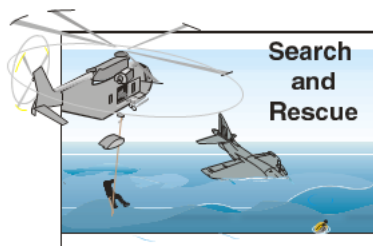
UK MOD Current Aircraft Equipped with IBT

Search and Rescue

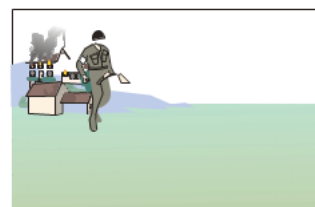
- RN Sea King MK4
- RAF Sea King Mk3/3A
- RN Sea King Mk5

Maritime Attack / RECCE / Utility

- RN Sea King MK7
- RAF Lynx Mk3 & 8
- RN Merlin Mk1
- RN Sea Harrier



Merlin Helicopter



Merlin Ship



**ASW Redetection
Classification Localisation**

I Band Transponder
(aircraft based)

RRB Receiver counterpart
(ship based)



Whilst every effort is made to ensure the accuracy of the information contained in this brochure, no responsibility can be accepted for any errors and/or omissions.

Descriptions and specifications of products are subject to change without notice.