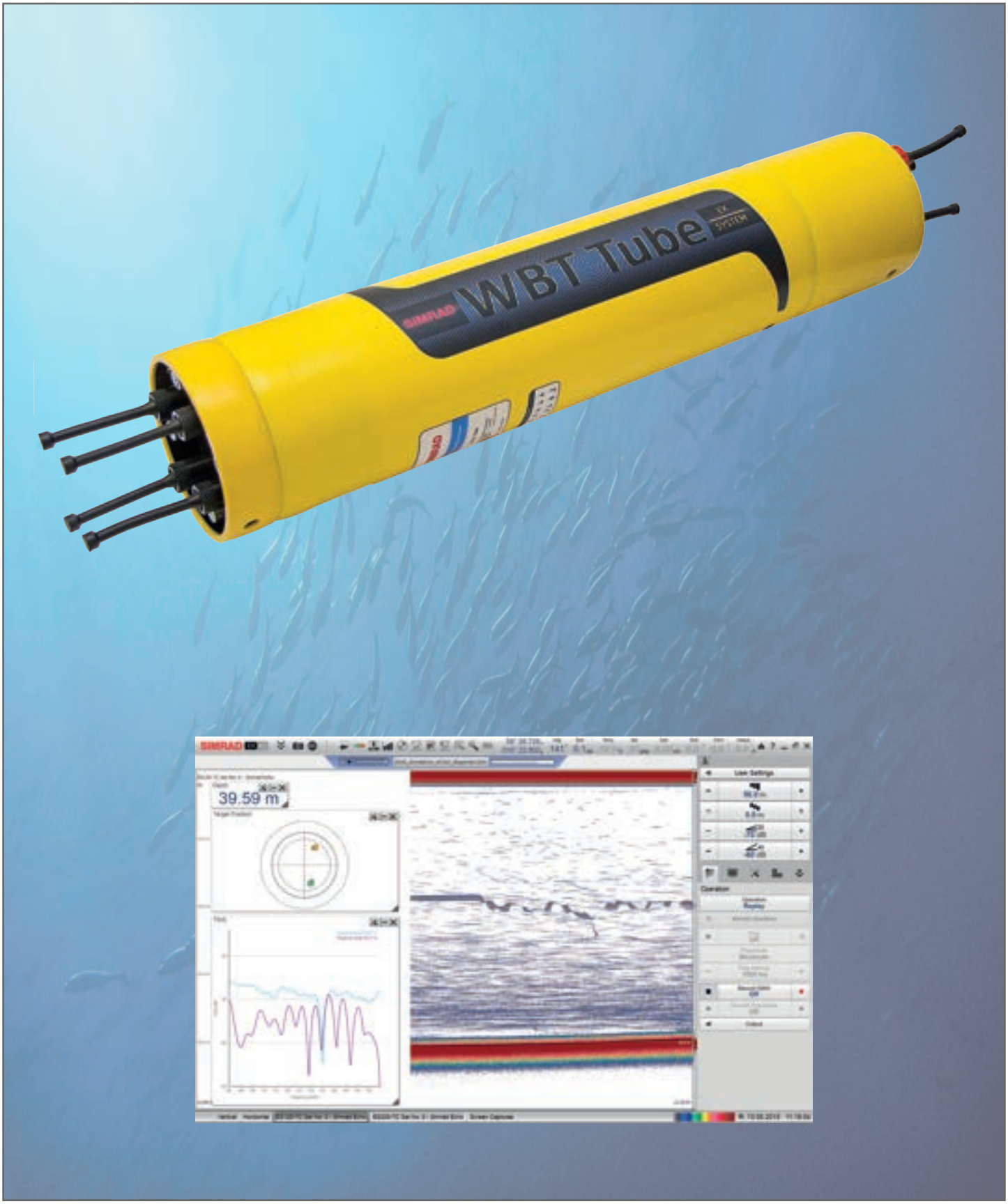
Simrad WBT Tube

Subsea wide band echo sounder transceiver



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The WBT Tube is a subsea version of the highly efficient Wide Band Transceiver (WBT) used by marine research vessels all around the world. Its energy efficient design makes it perfect for installation on a wide range of subsea platforms and vehicles.

Description

The WBT Tube is a scientific echo sounder transceiver designed for subsea applications. The transceiver electronics in the WBT Tube have the same linear FM (chirp) and CW pulse forms as the Simrad EK80 Wide Band Transceiver (WBT).

The WBT Tube contains two independent echo sounder boards. Each contains four individual transceiver channels with multiplexing functionality. This allows for great flexibility when you setup a system with various split-or single beam transducer configurations.

The WBT Tube is designed for long term use down to 4000 meters water depth. It requires an external power supply. Two versions are available, one for 15 VDC operation, and one for 20 to 50 VDC.

The WBT Tube is used with a computer running the EK80 echo sounder software. The EK80 software provides full real time control of the WBT Tube using an Ethernet interface.

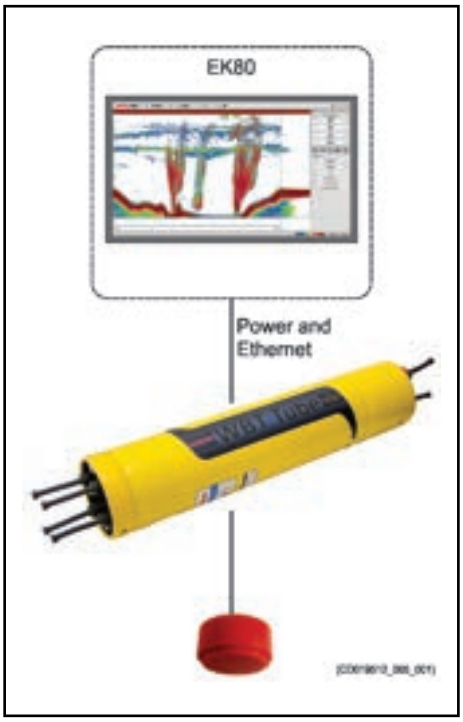
The WBT Tube installed on a subsea platform
Image courtesy of CSIRO, Australia

Key features

- A member of the Simrad EK80 wideband echo sounder family
- Depth rated to 4000m
- Two independent echo sounder transceivers in one unit
- Eight independent channels with built-in multiplexing available
- Controlled by standard Simrad EK80 echo sounder software
- Low power consumption
- Wide range of transducers available

Typical applications

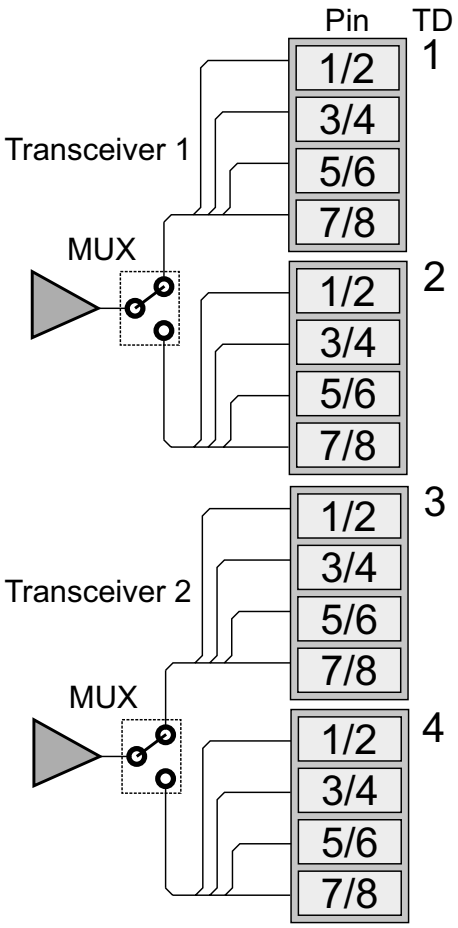
- Remotely Operated Vehicles
- Sensor on probes
- Environmental monitoring on subsea structures (K-Lander)



Transducers and multiplexing

The WBT Tube has four 8-pin transducer connectors.

- TD Connector 1 is the main connector for the first transceiver.
- TD Connector 2 is used for multiplexing with connector 1.
- TD Connector 3 is the main connector for the second transceiver.
- TD Connector 4 is used for multiplexing with connector 3.



Technical specifications

Performance specifications

- Frequency range: 30 – 500 kHz
- Pulse duration: 64 – 2048 µs
- Pulse forms: CW + FM (Linear up-sweep)
- Maximum transmit power: 1000 W @ 55 Ω
- Number of transceivers: 2
- Number of channels per transceiver: 4 (With multiplexer: 8)
- Transducer options: Single beam/Split beam

Power requirements

- Voltage requirement 15V version: 12 – 16 VDC
- Voltage requirement 24V version: 20 – 50 VDC
- Power consumption per transceiver:
  Active (@ 1 ms pulse duration, 2 ping/sec):
  38 / 120 / 333 kHz: 6 / 3 / 3 W
  Passive: 2 W
- Maximum current for one transceiver: 2.5 A (Peak)

Weight and outline dimensions

- Outline dimensions:
  Length: 663 mm
  Diameter: 144 mm
- Weight (in air): 14.1 kg
- Weight (in water): 3.6 kg

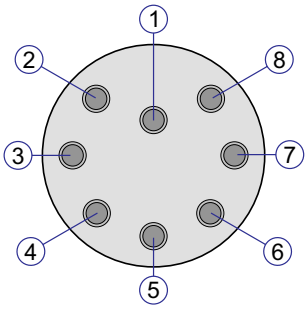
Environmental requirements

- Operational temperature: -15 to 35 °C
- Storage temperature: -20 to 55 °C
- Salinity: 0 - 40 PSU
- Enclosure material: Aluminium

All specifications are maximum ratings. We are continuously working to improve the quality and performance of our products. The technical specifications may be changed without prior notice.

Ethernet

Connector type: MacArtney female DBH8F

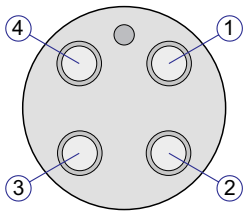


1 RJ45/8 (Brown*)
2 RJ45/7 (Brown/White*)
3 RJ45/4 (Blue*)
4 RJ45/5 (Blue/White*)
5 RJ45/2 (Orange*)
6 RJ45/1 (Orange/White*)
7 RJ45/6 (Green*)
8 RJ45/3 (Green/White*)
*Twisted pairs

Seen towards the connector

Power 15V Version

Connector type: MacArtney male MCBH4M



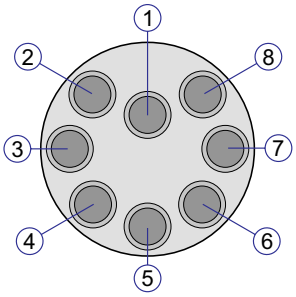
Transceiver 2:
1 +15 VDC (Black)
2 GND (White)

Transceiver 1:
3 GND (Red)
4 +15 VDC (Green)

Seen towards the connector

Transducer 8-pin

Connector type: MacArtney female MCBH8F

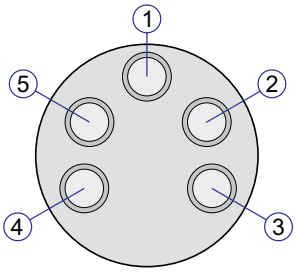


1 Channel 1+ (Black)
2 Channel 1– (White)
3 Channel 2+ (Red)
4 Channel 2– (Green)
5 Channel 3+ (Orange)
6 Channel 3– (Blue)
7* Channel 4+ (White/Black)
8* Channel 4– (Red/Black)

Seen towards the connector

Power 24V Version

Connector type: MacArtney male MCBH5M



1 N/C (Black)

Transceiver 2:
2 +24 VDC (White)
3 GND (Red)

Transceiver 1:
4 GND (Green)
5 +24 VDC (Orange)

Seen towards the connector

Communication End Cap

Transducer End Cap

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