

Model 2685 MIPS



The **2685 Mobile Integrated Positioning System (MIPS)** is an advanced Ultra Short Baseline (USBL) underwater tracking system.

The MIPS antenna provides a subsea positioning solution in a compact design for use in a Naval environment.

System integration is via a high speed serial link ideal for OEM applications.

The MIPS antenna is deployed from a single point mooring allowing a variety of platforms to be utilised.

Key Features

- Accurate and stable
- Lightweight and portable
- Integrated pitch, roll and heading sensors
- Integrated depth and temperature sensors
- Tested to military standards for compatibility
- Approved for military use

Technical Specification

PHYSICAL SPECIFICATION

Depth Rating	100m
Transceiver Dimensions	510.0mm x Ø100.0mm (including connector)
Transceiver Weight	12.5kg in air, 8.5kg in water

Additional Sensors

Depth Sensor	10 bar, 0.25% accuracy -10°C to +40°C
Temperature Sensor	1°C resolution -10°C to +40°C
Compass Accuracy	0.5°

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ACOUSTIC SPECIFICATION

Accuracy is based on the correct speed of sound being entered, no ray bending and an acceptable S/N ratio

Slant range accuracy	0.2m (accuracy dependent on correct speed of sound)
Position accuracy	0.45° drms 1.0% of slant range (acoustic accuracy excluding heading errors)
Frequency band (MF)	Reception 24 - 30 kHz Transmission 17 – 26 kHz Transmitter power > 187dB ref. 1µPa at 1m
Tracking beam pattern	Hemispherical
Beacon types	Transponders and responders
Interrogation rate	Internally set or external key

USER INTERFACE

Data communication	DS008-9010 Interface protocol
Down link	RS-422, 19,200 baud.
Up link	RS-422, 19,200 baud.
Responder up link	RS-422 drivers/receivers used

ELECTRICAL SPECIFICATION

Power requirements: 24-28VDC 2A

ENVIRONMENTAL SPECIFICATION

Temperature

DEF STAN 00-35 Part 3: Issue 4 including temperature shock test.CL14

Operation in water	-4°C to +32°C
Operation in air	-20°C to +44°C
Storage temperature	-40°C to +70°C

High ambient temperature operation in air is for short duration system checks only, thermal protection is fitted and unit will auto shut down.

Vibration

DEF STAN 00-35 Part 3: Issue 4

M1: General Purpose Vibration Test: Deployed or installed in surface ships: Sine sweep

M1: General Purpose Vibration Test: Deployed or installed in surface ships: Sine dwell

Test Type	Region	Amplitude (mm pk)	Frequency (Hz)	Duration (mins)
Sine Sweep	Upper deck, Protected Compartment and Hull	0.125	5 to 33	60
Sine Dwell	All	1.250	14	20
		0.300	23	20
		0.125	33	20



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Shock

DEF STAN 00-35 Part 3: Issue 4

M7: Shock Testing for Warship Equipment & Armament Stores: Classical Shock Pulse

NCUE – Classical Shock Pulse

	Vertical	Lateral	Longitudinal
Pulse Shape	Half Sine		
Pulse Width	10ms		
Acceleration	45g	25g	25g
Duration	1 shock in each direction of each orientation (6 in total)		

Humidity

Operation 5% to 95% non condensating

Storage 5% to 95% non condensating

COMPATIBILITY

EMC

MIL STD 461D tests: CE101, CE102, RE101, RE102, CS101, CS114, RS101, RS103 to an upper limit of 1GHz.*

*Subject to power supply.

Magnetic Signature

External housing material is Aluminum Silicon Bronze (NES 834) with a typical relative magnetic permeability of 1.05.

RELIABILITY

Mean Time Between Failure (MTBF)

Calculations have been performed in accordance to MIL-HDBK-217F (inc. notice 1 & 2), the environmental factor used was Naval Unsheltered. The Quality factor used was 'industrial'. The stress factor applied was 50%, the temperature factor applied was the upper operating condition = 50°C.

Calculated results = 2894 hours.

In-service MTBF >20,000, 2009 to date.

INTERFACE CABLE

Cable Jacket	Polyurethane jacket
Construction	4 screened twisted pairs (STP)
Diameter	10.8mm approx.
Bend Radius	200mm minimum
Max Length	100m
SWL (Safe working Load)	25kg, (tested to 50kg)
Electrical connector subsea	Souriau 12 contact
Electrical connector – surface	Wire end



ENSIGN SUBSEA SYSTEMS

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Due to continual product improvement, specification information may be subject to change without notice.

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