

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°

Model 2685 MIPS Technical specification continued...

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

Model 2685 MIPS Technical specification continued...

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 50 kg)
Electrical connector subsea	Souriau 12 contact
Electrical connector – surface	Wire end



APPLIED ACOUSTICS
Underwater Technology

Due to continual product improvement, specification information may be subject to change without notice.
Model 2685 MIPS/October 2015
©Applied Acoustics Engineering Ltd.



Applied Acoustic Engineering Ltd

T +44(0)1493 440355

F +44(0)1493 440720

E general@appliedacoustics.com

W www.appliedacoustics.com