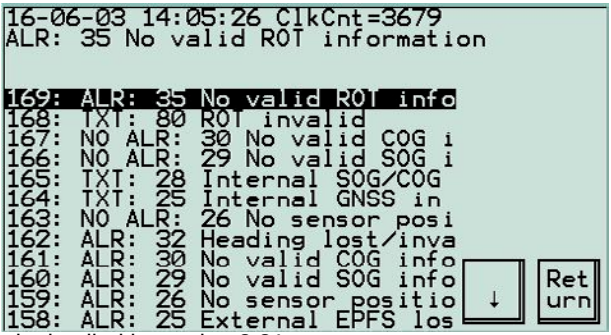
4.24 Log File



This log file is detailed in section 3.31

4.25 Saving Changes

If any changes have been made to the settings, UAIS will ask for confirmation of those changes.

To complete the process the correct password will need to be entered.

PRESS  to exit and return to **Main menu**.

This action returns UAIS to normal transmission.

5 Maintenance and Servicing

5.1 Preventative Maintenance

The UAIS transponder system is an essential part of the ship's navigation system and is a vital component for the safety of the ship and its crew. It is therefore very important to maintain the system and its installation to a very high standard. The design of the UAIS transponder ensures that maintenance can be kept to a minimum, however it is good practice to perform a performance check at least once every week.

5.2 VDU Touch-Screen

To optimise performance of the touch-screen VDU and cabinet, ensure they are kept clean and grease-free. Use a clean damp cloth, or for heavier deposits use a clean, damp cloth and a mild solution of dish washing detergent and water. Do not use any spirit or alcohol based solvents, gasoline or oils.

5.3 Electrical Connections

Periodically check the electrical connections; ensure that no cables are frayed or worn, and that all connections are tight and sound.

5.4 Repair and Service

With the exception of the fuses located on the Screw Terminal Board, there are no user serviceable parts. Changing fuses is described in Section 6 – Troubleshooting.

Removal of the inspection plates other than by an Authorised Service Technician will void warranty. If having followed the Troubleshooting Guide (Section 6) UAIS is still inoperable, please call your local Service Centre.

5.5 Spare Parts

Use only manufacturers genuine spare parts. No liability can be accepted for equipment failure due to incorrect replacement parts being used.

5.6 World-wide Sales and Service

For a complete list of worldwide sales and service agents, please contact your product supplier.

6 Troubleshooting

Perform the following checks BEFORE calling an authorised Service Centre.

Symptom	Cause	Cure
No text on screen	1) No power to Transponder 2) System fuse blown	No Green light illuminated on Transponder 1) Check fuse or circuit breaker at 24VDC supply point. 2) Check/replace system fuse in Transponder. *Use only 10Amp blade type fuse*
	1) VDU installation 2) Display fuse blown	Green light is illuminated on Transponder 1) Check display cable/connections 2) Check display fuse in Transponder. *Use only 1Amp blade type fuse*
Text appears on screen but is too dark or light to read	LCD backlight and/or contrast out of adjustment	1) Select Display Brightness from Main menu 2) Adjust LCD backlight and/or contrast (See section 3.36 Display Brightness Menu on page 29)
At power-up, self-test shows one of the following messages: - **ROM : Error** **RAM : Error** **FLASH : Error**	Central processor failure	Contact Service Centre
Tx malfunction alarm activates	Transmitter PCB failure	Contact Service Centre

Symptom	Cause	Cure
Antenna VSWR exceeds limit alarm activates	Antenna installation	1) Check cable/connections 2) Check antenna
Rx channel A malfunction alarm activates	Receiver PCB failure	Contact Service Centre
Rx channel B malfunction alarm activates	Receiver PCB failure	Contact Service Centre
Rx channel DSC malfunction alarm activates	Receiver PCB failure	Contact Service Centre
General failure alarm activates	1) No power to Transponder 2) System fuse blown	No Green light illuminated on Transponder 1) Check fuse or circuit breaker at 24VDC supply point. 2) Check/replace system fuse in Transponder. *Use only 10A blade type fuse*
MKD connection lost alarm activates	VDU installation	Check display cable/connections
External EPFS lost alarm activates	GPS signal lost	1) Check GPS 2) Check cable/connections
No sensor position in use alarm activates	GPS installation	1) Check cable/connections 2) Check GPS 3) Enable internal GPS to provide position (See section 4.15 Intern. GNSS Position on page 38)
No valid SOG information alarm activates	1) Bottom Track Log signal lost 2) GPS signal lost	1) Check GPS 2) Check cable/connections

Symptom	Cause	Cure
No valid COG information alarm activates	GPS signal lost	1) Check GPS 2) Check cable/connections
Heading lost/invalid alarm activates	1) Gyro compass 2) Gyro interface 3) Connection between Transponder and Gyro / interface	1) Check Gyro or Interface Unit 2) Check cable/connections
No valid ROT information alarm activates	1) Gyro compass 2) Gyro interface 3) Connection between Transponder and Gyro / interface	3) Check Gyro or Interface Unit 4) Check cable/connections
No TDMA synchronisation alarm activates	Integral GPS signal lost	1) Check cable/connections 2) Check antenna
Tx amplifier malfunction alarm activates	Transmitter PCB failure	Contact Service Centre
No own reports mode alarm activates	Purpose of station set to No own reports mode	Re-assign purpose of station (see section 4.5 Purpose on page 35)

Changing a fuse

There are two fuses, located on the Screw Terminal Board, which are designed to be changed by the user. These are the only user servicable parts.

Fuse description	Fuse value	Part No.
Main system fuse	10.0 Amp	99-077
VDU system fuse	1.0 Amp	99-076

Switch off the Transponder, undo the six screws retaining the cover, then lift off the cover. Ensure that the power is off before attempting to remove a fuse. The fuse link is visible through the transparent body of the fuse.

Ensure that the fuses are not interchanged. The values are clearly marked on the board.

When the fuses have been checked to be intact, replace the cover, fit the six screws and tighten carefully.

7 Specification

General Data		
Power consumption:	75W	
Power supply:	24 VDC –10% +30%	
Default frequencies:	AIS1 (CH87B)	161.975 MHz
	AIS2 (CH88B)	162.025 MHz
	DSC (CH70)	156.525 MHz
Operating temperature:	-15°C to +55°C	
Storage temperature:	-20°C to +70°C	
Environmental:	As per IEC 60945	
Transponder size / weight	308mm x 416mm x 93mm 7kg	
VDU size / weight	219mm x 151mm x 76mm 1kg	
GPS size / weight	∅ 115mm x 76mm 0.24kg	
GPS receiver:	Used for TDMA timing. Optionally used for navigational information.	
GPS antenna:	Patch antenna with built-in 30dB pre-amplifier	
GLONASS receiver	Optional GLONASS version available	
Transmitter		
Power output:	12.5 W or 2.0 W	
Frequency range:	156.025 – 162.025 MHz	
Antenna impedance:	50 Ω	
TDMA Receivers		
Sensitivity:	(PER) < 10% at –107 dBm (25kHz)	
Frequency range:	156.025 – 162.025 MHz	
Channel spacing:	12.5 or 25 kHz	
Modulation:	GMSK	
Data rate:	9,600 bits/s	
Frequency stability:	< ± 1ppm	
DSC Receiver		
Sensitivity:	BER $<10^{-4}$ at 107 dBm	
Frequency range:	155.3 – 162.5 MHz	
Channel spacing	25kHz	
Modulation	1300Hz/2100Hz - FSK	
Frequency stability	< ± 1ppm	
Serial inputs/outputs		
SENS1/2/3	IEC61162-2 (RS-422 input only)	
DISPLAY, LONG RANGE, MAIN, AUX/PILOT, RTCM	IEC61162-2 (RS-422 input & output)	

8 Glossary

4S	Ship-to-Ship & Ship-to-Shore
AIS	Automatic Identification System
ALM	Alarm
ANT	Antenna
ARPA	Automatic Radar Plotting Aid
ASCII	American Standard Code for Information Interchange
ATA	Automatic Tracking Aid
AtoN	Aid to Navigation
AUTO	Automatic
AUX	Auxiliary
BAS	Basic AIS Services
BAT	Battery
BIIT	Built-In Integrity Test
BIOS	Basic Input / Output System
BRG	Bearing
BRILL	Display Brilliance
CG	Coast Guard
CH	Channel
CHG	Change
CLR	Clear
CNCL	Cancel
CNS	Communication, Navigation & Surveillance
COG	Course Over Ground
CONTR	Contrast
CPA	Closest Point of Approach
CPU	Central Processing Unit
CSE	Course
DEL	Delete
DEST	Destination
DG	Dangerous Goods
DGLONASS	Differential GLONASS
DGNSS	Differential GNSS
DGPS	Differential GPS
DISP	Display
DIST	Distance
DSC	Digital Selective Calling
DTE	Data Terminal Equipment
ECDIS	Electronic Chart Display and Information System
ECS	Electronic Chart System
EGNOS	European Geo-stationary Navigational Overlay System
ENC	Electronic Navigation Chart
ENT	Enter
EPA	Electronic Plotting Aid
EPFD	Electronic Position Fixing Device
EPFS	Electronic Position Fixing System
EPIRB	Electronic Position Indicating Radio Beacon
ERR	Error
ETA	Estimated Time of Arrival
EXT	External
FATDMA	Fixed Access Time Division Multiple Access
FCC	Federal Communications Commission
FREQ	Frequency
GLO or GLONASS	Global Orbiting Navigation Satellite System
GMDSS	Global Maritime Distress and Safety System
GND	Ground
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GYRO	Gyro Compass
HDG	Heading
HS	Hazardous Substances
HSC	High Speed Craft
I/O	Input / Output
IBS	Integrated Bridge System
ID	Identification
IEC	International Electotechnical Commission
IMO	International Maritime Organisation
IN	Input
INFO	Information
INS	Integrated Navigation System
ITDMA	Incremental Time Division Multiple Access
ITU-R	International Telecommunications Union – Radiocommunications Bureaux

KN	Knots
L/L	Latitude / Longitude
LAT	Latitude
LON	Longitude
LOST TGT	Lost Target
M	Metres
MAG	Magnetic
MAN	Manual
MED	Marine Equipment Directive
MF/HF	Medium Frequency/High Frequency
MID	Maritime Identification Digit
MIN	Minimum
MKD	Minimum Keyboard and Display
MMSI	Maritime Mobile Service Identity
MOB	Man Overboard
MP	Marine Pollutant
NAV	Navigation
NM	Nautical Mile
NMEA	National Marine Electronics Association
NUC	Not Under Command
OOW	Officer Of the Watch
OS	Own Ship
OUT	Output
POSN	Position
PPU	Portable Pilot Unit
PWR	Power
RAIM	Receiver Autonomous Integrity Monitoring
RCC	Rescue Co-ordination Centre
RNG	Range
RORO	Roll On, Roll Off
ROT	Rate Of Turn
RR	Range Rings
RTCM	Radio Technical Commission for Maritime services
RTE	Route
Rx	Receive / Receiver
SAR	Search And Rescue
SEL	Select
SOG	Speed Over Ground
SOTDMA	Self-Organising Time Division Multiple Access
SPD	Speed
SPEC	Specification
STBD	Starboard
STBY	Standby
STW	Speed Through Water
TCPA	Time to Closest Point of Appoach
TDMA	Time Division Multiple Access
TGT	Target
TPR	Transponder
TRK	Track
TSS	Traffic Separation Scheme
TTG	Time To Go
Tx	Transmit / Transmitter
Tx/Rx	Transceiver
UAIS	Universal Automatic Identification System
UHF	Ultra High Frequency
UTC	Universal Time Co-ordinate
VDL	VHF Data Link
VDU	Visual Display Unit
VHF	Very High Frequency
VOY	Voyage
VSWR	Virtual Standing Wave Ratio
VTS	Vessel Traffic Systems
WAAS	Wide Area Augmentation System
WCV	Waypoint Closure Velocity
WGS	World Geodetic System
WIG	Wing In Ground
WPT	Waypoint

9 Declaration of Conformity

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Airport Service Road
Portsmouth
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www.mcmurdo.co.uk

mcmurdo

EC DECLARATION OF CONFORMITY

The following products comply with the essential requirements of Council Directive 96/98/EC on the approximation of the laws of the member States relating to Marine Equipment as amended by Commission Directives 98/85/EC, 2001/53/EC, 2002/75/EC and 2002/84/EC, and by the application of an EC Type Examination Certificate as detailed overleaf.

Products covered by this Declaration

Product Type: **Automatic Identification System (AIS)**

Models: **McMurdo M-1**
McMurdo /Transas MT-1
Transas/McMurdo T-111

Intended usage of products
All vessels which must comply with IMO SOLAS regulations in coastal or International waters.

Surveillance conformity assessment is undertaken in accordance with Production Quality Assurance Module D by:
Bundesamt fur Seeschifffart und Hydrographie (No. 0735)
Bernhard-Nocht-Str. 78, 20359 Hamburg
Germany

The product will carry this Conformity Marking:

NOTIFIED BODY 0735
YEAR XX

Issued on behalf of McMurdo Limited

Signed :

Name: **C P Hoffman**
Title: **Technical Director**

Date: 16th October 2003

See overleaf for technical information

Page 1 of 2

Technical Construction File held by:

McMurdo Limited
Silver Point, Airport Service Road, Portsmouth PO3 5PB UK

Regulations and Standards applied:

IMO MSC.74(69) Annex 3
ITU-R M.1371-1 (Class A)
IALA Technical Clarifications of Reg ITU-R M.1371-1 (Edition 1.3)
ITU-R M.825-3
ITU-R M.1084-3
IEC 61993-2 (2001)
IEC 61162-1 (2000), -2 (1998)
IEC 60945 (2002)
IEC 61108-1 (1996)

EC Type Examination Certificate:-

Name of Notified Body	:	Bundesamt fur Seeschifffart und Hydrographie (No. 0735)
Address of Notified Body	:	Bernhard-Nocht-Str. 78, 20359 Hamburg, Germany
EC Type Examination Certificate :		734.2/0046-1/2003 14 October 2003

ATTENTION

The attention of the specifier, purchaser, installer, or user is drawn to special measures and limitations to use which must be observed when the product is taken into service to maintain compliance with the above directive. Details of these special methods and limitations to use are available on request, and are also contained in the product installation and operator manuals.