



ATONIS^{PRO}

THE NEXT GENERATION AIS ATON TRANSPONDER

FEATURES

- Fully compliant A-126 operation
- Dual Repeater/ATON mode operation
- Redundant Dual Unit mode operation enabled with health check
- Extremely low power - *lower than any other AIS AtoN*
- Built-in ADIO interfaces
- Built-in Accelerometer for collision reporting or sea state monitoring
- Transmit Msgs 21, 6, 7, 8, 12, 13, 14, and 20
- Burst Message Transmission enabled
- Transmit Msg 21 for up to 20 virtual or synthetic Atons
- Automatic transmission of Msg 14 when buoy moves off position or lantern fails
- Standard and Alternate A-126 Position Algorithms
- Integrates with leading Met/Hydro sensor packages to report Msg 8
- External LED Status Lights
- Extensive BIIT report routines
- Selectable transmit power for each configured message
- GPS wake-up for Almanac updating in areas with poor satellite reception
- Import/Export configuration set-ups using GUI interface
- DGPS-ready



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SIMPLY THE BEST!

Atonis Pro surpasses the competition in state-of-the-art performance, functionality, and capabilities. With Atonis Pro, the aton authority is now able to inexpensively bring their atons into the realm of **e-Navigation** to provide greater service to the mariner. And while enhancing safety of navigation, Atonis Pro is an effective way to monitor aton status, report position and even make notification of ship collisions with a buoy or fixed structure.

Loaded with features demanded by Aton Authorities, Atonis Pro is hands-down the Next Generation AIS Aton Transponder.

Full Specification available at www.AtonisPro.com



ATONIS PRO TECHNICAL SPECIFICATION

Specifications												
Fitting	Fittable within 155mm Lantern Housing or internally mounted in IP67 enclosure											
Input Voltage	10-32 VDC; Nominal 12V and 24V											
Protection	Overcurrent and Reverse Polarity protection											
Power Consumption @ 12 VDC	Idle Mode :< 0.01Ah per 24 hour period Normal Operation Mode: 3 minute reporting according to IEC 62320-2 FATDMA: < 0.3Ah per 24 hour period RATDMA: < 2.0 Ah per 24 hour period Continuous Repeater Mode:.....< 5W											
I/O Interfaces	Ports	<table border="1"> <tr> <td>Port 1: Configuration</td> <td>RS-232 with digital wake-up control (opto-isolated). Provides 5VDC, 200 mA output.</td> </tr> <tr> <td>Port 2: DGPS</td> <td>RS-232; provides 5VDC, 200 mA feed to dGPS receiver. Outputs 1PPS pulse and posit/time from internal GPS. Short-circuit DC supply protection with automatic rest.</td> </tr> <tr> <td>Port 3: Application</td> <td>RS-422 opto-isolated input/output, digital control wake-up. Power output is the same as battery voltage.</td> </tr> <tr> <td>Port 4: External Systems</td> <td>RS-232, with digital wake-up control (opto-isolated). For external systems: Met/Hydro, GSM/GPRS/D+, external positioning device, etc. Power output is same as battery voltage.</td> </tr> <tr> <td>Port 5: Presentation Interface</td> <td>RS-232, digital wake-up control (opto-isolated). For use in Dual Unit and Limited Base Station configurations.</td> </tr> </table>	Port 1: Configuration	RS-232 with digital wake-up control (opto-isolated). Provides 5VDC, 200 mA output.	Port 2: DGPS	RS-232; provides 5VDC, 200 mA feed to dGPS receiver. Outputs 1PPS pulse and posit/time from internal GPS. Short-circuit DC supply protection with automatic rest.	Port 3: Application	RS-422 opto-isolated input/output, digital control wake-up. Power output is the same as battery voltage.	Port 4: External Systems	RS-232, with digital wake-up control (opto-isolated). For external systems: Met/Hydro, GSM/GPRS/D+, external positioning device, etc. Power output is same as battery voltage.	Port 5: Presentation Interface	RS-232, digital wake-up control (opto-isolated). For use in Dual Unit and Limited Base Station configurations.
	Port 1: Configuration	RS-232 with digital wake-up control (opto-isolated). Provides 5VDC, 200 mA output.										
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	Port 5: Presentation Interface	RS-232, digital wake-up control (opto-isolated). For use in Dual Unit and Limited Base Station configurations.										
	Analog/Digital (built-in)	(1) internal analog input, 10 bit resolution (battery voltage) (1) external analog input 10 bit resolution 1-100mV for differential current measurement via shunt (1) external analog input 10 bit resolution, 0-48 V (2) external digital inputs, 0-48V, with low/high threshold differentiation of 0 to 1 volt (referenced to ground) (2) digital open-collector/drain outputs, 500mA. Open-collector rated for 48VDC.										
	Analog/Digital (external)	Any number of additional analog and digital input/outputs are available with external board connected to Port 3.										
I/O Status Monitoring	Status of I/O interfaces can be reported by Msg 6.											
Protection	Surge and over-voltage protection on all serial and I/O ports.											
LED Status Indicators	Power On: Green Position and UTC: Yellow, flashing 1Hz when have satellite lock Transmit: Yellow, flashing when transmitting RX AIS 1: Yellow, flashing when receiving RX AIS 2: Yellow, flashing when receiving BIIT: Red, continuous when error exists, flashing when healthy LEDs status lights can be activated/de-activated by user.											
Accelerometer	Built-in, user configurable accelerometer. Can be configured to wake-up ATONIS to send message when collision detected. Programmable to report sea state.											



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Specifications	
Positioning	<ul style="list-style-type: none"> - GNSS receiver compliant with IEC 61108-1. Position accuracy +/- 3 meters (95%). - Independently configurable to wake-up GPS receiver for 20 minutes (0-30 day interval) to retrieve fresh almanac when operating in areas of poor satellite coverage or periods of extended sleep. - DGPS ready (IALA Beacon Service, SBAS) - Hardware ready to implement differential corrections transmitted by AIS VDL Msg 17. - User can select <i>Last Read</i> GPS position algorithm or <i>A-126 GLA</i> position algorithm to determine off-position status. - <i>Off-position</i> digital output available.
Synchronization	UTC direct. Hardware ready for UTC indirect and Semaphore.
Dual Operation	Able to work with a second ATONIS Pro unit for dual, redundant operation.
Automatic Msg 12 Notification	User configurable addressed safety message 12 sent when ATONIS Pro receives a Msg 1, 2 or 3 from vessel coming within user defined range, selectable from 0-25 nm. Message sent until acknowledge message received or three retries per ITU-R M.1371.
BIIT Routines	<p>Extensive BIIT routine. Automatic test modes for installation testing.</p> <ul style="list-style-type: none"> - Report analog/digital status. Will report actual battery voltage. - Data on Ports 3 and 4 - GPS receiver data including position, signal levels, number of satellites used, satellite constellation, GPS/DGPS status. - RX data including: signal level, average background noise, synchronization mode, slot, link load. - TX data including transmitted message content, forward and reflected power and calculated VSWR. - Configuration setting and Flash Memory status.
Humidity	95% relative humidity at 30°C
Temperature Range	-25° to +70°C
Transmit Power	1, 5, and 12.5W, user selectable for each configured message.
Configuration	Graphical User Interface (GUI – programming software; selectable for English, Spanish, Japanese or Chinese) via RS-232 or USB/Serial Converter. Hardware ready for optional ISM radio remote (50-100m) configuration. Configuration files can be saved, exported to and imported from external files.
AIS Message Capabilities	<ul style="list-style-type: none"> - Type 1 – FATDMA, Type 2 – FATDMA, Type 3 - RATDMA or FATDMA - Transmit AIS Messages 21, 6, 7, 8, 12, 13, 14 and 20 - Mode A, B, and C operation - Burst Transmissions
Repeater Operation	Option to operate in Dual AIS Aton mode and Repeater mode simultaneously, or in Repeater mode only. The times for repeater mode operation can be set by user. Option to repeat only SART messages.
Virtual/Synthetic Atons	Transmit Msg 21 for up to 20 virtual/synthetic atons with all Msg 21 parameters.
VHF Antenna	External. DC isolated from power supply to minimize galvanic corrosion.
GPS Antenna	External; compatible with all brands certified for use with standard NMEA GPS receivers including, but not limited to, Trimble, AC-Marine, Garmin and others.
Standards	IALA A-124, IALA A-126; IUT-1371-3, IEC 60945, and IEC 62320-2
Certifications	CE, R&TTE Directive (EC/1999/5), BSH
Transmitter Module	FM-GMSK (hardware ready for CSTDMA operation)
Frequency Range	155 - 163 MHZ, 25kHz bandwidth, configurable
Power Output	1, 5, and 12.5 Watts, configurable for each message.
Frequency Stability	± 2.5 ppm
Receiver Module	FM-GMSK (hardware ready for CSTDMA operation)
Frequency Range	155 - 163 MHZ, 25kHz bandwidth, frequency agile
Frequency Stability	± 2.5 ppm