

# WTE-MT-RX3

## AIS, 406 + 121.5 ALERTING RECEIVER

The WTE-MT-RX-3 is an Ethernet, Serial and USB capable multi-band receiver. The WTE-MT-RX-3 has been designed to decode emergency signals and then provide an alert to locate the source of the transmission for the purposes of early rescue or monitoring.

The WTE-MT-RX-3 performs equally well as a standard 2 channel AIS receiver, making available AIS data available via its serial ports. The monitoring and alerting capability of the WTE-MT-RX-3 makes the receiver more feature rich and configurable than most other AIS receivers available on the market.

The WTE-MT-RX-3 operates multiple independent DSP (Digital Signal Processing) receivers concurrently allowing the simultaneous decoding and alerting of several distress signal types over many different frequencies.

The WTE-MT-RX-3 has been developed to provide an alert and simple GPS based direction indicating capability for:

- 406MHz EPIRBs, PLBs and ELT beacons operating across the frequencies 406.020 to 406.045 MHz.
- AIS based SART alerting devices operating on both 161.975MHz and 162.025MHz.
- 121.5MHz or 243MHz man-overboard devices and emergency homing transmitters with the use of directional antennas.

The receiver technologies used take advantage of DSP techniques for high sensitivity and high rejection of unwanted interfering signals.

406 and AIS alerts can be logged to internal memory storage, and provide a time-stamped history of alert location and activity. The file history can be viewed on the WTE-MT-RX-3 and any logged transmission can be set as a target that provides a bearing and distance to the transmission source when external GPS NMEA data is provided.

A simple top level display provides at a glance a summary of the activity on all monitored distress channels over the previous several minutes.

NMEA output can be configured to allow integration with chart plotters and PC based mapping tools.

### Key Features:

- Multiple receivers for simultaneous decoding of AIS, 406 (all used frequencies) and 121.5MHz (and optionally others).
- Logging of alerts.
- Multiple connection options – RS232, RS422, RS485 and USB. Ethernet supports use via web browser, TCP server or TCP client.
- Integration with PC software and NMEA devices for indication and use of GPS data.
- Configurable on the device itself, USB or via Ethernet.
- Can raise distress alerts for AIS, 406 and 121.5MHz (or optional other frequencies).
- Standard AIS features such as graphical display of ships, list of closest vessels and collision avoidance alerts.
- GPS anchor and alerts.
- Optional software controllable antenna inputs.
- Optional low cost spectrum analyser providing visibility of transmitting signals, either to assist search and rescue or for direction finding.
- Can be connected to WTE transmitters for high power radio transmissions to notify users/crew within a very large area via messaging. WTE transceivers can also operate remote alerts.
- Compatible with OpenCPN free mapping software.
- Clear man-overboard alerts, and time stamped logging to SD card.
- Graphical and text based local vessel display.
- Proximity alerts and warnings.
- Configurable collision avoidance alerts



## Specifications:

**406 Frequency Range** ..... All used 406 Beacon frequencies  
406.020MHz – 406.045MHz (concurrently)  
**Supply Voltage** ..... 8-15 VDC (Internally fused at 500mA)

## Receiver Sensitivity:

121.5MHz ..... -110 dBm.  
406 MHz ..... -118 dBm  
AIS (A) MHz ..... -113 dBm  
AIS (B) MHz ..... -113 dBm

## Receiver:

**Receiver Absolute Maximum Input Power** ..... +13dBm  
Do NOT connect directly to a transmitter without attenuator  
**RSSI Range** ..... -125dBm to 0dBm (not calibrated)  
**RSSI Resolution** ..... 0.5 dB  
**Antenna Connectors** ..... SMA female  
**Operating Current** ..... 105mA plus  
20mA when backlight enabled  
**Firmware** ..... Field upgradable  
**Internal Storage Capacity** ..... 4GB  
**406 Error Correction** ..... Correction of up to 5 bit errors per 406 packet  
**406 Location Protocol Support** ..... All COSPAS SARSAT C/S T001  
Issue 3 Rev 12 Location protocols.  
**AIS Decode Support** ..... Both 161.975MHz and 162.025MHz.  
Decoding of all AIS sentences.  
Alert only on type 1 SART status 14 or 15 as configured.  
Serial output as RS232, or RS422 of all AIS messages.  
Configurable AIS vessel proximity and collision alert.  
**Serial Output** ..... 406 decoded messages as MT protocol,  
configurable data rate. NMEA position information and  
AIS sentences output as RS-232 or RS-422/485  
**Relay Contacts** ..... 1A maximum voltage 24V.  
**Relay Closure** ..... On any 406 message, distress burst only or on  
reception of a specific beacon hex ID.  
On AIS type 1 SART status message 14 or 15.  
On RSS signal strength.  
On 121.5MHz/243 MHz sweep detection.  
On AIS vessel proximity.  
On AIS vessel collision alert.  
On GPS Anchor drift alert.

## Spectrum Analyser:

**Frequency range:** ..... 142-175, 350 - 499 MHz  
**RBW:** ..... 1kHz/25kHz  
**Span:** ..... 120kHz/3MHz  
**Mode:** ..... Continual or peak display  
**Mode:** ..... Continual or peak display  
**Min signal:** ..... -120dBm, max signal -10dBm.  
**Input Power accuracy:** ..... 421-480MHz +/-8 dB,  
120-175MHz +/-2dB.

## Mechanical:

**Dimensions** .111mm (120mm including SMA connector) x 131mm x 41mm  
**Weight** ..... 550 Grams

## Environmental:

**Operating Temperature** ..... -30 to +55 °C  
**IP Rating** ..... IP51

## Compliance:

**ETSI** ..... EN 301 489-3  
**ESTI** ..... EN 60950-1 satisfying the CE directives R&TTE 1999/5/EC,  
EMC 2004/108/EC and LVD 2006/95/EC  
**FCC** ..... part 15 Subpart A + B.

For latest information and specifications please visit [wtmarine.com](http://wtmarine.com)



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