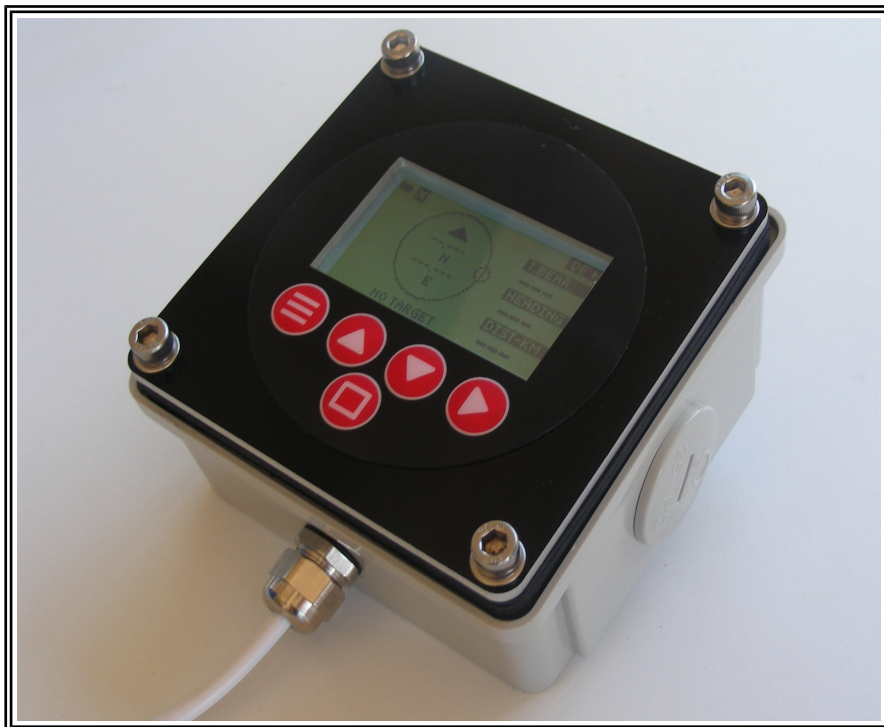


WTE LIMITED

MT-RX Series Receivers



AN002 Simulator Application Note

Introduction

This application note describes the basic operation of the MT-RX simulator. The MT-RX simulator at all times remains the property of WTE Limited, and should not be distributed without permission.

The MT-RX simulator is a basic development tool that has been created to aid software test and development, but can also be used for the purposes of training.

The MT-RX simulator does not behave *exactly* the same as the actual product, but in many cases close enough in order to allow familiarisation without the need to activate actual distress beacons.

The simulator logs alerts and stores configuration changes in the same manner as an actual device.

The simulator allows you to:

- Simulate test and distress 406 transmissions.
- Simulate test and distress AIS transmissions.
- Simulate AIS traffic received on both AIS channels.
- Visualise operation of relay, sounder and backlight.
- Familiarise with voice prompts.
- Simulate current location and heading.
- Simulate RSS levels.
- Generate test alerts.
- Use and test the menu system.

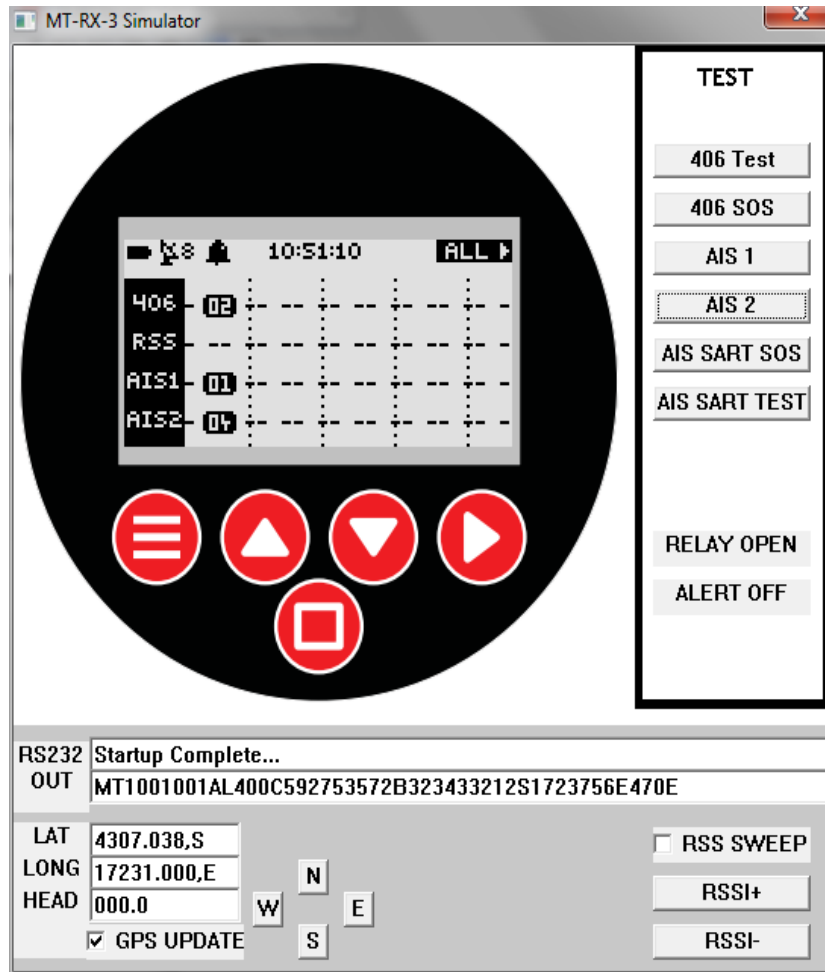
Installation

You will need:

1. The Micro Technologies MT-RX Simulator setup executable. This may be provided as a MT-RX-3, 2 or other variant as required.
2. Windows 7 or XP PC.

Install to the default location. The installation direction should allow for generated log files to be written to that location.

Operation



All the round red buttons operate normally, and can be clicked as if the actual device allowing operation as per the user manual.

Indicators

to the right of the screen, looks like flat buttons.

RELAY OPEN – This indicator will display either RELAY OPEN or RELAY CLOSED depending on the configuration.

ALERT OFF – this indicator shows when the internal sounder would normally be operating – this is a continuous siren and would normally operate on the actual device until acknowledged by a keypress or until the sounder has operated for the maximum configured period of time.

Right Hand Button Functions

406 Test :

Generates a simulated 406 test transmission without location information.

406 SOS:

Generates a simulated 406 distress transmission with location information.

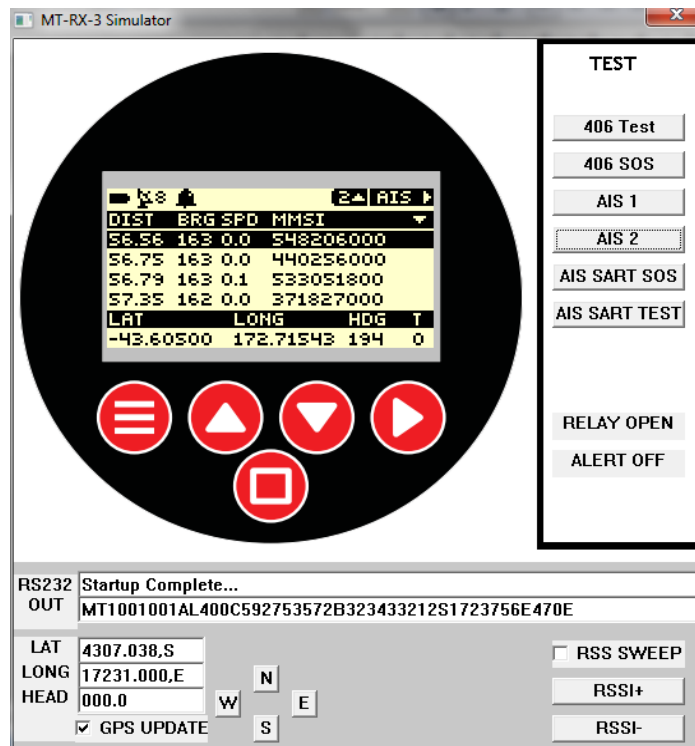
AIS 1:

Generates a simulated AIS transmission on AIS channel 1.

AIS 2:

Generates a simulated AIS transmission on AIS channel 2.

Each time these AIS buttons are pressed a different AIS transmission is provided to the simulator from a file in the installation directory. This file contains raw NMEA AIS sentences and can be modified as you wish. By default this file contains data relating to vessels in the area of Lyttelton, New Zealand.



AIS SART SOS:

Generates a simulated AIS distress transmission as would be seen from a standard SART (search

WTE Limited – MT-RX AN002 Using the MT-RX Simulator

and rescue transmitter) device – this is also the same for new AIS man overboard transmitters.

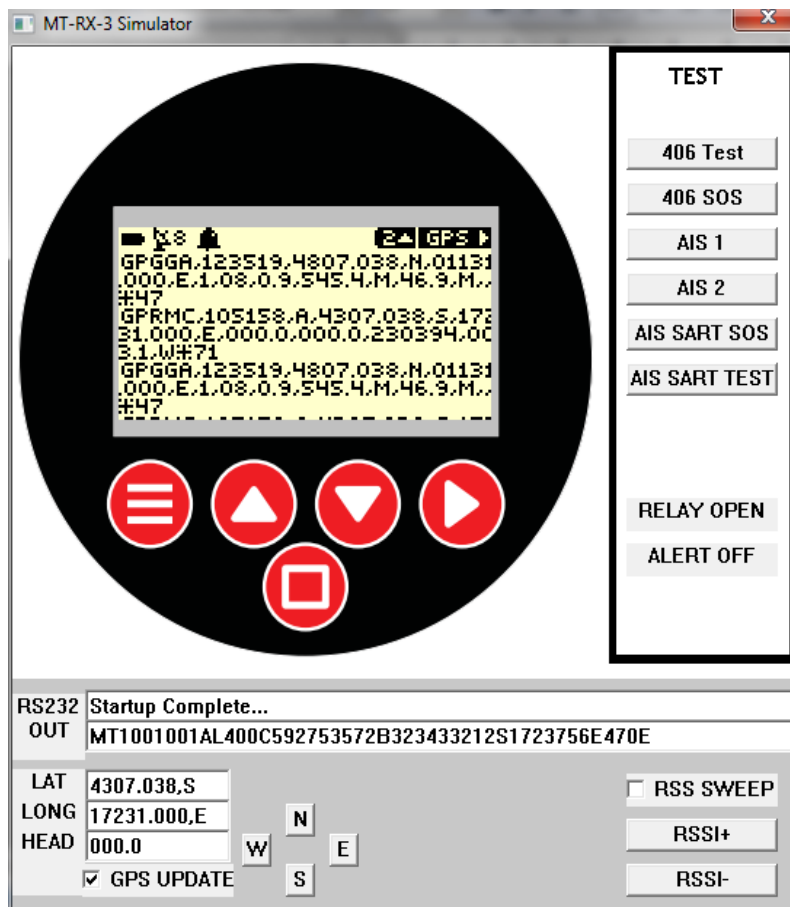
AIS SART TEST:

Generates a simulated AIS SART test transmission.

Bottom Screen Button Functions

GPS UPDATE(Checkbox):

When checked a GPS sentence is constructed and injected into the simulator once every second, as if provided from an external GPS module. This GPS sentence can be viewed on the GPS screen of the MT-RX. The LAT, LONG and HEADING fields are used to construct the GPS NMEA sentences used.



N, S, E and W:

These buttons make incremental changes to the current LAT and LONG.

RSS SWEEP (Checkbox):

When simulating a signal to be used on the RSS screen, checking this option informs the simulator that the signal has an embedded downwards sweep.

RSSI+ and RSSI-:

Make incremental changes to the RSS Level seen on RSS screen in 2dB increments. Note that a small amount of randomness is added to the signal level displayed on the RSS screen.

Input Fields

LAT, LONG and HEADING may all be changed. Ensure that the GPS UPDATE checkbox is cleared first, then check again after making changes.

LAT takes the form:

DDMM.MMM,S

where DD is degrees, and MM.MMM is decimal minutes. A coma following must be provided, then either a N or S. This is the format expected by NMEA GPS sentences.

LONG takes the form:

DDDMM.MMM,S

where DDD is degrees, and MM.MMM is decimal minutes. A coma following must be provided, then either a E or W. This is the format expected by NMEA GPS sentences.

HEADING takes the form:

0 to 360

RS232 OUTPUT Window

This window provides an indication of RS232 messages that are sent from the MT-RX under normal operation. This window can be used to view output messages that would be used by PC mapping software and NMEA navigation equipment.

Disclaimer

The MT-RX simulator when provided, is provided in good faith to provide a simulation of the MT-RX operation based on the software version that the simulator has been built on. There may be minor operating differences between the simulator and the actual device firmware due to variations on operating systems or simulation complexity.