

Title:	Waterproof Tracker			
Model name:	R-35W			
version:	V2			
Revision Index	Date	Name	Doc Type:	Status/comments
	25-11-2009	R-35W-V2 Manual	Application note	

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## **Waterproof Tracker (R-35W-V2) Manual:**

The R-35W has all the functionality off the R-35 tracking unit. This manual will only list the difference in hardware design and I/O connections. For any command codes, firmware or settings please see the R-35 setup manual.

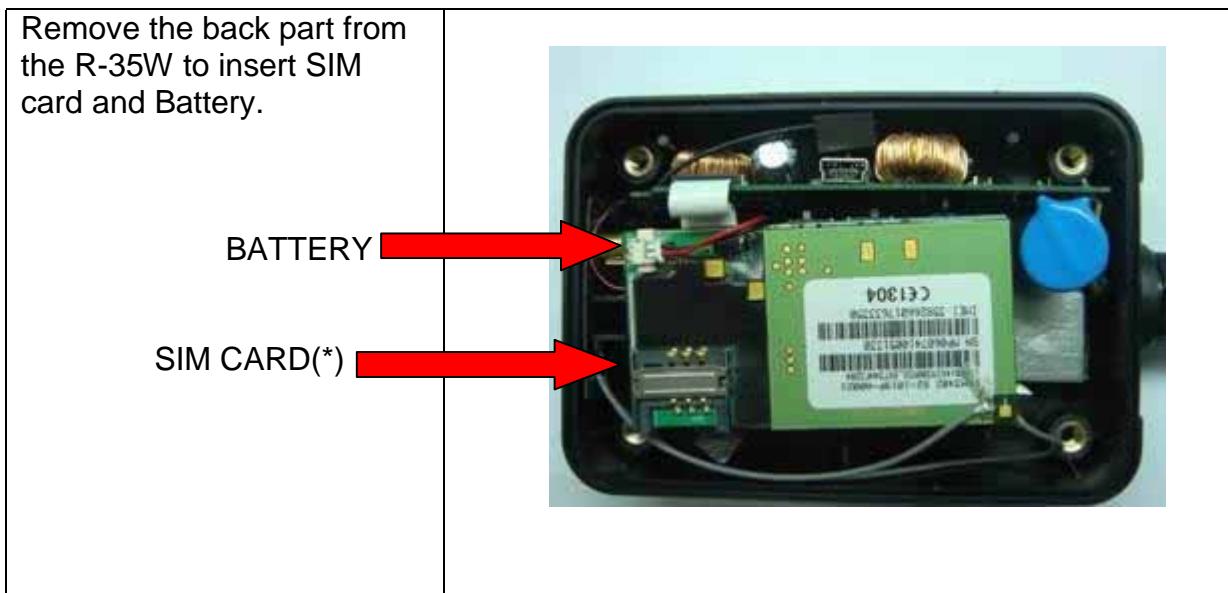


The R-35W has been designed to make installation, testing and configuration simple. **Please note** that you can only use the special serial cable supplied for USB communication.

**Please take care when opening or closing the R-35W casing. As this is a waterproof casing it needs to be closed correctly!**

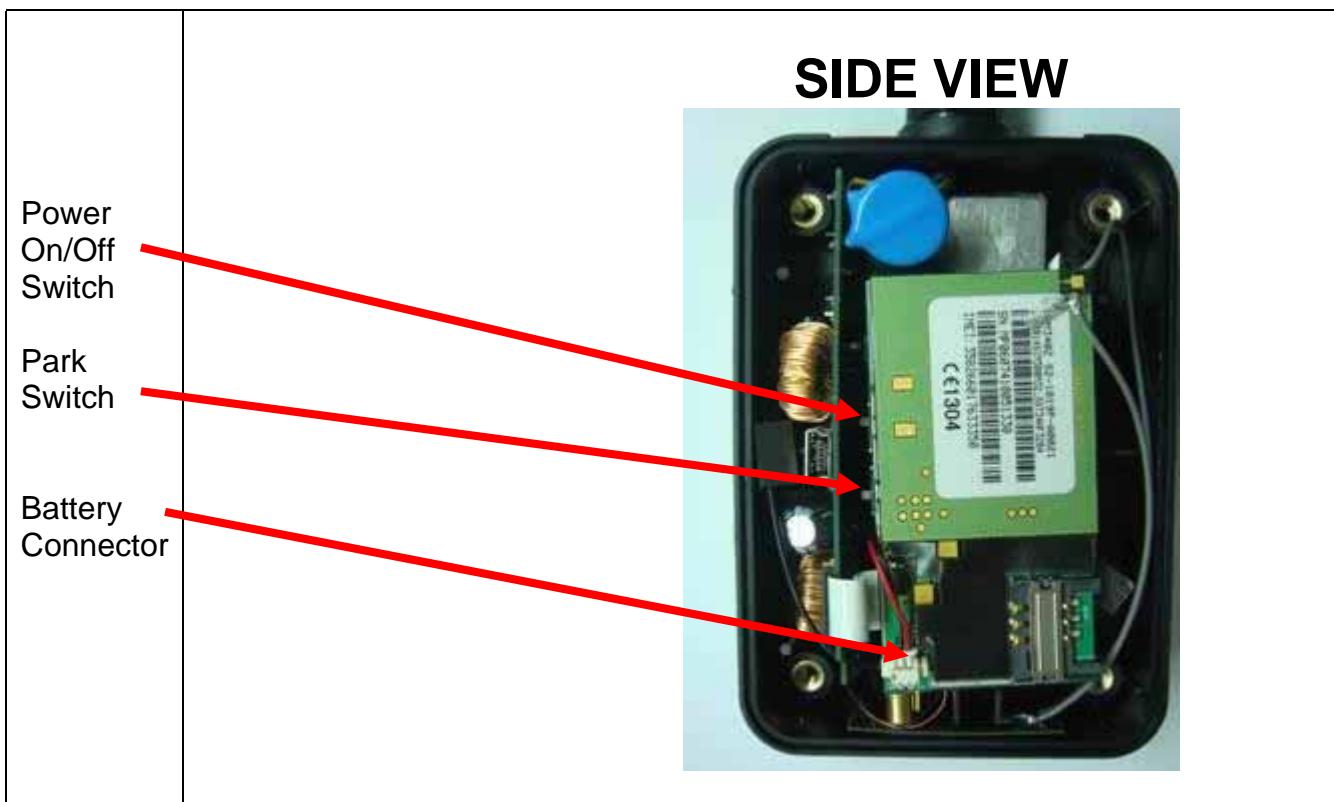
**Sim card and battery Installation (BACK VIEW)**

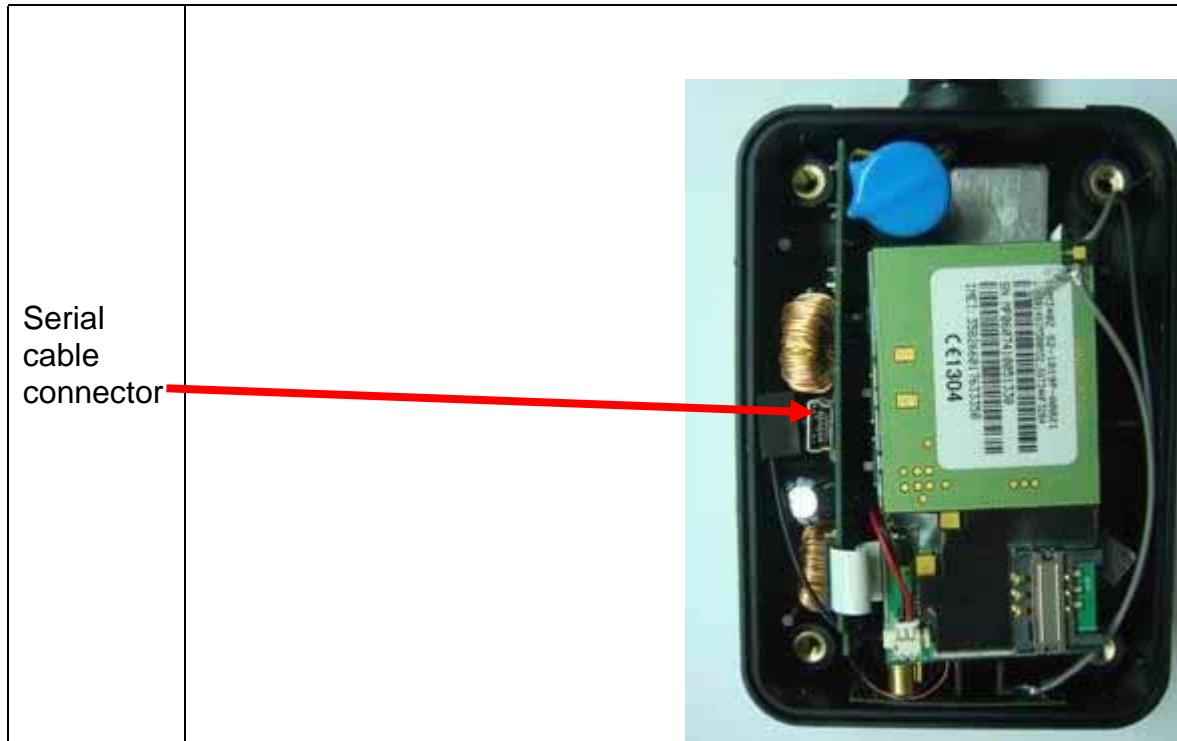
■ **MAKE SURE THE POWER IS OFF WHEN INSTALLING THE SIM CARD!**



**Please Note : ONLY USE THE SUPPLIED BATTERY WITH THE UNIT**

- For the first time when you install a new sim card the pin number (if configured) must be set to "0000" or disabled.  
**MAKE SURE THE PIN NUMBER IS CORRECT BEFORE INSTALLING SIM CARD. READ SETUP SIM PIN CODE INSTRUCTIONS FIRST!**





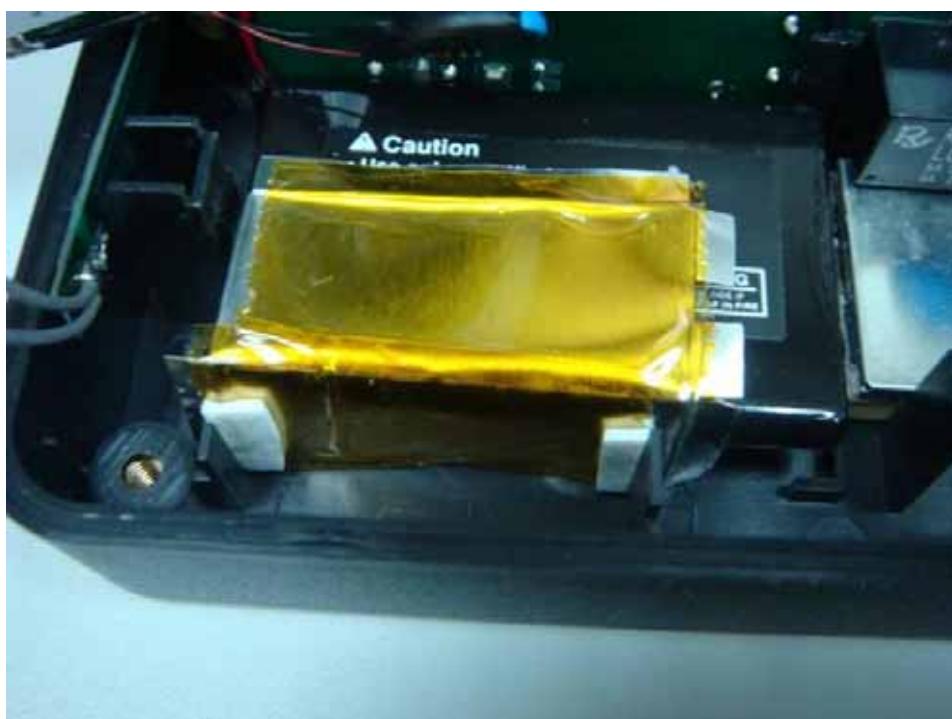
**\* It takes about 1 Minute or less for the R-35W to startup (If battery voltage is very low it may take several minutes).**

**Important:**

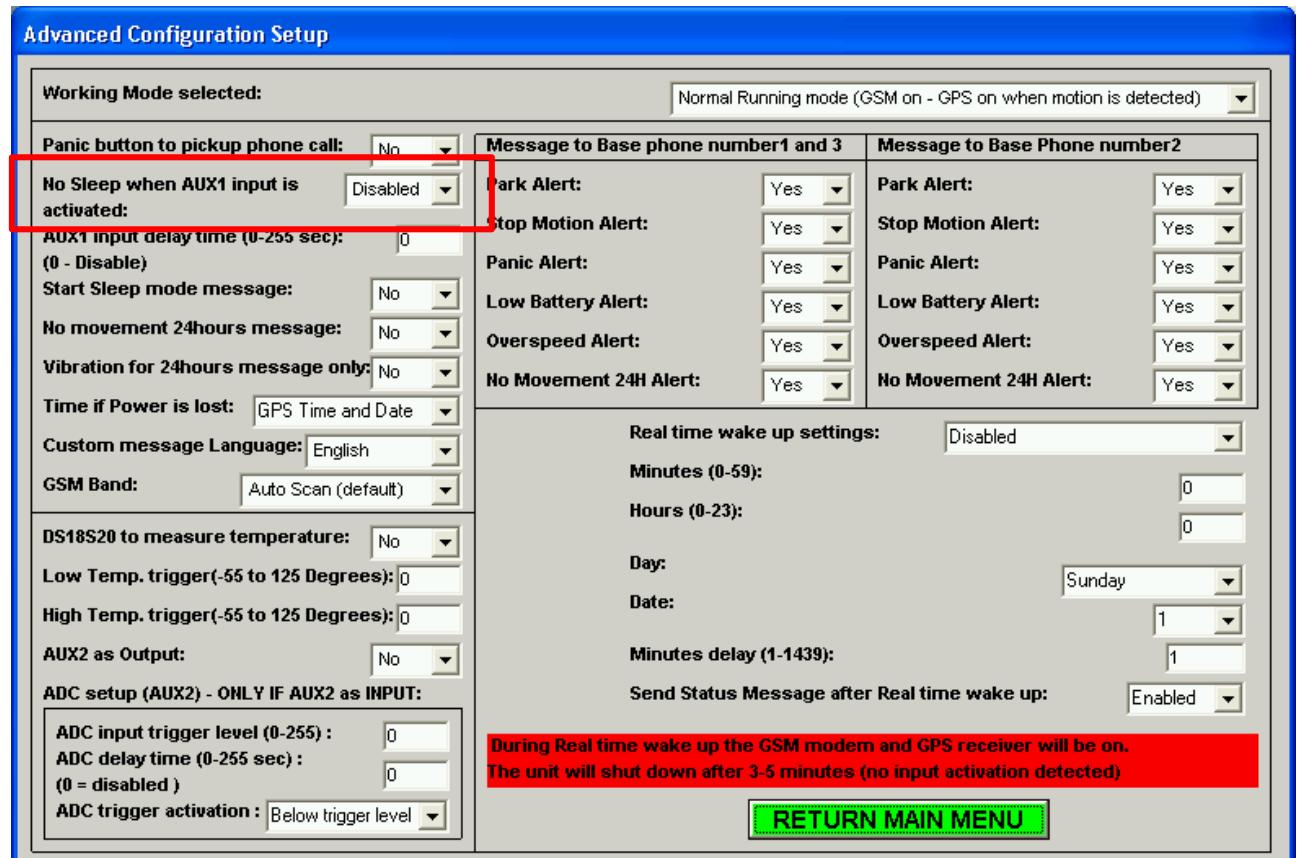
The R-35W uses the 'AUX2' signal to control and switch a relay. When using the R-35W the 'AUX2' signal must be configured as 'OUTPUT' only. It cannot be used for any other function!.

See the R-35 setup manual for information about the 'AUX2' settings.

**To reduce noise and interference the inside casing may have a RF shielding installed as shown in the picture below:**



When 'Deep sleep mode' is enabled the R-35W will not enter 'Deep sleep mode' if external power is connected. The user can configure the 'No Sleep when AUX1 input is activated' so that the R-35W will enter 'Deep sleep mode' (if configured) when external power is disconnected. **If this option is not enabled the R-35W will reset every time the R-35W tries to enter 'Deep sleep mode'.** This option allows the R-35W to be used in applications where external power is limited as example the power on a small boat.



### Physical Characteristics:

Unit size: LxWxH 118.5x 65.5 x 31 mm widest 88±1 mm

Plastic Waterproof casing (IP66)

Case Environmental Characteristics:

Operational Temperature: - 25 ~ + 70 °C (board temperature)

Storage temperature -40°C to +80°C

### Electrical Characteristics:

Power input DC from +12 to +24VDC (MAX 500mA).

Build in power filter and short circuit protected.

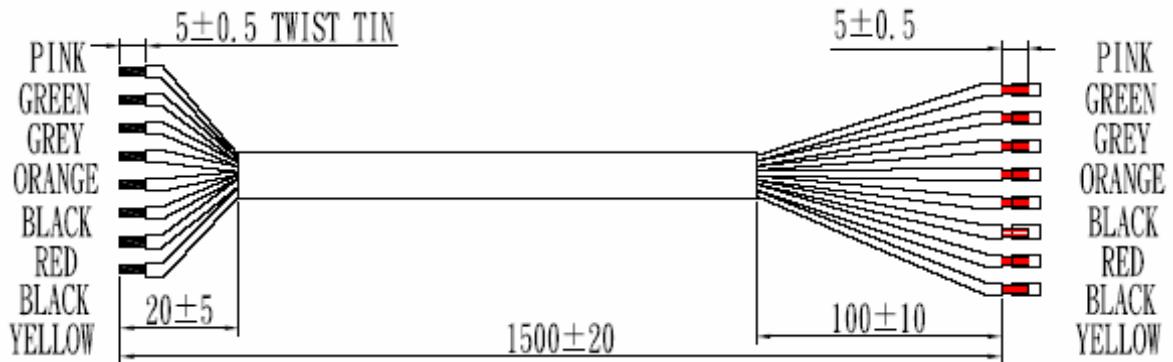
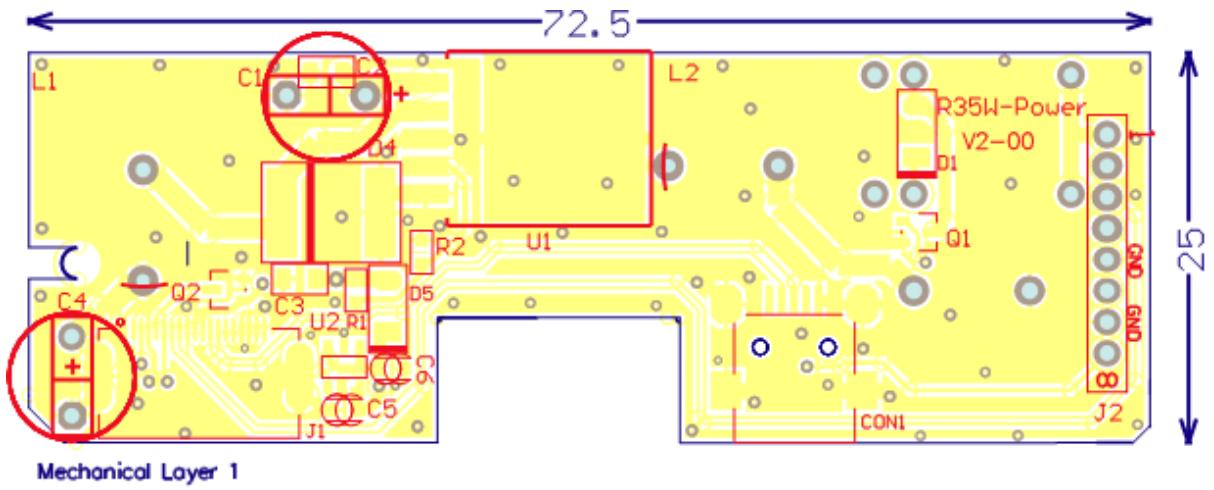
Power relay to switch up to 5A.

Panic input

'Loop' wire to detect external cable broken or cut.

# R-35W-V2 Connections

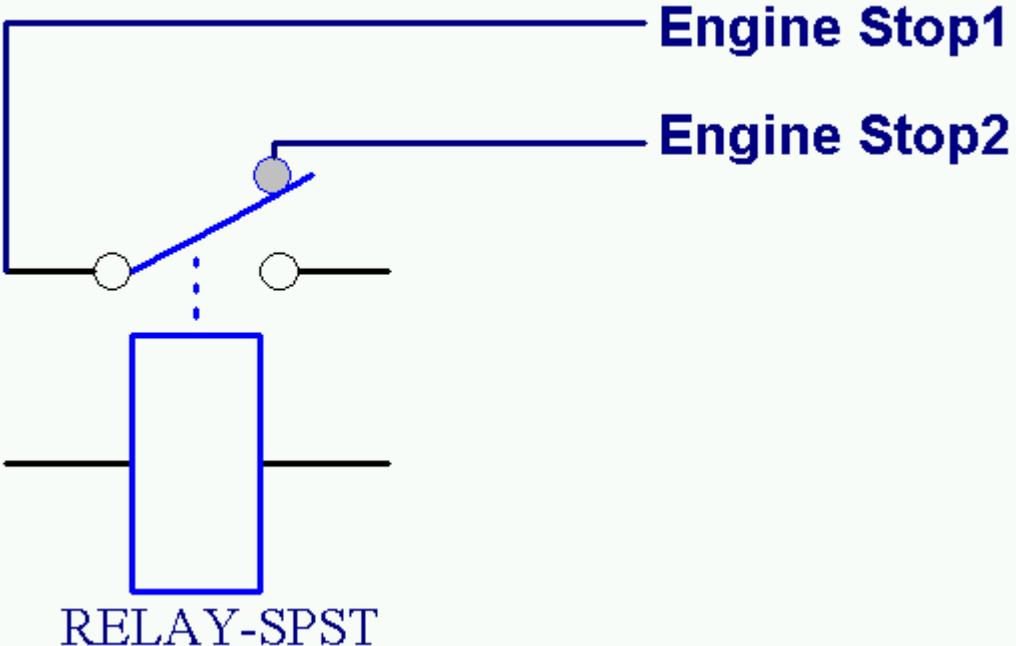
## Front View



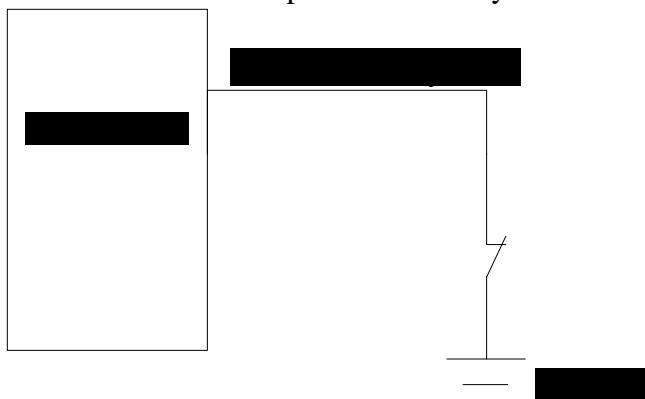
### Pin Out:

Pin	Name	Color
1	Engine Stop1 (1)	<b>Pink</b>
2	Engine Stop2 (1)	<b>Green</b>
3	Connect at switch1 by customer (2)	<b>Grey</b>
4	Connect at switch2 by customer (3)	<b>Orange</b>
5	Ground	<b>Black</b>
6	Power In (+12V to +24V DC- Max) (4)	<b>Red</b>
7	Ground	<b>Black</b>
8	Park Switch (Digital Input)	<b>Yellow</b>

(1) Relay switch normally closed. Max current that can be switched open or closed is 5A. The picture below shows the relay connections for the engine stop wire when not activated.

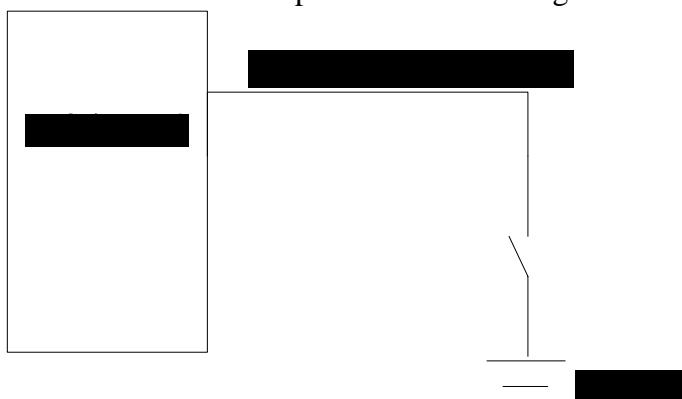


(2) Must NOT be connected to any power source.  
To deactivate Panic input connect Grey wire to Ground.



To activate Panic input disconnect Grey wire from Ground

(3) Must NOT be connected to any power source.  
To deactivate Panic input disconnect Orange wire to Ground.



To activate Panic input connect Orange wire to Ground.  
(4) Must be able to supply up to 500mA when required.

## **Testing the R-35W-V2 hardware extension board:**

1. Connect without any cable connected (Pin 1 to Pin 7 NOT CONNECTED). Only connect serial port cable.

### **Enter diagnostic mode and select option 0**

**- Upload the firmware first.**

### **Enter diagnostic mode and select option 5**

DIAGNOSTICS MAIN MENU :

Current Operating System :Personal Tracker V1.09 21-07-2008

Press 0 to upload operating system (X-MODEM format)

Press 1 to test GSM module and Sim card

Press 2 to read GSM signal strength

Press 3 to test GPS module and GPS location

Press 4 to read Battery voltage level

#### **Press 5 to Read Input Signals**

Press 6 to output GPS sentences to serial port

Press 7 to Display/Enter time and date

Press 8 to direct connect to GSM modem

Press 9 to test Vibration sensor and Buzzer

(Press M to Return to MAIN MENU)

Press Q to Quit

The following will be displayed when no external cable is connected.

**Panic button**

**- Activated**

**Park Switch**

**- NOT Activated**

**AUX1 Digital**

**- NOT Activated**

**AUX2 Analog**

**- Activated**

**Press M to Return to MAIN MENU**

**(The BLUE LED will be ON)**

2. Connect external test board and repeat diagnostic mode test 5. The **RED** LED WILL BE ON!.

Test the Panic input as shown in DIAGRAM B.

**Press M to Return to MAIN MENU**

**Panic button**

**- NOT Activated**

**Park Switch**

**- NOT Activated**

**AUX1 Digital**

**- Activated**

**AUX2 Analog**

**- Activated**

**Press M to Return to MAIN MENU**

3. Open the wire loop cable. The following will be displayed.

**Panic button**

**- Activated**

**Park Switch**

**- NOT Activated**

**AUX1 Digital**

**- Activated**

**AUX2 Analog**

**- Activated**

**Press M to Return to MAIN MENU**

4. Close the wire loop cable and press the Panic input button.

The following will be displayed.

**Panic button**

**- Activated**

**Park Switch**

**- NOT Activated**

**AUX1 Digital**

**- Activated**

**AUX2 Analog**

**- Activated**

**Press M to Return to MAIN MENU**

5. Quit the diagnostic mode and enter 'normal' running mode.

Then press the 'B' or 'b' key. The following message will be displayed.

The RED led will be on and off for 5 seconds each.

**AUX2 as output active HIGH**

**AUX2 as output active LOW**

**When external power (+12Volt) is connected to the 'R-35W' PCB board the RED charger LED on the R-35W must be ON.**

## **Federal Communications Commission (FCC) Statement**

15.21

**You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.**

15.105(b)

## **Federal Communications Commission (FCC) Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

**FCC RF Radiation Exposure Statement:**

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.



Updated 25-11-2009