

# GPS Tracking System

## TCU-618



# USER MANUAL

Ver. 1.00

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## **1. INTRODUCTION**

GPS tracking system TCU-618, integrates both GPS satellite receiver and GSM mobile phone, with advanced hi-tech such as global satellite positioning technology, GSM digital mobile phone network technology and GIS electronic map technology, to realize global satellite positioning, monitoring in real time, anti-burglary and anti-hijack (SOS) alarm historical record, remote power shutdown of the vehicle and vehicle monitor phone, etc.

## **2. COMPUTER SOFTWARE COPYRIGHT**

As the copyright of the software in the TCU-618 described in this manual belongs to VDO or its associated partner, the software should be prohibited for any reproduction, sales or copy without the prior written permission of the copyright owner.

## **3. SAFETY PRECAUTION**

Important for efficient and safe operation of the TCU-618 in-vehicle unit. Read this information before use

### **3.1 General**

The TCU-618 In-Vehicle unit consists of GSM modems, which is based on the international GSM standard.

Modem uses low power radio transmitters and receivers for saving frequency energy.

### **3.2 Exposure to RF energy**

Research, focusing on the traditional and latest RF technologies, conducted by scientist has concluded that the products cause no harm to human.

### **3.3 Efficient modem operation**

The modems are operated at the lowest energy level, without affecting the signal quality. Also, antenna can be extended to enhance the efficiency.

Do not hold the antennas when the modem is in operation. Holding the antenna affects signal quality and may cause the modem to operate at a higher power level that needed.

## **4. PACKAGE CONTENTS**

The TCU-618 package comprises:

- ◇ a TCU-618 main unit
- ◇ a multifunction cable

- ◇ a GSM antenna
- ◇ a G-Mouse
- ◇ a 'SOS' panic button cable
- ◇ a anti-removal box
- ◇ a cut relay
- ◇ a installation guide and user's manual
- ◇ a guarantee card which to keep this product in good maintenance
- ◇ accessories
- ◇ a package list

Above things are the standard configuration of the TCU-618, also there are some optional:

- ◇ a monitor MIC prolonging cable
- ◇ RFID card
- ◇ fuel sensor
- ◇ Temperature sensor

### **WARNING!**

- ◇ The optional components will not be included in the standard package.

## **5. PRODUCT MAIN CHARACTERISTICS**

### 5.1 Electrical Characteristics

The TCU-618 In-Vehicle unit has the electrical characteristic as follows:

- ◇ Supply Voltage: 9 – 36 VDC
- ◇ Maximum Operating Current: less than 200mA
- ◇ Standard Mode Current: less than 120mA
- ◇ Sleeping Mode Current: less than 55mA
- ◇ Operating Temperature:  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- ◇ Storage Temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- ◇ SOS Button Responding Time: more than 3 second (time of pressing the 'SOS' panic button continuously.)

### **WARNING!**

- ◇ Different network environment has different operating current. The above data is obtained under the standard measuring condition of the network environment.
- ◇ The above test does not include the consumption of the LCD, telephone handset and

other peripherals . The-operating current would be enhanced if other peripheral is used.

## 5.2 Physical Characteristics

- ◇ Power Interface: 1 × 12 VDC  
1 × GND
- ◇ Serial Interface: 57600 bps, 8N1
- ◇ Voice Interface: 1 × Microphone (MIC+)  
1 × Microphone (MIC-)  
1 × Speaker (SPK+)  
1 × Speaker (SPK-)
- ◇ SIM Card Holder: 2 × Card
- ◇ Dimensions: 66mm(W)×32mm(H)×110mm(L)
- ◇ Weight: 260 grams (without accessories)
- ◇ Casing: Black anodized aluminum shell

## 6. INTERFACE FEATURES

The TCU-618 In-vehicle unit consists of several interfaces (See **Figure 1**):

TCU-618 Connection Diagram

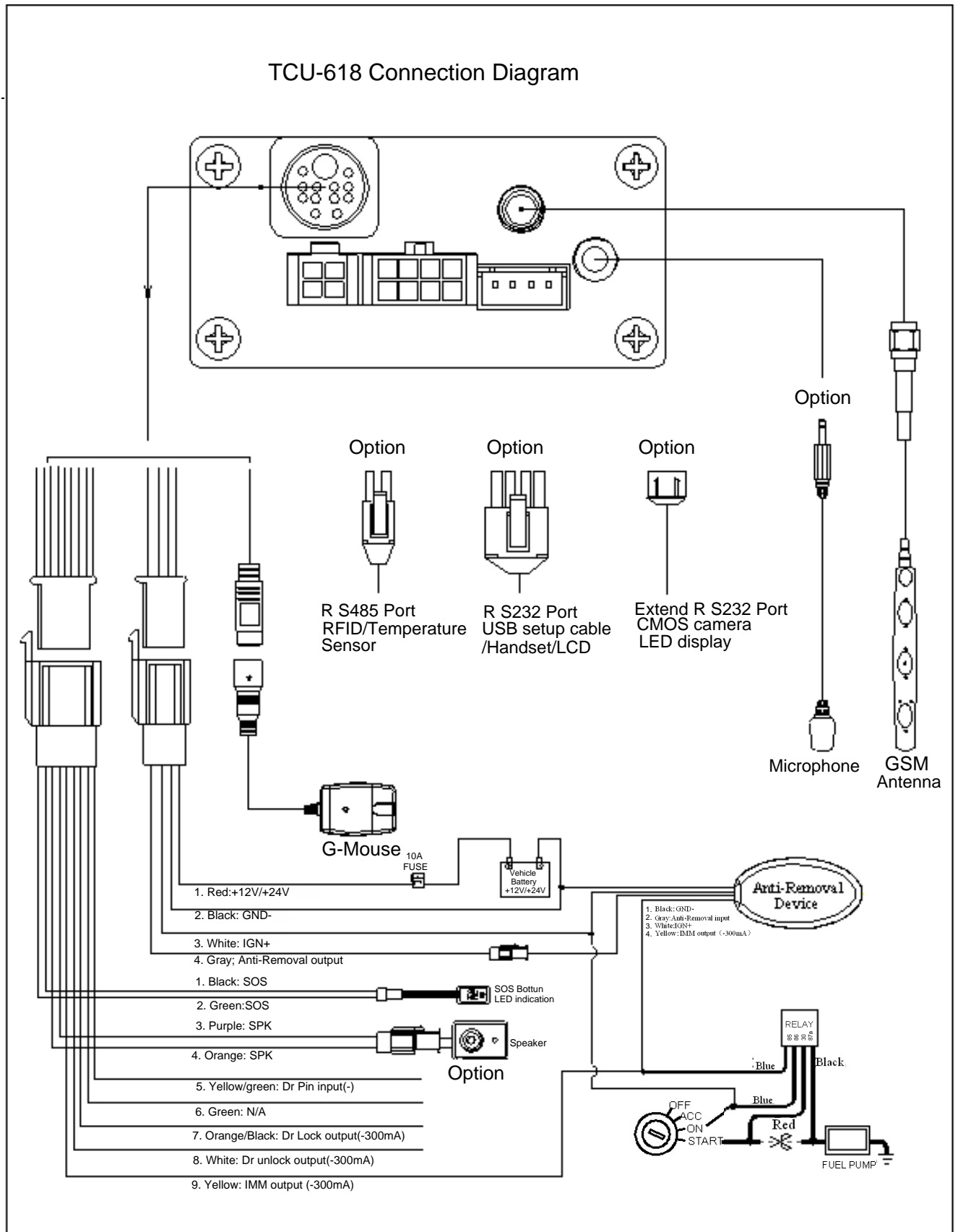


Figure 1

## 7. SETUP & INSTALLATION

### 7.1 Installation precaution

The TCU-618 In-Vehicle unit must be installed by the authorized technician or

maintenance professional in local service center. Users, without consent by the VDO, are not allowed to remove or install the In-Vehicle unit because it may cause damages by e-charges.

## 7.2 Installation steps

### 7.2.1 SIM card fixing

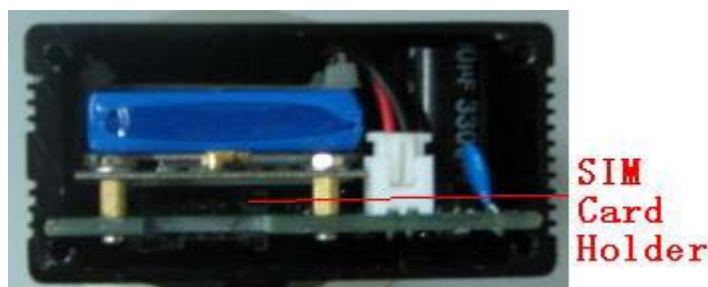
SIM card is necessary for the modem to operate on a GSM network. It is not included in the package and has to be purchased separately.

There is a double SIM cardholder on the In-Vehicle unit. (See **Figure 2**)The steps of fixing the SIM card are:

- ◇ Open the upper cover of the In-Vehicle unit, there is a dual SIM cardholder. Ordinarily, the user fixes the SIM card into the NO.1. If double SIM card is needed, the user should fix two SIM cards into the holder.
- ◇ Close the upper cover and fasten the bolts.

### **WARNING!**

The user should write down the SIM card number correctly in order to avoid unpredictable troubles.



**Figure 2: SIM Card Holder**

### 7.2.2 In-vehicle unit placement recommendation

We do not recommend users mount the In-Vehicle unit at places of the high temperature or the places near by the air-condition because the high temperature will highly shorten the life of the In-Vehicle unit, and the condensate water of the air-condition will immerge into the unit, resulting in short circuit to fully damage the unit

So it is highly recommended users to mount the In-Vehicle unit in a concealed location to avoid the humid problem.

### 7.2.3 multifunction cable connection

The connection of the 4-pin and 9-pin multifunction cable is very important and more complicated than other interfaces. There are many precautions and warnings of it. Therefore, extreme care must be taken before connecting.

- ◇ The 16-pin multifunction cable must be connected by the authorized technician or the maintenance professional in local service center. Otherwise, severe aftereffects may be caused.
- ◇ Read the description of the multifunction interface before installation and connect the In-Vehicle unit to the circuit of vehicle correctly. The cables that are not used should be packed properly by the black plastic tape.
- ◇ Check the fuse if it is fixed into the fuse-box before installation, else the In-Vehicle unit may have no power supply.
- ◇ The ACC cable is in the positive trigger mode
- ◇ Software control for function extension and output high/low voltage selection.
- ◇ Press-key for multi-function. Normally, press-key is used to dial to the pre-entered number. If there is an incoming call, press the key to receive the call. Also, press-key can be used to hang up the current call.
- ◇ The MIC prolonging cable is connected directly to MIC monitoring interface, and meanwhile sealing the interface with the black plastic glue.
- ◇ The ‘SOS’ panic button prolonging cable interface has two sides, the smooth side is the upper, another is the underside. The method of connecting this interface is: use your left hand to keep the multifunction interface at level, and make the green cable side up. If you see the interface of the ‘SOS’ panic button prolonging cable is the upper, then the connection is right. If not, it must be wrong. You should make the opposite side of which as the upper side. After that, you should package the connection with the black plastic tape, and place the ‘SOS’ panic button nearby the driver.
- ◇ The odometer signal input cable can be connected directly with the odometer instrument of the vehicle. Normally it will not be used.
- ◇ When users install the G-mouse antenna, they should make the G-mouse antenna downwards and place it at the planar location. It is better fixing it with double side tape if it is necessary.
- ◇ The GSM antenna will transmit RF (radio frequency) signal, in order to avoid interfering with the unit’s equipment, the GSM antenna should be placed far from the In-Vehicle unit and the multifunction cables.
- ◇ Any change of the G-mouse antenna’s and GSM antenna’s feedback cable may affect the normal working of the In-Vehicle unit,
- ◇ Please read the manual of the telephone handset or the LCD carefully before installing them.
- ◇ After finish installing all the equipment of the In-Vehicle unit, startup the vehicle with several minutes and then check whether all the equipment of the vehicle is normally working. If not, turn off the vehicle engine to check the connection of the unit carefully.

## 8. MAINTENANCE GUIDE

The TCU-618 In-Vehicle unit is an excellent designed and with good crafts. The advice below will not only help the user comply with the maintenance rules, but also will



make the In-Vehicle unit work smoothly and reliable.

- ◆ The TCU-618 In-Vehicle unit must be installed by the authorized technician or the maintenance professional in the local service center. Users, without consent by the VDO, are not allowed to remove or install the device; otherwise, severe aftereffects may be caused.
- ◆ Keep the unit dry because it is not waterproofed. If any water immerges into it, contact the maintenance staff of the local service center at once. Do not Turn the vehicle on is before contacting the maintenance staff. Otherwise, severe aftereffects may be caused. If the ‘SOS’ panic equipment is damaged, the user should contact the local service center for maintenance as soon as possible.
- ◆ If you find out the unit is working abnormally, contact the local service center for maintenance as soon as possible.

## 9. TROUBLESHOOTING

If the problem still exists after following the steps in the chart below, contact the local product dealer of our company or contact us directly.

Symptoms	Possible Causes	Corrective Actions
Not online	<ul style="list-style-type: none"> <li>◇ The fuse has melted and no power supply.</li> <li>◇ Parameters have been wrongly set.</li> <li>◇ No money in the SIM card or the user’s SIM card do not support the GPRS function.</li> <li>◇ SIM card has been wrongly fixed.</li> <li>◇ GSM antenna has been improperly connected result so that the GSM signal is weak.</li> <li>◇ The In-Vehicle unit out of function.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Change a good fuse.</li> <li>◇ Reset the parameters.</li> <li>◇ Check the function of the SIM card.</li> <li>◇ Fixing the SIM card into the correct holder.</li> <li>◇ Check the GSM antenna’s connection.</li> <li>◇ Send it to the service center for maintenance.</li> </ul>
No rob alarm reported	<ul style="list-style-type: none"> <li>◇ The ‘SOS’ panic button prolonging cable has been wrongly connected.</li> <li>◇ The unit is offline.</li> <li>◇ The In-Vehicle unit out of function</li> </ul>	<ul style="list-style-type: none"> <li>◇ Check the ‘SOS’ panic button prolonging cable.</li> <li>◇ Find out why the unit is offline.</li> <li>◇ Send it to the service center for maintenance.</li> </ul>
No valid GPS Position	<ul style="list-style-type: none"> <li>◇ G-mouse Antenna not connected.</li> <li>◇ The In-Vehicle unit is out of function.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Ensure the G-mouse antenna is connected properly and to the correct port.</li> <li>◇ Place the G-mouse antenna on other position or outside the vehicle.</li> <li>◇ Send it to the service center for maintenance.</li> </ul>

No hijack alarm reported	<ul style="list-style-type: none"> <li>◇ The trigger electrical level has been wrongly setmaking the unit not able to work with the external anti-burglary system.</li> <li>◇ The In-Vehicle unit is out of function.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Reset the trigger electrical level after read the manual carefully.</li> <li>◇ Send it to the service center to maintenance.</li> </ul>
The network center cannot call and trace the unit	<ul style="list-style-type: none"> <li>◇ The vehicle has turn off the power.</li> <li>◇ The In-Vehicle unit is out of function.</li> </ul>	<ul style="list-style-type: none"> <li>◇ It is no problem when you meet this situation, the In-Vehicle unit has been worked in the sleeping mode by that time.</li> <li>◇ Send it to the service center for maintenance.</li> </ul>

## 10. LIMITED MAINTENANCE WARRANTY

Please notice the warranty terms and conditions for the TCU-618 as follows:

- ◇ This warranty is valid for the consumers of VDO or dealers of VDO, who properly use the TCU-618 In-Vehicle unit.
- ◇ Users will have one-year free maintenance period from the purchase date. During the maintenance period, VDO and its authorized service center will provide the maintenance service for users. If the In-Vehicle unit is out of order due to the product's workmanship and material.
- ◇ Consumer should provide the invoice of this product for free maintenance.
- ◇ VDO and its authorized parties have the right to charge for unreasonable, man-made or deliberate damage even the device is still in the warranty period.
- ◇ If the replacement device is given for the warranty, VDO will have the total ownership of the replaced one. However, the shell of In-Vehicle unit is not included in this term.
- ◇ VDO and its authorized service center will take charge maintenance all the life if the free maintenance is expired.
- ◇ If the product needs the maintenance service during the free warranty period, the consumer should take the following steps:
  - (I) Send the defective product to the local dealer of the VDO for maintenance or replacement.
  - (II) The cost of removing the product from the vehicle is not included in this terms and conditions.
  - (III) The VDO will charge the consumer for the maintenance of the product if the returned product has exceeded the warranty period..

### **WARNING!**

- ◇ VDO will not have the obligations and responsibilities that outside this limited maintenance warranty and VDO will never authorize the local service center to fulfill that.

- ◇ Any changes including maintenance information, product functions and rules will not inform the consumer directly.
- ◇ VDO always holds the final right explanation for all of the warranty terms and conditions.

**FCC CAUTION:**

Changes or modifications to this device, not expressly approved by CASTEL, could void your authority to operate this transceiver under FCC regulations.

**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20 cm between the radiator& your body.