User Manual & Setting Instructions





# 1. INTRODUCTION

WT-1021 is a personal remote position device with build-in GPS and GSM/GPRS modules. It is a small size, high accuracy remote location tracking device. Based on GPS satellite, it provides accurate position information under dynamic conditions. Personal remote position device transmit the longitude and latitude coordinate to authorized cell phone.

You can use these features for protecting and searching children and old persons. Further, you can use it as a security purpose and other purpose which needs remote positioning such as asset protection and animal tracking

# 2. FEATURES

- Build-in GPS personal locator
- GSM/SMS communication or GPRS TCP/UDP connection
- Works worldwide!
  - → Support 3-frequency GSM900/1800/1900Mhz
  - → Support 4-frequency GSM 850/900/1800/1900 Mhz (Optional)
- High sensitivity, new technology and latest GPS SiRF-Star III chipset!
  - → Excellent for fixing the position even at a weak signal status.
  - → Work well even in areas with limited sky view like urban canyons.
- Compact size, and smaller than one name card. Easy to hide
- Very Low power consumption
- Fast Signal Acquisition
- Support single location and continuous tracking
- Support location triggered by tracker
- Support location triggered by authorized cell phone
- Support alarm and remote monitor
- Support quick dialing buttons for 2 preset phone numbers
- Support check location by SMS and GPRS
- Monitors can track the person without interfering him,
  - → LIVE! Real-Time tracking!
- Locate the locator holder by the mobile phone via SMS (short messaging system)
- SOS button send out exact location for immediate rescue/action.
- Geo-fencing to restrict movement to a defined radius.
- No monthly service charges to be paid to the call center

# 3. SPECIFICATION

| HARDWARE           |   |  |
|--------------------|---|--|
| GSM Modules        | embedded GSM 850/900/1800<br>embedded GSM 850/900/1800/1900Mhz (optional)<br>and GPRS TCP/UDP |  |
| GPS Chipset        | latest GPS SiRF-Star III chipset  |  |
| GPS Sensitivity    | -158Db  |  |
| GPS Frequency      | L1, 1575.42 MHz   |  |
| C/A Code           | 1.023 MHz chip rate   |  |
| Channels           | 20 channel all-in-view tracking   |  |
| Position Accuracy  | 10 meters, 2D RMS   |  |
| Velocity Accuracy  | 0.1 m/s   |  |
| Time Accuracy      | 1 us synchronized to GPS time   |  |
| Default datum      | WGS-84  |  |
| Reacquisition      | 0.1 sec., average   |  |
| Hot start          | 1 sec., average   |  |
| Warm start         | 38 sec., average  |  |
| Cold start         | 42 sec., average  |  |
| Altitude Limit     | 18,000 meters (60,000 feet) max.  |  |
| Velocity Limit     | 515 meters/second (1000 knots) max.   |  |
| Acceleration Limit | Less than 4g  |  |
| Jerk Limit         | 20 m/sec  |  |

| Other                 |  |  |
|-----------------------|--|--|
| Operating temperature | -25° to 65° C  |  |
| Humidity              | 5% to 95% Non-condensing   |  |
| Dimension             | 76 mm × 46 mm × 25 mm  |  |
| Voltage               | Rechargeable and replaceable 1300 mAh battery (3.7V), 5V for charging input. |  |
| Charging connector    | DC 5V (USB port)   |  |
| Standby time          | Over 60 hours  |  |
| LED                   | 3 LEDs showing Power, GPS and GSM status,<br>And other operation status.     |  |
| KEY                   | 3 Keys for SOS Emergency key, quick dial key A, quick dial key B             |  |

# 4. HARDWARE DESCRIPTION





| State                | Meaning   |
|----------------------|---|
| Constant Darkling    | The power is too low to work or Charging was completed. |
| Light 0.1s dark 0.1s | The power is not enough                                 |
| Constant Lighting    | Charging  |
| Light 1s dark 2s     | Working   |

Blue LED - indicate the GPS signal state:



| State                | Meaning                |
|----------------------|------------------------|
| Constant Lighting    | One key be pressed     |
| Light 0.1s dark 0.1s | Initial                |
| Light 0.1s dark 2.9s | GPS receiver work well |
| Light 1s dark 2s     | No GPS signal          |

Green LED -- indicate the GSM signal state:



| State                | Meaning                |
|----------------------|------------------------|
| Constant Lighting    | One call is coming     |
| Light 0.1s dark 0.1s | Initial                |
| Light 0.1s dark 2.9s | GPS receiver work well |
| Light 1s dark 2s     | No GSM signal          |

|     |        |        |         | 1  |
|-----|--------|--------|---------|----|
|     |        |        | - 0000- |    |
| SOS | Call B | Call C | OFF     | ON |

Button Function description:

| Button        | Meaning  |
|---------------|--|
| Power Button  | Turn On/ Turn Off  |
| SOS button    | You can assign a phone numbers to the SOS button.<br>When this button is press, WT-1021 will send it's location<br>information to the phone number by SMS, at the same<br>time, WT-1021 will dial to the preset phone number |
| Call B button | You can assign a phone numbers to the Quick Call B button. When this button is press, WT-1021 will dial to the preset phone number   |
| Call C button | You can assign another phone numbers to the Quick Call C button. When this button is press, WT-1021 will dial to the preset phone number   |

# 5. GET STARTED

# 5.1 Accessories

1. USB Charged Cable



2. Wall Charger and Car Charger





3. Earphone with mini microphone



# 5.2 Charge Battery

Before you can use the WT-1021, you must FULLY charge the battery by USB cable at least 2 hours under the power off condition.

Charger state indicates:

Red light is ON. It indicates that it is in charging Red light is OFF. It indicates that charge completed



# 5.3 Buy SIM Card

Buy SIM Card from local service provider

(Note: Please make sure that your SIM Card support SMS function and have enough deposit)

# 5.4 Install SIM Card

Insert SIM Card to WT-1021 as following picture shows



#### 6. Operation

#### 6.1 Turn ON/ Turn OFF

#### Turn On:

When the device is off, press the power button to on side and wait for about 20 seconds. It will enter standby mode. It is suggested that you be an outer place where it can receive the better GPS signal when you turn on the device.

#### Turn OFF:

When the device is on, press the button to off side and wait for 3 seconds. When the LEDs go out, it indicates that the device is turn off for sure



Tips: How to get better GPS signal;

- 1. Working outdoor, WT-1021 can get better GPS signal
- 2. The front side WT-1021 should be placed towards sky

#### 6.2 Apply For One Position Service

No matter where you are, when you want to know the position of your vehicle, send a SMS or make a telephone call to WT-1021, it will repost its location back to you by SMS.

Edit a message as following format, then send it to WT-1021:

Format: W+Password+,+000 (Initial password is: 000000)

For Example: W000000,000



The WT-1021 send back one SMS, which including the position information



# Position Data Means:

Longitude: 114 degree – 03 cent – 43.88 second Latitude: 22 degree – 32 cent – 17.09 second

(Tips: Apply for one position service by another easier way;

- a) Dial up the WT-1021 number by your mobile phone
- b) After listening the ring of WT-1021 for  $10 \sim 20$  second, ring off the phone
- c) Then, after 20 second, your mobile phone will receive the position SMS)

#### 6.3 Set A Time Interval For Tracking Report Function

Tracking report function can be turned on or off according to the requirements of the user. **Tracking function will continually report vehicle position until get stop command**. In this tracking mode, WT-1021 will send one position message at a preset time interval.

(It is say that WT-1021 will send one position message every time interval)

Step1: Edit a message as following format, and then send it to WT-1021: ----- W+Password+,+002,+XXX (Note: XXX unit: preset minutes interval -- if XXX=000 it is STOP tracking)

> For example: **W000000,002,005** (It means is WT-1021 will send Position Data each 5 minutes)



Step2: WT-1021 will send back one SMS – Set Time (preset time interval) OK

In this example, the SMS is Set Time (005 Min) OK

This SMS means that WT-1021 is in tracking mode now and preset time interval is 5 minutes

Step3: WT-1021 will send back position SMS at present time interval.

In this example, the SMS will send back position data at every 5 minutes. The target phone will receive the Position Data each 005 minutes.

Latitude=22 32 36.25N Longitude= 113 57 38.78E, Speed= 000.31Km/h,2008-10 09.14:12

Position Data Means:

Longitude = 113 degree - 57 cent - 38.78 second Latitude = 22 degree - 32 cent - 36.25 second

(Note: If SMS shows: Longitude = 000 degree - 00 cent - 00 second Latitude = 00 degree - 00 cent - 00 second It means that GPS signal is too weak to work well)

#### 6.4 Stop Continuous Tracking Report Function

This function is used to turn off tracking report function

Edit a message as following format, then send it to WT-1021: Format: **W+Password+,+002+,+000** For example: **W000000,002,000** 

The WT-1021 will send back one SMS -- Stop Timer OK. This message means tracking report function is turned off

#### 6.5 Set Preset Phone Number for SOS key

This function is used to set what telephone number will be dialed when press SOS key.

- Step1: Edit a message as following format, then send it to WT-1021 W+password+,+003+,+3+,+1+,+ area number +telephone number For Example "W000000,003,3,1,008613628888444"
- Step2: About ten seconds later, the WT-1021 will send back one SMS----Set Tel OK/003,3,1,008613628888444. This message means the preset phone number for SOS key is OK.
- Step3: Press the SOS button, the WT-1021 will send one Alarm SMS to "0086 13628888444", and then dial "0086 13628888444".

#### Note:

- a) After SOS button be pressed, you can call and talk with another people by ear microphone
- b) Press the Call Key B, you can hang up the call or cancel the SOS call

C) After press the SOS key, WT-1021 do not go into normal state until you press Call

key

B to cancel the SOS call

d) About area number

In different countries, the area number may different. Please contact with your telecommunication provider to get the area number.

# 6.6 Make SOS help

This function is especially useful when in emergency. When SOS key is pressed, WT-1021 will in SOS state and send SOS alarm SMS and position data SMS to preset phone number. At the same time WT-1021 will dial preset telephone number. When the telephone pick up, 2 ways communication starts.

When the SOS button is pressed for 4 seconds, a SOS help is made.



# 6.7 Cancel a SOS Call

When in SOS state, press Call B key to hang up the phone, exit SOS state and return normal state



#### 6.8. Dial The Preset Phone Number by Call B or Call C

Press the Call B button/ Call C button for 4 seconds, WT-1021 will call the according preset phone number, then you can talk with another people.



If you completed the call, you can hang u the calling by pressing the Call B button

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# 6.9 Receiving Incoming Call

When incoming call, the green light will light, you can press SOS key to receive the calling, then talk with another people by ear microphone



If you completed the call, you can hang u the calling by pressing the Call B button

# 6.10 Set Monitoring Call

When you want to monitor the voice around WT-1021 ,you need set a monitoring number, you can use the mobile phone with this monitoring number to call WT-1021,WT-1021 can answer by itself ,so you can hear what you want . Set one monitoring call: W000000,030,13800138000



So this number 13800138000 can monitor the tracker.

# 7 DISPLAYING LOCATION ON MAP

- 7.1 Download Google Earth software from <u>http://earth.google.com</u>
- 7.2 Start the Google Earth Software (For more information about Google Earth Software, please refer to <u>http://earth.google.com/</u>) As following picture shows:

(Note: Pay attention to change the Position Data Format)



Or you can start the Internet Explorer and type "http://maps.google.com" to connect to Google Map website for displaying the location map.

7.3 You can get the latitude & longitude data by sending "W+Password+, +000" SMS command Code to the GPS Tracker WT-1021. Input the latitude and longitude that you receive from SMS and click on search button. The Google earth will display the location map for you.

For example:

Step1: We you see the Position Data from SMS: Last: Latitude = 22 32 40.05N Longitude = 114 04 57.74E

Step2: Now you can Input the latitude and longitude as following, and click on the searching button.

(Note: Pay attention to change the Position Data Format) Format: **22 32 40.05 114 04 57.74** 



Step3: Now you can find the exact position of the tracker.



7.4 Or you can use local map software on **PDA** or **Car Navigation Device**, input the Position Data.

(Note: Pay attention to change the Position Data Format)



#### 8 More Professional SMS Instruction

\*\*\*\*\* is user password, and initial password is 000000

|   | SMS Instruction | Format         | Note                   |
|---|-----------------|----------------|------------------------|
| 1 | Request one     | W*****,000     |                        |
|   | position        |                |                        |
| 2 | Modify User     | W*****,001,    | ***** is old password  |
|   | Password        | ######         | ###### is new password |
| 3 | Set the time    | W*****,002,XXX | XXX (3 digital)        |

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|   | internet of  |                            | 000 at an   |
|---|--|----------------------------|---|
|   | internal of  |                            | =000,stop   |
|   | continuous   |                            | =[1,999] time internal (unit:   |
|   | tracking when in   |                            | mins)   |
|   | SMS working  |                            |   |
|   | mode   |                            |   |
| 4 | Set a preset   | W*****,003, <b>F,P,Tel</b> | <b>F</b> = 0, close this function   |
|   | phone number for   | Number                     | = 1, only send alarm SMS to the   |
|   | SOS button/ Call   |                            | preset number   |
|   | B button/ Call C   |                            | = 2, only Call the preset number  |
|   | button;  |                            | = 3, Send alarm SMS then Call   |
|   |  |                            | the preset number   |
|   | When this button   |                            |   |
|   | is pressed, WT-  |                            | $\mathbf{P}$ = 1, Set the preset number for   |
|   | 1021 will dial the   |                            | SOS key   |
|   |  |                            | 5   |
|   | preset   |                            | = 2, Set the preset number for  |
|   | number   |                            | Call B  |
|   |  |                            | = 3, Set the preset number for  |
|   |  |                            | Call C  |
|   |  |                            | TelNumber: Preset Tel Number  |
|   |  |                            | (TelNumber must <16 digits)   |
| 5 | Set low power  | W*****,004,X               | X (Voltage preset value)  |
|   | alarm  |                            | = 0, close  |
|   |  |                            | = 1, <3.3V send SMS alarm   |
|   | When the WT-   |                            | = 2, <3.4V send SMS alarm   |
|   | 1021 voltage is  |                            | = 3, <3.5V send SMS alarm   |
|   | TOZT VOITage IS  |                            |   |
|   | lower than the   |                            | (default)   |
|   | e e  |                            | (default)   |
|   | lower than the   |                            | (default)<br>= 4, <3.6V send SMS alarm  |
|   | lower than the<br>preset value, WT-<br>1021 will send  |                            | (default)   |
|   | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power   |                            | (default)<br>= 4, <3.6V send SMS alarm  |
|   | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the   |                            | (default)<br>= 4, <3.6V send SMS alarm  |
|   | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset   |                            | (default)<br>= 4, <3.6V send SMS alarm  |
|   | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number   | W***** 005 VV              | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm   |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number<br>Set over speed   | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)                |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number   | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)<br>= 00, close |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number<br>Set over speed<br>alarm  | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)                |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number<br>Set over speed<br>alarm<br>When the WT-                                  | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)<br>= 00, close |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number<br>Set over speed<br>alarm<br>When the WT-<br>1021 speed                    | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)<br>= 00, close |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number<br>Set over speed<br>alarm<br>When the WT-<br>1021 speed<br>higher than the | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)<br>= 00, close |
| 6 | lower than the<br>preset value, WT-<br>1021 will send<br>one lower power<br>alarm SMS to the<br>SOS preset<br>number<br>Set over speed<br>alarm<br>When the WT-<br>1021 speed                    | W*****,005, XX             | (default)<br>= 4, <3.6V send SMS alarm<br>= 5, <3.7V send SMS alarm<br>XX (the speed preset value)<br>= 00, close |

|   |                   |                   | 1  |
|---|-------------------|-------------------|--|
| 1 | one over speed    |                   |  |
|   | alarm SMS to the  |                   |  |
|   | SOS preset        |                   |  |
|   | number            |                   |  |
| 7 | Set Geo-Fence     | W*****,006,XX     | <b>XX</b> (preset distance to original   |
|   | alarm             |                   | place)   |
|   |                   |                   | = 00, close  |
|   | When the WT-      |                   | = 01, 30m  |
|   | 1021 move out     |                   | = 02, 50m  |
|   | preset scope, WT- |                   | = 03, 100m   |
|   | 1021 will send    |                   | = 04, 200m   |
|   | one Geo-fence     |                   | = 05, 300m   |
|   | SMS to the SOS    |                   | = 06, 500m   |
|   | preset number     |                   | = 07, 1000m  |
|   | F                 |                   | = 08, 2000m  |
| 8 | Extend setting    | W*****,008,ABCDEF | <b>A</b> = 0, Close position report  |
|   | (note: Please use | G###              | function which get position  |
|   | this instruction  | 0"""              | SMS by Calling WT-1021   |
|   |                   |                   | A = 1, Open position report  |
|   | carefully)        |                   |  |
|   |                   |                   | function which get position  |
|   |                   |                   | SMS by Calling WT-1021   |
|   |                   |                   | $\mathbf{B} = 0$ , position SMS format be  |
|   |                   |                   | analyzed in order to read  |
|   |                   |                   | easily   |
|   |                   |                   |  |
|   |                   |                   | For example:   |
|   |                   |                   | Longitude = 114 degree - 04 cent   |
|   |                   |                   | - 57.74 second   |
|   |                   |                   | Latitude = 22 degree - 32 cent   |
|   |                   |                   | - 40.05 second   |
|   |                   |                   |  |
|   |                   |                   | $\mathbf{B} = 1$ , position SMS format in  |
|   |                   |                   | NMEA 0183 Format   |
|   |                   |                   | For example:   |
|   |                   |                   | \$GPRMC,072414000,V,3114.3763,   |
|   |                   |                   | N, 12131.3255, E, 0.00, 0.00, 050805   |
|   |                   |                   | ,*00   |
| 1 |                   |                   | ,  |
|   |                   |                   | <b>C</b> = 0, WT-1021 do NOT hung up   |
|   |                   |                   | $\mathbf{v} = 0, \mathbf{w} = 0 \mathbf{z} + 0 \mathbf{z} + 0 \mathbf{v} + 0 \mathbf{z} + 0 z$ |

| <b></b> |                    |               | · · · · · · · · · · · · · · · · · · ·      |
|---------|--------------------|---------------|--|
|         |                    |               | when incoming call                         |
|         |                    |               | $\mathbf{C} = 1$ , WT-1021 hung up after   |
|         |                    |               | 4~5 rings when call incoming               |
|         |                    |               | <b>C</b> = 0, WT-1021 do NOT send one      |
|         |                    |               | notice SMS to SOS preset                   |
|         |                    |               | number when the WT-1021                    |
|         |                    |               | power on                                   |
|         |                    |               | $\mathbf{D} = 1$ , WT-1021 do send one     |
|         |                    |               | notice SMS to SOS preset                   |
|         |                    |               | number when the WT-1021                    |
|         |                    |               |  |
|         |                    |               | power on                                   |
|         |                    |               | $\mathbf{E} = 0$ , WT-1021 do NOT shut     |
|         |                    |               | down automatically when the                |
| 1       |                    |               | power voltage lower than 3V                |
|         |                    |               | E = 1, WT-1021 will shut down              |
|         |                    |               | automatically when the power               |
|         |                    |               | voltage lower than 3V                      |
|         |                    |               | $\mathbf{F}$ = 0, WT-1021 do NOT send the  |
|         |                    |               | notice SMS to the SOS preset               |
|         |                    |               | number when the GPS signal                 |
|         |                    |               | is weak                                    |
|         |                    |               | $\mathbf{F} = 1$ , WT-1021 send the notice |
|         |                    |               | SMS to the SOS preset                      |
|         |                    |               | number when the GPS signal                 |
|         |                    |               | is weak                                    |
|         |                    |               | $\mathbf{G} = 0$ , Open 3 LED when WT-     |
|         |                    |               | 1021 works                                 |
|         |                    |               |  |
|         |                    |               | $\mathbf{G} = 1$ , Close 3 LED when WT-    |
|         |                    |               | 1021 works                                 |
|         |                    |               | ###, end char                              |
|         |                    |               |  |
| 1       |                    |               | (default value should be:                  |
|         |                    |               | ABCDEFG = 1011110)                         |
| 9       | Set the tracker ID | W*****,010,ID | ID: the Tracker ID of the tracker,         |
|         | for WT-1021 for    |               | it may set to telephone number             |
|         | GPRS               |               | according the SIM card of WT-              |
| 1       |                    |               | 1021                                       |
| 1       |                    |               |  |
|         |                    |               | (Tracker ID must be <14 digits)            |
| L       |                    |               | 、 · · · · · · · · · · · · · · · · · · ·    |

| 10 | Set APN           | W*****,011,APN,    | APN: APN string. No more than 39 |
|----|-------------------|--------------------|----------------------------------|
|    |                   | APN User Name,     | strings                          |
|    |                   | APN Password       |                                  |
| 11 | Set IP Address &  | W*****,012,IP,PORT | IP: xxx.xxx.xxx                  |
|    | Port Number       |                    | PORT: [1,65536]                  |
|    |                   |                    |                                  |
| 12 | Open/ Close GPRS  | W*****,013,X       | X=0, Close GPRS                  |
|    | function          |                    | X=1, Open GPRS                   |
|    |                   |                    |                                  |
| 13 | Set time interval | W*****,014,XXXXX   | XXXXX: means times interval,     |
|    | of send a GPRS    |                    | (Unit: 10s)                      |
|    | package           |                    | The max length of XXXXX is in 4  |
|    |                   |                    | digits                           |
|    |                   |                    | XXXXX= 00001, means time         |
|    |                   |                    | interval is 10s                  |
| 14 | Set IO (effective | W*****,019,P,F     | P only 2 or 3 ,means OUT2,OUT3   |
|    | OUT2/OUT3)        |                    | F=0 means output                 |
|    |                   |                    | F=1 means input                  |
| 15 | Control output    | W*****,020,P,F     | P only one of the 1,2,3 means    |
| _  |                   | ,, , ,             | OUT1,OUT2,OUT3                   |
|    |                   |                    | F=0, Close position output       |
|    |                   |                    | F=1, Open position output        |
| 16 | Set power saving  | W*****,021,XX###   | XX=00 Banned power saving        |
|    |                   |                    | (Default)                        |
|    |                   |                    | XX=01, Small power saving        |
|    |                   |                    | XX=02, Big power saving          |
| 17 | Set SMS mode      | W*****,023,X       | =0 Text mode (Default)           |
|    |                   |                    | =1 PDU mode                      |
|    |                   |                    |                                  |
| 18 | Set the Reply     | W*****,502,*Data#  | Data:                            |
|    | SMS phone         |                    | InChina: +86 , Italy: +39        |
|    | number prefix     |                    | In USA: +1                       |
|    | -                 |                    | For example:                     |
|    |                   |                    | W*****,502,*+86#                 |
| 19 | Set monitor       | W*****,030,T       | T is mobile phone no.or fix phon |
|    | number            |                    | no. for example                  |
|    |                   |                    | 13824787740or075582941987        |
|    |                   |                    | To cancel ,Please Send           |

|    |                              |                       | W*****,030,1#   |
|----|------------------------------|-----------------------|---|
| 20 | Set SMS prefix characters    | W*****,501,*Data#     | Data: Prefix characters max 10  |
| 21 | Initialization<br>parameters | W*****,990,099##<br># | Press SOS and CALL B 3s after,<br>within 120s received the<br>information means changing all for<br>factory setting |
| 22 | Password<br>initialization   | W888888,999,666       | Press CALL B and CALL C 3s after,<br>within 120s received means<br>password initialization 000000                   |

# 9 SMS INSTRUCTION EXAMPLE

1. Send Instruction "W\*\*\*\*\*,000"

Meaning: Apply one position, WT-1021 will reply one position SMS

2. Send Instruction "**W**\*\*\*\*\*,**002**,**005**"

Meaning: Set the time internal of position refresh, WT-1021 will replay one position SMS each 5 minutes in SMS working mode.

3. Send Instruction "W\*\*\*\*\*,003,3,1,(area number)+13628888444"

Meaning: When the SOS button is pressed, the WT-1021 will send one SMS to "13628888444", and then dial up "13628888444"

4. Send Instruction "W\*\*\*\*\*,003,3,2,(area number)+13628888444"

Meaning: When the Dial button B be pressed, the WT-1021 will send one SMS to "13628888444", and then dial up "13628888444"

5. Send Instruction "W\*\*\*\*\*,003,1,3,(area number)+013628888444"

Meaning: When the Dial button C be pressed, the WT-1021 will only send one SMS to "13628888444"

6. Send Instruction "W\*\*\*\*\*,005,03"

Meaning: When the speed is up 30 km/h, the WT-1021 will send one Alarm SMS the mobile phone linking to SOS alarm

# 10 GPRS COMMUNICATION SETTING

- Step1: Make sure that your SIM card in WT-1021 have the GPRS function
- Step2: Set the phone number of WT-1021 by send one SMS:

SMS Format: W\*\*\*\*\*,010,TrackerID

For Example: W000000,010,123

"123" can be considered to be the device's name. (Tracker ID must be <14 digits)

If there are several devices, you can use their Tracker ID to differ from each other.

WT-1021 will response one SMS to confirm the setting.

Step3: Set IP address and Port by send one SMS

SMS Format: W\*\*\*\*\*,012,IP,PORT

Make sure that the IP should be the Extranet IP. If your pc is in Intranet, you must know your Extranet IP. You can know your PORT from the router's configuration.

Now there are two ways of getting your IP address and PORT: First, you can get your IP and port through the DOS Order: ipconfig. Second, the IP address and PORT can be got from IT supports, such as some IT support websites.. FORMAT: IP: xxx.xxx.xxx.xxx PORT: [1,65536]

For example: W000000,012,202.116.11.12,8000

WT-1021 will response one SMS to check it.

Like "Set IP ok /202.116.11.12#8000"

Step4: Set APN

SMS Format: W\*\*\*\*\*,011,APN

APN is your username when you use the GPRS function, and it is used to be connected to the internet.

For example: W000000,011, CMNET

WT-1021 will response one SMS to check it

Like "Set APN OK /CMNET"

Step5: Set time interval of sending GPRS package

SMS format: W\*\*\*\*\*,014,XXXXXX (in units of 10 seconds)

(Be sure that the time interval should be FIVE digits).

XXXXX: Means time's interval, (Unit: 10s) The max length of XXXXX is in 5 Digits XXXXX=00001, means time interval is 10s

For example: W000000,014,00003

WT-1021 will send a GPRS package every 30 seconds

Like "Set GPRS Timer ok/00003"

Step6: Enable GPRS function
SMS format: W\*\*\*\*\*,013,X
X=0, Close GPRS
X=1, Open GPRS
For example: W00000, 013, 1
WT-1021 will response one SMS to confirm the setting.
Like "open tcp ok"
(Note: 1 Default value is GPRS Disable
2 SMS W0000,013,0 is disable GPRS function )

Step7: According to the document of << GTP communication protocols of WT-1021>>, the server can analyses the GPRS data.

#### 11 CAUTION

- a. This device is not design for water-proof, and you must use the water-proof bag accessory
- b. This device must work with GPRS/GSM network.
- c. Make sure enough deposit in the SIM card to avoid any in convince.

# 12 TROUBLE SHOOTING

If you find some trouble in using WT-1021, please refer the following:

1. Check GPS signal is normal

In normal, the blue led should in rapid blink ---- light for 0.1 second and then dark for 2.8second in turn

If blue led is not in this correct state, it indicates GPS signal is too weak to get position info.

Please check following issue:

- (a) Working outdoor, WT-1021can get better GPS signal;
- (b) The front side of WT-1021 should be placed toward sky;
- (c) Charging WT-1021 for 3 hours for the tracker has enough power before usage
- 2. Check GSM signal is normal

In normal, the green led should in rapid blink ---- light for 0.1 second and then dark for 2.8s in turn

If green led is not in this correct state, it indicates GSM communication is wrong please tried following issue:

- (a) Whether the GSM network is strong enough to make the track unit work.You can judge it by calling someone thorough your cell phone.
- (b) Whether the SIM card is installed correctly or not, and tries to pull out and insert SIM card as following picture shows to ensure it; try this operation a few times may help to ensure correct installation
- (c) Whether there is enough deposit in SIM card or not;
- (d) Whether your SIM card in WT-1021 support SMS function or not, (including send SMS and receive SMS)

- (e) Whether SIM card has specific requirement on cell phone or not, for example whether the SIM card can only use in a appointed cell phone, other cell phone cannot use the SIM card
- (f) Whether SIM card is binding to the specific cell phone or not
- (g) Whether SIM card need some authorization when using it.For example, you need type one password when you use the kind of SIM cards
- (h) Whether the tracker has enough power to work, we strongly suggest it was charged at least 3 hours before use it
- 3. The SMS which it replied by WT-1021 is including the chars --- "Last ......" It is indicate the GPS signal is weak.

# 13 ATTACHMENT: WOLDWIDE APN (ACCESS POINT NAME) LIST

| Country   | Mobile Operator | Access Point Name           |
|-----------|-----------------|-----------------------------|
| Argentina | Personal        | gprs.personal.com           |
| Argentina | Unifon          | internet.gprs.unifon.com.ar |
| Australia | Telstra         | telstra.internet            |
| Australia | Optus           | internet                    |
| Australia | Three           | 3netaccess                  |
| Australia | Vodafone        | internet                    |
| Austria   | Max Online      | gprsinternet                |
| Austria   | One             | wap.one.at                  |
| Belgium   | Orange          | orangeinternet              |
| Belgium   | Mobistar        | web.pro.be                  |
| Belgium   | Proximus        | internet.proximus.be        |
| Bermuda   | AT&T            | proxy                       |
| Bermuda   | Mobility        | net.bm                      |
| Brazil    | Claro           | claro.com.br                |
| Brazil    | Oi              | gprs.ou.com.br              |
| Brazil    | TIM             | tim.br                      |
| Bulgaria  | Mobiltel (Mtel) | inet-gprs.mtel.bg           |
| Canada    | Fido            | internet.fido.ca            |
| Canada    | Rogers AT&T     | internet.com                |
| Chile     | Entel PCS       | imovil.entelpcs.cl          |

|                    |                                    | bam.entelpcs.cl               |
|--------------------|------------------------------------|-------------------------------|
| Chile              | Telefonica GSM                     | web.tmovil.cl                 |
| China              | China Mobile                       | cmnet                         |
| Croatia            | VIPNET                             | gprs.vipnet.hr                |
| Czech Republic     | Eurotel                            | internet                      |
| Czech Republic     | Oskar                              | internet                      |
| Czech Republic     | Oskar prepaid cards                | ointernet                     |
| Czech Republic     | T-Mobile                           | internet.t-mobile.cz          |
| Denmark            | TDCmobil                           | internet                      |
| Denmark            | Oarnage                            | web.orange.dk                 |
| Egypt              | Vodafone                           | internet.vodafone.net         |
| Dominican Republic | Orange Dominicana                  | drangenet.com.do              |
| Finland            | Telia Mobile                       | internet                      |
| Finland            | DNA                                | internet                      |
| Finland            | Sonera                             | internet                      |
| Finland            | Radiolinja                         | internet                      |
| Finland            | Saunalahti                         | saunalahti                    |
| France             | Orange                             | orange.fr                     |
| France             | SFR                                | websfr                        |
| France             | Bouygues Telecom                   | eBouygTel.com                 |
| Germany            | D2 Vodafone                        | web.vodafone.de               |
| Germany            | E-Plus                             | intenet.eplus.de              |
| Germany            | 02                                 | internet                      |
| Germany            | Quam                               | quam.de                       |
| Germany            | T-Mobile D1                        | intenet.t-d1.de               |
| Greece             | Vodafone                           | internet.vodafone.gr          |
| Greece             | Telestet                           | gint.b-online.gr              |
| Greece             | Cosmote                            | internet                      |
| Hungary            | Vodafone (Prepaid<br>"Optimized")  | vitamax.internet.vodafone.net |
| Hungary            | Vodafone (Prepaid<br>"Standard")   | vitamax.snet.vodafone.net     |
| Hungary            | Vodafone (Postpaid<br>"Optimized") | internet.vodafone.net         |
| Hungary            | Vodafone (Postpaid<br>"Standard")  | standardnet.vodafone.net      |
| Hong Kong          | CSL                                | internet                      |

| Hong Kong   | Orange                 | web.orangehk.com     |
|-------------|------------------------|----------------------|
| Hong Kong   | New World              | internet             |
| Hong Kong   | People                 | internet             |
| Hong Kong   | SmarTone               | internet             |
| Hong Kong   | Sunday                 | internet             |
| India       | Orange, Hutch          | www                  |
| Iceland     | Siminn                 | gprs.simi.is         |
| India       | BPL Mobile             | bplgprs.com          |
| India       | Airtel                 | airtelgprs.com       |
| Indonesia   | Telkomsel              | internet             |
| Ireland     | 02                     | internet             |
| Ireland     | Vodafone               | live.vodafone.com    |
| Israel      | Cellcom                | internetg            |
| Israel      | Orange                 | internet             |
| Italy       | TIM                    | uni.tim.it           |
| Italy       |                        | ibox.tim.it          |
| Italy       | Vodafone Omnitel       | web.omnitel.it       |
| Italy       | Wind                   | internet.wind        |
| Latvia      | Latvia Mobile Telefone | internet.Imt.Iv      |
| Luxembourg  | LUXGSM                 | web.pt.lu            |
| Luxembourg  | Tango                  | internet             |
| Malaysia    | Celcom                 | celcom.net.my        |
| Mexico      | Movistar               | internet.moistar.mx  |
| Mexico      | Telcel                 | internet.itelcel.com |
| Montenegro  | Monet                  | gprs.monetcg.com     |
| Netherlands | T-Mobile               | internet             |
| Netherlands | KPM Mobile             | internet             |
| Netherlands | Orange                 | internet             |
| Netherlands | 02                     | internet             |
| Netherlands | Vodafone (normal)      | web.vodafone.nl      |
| Netherlands | Vodafone (business)    | office.vodafone.nl   |
| New Zealand | Vodafone NZ            | www.vodafone.net.nz  |
| Norway      | Netcom                 | internet.netcom.no   |
| Norway      | Telenor                | internet             |
| Pakistan    | UFone                  | ufone.internet       |
| Paraguay    | Personal               | internet             |
| Paraguay    | Tigo                   | internet.tigo.py     |

| Philippines       | Smart                 | internet              |
|-------------------|-----------------------|-----------------------|
| Philippines       | Globe                 | internet.globe.com.ph |
| Poland            | Era                   | erainternet           |
| Poland            | Idea                  | www.idea.pl           |
| Poland            | PlusGSM               | www.plusgsm.pl        |
| Portugal          | Optimus               | internet              |
| Portugal          | TMN                   | internet              |
| Portugal          | Vodafone (Telcel)     | internet.vodefone.pt  |
| Romania           | Connex                | internet.connex.ro    |
| Romania           | Orange                | internet              |
| Russia            | BeeLine               | internet.beeline.ru   |
| Russia            | Megafon               | internet.nw           |
| Russia            | MTS                   | internet.mts.ru       |
| Russia            | PrimTel               | internet.primtel.ru   |
| Saudi Arabia      | Saudi Telecom         | jawalnet.com.sa       |
| Serbia-Montenegro | Mobtel Srbija         | internet              |
| Serbia-Montenegro | Telekom Srbija        | gprsinternet          |
| Singapore         | M1                    | sunsurf               |
| Slovakia          | Eurotel               | internet              |
| Slovakia          | Orange                | internet              |
| South Africa      | MTN                   | internet              |
| Spain             | Amena                 | amenawap              |
| Spain             | Telefonica (Movistar) | movistar.es           |
| Spain             | Vodafone              | airtelnet             |
| Sweden            | Telia                 | online.telia.se       |
| Sweden            | Vodafone SE           | internet.vodafone.net |
| Switzerland       | Swisscom              | gprs.swisscom.ch      |
| Switzerland       | Orange CH             | internet              |
| Switzerland       | Sunrise               | internet              |
| Switzerland       | UMC                   | www.umc.ua            |
| Taiwan            | Chunghwa Telecom      | internet              |
| Taiwan            | Far EasTone           | fetnet01              |
| Taiwan            | KG Telecom            | internet              |
| Taiwan            | Taiwan Cellular       | internet              |
| Thailand          | AIS                   | internet              |
| Thailand          | DTAC                  | www.dtac.co.th        |
| Turkey            | Avea                  | internet              |

| Turkey    | Aycell         | aycell                    |
|-----------|----------------|---------------------------|
| Turkey    | Telsim         | telsim                    |
| Turkey    | Turkcell       | internet                  |
| UK        | Jersey Telecom | pepper                    |
| UK        | 02             | mobile.o2.co.uk           |
| UK        | T-Mobile       | general.t-mobile.co.uk    |
| UK        | Vodafone UK    | internet                  |
| UK        | Orange         | orangeinternet            |
| Ukraine   | Kyivstar GSM   | www.kyivstar.net          |
| Ukraine   | UMC            | www.umc.ua                |
| USA       | T-Mobile       | internet2.voicestream.com |
| USA       | AT&T           | ргоху                     |
| USA       | Cingular       | isp.cingular              |
| Venezuela | Digital TIM    | gprsweb.digitel.ve        |