T21 Series GIS Handheld

Quick Start Guide

V1.0

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1.Introduction

1.1. Features

The following section describes the general features of the T21 Handheld Controller.

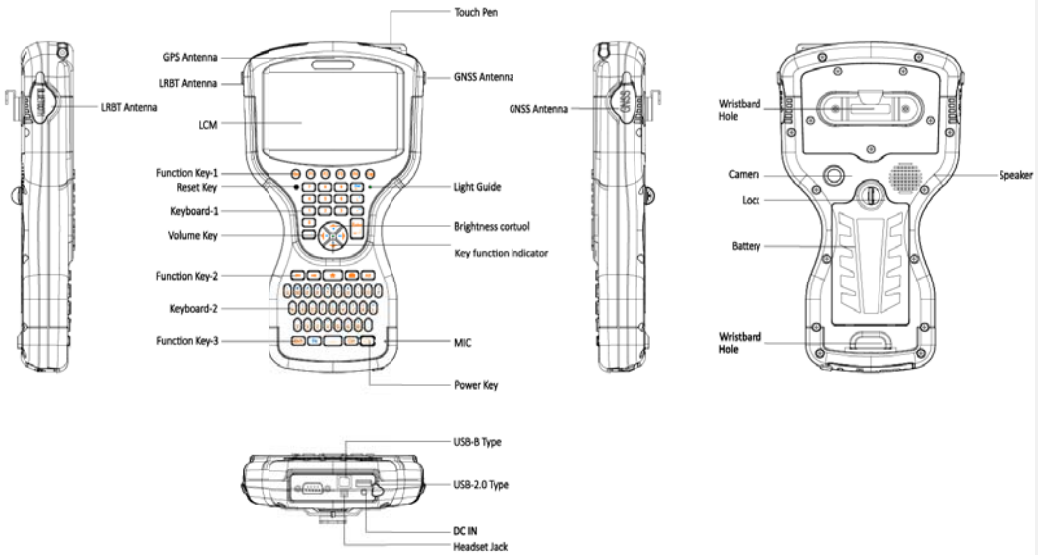
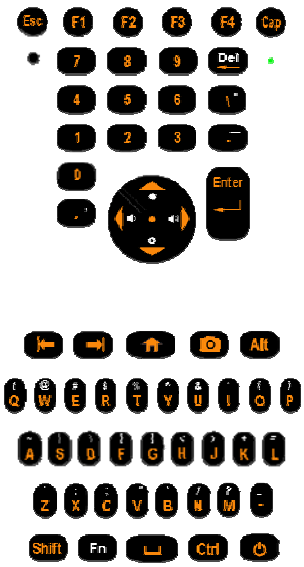


Figure 1-1: General Diagram

1.2. Keyboard



Some keys have two different silk screen colors. One is yellow, the other is white. “Fn” key is used to switch the key’s function between the two colors. Yellow silk screen indicates the default function. When the indicator in the center of the four arrow keys lighted, the function indicated by white color is available.

Table 1-1. Keyboard Function

Key	Sample image	Silk screen Color	Function
Function keys F1-F4		Yellow	User definable keys to execute chosen commands or access chosen screens.
Alpha keys a~z, A~Z		Yellow	To type letters. Yellow characters.
Numeric keys 0~9		Yellow	To type numbers. Yellow characters.
Punctuation and specialcharacters		White	To type puntuation and spcial characters.
Caps Lock		Yellow	Switches between upper case and lower case letters, and lock the case status.
Backspace		Yellow	Clears all entry at the beginning of user input.Clears the last character during user input. Yellow symbol.
Del		White	Deletes character at the cursor.
Esc		Yellow	Leaves the current screen without storing any changes.
Arrow keys		**Yellow**	Move the focus on the screen.
Volume adjust		White	Increase or decrease the volume
Backlight adjust		White	Increase or decreaase the screen brightness
Next Tab key		Yellow	To advance the cursor to the next tab stop.

Previous Tab key		Yellow	To advance the cursor to the previous tab stop.
Home		Yellow	Switches to the Windows EC7 Start Menu.
Camera		Yellow	Access the camera.
Alt		Yellow	To change (alternate) the function of other pressed keys.
Shift		Yellow	Combinate with an alpha keys to switche between upper case and lower case letters.
Fn		White	First press: switches the functions to the white characters indicated Press again: switches the functions aback to the yellow characters indicated
Space		Yellow	Enters a blank.
Ctrl		Yellow	Combinate with another key to performs a special operation
Enter		Yellow	Selects the highlighted line and leads to the next logical menu/ dialog.
Power key		Yellow	If the T21X controller is already off: Turns the field controller on when held for 3~5s. If the T21X controller is already on: Turns to power off menu when held for 3~5s.

1.3. LED Functions

Table 1-2, Charging LED Functions

Operation	Power off	Charging	Fully of charged
LED Status	Off	Red light on	Off

Table 1-3, Key function indicator

LED Status	Off	On
Function of the key	Yellow silk screen indicated	White silk screen indicated

2. Getting Acquainted

2.1. Installing the TF card/SIM card/Battery

a) Turnthe back cover screw to the open position according to the instructions on a label in the box, and take off the back cover.

Figure 2-1: Opening the Back Cover

b) Insert the SIM card and TF card according to the instructions in the battery cabin.

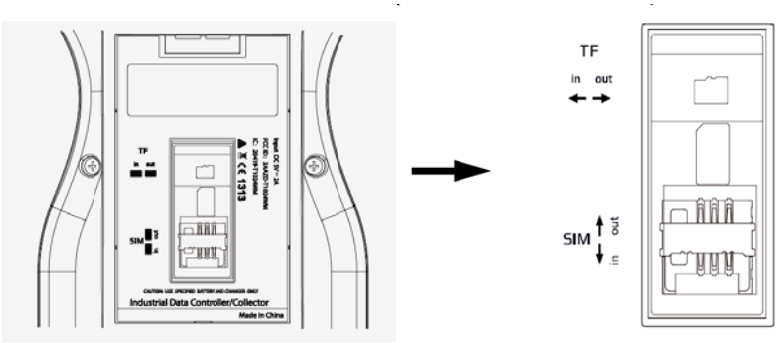


Figure 2-2: Inserting the SIM Card

c) Insert the battery according the instructions on the battery label(Figure 2-3).

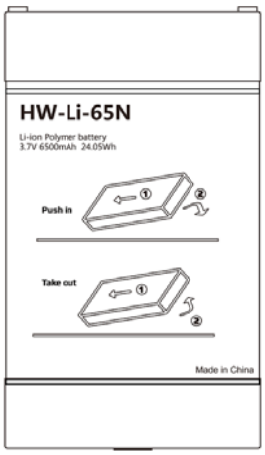


Figure 2-3: Inserting the Battery

d) Close the back cover and turn the back cover screw to the lock position.

2.2. Charging

Open the cover at the bottom of the device, and charge with the DC adapter. Charging current can reach1.5A.

2.3. Turning the collector on/off

a) Make sure the battery has enough power, or connect the T21toa DC adaptor.
b) Press power button for three (3) to five (5) seconds to turn on(until the boot screen appears).
c) Press the power button for three (3) to five (5) seconds, and confirm to power off.

NOTE: If there are abnormal situations, such as the T21does not operate normally, use the tip of the stylus to press the reset key to restart the T21.

2.4. Connecting to a PC

a) Make sure Microsoft ActiveSync application has been installed in Win-XP PC. And make sure WMDC (Windows Mobile Device Center) has been installed in Vista/Win7/Win8/Win10 PC.
b) Connect T21 to a PC with USB cable.
c) ActiveSync/WMDC will connect to T21 and PC automatically. The icon will appear in the tool bar of PC and also the **Synchronization Setup Wizard.**In the meantime, click **Cancel** or **connect without setting up your device**.
d) Click **Browse** to check the files in the T21, and then transfer data between your PC and the T21.

2.5. Installing Applications

2.5.1. Installing Applications via ActiveSync or WMDC

a) Make sure the T21is connected with your PC via ActiveSync or WMDC.

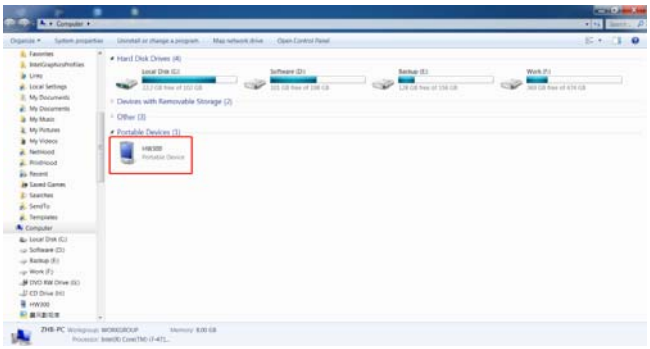


Figure 2-4: T21 Connected with PC

b) Click the installation file on your PC to start the installation of an application.

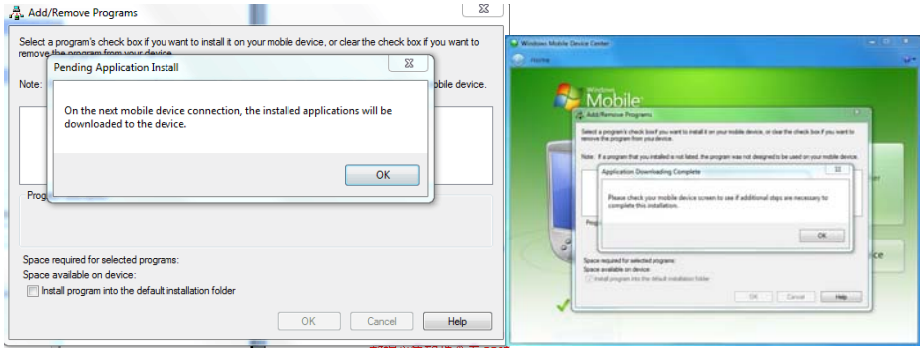


Figure2-5: Installing the Applicationg

c) Select an installation directory in the T21（**Flash Storage** is suggested）, and tap **install**.

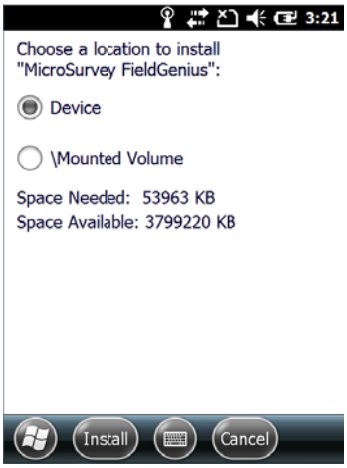
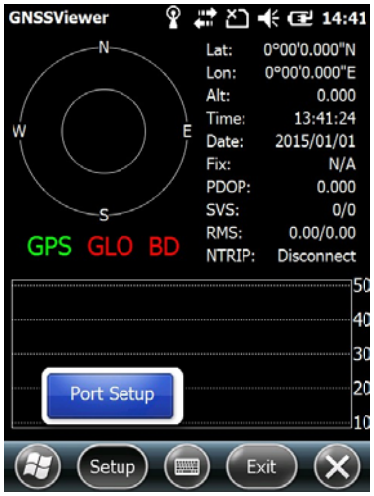


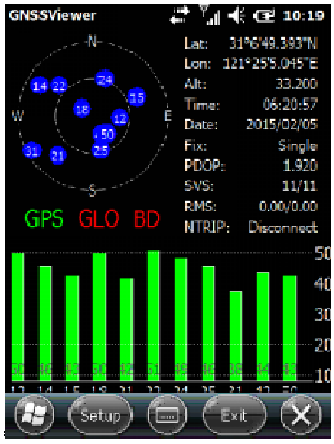
Figure 2-6: Choosing Install Location

NOTE: We suggest installing the application in **Flash Storage**, and saving your data to a TF card.

2.5.2. Directly Installing Applications

If the installation file is compatible on mobile devices, copy the file into the T21 and tap the file to directly start the installation.





2.7. Camera

a) Select **Start>Picture & Video**, select **Camera** or the **camera key** icon to take photos.
b) Press the camera key or**F3** to take photos.
c) Tap screen and select **OK** to exit.

2.8. USB Disk

Plug a USB disk to USB type A port at the bottom of the device.

2.9. Headset Jack

You will hear the sound from headset device if connect it to headset jack at the bottom of the T21 device.

2.10. User Serial Port

The user serial port is COM2. To transfer data between the T21 and other devices using a DB9 serial cable.
NOTE: This user serial port is at the bottom of the T21.

2.11. Wireless Connection (Bluetooth/GPRS/WIFI)

2.11.1. Standard Bluetooth

a) Select **Start>Settings>Connections>Wireless Management**, tap the icon to activate the Bluetooth(BT) device.
b) Select **Start> Settings> Bluetooth**, and tap**Add new device…**. Follow the tips shown on the screen to finish the operation of pairing the other BT Device.

NOTE: The standard Bluetooth virtual ports are COM7 and COM9.

2.11.2. Long Range Bluetooth(Optional)

a) Select **Start>Settings>System**, and tap**Bluetooth Radio Manager**.

Figure 2-9: Bluetooth Radio Manager

b) Chose the module **DirectConn**, andtap **Power On**.
c) Tap **Search BT** to start searching for BT devices.
d) After all BT devices have been found, select a device.
e) Tap**Connect**to pair with a BT device of your choice.Your screen will display**Connect the BT device successfully** after BT pairs successfully.

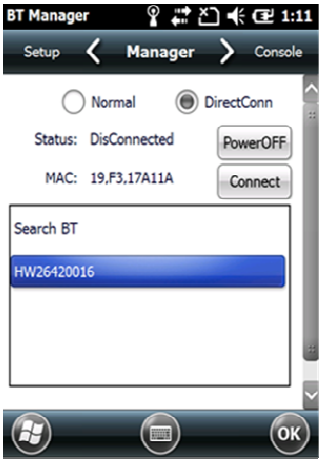


Figure 2-10: BT Manager-DirectConn

f) Tap **Console** to check the status of Bluetooth, as shown below.

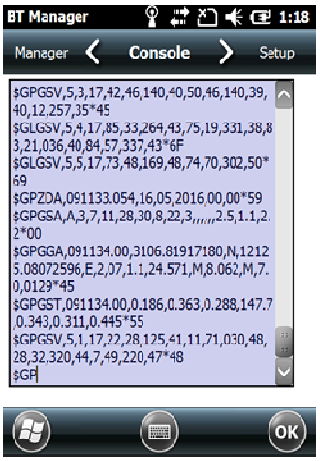


Figure 2-11: BT Manager-Status

g) Tap **Setup** to setup this Bluetooth, as shown below.

Figure 2-12: BT Manager-Setup

h) The default baud rate is 38400.
i) The **PIN** code refers to the pairing PIN code of the BT device which T21 want to pair with.
j) If you check **Auto Conn**, T21 will automatically connect to the last pairing BT device when powered up.

NOTE: Long Range Bluetooth port is COM2 which is the same as user serial port. If Long Range Bluetooth been used, user serial port is disable.

2.11.3. Wi-Fi

a) Select **Start>Settings>Connections>Wi-Fi**.
b) Tap**Search for Networks**, select a network listed. Follow the installation guide to input a password and confirmconnection to Wi-Fi.

2.11.4. GPRS/3G Data connection

a) Make sure there is a SIM card in the T21.
b) Select **Start>Settings>Connections>Connections**.
c) Tap**Add a new modem connection**.
d) Input connection name, select **Cellular Line (GPRS)**,and tap **Next.**
e) Input **Access point name**, tap**Next**.
f) Tap**Finish** and add new connection successfully.
g) Tap**Manage existing connections**.
h) Tapand hold on **new connection** and select **Connect**.
i) If there is the identifier on the signal icon in the top right corner, this indicates a successful.

3. Useful Functions

3.1. Screen response

Select**Start>Settings>System>Screen**,tapthe **AlignScreen**iconandfollowthe guide toalign the screen.

Figure 3-1: Align Screen

3.2. Adjusting the backlight

Select**Start>Settings>System>Backlight** to adjustbacklightaccordingtothe guide.

Figure 3-2: Backlight

3.3. Removing programs

Select **Start>Settings>System>RemovePrograms**,selecttheprograms you wish to removeinthelist and, click **OK**toremove.

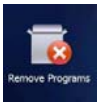


Figure 3-3: Remove Program

3.4. Auto power off*

(*NOTE:The device does not support the Auto power off function, instead use Go-to-sleep mode.)

Select **Start> Settings> System> Power> Advanced**, set the power off time in different conditions. Backlight will be off according to selected settings.

Figure 3-4: Go-to-Sleep Mode

3.5. Clean Boot

Select**Start> Settings> System> Clean Boot**, torestore factory default settings according to the guide.

Figure 3-5: Clean Boot

NOTE: The password is “1234”. Restoring factory settings will clear the system configuration, please be cautious.

3.6. PWConfig

Select**Start> Settings> System>PWConfig**.

NOTE:While on**Screen off** mode, the device won’thibernate.

Figure 3-6: PWConfig

4. Accessories

4.1. Standard Accessories

Table 4-1, Stardand Accessories

Item	Name	Description	Quantity
1	DC Adapter	220V/DC5V/2A	1
2	USB cable	USB to B-TYPE USB cable	1
3	Serial cable	DB9 serial cable	1
4	Li-ion Battery	3.7V/6500mAh	1
5	Strap	Black, 180*12mm	1
6	Stylus	Black, 127mm	1
7	Screen protection film	57*76mm, 3H & Screen Microfiber Cloth	2
8	User guide	Size,14*21cm	1

4.2. Optional Accessories

Table 4-2, Optional Accessories

Item	Name	Description	Quantity
1	TF card	Memory Capacity: 8G	1
2	External battery charger	5V/2A	1
3	Mounting bracket and Pole (Claw) Clamp	HW-02	1
4	External GNSS antenna	GPS L1, BD B1, Glonass G1 Gain: 40dB	1

		TNC Connector	
5	External antenna cable	Fischer to TNC cable	1
6	TNC to TNC cable	TNC male to TNC male cable, 3m long	1
7	Centering rod	Centering rod	1

5. Environmental Specifications

a) Operating ambienttemperature: -20℃ to +60℃
b) Non operating temperature: -30℃ to +70℃
c) Drop: 1.5m drop tested on all surfaces
d) Water and Resistant: Rated IP65 under IEC 60529
e) Relative humidity: 5% ~ 95% , non-condensing

6. Warranty Terms

HowayGIS T21 Series are guaranteed against defective material and workmanship under normal use and application consistent with this Guide. The equipment is guaranteed for the period indicated, on the warranty card accompanying the product, starting from the date that the product is sold to the original purchaser by HowayGIS' Authorized Dealers.

During the warranty period, HowayGIS will, at its option, repair or replace this product at no additional charge. Repair parts and replacement products will be furnished on an exchange basis and will be either reconditioned or new. This limited warranty does not include service to repair damage to the product resulting from an accident, disaster, misuses, abuse or modification of the product.

Warranty service may be obtained from an authorized HowayGIS warranty service dealer. If this product is delivered by mail, purchaser agrees to insure the product or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location and to usethe original shipping container or equivalent. A letter should accompany the package furnishing a description of the problem and/ or defect.

The purchaser's sole remedy shall be replacement as provided above. In no event shall HowayGIS be liable for any damages or other claim including any claim for lost profits, lost savings or other incidental or consequential damages arising out of the use of, or inability to use, the product.

NOTE: Please use the original factory parts.

7. Contact information

HowayGIS Infotech Co, Shanghai, China
Address: Room 230, Focus Building,Lane No.1985,Chunshen Road, Minhang District,Shanghai 201102 China

Telephone: +86-21-56383139
Email: supports@howaygis.com

8. Appendix– Product Safety Warnings

Safetyandcomplianceinformation

- Use responsibly –Read all instructions and safety information before use to avoid injury.

Batterysafety

- Charge battery only in temperature ranging from 32℉ to 140℉ (0℃ to 50℃)
- CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type of battery recommended by the manufacturer.
- The maximum operating ambient temperature of the switching power supply declared by the manufacturer is 50℃.
- Dispose of used batteries according to battery manufacturer's instructions.

Wi-Fisafety

- Turn Wi-Fi off in areas where Wi-Fi use is prohibited or when it may cause interference or danger, such as in airplanes while flying.

Care andmaintenance

T21 is an electronic product and should be treated with care.To reduce the risk of fire, electronic shock, or product damage take the following advice:

- Do not expose this device to rain, moisture, or any type of liquid that corrodes electronic circuits. If your device gets wet, immediately turn the power off. Allow the device to dry completely before using it again.
- Clean the display with a soft cloth, and be careful not to wipe the display with anything abrasive.
- Do not expose your device to extreme heat (60℃) or cold (-20℃). For example, do not leave it in the trunk of your car in high heat conditions.
- Do not attempttoopen the device otherthan as instructed in thismanual.
- Rough handling can break internal circuitry.
- Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
- Use only the recommended accessories.

FCC Statement

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
RF warning for Portable device:
The device has been evaluated to meet general RF exposure requirment. The device can be used in portable exposure condition without restriction.

Note : 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.

RF Exposure Information (SAR) :

This device meets the government's requirements for exposure to radio waves.
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.
The exposure standard for wireless devices employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. *Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands.
Although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as to use only the poser required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.
The highest SAR value for the device as reported to the FCC when tested by Body mode, as described in this user guide, is 1.33W/kg.
While there may be differences between the SAR levels of various devices and at various positions, they all meet the government requirement. The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID:2AAZD-IRHC21WE .

CAUTION!

CONNECTIONTOA USBINTERFACEMUST BE LIMITEDTO

USB2.0VERSIONORHIGHER

CONNECTIONTO “POWERUSE” MODEISPROHIBITED.