



# WD5 INDUSTRIAL SMARTWATCH

Nwear

# Disclaimer

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Please read the manual carefully before using the product and operate it according to the manual. It is advised that you keep this manual for future reference.

Do not disassemble the device or remove the seal label from the device; doing so will void the product warranty provided by Newland Europe BV.

All pictures in this manual are for reference only, and the actual product may differ.

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You should use the Newland-provided tool to update this product's system. Modifying system files by installing a third-party ROM system or using any cracking method may result in product malfunction or data loss and void your warranty.

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## Revision History

Version	Description	Date
V1.0	Initial Release	2024-08-19

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# Chapter 1 About This Guide

## Introduction

This guide provides instructions for programming and operating the NLS-WD5-ISW wearable data collector (hereinafter referred to as “the WD5” or “the terminal”).

## Documentation Set

The documentation set for the WD5 includes:

- ✧ **NLS-WD5-ISW Wearable Data Collector Quick Start:** Describes how to get the NLS-WD5-ISW up and running.
- ✧ **NLS-WD5-ISW Wearable Data Collector User Guide:** Describes how to program and use the NLS-WD5-ISW.

## Chapter Descriptions

- ✧ *Chapter 1 About This Guide* Provides a general description of this manual.
- ✧ *Chapter 2 Getting Started* Provides information on getting the WD5 up and running for the first time.
- ✧ *Chapter 3 Basics* Describes how to program the WD5 for the use of its basic features.
- ✧ *Chapter 4 Scanning Barcodes* Provides the instructions as to how to scan 1D/2D barcodes and how to program the scanner.
- ✧ *Chapter 5 Bluetooth* Explains how to use Bluetooth functionality.
- ✧ *Chapter 6 Wi-Fi* Explains how to use Wi-Fi functionality.
- ✧ *Chapter 7 Others* Explains how to use Camera and GPS functionalities.
- ✧ *Chapter 8 System Update* Explains how to update the system.
- ✧ *Chapter 9 App Development Guide* Describes the app development environment and the use of non-standard interfaces.

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✧ *Chapter 10 Maintenance & Troubleshooting*

Provides troubleshooting solutions for issues that might occur when using the WD5.

## **More Information**

For more product and support information, please visit our website <https://www.newland-id.com/en>



## Chapter 2 Getting Started

### Introduction

This chapter lists the parts and accessories for the WD5 and explains how to charge the battery, and power on the WD5 for the first time.

### Unpacking

Carefully remove all protective materials from the pack. Verify that you received the following:

- ✧  1 x WD5 Wearable Data Collector
- ✧  1 x USB Cable
- ✧  1 x Charging Cradle
- ✧  1 x Quick Start Manual

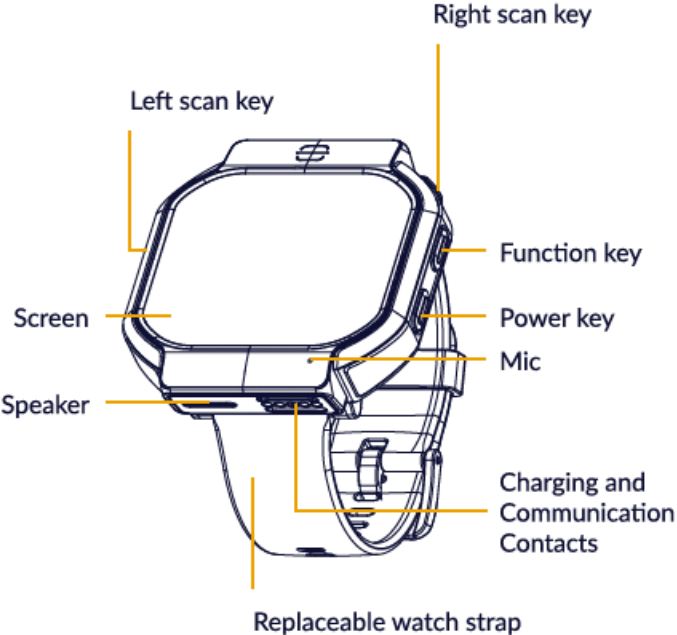
### Accessories (Optional)

- ✧  Screen Protector
- ✧  Belt Clip

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# Getting Started

## The WD5



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## Gestures

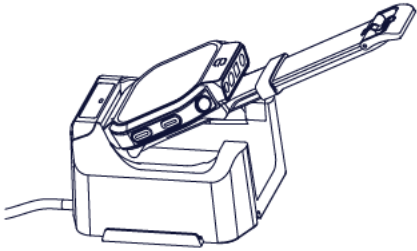
- 1) Back to the previous page: Swipe inward from the left or right edge of the screen.
- 2) Back to the desktop: Swipe the screen from bottom to top.
- 3) Switch to the new task: Swipe the screen from bottom to top, and then hold on until the recently used apps display.

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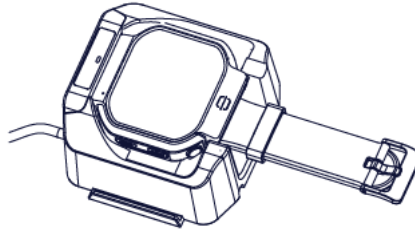
## Connect to the Cradle

Step 1: Place the watch on the charging cradle as shown in the figure.

Step 2: Ensure the cradle is securely connected to a power source. When the connection is successfully established, the red LED will turn on.



Step One



Step Two

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## Communicating with PC

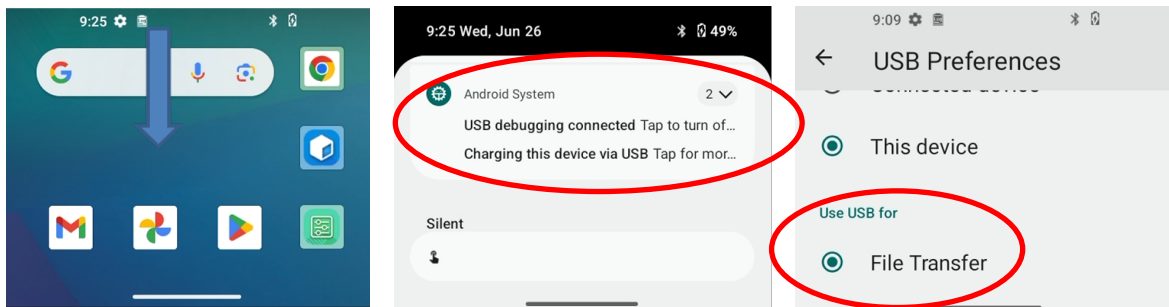
Step 1: Insert the WD5 to the charging cradle.

Step 1: Connect the USB port on the charging cradle to your computer with the included USB cable.

Step 2: Switch the WD5 on. On the Home screen, swipe from top to bottom with one finger in one smooth motion to open the notification bar as shown below.

Step 3: Tap “Charging this device via USB, Tap for more options”.

Step 4: Select “Files Transfer”. Navigate to the “My Computer” section of your computer and look for the newly added drive. Double-click it and you will be connected to the WD5. Then you may handle the files on the terminal through your computer.



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## Chapter 3 Basics

### Introduction

This chapter provides the basics of setting and using the WD5

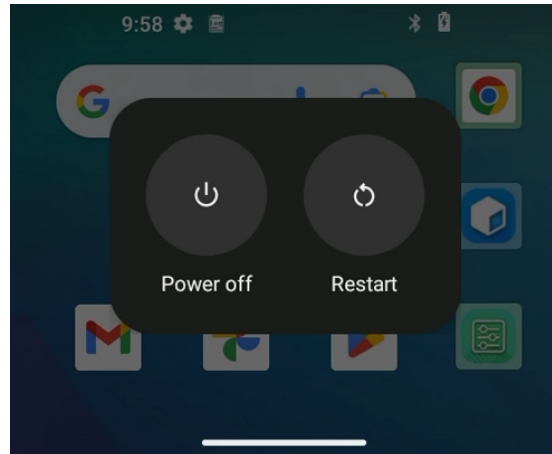
### Switching On/Rebooting/Switching Off/the WD5

After having the WD5 fully charged, you may switch the terminal on.

**Switch the WD5 on:** Hold down the Power key on the right side of the terminal until the Android logo is displayed. Note that the initialization is going to take some time before the WD5 displays the Home screen.

**Reboot the WD5:** Hold down the Power key on the right side of the terminal until the window below pops up, then tap “Restart”.





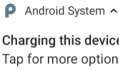
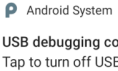

**Switch the WD5 off:** Hold down the Power key on the right side of the terminal until the window below pops up, then tap “Power off”.



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## Status Icons

The icons in the status bar at the top of the screen give information about the WD5.

Status Icon	Description	Status Icon	Description
	WLAN on		Battery Charging in Progress
	Bluetooth on		Airplane Mode on
 <small>Android System ^ Charging this device via USB Tap for more options.</small>	USB Connected	 <small>Android System USB debugging connected Tap to turn off USB debugging</small>	USB Debugging
	Power Saving Mode		

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## Installing App

Use the below method to install a new app on the WD5:

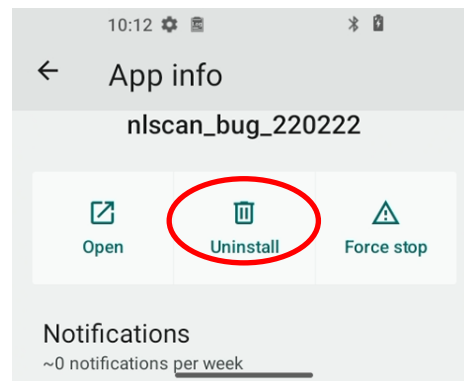
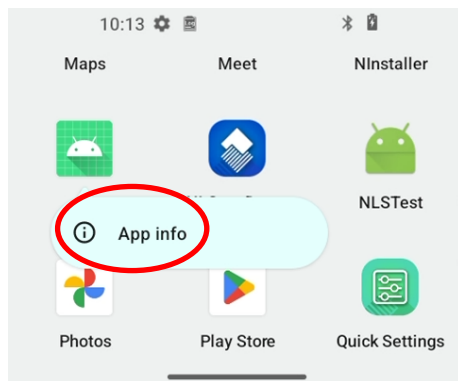
Download the software package on PC and copy it to your terminal. Then install it with Files app.

## Uninstalling App

Follow the procedure below to remove an app from the WD5:

Tap and hold your desired app until “App info” appears, then tap “UNINSTALL” and uninstall it.


\*The application that comes with the system cannot be uninstalled.

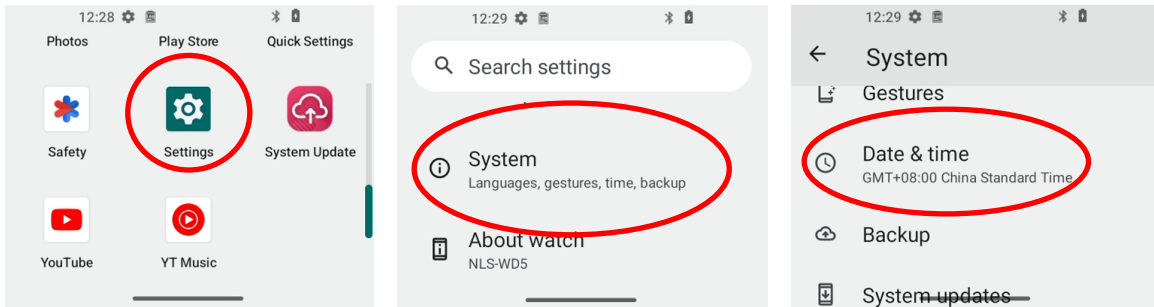




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## Date & Time


**Set the date and time:** Tap the app icon  and then “System” -> “Date & time” and set the date and time on the screen shown below as per your needs.

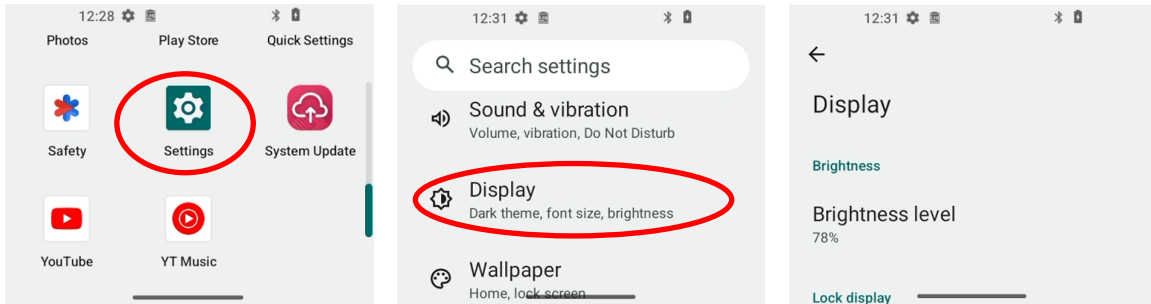


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## Display

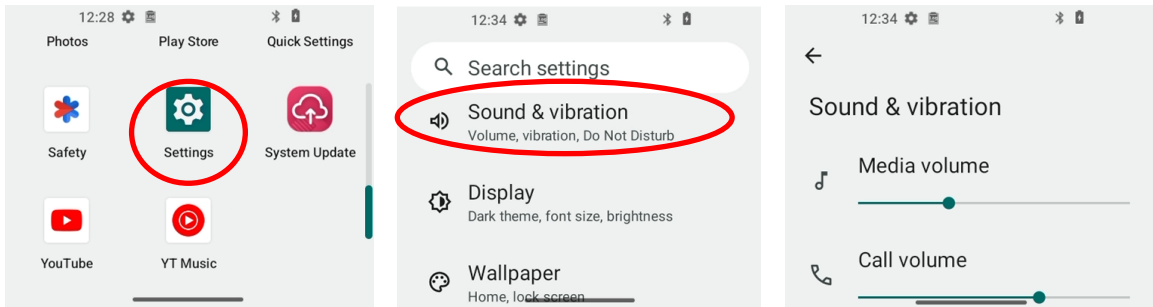
Tap the app icon  and then “Display”, and set the brightness level, lock screen, dark theme, night light, and other parameters on the screen shown below as per your needs.




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## Ringtones

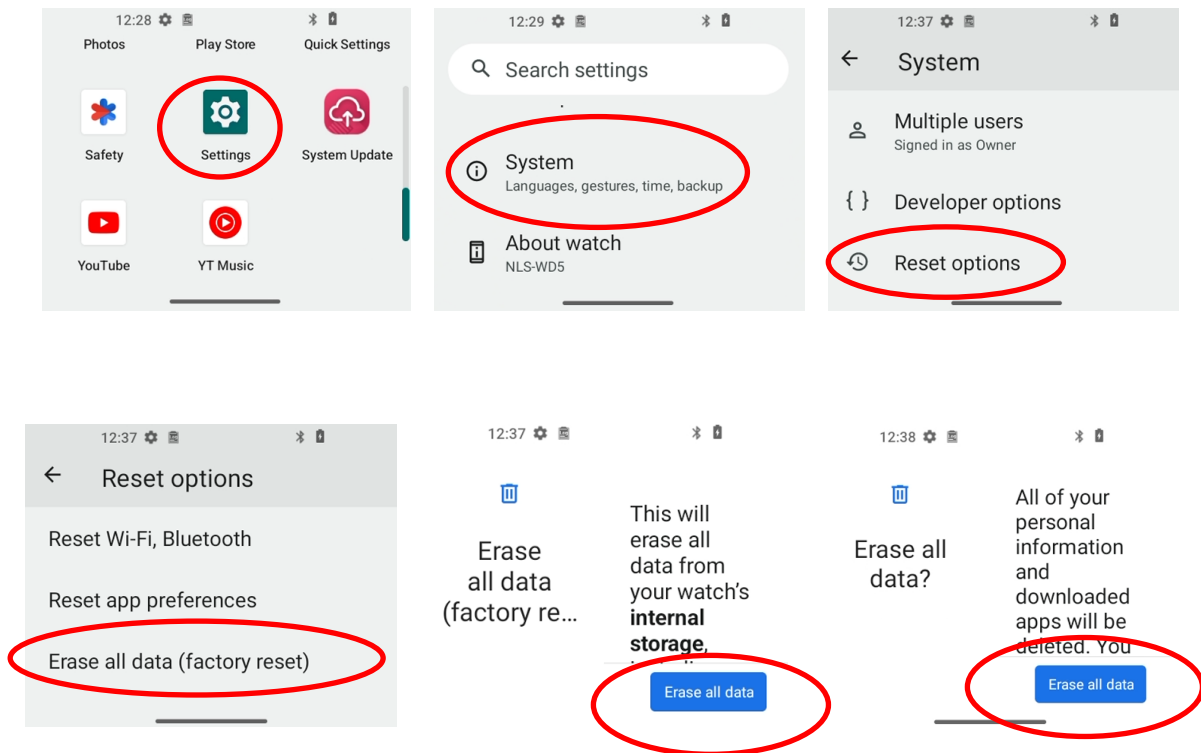
Tap the app icon  -> "Sound & Vibration". Then set the ringtones and other notification sounds as per your needs.



## Restoring Factory Settings


Tap the app icon  -> "System" -> "Reset options" -> "Erase all data (factory reset)" -> "Erase all data" -> "Erase all data".

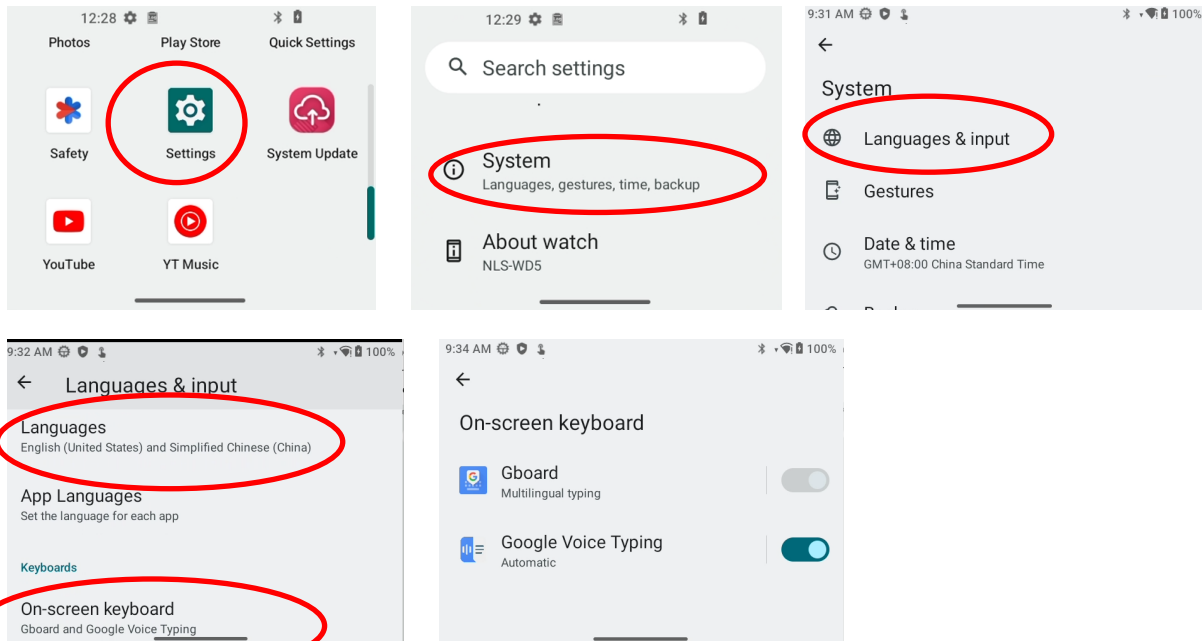
After this operation, the terminal will be reset to factory defaults and all the personal data on the internal storage, such as music and photos, will be deleted.



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## Language & Input Method

Tap the app icon  -> "System"-> "Languages & input". Then set the language and input method as per your needs.




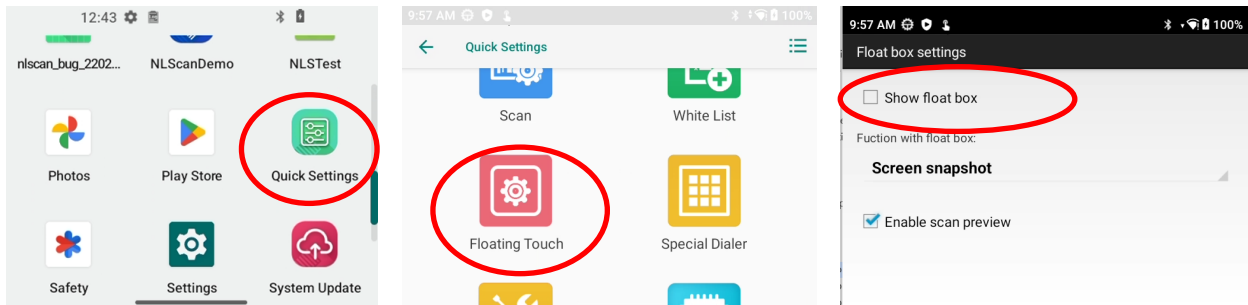
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## Floating Button Settings

Tapping the floating button can perform tasks such as scanning barcode (**Scan**), turning on/off flashlight (**Flashlight**), taking a screenshot (**Screen snapshot**), turning off screen (**Screen off**), going to the Home screen (**Home**), switching between level and continue scan mode (**Toggle level and continue scan mode**), or showing device name (**Show device name**).

Holding down the floating button  can make it movable.

**Show/Hide the floating button:** Tap the app icon “Quick Settings”  -> “Floating Touch” -> select/unselect “Show float box”.





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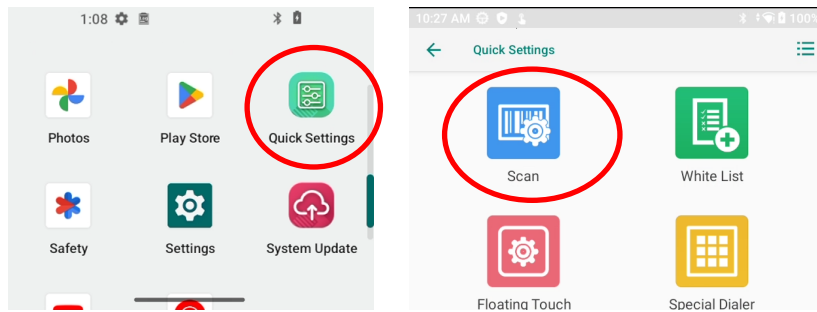
## Chapter 4 Scanning Barcodes

### Introduction

WD5 can read barcodes by its equipped camera or connecting to other barcode reading devices such as Bluetooth badges. This chapter is mainly introducing how to use its equipped camera to read barcodes.

### Programming Scanner

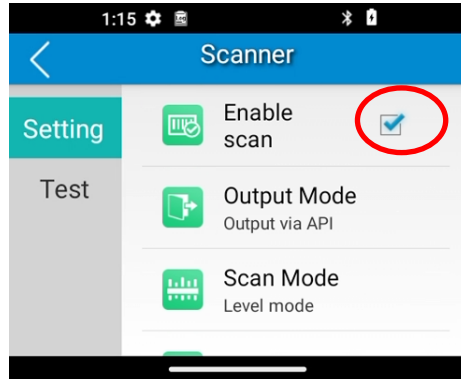
Tap the app icon  on the Home screen -> scan icon . Then configure the scanner parameters as per your actual needs.



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## Enable Scan

Check or uncheck the “Enable scan” item to enable or disable the scanning feature of the WD5.



## Output Mode

The WD5 provides three output modes: Simulate keystroke, Output via API, and Fill in EditText directly.

1. **Simulate keystroke:** Output scanned data to keyboard buffer to simulate keyboard input.

Character interval (ms): A character interval of 0-100 milliseconds may be placed between the transmissions of each character of scanned data.

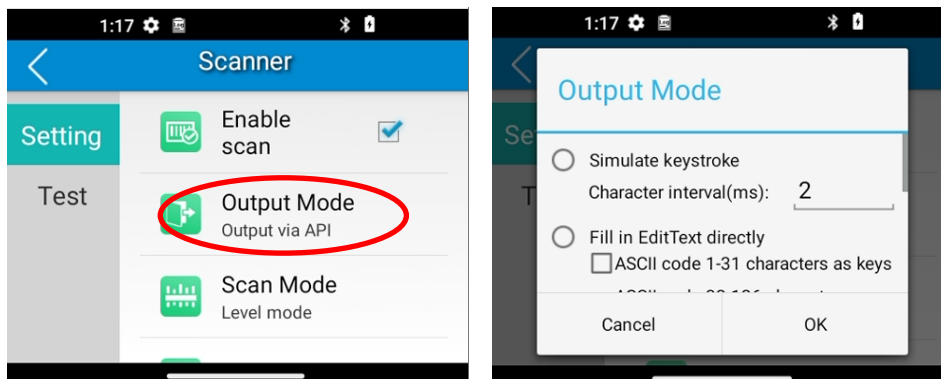
2. **Output via API:** The application acquires scanned data by receiving system broadcasts.

3. **Fill in EditText directly:** Output scanned data at the current cursor position in EditText.

**Overwrite output:** Clear the text input box before sending the barcode currently scanned to make sure only the most recently scanned data is present in the text input box. This feature is available only when **Simulate keystroke** or **Fill in EditText directly** is selected.

**Output enter-event:** Send an Enter Key after each barcode is scanned.

**Send virtual keyboard function:** Make send virtual keyboard function as “action done”, “action search”, “action previous”, action search, etc.





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## Scan Mode

The WD5 provides the following three scan modes:

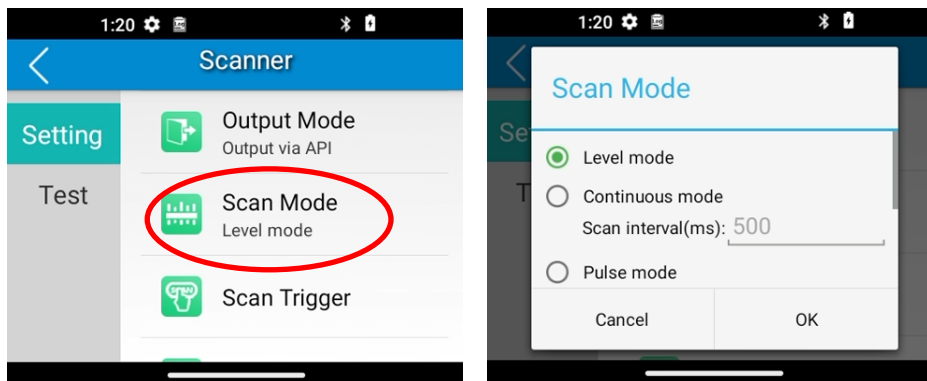
1. **Level mode:** Press and hold the scan trigger to start a decode session which continues until the trigger is released.
2. **Continuous mode:** Press the scan trigger to continuously read barcodes. To suspend or resume scan operation, simply press the scan trigger.

**Scan interval (ms):** This parameter sets the timeout between decode sessions.

3. **Pulse mode:** Press the scan trigger to start a decode session which continues until the decode session timeout expires.

**Decode session timeout (ms):** This parameter sets the maximum time decode session continues during a scan attempt.

**Masked repeat interval (ms):** This parameter sets the time interval between two successive reads on the same barcode.





## Scan Trigger

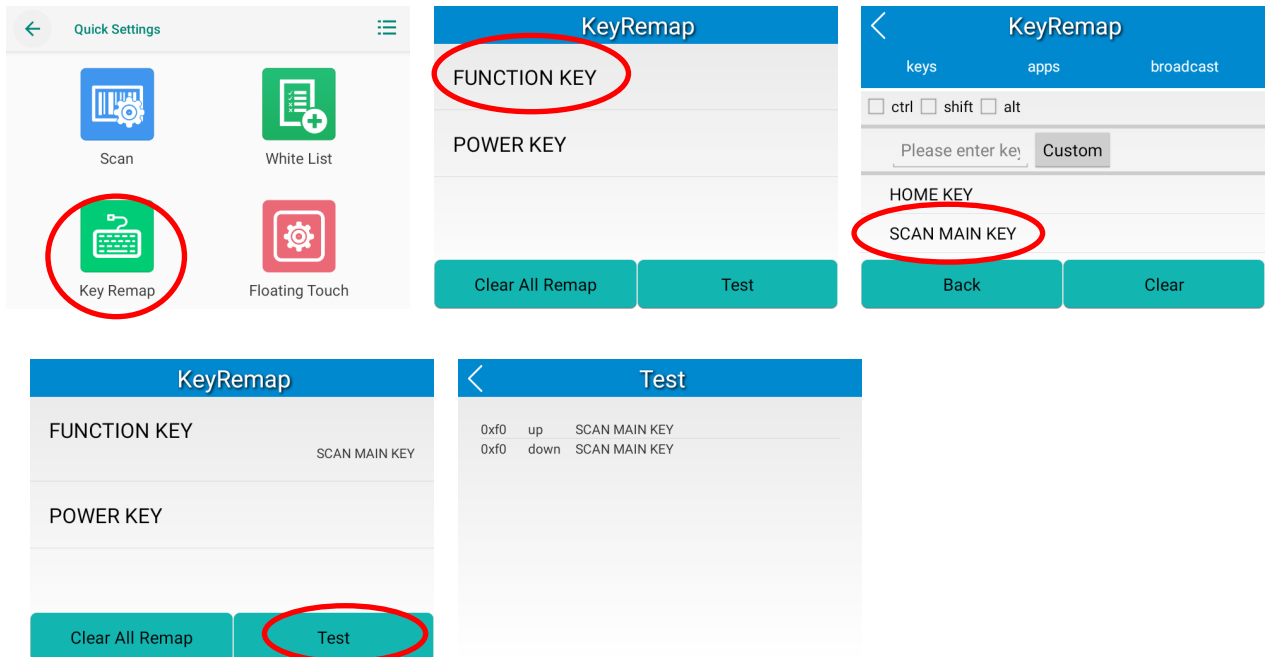
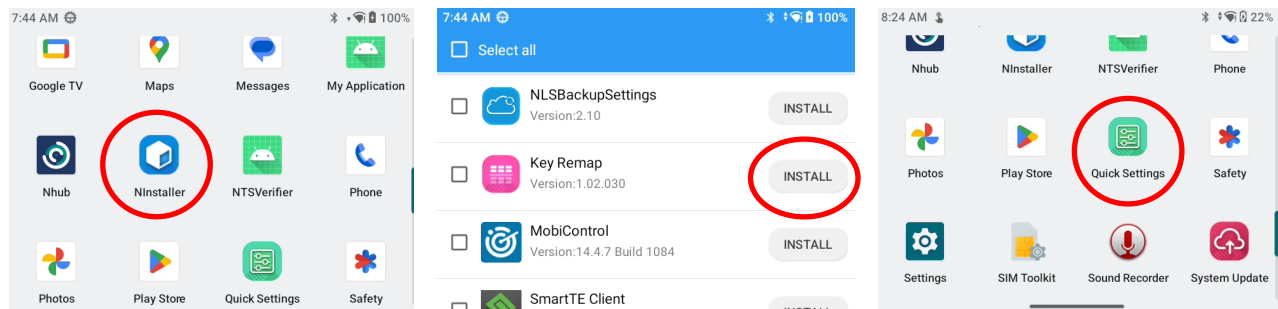
There is no dedicated key on the WD5 that served as a scan trigger. However, you can set keys as scan triggers by following two ways:

### 1. User-defined key.

There is a user-defined key on the WD5 that can be set as a scan trigger by the Key Remap function. Install the Key Remap

app in the NInstaller first. Then tap the “Quick Settings” app icon  on the Home screen -> “Key Remap”  -> “Function Key” -> “Scan Main Key”.

\*The function can be tested in the “Test” function.



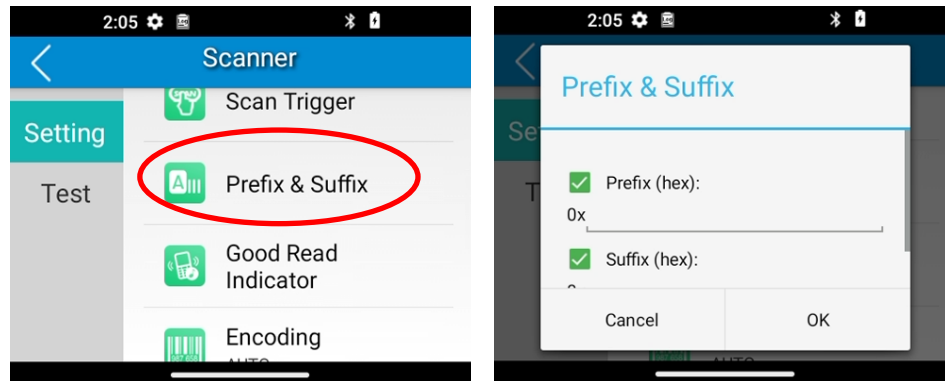
### 2. Floating Touch.

For the setting part, please refer to the **Floating Button Settings** mentioned in the previous chapter.

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## Prefix & Suffix

To set the prefix/suffix, enter the hexadecimal value of a desired prefix/suffix, and then tap “OK”. For example, if you want to add a Line Feed character after each barcode, set the suffix to “0A”; if you want to add a Carriage Return character after each barcode, set the suffix to “0D”.

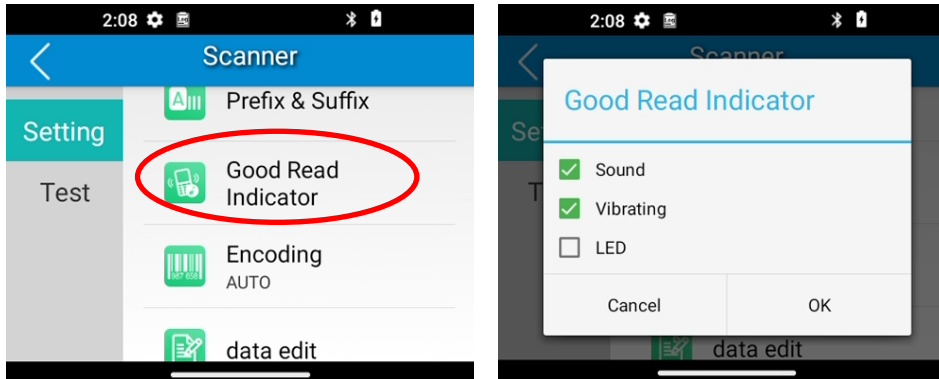


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## Good Read Indicator

The terminal can use sound/ vibration/ LED to indicate a good read. Choose one or more options as per your actual needs.

1. **Sound:** The WD5 issues a short beep to indicate a good read.
2. **Vibrating:** The WD5 vibrates to indicate a good read.
3. **LED:** The blue LED on the WD5 flashes once to indicate a good read.

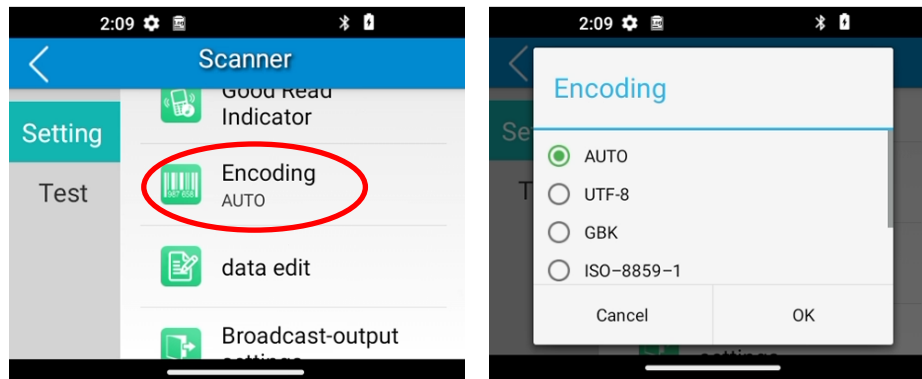


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## Encoding

Choose a character encoding to interpret barcode data.

1. **AUTO:** The terminal determines automatically if the target barcode uses UTF-8, GBK, or ISO-8859-1 encoding. If the terminal produces the wrong output, you may need to choose or enter a specific character encoding.
2. **UTF-8:** Dominant Unicode encoding.
3. **GBK:** A character encoding for Chinese characters.
4. **ISO-8859-1:** A common character encoding that covers Western European languages.
5. **windows-1251:** A character encoding designed to cover language that uses the Cyrillic alphabet such as Russian, Bulgarian, Serbian Cyrillic, and other languages.
6. **Other:** Enter a different character encoding when UTF-8, GBK, ISO-8859-1, and windows-1251 are not applicable. If the terminal does not support the encoding entered, this setting will fail.

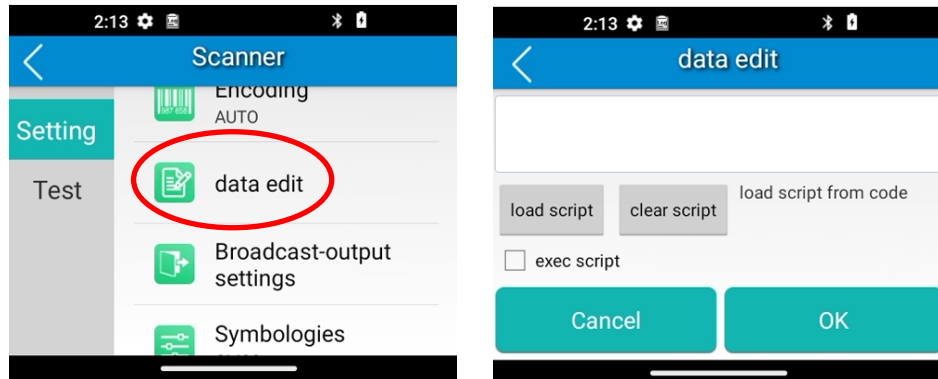


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## Data Edit

This feature allows you to edit barcode data with a script.

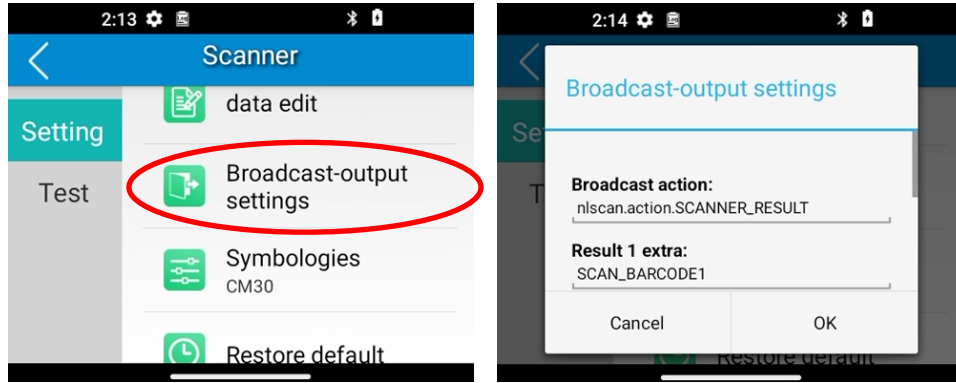
Tap “load script” and then select the desired script file on the terminal, or scan the 2D barcode that contains a script, to load the script. Then select “exec script” and tap “OK”.



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## Broadcast-output Settings

When using broadcast as the scan output method, the WD5 will output the scan information with the specified broadcast ACTION and EXTRA.



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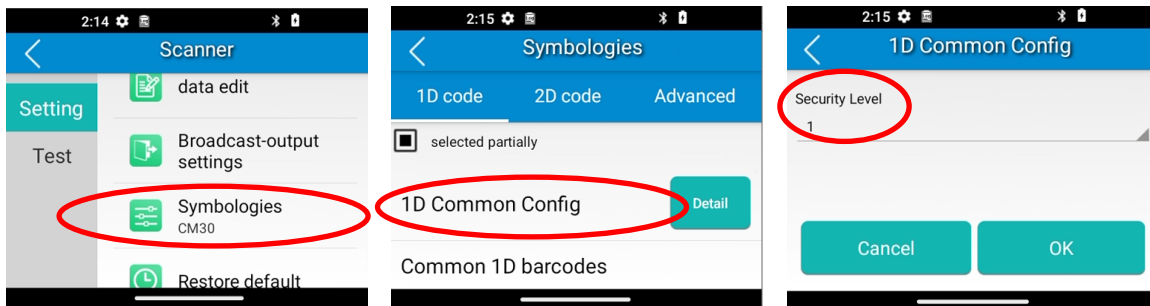
## Symbologies

The symbologies settings are based on the camera integrated in the terminal

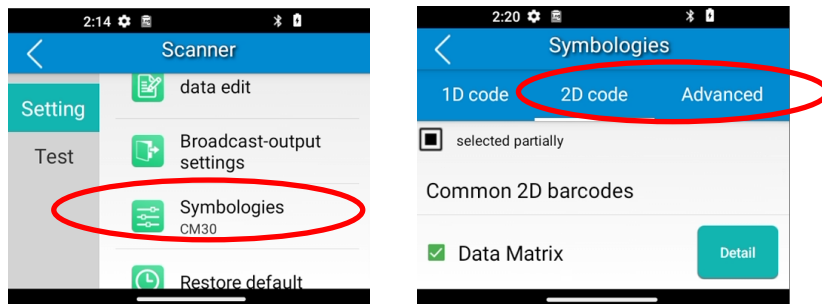
**1D code:** Enable or disable 1D symbologies and set other barcode parameters.

**Security Level:** Tap the 1D common config, then you can set the security level per actual need.

- 1) The higher the security level, the lower the error rate of code.
- 2) The barcode reading performance at the higher security level is not as smooth as that at low security. Therefore, the default security level is 1. Increase the security level only when the error rate is high.



**2D code:** Enable or disable 2D symbologies and set other barcode parameters.



**Advanced:** The features listed here are designed to improve the scanning performance and energy efficiency of the terminal.

1. **Acuscan Decoding:** When selected, the terminal only decodes the barcode aimed squarely by the aiming pattern. It is advised to select it to ensure that only the desired barcodes are read if multiple barcodes are placed closely together.
2. **Output AI in brackets:** When selected, enable the function that outputs AI in brackets.
3. **Multiple Barcodes:** When selected, the terminal can decode multiple barcodes at the same time, and the maximum number of the barcodes can be set per actual needs.
4. **Other:** Tap **DETAIL** to access the following parameter settings.



**Noise Reduction:** This feature is designed to reduce noise in images produced by the terminal. However, the terminal shows a slight decrease in scanning speed when using this feature. It is recommended to enable it only when necessary.

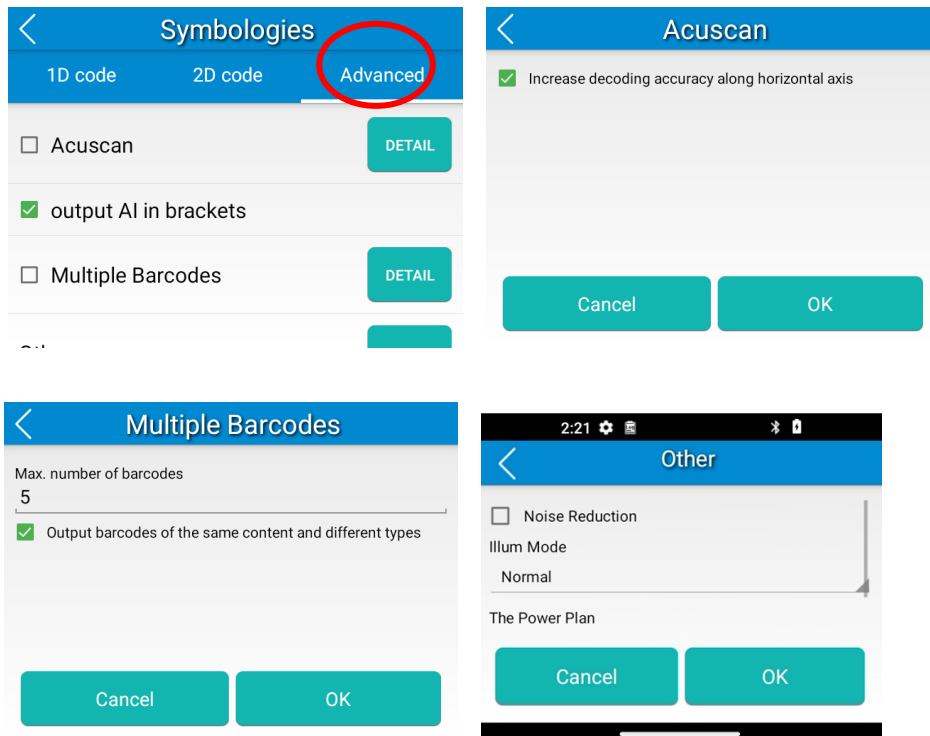
**Illum Mode:** Select normal or no light per actual need.

**Power Plan:** Two options are provided.

**Power Saving:** The terminal's built-in scanner turns off automatically after 3 seconds of inactivity.

**High-performance:** The terminal's built-in scanner turns off automatically after 15 seconds of inactivity.

**OCR Enable:** Select this check box when reading passports (compliant with ICAODoc9303 standards, TD1/TD2/TD3 supported).





## Chapter 5 Bluetooth


This chapter describes how to connect the WD5 to other Bluetooth devices.

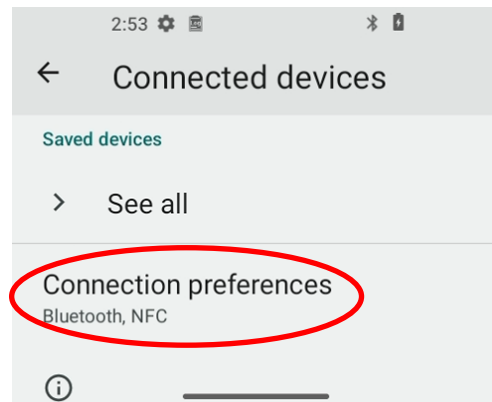
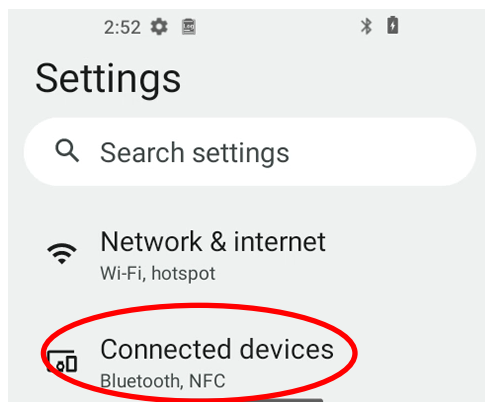
You can set up a Bluetooth connection between the WD5 and other Bluetooth devices, such as PC, mobile phones, and badges. Note that the Bluetooth connection works better if there are no obstacles between them.

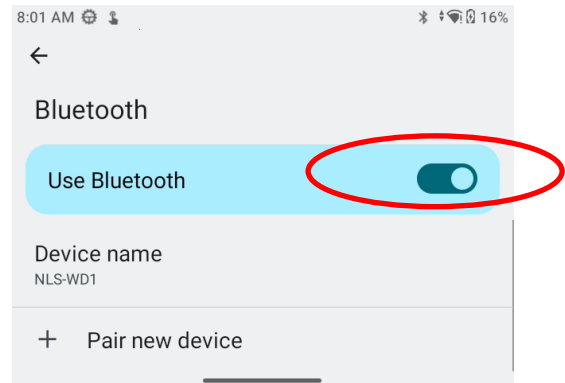
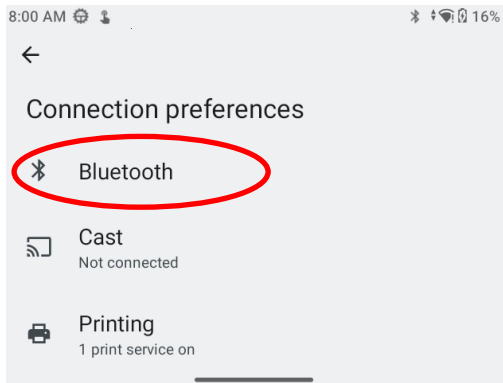
Before you can use a Bluetooth device with the WD5, you must first pair them.

1. Make the Bluetooth device visible to the WD5.

2. Swipe the home screen from top to bottom, then tap  to turn on the Bluetooth, long-press the icon  can enter the detailed setting of the Bluetooth.

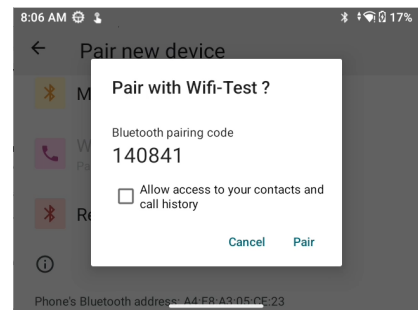
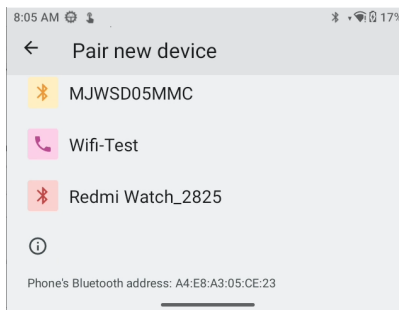
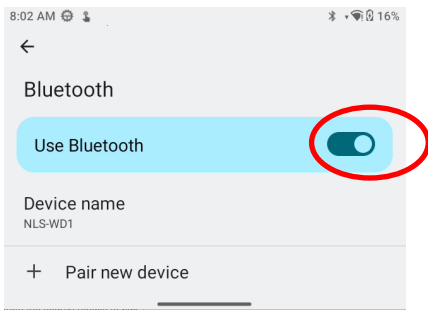
Or tap the app icon  then “Connected devices” -> “Connection preferences” -> “Bluetooth”, and turn Bluetooth on to search for available Bluetooth devices.






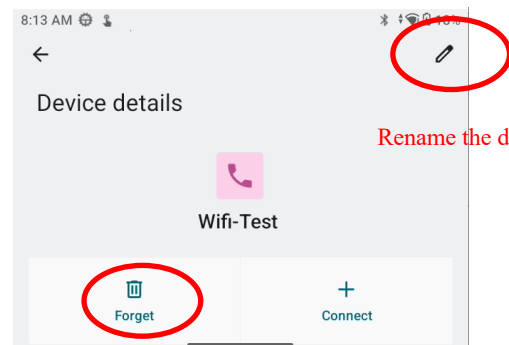
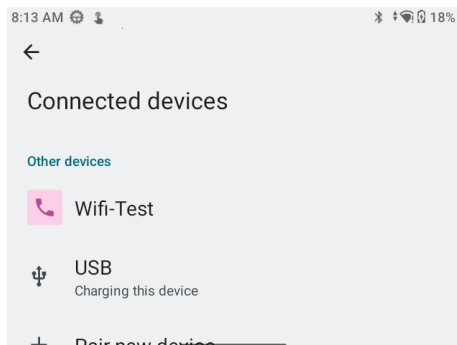
3. Select the device from the search results to pair.

4. If prompted, input the pairing code and then tap "OK"; or if the pairing code is given automatically, then tap "PAIR".



**Unpair/rename a paired Bluetooth device:** To rename the paired Bluetooth device, tap the desired device name ->

then tap  to edit its name manually-> tap "RENAME". To unpair it, tap "FORGET".



Rename the device name

Unpaired Device


## Chapter 6 Wi-Fi

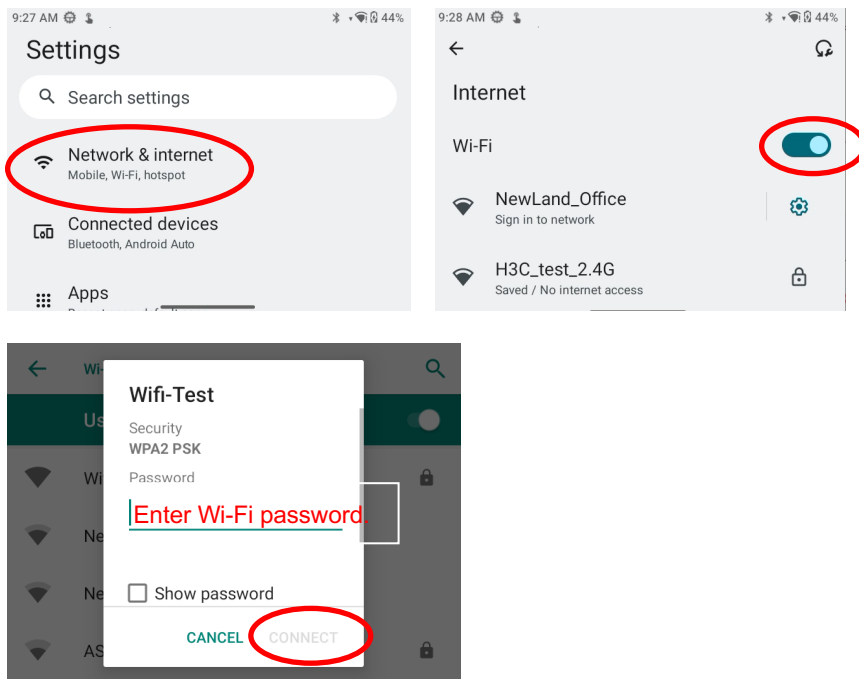
### Introduction

This chapter describes how to connect the WD5 to a Wi-Fi network.

### Wi-Fi Settings

#### Join a Wi-Fi network:

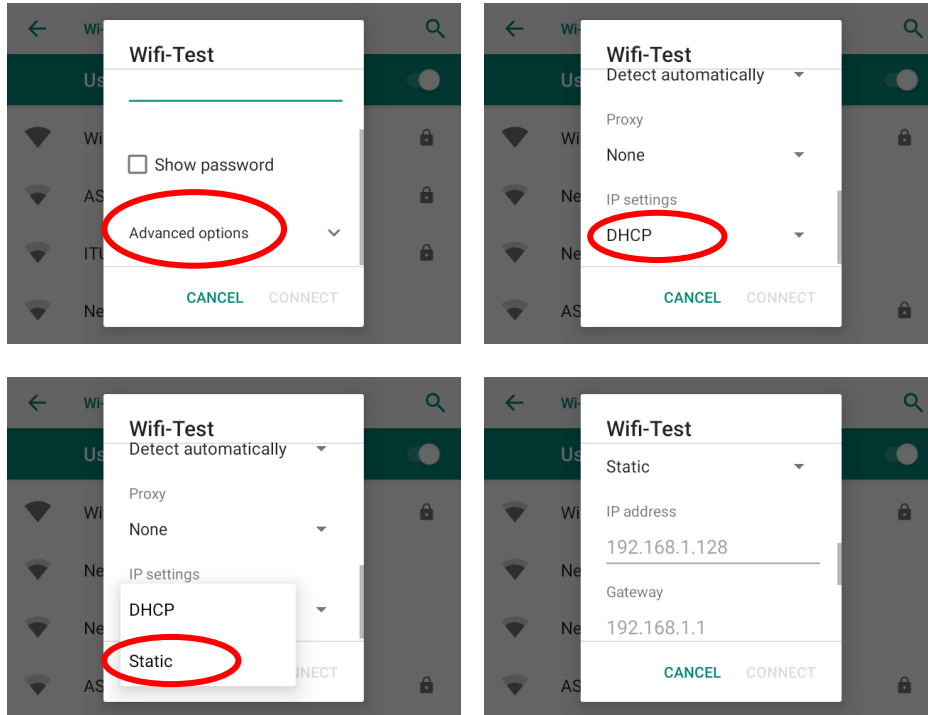
1. Tap the app icon  then “Network & Internet” -> “Internet” -> “Wi-Fi”, and turn Wi-Fi on to find available Wi-Fi networks.  
If Wi-Fi is already ON, then the terminal will automatically search for available networks.
2. Tap a network and then enter the password.
3. Tap “CONNECT”.



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## IP Settings

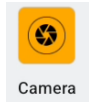
To set the IP, follow the first two steps of joining a Wi-Fi network, tap “Advanced options”, then select “DHCP” or “Static” per actual need.



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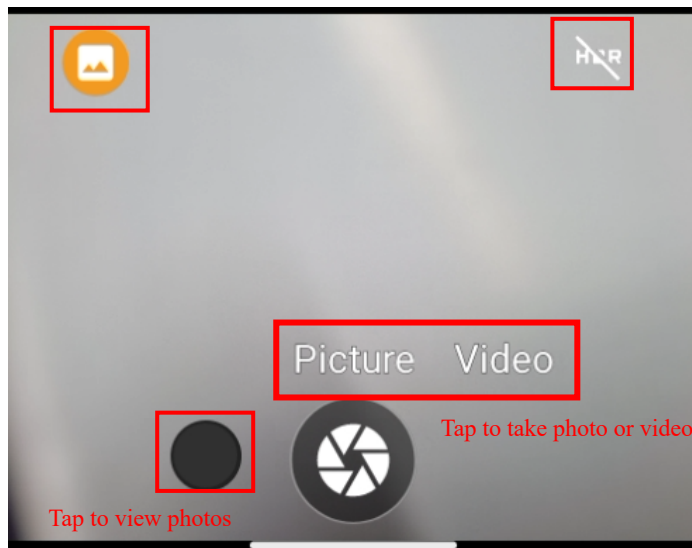
## Chapter 7 Others

### Camera





Tap the app icon **Camera** to launch the Camera app.

Normal Modes




Turn on/off HDR

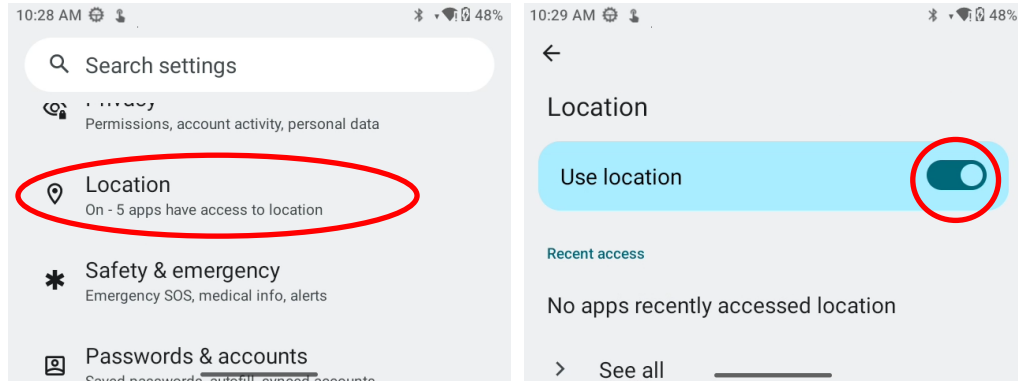
Tap the normal modes icon  > Tap settings , then the user can set parameters such as scene mode, self timer, picture size, ZSD, white balance, etc.

You can also download a camera app from the internet or develop an app for the camera feature.

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## GPS

Tap the app icon  -> "Location", and then turn Location on.

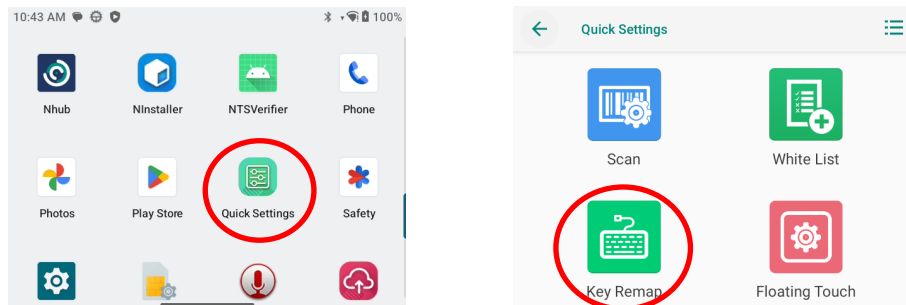


## Key Map

This app allows you to remap the keys on the terminal to function as a different key or to make them into shortcuts to launch an application. Please install the Key Remap app in the NInstaller first.

### 1. Remap a key to another key:

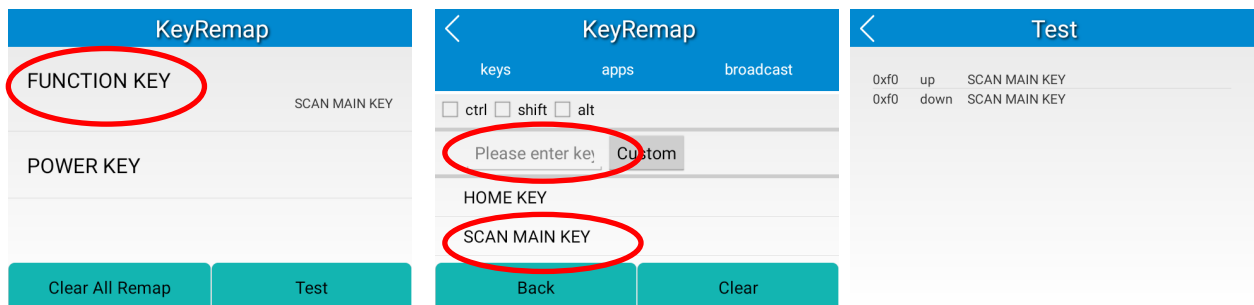
- 1) Start the Key Remap app: Tap the quick setting app icon  on the Home screen then .



- 2) **Remap a key to another key:** After starting the Key Remap app, select the key you want to remap, and then tap “keys” and select/enter the key to which you want to remap it.

**Clear All Remap:** Clear all remap to return to default settings.

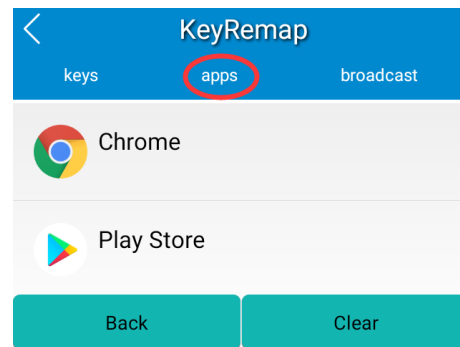
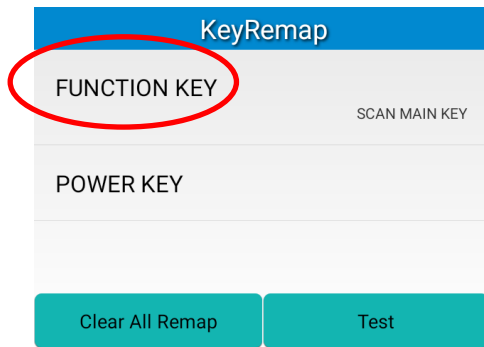
**Test:** Test the function of the remap key you just set.



- 2) **Remap a key to an app:** After starting the Key Remap app, select the key you want to remap, and then tap “apps” and select the app to which you want to remap it.

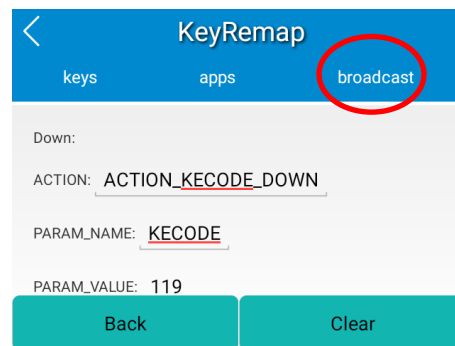
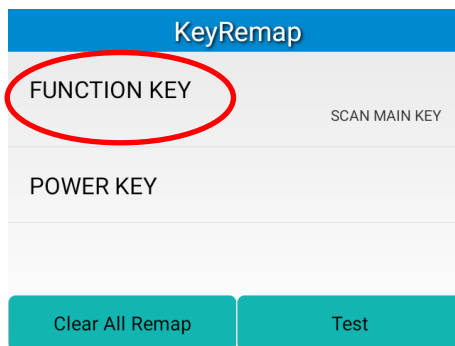
**Clear All Remap:** Clear all remap to return to default settings.





3. **Remap a key to broadcast:** After starting the Key Remap app, select the key you want to remap, and then tap “broadcast” and defined the action for pressing remap key up or down.

**Clear All Remap:** Clear all remap to return to default settings.




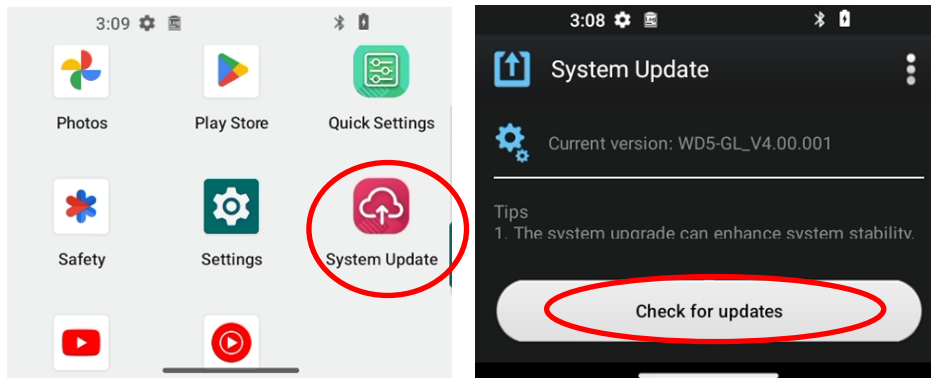
# Chapter 8 System Update

## Introduction

This chapter introduces two methods to update the system software of the terminal: Online update and local update.

## Online Update

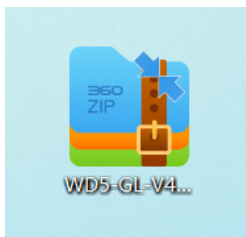
Update the system online: Tap the system updates icon  ->“CHECK FOR UPDATES”.



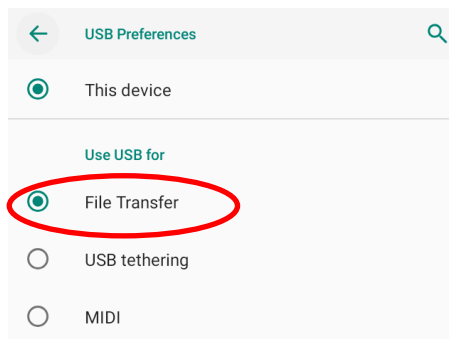
## Local Update

### Zip File to the WD5 Drive


1. Connect the terminal to a PC with the included USB cable. Swipe the home screen from left to right with one finger in one smooth motion to open the notification bar. Tap “USB file transfer turned on”. Then select “File Transfer”.




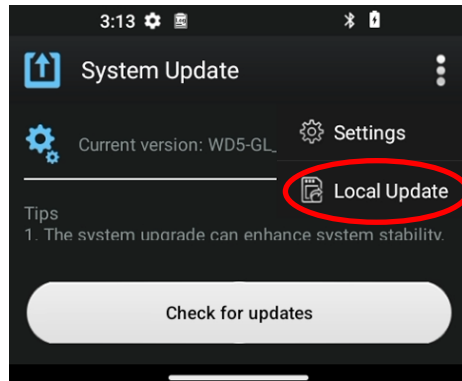
The file name might be different based on each version



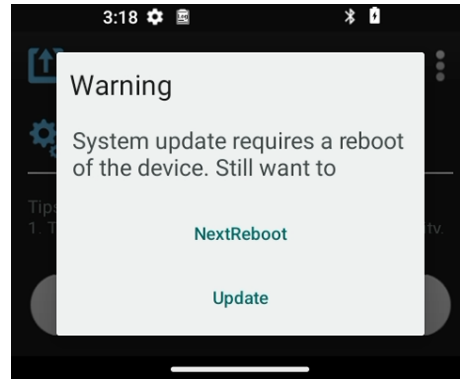
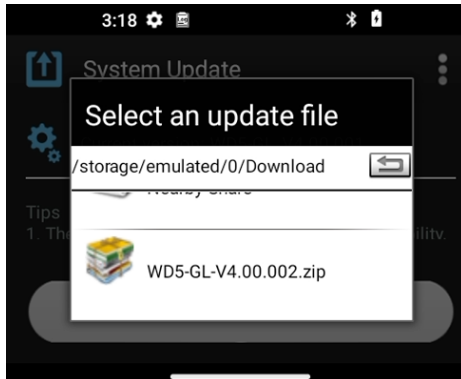
2. Copy the update zip file to the WD5 drive.

3. Tap  to access the System Update screen.

4. Tap  in the top right corner of the System Update screen then select “Local Update”.



5. Select the update zip file. Then select “NEXTREBOOT” or “UPDATE”.



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## Chapter 9 App Development Guide

### Development Environment

The WD5 runs on the Android 13 operating system, so you should use Android SDK 13 or higher when developing apps for the WD5.

### Use of Non-standard Interfaces

See *Newland Android PDA API Handbook*.

# Chapter 10 Maintenance & Troubleshooting

## Introduction

This chapter includes important safety and handling information and provides troubleshooting solutions for issues that might occur when using the terminal.

## Important Safety & Handling Information

### Disassembly and Retrofit

Do not attempt to disassemble or retrofit the terminal yourself. Unauthorized disassembly or retrofit will void the warranty.

### External Power Supply

Use only the included AC adapter. Otherwise, there is a risk of damage to the terminal.

### Abnormal Situation

Keep the terminal away from fire or heat sources. If there is unusual odor, overheating or smoke during charging, immediately cut off the power and disconnect the AC adapter, and contact your dealer or Newland customer service center. Continued use in this case may result in fire or electric shock.

### Drop Damage

If the terminal is damaged due to a drop from a high place, immediately cut off the power and contact your dealer or Newland customer service center.

### LCD Screen

Do not press against or strike the LCD screen. Otherwise, it may damage the screen. When handling a cracked or shattered screen, do not touch the liquid that has leaked from it to avoid skin burn or infection.

### Stacking Heavy Objects

Do not place heavy objects on the terminal as those objects may fall and cause injury.

### Mounting Location

Do not place the terminal on unstable or uneven surfaces as it may fall and cause injury. Do not expose the terminal to humidity or dust as this may cause fire or electric shock. Do not expose the terminal to direct sunlight for extended periods.

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## Wireless Functionalities

Do not use the terminal's wireless functionalities where wireless device use is prohibited or where it may cause interference or danger, such as petrol stations.

## Use & Maintenance

- ✧ If the terminal crashes, please press and hold the power key for more than 30 seconds to force restart.
- ✧ Do not throw, drop or strike the terminal. Doing so may damage the LCD display, interrupt running programs, cause data loss in memory and result in malfunction.
- ✧ Clean the scan window regularly. Do not touch it with hands. Scratched or smudged window may degrade reading performance.
- ✧ Do not tap the touch screen with sharp objects. Doing so may damage the screen or cause internal short circuits.
- ✧ Use only a dry soft cloth to clean the terminal. Cleaning it with wet cloth or benzene/ thinner/ other volatile chemicals may deform and shorten the service life of the keypad and shell of the terminal.

## Battery Safety Guidelines

- ✧ Do not disassemble or expose the battery to fire or water.
- ✧ Keep the battery away from excessive heat, humidity, and corrosive environments.
- ✧ Do not crush, drop, or short-circuit the battery.
- ✧ Discontinue use if the battery has been submerged in water.

## Battery Replacement Guidelines

- ✧ The battery life varies based on device usage frequency. If you observe a significant reduction in battery performance, it is recommended to replace the battery. Typically, batteries retain at least 80% of their capacity after 500 charge cycles.

## Long-Term Storage

- ✧ If the device will not be used for a long time, the battery will discharge slowly. During storage, it is recommended to charge the battery to 80%, shut down the device, and recharge it regularly (at least every six months).

## Charging Guidelines

- ✧ Use only the battery and AC adapter provided by Newland.

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- ✧ Avoid charging in environments with extremely low or high temperatures. The most suitable temperature for charging is between 5°C and 45°C (41°F–113°F); do not charge the battery below 0°C (32°F); recommend charging temperature 10°C -30°C(50°F–86°F).
  - ✧ Do not use damaged or faulty AC adapters or batteries. If the battery is swollen, bulging, or showing other abnormalities, stop using it immediately.
  - ✧ Properly dispose of and recycle batteries. Do not dispose of them as household garbage.

## Troubleshooting

Problem		Possible Cause & Solution
Type	Description	
Key	Unresponsive or incorrect response to any key entry.	Ensure that there is no contaminant inside the key; if a key malfunction occurred, please check whether the key has been remapped to other functions.
Battery	The charging LED is OFF when charging.	Ensure the AC adapter is plugged in properly.
	Stop charging or charging slowly in a low-temperature environment.	Charging protection is enabled when the temperature is lower than 0 degrees Celsius. To continue charging at normal speeds, please move to a warmer environment before charging your device.
	Noticeably short battery life.	<ol style="list-style-type: none"> <li>1. Check the battery level. If the battery is almost depleted, recharge it.</li> <li>2. If the problem remains, please contact the after-sales service center.</li> </ol>
	The fully charged battery is depleted after the terminal is switched on.	If the battery is faulty, please contact the after-sales service center.
USB	USB communication failure	<ol style="list-style-type: none"> <li>1. Ensure that the USB cable connections are secure.</li> <li>2. Ensure that there is no contaminant inside the USB port.</li> <li>3. If the problem remains, please contact the after-sales service center.</li> </ol>
LCD Screen	No display	<ol style="list-style-type: none"> <li>1. Ensure the terminal is switched on.</li> <li>2. If the terminal is in sleep mode, press the Power key to wake it up.</li> <li>3. Check the battery level. If the battery is depleted, recharge it.</li> <li>4. If the problem remains, please contact the after-sales service center.</li> </ol>
System	Cannot switch on	<ol style="list-style-type: none"> <li>1. Check the battery level. If the battery is depleted, recharge it.</li> <li>2. Switch the terminal on after using the included AC adapter to connect it to a power outlet. If the problem disappears, then continue to charge the terminal. If the problem remains after charging the terminal for 30 minutes, please contact the after-sales service center.</li> </ol>
	System halted	<ol style="list-style-type: none"> <li>1. The problem may be caused by bugs in downloaded apps. Ensure that only reliable apps are used.</li> <li>2. The problem may be caused by a sudden or unexpected power loss. Please press and hold the power key for 30 seconds to reset the terminal.</li> </ol>



# SCANNING MADE SIMPLE

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