



Newland AIDC
Scanning Made Simple

Portable Data Collector NLS-N7



User Guide

Disclaimer

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Please read through the manual carefully before using the product and operate it according to the manual. It is advised that you should 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 Auto-ID Tech. Co., Ltd.

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Risk Warning Regarding Unauthorized System Updates:

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

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Revision History

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V1.0.2	Add description about security level of ITF code	2021-05-19
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Chapter 1 About This Guide

Introduction

This guide provides instructions for programming and operating the NLS-N7 portable data collector of android 10.0 version (hereinafter referred to as “**the N7**” or “**the terminal**”).

Chapter Descriptions

✧ <i>Chapter 1 About This Guide</i>	Provides general description of this manual.
✧ <i>Chapter 2 Getting Started</i>	Provides information on getting the N7 up and running for the first time.
✧ <i>Chapter 3 Basics</i>	Describes how to program the N7 for the use of its basic features.
✧ <i>Chapter 4 Scanning Barcodes</i>	Provides the instructions as to how to scan 1D/2D barcodes.
✧ <i>Chapter 5 Settings</i>	Provides Explain how to set the functionalities like Wi-Fi, Bluetooth Network, Display, GPS, etc.
✧ <i>Chapter 6 Scanning and NFC</i>	Explains how to program the scanner and NFC.
✧ <i>Chapter 7 Lens Heating Tool</i>	Describes how to use the lens heating tool.
✧ <i>Chapter 8 System Update</i>	Explains how to update the system.
✧ <i>Chapter 9 Maintenance & Troubleshooting</i>	Provides troubleshooting solutions for issues that might occur when using the N7.
✧ <i>Chapter 10 System Customization & Software Development</i>	Describes the support of system customization and software development.

More Information

For more product and support information, please visit our website: <http://www.newlandaidc.com>.

Chapter 2 Getting Started

Introduction

This chapter lists the parts and accessories for the N7 and explains how to install, remove and charge the battery, and power on the N7 for the first time.

Unpacking

Carefully remove all protective material from the pack and verify that the followings were received:













- ✧ 1 x NLS-N7 main unit
- ✧ 1 x USB cable
- ✧ 1 x AC adapter for the N7
- ✧ 1 x Li-polymer battery
- ✧ 1 x Hand strap
- ✧ 1 x Quick start manual
- ✧ 1 x Retrieve card pin

Accessories (Optional)

- ✧ Charging cradle for the N7 (can be assembled into a 4-slot charging cradle)
- ✧ 4-slot battery charger
- ✧ Trigger handle

Safety Guidelines

Before using the terminal, please read the safety instructions carefully to ensure proper use of the terminal. For more detailed information, please refer to Chapter 8.

	Do not switch the terminal on when use is prohibited or when it may cause interference or danger.		Do not place the terminal or its accessories in containers with a strong electromagnetic field.
	Do not use the terminal while driving.		Keep the terminal away from magnetic devices as the radiation from this product may erase the information stored on them.
	Follow any rules or regulations in hospitals and health care facilities. Switch off the terminal near medical apparatus.		Do not put the terminal in a high-temperature place or use it in a place with flammable gas such as a gas station.
	Switch off the terminal before boarding an aircraft as it may cause interference to control equipment of the aircraft.		Keep the terminal and its accessories out of the reach of young children. Do not allow children to use the terminal without supervision.
	Switch off the terminal near high-precision electronic devices as it may affect their performance.		Use only approved batteries and chargers to avoid the risk of explosions.
	Do not attempt to disassemble the terminal or its accessories. Only authorized repair stations are allowed to repair the terminal.		Observe any laws or regulations on the use of wireless devices. Respect others' privacy and legal rights when using the wireless device.

Getting Started

The N7



1	Up/Down/Left/Right Key	2	Scan Key
3	Home Key	4	Delete Key
5	Numeric Keys	6	Function Switch Key
7	Input Method Switch Key	8	Cradle Connector
9	Virtual Keyboard/ Screen Lock Key	10	Power Key
11	SIM/TF Card Slot	12	Right Scan Key
13	Enter Key	14	User-defined Key

15	Return Key	16	Left Scan Key
17	USB Port	18	LED
19	Earpiece	20	Scan Window
21	Speaker	22	Battery Cover Latch
23	Flashlight		

Installing the Battery



Install Battery

Step 1: Slide the battery cover latch to the unlock position and remove the cover.

Step 2: Insert the battery as indicated into the battery compartment, with its metal contacts facing down and lining up with the metal contacts on the inside of the terminal.

Step 3: Close the battery cover and slide the battery cover latch to the lock position.

Removing the Battery



Remove Battery

Step 1: Hold down the Power key for 2 seconds and then tap “Power off” to turn off the terminal. Slide the battery cover latch to the unlock position and remove the cover.

Step 2: Remove the battery.

Charging the Battery

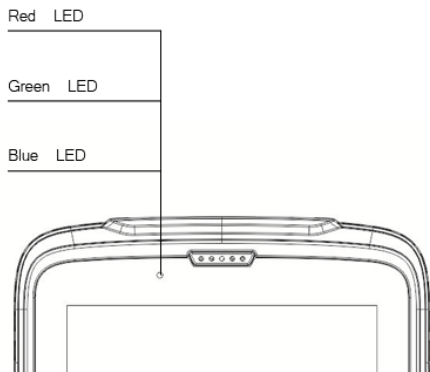


Connect the N7 to a power outlet using the included AC adapter or USB cable.

Note:

- 1. When the terminal battery is running low (at 20%), the battery icon in the notification bar at the top of the screen starts flashing; when it goes down to 10%, the terminal emits beeping sounds and displays a prompt; when the battery is running out, the terminal beeps and then shuts down automatically.
- 2. If N7 battery is completely drained, please press the power key to turn it on after 15 minutes of being charged.
- 3. When charging, make sure that the indoor temperature is above 0 degrees Celsius (32 degrees Fahrenheit). The device will stop charging at a low temperature for safety consideration.

LEDs on the N7



Charging/Battery Statuses	
Green LED on	Fully charged
Red LED on	Charging in progress
Red LED flashes constantly	Low-battery alert
Scan/Decode	
Blue LED flashes once	Scan successfully

When charging the N7 with AC adapter or USB cable, the user is notified the charging statuses by the LEDs on the terminal.

Installing the TF Card/SIM Card



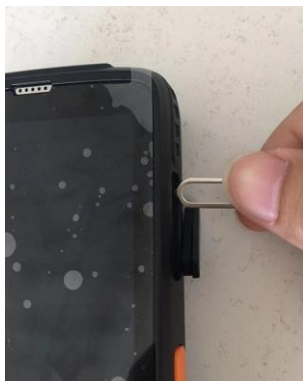
Step 1: Open the cover of SIM/TF card slot and pull the tray out from the slot.

Step 2: Insert the SIM / TF card into the corresponding slot on the tray, with its metal contacts facing down. Then gently push the tray into the slot until it locks in place. Finally close the cover.

Note: 1. N7 is equipped with dual card slots (card slot 1 and card slot 2), which can support Nano SIM+Nano SIM or Nano SIM+TF card. (Nano SIM Size: 12.3mm×8.8mm×0.7mm.TF card is max to 128G).

2. Both card slots can support 2G, 3G, 4G networks of mobile / Unicom / Telecom.

Removing the MicroSD Card/SIM Card



Step 1: Open the cover of SIM/TF card slot.

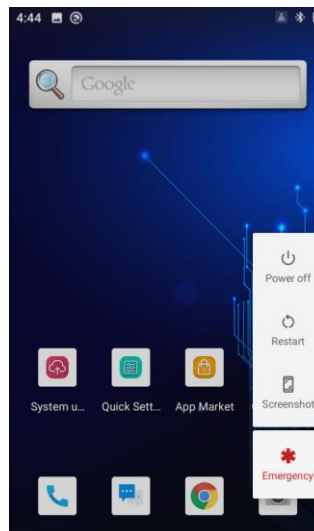
Step 2: Pull the tray out from the slot with the help of retrieve card pin, then remove the SIM/TF card.

Chapter 3 Basics

Introduction

This chapter provides the basics of setting and using the N7.

Power Key



After installing the SIM card and battery and having the N7 fully charged, you may switch the terminal on.

Switch the N7 on: Hold down the Power Key around 3 seconds until the Android logo is displayed. Note that the initialization is going to take some time before the N7 displays the Home screen.

Reboot the N7: Hold down the Power key until the window below pops up, then tap “restart”.

Switch the N7 off: Hold down the Power key until the window below pops up, then tap “Power off”.

Screenshot the N7: Hold down the Power key until the window below pops up, then tap “Screenshot”.

Lock the N7: Briefly press the Power key. If no operation is performed on the N7 for a preset period of time, the N7 locks automatically. You can change how long it takes for the N7 to lock.

Unlock the N7: Briefly press the Power key. Then swipe home screen from bottom to top with one finger in one smooth motion to open.

Force reboot the N7: If the terminal is stuck and unable to operate, press and hold the power key for more than 10 seconds to force the terminal to reboot.

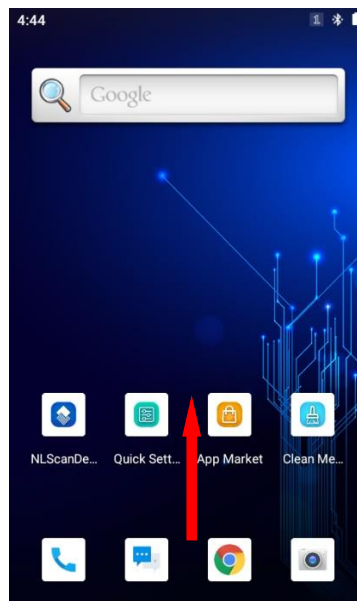
Home Screen

View another Home screen: Swipe left or right.

Go to the Home screen: Press the Home key on the front panel of the terminal.

Open an app: Tap the app icon.

View all apps/Open apps list: Swipe Home screen from bottom to top with one finger in one smooth motion to view all the app.















View the App list

Add an app icon to the Home screen: swipe home screen from bottom to top with one finger in one smooth motion to show all app. Tap and hold your desired app until it appears on the Home screen and then drag it into a blank area.

Delete an app icon on the Home screen: Tap and hold your desired app on the Home screen until “X Remove” appears, then drag the app into it. Note that this operation only removes the icon from the Home screen. To remove the app from the N7, see the **Uninstalling App** section.

Status Icons

The icons in the notification bar at the top of the screen give information about the N7.

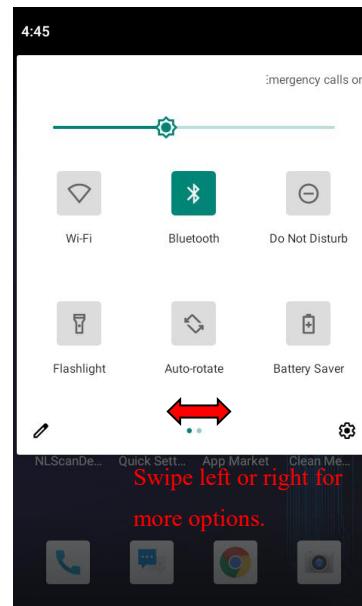
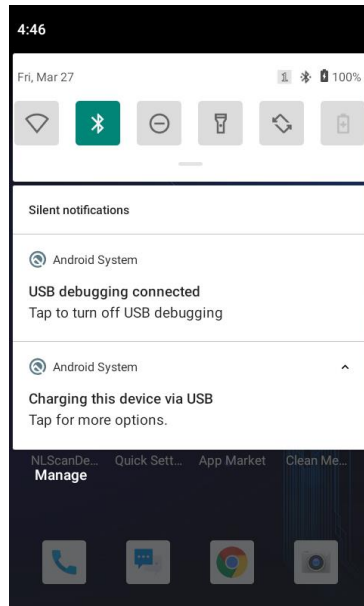
Status Icon	Description	Status Icon	Description
	Signal strength		Turn on Mobile Network
	Battery Status		Call in the progress
	Data Transfer Mode		Airplane Mode on
	Bluetooth on		Uploading
	Sending/receiving data via Bluetooth		Downloading
	Open Wi-Fi network available		Wi-Fi Connected

Notification Bar

View the Notification Bar: Swipe Home screen from top to bottom with one finger in one smooth motion to display the notification bar. It is combined by **shortcut list** and **USB options**.

USB options: Tap to turn on/off USB debugging, or set USB preference here.

Shortcut list: Tap to turn on /off functions like Wi-Fi, Bluetooth, and Flashlight, etc.

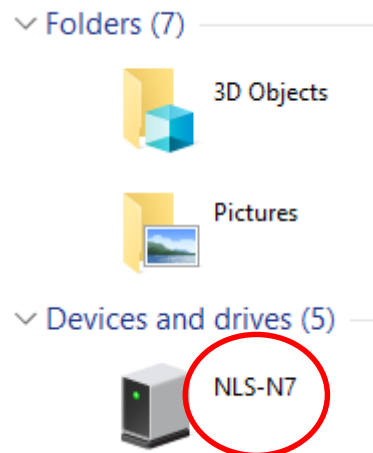
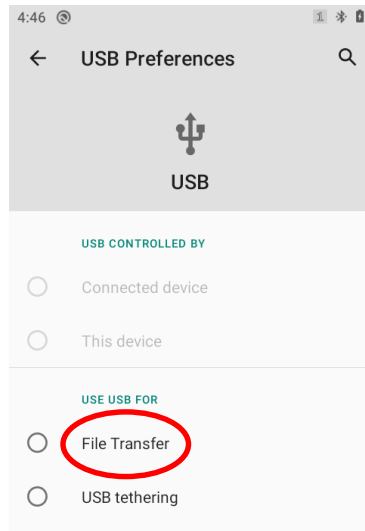


Transferring Files between the Terminal and PC


Step 1: Connect the Micro USB port on the N7 to your computer with the included USB cable.

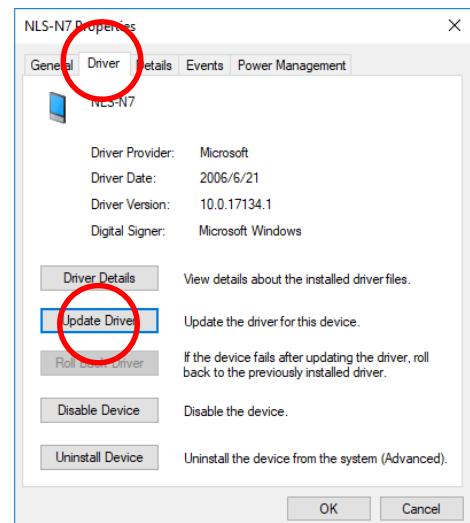
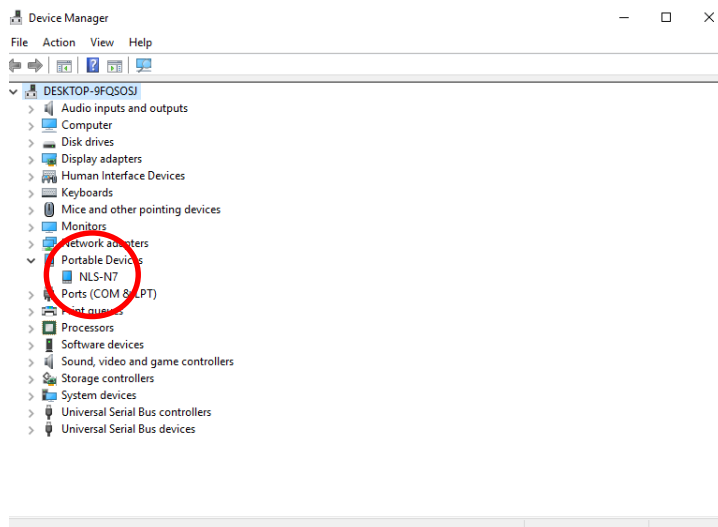
Step 2: Switch N7 on. On the home screen, swipe from top to open the notification bar. Tap "Charging the device via USB", and Tap "Tap for more options".

Step 3: Select "Files Transfer". Navigate to the "This Computer" section of your computer and look for the newly added drive. Double-click it and you will be connected to the N7. Then you may handle the files on the terminal through your computer.

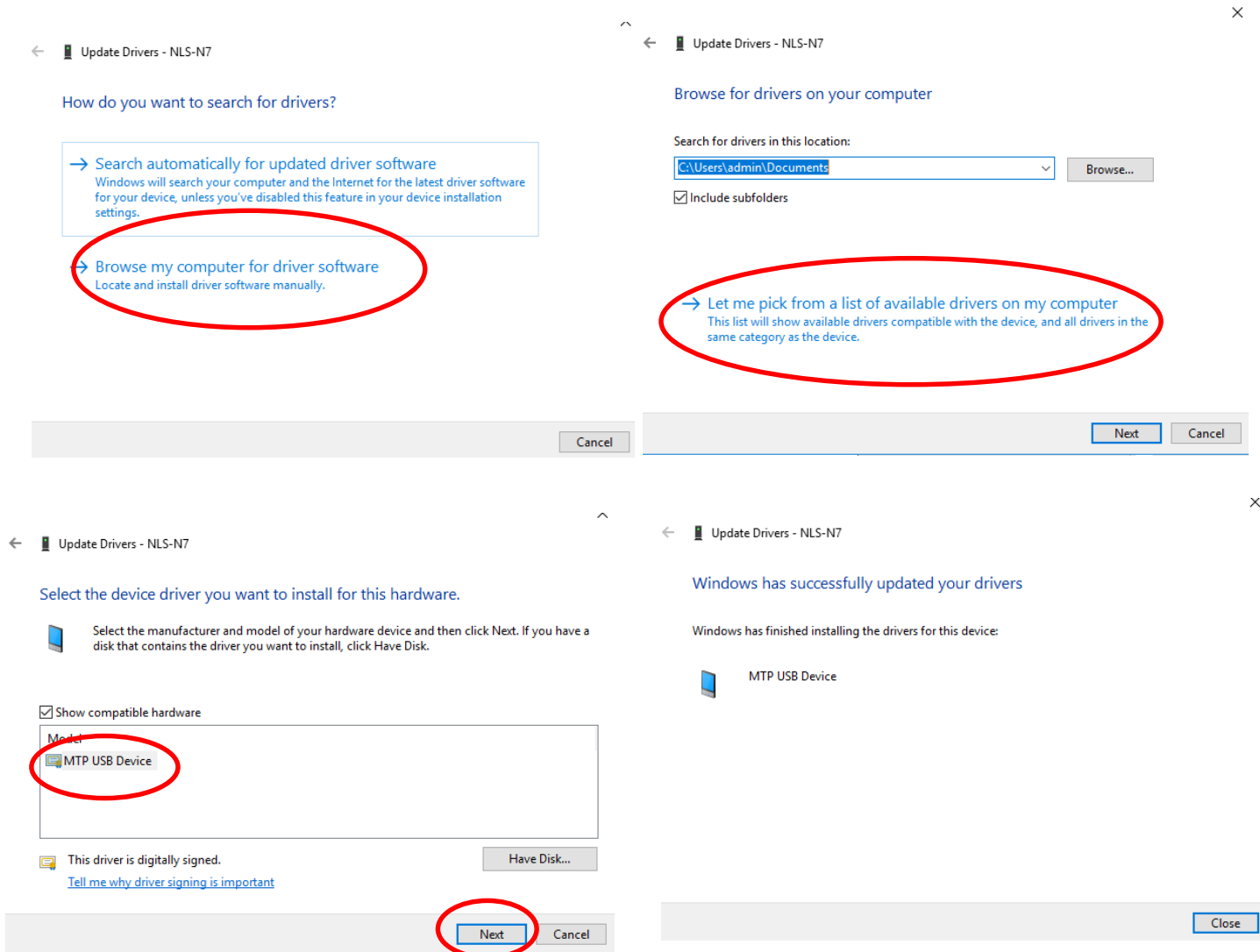


If you cannot find the drive with the N7 icon, follow the steps below to install/update the driver:

1. Tap "Settings"  -> "About phone", then tap "Build number" 4 times. -> Tap "←" to return to the Settings menu. Then "System" -> "Advanced" -> "Developer options", turn "USB debugging" on and then tap "OK".
2. Open the Device Manager on your PC. Locate "MTP" and double-click on it. Click on the "Driver" tab then "Update Driver".



3. Click on "Browse my computer for device software" then "Let me pick from a list of device drivers on my computer". Select "MTP USB Device" from the list and then click on "Next". Wait for the installation to complete. Then click "Close".

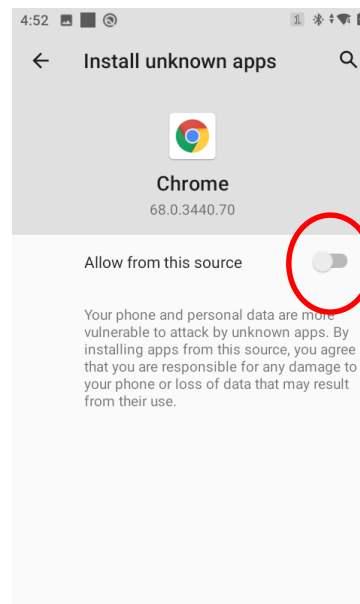
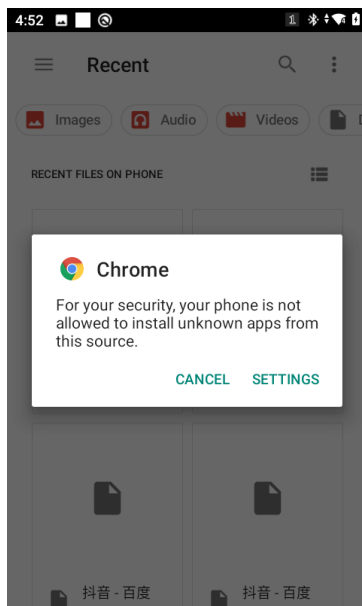


Installing App

Use one of the following methods to install a new app on the N7:

1. Download an APK file from online app store and install it.
2. Download software package onto a Micro SD card or PC and copy it to your terminal. Then install it with File Manager.
3. Install a new app using a mobile assistant (such as Baidu Mobile Assistant) installed on the PC.

Note: If receiving the “For security, your phone is not allowed to install unknown apps from this source” message when installing an app, tap “SETTINGS”, and enable the “Allow from this source” option, and then reinstall the app.



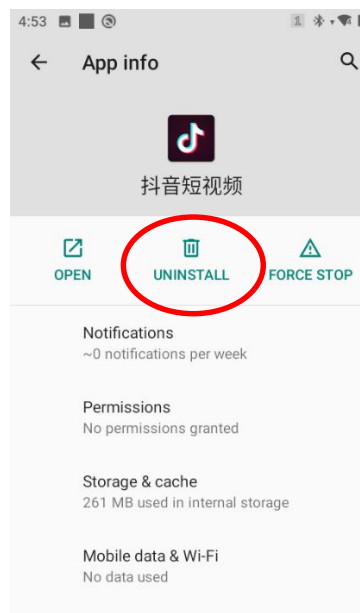
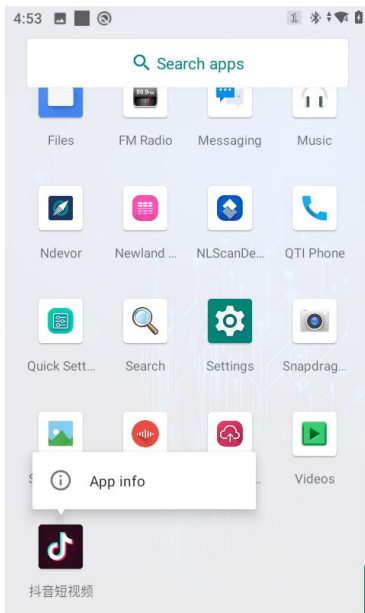
Uninstalling App

Use one of the following methods to uninstall an app on the terminal:

Method 1: Connect the terminal to PC with the supplied USB cable. Uninstall an app using a mobile assistant (such as Baidu Mobile Assistant) installed on the PC.

Method 2: Swipe Home screen from bottom to top with one finger in one smooth motion to view all the app. Tap and hold your desired app until a trash bin appears at the top left corner of the screen, then drag it into the trash bin.

Method 3: Tap “Settings” -> “Apps” -> the app you want to uninstall -> “UNINSTALL”.



Chapter 4 Scanning Barcodes

Introduction

This chapter includes scanning tips and instructions for setting up the scanner.

Scanning 1D Barcode

Adjust the scan angle or the distance between the N7 and the target barcode to ensure the length of laser beam is roughly 8mm greater than that of the barcode, as shown below.



Correct	Wrong

Scanning 2D Barcode

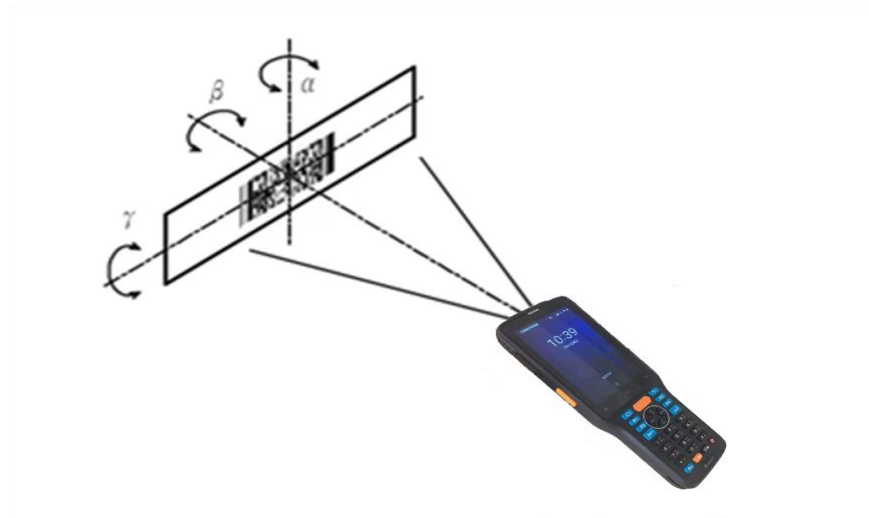
Adjust the scan angle and the distance between the N7 and the target barcode to make them fall into the following ranges:

1. Point the N7's focus lamp at the center of the barcode.
2. Move the N7 until you find the appropriate scan distance.
3. Optimum scan angles:

Skew (α) < 45° (0° preferably)


Pitch (γ) < 45° (5° - 20° preferably)

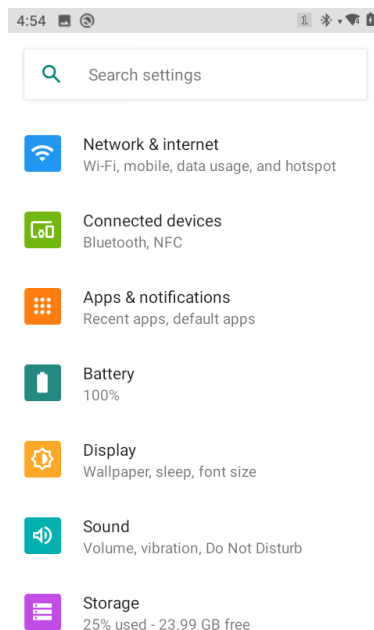
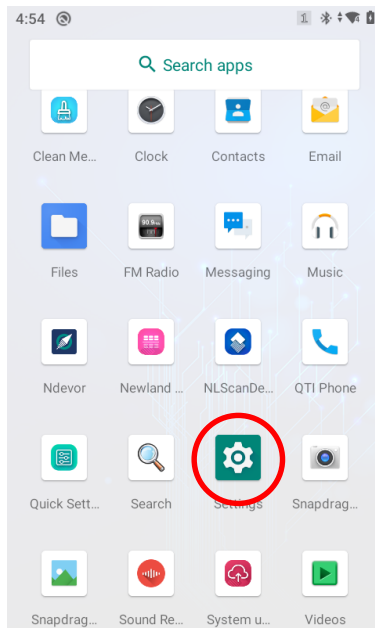
Roll (β) = 0° - 360°



Chapter 5 Settings


Introduction

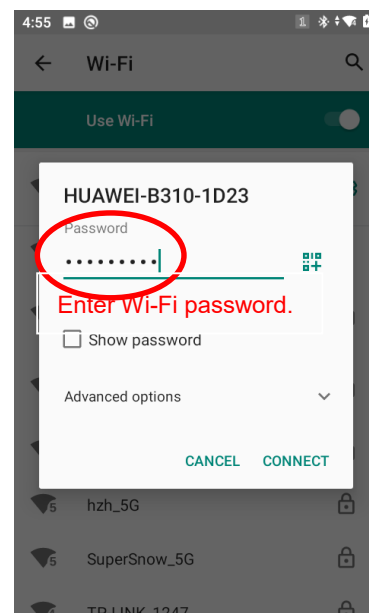
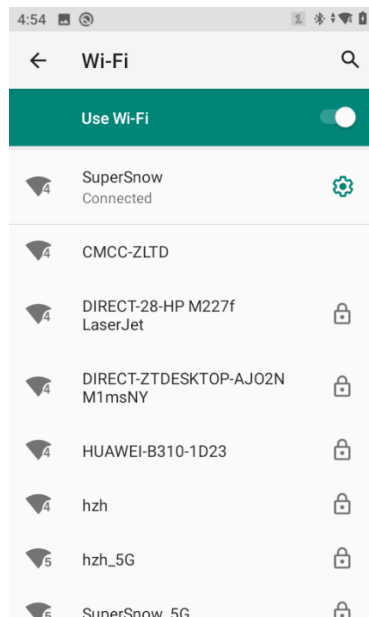
This chapter provides introductions about how to set the functionalities like Wi-Fi, Bluetooth, Time, Language, Display, Apps, Reset, and System Upgrade, etc. in the settings app .



Wi-Fi Settings

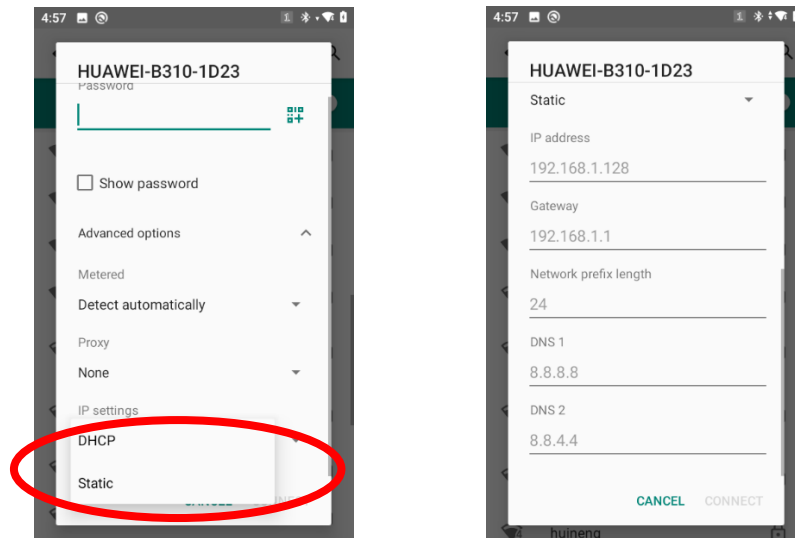
Join a Wi-Fi network:

1. Tap the app icon  then “Network & 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 scan for available networks.
2. Tap a network and then enter the password.
3. Tap “CONNECT”.



IP Settings


To set the IP, follow the first two steps of joining a Wi-Fi network, tap “Advanced options” then “DHCP”, and select the desired option.

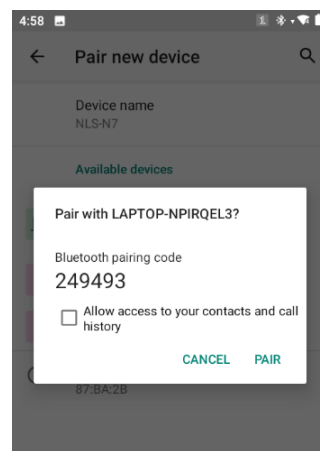
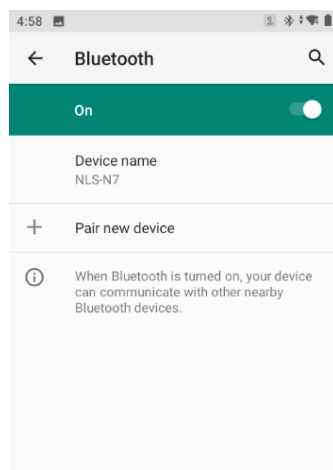



Bluetooth

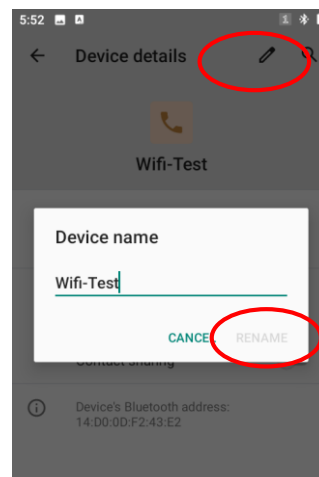
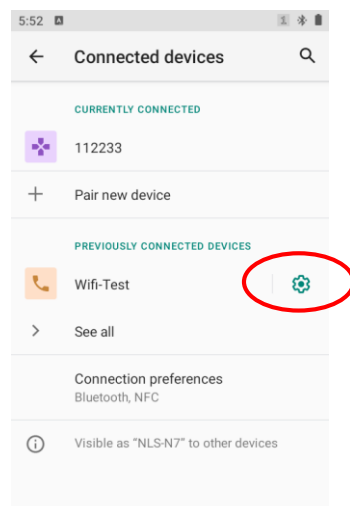
You can set up a Bluetooth connection between the N7 and other Bluetooth devices, such as PC, mobile phone. Note that Bluetooth connection works better if there are no obstacles between them.

Before you can use a Bluetooth device with the N7, you must first pair them.

1. Make the Bluetooth device visible to the N7.
2. 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  next to the device name and then edit its name manually and then tap "RENAME". To unpair it, tap "FORGET"



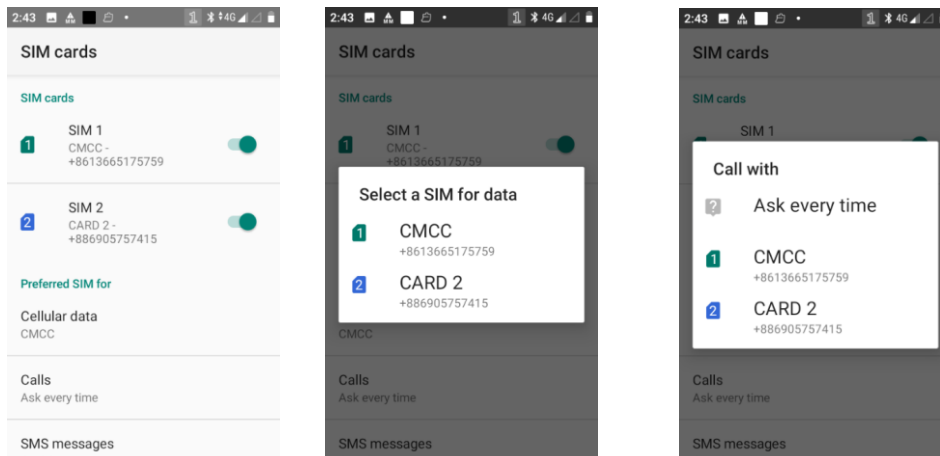
SIM Card and Mobile Network

The N7 can also use 4G network to connect to the internet. To establish 4G connection, you must have a SIM card installed in your N7.


On the N7, both SIM slot 1 and SIM slot 2 support 4G networks. When two SIM cards are installed, you will be asked to select which SIM card to use for data connection.

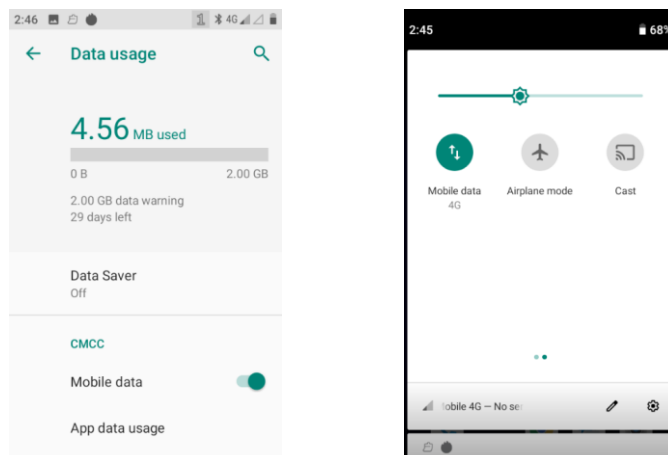
SIM cards: you can check the operator information or activate the SIM cards inserted in the card slot 1 and 2.

Preferred SIM card: you can select either card 1 or card 2 for cellular data, and they can be switched between each other. For the calls and messages, you can set default option or ask every time for the preferred SIM card.




Turn on cellular network:

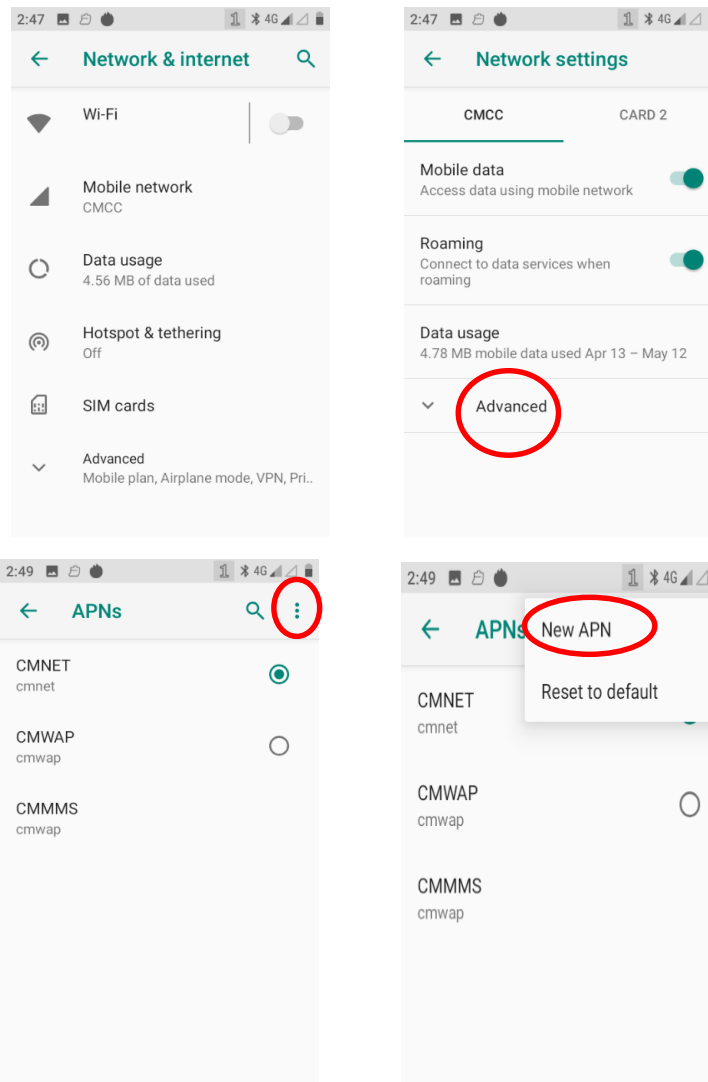
1. Swipe from top to bottom on the home screen and it will display the drop-down mean, Find  and tap it to turn Cellular data on.
2. Or Go to Settings-> "Network & Internet" ->"Mobile network" -> turn on "Mobile data".




APN Settings:

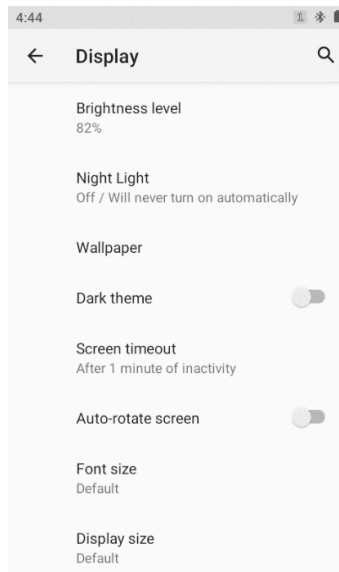
If you cannot connect to the internet when using your terminal's cellular data, you may need to change your APN settings on the N7 to fix it:

1. Go to Settings-> "Network & Internet" ->"Mobile network" -> "Advanced" -> "Access Point Names".
2. Tap  in the top right corner of the screen or tap the carrier of your SIM card on the screen. Then manually enter the APN settings. You can contact your carrier or visit their website to get the correct APN settings, or check the APN settings on a mobile device that can access the internet using the SIM card.
3. Press the Return key on the N7 to go back to the previous screen and then select the APN you just added.




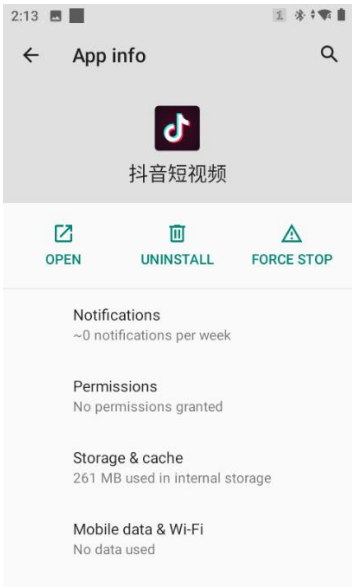
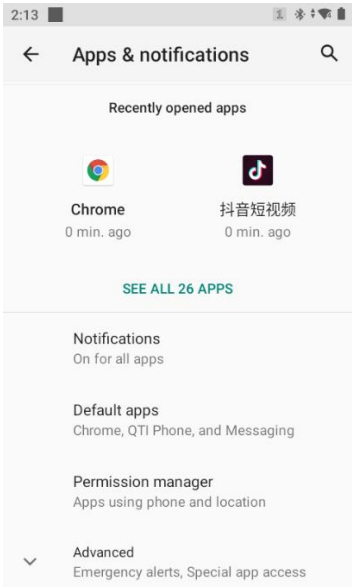
Display

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




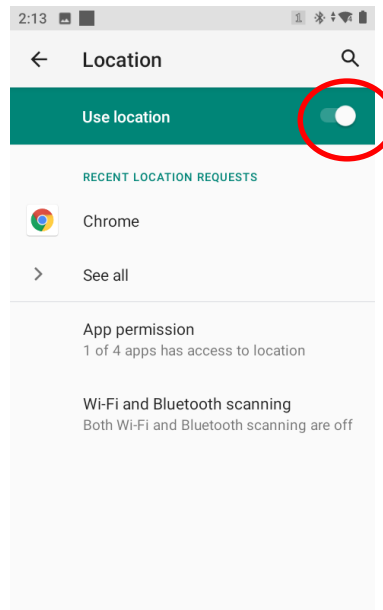
Apps & Notifications

Tap the app icon  and then “Apps & notifications”, and set the force stop/uninstall/clear storage /clear cache, and other parameters on the screen shown below as per your needs.




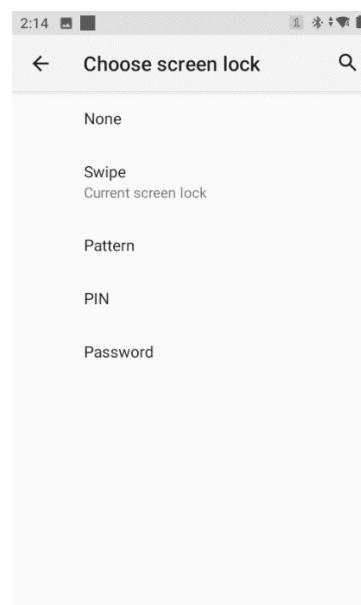
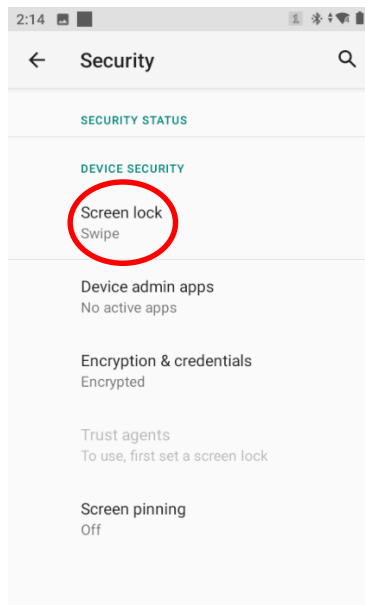
GPS

Tap the app icon  then “Location”, and then turn Location on. Then you can use a third-party app to obtain location information.




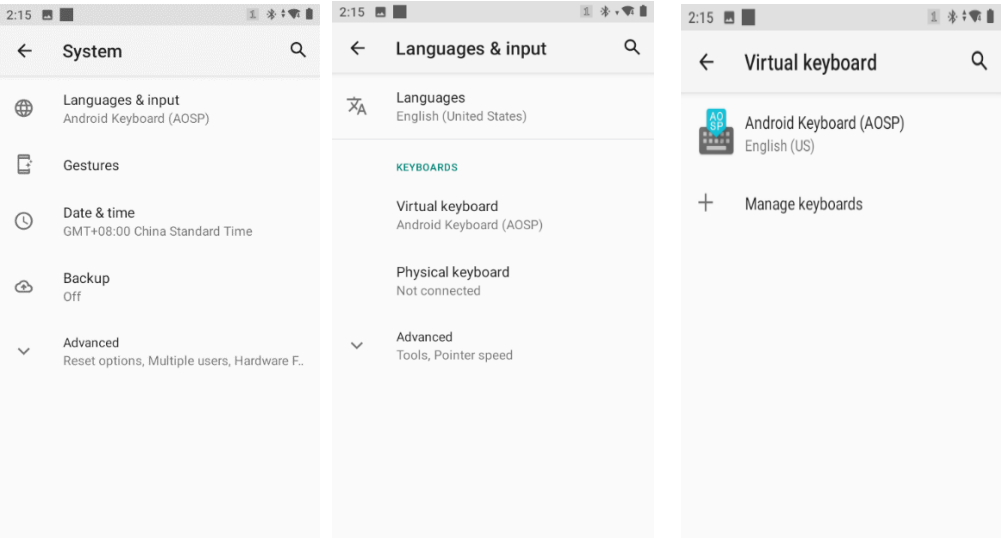
Screen lock

Tap the app icon  then "Security" -> "Screen Lock", and choose none/swipe/pattern/pin/password for screen lock per your needs.




Language & Input Method

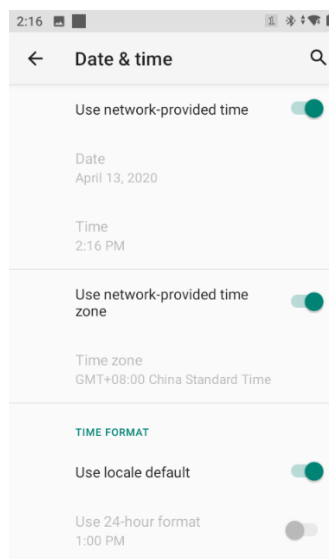
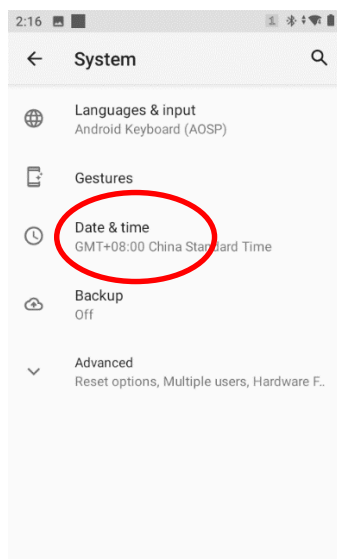
Tap the app icon  -> "System"-> "Languages & input". Then set the language and input method as per your needs.



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.

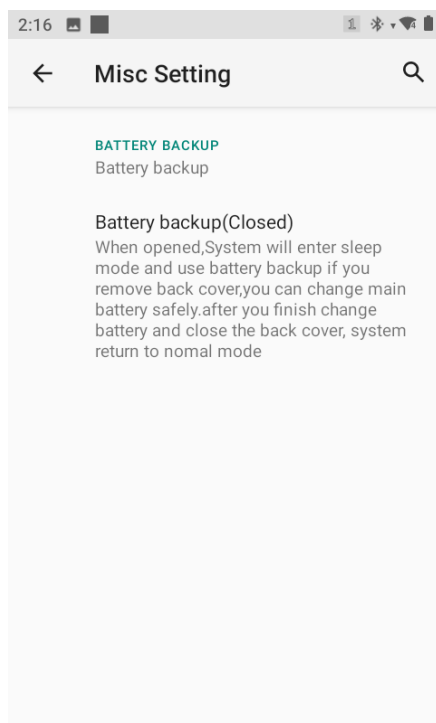
Note: If need manually set the date& time, you should turn off the “Use network-provided time” first.




Misc Setting

Battery backup (Option for N7 with backup battery): When turn on this function, system will enter sleep mode and use battery backup if you remove back cover, and you can change main battery safely without worrying about losing data. After you finish change battery and close the back cover, system return to normal mode.

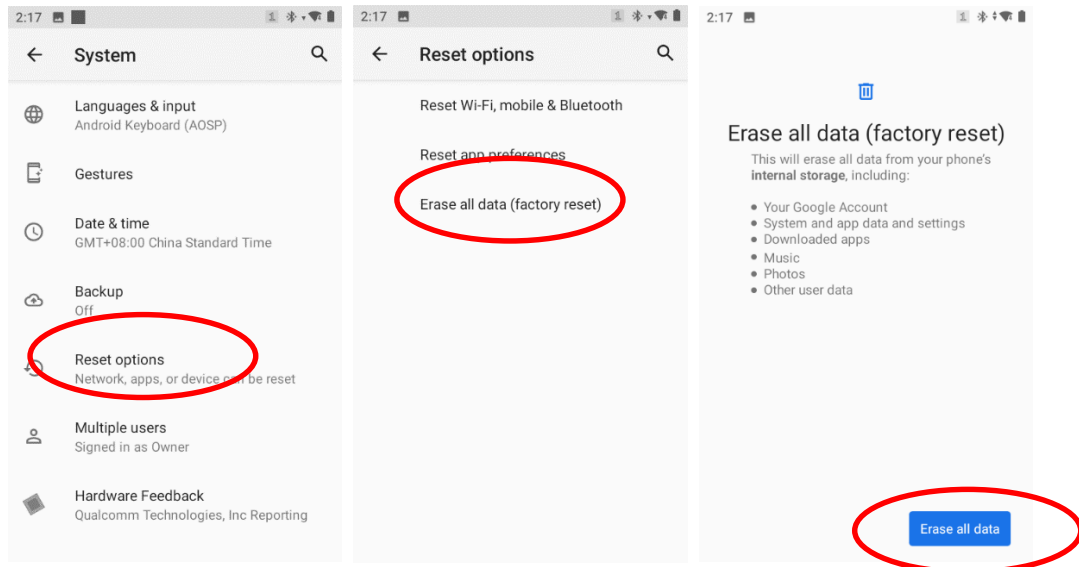
Tap the app icon  and then "System" -> "Misc Setting" -> tap "Battery backup (close)" and then turn on / off this function per your needs.




Restoring Factory Settings

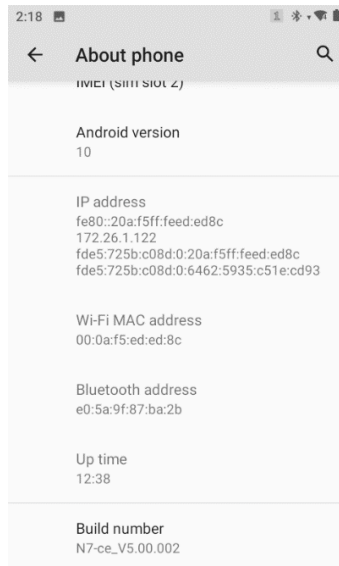
Tap the app icon  -> "System" -> "Advanced" -> "Reset options" -> "Erase all data (factory reset)" -> "erase all data"

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.





About phone

Tap the app icon  -> "About phone", then you can review information like IMEI, SN, MAC address.



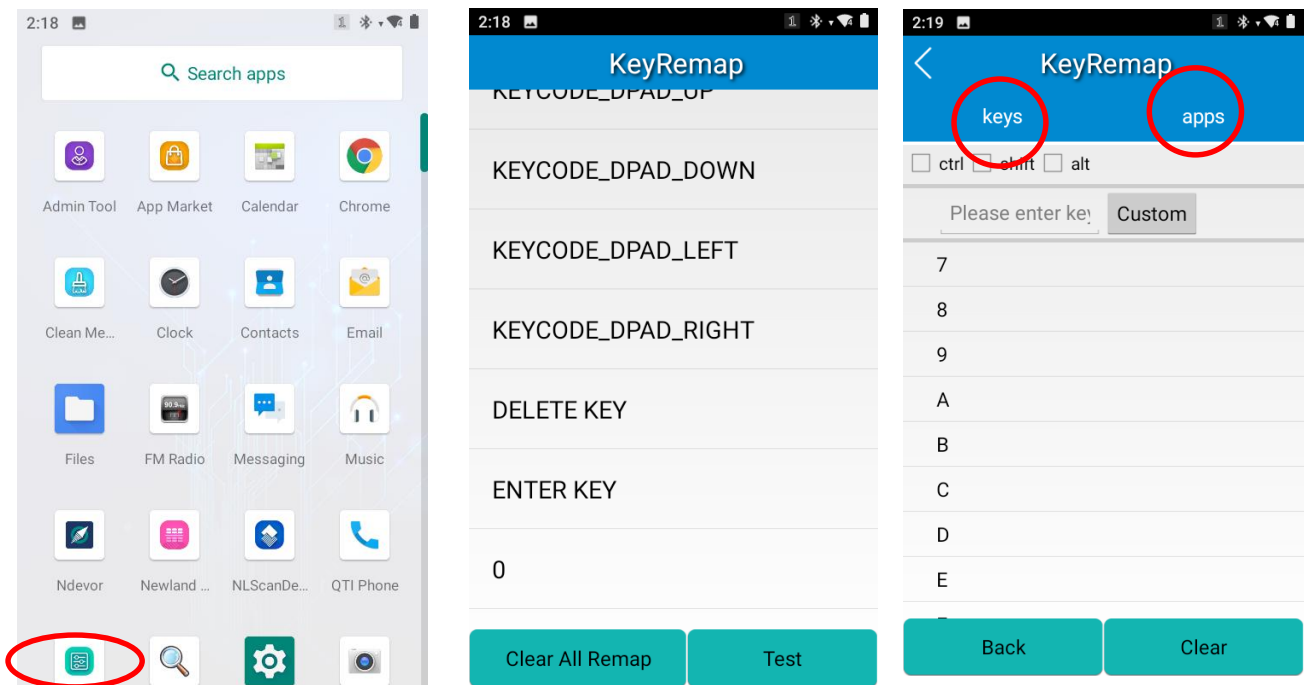
Key Map

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.

Start the Key map app: Tap the quick setting app icon  on the Home screen then .

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

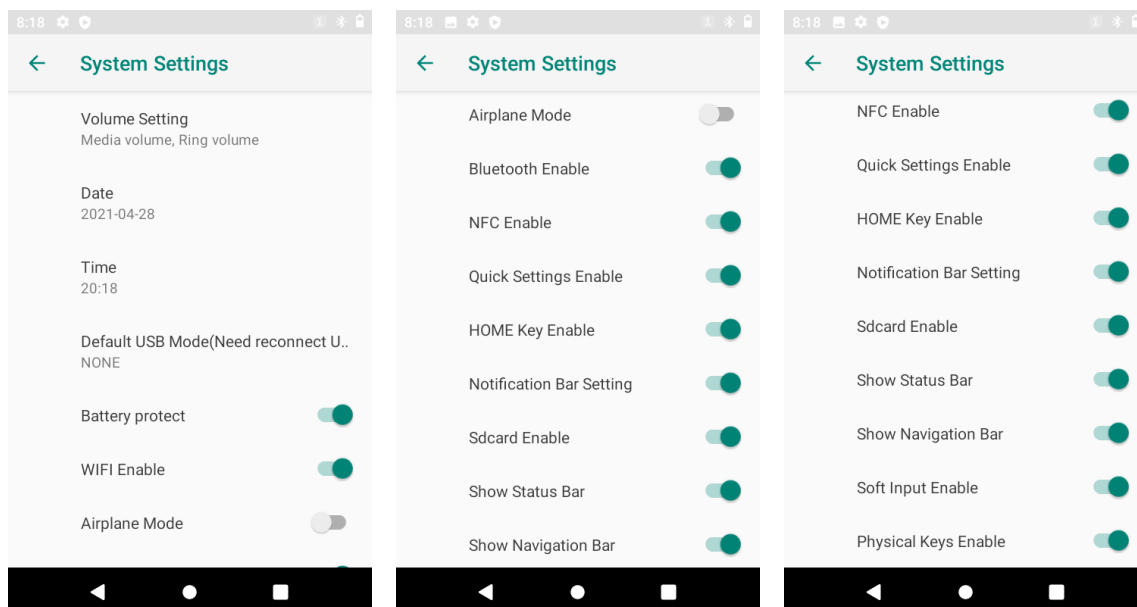
When remapping a key to KEYCODE_SHOW_SOFT_INPUT, pressing the remapped key can open/close the on-screen keyboard.



System Settings

In Quick Settings app->system settings, The following functions can be enabled or disabled.

1. **Volume Setting:** Set Media Volume and Ring Volume.
2. **Date:** Set date.
3. **Time:** Set time.
4. **Default USB Connection Mode:** Set MTP, PTP, MIDI or NONE usb connection mode.
5. **Battery Protect:** Enabled or disabled the standby battery function. Enable this function, the device can still maintain the running state for about 5 minutes after removing the battery. So that you can continue to use it after replacing the battery.
6. **WIFI Enable:** Enabled or disabled WLAN function.
7. **Airplane Mode:** Enabled or disabled Airplane Mode.
8. **Bluetooth Enable:** Enabled or disabled BT function.
9. **NFC Enable:** Enabled or disabled NFC function.
10. **Quick Settings Enable:** Enabled or disabled Notification Bar function.
11. **HOME Key Enable:** Enabled or disabled home key function.
12. **Notification Bar Setting:** Enabled or disabled the function of going into settings by Notification Bar.
13. **Sdcard Enable:** Enabled or disabled Sdcard function.
14. **Show Status Bar:** Show or hide the status bar.
15. **Show Navigation Bar:** Show or hide the Navigation Bar.
16. **Soft Input Enable:** Show or hide soft Input keyboard.
17. **Physical Keys Enable:** Enabled or disabled physical keys.





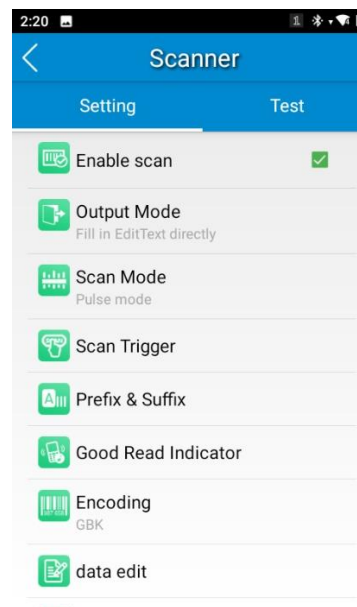
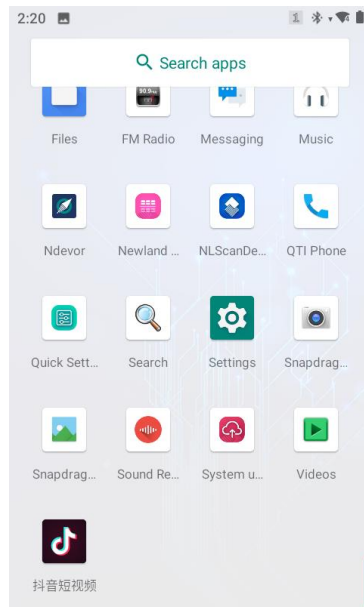
Chapter 6 Scanning and NFC

Introduction

This chapter provides introductions about how to programming scanner.

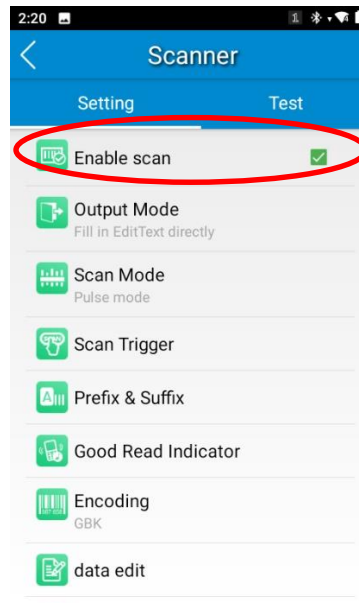
Programming Scanner

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



Enable Scan

Check or uncheck the “Enable scan” item to enable or disable the scanning feature of the N7.



Output Mode

The N7 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.

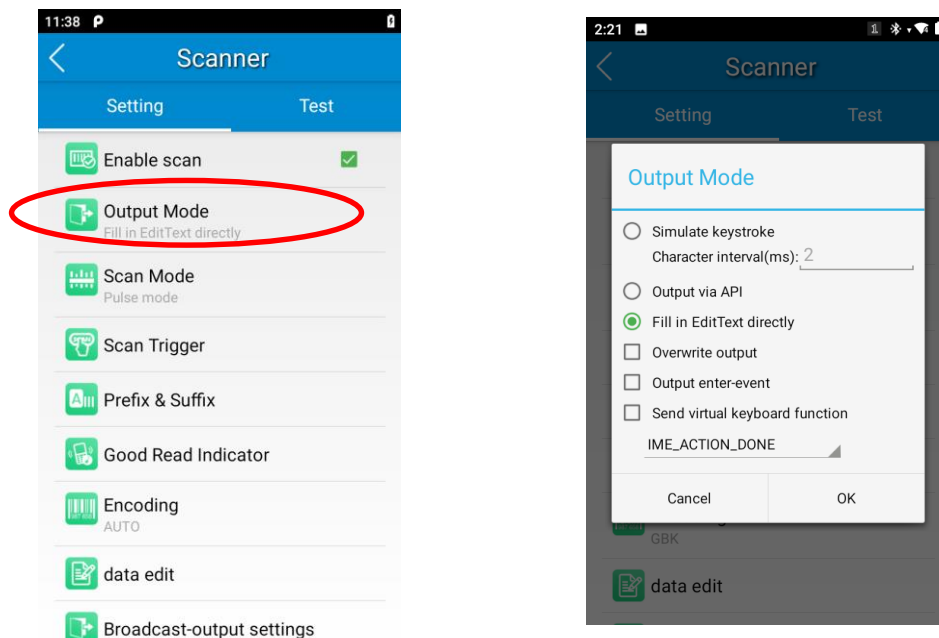
2. **Output via API:** Application acquires scanned data by receiving system broadcasts.

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 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 scanned.

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



Scan Mode

The N7 provides the following four scan modes:

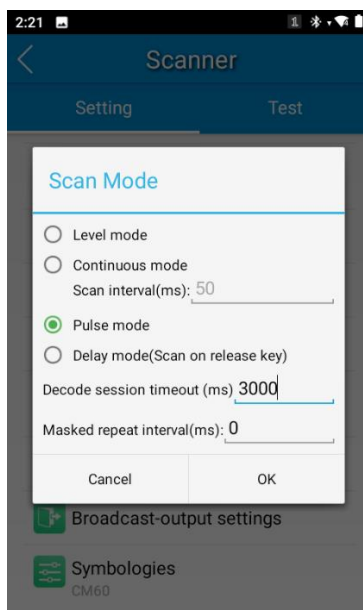
1. **Level mode:** Press and hold the scan trigger to start a decode session which continues until the trigger is released.
2. **Continuous mode:** Press the scan trigger to continuously read barcodes. To suspend or resume scan operation, simply press the scan trigger.

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.
4. **Delay mode (Scan on release key):** Press and hold the scan trigger to aim at barcode then release it to start a decode session which continues until the decode session timeout expires or a barcode is decoded. It is advised to use this scan mode and the **Central Area Decoding** feature to ensure that only the desired barcodes are read if multiple barcodes are placed closely together.

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

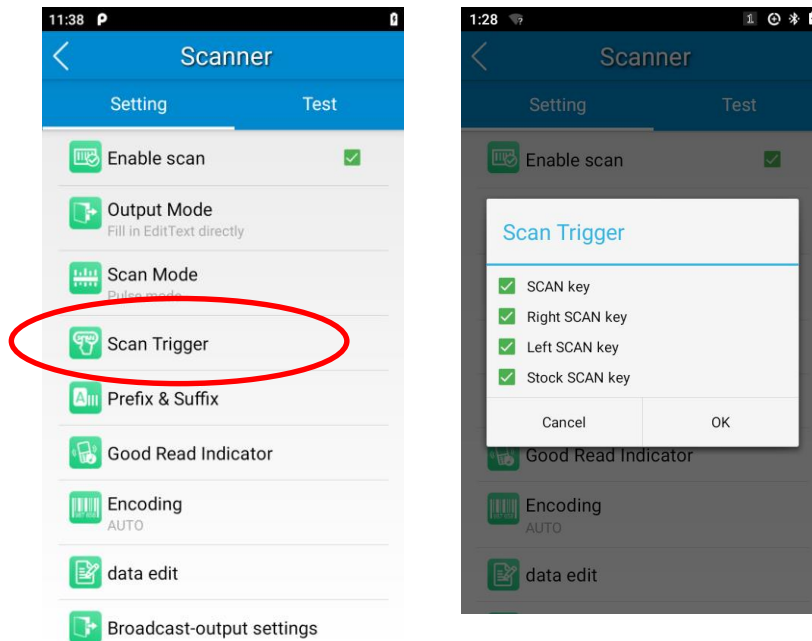
Masked repeat interval (ms): This parameter sets the time interval between two successive reads on the same barcode.



Scan Trigger

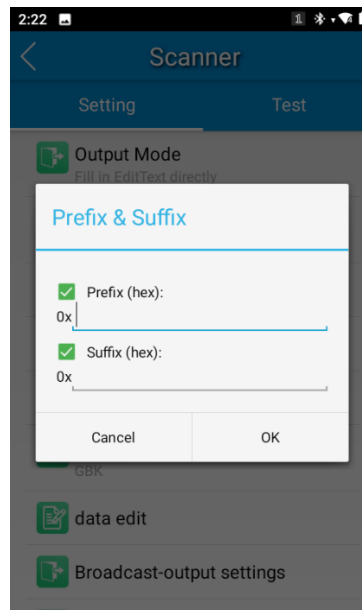
The three scan keys on the terminal and the trigger on the pistol grip can all serve as scan trigger. Enable or disable them as per your actual needs.

1. **SCAN key:** Use the Scan key on the front panel of the terminal as scan trigger.
2. **Left/Right SCAN key:** Use the Scan key on the left/right side of the terminal as scan trigger.
3. **Stock SCAN key:** Use the trigger on the pistol grip attached to the terminal as scan trigger.



Prefix & Suffix

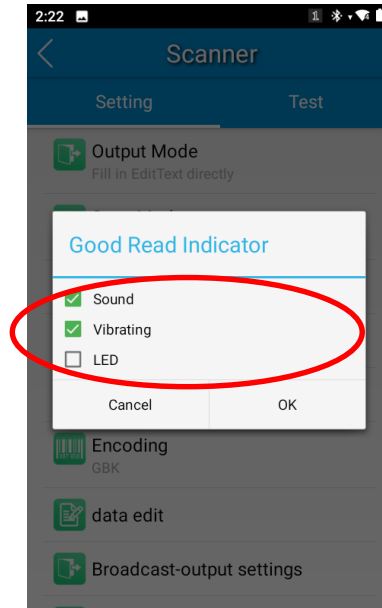
To set the prefix/suffix, enter the hexadecimal value of a desired prefix/suffix and then tap “OK”. For example, if you want to add a Line Feed character after each barcode, set the suffix to “0A”; if you want to add a Carriage Return character after each barcode, set the suffix to “0D”.



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.

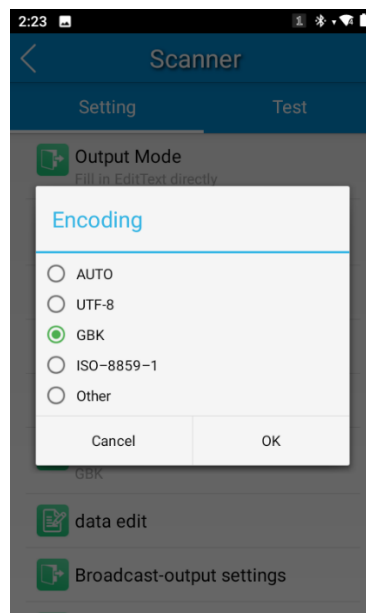
1. **Sound:** The N7 issues a short beep to indicate a good read.
2. **Vibrating:** The N7 vibrates to indicate a good read.
3. **LED:** The blue LED on the N7 flashes once to indicate a good read.



Encoding

Choose a character encoding to interpret barcode data.

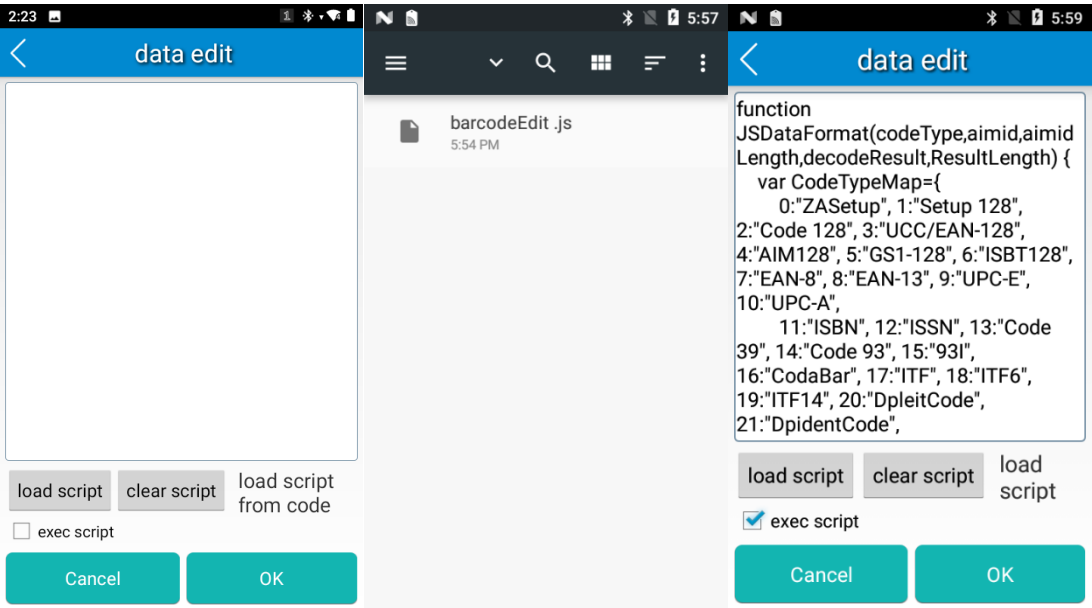
1. **AUTO:** The terminal determines automatically if target barcode uses UTF-8, GBK, or ISO-8859-1 encoding. If the terminal produces wrong output, you may need to choose or enter a specific character encoding.
2. **UTF-8:** Dominant Unicode encoding.
3. **GBK:** A character encoding for Chinese characters.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



Data Edit

This feature allows you to edit barcode data with a script. You can take the “barcodeEdit.js ” script as a reference to make your version.

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”.



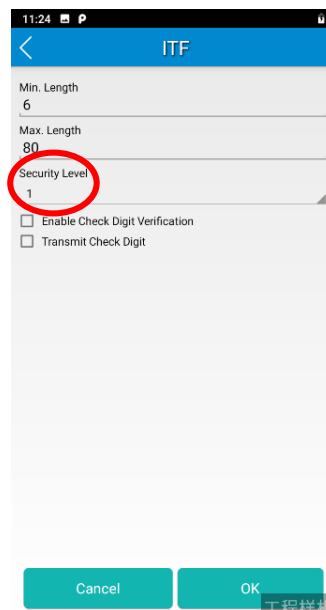
Symbologies

Note that supported symbologies depend on the scan engine integrated in the terminal. Here we will take CM60 for example.

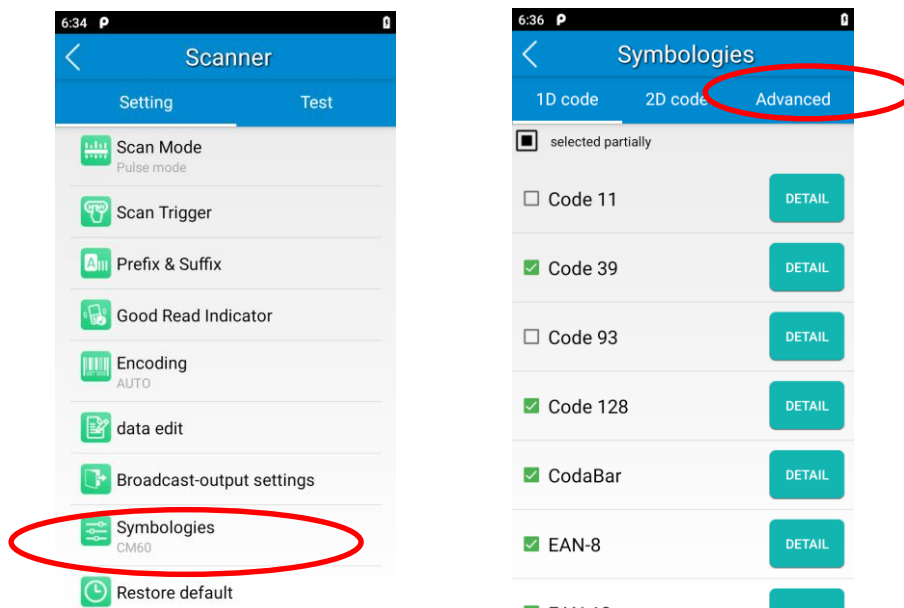
1D code: Enable or disable 1D symbologies and set other barcode parameters.

Below is remarks for ITF codes:

- 1) The higher the security level, the lower the error rate of ITF 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. **Other:** Tap **DETAIL** to access the following parameter settings.

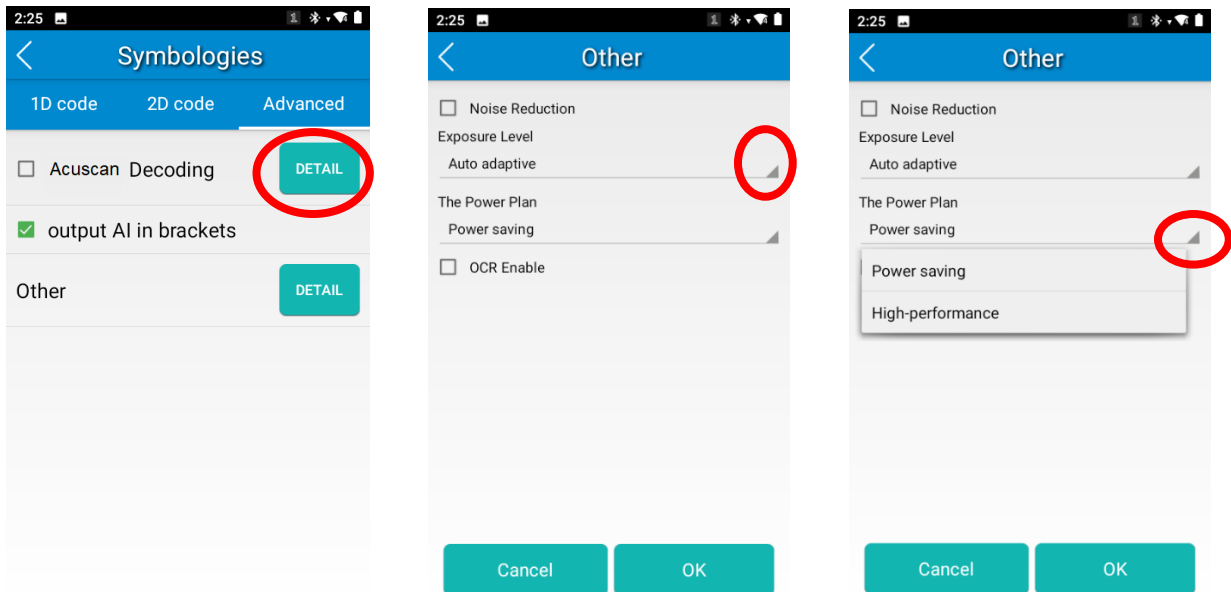
Noise reduction: This feature is designed to reduce noise in images produced by the terminal. However, the terminal shows a slight decrease in scanning speed when using this feature. It is recommended to enable it only when necessary.

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.

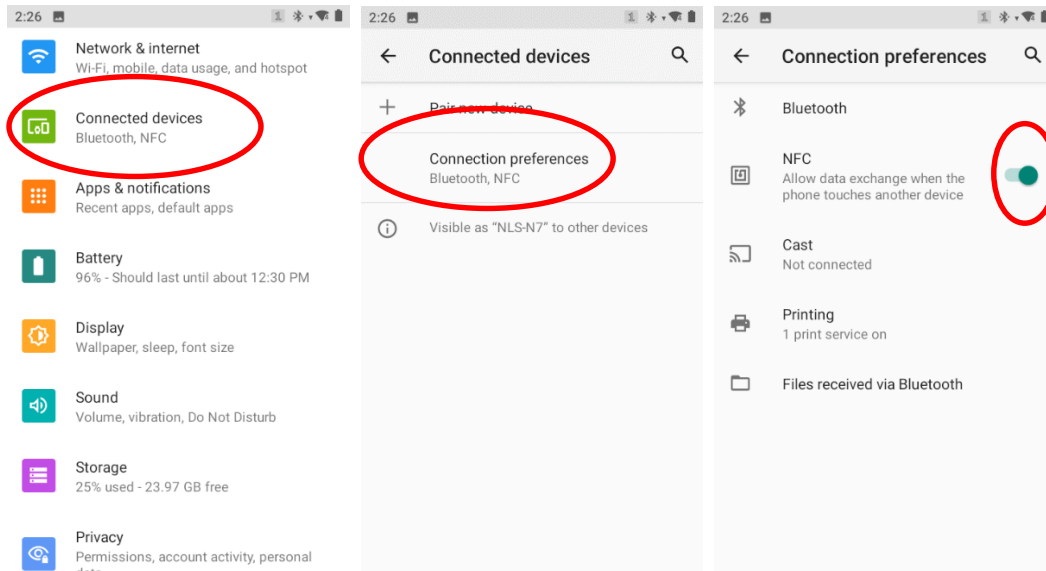
OCR Enable: Select this checkbox when reading passports (compliant with ICAODoc9303 standards, TD1/TD2/TD3 supported).



NFC (Optional)

To enable the NFC feature, tap the app icon  -> "Connected devices" -> "Connection preferences" ->, turn on "NFC".

Then you can install an NFC writer on the N7 to read and write NFC tags.



Note: The best NFC reading area of N7 is on the back of its battery cover.



Back cover with NFC reader

Chapter 7 Lens Heating

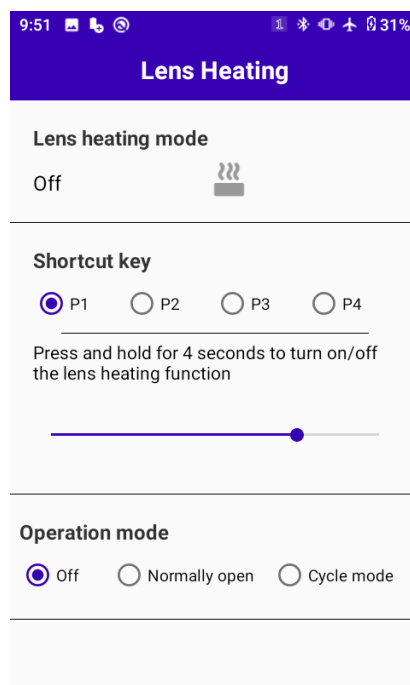
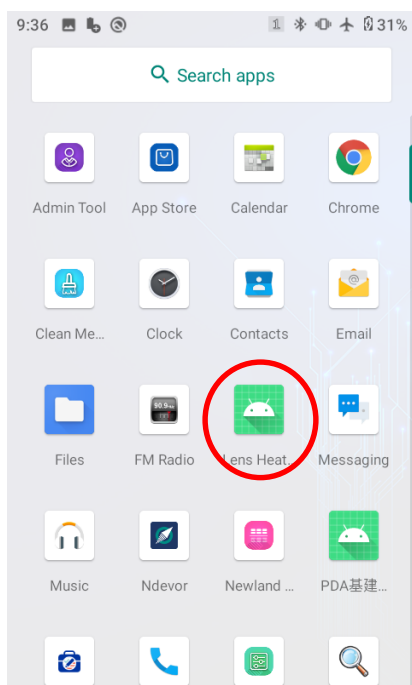
Introduction

This chapter describes how to use the Lens Heating tool.

Launch the Lens Heating Tool

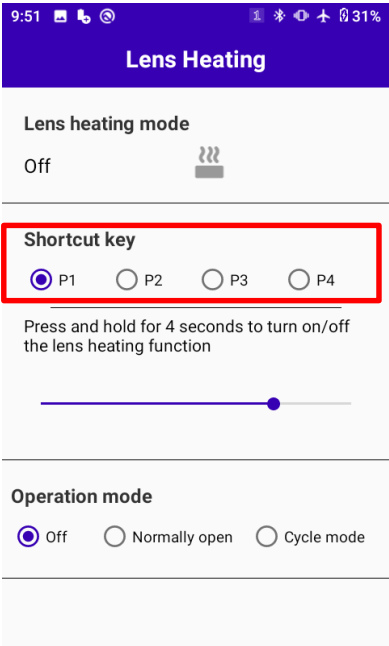


Tap the app icon on the Home screen to launch the lens heating tool. Then the user can set parameters such as shortcut key, heating trigger time, and operation mode per actual needs.




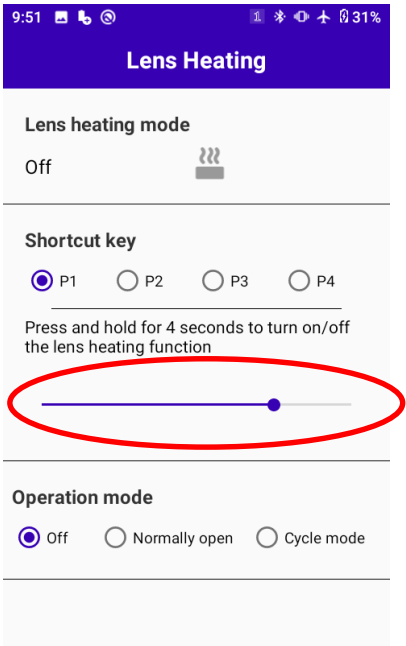
Shortcut Key Setting

Select P1, P2, P3, or P4 to function as the lens heating shortcut key (Hereafter referred to as “shortcut key”) to turn on or off the lens heating function.



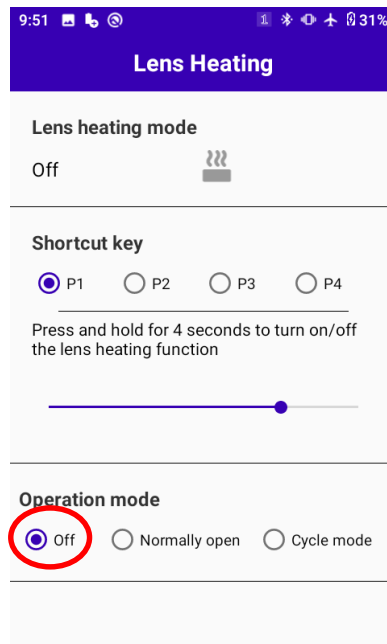
Heating Trigger Time Setting

Users can drag the  as shown below in the red light to configure the duration to trigger the lens heating function.

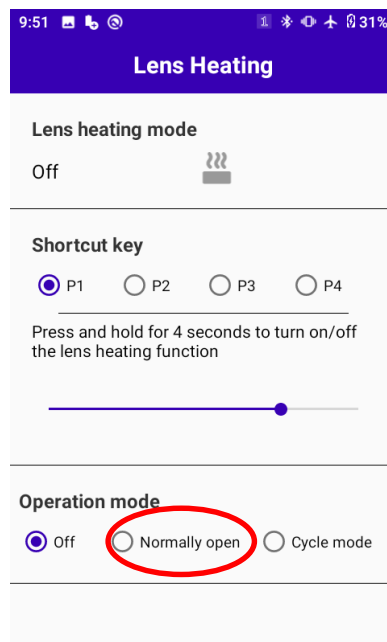


Operation Mode Setting

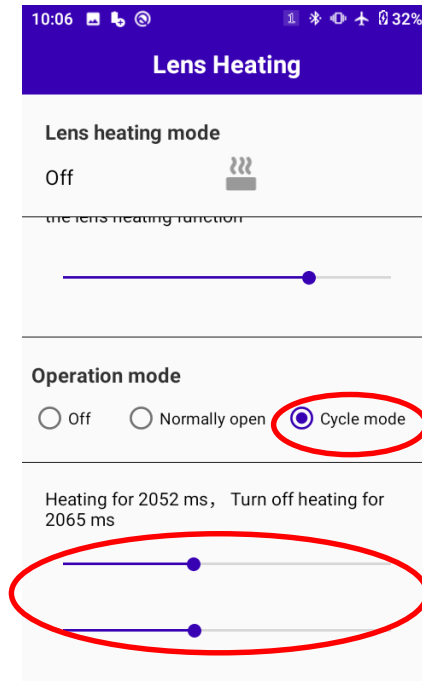
- 1) "Off" mode: Set the operation mode to "off", then long press the shortcut key to turn on or off the lens heating function.



- 2) "Normally open" mode: Set the operation mode to "Normally open" and turn on the lens heating function, then the lens heating will work continuously until the shortcut key is pressed to turn it off.



- 3) "Cycle mode": Set the operation mode to "cycle mode" and turn on the lens heating function. Then the lens heating function will be turned on or off according to the configured parameters. You can press the shortcut key to turn on or off the lens heating function.



Chapter 8 System Update

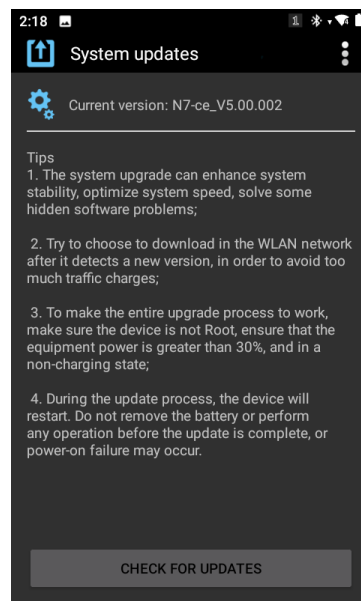
Introduction

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 system updates icon  -> "CHECK FOR UPDATES".

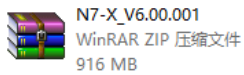
Note: The device should connect to the network first.



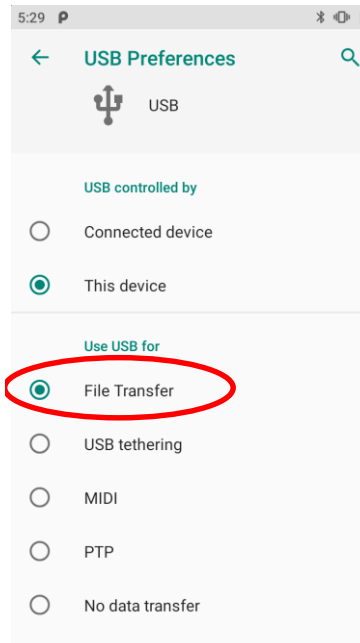
Local Update

Zip File to the N7 Drive

1. Connect the terminal to PC with the included USB cable. Swipe from top to bottom with one finger in one smooth motion to open the notification bar. Tap “USB for file transfer”. Then Select “Transfer files”.





The file name may be different based on each version.

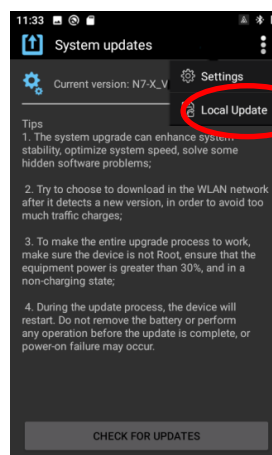


2. Copy the update zip file to the N7 drive or N7's Micro SD card.

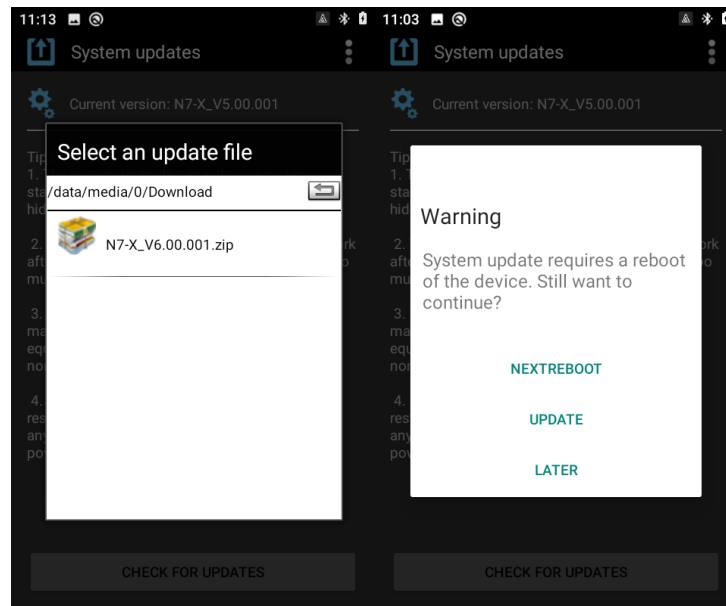


3. Tap  to access the System Update screen.

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”.




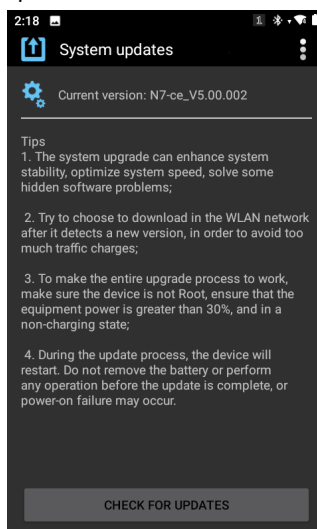
Zip File to TF Card


1. Copy the update zip file to TF Card.

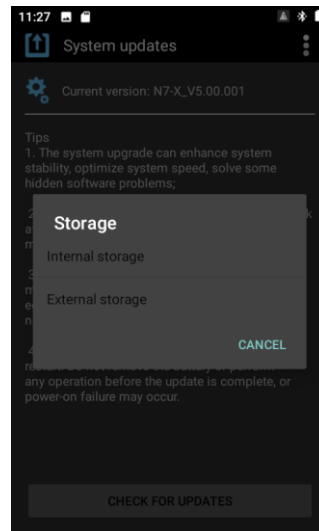
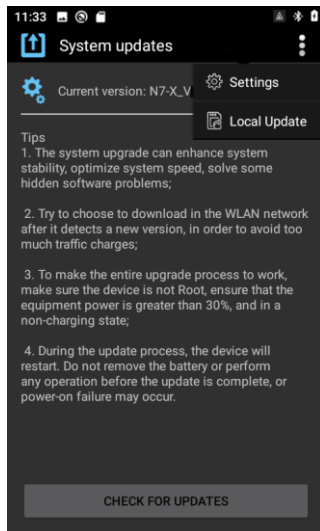


2. Insert the TF card to the N7 and then power on the terminal.

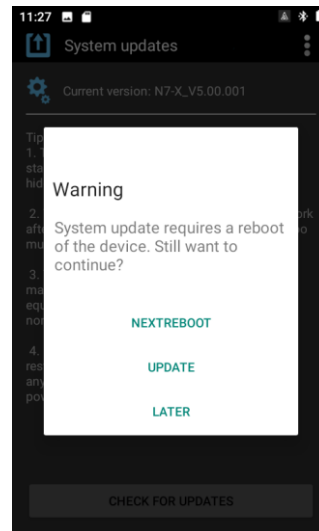
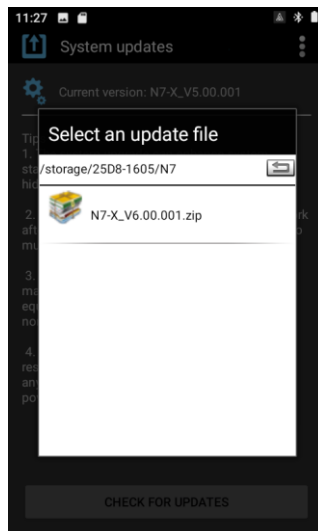
3. Tap  to access the System Update screen.



4. Tap  in the top right corner of the System Update screen, and then select “Local Update” ->“External Storage”.



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



Chapter 9 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 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.

Electronic Device

- ✧ Switch off the terminal near high-precision electronic devices. The terminal may affect the performance of these devices. Such devices include hearing aids, pacemakers, fire alarm systems, automatic gates, and other automatic control

devices. If you are using an electronic medical device, consult the device manufacturer to confirm whether the radio wave affects the operation of this device.

- ✧ Pacemaker manufacturers recommend that a minimum distance of 15cm be maintained between a device and a pacemaker to prevent potential interference with the pacemaker. If you have a pacemaker, use the terminal on the opposite side of the pacemaker and do not carry the terminal in your front pocket.

Hospital

- ✧ Do not take the terminal into the operating room (OR), intensive care unit (ICU), or coronary care unit (CCU).
- ✧ Follow rules and regulations set forth by hospitals and health care facilities. Do not use the terminal when it is prohibited.
- ✧ When using the terminal near someone who is suffering from a heart disease, turn down the ring tone volume or vibration properly so that it does not affect the person.

Area with inflammables and Explosives

In any area with inflammables and explosives, turn off the terminal and do not take out, install or charge the battery, to avoid explosion and fire. Areas with inflammables and explosives include, but are not limited to:

- ✧ Gas stations
- ✧ Area for storing fuels (such as the bunk under the deck of a ship)
- ✧ Device/vehicle for transporting and storing fuels or chemical products
- ✧ Area with chemical substances and particles (such as granule, dust, metal powder) in the air
- ✧ Area with the sign of "Explosives"
- ✧ Area with the sign of "Turn off bi-direction wireless equipment"
- ✧ Area where it is generally suggested to turn off a vehicle engine

Traffic Safety

- ✧ Please observe local laws and regulations on wireless device use. Do not use the terminal while driving to avoid traffic accidents. Secure the terminal on its holder. Do not place the terminal on the seat or other places where it can get loose in a sudden stop or collision. Use the terminal after the vehicle stops at a safe place.
- ✧ Do not place the terminal over the air bag or in the air bag deployment area. Otherwise, the terminal may hurt you owing to the strong force when the air bag inflates.
- ✧ Observe the rules and regulations of airline companies. When boarding or approaching a plane, turn off the terminal and remove the battery. In areas where wireless device use is prohibited, turn off the terminal. Otherwise, the radio signals of the terminal may disturb the plane control signals.

Storage Environment

- ✧ Do not place magnetic storage media such as magnetic cards and floppy disks near the terminal. Radiation from the terminal may erase the information stored on them.

-
- ✧ Do not put the terminal, battery, or charger in containers with a strong electromagnetic field, such as an induction cooker and a microwave oven. Otherwise, circuit failure, fire, or explosion may occur.
 - ✧ Do not leave the terminal, battery or charger in a very hot or cold place. Otherwise, malfunction of the terminal, fire or explosion may occur.
 - ✧ Keep the ambient temperature between 0°C and 45°C while the terminal is being charged. Keep the ambient temperature between -20°C and 60°C for storing the battery. Extreme temperatures may reduce the capacity and lifetime of the battery. Battery performance is particularly limited in temperatures below 0°C.
 - ✧ Do not place sharp metal objects such as pins near the earpiece. The earpiece may attract these objects and hurt you when you are using the terminal.
 - ✧ Do not subject the terminal, battery, and charger to serious collision or shock. Otherwise, battery leakage, terminal malfunction, overheat, fire, or explosion may occur.
 - ✧ Do not put the terminal in the back pocket of your trousers or skirt, to avoid terminal damage while seated.

Operating Environment

- ✧ Do not use the terminal in dusty, damp, and dirty places or places with magnetic fields. Otherwise, malfunction of the circuit may occur.
- ✧ Do not turn on or off the terminal when it is near your ears to avoid negative impact on your health.
- ✧ When carrying or using the terminal, keep the antenna at least one inch (2.5 centimeters) away from your body, to avoid negative impact on your health caused by radio frequency leakage.
- ✧ Move the terminal away from your ear while using the “hands-free” mode as the amplified volume might cause hearing damage.
- ✧ Do not let the flashlight close to your eyes when taking photos.
- ✧ On a thunder stormy day, do not use the terminal outdoors or when it is being charged, to prevent any danger caused by lightning.
- ✧ The terminal may interfere with nearby TV sets, radios and PCs.
- ✧ In accordance with international standards for radio frequency and radiation, use terminal accessories approved by the manufacturer only.
- ✧ While using the terminal, observe the local laws and regulations, and respect others' privacy and legal rights.

Cleaning and Maintenance

- ✧ Before cleaning or maintaining the terminal, turn off the terminal and disconnect it from the charger. Otherwise, electric shock or short-circuit of the battery or charger may occur.
- ✧ Do not use any chemical detergent, powder, or other chemical agent (such as alcohol and benzene) to clean the terminal and the charger. Otherwise, parts of the terminal may be damaged or a fire can be caused. The terminal can be cleaned with a soft antistatic cloth.

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- ✧ Do not scratch the shell of the terminal. Otherwise, the shed coating may cause skin allergy. Once it happens, stop using the terminal at once and go to see a doctor.
 - ✧ If the terminal or any of its accessories does not work, turn to the local authorized service center for help.

Battery Safety Guidelines

- ✧ **Do not dispose of batteries in a fire as they may explode.**
- ✧ The battery can be charged and discharged over 500 times. If the battery life is unreasonably short, please replace the battery with a new one.
- ✧ Use only the battery and AC adapter provided by Newland
- ✧ Do not continue to charge a battery that is fully charged. Overcharging will shorten battery lifespan.
- ✧ Charge the device before the battery is exhausted; Excessive battery discharge will have a bad impact on the device. In severe cases, it may cause the device to fail to boot normally.
- ✧ Avoid charging in a low or high-temperature environment. The most suitable temperature for charging is at 5°C–45°C (41°F–113°F), and it cannot be charged below 0°C (32°F).
- ✧ If the device is not used for a long time, it will discharge slowly. During the storage, it is recommended to shut down the device and regularly recharge it (at least every six months). Ideally, Battery should be stored between 30% to 50% state of charge.
- ✧ Do not use damaged or faulty AC adapters or batteries. If the battery is swelling, bulging, or having other abnormalities, please stop using it immediately.
- ✧ **Properly dispose of and recycle batteries. Do not dispose of them as household garbage.**

Repair

- ✧ If the terminal is subjected to drop damage or water damage, or its LCD screen is broken and leaking fluid, immediately cut off the power, and contact your dealer or Newland customer service center.
- ✧ Do not attempt to disassemble the terminal or its accessories yourself. Only authorized repair stations are allowed to repair the terminal.

Troubleshooting

Problem		Possible Cause & Solution
Type	Description	
LCD screen	No display	<ol style="list-style-type: none"> 1. Ensure the terminal is switched on. 2. If the terminal is in sleep mode, press the Power key to wake it up. 3. Check the battery level. If the battery is depleted, recharge it. 4. Ensure that the battery is properly installed. 5. Replace the battery if it is faulty. 6. If the problem remains, contact the after-sales service center to arrange a repair.
	Black lines, white spots	This problem may be due to an external force hitting the screen. Please contact the after-sales service center to arrange a repair.
	Blurry screen	This problem may be due to loose connection between LCD screen and mainboard or a faulty LCD panel. Please contact the after-sales service center to arrange a repair.
Battery	Will not turn on	<ol style="list-style-type: none"> 1. Check the battery level. If the battery is dead, recharge it for 15 minutes before turning it on. 2. Replace the battery if it is faulty. 3. Ensure that the battery is properly installed.
	Will not charge	<ol style="list-style-type: none"> 1. Check if AC adapter and/or the USB port on the terminal are damaged. 2. Replace the battery if it is faulty. 3. 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
	Shorter battery life between charges	<ol style="list-style-type: none"> 1. Replace the battery. 2. If the problem remains, please contact the after-sales service center to arrange a repair.
Barcode scanning	No illumination beam	<ol style="list-style-type: none"> 1. There may be some system failure. Restart the terminal to fix it. 2. If the problem remains, please contact the after-sales service center to arrange a repair.
	Cannot read barcode (though there is illumination beam)	<ol style="list-style-type: none"> 1. Check if the window at the top of the terminal is broken. If yes, contact the after-sales service center to arrange a repair. 2. There may be some system failure. Restart the terminal to fix it. 3. There may be something wrong with the scanner. Please contact the after-sales service center to arrange a repair.
Keyboard	Unresponsive key(s)	This problem may be due to loose connection between key(s) and mainboard. Please contact the after-sales service center to arrange a repair.
	Incorrect response to any key entry	<ol style="list-style-type: none"> 1. Check if this problem is caused by third-party app(s).

		2. Restore the terminal to factory default settings.
Touch screen	Unresponsive touch screen	This problem may be due to loose connection between touch panel and mainboard or a faulty touch panel. Please contact the after-sales service center to arrange a repair.
	Touch screen randomly becoming partially unresponsive	1. Check if this problem is due to a slow system that is caused by third-party app(s). 2. Touch panel may be damaged. Please contact the after-sales service center to arrange a repair.
System	Will not turn on	1. Check if this problem is caused by the battery. 2. Update the system.
	Restart randomly	1. Check if this problem is caused by the battery. 2. Update the system.
	System halted	1. This problem may be caused by third-party app. Restore the terminal to factory default settings to fix it. 2. Update the system.

Chapter 10 System Customization and Software Development

Introduction

This chapter provides information about some common customization requests for the N7.

System Customization

We welcome N7 customization requests, including:

1. Redefine keys
2. Customize boot/shutdown animations
3. Preinstall business apps
4. Disable notification bar pull-down
5. Restrict phone/messaging functionalities
6. Third-party app installation/uninstallation privilege management
7. Business app exiting privilege management
8. Preinstalled app management, such as remove/add preinstalled apps
9. Enable/disable functional key.
10. Physical numeric keyboard output control

If you have other customization needs, please contact the technical support.

Software Development

See *N7 SDK Handbook*.

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