

# CipherLab Reference Manual

RS51 Mobile Computer  
(RS51\_HS)  
Android 11

Version 1.00



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CIPHERLAB CO., LTD.

Website: <http://www.CipherLab.com>

## IMPORTANT NOTICES

### FOR USA



Tested to Comply with FCC Standards

**FOR HOME OR OFFICE USE**

FCC ID: Q3N-RS51

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ▶ Reorient or relocate the receiving antenna.
- ▶ Increase the separation between the equipment and receiver.
- ▶ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ▶ Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Find the certificate information from:

**Setup → About Phone → Regulatory information**

## SIM CARDS USING INFORMATION FOR VERIZON AND AT&T CELLULAR SERVICE

### ATTENTION!

#### Verizon and AT&T Cellular Service

##### For New SIM Cards:

The RS51 is not registered within the IMEI database of Verizon nor AT&T. In order to obtain service from these carriers, you must request them to provide you with a pre-activated SIM card (MicroSIM/3FF). The carrier will need to activate a SIM card using the IMEI information of a certified device within their database. Once activation has been completed you'll be able to insert the SIM card in to the RS51 and receive cellular service.

##### For Already Activated SIM Cards:

You can use any of your already activated SIM cards that have service on the RS51. Please note the RS51 uses MicroSIM cards. In the event that you have a NanoSIM card, you'll need to utilize a SIM card adapter to convert them into MicroSIM in order to fit the device.

Feel free to contact us if you have any questions at [tech@cipherlab.com](mailto:tech@cipherlab.com) or 1 (888) 300-9779



**FOR PRODUCT WITH LASER**

- ▶ This laser component emits FDA / IEC Class 2 laser light at the exit port. Do NOT STARE INTO BEAM DIRECTLY.
- ▶ Do not aim the beam at the eyes.
- ▶ Any adjustments or performance excluding those specified herein may result in hazardous laser light exposure.

**ENVIRONMENT**

- ▶ Operate the mobile computer at ambient temperatures from -20°C to 50°C and with humidity range from 10% to 90%.
- ▶ Store the device at ambient temperatures from -30°C to 70°C and with humidity range from 5% to 85%.
- ▶ Charge the device at ambient temperatures from 0°C to 45°C.
- ▶ This device is built with a dust-proof and splash-proof structure that conforms to protection class IP65/67.

**SPECIFIC ABSORPTION RATE (SAR) INFORMATION**

The product complies with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the products can be kept as far as possible from the user body or set the device to lower output power if such function is available.

**Body-worn Operation**

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 10 mm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components.

Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided.

The SAR test distance is Head (0 mm), Body (10 mm) and Hotspot (10 mm).

FCC SAR Value (Standard limit is 1.6 W/Kg)

USA (1g): Max. 1.52 W/Kg

A minimum separation distance of 0.5 cm must be maintained between the user's body and the device, including the antenna during body-worn operation to comply with the RF exposure requirements in Europe. To compliance with RF Exposure requirements in Europe, third-party belt-clips, holsters or similar accessories used by this device should not contain any metallic components. The use of accessories that do not satisfy these requirements may not comply with RF exposure requirements, and should be avoided.

CE SAR Value (Standard limit is 2 W/Kg) EU (10g): Max. 1.48 W/Kg

## IMPORTANT SAFETY INSTRUCTIONS AND WARNING FOR LI-ION/POLYMER BATTERY

- ▶ It is important for users to be aware of the risks associated with lithium batteries.
- ▶ Lithium Polymer and Li-ion batteries are volatile. Failure to read and follow the below instructions may result personal injury and damage to device if charged or used improperly.
- ▶ Lithium Polymer/Li-ion batteries have limited life cycle for charging and discharging. When life cycle has been reached, battery may swell.
- ▶ Must keep Lithium Polymer and Li-ion battery away from children.
- ▶ Never make wrong polarity connection when charging and discharging battery. Always double check polarity of battery's connector.
- ▶ If battery has not been using or staying in device for 2 months, please do battery complete discharging and charging once before use. Always detach battery from device if you will not use device for long period of time.

## GENERAL GUIDELINE AND WARNING

- ▶ Use specific Lithium Polymer/Li-ion charger from CipherLab only. Failure to do so may cause fire, which may result in personal injury and property damage.
- ▶ Never charge batteries unattended. When charging Lithium Polymer/Li-ion batteries, you should always remain in constant observation to monitor the charging process and react to potential problems that may occur.
- ▶ Some Polymer/Li-ion chargers on the market may have technical deficiencies that may cause it to charge the LiPo/Li-ion batteries incorrectly or at an improper rate. Assure the charger you purchased works properly and always monitor charging process to ensure batteries are being charged properly. Failure to do so may result in fire.
- ▶ If at any time you witness a battery starting to balloon, swell up, smoke or hot; stop using this battery at once and contact your dealer immediately.
- ▶ If you accidentally short the battery polarity, the battery must be placed in a safe area for observation for approximately 15 minutes. Additionally, if a short occurs and contact is made with metal (such as rings on your hand), severe injuries may occur due to the conductivity of electric current.
- ▶ In the event of a crash due to bad shipment or other reasons, you must remove damaged battery for observation and place the damaged batteries from other good batteries.
- ▶ Never drop the batteries.
- ▶ Do NOT expose battery to water.
- ▶ Do NOT attempt to dis-assemble battery.
- ▶ Recommended to put the battery in an enclosure to protect it from damages by liquid or dropping from height accidentally.

## CHARGING PROCESS

- ▶ Please ensure to charge battery indoor such as a well-ventilated room between 20°C to 30 °C.
- ▶ Do NOT charge battery under direct sunlight.
- ▶ When selecting the cell count or voltage for charging purposes, select the cell count and voltage as it appears on the battery label. As a safety precaution, please confirm the information printed on the battery is correct.
- ▶ Lithium Polymer/Li-ion batteries has limited life cycle for charging and discharging. When life cycle has been reached, battery may swell.
- ▶ The allowed charging temperature is from 0°C to 45°C.
- ▶ During discharge and handling of batteries, do not exceed 45°C.

## STORAGE & TRANSPORTATION

- ▶ CipherLab battery is charged in manufacturing to around 30% of its full capacity. It is a good capacity for long-term storage & transportation.
- ▶ Battery should NOT be stored in full-charged or full-discharge state; otherwise it will damage battery permanently.
- ▶ Battery subjects to discharge even when not installed in a device. For any stored & un-used battery, it is highly recommended for every 3 months to charge battery to 40%~60% of its original capacity to prolonged storage.
- ▶ Always detach battery from device if you will not use device for long period of time.
- ▶ Store battery indoor temperature between 0°C to 30°C for the best performance.
- ▶ Do NOT store battery in temperature exceeding 50°C, and never expose battery pack to high external pressure for extended periods, which can lead to an internal short circuit and overheating.
- ▶ When transporting or temporarily storing in a vehicle, temperature range should be greater than 0°C but no more than 45°C.
- ▶ Storing battery at temperatures greater than 50°C for extended periods of time (more than 2 hours) may cause damage to battery.

#### TO USE, HANDLE, AND DISPOSE BATTERY

- ▶ For Li-ion / Li-polymer battery, it is normal to balloon, expand, or swell after one year or 500 cycles (full charge-discharge cycles). Although we guarantee it will NOT cause any damage, it can't be used again and must be disposed at once, therefore we strongly recommend to replace battery every year or after 500 cycles, depend on which comes first.
- ▶ If a battery performance decreases more than 20%, it means the battery is at the end of its life cycle. Please stop using this battery, dispose properly according to the location's safe battery disposal procedures, and replace with a new / healthy one.
- ▶ The actual number of charge cycle will vary depending on usage conditions, patterns, ambient temperature, and other variables.
- ▶ Batteries may be subject to discharging even when the battery is not installed inside a device, therefore, to prevent permanent deterioration, batteries should not be discharged under 5%.
- ▶ Use caution to avoid puncture of the battery. Puncture of battery may damage battery cell.
- ▶ Periodically and properly dispose used battery according to local regulations.

#### PRODUCT WARRANTY

Product warranty is limited to original manufacturing defects in material only. Warranty will not apply to batteries with reduced capacity due to user scenario, unless determined to be a manufacturing flaw.

Warranty does not cover collateral damage. Due Misuse, abuse, incorrect charging and other inappropriate use of this product are not covered under warranty.

## SAFETY PRECAUTIONS



### **Warning statement:**

A pleine puissance, l'écoute prolongée du baladeur peut endommager l'oreille de l'utilisateur.

To prevent possible hearing damage, do not listen at high volume levels for long periods.

### For people's safety

- ▶ Do not listen at high volume levels for long periods to prevent possible hearing damage.
- ▶ Do not operate this device while walking, cycling or car driving.

### For the equipment

- ▶ Do not use any batteries or charging devices which are not originally sold or manufactured by CIPHERLAB CO., LTD.
- ▶ Do not replace the battery with an incorrect type, to avoid the risk of heat generation, fire, or explosion.
- ▶ Do not disassemble, incinerate or short circuit the battery.
- ▶ Do not touch the contact pins of the battery pack.
- ▶ Do not expose the mobile computer or battery to any flammable sources.
- ▶ Do not expose the mobile computer to extreme temperatures or soak it in water.
- ▶ Do not use any pointed or sharp objects against the screen surface.
- ▶ Do not use the styluses which are not supplied or approved by CIPHERLAB CO., LTD., to prevent possible scratches to the touch screen.
- ▶ Water residue on the touch screen may cause abnormal behaviors or the fall of its sensitivity levels.
- ▶ On the surface of the terminal and the barcode reading window, the fog or water drops caused by low temperatures may influence barcode reading.
- ▶ Do not use bleaches or cleaners to clean the device. Use a clean, wet cloth instead.

**BATTERY**

- ▶ Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- ▶ The main battery may not be charged to full for shipment. Charge the main battery to full before using the mobile computer for the first time.
- ▶ **Main battery:**

The main battery powers the mobile computer to work. It takes approximately 4 hours to charge an empty main battery to full. For the first time charging the main battery, please charge it for at least 8 to 12 hours. The charging LED above the screen will light up in red while charging and will turn green when charging is complete.

When the main battery is removed, RTC retention will be maintained for at least 30 minutes.
- ▶ **Backup battery:**

The backup battery is mounted on the main board. Its role is to temporarily keep the mobile computer in suspension when the main battery is drained out so data in DRAM will be retained. The backup battery takes approximately 4 hours to charge to full by the main battery or power adapter.
- ▶ To preserve battery life and avoid battery bulge:
  - (1) Please do not use your device while continuously connected with a power supply or cradle for charging. If you need to use your RS51 mobile computer with a power supply or cradle continuously connected, be sure to turn on "[Balance Mode](#)".
  - (2) If the main battery is fully charged, do not keep connecting your RS51 mobile computer with charging it a power supply or cradle for charging. If you need to continuously connect your RS51 mobile computer with a power supply or cradle, be sure to turn on "[Balance Mode](#)".
- ▶ The allowed battery charging ambient temperature is between 0℃ to 45℃. It is recommended to charge the battery at room temperature (18℃ to 25℃) for optimal performance.
- ▶ Battery charging stops when ambient temperature drops below 0℃ or exceeds 45℃.
- ▶ In order to prevent system from shutting down after the battery is drained out, keep a fresh battery for replacement at all times, or connect the mobile computer to an external power.
- ▶ If there are drippings or dust on the device or battery pack, wipe them away with a soft clean cloth before battery replacement.
- ▶ Turn off the power before battery replacement.
- ▶ If you want to put away the mobile computer for a period of time, remove the battery pack from the mobile computer's battery compartment. Store the mobile computer and battery pack separately.
- ▶ Recycle batteries in a proper way for the green-environment issue.

## SCANNER

### ▶ Scan a 1D barcode

- 1) Open **ReaderConfig** and tap **Scan Test** on the menu bar.
- 2) Aim the scanning window at the barcode to read. Move the device, having the barcode located in the center of the scanning area.
- 3) Press any of the two side triggers. The scanning light beams to read the printed barcodes. The buzzer beeps after scanning. The scanning light goes off once the data is decoded, or when the decode timeout period has passed.

### ▶ Scan a 2D barcode

- 1) Open **ReaderConfig** and tap **Scan Test** on the menu bar.
- 2) Aim the scanning window at the barcode to read. Move the device, having the barcode located in the center of the scanning area.
- 3) Press any of the two side triggers. The scanning light beams to read the printed barcodes. The buzzer beeps after scanning. The scanning light goes off once the data is decoded, or when the decode timeout period has passed. USA and Canada e-label

## CONNECTION

### Via Bluetooth or WLAN

- ▶ Connection may fail when the mobile computer is around other wireless machines or power cables as the radio frequencies of those may cause interferences.
- ▶ If communication fails, move the devices much closer to each other, and try to communicate again
- ▶ After turning on, Bluetooth power is sustained even when the mobile computer is suspended. However, if the power mode is switched to Airplane Mode, Bluetooth power will be turned off regardless of the settings.

### To a charging cradle

- ▶ Do not insert the mobile computer to a charging cradle if water or drippings are staying on the device.
- ▶ The LED indicator on a charging cradle shows the status of battery charging only; the status of terminal charging is shown on the device itself.
- ▶ Not Charging could be the result of battery damage, battery's failure to touch the connector or AC plug coming off.
- ▶ Charging error could be due to high battery temperature.



## CARE & MAINTENANCE

- ▶ This mobile computer is intended for industrial use. The mobile computer is rated IP65/67, however, damage may be done to the mobile computer if it is exposed to extreme temperatures or soaked in water.
- ▶ When the body of the mobile computer gets dirty, use a clean, wet cloth to wipe off dust and debris. DO NOT use bleaches or cleaners.
- ▶ Use a clean, non-abrasive, lint-free cloth to wipe dust off the LCD touch screen. DO NOT use any pointed or sharp objects against the surface. Always keep the LCD dry.
- ▶ If you want to put away the mobile computer for a period of time, download the collected data to a host computer, and then remove the battery pack from the mobile computer's battery compartment. Store the mobile computer and battery pack separately.
- ▶ If you encounter malfunction on the mobile computer, write down the specific scenario and consult your local sales representative.

**E-LABEL**

Mobile Computer  
Model : RS51

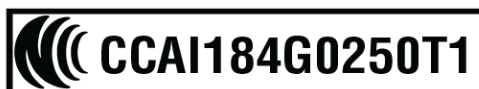
**US**

FCC ID : Q3N-RS51



This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.

**TW**



減少電磁波影響,請妥適使用

## EUROPE – EU DECLARATION OF CONFORMITY



# Declaration of Conformity

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*Type of Equipment*

**Mobile Computer**

*Model(s) Declared*

**RS51**

*Initial Year of Manufacture*

**2019**

Reference to the specification under which conformity is declared in accordance with Council Directive- 2014/30/EU(EMC), 2014/35/EU(LVD), 2011/65/EU (RoHS), 1999/519/EC (EMF), 2014/53/EU (RED).

**EN 300 328 V2.1.1**

**EN 303 413 V1.1.1**

**EN 301 511 V12.5.1**

**EN 301 908-2 V11.1.2**

**EN 300 330 V2.1.1**

**EN 50360 :2017**

**EN 61000-3-2 :2014**

**EN 55024 : 2010+A1:2015**

**EN 55032: 2015+AC:2016**

**EN 60950-1 : 2006+A2:2013**

**EN 301 893 V2.1.1**

**EN 50663:2017**

**EN62311:2008**

**EN 301 489-1 V2.1.1**

**EN 301 489-3 V2.1.1**

**EN 50566:2017**

**EN 61000-3-3 :2013**

**EN 301 489-52 V1.1.0**

**EN 301 489-17 V3.1.1**

**EN 301 489-19 V2.1.0**

**EN 301 908-1 V11.1.1**

**EN 62479:2010**

**EN 301908-13 V11.1.2**

**EN 50332-2:2013**

*I the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).*

*Manufacture Signature*

*Full Name :Herbie Jiang*

*Title : Manager*

*Date: 2019.1.3*

## THAILAND CAUTION

เครื่องโทรคมนาคมและอุปกรณ์นี้มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดของกสทช.



เครื่องวิทยุคมนาคมนี้มีอัตราการดูดกลืนพลังงานจำเพาะ (Specific Absorption Rate - SAR)

อันเนื่องมาจากเครื่องวิทยุคมนาคมเท่ากับ 1.48 W/kg

ซึ่งสอดคล้องตามมาตรฐานความปลอดภัยต่อสุขภาพของมนุษย์จากการใช้เครื่องวิทยุคมนาคมที่คณะกรรมการกิจการโทรคมนาคมแห่งชาติประกาศกำหนด

## RELEASE NOTES

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Version	Date	Notes
1.00	Jan. 12 <sup>th</sup> , 2022	• Initial release

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## INTRODUCTION

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The **RS51** mobile computer, powered by Android 11, is light-weight, easy to use, providing powerful and handy tools for the purpose of delivering flexibility in customization.

Specifically designed to work as an industrial PDA, it provides rich options of data collection, voice and data communication, long-lasting working hours, and so on. Its large color capacitive display guarantees ease in reading in all lighting conditions. Integrated with Bluetooth Class II, v4.1 and v2.1+EDR, 802.11 b/g/n and 802.11 a/ac/n technologies, the mobile computer also includes a GSM/GPRS/EDGE/WCDMA/HSPA/HSPA+/LTE CAT 6 module to gain greater speeds and optimal mobility. In particular, an integrated GPS receiver is made available for use with third-party location-based applications.

This manual serves to guide you through how to install, configure, and operate the mobile computer. The [Care & Maintenance](#) section is specifically crucial for those who are in charge of taking care of the mobile computer.

We recommend you to keep one copy of the manual at hand for quick reference or maintenance purposes. To avoid any improper disposal or operation, please read the manual thoroughly before use.

## FEATURES

- ▶ Built tough to survive drop test and sealed against moisture/dust to industrial standard IP65/67.
- ▶ Android 11 operating system with a powerful Qcta-core 1.8GHz processor
- ▶ 16GB eMMC flash memory to store OS and software programs
- ▶ 2GB LPDDR3 SDRAM to store and run programs, as well as store program data
- ▶ One expansion slot for microSDHC card up to 32GB and microSDXC card up to 64GB.
- ▶ Built-in 13 megapixels rear camera with white LED for flash and auto focus.
- ▶ One side trigger for scanning
- ▶ Total wireless solution — connectivity includes Bluetooth Class II, v4.1 and v2.1+EDR (2402~2480 MHz: 3.3dBm), 802.11 b/g/n and 802.11 a/ac/n networking, GSM/GPRS/EDGE/WCDMA/HSPA/HSPA+/LTE CAT6.
- ▶ A 4.7" color transmissive display with 720x1280 pixels to deliver excellent visibility in all lighting conditions
- ▶ Configurable feedback indicators including speaker and vibrator
- ▶ Built-in scan engine setting tool Reader Configuration which serves out-of-the-box keyboard wedge functionality
- ▶ Accessories and peripherals include Snap-on Charging Cable and Charging Cradle (both are capable of USB Charging and Data Transfer)

## INSIDE THE PACKAGE

The following items are included in the kit package. Save the box and packaging material for future use in case you need to store or ship the mobile computer.

- ▶ RS51 Mobile Computer
- ▶ Rechargeable Li-ion battery pack
- ▶ Hand Strap
- ▶ Micro USB Charging and Data Transfer Cable
- ▶ Snap-on Charging Cable
- ▶ AC Power Adaptor
- ▶ Quick Start Guide

## ACCESSORIES

- ▶ Handbelt
- ▶ Charging cradle

## RELATED DOCUMENTATION

Please visit [CipherLab website](#) to access related documentation about the RS51 mobile computer.

# Chapter 1

## QUICK START

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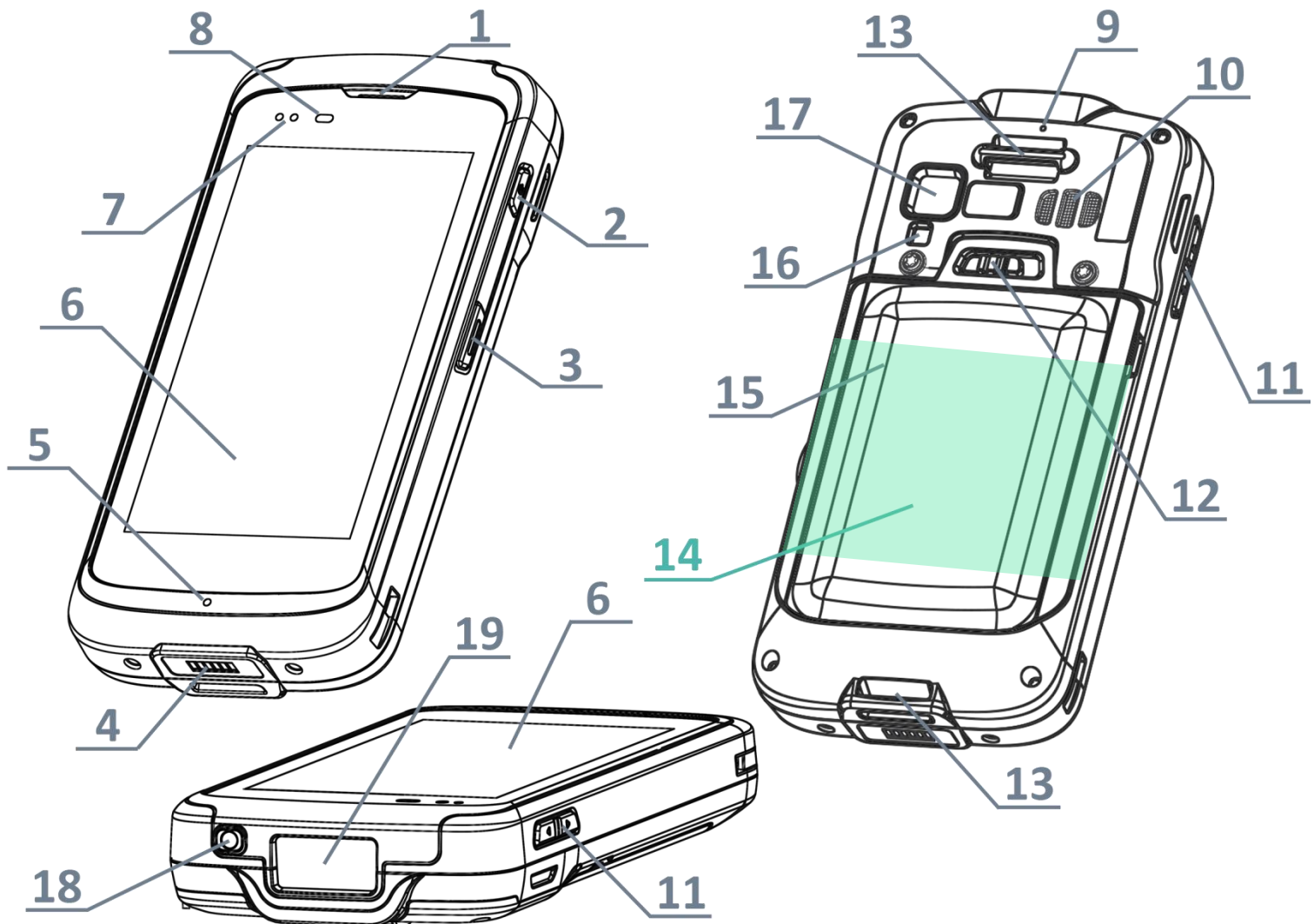
This chapter helps you get ready for starting using the mobile computer.

### IN THIS CHAPTER

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1.1 Overview .....	26
1.2 Charging & Communication .....	35

## 1.1. OVERVIEW



No.	Description
1	Phone Receiver
3	Side Trigger Key
5	Microphone
7	Status LEDs
9	Rear Microphone
11	Volume Keys
13	Hand Strap Hole
15	Battery (with Cover)
17	Camera Lens
19	Scan Window

No.	Description
2	Power Button
4	Charging & Communication Port
6	Touch Screen
8	Light Sensor & Proximity Sensor
10	Loudspeaker
12	Battery Latch
14	NFC Detection Area
16	CameraFlash
18	Headset Jack

### 1.1.1. INSTALLING/ REMOVING BATTERY

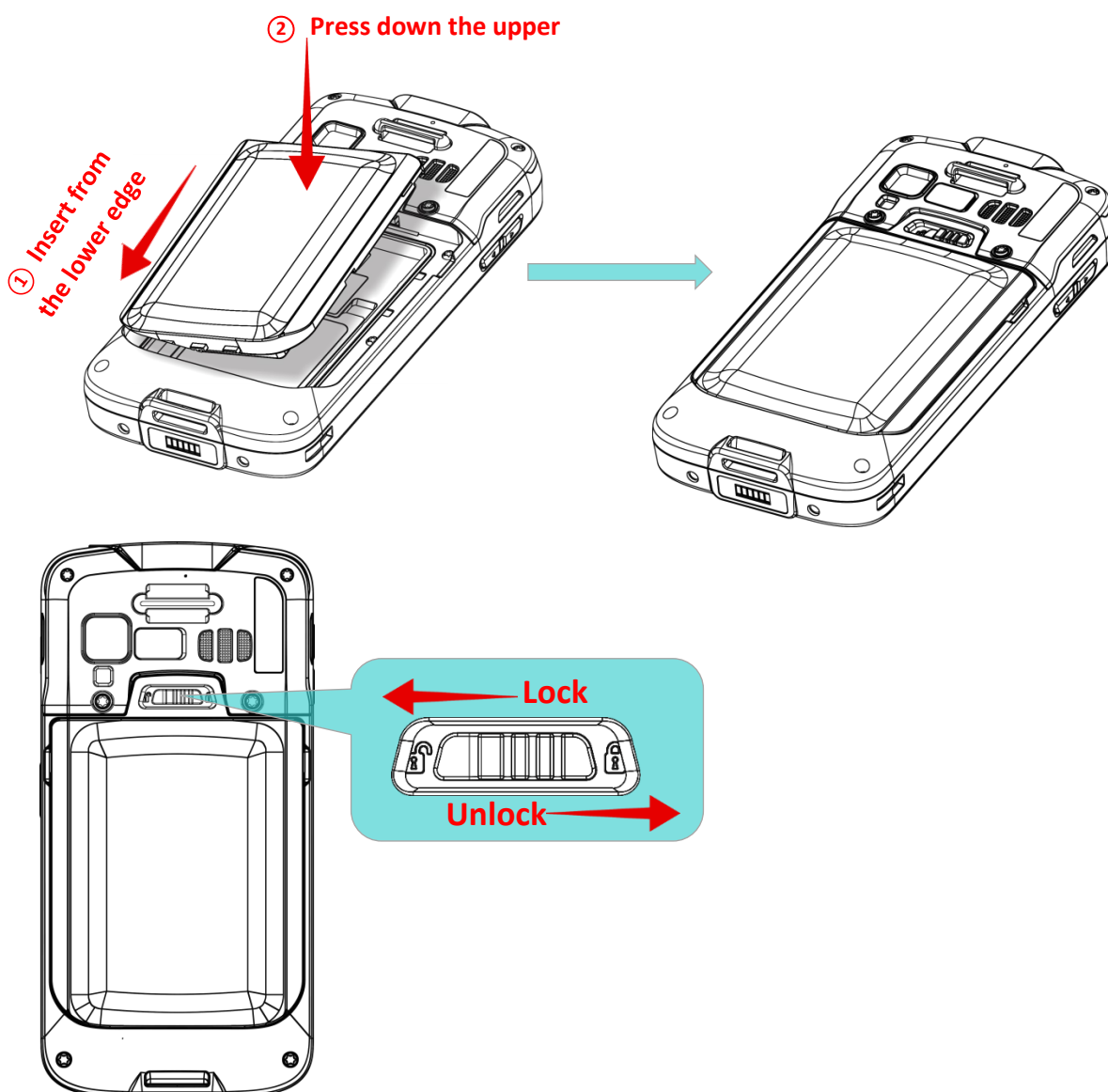
For shipping and storage purposes, the mobile computer and the main battery are saved in separate packages.

**Note:** Any improper handling may reduce the battery life.

#### INSTALL MAIN BATTERY

To install the main battery, please:

- 1) Insert the main battery with the contact pins facing the lower end. Fix the lower edge of the battery first.
- 2) Then push down the upper end. The battery latch will fit into place with a click sound.



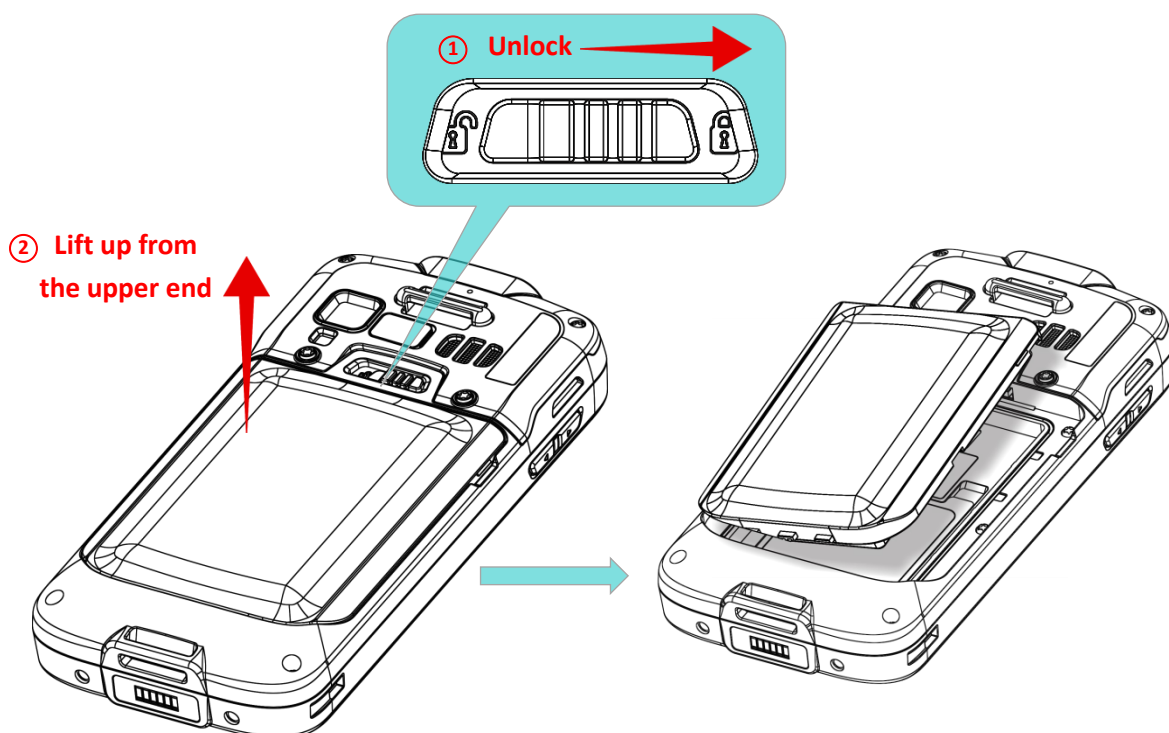
## IMPORTANT CHARGING INFORMATION

Power Adaptor	Input: AC 100-240V, 50-60Hz; output: 5V/2A CipherLab approved
Battery Pack	3.8V 4000mAh/3.75V 5300mAh (Standard/Extended) rechargeable Li-ion CipherLab proprietary
Charging time	Approx. 4 hours (4000mAh) / 6 hours (5300mAh) via adapter at 25°C For the first time charging the main battery, please charge it for at least 8 to 12 hours.

**Note:** For initial use, insert a charged battery, and then press the Power key to power on the mobile computer.

## REMOVE BATTERY

- 1) Shut down this device first.
- 2) Slide the key latch rightwards; the battery will be unlocked with a click sound.
- 3) Lift the battery up from its upper end.





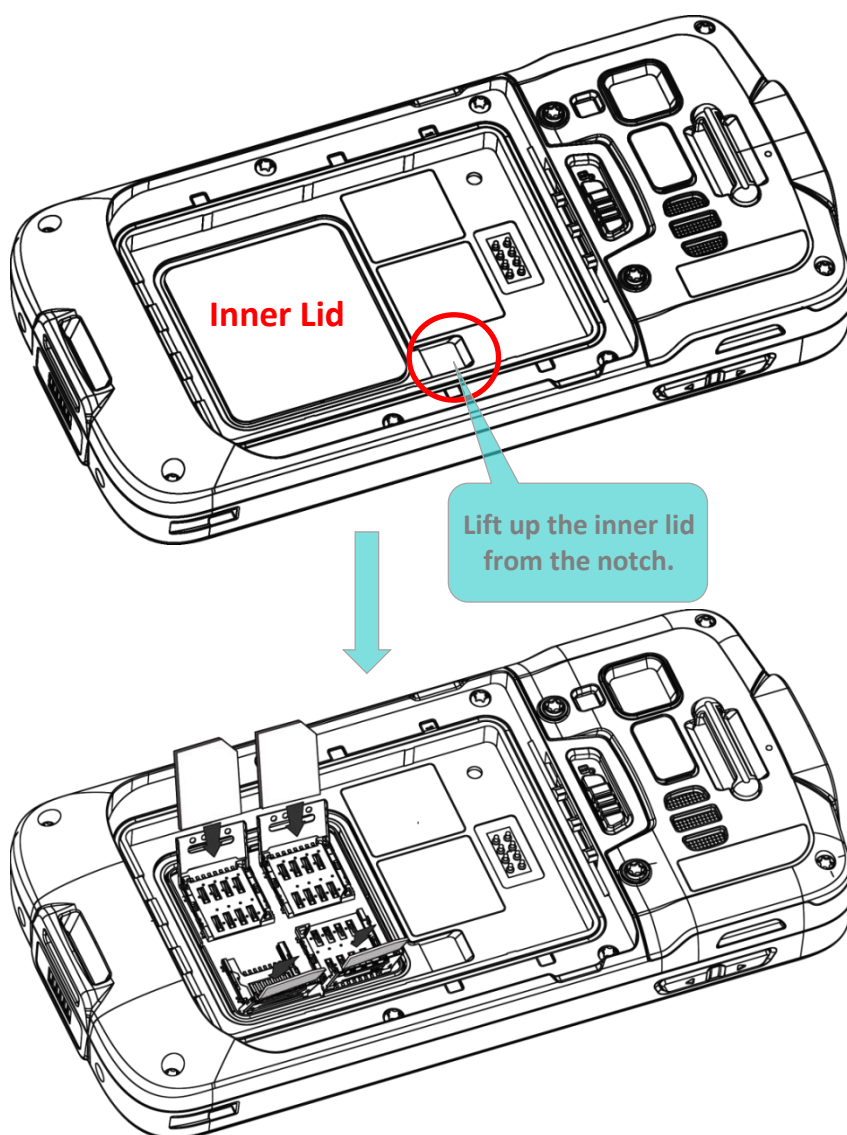
### 1.1.2. INSTALLING SIM CARD, SAM CARD AND MEMORY CARD

The RS51 mobile computer is equipped with two SIM card slots, one SAM card slot and one memory card slot.

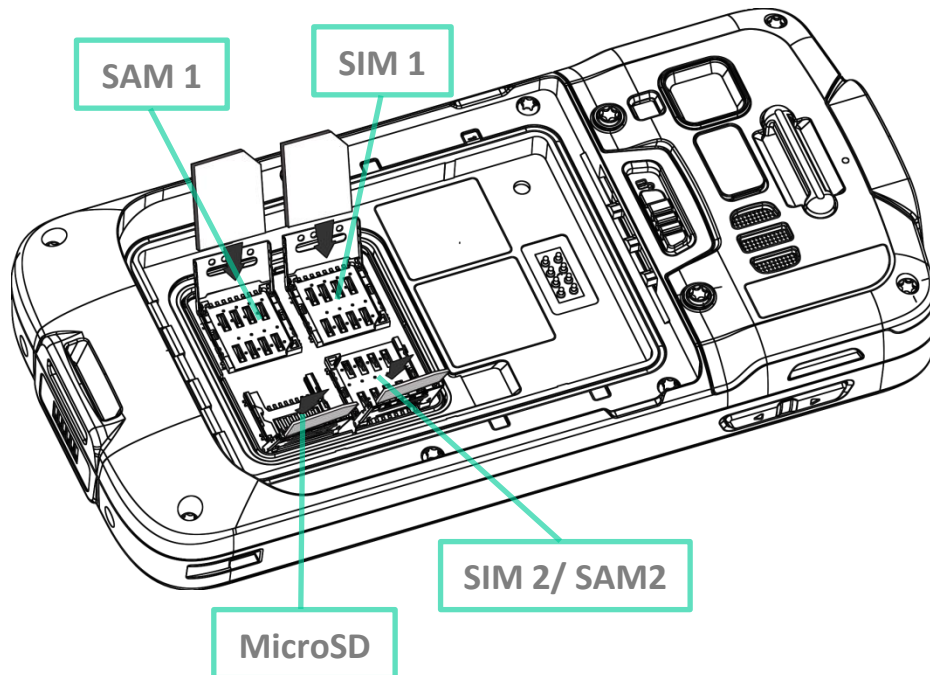
**Note:** SIM/SAM card slots are with no function for Wi-Fi only model.

To insert the cards:

- 1) Remove the battery as described in [Remove Battery](#).
- 2) Lift up the inner lid that protects the card sockets chamber from the notch.

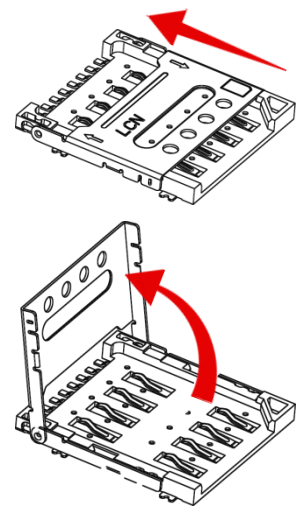


- 3) After the chamber is revealed, insert SIM cards, the SAM card and the microSD card into their respective sockets. Close and push back the hinged cover till a click sounds.



**To Install the Cards:**

- 1) Slide the hinged cover back.
- 2) Swing the top to open.
- 3) Insert the cards, close the hinged cover, and then push it back.



- 4) Place the inner lid back.

- 5) Place the battery back.

---

**Note:**

- (1) Both SIM1 and SIM2 card slots support 2G/3G/4G cards. However, you can have 3G/4G data transmission on either SIM but not on both at the same time. Refer to [SIM Card Management](#) for details on managing dual SIM cards.
  - (2) SIM/SAM card slots are with no function for Wi-Fi only model.
-


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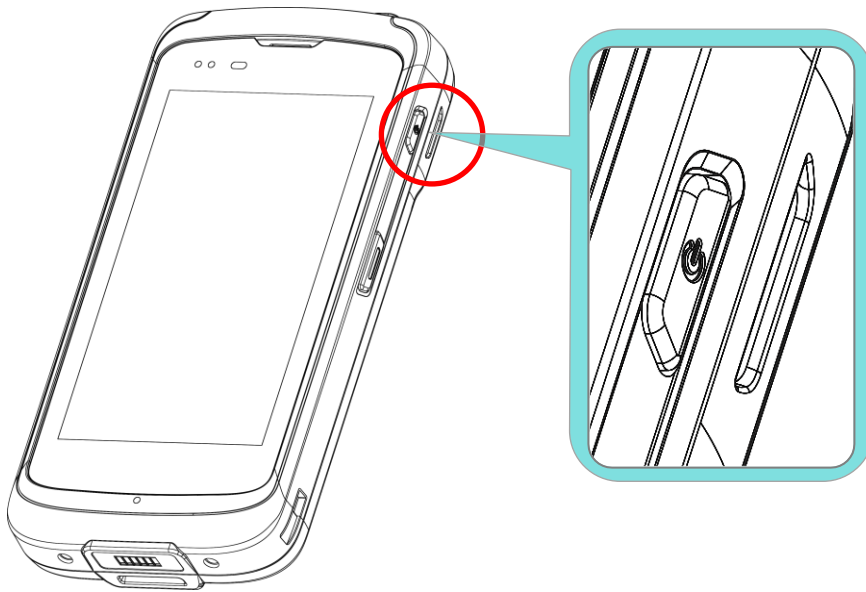
## REMOVE CARDS

- 1) Remove the battery.
- 2) Remove the inner lid.
- 3) Unlock the card hinge cover and remove the card.
- 4) Mount the inner lid and the battery.

### 1.1.3. POWER ON/OFF MOBILE COMPUTER


#### POWER ON

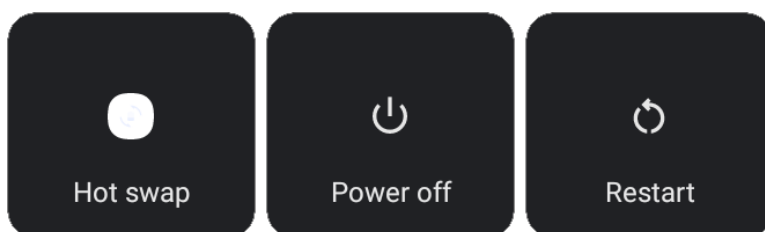
To power on the mobile computer, press and hold the power button  located on the upper right side of the device. The mobile computer will turn on and show the [Home Screen](#) after splash screen.



**Note:** For the mobile computer to power on, the battery cover must be secured in place.

#### POWER OFF

To power off the mobile computer, press and hold the power button  for more than three seconds. A menu will appear on-screen which allows you to power off the device.



Make sure all user data and tasks have been stored before tapping on **Power off**.





#### 1.1.4. HOMESCREEN SELECTION

If a **Select Home app** window pops up to request your immediate choice of home screen, you may select “**AppLock**” to directly enter AppLock application (please refer to [AppLock User Guide](#) for detailed instructions on AppLock settings) to start configuring the interface provided to normal users of this device.

By selecting “**Launcher**”, you will enter the default Android 11 home screen.

### 1.1.5. USING HARDWARE BUTTONS

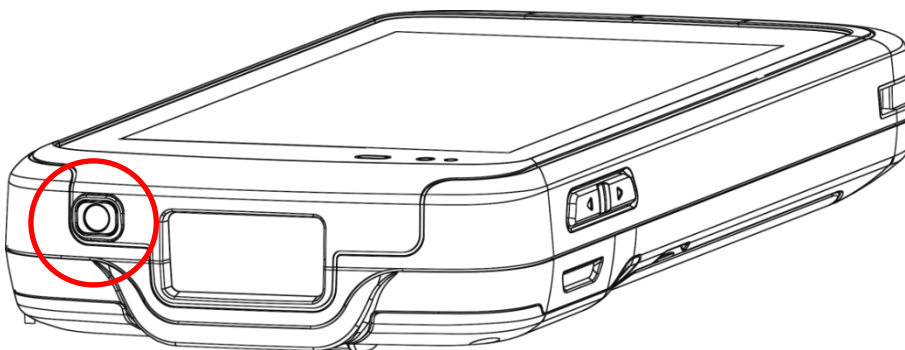
On the bottom of the mobile computer are three hardware buttons that deliver the following functions:

Button	Function	Description
	<b>Back button</b>	Returns to the previous screen or closes the active window or keyboard.
	<b>Home button</b>	Displays the Home screen.
	<b>Recent apps button</b>	Opens a list of recently used applications.
	<b>Search button</b>	Performs Google™ search online



### 1.1.6. CONNECTING HEADSET

The headset jack is located on the top of the mobile computer. You can use the headset for audio playback or communication via the phone application, audio instant messaging, etc.



## 1.2. CHARGING & COMMUNICATION

### 1.2.1. CHARGE MOBILE COMPUTER

The main battery may not be charged to full for shipment. When you first receive the kit package, you will need to charge the main battery to full before using the mobile computer. You may use the Snap-on Charging Cable or Charging Cradle along with a power adapter to charge the mobile computer.

Your device can be charged as well when connected to a computer via USB cable; however, charging from a USB port on a computer is slower than charging using the Snap-on Charging Cable/Charging Cradle (all powered by the AC power adaptor).

#### CHARGING TIME

► **Main battery:**

The main battery powers the mobile computer to work. It takes approximately 4 hours to charge an empty main battery to full. For the first time charging the main battery, please charge it for at least 8 to 12 hours. The charging LED above the screen (located on the right) will light up in red while charging and will turn green when charging is complete.

When the main battery is removed, RTC retention will be maintained for at least 30 minutes.

► **Backup battery:**

The backup battery is mounted on the main board. Its role is to temporarily keep the mobile computer in suspension when the main battery is drained out so data in DRAM will be retained. The backup battery takes approximately 3.5 hours to charge to full by the main battery or power adapter.

#### CHARGING TEMPERATURE

The allowed battery charging ambient temperature is between 0°C to 45. It is recommended to charge the battery at room temperature (18°C to 25°C) for optimal performance.

Please note that battery charging stops when ambient temperature drops below 0°C or exceeds 45°C.

## OPERATION ON BATTERY POWER

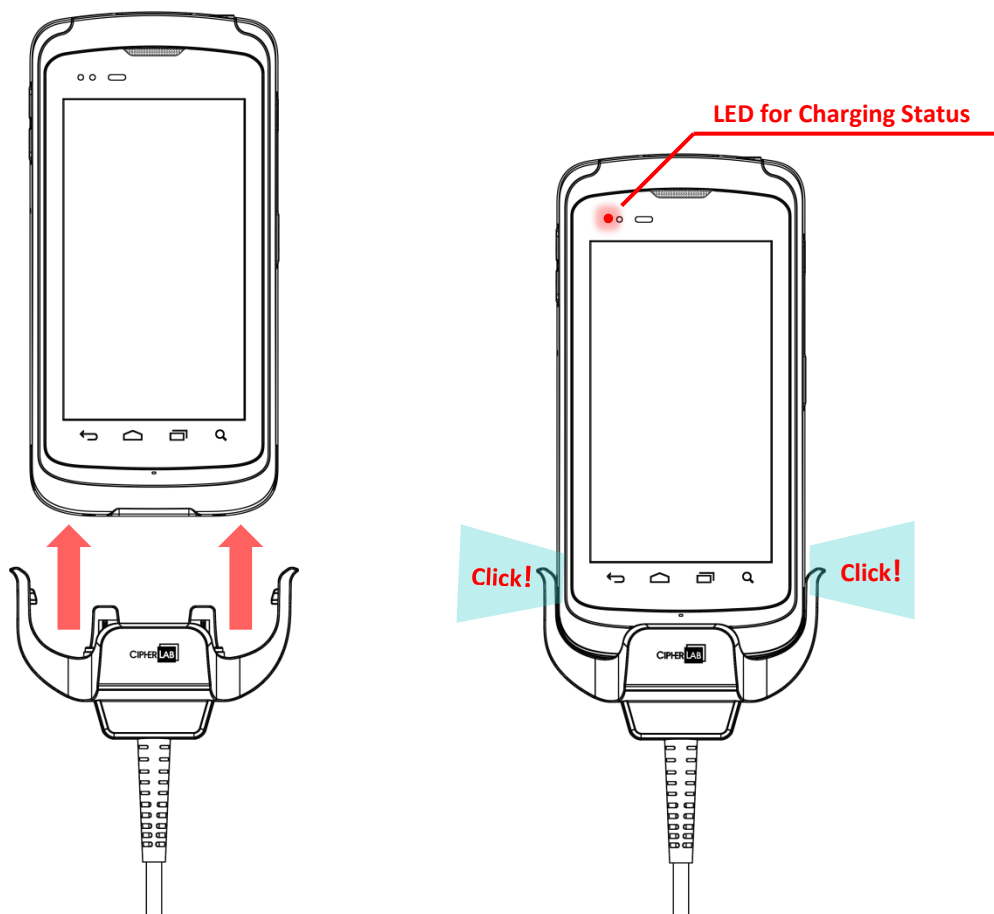
When 802.11a/b/g/n/ac, GSM/GPRS/EDGE/WCDMA/HSPA/HSPA+/LTE CAT 6, Bluetooth v4.1 & v2.1+EDR and GPS are all enabled on battery power, the main battery level will drop down substantially. Prolonged use of the display and continued scanning of barcodes will also affect battery level.

In order to prevent system from shutting down after the battery is drained out, we suggest that you keep a fresh battery for replacement at all times, or connect the mobile computer to an external power.

## USE SNAP-ON CHARGING CABLE

The Snap-on Charging Cable provides a convenient way to charge your mobile computer.

- 1) Fasten the Snap-on Charging Cable to the lower end of the mobile computer.
- 2) Connect the other end of the cable to a USB port or the adaptor.
- 3) Fix the adapter plug onto the adaptor, and plug in into an electrical outlet.





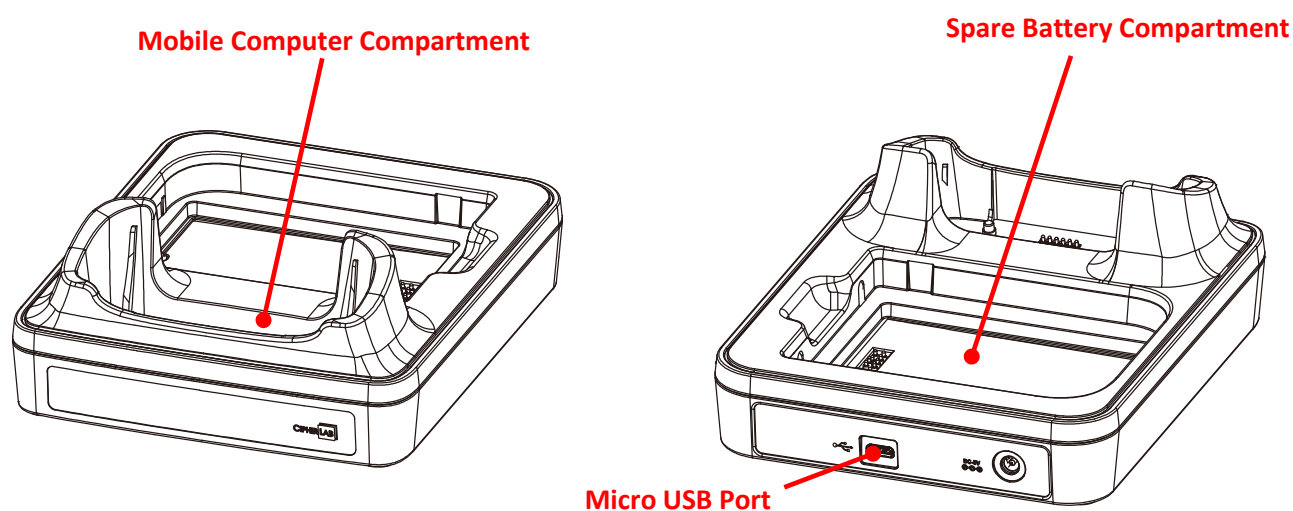
While the device battery is being charged, the LED indicators on mobile computer will indicate charging status.

LED Indicator	Status	Description
Charging Status	Red, solid	Charging in progress
	Red, blink	Charging error
	Green, solid	Charging completes
	No light	The cable is not correctly connected

## USE CHARGING CRADLE

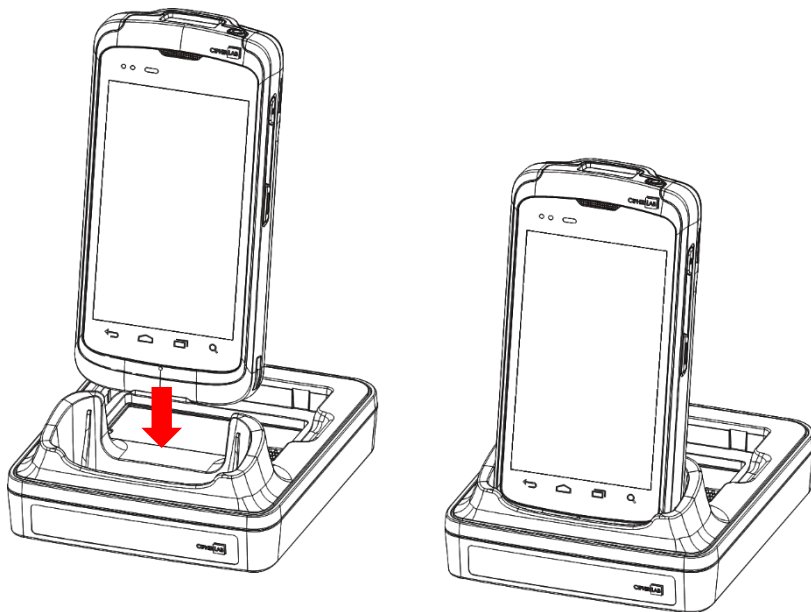
The Charging Cradle can charge your mobile computer and a spare battery at the same time:

- ▶ Presents charging compartment for mobile computer and spare battery
- ▶ Provides micro USB socket on the back for charging
- ▶ Supports USB Host Mode via a USB OTG cable
- ▶ Completes charging in approximately 5 hours
- ▶ Adapter input AC 100-240V, 50/60Hz; output DC 5V, 2A.

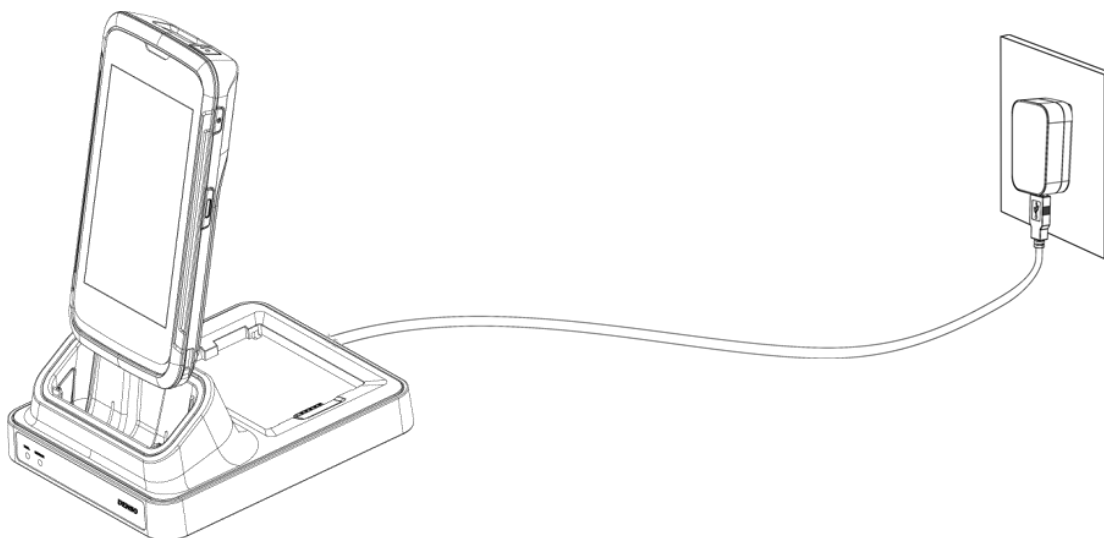


To charge your mobile computer via the Charging Cradle:

- 1) Smoothly insert the mobile computer into the Charging Cradle.



- 2) Connect the adapter to the Cradle, and plug the other end into an electrical outlet.



The status of the mobile computer charging is shown on the device itself; while the LED indicator on RS51 Charging Cradle shows the status of battery charging as below:

Cradle LED Indicator	Status	Description
Charging	Red, solid	Charging the battery
	Red, blink	Charging error
	Green, solid	Charging completes
	No light	Not charging

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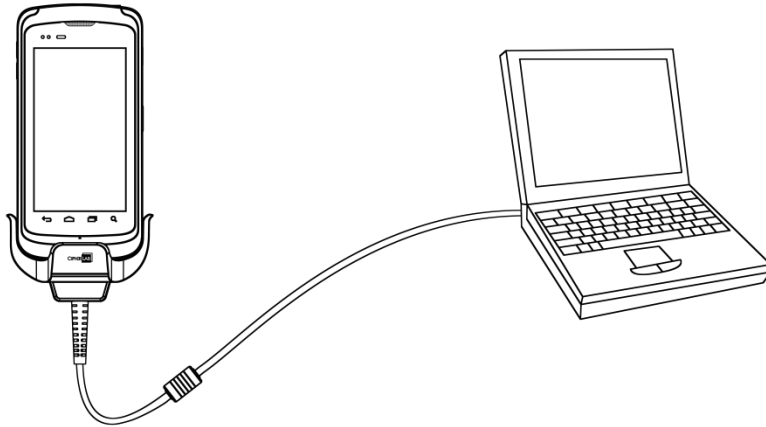
**Note:**

- (1) Not Charging could be the result of battery damage, battery's failure to touch the connector, or AC plug coming off.
  - (2) Charging error could be due to high battery temperature.
-

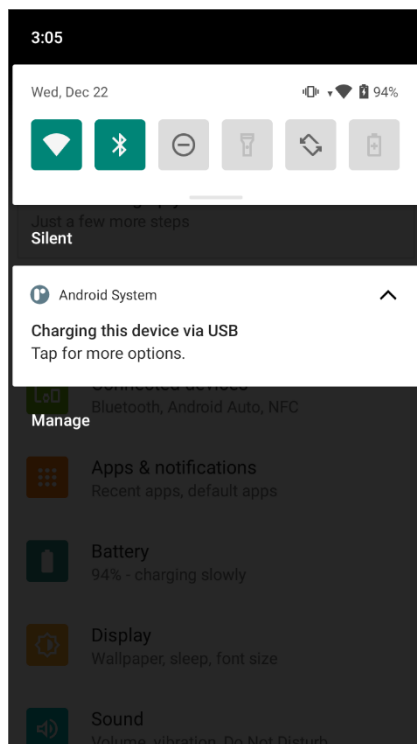
## 1.2.2. WIRED DATA TRANSMISSION

Use the Snap-on cable to connect the mobile computer to your PC for data transmission.

- 1) Connect your device to the computer with the supplied Snap-on cable.

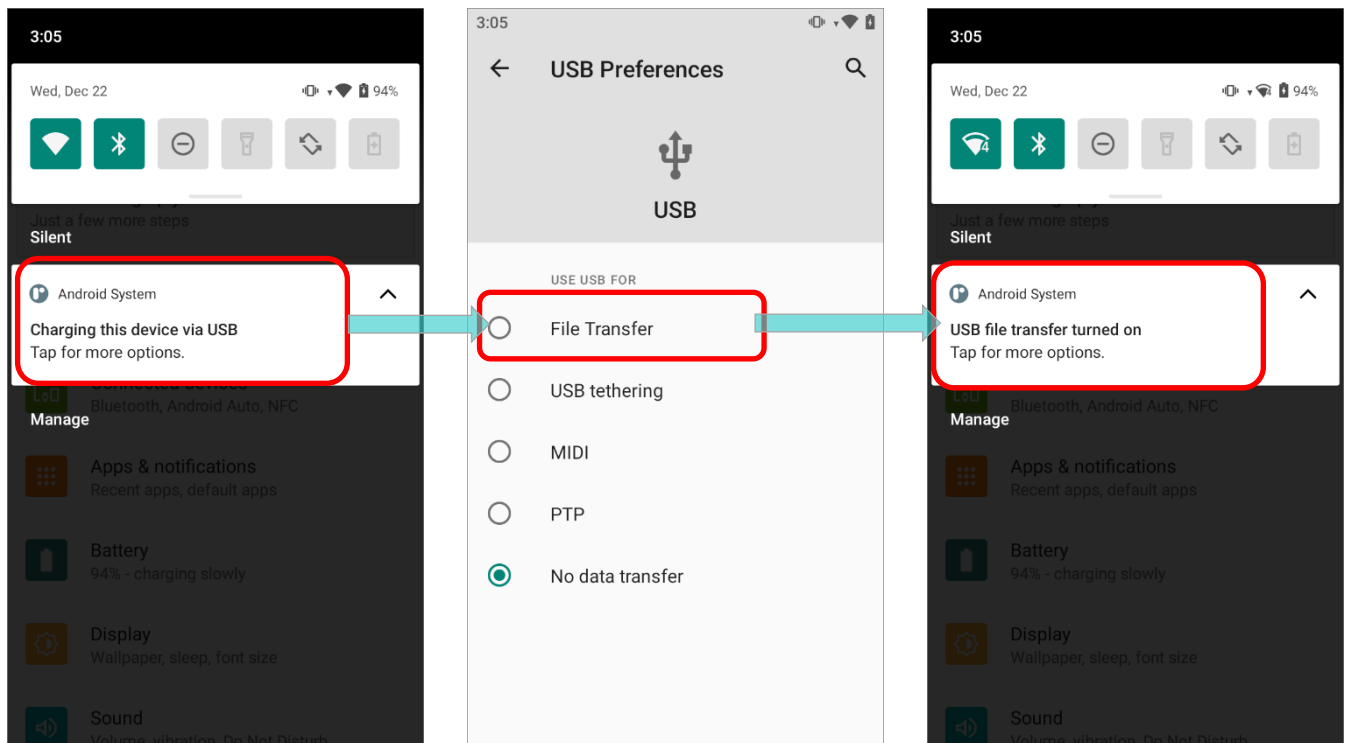


- 2) Swipe down from the status bar to reveal Notifications Drawer.



- 3) Tap on the system notification “**Charging this device via USB**” to enter USB options.

By default, the device will be in charging mode, in which you are unable to access the files on this device from the PC client. To transfer all types of files between your device and PC, choose “**File Transfer**”.



### 1.2.3 USING WIRELESS NETWORKS

The mobile computer supports widely applied wireless technologies including Bluetooth v4.1 & v2.1+EDR, 802.11 a/b/g/n/ac, and is able to send/receive data in real time in an efficient way. Select GSM/GPRS/EDGE/WCDMA/HSPA/HSPA+/LTE CAT 6 modules embedded for a total wireless solution for data and voice communication.

## Chapter 2

### USING THE RS51 MOBILE COMPUTER

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This chapter walks you through the fundamental usage and features of this device.

#### IN THIS CHAPTER

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## 2.1. BATTERY

### ▶ **Main Battery**

The mobile computer is powered by a rechargeable 3.8V / 4000 mAh or 3.75V / 5300 mAh Li-ion battery pack. It takes approximately 4 hours to charge it to full from the power adaptor (for the first time charging the main battery, please charge it for at least 8 to 12 hours). However, the charging time may vary by your working condition.

### ▶ **Spare Battery**

A spare battery pack is provided as an accessory. We recommend keeping a fully charged spare battery at hand in order to replace the main battery when it is nearly drained out.

### ▶ **Backup Battery**

Settled on the main board is a backup battery that keeps the mobile computer in suspension when the main battery is depleted. The backup battery is a 60 mAh rechargeable Li-ion battery, and can retain data in the DRAM for 30 minutes when it is fully charged (as long as wireless modules on the mobile computer are inactive). The backup battery can be charged by the main battery or the power adapter, and takes approximately 3.5 hours to charge to full.

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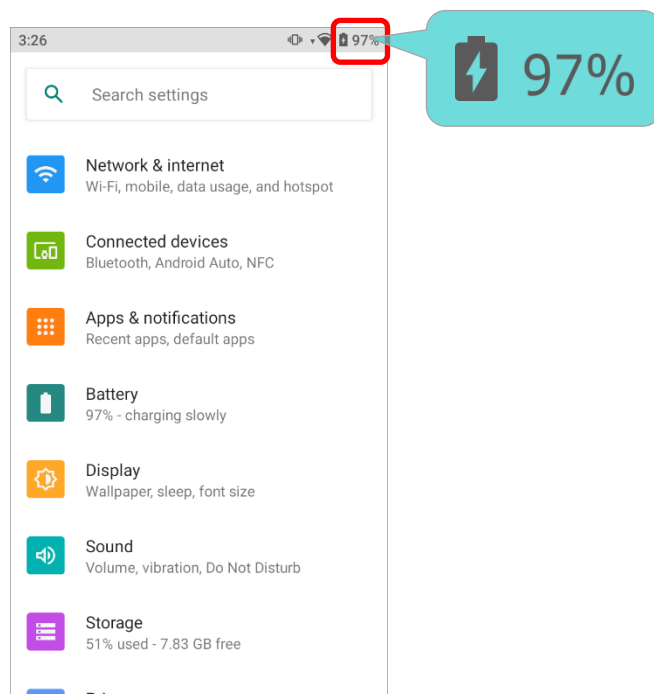
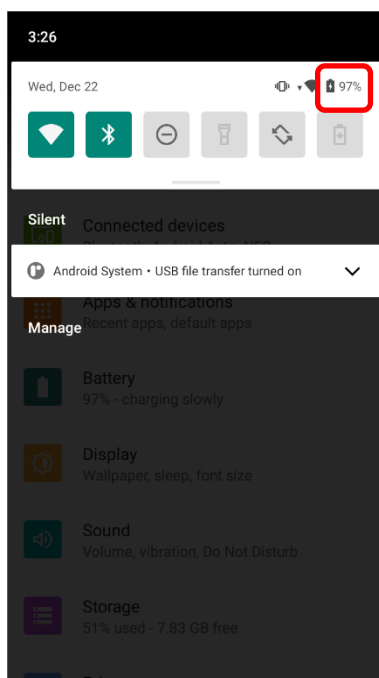
#### **Warning:**






- (1) The battery must be secured in position. If not, the mobile computer cannot turn on by pressing the power key.
  - (2) For a new battery, make sure it is fully charged before using, and for the first time charging the main battery, please charge it for at least 8 to 12 hours.
  - (3) To avoid data loss, when replacing the main battery, make sure you replace it with a well-charged spare battery pack. Always prepare a spare battery at hand, especially when you are on the road. When the mobile computer has been on backup battery for 30 minutes, the system will shut down. Be sure to replace the main battery as soon as possible in order to avoid data loss.
-

### 2.1.1. BATTERY STATUS INDICATORS



The main battery pack is the only power source for the mobile computer to work. Therefore, when the main battery level goes low, you need to replace the battery pack with a charged one or charge it as soon as possible. Most of all, you should backup important data on a regular basis.

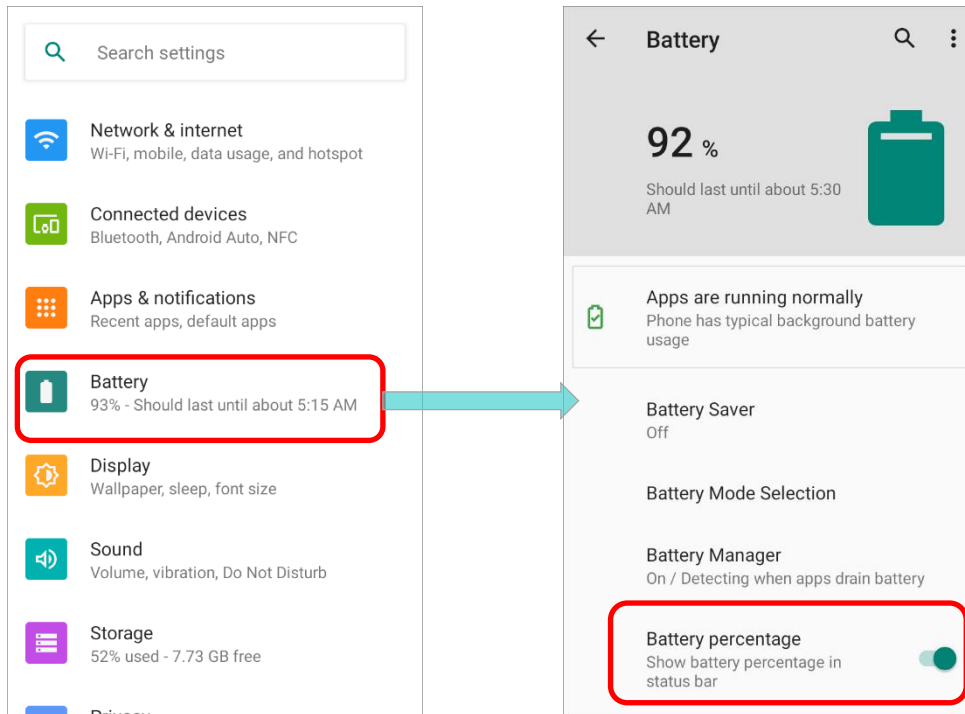
By checking the battery status icon on **Status Bar**, you can tell the battery level remaining in the main battery.





Battery Icon	Description
	Main battery is fully charged.
	Main battery level is partially drained.
	Main battery level is low (5%~15%).
	Main battery level is very low and needs charging immediately (<5%).
	External power source is connected and main battery is being charged.



The percentage beside the battery icon on the status bar can be switched on or off in [App Drawer](#) [\(All Apps\)](#) | **Settings**  | **Battery**  | **Battery percentage**.

**Note:**

When the mobile computer is fully charged and battery level reaches 100%, the battery icon will change from  to  to indicate charging is completed.



**Warning:**


- (1) Once the battery level drops below 15%, the low battery notification will be displayed on the screen.
- (2) Data loss with RAM may occur when battery level is low. Always save data before the battery runs out of power or keep a fresh battery for replacement.
- (3) Constant usage of the mobile computer at low battery level can affect battery life. For maximum performance, recharge the battery periodically to avoid battery drain out and maintain good battery health.

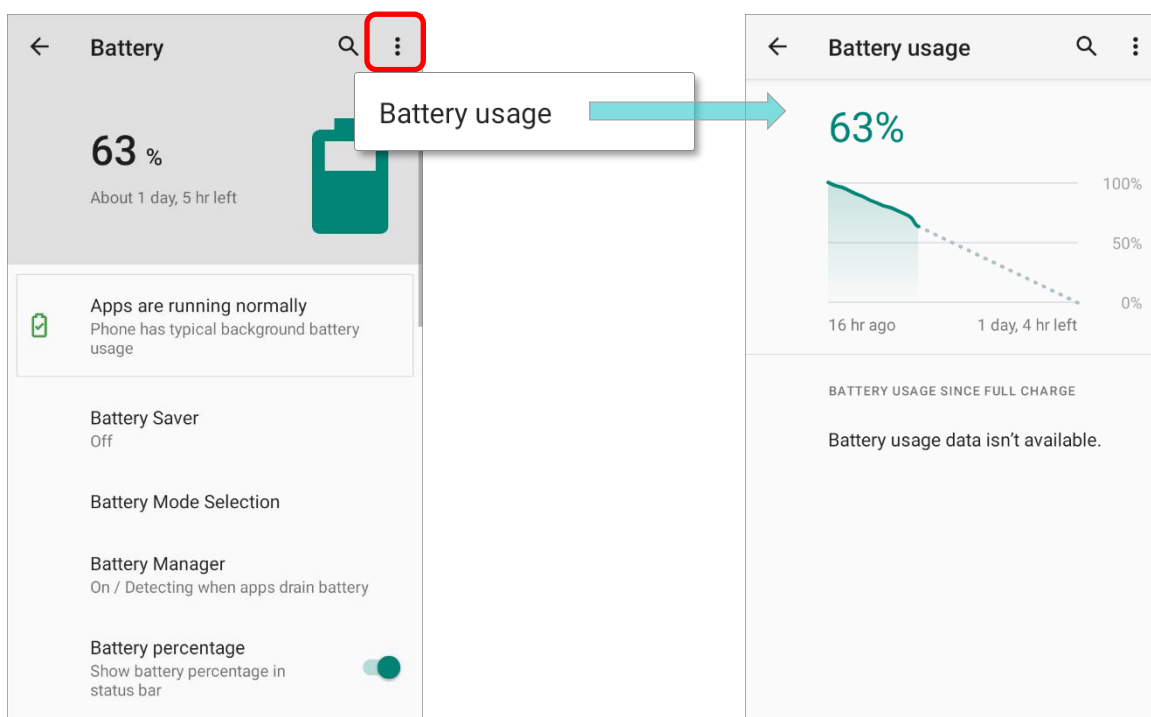
## 2.1.2. MONITOR BATTERY LEVEL

### MAIN BATTERY LEVEL

The main battery is the only source that feeds the mobile computer to work. It also supplies the backup battery on the main board in order to retain the data stored in DRAM. When main battery level gets low, recharge it or replace it as soon as possible. Most critically, back up the important data from time to time to protect your work.

To check main battery level, please go to [App Drawer \(All Apps\)](#) | **Settings**  | **Battery** . Battery level percentage is shown to provide a clear grasp of the remaining battery power.

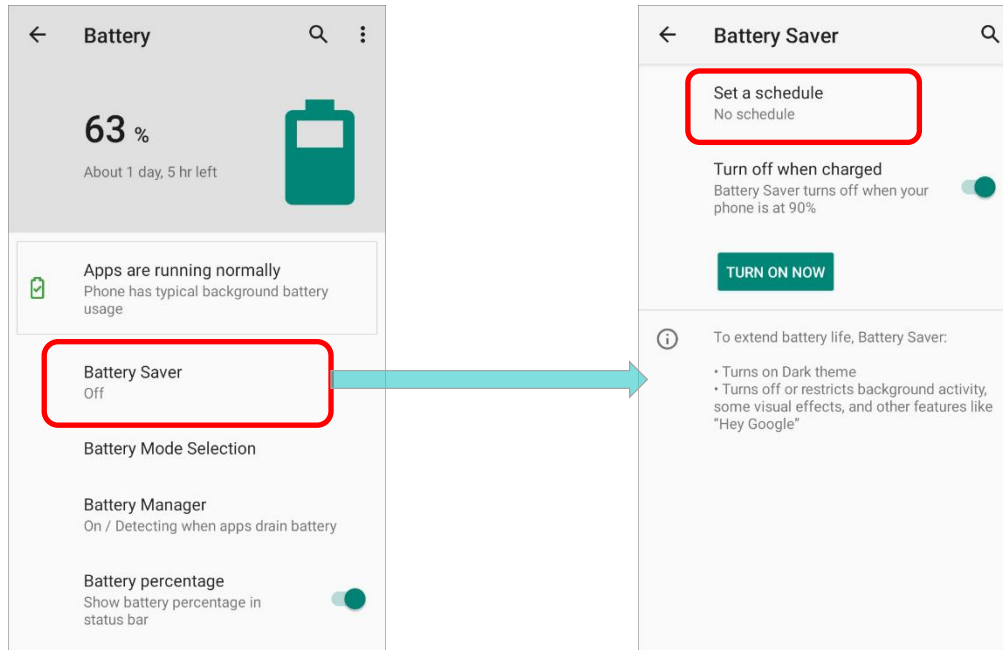
Tap the “**More**” button  on the action bar and then tap on “**Battery usage**” to enter “**Battery usage**” page, the screen shows the rate of battery discharge since the last battery charging session, how long the device has been running on battery power, and which applications are consuming the most battery power.



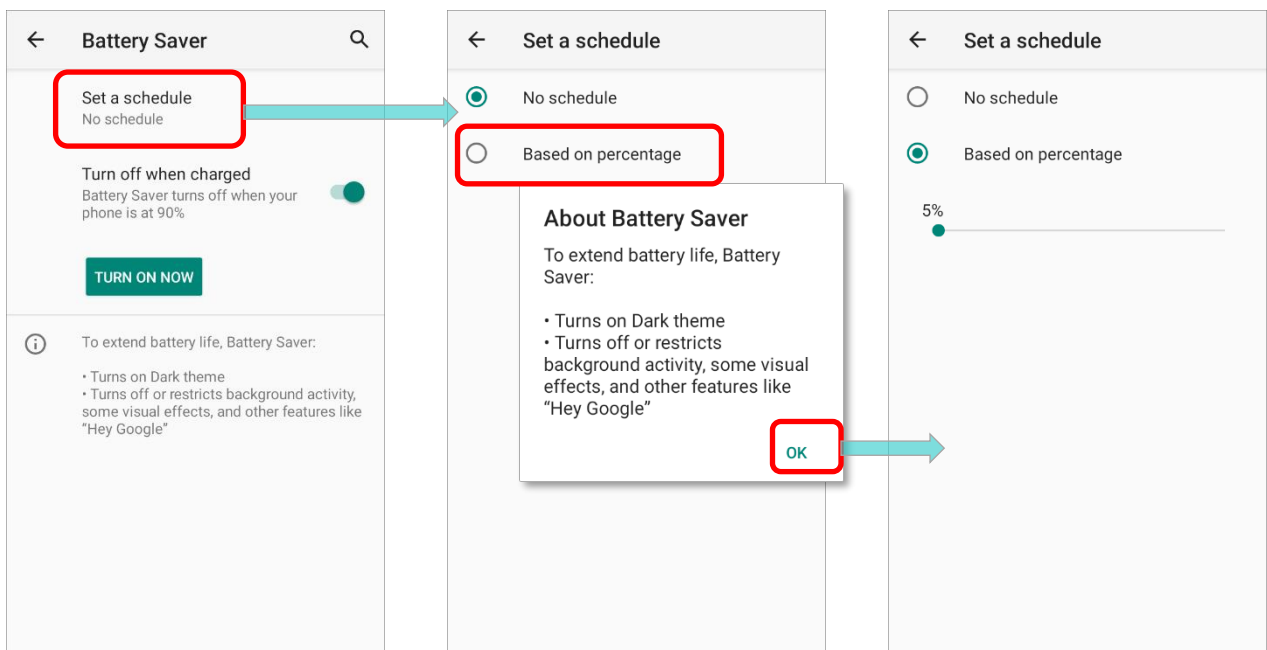
## BATTERY SAVER MODE

You can have the **Battery saver mode** automatically turned on when the main battery gets low. This mode will limit the use of location services, vibration and most background processing data. Once **Battery saver** is enabled, the title bar of your screen will turn red.

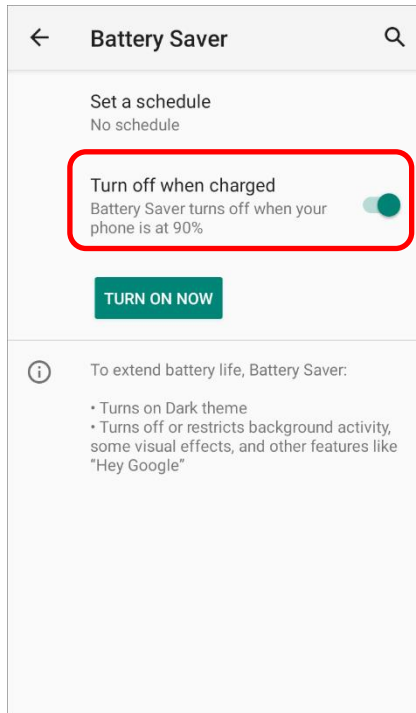
- 1) On Battery screen, tap to enter “**Battery saver**” page and then “**Set a schedule**”.



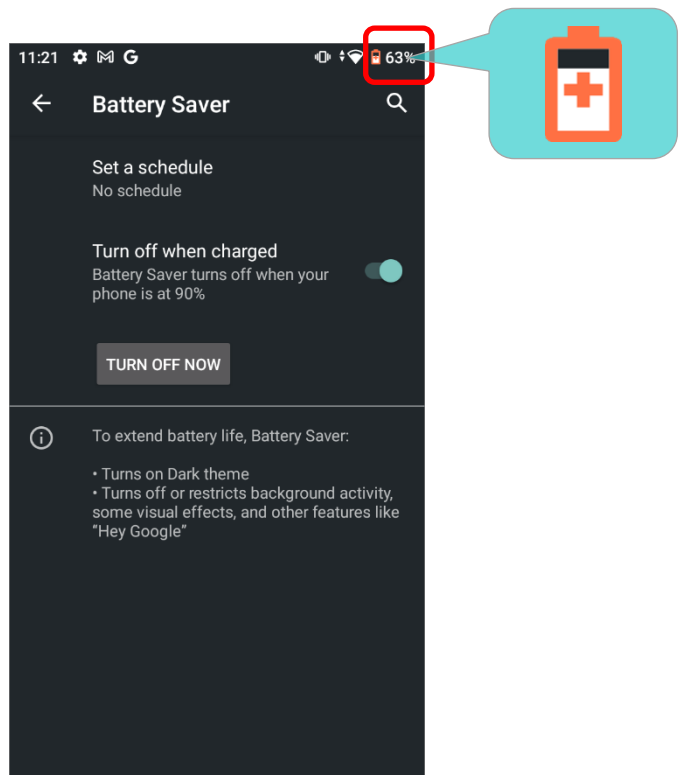
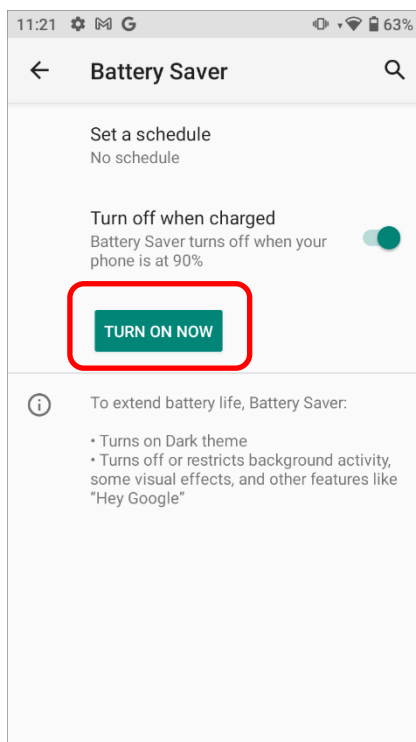
- 2) Tap the radio button of “**Based on percentage**” to display the slider which can be dragged to set when to enable the battery saver mode according to the battery power percentage. The default setting is **5%**.




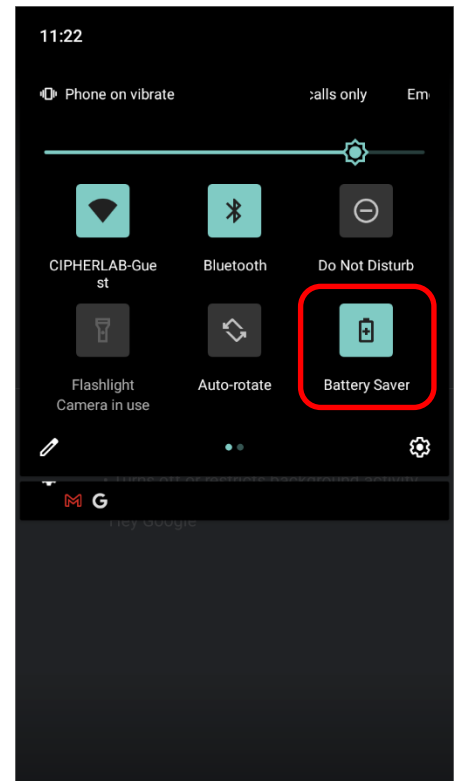
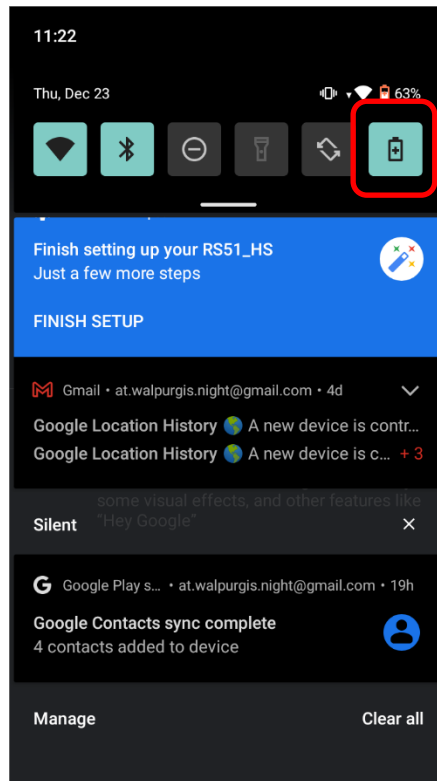
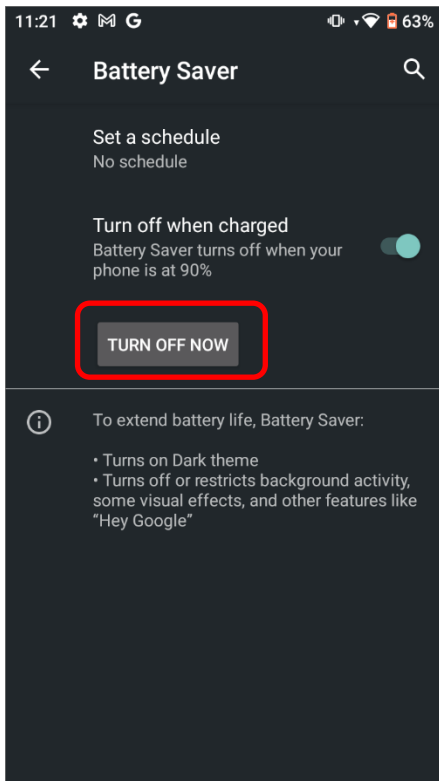
By enabling **“Turn off when charged”** on **“Battery Saver”** page, the battery saver mode will be automatically off once the battery power is charged to be **90%**.





Tap on **“TURN ON NOW”** to directly enable battery saver function, and the battery icon on status bar will turn orange once this function is enabled.



Also, you can swipe down from the status bar to reveal **Quick Settings Panel** or **Quick Settings Menu**, and tap the battery saver icon  to enable/ disable it.



Icon	Description
	Battery saver mode is <b>OFF</b> .
	Battery saver mode is <b>ON</b> .

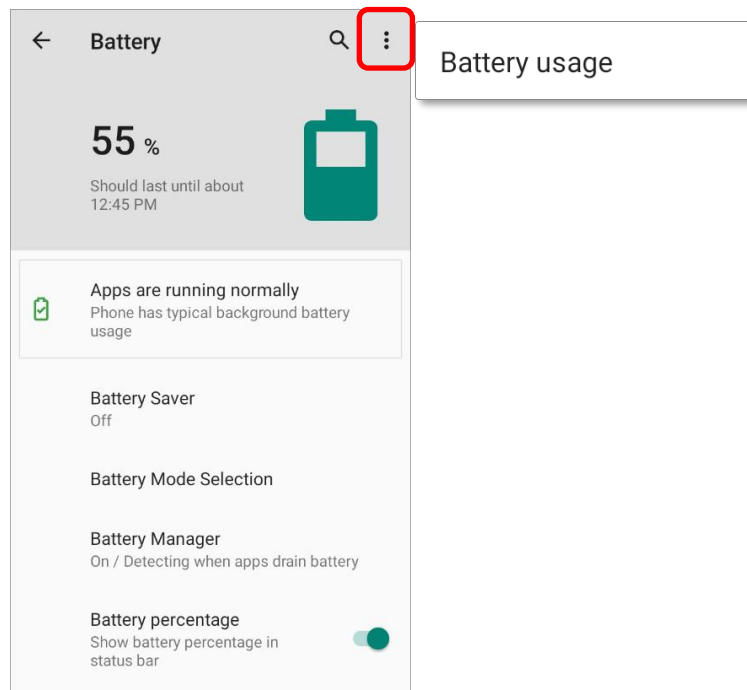
**Note:**

Battery saver mode will automatically become inactive when your device is being charged.

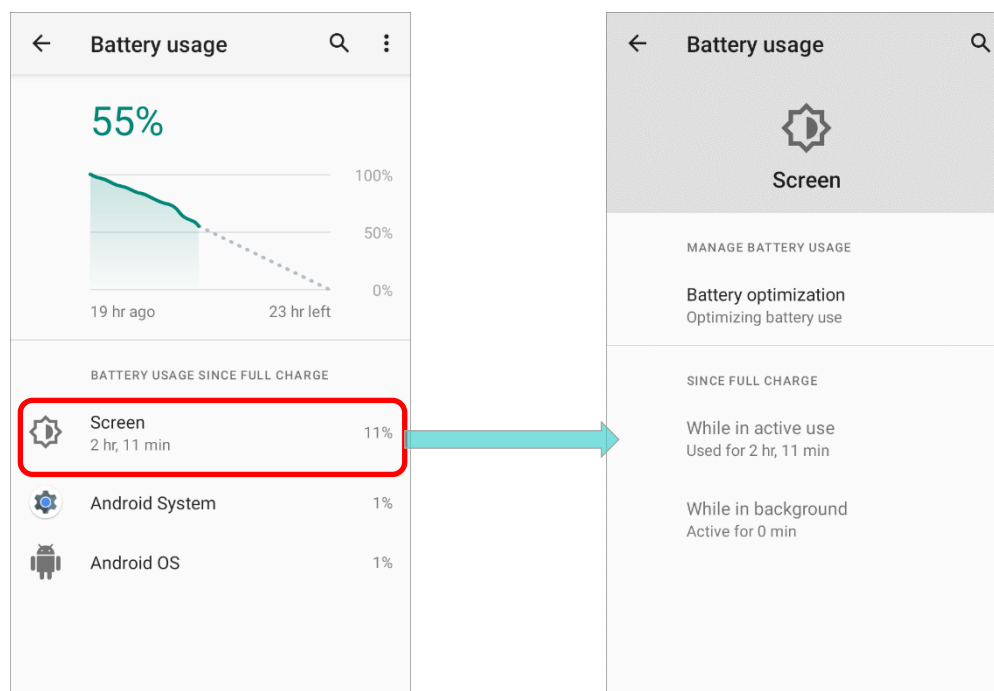
## BATTERY OPTIMIZATION

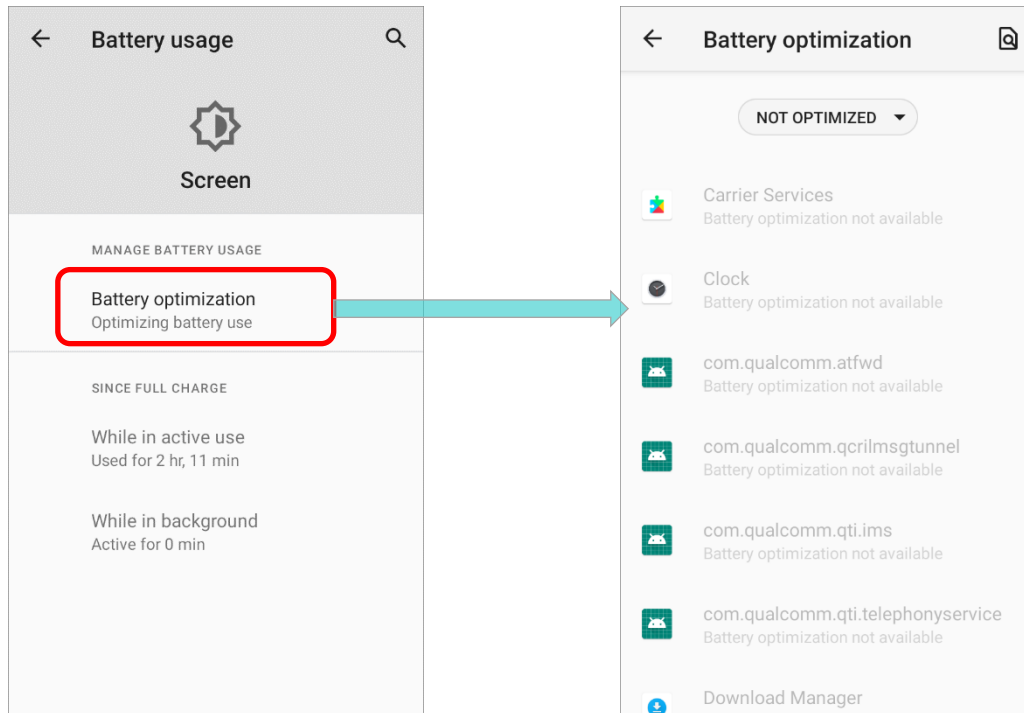
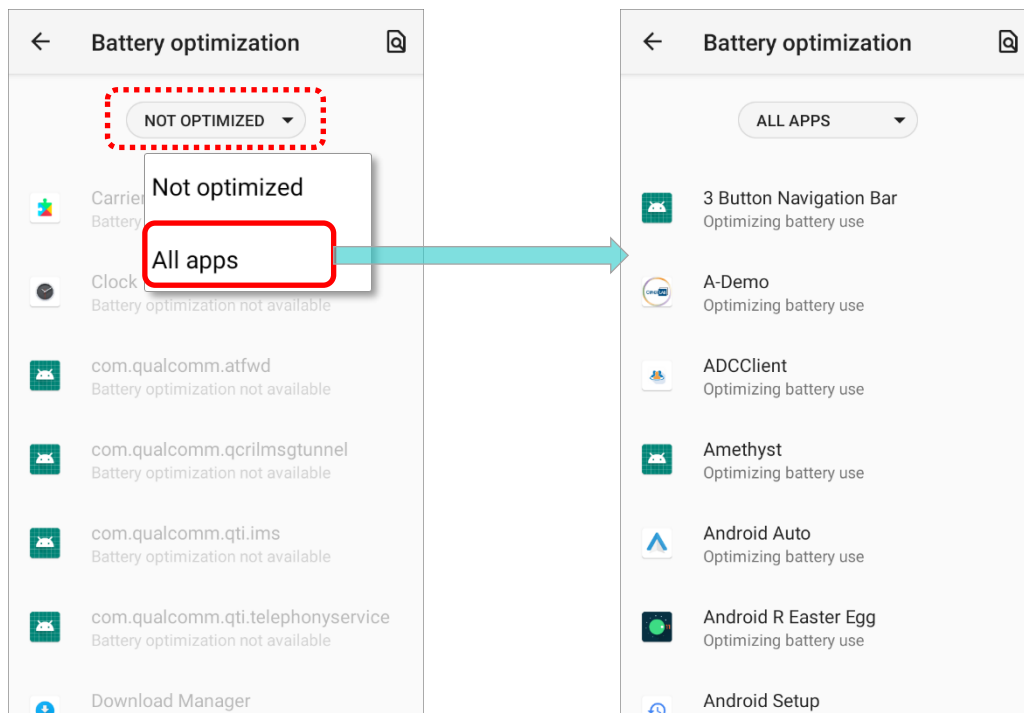
With **Battery optimization** enabled for the applications, you can make sure they stay inactive when your device is idle or when they have not been used for days.

- 1) On **Battery** screen, tap on **More**  and then “**Battery usage**”.

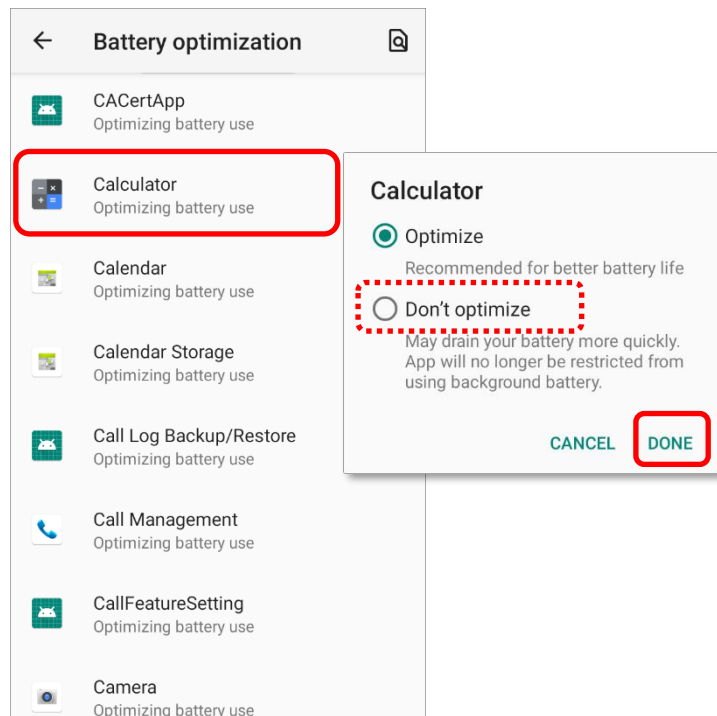


- 2) Tap on any item under “**BATTERY USAGE SINCE FULL CHARGE**” to enter its detail page.



3) Tap on **"Battery optimization"**.4) Tap on **"NOT OPTIMIZED"** to open the dropdown list and select **"All apps"**. All the optimized applications are listed.

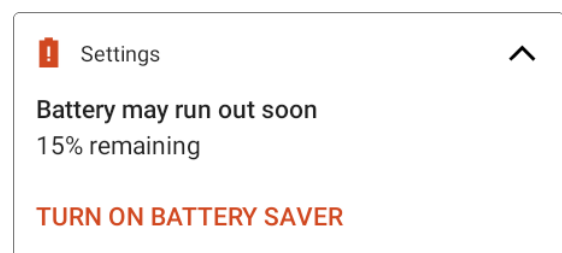
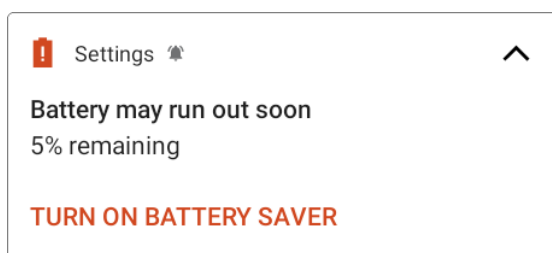
- 5) You can individually turn off the optimization mode of a certain app if you'd like it always activated by tapping on the app name and select "Don't optimize" and then "**DONE**".



## LOW BATTERY ALERT

The mobile computer prompts a warning notification reminding you to charge the main battery when the main battery level drops to **15%** and **5%**. In the meantime, the device's status LED indicator will blink red.

Opening [Notifications Drawer](#), you will also see this warning appearing on the notifications list; you may turn on [Battery Saver Mode](#), connect the mobile computer to an external power source, or replace the main battery pack as soon as possible. To replace the main battery pack, see [Replace Main Battery](#).





### LOW SUB BATTERY ALERT

When the main battery's power is drained out, RS51 mobile computer will automatically suspend by backup battery's power for **30** minutes. When backup battery's power is low, the "**Low Sub Battery**" notification will remind you to connect the device with an external power source to charge it immediately. Please note that do not replace the main battery at this moment, otherwise data loss may occur.



Settings

#### Low Sub Battery

The sub battery is low, please plug in charg..

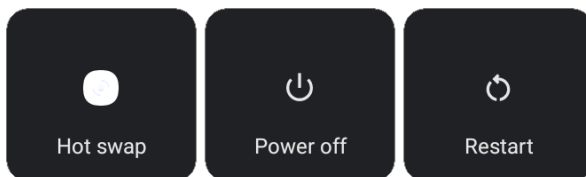
### 2.1.3. REPLACE MAIN BATTERY

When main battery level is low, follow the steps below to replace the main battery.

#### SHUT DOWN TO REPLACE THE MAIN BATTERY

Shut the device down to replace the main battery, please:

- 1) Make sure the sub battery (backup battery) and the new main battery are fully-charged.
- 2) Press and hold the [power button](#) on the side of the mobile computer.
- 3) Tap “**Power off**” in the pop-up menu. The mobile computer will power off.

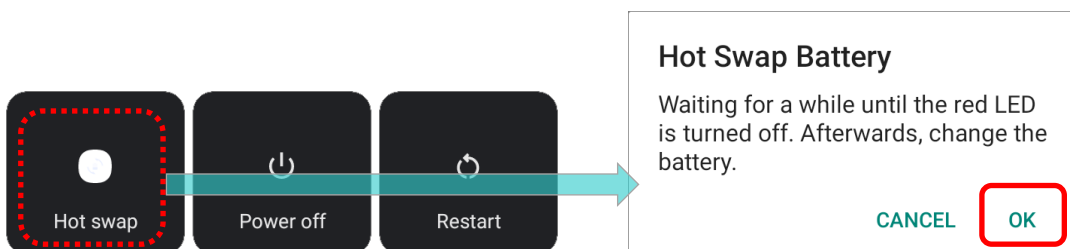


- 4) Follow the steps as [Installing/ Removing Battery](#) describes to remove the main battery and replace it with the new one.

#### BATTERY SWAP

RS51 mobile computer's backup battery supplies system power during battery swap. When the battery (with cover) is removed, the system will enter suspend mode and not wake up until battery cover is put back and the power button is pressed. Please refer to “[Low Sub Battery Alert](#)” to make sure the sub battery is fully charged before battery swap process.

- 1) Press and hold the power button on the top end of the mobile computer, and select “**Battery Swap**” and then “**OK**” in the pop-up menus. The system will prepare to enter suspend mode with the red Status LED on the front panel lit.



- 2) Observe the red light on the front panel; as it goes off, the device is in complete suspend mode and Main battery is ready to be replaced. Follow the steps described in [Installing/ Removing Battery](#) to remove the battery and replace it with the new one.
- 3) When the main battery is removed, system can stay in suspend mode at least 5 minutes. Please replace with a fully-charged main battery as soon as possible.
- 4) Make sure the battery latch is properly locked before pressing the power button to wake up the mobile computer from suspend mode.

---

**Warning:**

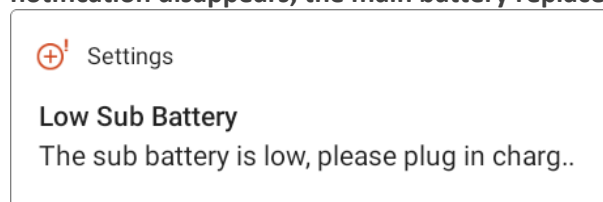
**Please do not perform a battery swapping before the mobile computer's OS is ready. Removing the battery cover during powering up your mobile computer may cause system failure.**

---

---

**Note:**

- (1) "Battery Swap" is forbidden for the circumstance below:
  - (a) during Welcome Wizard ;
  - (b) within the 70 seconds after booting up including rebooting or factory reset.
- (2) When main battery is removed, the system will stay in suspend mode for at least 5 minutes. To prevent the system from being shut down without advance warning, please DO replace the main battery within the 5 minutes.
- (3) The system time will be set to default if the main battery is not replaced within 5 minutes.
- (4) Backup battery keeps the mobile computer in suspension when the main battery is depleted. Thus, to prevent data loss, DO NOT replace the main battery when backup battery's power is low. Please connect RS51 mobile computer with the external power source to charge it till the "Low Sub Battery" notification icon disappears from the status bar. Once the ["Low Sub Battery"](#) notification disappears, the main battery replacement could be proceeded.







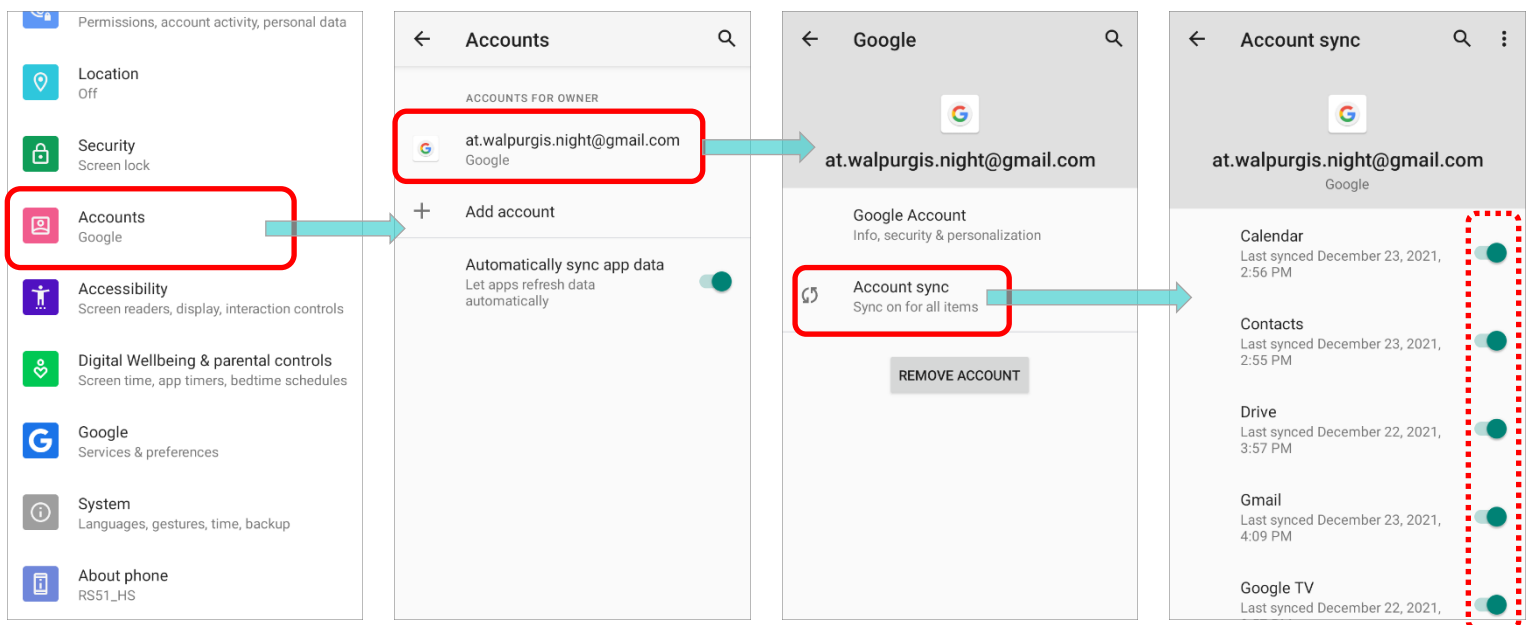
## 2.1.4. POWER MANAGEMENT

For any portable device, power management is a critical issue especially when you are on the road. Below are some tips to help you save battery power.

### Warning:

Using backlight, wireless connectivity, and peripheral devices on battery power will substantially reduce battery power.

- ▶ Bring an additional main battery pack with you on the road.
- ▶ End wireless connections (such as Bluetooth transmission, WLAN, WWAN, NFC and GPS) which are not in use.
- ▶ Shorten the time interval of turning off screen. See [Screen Timeout Settings](#).
- ▶ Reduce the screen brightness level, see [Screen Brightness](#).
- ▶ If you have had your Google account signed in on this device, you could turn off certain automatic data syncing of applications (such as Email, Calendar, and Contacts). Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Accounts**  | your **Google** account  | **Account sync**  and disable the data syncing services of your desired items.



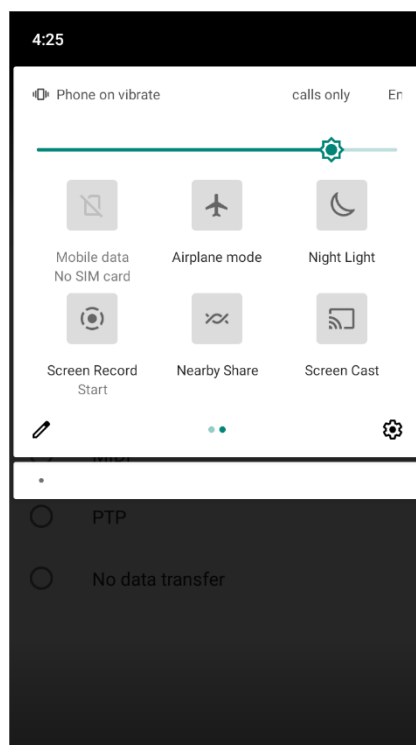
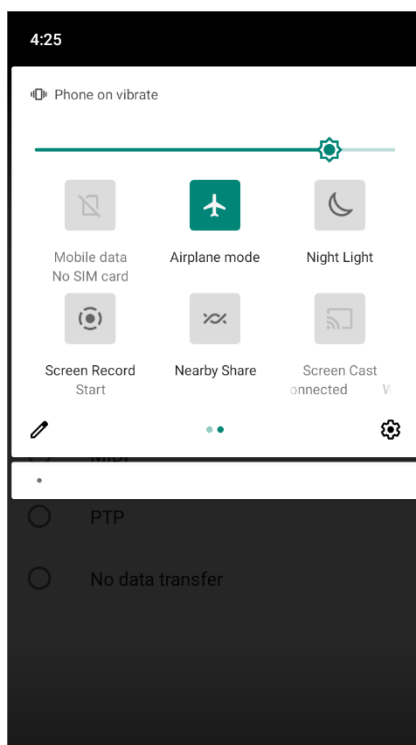
- ▶ Enable Battery saver mode and Battery optimization mode. See [Battery Saver Mode](#) and [Battery Optimization](#).


## ENTER AIRPLANE MODE

You can enable **Airplane** mode to have all the wireless radios (including call functions, data connections such as Bluetooth, Wi-Fi and 3G/4G) on your mobile computer turned off, which will considerably reduce the power consumption of your battery.

To enter **Airplane** mode:

- 1) Swipe down from the top of the screen to open [Quick Settings Menu](#).
- 2) Tap on the Airplane mode icon to enable/disable the mode.



Icon	Description
	Airplane mode is <b>OFF</b> .
	Airplane mode is <b>ON</b> .

### 2.1.5. BATTERY PRECAUTIONS

To preserve battery life and avoid battery bulge:

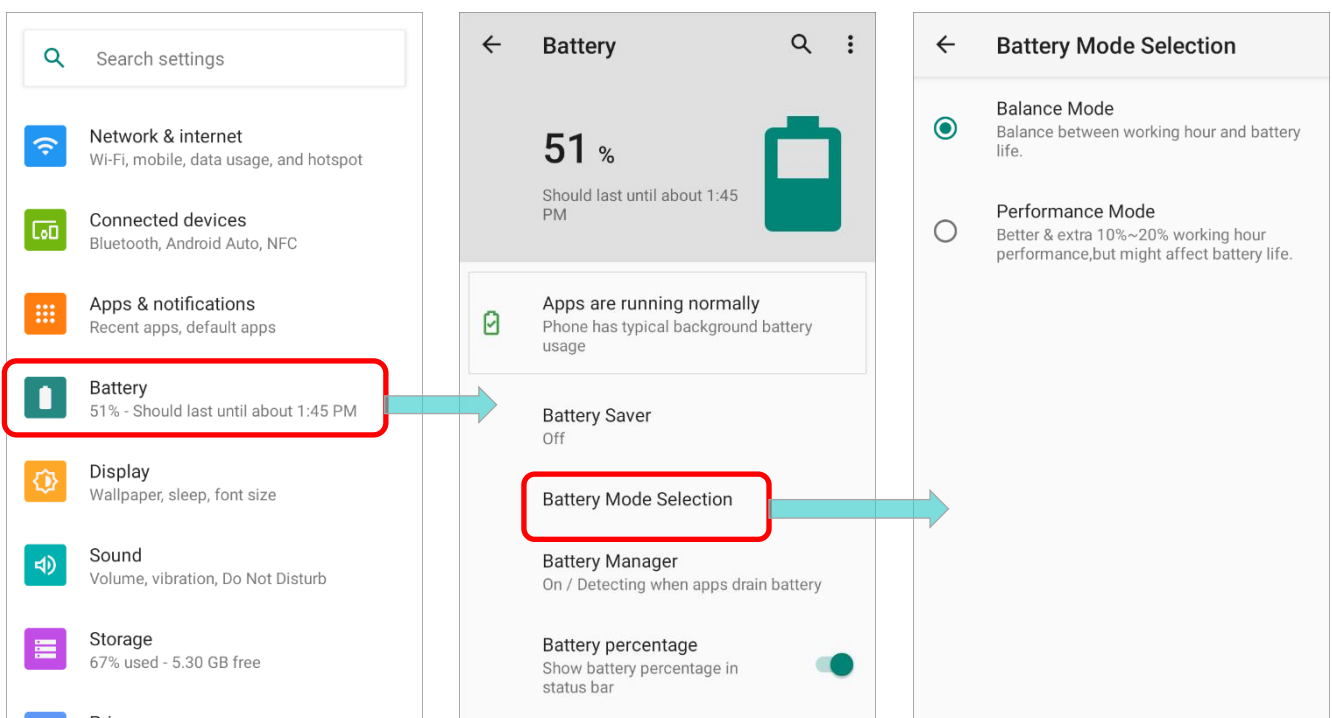
- Please do not use your device while continuously connected with a power supply or cradle for charging. If you need to use your RS51 mobile computer with a power supply or cradle continuously connected, be sure to turn on “**Balance Mode**”.
- If the main battery is fully charged, do not keep connecting your RS51 mobile computer with charging it a power supply or cradle for charging. If you need to continuously connect your RS51 mobile computer with a power supply or cradle, be sure to turn on “**Balance Mode**”.

#### BATTERY MODE SELECTION

If you need to use RS51 mobile computer while charging, or if the device needs to be connected with the power supply for charging all the time, it is suggested that enabling “**Balance Mode**” for battery life.

The default battery mode is set to be “**Balance Mode**”. To switch between “**Balance Mode**” and “**Performance Mode**”:

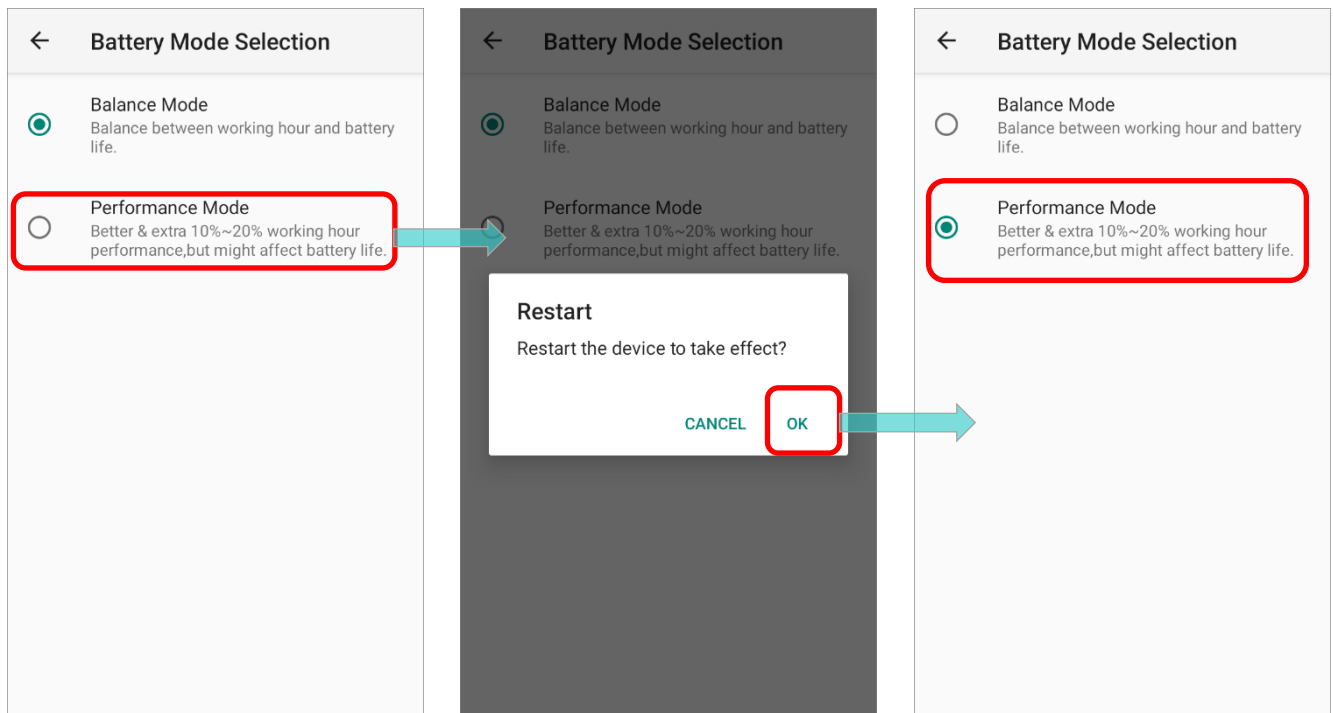
- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Battery** , and tap on “**Battery Mode Selection**”.



- 2) Tap to select “**Balance Mode**” or “**Performance Mode**”.

Mode	Description
<b>Balance Mode</b>	Balance between working hour and battery life.
<b>Performance Mode</b>	Better & extra 10% to 20% working hour performance, but might affect battery life.

- 3) Once you change the mode, a pop-up message appears to indicate the device needs to reboot to make the change take effect. Tap on “**OK**” to confirm, and the device will automatically shut down and reboot.

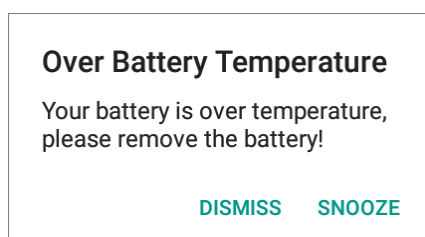


## BATTERY TEMPERATURE ANOMALY

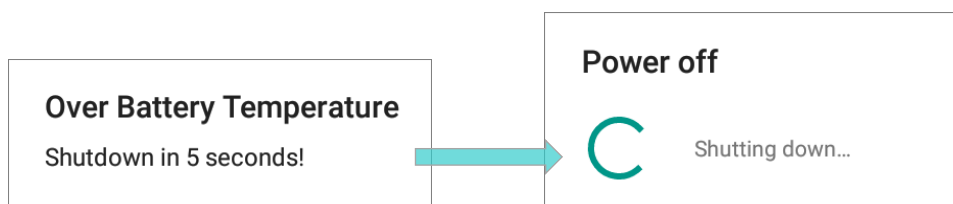
High ambient temperature or keeping using RS51 mobile computer while charging might results in battery temperature rises. RS51 mobile computer will automatically suspend charging battery or shut down for safety purpose. Once the battery temperature cools down to normal temperature, battery charging could be proceeded again.

The warning “**Over Battery Temperature**” shows up to instruct you to remove the battery if the temperature reaches **55°C** while it prompts to automatically shut down if the battery temperature reaches **60°C**.

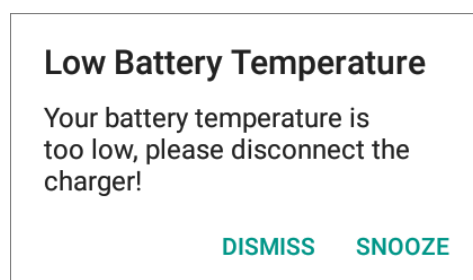
- **At 55°C**



- **At 60°C**



Using RS51 mobile computer under low-temperature environment may cause the device shut down automatically. If the battery temperature is at **0°C** or even lower than **0°C** while charging, the red Status LED in the front panel blinks with a warning window popup to remind the user to disconnect the charger, and the device will automatically suspend charging the battery.



For battery life, please unplug the charger immediately and charge your RS51 mobile computer under appropriate temperature conditions.



## 2.2. MEMORY

### ▶ Flash Memory (ROM)

16GB flash memory for storing the OS (Android 11) and custom application programs.

### ▶ Random Access Memory (RAM)

2GB RAM for storing and running programs, as well as storing program data.

### ▶ Expansion Slot

The mobile computer is equipped with one SD card slot which can accommodate a micro SD card, a microSDHC, or a microSDXC card. When choosing an SD card for best compatibility and performance with RS51, please make sure of the capacity you need. For the use of SDXC card, please use a new card and make sure it has not been used in other host devices (computers, cameras, or readers).

Card	Capacity
SDXC	64GB
SDHC	32GB

## CAUTION OF DATA LOSS

When the main battery is removed or drained, the backup battery on the main board takes over to supply the mobile computer and keep it in suspension. A fully charged backup battery will retain the data in the RAM for **30 minutes**. When the backup battery is drained out as well, the mobile computer will shut down, and only the contents of RTC will be retained. All other unsaved data will be lost.


If you want to put away the mobile computer for a couple of days, you should be aware that data loss occurs when the main battery and backup battery discharges completely. Therefore, it is necessary to backup data and files before putting away the mobile computer.

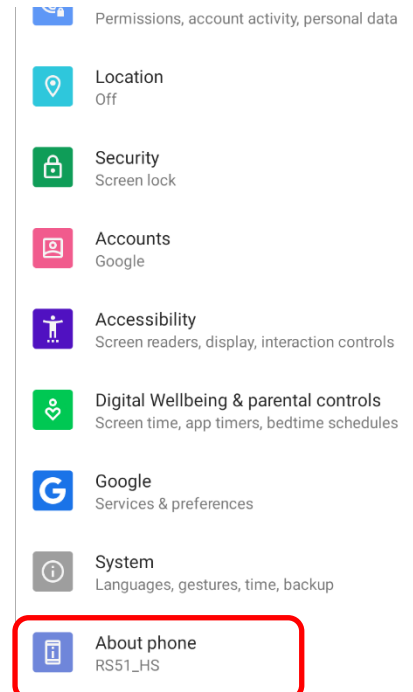
## 2.2.1. CHECK MEMORY USAGE

The memory manager can offer a glance of how the device is using its RAM.

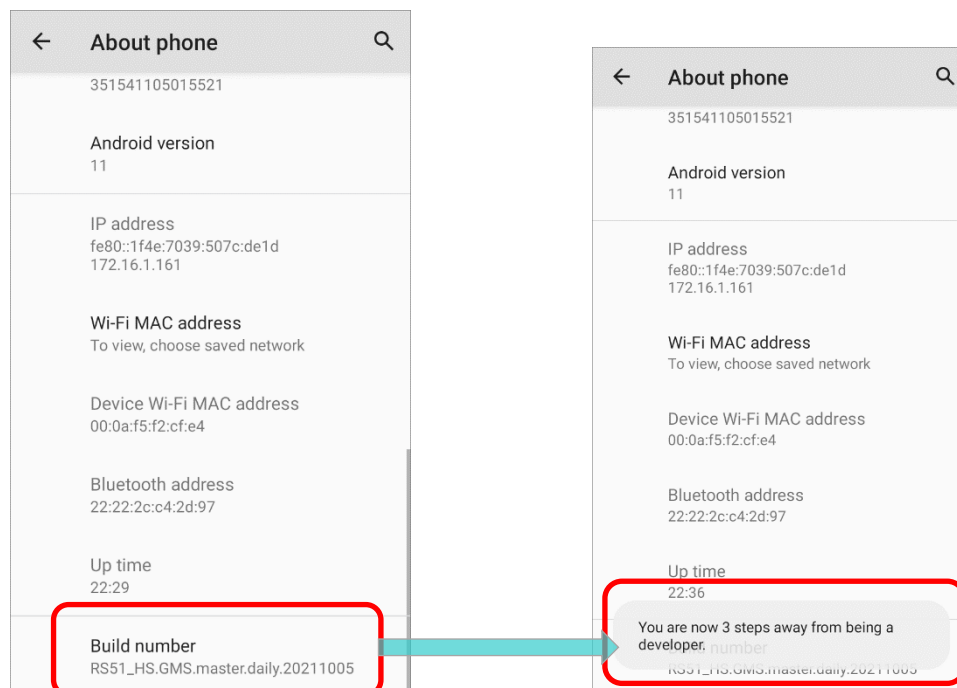
### ENABLE DEVELOPER OPTION

To check the memory usage, you have to enable **“Developer Option”** :

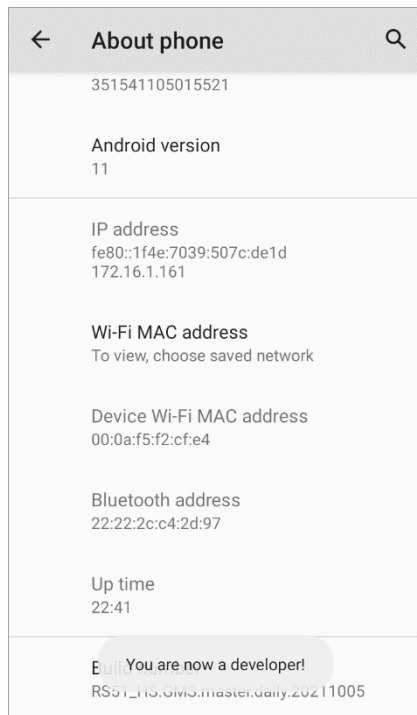
- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **About Phone** .





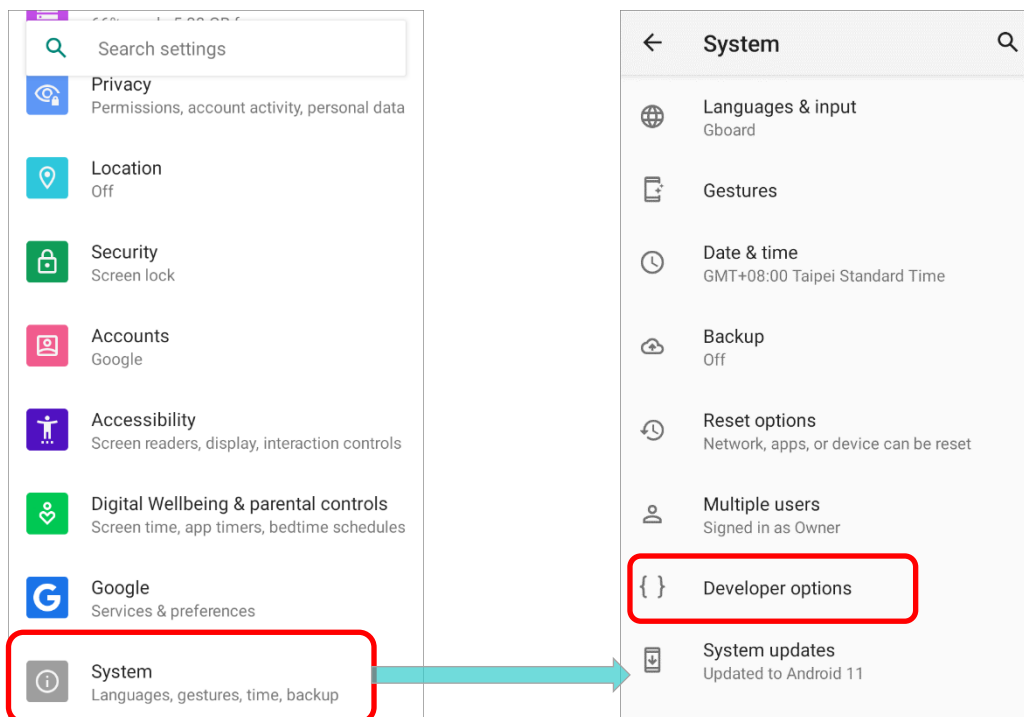
- 2) Tap on **“Build number”** 7 times to enable it. During the process, you’ll see a prompt with a countdown reading **“You are now X steps way from being a developer.”**



- 3) Once the prompt “**You are now a developer!**” showing up, you have succeeded in entering developer mode.

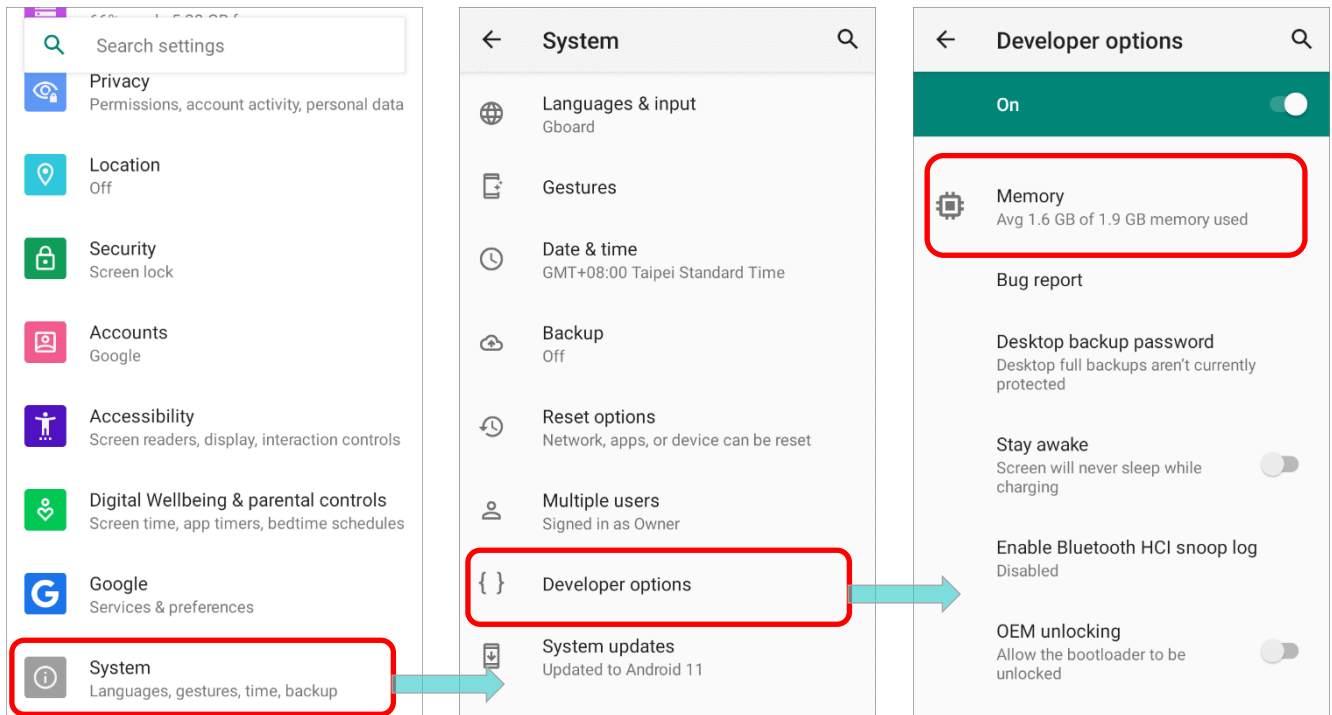


- 4) You can find **Developer Option { }** is now enabled in **Settings**  | **System**  .



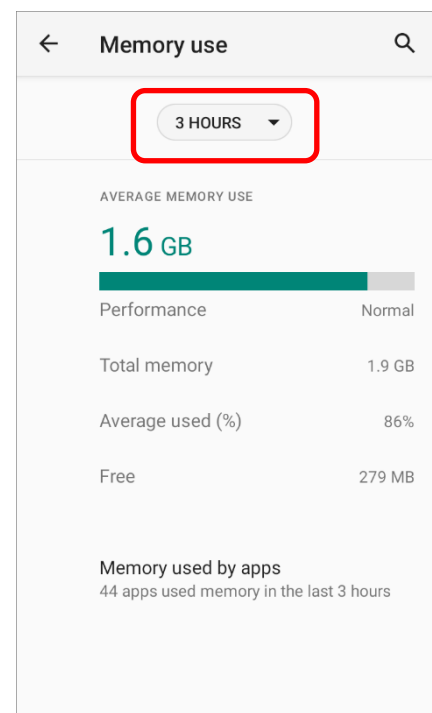
## CHECK MEMORY USAGE

Tap [App Drawer \(All Apps\)](#) | **Settings**  | **Developer Option**  | **Memory**  to enter memory manager screen.

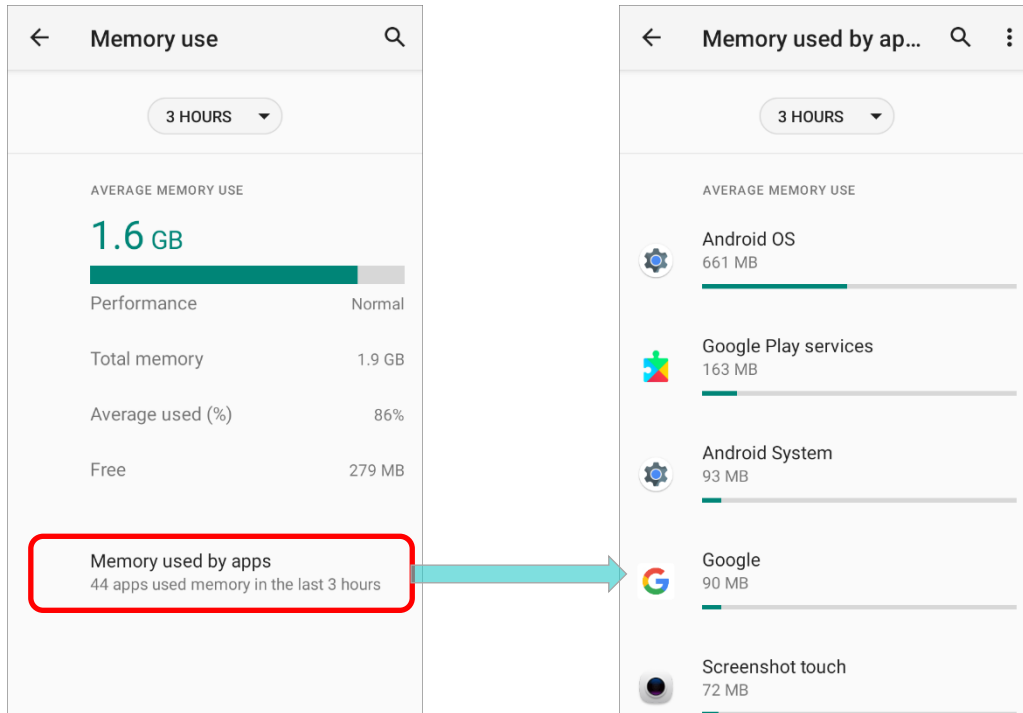


On the main screen, it tells you not only the used and free memory space of the RAM, but how your pattern of usage has impacted the device's overall performance.

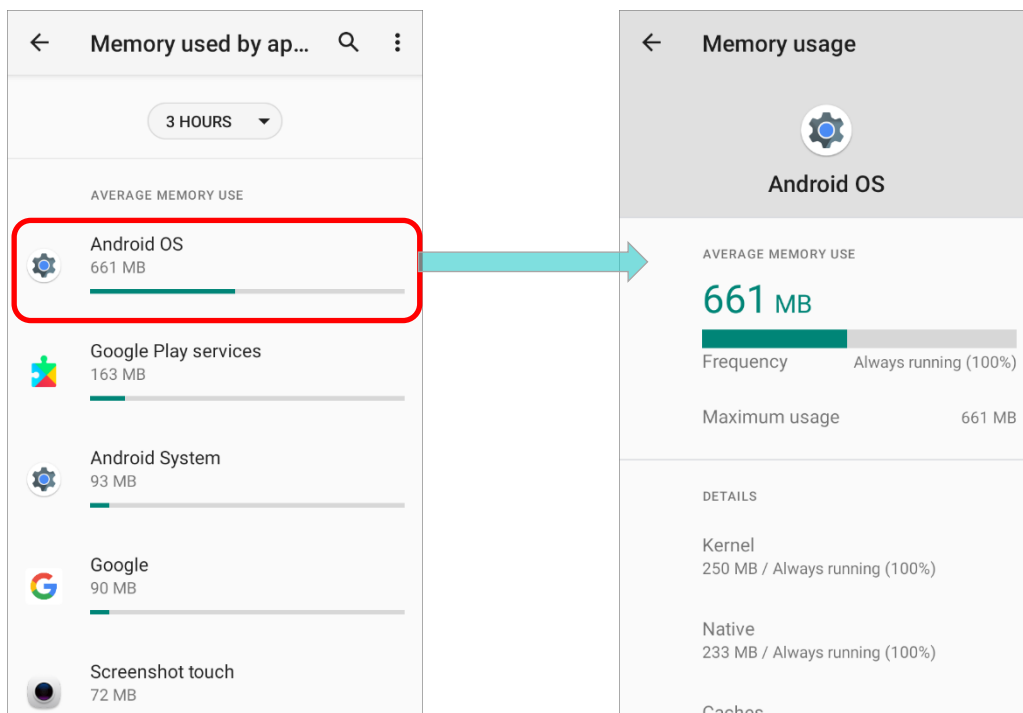
To figure out how the system and apps have been taking up the memory over a longer period, tap the dropdown list to choose a different time span.



To look at how individual apps are consuming the memory space, tap **“Memory used by apps”** to get a breakdown of memory usage by apps.





Tap an application name to check its memory usage. This allows you to make sense of how much memory a newly-installed application can potentially consume your RAM.



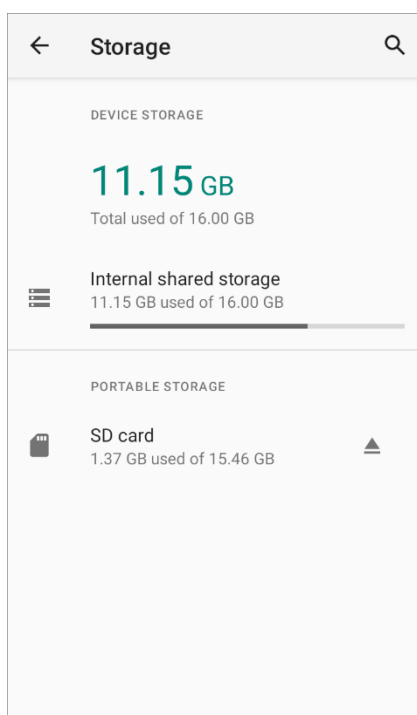
## 2.2.2. MANAGE STORAGE SPACE

To your Android device, the SD card can serve as an extension of your device's internal storage (which comes as 16 GB of flash memory to store the OS, applications and files) other than a portable storage place.

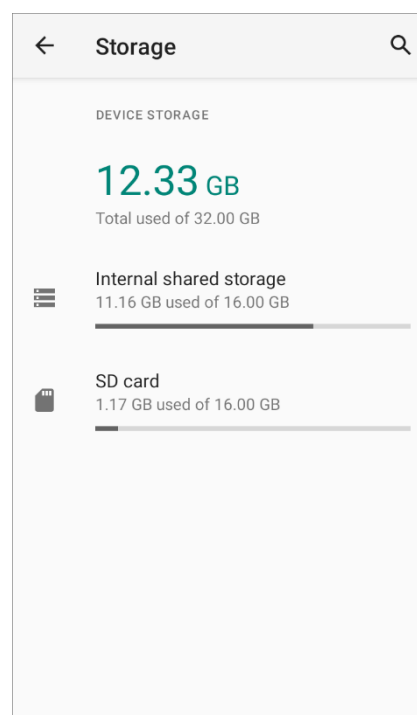
Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Storage**  to check usage of the internal and external storage spaces.

By default, all the videos, photos and downloaded files are directly saved to the device's internal storage. If you have previously inserted and mounted an SD card as portable storage, you could transfer/save photos & other media in this SD card; if the SD card is set as internal storage, photos, files, and some apps could be moved to the SD card.

- SD card as portable storage in Storage Settings page
- SD card as internal storage in Storage Settings page



The SD card is used for moving photos and other media between devices.

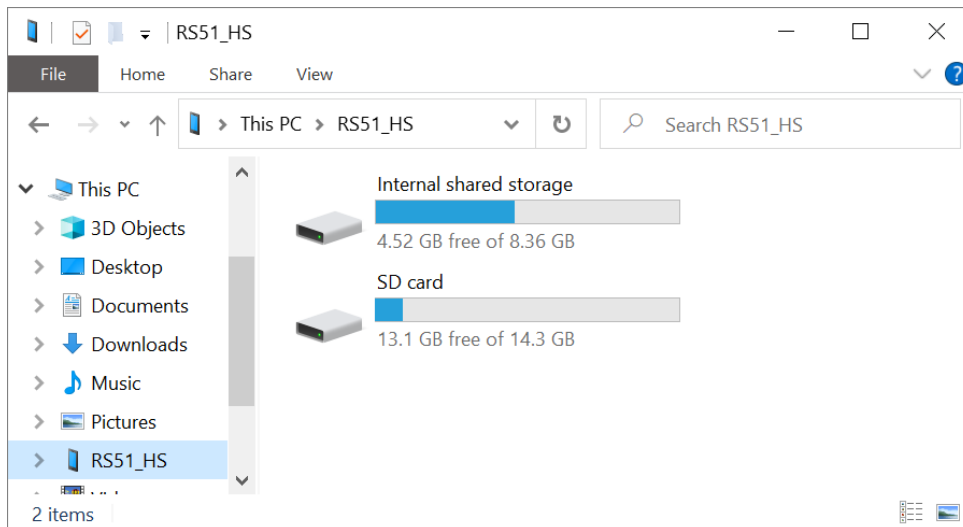


The SD card is used for storing anything on this device only, including apps and photos. Requires formatting that prevents it from working with other devices.

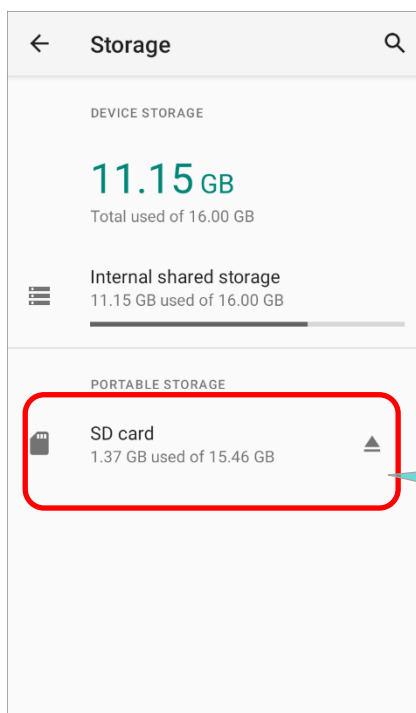
## SET UP SD CARD AS PORTABLE STORAGE


Using SD card as a portable device allows you to treat it as a USB disk, by swapping it between your Android device and the computer to easily transfer files. This is quite handy when there is a need to offload files that are taking up too much storage space.

When this device is connected with PC, the disk content is readable from PC client:




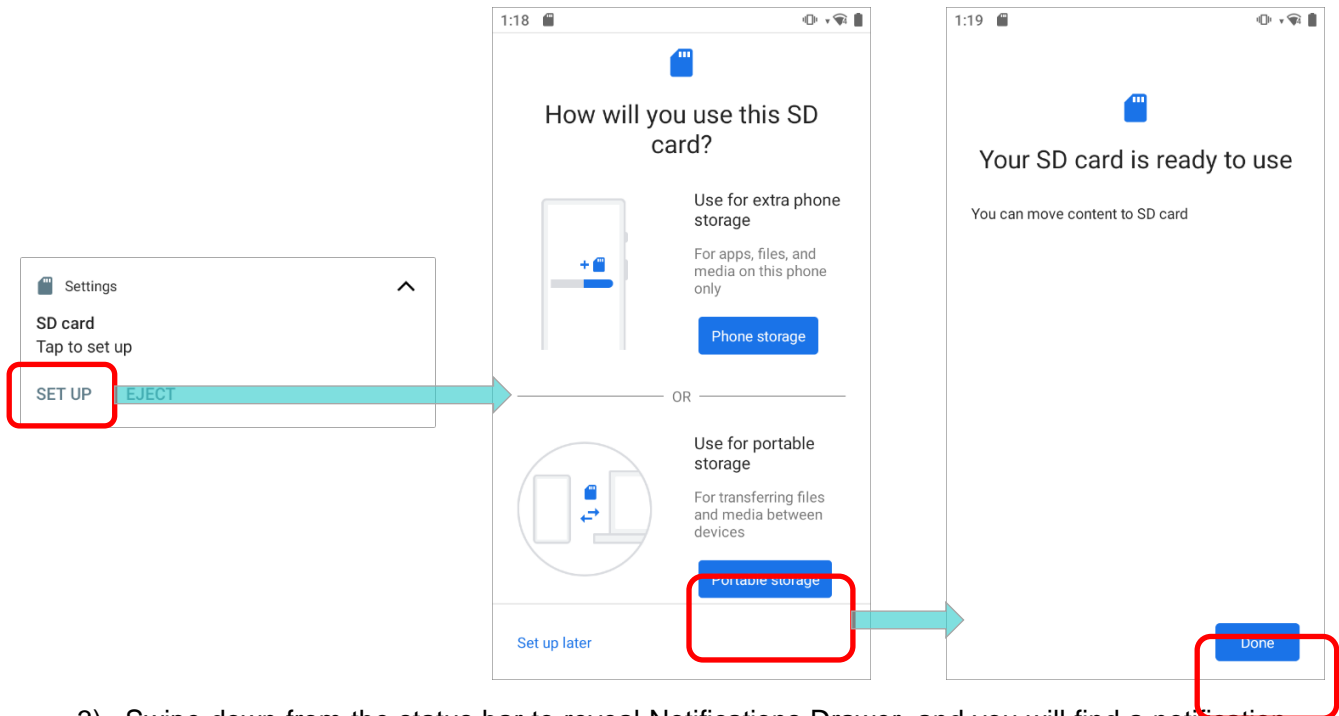
On **Storage** screen, this disk can be managed separately.



The SD card is considered a separate storage, the capacity of which is not included in total device storage. You can tap  to eject a mounted SD card.

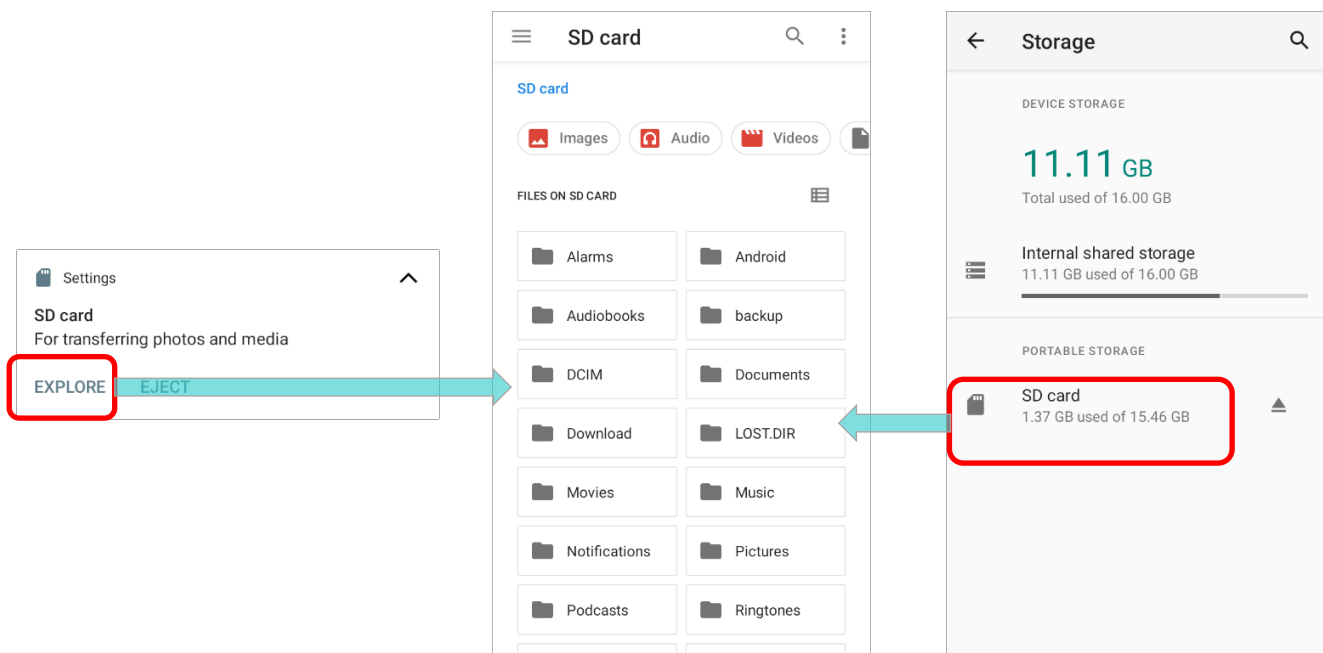
To start:

- 1) Insert the SD card. A notification icon  indicating that an SD card is detected will be shown in the status bar; swipe down from the status bar and tap “**SET UP**”.
- 2) Tap “**Portable storage**”, and complete the setting by tapping “**DONE**”.



- 3) Swipe down from the status bar to reveal Notifications Drawer, and you will find a notification indicating that the SD card is for transferring photos and media; tap “**EXPLORE**” to check its content.

**OR** tap the SD card in **Storage Settings** page to check it.

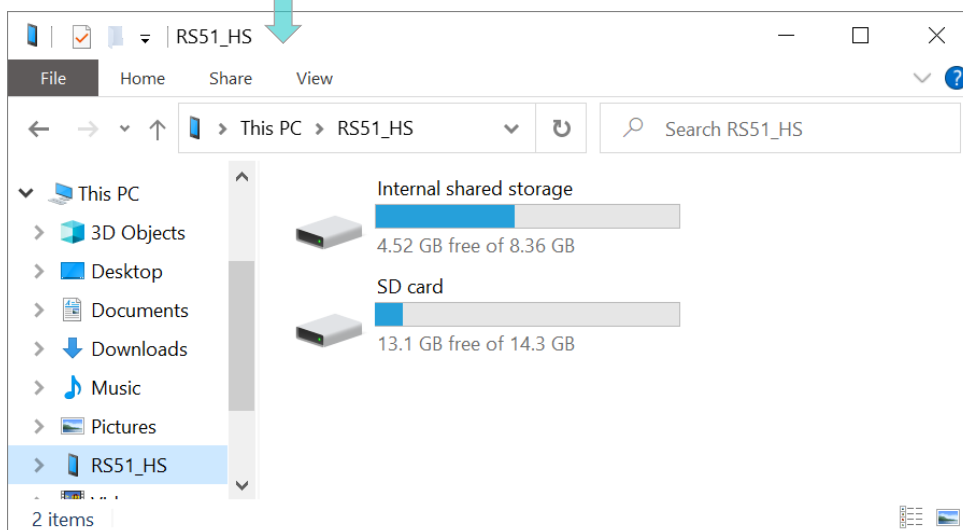
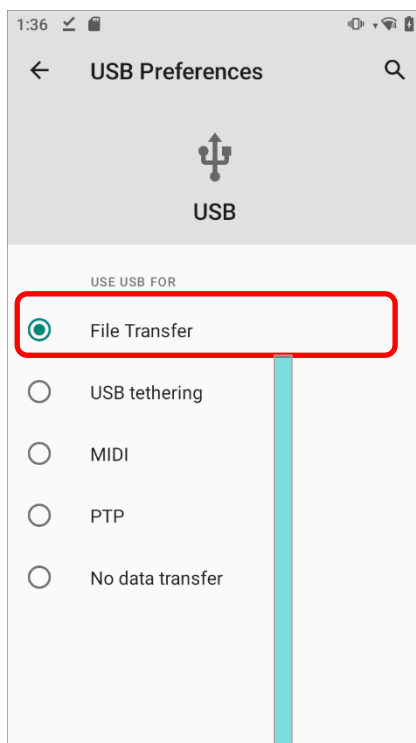




## TRANSFER PHOTOS & MEDIA BETWEEN THE DEVICE & PC


To transfer photos and media between this device and PC when the mounted SD card is set as portable storage, please:

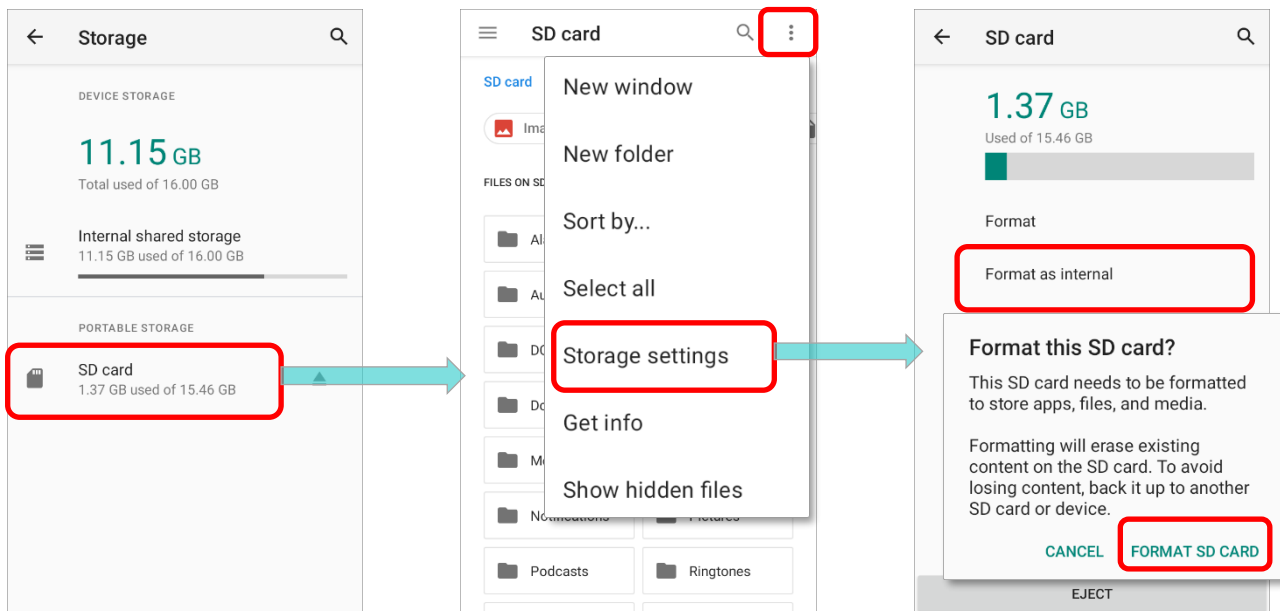
- 1) Connect your mobile computer with PC with the snap-on cable, and “**USB Preference**” page shows up.
- 2) Choose “**File Transfer**”, and now you will find the disk content is readable from PC client. Please make sure the USB cable is properly connected while transferring files over USB connection.



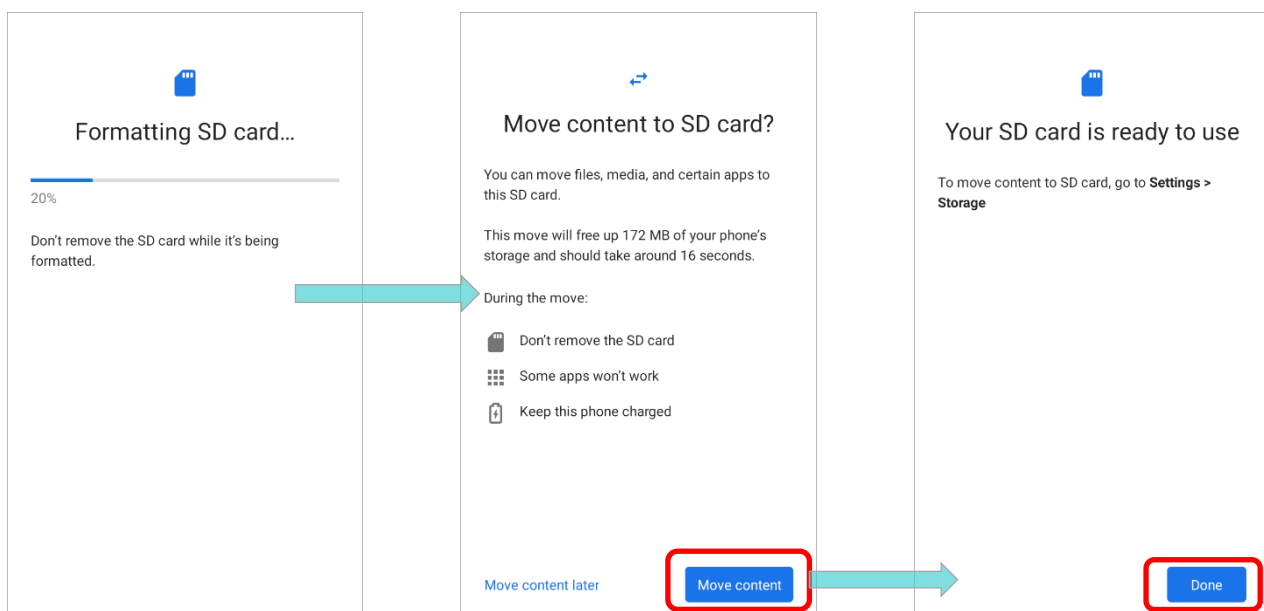
## CONVERT THE SD CARD TO INTERNAL STORAGE

You can always convert the SD Card from portable storage to internal storage. On Storage screen, tap the SD card. Before starting, make a backup of the files on this disk if you'd like to keep them.

- 1) On SD card content screen, tap **More**  and then tap **"Storage settings"**.
- 2) By selecting **"Format as internal"**, the device will eventually format this SD card into a specific file format only readable by this device.
- 3) On **"Format this SD card"** popup window, tap **"FORMAT SD CARD"** to format the card.



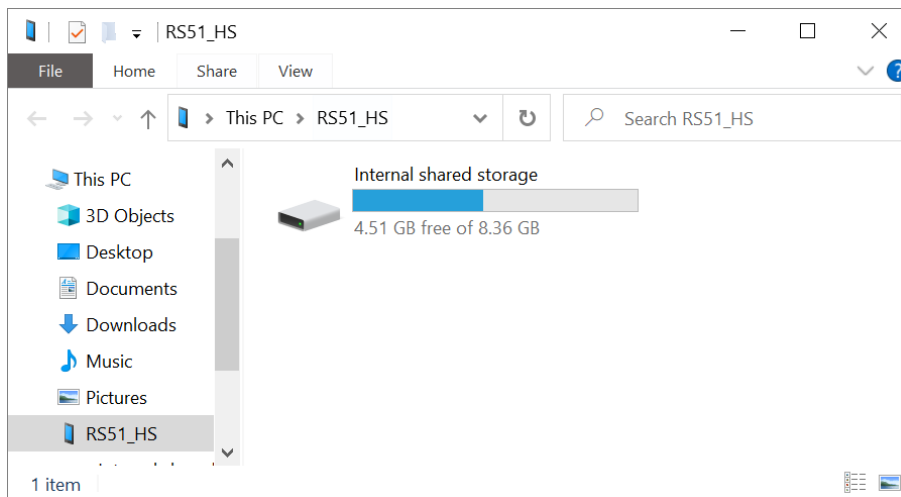
- 4) You will then be asked whether to move multimedia files to this new SD card right away or later; tap to make your choice.
- 5) When the formatting is completed, tap **"DONE"**.



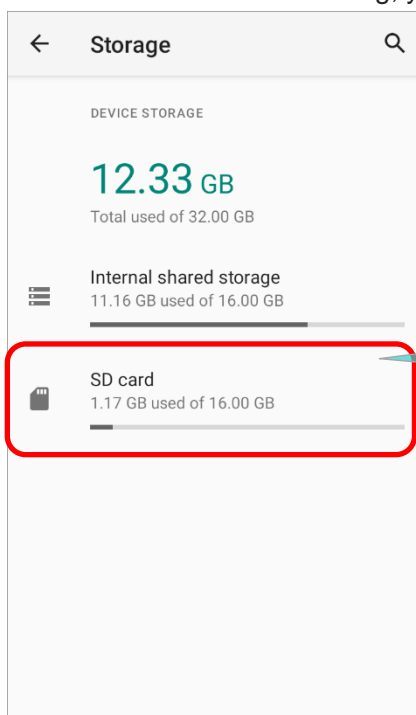
## SET UP SD CARD AS INTERNAL STORAGE


Using SD card as internal storage allows you to extend your existing device storage and to store huge applications. This SD card will be reformatted and encrypted with a file format that is not readable by another device. Therefore, it is essential that you back up important files on this SD card in advance. Please note that if you eject this SD card, the applications and media files stored on it will not be available until you reinsert the card.

When this device is connected with PC, the disk content is not readable from PC client:



On the **Storage & USB** screen, the capacity of this SD card is merged into the total device storage. Please note that. In this setting, you will have no control of which files to be stored on SD card.



To eject this SD card:  
 (1) Select this SD card.  
 (2) On SD card content screen,  
 tap **More**  and then  
 tap "Eject".

### Warning:

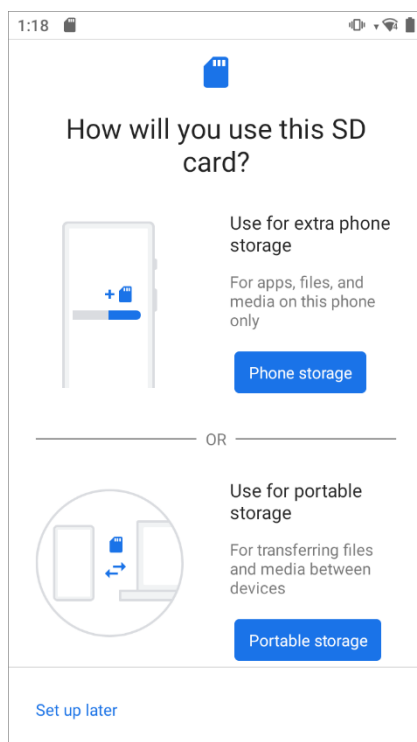
**Do not physically remove the SD card from the device without ejecting this card in advance.**

To start:

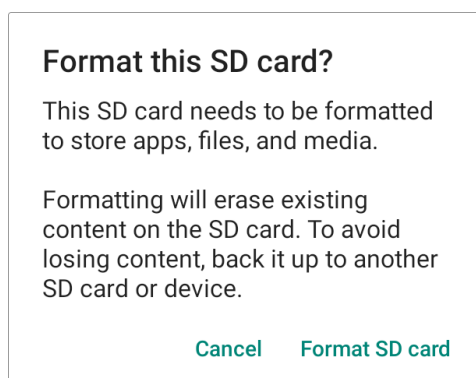
- 1) Insert the SD card. A notification will pop up indicating that an SD card is detected tap **“SET UP”**.



- 2) Tap on **“Phone storage”**.

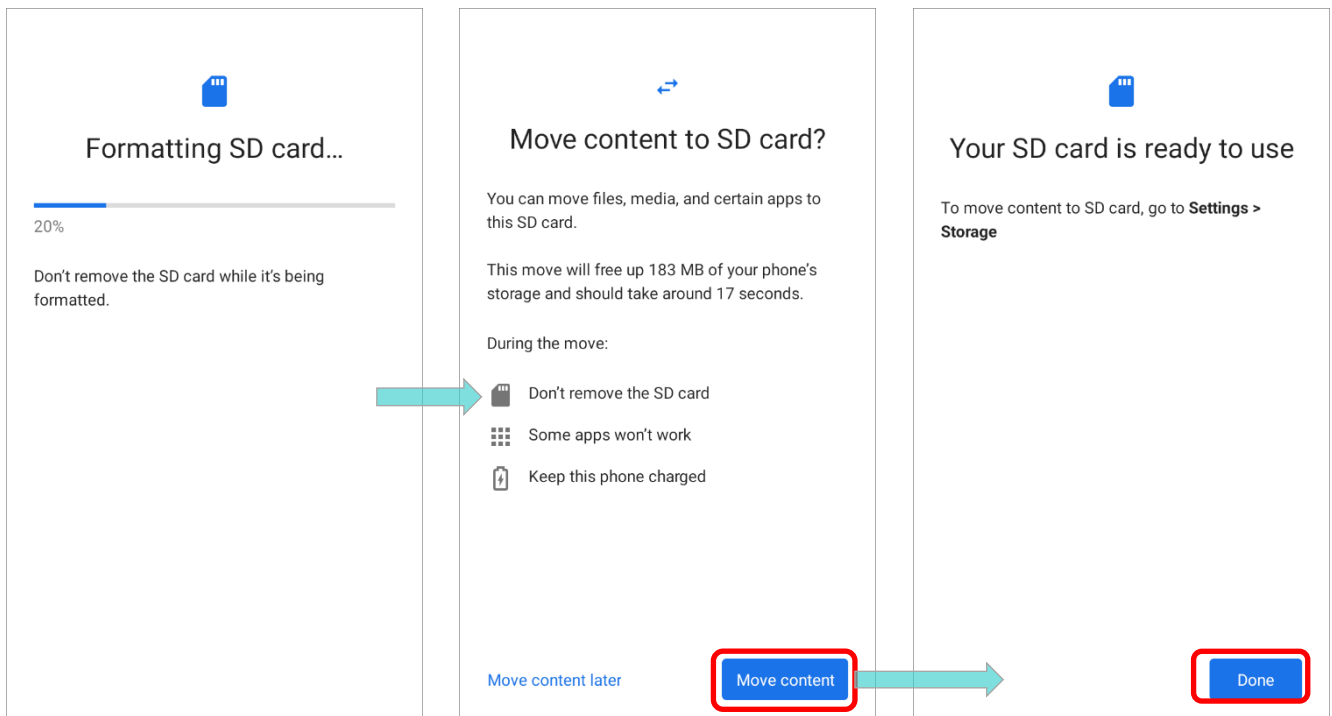


- 3) On the popup window, select **“FORMAT SD CARD”**.



4) You will then be asked to whether to move media files to this new SD card, tap to make your choice.

5) When the setting is completed, tap “**DONE**”.



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**Note:**

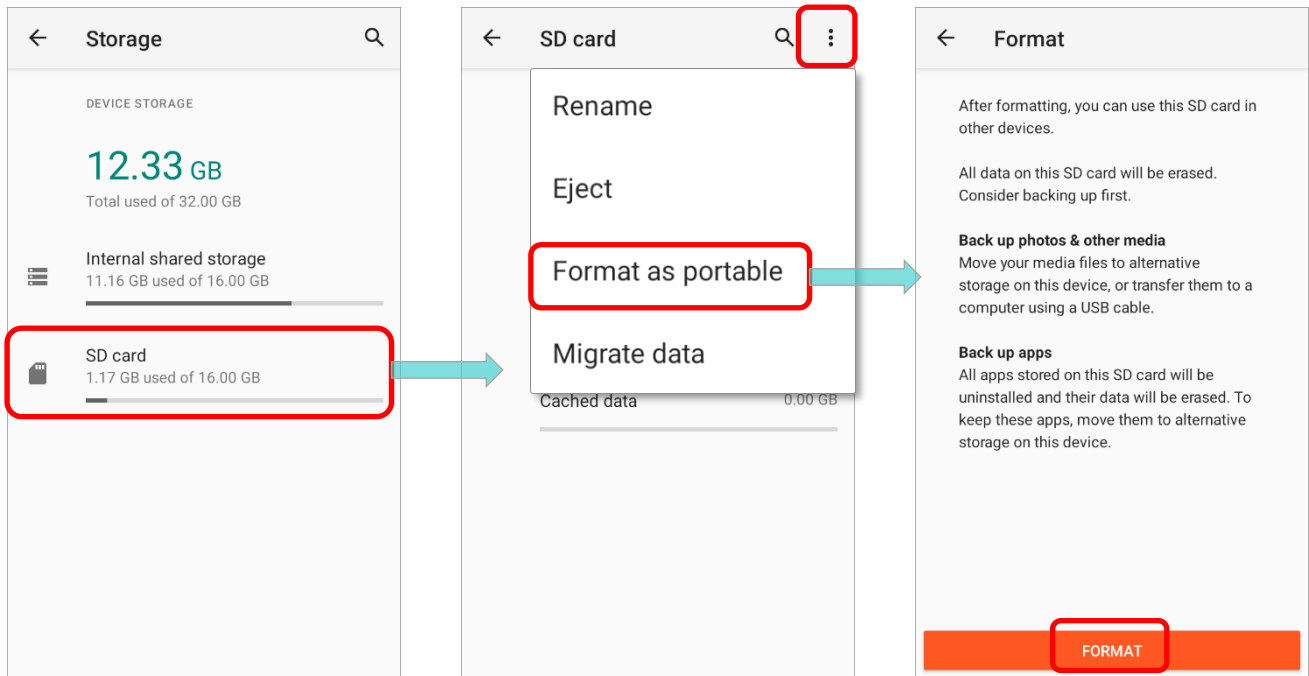
It is recommended that you select “Move content” at Step 4 to have the device immediately start making use of SD card space. If you select “Move content later”, the device will continue to consider device’s original storage the primary location to save files.

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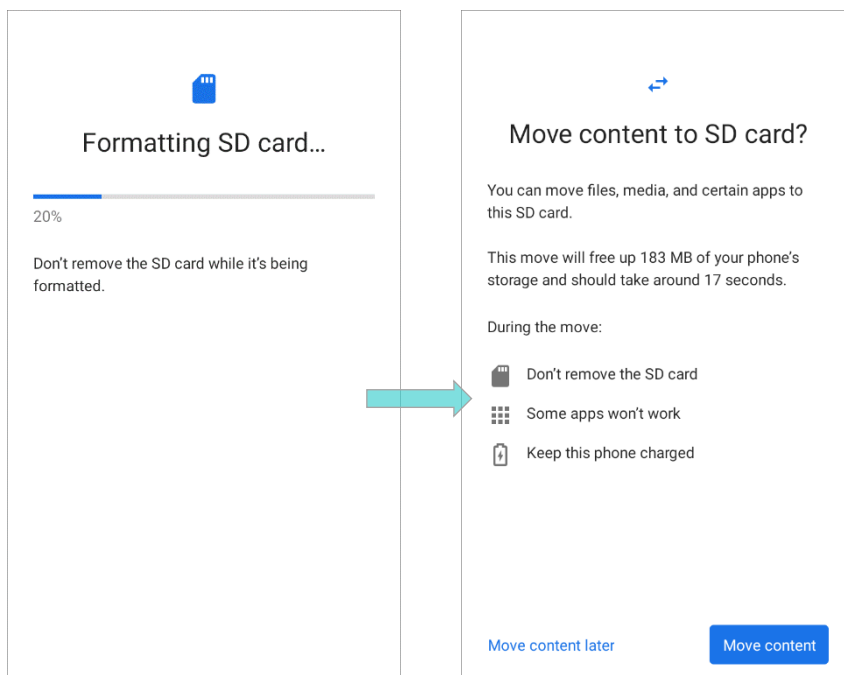
## CONVERT THE SD CARD TO PORTABLE STORAGE

You can always convert the SD Card from internal storage to portable storage. Before you start, make a backup of the files on this disk if you would like to keep them.

- 1) On SD card content screen, tap **More**  and then tap **“Format as portable”**.



- 2) Tap **“FORMAT”** to have this SD card re-formatted into a file type accessible by other devices.



### Note:



**Please do back up important files on this SD card before proceeding formatting.**

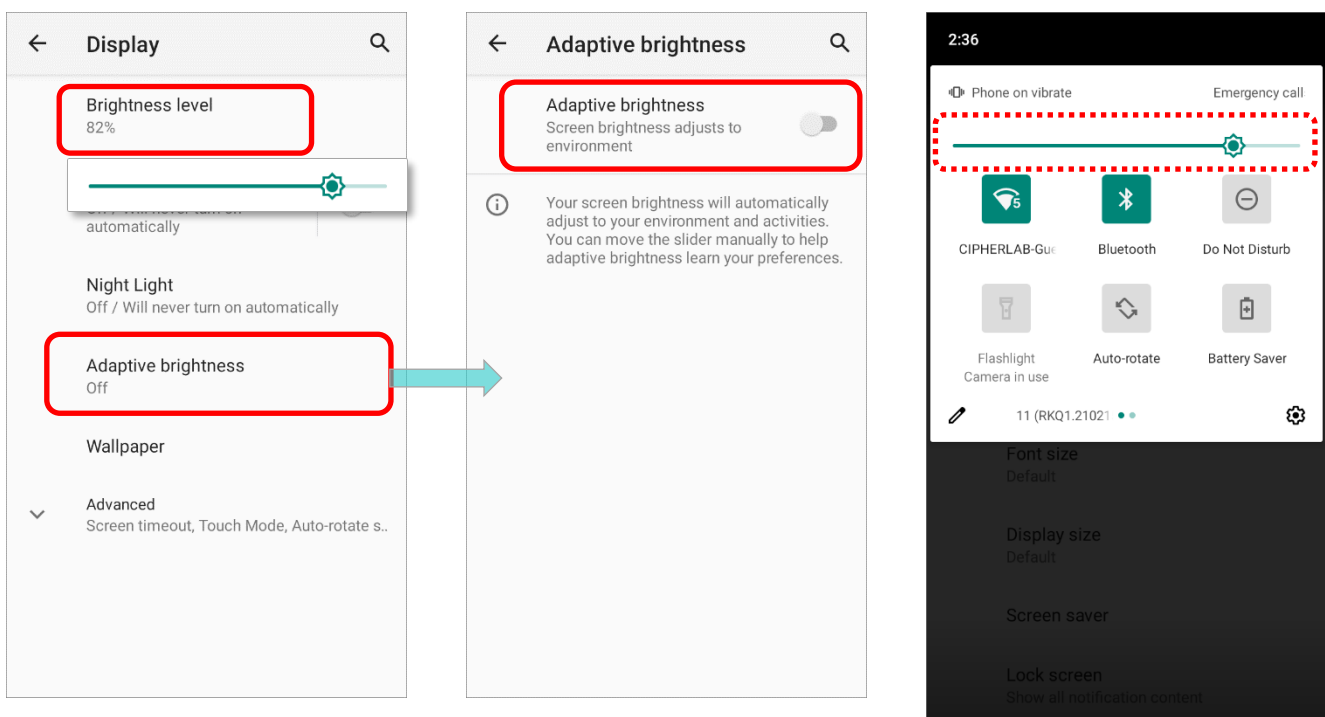
## 2.3. TOUCH SCREEN

The mobile computer comes with a 4.7" transmissive LCD with 1280 by 720 pixels resolution (HD). The LED backlight of the screen, which helps ease reading under dim environments, can be controlled manually and automatically.

**Warning:** DO NOT use any pointed or sharp objects to move against the surface of the screen.

### 2.3.1. SCREEN BRIGHTNESS

- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Display**  | **Brightness level**.
- 2) Adjust screen brightness by dragging the slider to the right (to increase brightness) or left (to reduce brightness). Switch on the **Adaptive brightness** to enable automatic backlight adjustment with the mobile computer's built-in sensor.





You can also use the shortcut button on **Quick Settings menu** to adjust the brightness level.

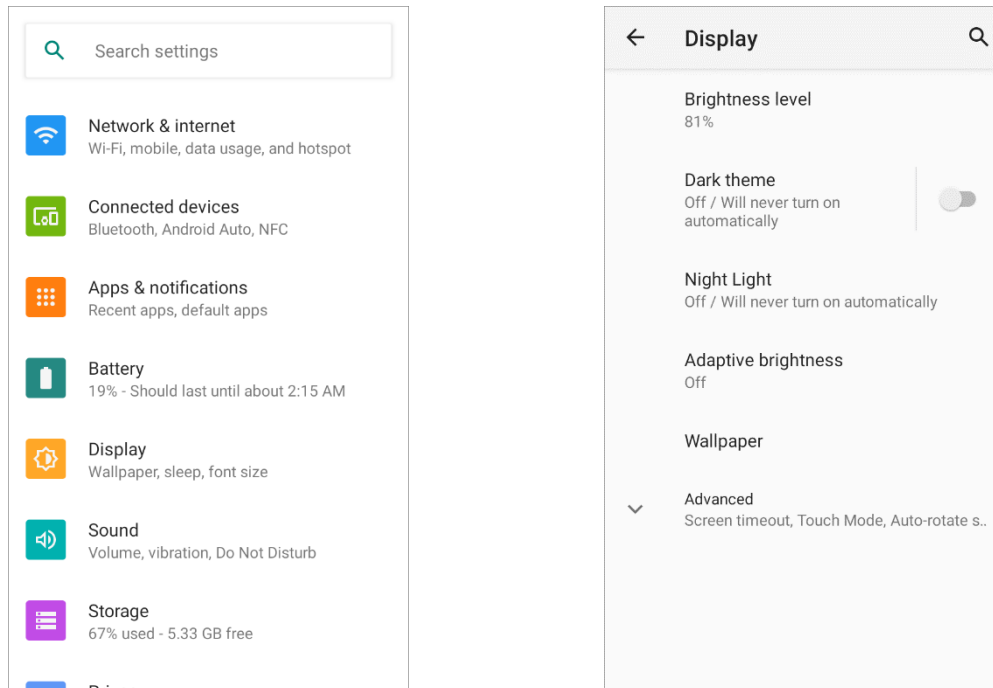
#### Note:

To save battery power, dim the screen brightness while working in a well-lit area, or set a shorter sleeping plan for the screen backlight to go off.

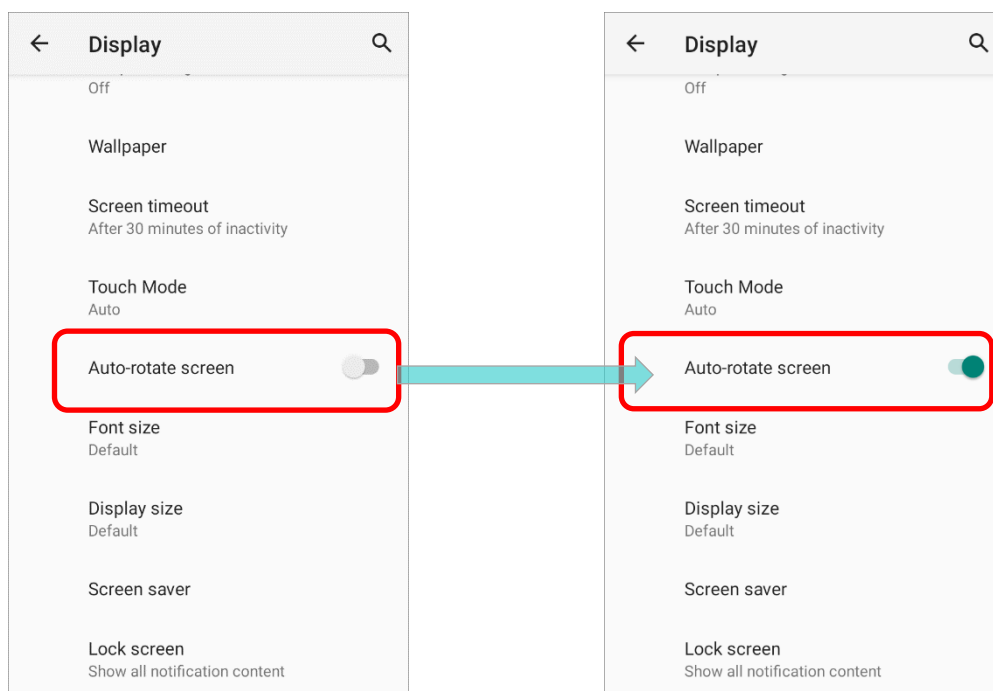
### 2.3.2. SCREEN ROTATION

By default, the device automatically rotates the screen to when you turn the device sideways. To switch this function on or off:

- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Display** , and then tap **Advanced** for more display settings.




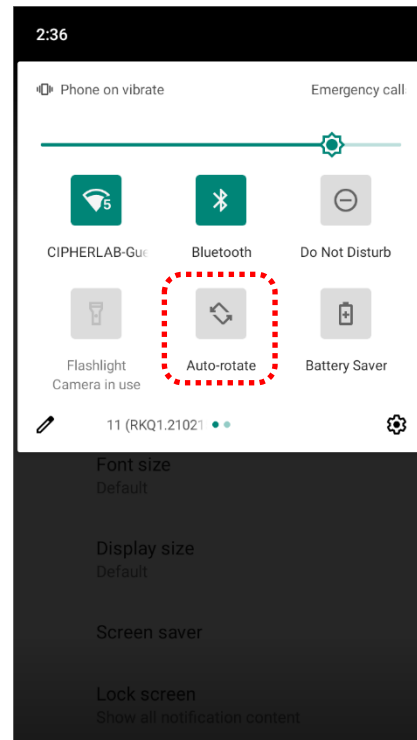
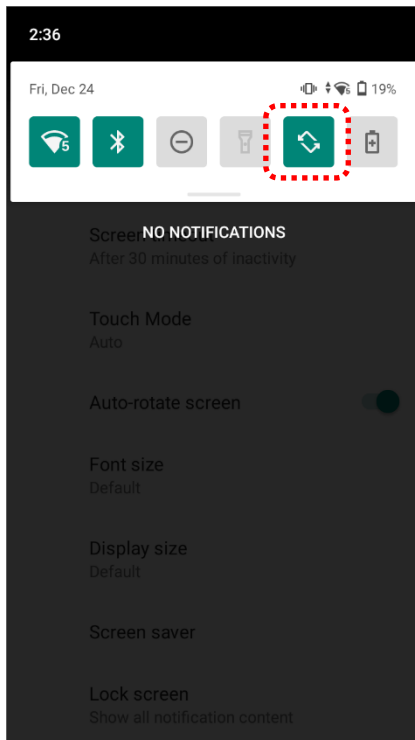
- 2) Switch on or off **Auto-rotate** screen.







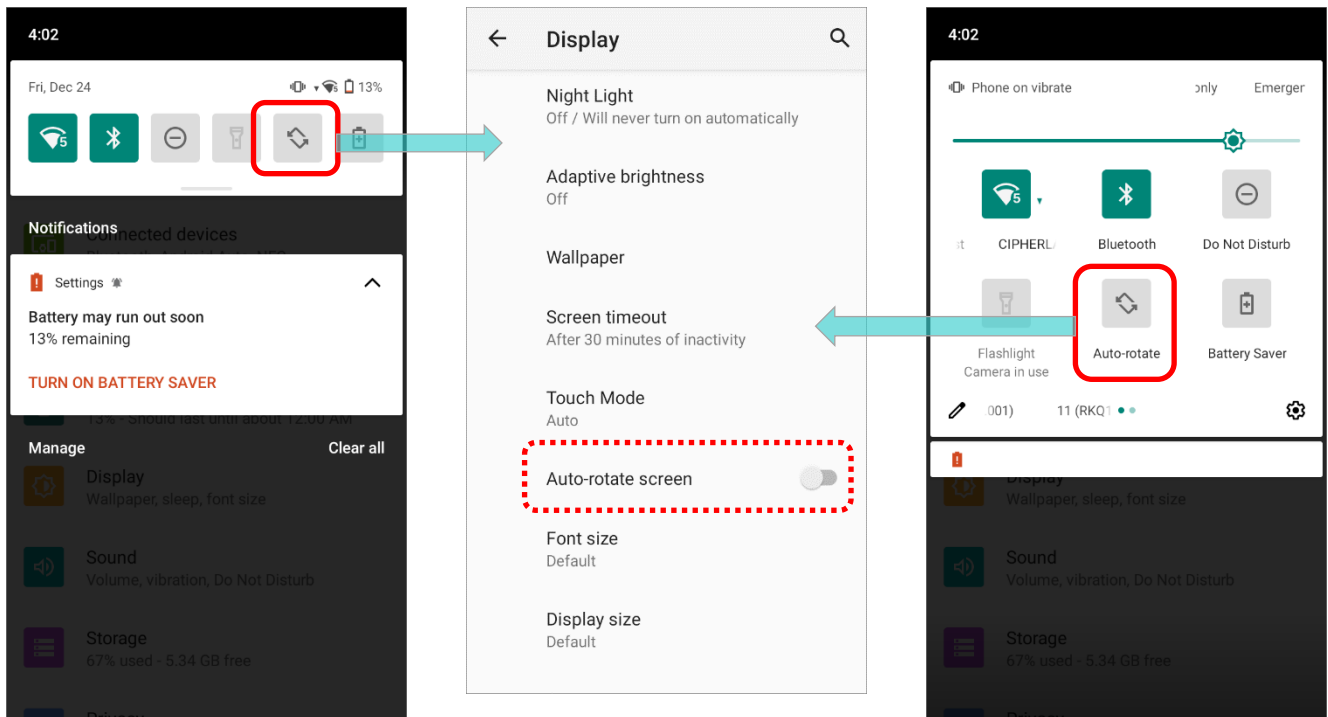
OR

Swipe down from the top of the screen to open **Quick Settings Panel** or **Quick Settings Menu** and tap the **Auto rotate** icon  to enable screen rotation.



Icon	Description
	Auto rotate mode is <b>OFF</b> .
	Auto rotate mode is <b>ON</b> .

You can enter “**Display**” page to enable or disable screen rotation by long pressing the **Auto rotate** icon on **Quick Settings Panel** or **Quick Settings Menu**.



## HOME SCREEN ROTATION


To enable Home screen rotation, please make sure **Auto Rotation** is enable.

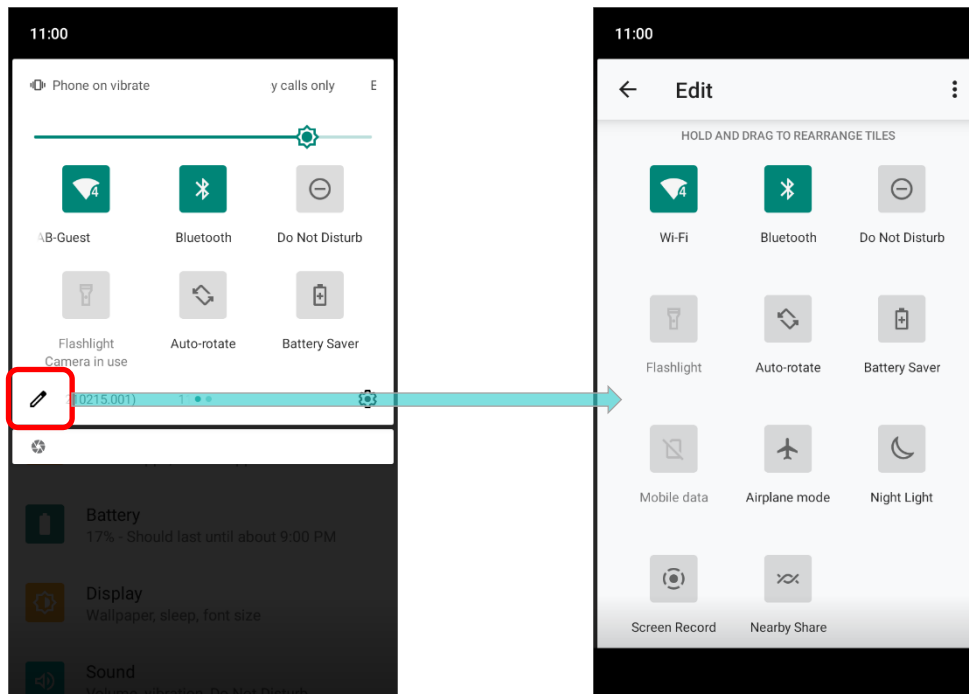
- 1) Press any empty spot on Home screen.
- 2) Tap “**Home Settings**” and enable “**Allow Home screen rotation**”.



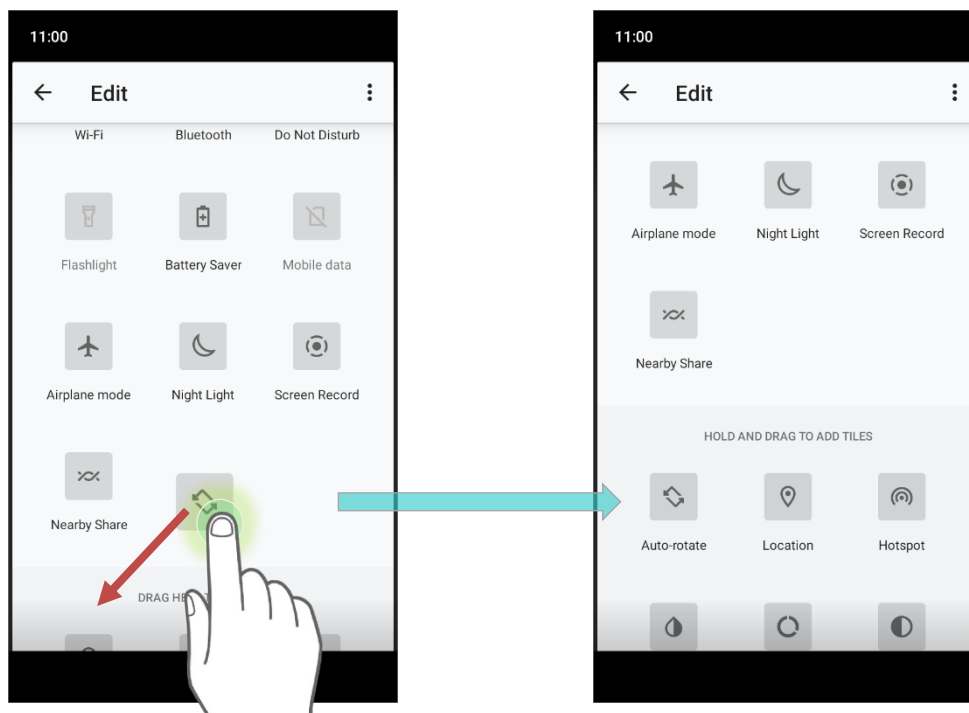
## REMOVE AUTO-ROTATE FROM QUICK SETTINGS MENU & DISPLAY SETTINGS

You can remove the **Auto-rotate** switch icon on Quick **Settings menu** to minimize the possibility of accidentally turning on the auto-rotation function:

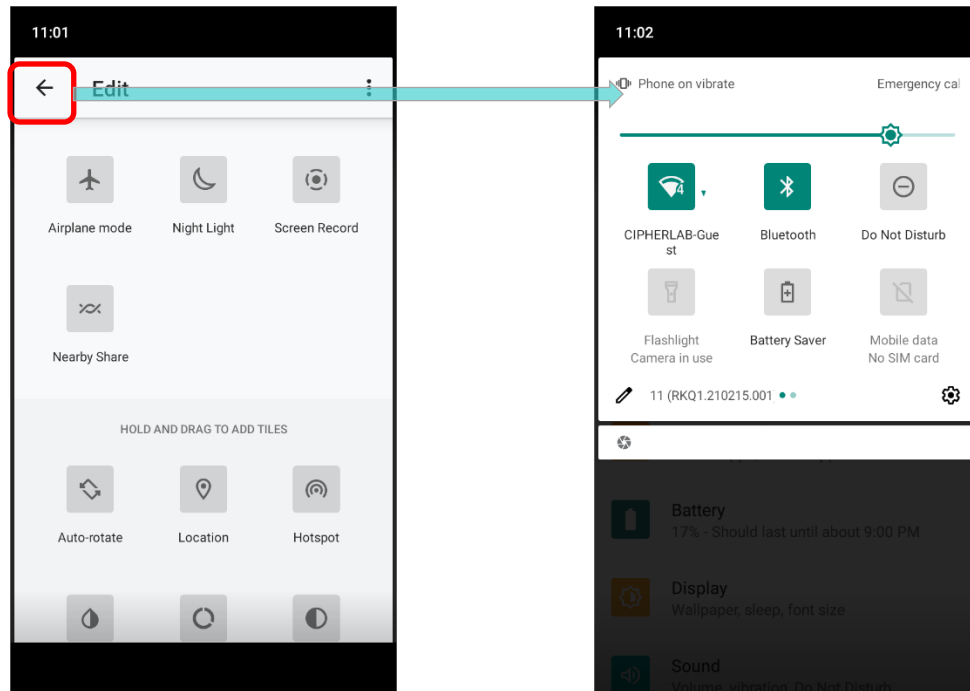
- 1) Swipe down from the top of the screen to open **Quick Settings menu**, and click on  button to get into **Edit** page.







- 2) Tap on and hold the **Auto-rotate** switch icon, and drag it to the “**Drag here to remove**” area and then release it.



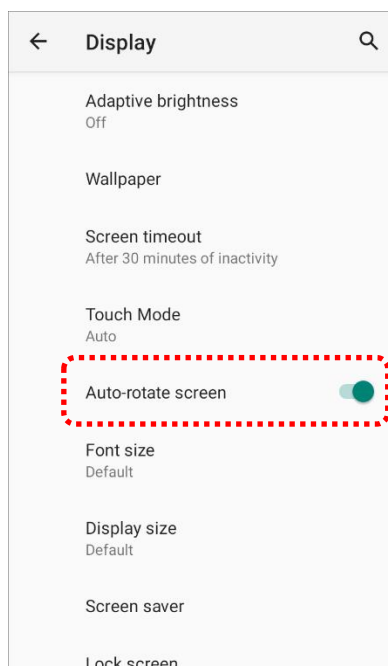
3) Return to the **Quick Settings** menu, the Auto rotate switch icon is now hidden.



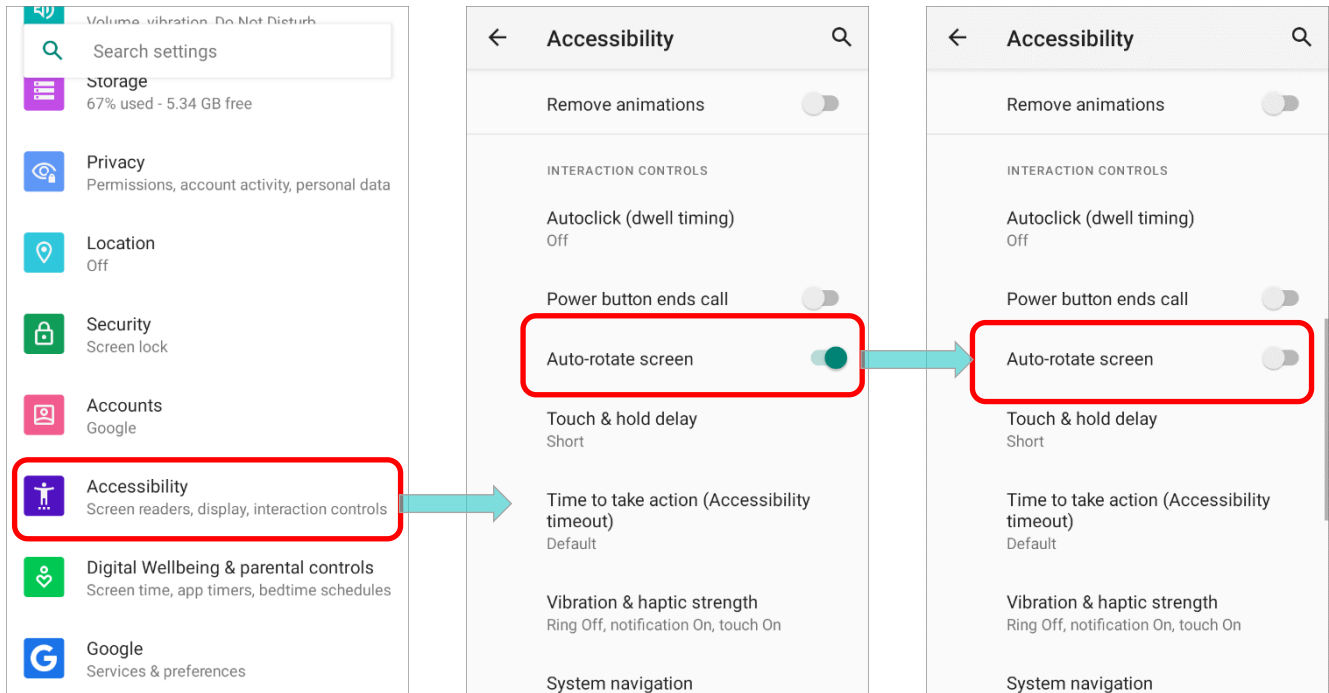
## REMOVE AUTO ROTATION FROM DISPLAY SETTINGS

Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Accessibility**  and switch off **Auto-rotate screen**. By doing so, the auto-rotation option will be hidden in **Settings**  | **Display** .

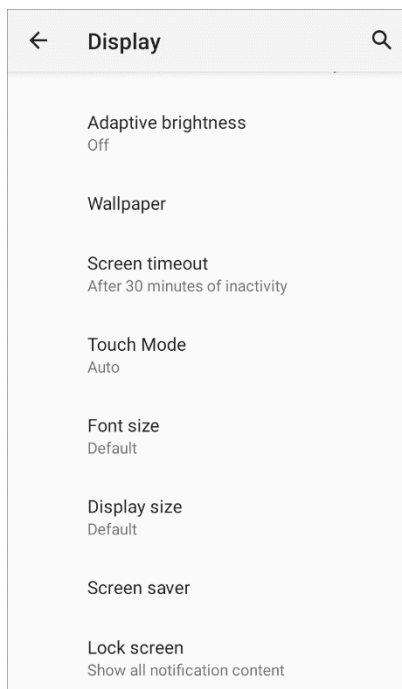
- The original “Display” page where the function “Auto-rotate screen” is listed on.



- Switch off “Auto-rotate screen” on “Accessibility” page.



- Now the function “Auto-rotate screen” is hidden on “Display” page.

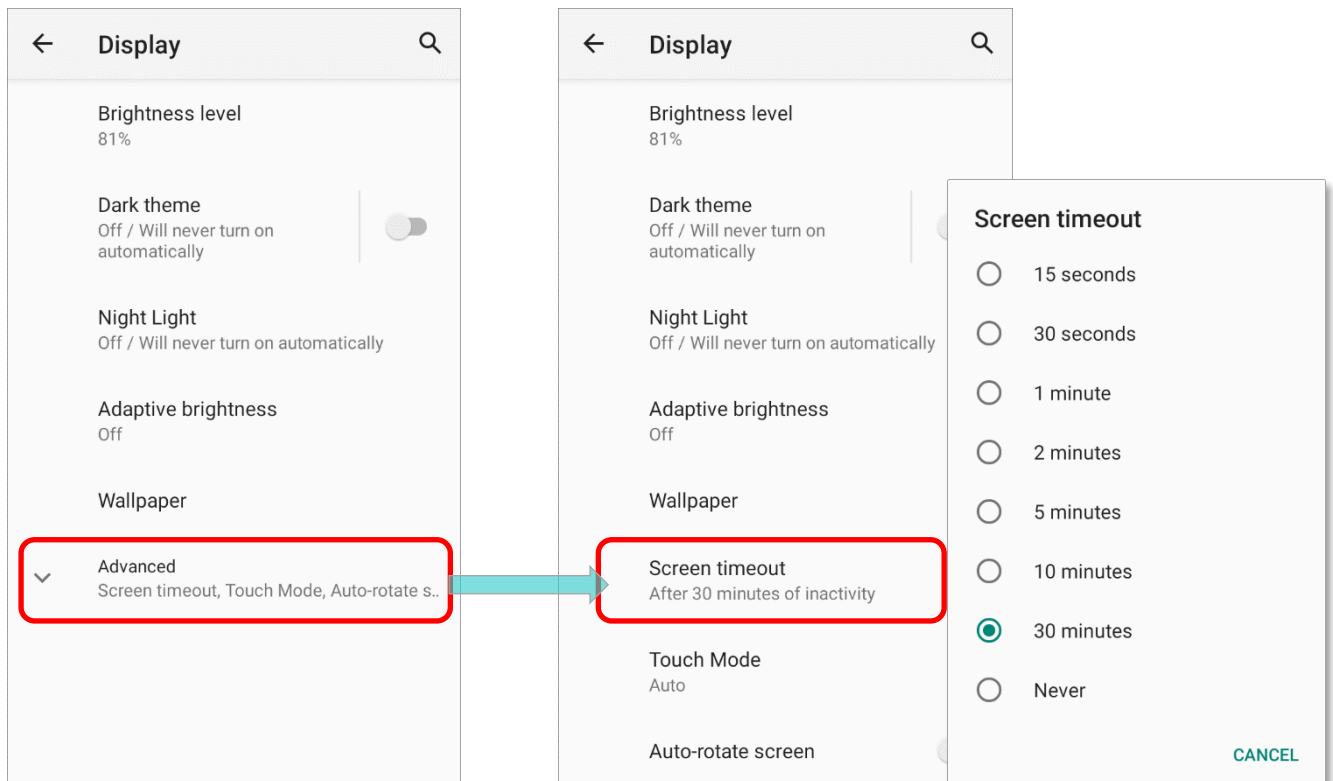


**Note:** Auto-rotation is not supported for certain applications. Without enabling “[Allow Home Screen Rotation](#)”, auto-rotation is inapplicable in Home Screen and App Drawer screen.


### 2.3.3. SCREEN TIMEOUT SETTINGS



Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Display**  | **Advanced** | **Sleep**.

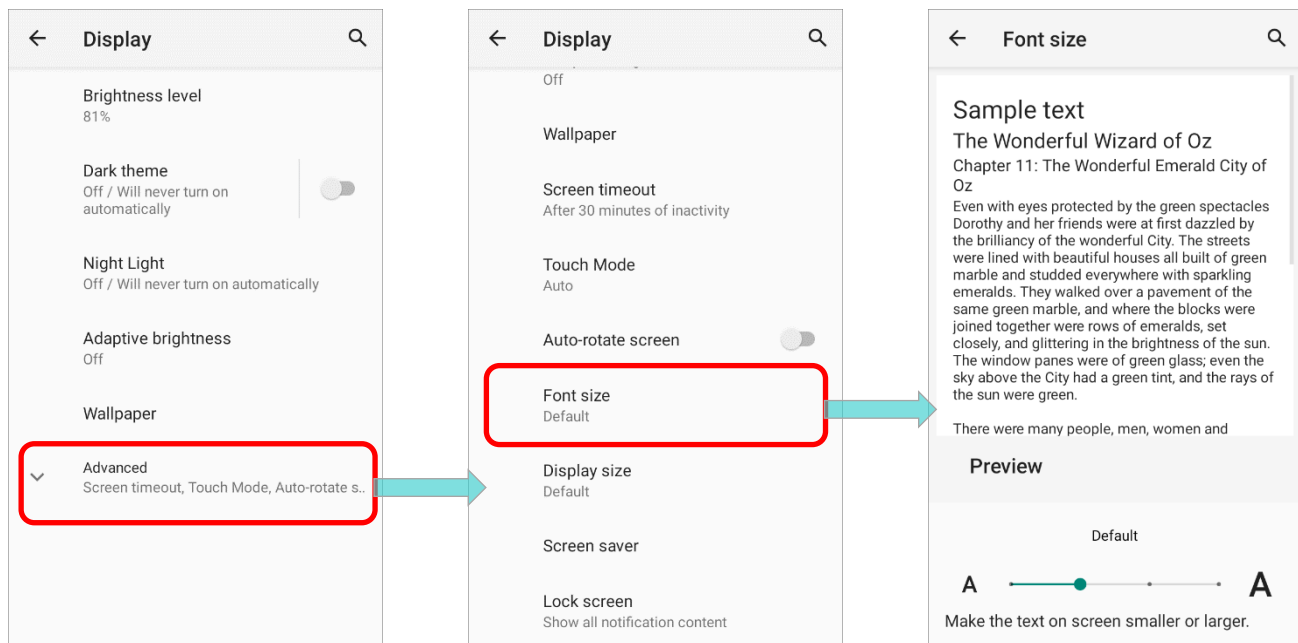
Select the time lapse for screen timeout.



### 2.3.4. TEXT SIZE & DISPLAY SIZE

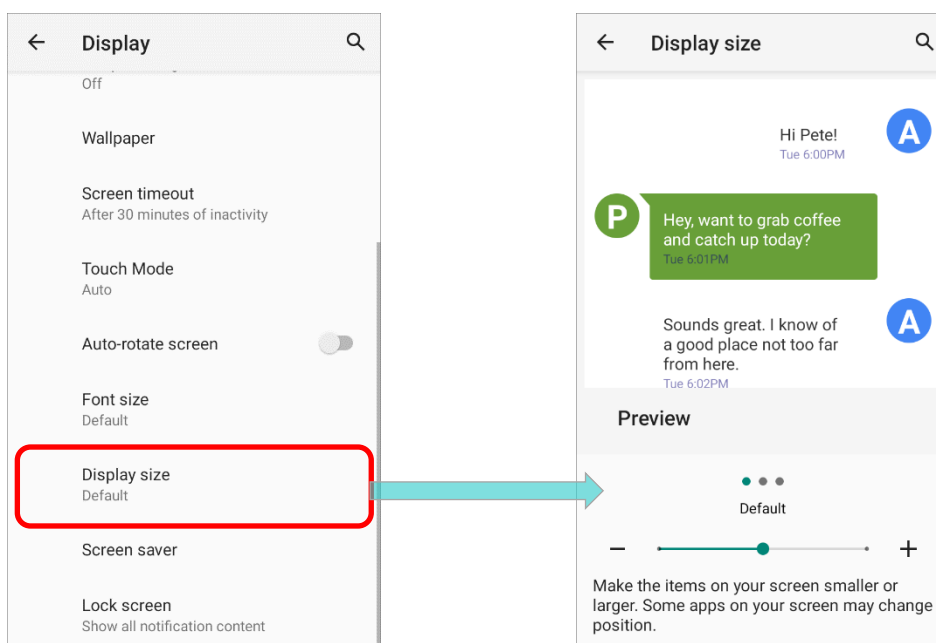
To change text size, please go to [App Drawer \(All Apps\)](#) | **Settings**  | **Display**  | **Advanced** | **Font size**.

Tap the small A icon  or the large A icon  to select the font size between **Small**, **Default**, **Large** and **Largest**.



Tap to enter **Display size**, and then select the display size as **Small** or **Default** by the plus icon

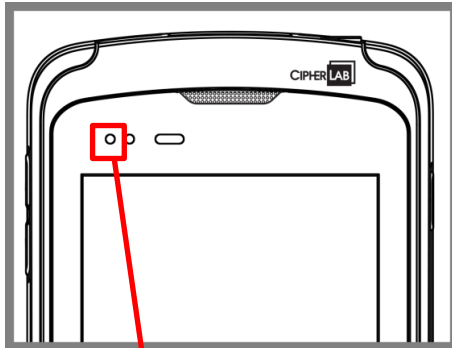
 or the minus icon .



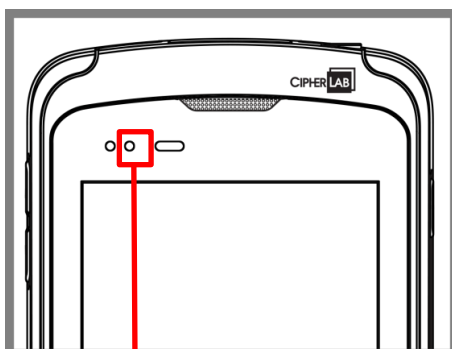
## 2.4. NOTIFICATIONS

### 2.4.1. STATUS LED

Two LED indicators located above the touch screen provide information about charging status, scanner light beam, and scanner **"Good Read"** during data collection.



Indicator	Status	Description
Charging	Green, solid	Charging complete
	Red, solid	Charging the mobile computer
	Red, blinking	Charging error (for instance, battery not in place)
Backup battery power being used	Red, solid	Upon the removal of the main battery the red light is on for a while and then goes off to signal that the main battery is ready to be removed.



Indicator	Status	Description
Barcode or RFID tag decode	Green, flash once	Good read

**Note:** For Scanner decode and Scanner beam LED to function, LED notification must be enabled in Reader Configuration.



## 2.4.2. AUDIO

The speaker is used to play sounds for events, or play audio files. In addition, it can be programmed for status feedback. In noisy environments, you may consider connecting a headset instead. A headset jack is provided on the top of the mobile computer, which is a 3.5 mm DIA stereo earphone jack. The mobile computer also supports using Bluetooth headsets.

Supported audio file formats include: WAV, MP3, AAC, AAC+, Enhanced AAC+, AU (including ADPCM), Midi, XMF, AMR (NB and WB).

Use the volume buttons on the side of the mobile computer to adjust the system volume.




## 2.4.3. SOUNDS AND VIBRATION

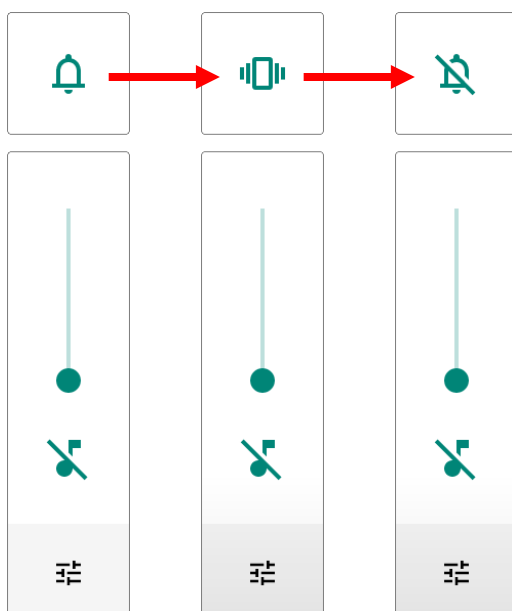
The mobile computer is integrated with a vibrator, which is software programmable for tactile feedback. This can be helpful when working in noisy environments.




You may also set the mobile computer to vibrate only, in which all system sounds will be muted and replaced by the vibrator.

### QUICK SOUND MENU

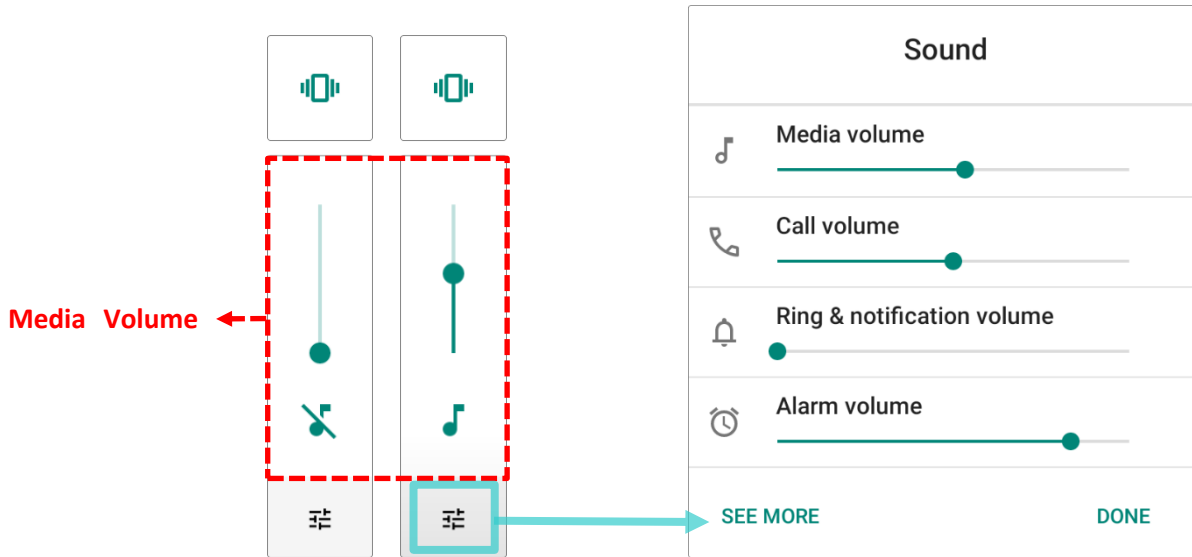
On any screen, press down **Volume Up** or **Volume Down** key to open quick sound menu.


Tap on the icon  or  or  to switch between ringing, vibration, and mute.



Item	Description
	Calls and notifications will ring.
	Calls and notifications will vibrate.
	Calls and notifications will be muted.

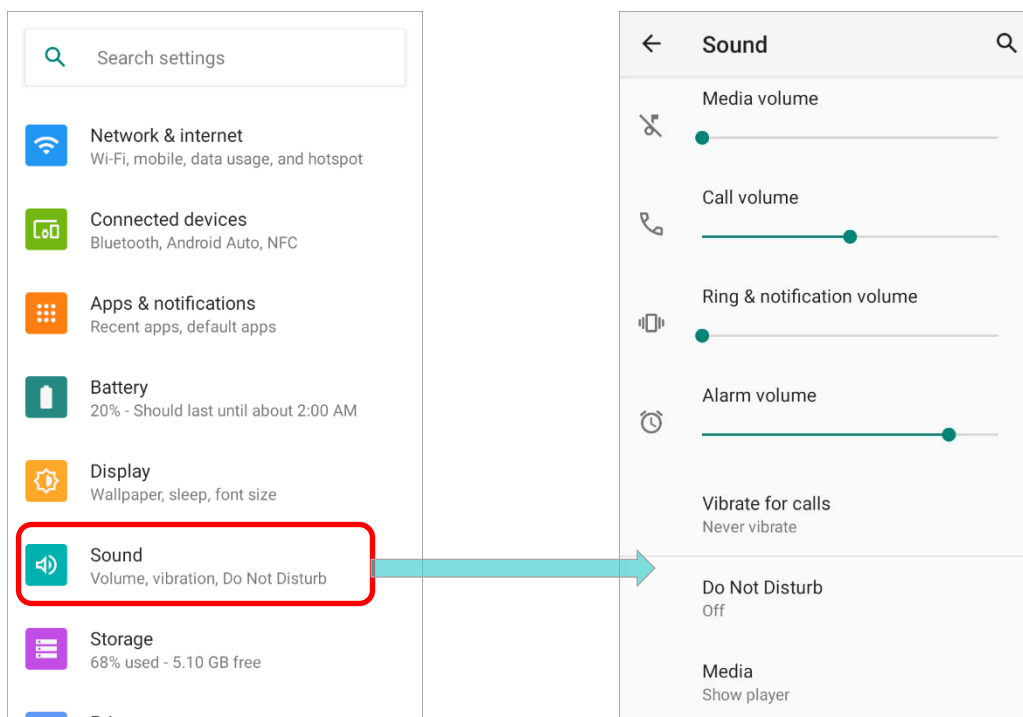
The media volume can be adjusted by pressing the **Volume Up** or **Volume Down** key, or dragging the slider on quick sound menu.



Tap on the settings icon  to open the pop-up volume panel; tap on “**SEE MORE**” will directly enter the Sound Settings page.

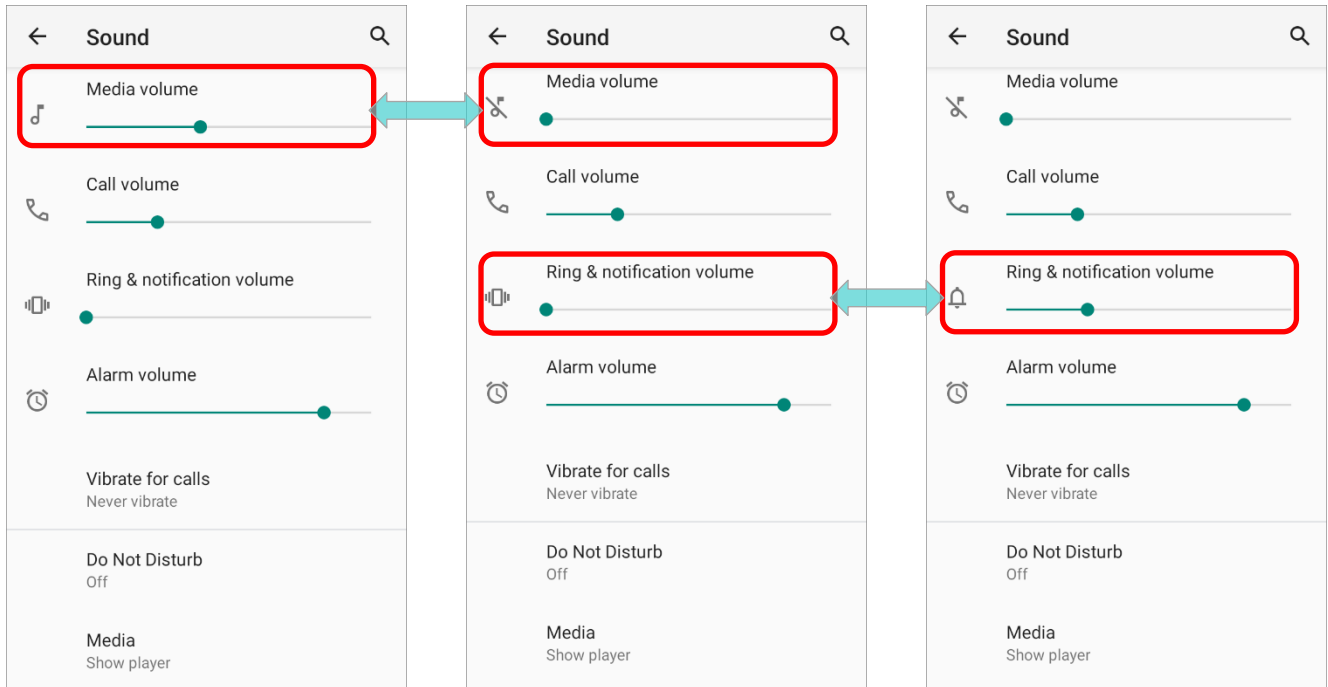
## SOUND SETTINGS

Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Sound**  for more sound settings.

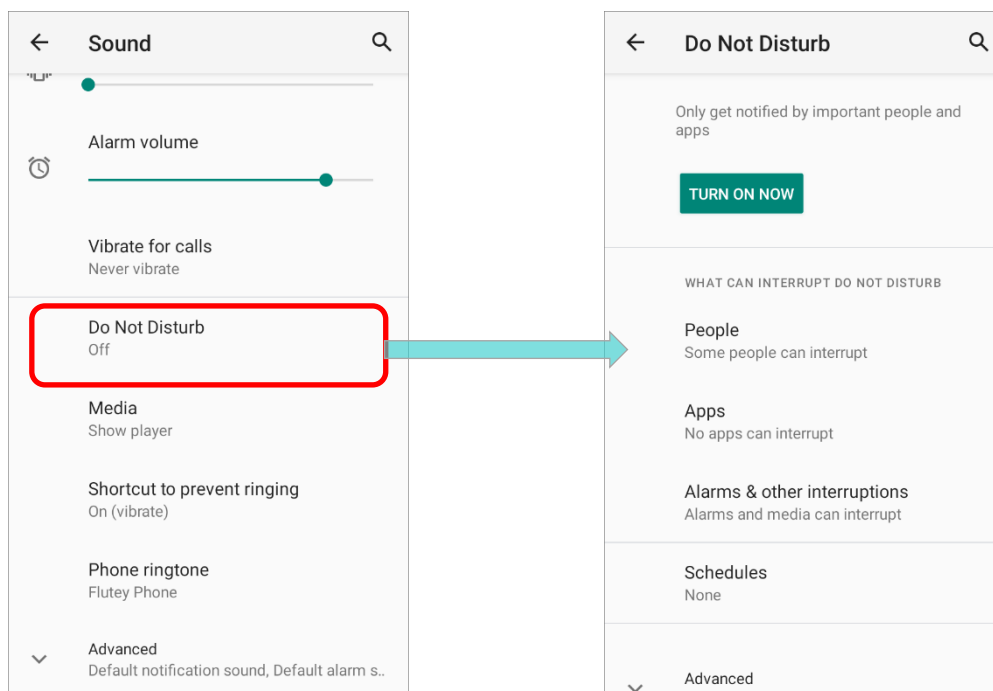


On “**Sound**” settings page, you can:

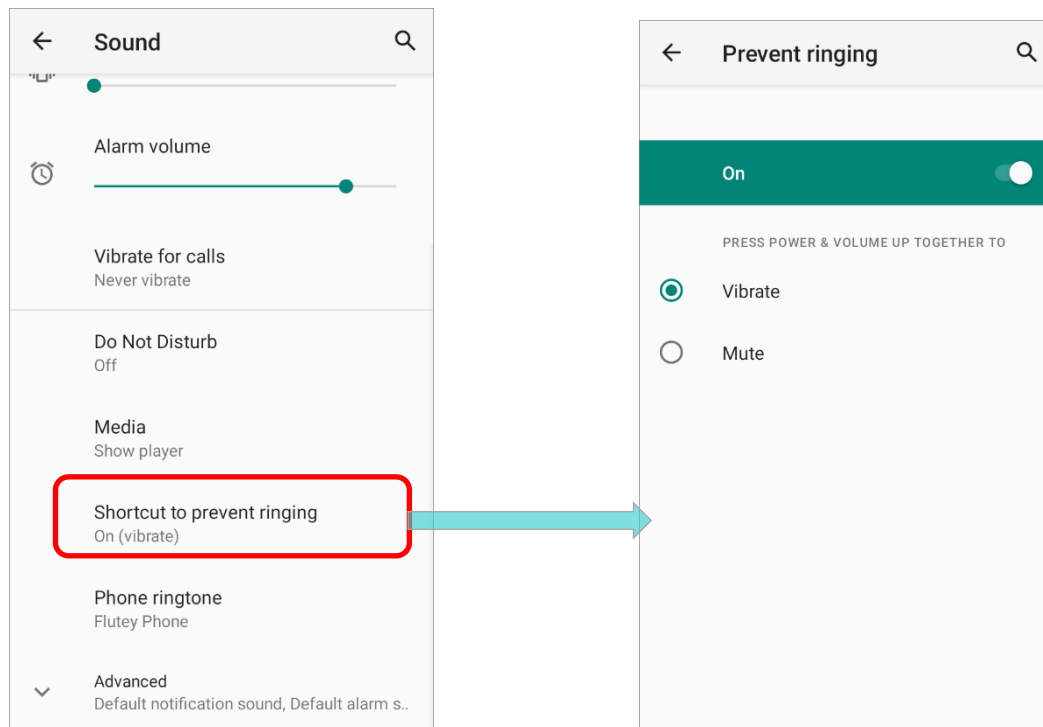
- Adjust the volume for **media** 🎵, **call** 📞, **ring** 🔔, and **alarm** ⌚ by dragging the sliders.
- The **media** icon turns to be 🔇 if it is off while the **ring** icons turns to be 🔊 to indicates it is off.



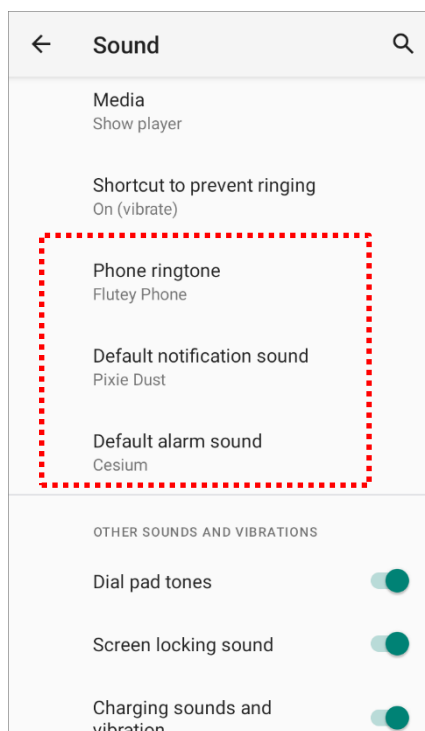
- Enter “**Do Not Disturb**” for its detailed settings.



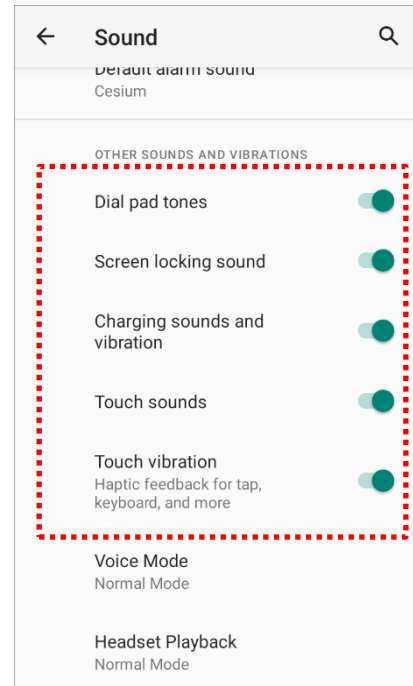
- Set the shortcut to prevent ringing.



- Select the sound for “**Phone Ringtone**”, “**Default notification soud**” and “**Default alarm sound**”.



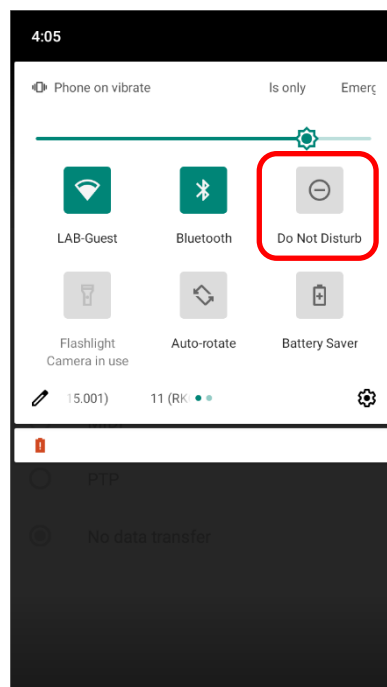
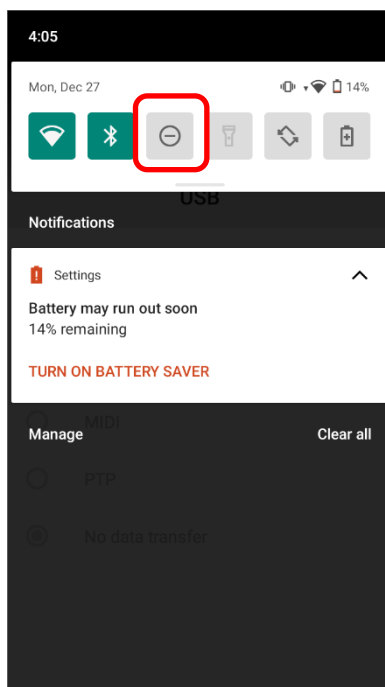
- Turn on or off the switch of the items under “**Other sounds and vibrations**”.



### DISABLE UNWANTED NOTIFICATIONS WITH “DO NOT DISTURB”

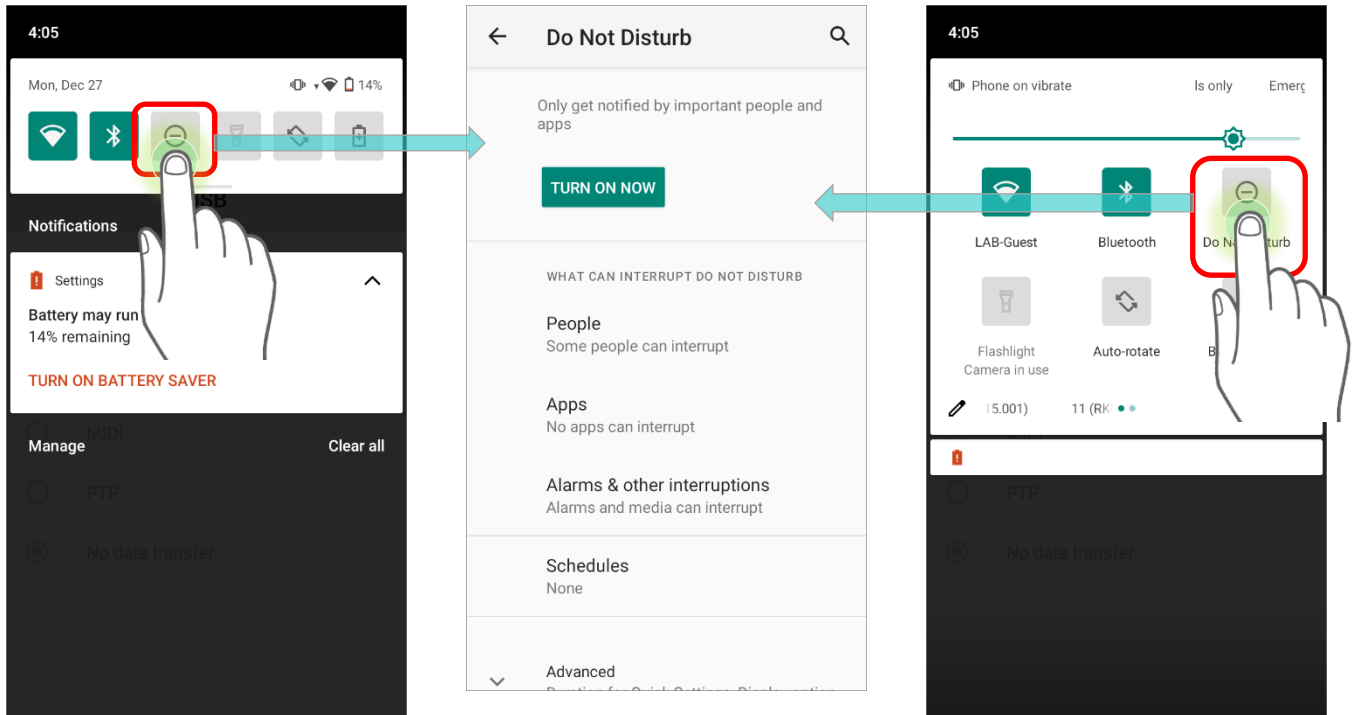
You can temporarily disable specific notifications (vibration or sound) using “**Do Not Disturb**” in Quick Settings menu. What’s more, you can schedule the duration of the disabled status so that the notifications will switch to enabled state automatically based on your arrangement.

Swipe down from the status bar to open **Quick Settings Panel** or **Quick Settings Menu**, tap on “**Do not disturb**” to enable this feature and make further adjustment.

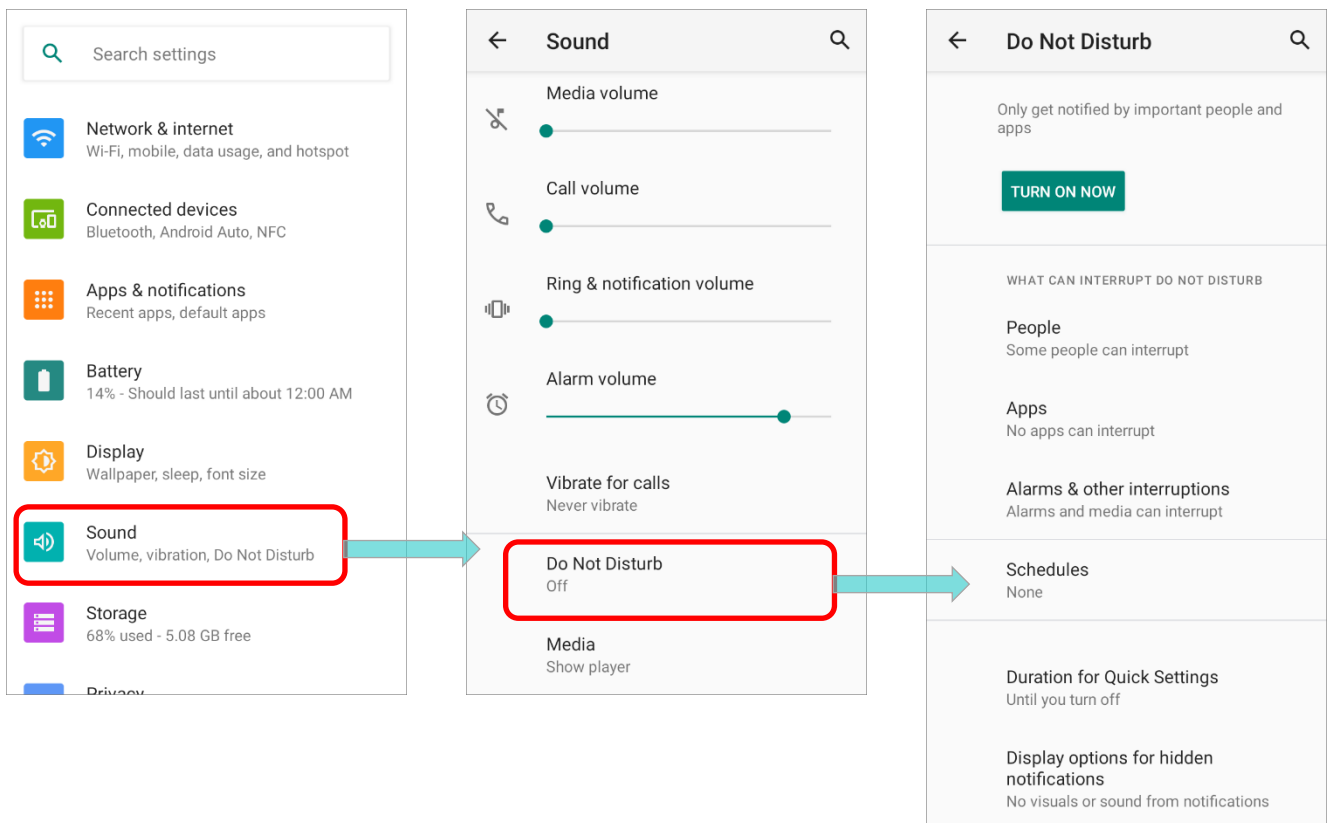


Icon	Description
	DND mode is <b>OFF</b> .
	DND mode is <b>ON</b> .

You can enter “Do Not Disturb” page for further settings by long pressing the **Do Not Disturb** icon on **Quick Settings Panel** or **Quick Settings Menu**.



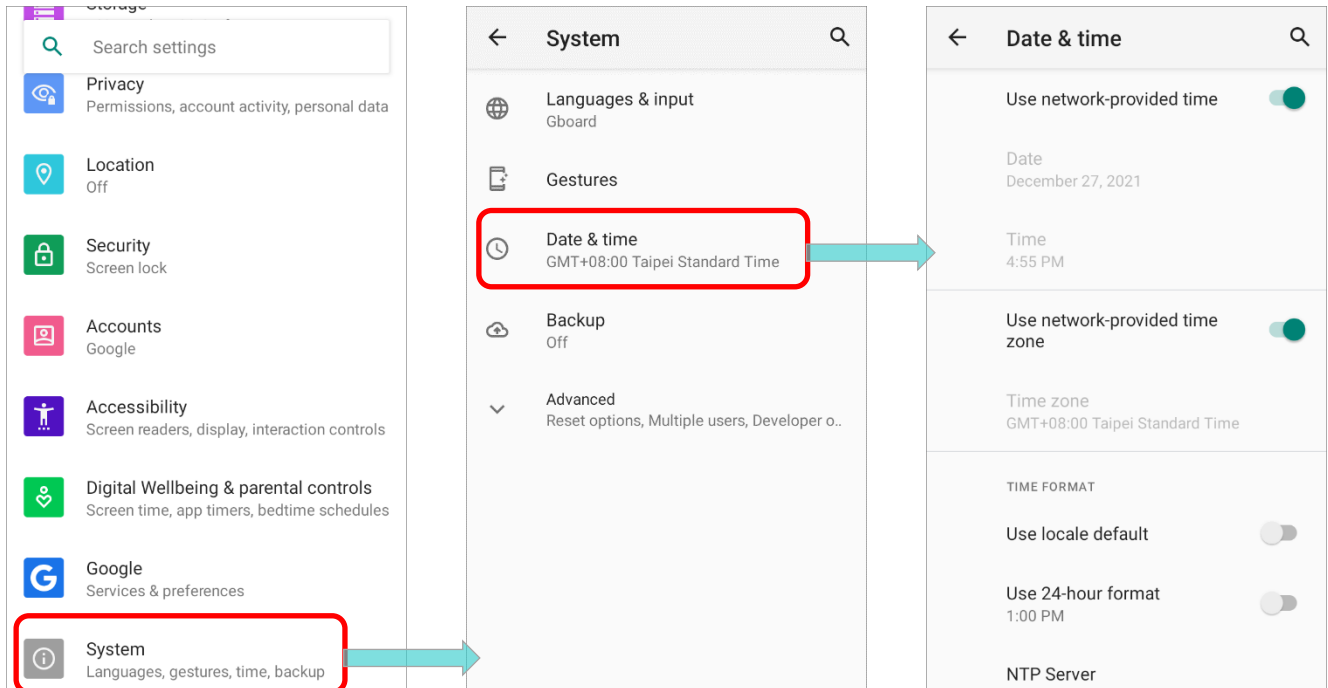
OR go to [App Drawer \(All Apps\)](#) | **Settings**  | **Sound**  | **Do Not Disturb**



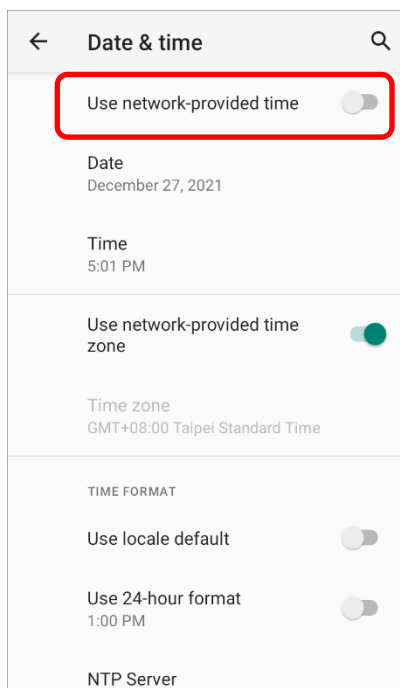
## 2.5. DATE AND TIME

By default, the mobile computer automatically synchronizes the date and time to the WWAN network (if connected). To set the date and time manually:

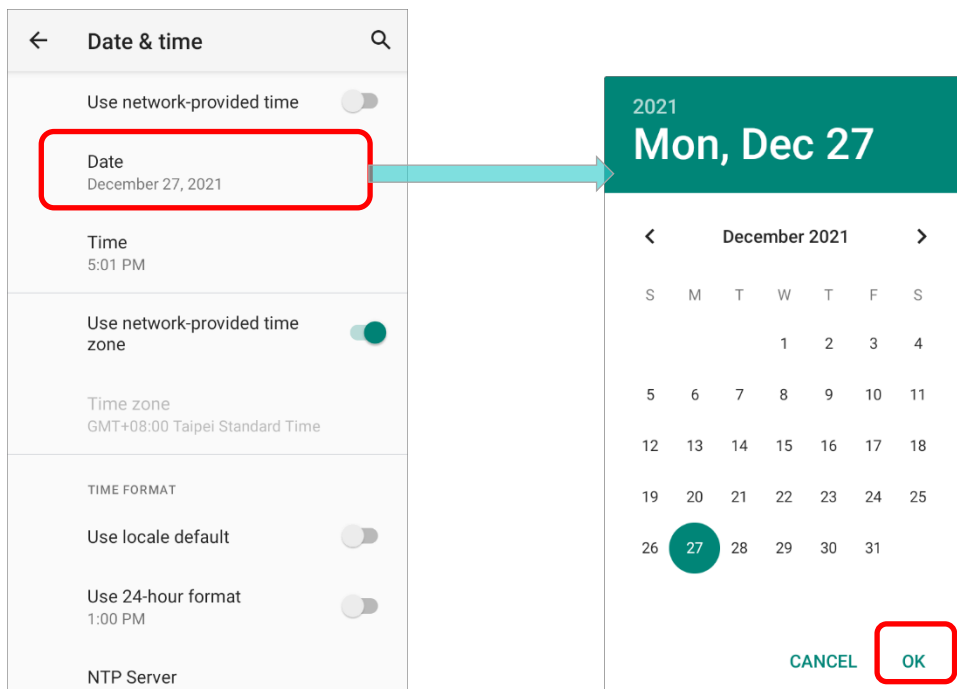
- 1) Tap [App Drawer \(All Apps\)](#) | **Settings**  | **System**  | **Date & time** 



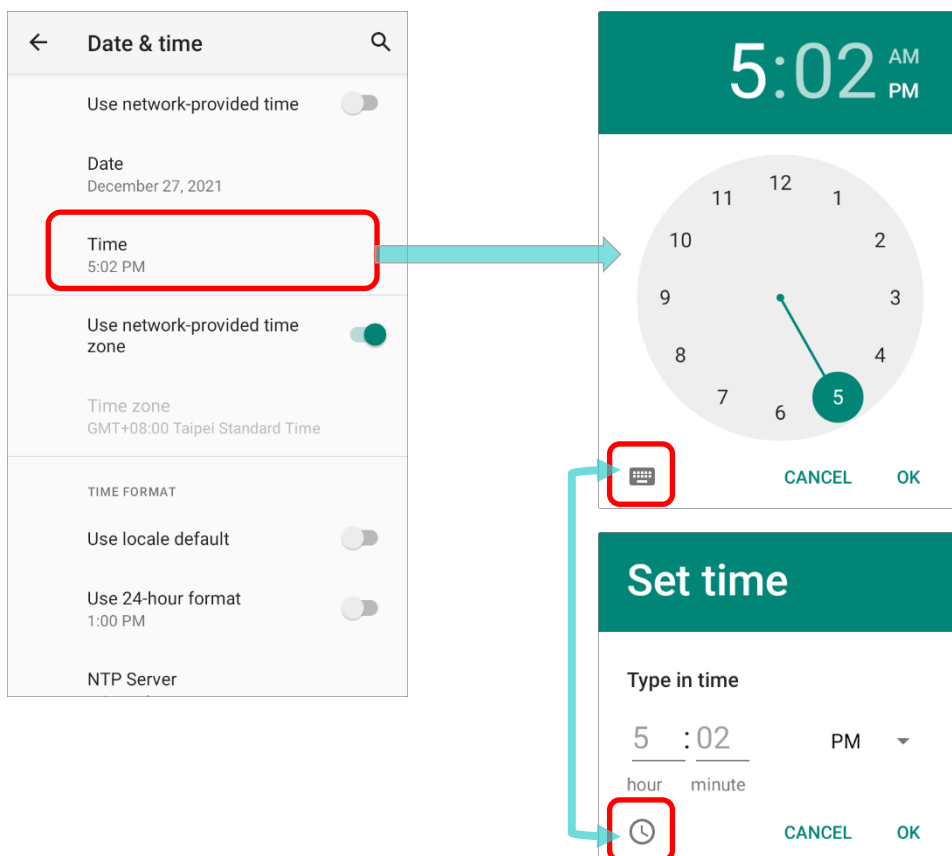
- 2) Tap to turn off **Automatic date & time** to disable using network-provided time.



3) Tap on **"Set date"** to select the correct month, date and year. Tap **OK** to save.

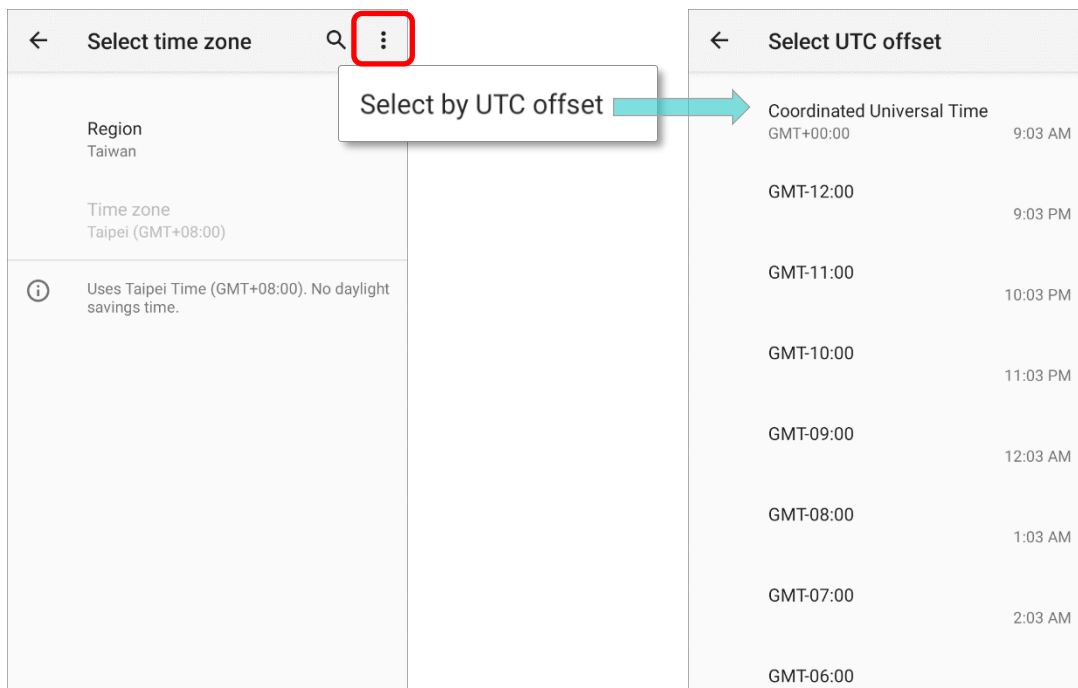
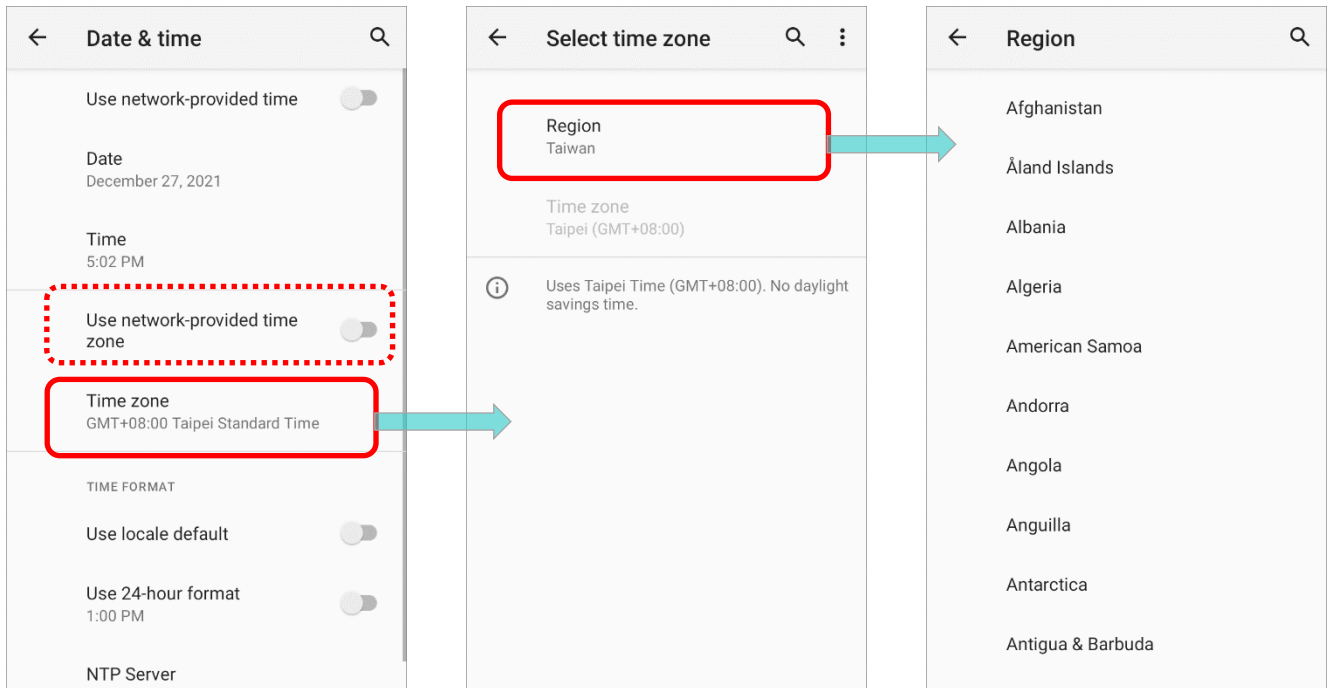


4) Tap on **"Set time"** to set the correct time. Tap **OK** to save.








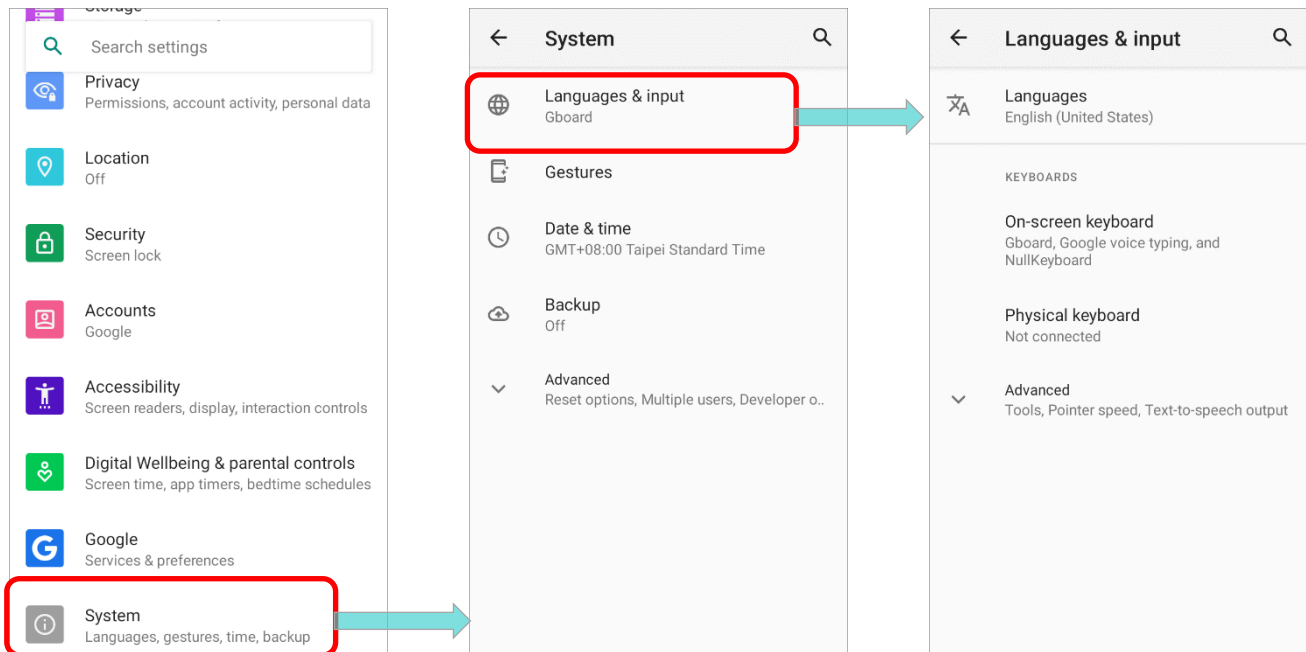
- 5) Disable “**Automatic time zone**” and then tap on “**Select time zone**” to select the correct time zone from the list.



- 6) Disable “**Use locale default**” and tap “**Use 24-hour format**” to switch on or off to change the displayed time.
- 7) Tap “**NTP Server**” to input NTP server address and tap **OK** to save.

## 2.6. LANGUAGE & KEYBOARD INPUT

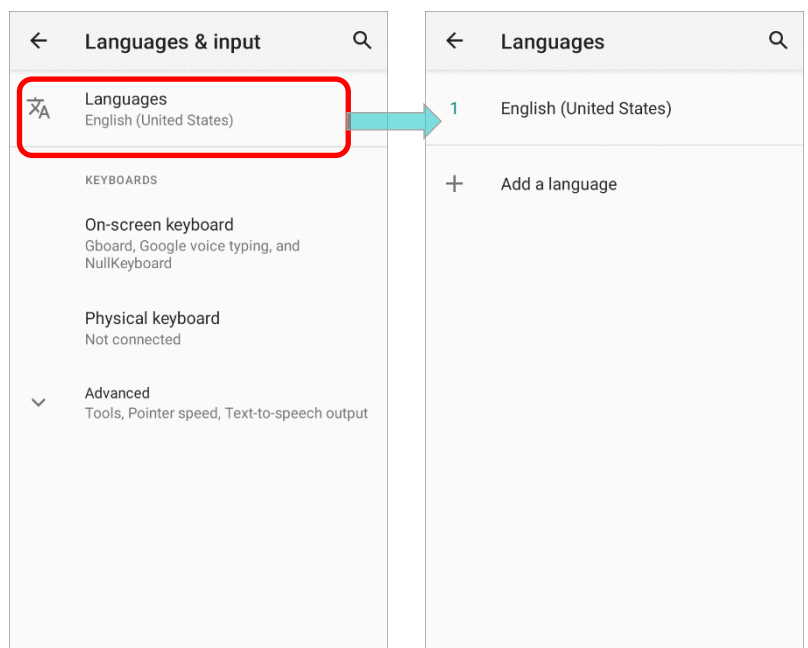
Tap [App Drawer \(All Apps\)](#) | **Settings**  | **System**  | **Language & input**  to change the system language, default keyboard type, and configure keyboard input and speech settings.



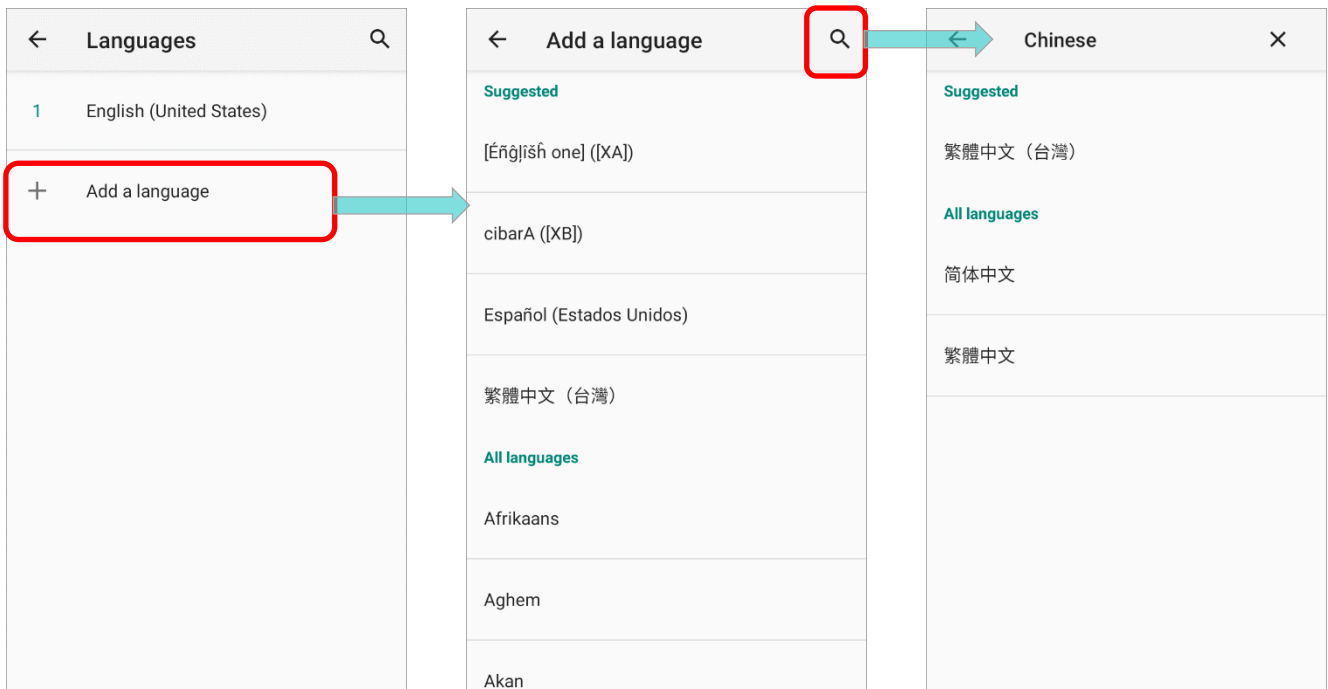
### 2.6.1. CHANGE DISPLAY LANGUAGE

To change display language:

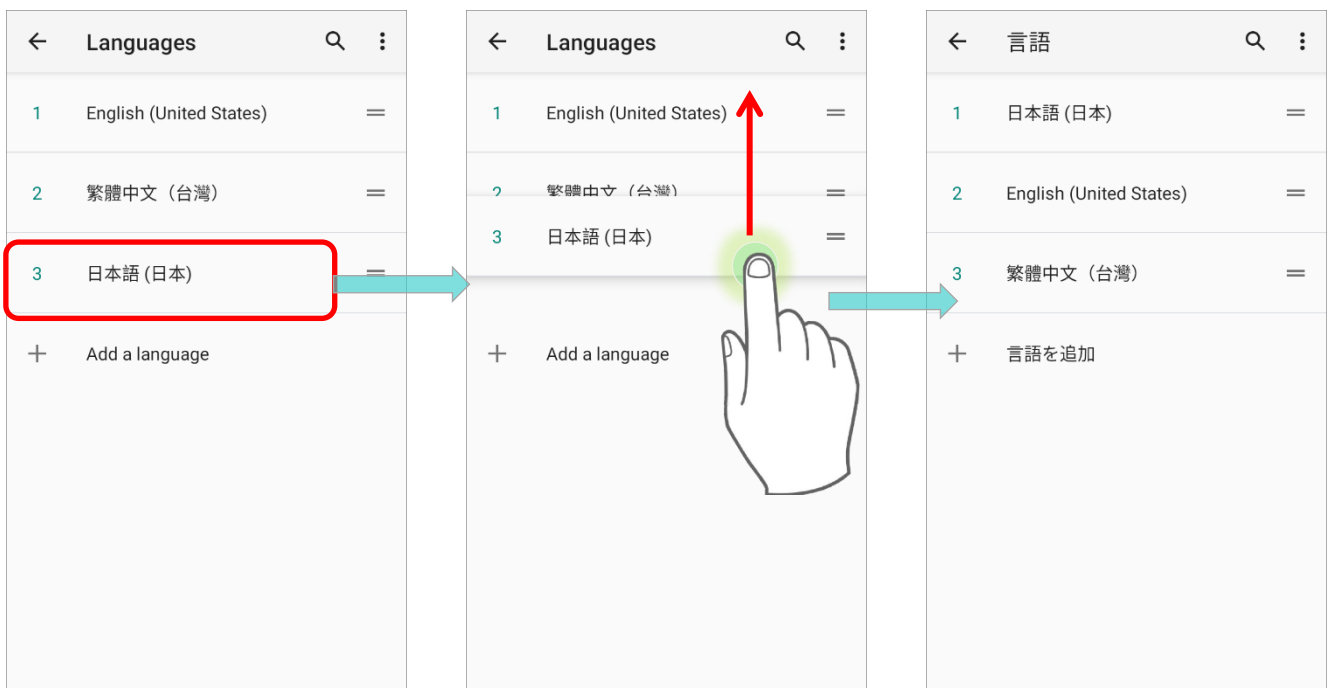
- 1) On **Language & input** screen, tap to get into **Language** page.



2) Click **“Add a language”** to select your desired system language.




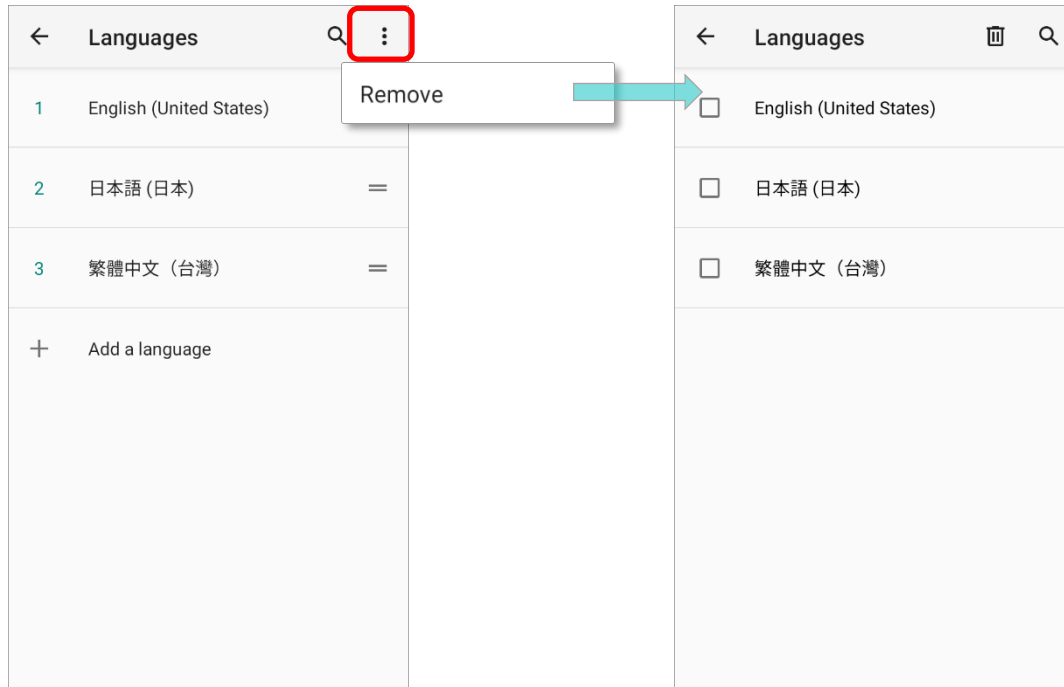
3) Press and hold your desired system language to change its sorting order to the 1<sup>st</sup> by dragging. Once it is released, the new language setting will immediately be applied.



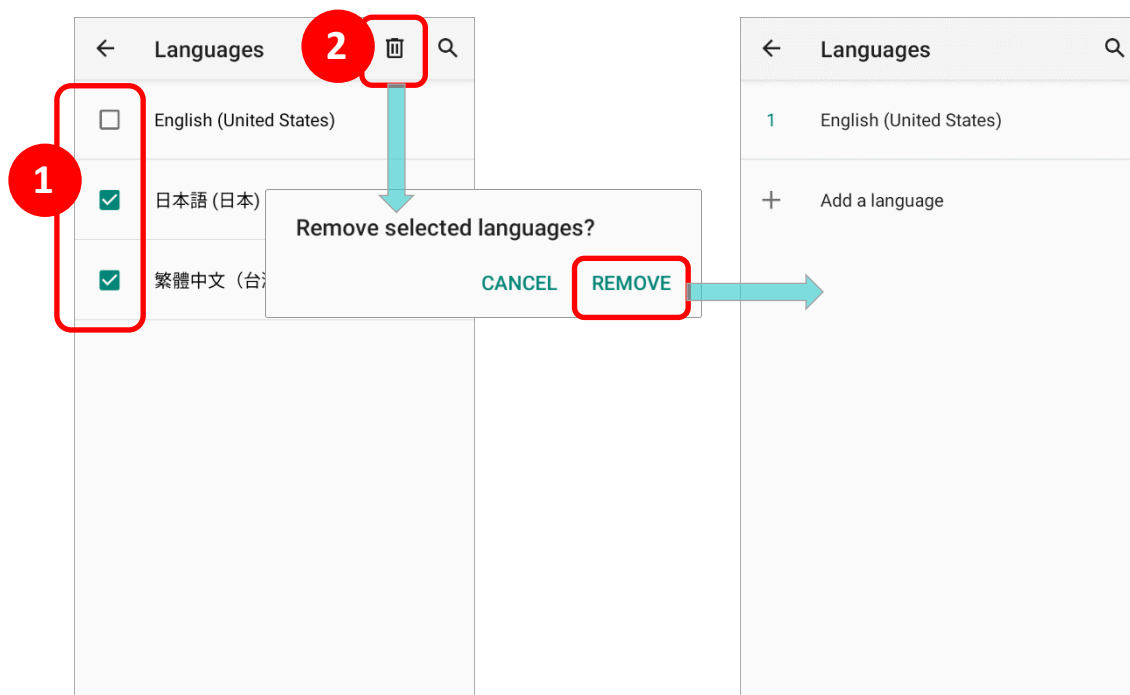
## DELETE LANGUAGE

To delete language(s):

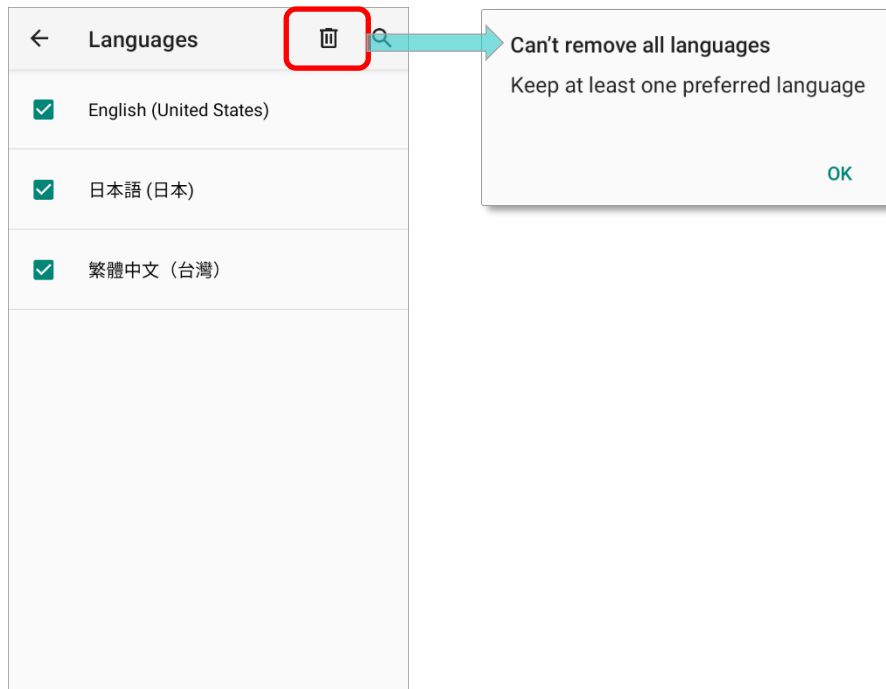
- 1) Tap on the more button  in the upper right corner and tap “**Remove**” option.



- 2) Select the language to delete. Please note that the display language will be changed if it is selected to be deleted.

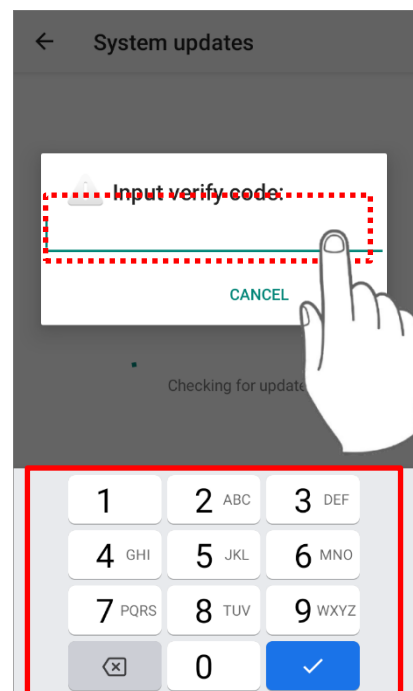
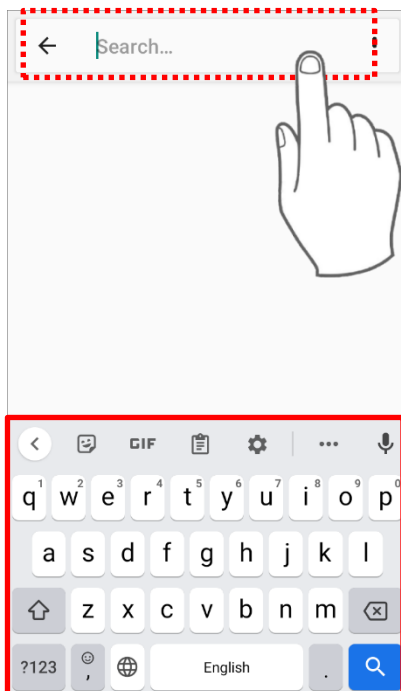


3) You have to leave at least one language.



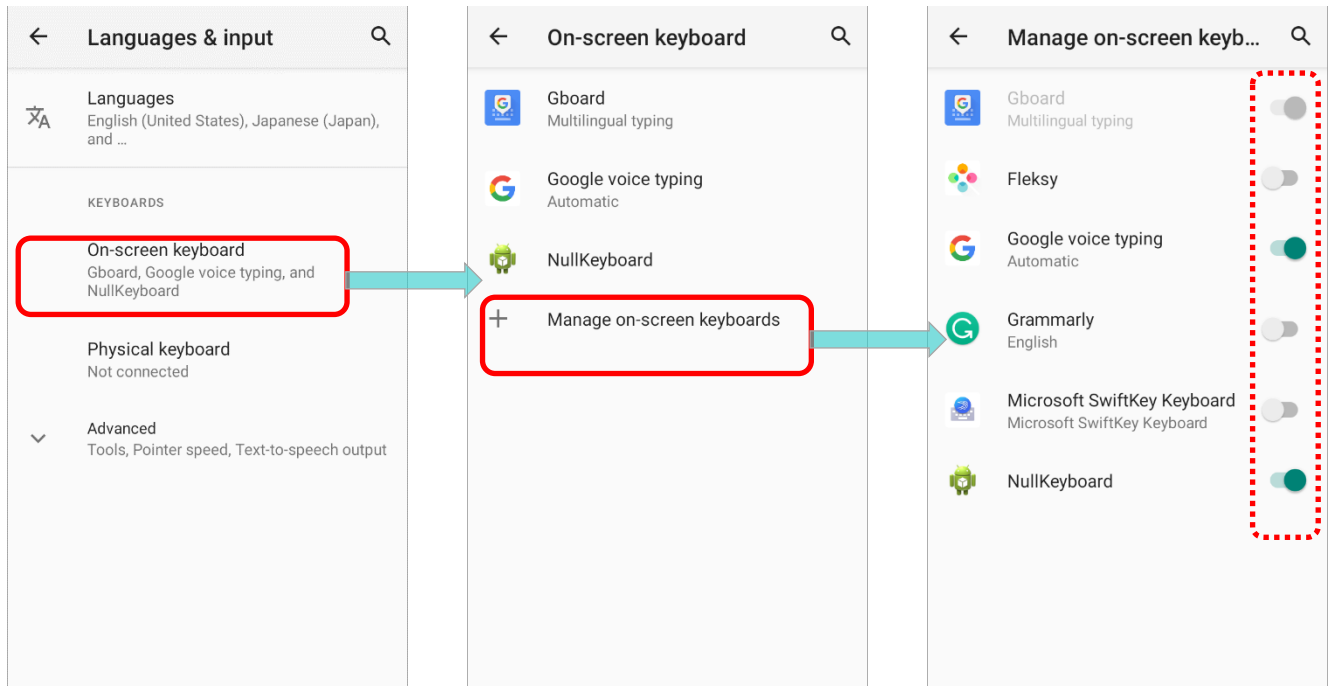
## 2.6.2. ON-SCREEN KEYBOARD

Tap a text input field to automatically open an on-screen keyboard. The virtual keyboard will vary depending on the data type (text or numbers) this field requires.



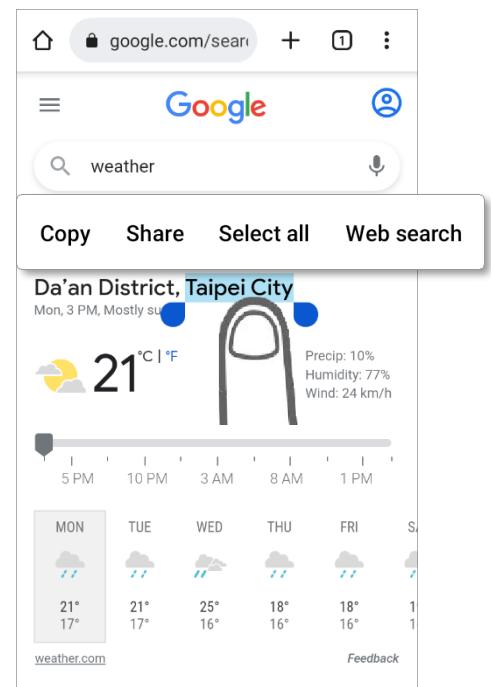
## SELECT KEYBOARD (INPUT METHOD)

On **Language & input** screen, select **On-screen Keyboard** to manage the installed keyboards by tapping “**Manage on-screen keyboard**” and switch on/off the input methods you need.



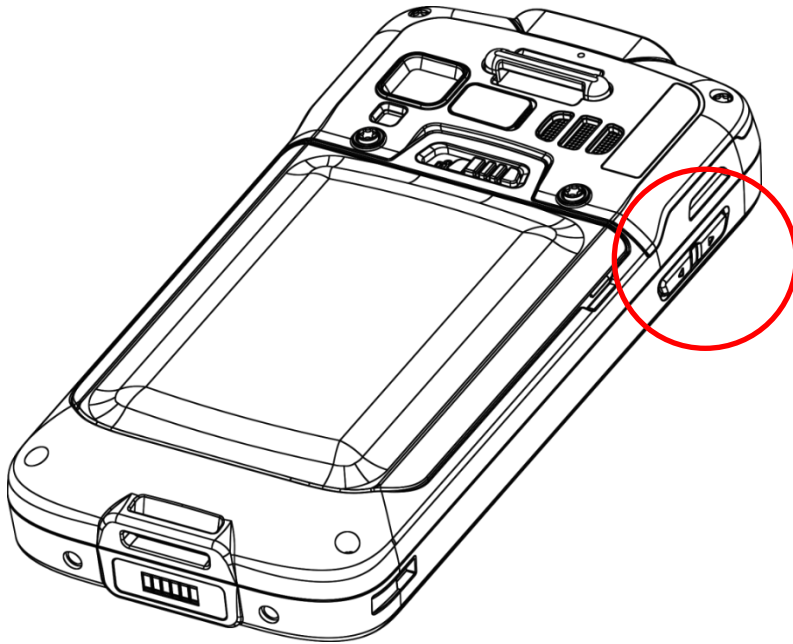
## EDIT TEXT

Tap and hold text on the screen to enable a text editing menu for selecting all text, or copying and pasting text within or across applications. Some applications may use different ways to select or edit text.



## 2.7. SOUND AND VOLUME

Use the volume buttons on the left side of the mobile computer to adjust system and ringer volume.



## 2.8. DATA CAPTURE

### 2.8.1. BARCODE READER

A selection of scan engines is available for delivering flexibility to meet different requirements. Depending on the scan engine integrated, the mobile computer is capable of scanning barcodes of a number of symbologies that are enabled by default while running the ReaderConfig application. If you need to scan barcodes that are encoded in a different symbology, enable the symbology first.

### 2.8.2. DIGITAL CAMERA

An integrated 13 megapixels rear camera in the mobile computer is specifically designed for collecting image data. You may use the image capture utility to turn on the camera and capture images. By default, the images taken by this camera application are saved as JPG files in the **DCIM** folder in the device's primary storage.



## Chapter 3

### BASIC OPERATION

---

This chapter describes the basic skills to work with the RS51 mobile computer, for instance, on how to operate the home screen, check system statuses and manage notifications. The add-on utilities for applications regarding data collection, processing, and transmission are introduced in the following chapters.

#### IN THIS CHAPTER

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3.2 Status Bar .....	107
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3.6 Back up Your Data .....	123
3.7 Reset to Factory Default .....	125


### 3.1. HOME SCREEN

When the mobile computer is fully charged, press the Power key for three seconds to turn on the mobile computer. A locked screen will appear.

---

#### LOCK SCREEN

To enter the Home screen, you need to unlock the Lock screen.

Simply swipe up from the bottom of the screen toward “**unlock**”  to unlock the screen. You may need to further draw the pattern, input PIN or password depends on the screen lock you set.

---

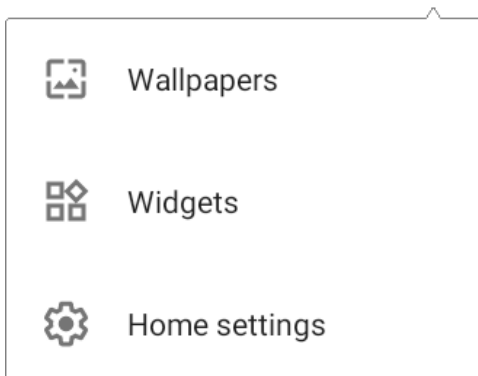
#### APP DRAWER

To open **App Drawer**, please long-swipe up from the bottom of the screen.

---

#### CHANGE HOME SCREEN WALLPAPER

- 1) Tap and hold any empty spot on the home screen.
- 2) Tap Wallpapers in the menu that appears, and select the app you would like to use.
- 3) Select an image to apply as the wallpaper.
- 4) Tap Set wallpaper.



### 3.1.1. APPLICATION & WIDGET ON HOME SCREEN

#### ADD APPLICATION SHORTCUT TO HOME SCREEN

To add an application to Home screen:

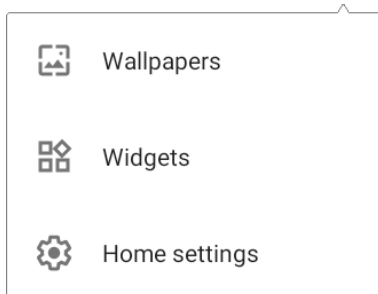
- 1) Open [App Drawer \(All Apps\)](#) on the home screen you would like to customize.
- 2) Locate the application to add, tap and hold the application icon.
- 3) Drag the application icon upward and the home screen will appear. Keep dragging the app icon and move it to your preferred position and release to have it placed.

Long pressing certain applications such as Chrome or Gmail may show the app shortcuts. To add such applications from App Drawer to Home screen, please:

- 1) Keep tapping and holding the application icon and drag it upward.
- 2) The Home screen will appear. Drag the application icon to your preferred position and release to have it placed.

#### ADD WIDGET TO HOME SCREEN

- 1) Tap and hold any empty spot on the home screen, and select “**Widgets**” from the appeared menu.



- 2) In the widget selection list, scroll to locate your desired widget.
- 3) Tap and hold the widget until the home screen layout appears. Drag the widget to your preferred position and release to have it placed.
- 4) For a setting shortcut, you will have to select a specific setting from the shortcuts list.

---

### ADD AN ACTION ICON FROM APP SHORTCUT TO HOME SCREEN

To create an Action icon from the app shortcuts to Home screen, please:

- 1) Long press an application icon (no matter on the Home screen or the [App Drawer](#)) to unfold its app shortcuts.
- 2) Tap and hold an **Action** from the app shortcuts and drag it to the preferred position on the Home screen.
- 3) Release the **Action** icon to have it placed.

---

### ARRANGE THE SHORTCUTS AND WIDGETS ON HOME SCREEN

To move or remove a shortcut/widget, on the home screen you would like to customize, tap and hold it to enter layout edit mode, an option “**X Remove**” will appear on top of the screen, to which you can drag the unwanted shortcut/widget to remove it. Drag the icon to the preferred position and release it to have it placed.

To resize a widget, tap and hold it until a white frame appears. Tap and drag a white dot to re-scale the widget.

---

### ARRANGE THE APPLICATIONS WITH APP SHORTCUTS ON HOME SCREEN

To move or remove those applications which offer **app shortcuts**, please hold and drag the application icon to anywhere on the screen, and layout edit mode appears. Drag the application icon to “**X Remove**” on the top of the screen to remove it, or to the preferred position and release it to have it placed.

### 3.1.2. FOLDER ON HOME SCREEN

#### CREATE FOLDER

- 1) On the home screen you would like to customize, tap and hold the application shortcut you would like to move, drag the icon on the top of another icon to create a folder.
- 2) As these icons overlap, a folder is created.
- 3) After you let go your finger, these icons are enclosed in a circle.

#### NAME A FOLDER

- 1) Tap the folder you would like to name.
- 2) The folder will expand to a full rectangle to show all the shortcuts in it. Tap “**Edit Name**” and edit the folder name.
- 3) Tap **Done** button on the on-screen keyboard.
- 4) Tap elsewhere on the screen, the folder will shrink to a small circle with its new name.

#### REMOVE A FOLDER

- 1) Tap and hold the folder you would like to remove.
- 2) Drag the folder to the top of the screen where the option “**X Remove**” is located.


---

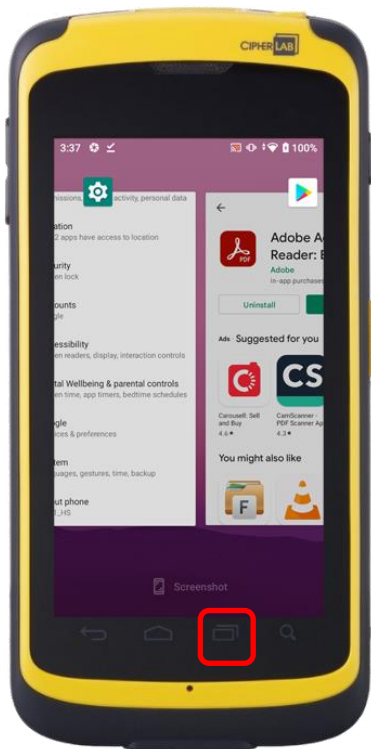
#### Note:

If you remove a folder, the shortcuts contained in it will be removed as well.

---

### 3.1.3. CURRENT APPLICATIONS

To reveal the **Recent App Menu**, please tap on the **Recent Apps** button .



On this screen, you can:

#### SWITCH BETWEEN APPLICATIONS

Slide to the left or right to check the listed applications, tap on your desired one to open it on the screen.

#### END APPLICATION

Swipe an application up to close it.

#### Note:











Close unused applications to release RAM space. Remember to save your data or settings before closing any application.

## 3.2. STATUS BAR

The left side of the status bar shows **notification icons**, and the right side of the status bar shows **status icons**.

### 3.2.1. ICONS ON STATUS BAR










#### STATUS ICONS

Icon	Description
	The device has been connected to a Bluetooth device.
	The device is currently connected to a Wi-Fi network and performing data transmission.
	Airplane mode is active, which means all radios are inactive now.
	Alarm is active.
	All sounds are silent except for alarms (Vibration mode).
	Wi-Fi hotspot is active.
	The main battery is fully charged.
	The main battery is partially drained.
	Main battery level is very low and needs charging immediately (<5%).
	External power source is connected and main battery is being charged.

---

**NOTIFICATION ICONS**


---

Icon	Description
	Android System notification such as “ <b>USB debugging connected</b> ” or “ <b>Charging this device via USB</b> ”. Open <a href="#">Notifications Drawer</a> for more details.
	The device is performing data synchronization.
	There is an upcoming event.
	The device is downloading data.
	The device is uploading data.
	An open Wi-Fi network is available.
	A memory card has been inserted.
	The headset has been inserted.
	<a href="#">Wi-Fi will turn on automatically</a> when there’s the saved network with a strong signal nearby.

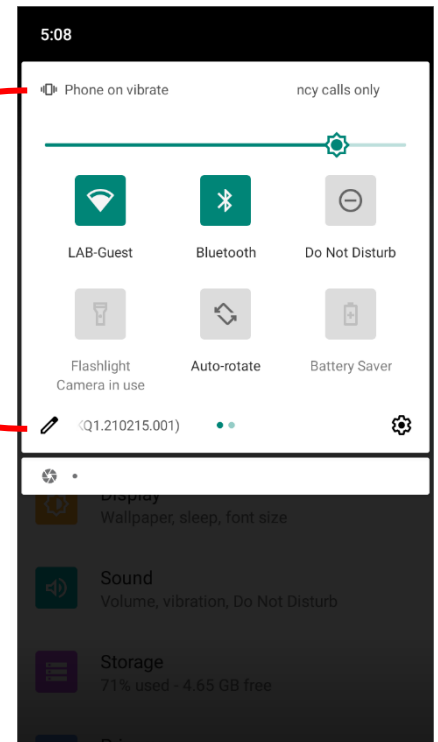




### 3.2.2. OPEN QUICK SETTINGS MENU

The **status icons** are related to essential settings regarding the device's remaining power, Bluetooth status or Wi-Fi connectivity status. The status bar offers a quick access for you to easily make adjustments of the settings.

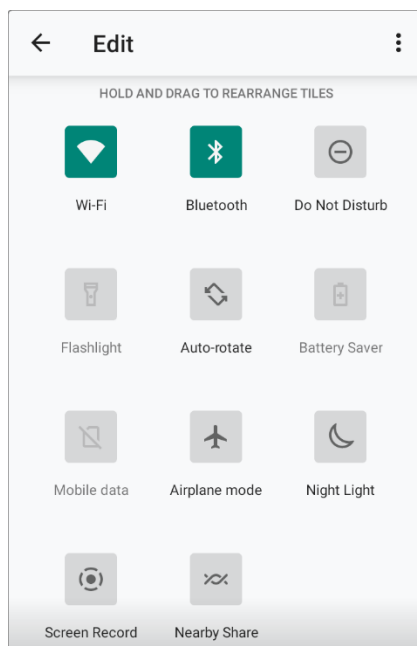
To open **Quick Setting Menu**, please use two fingers to swipe from the top to the bottom of the screen. You can tap on each status icon on the menu to switch among different modes or enter the settings.

Quick Setting Menu

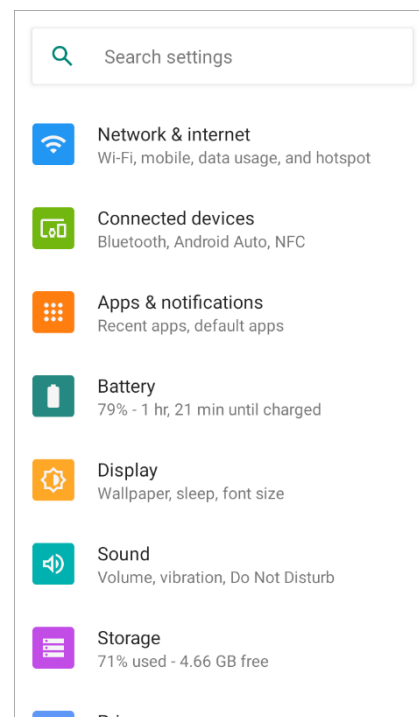


Tap on the two buttons,  and , on the bottom side of the Quick Setting Menu will respectively enter the below pages:

-  **Quick Setting Menu Edit Page**



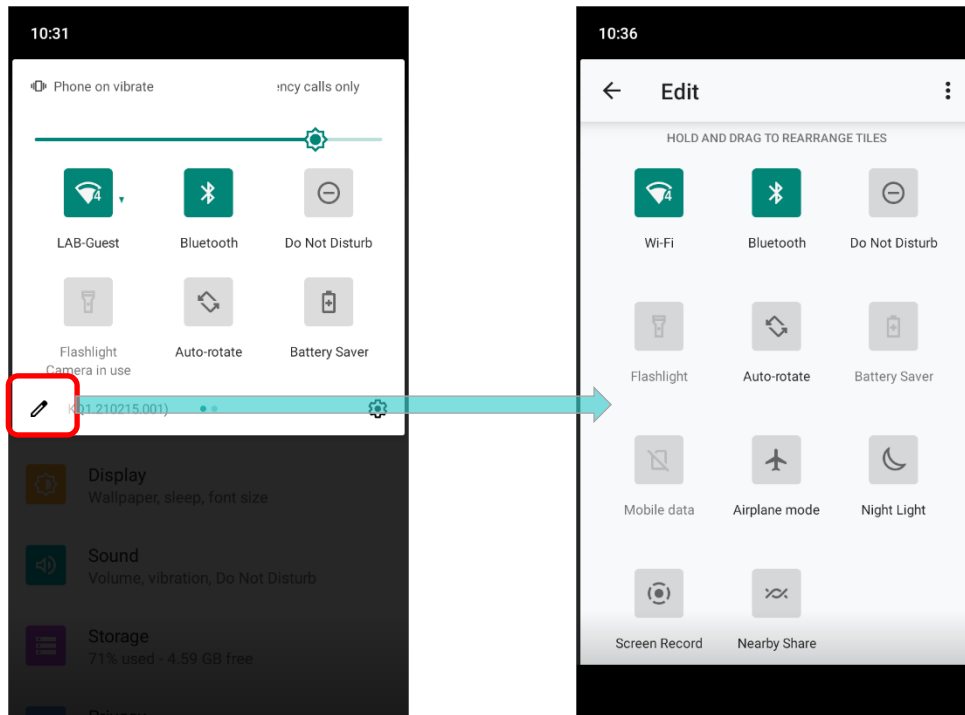
-  **"Settings" Page**



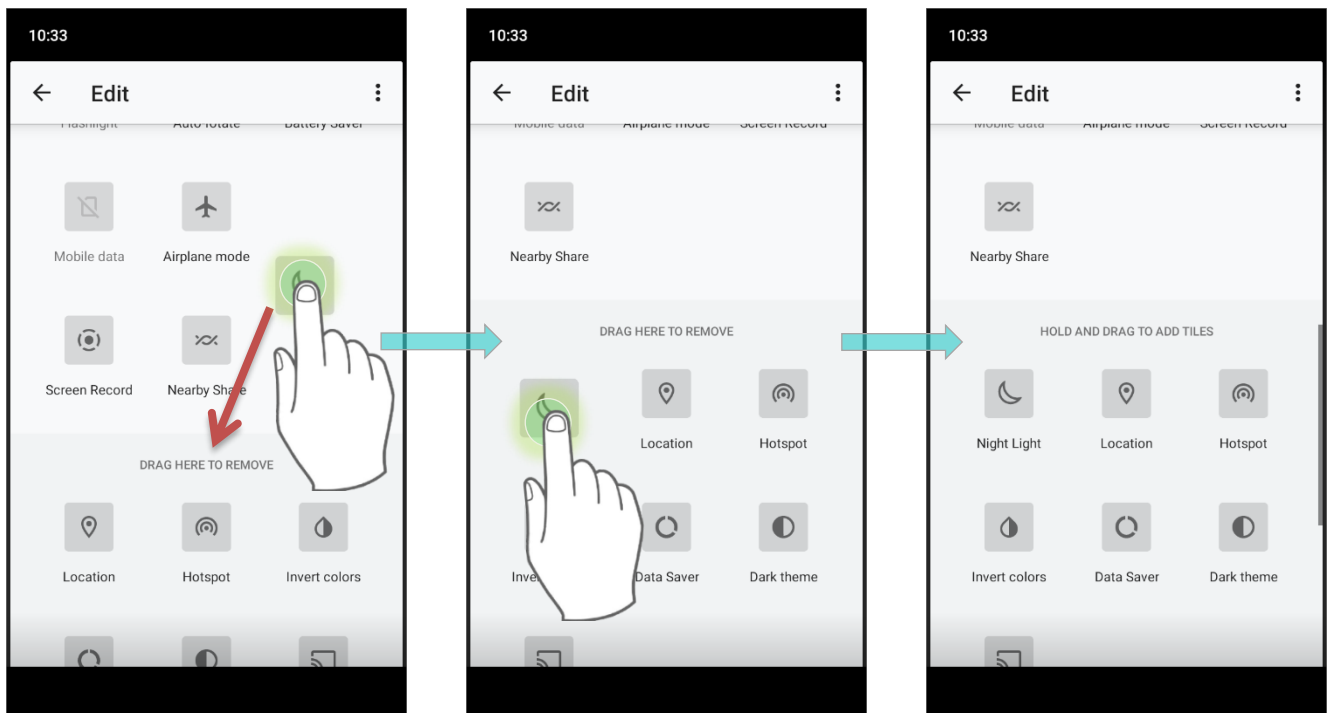
## EDIT QUICK SETTINGS MENU

To customize **Quick Settings Menu**, please:

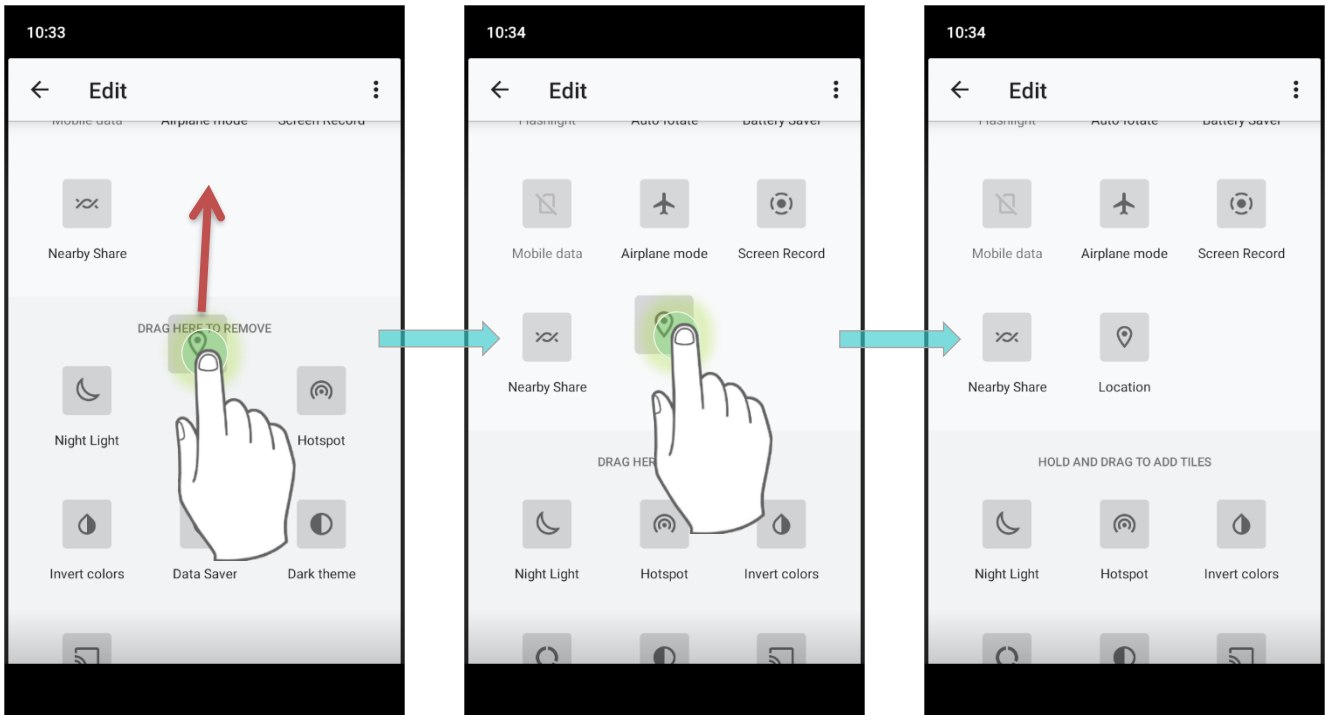
- 1) Click “**EDIT**” icon  to get into **Edit** page.



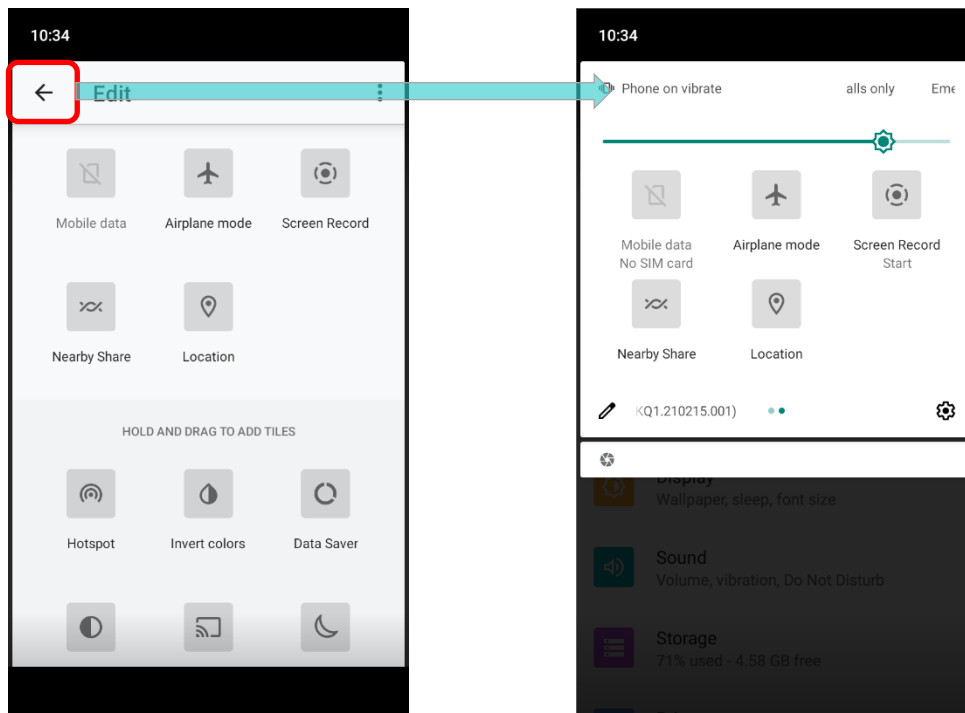
- 2) **Remove**: To remove certain item, please tap on and hold the icon to be removed, and drag it to the “**Drag here to remove**” area and then release it.



- 3) **Add:** To add certain item, please tap on and hold the icon to be added and drag it to the upper area and then release it.

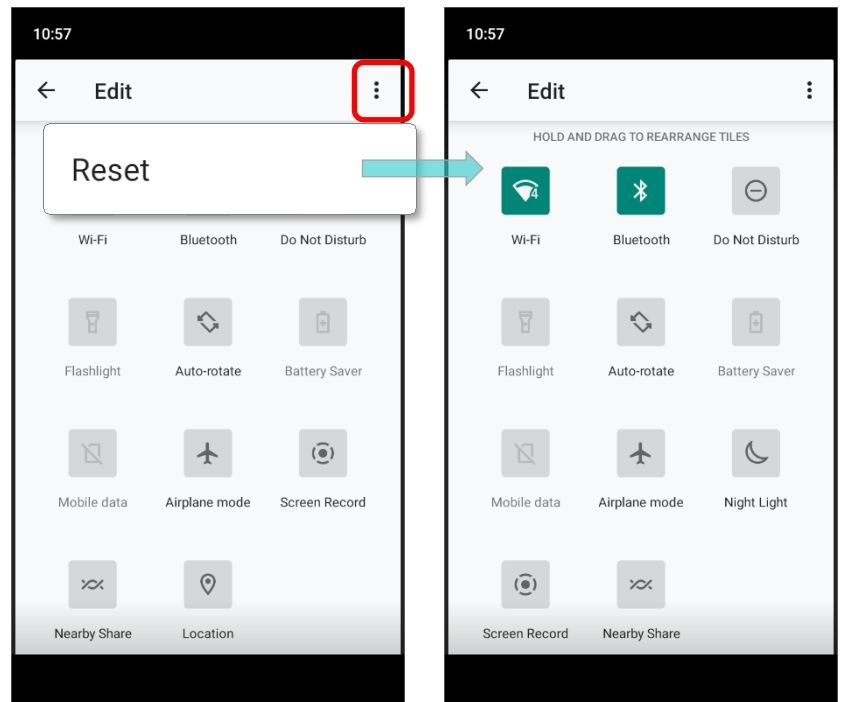


- 4) Return to the **Quick Settings menu**, all the settings are done.



To reset Quick Settings Menu, please:

- 1) Tap  to enter **Edit** page.
- 2) Tap **More**  icon in the upper-right corner, and tap **Reset**.



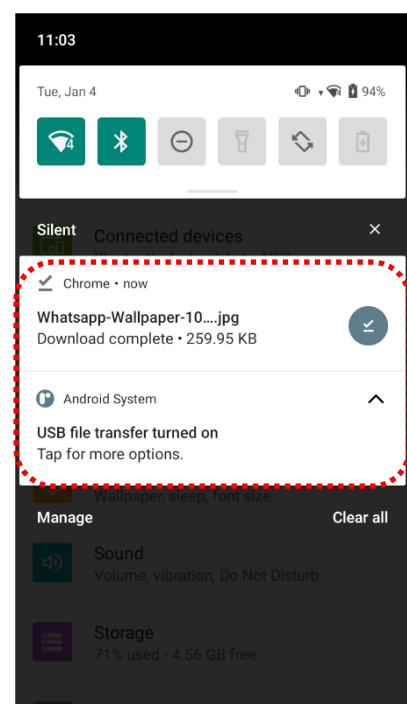
### 3.2.3. OPEN NOTIFICATIONS DRAWER

The **notifications icons** on status bar inform you of the new events such as incoming calls, messages or USB connection.

#### CHECK OUT NOTIFICATION

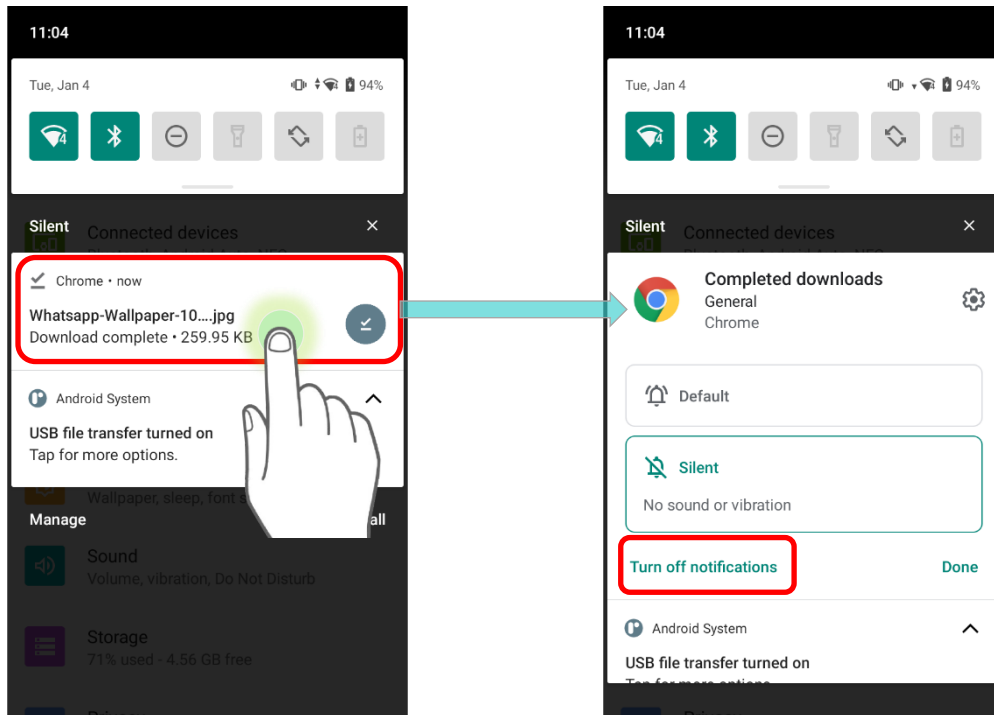
To check out details of the events, swipe down from the status bar to open [Notifications Drawer](#).

Tap on the individual notification card to carry out immediate action or to open the corresponding application.



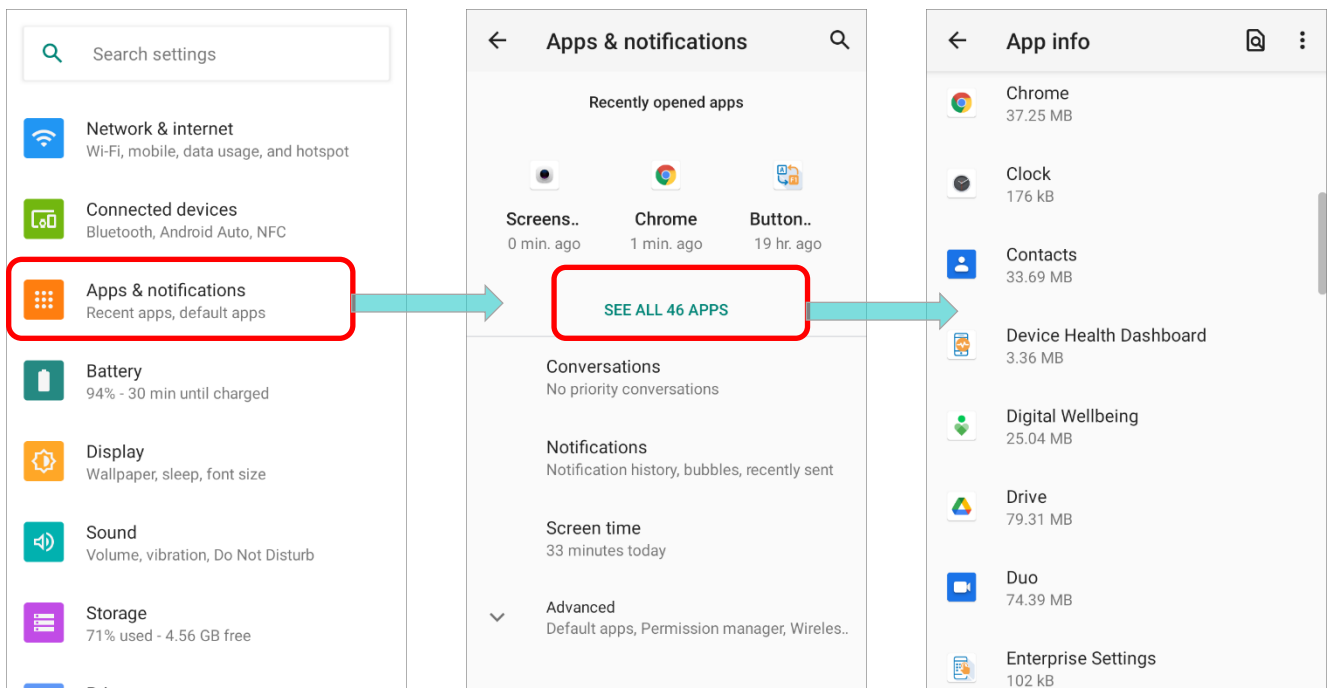
## DISABLE NOTIFICATION

You can turn off the notification of a specific app by long pressing on the notifications card until the corresponding app name reveals. Tap **“Turn off notifications”** to turn it off.

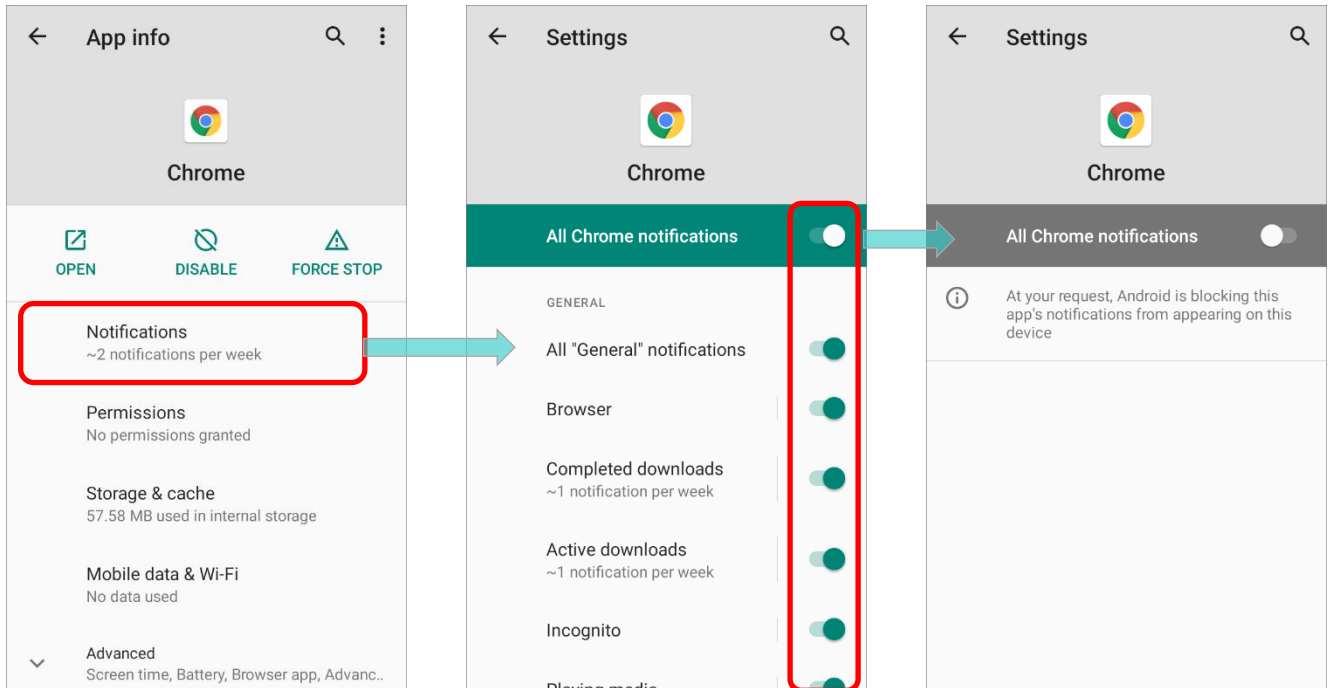


OR

- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Apps & notifications**  | **See all XX apps** to find the app you would like to change its notification settings.

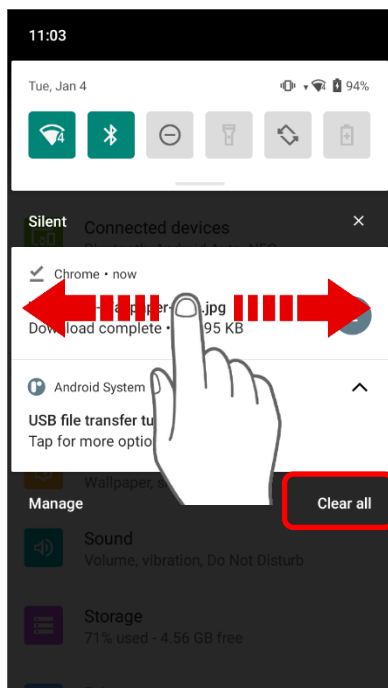


- 2) Tap to enter the “App info” page and tap “Notifications” to switch on or off “Show notifications” and other settings.




## CLEAR NOTIFICATION

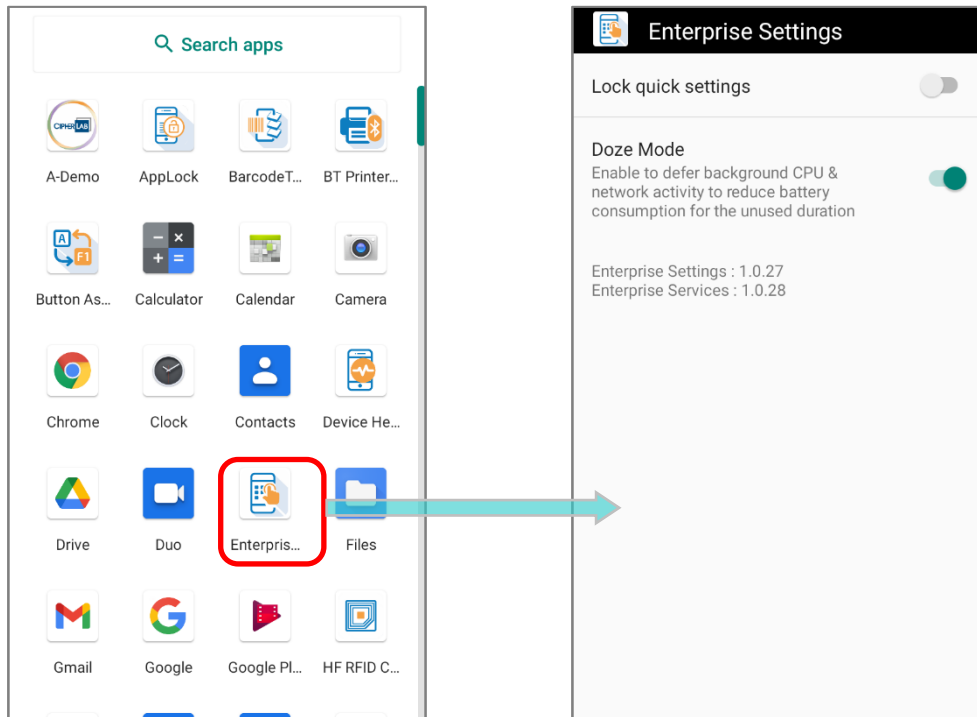
To dismiss a single notification, simply swipe the notification right or left. You can also dismiss all notifications at a time by tapping “**CLEAR ALL**”. Ongoing notifications and notifications that require subsequent activity to be cleared will remain on the list.



### 3.3. ENTERPRISE SETTINGS

The app “**Enterprise Settings**” is for setting whether the status bar could be pulled down or not.

Please go to [App Drawer \(All Apps\)](#) and tap on  “**Enterprise Settings**”.



By tapping on the switch of “**Lock quick settings**”, you can enable or disable the status bar on the top of the screen. The default setting of “**Lock quick settings**” is off.

Once “**Lock quick settings**” is on, the status bar cannot be swiped down, and [Quick Settings Panel](#), [Quick Settings Menu](#), and [Notification Drawer](#) become unreachable.

For other setting functions of “**Enterprise Settings**”, please refer to [Enterprise Settings](#).

## 3.4. SUSPEND & LOCK

### 3.4.1. SUSPEND DEVICE

The mobile computer operates continuously once it is powered on. To minimize power consumption and prevent unintended operation, suspend the mobile computer if you are not actively using it. The mobile computer can be quickly awoken from suspend mode to operate as needed. When the mobile computer enters suspend mode, the system is in a power-saving status, meaning the device will not respond to screen touch, and volume keys and side buttons will also be unavailable until the device is unlocked.

---

#### SUSPEND RS51

Press the power button to immediately suspend the mobile computer. The mobile computer will also automatically get into suspend when the time interval set in [Screen Timeout Settings](#) has passed without any activity.

---

#### Warning:

**To save battery power, suspend the mobile computer when not in use.**

---

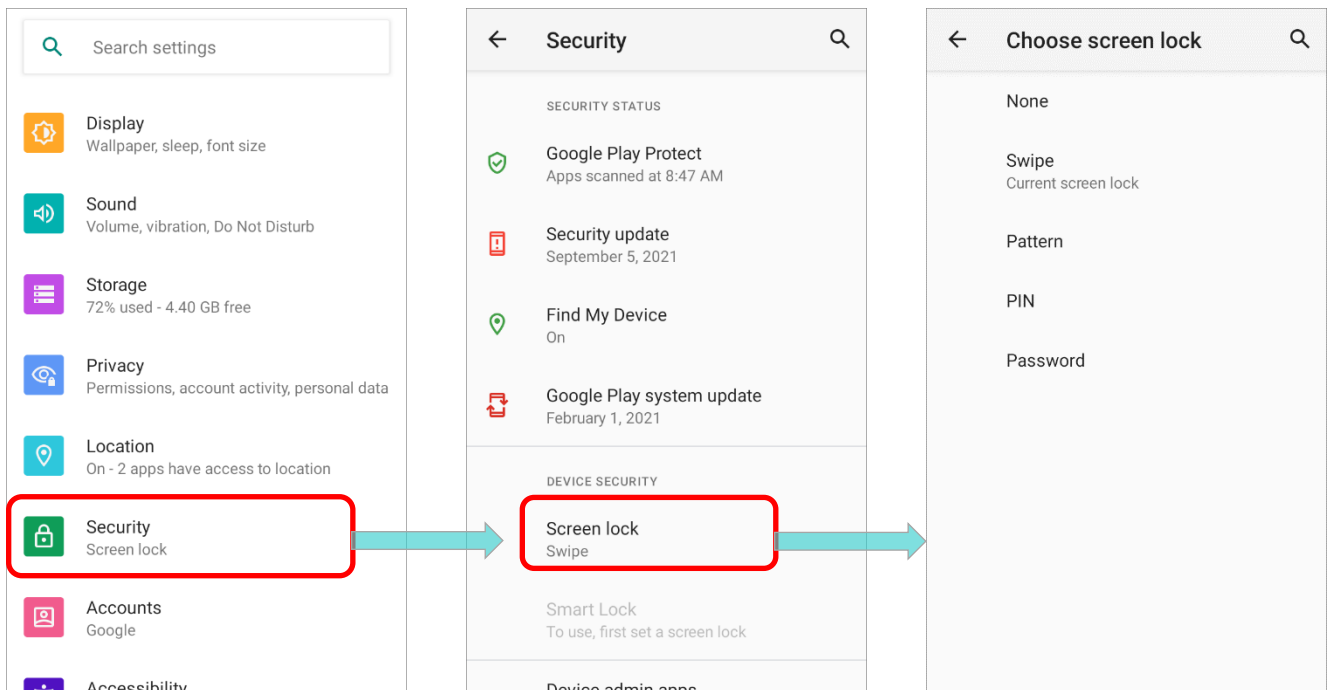


### 3.4.2. LOCK DEVICE

Setting a screen lock allows you to protect your personal data on this device while the device is not at your hand. With various types of screen lock available and Smart Lock, you can not only enjoy the benefits of this function but also great convenience.

#### LOCK RS51

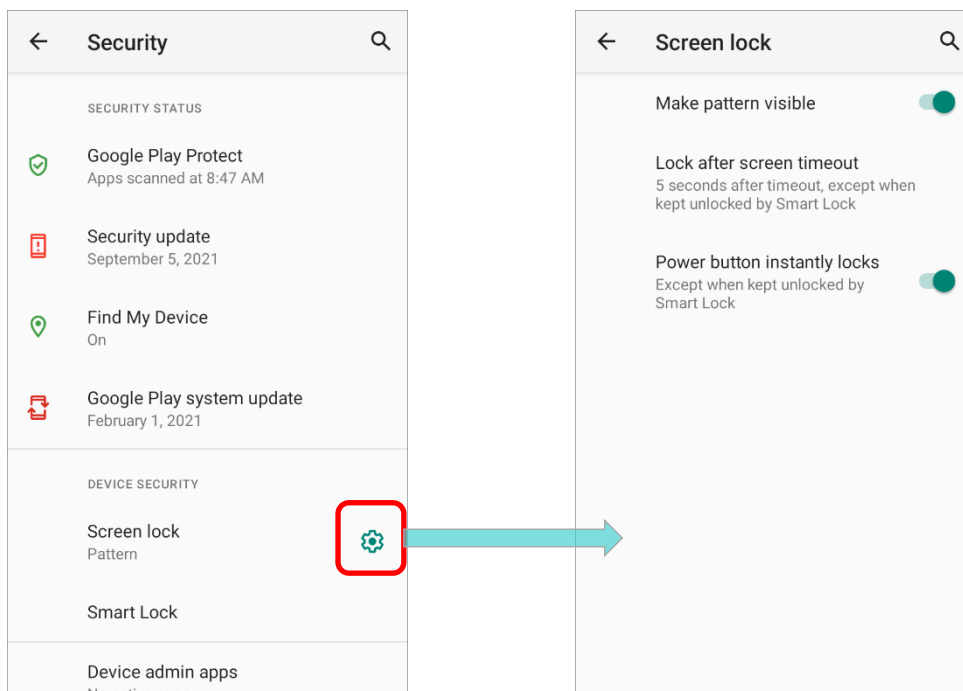
Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Security & location**  | **Screen lock** to change the lock method.



The lock methods are:

Item	Description
None	Disable screen lock.
Swipe	Default slide gesture.
Pattern	Enter a pattern to unlock.
PIN	Uses the PIN code to unlock.
Password	Enter a password of at least 4 characters to unlock.

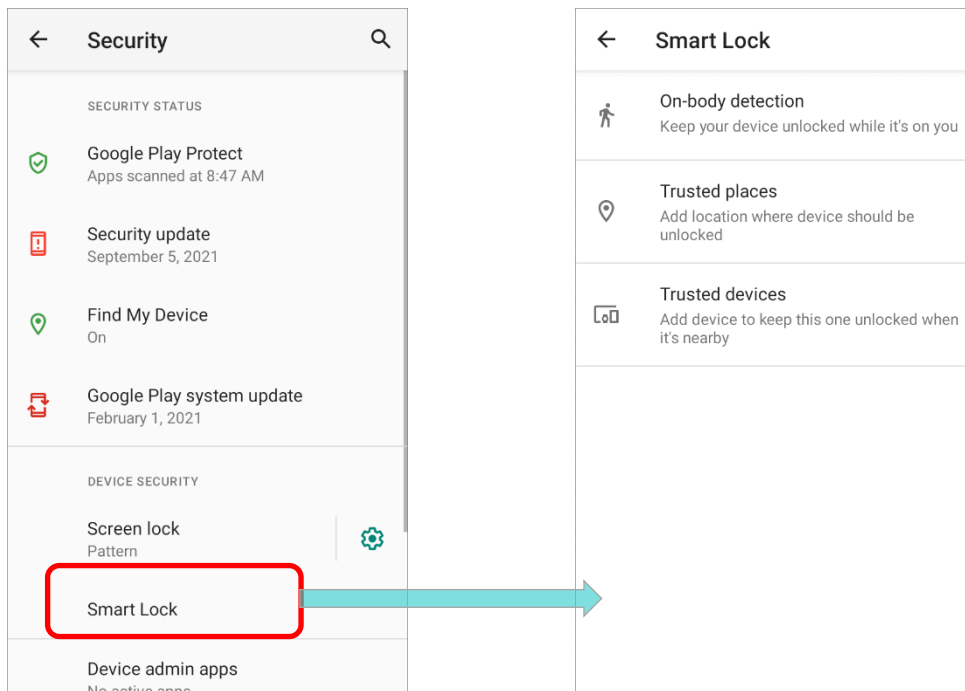
By selecting a **pattern**, **PIN**, or **Password** method, you can access **Screen Lock** advanced settings.



**Screen Lock** advanced settings are:

Item	Description
<b>Make pattern visible</b>	Switch to make the unlock pattern you are drawing to be visible or invisible. This function only works when setting pattern as screen lock.
<b>Power button instantly lock</b>	Switch to enable/ disable instantly lock screen by pressing power button.
<b>Lock screen message</b>	Set the message to be shown on the lock screen.

You can also access **Smart Lock** to customize personal lock settings.



### 3.5. OS UPDATE

Updating the operating system on the mobile computer helps maintain it at an optimized state. You may choose to update the system by establishing a wireless network connection to the Internet and downloading the update file from the OTA server.

**Note:**

The mobile computer will shut down during system update. Save any unfinished tasks and data before updating the system in order to avoid data loss.

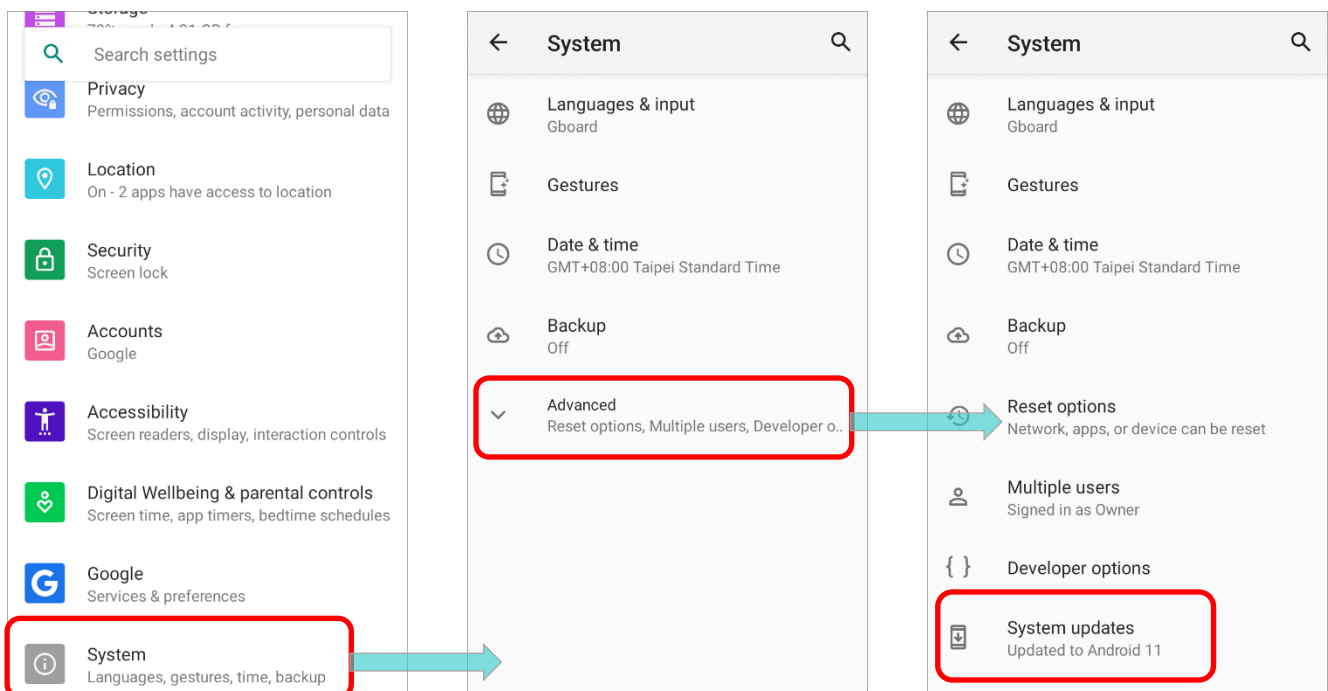
#### 3.5.1. NETWORK UPDATE

In order to check for and download the latest system update file on the server, make sure a wireless network connection to the Internet is established on the mobile computer.

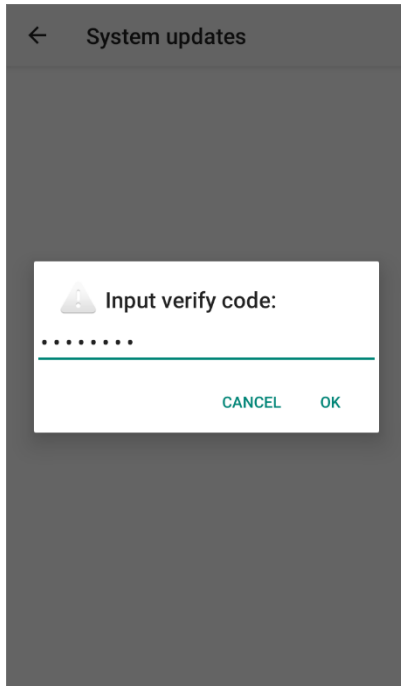
**Note:**

To avoid any additional charges to your wireless data plan, the Wi-Fi connection to the Internet is recommended for downloading the file.

- 1) Go to [App Drawer](#) | **Settings**  | **System**  | **Advanced** | **System updates** .



- 2) A dialog pops up asking you to input the password for system update. Please contact with [support@cipherlab.com.tw](mailto:support@cipherlab.com.tw) for the password. Enter the password and tap **OK**.



- 3) The mobile computer searches for the latest system update file on the server. Tap **DOWNLOAD AND INSTALL** to download the update file.
- 4) When a new system update file is detected on the server, a notification icon will appear on the status bar, and a text notification will pop up in the notifications panel.

---

## AUTOMATIC UPDATE

The automatic update feature of RS51 mobile computer is off by default, and you can change the setting by **ADC** (Android Deployment Configurator) to turn it on.

By enabling automatic update feature, RS51 mobile computer automatically detects whether there's the latest OS update and downloads it. The update is scheduled to proceed on early morning when the device is on and left idle.

### 3.5.2. SD CARD UPDATE

RS51 mobile computer automatically searches the available update files in your mobile computer's storage and then install it.

Please obtain the latest system update image file, and rename and copy the file as "**sduupdate.zip**" onto the folder "**sduupdate**" of your SD card. Insert the SD card into the memory card slot on the device. Press the power button to power it on.

**OR**

Transfer the update image file to the root directory of the device's internal storage via the snap-on cable.

The newest version of OS will be automatically installed and take effect next time the device is booted up.

---

**Note:**

**Make sure the SD card is inserted in the mobile computer. If not, the screen will show that your system is currently up to date.**




---

### 3.6. BACK UP YOUR DATA




With **Backup**, you can have your personal data (Google calendar settings, Google contacts, Google Chrome™ browser data and Gmail™ settings) and certain system settings under your Google account backed up (over network connection) on the cloud. This allows you to easily restore the settings on this device after a Factory Reset (refer to **Reset to Factory Default**).

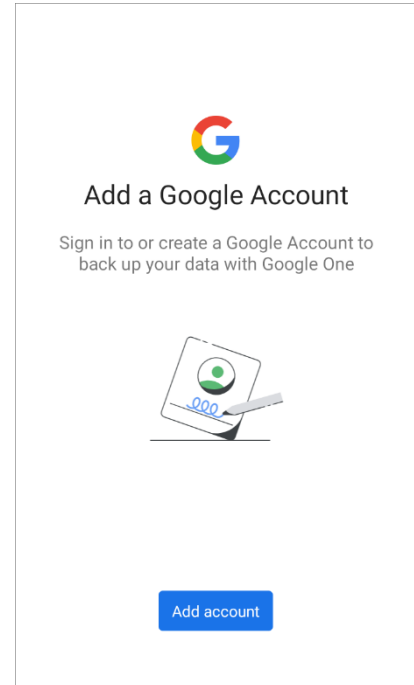
To start:

1) Make sure your device is connected with network.

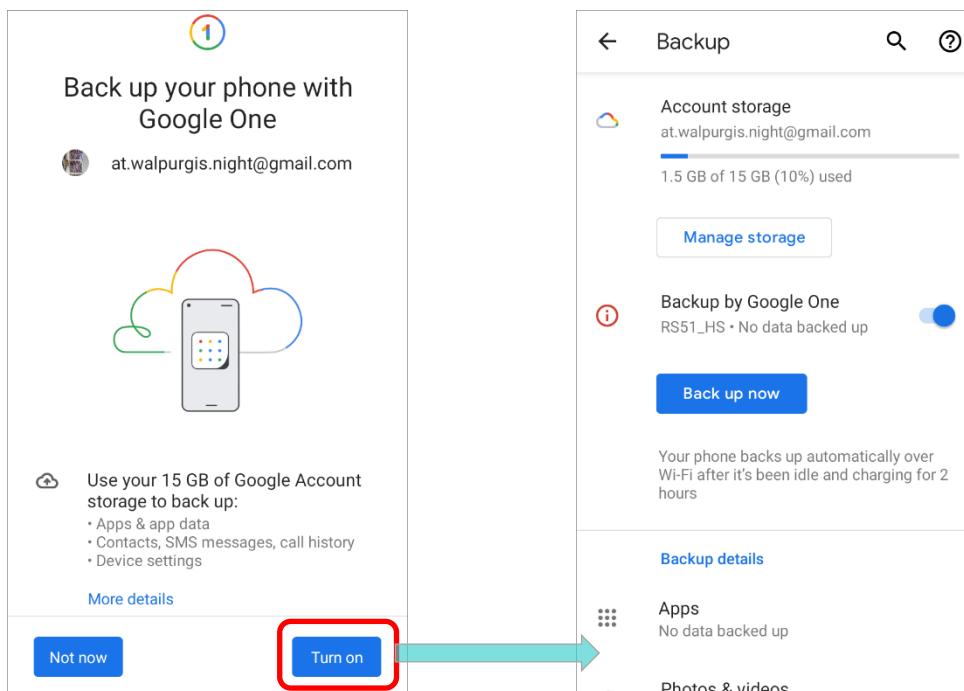
2) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Google**  | **Backup** 

OR

[App Drawer \(All Apps\)](#) | **Settings**  | **System**  | **Backup**  and log in to your Google account.




3) Tap to turn on “**Back up your phone with Google One**”.

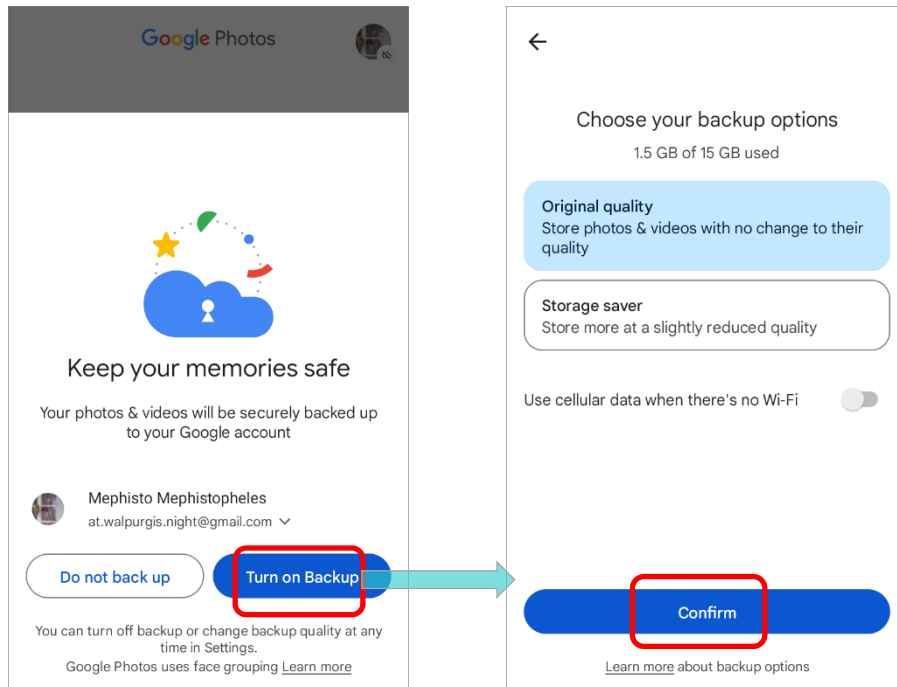


To restore the backed up personal data of a Google Account, just add that account to the device.

---

**Note:**

- (1) To back up your photos and videos, tap **Photos**  in [App Drawer](#) and log in your Google account to sync the files on your device with Google Photo Library.



- (2) To back up other data such as audio or video files on the device's storage, you can make use of the Google Drive service.

- (3) **Backup** may not handle certain app progress data and settings.
-



### 3.7. RESET TO FACTORY DEFAULT

Performing a factory reset will erase all data on your mobile computer (including call logs, messages, files as well as your installed apps and their associated data) and revert the device back to its original state in which it is powered on for the first time.

It is strongly recommended that following the instructions in [Back up Your Data](#) to back up important data before performing a factory reset.

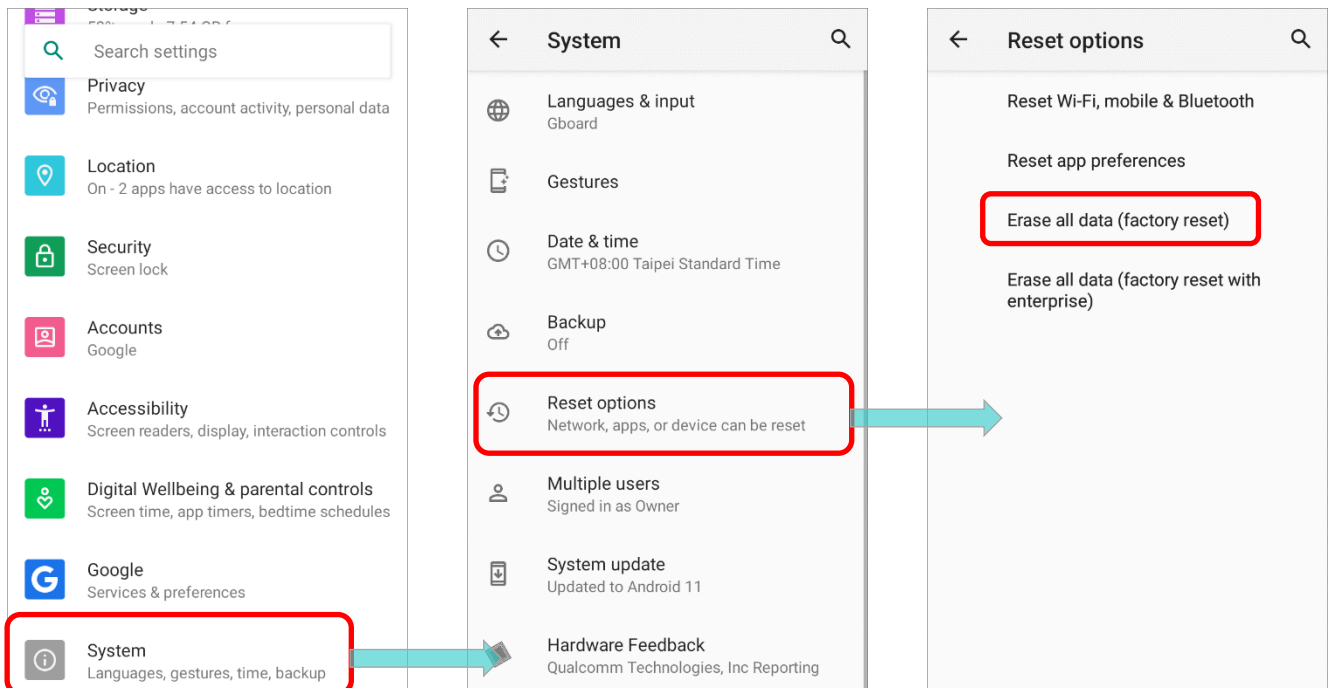
When setting your RS51 mobile computer by **ADC** (Android Deployment Configurator), the settings will automatically backup to “**enterprise partition**” of your RS51 mobile computer, and the settings saved in enterprise partition will not be erased by proceeding “**Erase all data (factory reset)**”. To erase all the settings, please select “[Erase all data \(factory reset with enterprise\)](#)”.

#### 3.7.1. ERASE ALL DATA (FACTORY RESET)

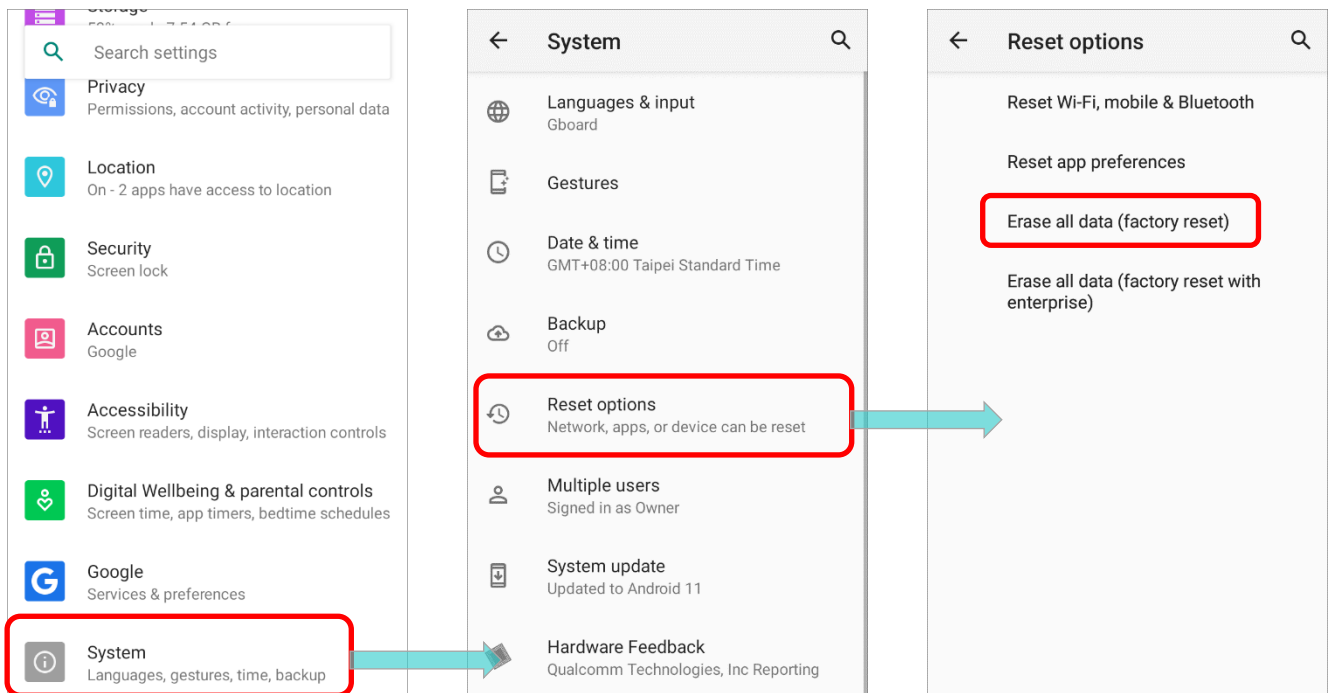
“**Erase all data (factory reset)**” will erase all the data except of the settings backed up in enterprise partition by ADC (Android Deployment Configurator).

To start:




- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **System**  | **Reset option**  | **Erase all data (factory reset)**.



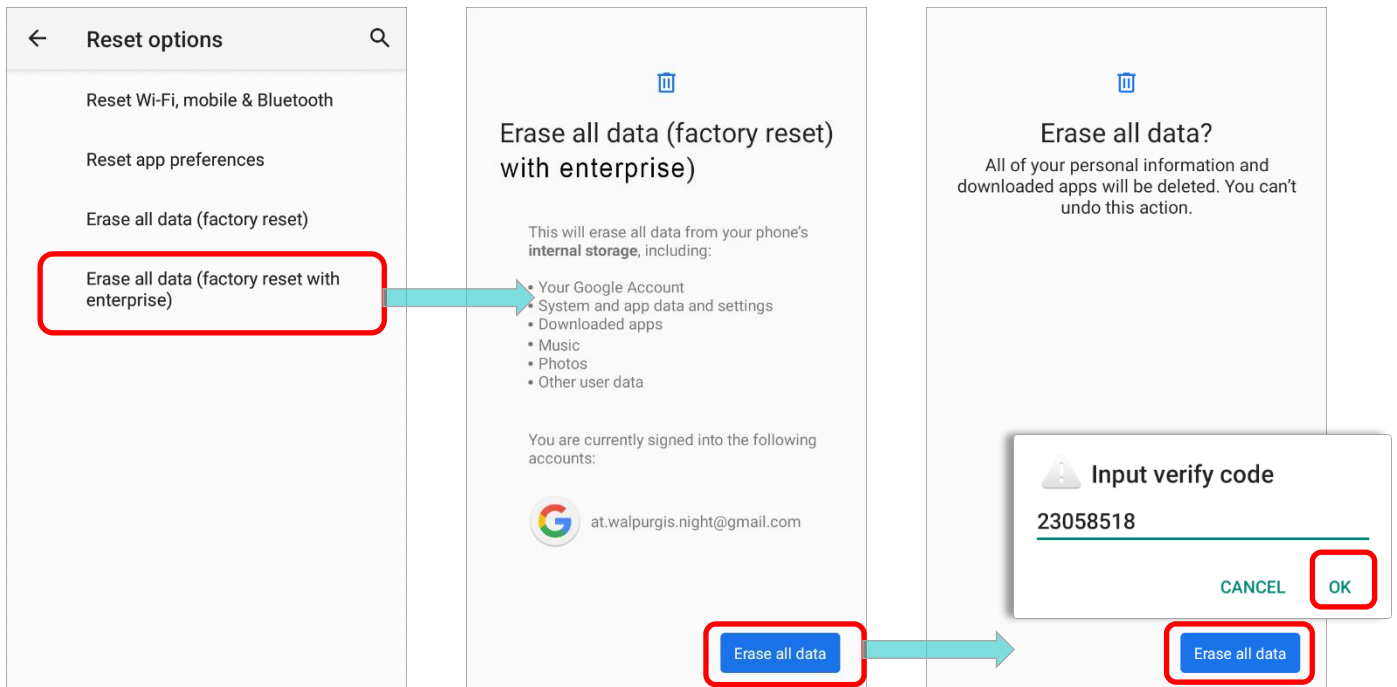
- 2) Confirm the action by tapping on the buttons and input the verification code (Please contact with [support@cipherlab.com.tw](mailto:support@cipherlab.com.tw) to obtain your verification code). Finally, tap **OK** to perform a factory reset.



### 3.7.2. ERASE ALL DATA (FACTORY RESET WITH ENTERPRISE)

Go to [App Drawer \(All Apps\)](#) | **Settings**  | **System**  | **Reset option**  | **Erase all data (factory reset with enterprise)**.


Confirm the action by tapping on the buttons and input the verification code (Please contact with [support@cipherlab.com.tw](mailto:support@cipherlab.com.tw) to obtain your verification code), and tap **OK** to perform a factory reset.

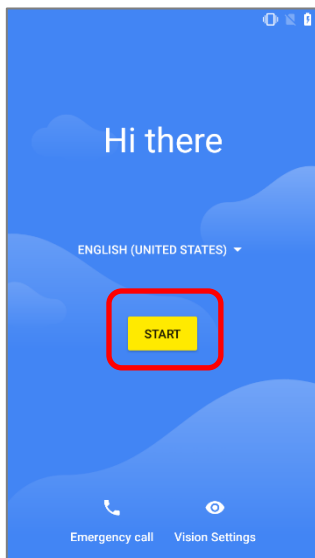


Please note that “**Erase all data (factory reset with enterprise)**” will erase all the data including the settings backed up in enterprise partition by **ADC (Android Deployment Configurator)**.

### 3.7.3. WELCOME WIZARD

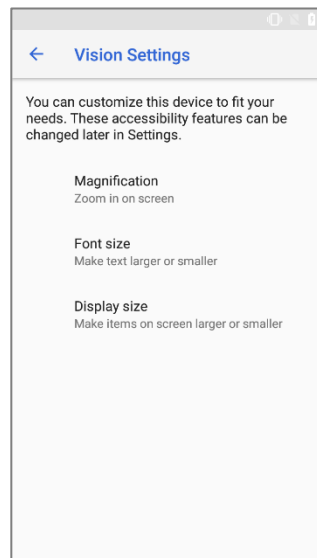
As the mobile computer boots up for the first time after the reset, the Welcome wizard will run you through setting up the environment as well as restoring apps and data.

During setup, you can tap **SKIP** to continue to the next step (you can finish the respective settings in [App Drawer \(All Apps\)](#) | **Settings**  at any time). Please note that to have the backed up data in your Google accounts restored right in this stage, log in to a Wi-Fi network when prompted to **Select Wi-Fi Network**.



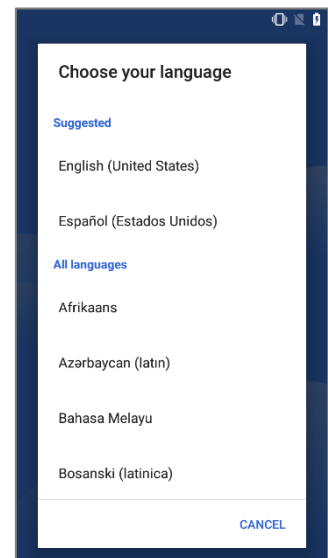
#### Step 1-1

Tap on “**STARTED**” to proceed, or tap to enter “**Choose your language**” page/ “**Vision Settings**” page.



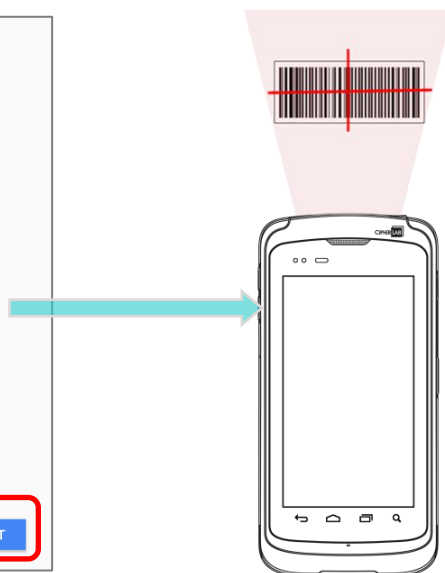
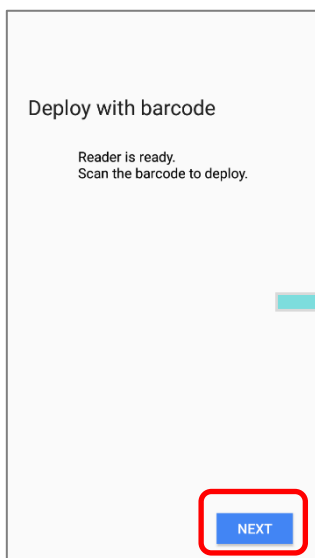
#### Step 1-2

Customize your device if needed.



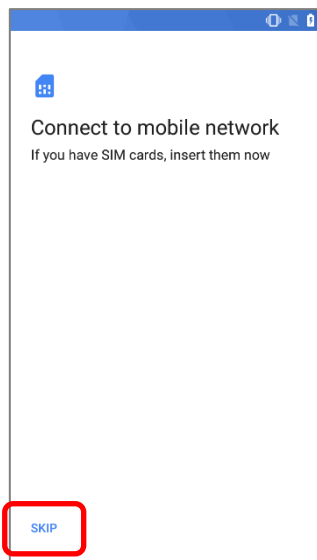
#### Step 1-3

Select your system language.



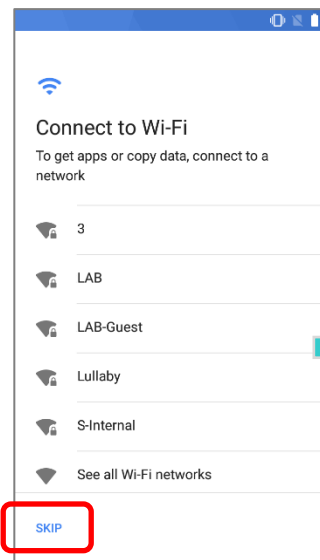
#### Step 2

Press the trigger to scan the settings barcode generated by **ADC** (Android Deployment Configurator) to deploy the settings, or tap on “**Next**” to continue setting up by Welcome Wizard.



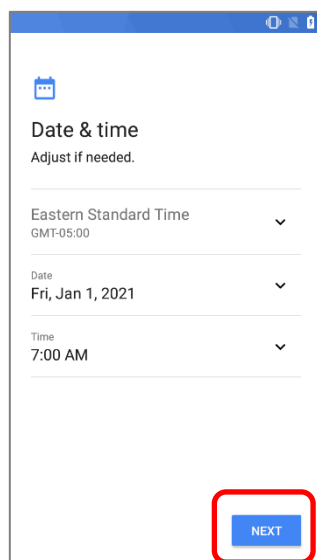
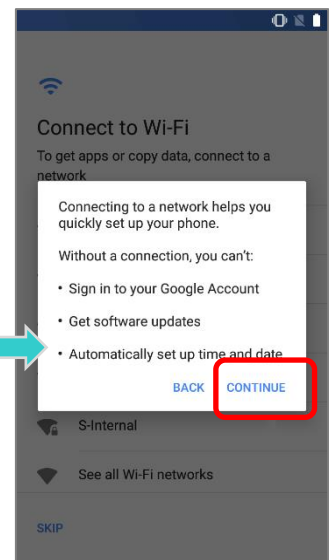
### Step 3

Insert your SIM to connect to mobile network, or tap on **“SKIP”** to the next step.



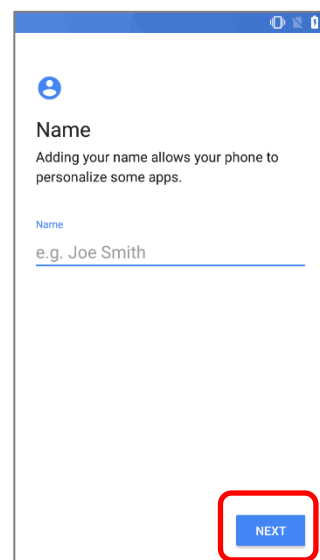
### Step 4

Select a Wi-Fi network to log in or tap on **“SKIP”** to the next step. If logged in a Wi-Fi network, you will be further asked to sign in your Google account to restore data.



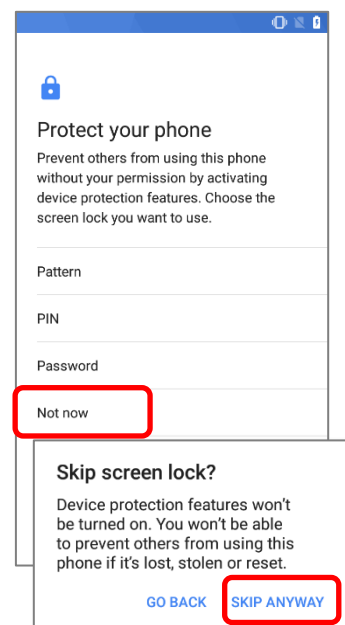
### Step 5

Set date and time, or merely skip this step by tapping **“NEXT”**.



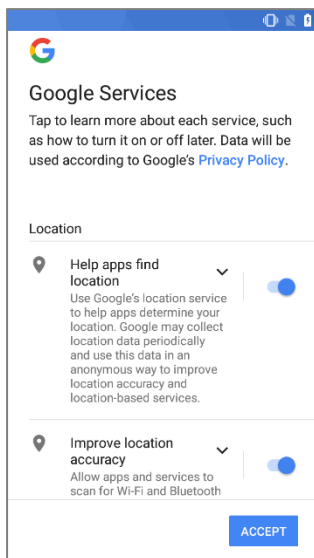
### Step 6

Input your name, or merely skip this step by tapping **“NEXT”**.



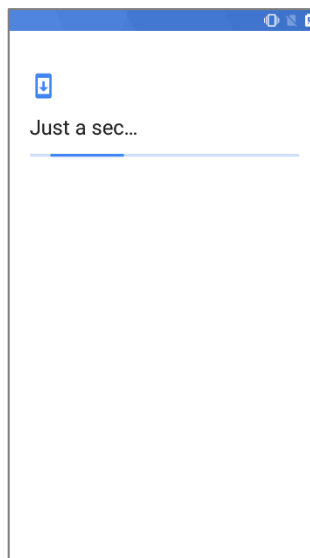
### Step 7

Set up the protection methods to protect this device. Select **“Not now”** and confirm by **“SKIP ANYWAY”** to skip.



### Step 8

Choose Google services that you want to be enabled, and tap **“ACCEPT”** to proceed.



### Step 9

It takes few seconds to complete.

Once the initial setup is completed, the Home app screen shows up. Apps and settings will be restored in the background.

---

**Note:** **“[Battery Swap](#)”** is unavailable during Welcome Wizard.

---

## Chapter 4

### WIRELESS RADIOS

---

With the Wi-Fi module integrated on the mobile computer, you can configure and connect to network wirelessly.

#### IN THIS CHAPTER

---

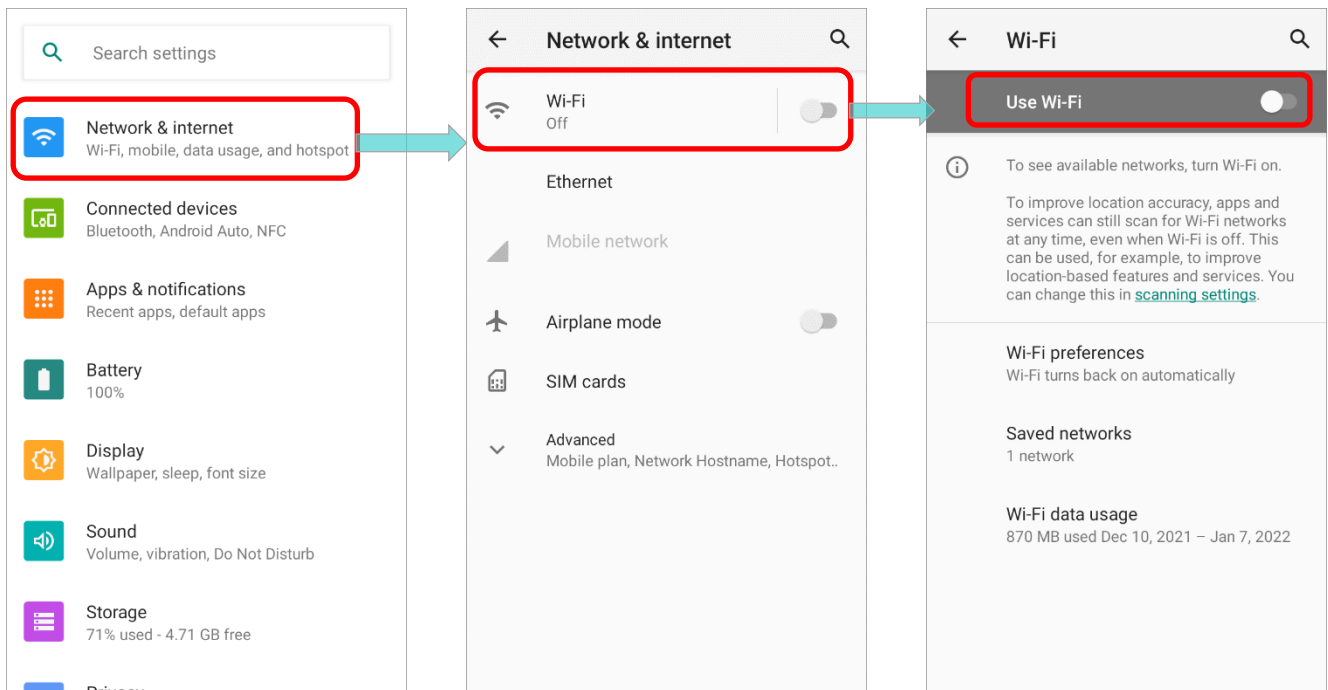
4.1 Use Wireless Local Area Network (Wi-Fi).....	132
4.2 Use Bluetooth.....	144
4.3 Use Near Field Communications .....	152

## 4.1. USE WIRELESS LOCAL AREA NETWORK (WI-FI)

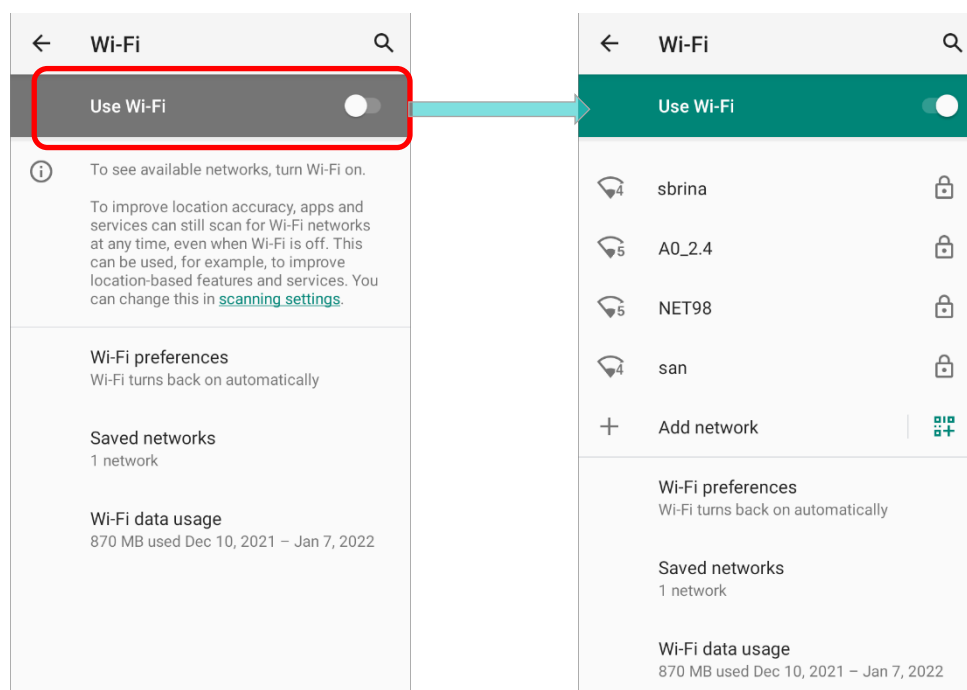
### 4.1.1. CONNECT TO WI-FI NETWORK

To power on Wi-Fi:

- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Network & internet**  | **Wi-Fi** .



- 2) Tap the Wi-Fi switch to scan for available networks.

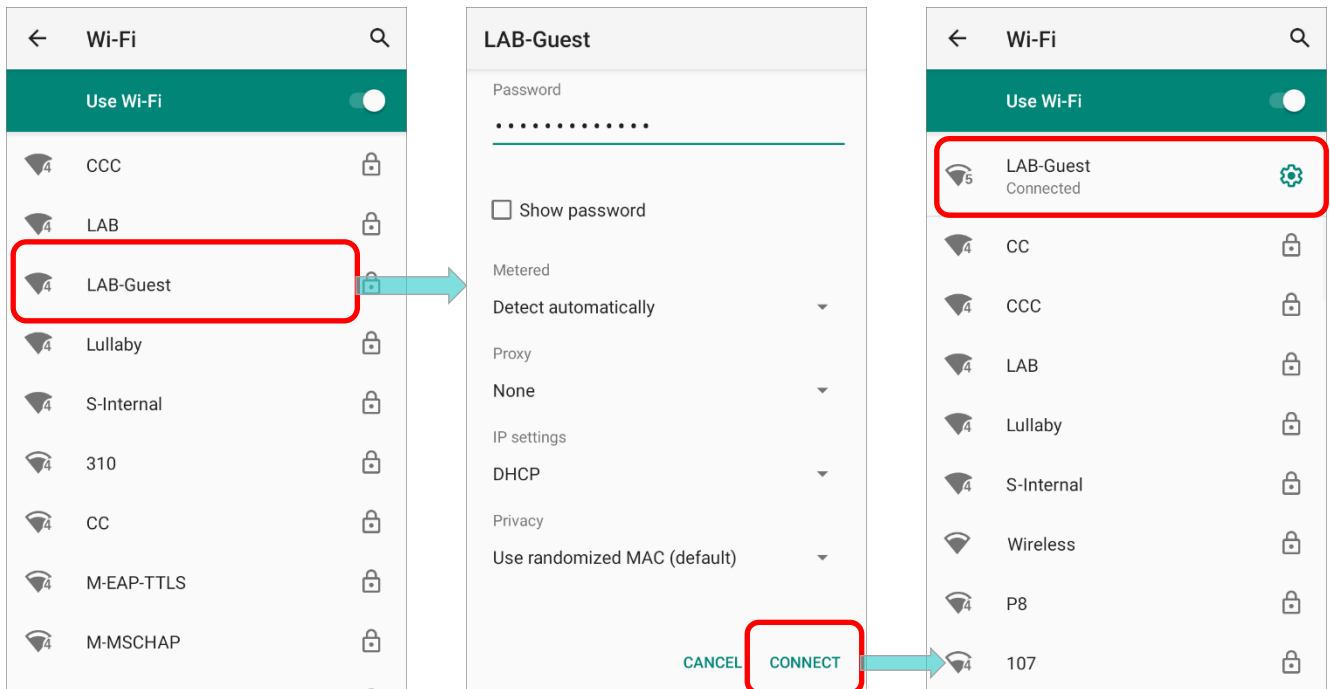




### 3) Select a network to connect.

If the network is an open one, the mobile computer will attempt to connect to it directly. When connected, the status will change to show **“Connected”**.

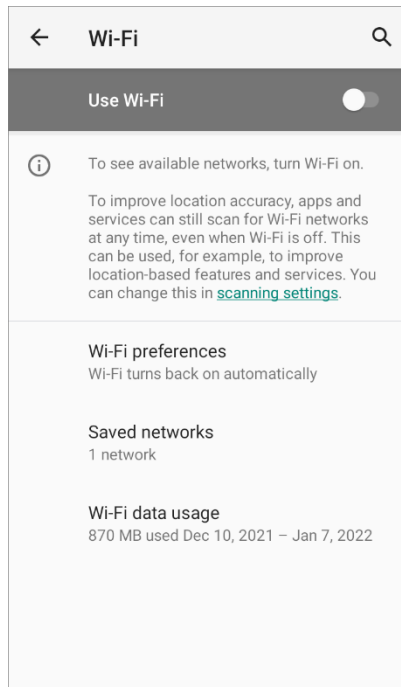
If the network is a secured one, the mobile computer prompts a dialog to enter the password for the connection.



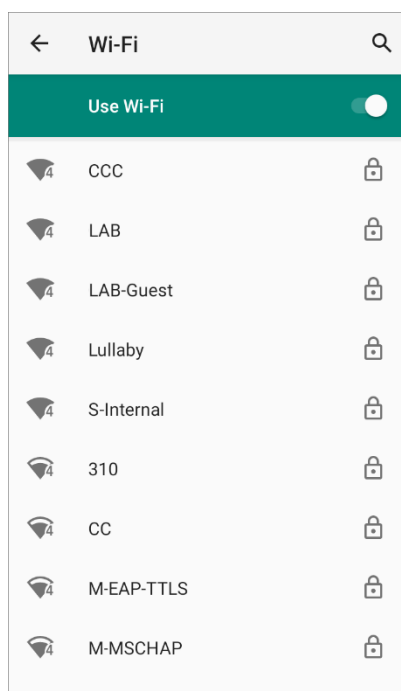
### 4.1.2. MANUALLY ADD WI-FI NETWORK

If the network you would like to connect to does not broadcast its SSID, or if the network is out of range, you may add it manually.

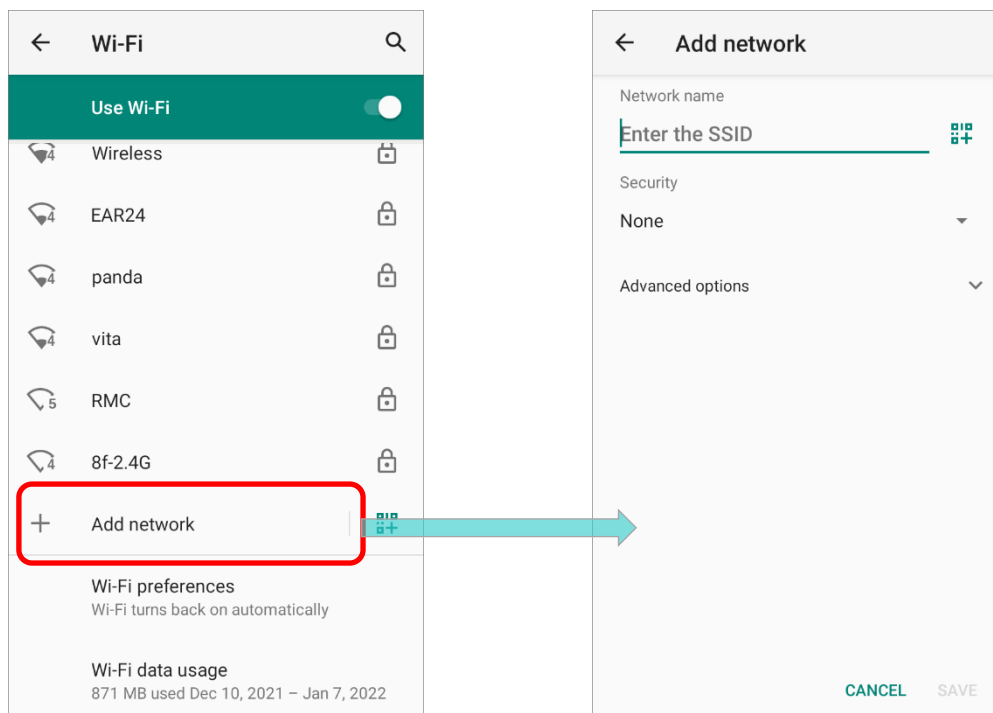
- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Network & internet**  | **Wi-Fi**  .



- 2) Tap the Wi-Fi switch to turn it on.



- 3) Scroll down to the bottom of the page, and select “**Add network**”.



- 4) On “**Add network**” page, enter the name of the network in the **Network name** field, and select a security method (None, WEP, WPA/WPA2 PSK, 802.1x EAP, OWE, or SAE).

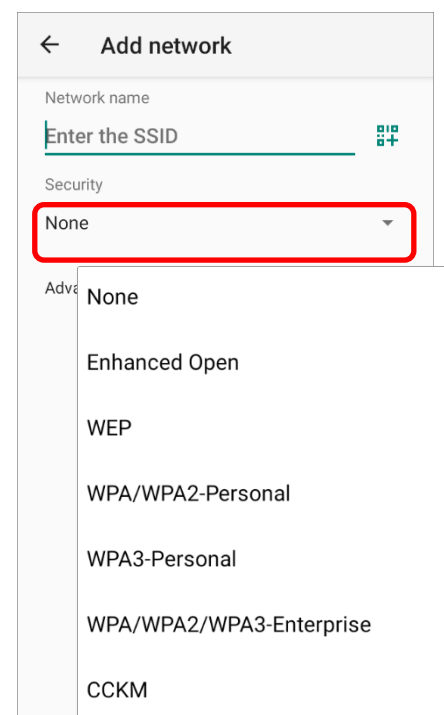
- **Enhanced Open** is for public networks and provides no authentication.
- For **WEP**, **WPA/WPA2-Personal**, and **WPA3-Personal** connections:

Enter the required password and tap **Save**.

- For **WPA/WPA2/WPA3-Enterprise** connections:




Select the **EAP method** in the drop-down box (PEAP, TLS, TTLS, PWD, SIM, AKA), and the **Phase 2 authentication** in the drop-down box (None, MSCHAPV2, GTC). Select a **CA certificate** and User certificate if required.

Enter your username in the Identity box and the password in the Password box if required.



**Note:**

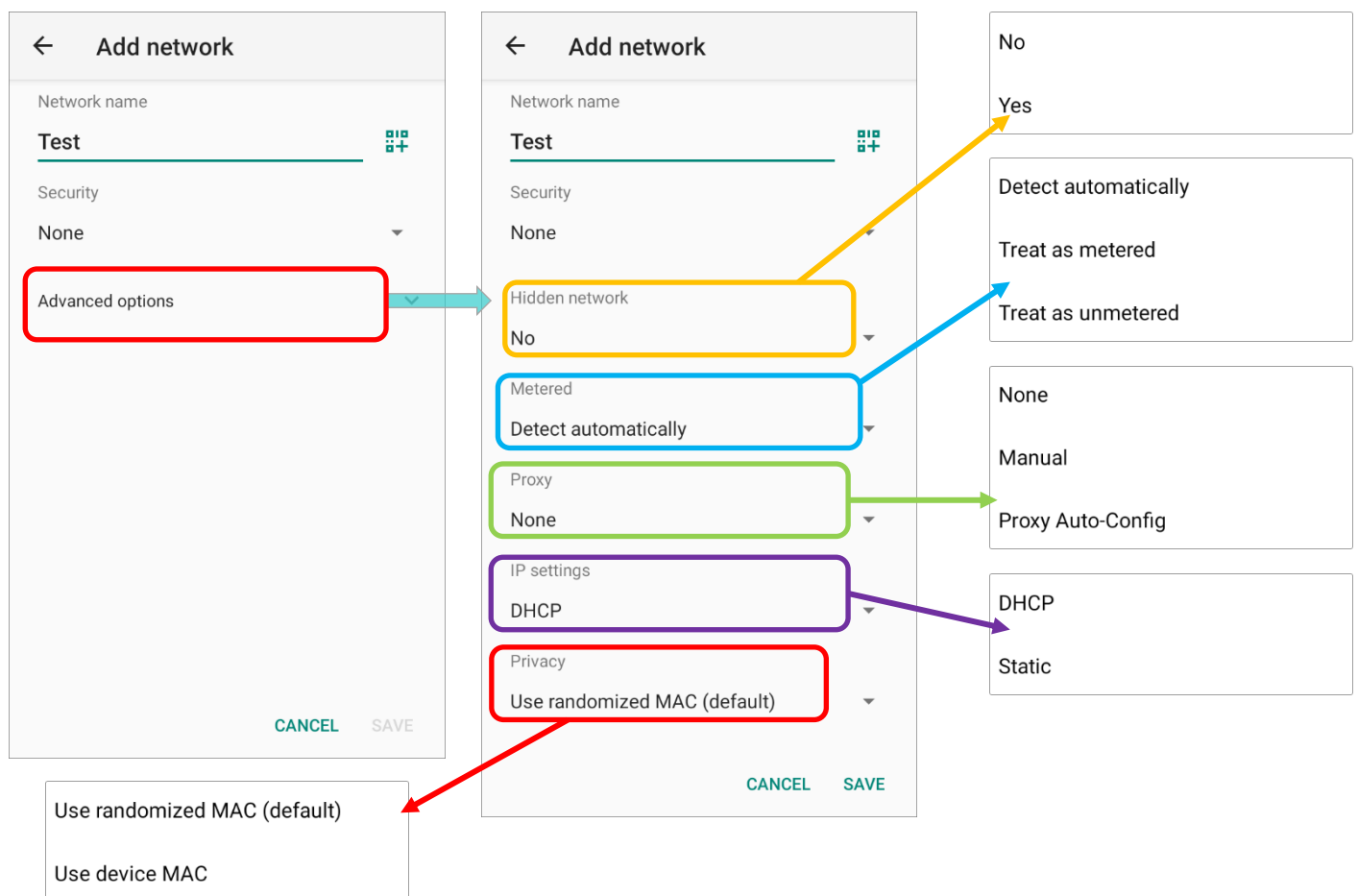
Certificates may be installed under:

[App Drawer \(All Apps\)](#) | [Settings](#)  | [Network & internet](#)  | [Wi-Fi](#)  | [Wi-Fi preferences](#) | [Advanced](#) | [Install certificates](#).

The mobile computer supports the following certificate file extensions:

File Extension Type	Standard Certificate	Key Stored
<b>Description</b>	DER-encoded X.509 certificates saved in .crt or .cer files.	X.509 certificates saved in PKCS#12 key store files with a .p12 or .pfx extension.
<b>How to install</b>	change the extension to .crt or .cer.	Change the extension to .p12 or .pfx.

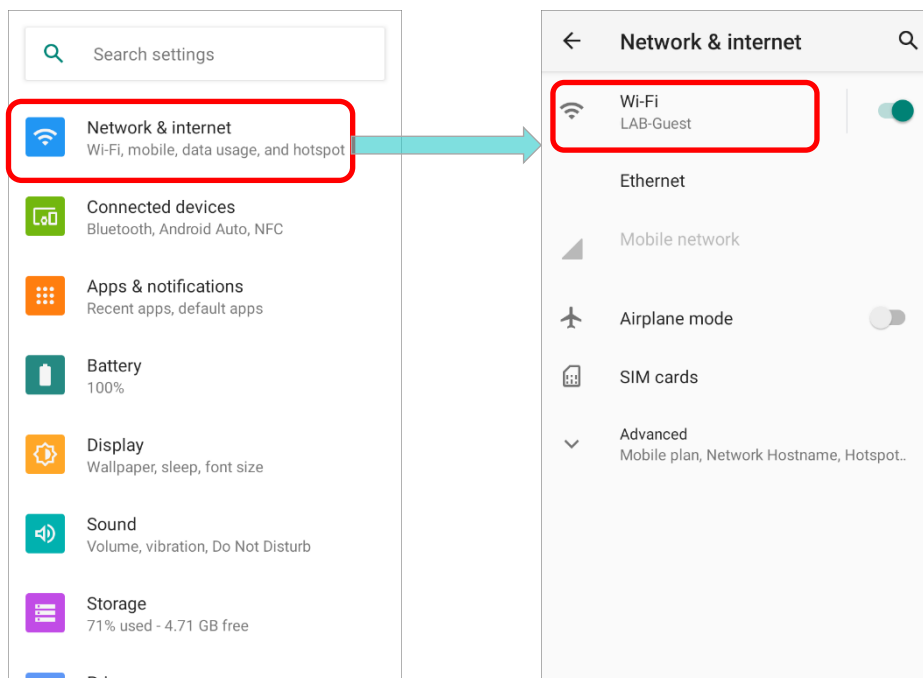
- 5) If necessary, select the Proxy server and IPv4 settings. By default, no proxy is set and IP settings are set to DHCP.



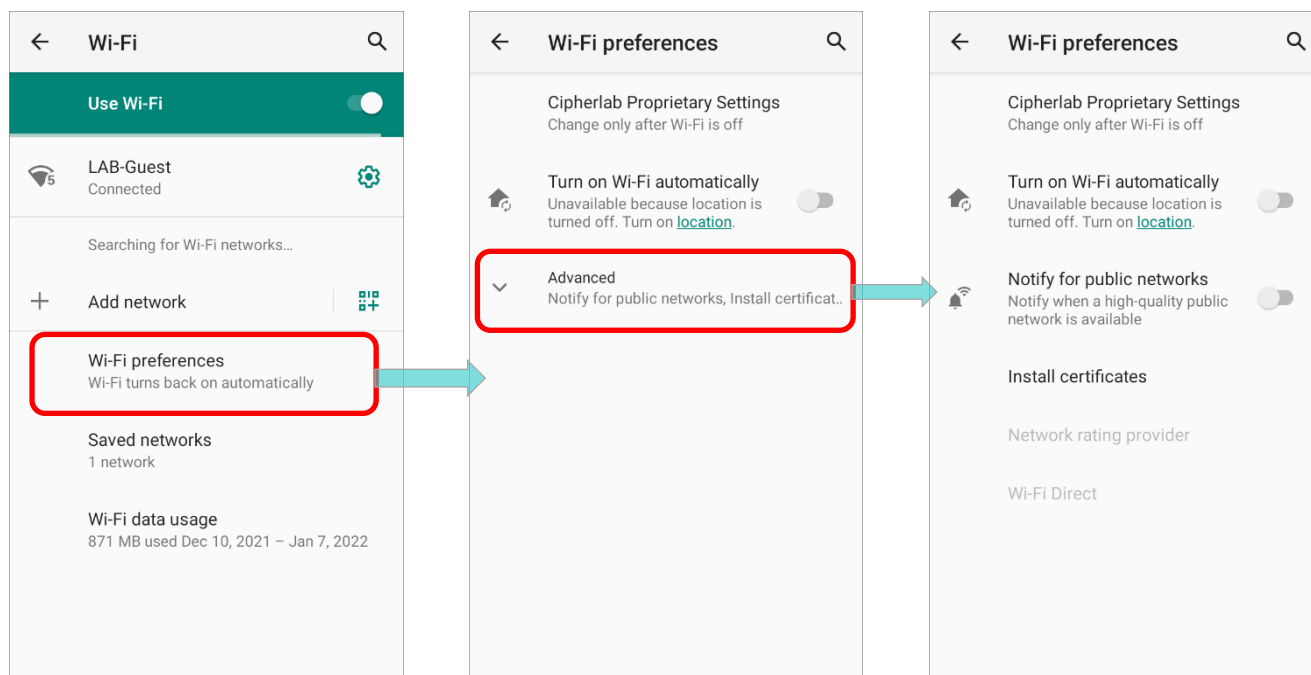
### 4.1.3. WI-FI PREFERENCES

To access advanced Wi-Fi settings:

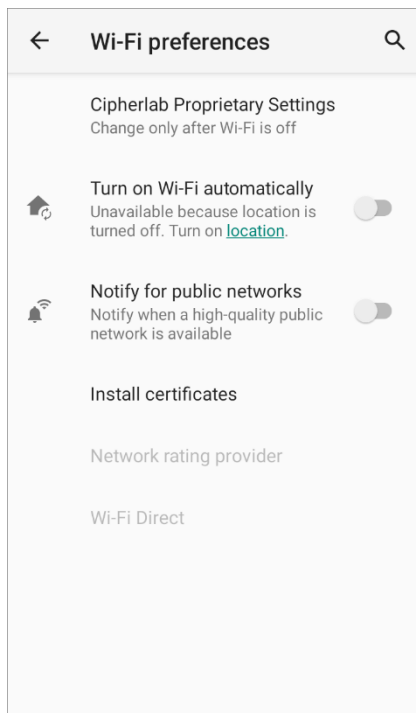
- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Network & internet**  | **Wi-Fi** .



- 2) Scroll down to the bottom of the page, and tap on **“Wi-Fi preferences”**.
- 3) Tap **“Advanced”** to expand more settings.



The available settings are as below:

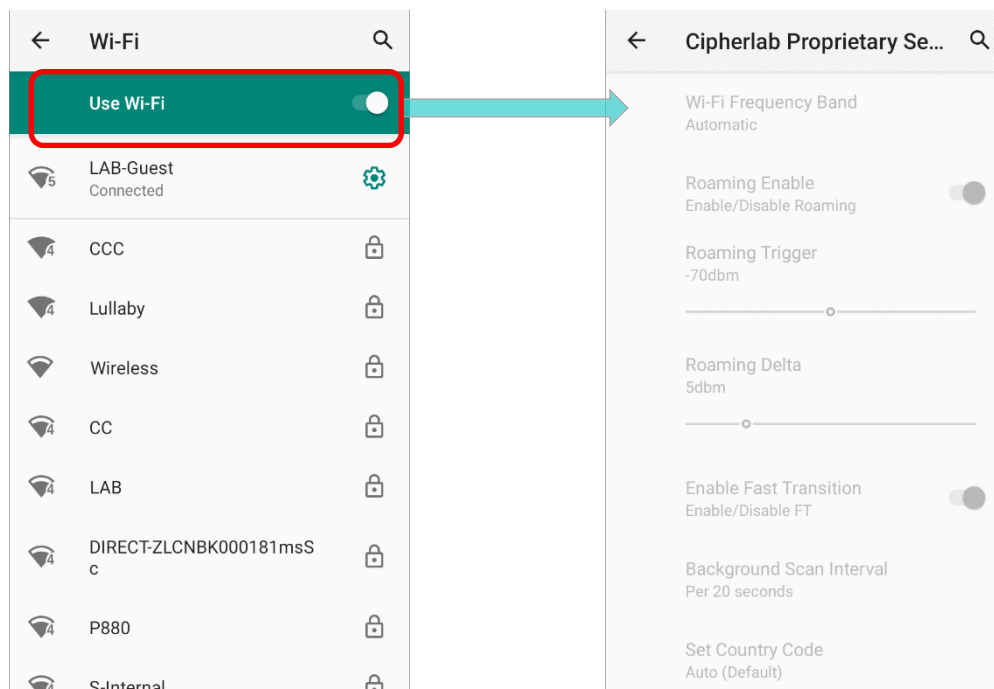


Item	Description
<b>Cipherlab Proprietary Settings</b>	Tap to enter the page for further settings. Please refer to <a href="#">Cipherlab Proprietary Settings</a> for details.
<b>Turn on Wi-Fi automatically</b>	Even you've turned off Wi-Fi, the device will automatically turn on your Wi-Fi connection when there's the saved network with a strong signal nearby.
<b>Notify for public networks</b>	Notify when a high-quality open network is available.
<b>Install certificates</b>	Installs certificates recently downloaded or placed on the internal storage.
<b>Network rating provider</b>	The selected network scorers will label the the quality of the open Wi-Fi networks you are connecting to between very fast and slow.
<b>Wi-Fi Direct</b>	Enables your device to connect with a Wi-Fi Direct-capable device.

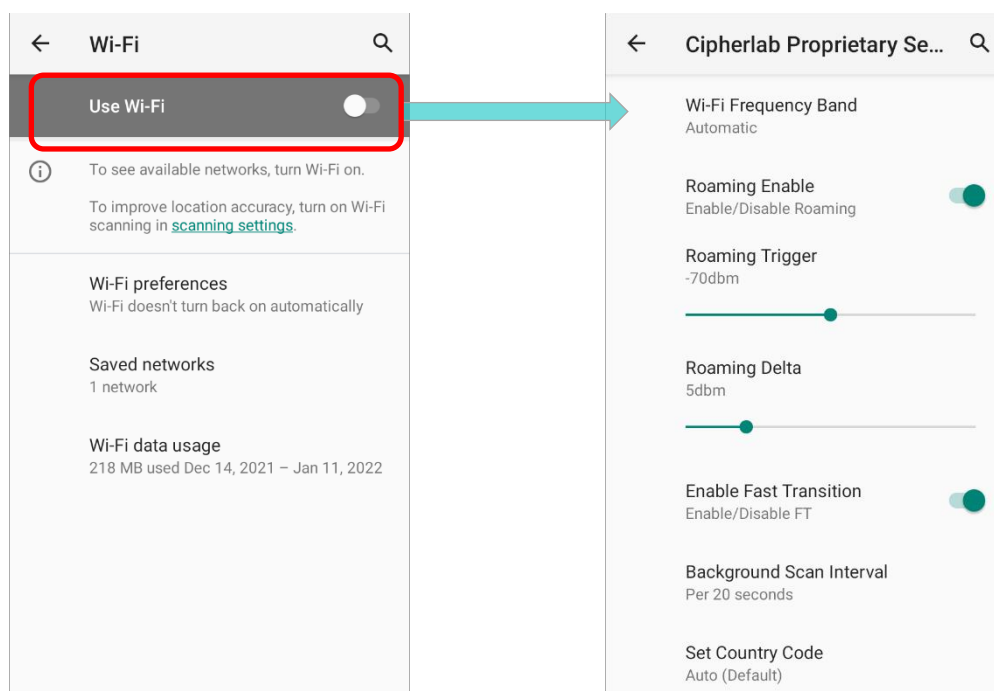
## CIPHERLAB PROPRIETARY SETTINGS

To configure the grayed out options listed on “**Cipherlab Proprietary Settings**”, Wi-Fi must be turned off. Turn on Wi-Fi again to apply the setting(s) once the configuration is done. Please tap on the switch to turn Wi-Fi on or off.

### ■ Wi-Fi is ON



### ■ Wi-Fi is OFF



Item	Description
<b>Wi-Fi Frequency Band</b>	Select <b>Automatic</b> , <b>5 GHz only</b> , or <b>2.4 GHz only</b> for your Wi-Fi frequency band. The default setting is Automatic.
<b>Enable Roaming</b>	Select whether to enable Wi-Fi roaming or not.
<b>Roaming Trigger</b>	The signal strength when triggering Wi-Fi roaming. The higher value means the sensitivity of triggering roaming is higher.
<b>Roaming Delta</b>	The qualification for roam candidates. The higher value means the signal strength of candidate APs should be higher than the current connected AP.
<b>Enable Fast Transition</b>	Enable 802.11r Fast Transition feature.
<b>Background Scan Interval</b>	The frequency of background scan when the device does not connect the internet. The shorter time means the scanning frequency is higher.
<b>Set Country Code</b>	Select the Wi-Fi country code for your device.
<b>Enable WLAN Blacklist</b>	Deny the Wi-Fi AP (access point) which is failed to access for several time, and add the denied AP to the blacklist.
<b>Wi-Fi Connection Timeout</b>	The device retains network connection and takes a while to wait for the response from the Wi-Fi till the device cannot reconnect to the previously connected Wi-Fi AP.
<b>Set Timeout Value</b>	Once “Wi-Fi Connection Timeout” is enabled, you can further set the timeout value.
<b>Captive Portal Detection</b>	To determine Internet connectivity when the device connects to a network.
<b>IP Reachability Monitor</b>	Confirm whether the gateway or DNS server can be unreachable.
<b>Channel Selection</b>	Select the Wi-Fi channel(s) to narrow down frequency band of the 2.4GHz (802.11b/g/n) or 5 GHz (802.11a/n).
<b>Reset to Default</b>	Restore all the settings in “Cipherlab Proprietary” to default.

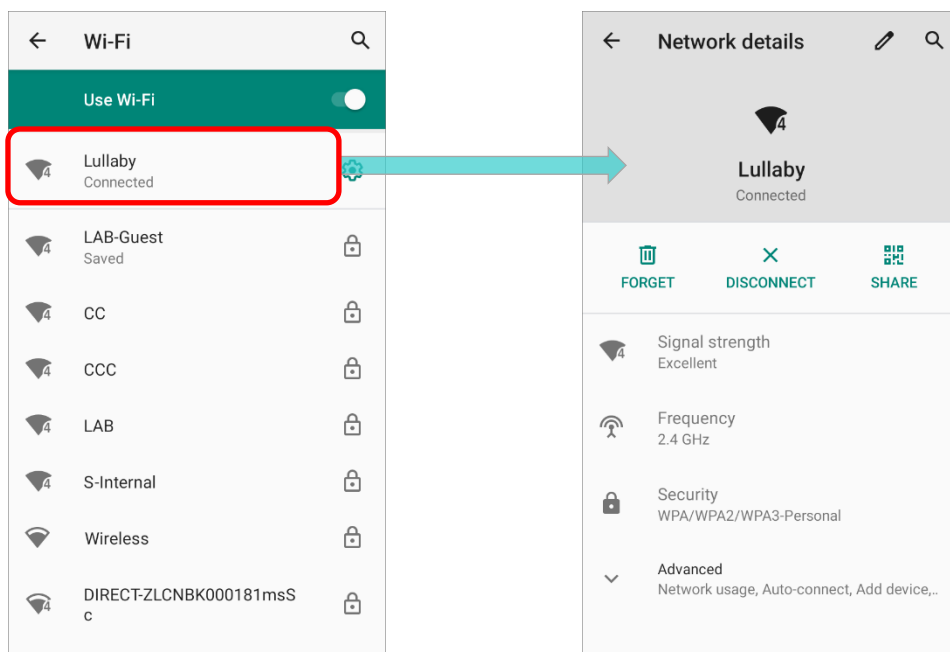


#### 4.1.4. MODIFY WI-FI NETWORK

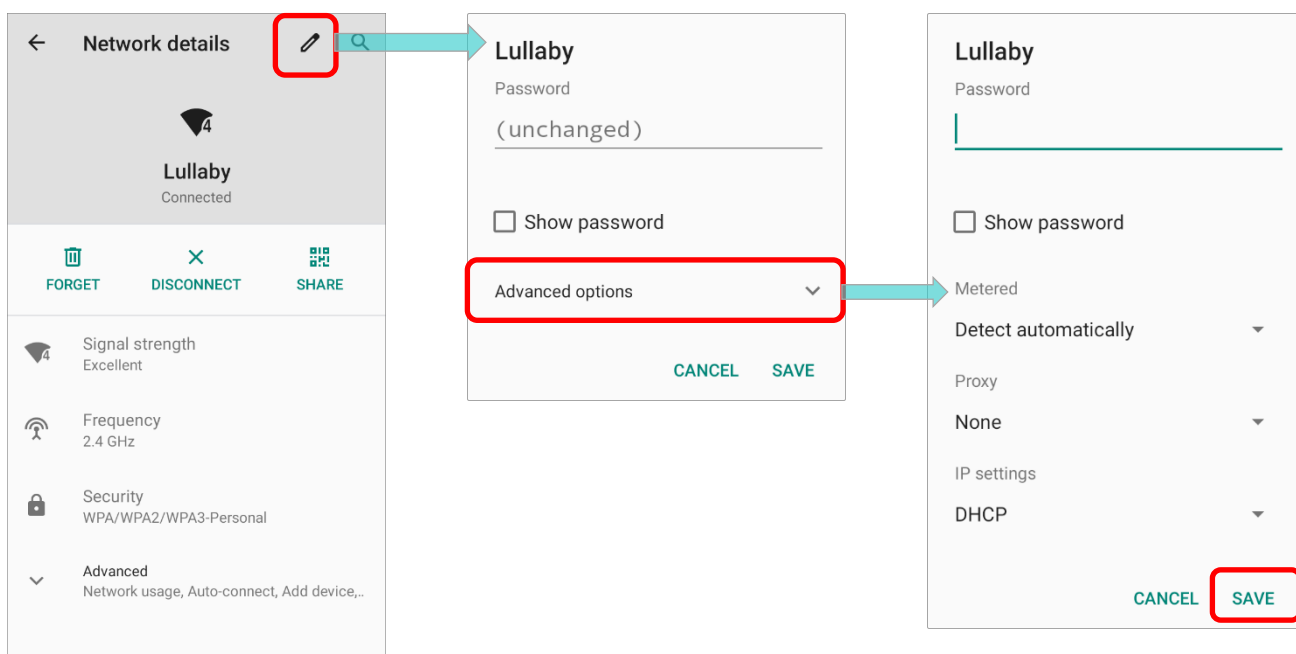
##### MODIFY THE CONNECTED NETWORK

To change the settings for a connected network:

- 1) Tap a connected network in the Wi-Fi hotspot list to enter its **"Network details"** page.



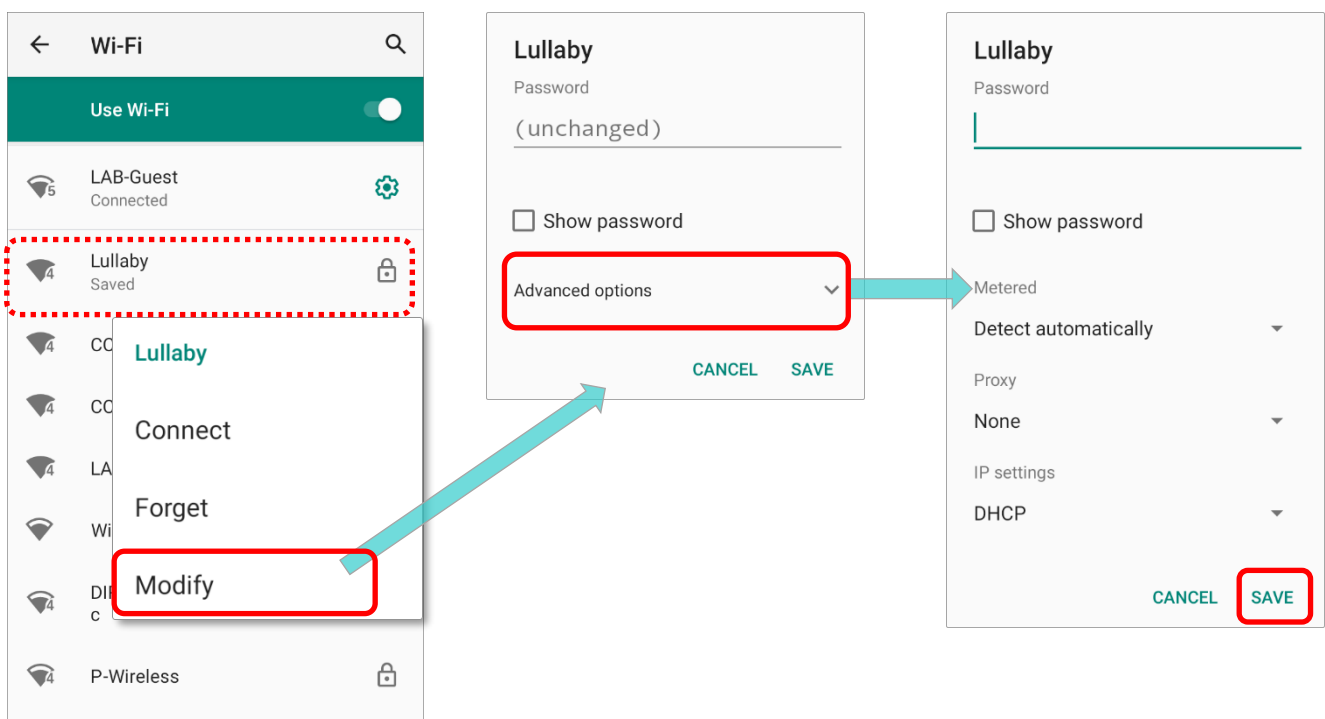
- 2) Tap on  **Edit** button to open the pop-up menu.



## MODIFY THE SAVED NETWORK

To change the settings for a saved network:

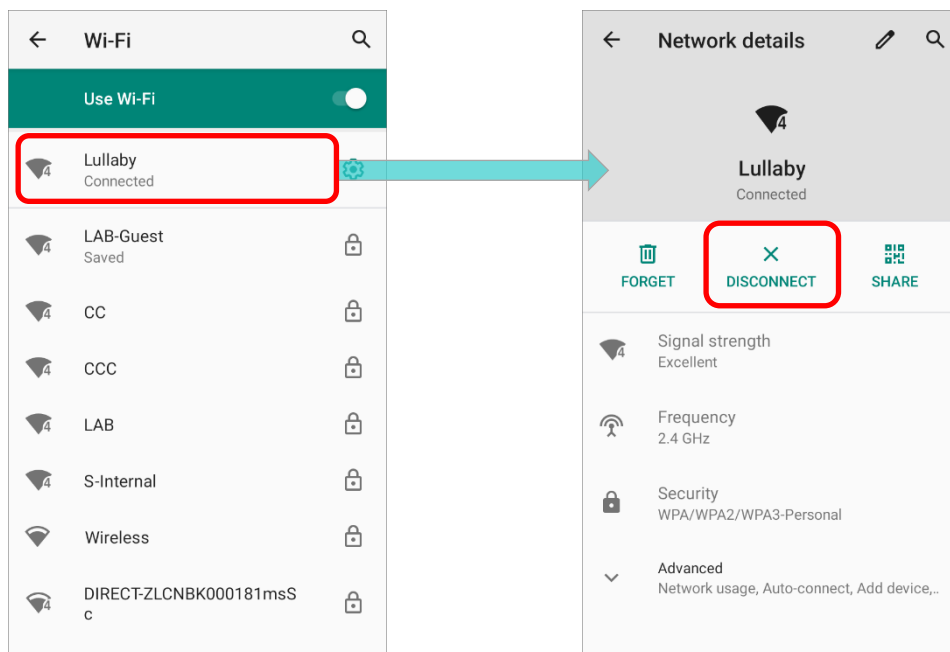
- 1) Tap and hold a saved network in the Wi-Fi hotspot list.
- 2) Tap **“Modify network”** in the pop-up menu.
- 3) In the dialog box that opens, modify the network settings, and tap **Save**.



#### 4.1.5. DISCONNECT WI-FI NETWORK

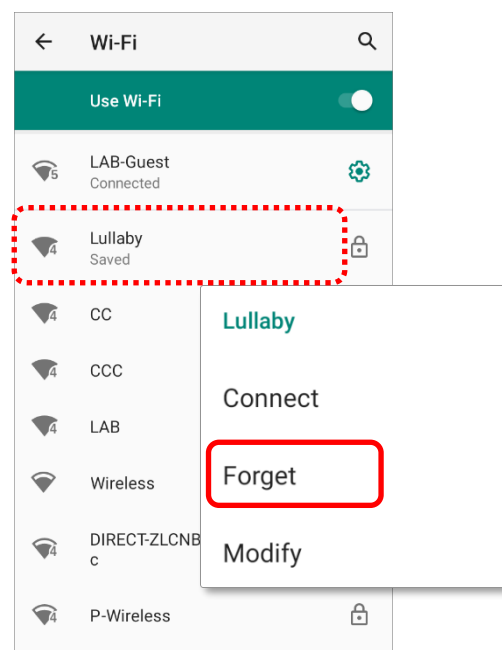
To disconnect a connected network:

- 1) Tap a connected network in the Wi-Fi hotspot list to enter its **“Network details”** page.
- 2) Tap **FORGET** or **DISCONNECT** button to disconnect.



To forget a saved network:

- 1) Tap and hold a connected network in the Wi-Fi hotspot list.
- 2) Tap **Forget network** in the pop-up menu.



## 4.2. USE BLUETOOTH

You can configure Bluetooth settings and manage Bluetooth services provided on remote devices.

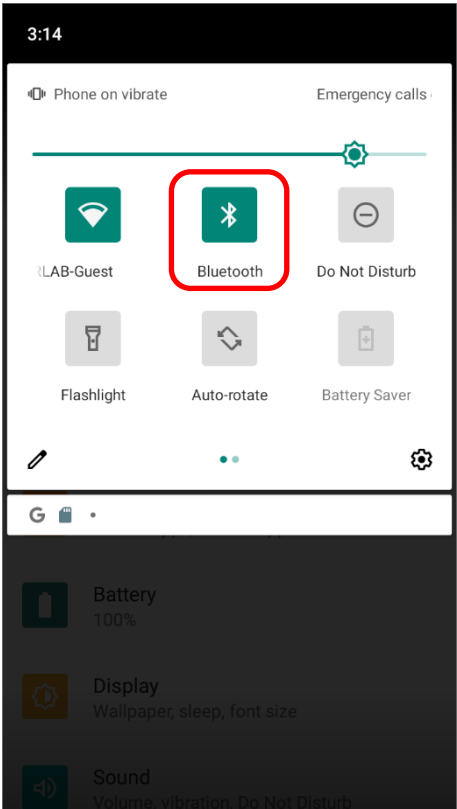
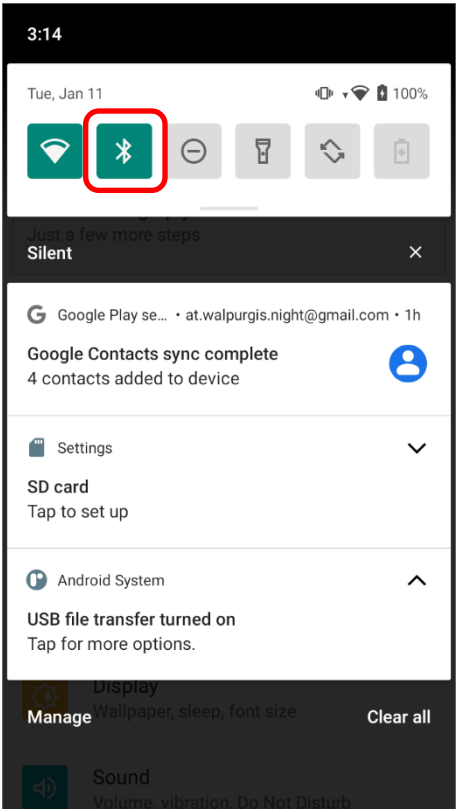
### 4.2.1. BLUETOOTH PROFILES



Bluetooth Profiles Supported		
Generic Access Profile	<b>(GAP)</b>	For device discovery and authentication.
Service Discovery Access Profile	<b>(SDAP)</b>	Discovers services on remote devices.
Headset Profile	<b>(HSP)</b>	Describes how a Bluetooth enabled headset should communicate with a Bluetooth enabled device
Hands-Free Profile	<b>(HFP 1.6)</b>	Allows using a hands-free device to place and receive calls.
Serial Port Profile	<b>(SPP)</b>	Sets up a virtual serial port to connect two Bluetooth devices.
Generic Object Exchange Profile	<b>(GOEP)</b>	Provides a basis for other data profiles.
Object Push Profile	<b>(OPP)</b>	Pushes and pulls objects to and from a push server.
Hands Free Profile	<b>(HFP)</b>	Connects the Audio Gateway device to the Hands Free device.
Personal Area Networking Profile	<b>(PAN)</b>	Uses Bluetooth Network Encapsulation Protocol for Bluetooth transmission.
Advanced Audio Distribution Profile	<b>(A2DP)</b>	Streams stereo-quality audio to a wireless headset or speaker.
Audio Video Remote Control Profile	<b>(AVRCP)</b>	Allows controlling of television and Hi-Fi equipment.
General Audio/Video Distribution Profile	<b>(GAVDP)</b>	Provides a basis for A2DP and VDP.
Human Interface Device Profile	<b>(HID)</b>	Provides a low latency Bluetooth connection with keyboards, pointing devices, etc.
Phone Book Access profile	<b>(PBAP)</b>	Transfers Phone Book Objects to a car kit to display the information of an incoming call received on the mobile computer, or initiate a call.
Out of band and Near Field Communications	<b>(OOB, NFC)</b>	Manages the pairing process by using NFC.
Symbol Serial Interface Profile	<b>(SSI)</b>	Supports additional scanner.
Human Interface Device Profile	<b>(HID)</b>	Provides a low latency Bluetooth connection with keyboards, pointing devices, etc.
Dial-up Networking Profile	<b>(DUN)</b>	Provides a standard to access the Internet and other dial-up services over Bluetooth.


4.2.2. TURN ON BLUETOOTH

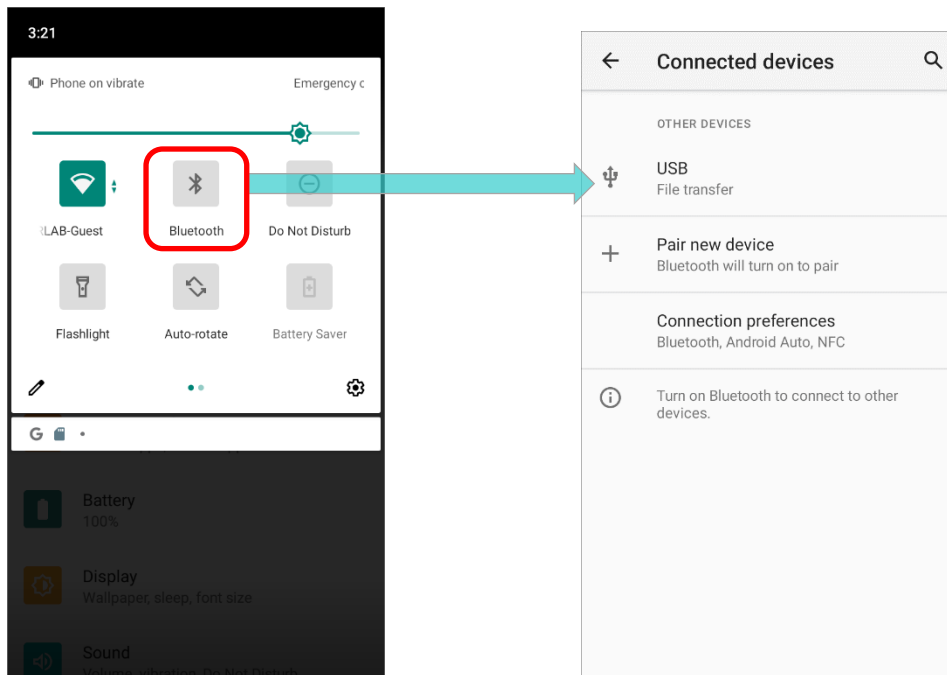
Bluetooth is turned on by default, and you can turn it on or off by tapping on the **Bluetooth** icon

 on **Quick Settings Menu** or **Quick Settings Panel**:






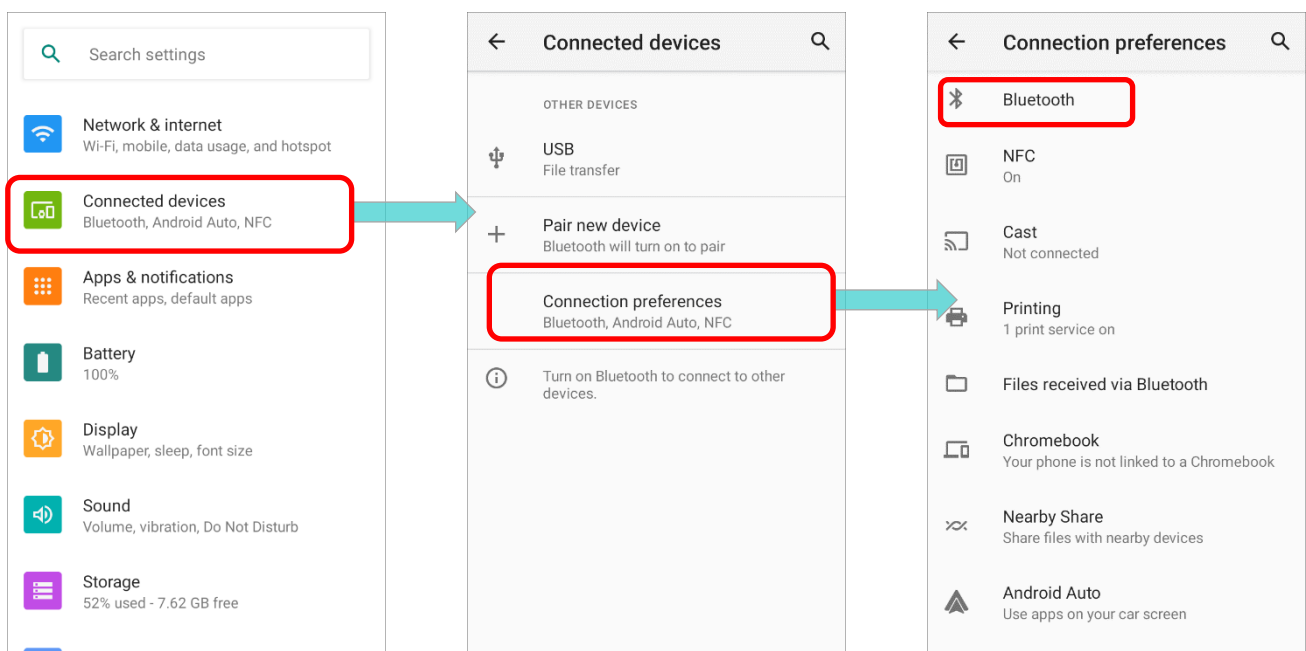
Icon	Description
	Bluetooth is <b>OFF</b> .
	Bluetooth is <b>ON</b> .

To enter “**Connected devices**” page for further Bluetooth settings, please long press the Bluetooth icon  on **Quick Settings Menu** or **Quick Settings Panel**:

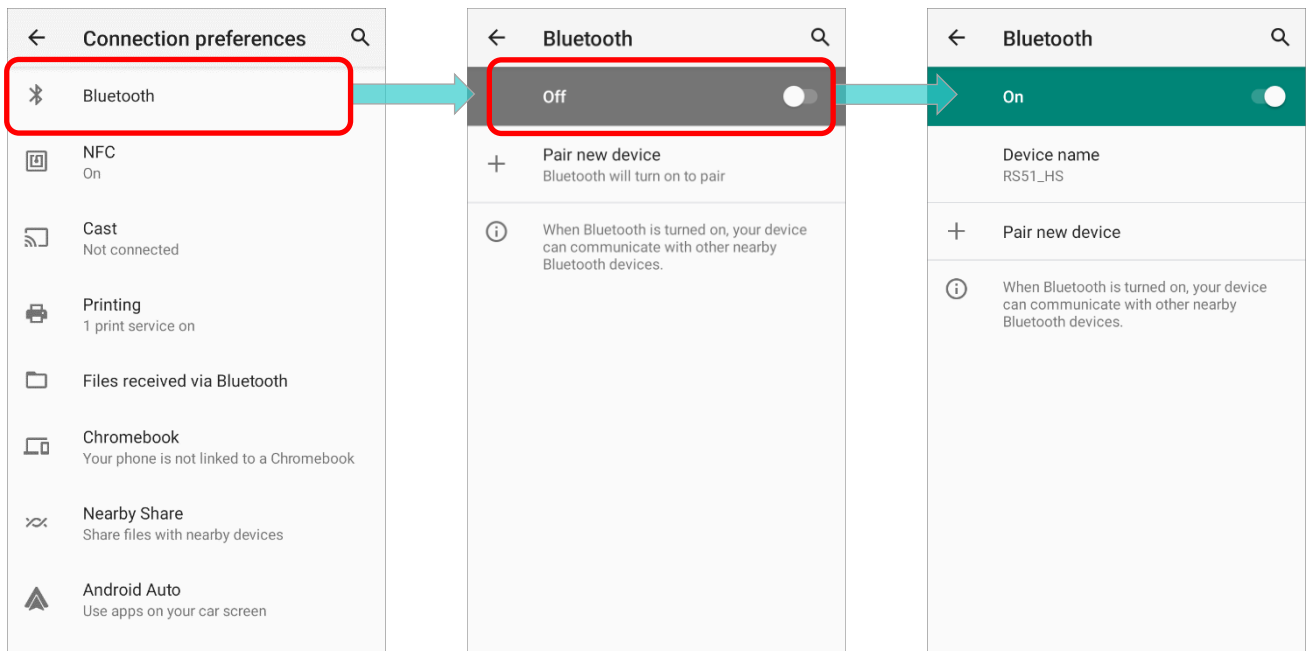


OR

1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Connected devices**  | **Connection preferences** | **Bluetooth** .



2) Tap the switch to turn on this function while enabling the Bluetooth visibility of this device.






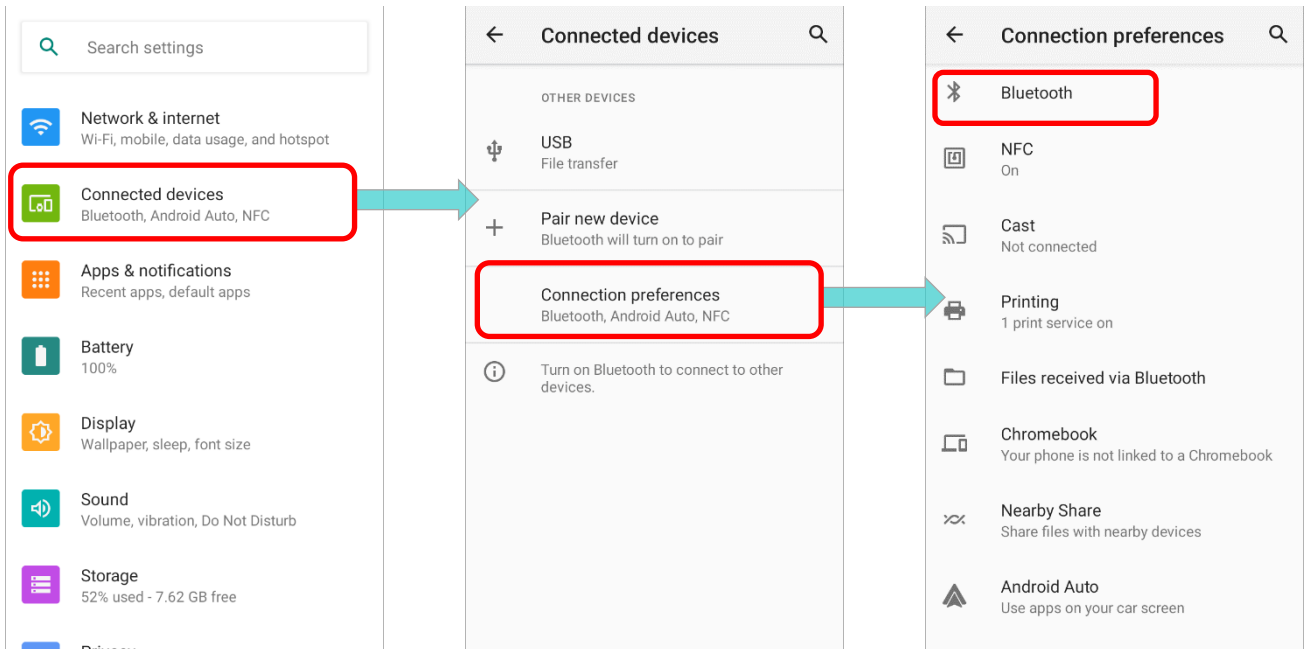
**Note:**

Having been turned on, Bluetooth is active even when the mobile computer is suspended. However, if the power mode is switched to Airplane Mode, Bluetooth power will be turned off regardless of the settings.

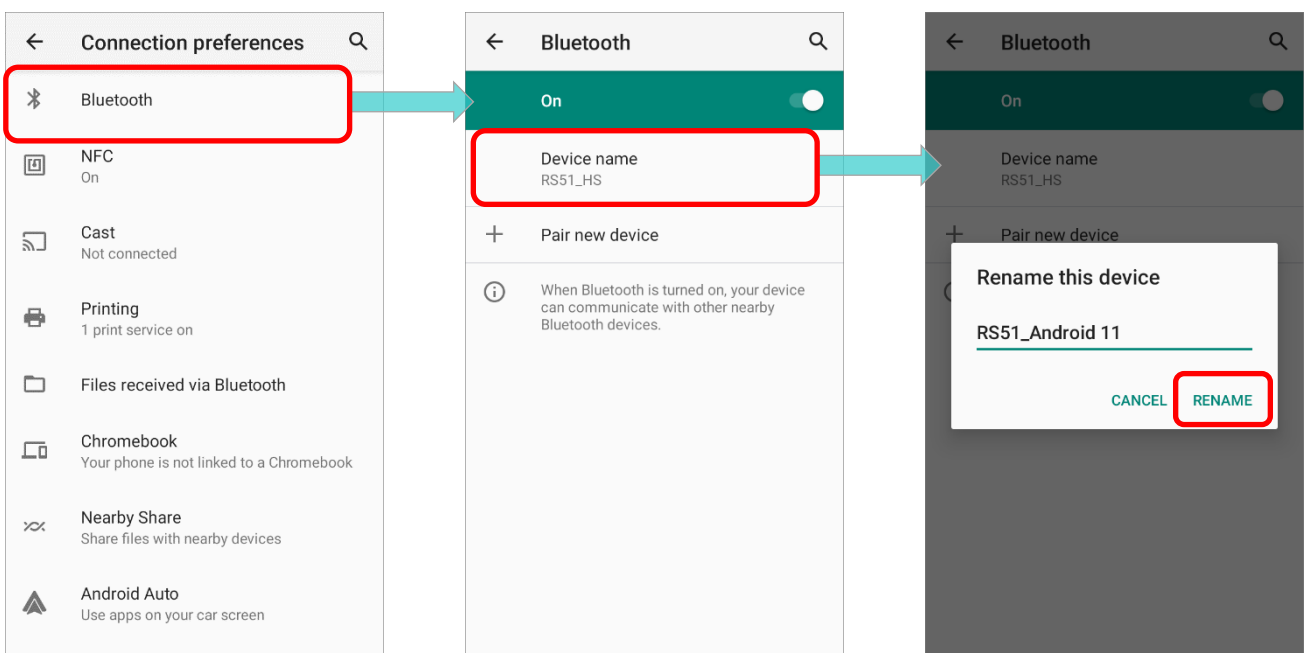
### 4.2.3. CHANGE BLUETOOTH NAME

To change the Bluetooth name of this mobile computer:

- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Connected devices**  | **Connection preferences** | **Bluetooth** .






- 2) Tap “**Device name**” and the pop-up window “**Rename this device**” shows up.
- 3) Type a new name in the field and tap **RENAME**.

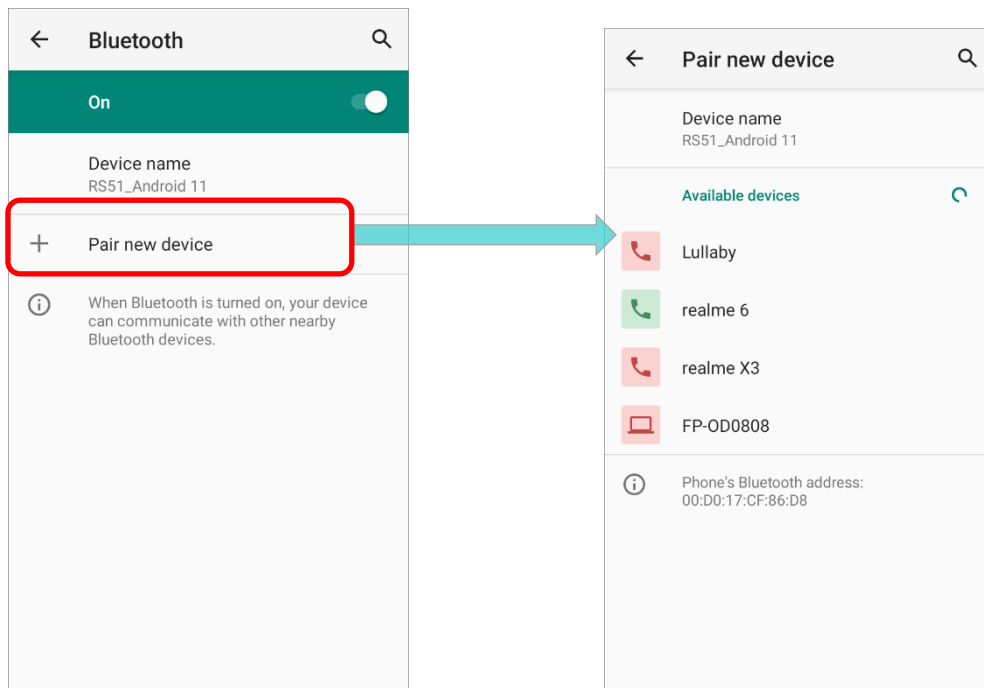




#### 4.2.4. PAIR BLUETOOTH DEVICES

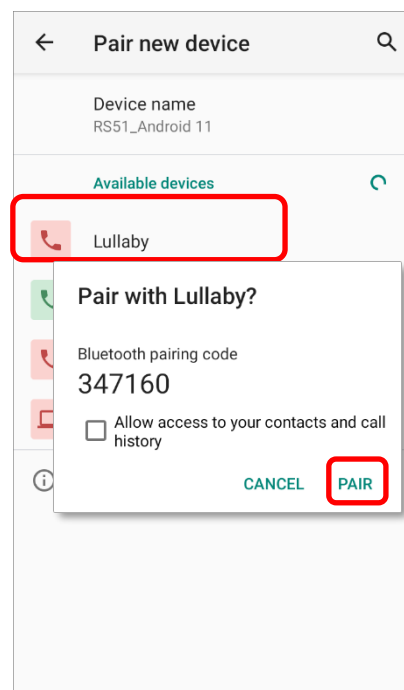
- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Connected devices**  | **Connection preferences** | **Bluetooth** .

Tap the switch to **On** and then enter “**Pair new device**” page to scan for available Bluetooth devices nearby. Scroll through the list and tap the device you would like to pair.




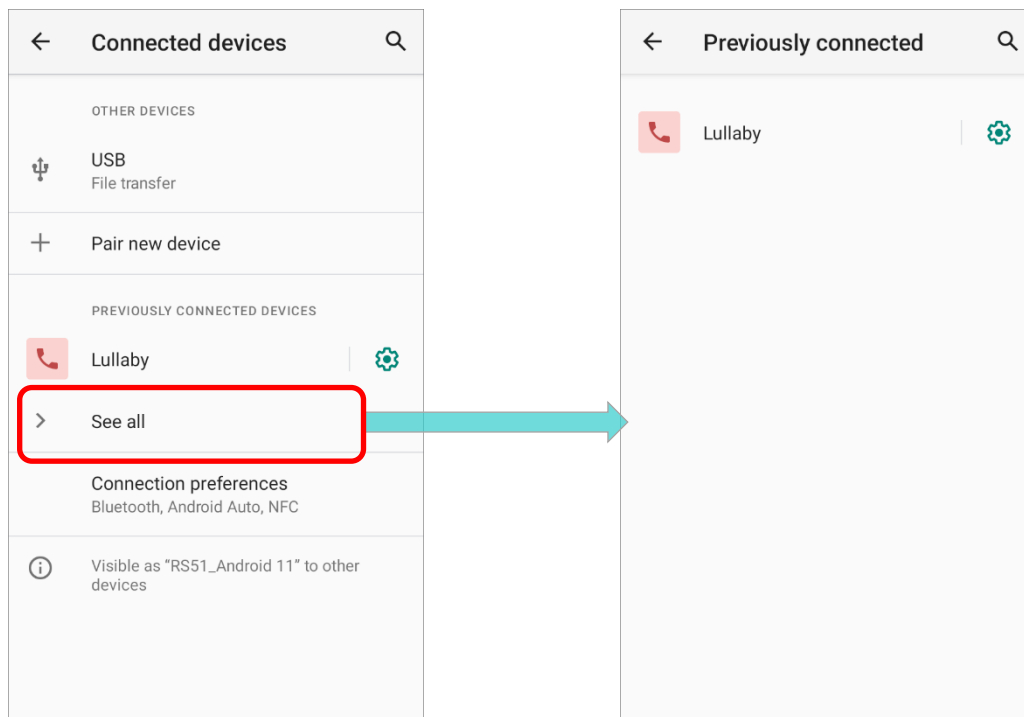
- 2) The **Bluetooth pairing request** window opens.

Depending on the pairing settings of the Bluetooth device, you may need to enter a passkey, or confirm the assigned passkey on the device to pair if a smart pairing method is applied. Enter/confirm the passkey on the device to pair.



- 3) Once pairing is done, the Bluetooth device will be listed in the **Previously connected devices** page.

Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Connected devices**  to check the connected device(s) list.



---


**Note:**

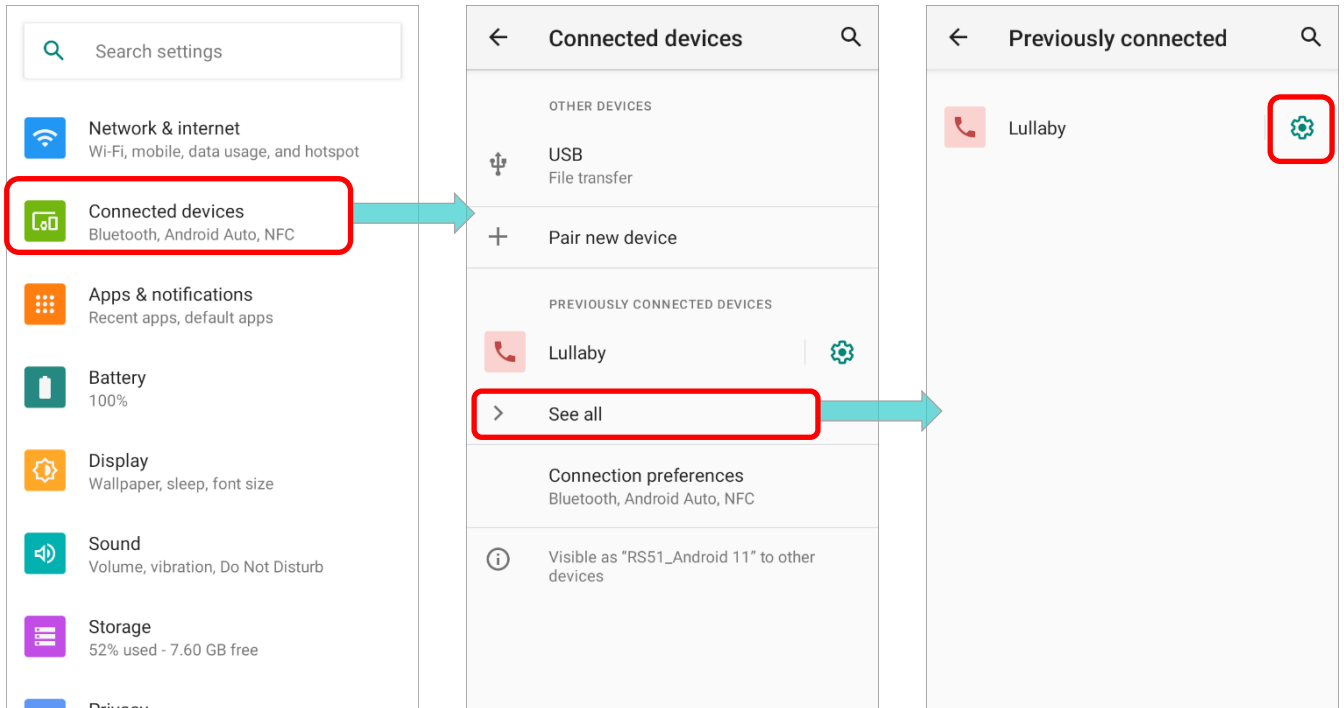
If the device you would like to pair with is not listed, make sure Bluetooth visibility is enabled on the device.

---

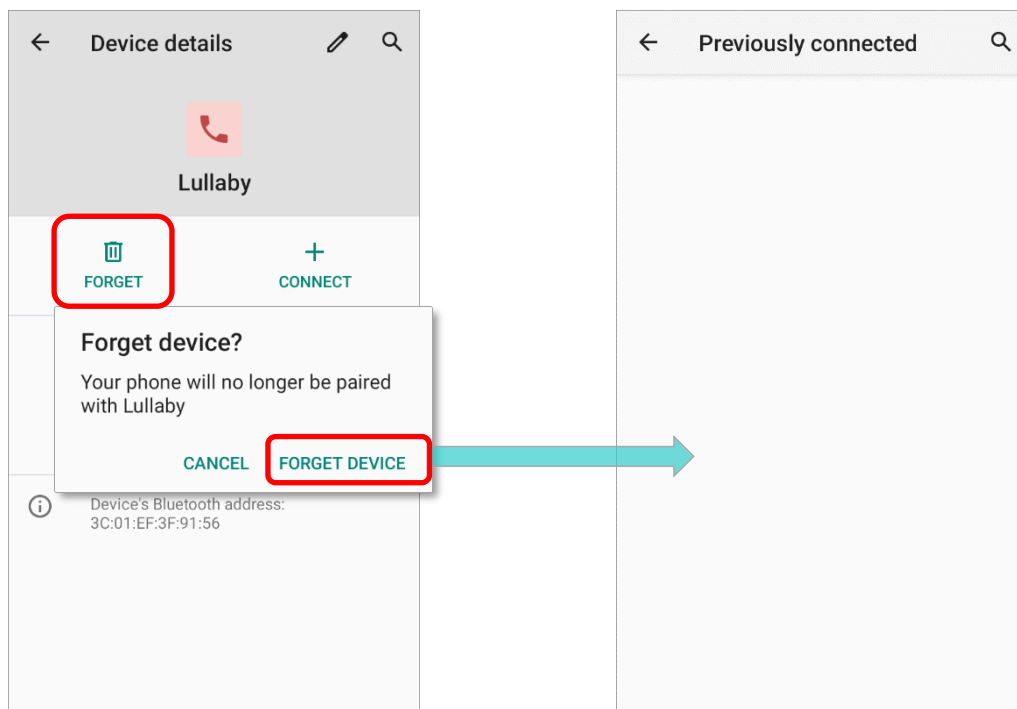
#### 4.2.5. UNPAIR BLUETOOTH DEVICE

To unpair a paired device:

- 1) In the **Previously connected devices** list, tap the settings button  next to the paired device.






- 2) On the Device details screen, tap **FORGET**.

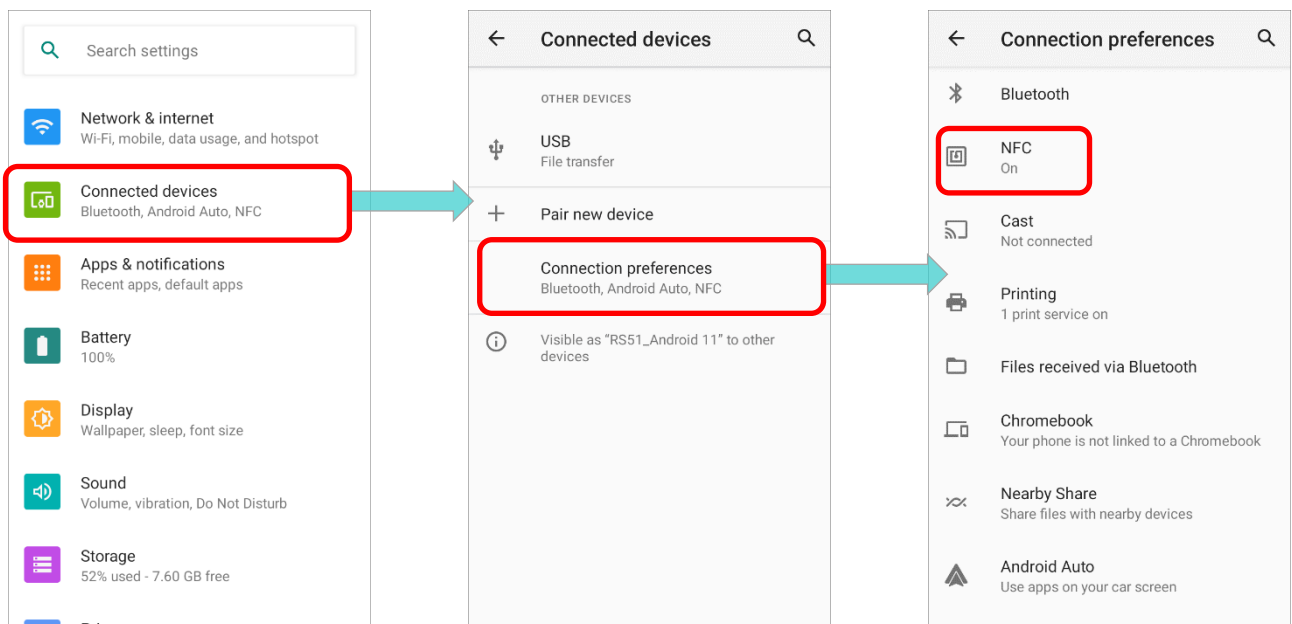


### 4.3. USE NEAR FIELD COMMUNICATIONS

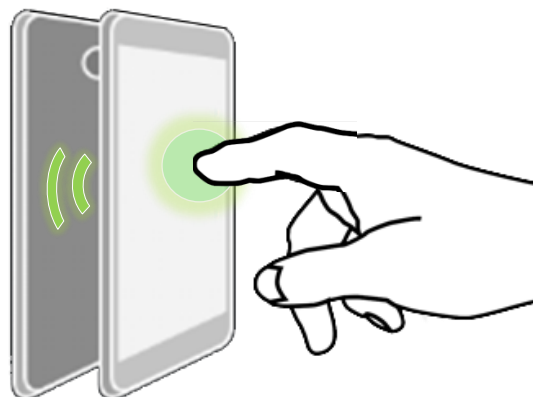
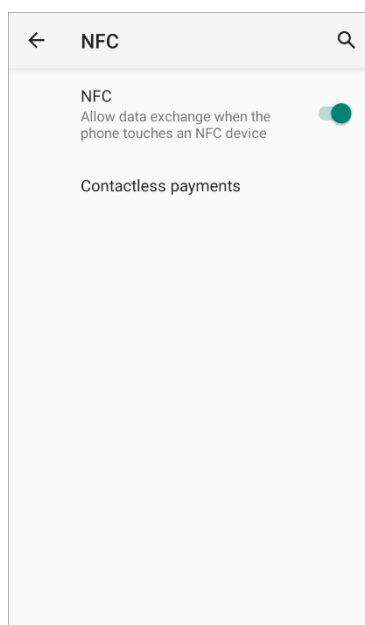
Near field communications (NFC) uses close proximity (4 cm or less) to establish radio communication through electromagnetic fields. With NFC enabled, the mobile computer can collect information from NFC tags, exchange information with other NFC supported devices, and even change information on the NFC tag if authorized.

Before starting to communicate through NFC, perform the following:

- 1) Go to [App Drawer \(All Apps\)](#) | **Settings**  | **Connected devices**  | **Connection preferences** | **NFC** .

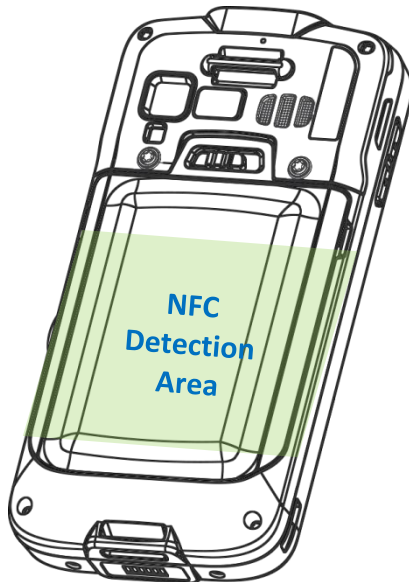


- 2) Tap on the switch to turn on “NFC”.



#### 4.3.1. PAIR WITH NFC ENABLED BLUETOOTH DEVICES

- 1) On the device you would like to pair with, make sure NFC is enabled and Bluetooth discovery is enabled.
- 2) Hold the mobile computer without covering the antenna area.



- 3) Move the mobile computer in proximity with the device for pairing. A screen notification will appear to indicate that pairing is successful.

---

**Note:**

Once the data begins to transfer, just keep the two devices in the distance within 10 m (32.8 ft.); they no longer have to be held within close range in order to transfer successfully.

---

#### 4.3.2. COMMUNICATION WITH NFC

- 1) On the mobile computer, launch an NFC enabled application.
- 2) Hold the mobile computer without covering the antenna area at the lower end of the battery.
- 3) Place the mobile computer close to the NFC tag or device until the application indicates data transfer is complete.

## Chapter 5

### USING THE PHONE

---

The RS51 mobile computer allows making phone calls and connecting to the network over Wideband Code Division Multiple Access (WCDMA). Insert the SIM card before turning on the power. Refer to [Installing SIM Card, SAM Card and Memory Card](#).

---

#### Note:

- (1) If the SIM card is not in position, you may make emergency calls if the service is supported.
  - (2) Wi-Fi only model doesn't support phone application.
- 

#### IN THIS CHAPTER

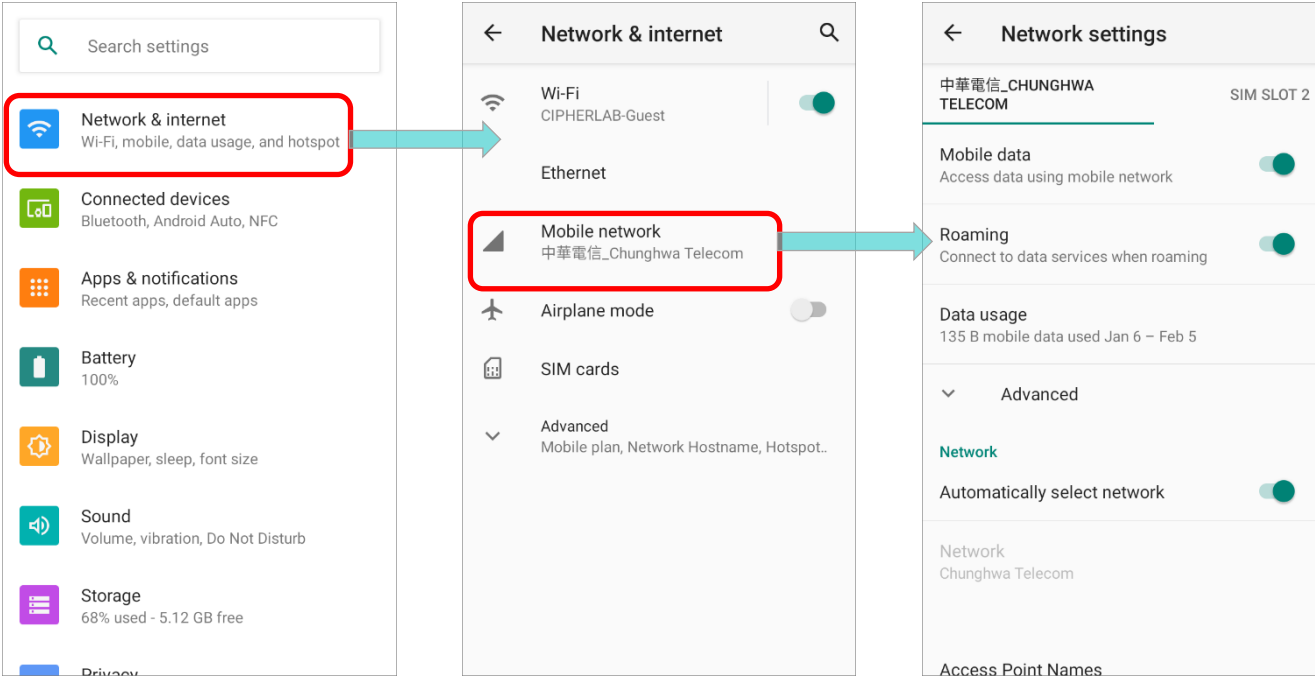
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5.1 SIM Card Management .....	155
5.2 Phone Application .....	158
5.3 Audio Modes.....	168
5.4 In-call Volume.....	169

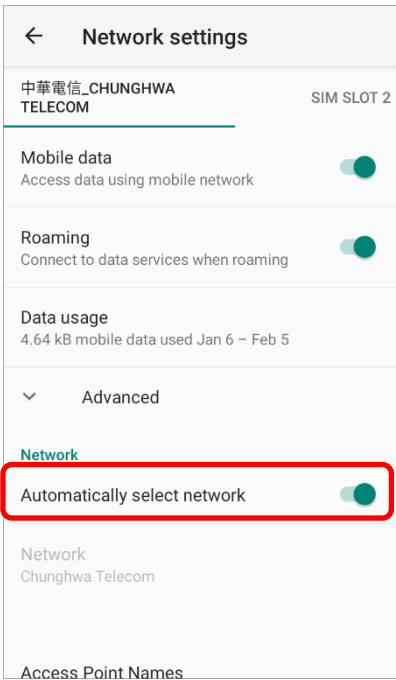
5.1. SIM CARD MANAGEMENT

The default setting for cellular networks is “Automatically select network”. To manually select the cellular network, please:

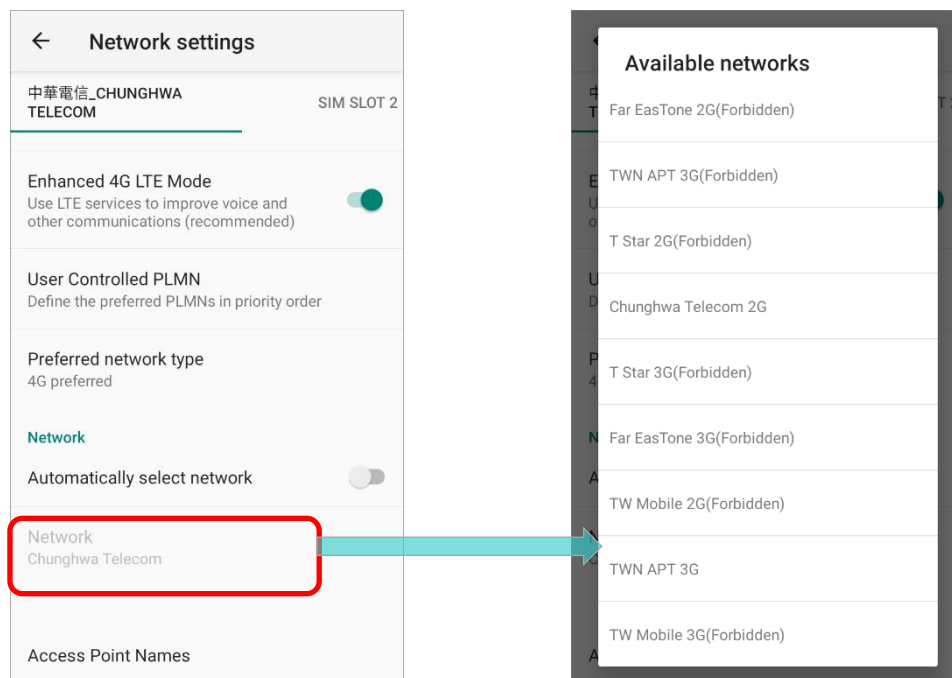
- 1) Go to [App Drawer](#) | [Settings](#) | [Network & Internet](#) | [Mobile Network](#).



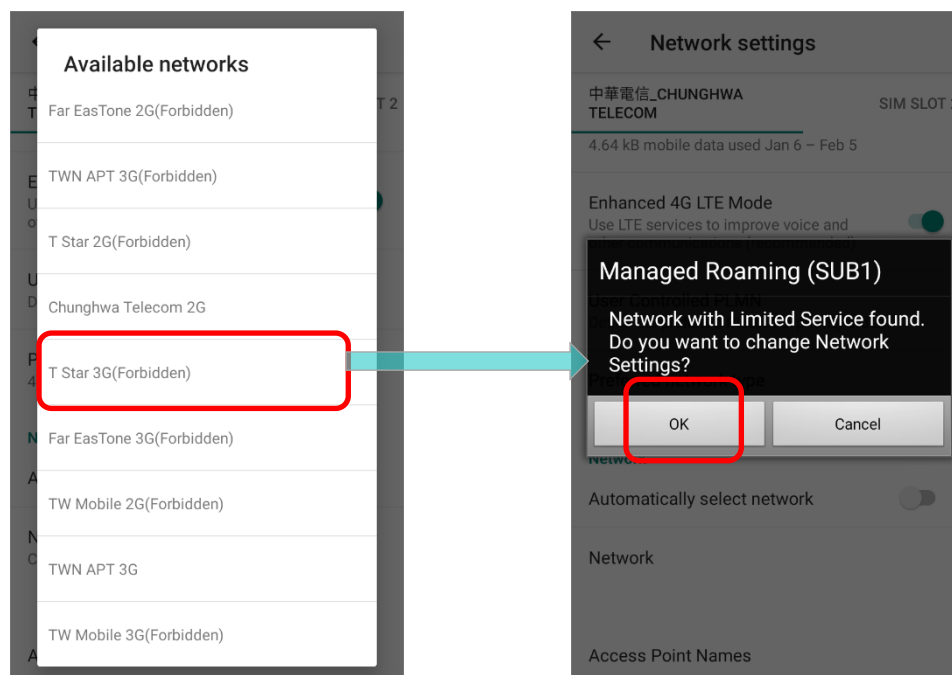
- 2) On the mobile network page, scroll to find “Automatically select network” to disable it. Or scroll



- 3) “**Choose Network**” page shows up automatically once “**Automatically select network**” is turn off. Available networks will be listed after searching.

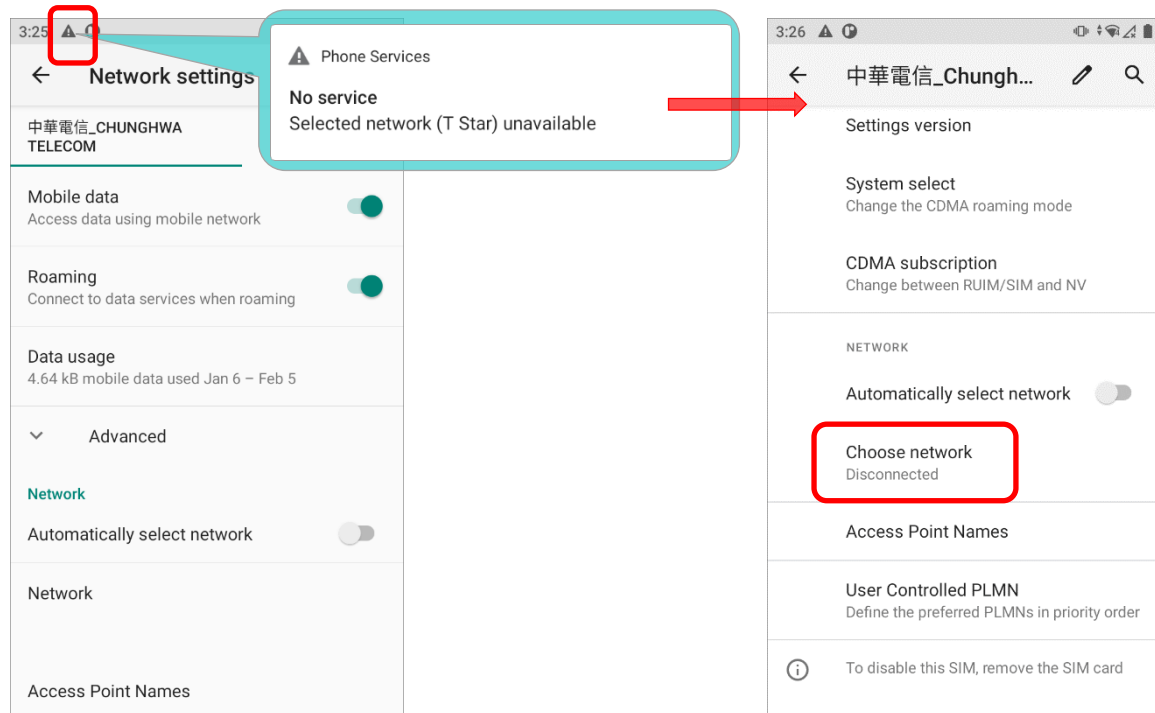


- 4) Select your preferred network from the list.





- 5) A notification appears if the selected network is unavailable. Tap on the notification card to enter the mobile network page, and tap on **“Choose Network”** to repeat the aforesaid steps to select the network again.

**Note:**

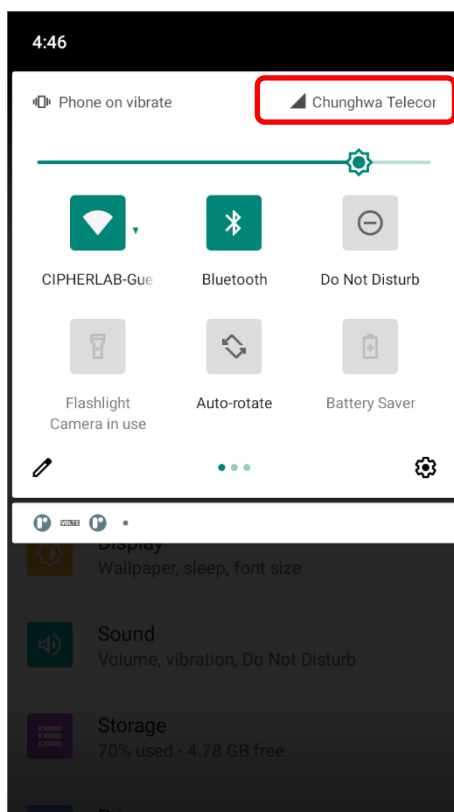
When both SIM cards are inserted and enabled, they are active and ready to receive an incoming call but not able to be connected at the same time.

**EMERGENCY CALLS**


Depending on your service provider, the mobile computer might support making emergency phone call when the SIM card is locked, or even when no SIM card is inserted. Emergency phone numbers will vary by country.

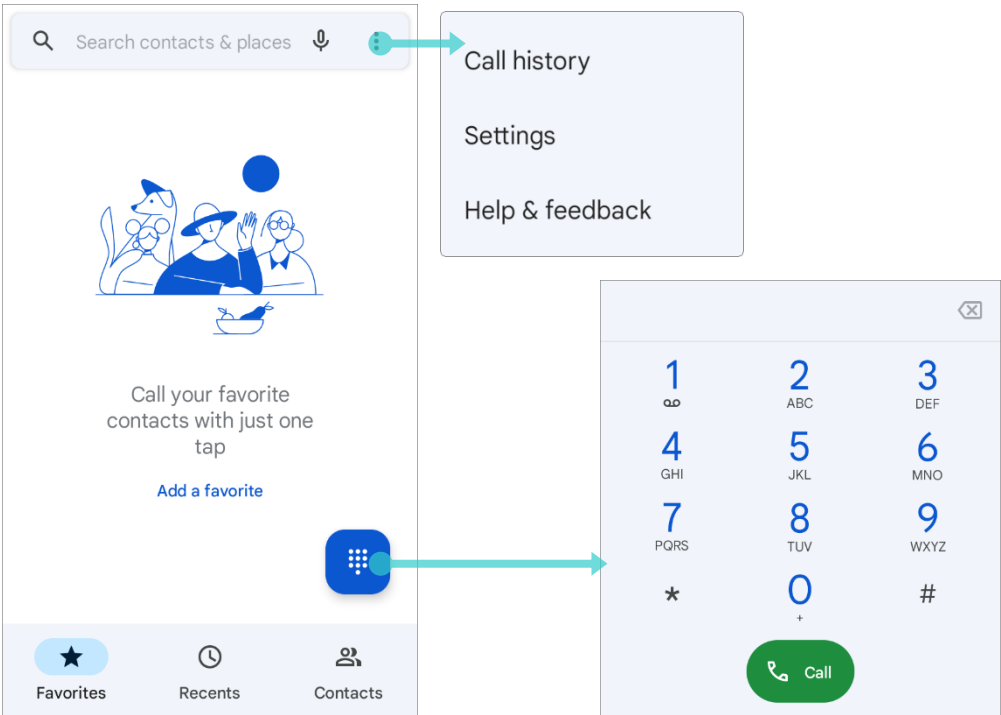
## 5.2. PHONE APPLICATION




When a SIM card is installed on the mobile computer, a signal icon appears on the status bar. The filled part of the signal icon indicates the strength of the connection.



5.2.1. PHONE INTERFACE

To launch the phone application, please go to [App Drawer \(All Apps\)](#) | Phone  .

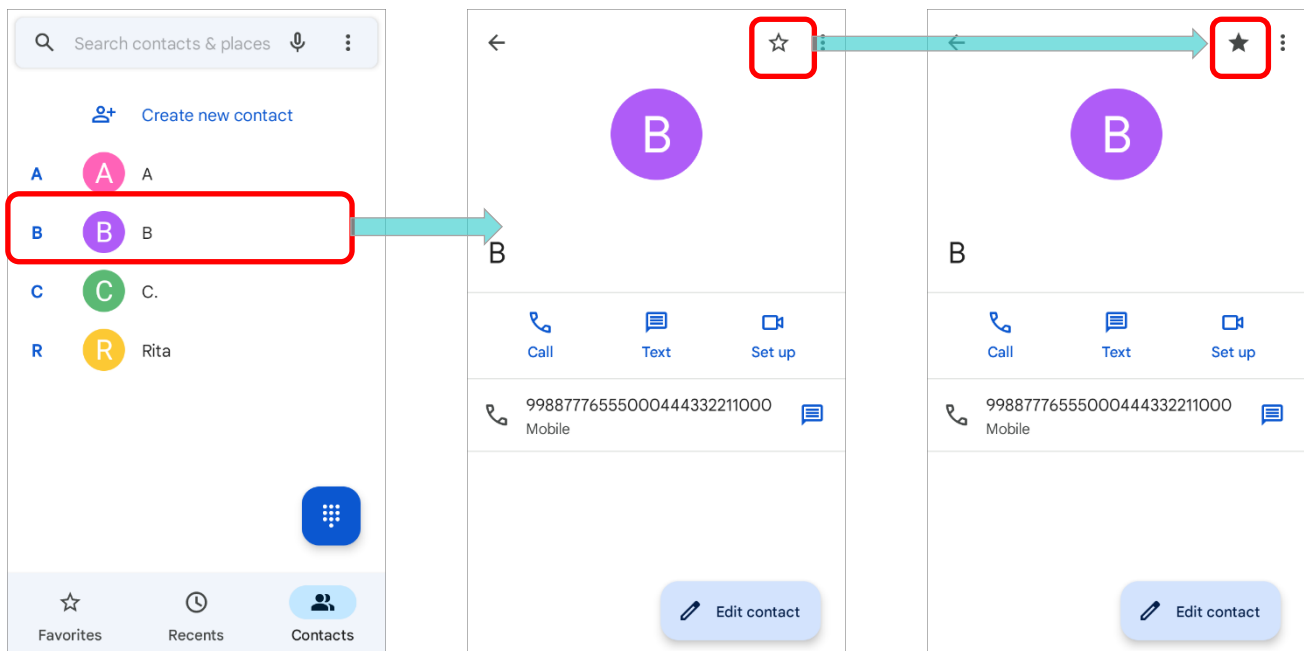


Item		Description
	Favorite	Display your favorite contacts & your frequent calls.
	History	List all the call history.
	Contacts	List your contacts.

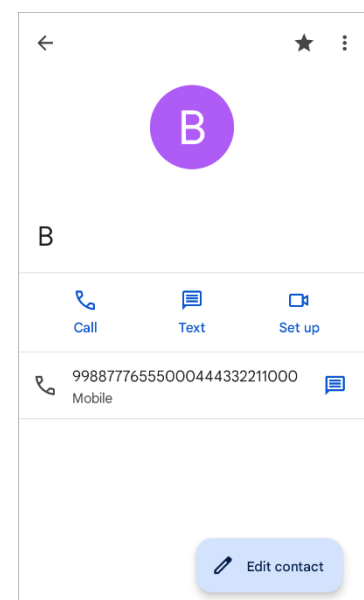
## ADD FAVORITE CONTACTS

Your favorite contacts are displayed on “**Favorite**” ★ tab pages for quickly making phone calls. To add a favorite contact:



- 1) On “**Contacts**” 👤 tab page, tap on the contact you would like to set to be your favorite to enter the contact detail page.
- 2) Tap on the start mark on the upper-right to mark this contact as your favorite.




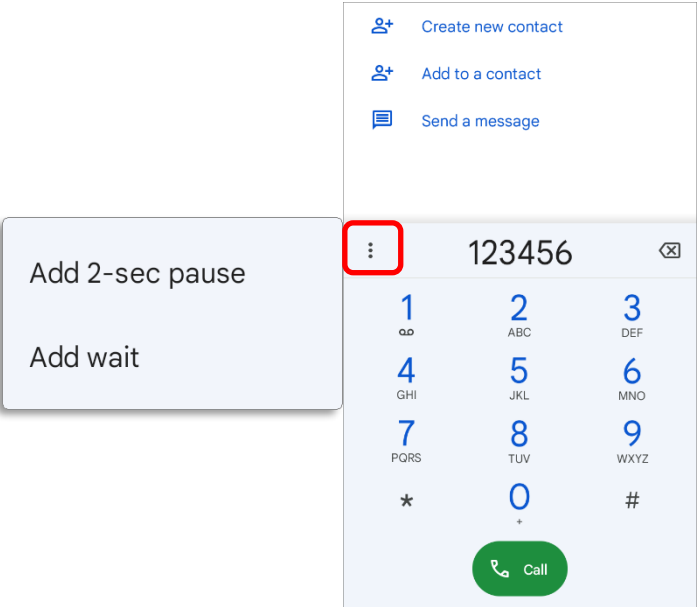
Return to “**Favorite**” ★ tab pages, the contact you just marked as favorite is now displayed on “**Favorite**” ★ tab pages.



5.2.2. PLACE CALL



Tap  to expand the dial pad, and enter the phone number in the dial pad and tap  to initiate the call.

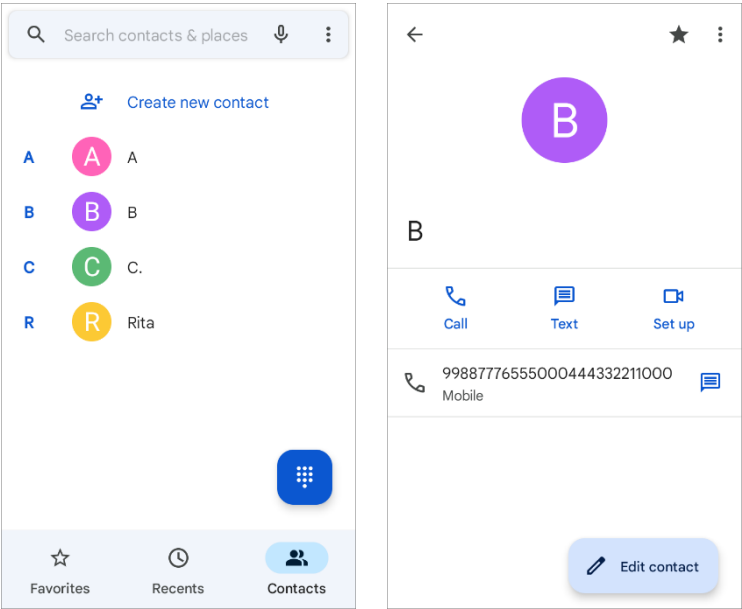
If you need to frequently make calls to an interactive voice system, you may tap  next to the number and select **Add 2-sec pause** for soft pause (a pause of 2 seconds to the buttons) or a hard pause (a pause that will wait for your confirmation to send the following digits).



PLACE CALL BY USING CONTACTS

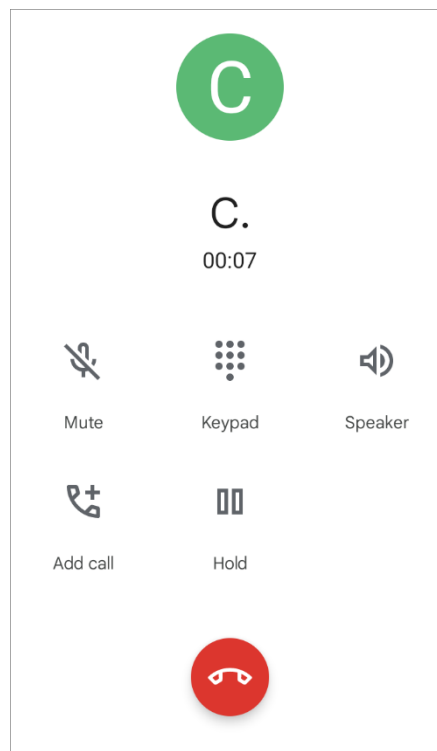
To make a call by using contacts:







- 1) In the phone application page, tap to enter “**Contact**” tab page .
- 2) Tap a contact to enter the contact detail page and then tap on “**Call**”  to initiate a call.



### 5.2.3. DURING A CALL

When a call is connected, the phone keypad features the following buttons:



Button		Description
	<b>Mute</b>	Mute the call.
	<b>Keypad</b>	Open the numeric keypad.
	<b>Speaker</b>	Turn on the speaker.
	<b>Add call</b>	Add another person to the call.
	<b>Hold</b>	Place the call on hold.
	<b>Hang up</b>	End the call.

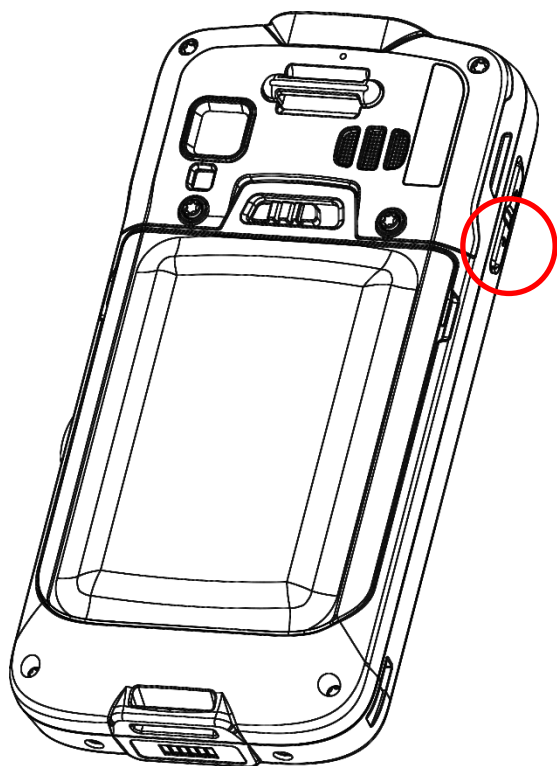
#### 5.2.4. RECEIVE INCOMING CALL

When a call is incoming on the mobile computer, tap **ANSWER** to pick it up.




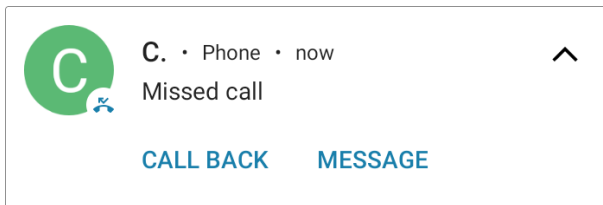
Incoming calls will be logged in the Phone application; in the case of a missed call, a notification will be displayed. See [Check Miss Calls](#).



To mute the ringtone of an incoming call, press the volume down button.

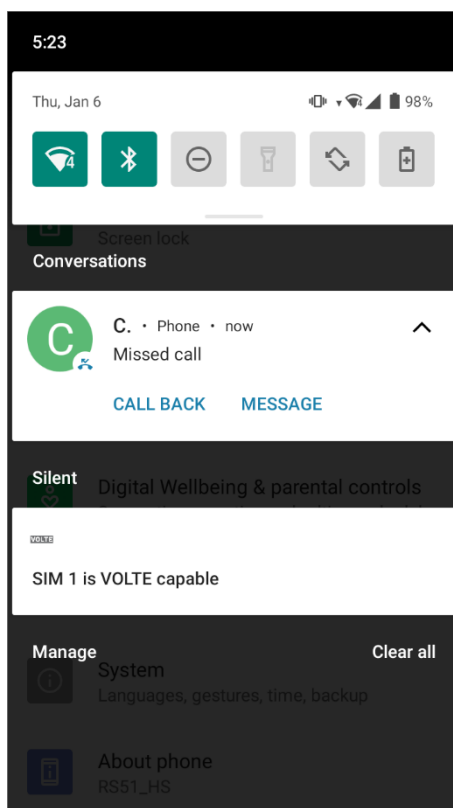


### 5.2.5. CHECK MISSED CALLS

If you have a missed call, a notification icon  will appear on the status bar. The missed calls notification will also be displayed on the lock screen.



(Turning on or off the notification function on [App Drawer \(All Apps\)](#) | **Settings**  | **Apps & notifications**  | **Notifications** | **Notifications on lock screen.**)




Unlock the screen and use the [Notification Drawer](#) to manage the missed call.



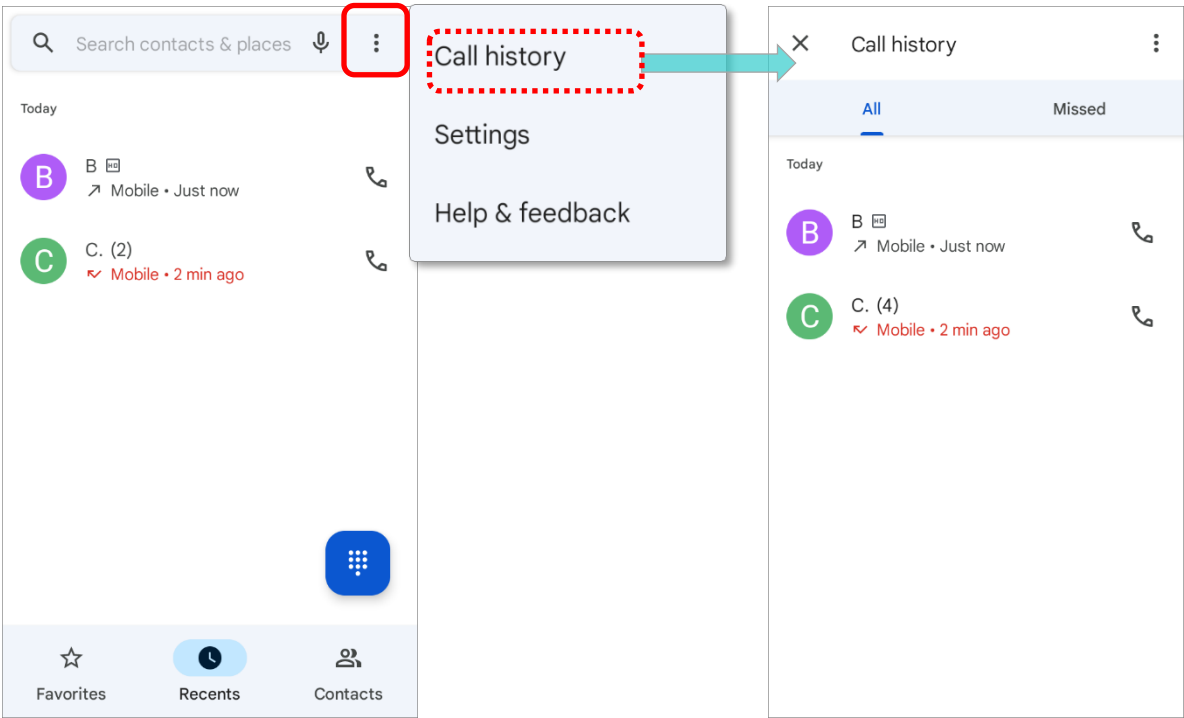
5.2.6. CALL HISTORY



To check the call history:


- 1) On the Phone application, tap to enter the History tab page  where a list of history calls is displayed.

OR


- 2) Tap on the more button  and then Call history.

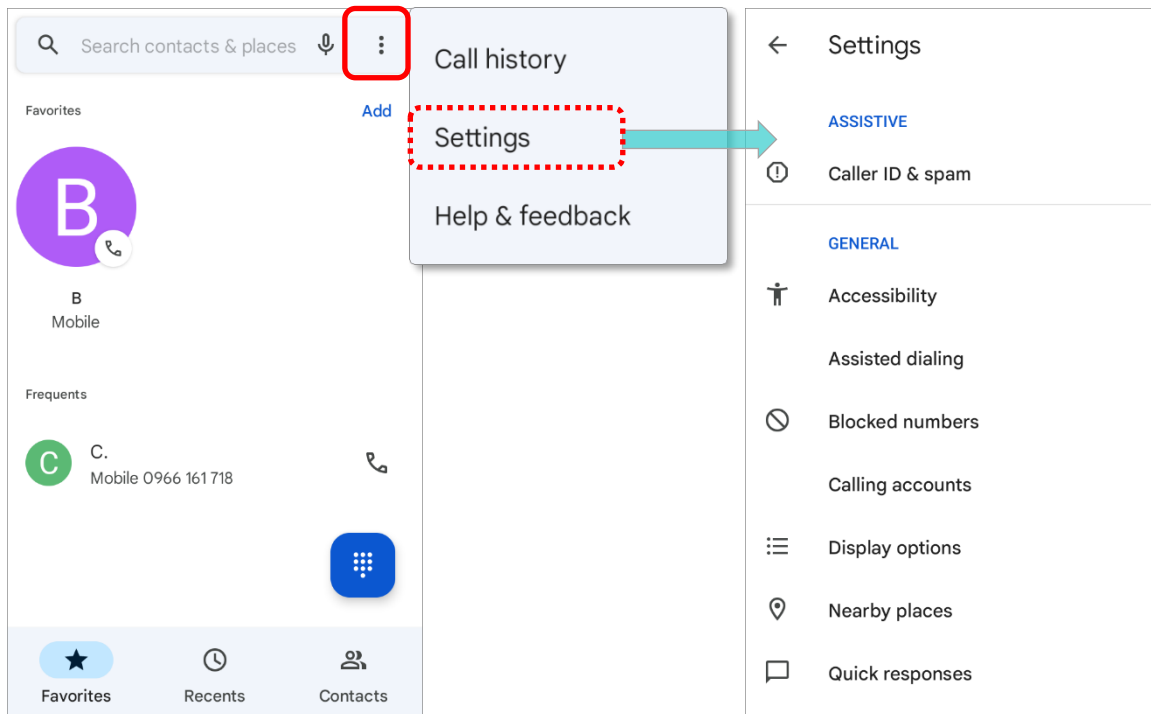


Item	Description
	Connected calls.
	Missed calls.

Tap the phone icon  next to a call record to place back the call.

## 5.2.7. CALL SETTINGS











Tap on more button  and select “**Settings**” to enter the settings page:



Tap each setting for more setting options.

### 5.2.8. MAKE MULTI-PARTY CALLS

To make multi-party conference calls:

- 1) On the Phone application page, enter the 1<sup>st</sup> number to call and tap  to initiate the call.
- 2) After the call has begun, tap **Add call**  to add another member. The 1<sup>st</sup> call will be put on hold.
- 3) Select the 2<sup>nd</sup> member from call log or contacts to call directly, or tap the dial pad  to input the phone number to call and tap  to initiate the call.
- 4) When the 2<sup>nd</sup> call is connected, the first call will continue to be on hold. Tap the merge call button  to add the 1<sup>st</sup> call to the conversation. A three-party conference call is initiated.
  - To add a 4<sup>th</sup> member, please tap . The three-party call will be put on hold. Follow the step similar to step 3 to initiate the call. When the call is connected, the three-party call will continue to be on hold. Tap the merge call button  to add the three-party call to the conversation. A four-party conference call is then initiated.
  - Tap **Manage Conference Call** to view all members of the call.
  - To remove a member, tap  next to the member.
  - To speak with a member in private, tap  next to the member, and the conference call will be put on hold. Tap  to return back to the conference call.

### 5.3. AUDIO MODES

The mobile computer offers three different audio modes for phone calls:

---

#### HANDSET MODE

This is the default audio mode which uses the receiver above the touchscreen for audio output during calls.

---

#### SPEAKER MODE

This mode uses the built-in speaker for audio output during calls.

---

#### HEADSET MODE

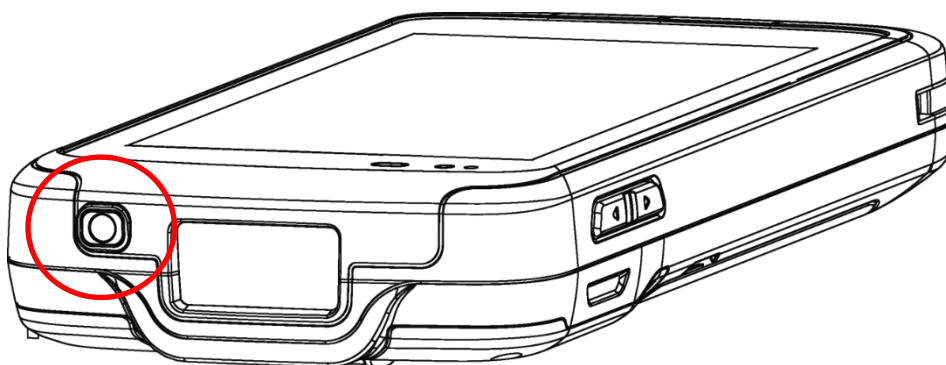
Connect a Bluetooth headset or a wired headset to the mobile computer for audio output during calls.

#### USE BLUETOOTH HEADSET

See [Pair Bluetooth Devices](#) to connect the mobile computer to a Bluetooth device. The speaker phone becomes muted when a Bluetooth headset is connected.

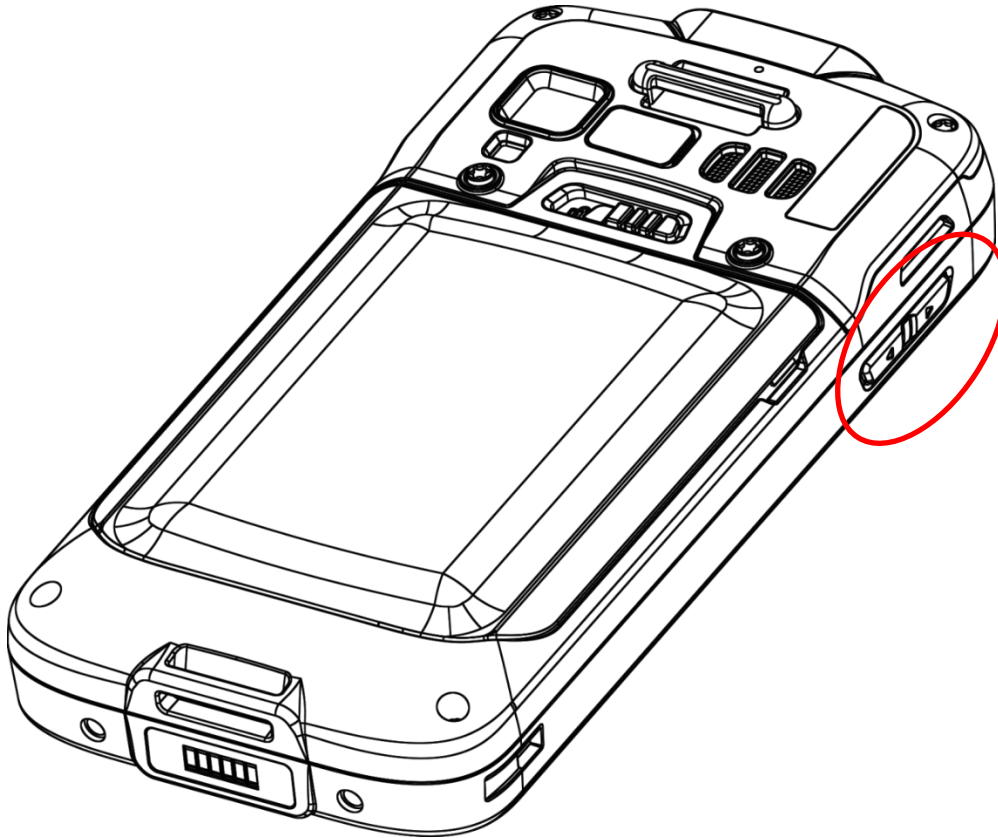
#### USE WIRED HEADSET

Insert a wired headset depicted in the [Overview](#). The speaker phone becomes muted when a wired headset is connected.



## 5.4. IN-CALL VOLUME

Use the volume buttons to adjust the ringer volume and system sound level. When in the middle of a call, use the volume buttons to adjust in-call conversation volume.



## Chapter 6

### CIPHERLAB UTILITIES

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This chapter gives the introduction about the built-in applications developed by CipherLab

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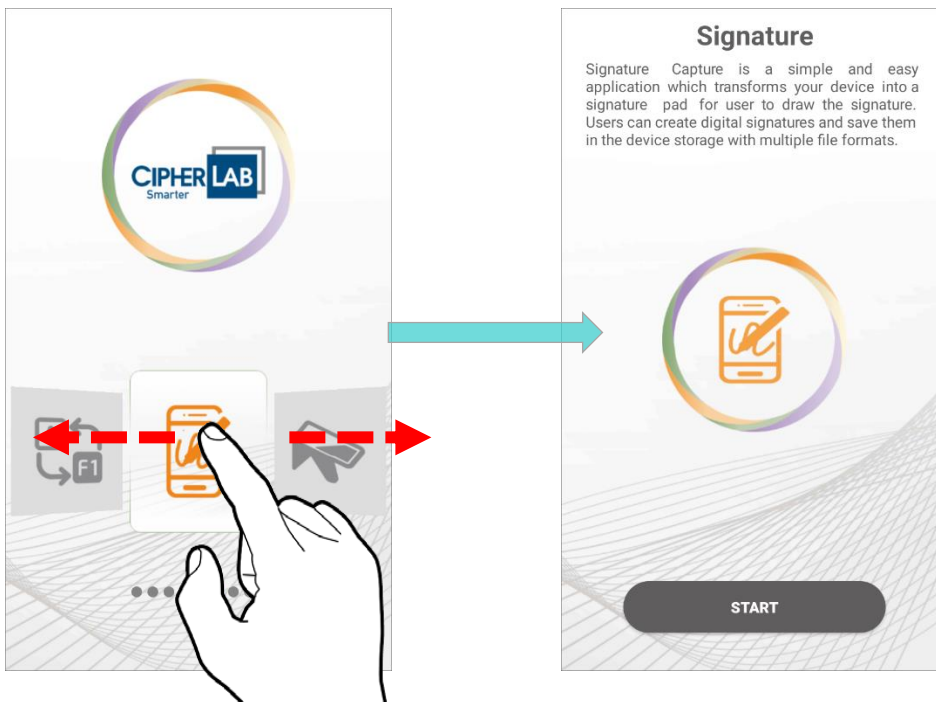
## 6.1. A-DEMO



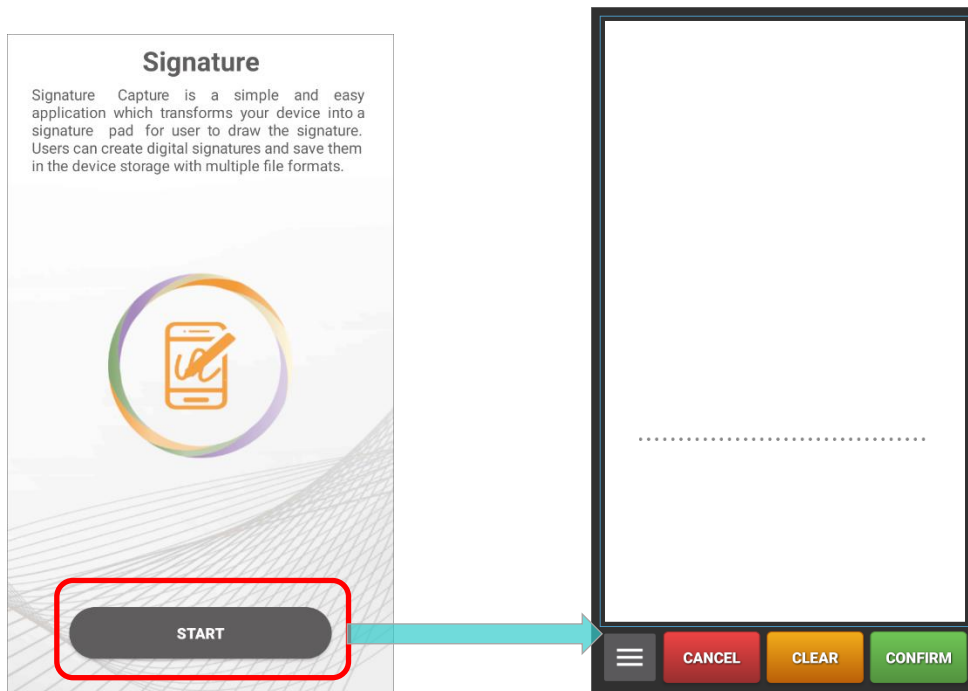
“**A-Demo**” is an application which gives the brief introduction about all the built-in applications developed by CipherLab.



Enter the main screen and swipe left or right to select the item to get the function introduction.



Users can launch those apps by tapping “**START**” on the app’s introduction page.





## 6.2. APPLOCK



**AppLock** controls the interface provided to users. It dominates over the O.S. and limits the system resources made available to users. Properly tuned, AppLock gives way to ordinary working applications while locking out those that are not so productive.

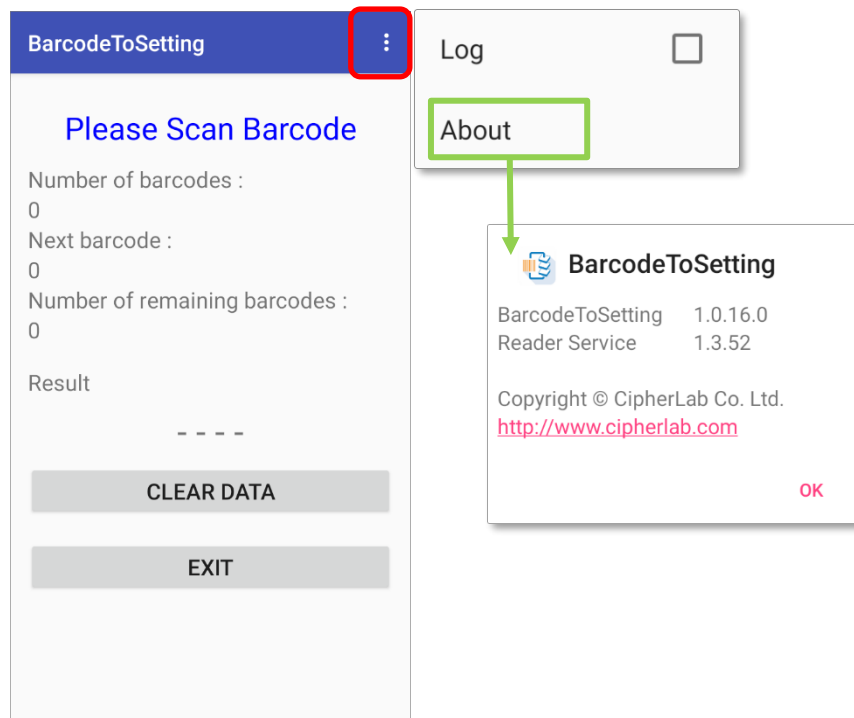
If you have a collection of mobile computers, you can apply a uniform user environment to the entire group without the need of great time and effort. This can be done easily by reduplicating a copy of master settings to your entire set of mobile computers.

For the operation instruction of **AppLock**, please refer to [AppLock User Guide for Android](#).

### 6.3. BARCODE TO SETTING



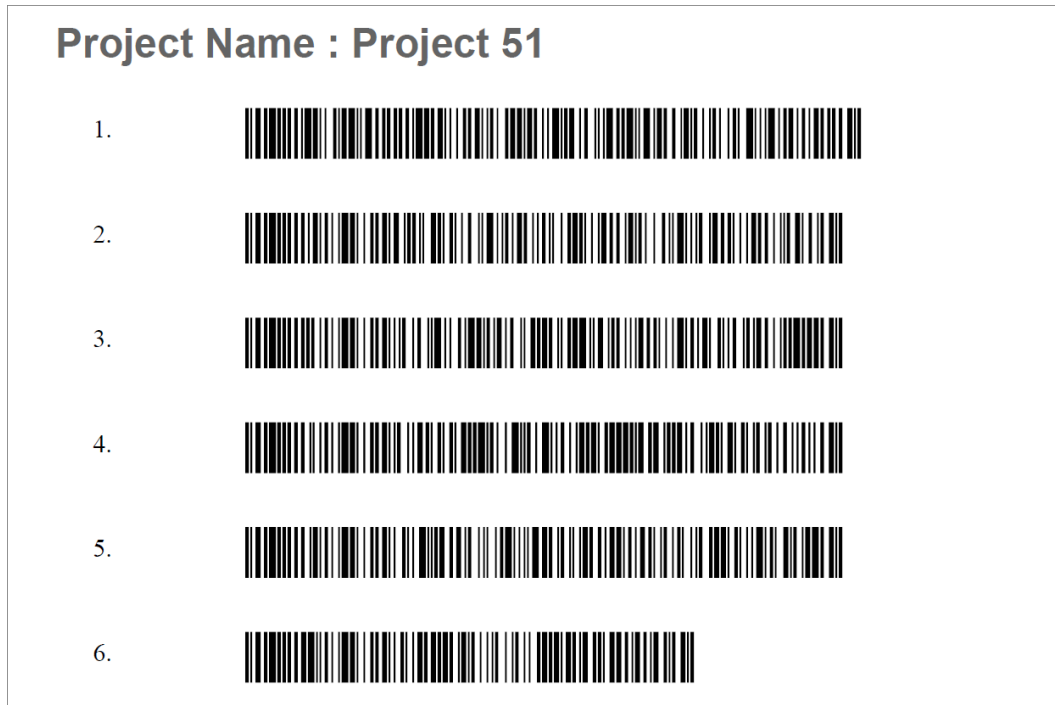
“BarcodeToSettings” is to read the setting barcodes generated by **ADC** (Android Deployment Configurator) to apply the configuration. Launch “BarcodeToSettings” and the main screen shows as below:



Item	Description
<b>Number of barcodes</b>	The total amount of the barcodes to be scanned.
<b>Next barcode</b>	The item number of the next barcode to be scanned.
<b>Number of remaining barcodes</b>	The amount of the remaining barcodes to be scanned.
<b>Result</b>	The setting result will be “ <b>Success</b> ” or “ <b>FAIL</b> ”
<b>CLEAR DATA</b>	Clear the data of the barcode(s) you just scanned.
<b>EXIT</b>	Close and leave the application “BarcodeToSettings”.
<b>Log</b>	Select whether to save the log in the internal storage.
<b>About</b>	The current version information of “BarcodeToSettings”.

The setting barcode(s) you generated by **ADC** might be 1D or 2D as the example figures shows:

- **1D barcodes:**

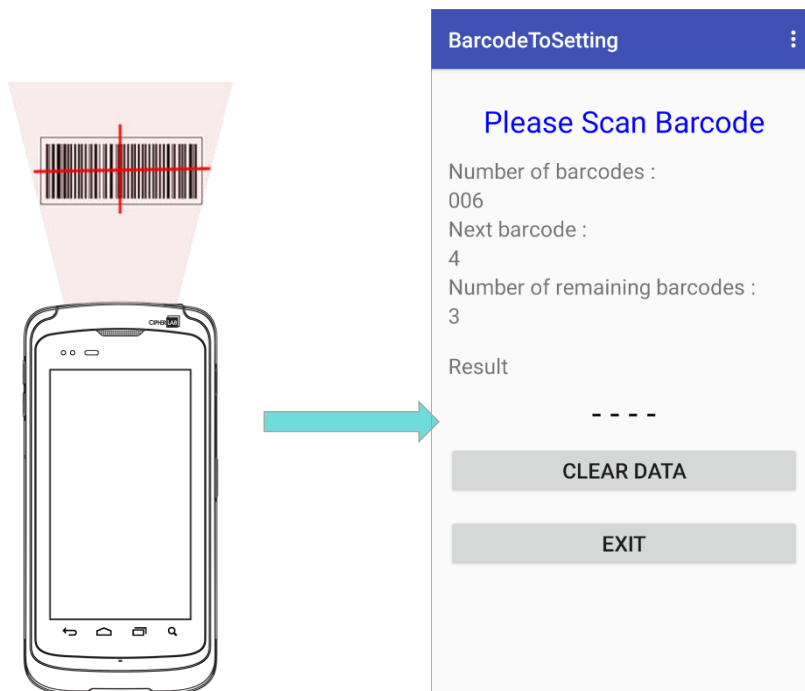


- **2D barcode:**

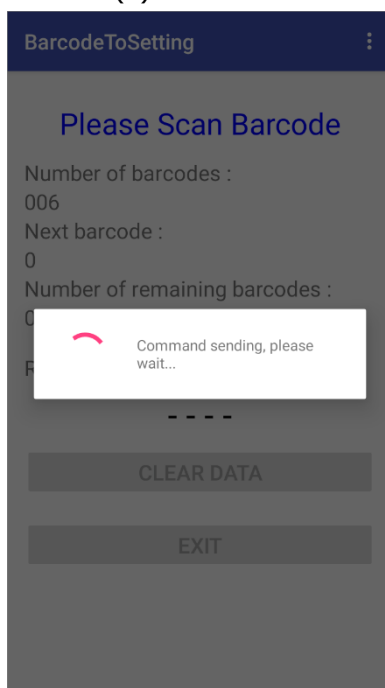


## HOW TO APPLY THE SETTINGS BY SCANNING BARCODE(S)

Simply aim the scanning window at the barcode to read and press any of the side trigger. The scanning light beams to read the printed barcodes.



It takes few seconds for your device to apply the configuration after scanning the setting barcode(s) is done.



Configuration is complete.

BarcodeToSetting

Please Scan Barcode

Number of barcodes :  
0

Next barcode :  
0

Number of remaining barcodes :  
0

Result

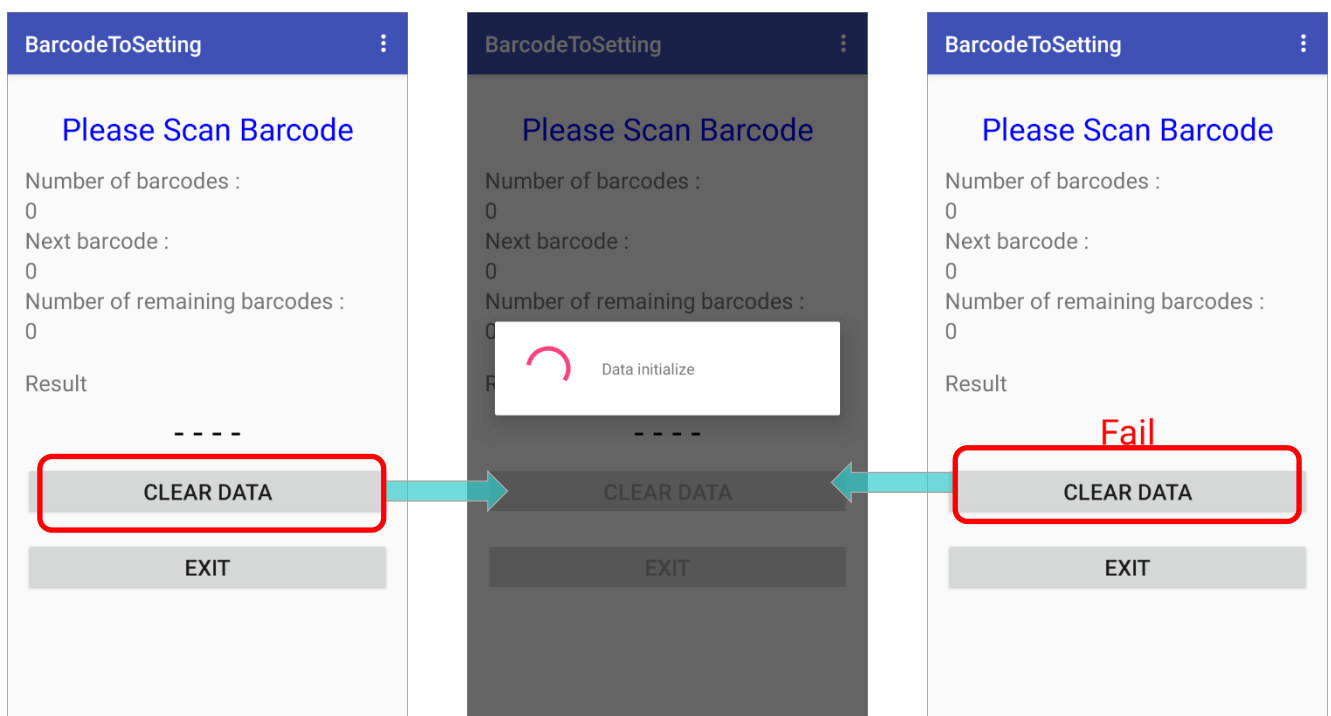
Success

CLEAR DATA

EXIT

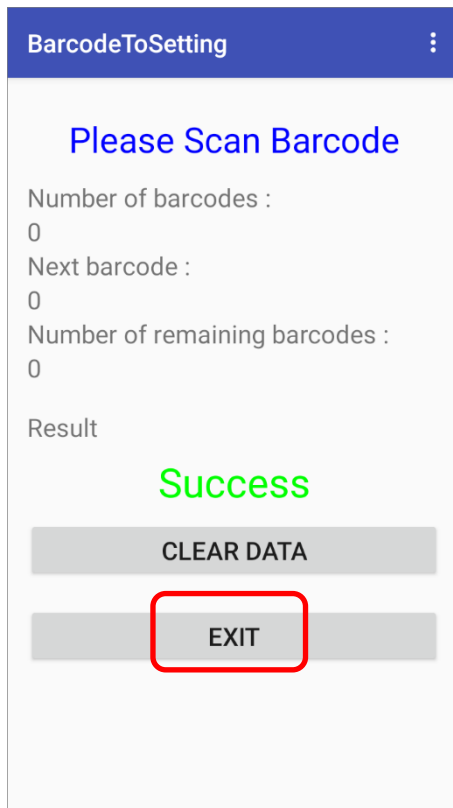
### CLEAR DATA

You may carry out **"CLEAR DATA"** during the scanning procedure (before it starts to apply the configuration) to start over. Or you may tap on **"CLEAR DATA"** button after completing configuration so that you can scan other barcodes you generated to apply other settings.



## EXIT

Tap on the button "EXIT" to quit "BarcodeToSettings".



## 6.4. BT PRINTER MATE



**BT Printer Mate** is an application which provides user interface to pair with Bluetooth printers.

## 6.5. BUTTON ASSIGNMENT



**Button Assignment** can redefine the functions of physical keys so that they trigger different actions. Settings made to one or more keys can be saved as a profile, allowing users to switch conveniently in between different sets of settings.

Users can change key behavior of the device with keypad by the application “**Button Assignment**” while changing the key behavior of device without keypad by “**Programmable Keys**” in settings.

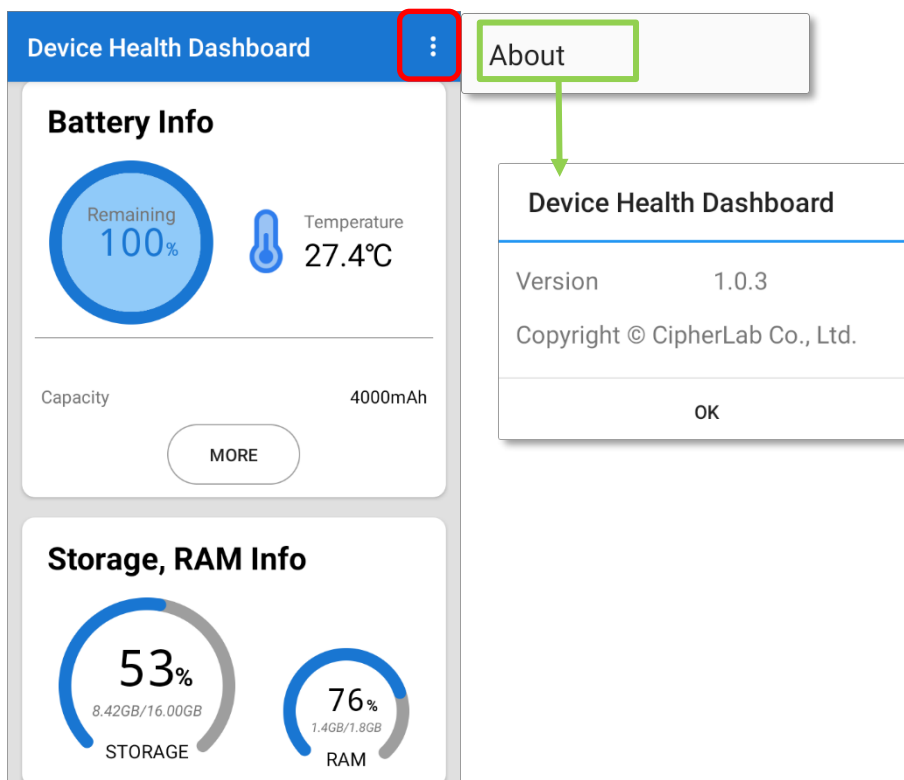
Please refer to [Button Assignment User Guide for Android](#).


## 6.6. DEVICE HEALTH DASHBOARD



“**Device Health Dashboard**” is for detecting the battery health status and showing the storage & RAM information of the device.

Please go to [App Drawer \(All Apps\)](#) and tap on the app “**Device Helth**” to enter its main page, and here you can check “**Battery Info**” and “**Storage, RAM Info**”.

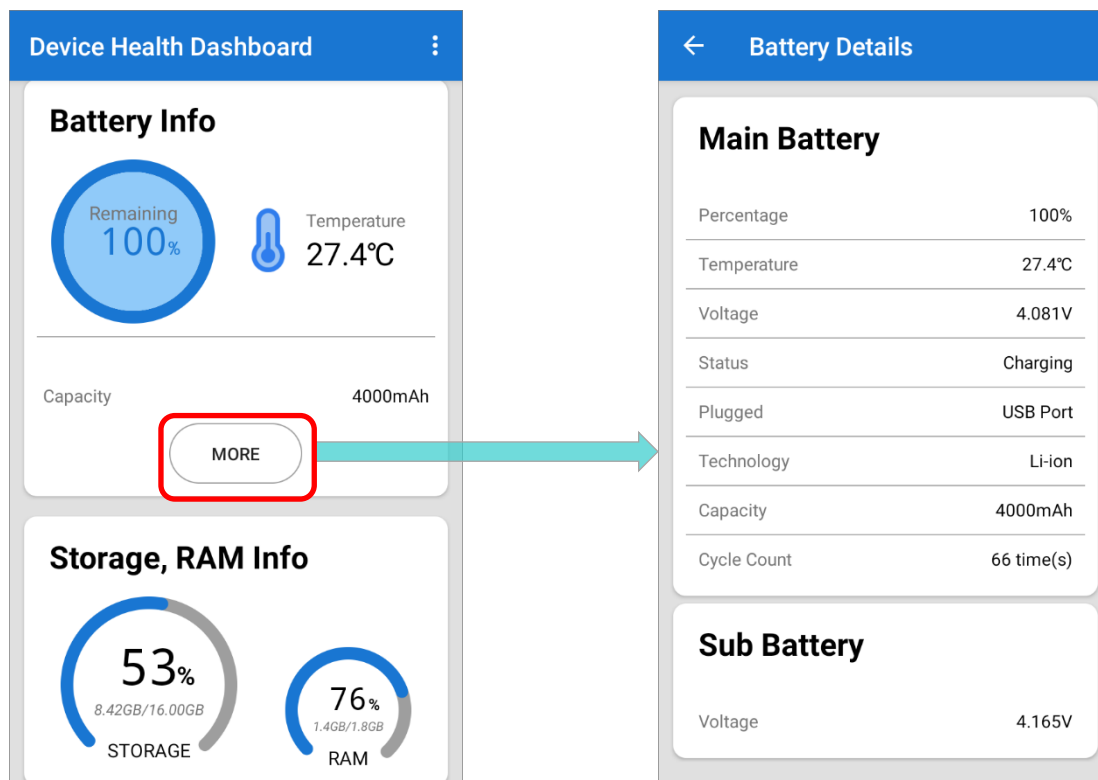


To check the app version information, please tap on the more button  on the action bar, and then “**About**”.





## CHECK THE BATTERY INFORMATION

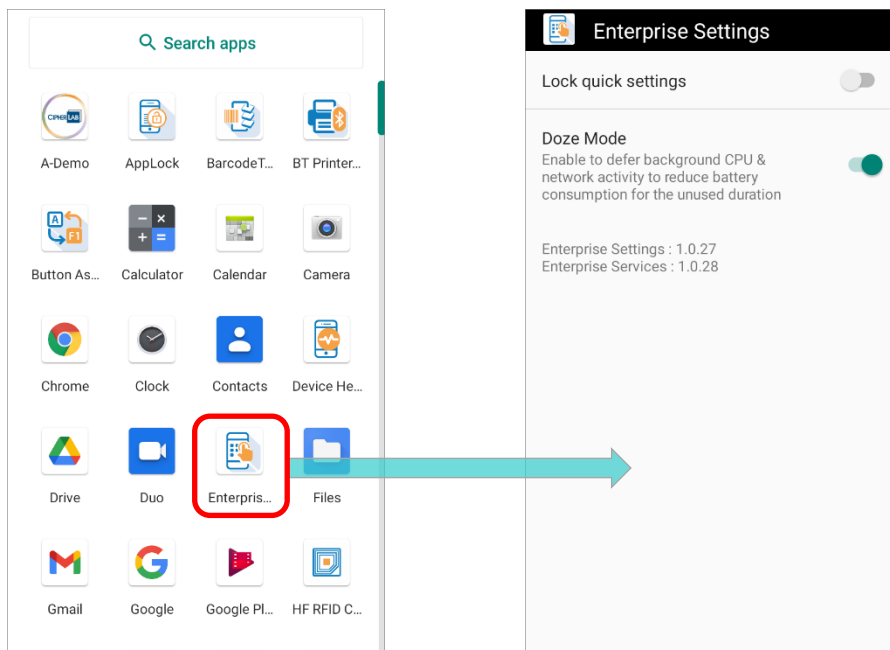
To check the battery details, please tap on “**More**” button of “**Battery Info**”.



## 6.7. ENTERPRISE SETTINGS

The app “**Enterprise Settings**”  is for setting whether the status bar could be pulled down or not.

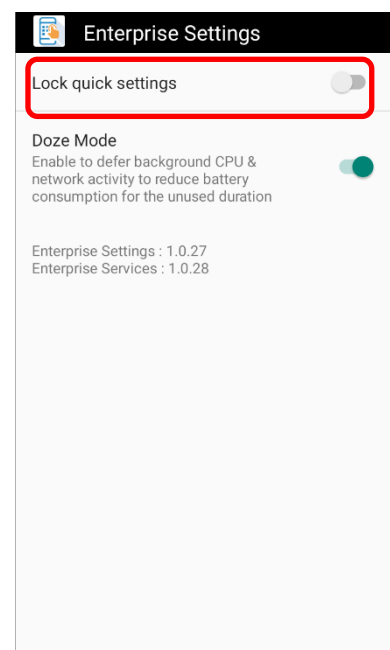
Please go to [App Drawer \(All Apps\)](#) and tap on  “**Enterprise Settings**”.



### LOCK QUICK SETTINGS

By tapping on the switch of “**Lock quick settings**”, you can enable or disable the status bar on the top of the screen. The default setting of “**Lock quick settings**” is off.

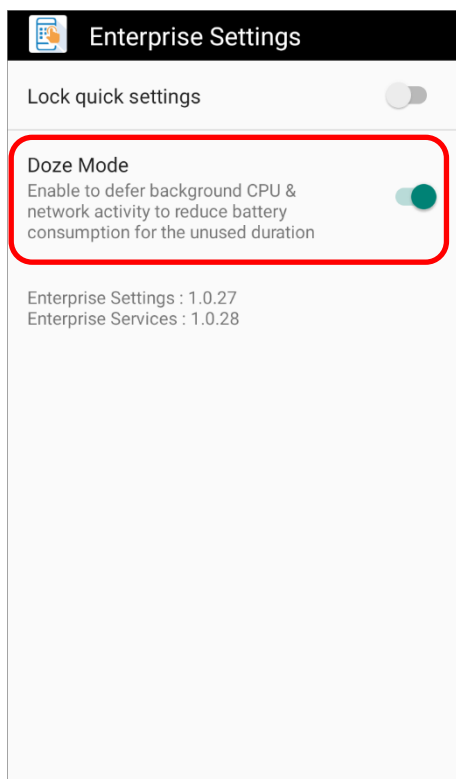
Once “**Lock quick settings**” is on, the status bar cannot be swiped down, and [Quick Settings Panel](#), [Quick Settings Menu](#), and [Notification Drawer](#) become unreachable.



## DOZE MODE

“**Doze Mode**” is enabled by default.

Please refer to <https://developer.android.com/training/monitoring-device-state/doze-standby> for details.



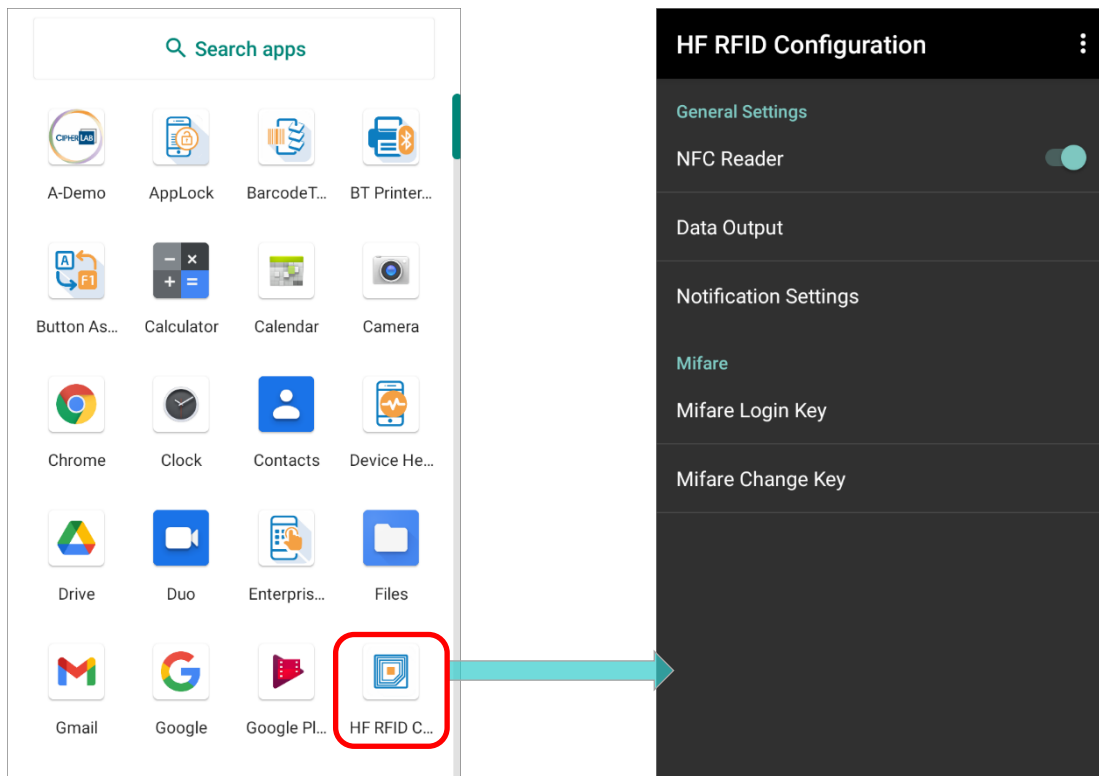
## VERSION

The version information about Enterprise Settings is listed right below “**Doze Mode**”.

## 6.8. HF RFID CONFIGURATION



**HF RFID Configuration** is a NFC application which is for reading and writing NFC tags and RFID compatible chips by putting the NFC tag/ RFID chip close to the NFC detecting area of your device. User can control how the NFC reader works by settings in HF RFID Configuration and enabling it.

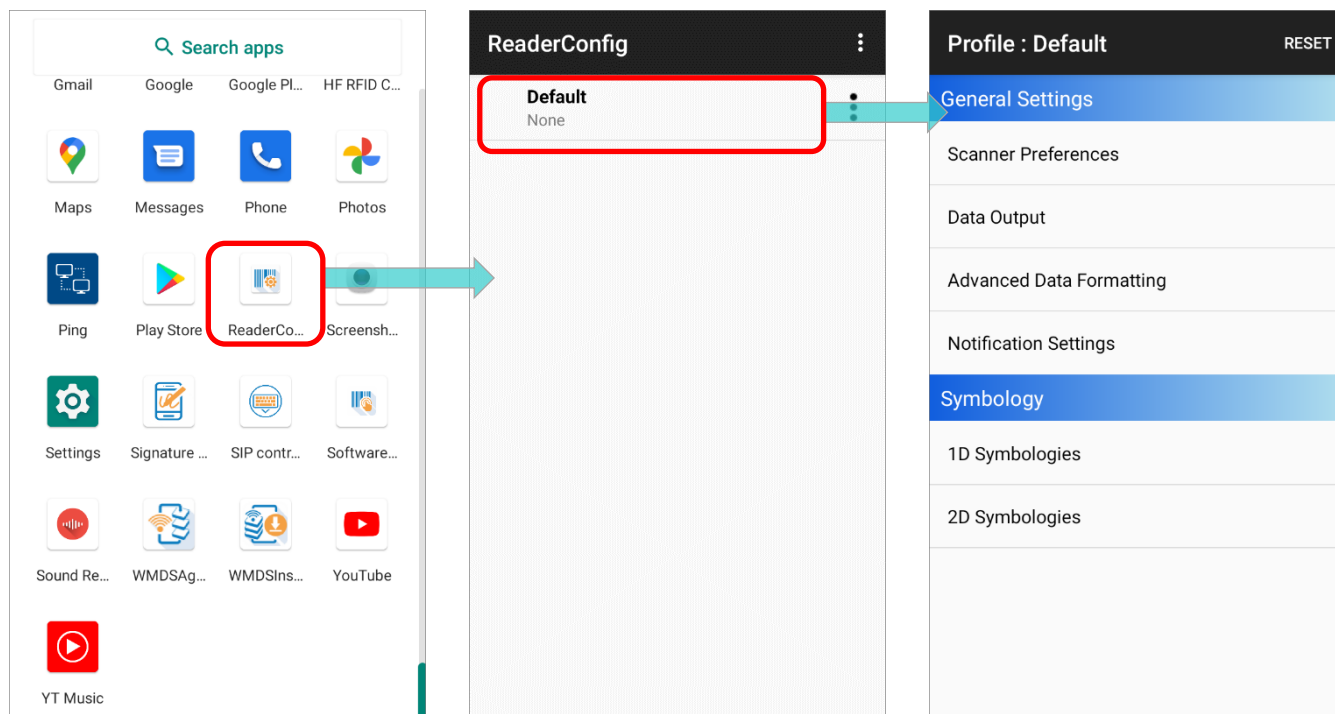


Please refer to [HF RFID Configuration User Guide for Android](#).

## 6.9. READER CONFIG



**ReaderConfig**, a built-in app for configuring the scan engine inside the mobile computer, allows users to set their scanner preferences and the way to output decoded data. Symbology and scanner settings can be saved and exported as a profile for importing again or implementing identical ReaderConfig settings on multiple devices.

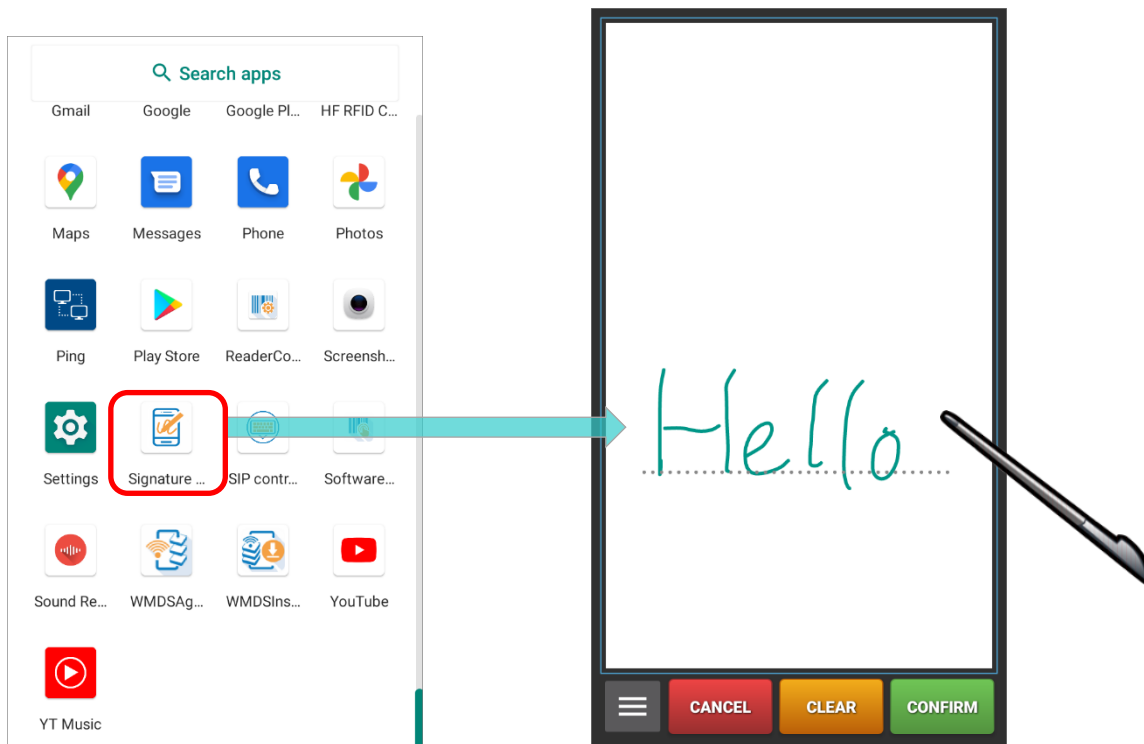


Please refer to [ReaderConfig User Guide for Android](#).

## 6.10. SIGNATURE CAPTURE



**Signature Capture** is a simple and easy application which transforms your device into a signature pad for user to draw the signature. Users can create digital signatures and save them in the device storage with multiple file formats.

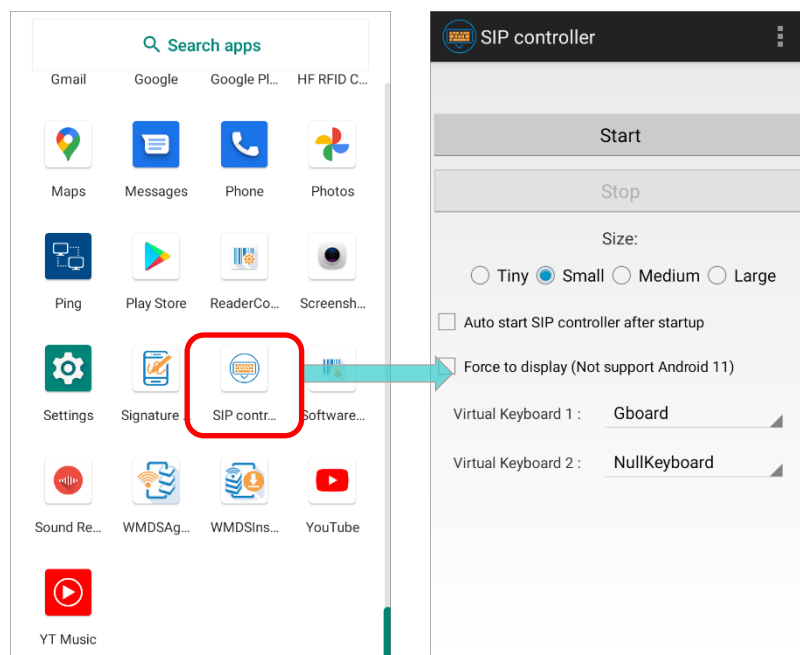


Please refer to [Signature Capture User Guide for Android](#).

## 6.11. SIP CONTROLLER



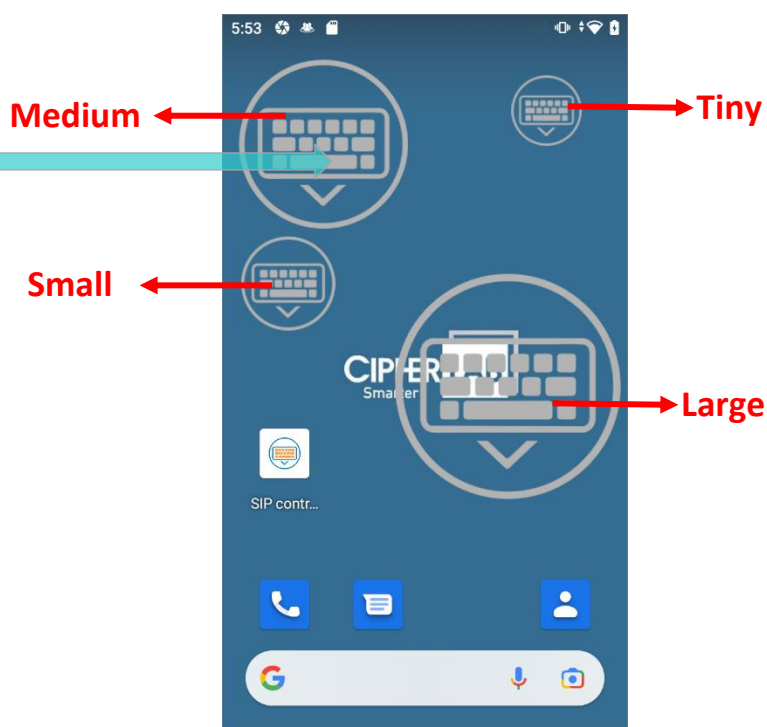
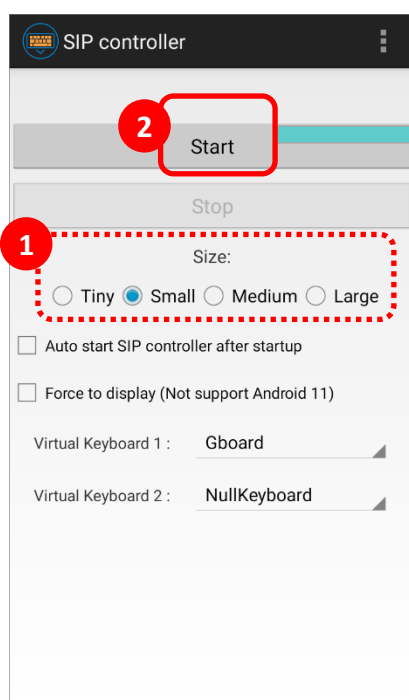
**SIP Controller**, a built-in application for quickly open or close virtual keyboard by tapping on the floating button.




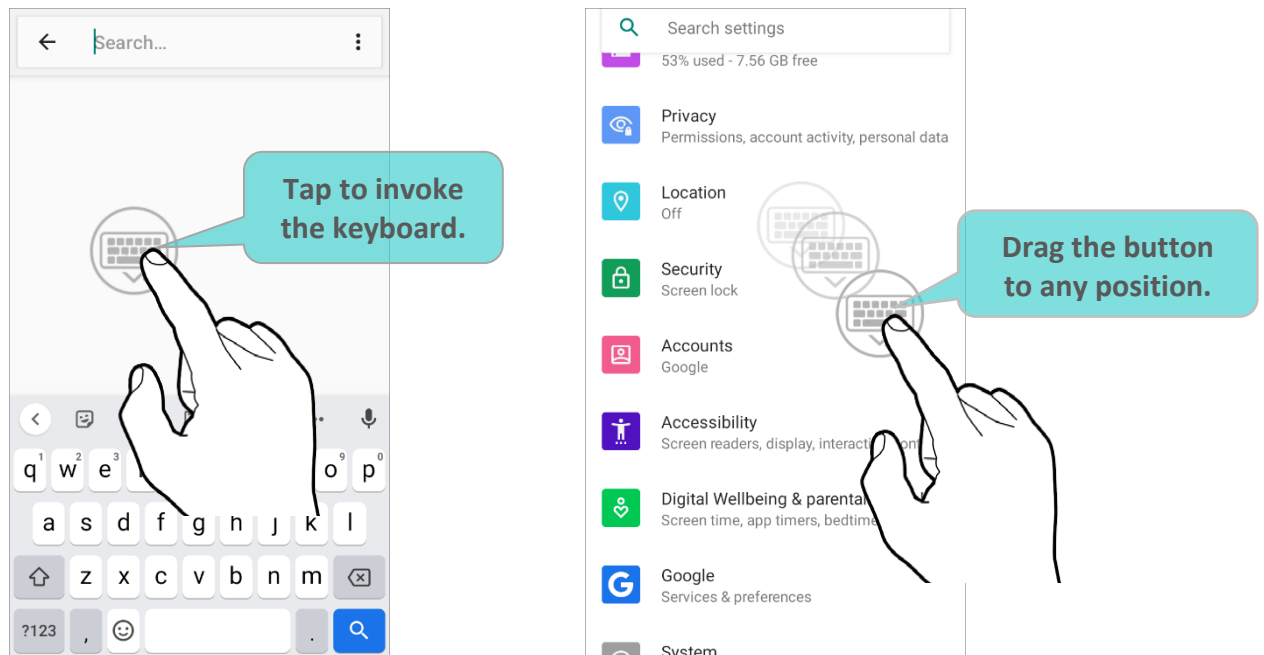
### LAUNCH SIP CONTROLLER

To launch SIP Controller:

- 1) On [App Drawer](#) screen, tap on “**SIP Controller**”  to enter the main screen.
- 2) Select the button size, and then tap on “**Start**”.

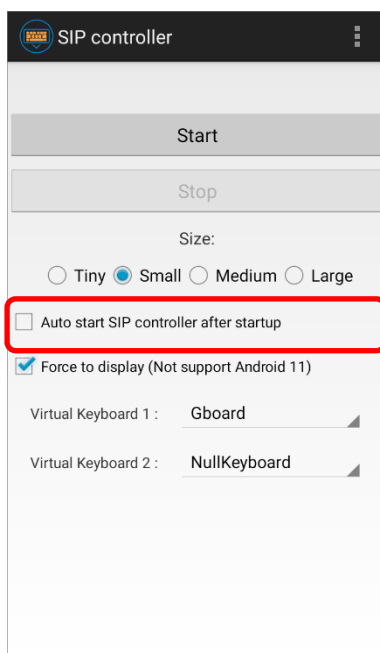


- 3) Now the **“SIP Controller”** button  appears on screen, and you can invoke the virtual keyboard by tapping on it. You can drag this button to any position on the screen.



## AUTO START

By enabling **“Auto start SIP controller after startup”**, **SIP Controller** will automatically start up on device boot up. Simply check the checkbox to enable this function.



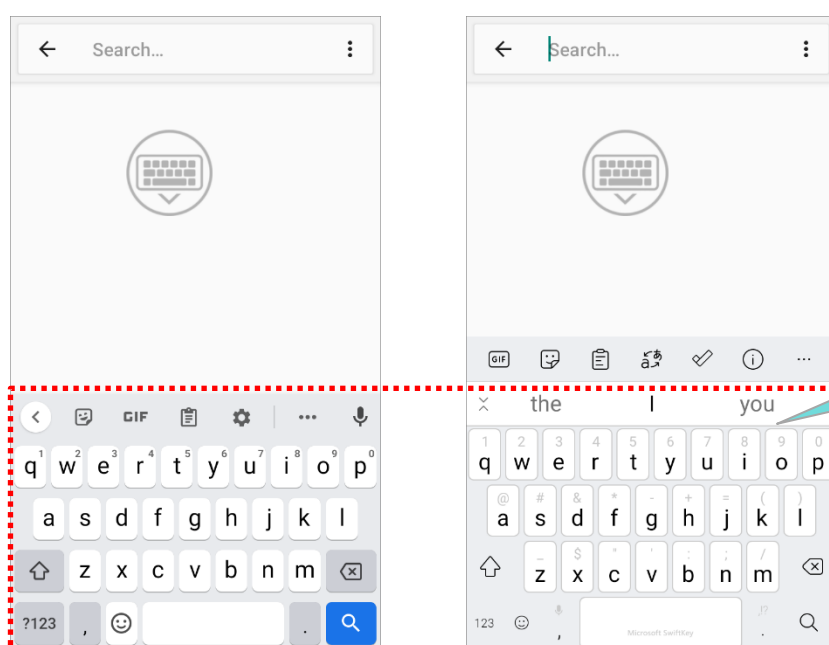
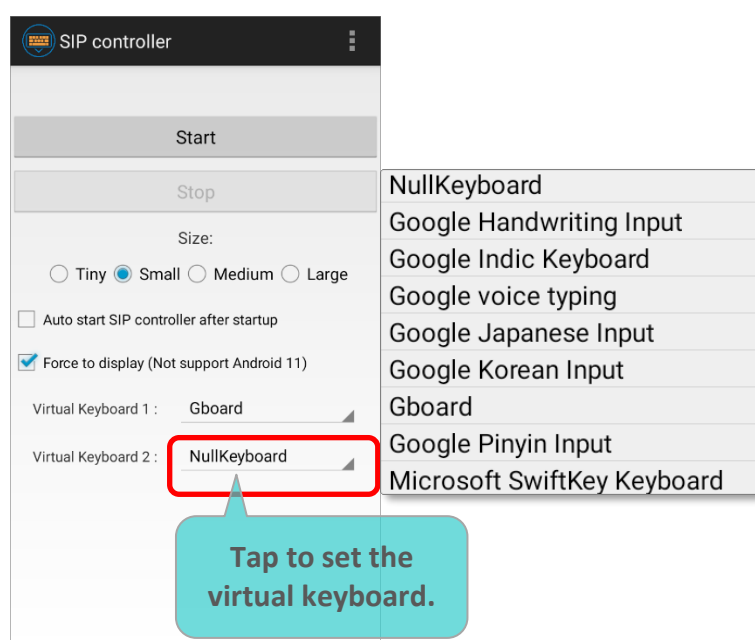


## FORCE TO DISPLAY

“**Force to display**” is to invoke the virtual keyboard even without the input field.

## SWITCH VIRTUAL KEYBOARD

You can set “**Virtual Keyboard 1**” and “**Virtual Keyboard 2**” to be the keyboard invoked by **SIP Controller**. Tap on the button to cycle through “**Virtual Keyboard 1**” and “**Virtual Keyboard 2**” you set.



As to the keyboard to be selected on the drop-down menu, please refer to [On-screen Keyboard](#) for how to enable the keyboard.

---

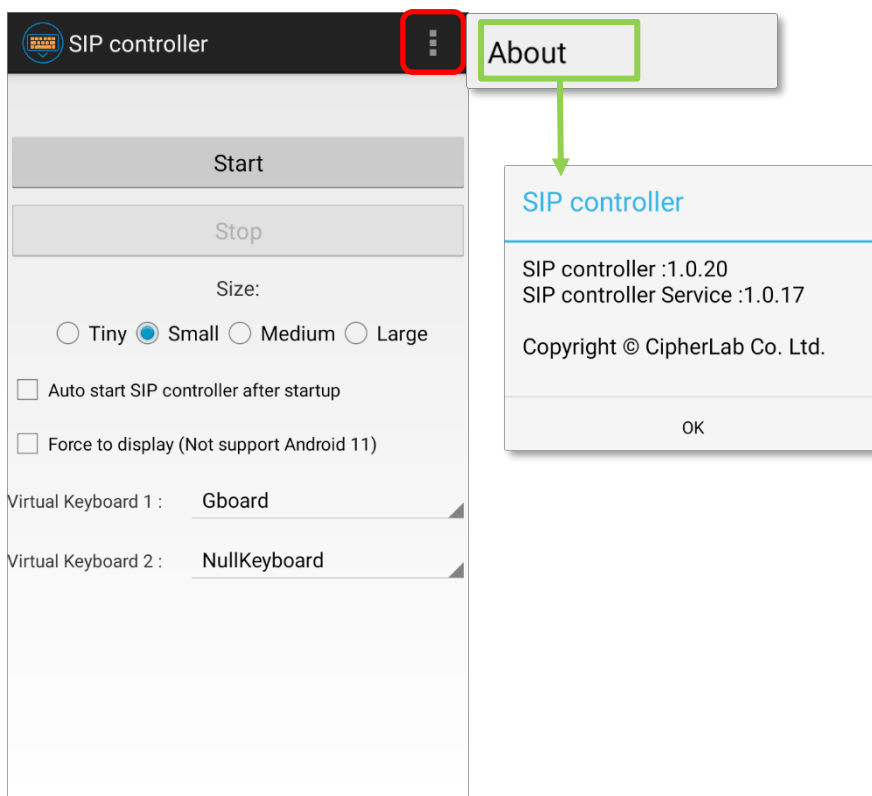
## EXIT SIP CONTROLLER

Tap on **“Stop”** to disable **SIP Controller** on-screen button.

---

## VERSION INFORMATION

Tap on the more button on the action bar and select **“About”** to check the current version of **SIP Controller**.



## 6.12. SOFTWARE TRIGGER



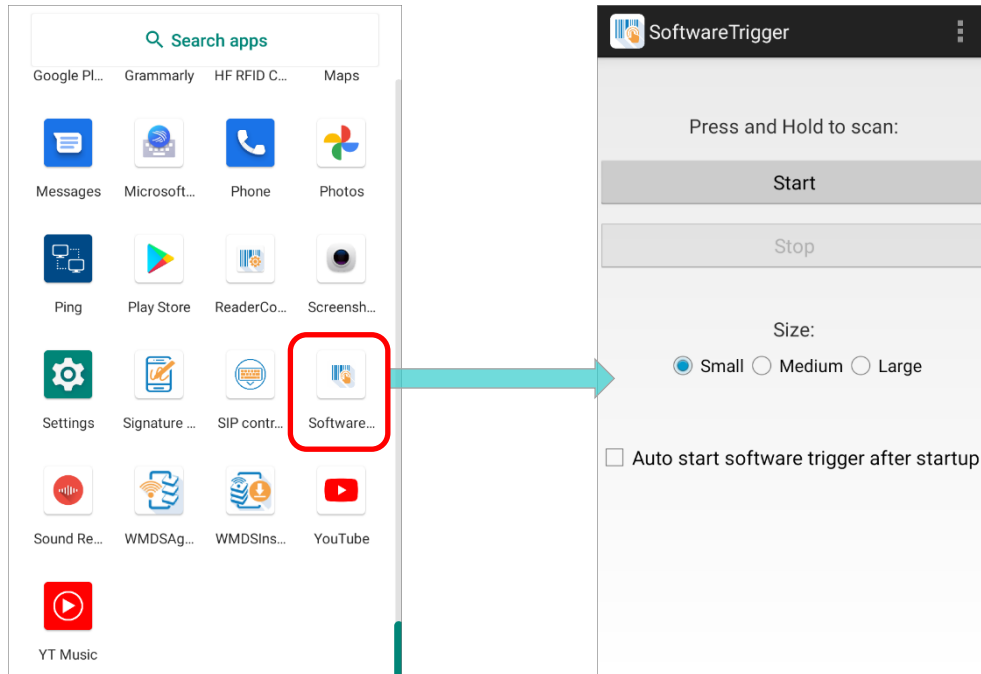
**Software Trigger** is an application running on mobile device. Serving as a real trigger key, it always floats on top of all other programs for convenient trigger control of the barcode scanner; by tapping and holding this virtual button, the device will keep casting a red beam to scan the code.



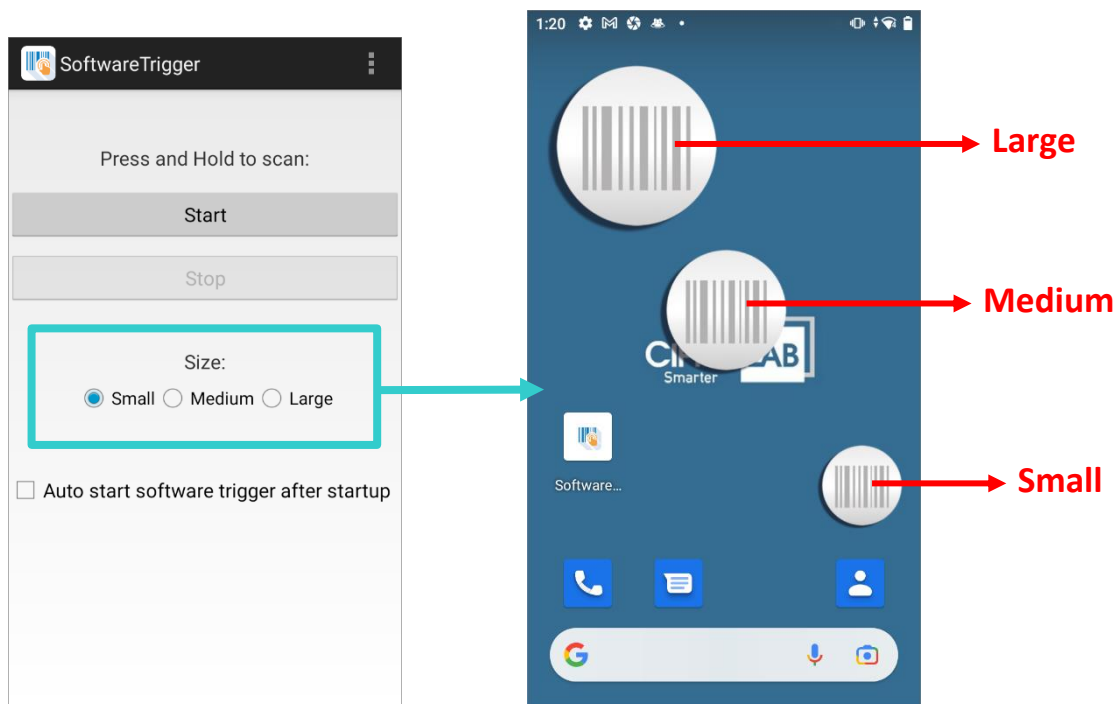
## LAUNCH SOFTWARE TRIGGER

Please follow the steps below to launch **Software Trigger**:

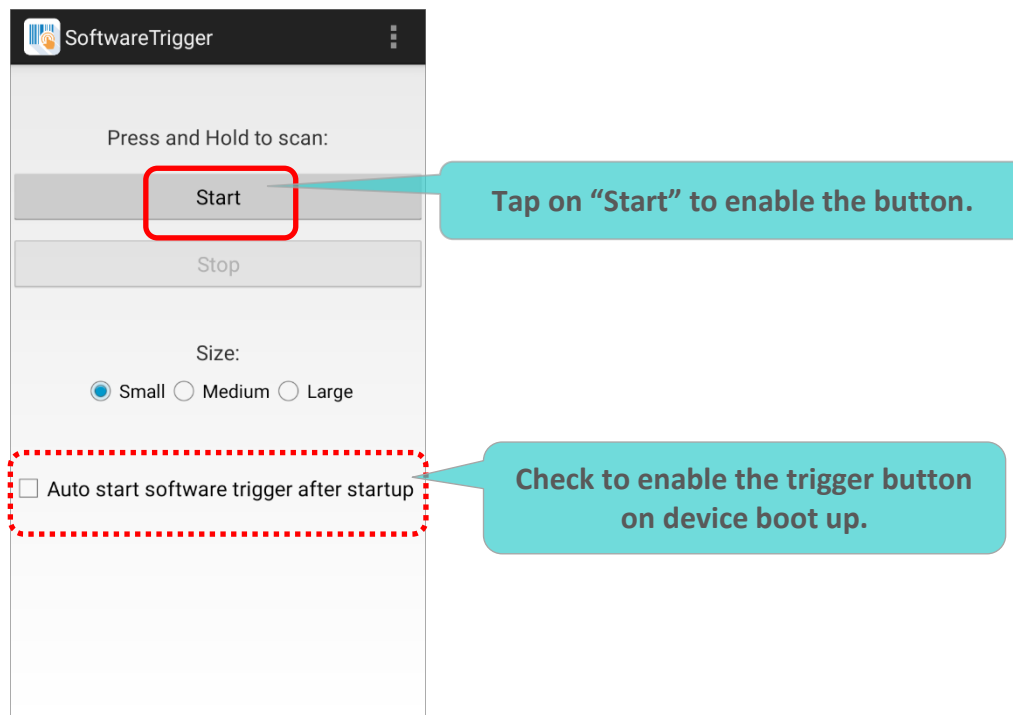
- 1) Go to [App Drawer](#) and tap on the app **"Software Trigger"**  to enter the main screen.



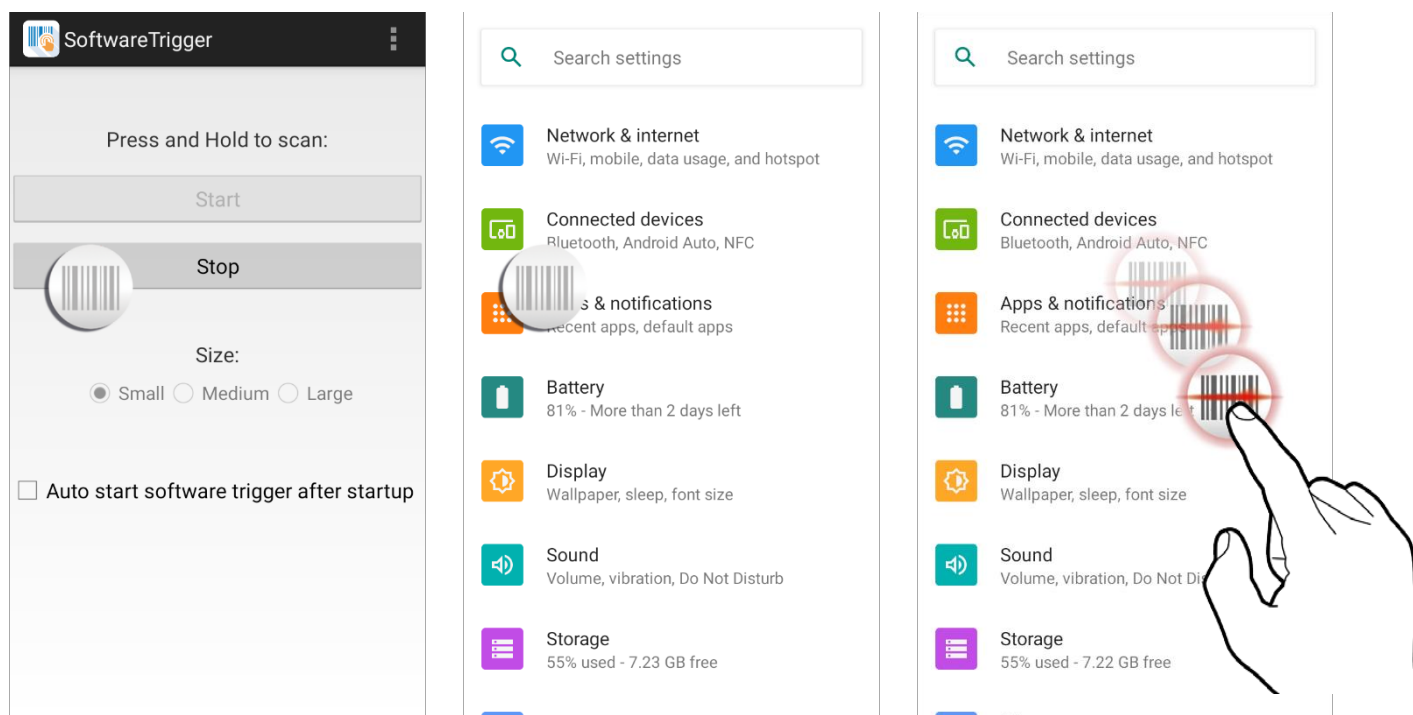
- 2) Select the size of the virtual trigger button:



- 3) Tap **“Start”** to enable the button. You can check **“Auto start software trigger after startup”** to have this application automatically launch right after the device starts up.

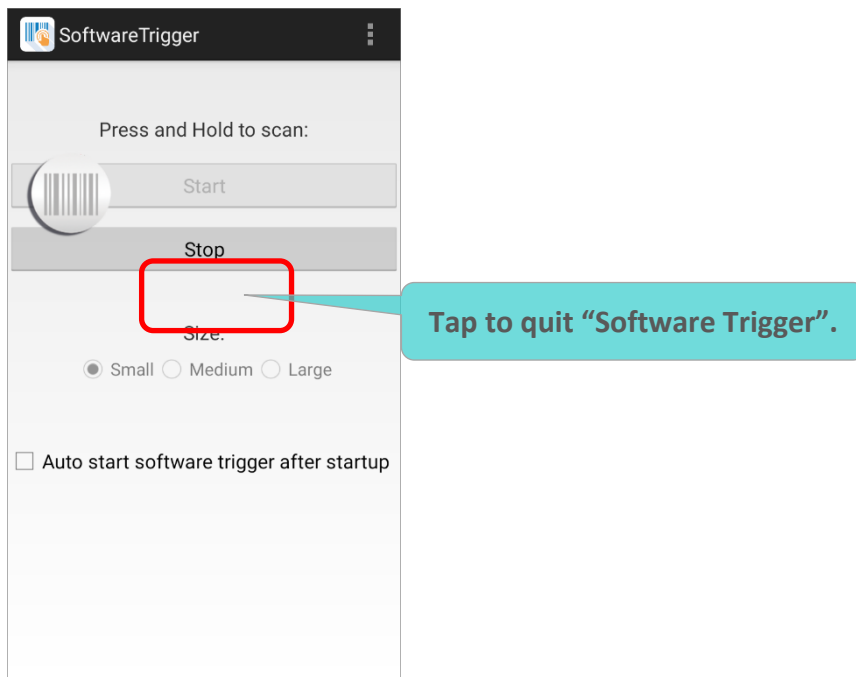


- 4) An always-accessible software keys will appear on your screen. This trigger button can be dragged to the position on the screen where you feel easy to control the trigger.



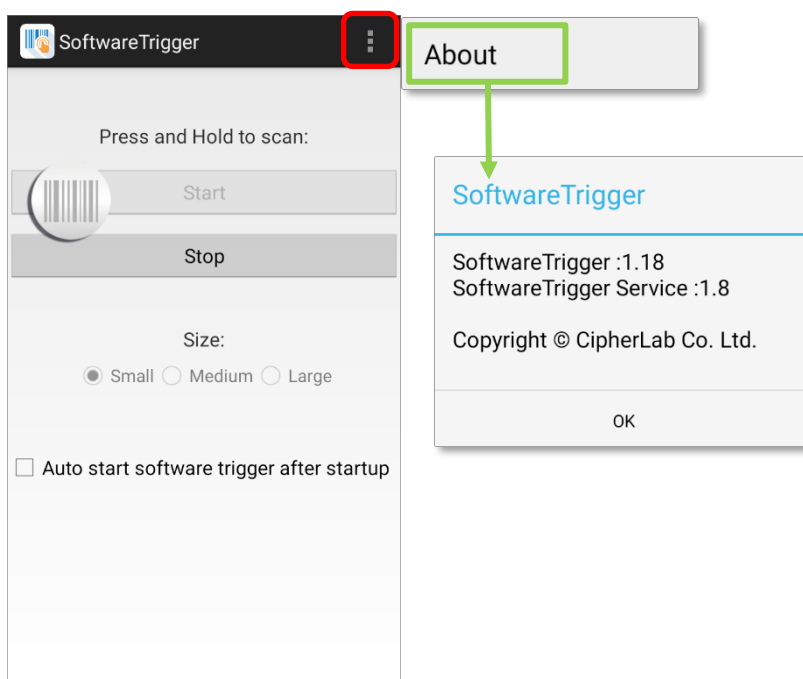
## EXIT SOFTWARE TRIGGER

To disable this virtual trigger button, enter **Software Trigger** application screen, and tap **“Stop”**.



## VERSION INFORMATION

To check the current version of **Software Trigger**, please tap on the more button on the action bar and select **“About”**.



### 6.13. WMDS AGENT & WMDS INSTALLER

**WMDS** (Wireless Mobile Deployment System) for Android is a windows-based server program that can deploy the configuration projects (created by **Android Deployment Configurator**) to Android devices through wireless network.



The preloaded application “**WMDSInstaller**” is for fetching the latest WMDS Agent version



over the Internet and then perform auto-installation while the application “**WMDSAgent**” makes this mobile computer become an enrolled device once it is successfully connected to WMDS server.

Please refer to [WMDS User Guide for Android](#) for details.

## SPECIFICATIONS

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### PLATFORM, PROCESSOR & MEMORY

#### Operating System & CPU

---

OS Version	Android 11 with GMS Certified
------------	-------------------------------

CPU	Qcta-core 1.8GHz
-----	------------------

#### Memory

---

ROM	16GB
-----	------

RAM	2GB
-----	-----

Expansion Slot	One Micro SD card slot (up to 32GB for SDHC; up to 64GB for SDXC)
----------------	---



## COMMUNICATION & DATA CAPTURE

### Communication

USB Client	USB 2.0 OTG
WPAN	Bluetooth Class II, v4.1 and v2.1+EDR (2402~2480 MHz: 3.3dBm)
WLAN	<p>802.11 b/g/n and 802.11 a/ac/n networking            (2412~2472 MHz: 18.34dBm            5180~5240MHz: 21.06dBm,            5260~5320MHz: 21.46dBm,            5500~5700MHz: 21.90dBm,            5745~5825MHz: 14.30dBm <b>(USA only)</b> )            Operations in the 5.15-5.35GHz band are restricted to indoor usage only.</p>
WWAN	<p>Built-in WWAN modem for Quadband GSM, UMTS, LTE functions:            GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE            Worldwide            Frequency bands:            GSM/GPRS/EDGE            880~915, 925~960MHz: 29dBm            1710~1785, 1805~1880MHz: 30dBm            WCDMA/UMTS/HSDPA/HSUPA: B1, B8            1922.4~1977, 2112.4~2167.6: 24dBm            880~915, 925~960: 24dBm            LTE B1, B3, B7, B8, B20, B28, B38, B40            1922.4~1977, 2112.4~2167.6MHz: 23dBm            1710~1785, 1805~1880MHz: 23dBm            2500~2570, 2620~2690MHz: 23dBm            880~915, 925~960MHz: 23dBm            832~862, 791~821MHz: 23dBm            718~748, 758~773: 23dBm            2570~2620MHz: 23dBm            2300~2399.9MHz: 23dBm            Americas            GSM : 850/1900            UMTS : B2, B4, B5            CDMA : BC0, BC1, BC10            LTE : B2, B4, B5, B7, B12, B13, B17, B25, B26, B38, B41</p>
GPS	<p>BDS (1561.098MHz), Galileo/GPS (1575.42MHz),            GLONASS (1602.000MHz)</p>

### Data & Image Capture

---

Digital Camera	Autofocus 13 megapixels with user-controllable LED flash
Barcode Reader	2D Imager
HF RFID Reader	HF RFID 13.56 MHz (-18.18 dBuA/m at 10m) frequency which supports ISO14443A, ISO14443B, ISO15693, Felica Supports NFC (Peer-to-Peer, Card Reader, Card Emulation)

## ELECTRICAL CHARACTERISTICS

### Batteries

Main Battery Pack	Replaceable and rechargeable 3.8V 4000mAh/3.75V 5300mAh Li-ion battery, full charging 4.35V  Minimum charging time: 4 hours @25°C (4000mAh)  6 hours @25°C (5300mAh)  For the first time charging the main battery, please charge it for at least 8 to 12 hours. The allowed battery charging ambient temperature is between 0°C to 45°C. It is recommended to charge the battery at room temperature (18°C to 25°C) for optimal performance. Please note that battery charging stops when ambient temperature drops below 0°C or exceeds 45°C.	
Backup Battery	Rechargeable Li-ion battery: 3.7V, 60 mAh, full charging 4.2V. Capable of Data retention for 30 minutes Charging time: 4 hours	

### Power Adaptor

Power Supply Cord with Universal Power Adaptor	Input	AC 100~240 V, 50/60 Hz
	Output	DC 5V, 2A CE, CB, BSMI, FCC, CCC, PSE, KC, CU, INMETRO (AC plug only), BIS

### Working Time

Supports working time for up to 12/16 (4000/5300 mAh main battery) hours at 25°C

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**PHYSICAL CHARACTERISTICS**

---

**Color Touch Screen Display**

---

Display	4.7" LCD, Corning Gorilla Glass 3, touch supports bare/wet/gloved finger and stylus inputs
Resolution	HD (720x 1280 pixels)

**Notifications**

---

Status LED	A Ttri-color (white, green, & red) LED indicators signaling charging and data capturing status
Audio	Integrated with one speaker playing sounds for events
Vibrator	Integrated with one vibrator for tactile feedback

**Dimensions & Weight**

---

Dimensions	162 mm (L) x 80mm (W) x 26mm (H)
Weight	330g (equipped with 4000mAh battery) 365g (equipped with 5300mAh battery)

**ENVIRONMENTAL CHARACTERISTICS****Temperature**

Operating	-20°C to 50°C (-4°F to 122°F)
Storage	-30°C to 70°C (-22°F to 158°F)
Charging	0°C to 45°C (32°F to 113°F)

**Humidity**

Relative humidity	5% to 85% (Sharp temperature change, dewing, or freezing not allowed)
-------------------	--

**Resistance**

Impact Resistance	Multiple drops onto concrete at 1.8 m (6 ft.) on all six sides
Tumble Test	500 tumbles (1000 drops/hits) at 1 meter
Splash/Dust Resistance	IP65/67
Electrostatic Discharge	±15 kV air discharge, ±8 kV contact discharge

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**PROGRAMMING SUPPORT**

---

**Development Environment & Tools**

---

JAVA	Environment Android studio
	Software Development Kit: JAR
C#	Environment: Visual Studio
	Software Development Kit: DLL (Xamarin Library)













**Software & Utilities**















---

Software Package	Reader Config
	Software Trigger
	Mobile Deployment Suite for Android
	App Lock
	Xamarin Binding
	HF RFID Configuration
	Signature Capture
	Terminal Emulation











# APPENDIX I

## APPLICATION MENU

Icon	Name	Description
	<b>A-Demo</b>	An application which give the brief introduction about CipherLab's applications. Users can launch those apps by tapping "START" on the app's introduction page.
	<b>AppLock</b>	An application used to limit the system resources made available to users.
	<b>BarcodeToSettings</b>	An application for reading the setting barcodes generated by ADC (Android Deployment Configurator) to apply the configuration.
	<b>BT Printer Mate</b>	An application for providing user interface to pair with Bluetooth printers.
	<b>Button Assignment</b>	The application "Button Assignment" can redefine the functions of physical keys so that they trigger different actions. Settings made to one or more keys can be saved as a profile, allowing users to switch conveniently in between different sets of settings.
	<b>Calculator</b>	Performs mathematical calculations.
	<b>Camera</b>	Takes pictures and shoots videos.
	<b>Calendar</b>	Creates and manages events, meetings and appointments.
	<b>Chrome</b>	An Android built-in browser application developed by Google.
	<b>Clock</b>	Sets date, time, time zone according to your locale, and sets and manages alarms.
	<b>Contacts</b>	Manages contact information, and shares or exports/imports the information to other devices or SD card.
	<b>Device Health Dashboard</b>	A CipherLab built-in app for detecting the battery health status and showing the storage & RAM information of the device.

Icon	Name	Description
	<b>Drive</b>	An Android built-in application for a file storage and synchronization service created by Google.
	<b>Duo</b>	A one-to-one video call application developed by Google.
	<b>Enterprise Settings</b>	An application to control how the physical keypad works.
	<b>File</b>	Browses and manages files on the local storage and storage card.
	<b>Gmail</b>	An Android built-in application for Gmail, a free email service provided by Google.
	<b>Google</b>	An Android built-in application providing you easy access to handy services provided by Google such as searching for nearby restaurants or updates on traffic alerts.
	<b>Google Movies &amp; TV</b>	An Android built-in application for an online video on demand service operated by Google.
	<b>HF RFID Configuration</b>	An application for the configuration of RFID & NFC.
	<b>Maps</b>	An Android built-in app developed by Google.
	<b>Messages</b>	Sends SMS and MMS messages.
	<b>Phone</b>	Places and receives calls, accesses voicemail, views call history, manages phone contacts, and adjusts phone settings.
	<b>Photos</b>	An Android built-in application for a photo and video sharing and storage service developed by Google.
	<b>Play Store</b>	An Android built-in application providing access to a digital distribution service, including a digital media store, Play Store operated and developed by Google.
	<b>Reader Config</b>	Sets scanner preferences, data output format and destination, symbology settings, and reads barcodes.



Icon	Name	Description
	<b>Settings</b>	Opens settings to configure the mobile computer.
	<b>Signature Capture</b>	A simple and easy application which transforms your device into a signature pad.
	<b>SIP Controller</b>	An application for quickly open or close virtual keyboard by tapping on the floating button.
	<b>Software Trigger</b>	An application serving as a real trigger key, floating on top of all other programs for convenient trigger control of the barcode scanner.
	<b>Sound Recorder</b>	Records and plays audio information.
	<b>Terminal Emulation</b>	The application is developed for industries which make extensive use of terminal emulators. It enables your mobile computer to act as a terminal emulator while communicating with a host of the same environment.
	<b>WMDSAgent</b>	Wireless Mobile Deployment System for Android is a windows-based server program that can deploy the configuration projects (created by Android Deployment Configurator) to Android devices through wireless network.
	<b>WMDSInstaller</b>	The WMDSInstaller will fetch the latest WMDS Agent version over the Internet and then perform auto-installation.
	<b>YouTube</b>	An Android built-in application for a video-sharing service.
	<b>YT Music</b>	A music streaming service application developed by YouTube. which allows users to browse through songs and music videos on YouTube.

## APPENDIX II

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The Reader Config involves the Android-serialport-api project of Apache License Version 2.0, January 2004.

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