CipherLab

Reference Manual

RK25 Mobile Computer

Android™ 11

Version 1.01

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CIPHERLAB CO., LTD.
Website: http://www.CipherLab.com

IMPORTANT NOTICES

FOR USA

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:

Settings → Legal Information → Electronic authentication

Tested to Comply with FCC Standards

FOR HOME OR OFFICE USE

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 95%.
- 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.

SPECIFIC ABSORPTION RATE (SAR) INFORMATION

The product complies with the FCC / Canada 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.

For body-worn operating conditions please use belt-clips, holsters, and/or accessories that have no metallic component in the assembly and must provide at least 10mm separation between the device and the user's body.

- FCC SAR Value (Standard limit is 1.6 W/Kg)
- USA (1g): Max. 0.52 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. 1.03 W/Kg

- 台灣 NCC 注意事項

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機需忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

註：若要減少電磁波影響，請妥適使用。SAR 標準值 2.0W/Kg；送測產品實測值為：0.882W/Kg。

IMPORTANT SAFETY INSTRUCTIONS AND WARNINGS FOR LI-ION/POLYMER BATTERY

Lithium batteries are prone to capacity loss and swelling when exposed to high temperatures, excessive discharge, or overcharging. While CipherLab pre-charges batteries before shipment to prevent excessive discharge, it's crucial for customers to follow the guidelines below for battery usage and storage:

1. **If the batteries will not be used for long periods, store them in an environment at room temperature and charge them to 60% to 70% of capacity every 3 to 4 months.**

2. **Please avoid leaving the battery installed in the device for long periods, even when the device is powered off. Standby power consumption may occur, leading to potential excessive discharge of the battery.**

3. **Avoid prolonged charging of the batteries. It is recommended to unplug the charging cable within 48 hours after the battery is fully charged to avoid damaging the battery's lifespan.**

- 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 conductibility 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℃ to 30℃.
- 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℃ to 45℃.
- During discharge and handling of batteries, do not exceed 50℃.
-

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℃ to 30℃ for the best performance.
- Do NOT store battery in temperature exceeding 50℃, 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℃ but no more than 45℃.
- Storing battery at temperatures greater than 50℃ 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.

使用過度，恐傷害視力。

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

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

- 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 3.5 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 RK25 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 RK25 mobile computer with charging it a power supply or cradle for charging. If you need to continuously connect your RK25 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.
- Please note that 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.

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 & Communication Cradle

- Do not insert the mobile computer to a Charging & Communication Cradle if water or drippings are staying on the device.
- The LED indicator on a Charging & Communication 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, 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 : RK25

US

FCC ID : Q3N-RK25

FC

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

CCAJ18Z10160T8

減少電磁波影響,請妥適使用

CE DECLARATION

CIPHER LAB

Declaration of Conformity

Manufacturer

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Type of Equipment

Mobile Computer

Model(s) Declared

RK25

Initial Year of Manufacture **2018**
CE issued date **2018.04.10**

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 V1.1.0
EN 301 511 V12.1.1
EN 301 908-2 V11.1.1
EN 50360 :2001 A1:2012
EN 300 330 V2.1.1
EN 55024 : 2010 + A1:2015
EN 55032: 2015+AC:2016
EN 60950-1 : 2006+A2:2013
EN 301 893 V2.1.1
EN 301 908-13 V11.1.1
EN 301 489-3 V2.1.1
EN 50566:2013 AC:2014
EN 301 489-52 V1.1.0
EN 301 489-1 V2.1.1
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 61000-3-2 :2014
EN 61000-3-3 :2013

I the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).
The Notified Body Telefication B.V., with Notified Body number 0560 performed:
choose applicable Modules: B+C
Where applicable:
The issued EU-type examination certificate: note certificate number

Manufacture Signature

Full Name :Herbie Jiang
Title : Manager
Date: 2018.04.10

THAILAND CAUTION

เครื่องโทรคมนาคมและอุปกรณ์นี้มีความสอดคล้องตามมาตรฐานหรือข้อกำหนดของกสทช.

เครื่องวิทยุคมนาคมนี้มีอัตราการดูดกลืนพลังงานจำเพาะ (Specific Absorption Rate - SAR)
อันเนื่องมาจากเครื่องวิทยุคมนาคมเท่ากับ 0.95 W/kg
ซึ่งสอดคล้องตามมาตรฐานความปลอดภัยต่อสุขภาพของมนุษย์จากการใช้เครื่องวิทยุคมนาคมที่คณะกรรมการกิจการโทรคมนาคมแห่งชาติประกาศกำหนด

RELEASE NOTES

Version	Date	Notes
1.01	Apr. 29th , 2024	· Add important notices for lithium polymer batteries.
1.00	Jan. 13th, 2022	· Initial release

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INTRODUCTION

The **RK25** 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 transmissive display guarantees ease in reading in all lighting conditions. Integrated with Bluetooth Class I, v4.0, v4.1, V4.2 v2.1 BLE, v2.1 with Enhanced Data Rate (EDR)+EDR, 802.11 b/g/n and 802.11 a/ac/n networking technologies, the mobile computer also includes a GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE 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.
- Android 11 operating system with a powerful Cortex 1.45 GHz Quad-Core 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 8.0 Megapixel rear camera with white LED for flash and auto focus.
- Left and right side triggers for ambidextrous scanning
- Total wireless solution — connectivity includes Bluetooth Class I, v4.0, v4.1, V4.2 v2.1 BLE, v2.1 with Enhanced Data Rate (EDR)+EDR, 802.11 b/g/n and 802.11 a/ac/n networking, GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE, and near field communication (NFC)
- A 4.0 inch, LCD, Corning Gorilla Glass 3 display with 480x800 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

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.

- RK25 Mobile Computer
- USB Cable (optional)
- Snap-on Cable (optional)
- AC Power Adaptor (optional)
- Hand Strap (optional)
- Quick Start Guide

ACCESSORIES

- 1-slot Charging + Communication Cradle
- Pistol Grip

RELATED DOCUMENTATION

Please visit CipherLab website to access related documentation about the RK25 mobile computer.

Chapter 1

QUICK START

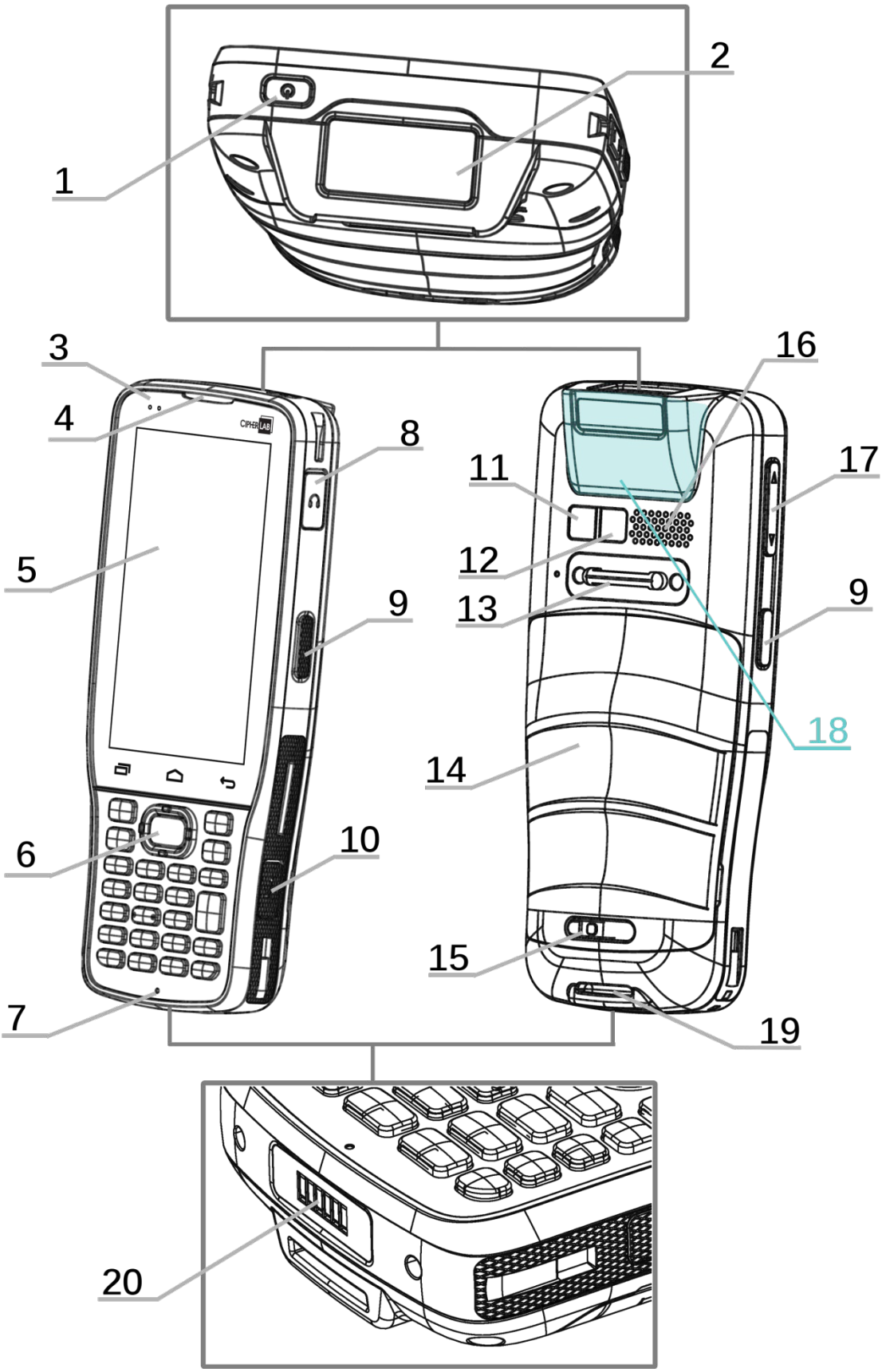
This chapter helps you get ready for starting using the mobile computer.

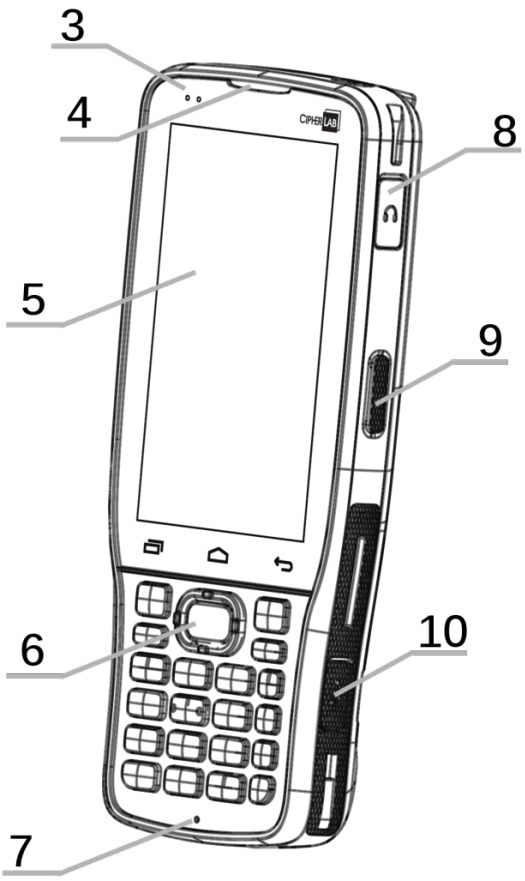
IN THIS CHAPTER

1.1.Overview 24

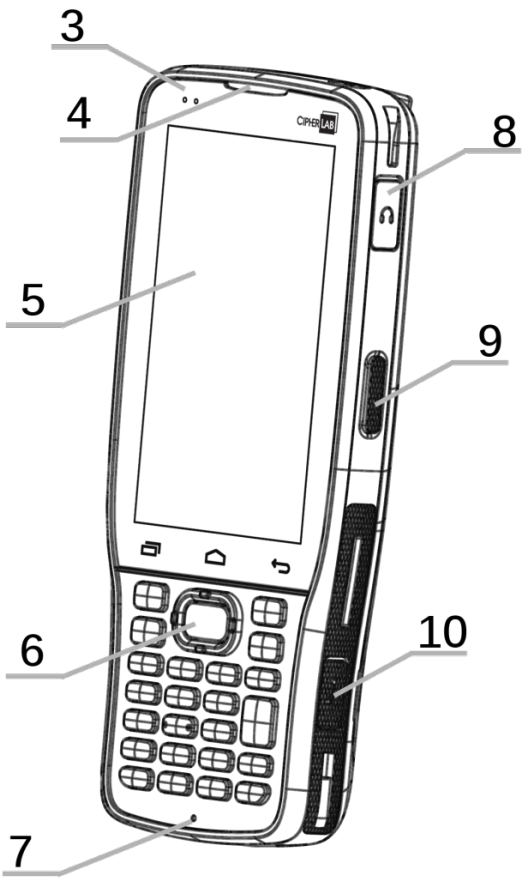
1.2.Charging & Communication 37

1.1. OVERVIEW



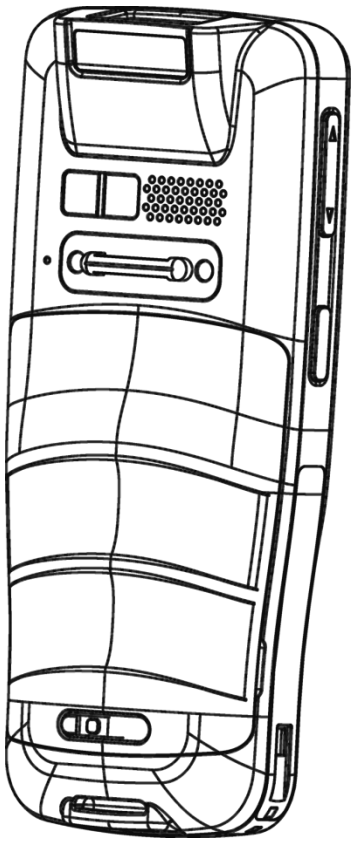


25-key Model

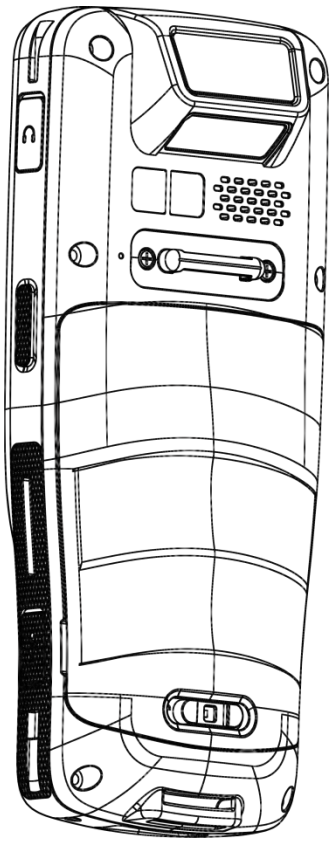


28-key Model

No.	Description	No.	Description
1	Power Button	2	Scan Window
3	Status LED	4	Receiver
5	Touchscreen	6	Scan Key
7	Microphone	8	Headset Jack
9	Side-Trigger	10	Micro USB Port
11	Camera	12	Camera Flash
13	Handstrap Cover	14	Battery
15	Battery Cover Latch and Lock	16	Speaker
17	Volume Buttons	18	NFC Detection Area
19	Handstrap Hole	20	Charging & Communication Pins



10° Tilted Reader



70° Tilted Reader

Note:

(1) Please refer to "Physical Keypad" for the difference between 28-key Model and 25-key Model.

(2) NFC function is unavailable for 70° tilted reader model and 25-Key model.

(3) 10° tilted reader model is equipped with 1 SIM slot & 1 optional SIM/SAM slot, while 70° tilted reader model is equipped with dual SIM slot.

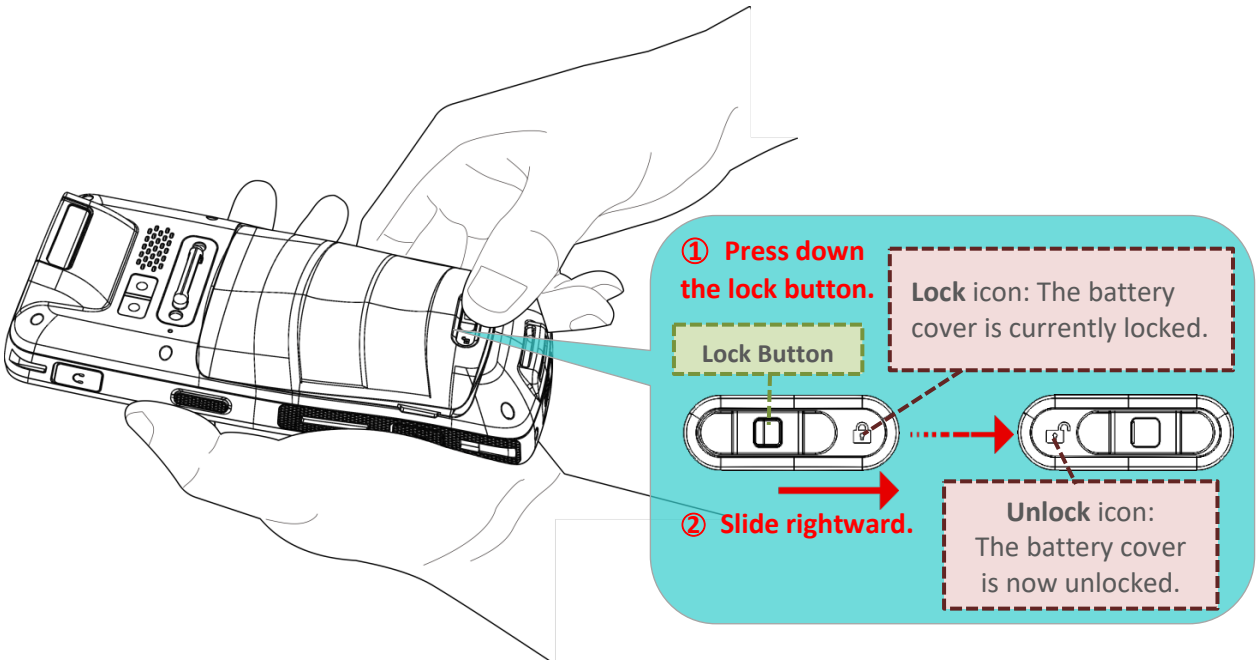
1.1.1. INSTALL/ REMOVE BATTERY

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.

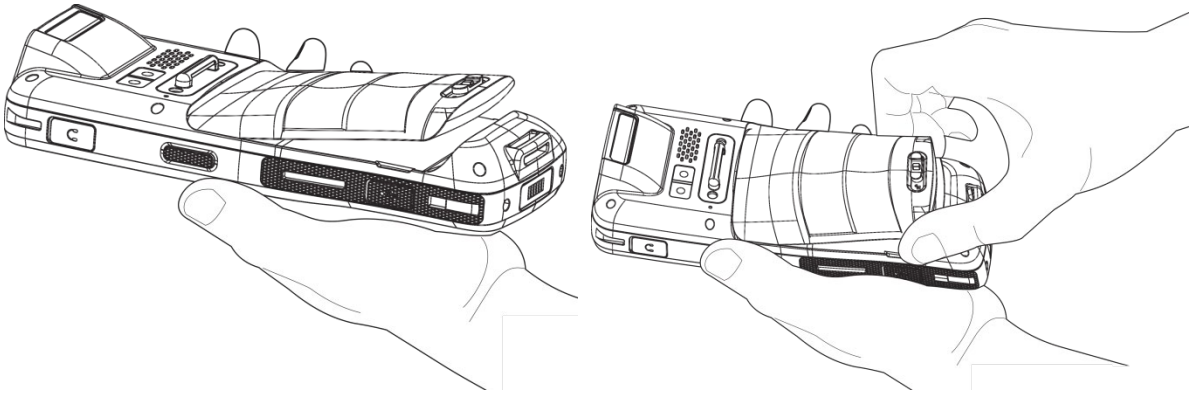
To install the main battery:

1) Keep pressing down the lock button and slide the battery latch rightward to unlock it.

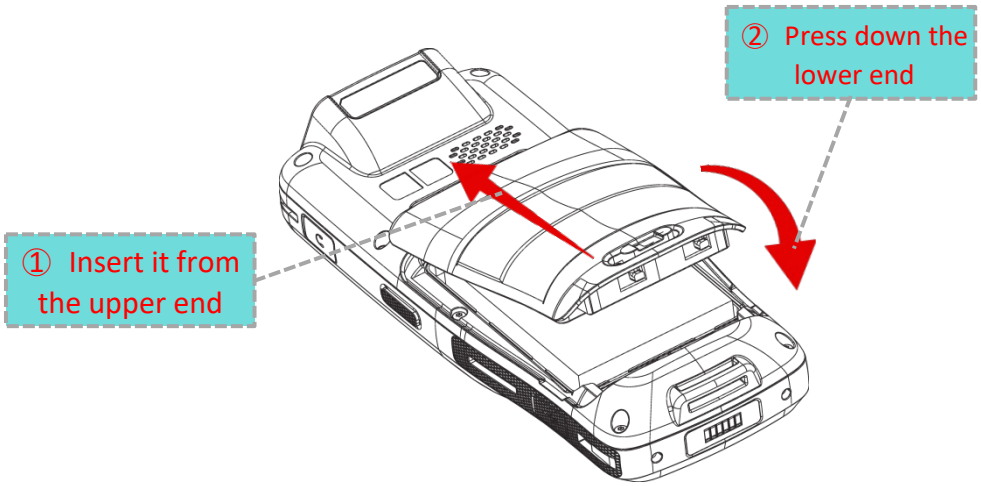


2) Once the battery cover is unlocked, it slightly tilts up and is ready to be removed.

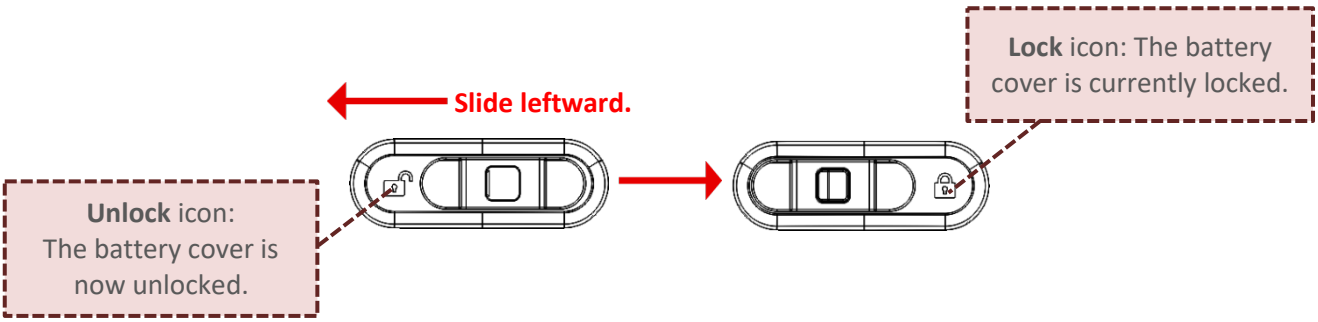
   By holding the two sides of the battery cover, lift up the main battery (which is with the battery cover) from its lower end to remove it.



3) Insert a fully-charged main battery from its upper end, and then press down the lower edge of the battery.



4) Slide the battery latch leftward to "**Lock**" position.



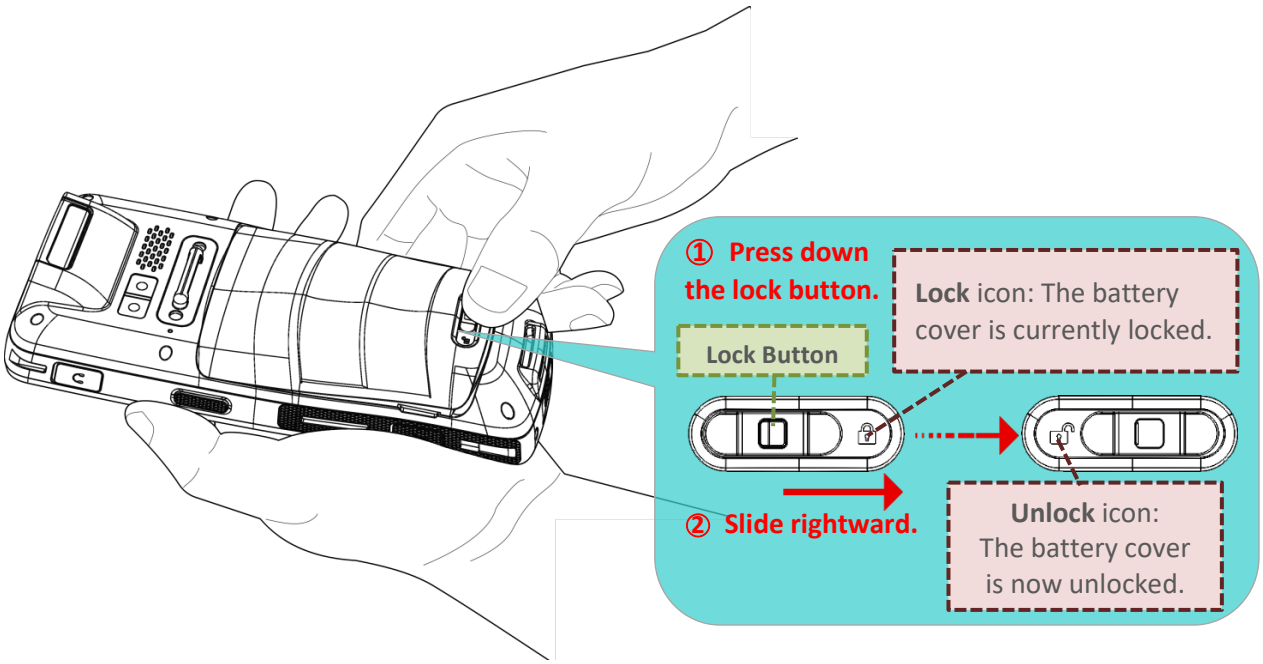
Warning:

1) **Make sure the battery latch is at the "Lock" position before powering on the device.**
2) **For initial use, insert a charged battery, lock the battery cover in place, and then press the Power key to power on the mobile computer.**

REMOVE BATTERY

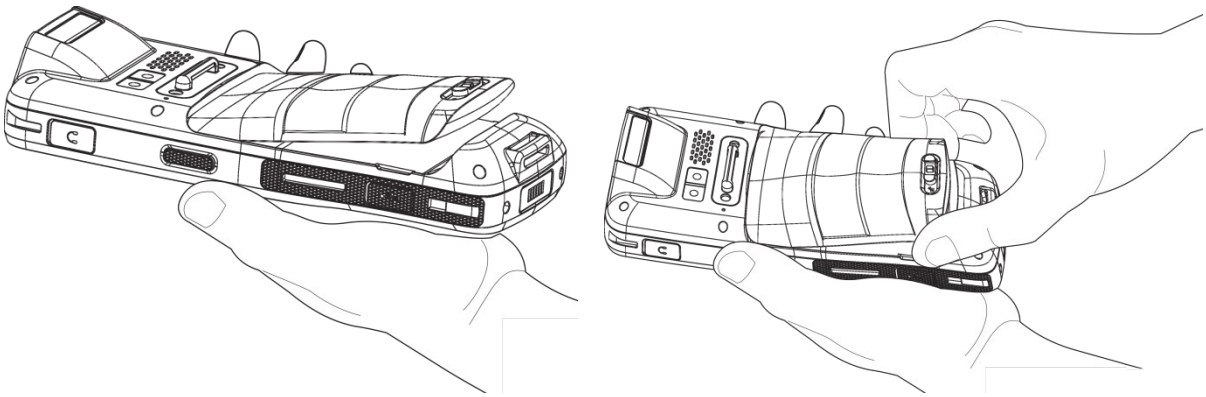
To remove the battery from the device:

1) Keep pressing down the lock button and slide the battery latch rightward to unlock it.



2) Once the battery cover is unlocked, it slightly tilts up and is ready to be removed.

   By holding the two sides of the battery cover, lift up the main battery (which is with the battery cover) from its lower end to remove it.



1.1.2. INSTALLING SIM CARD, SAM CARD AND MEMORY CARD

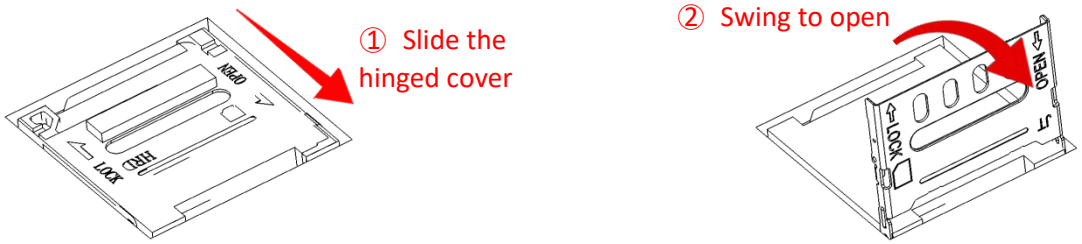
The RK25 mobile computer is equipped with:

- 1 SIM card slot
- 1 SAM slot
- 1 memory card slot.

To insert the cards:

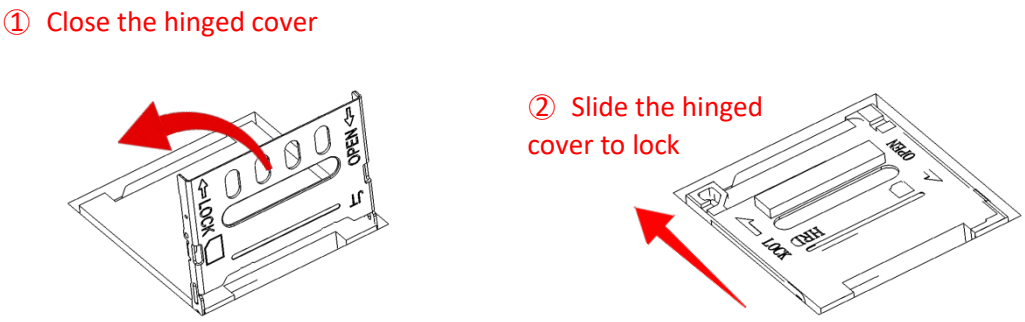
1) Remove the battery as described in Remove Battery.

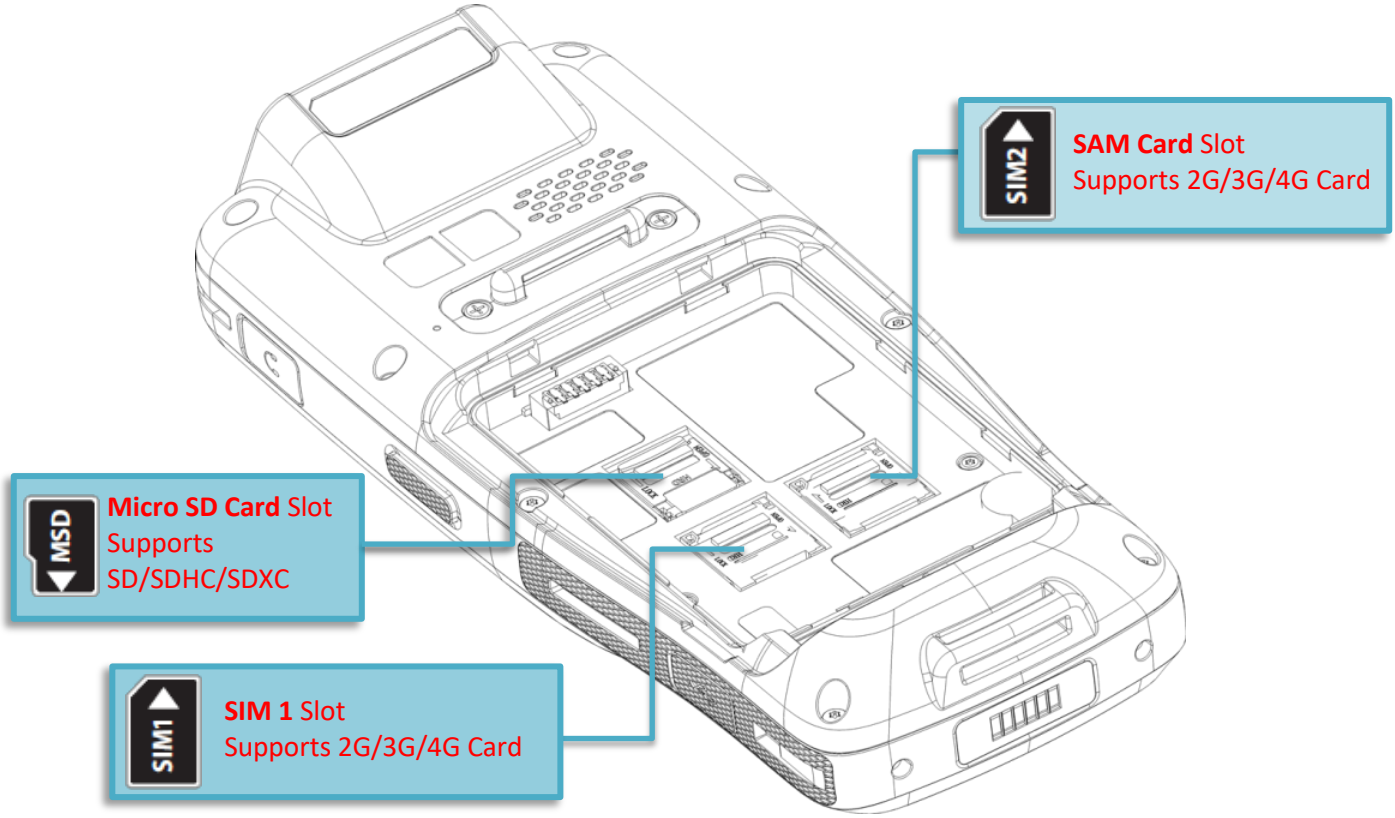
2) Slide the hinged cover backward, and swing the top to open.



3) Place the card into the slot with its metal contacts downward.

4) Close the hinged cover, and then push it toward to lock.





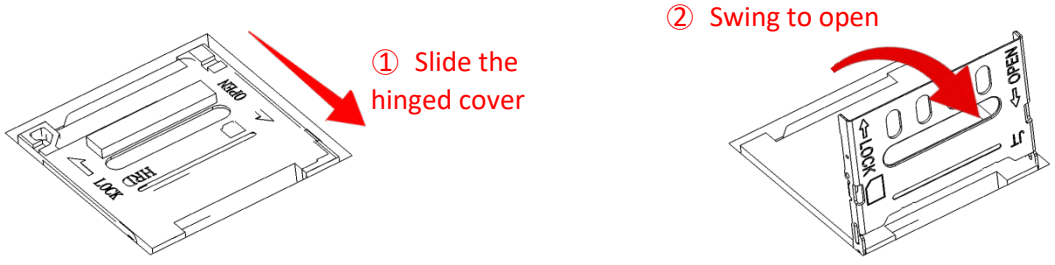
5) Replace the battery cover and push the battery latch back to the "**Lock**" position.

REMOVE CARDS

To remove the card(s) from the card slot(s):

1) Remove the battery cover as described in Remove Battery.

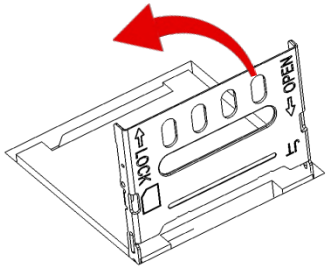
2) Slide the hinged cover backward, and swing the top to open.



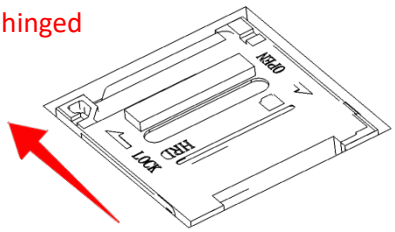
3) Take out the cards directly from their slots.

4) Close the hinged cover, and then push it toward to lock.

① Close the hinged cover



② Slide the hinged cover to lock

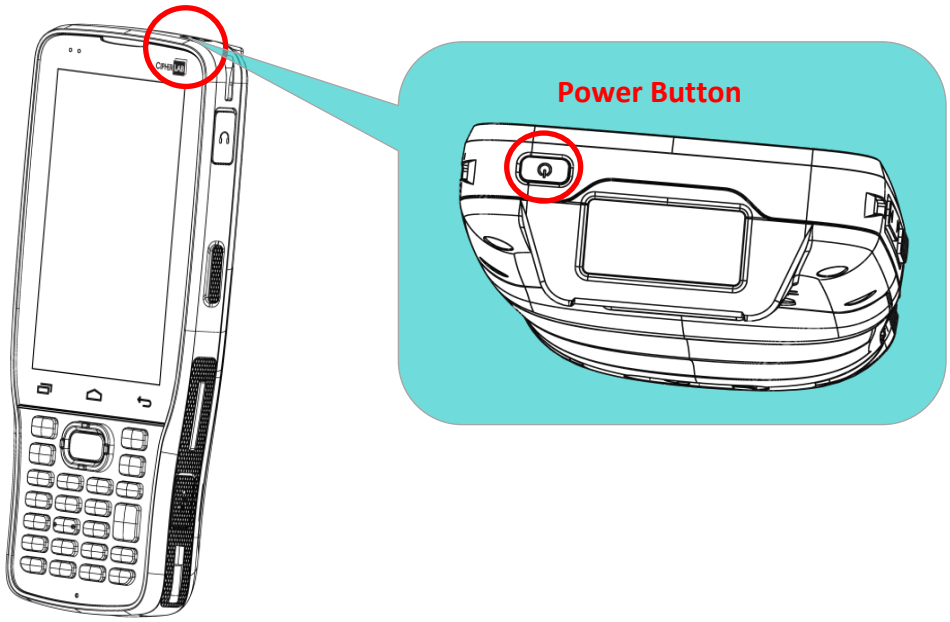


5) Replace the battery cover and push the battery latch back to the "**Lock**" position.

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 top end of the device. The mobile computer will turn on and show the **Home Screen** after splash screen.

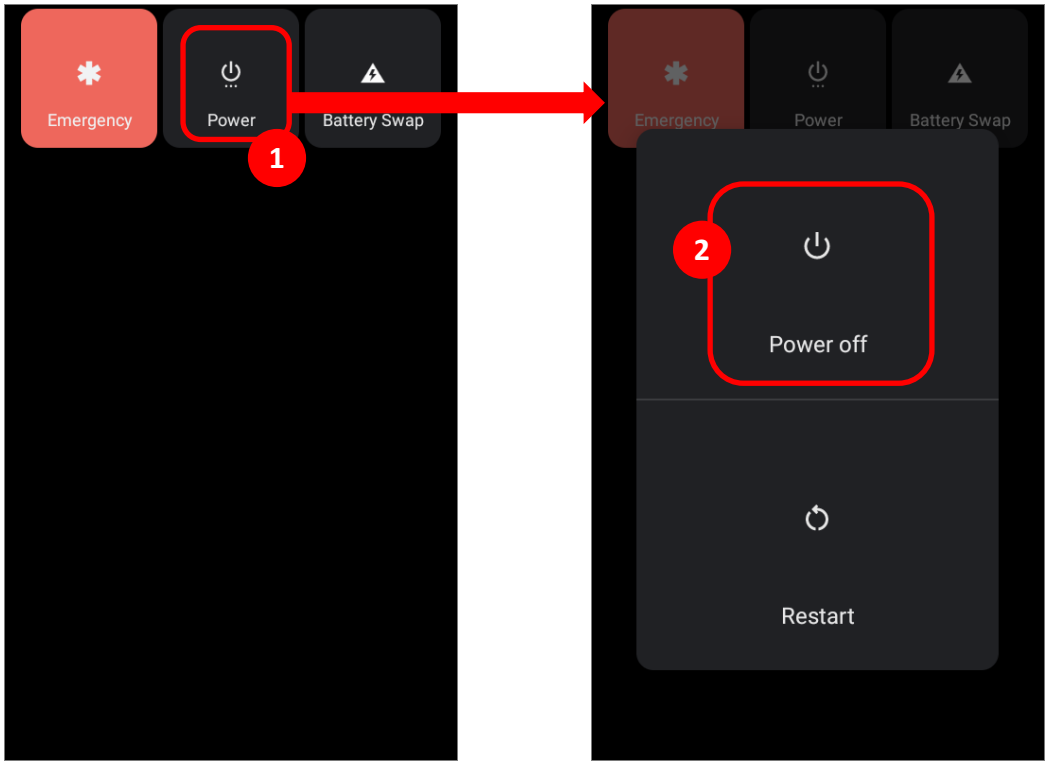


Note:

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

Upon the first time you launch the system, a **Select Home app** window will pop up to request your immediate choice of home screen.

By selecting "**AppLock**", you will 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

Beneath the LCD display are three hardware buttons that deliver the following functions:

Button	Function	Description
	Back button	Returns to the previous screen or closes the active window or keyboard.
	Home button	Displays the Home screen.
	Recent apps button	Opens a list of recently used applications.

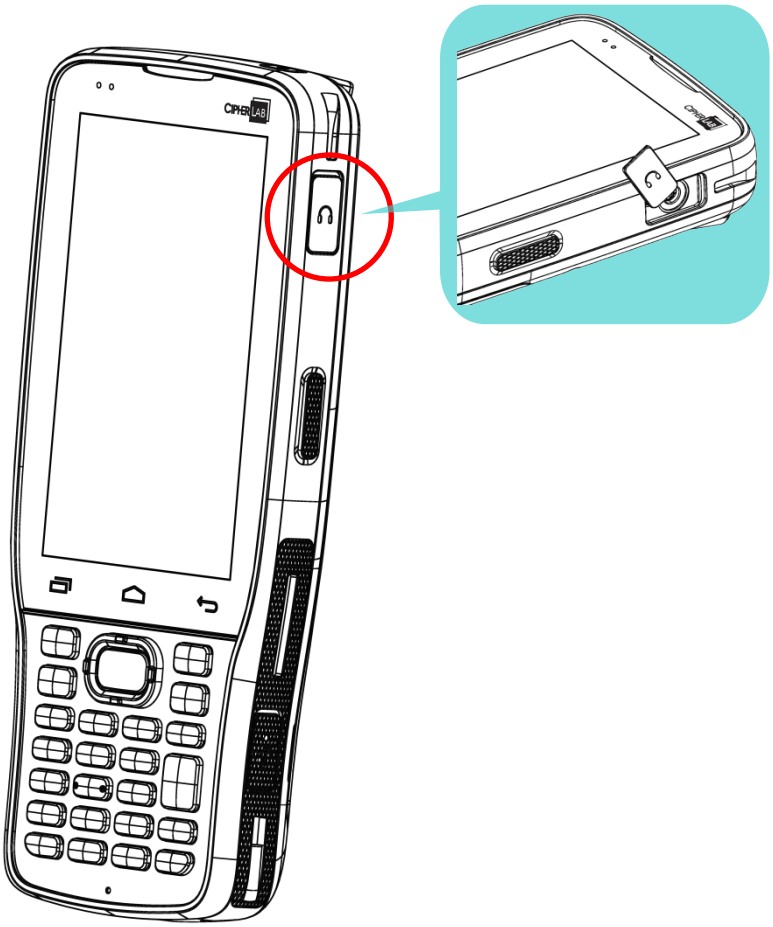
1.1.6. CONNECTING HEADSET

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

1) Flip up the rubber cover.

2) Connect the headset to the headset jack.

3) Once the headset is removed, please replace the rubber cover.



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 & Communication Cradle along with a power adapter to charge the mobile computer.

Your device can also be charged by connecting to a host computer using the USB cable. It's slower than charging using the supplied snap-on cable or Charging & Communication Cradle.

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 left) 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 ℃ to 45 ℃. It is recommended to charge the battery at room temperature (18℃ to 25℃) for optimal performance.

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

OPERATION ON BATTERY POWER

When Bluetooth Class I, v4.0, v4.1, V4.2 v2.1 BLE, v2.1 with Enhanced Data Rate (EDR)+EDR, 802.11 b/g/n and 802.11 a/ac/n networking, GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE, 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.

BATTERY STATUS & STATUS LED DURING CHARGE

To prevent the battery from keeping being continuously charged and discharged, RK25 mobile computer will automatically stops charging the battery when the battery level reaches 100% even if it is connected with a snap-on cable/ charging & communication cradle/ micro USB cable for external power supply.

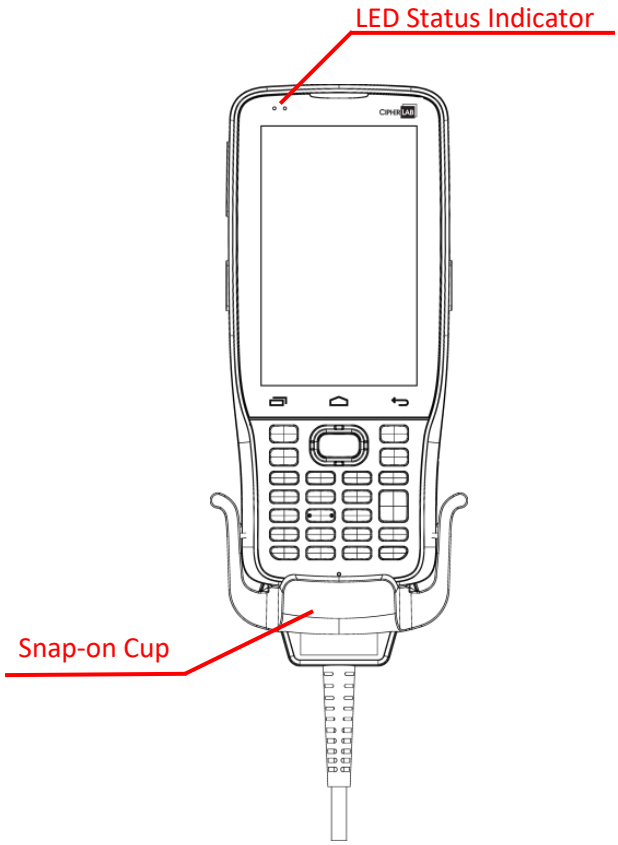
When RK25 mobile computer is connected with the external power source, the Status LED located above the touch screen shows as below:

LED Status	Description
Red, solid	Charging the mobile computer (0% to 99%)
Red, blink	Charging error
Green, solid	Charging complete (100%)
No light	The cable is not correctly connected

Note:

RK25 mobile computer stops charging when the main battery power level reaches 100%, and it will resume charging the battery when the battery power level is lower than approximate 90% and the voltage is 4.15v. During the period when RK25 mobile computer stops charging the battery (from the battery power level 100% to 90%), the status LED is still solid red.

USE SNAP-ON CABLE



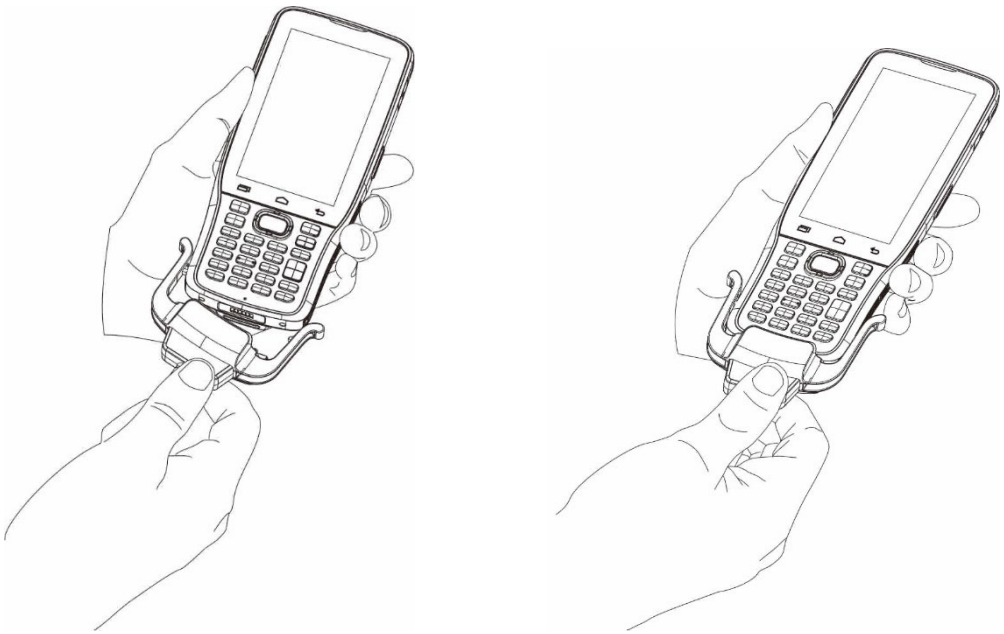
The Snap-on Cable provides a convenient way to charge your mobile computer as well as data communication.

To install:

1) Remove the micro USB cable if it is connected with the RK25 mobile computer.

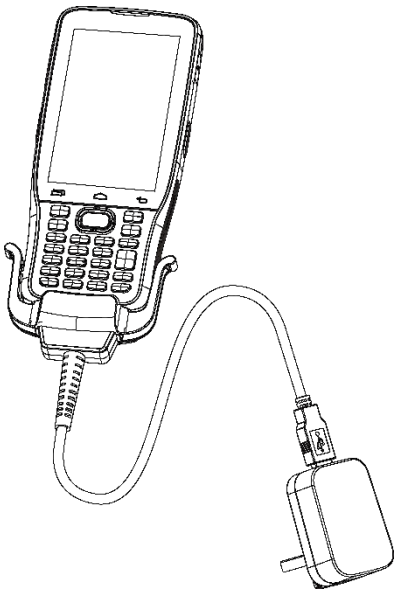
2) Hold the snap-on cup toward the bottom of the RK25 mobile computer, and place one of the snap-on cup side to the side of the RK25 mobile computer.

3) Push the Snap-on cup upwards to make its another side to be attached to the RK25 mobile computer.



4) A "click" sound is made once the Snap-on cable is connected with the bottom of the RK25 mobile computer in place.

5) Connect the USB plug to the approved adapter for external power connection, or plug it to the USB port of PC/laptop for data transmission/ charging.



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

LED Indicator	Status	Description
Charging	Red, solid	Charging the mobile computer
	Red, blink	Charging error
	Green, solid	Charging complete
	No light	The cable is not correctly connected

Note:

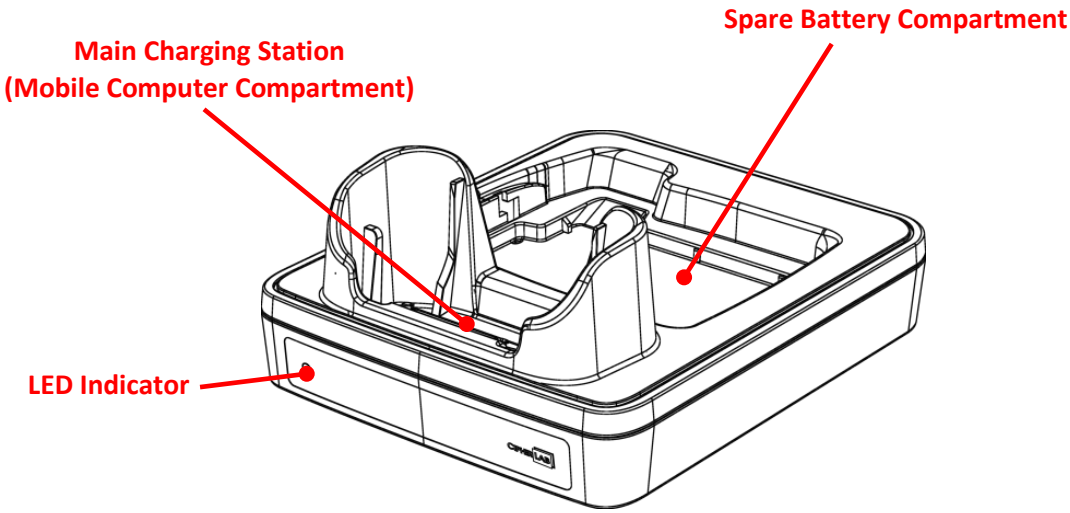
(1) The micro USB cable must be removed before installing the Snap-on Cable.

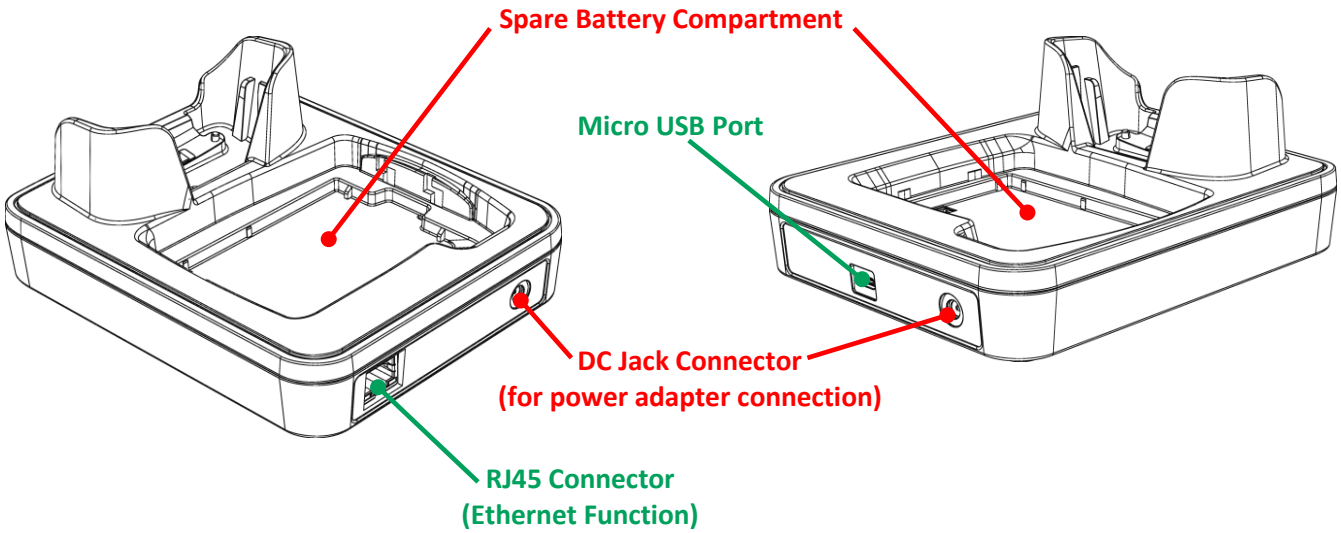
(2) For data communication, you could also use the micro USB cable to connect the mobile computer to your PC or laptop.

(3) RK25 mobile computer stops charging when the main battery power level reaches 100%, and it will resume charging the battery when the battery power level is lower than approximate 90% and the voltage is 4.15v. During the period when RK25 mobile computer stops charging the battery (from the battery power level 100% to 90%), the status LED is still solid red.

USE CHARGING & COMMUNICATION CRADLE

The Charging & Communication Cradle charges your mobile computer and a spare battery at the same time, and it could also be used for data communication.





ENCR Model CCCR Model

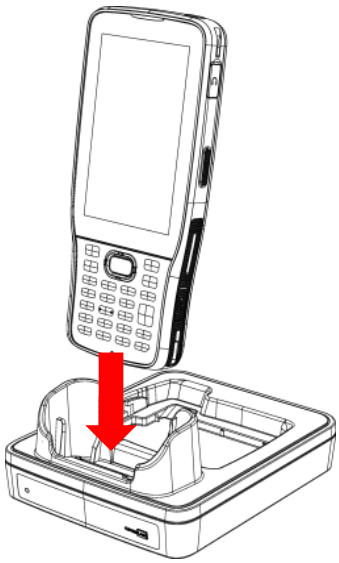
Note:

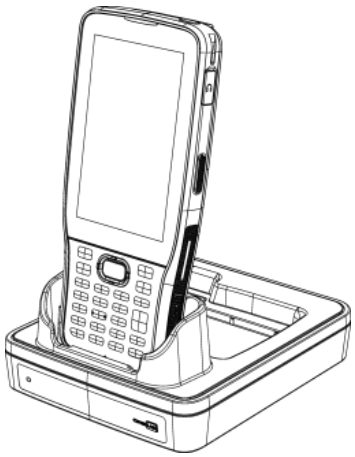
The Charging & Communication Cradle is equipped with either one Micro USB Port (CCCR Model) or one RJ45 Connector (ENCR Model).

To charge your mobile computer on the Charging & Communication Cradle:

1) Remove the micro USB cable if it is connected with the RK25 mobile computer.

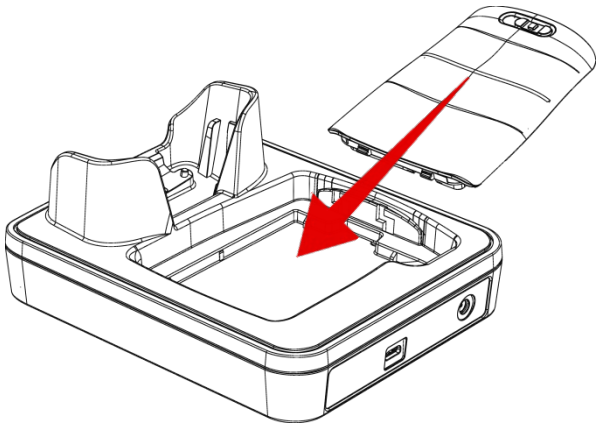
2) Insert the RK25 mobile computer onto the Cradle. The installed hard shell or hand strap is not necessary to be removed in advance before inserting the mobile computer. To remove, please take out the RK25 mobile computer directly.

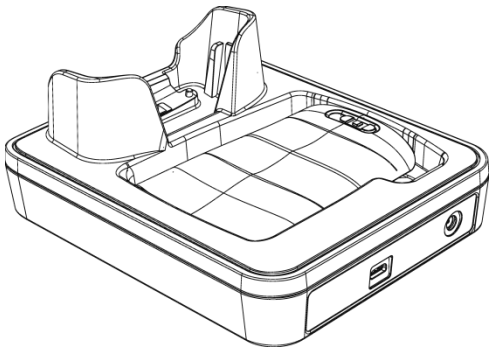




3) For the spare battery, please make sure the battery latch is at "**Unlock**" position, and then insert the battery from its top side (where the contact pins are located) into the spare battery compartment of the cradle with their contact pins connected. Press down the bottom side of the battery (where the battery latch is located), and slide the battery latch leftward to "**Lock**" position to fasten it.

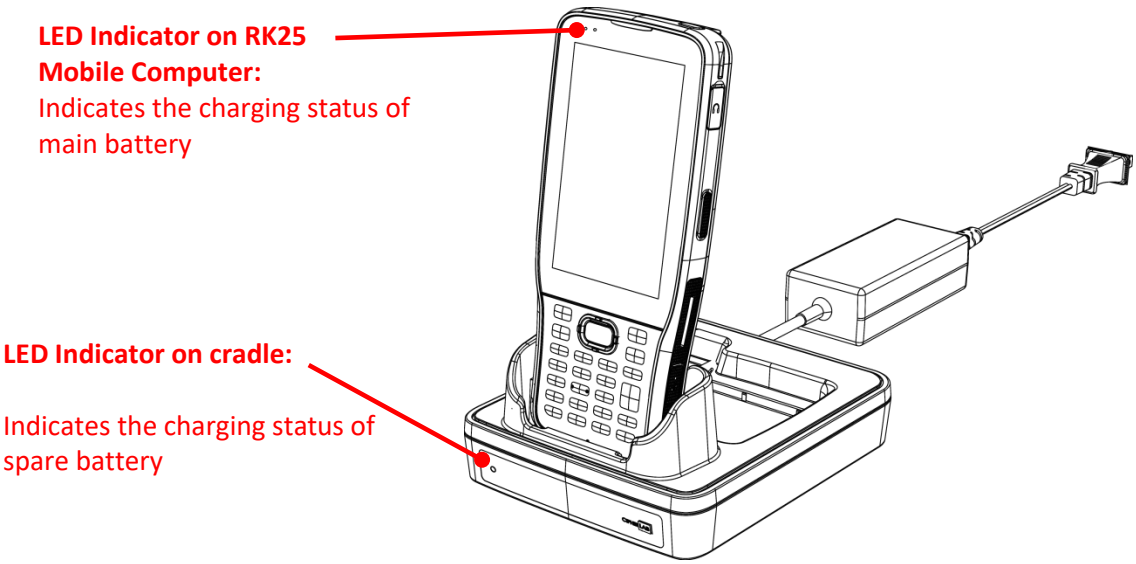
   To remove, please slide the battery latch to "**Unlock**" position, and directly take the battery out.





4) 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 RK25 Charging & Communication Cradle shows the status of battery charging as below:



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

Note:

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

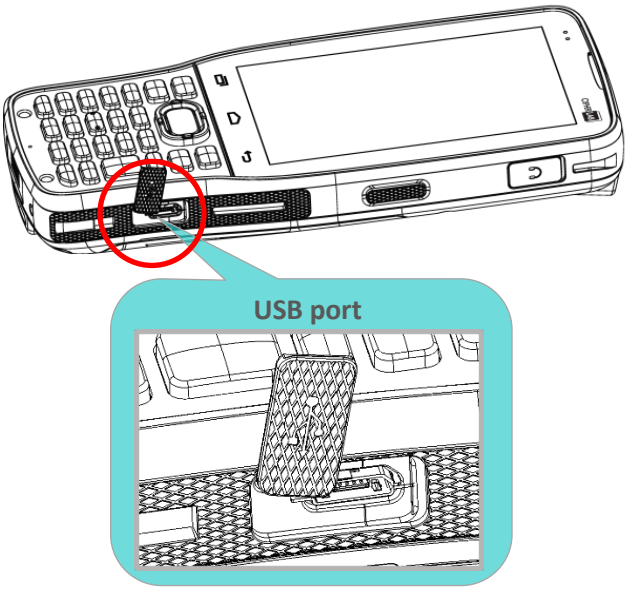
(2) Charging error could be due to high battery temperature.

(3) The micro USB cable must be removed before inserting the device onto the cradle.

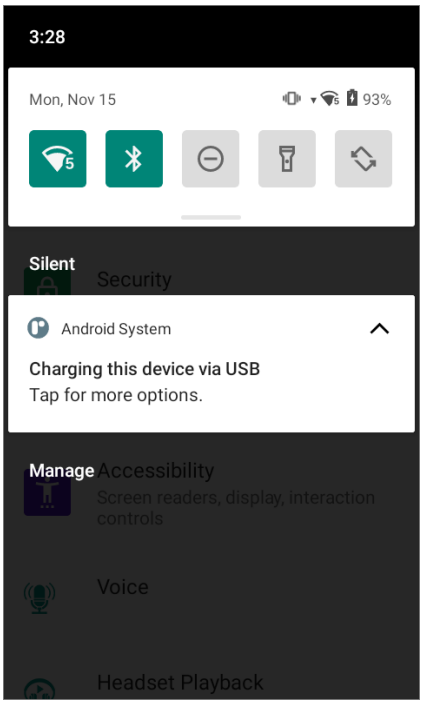
1.2.2. WIRED DATA TRANSMISSION

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

1) Connect your device to the computer with supplied USB cable/ Snap-on Cable / Cradle.

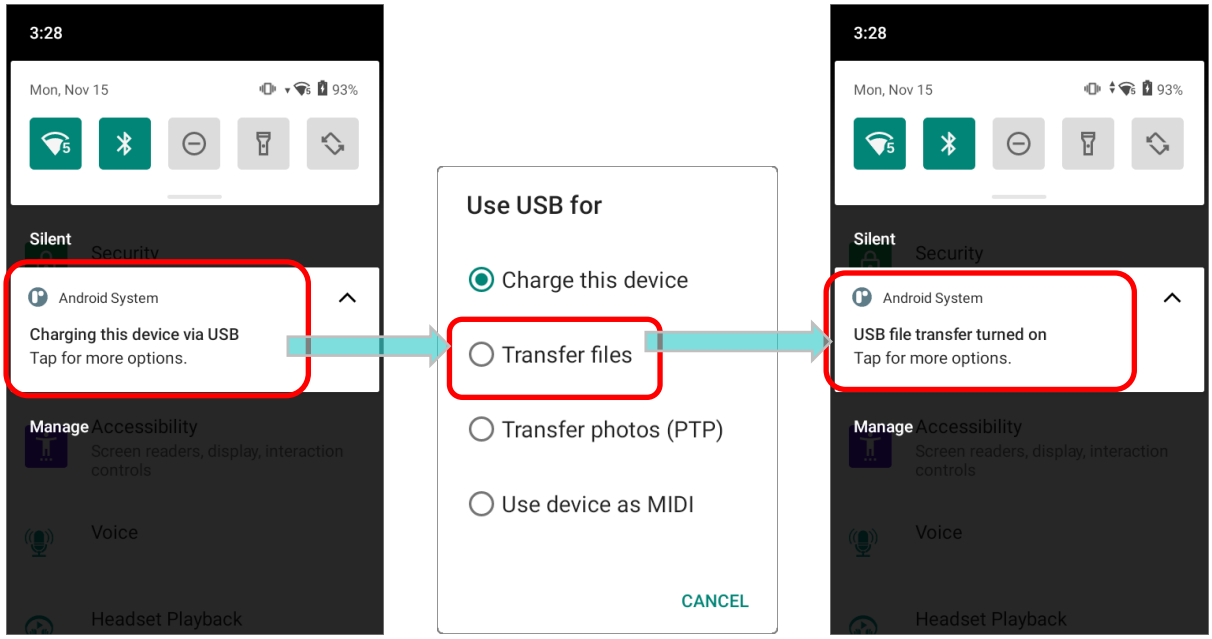


2) Swipe down from the status bar to reveal Notifications Drawer.



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 "**Transfer files**".

   To transfer videos and photos, you can select "**PTP**", in which your device will share only videos and photos in DCIM and Pictures folders.



1.2.3. USING WIRELESS NETWORKS

The mobile computer supports widely applied wireless technologies including Bluetooth Class I, v4.0, v4.1, V4.2 v2.1 BLE, v2.1 with Enhanced Data Rate (EDR)+EDR, 802.11 a/ac/n is able to send/receive data in real time in an efficient way.
Select GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE modules embedded for a total wireless solution for data and voice communication.

Chapter 2

USING RK25 MOBILE COMPUTER

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

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2.1. BATTERY

- **Main Battery**

  The mobile computer is powered by a rechargeable 3.8V / 4000 mAh Li-Polymer battery pack, and 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-Polymer 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.

Warning:

(1) The battery cover must be secured in position with its latch locked.

(2) For a new battery, make sure it is fully charged before using.

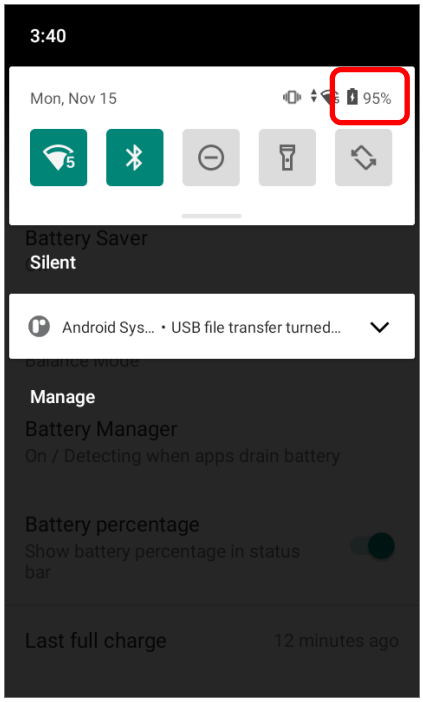
(3) To avoid data loss, when replacing the main battery, make sure you replace it with a well-charged spare battery pack. Always prepare a spare battery at hand, especially when you are on the road.

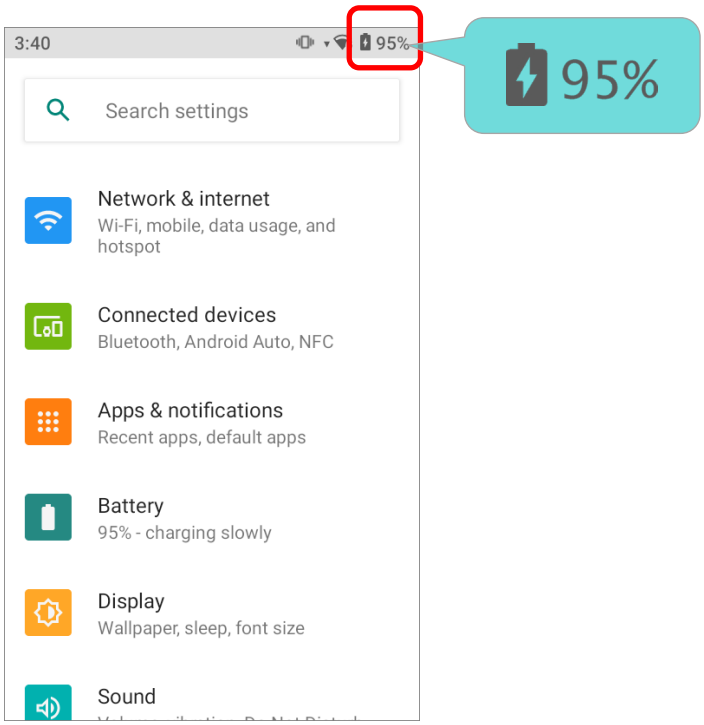
(4) When the mobile computer has been on backup battery for 30 minutes, the system will shut down. Be sure to replace the main battery as soon as possible in order to avoid data loss.

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.

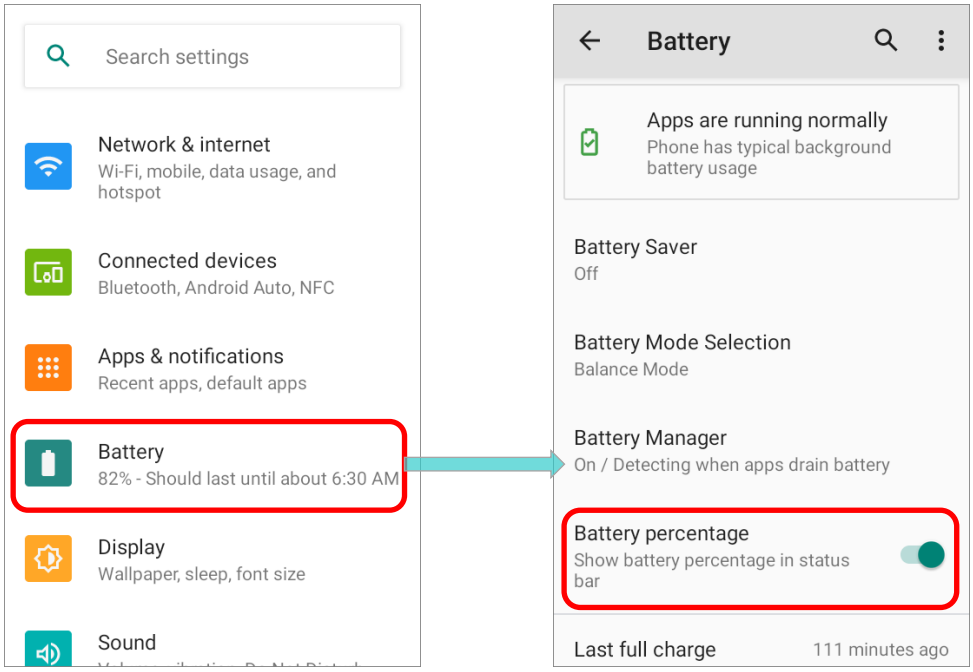
By checking the battery status icon on **Status Bar**, you can tell the battery level remaining in the main battery.





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.

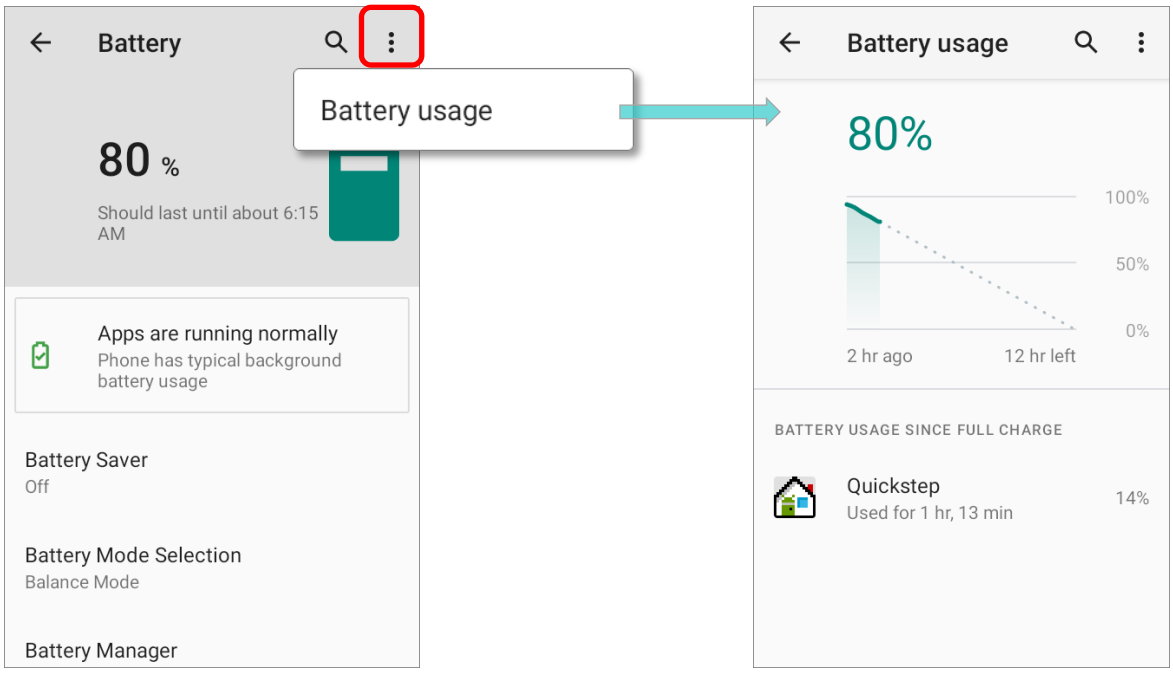
2.1.2. MONITOR BATTERY LEVEL

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 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.

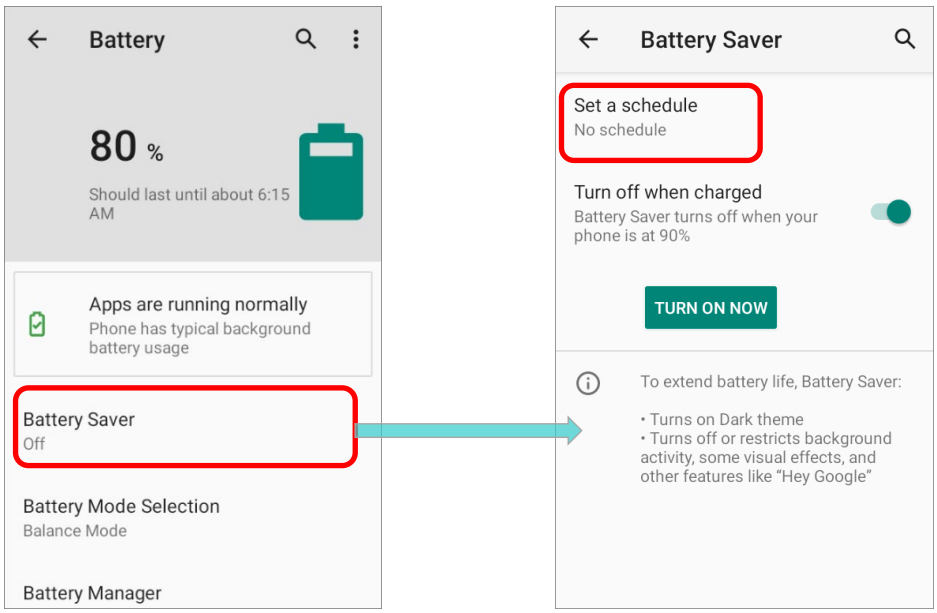


The screen also shows the rate of battery discharge since the last battery charging session, how long the device has been running on battery power, and which applications are consuming the most battery power.

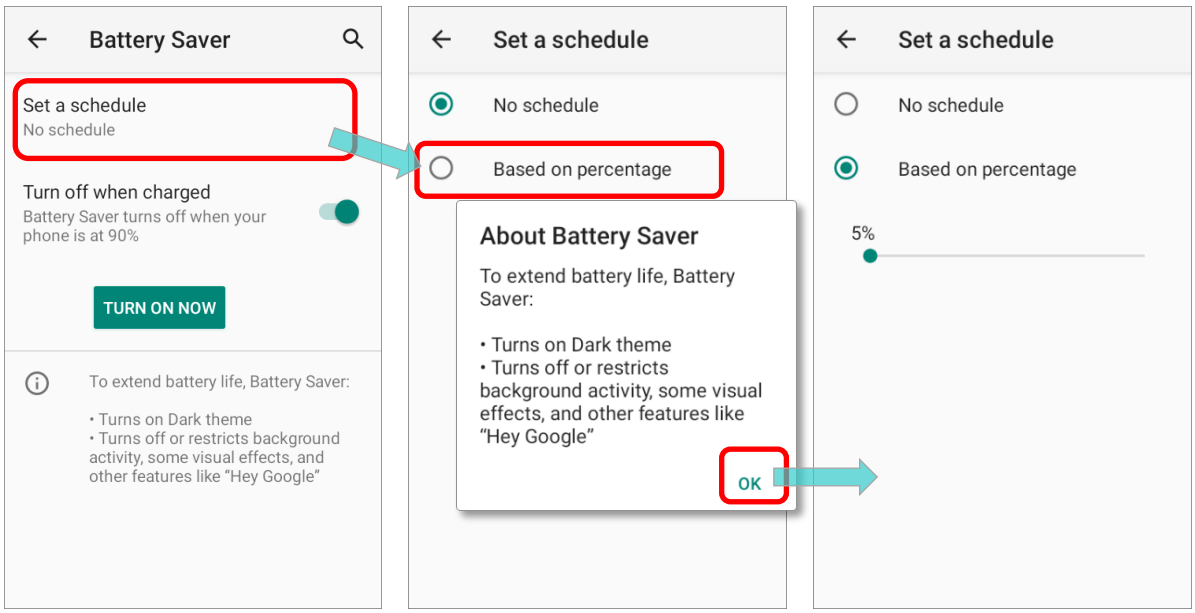
BATTERY SAVER MODE

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.

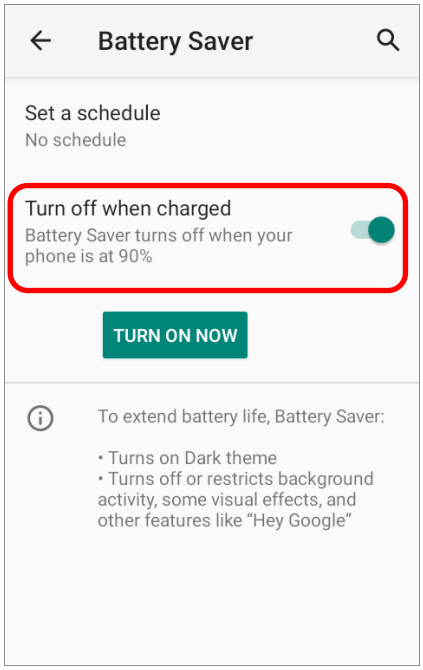
1) On Battery screen, tap "**Battery saver**" to enter "**Battery Saver**" page, and then tap on "**Set a schedule**".



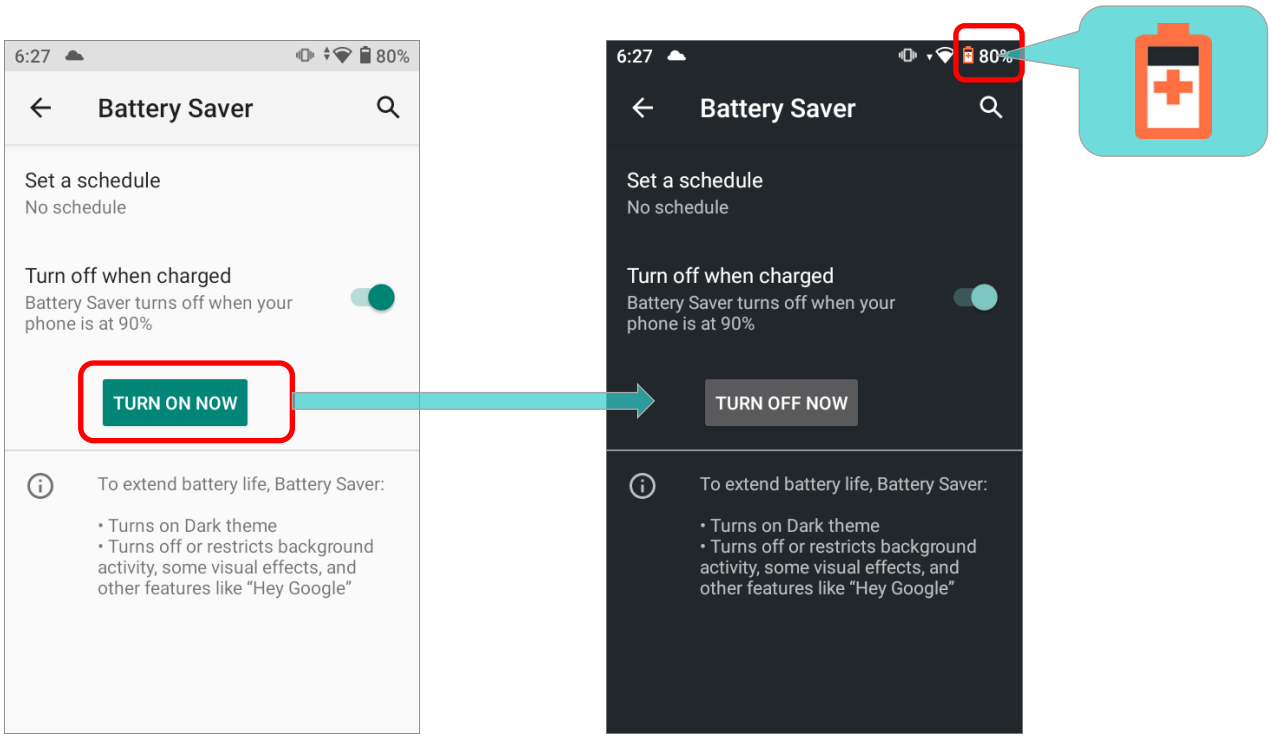
2) Tap the radio button of "**Based on percentage**" to display the slider which can be dragged to set when to enable the battery saver mode according to the battery power percentage. The default setting is **5%**.



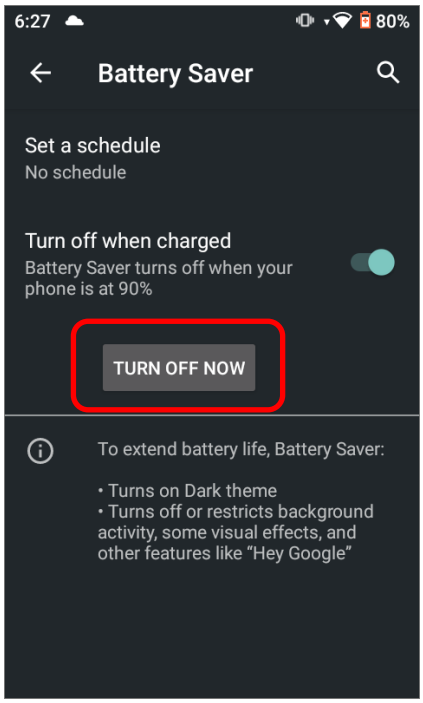
By enabling "**Turn off when charged**" on "**Battery Saver**" page, the battery saver mode will be automatically off once the battery power is charged to be **90%**.

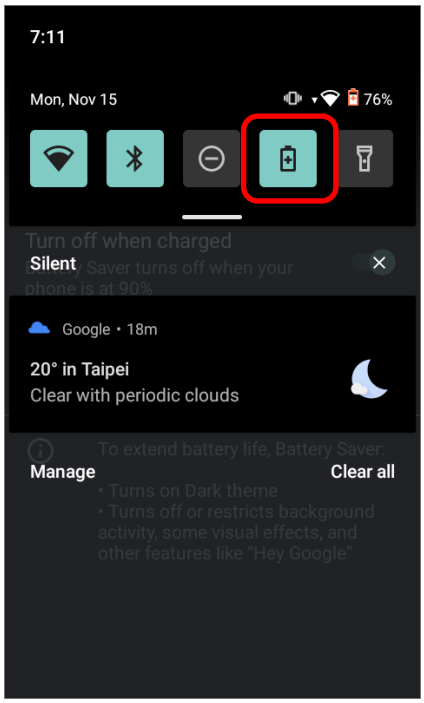


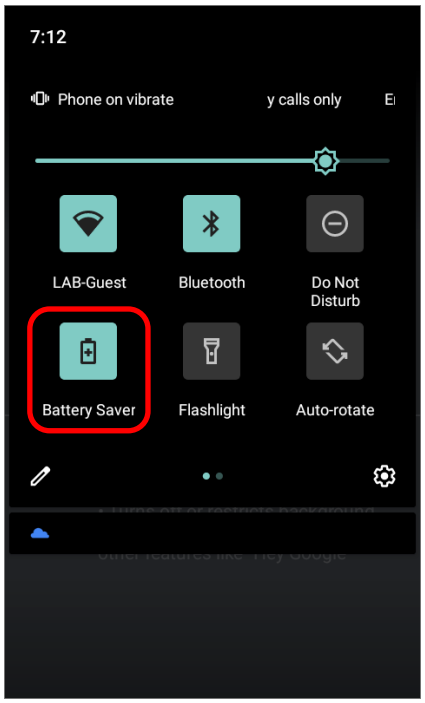
Tap on "**TURN ON NOW**" to directly enable battery saver function, and the battery icon on status bar will turn orange once this function is enabled.



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 **OFF**.
	Battery saver mode is **ON**.

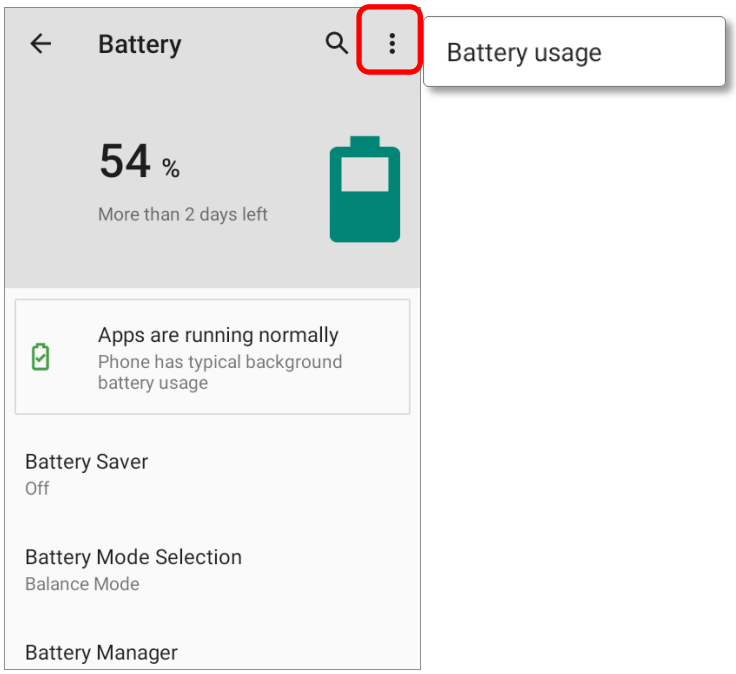
Note:

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

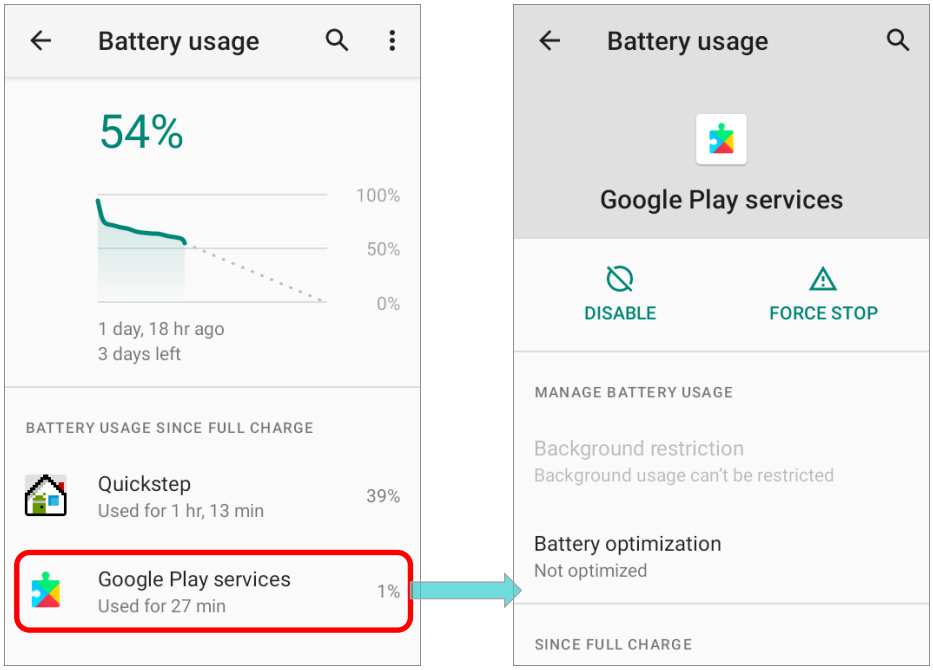
BATTERY OPTIMIZATION

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.

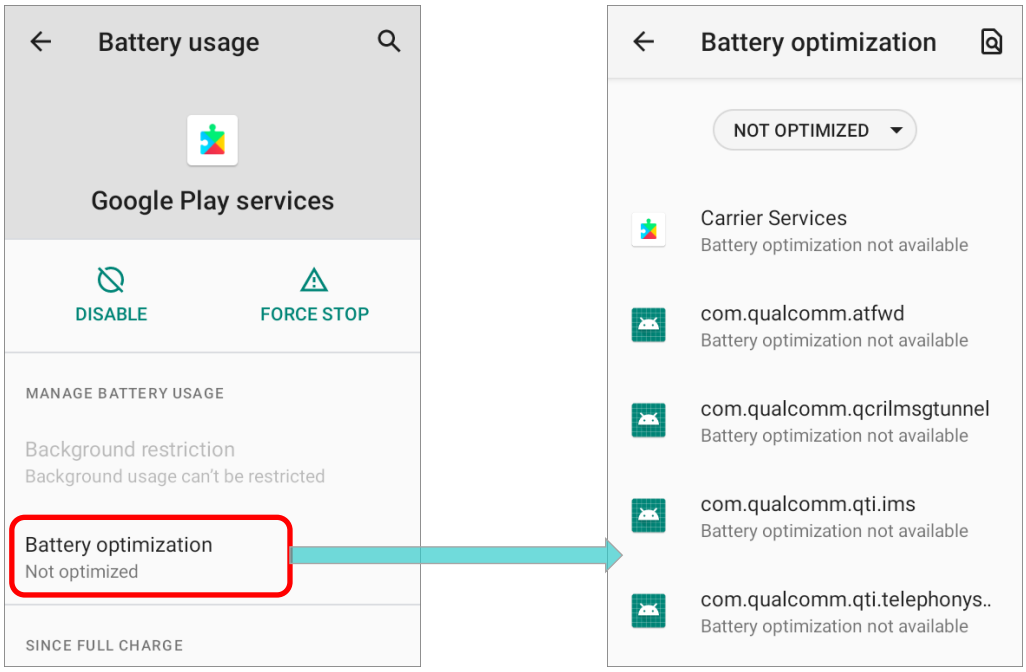
1) On Battery screen, tap on **More** and select "**Battery usage**".



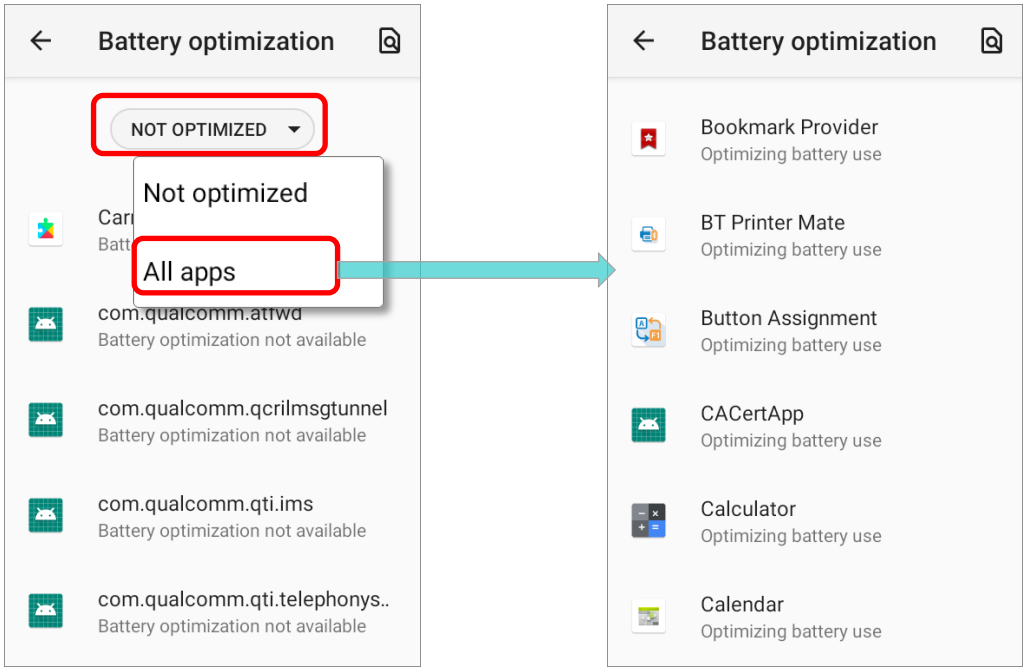
2) Tap on any item under "**BATTERY USAGE SINCE FULL CHARGE**" to enter its detail page.



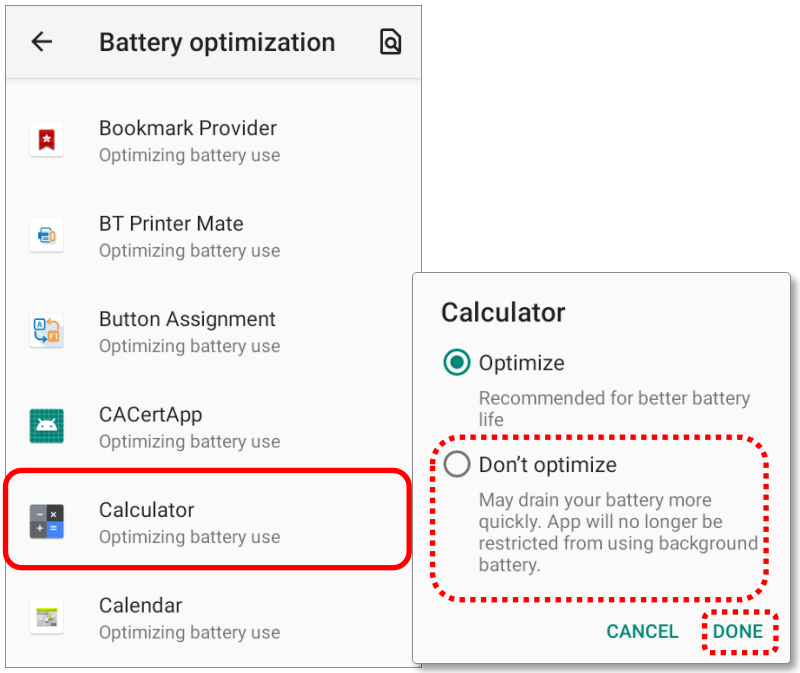
3) Tap on "**Battery optimization**".



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



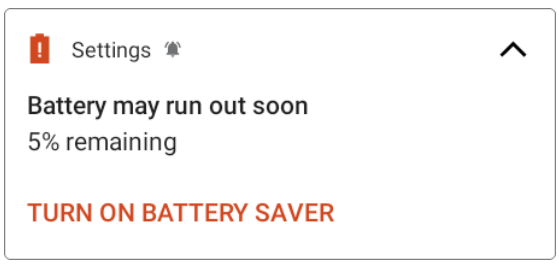
5) You can individually turn off the optimization mode of a certain app if you'd like it always activated by tapping on the app name and select "**Don't optimize**" and then "**DONE**".

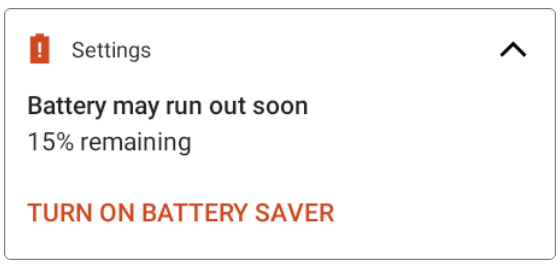


LOW BATTERY ALERT

The mobile computer prompts a warning notification reminding you to charge the main battery when the main battery level drops to **15%** and **5%**.

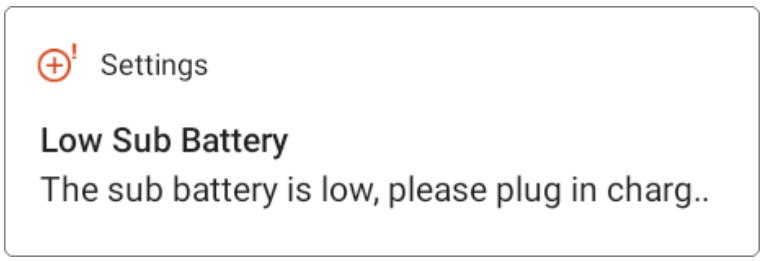
Opening Notifications Drawer, you will also see this warning appearing on the notifications list; you may turn on Battery Saver Mode, connect the mobile computer to an external power source, or replace the main battery pack as soon as possible. To replace the main battery pack, see Replace Main Battery.





LOW SUB BATTERY ALERT

When the main battery's power is drained out, RK25 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.



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

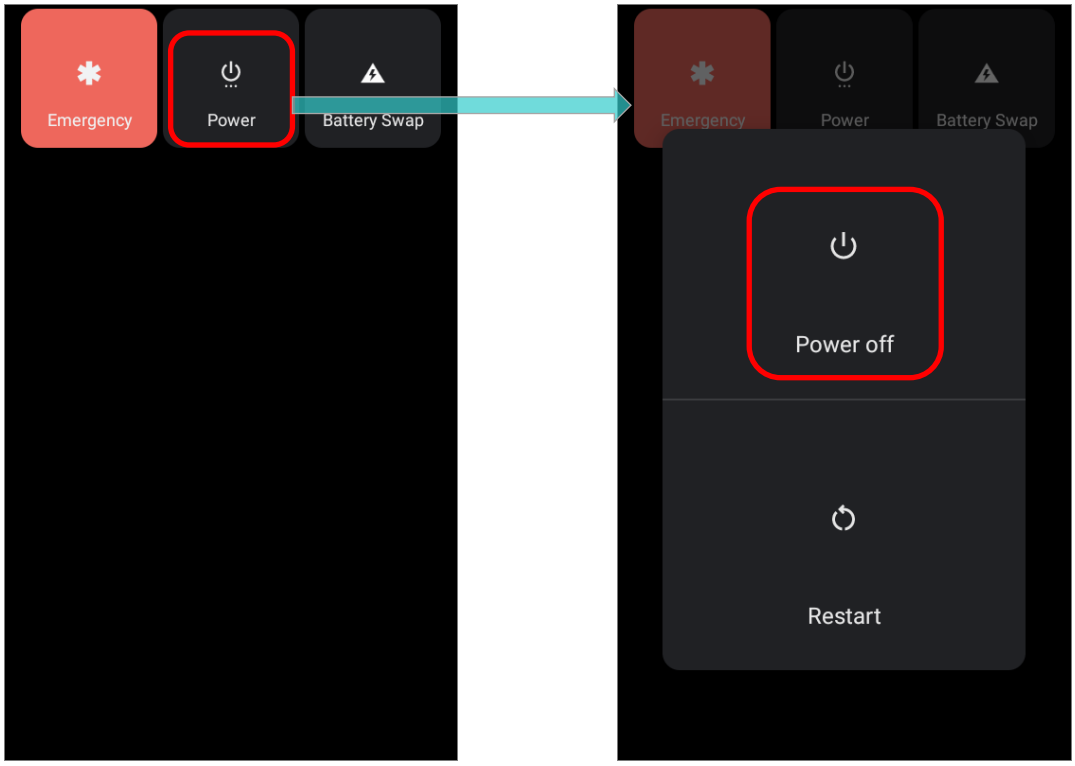
Shut the device down to replace the main battery, please:

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 top end of the mobile computer.

3) Tap on "**Power**" and then "**Power off**". The mobile computer will power off.

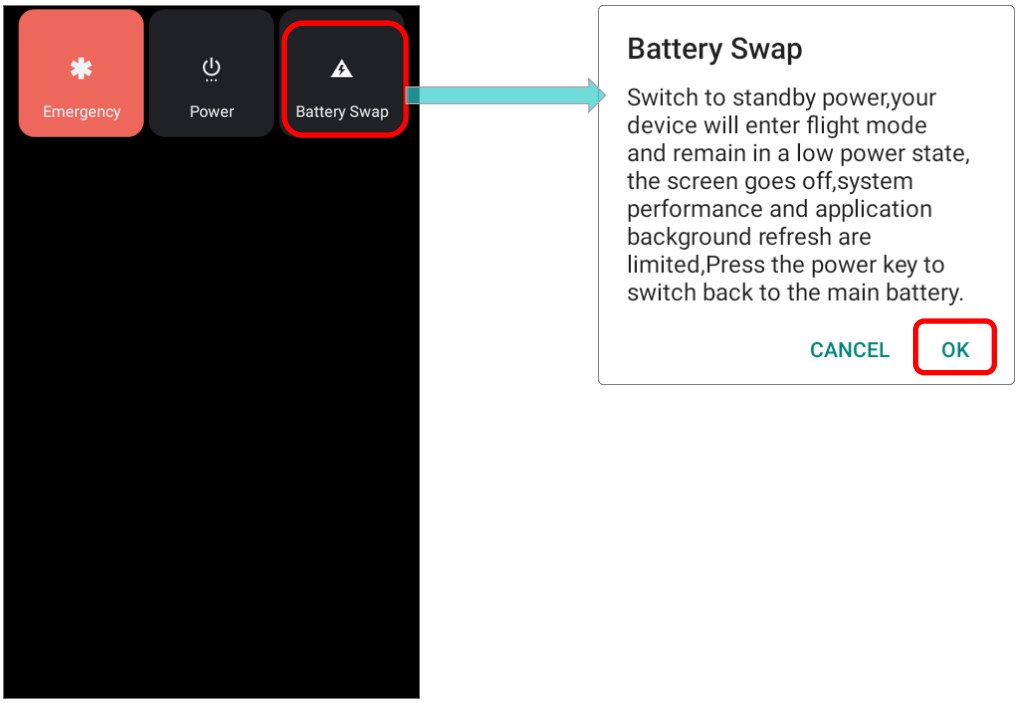
4) Follow the steps as Install/ Remove Battery describes to remove the main battery and replace it with the new one.



BATTERY SWAP

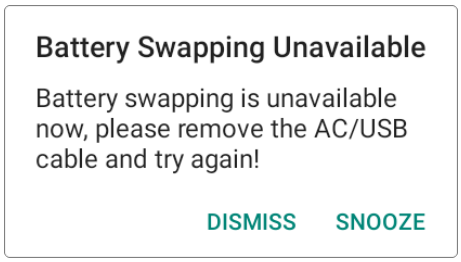
RK25 backup battery supplies system power during battery swap. When battery cover is removed, the system will enter suspend mode and not wake up until battery cover is put back and the power button is pressed. Please refer to "Low Sub Battery Alert" section to make sure the sub battery is fully charged 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.



Note:

Make sure to remove the AC or USB cable before proceeding "Battery Swap".



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. Fellow the steps described in Install/ Remove 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.

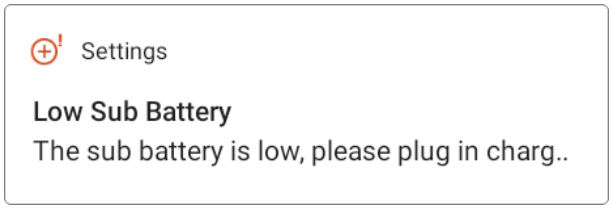
Warning:

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) 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.

(2) 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 RK25 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

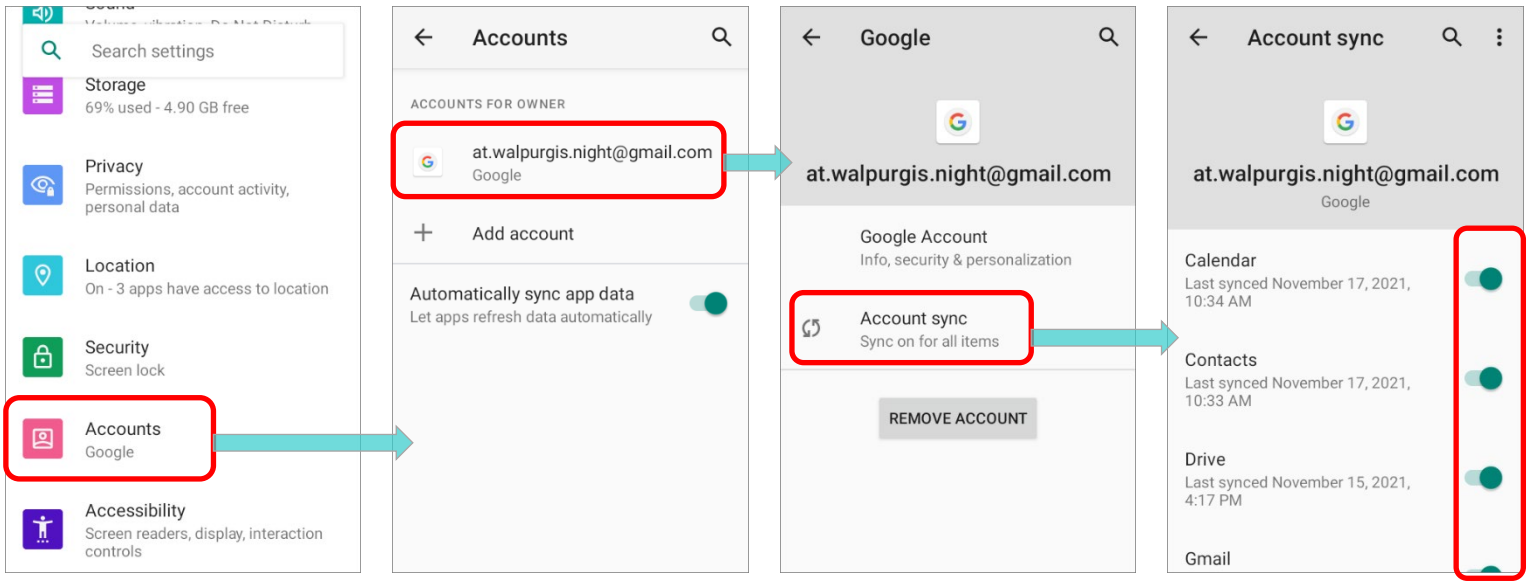
For any portable device, power management is a critical issue especially when you are on the road. Below are some tips to help you save battery power.

Warning:

Using backlight, wireless connectivity, and peripheral devices while 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, wireless connection, NFC and GPS) which are not in use.
- Shorten the screen off time. 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.

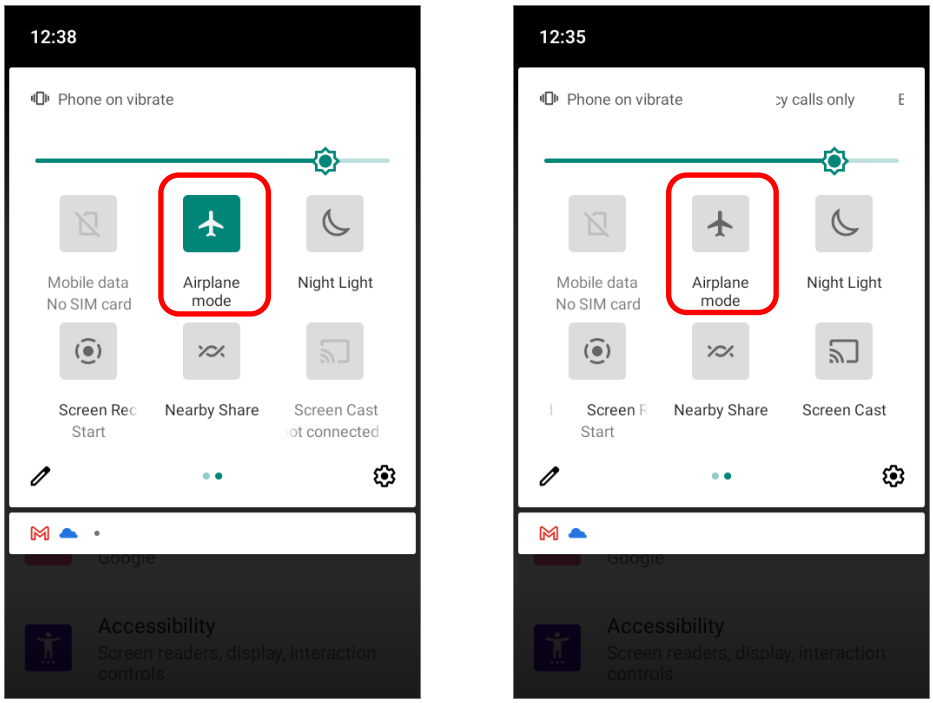
ENTER AIRPLANE MODE

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, please:

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 **OFF**.
	Airplane mode is **ON**.

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 RK25 mobile computer with a power supply or cradle continuously connected, be sure to turn on "**Balance Mode**".

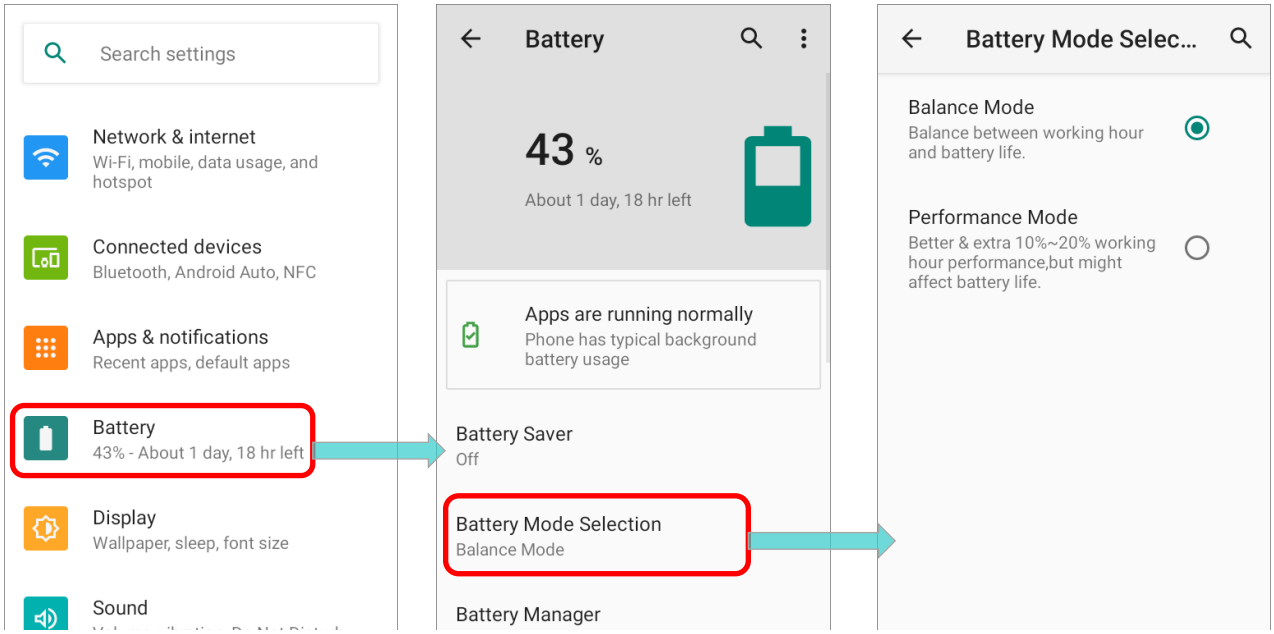
- If the main battery is fully charged, do not keep connecting your RK25 mobile computer with charging it a power supply or cradle for charging. If you need to continuously connect your RK25 mobile computer with a power supply or cradle, be sure to turn on "**Balance Mode**".

BATTERY MODE SELECTION

If you need to use RK25 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 switching on "**Balance Mode**" for battery life.

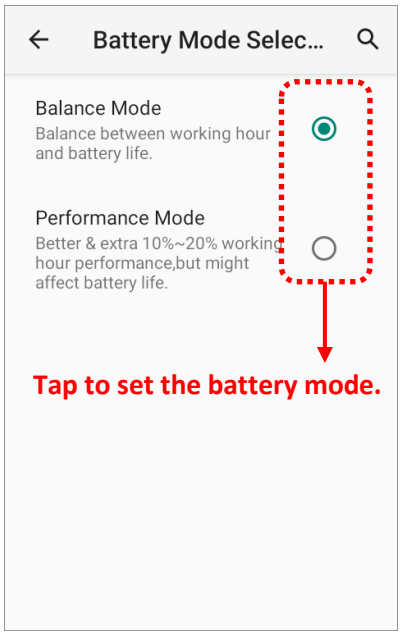
The default battery mode is set to be "**Balance Mode**". To switch between "Balance Mode" and "Performance Mode":

1) Go to **App Drawer (All Apps)** | **Settings** | **Battery** , and tap on "**Battery Mode Selection**"

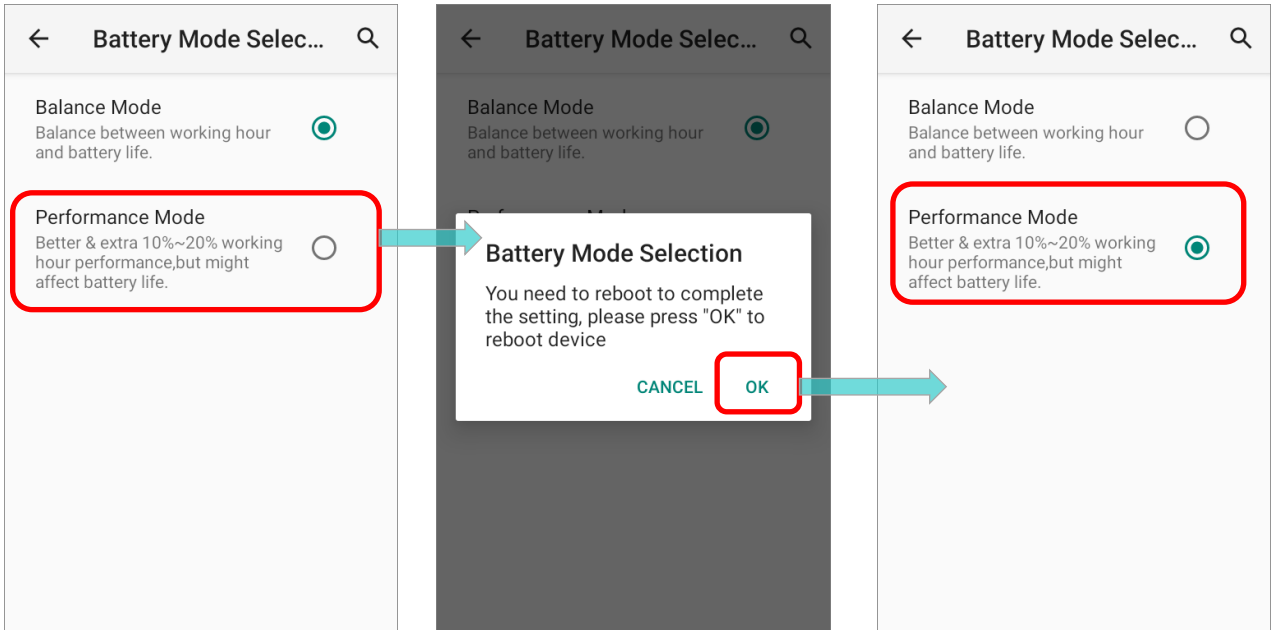


2) Tap on the radio button to select "**Balance Mode**" or "**Performance Mode**".

Mode	Description
Balance Mode	Balance between working hour and battery life.
Performance Mode	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.



PRECAUTIONS WHEN CHARGING THE MAIN BATTERY FOR A LONG TIME

Please avoid using RK25 mobile computer with heavy system loading when it is being charged for a long time, for the battery is continuously charged and discharged in this period of time, and it might result in battery bulge.

Due to safety precautions, it is a normal phenomenon that the battery status shows it is not fully recharged when RK25 mobile computer is connected to an external power supply for a long time. Please pull out the charging cable and then plug it again to recharge the battery.

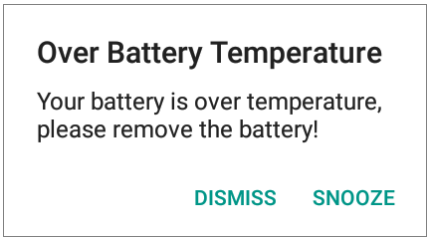
When being connected with a snap-on cable/ charging & communication cradle/ micro USB cable for external power supply, RK25 mobile computer will automatically stops charging the battery once the battery level reaches 100%. It resumes charging the battery when the battery power level is lower than approximate 90% and the voltage is 4.15v.

BATTERY TEMPERATURE ANOMALY

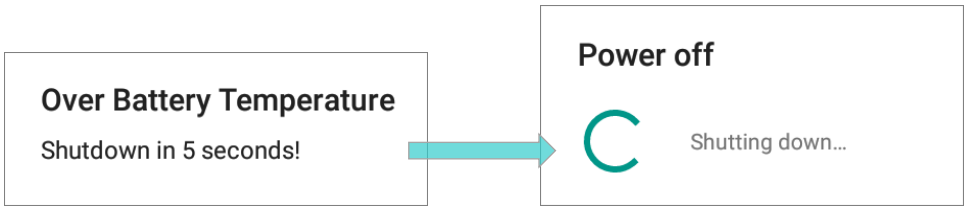
High ambient temperature or keeping using RK25 mobile computer while charging might results in battery temperature rises. RK25 mobile computer will automatically suspend charging battery or shut down for safety purpose. Once the battery temperature cools down to normal temperature, battery charging could be proceeded again.

The warning "**Over Battery Temperature**" shows up to instruct you to remove the battery if the temperature of the RK25 battery reaches **55℃** while it prompts to automatically shut down if the temperature of the RK25 battery reaches **60℃**.

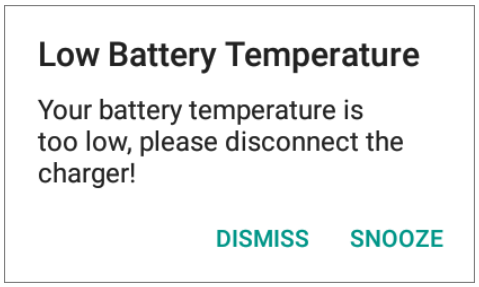
- **At 55℃**



- **At 60℃**



Using RK25 mobile computer under low-temperature environment may cause the device shut down automatically. If the battery temperature is at **0℃** or even **lower than 0℃** 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 RK25 mobile computer will automatically suspend charging the battery.



For battery life, please unplug the charger immediately and charge your RK25 mobile computer under appropriate temperature conditions.

2.1.6. BATTERY SENSOR

"**Battery Sensor**" can be switch on or off in "**Developer Options**", and thus "**Developer Options**" needs to be enabled in advanced.

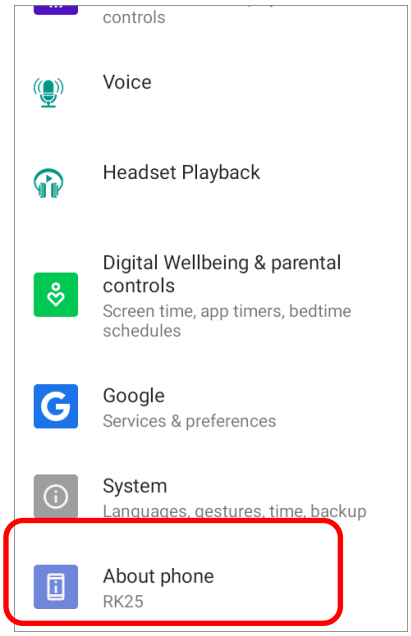
ENABLE DEVELOPER OPTIONS

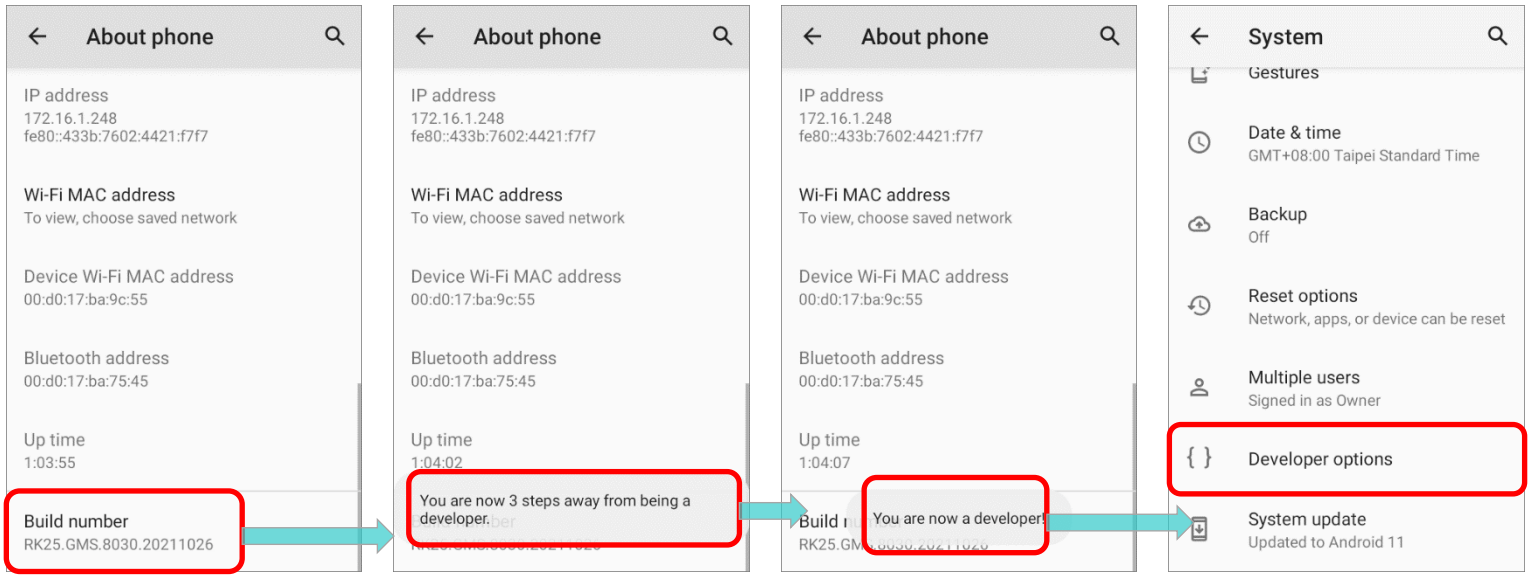
To enable "**Developer Options**":

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.**"

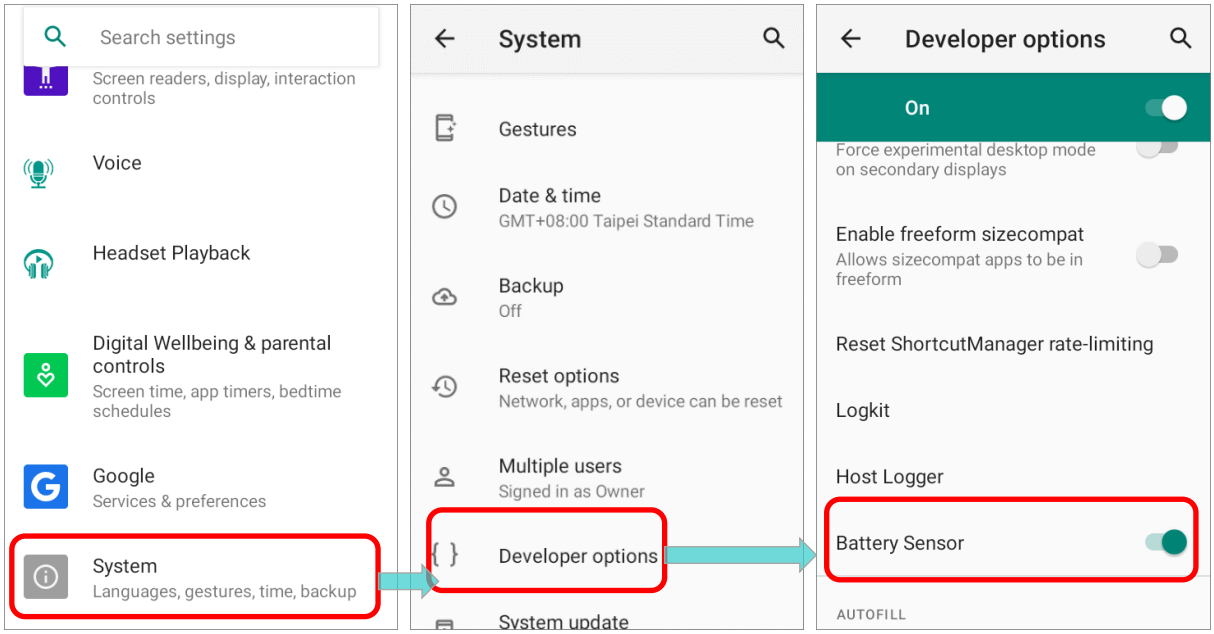
3) Once the prompt "**You are now a developer!**" showing up, you have succeeded in entering developer mode. You can find Developer option { } is now enabled in **System** page.





BATTERY SENSOR

"**Battery Sensor**" can be switch on or off in **App Drawer (All Apps)** | **Settings** | **System** | **Developer option** { }. Swipe down to the bottom and you will find the function "**Battery Sensor**" is enabled by default.



By enabling "**Battery Sensor**", the screen will be automatically off if the Battery Cover Latch and Lock is detected to be unlocked. When the battery latch is unlocked, the screen is off and the red light on the front panel blink and then goes off which means the RK25 mobile computer is now enter low power consumption mode. In low power consumption mode, the main battery can be replaced without powering off the RK25 mobile computer.

To avoid screen off caused by loosening the battery latch accidentally, you can turn off "**Battery Sensor**".

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** (up to **32GB**) or a **microSDXC** (up to **64GB**). When choosing an SD card for best compatibility and performance with RK25, 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).

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.

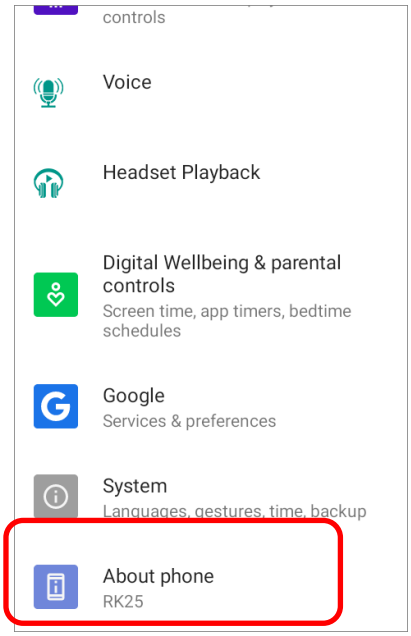
ENABLE DEVELOPER OPTIONS

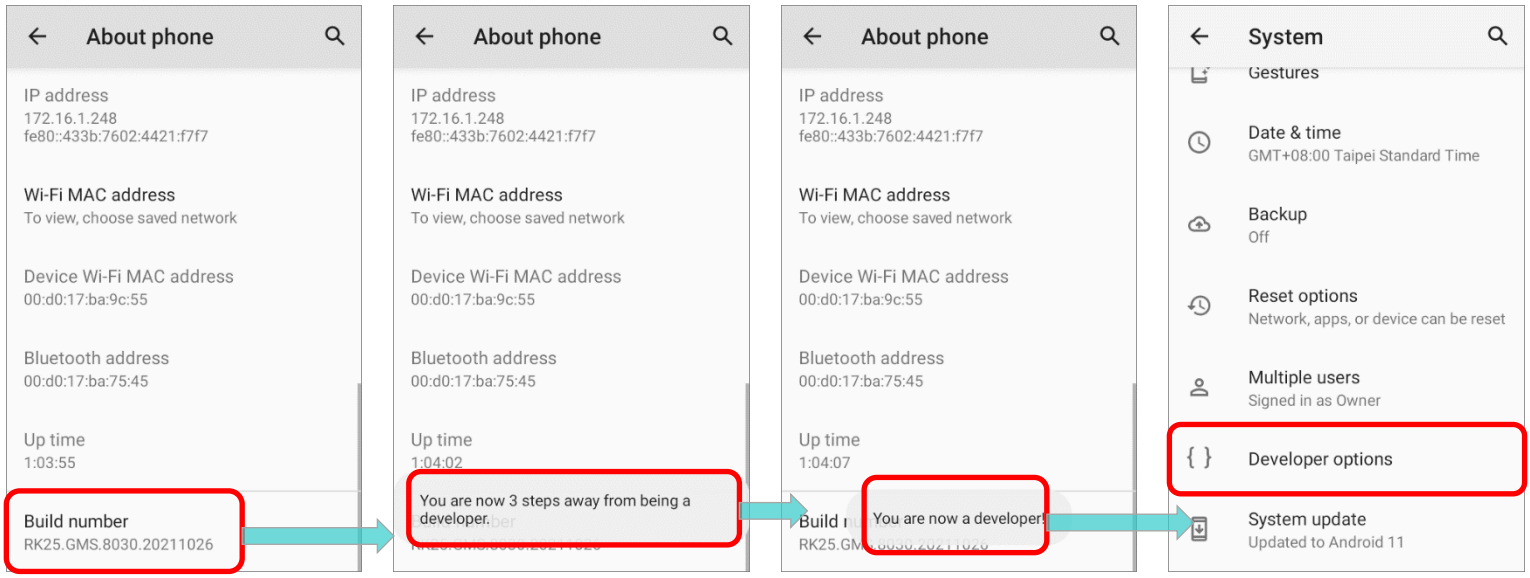
To enable "**Developer Options**":

4) Go to App Drawer (All Apps) | **Settings** | **About Phone** .

5) 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.**"

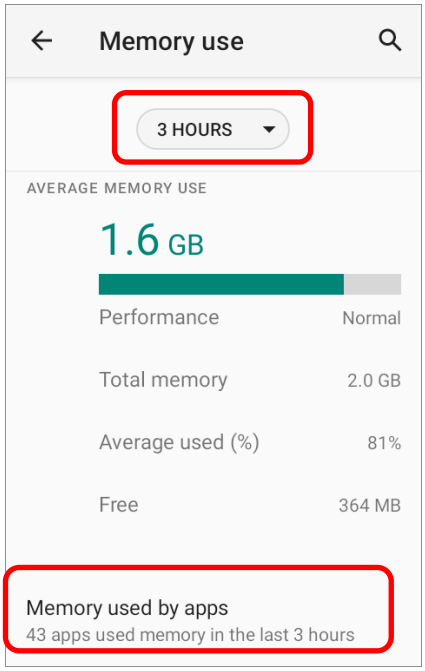
6) Once the prompt "**You are now a developer!**" showing up, you have succeeded in entering developer mode. You can find Developer option { } is now enabled in **System** page.





CHECK MEMORY USAGE

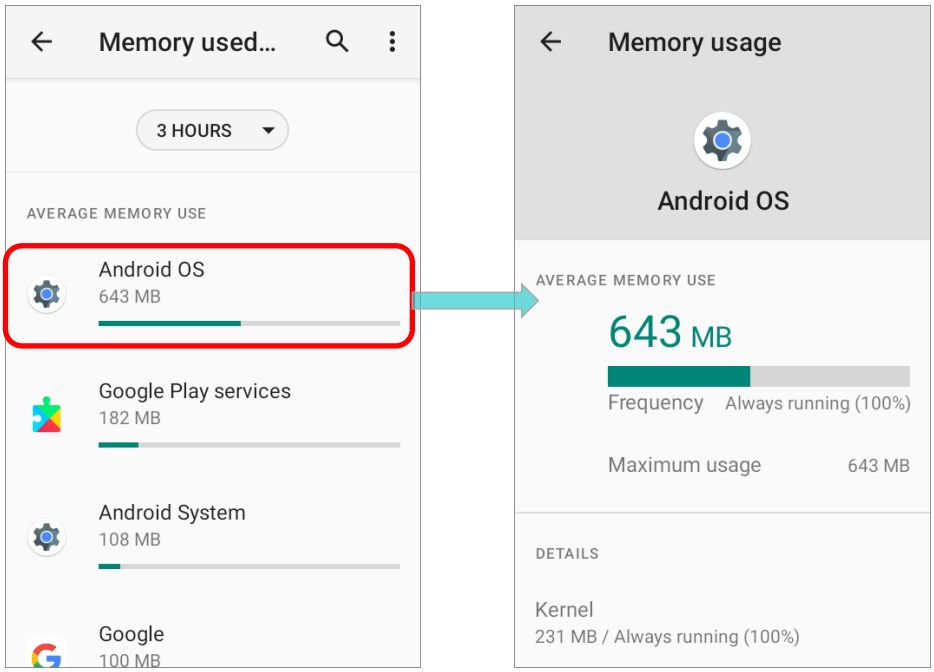
Go to App Drawer (All Apps) | **Settings** | **System** | **Developer option** | **Memory** to enter memory manager screen.



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

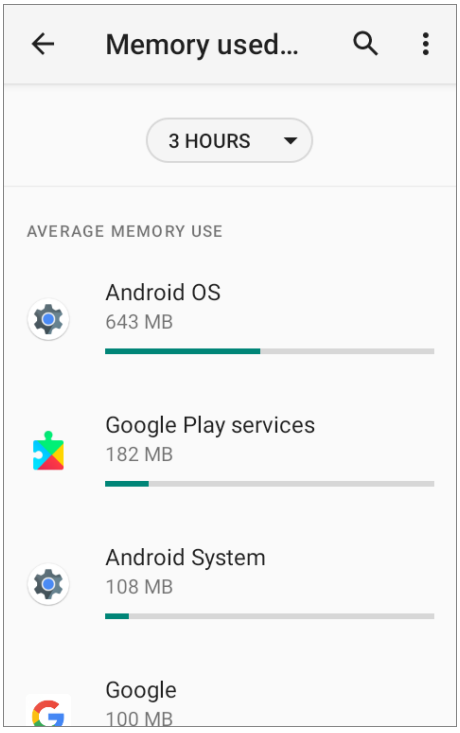
To your Android device, the SD card can serve as an extension of your device's internal storage (which comes as 16 GB of flash memory to store the OS, applications and files) other than a portable storage place.

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.

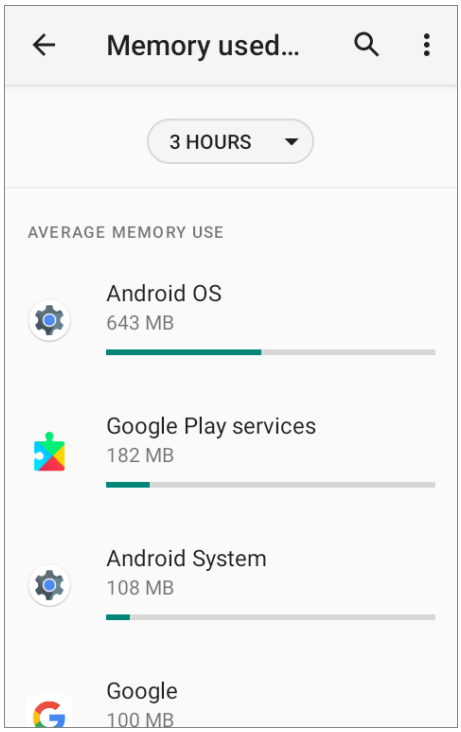
- **SD card as portable storage in Storage Settings page**

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



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

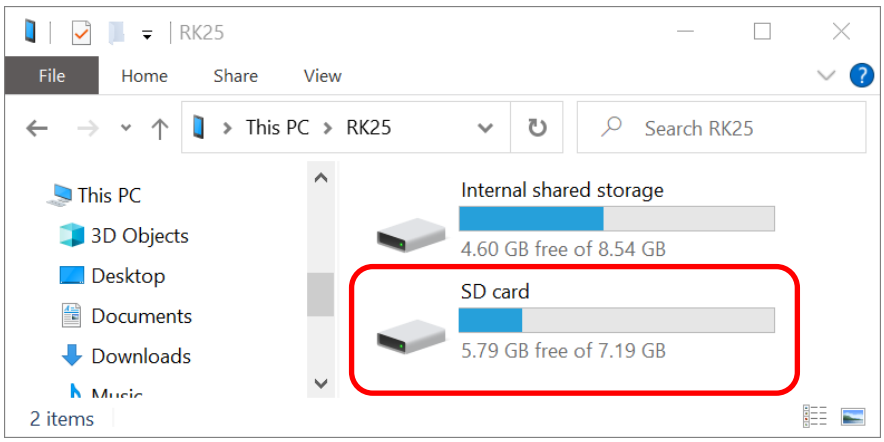
  The SD card is used for storing anything on this device only, including apps and photos. Requires formatting that prevents it from working with other devices.



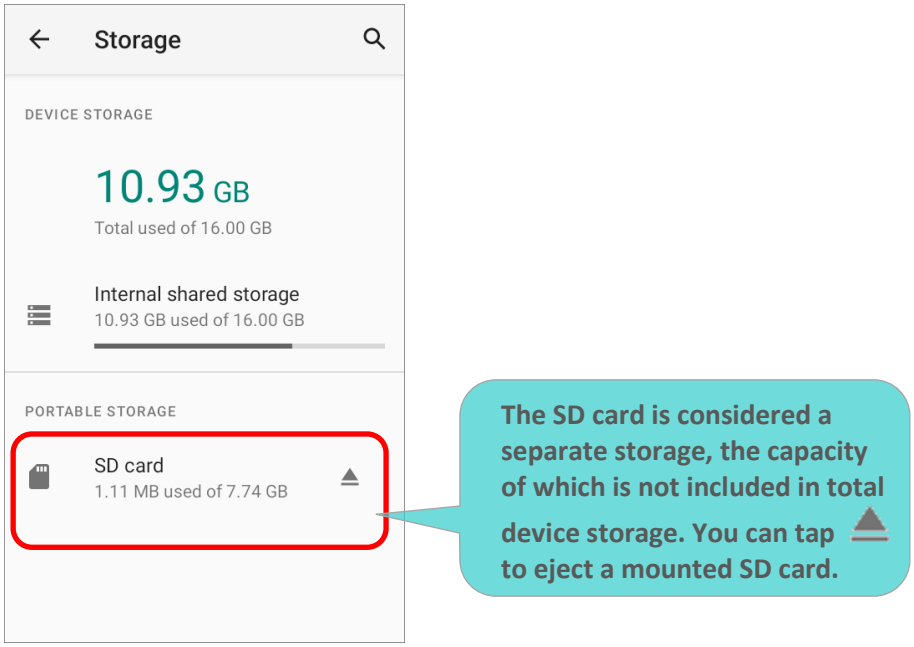
SET UP SD CARD AS PORTABLE STORAGE

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:

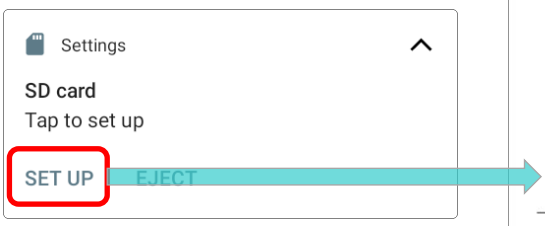


On **Storage** screen, this disk can be managed separately.

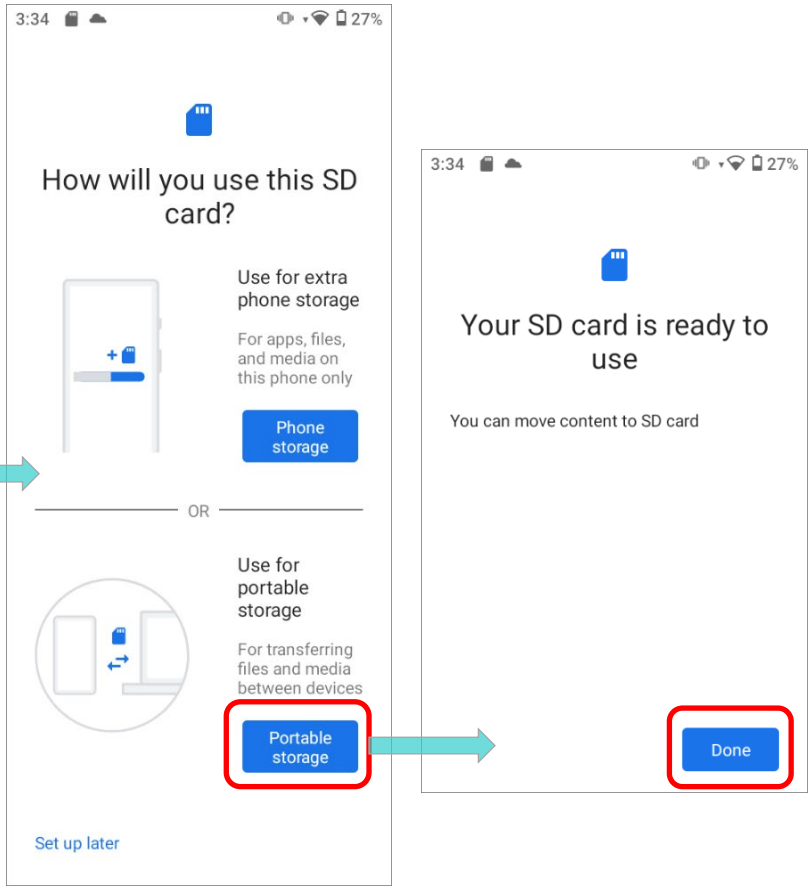


To start:

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**".

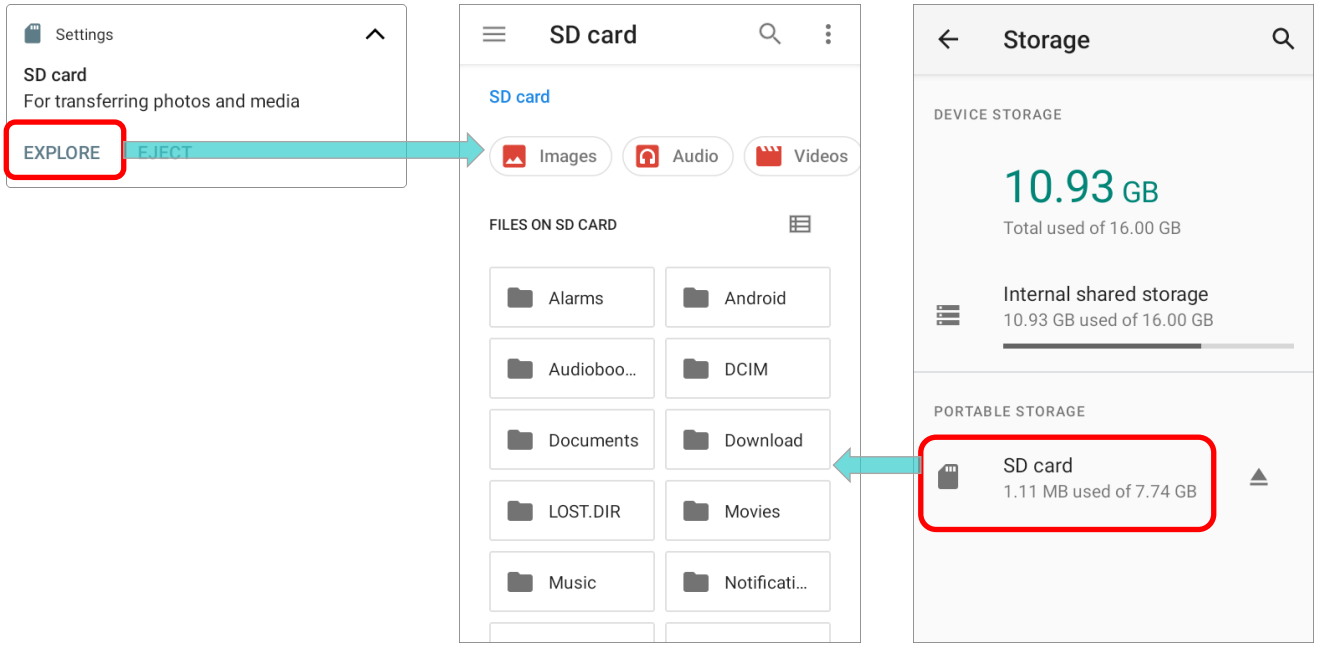


2) Tap "**Portable storage**", and complete the setting by tapping "**DONE**".



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.

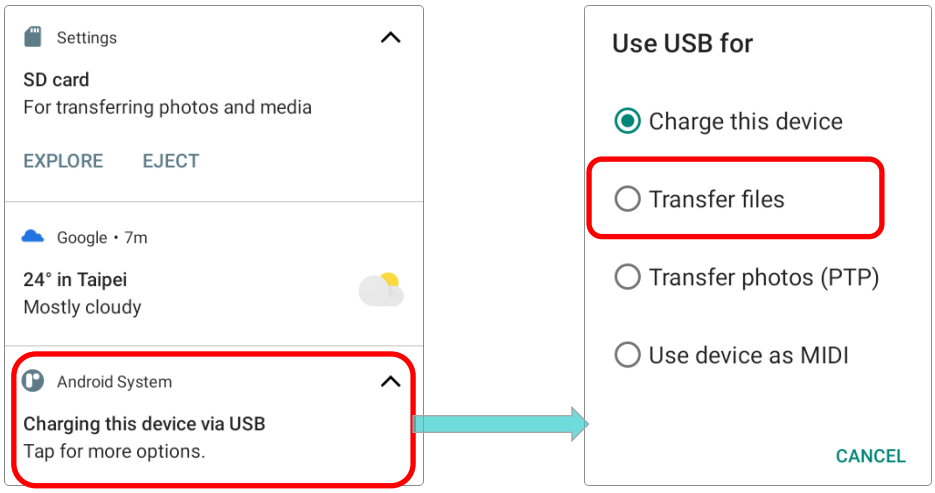
   OR tap the SD card in **Storage Settings** page to check it.



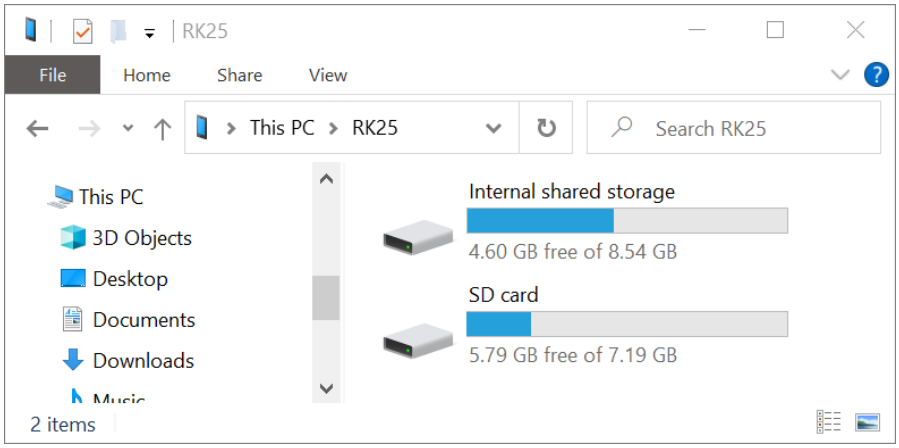
TRANSFER PHOTOS & MEDIA BETWEEN THE DEVICE & PC

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 supplied USB cable.
2) Swipe down from the status bar to reveal Notifications Drawer, and tap on the Android System notification "**Charging this device via USB**" to enter USB options menu.



3) Choose "**Transfer files**", and now you will find the disk content is readable from PC client. Make sure the USB cable is properly connected while transferring files over USB connection.

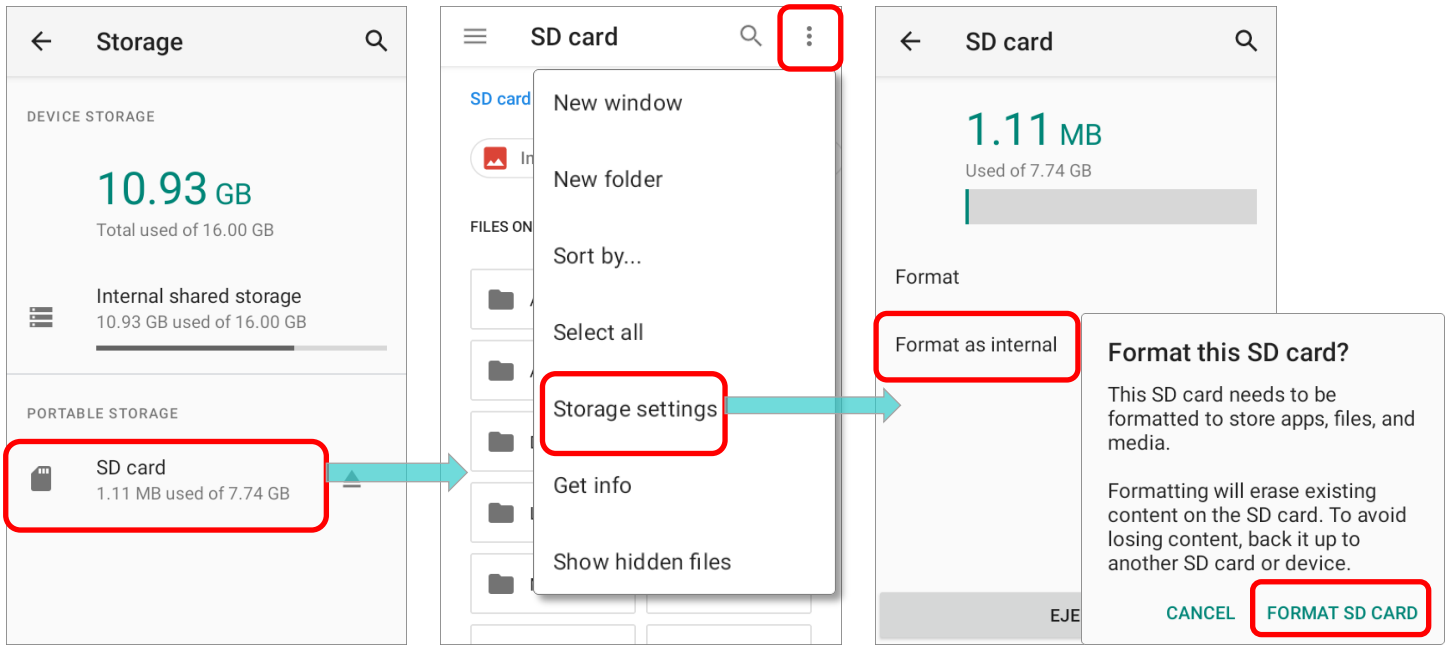


CONVERT THE SD CARD TO INTERNAL STORAGE

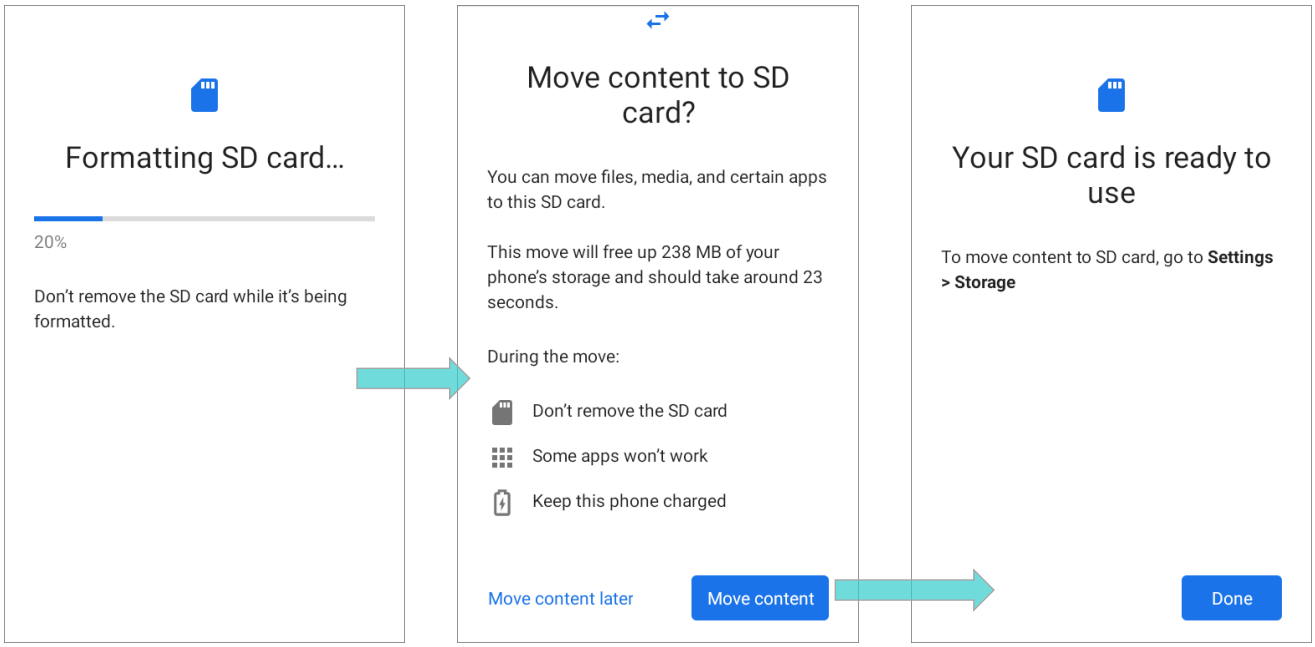
You can always convert the SD Card from portable storage to internal storage. On **Storage** screen, tap the SD card. Before you start, make a backup of the files on this disk if you would like to keep them.

1) On SD card content screen, tap **More** and then tap "**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.



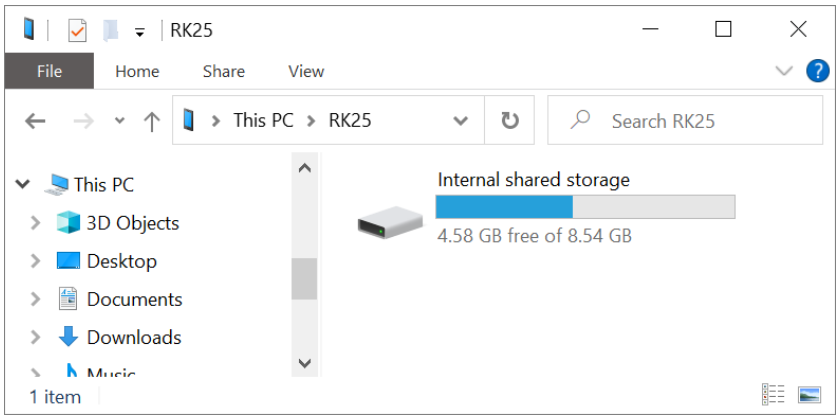
3) On "**Format this SD card**" popup window, tap "**FORMAT SD CARD**" to format the card.
4) You will then be asked whether to move multimedia files to this new SD card right away or later; tap to make your choice.
5) When the formatting is completed, tap "**DONE**".



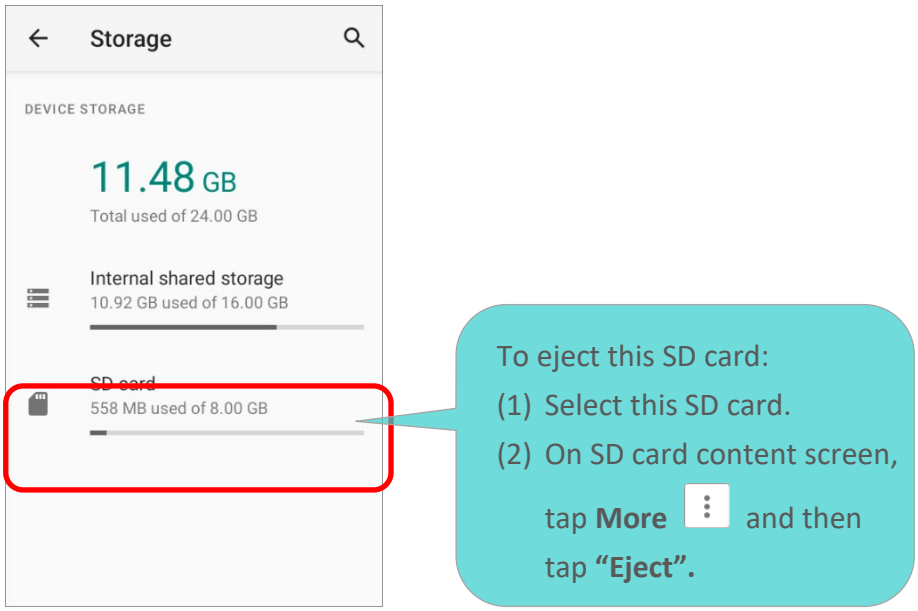
SET UP SD CARD AS INTERNAL STORAGE

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 **Storage**, 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.

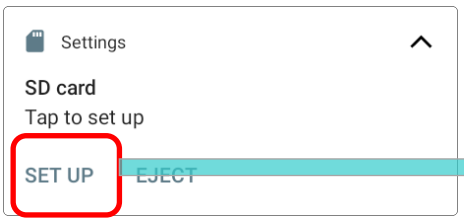


Warning:

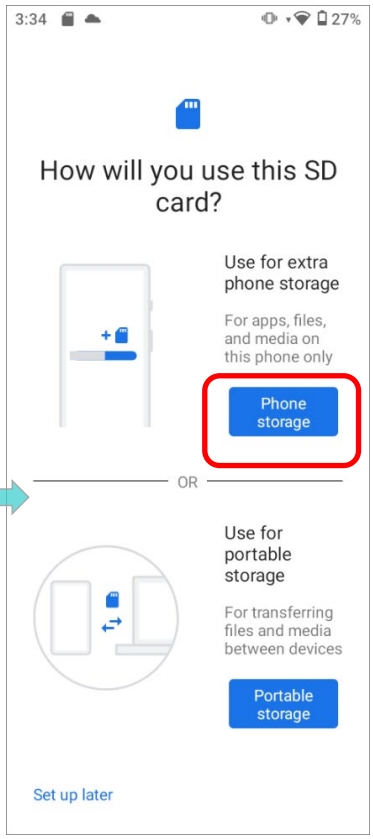
Do not physically remove the SD card from the device without ejecting this card in advance.

To Start:

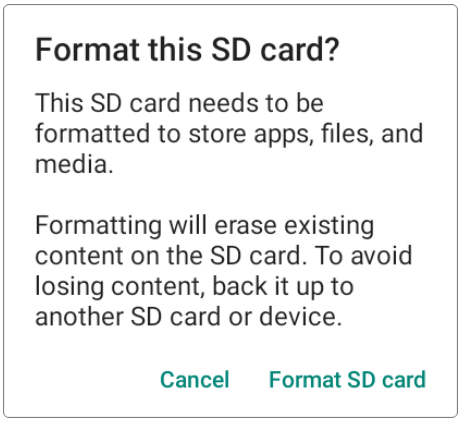
1) Insert the SD card. A notification will pop up indicating that an SD card is detected tap "**SET UP**".



2) Tap on "**Phone storage**".

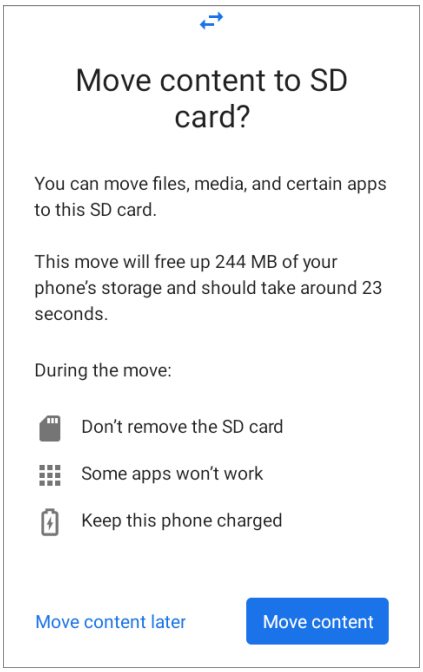


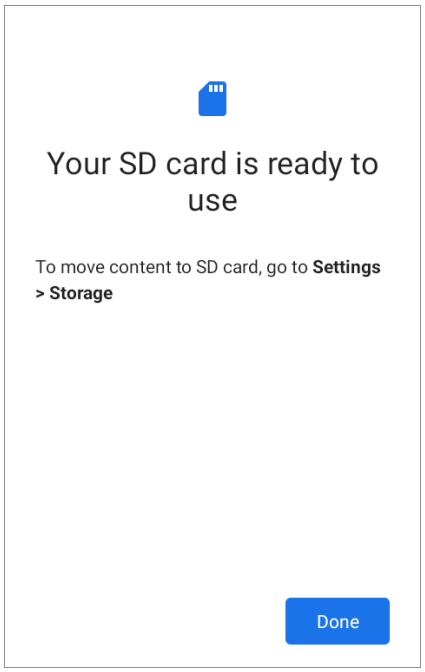
3) On the popup window, select "**FORMAT SD CARD**".



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**".





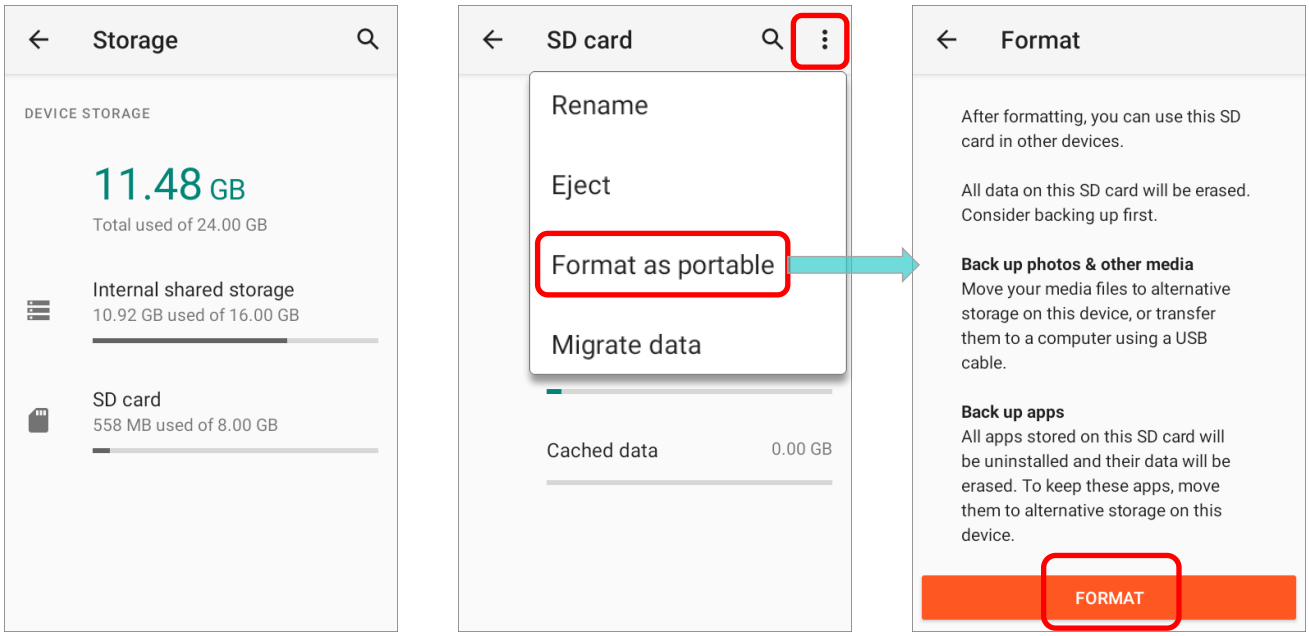
Note:

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

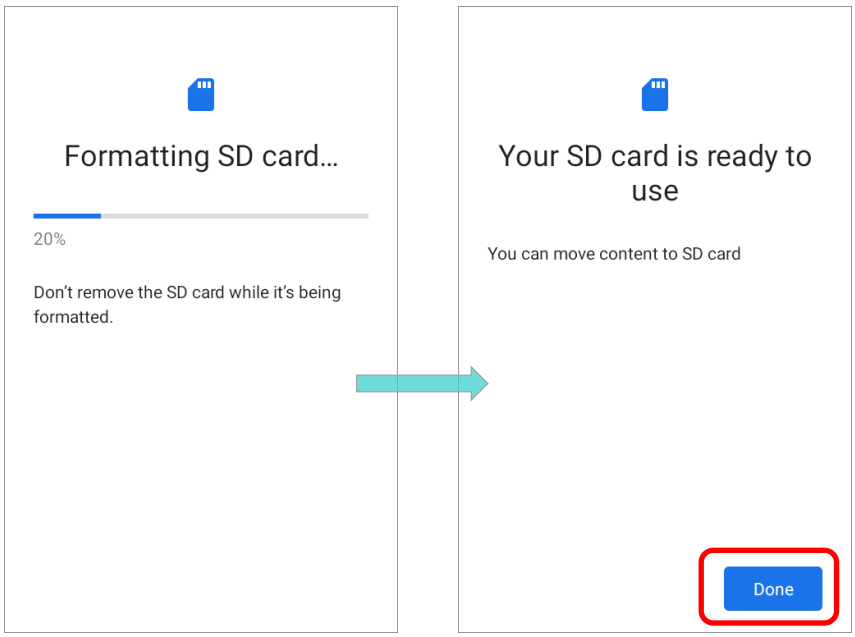
CONVERT THE SD CARD TO PORTABLE STORAGE

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.



3) When the formatting is completed, tap "**DONE**".



Note:

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

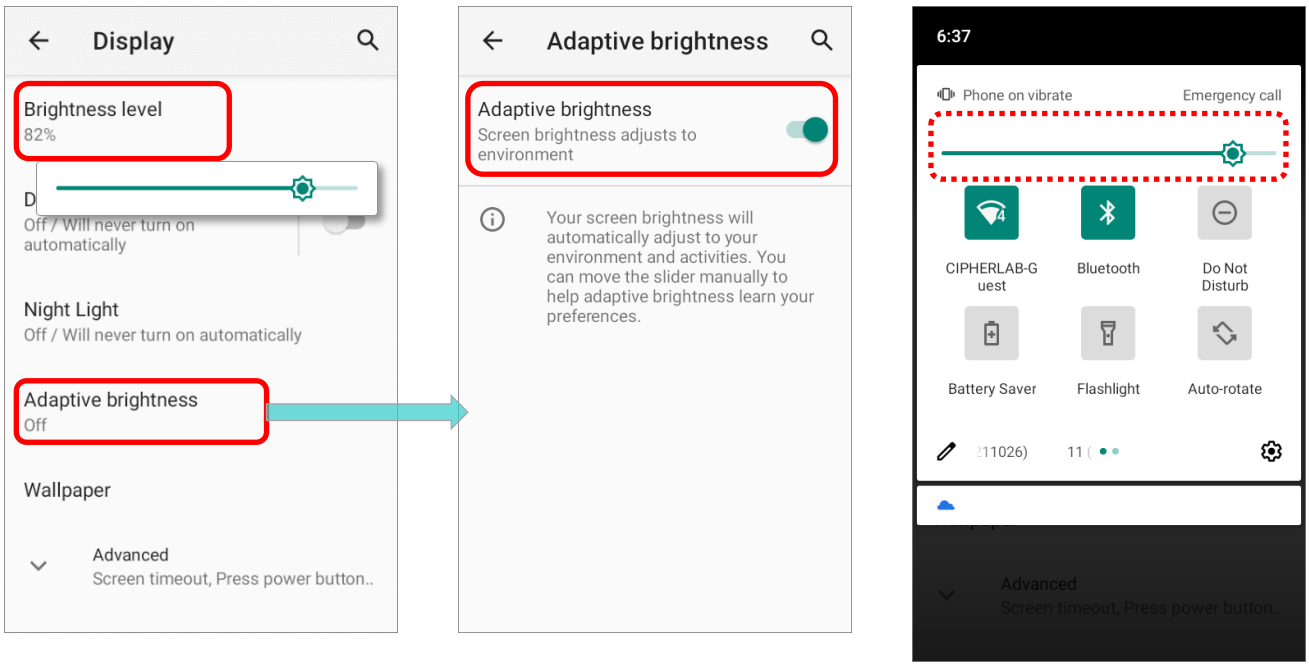
2.3. TOUCH SCREEN

The mobile computer comes with a 4.0 inch, LCD, Corning Gorilla Glass 3 display with 480RGBx800 resolution. 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.

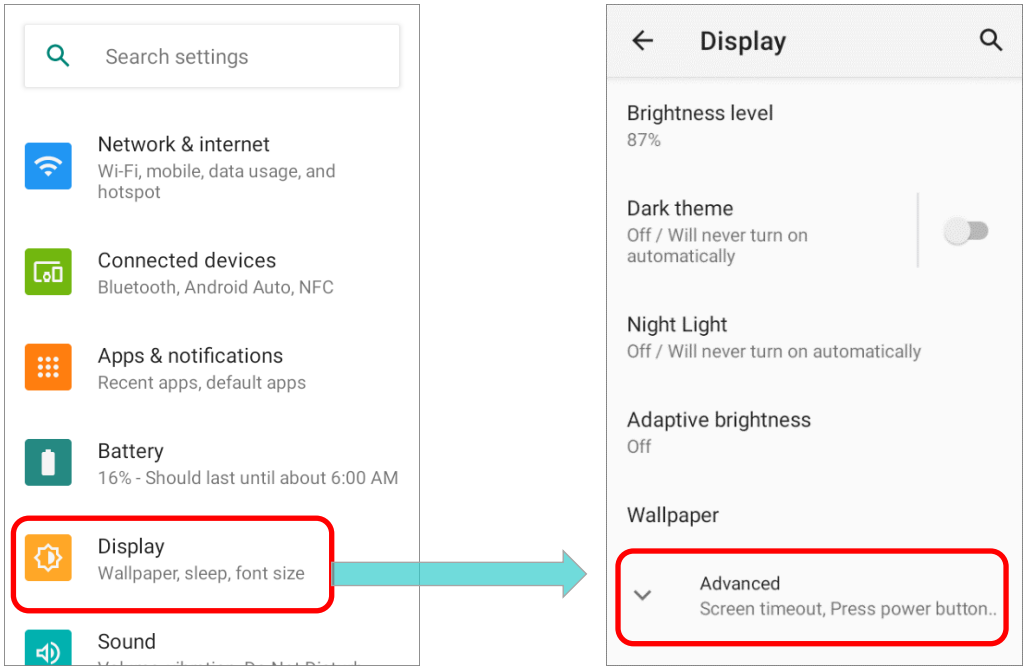
Note:

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.

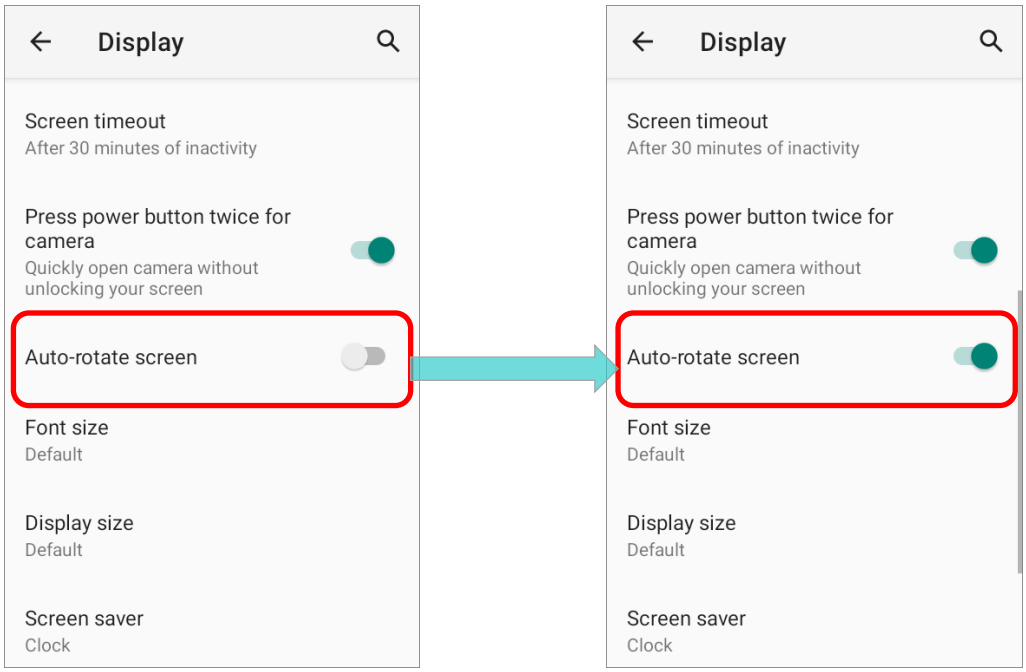
2.3.2. SCREEN ROTATION

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.

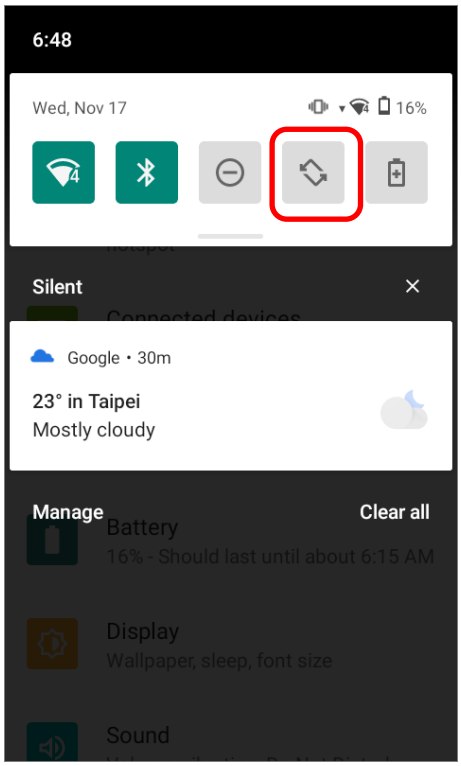


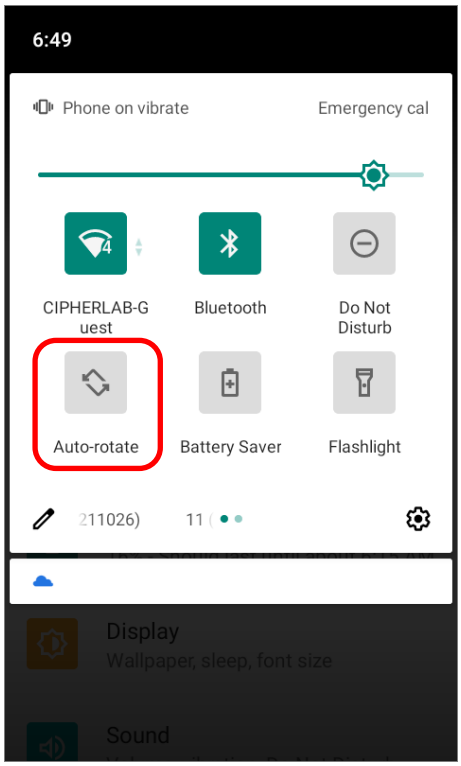
2) Switch on or off **Auto-rotate screen**.



OR

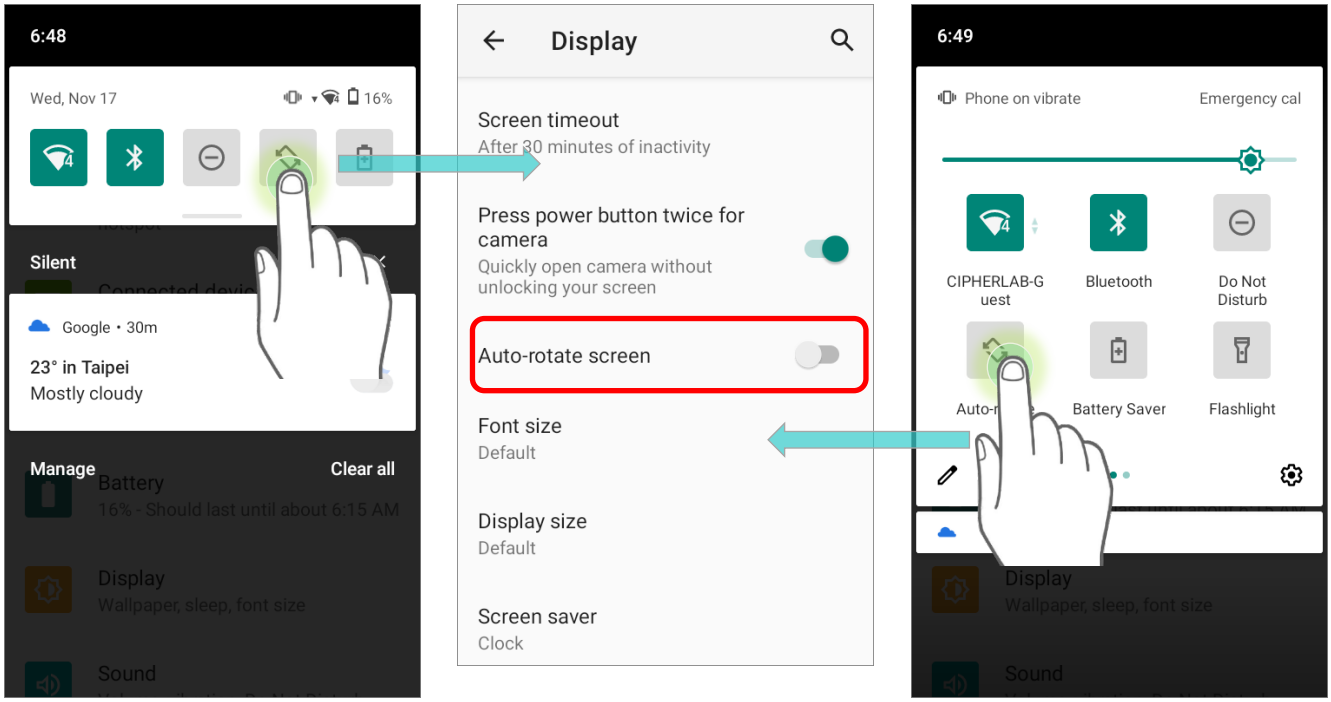
Swipe down from the top of the screen to open **Quick Settings Panel** or **Quick Settings Menu** and tap the **Auto rotate** icon to enable screen rotation.





Icon	Description
	Auto rotate mode is **OFF**.
	Auto rotate mode is **ON**.

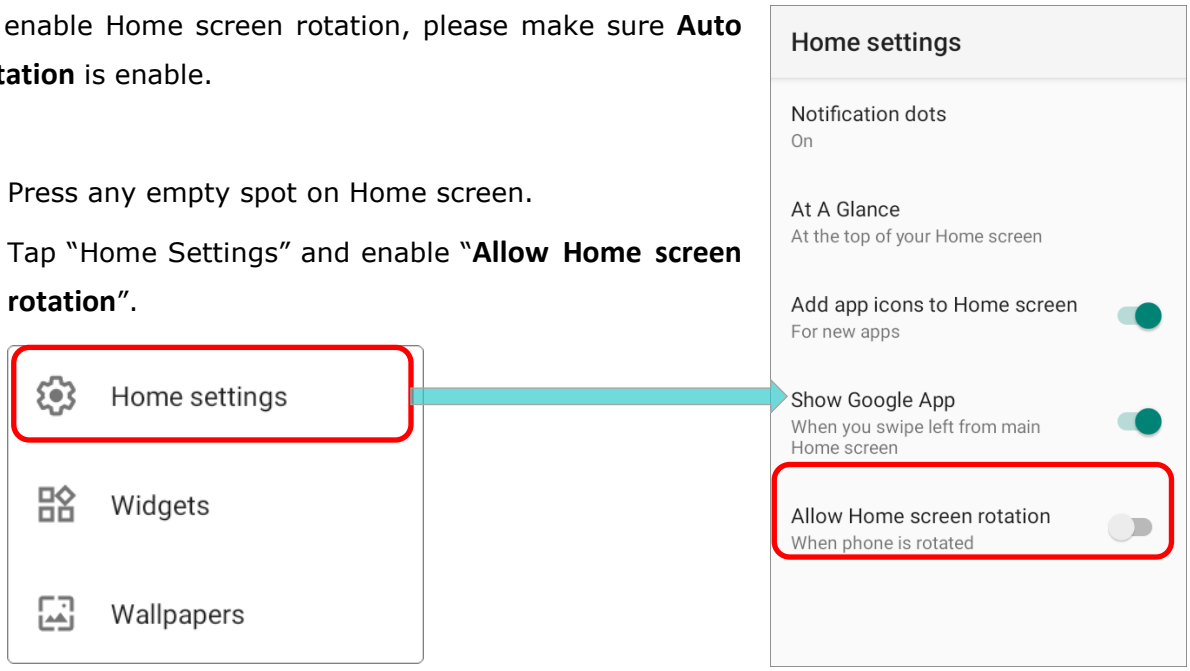
You can enter "**Display**" page to enable or disable screen rotation by long pressing the **Auto rotate** icon on **Quick Settings Panel** or **Quick Settings Menu**.



HOME SCREEN ROTATION

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

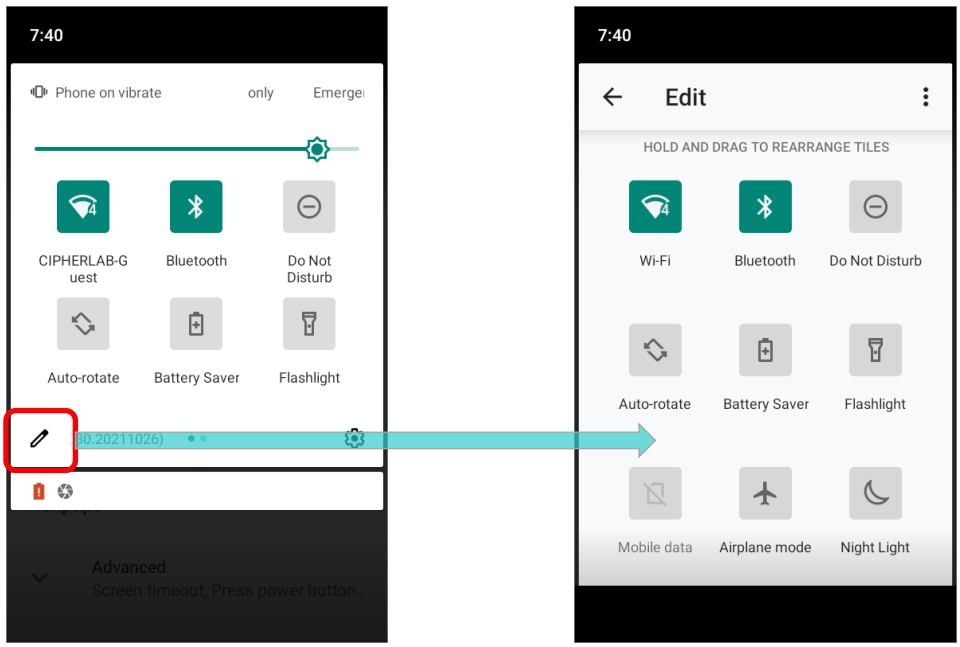
1) Press any empty spot on Home screen.
2) Tap "Home Settings" and enable "**Allow Home screen rotation**".



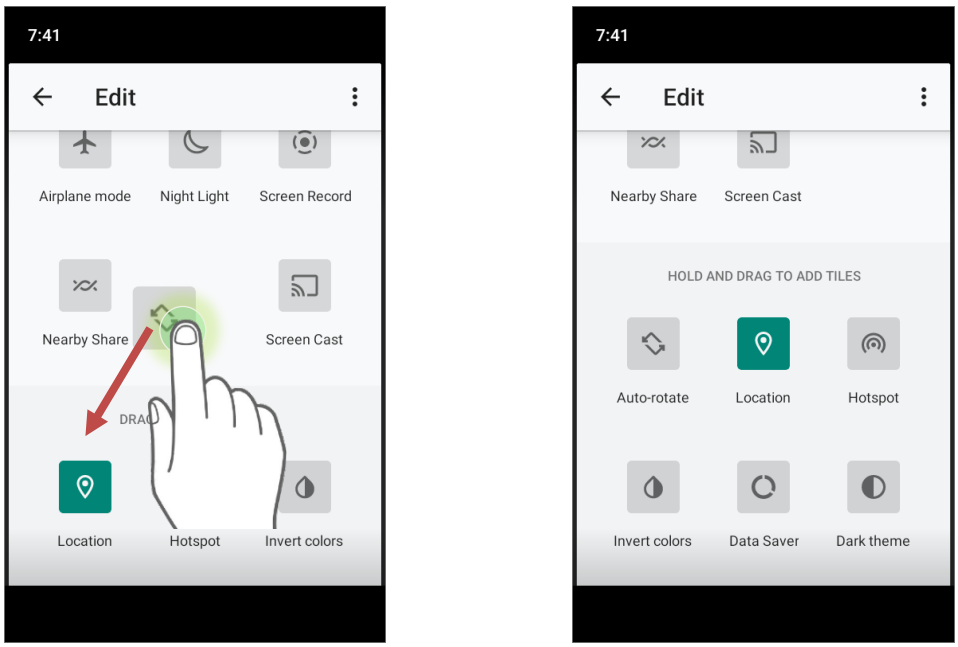
REMOVE AUTO ROTATION FROM QUICK SETTING MENU

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

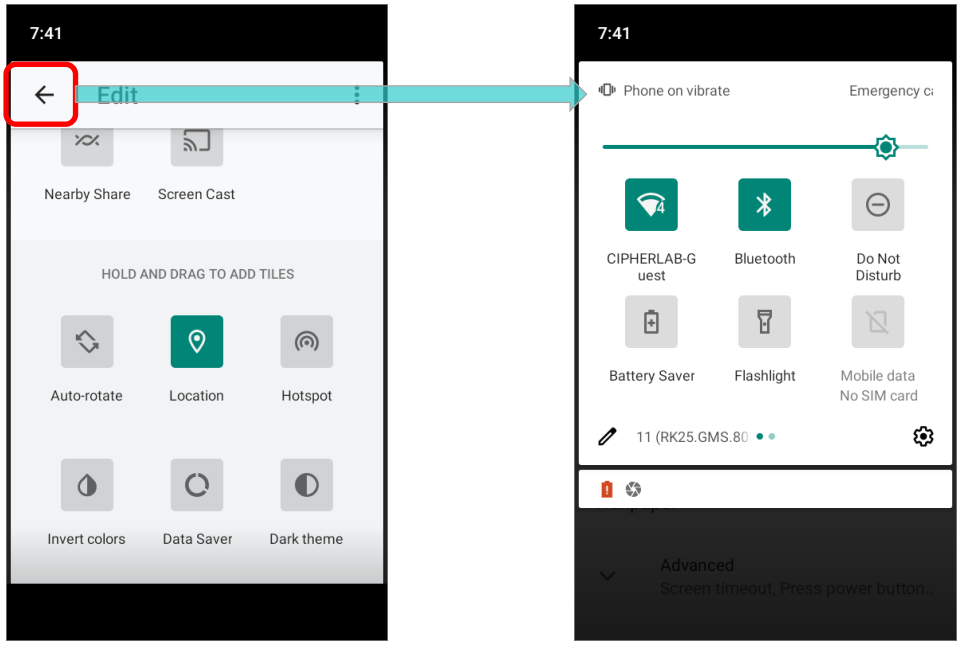
1) Swipe down from the top of the screen to open **Quick Settings Menu**, and tap on **Edit** button to get into **Edit** page.



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



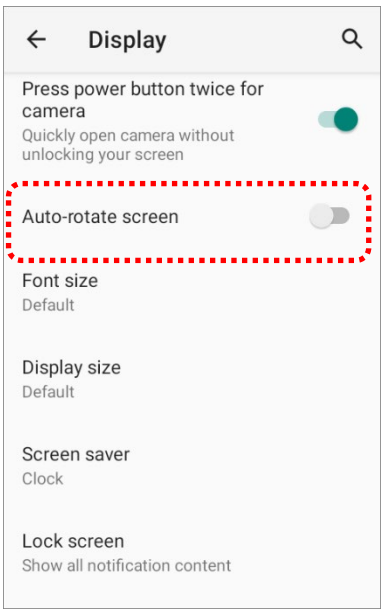
3) Return to the **Quick Settings Menu**, the **Auto rotate** switch icon is now hidden.



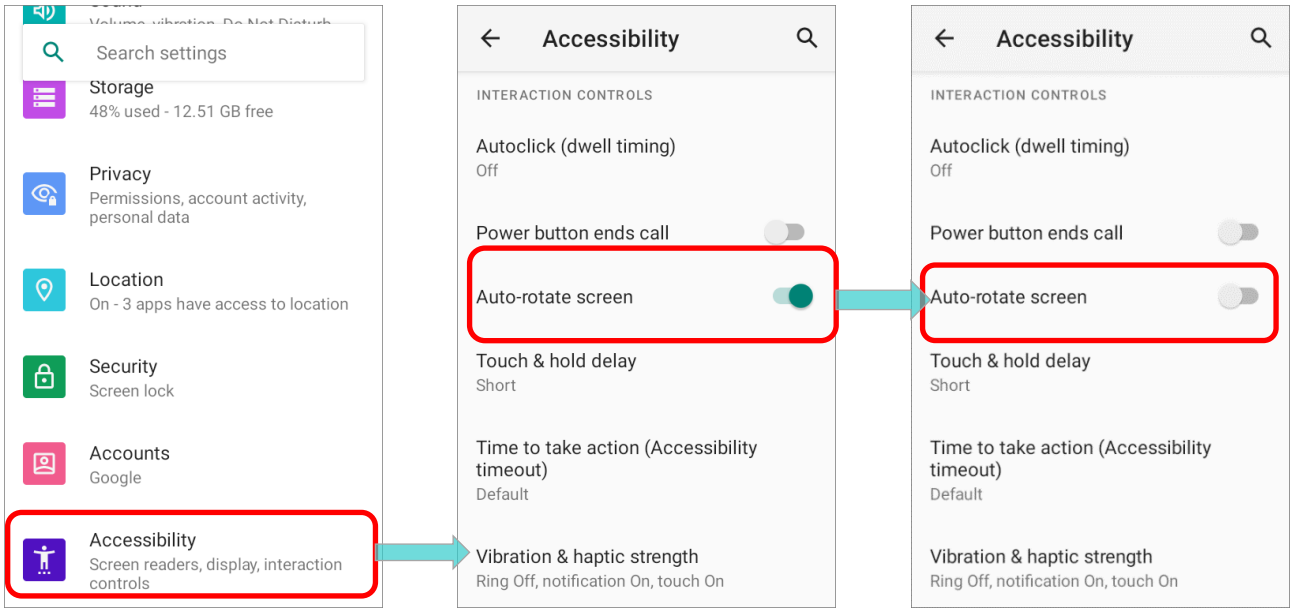
REMOVE AUTO ROTATION FROM DISPLAY SETTINGS

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** .

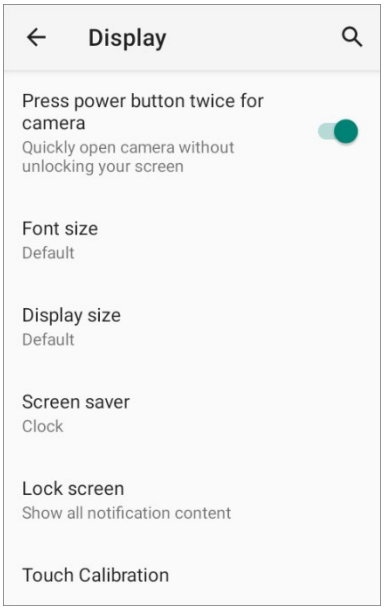
- **The original "Display" page where the function "Auto-rotate screen" is listed on.**



- **Switch off "Auto-rotate screen" on "Accessibility" page.**



- **Now the function "Auto-rotate screen" is hidden on "Display" page.**



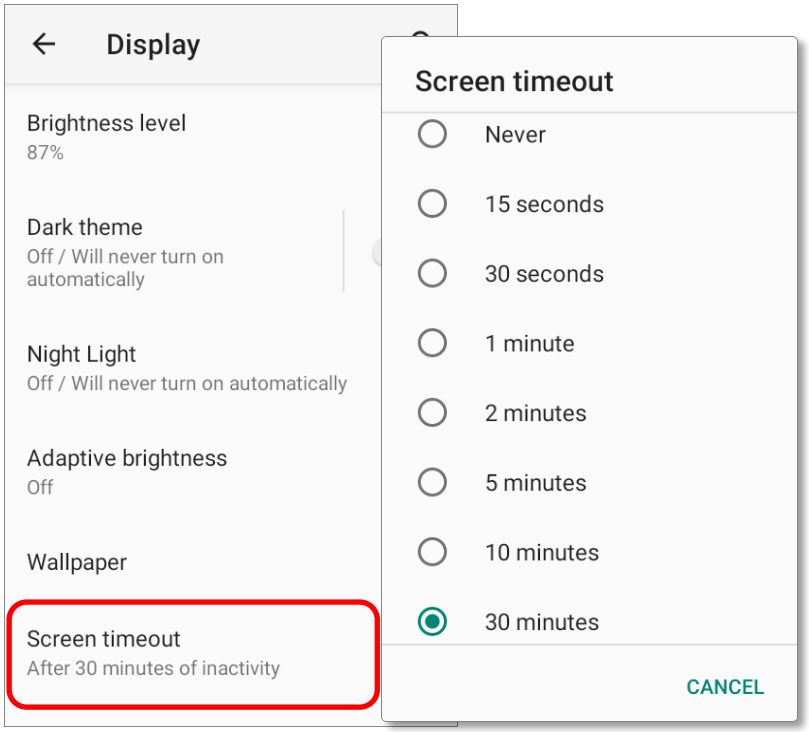
Note:

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** | **Sleep**.

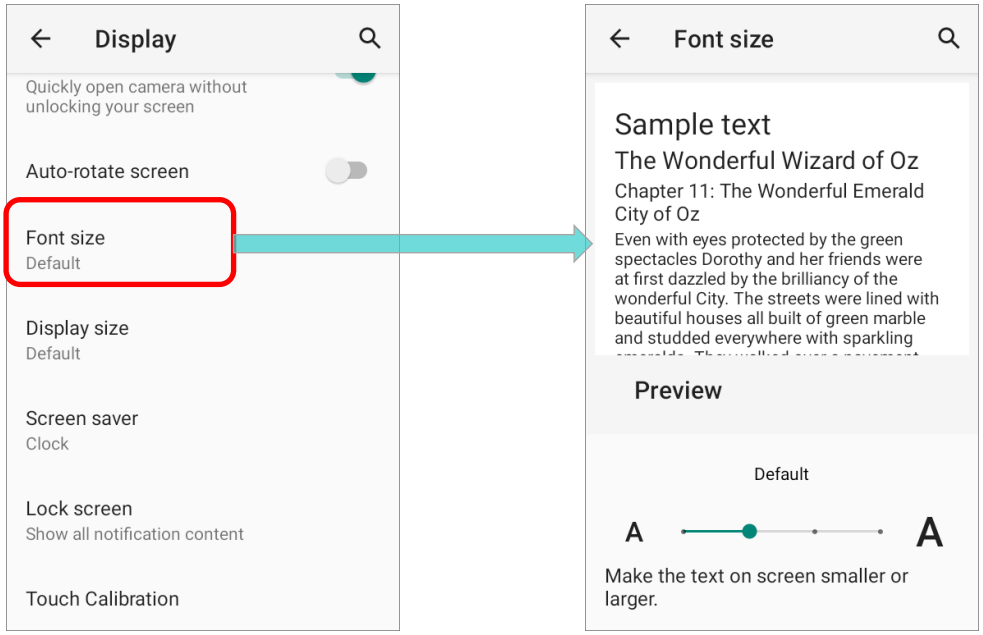
Select the time lapse for screen timeout.



2.3.4. TEXT SIZE & DISPLAY SIZE

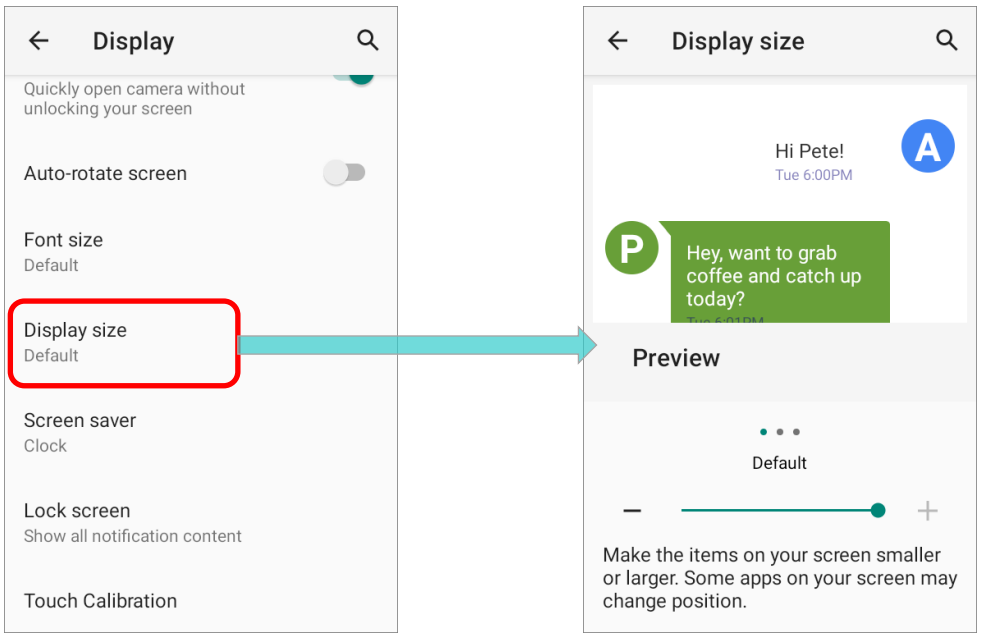
Go to **App Drawer (All Apps)** | **Settings** | **Display** | **Font size**.

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



Go to **App Drawer (All Apps)** | **Settings** | **Display** | **Display size**.

Tap the plus icon + or the minus icon − to select the display size as **Small** or **Default**.



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.

LED 1 for Power Indication		
Indicator	**Status**	**Description**
Charging	Green, solid	Charging complete (100%)
	Red, solid	Charging the mobile computer (0% to 99%)
	Red, blinking	Charging temperature error (lower than 0°C or exceed 45°C)
Battery Swap	Red, flash once	Pressing power button and select “Battery Swap” in the pop-up menu, and the red status LED lights up. As the red light goes off, the device is in complete suspend mode and Main battery is ready to be replaced

LED 2 for Reader & System Notification		
Indicator	**Status**	**Description**
Barcode 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 in windows and programs, 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 upper right size 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: MP3, AAC, He-AAC v1 and v2, WMA9/Pro, Dolby AC-3, DTS-HD M6 and DTS-HD M8.

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

2.4.3. SOUNDS AND VIBRATION

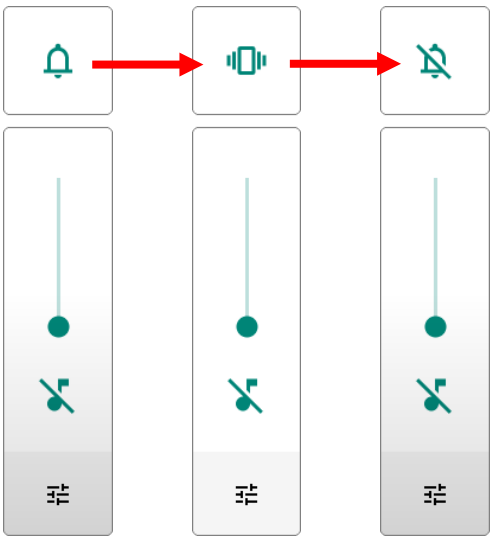
The mobile computer is integrated with a vibrator, which is software programmable for tactile feedback. This can be helpful when working in noisy environments.

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.

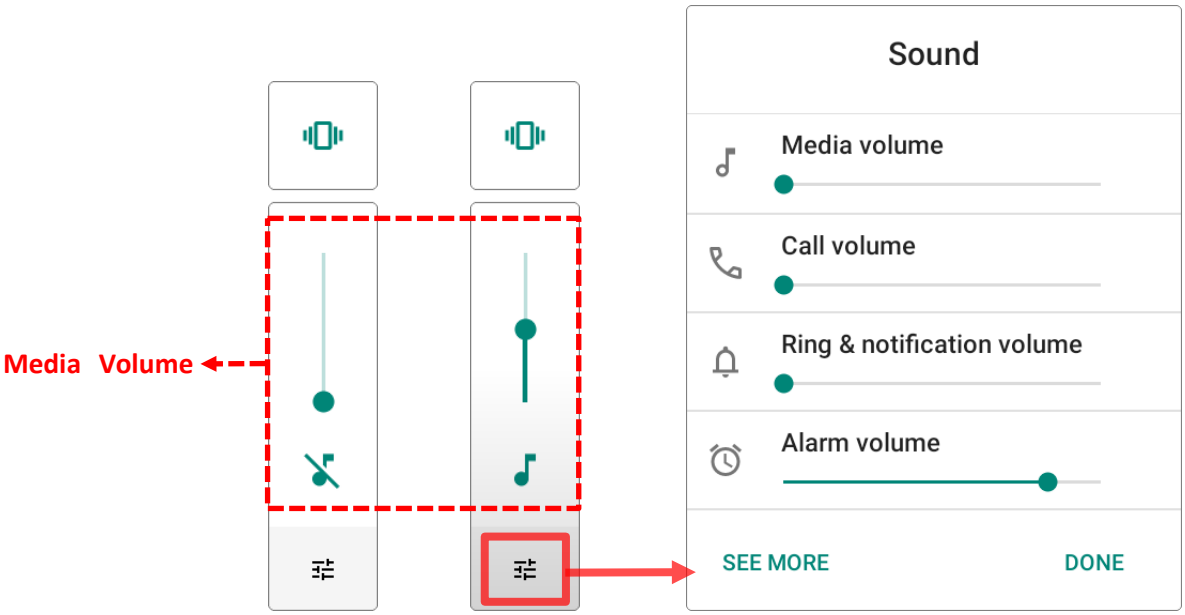
Tap on the icon or or to switch between ringing, vibration, and mute.



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

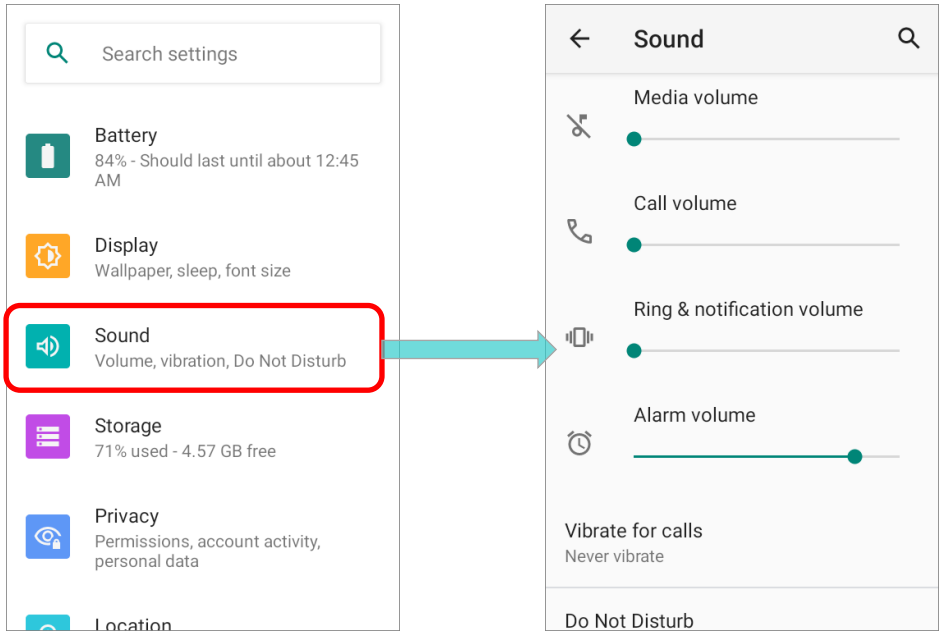
The media volume can be adjusted by pressing the **Volume Up** or **Volume Down** key, or dragging the slider on quick sound menu.

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

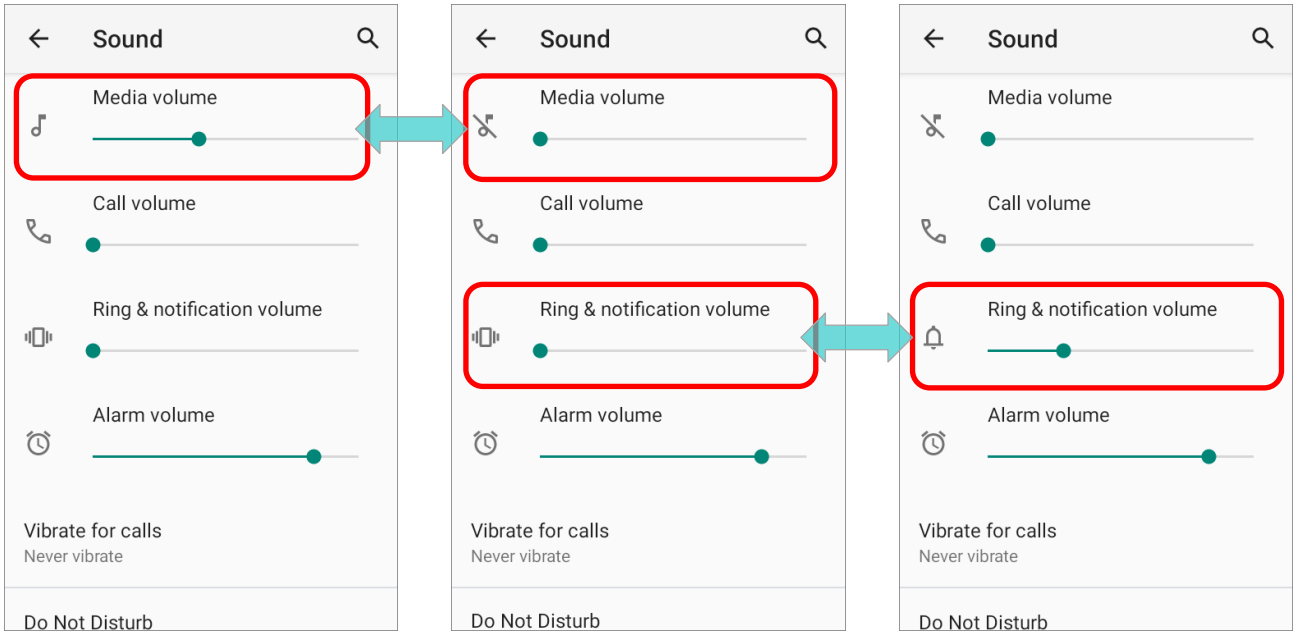
Go to **App Drawer (All Apps)** | **Settings** | **Sound** for more sound settings.



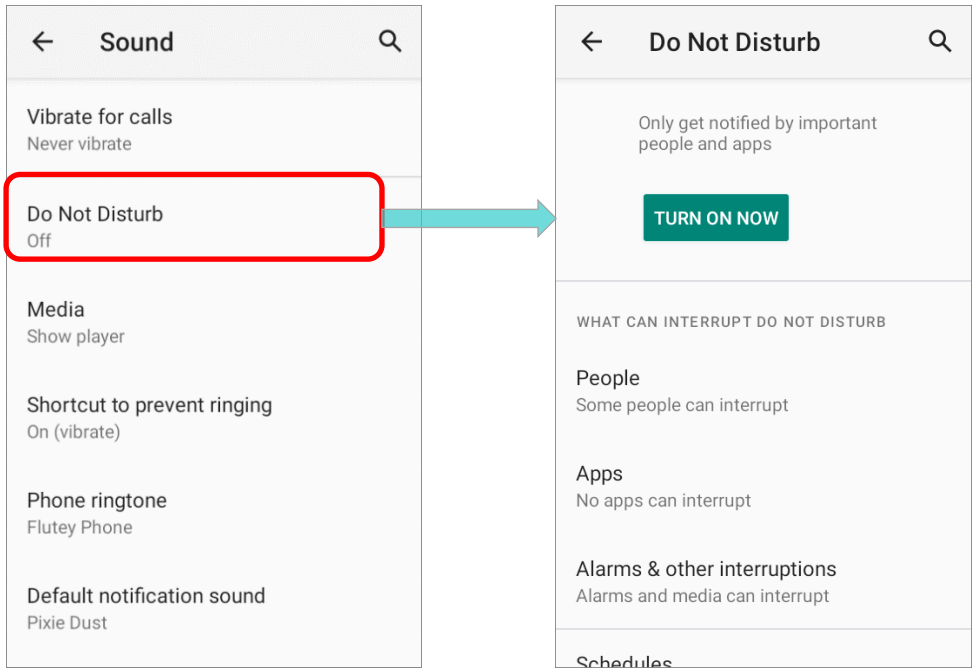
On "**Sound**" settings page, you can:

- Adjust the volume for **media**, **call** , **ring** , and **alarm** by dragging the sliders.

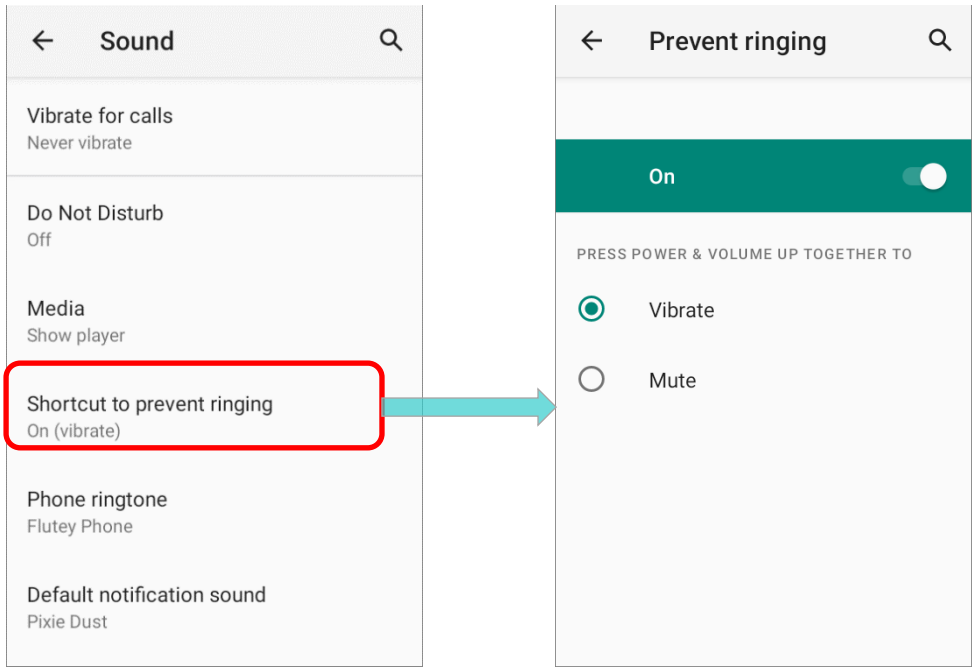
  The media icon turns to be if it is off while the ring icons turns to be to indicates it is off.



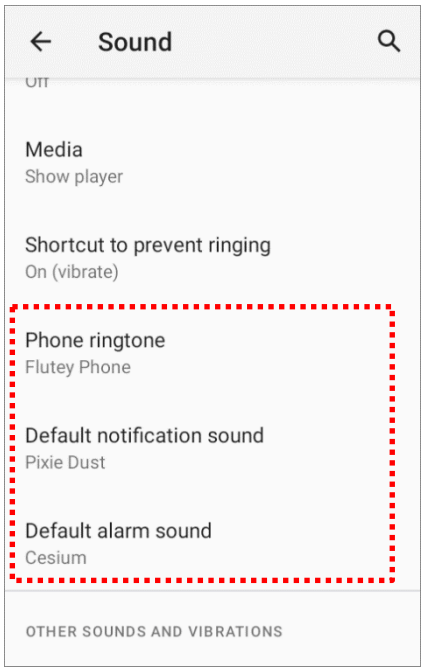
- Enter "**Do Not Distrub**" for its detailed settings.



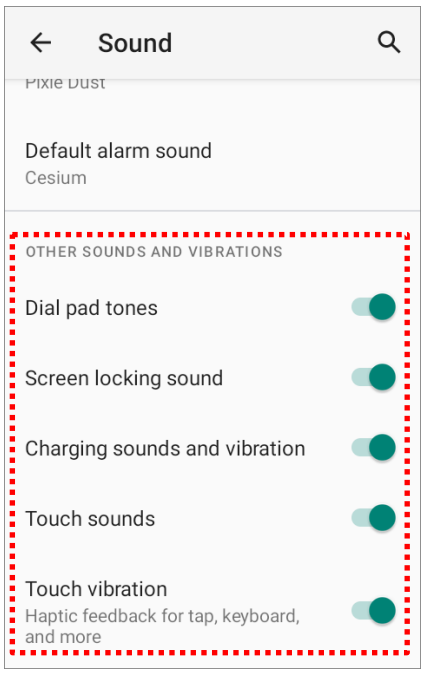
- Set the shortcut to prevent ringing.



- Select the sound for "**Phone Ringtine**", "**Default notification soud**" and "**Default alarm sound**".



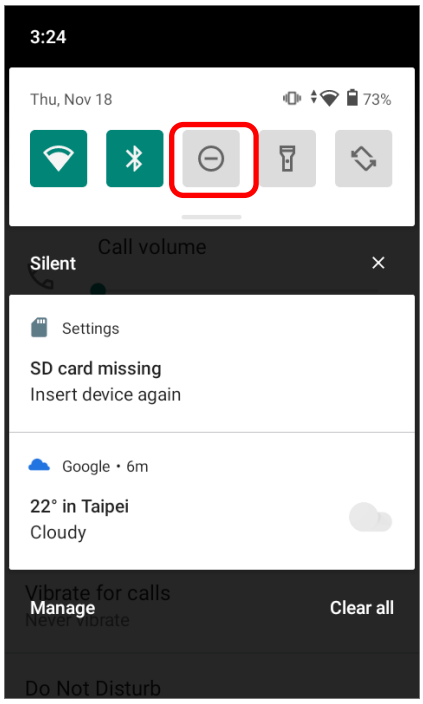
- Turn on or off the switch of the items under "**Other sounds and vibrations**".

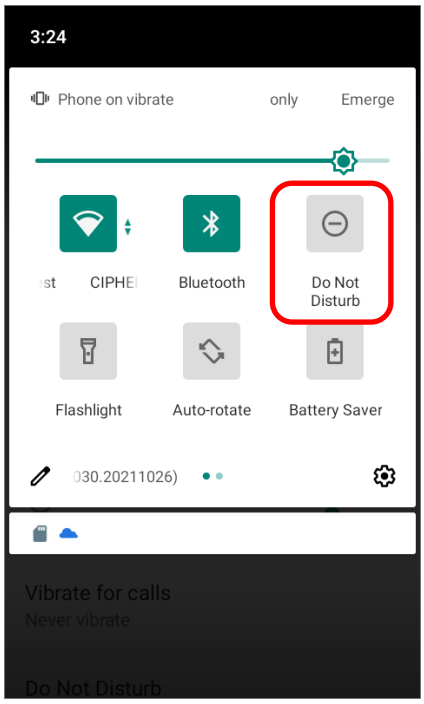


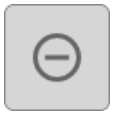
DISABLE UNWANTED NOTIFICATIONS WITH "DO NOT DISTURB"

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.

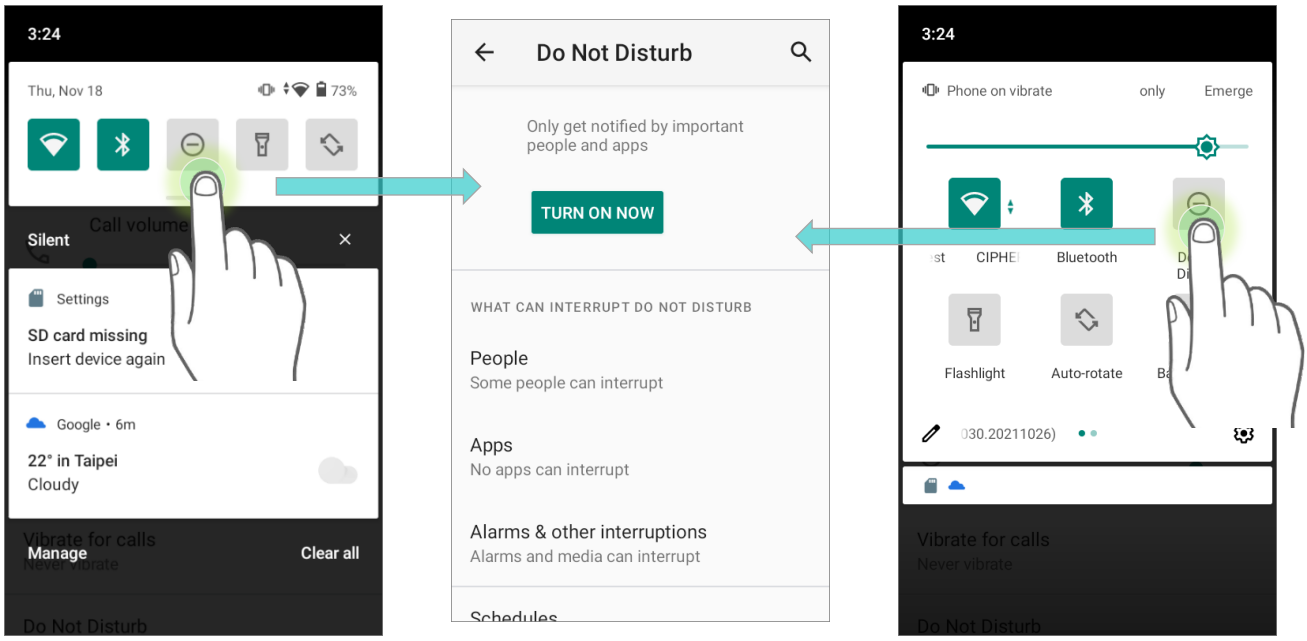
Swipe down from the status bar to open **Quick Settings Panel** or **Quick Settings Menu**, tap on "**Do not disturb**" to enable this feature and make further adjustment.



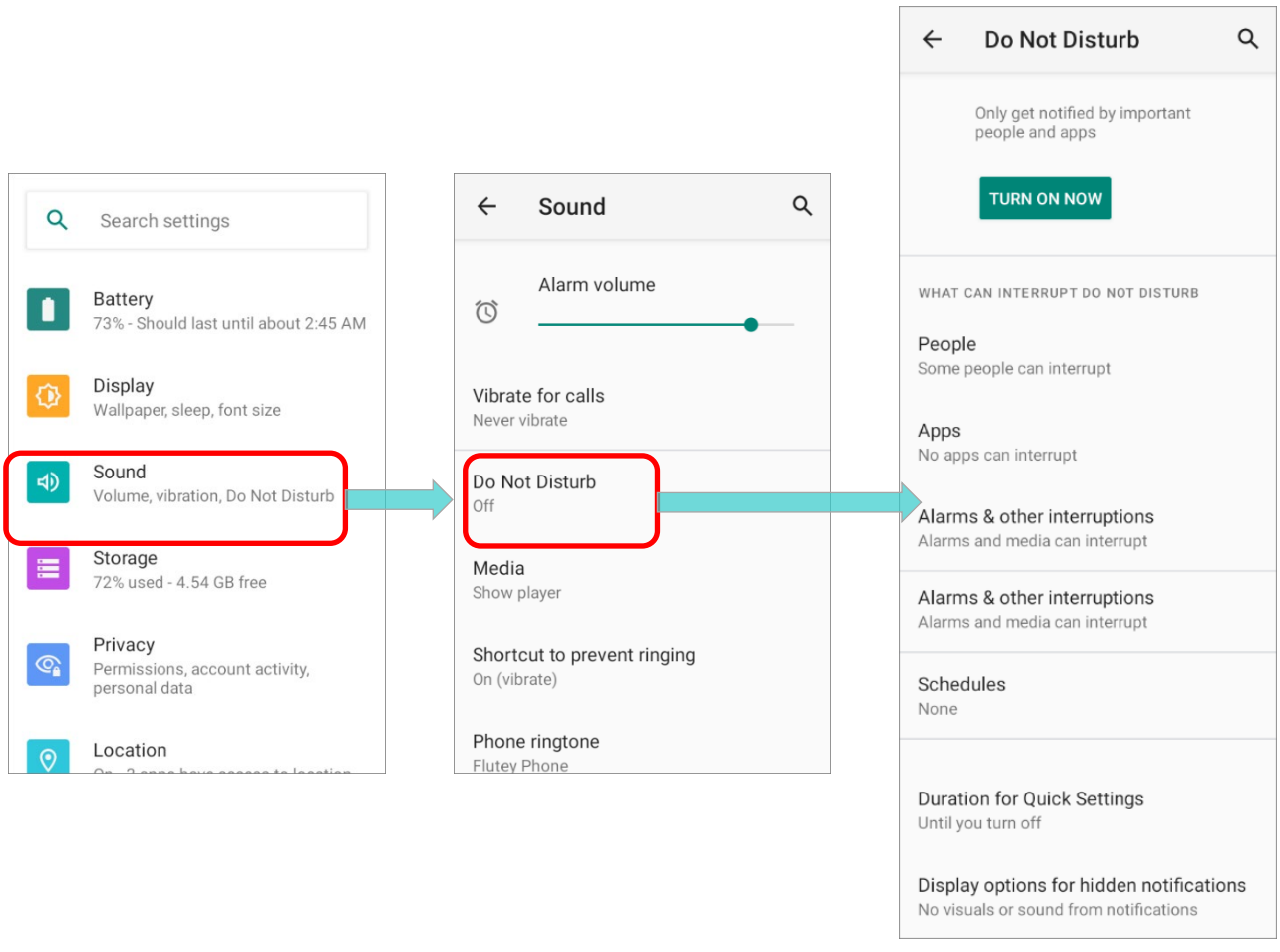


Icon	Description
	DND mode is **OFF**.
	DND mode is **ON**.

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**

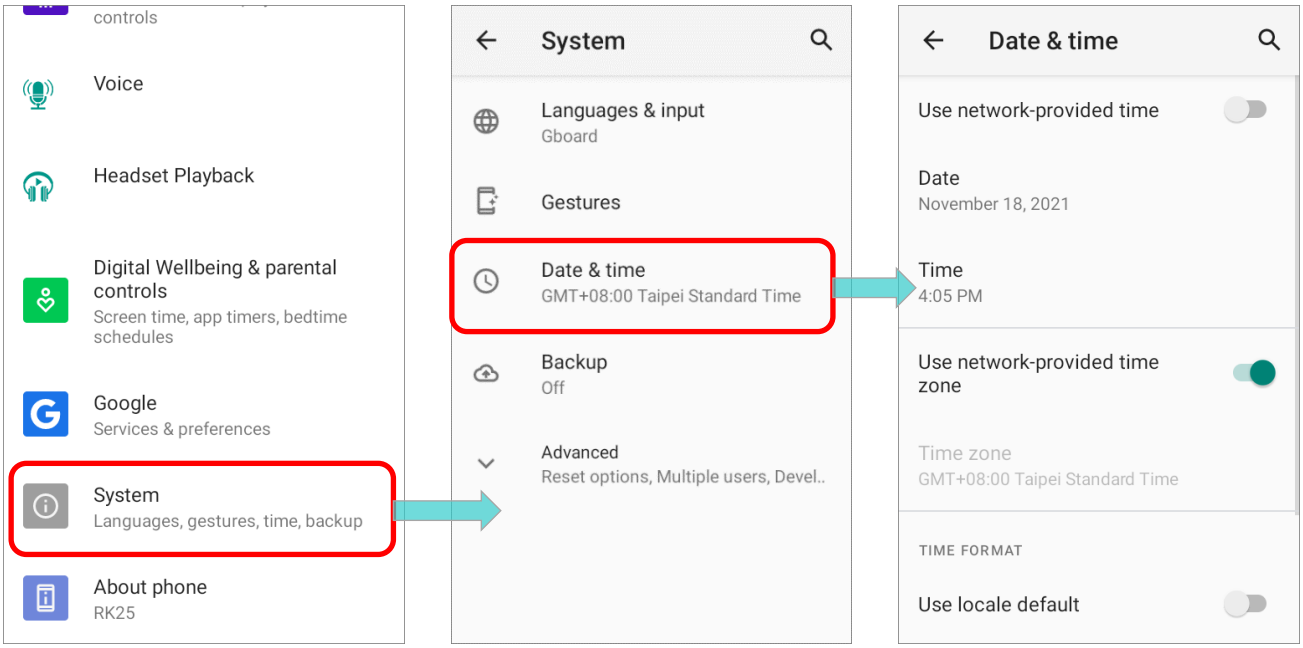


2.5. DATE AND TIME

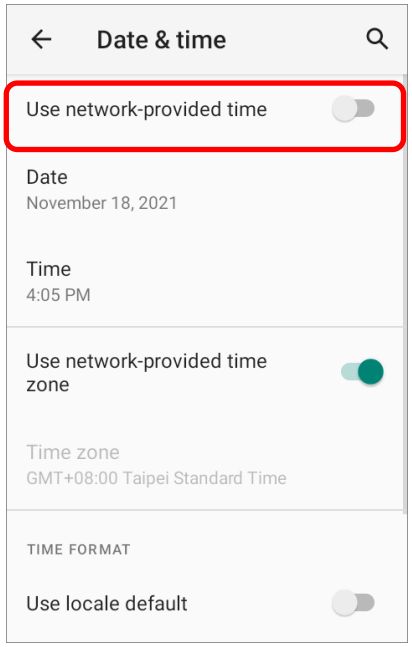
By default, the mobile computer automatically synchronizes the date and time to the WWAN network (if connected).

To set the date and time manually:

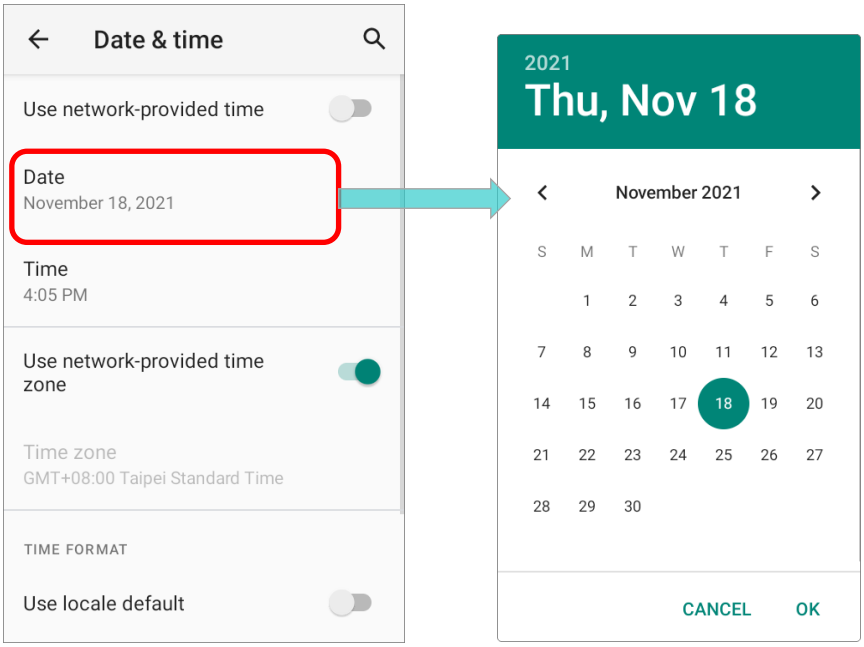
1) Go to App Drawer (All Apps) | **Settings** | **System** | **Date & time**



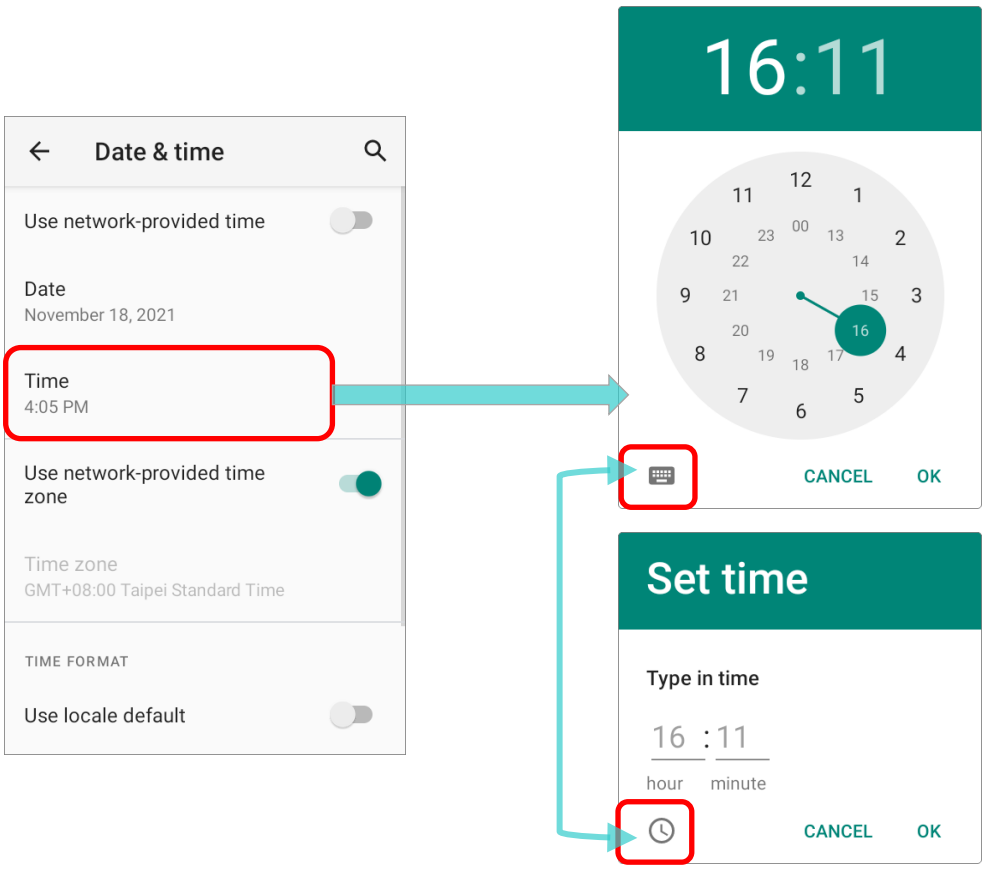
2) Tap to turn off **Automatic date & time** to disable using network-provided time.



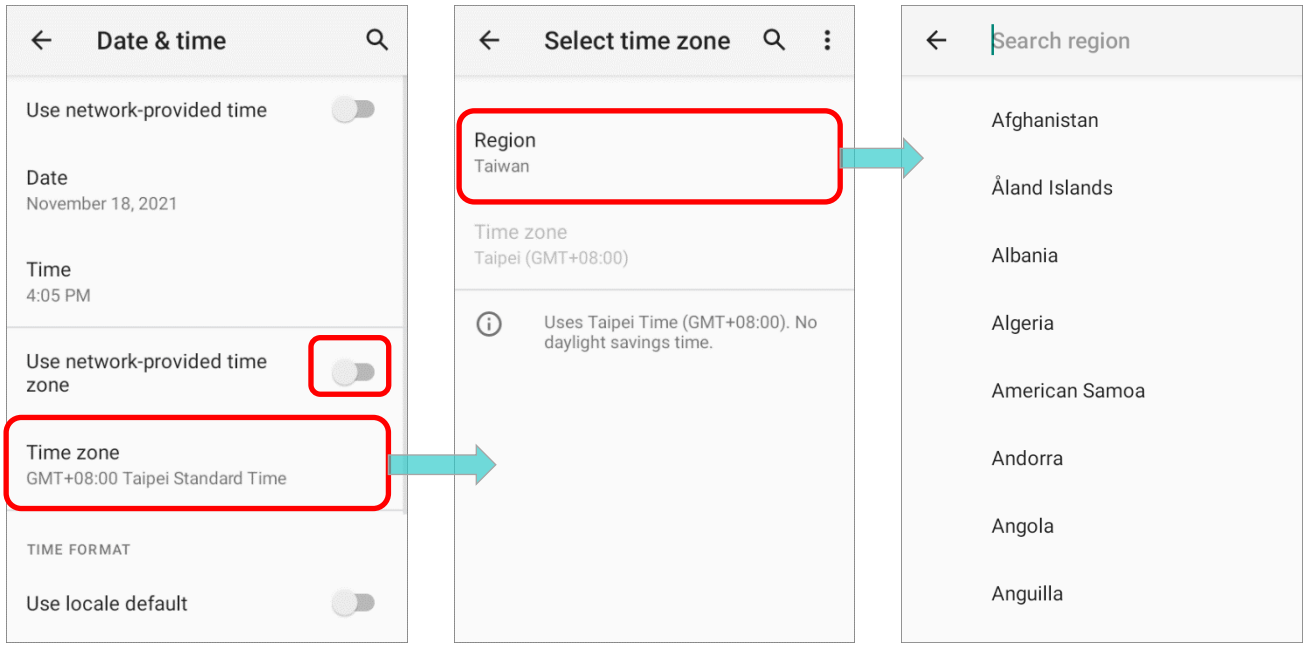
3) Tap **Set date** to select the correct month, date and year. Tap **OK** to save.

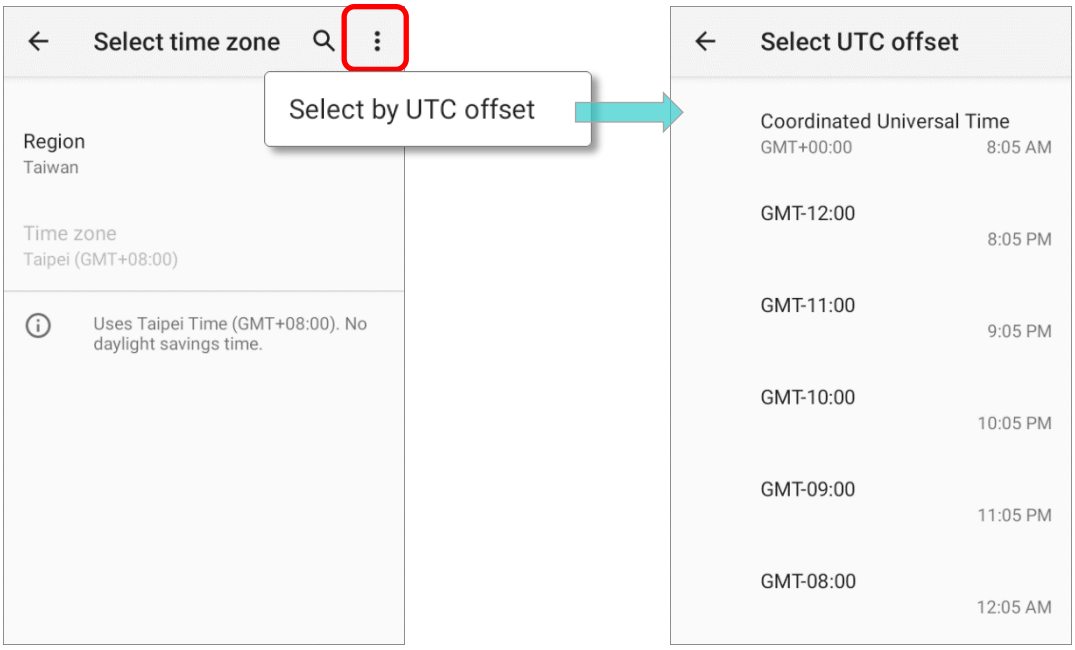


4) Tap **Set time** to set the correct time. Tap **OK** to save.



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



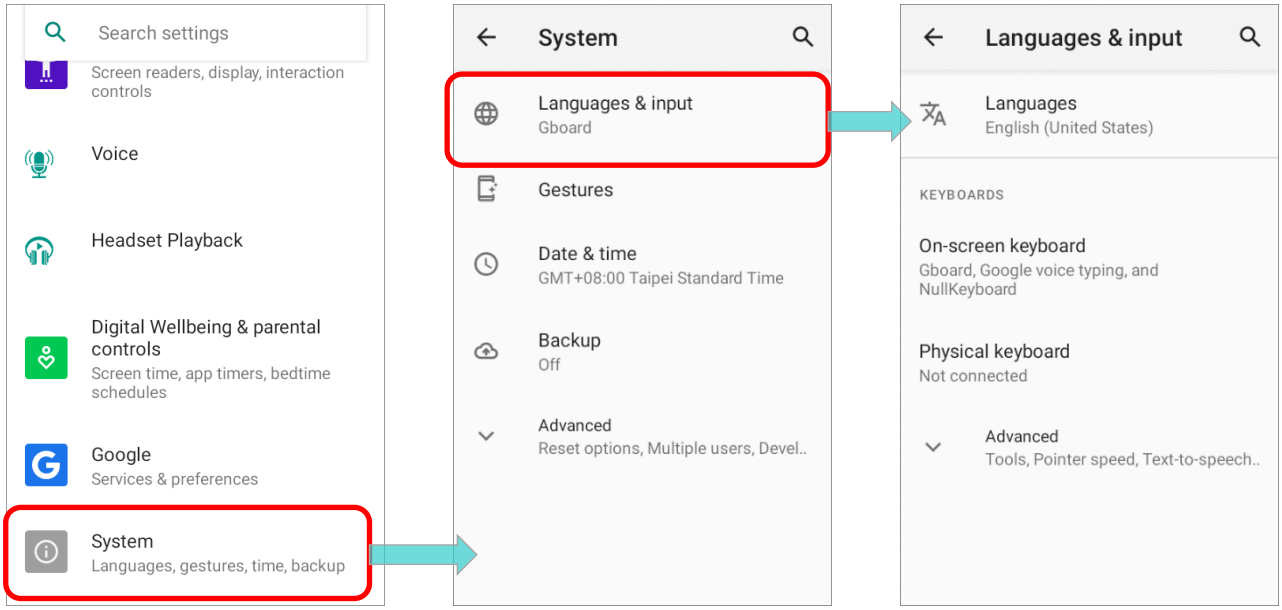


6) Disable "**Use locale default**" and tap "**Use 24-hour format**" to switch on or off to change the displayed time.

7) Tap "**NTP Server**" to input NTP server address and tap **OK** to save.

2.6. LANGUAGE & KEYBOARD INPUT

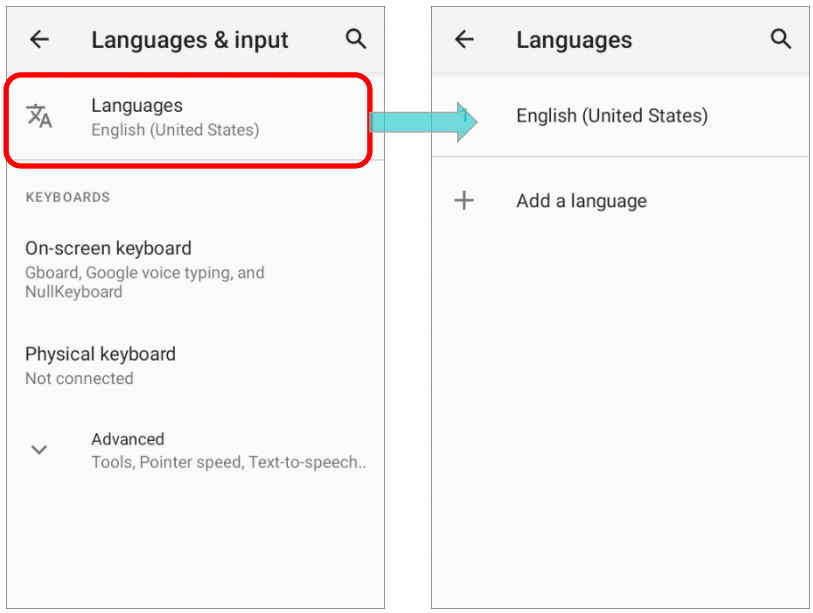
Tap **App Drawer (All Apps)** | **Settings** | **System** | **Language & input** to change the system language, default keyboard type, and configure keyboard input and speech settings.



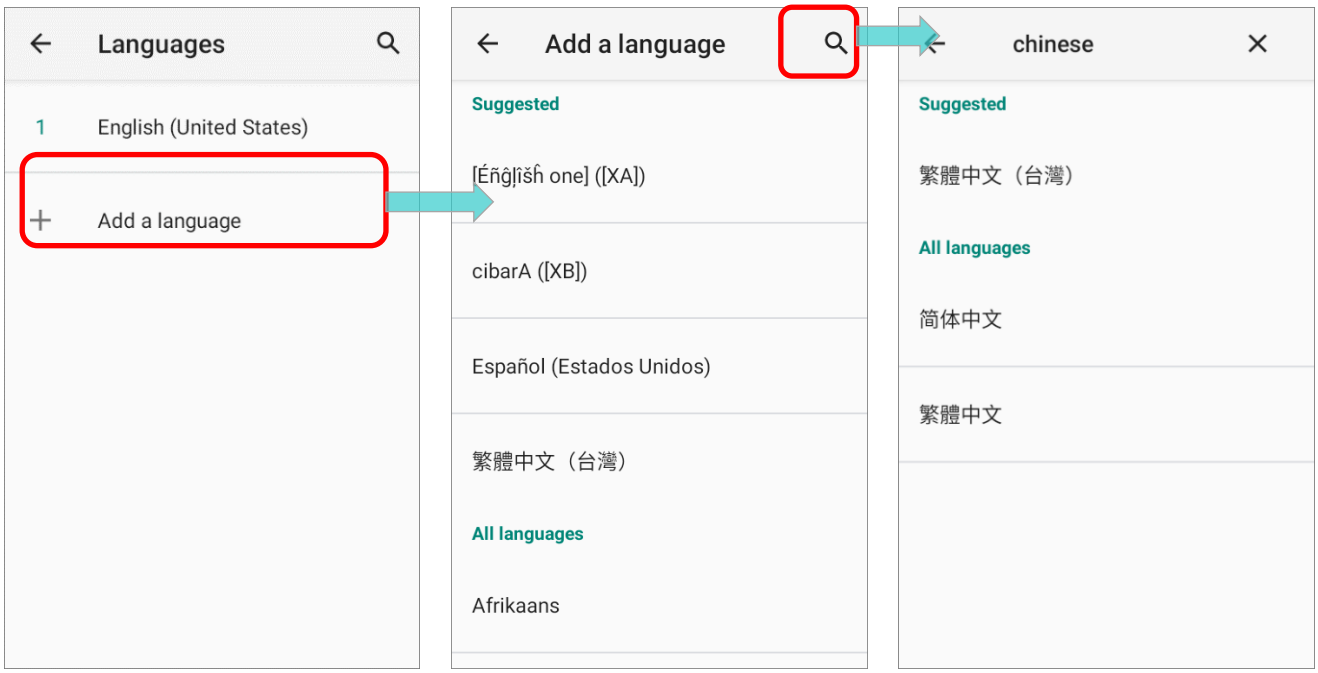
2.6.1. CHANGE DISPLAY LANGUAGE

To change display language:

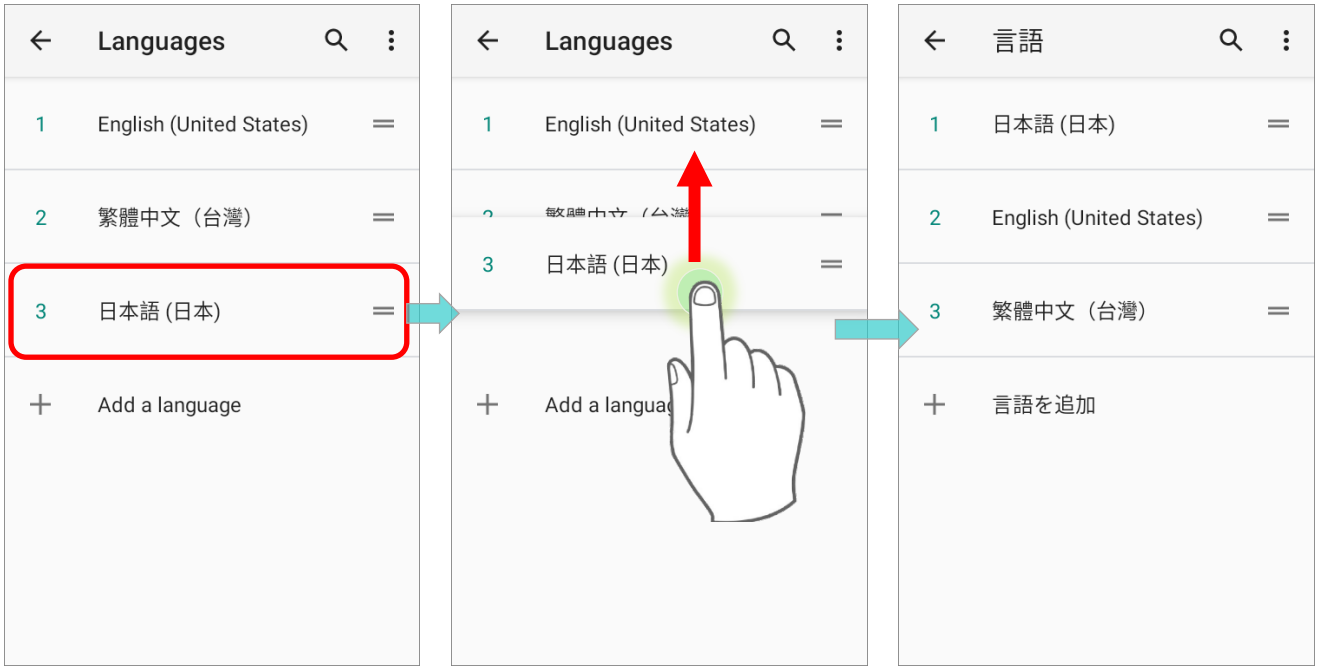
1) On **Language & input** scree, tap on **Language** to get into "**Language preference**" page.



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



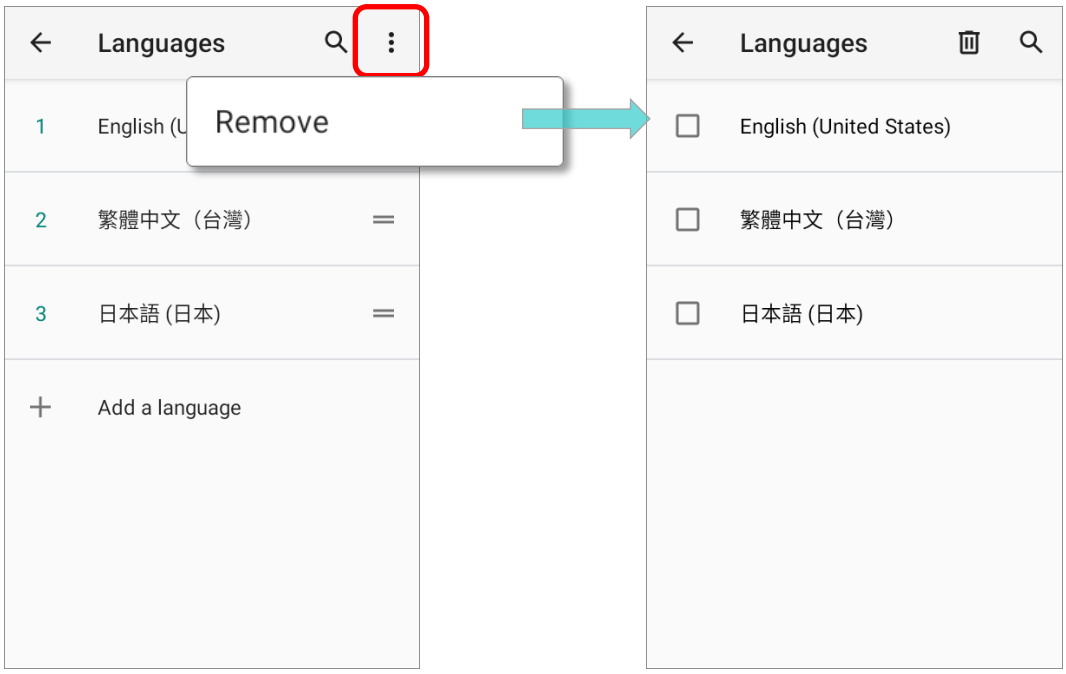
3) Press and hold your desired system language to change its sorting order to the 1st by dragging. Once it is released, the new language setting will immediately be applied.



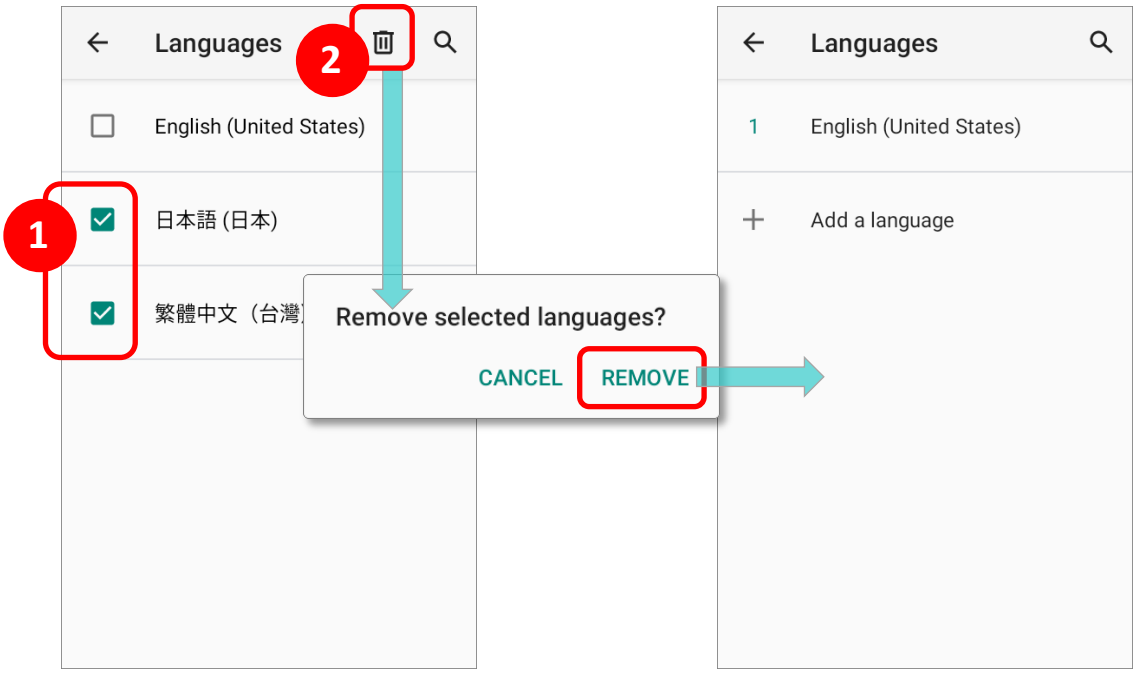
DELETE LANGUAGE

To delete language(s):

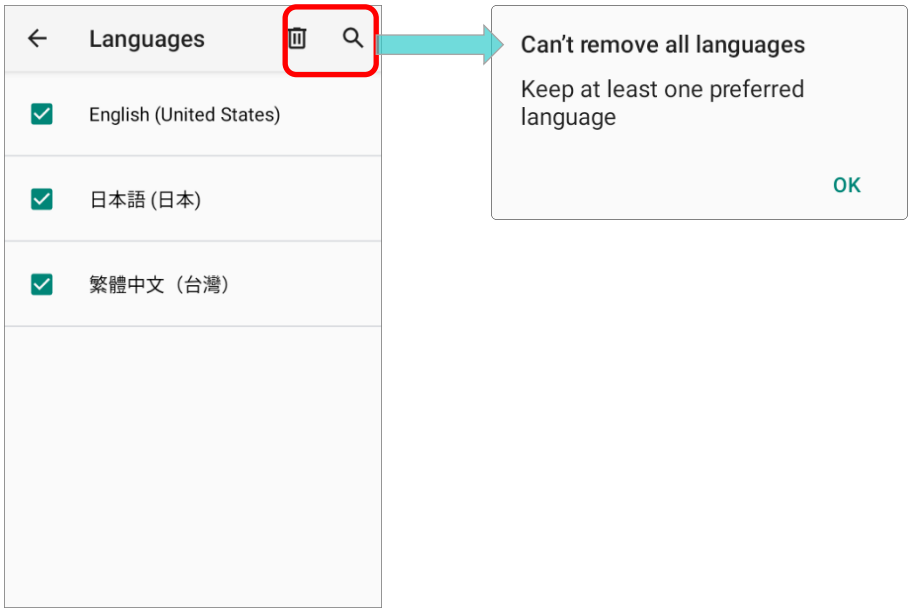
1) Tap more button ⋮ in the upper right corner and tap "**Remove**" option.



2) Select the language to delete.

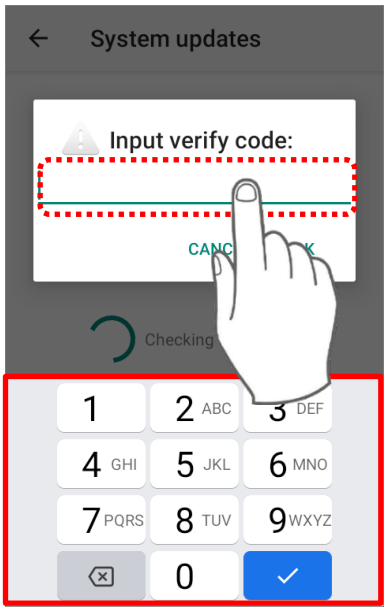


Please note that the display language will be changed if it is selected to be deleted.



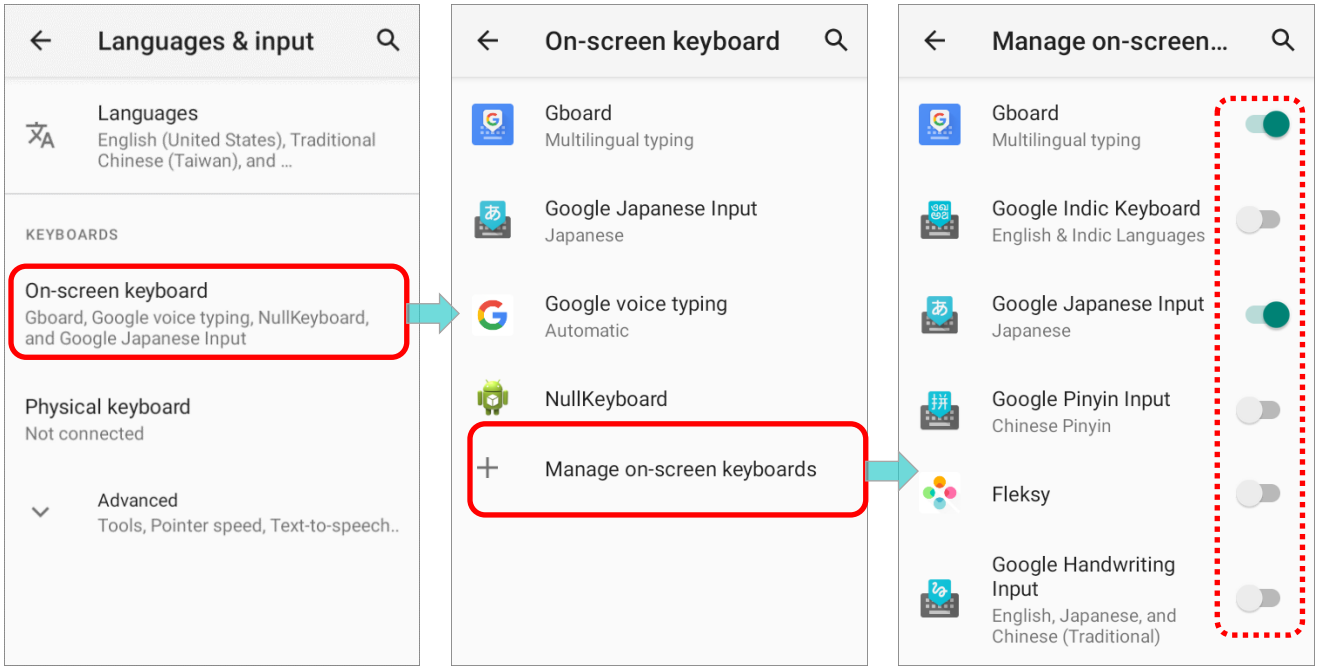
2.6.2. ON-SCREEN KEYBOARD

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.



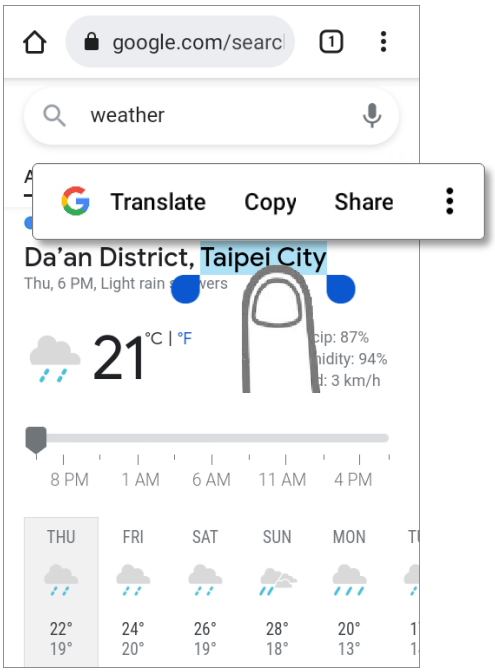
SELECT KEYBOARD (INPUT METHOD)

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



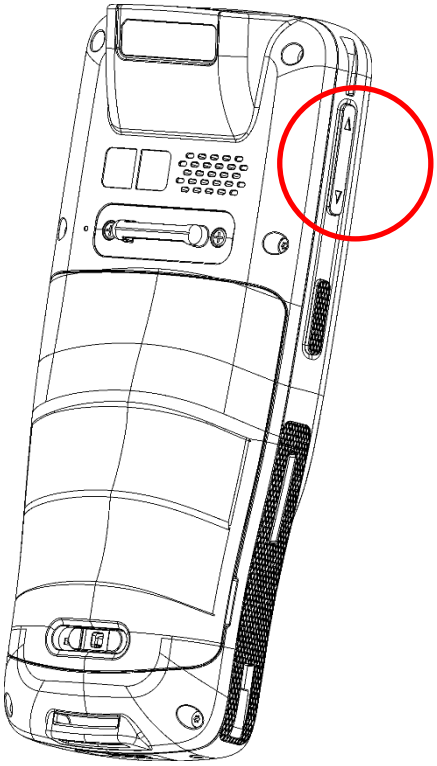
EDIT TEXT

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. You won't be able to scan a specific barcode symbology which is not enabled. Run ReaderConfig.exe to enable/disable barcode symbologies.

2.8.2. DIGITAL CAMERA

An integrated 8 megapixel 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

PHYSICAL KEYPAD

This chapter introduces the physical keypad of RK25 mobile computer, including 28-key model and 25-key model. The physical keypad receives supplementary backlight along with the screen, and supports multi-key operation, which normally requires two keys hit simultaneously. The keypad is capable of entering numbers, letters, symbols and punctuation marks.

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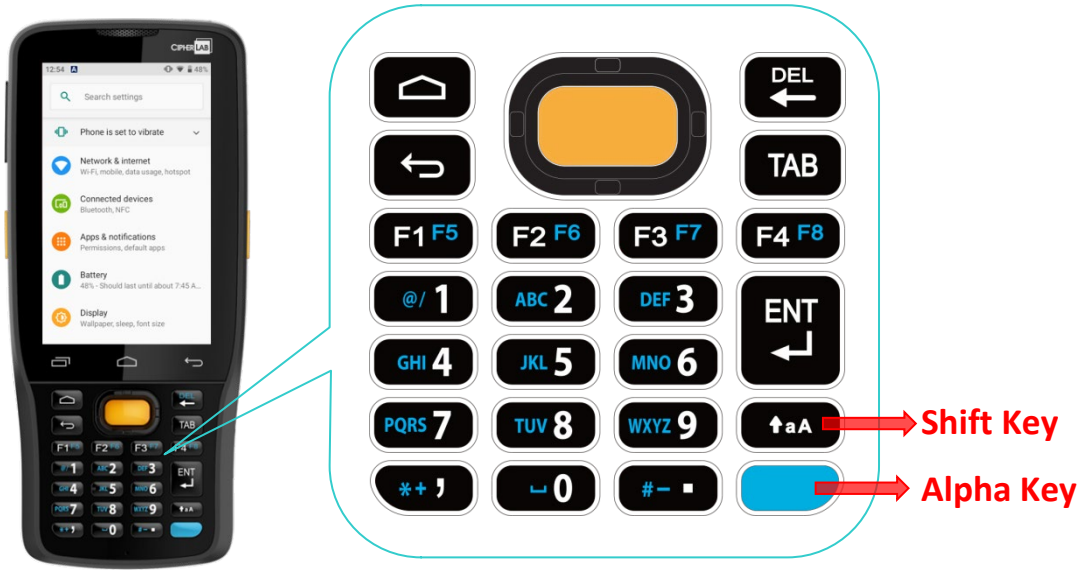
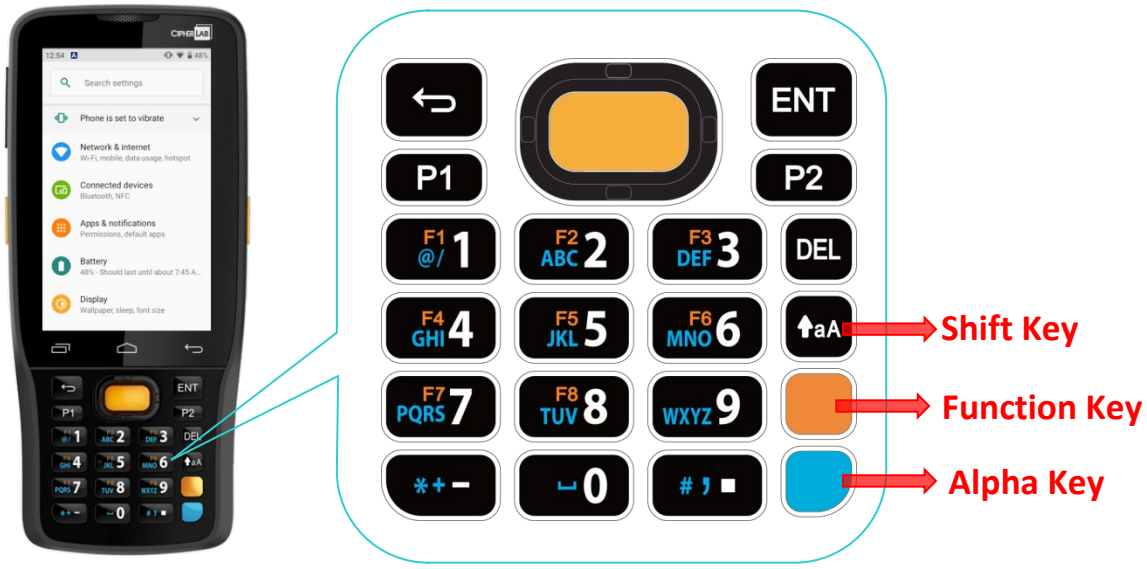
3.1. OVERVIEW

The physical keypad receives supplementary backlight along with the screen, and supports multi-key operation, which normally requires two keys hit simultaneously. The keypad is capable of entering numbers, letters, symbols and punctuation marks.

28-KEY MODEL



25-KEY MODEL



3.2. BASIC KEY

Basic Keys deliver the following functions:

3.2.1. BASIC KEY OF 28-KEY MODEL

Key	Description
Scan	Press the scan key to read a barcode in place.
Arrows	The arrow keys are circled around the center scan key. These can be used to move the cursor up, down, left or right during text input, or move between items in certain applications.
Home	Displays the Home screen.
Back	Returns to the previous screen or closes the active window or keyboard.
Backspace	Remove the last input letter.
Tab	To advance the cursor to the next tab stop.
Enter	Enter key works as tap or double-tap.

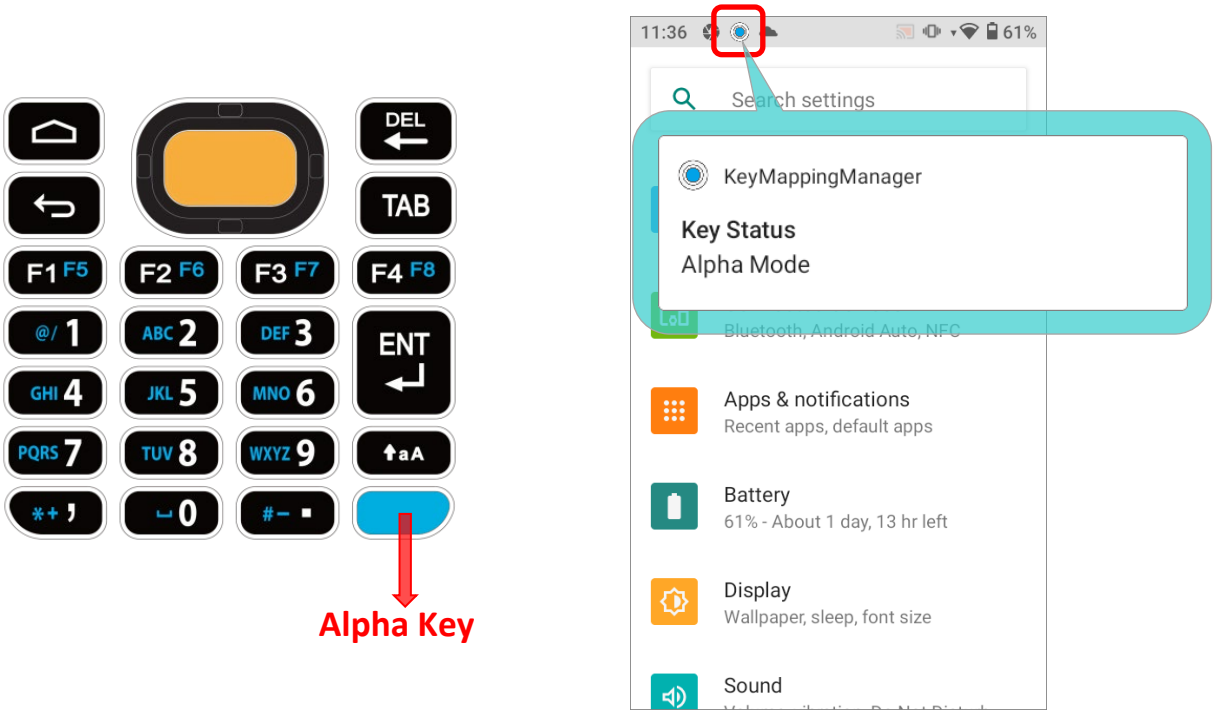
3.2.2. BASIC KEY OF 25-KEY MODEL

Key	Description
Scan	Press the scan key to read a barcode in place.
Arrows	The arrow keys are circled around the center scan key. These can be used to move the cursor up, down, left or right during text input, or move between items in certain applications.
Back	Returns to the previous screen or closes the active window or keyboard.
Delete	Remove the last input letter.
Enter	Enter key works as tap or double-tap.

3.3. ALPHA KEY

3.3.1. ALPHA KEY OF 28-KEY MODEL

The Alpha key is the blue button located in the bottom right corner of the keypad. When the Alpha key is pressed, a blue icon shows up in the status bar to indicate that **Alpha Mode** is on:



When Alpha Mode is on, the keypad enter Alpha lock mode, and the keys deliver the function as the text in blue on the keys (please refer to Key Functions in Different Modes for details). To turn off Alpha Mode, press Alpha key again to return to the default input mode.

- **Default Input Mode**

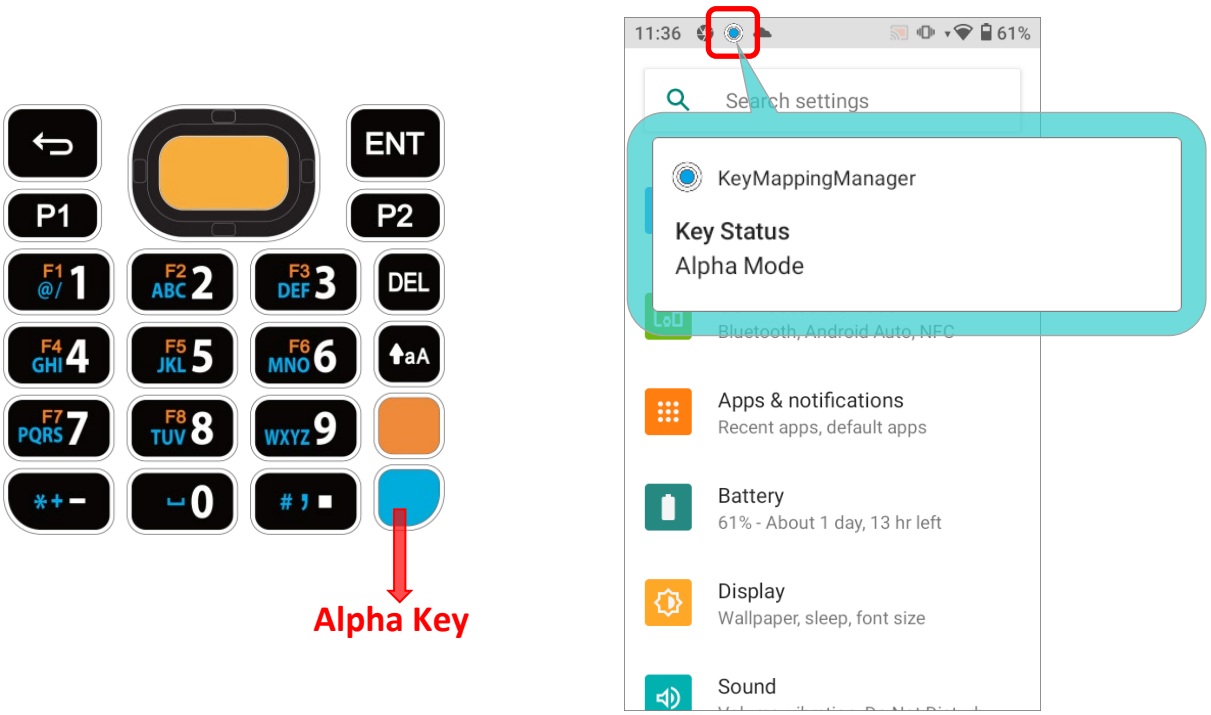
- **Alpha Mode**

Note:

Alpha mode can coexist with Shift mode. When both modes are active, the input letters will be uppercase. Please refer to Key Functions in Different Modes.

3.3.2. ALPHA KEY OF 25-KEY MODEL

The Alpha key is the blue button located in the bottom right corner of the keypad. When the Alpha key is pressed, a blue icon shows up in the status bar to indicate that **Alpha Mode** is on:



When Alpha Mode is on, the keypad enter Alpha lock mode, and the keys deliver the function as the text in blue on the keys (please refer to Key Functions in Different Modes for details). To turn off Alpha Mode, press Alpha key again to return to the default input mode.

- **Default Input Mode**

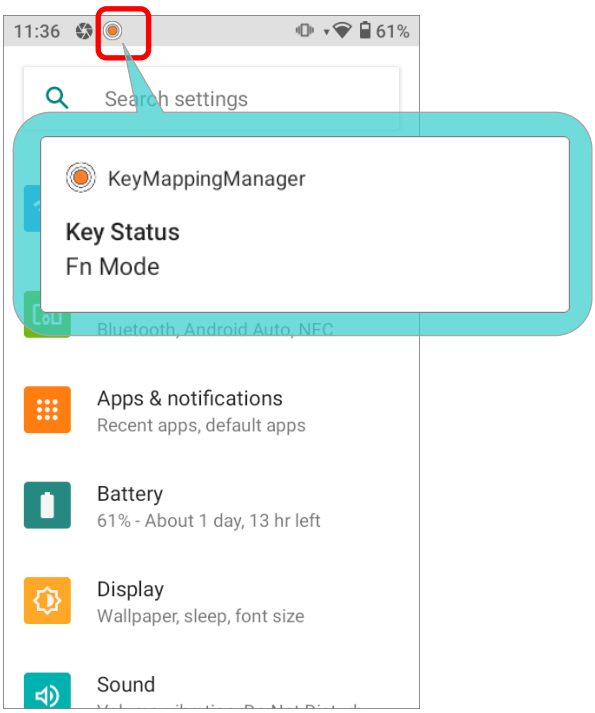
- **Alpha Mode**

Note:

Alpha mode can coexist with Shift mode & Function Mode. When both Shift mode and Alpha Mode are active, the input letters will be uppercase. Please refer to Key Functions in Different Modes for details.

3.4. FUNCTION KEY (ONLY FOR 25-KEY MODEL)

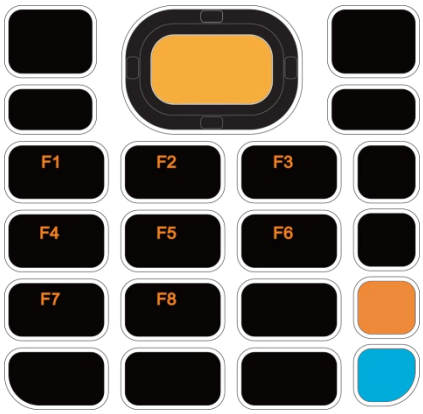
The Function key is the orange button located right above in the Alpha Key (the blue button). When the Function key is pressed, a orange icon shows up in the status bar to indicate that **Function Mode** is on:



Keypad returns from **Function Mode** to **Default Input Mode** upon pressing any button engraved in orange. If **Alpha key/Shift Key** is pressed, keypad will return to **Alpha mode/Shift Lock Mode** until **Alpha key/Shift Key** is pressed again.

- **Default Input Mode**

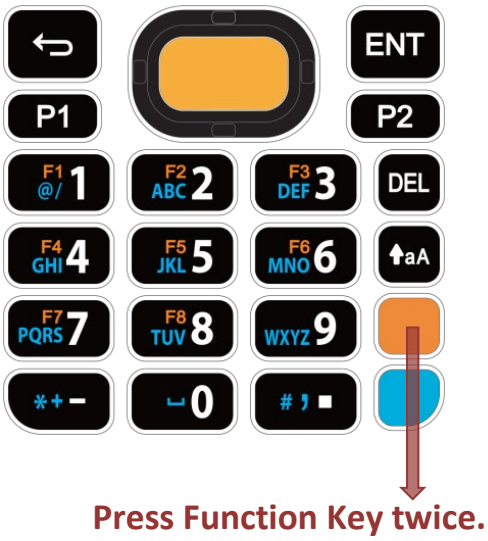
- **Function Mode**

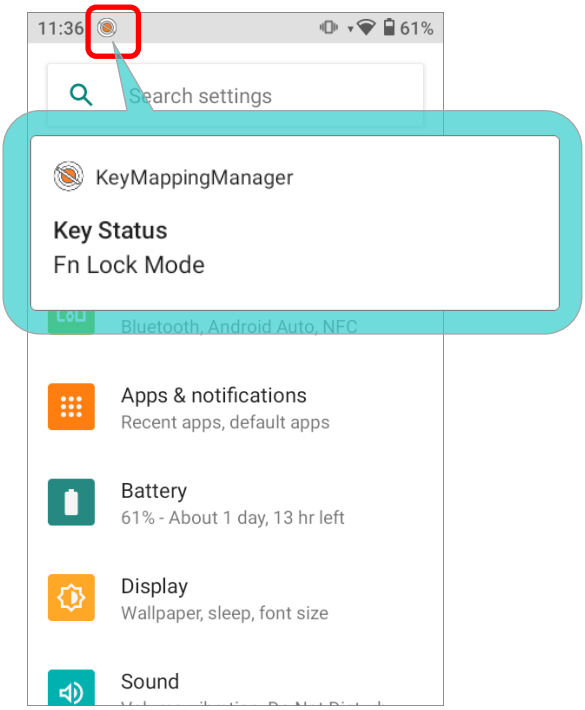


Note:

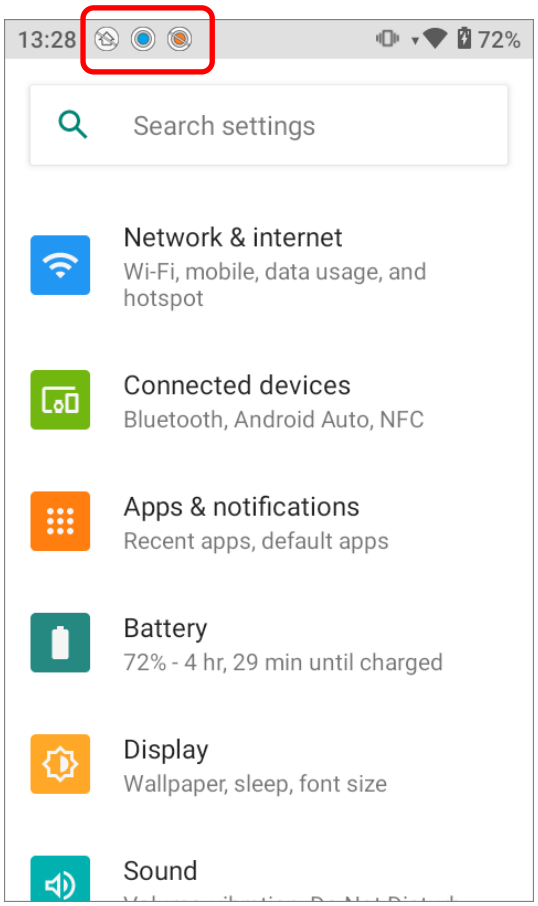
Function mode can coexist with Shift mode & Alpha Mode. Please refer to Key Functions in Different Modes for details.

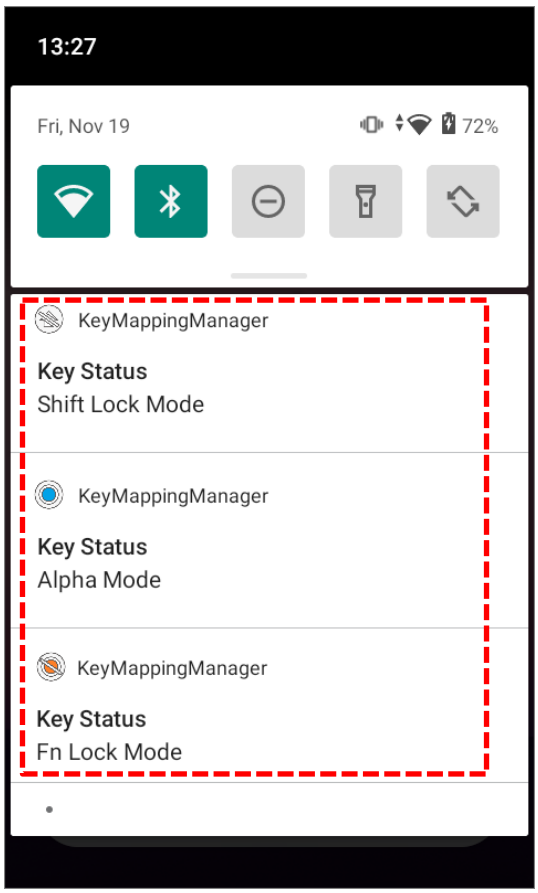
Press **Function key** twice, and the keypad will enter **Fn Lock Mode** (**Function Lock Mode**) with an icon appears in the status bar. The keypad stays in **Function Lock Mode** till the **Function key** is pressed again.





In **Function Lock Mode**, you can still enable **Alpha mode** and **Shift mode** if it is needed. Please refer to **Key Functions in Different Modes** for details.





3.5. SHIFT KEYS

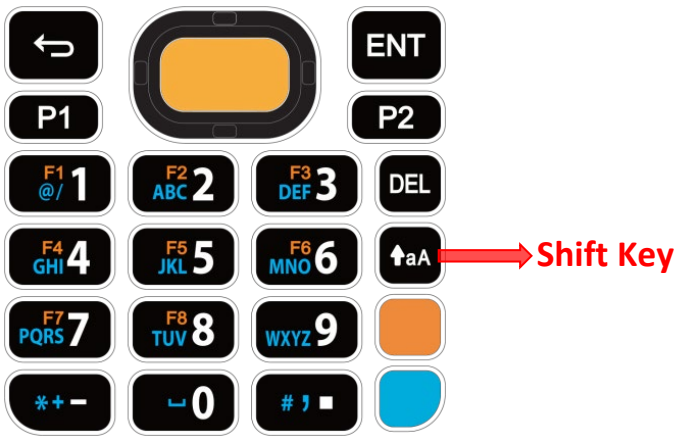
The **Shift key**

is located right above the **Alpha key** for 28-key Model, while it is located right above the **Function Key** for 25-key Model.

When the **Shift key** is pressed once, an icon shows up in the status bar to indicate the Key Status is in **Shift Resume Mode**. The keypad will return to the **Default Input mode** right after pressing any key (except of **Backspace** key for **28-key Model** and **Delete key** for **25-key Model**).

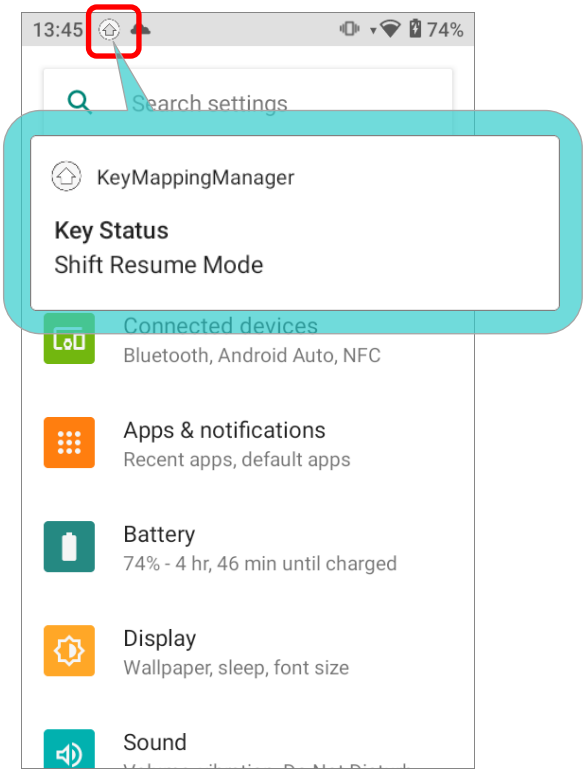
- **28-key Model Keypad**

- **25-key Model Keypad**

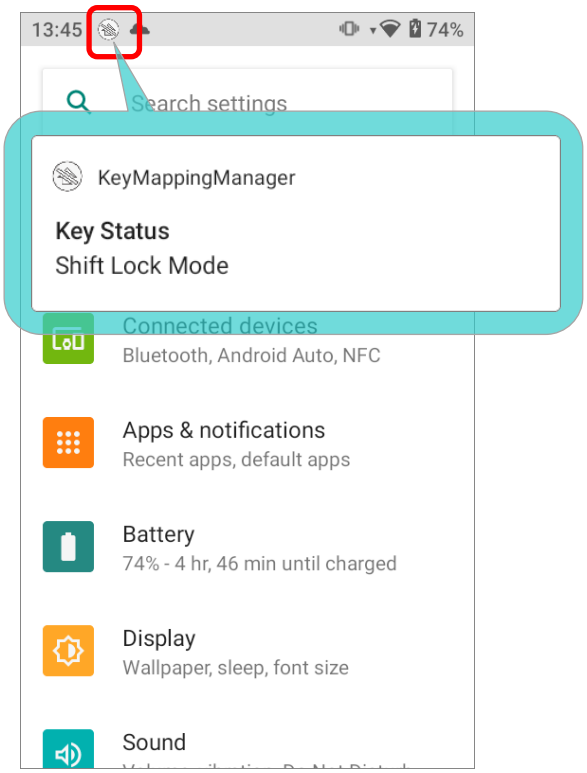


When the Shift key is pressed twice, the keypad will enter **Shift Lock Mode** with an icon appears in the status bar, and the keypad stays in Shift Lock Mode till the Shift key is pressed again.

- **Shift Resume Mode**



- **Sfift Lock Mode**



In both **Shift Resume Mode** and **Shift Lock Mode**, the keys deliver the functions as Key Functions in Different Modes describes.

3.6. KEY FUNCTIONS IN DIFFERENT MODES

3.6.1. FOR 28-KEY MODEL KEYPAD

Default Input Mode	Alpha Mode	Shift Mode	Shift Mode+ Alpha Mode
DEL	N/A	DEL	N/A
F1	F5	F1	F5
F2	F6	F2	F6
F3	F7	F3	F7
F4	F8	F4	F8
1	@/	! (exclamation mark)	@/
2	ABC	@ (at sign)	A, B, or C (uppercase)
3	DEF	# (pound)	D, E, or F (uppercase)
4	GHI	$ (currency symbol)	G,H, or I (uppercase)
5	JKL	% (percent)	J, K, or L (uppercase)
6	MNO	^ (caret)	M, N, or O (uppercase)
7	PQRS	& (ampersand)	P, Q, R, or S (uppercase)
8	TUV	* (asterisk)	T, U, or V (uppercase)
9	WXYZ	((parentheses)	W, X, Y, or Z (uppercase)
0	␣	) (parentheses)	␣
,	*+	> (more than sign)	*+
.	#–	< (less than sign)	#–
ENT	ENT	Return to the next line or start a new paragraph in text input field.	ENT

3.6.2. FOR 25-KEY MODEL KEYPAD

Default Input Mode	Alpha Mode	Shift Mode	Function Mode
P1	N/A	N/A	N/A
P2	N/A	N/A	N/A
1	@/	! (exclamation mark)	F1
2	ABC	@ (at sign)	F2
3	DEF	# (pound)	F3
4	GHI	$ (currency symbol)	F4
5	JKL	% (percent)	F5
6	MNO	^ (caret)	F6
7	PQRS	& (ampersand)	F7
8	TUV	* (asterisk)	F8
9	WXYZ	((parentheses)	N/A
0	␣	) (parentheses)	0
-	*+	> (more than sign)	- (hyphen)
.	# '	< (less than sign)	. (period)
ENT	N/A	Return to the next line or start a new paragraph in text input field.	N/A

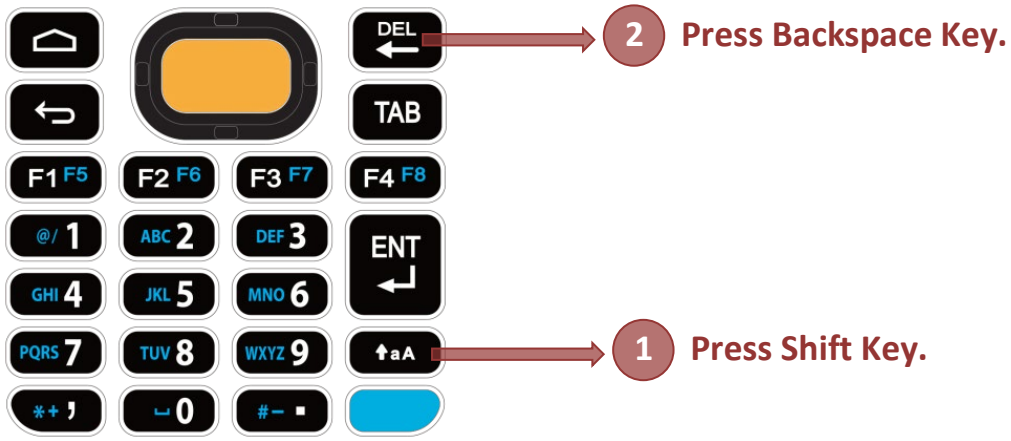
Default Input Mode	Shift Mode + Alpha Mode	Shift Mode + Alpha Mode + Function Mode Alpha Mode + Function Mode Shift Mode+ Function Mode
P1	N/A	N/A
P2	N/A	N/A
1	@/	N/A
2	A, B, or C (uppercase)	N/A
3	D, E, or F (uppercase)	N/A
4	G,H, or I (uppercase)	N/A
5	J, K, or L (uppercase)	N/A
6	M, N, or O (uppercase)	N/A
7	P, Q, R, or S (uppercase)	N/A
8	T, U, or V (uppercase)	N/A
9	W, X, Y, or Z (uppercase)	N/A
0	␣	) (parentheses)
-	*+	_ (underline)
.	#'	> (more than sign)
ENT	N/A	Return to the next line or start a new paragraph in text input field.

3.7. KEYPAD LOCK

Keypad lock is for user to lock all keys on the keypad to prevent any accidental pressing of the keys.

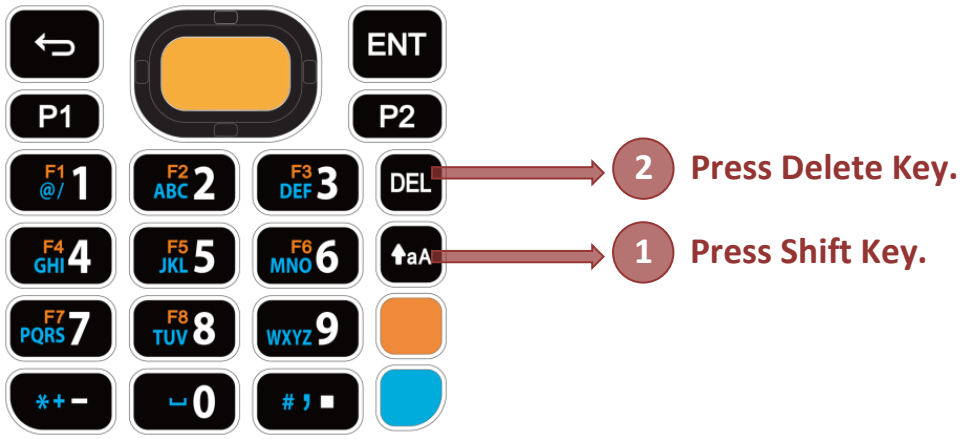
28-KEY MODEL

To lock the keypad of **28-Key Model**, please press **Shift key** and then **Backspace key**.



25-KEY MODEL

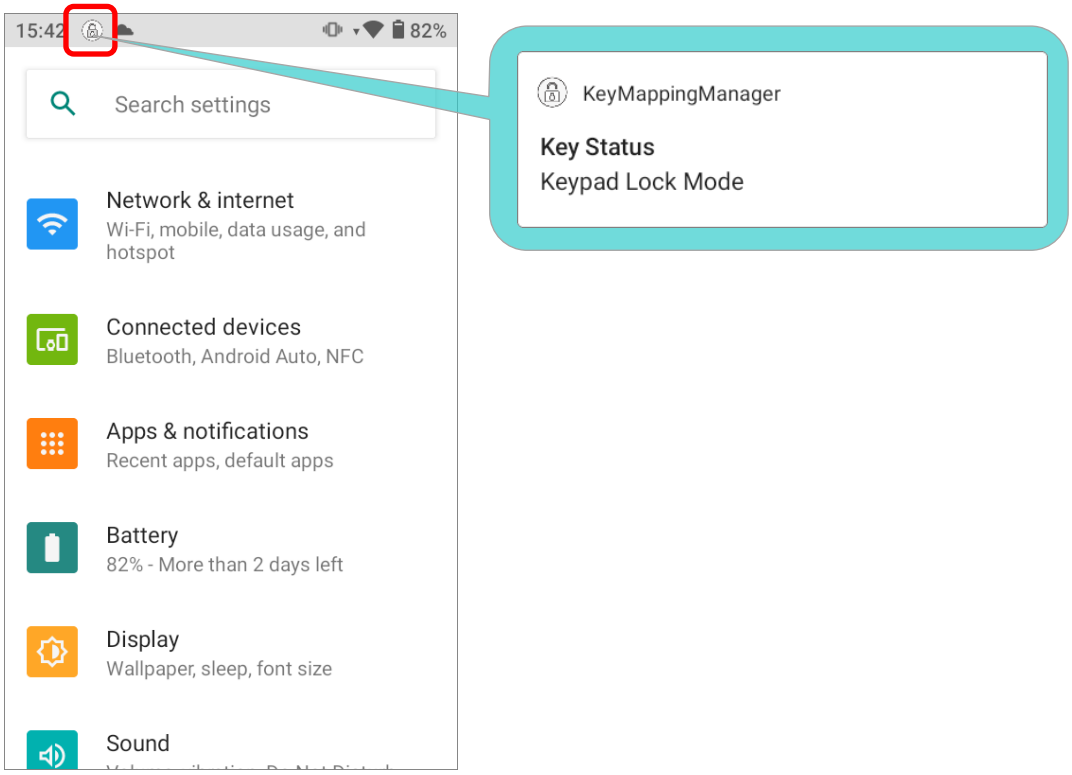
As to **25-Key Model**, the keypad lock mode can be triggered by pressing **Shift key** and **Delete key**.



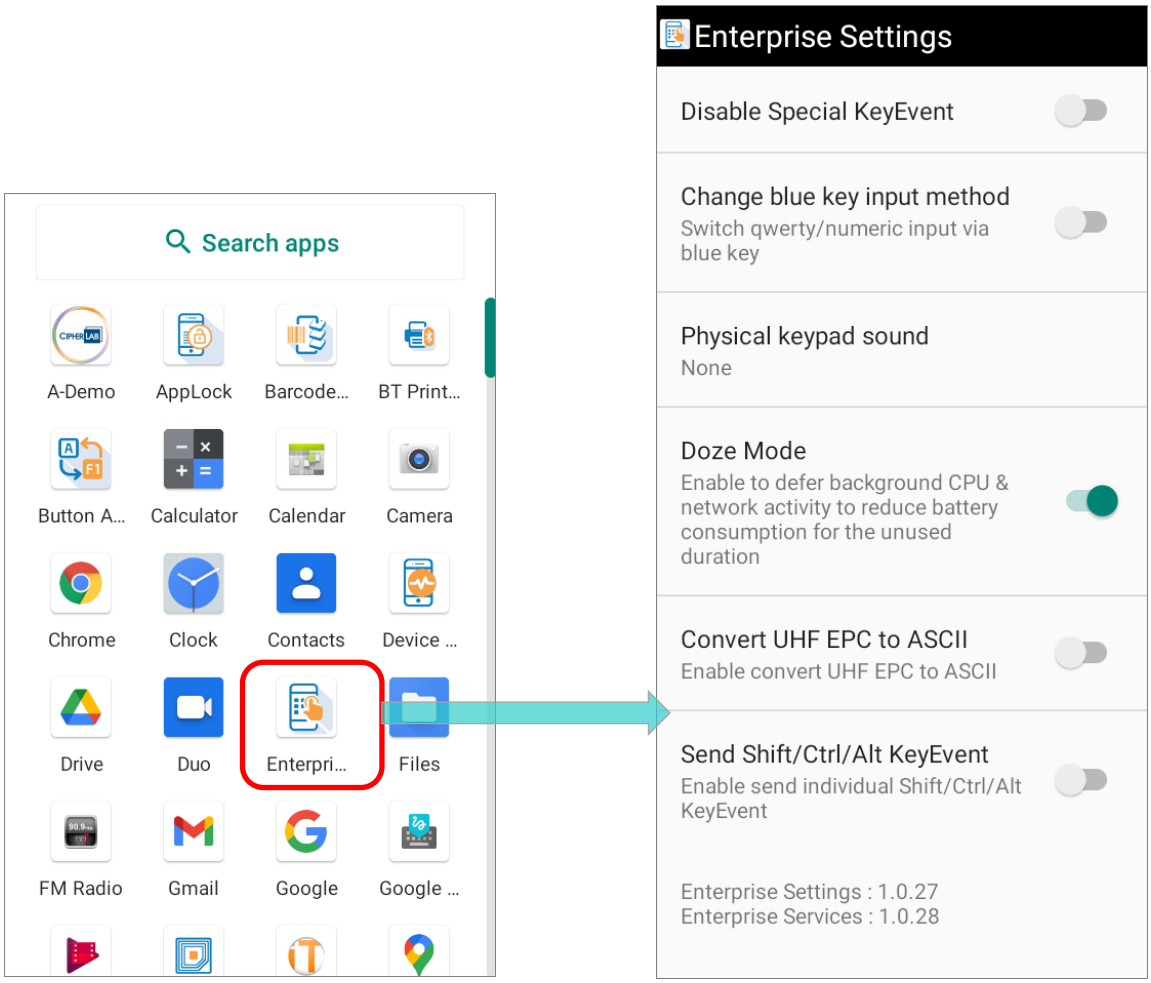
Note:

When Alpha Mode is on, the hot key combination (Shift + Backspace) would not work for 28-key Model, because Backspace key becomes "Delete" in Alpha Mode. For 25-key Model, the hot key combination (Shift + Delete) would not work.

When the keypad lock mode is triggered, all keys on the keypad will become locked to prevent any accidental pressing of keys. A keypad lock icon will appear on the status bar to indicate keys are currently locked.



3.8. ENTERPRISE SETTINGS

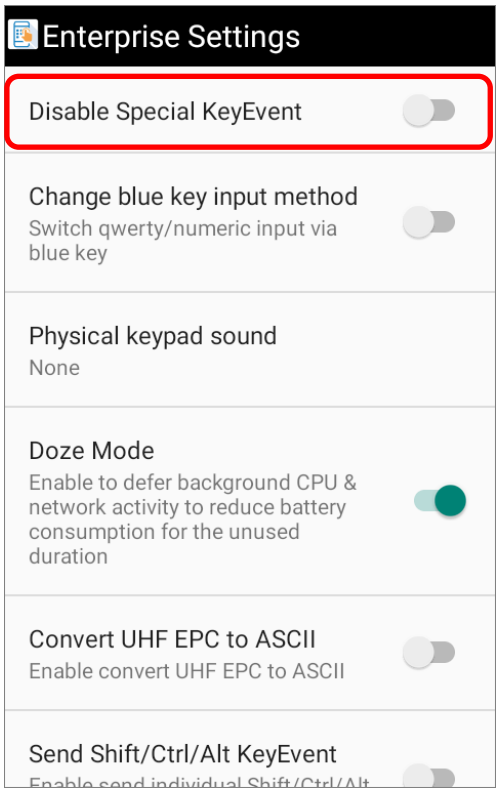


The app "**Enterprise Settings**" helps you to control the physical keypad. Go to **App Drawer (All Apps)** and tap on "**Enterprise Settings**" for the following functions:

3.8.1. DISABLE SPECIAL KEYEVENT

"**Disable Special KeyEvent**" is to disable the special keycode (which is not defined by Android) sent by pressing **Function Key**, **Alpha Key**, and **Trigger Keys**.

The default setting of "**Disable Special KeyEvent**" is off. Simply tap on the switch to turn it on.

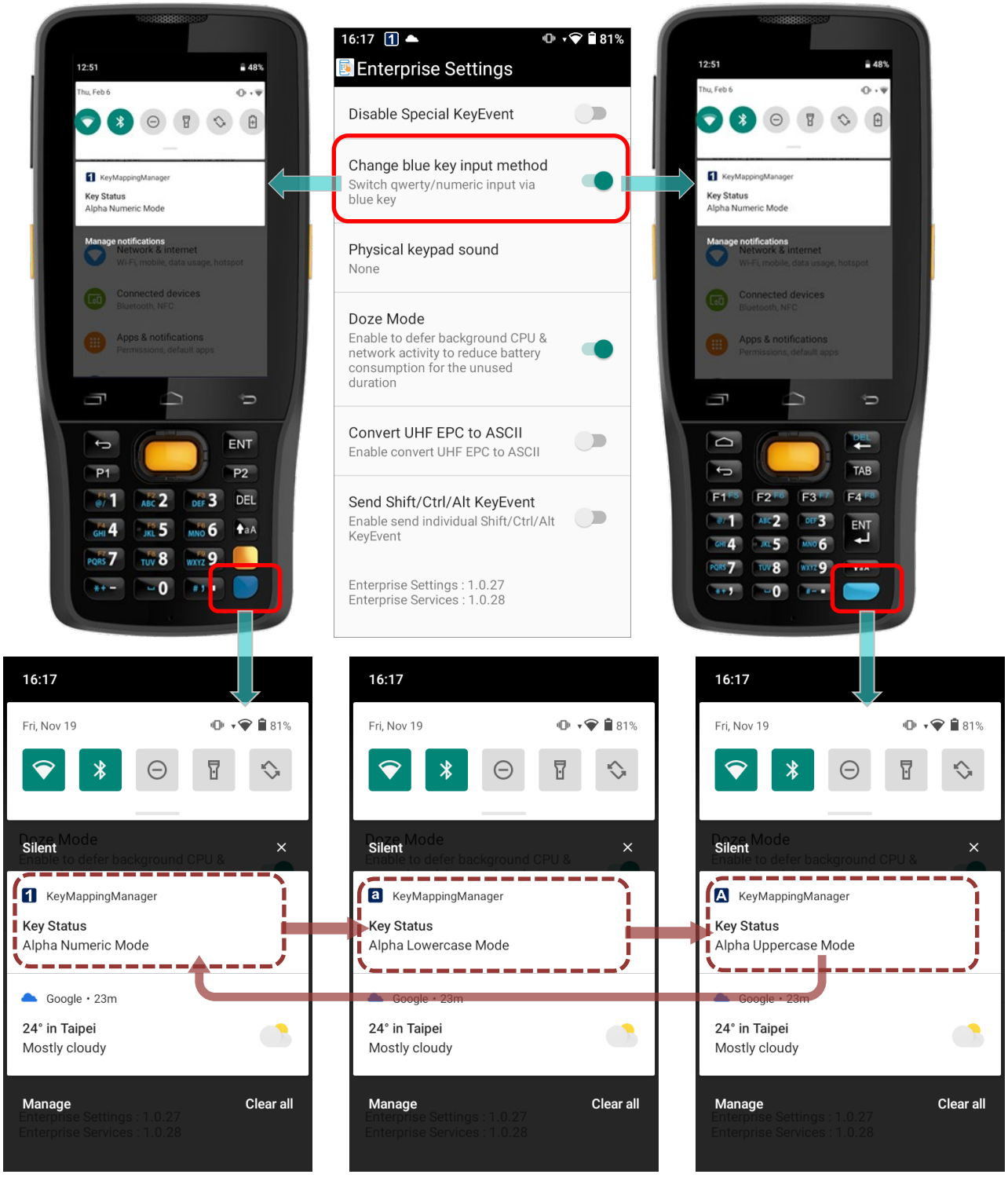


Note:

Turning on "Disable Special KeyEvent" will not affect barcode scanning by pressing trigger keys.

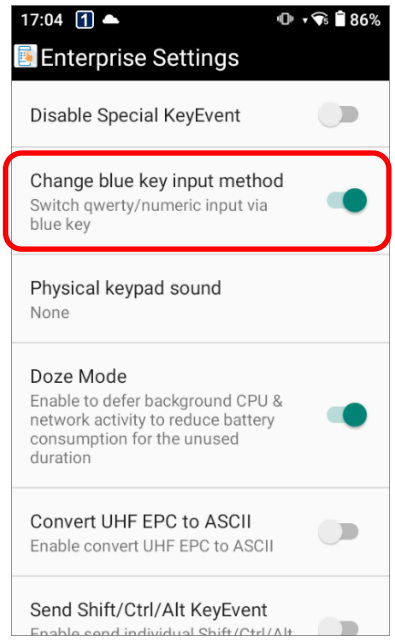
3.8.2. CHANGE BLUE KEY INPUT METHOD

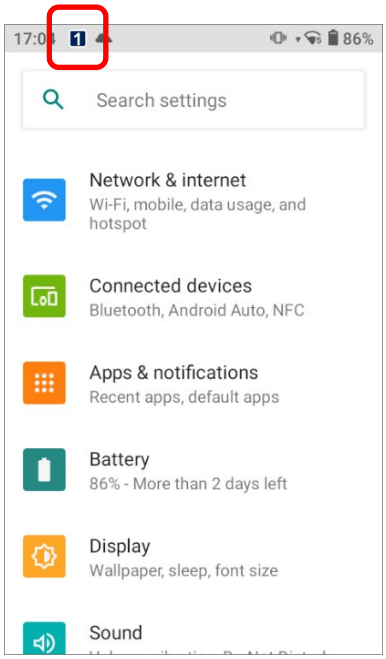
You can turn on "**Change blue key input method**" to change input mode of the physical keypad. By enabling this function, you can cycle through **Alpha Numeric Mode**, **Alpha Lowercase Mode**, and **Alpha Uppercase Mode** with simply pressing **Alpha Key** (the blue key).

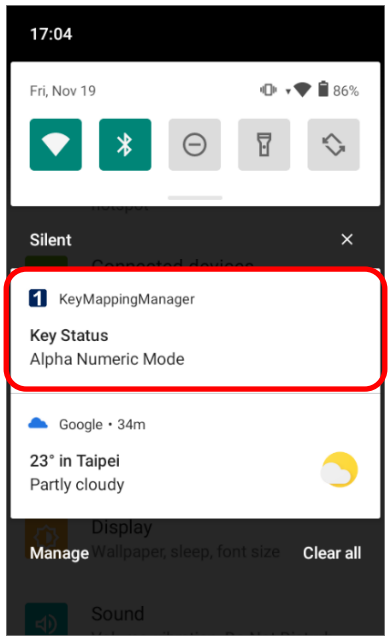


ALPHA NUMERIC MODE

Once you turn on "**Change blue key input method**", the physical keypad changes to be numeric keypad immediately. An icon 1 shows up in the status bar to indicate **Alpha Numeric Mode** is on.

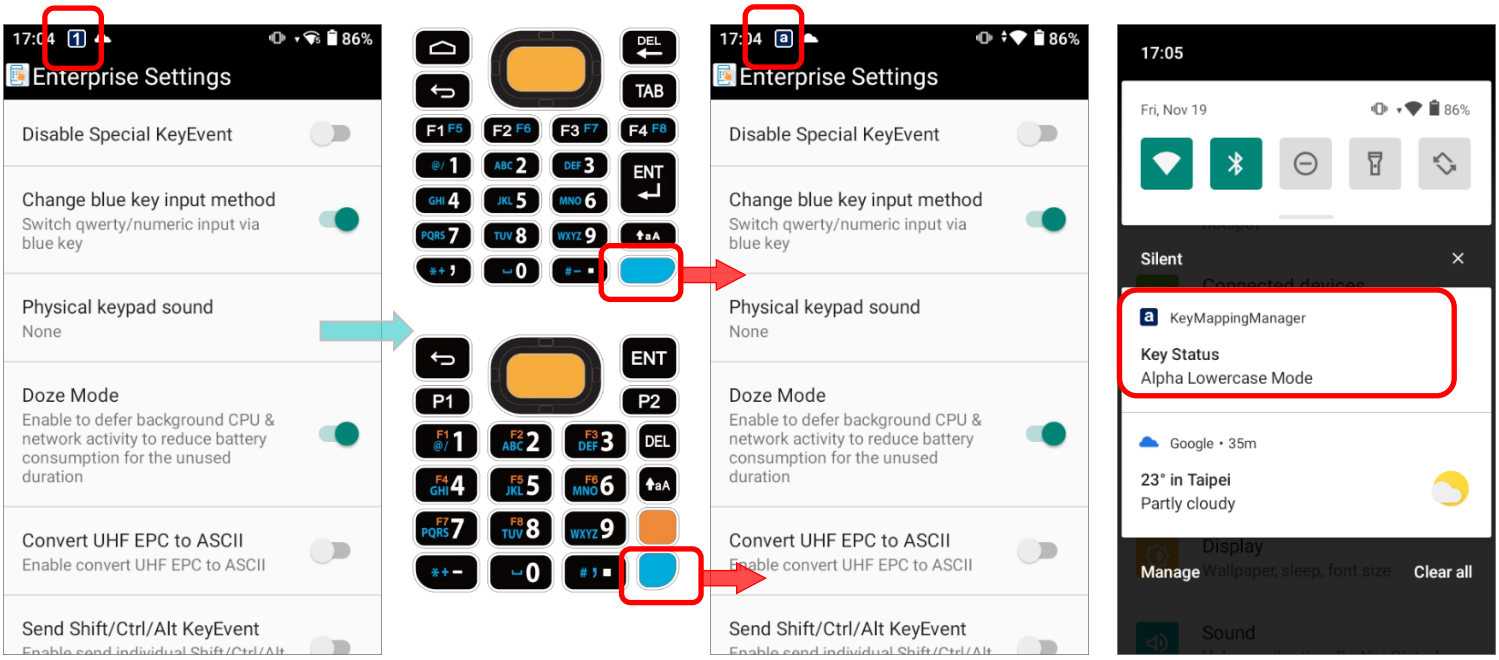






ALPHA LOWERCASE MODE

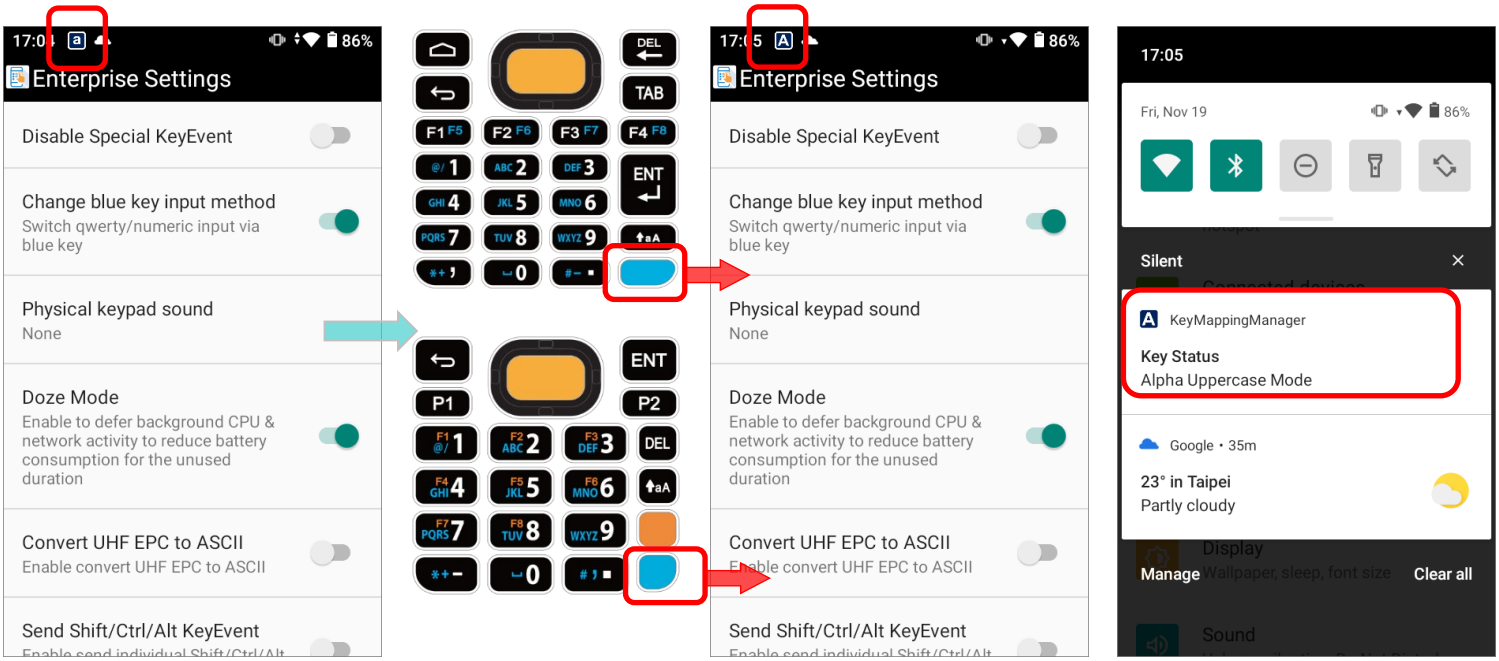
In **Alpha Numeric Mode**, press **Alpha Key** (the blue key) once, and the physical keypad will change to be lowercase keypad with an icon a appears in the status bar.



ALPHA UPPERCASE MODE

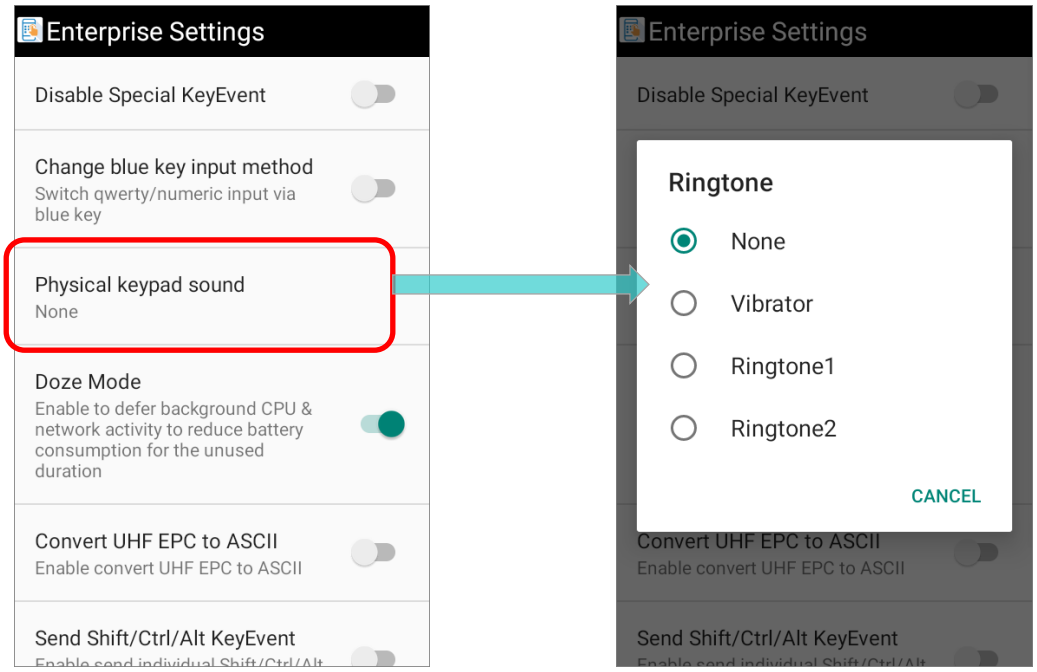
In **Alpha Numeric Mode**, press **Alpha Key** (the blue key) twice, or press **Alpha Key** (the blue key) once in **Alpha Lowercase Mode** to change the physical keypad into uppercase keypad with the **Alpha Uppercase Mode** icon shows up in the status bar.

Press **Alpha Key** (the blue key) again to switch to **Alpha Numeric Mode**.



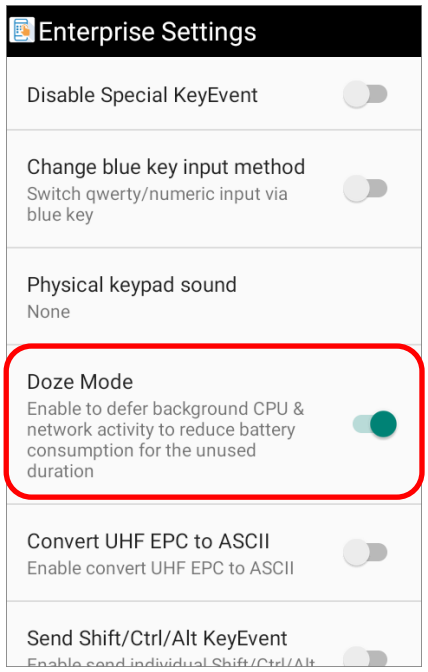
3.8.3. PHYSICAL KEYPAD SOUND

Tap to select the physical keypad sound from the pop-up window. The default setting is "**None**".



3.8.4. DOZE MODE

"**Doze Mode**" is enabled by default. Please refer to https://developer.android.com/training/monitoring-device-state/doze-standby for details.

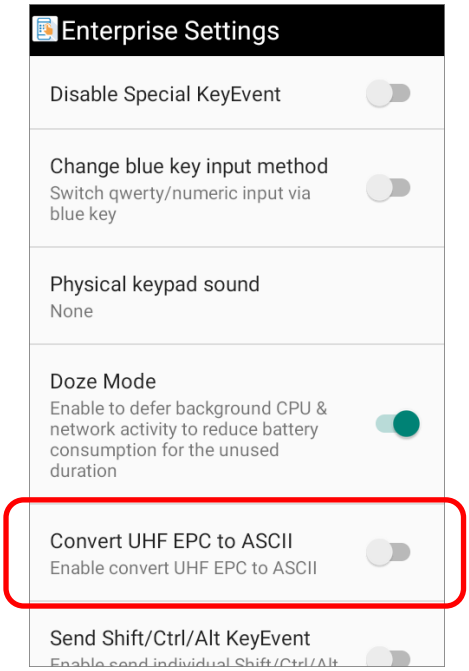


3.8.5. CONVERT UHF EPC TO ASCII

Enable "**Convert UHF EPC to ASCII**" to work with RK25 UHF RFID Reader to convert the EPC code (hexadecimal) to ASCII code under the following conditions:

- All the decoded EPC code (hexadecimal) corresponds to ASCII code must be visible characters. If not, the EPC code would not be converted and remaind as hexadecimal values.

- If the last two values are 00, the 00 will be deleted and then the EPC code is converted to ASCII code, e.g. the decoded EPC code is 3538355959504a5442434900, and it becomes ASCII mode EPC "585YYPJTBCI" after being converted.



3.8.6. VERSION

The version information about **Enterprise Settings** is listed right below "**Convert UHF EPC to ASCII**".

Chapter 4

BASIC OPERATION

This chapter describes the basic skills to work with the RK25 mobile computer, for instance how to operate the home screen, check system status and manage notifications. The add-on utilities for applications regarding data collection, processing, and transmission are introduced in the following chapters.

IN THIS CHAPTER

4.1.Home Screen 135
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4.4.OS Update 152
4.5.Back up Your Data 155
4.6.Reset to Factory Default.....157

4.1. 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.

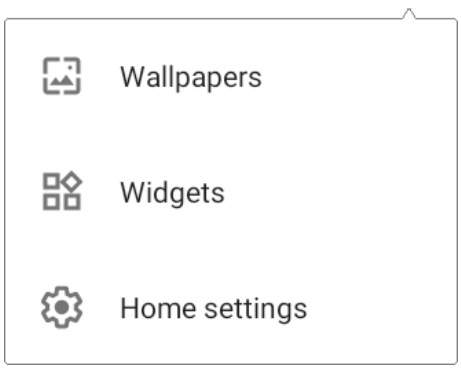
CHANGE HOME SCREEN WALLPAPER

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**.



4.1.1. 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.

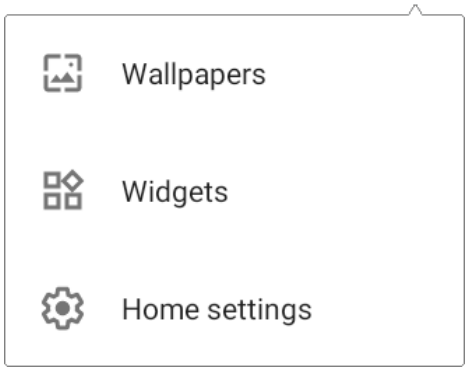
Long pressing certain applications such as Chrome or Gmail may show the **app shortcuts**. To add such applications from **App Drawer** to **Home** screen, please:

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 APPLICATIONS 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.

4.1.2. 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 FOLDER

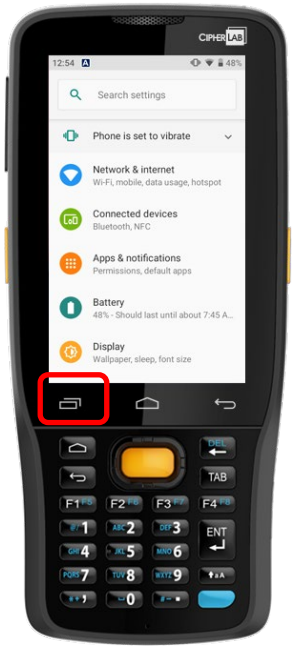
1) Tap and hold the folder you would like to remove.
2) Drag the folder to the top of the screen where the option **"X Remove**" is located.

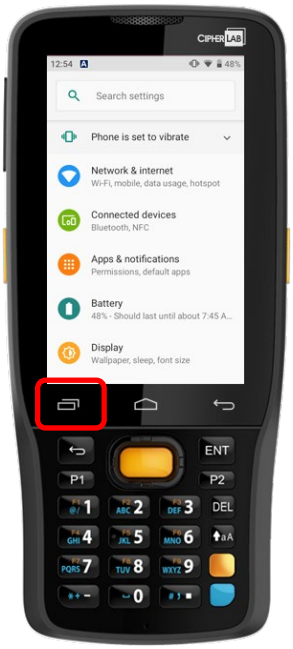
Note:

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

4.1.3. 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 in order to release RAM. Remember to save your data or settings before closing any application.

4.2. STATUS BAR

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

4.2.1. 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.

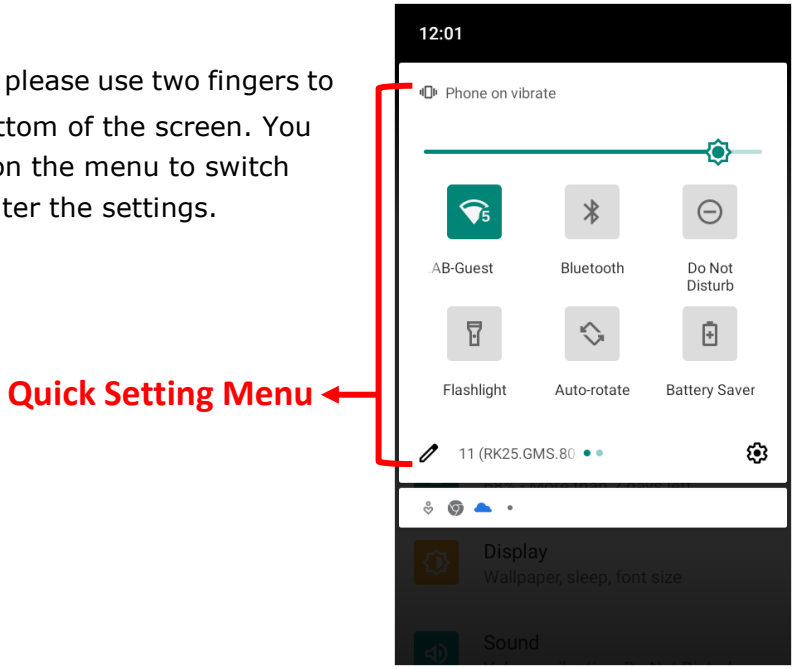
NOTIFICATION ICONS

Icon	Description
	Android System notification such as “**USB debugging connected**” or “**Charging this device via USB**”. Open **Notifications Drawer** 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.
	Wi-Fi will turn on automatically when there’s the saved network with a strong signal nearby.

4.2.2. OPEN QUICK SETTING MENU

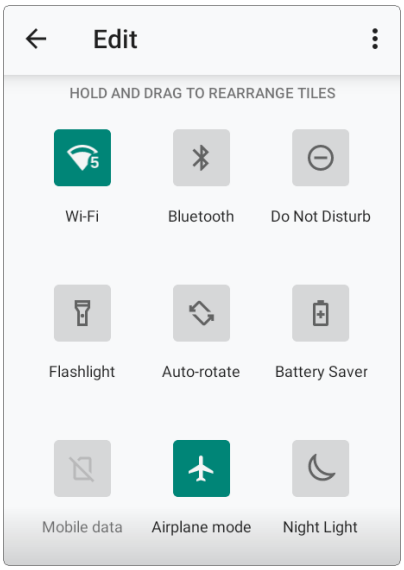
The **status icons** are related to essential settings regarding the device's remaining power, Bluetooth status or Wi-Fi connectivity status. The status bar offers a quick access for you to easily make adjustments of the settings.

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.

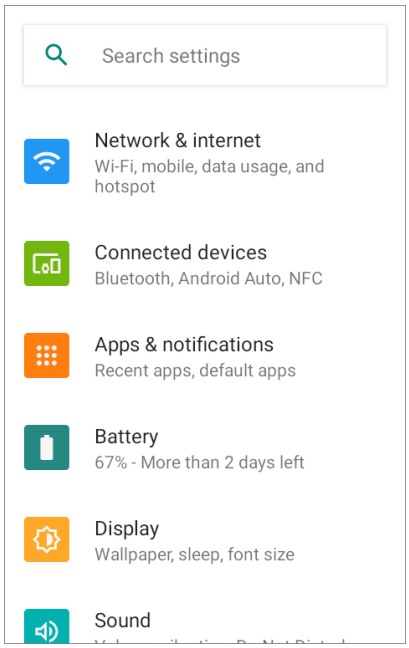


Tap on the two buttons, and , on the bottom side of the **Quick Setting Menu** will respectively enter the below pages:

- **Quick Setting Menu Edit Page**



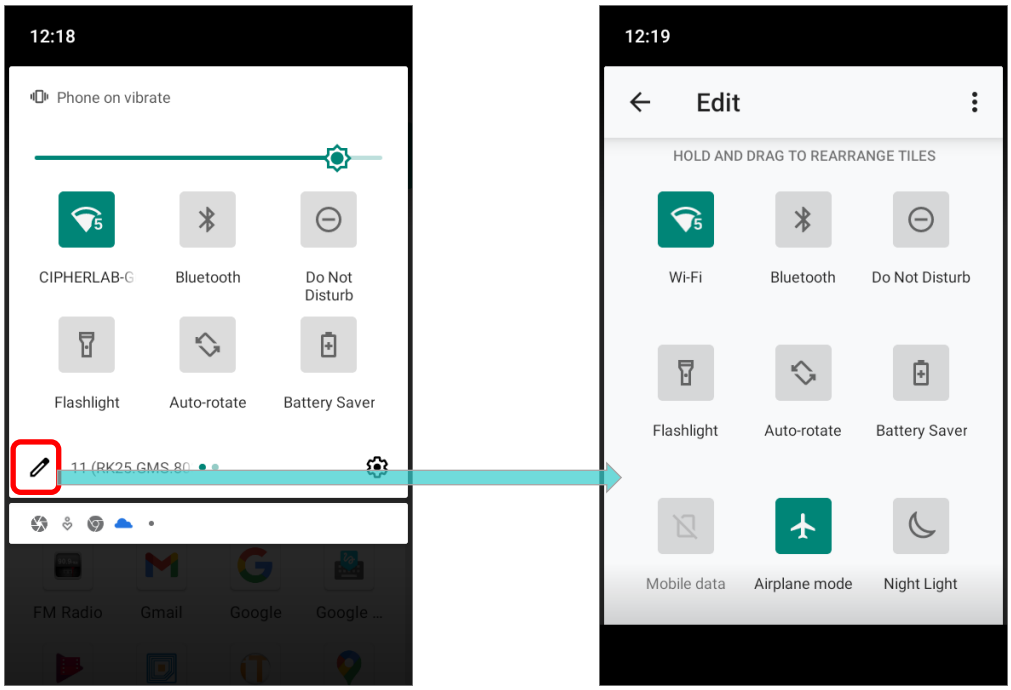
- **"Settings" Page**



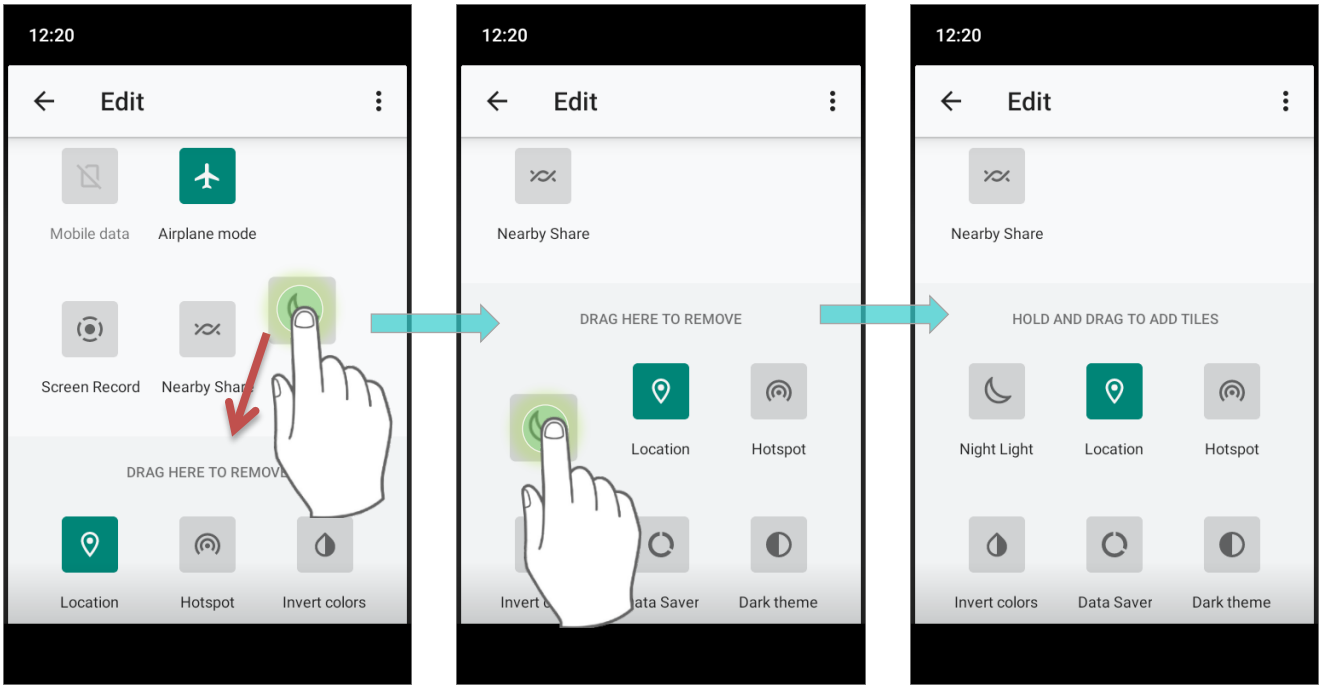
EDIT QUICK SETTING MENU

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

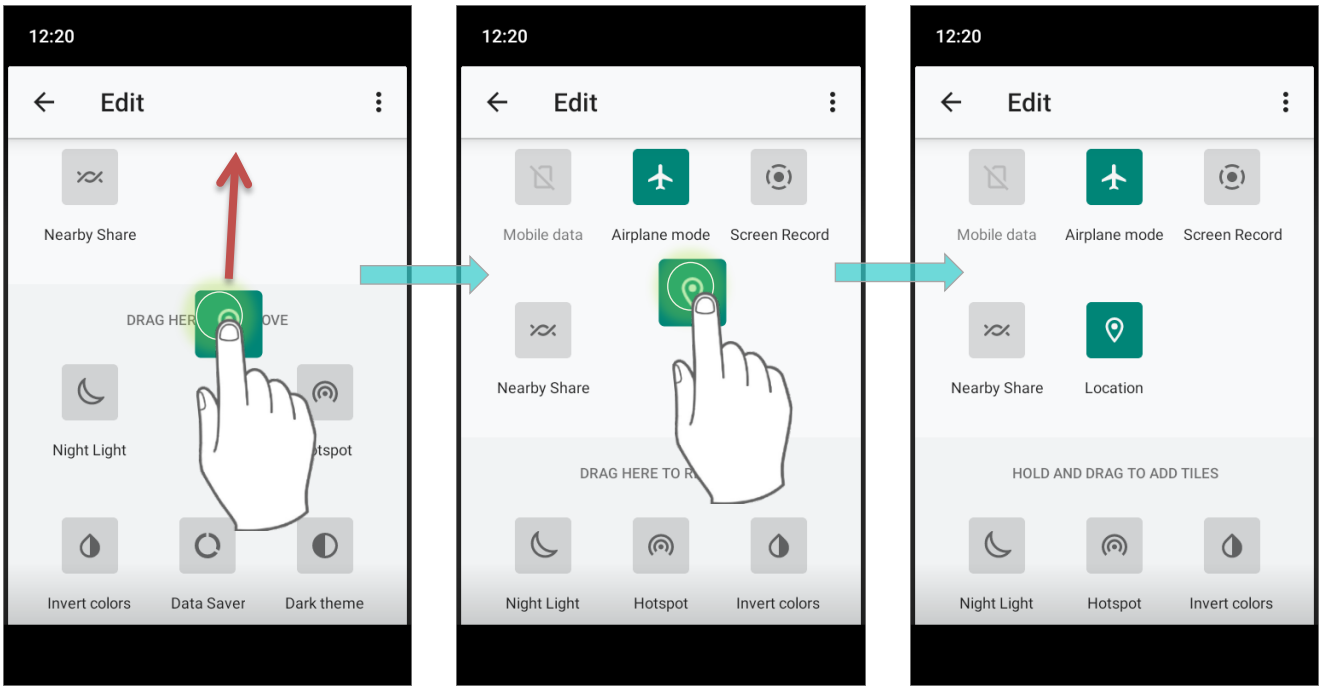
1) Click "**EDIT**" to get into **Edit** page.



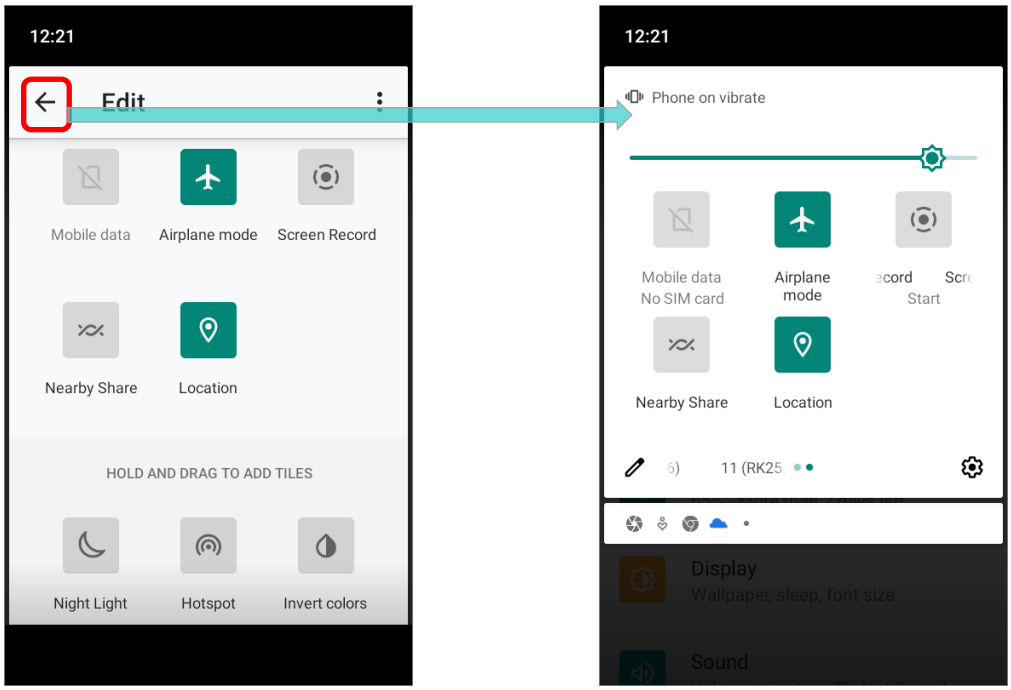
2) **Remove**: To remove certain item, please tap on and hold the icon to be removed, and drag it to the "**Drag here to remove**" area and then release it.



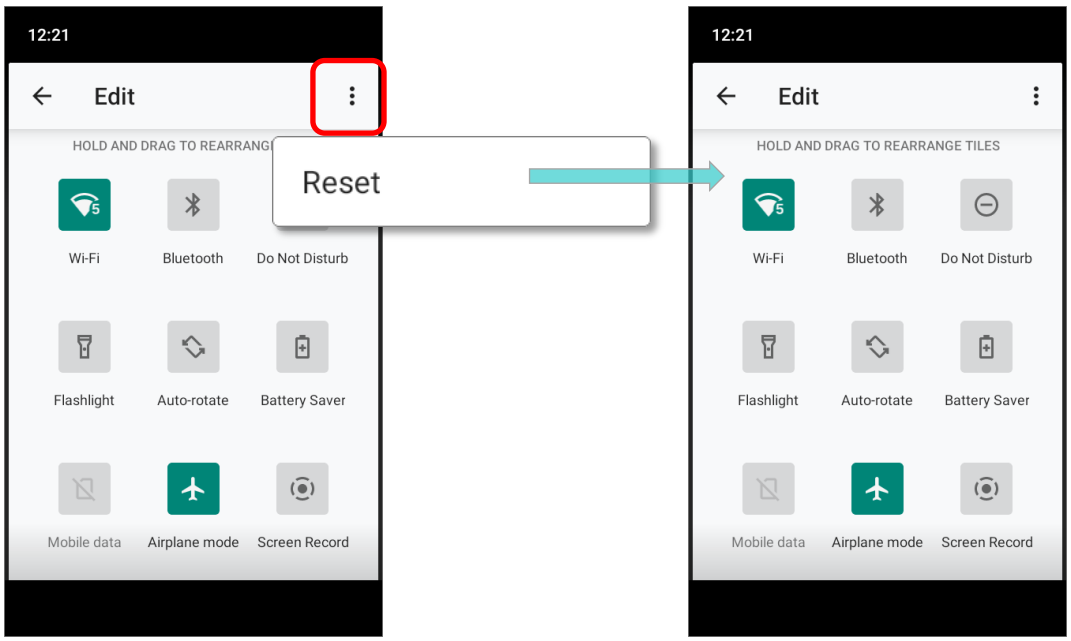
3) **Add**: To add certain item, please tap on and hold the icon to be added and drag it to the upper area and then release it.



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



To reset the **Quick Setting Menu**, please tap on "**EDIT**" to enter **Edit** page. Tap on **More** icon in the upper-right corner, and then "**Reset**".

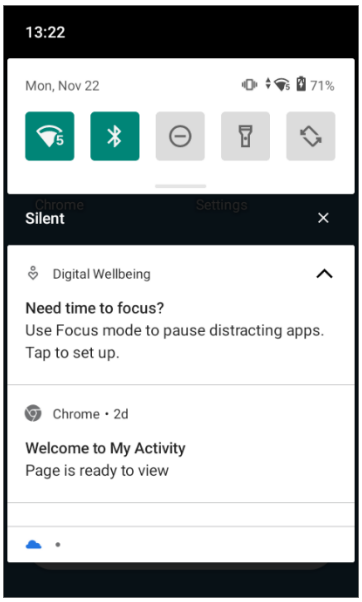


4.2.3. OPEN NOTIFICATIONS DRAWER

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

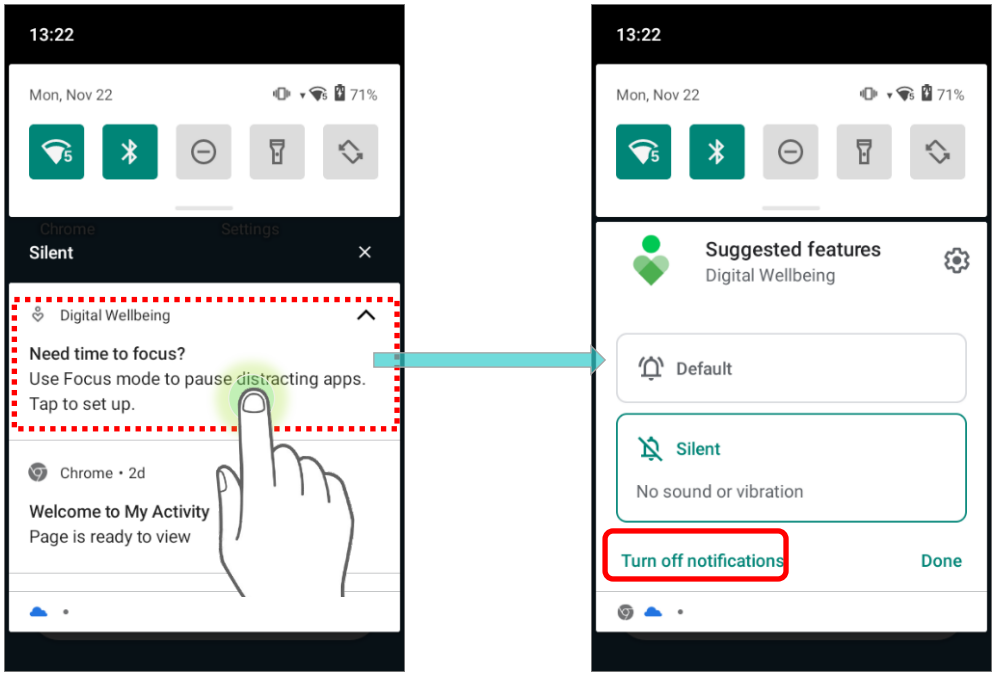
CHECK OUT NOTIFICATION

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.



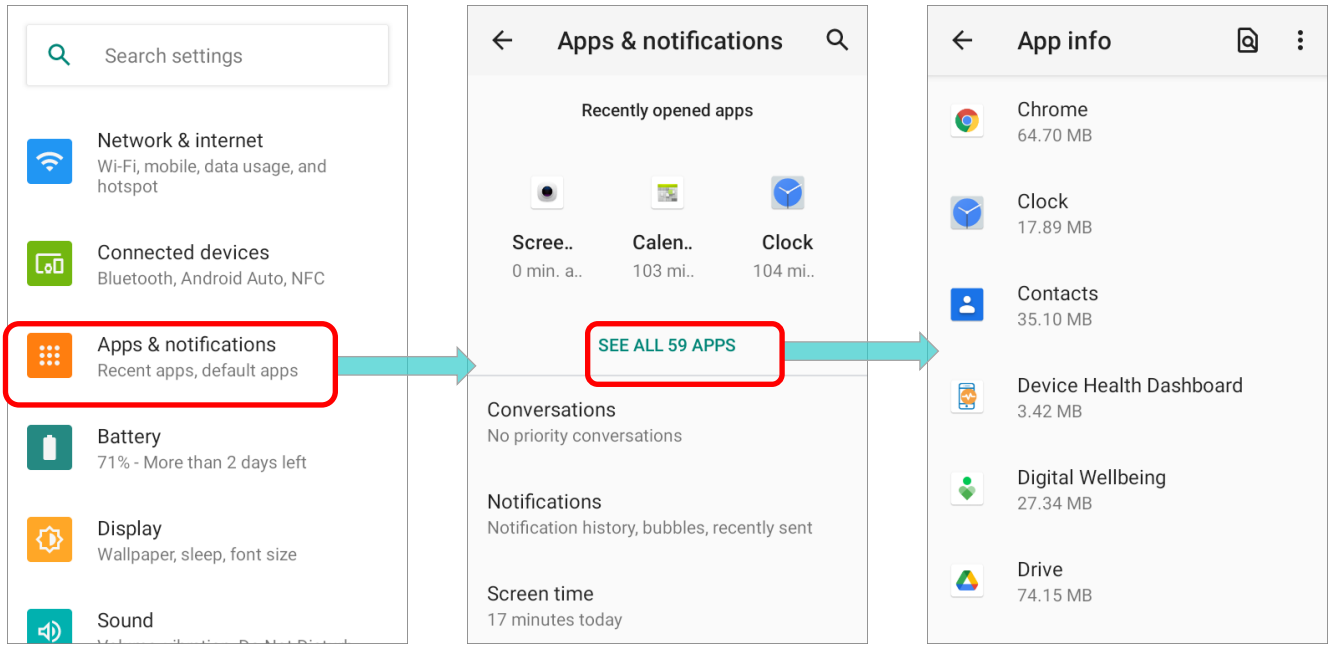
DISABLE NOTIFICATION

You can turn off the notification of a specific app by tapping and holding on the notifications card until the corresponding app name reveals. Tap "**Turn off notifications**" to turn it off.

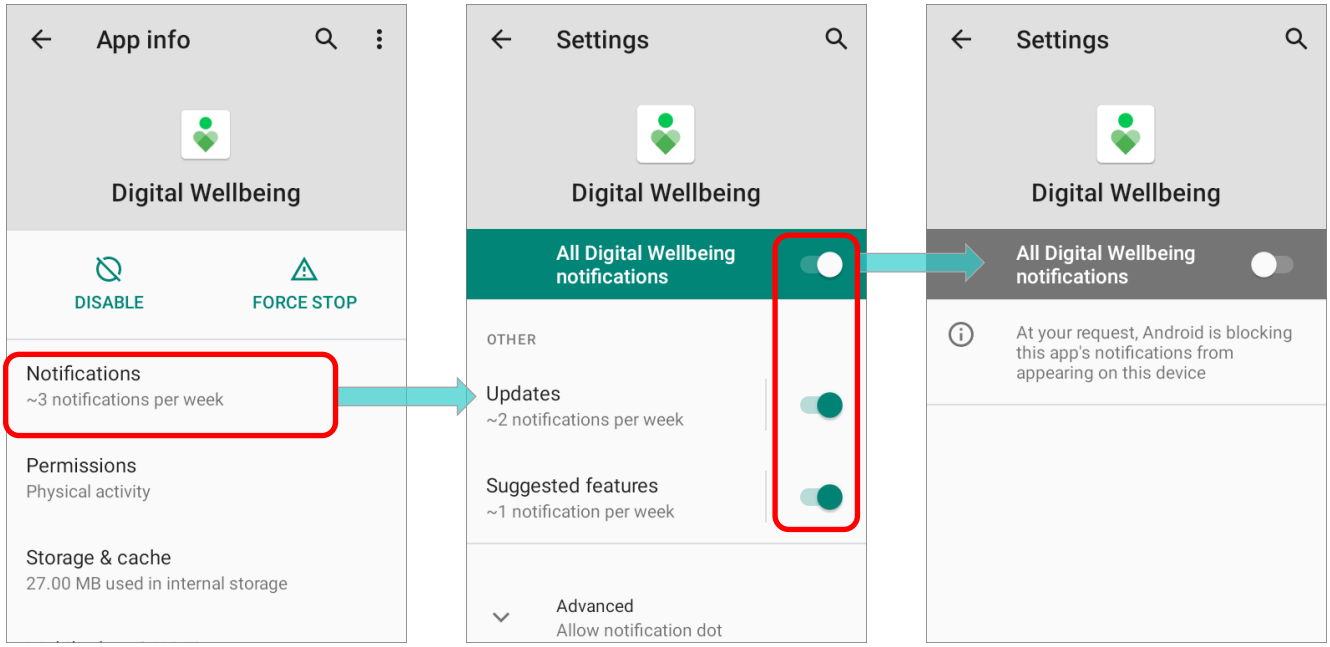


OR

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.

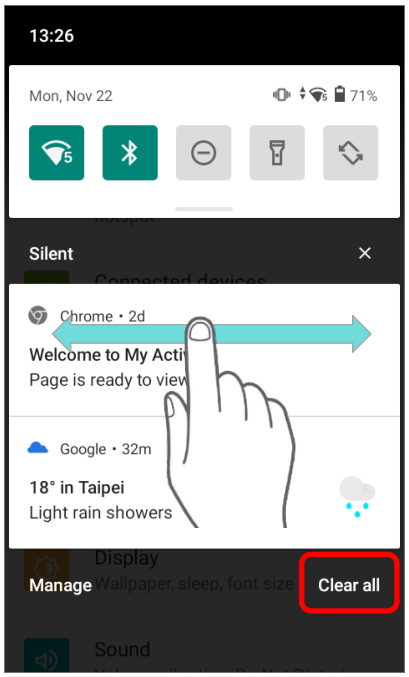


2) Tap to enter the "**App info**" page and tap "**Notifications**" to switch on or off "**Show notifications**" and other settings.



CLEAR NOTIFICATION

To dismiss a single notification, simply swipe the notification card 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.



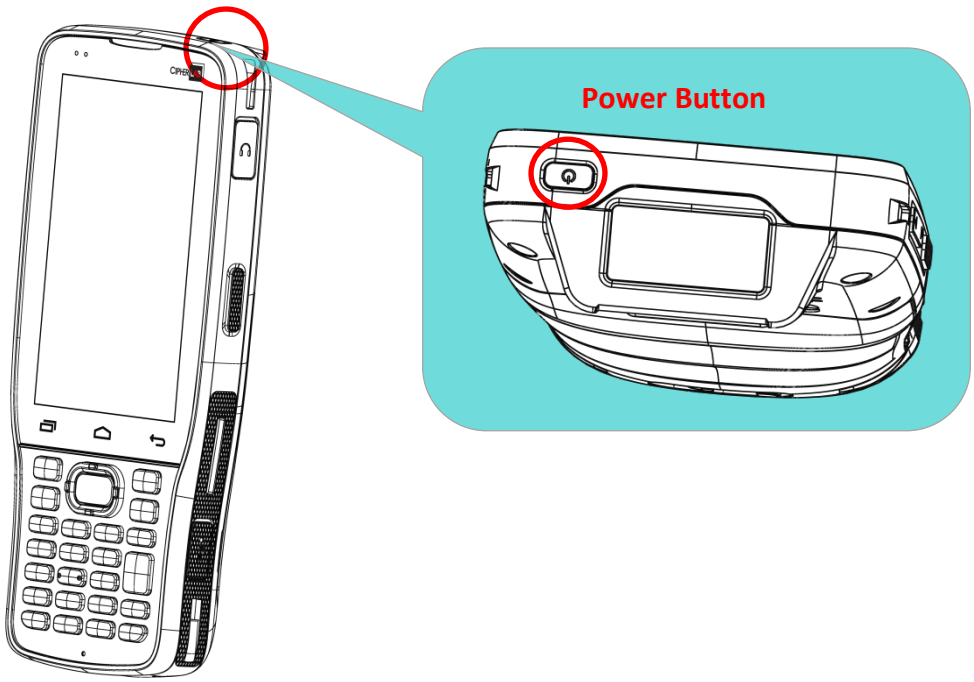
4.3. SUSPEND & LOCK

4.3.1. 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 RK25

Press the power button to suspend the mobile computer. The mobile computer will automatically suspend when the time period set in Screen Timeout Settings has passed without any activity.

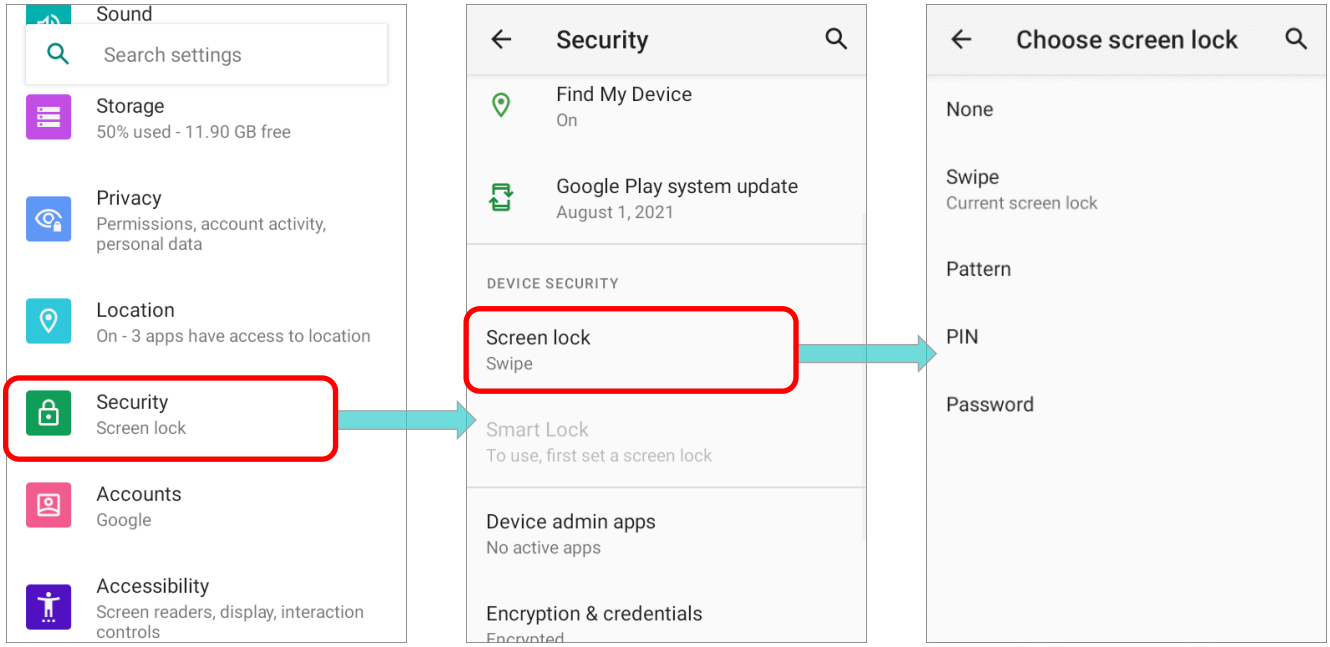


4.3.2. LOCK DEVICE

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 RK25

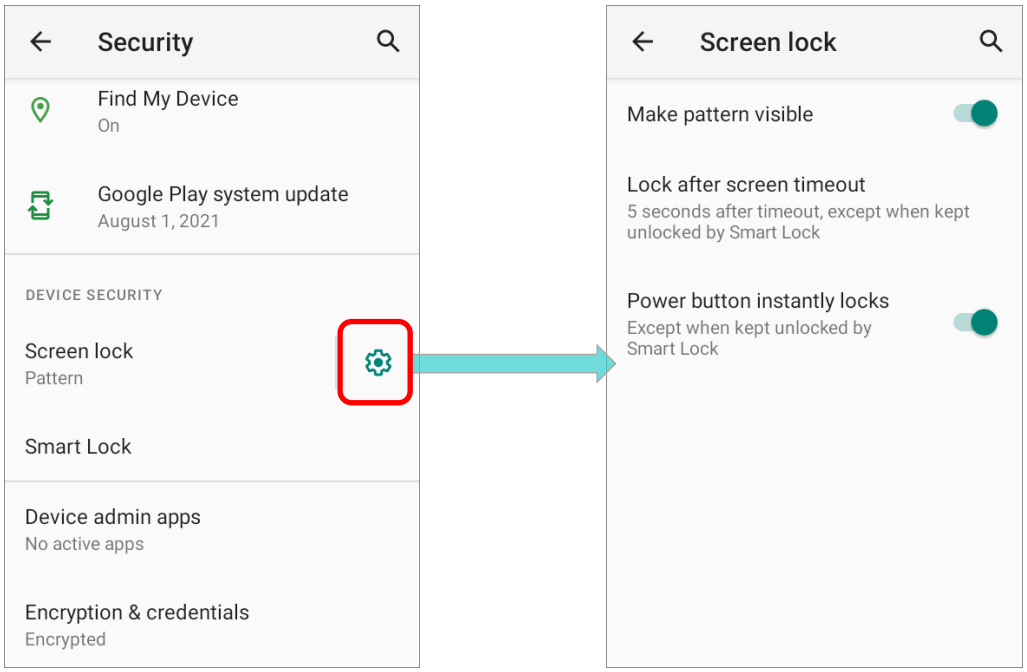
Go to **App Drawer (All Apps)** | **Settings** | **Security & location** | **Screen lock** to change the lock method.



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.

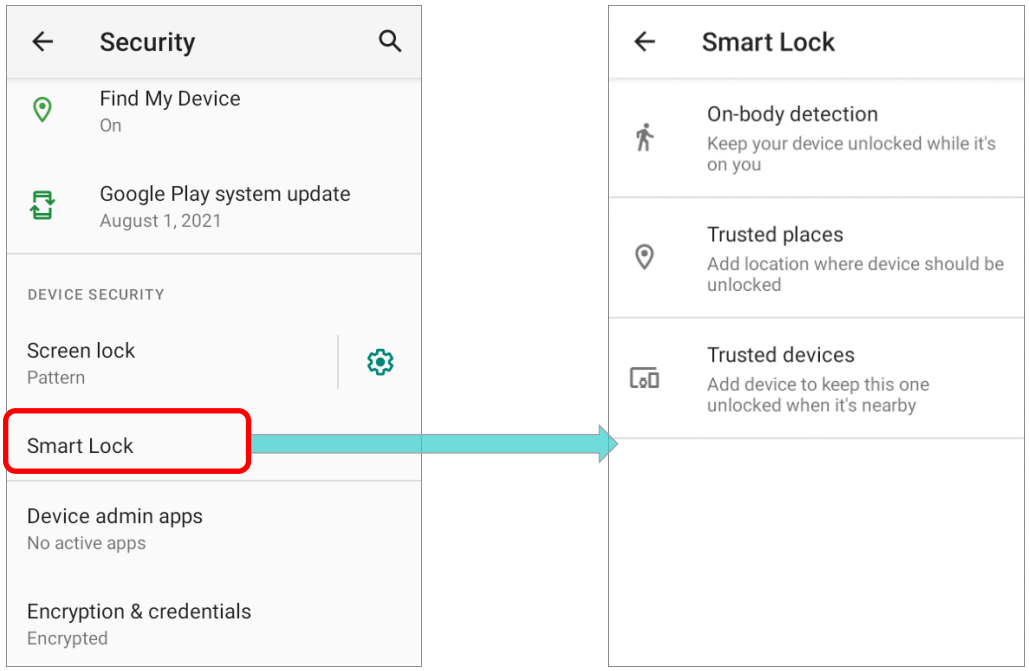
By selecting a **Pattern**, **PIN**, or **Password** method, you can access **Screen Lock** advanced settings.



Screen Lock advanced settings are:

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

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



4.4. 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.

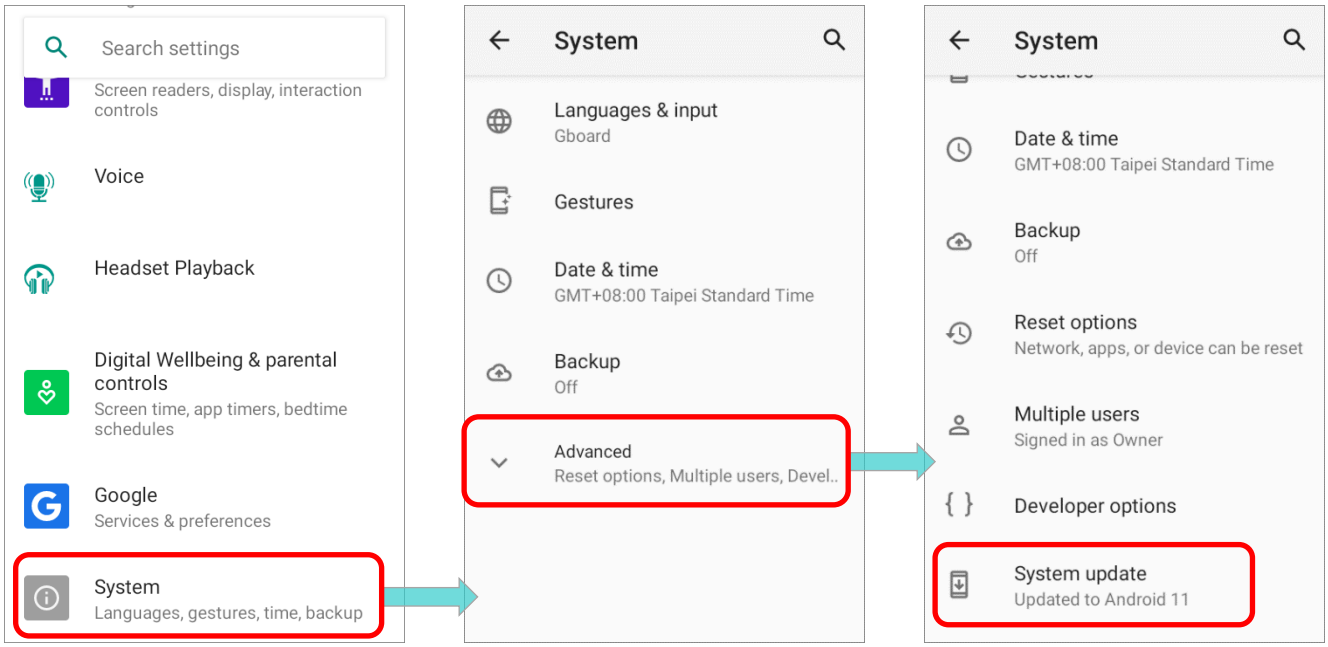
4.4.1. NETWORK UPDATE

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.

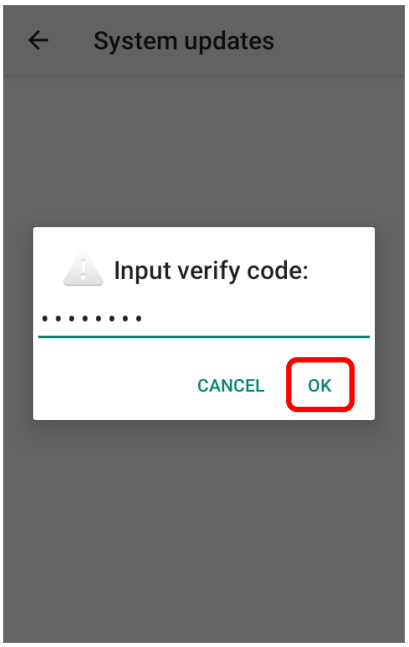
Note:

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

1) Go to **App Drawer** | **Settings** | **System** | **Advanced** | **System updates**.



2) A window pops up asking you to input the password for system update. Please contact with 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 RK25 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, RK25 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.

4.4.2. SD CARD UPDATE

RK25 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 "**sdupdate.zip**" onto the folder "**sdupdate**" 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 a micro USB cable/ the snap-on cable.

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

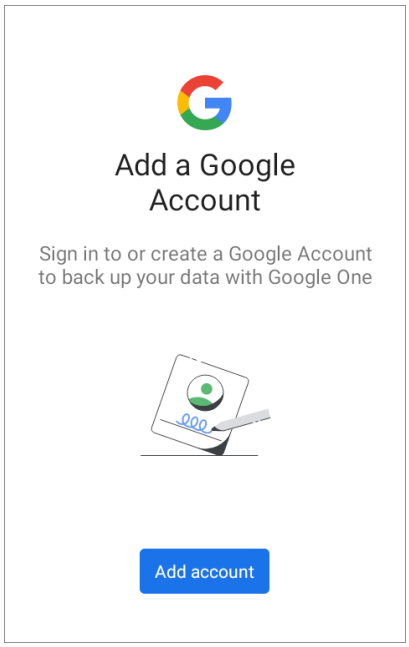
Note:

Make sure the SD card is properly inserted in the mobile computer; otherwise, the system is regarded as currently up to date.

4.5. 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:



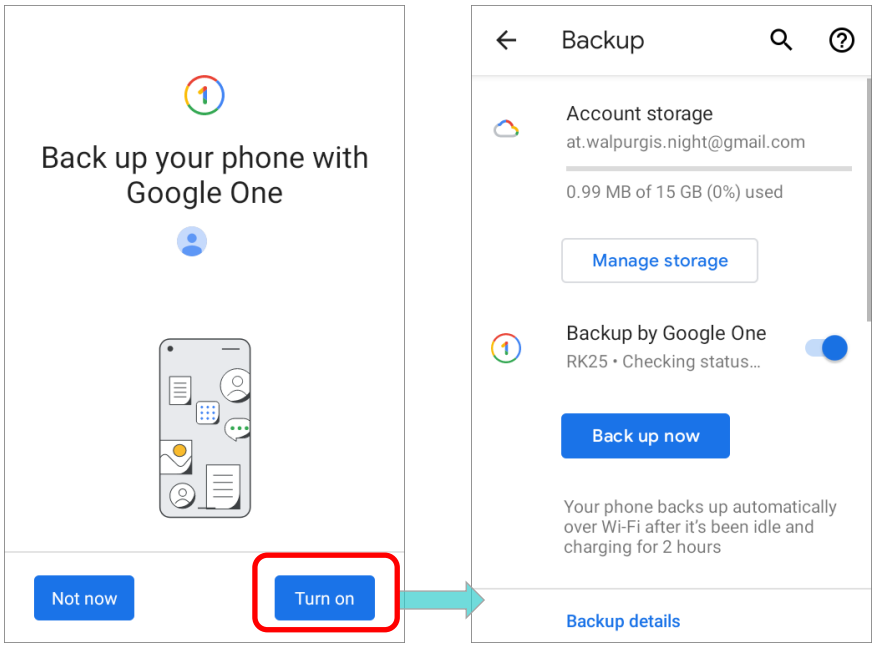
1) Make sure your device is connected with network.

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.

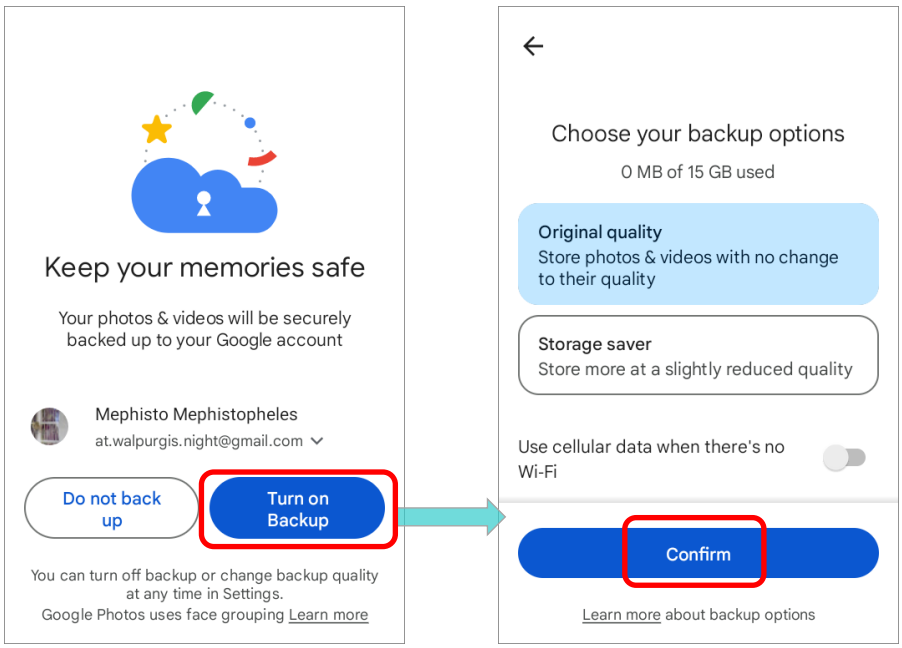
3) Tap to turn on "**Back up your phone with Google One**".



To restore your 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.

4.6. RESET TO FACTORY DEFAULT

Performing a factory reset will erase all data on your mobile computer (including, 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.

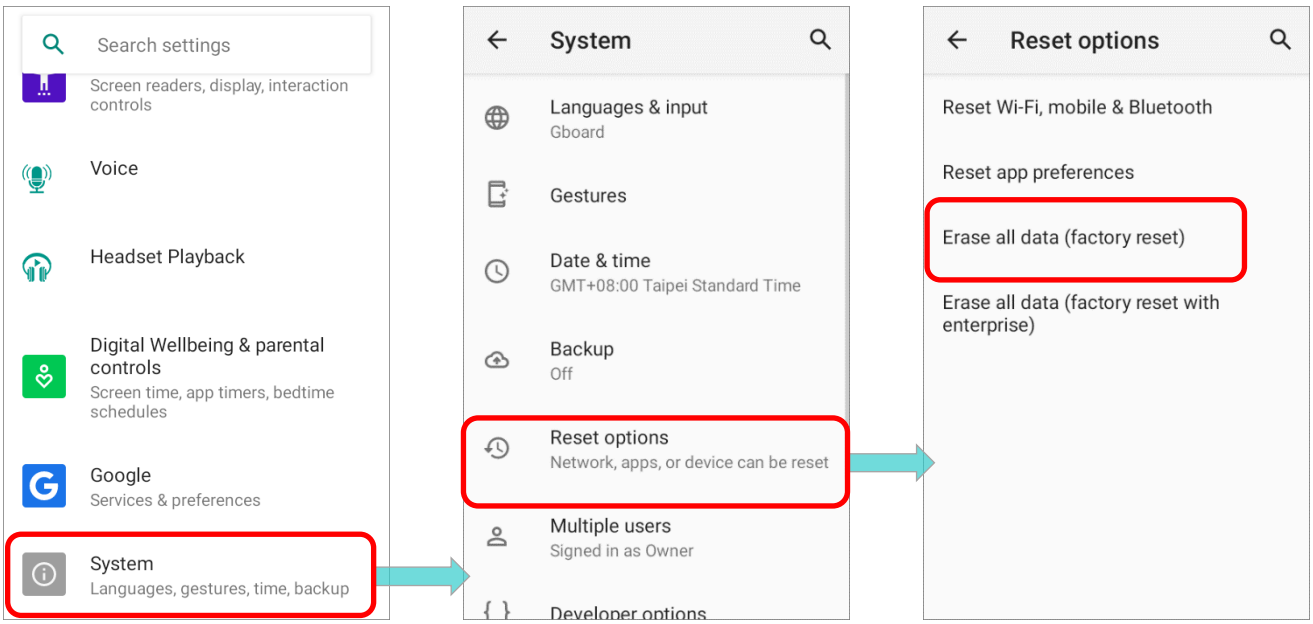
When setting your RK25 mobile computer by **ADC** (Android Deployment Configurator), the settings will automatically backup to "**enterprise partition**" of your RK25 mobile computer, and the settings saved in enterprise partition will not be erased by proceeding "**Factory data reset**". To erase all the settings, please select "**Erase all data** (**factory reset with enterprise**)".

4.6.1. ERASE ALL DATA (FACTORY RESET)

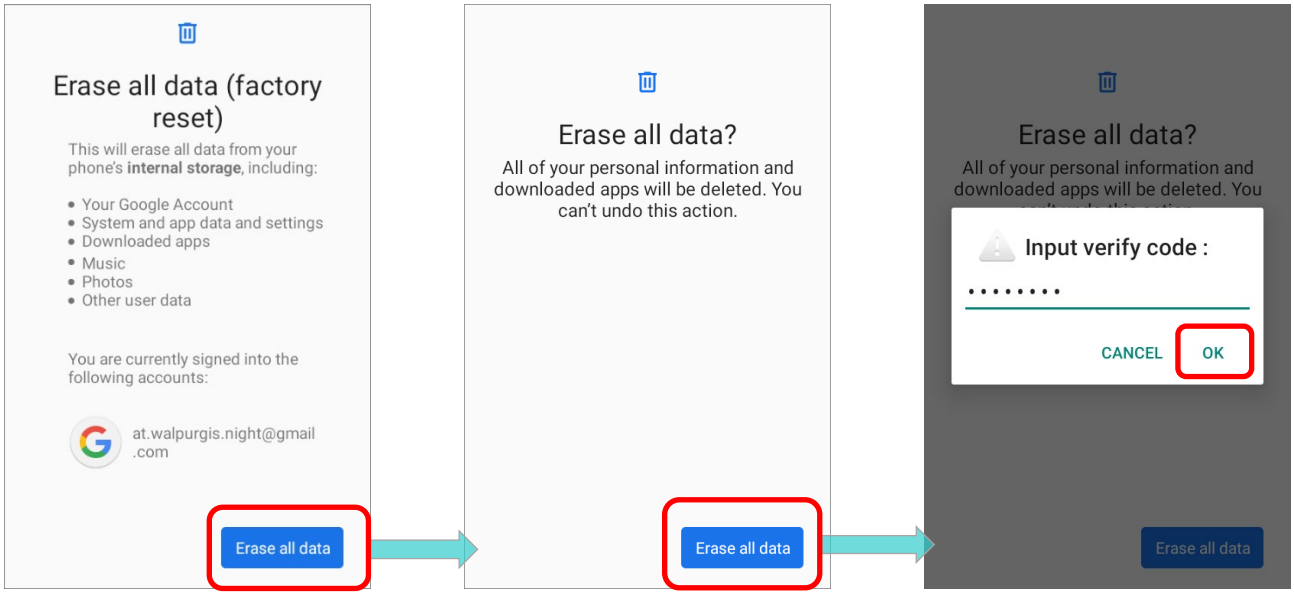
"**Erase all data (factory reset)**" will erase all the data except of the settings backed up in enterprise partition by ADC (Android Deployment Configurator).

To start:

1) Go to **App Drawer (All Apps)** | **Settings** | **System** | **Advanced**| **Reset options** and **Erase all data (factory reset)**.



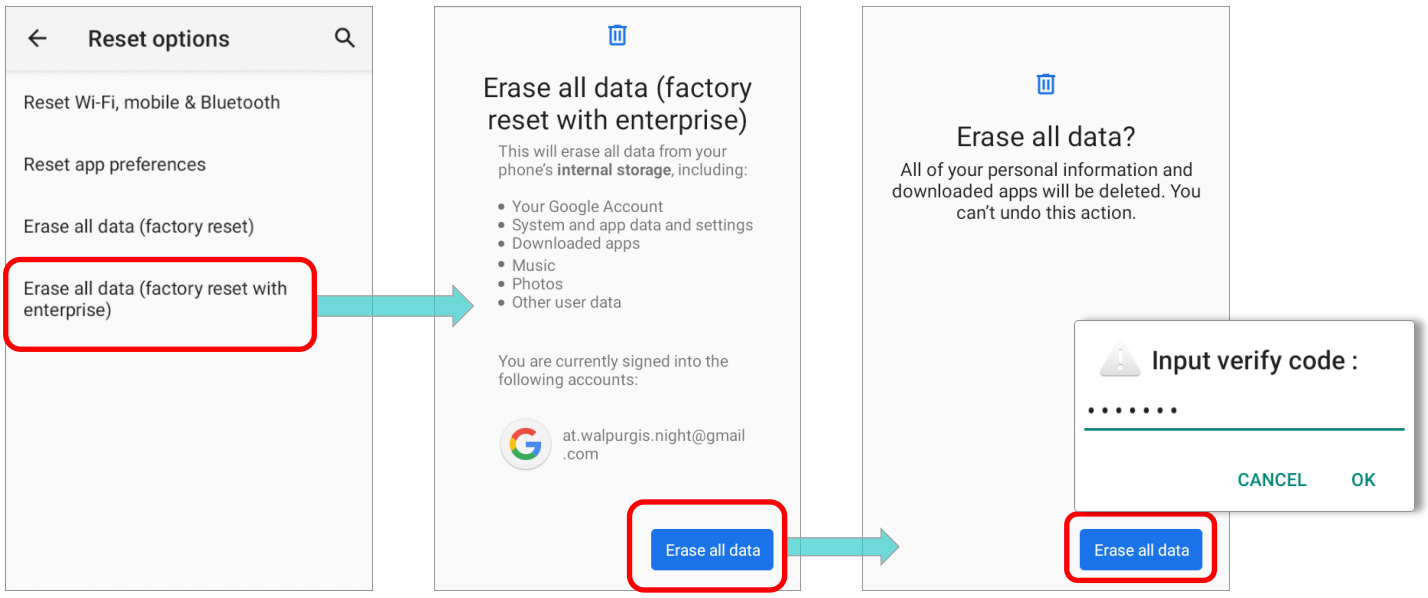
2) Confirm the action by tapping on the buttons and input the verification code (please contact with support@cipherlab.com.tw to obtain your verification code). Finally, tap **OK** to perform a factory reset.



4.6.2. ERASE ALL DATA (FACTORY RESET WITH ENTERPRISE)

Go to **App Drawer (All Apps)** | **Settings** | **System** | **Advanced**| **Reset options** and **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 to obtain your verification code). Finally, tap **OK** to perform a factory reset.



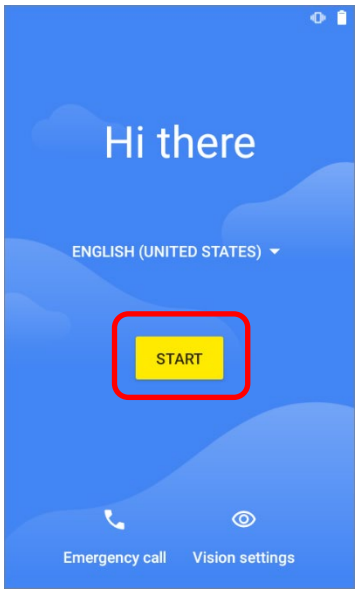
4.6.3. WELCOME WIZARD

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 **Connect to Wi-Fi**.

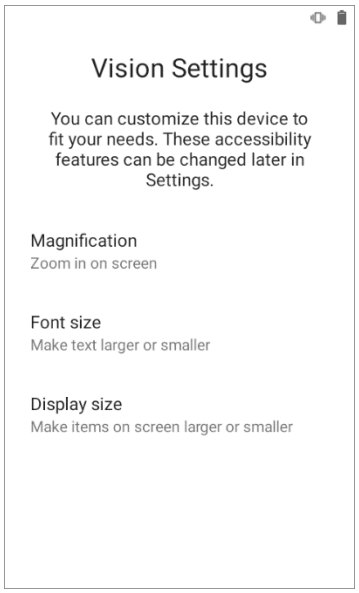
- **Step 1-1**

  Tap on "**START**" to proceed, or tap to enter "**Choose your language**" / "**Vision Settings**".



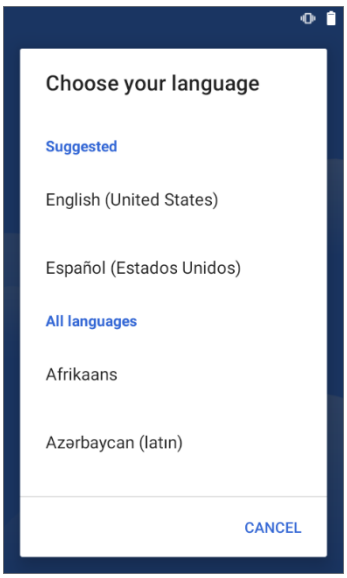
- **Step 1-2**

  Customize your device if needed.



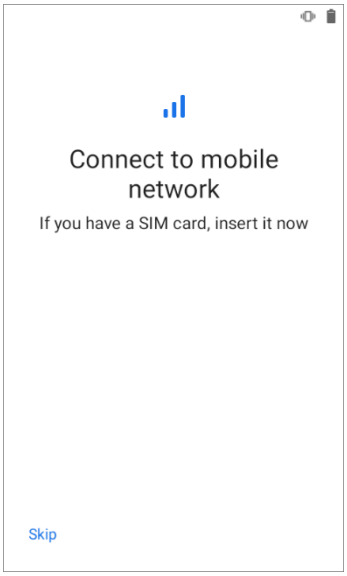
- **Step 1-3**

  Select your system language.



- **Step 2**

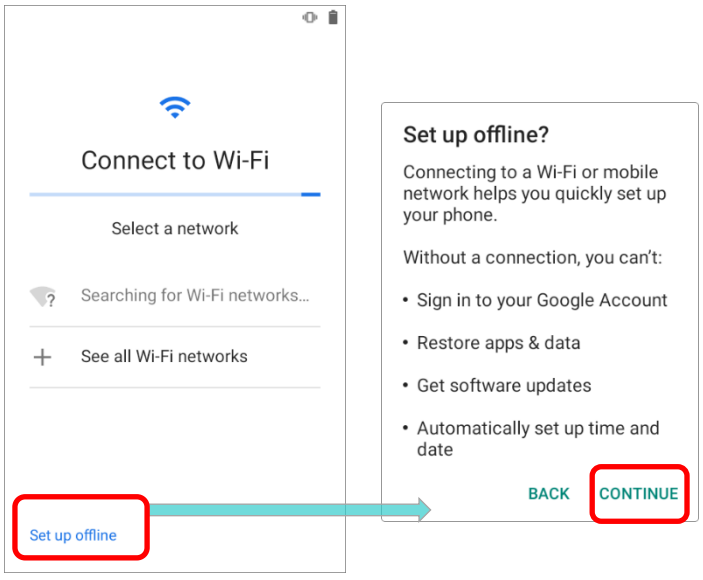
  Insert your SIM to connect to mobile network, or tap on "**SKIP**" to the next step.



- **Step 3**

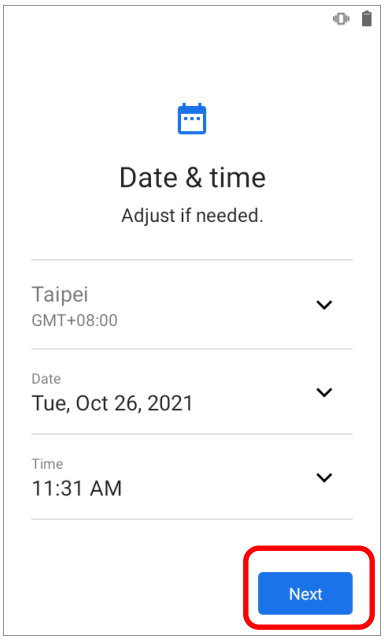
  Select a Wi-Fi network to log in or tap on "**Set up offline**" and confirm with "**CONTINUE**" to the next step.

  If logged in a Wi-Fi network, you will be further asked to sign in your Google Account to restore data.



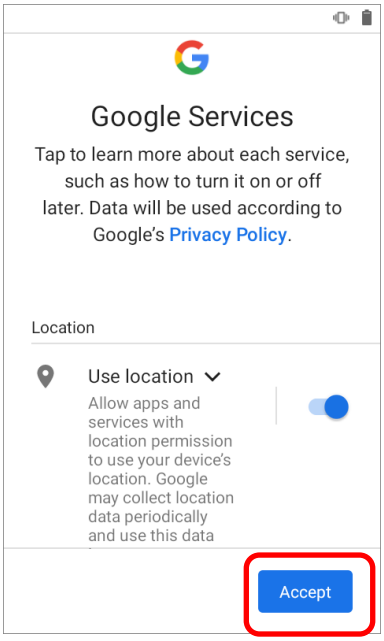
- **Step 4**

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



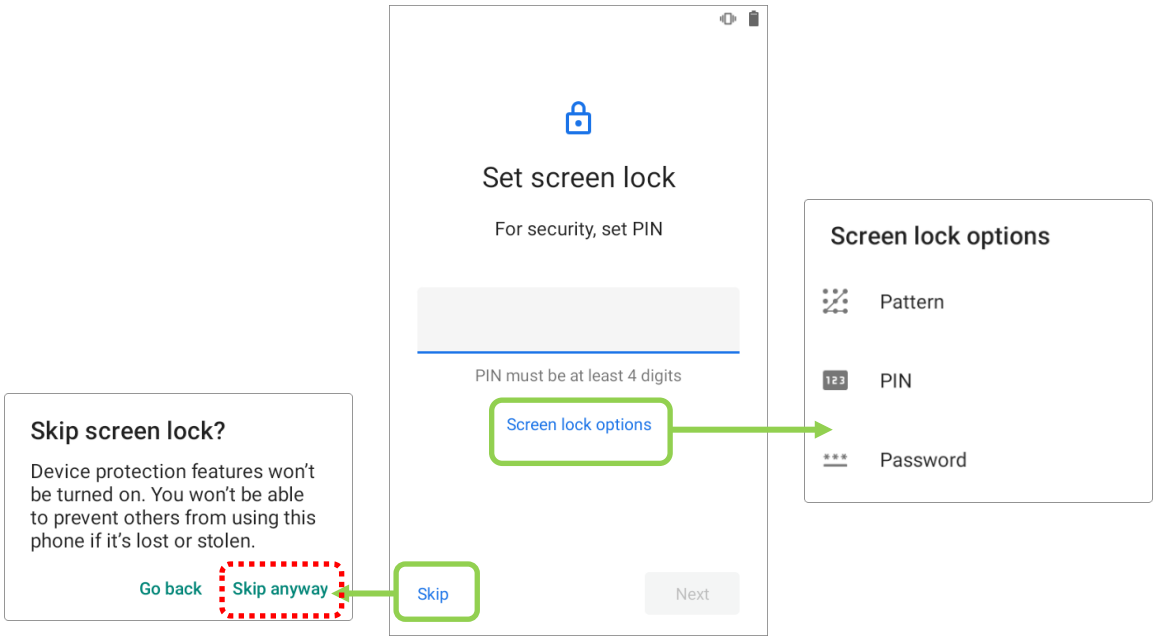
- **Step 5**

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



- **Step 6**

  Set up the protection methods to protect this device, or merely "**SKIP**" this step.



- **Step 7**

  It takes few seconds to complete the settings.

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

Chapter 5

WIRELESS RADIOS

The Wi-Fi module integrated on the mobile computer lets you configure and connect to network wirelessly.

IN THIS CHAPTER

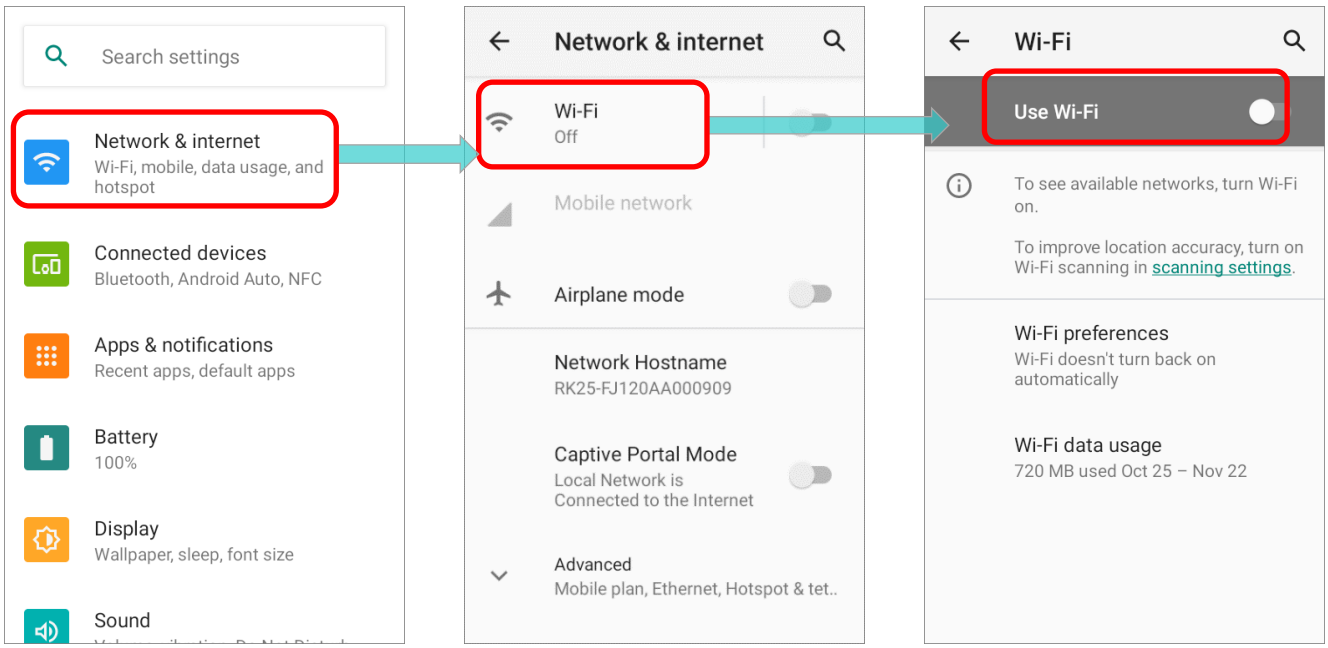
5.1 Use Wireless Local Area Network (Wi-Fi).....164
5.2 Use Bluetooth.....176
5.3 Use Near Field Communications.....184

5.1 USE WIRELESS LOCAL AREA NETWORK (WI-FI)

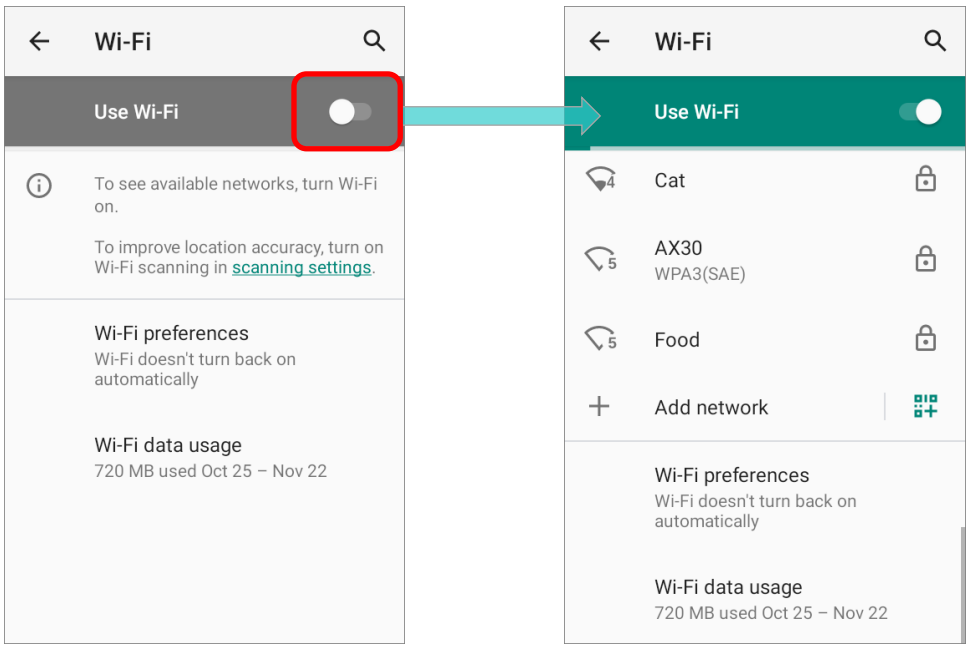
5.1.1. CONNECT TO WI-FI NETWORK

To power on Wi-Fi:

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



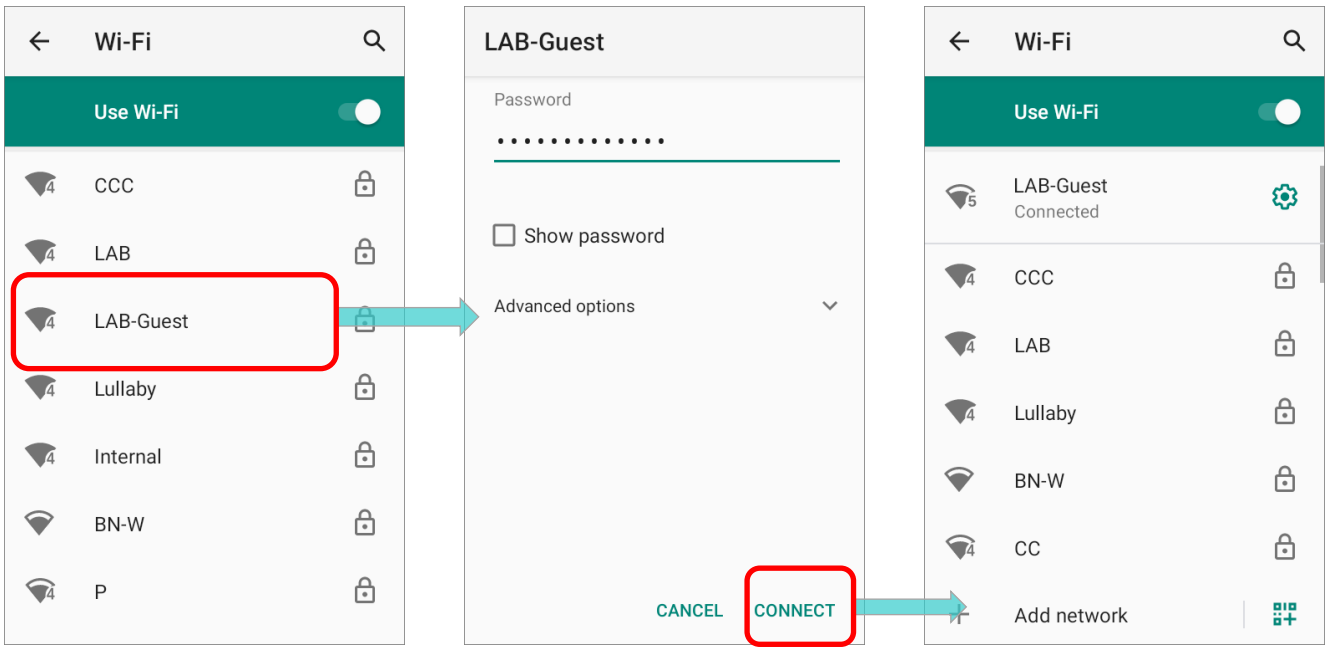
2) Tap the Wi-Fi switch to scan for available networks.



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**".

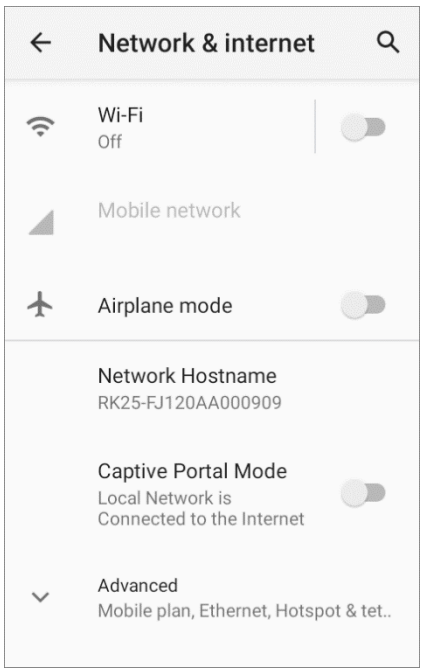
If the network is a secured one, the mobile computer prompts a dialog to enter the password for the connection.



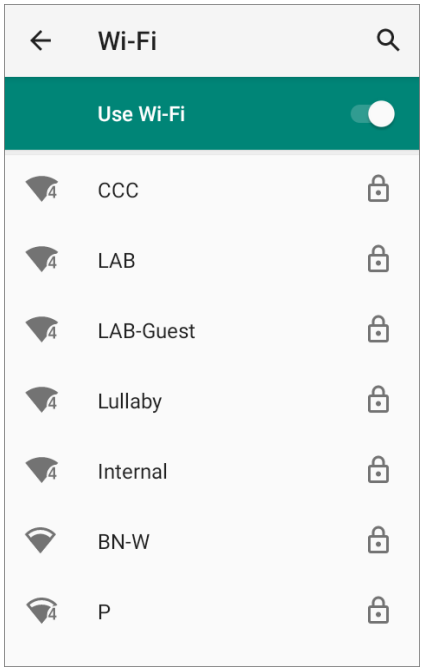
5.1.2. MANUALLY ADD WI-FI NETWORK

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.

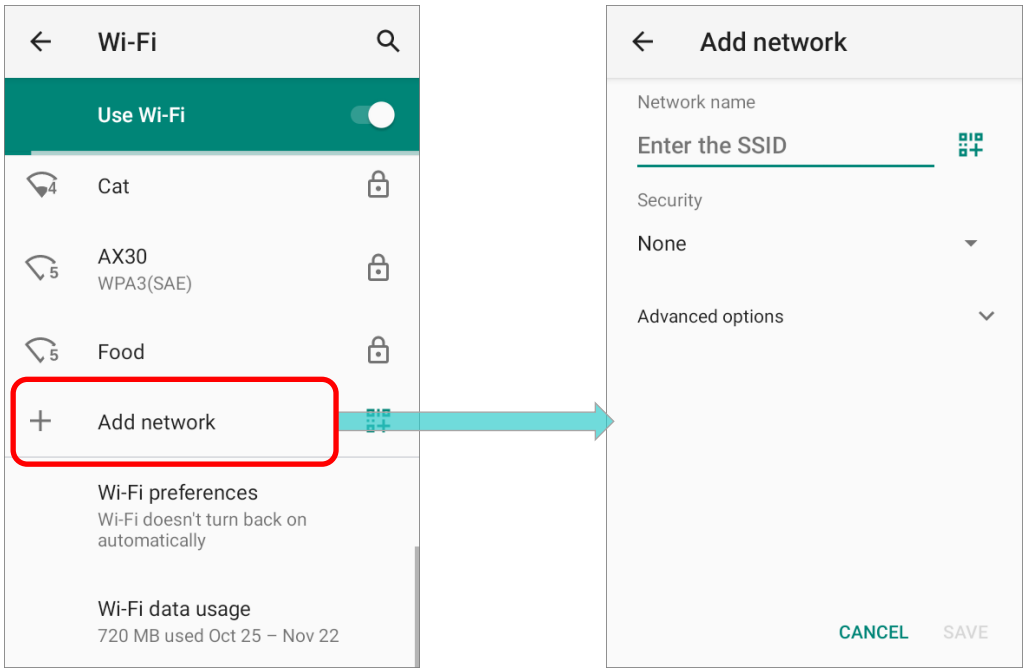
1) Go to **App Drawer (All Apps)** | **Settings** | **Network & internet** | **Wi-Fi** .



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.

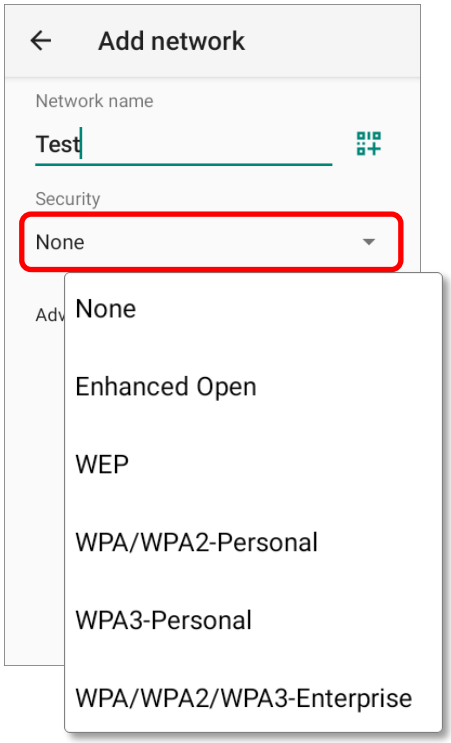
- For **WEP**, **WPA/WPA2-Personal**, and **WPA3-Personal** connections:

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

- For **WPA/WPA2/WPA3-Enterprose** 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.



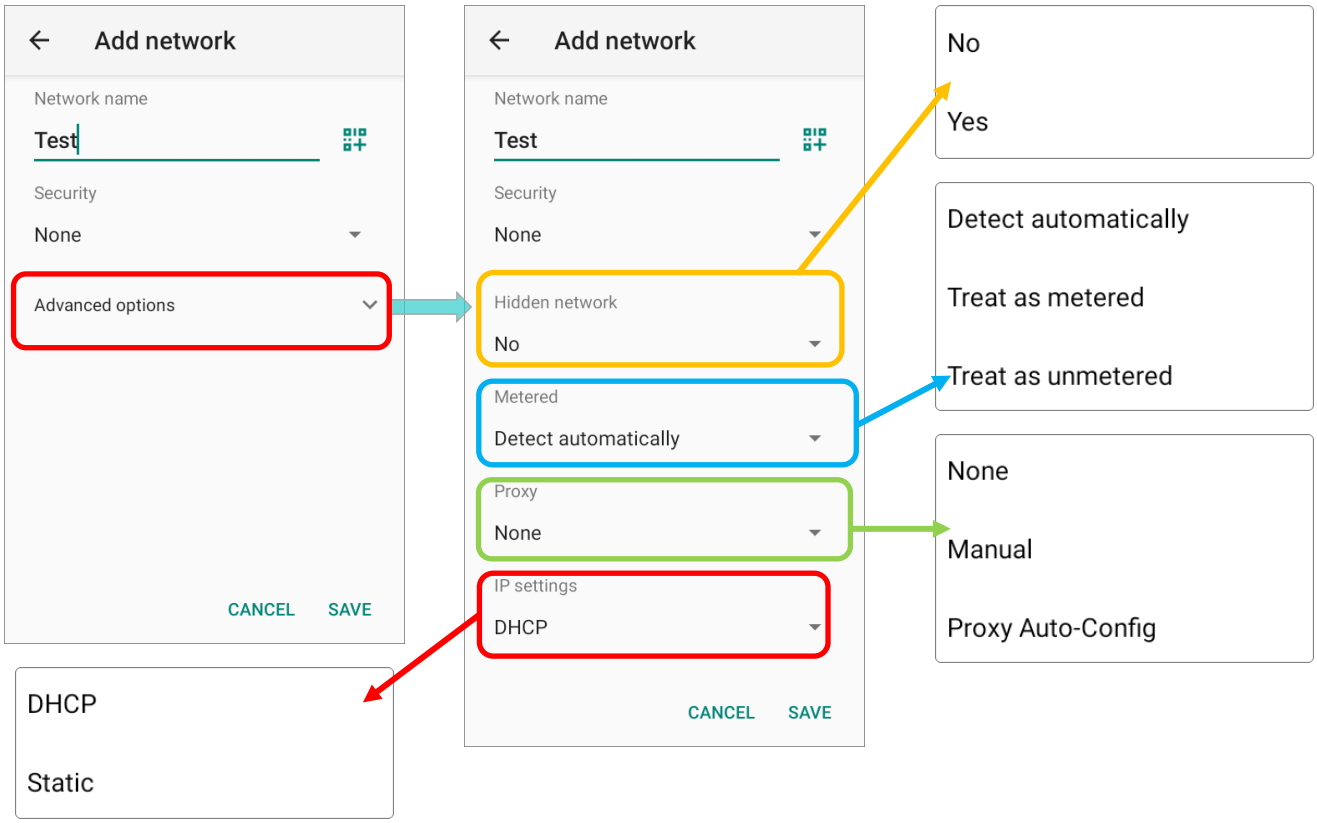
Note:

Certificates may be installed under App Drawer | 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
Description	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.
How to install	change the extension to .crt or .cer.	Change the extension to .p12 or .pfx.

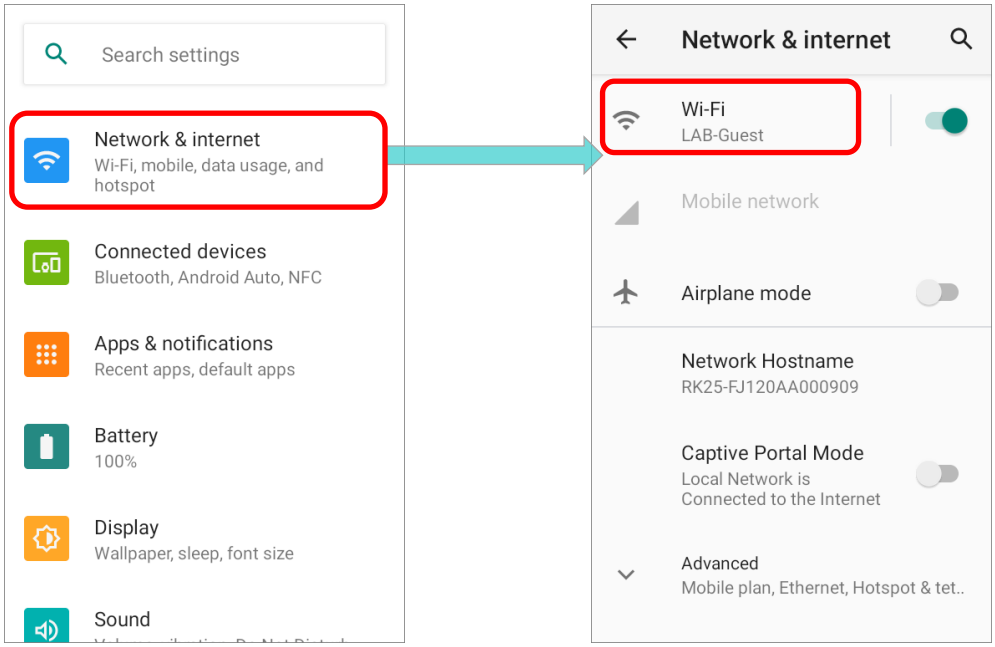
5) If necessary, select the **Proxy** server and **IPv4** settings. By default, no proxy is set and IP settings are set to **DHCP**.



5.1.3. WI-FI PREFERENCES

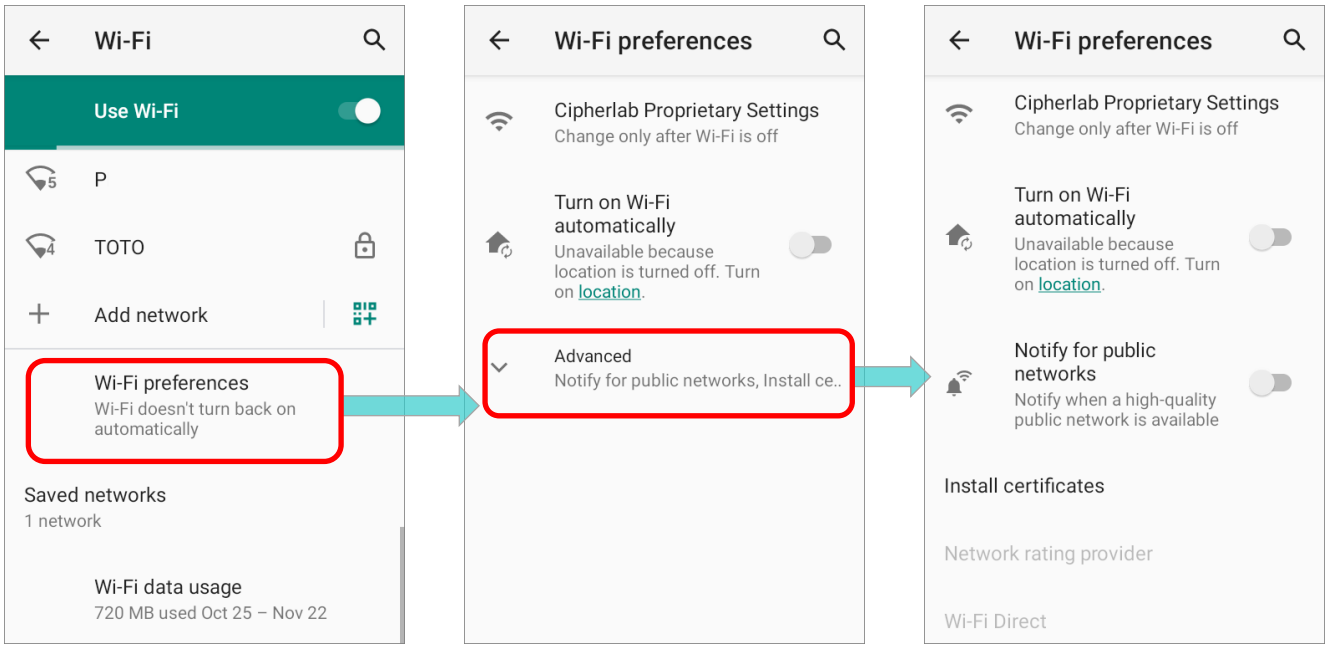
To access advanced Wi-Fi settings:

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

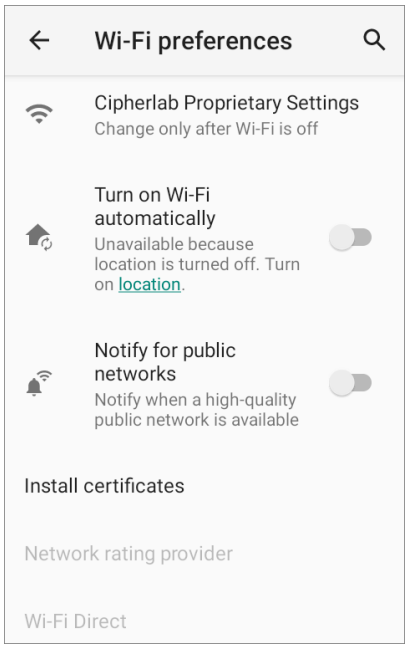


2) Scroll down to the bottom of the page, and tap on "**Wi-Fi preferences**".

3) Tap "**Advanced**" to expand more settings.



The available settings are as below:

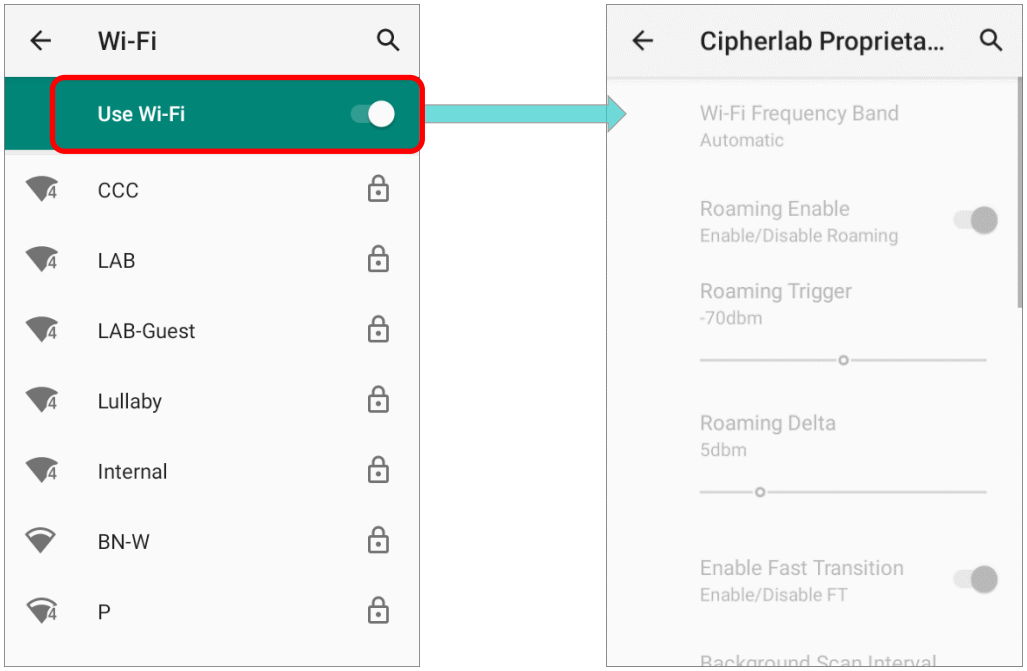


Item	Description
Cipherlab Proprietary Settings	Tap to enter the page for further settings. Please refer to Cipherlab Proprietary Settings for details.
Turn on Wi-Fi automatically	Even you've turned off Wi-Fi, the device will automatically turn on your Wi-Fi connection when there's the saved network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

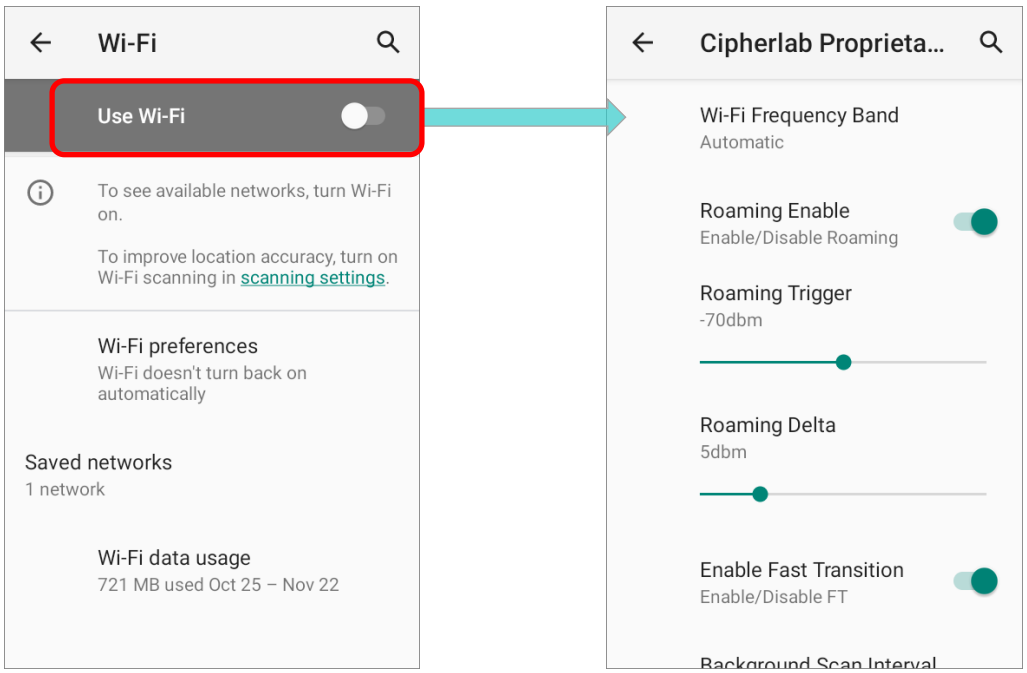
CIPHERLAB PROPRIETARY SETTINGS

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**



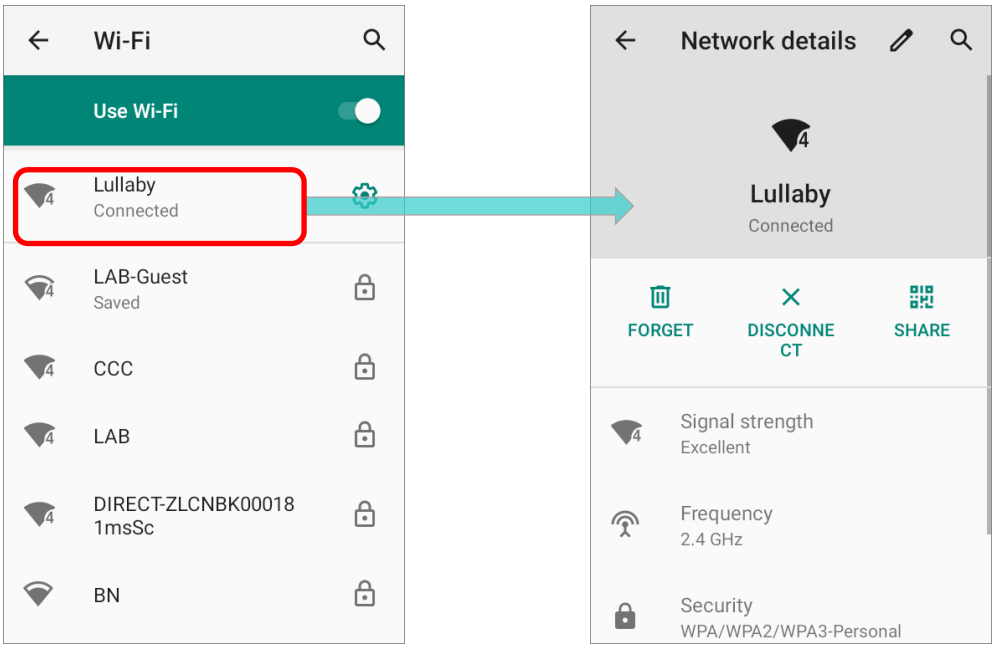
Item	Description
Wi-Fi Frequency Band	Select **Automatic**, **5 GHz only**, or **2.4 GHz only** for your Wi-Fi frequency band. The default setting is Automatic.
Enable Roaming	Select whether to enable Wi-Fi roaming or not.
Roaming Trigger	The signal strength when triggering Wi-Fi roaming. The higher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

5.1.4. MODIFY WI-FI NETWORK

MODIFY THE CONNECTED NETWORK

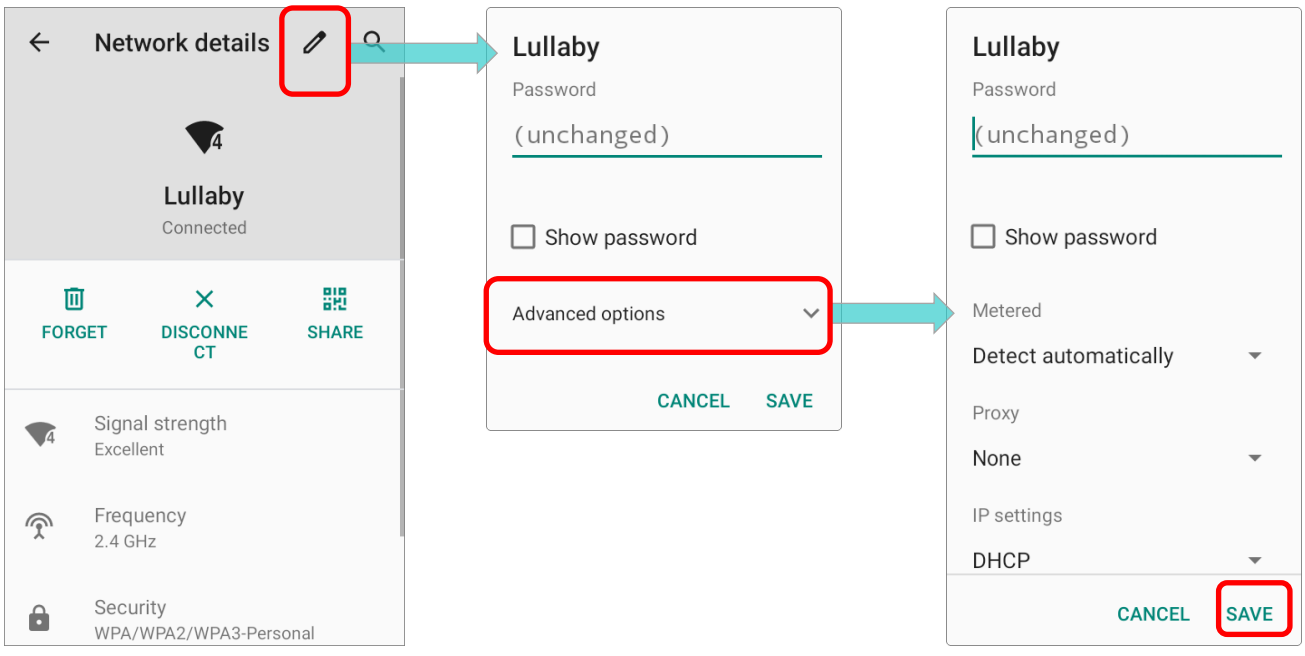
To change the settings for a connected network:

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.

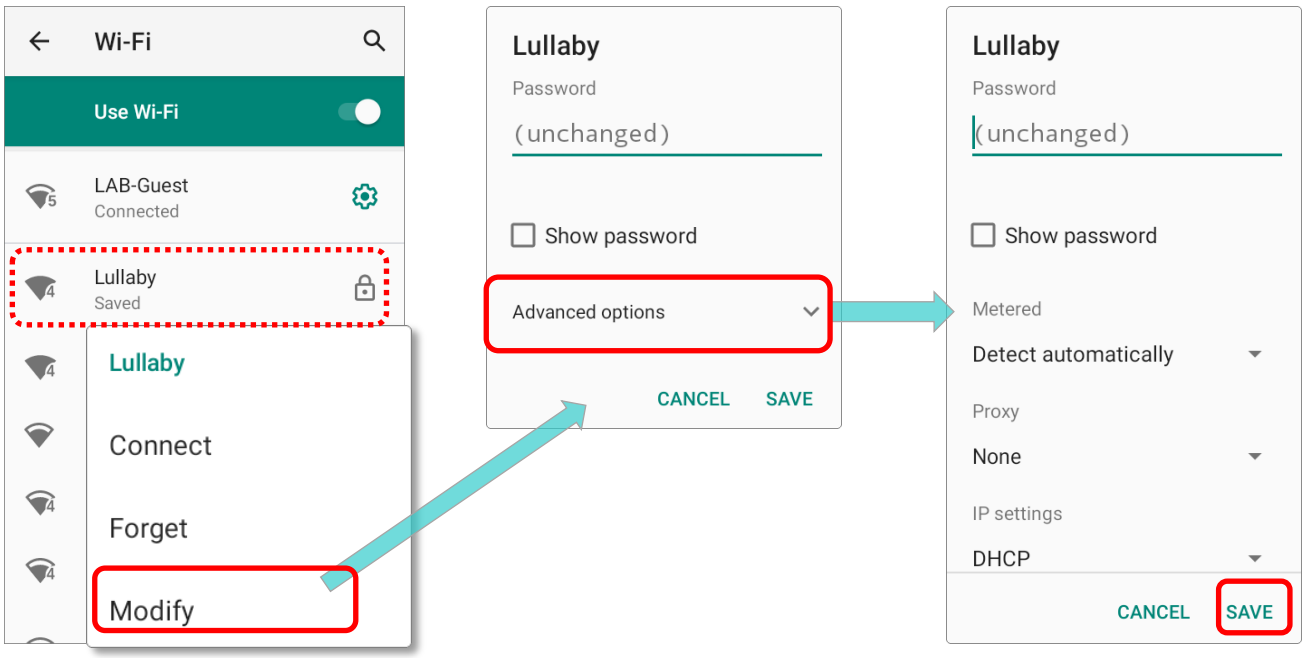
3) Modify the network settings, and tap **Save**.



MODIFY THE SAVED NETWORK

To change the settings for a saved network:

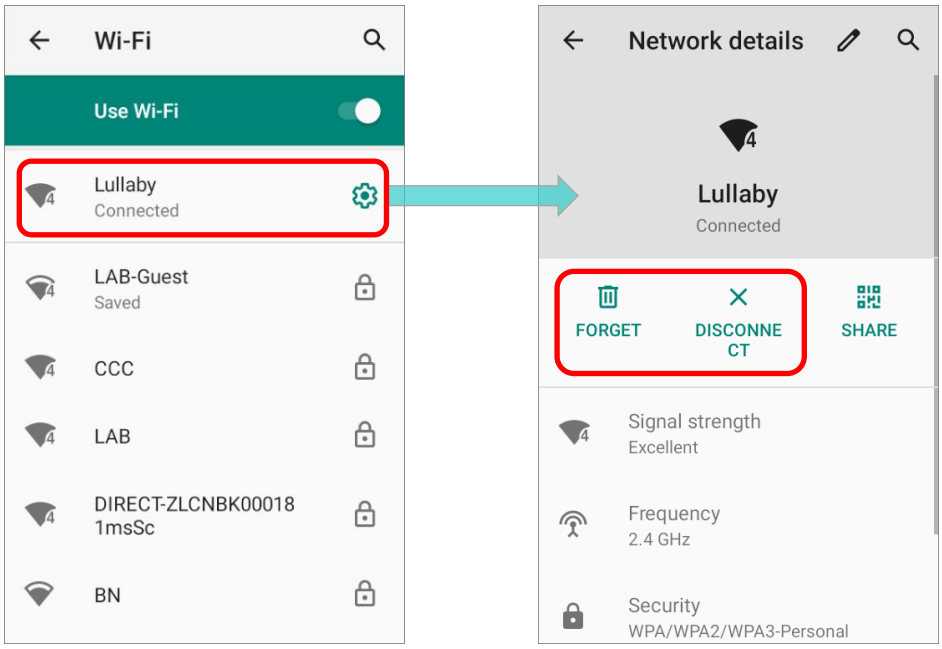
1) Tap and hold a saved network in the Wi-Fi hotspot list.
2) Tap **Modify network** in the pop-up menu.
3) In the dialog box that opens, modify the network settings, and tap **Save**.



5.1.5. DISCONNECT WI-FI NETWORK

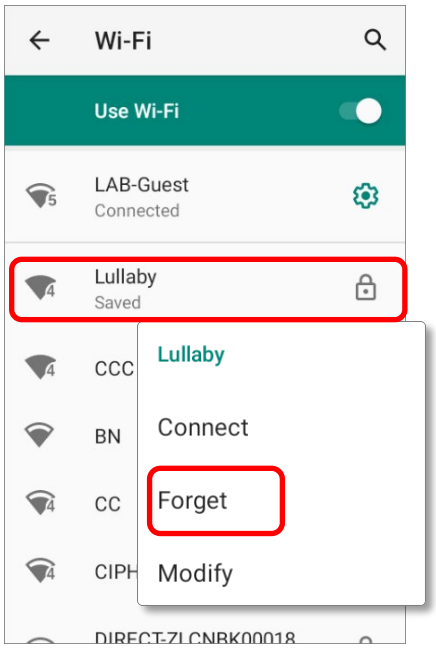
To disconnect a connected network:

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.



5.2 USE BLUETOOTH

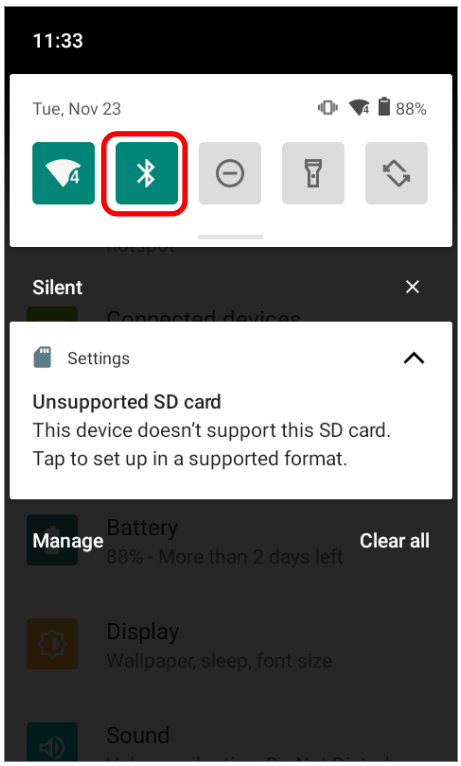
The RK25 mobile computer lets you configure Bluetooth settings and manage Bluetooth services provided on remote devices.

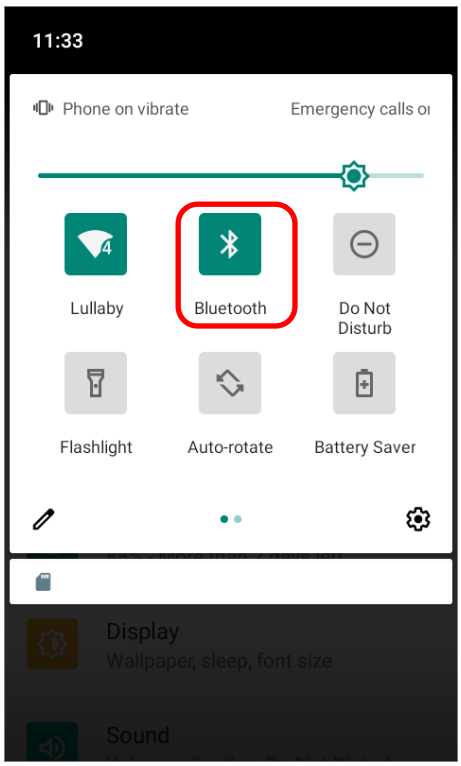
5.2.1. BLUETOOTH PROFILES

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

5.2.2. TURN ON BLUETOOTH

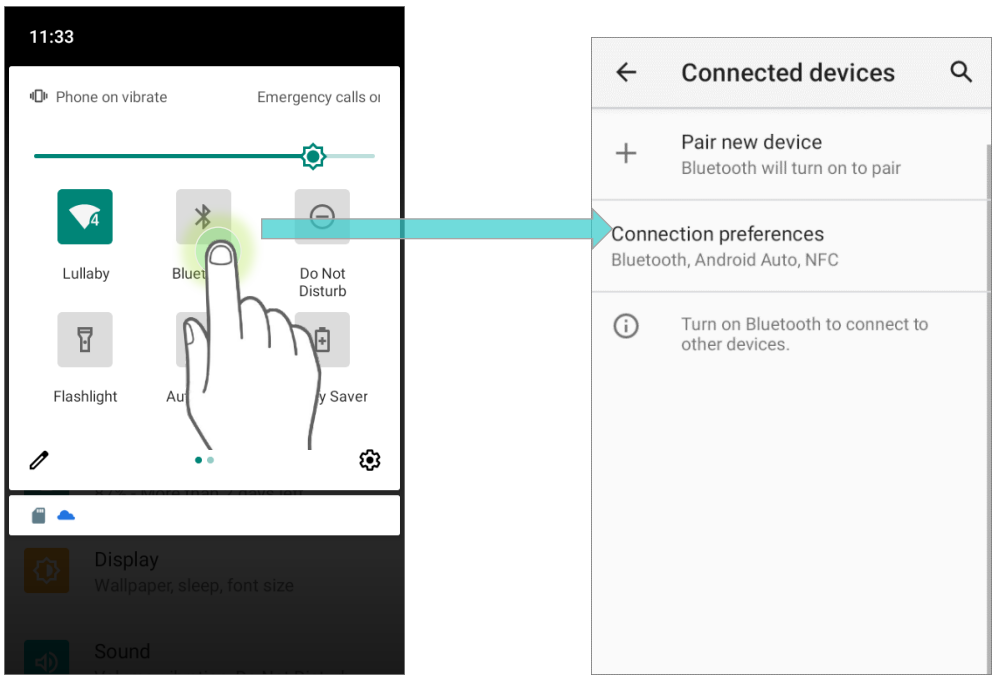
Bluetooth is turned on by default, and you can turn it on or off by tapping on the Bluetooth icon on **Quick Settings Menu** or **Quick Settings Panel**:





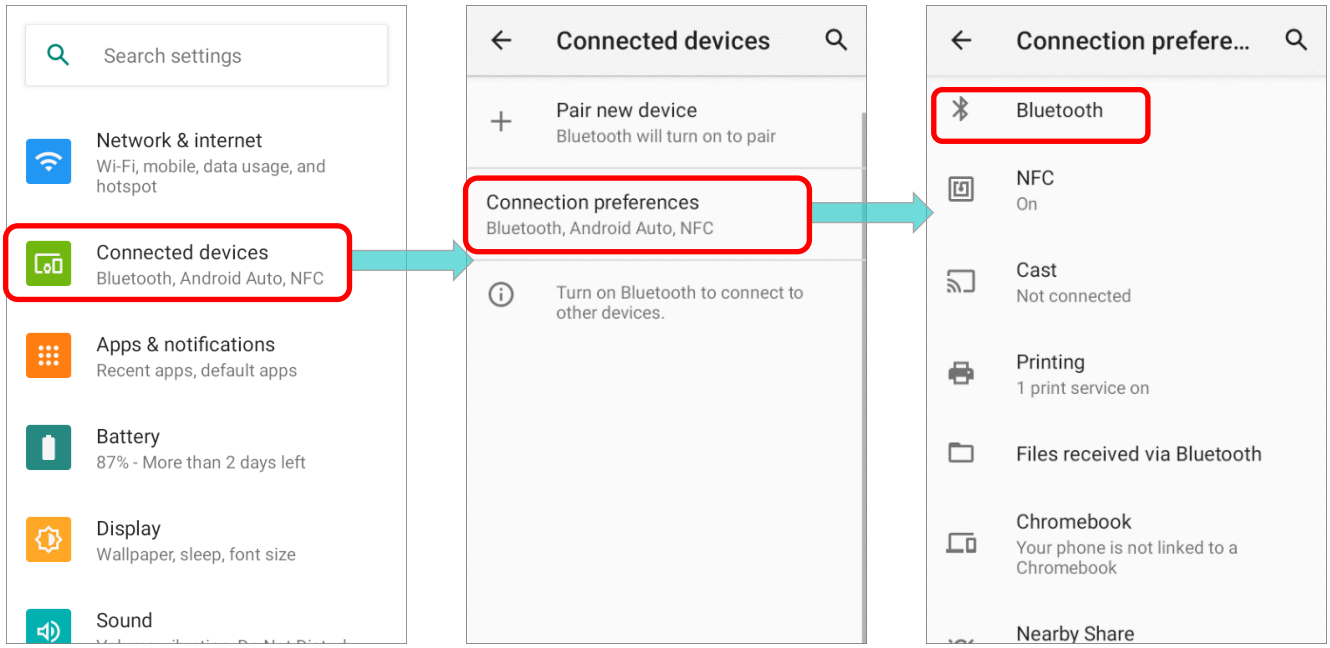
Icon	Description
	Bluetooth is **OFF**.
	Bluetooth is **ON**.

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

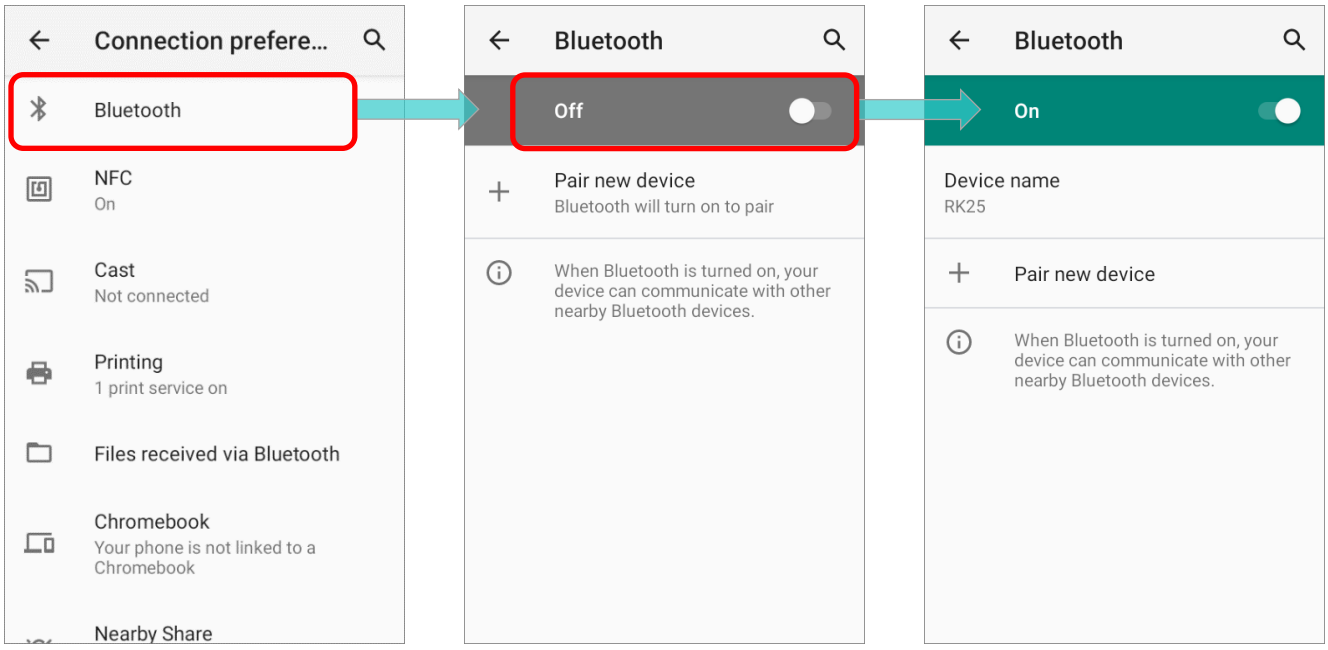


OR

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.



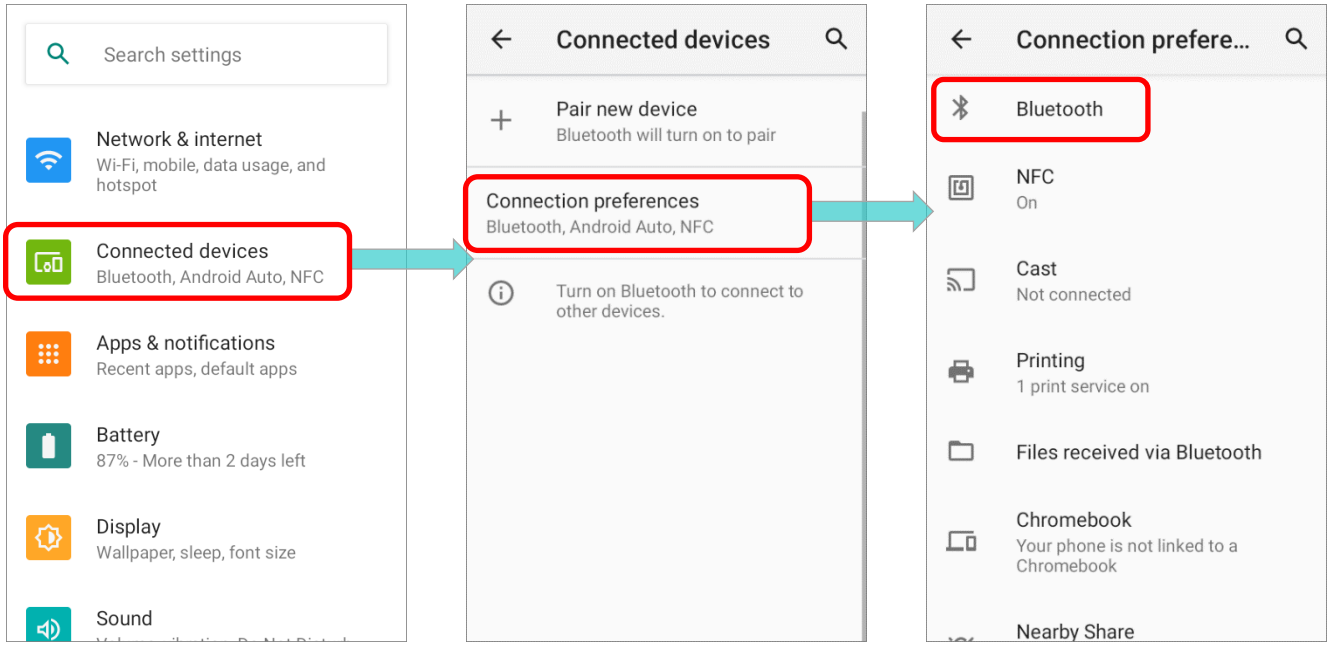
Note:

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.

5.2.3. CHANGE BLUETOOTH NAME

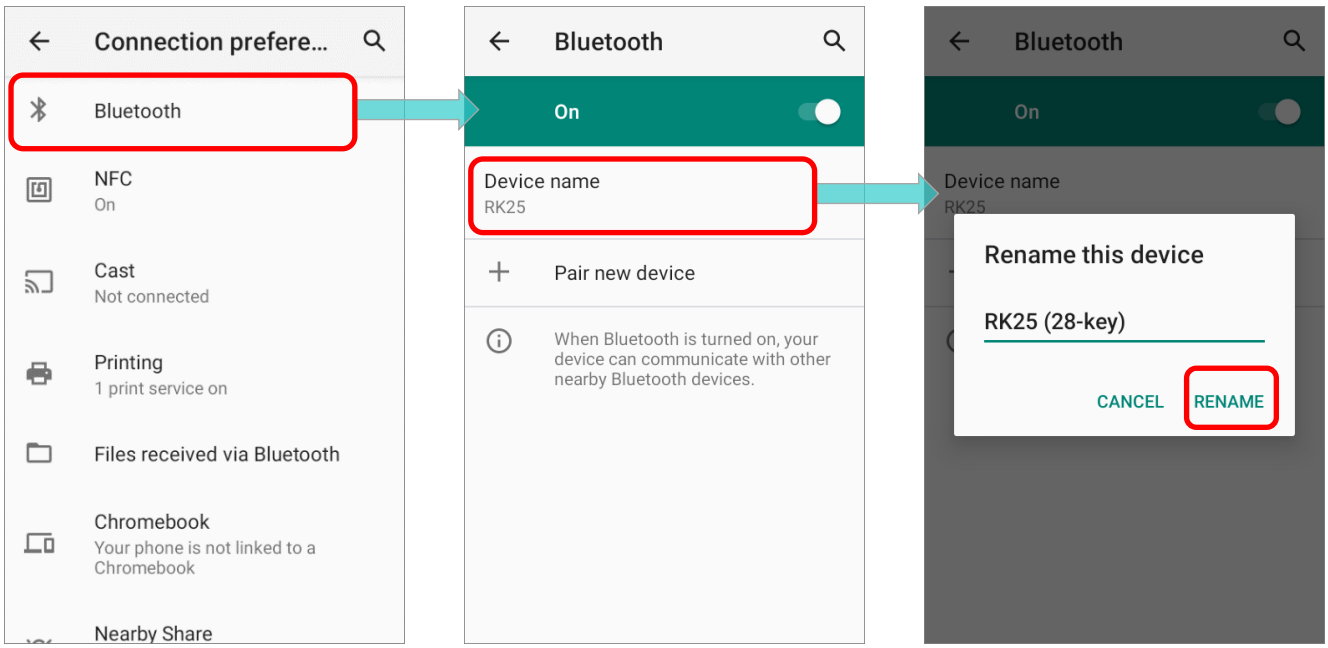
To change the Bluetooth name of this mobile computer:

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.

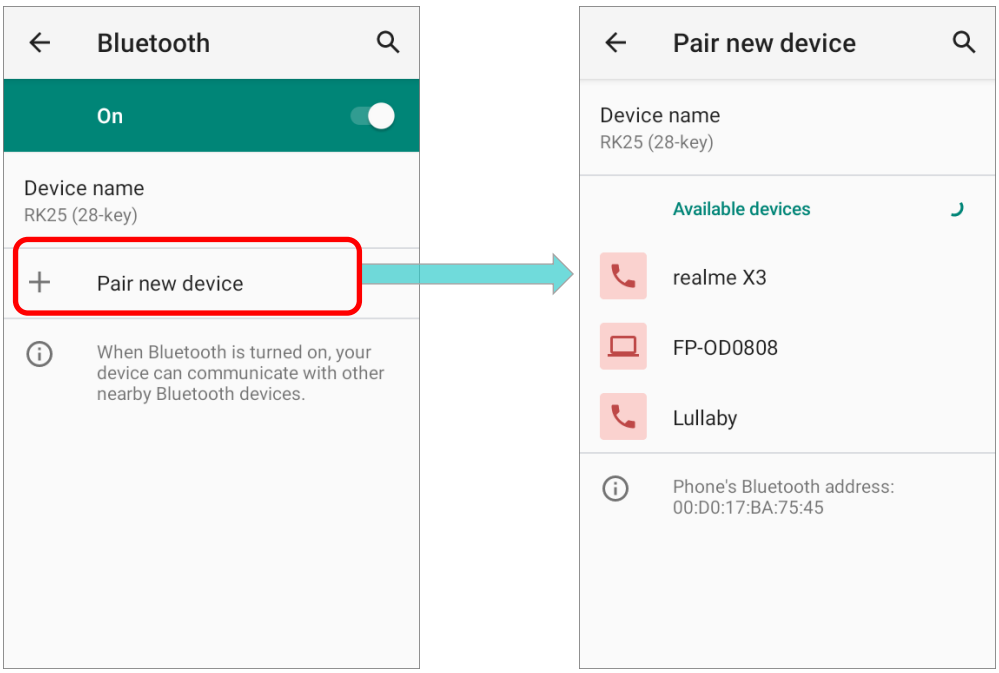
3) Type a new name in the field and tap **RENAME**.



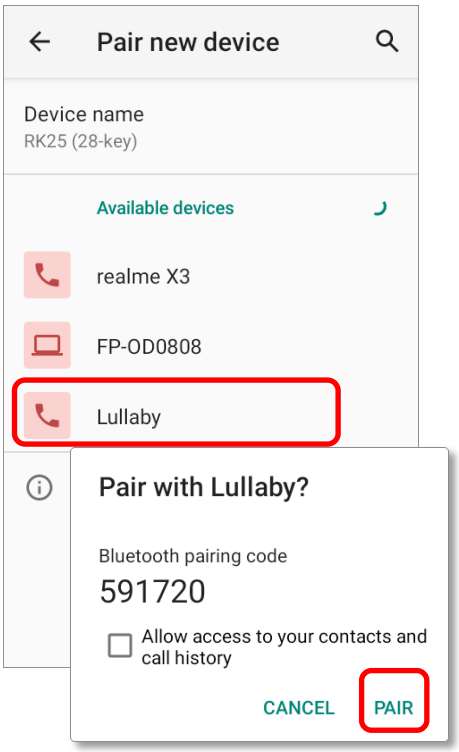
5.2.4. PAIR BLUETOOTH DEVICES

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

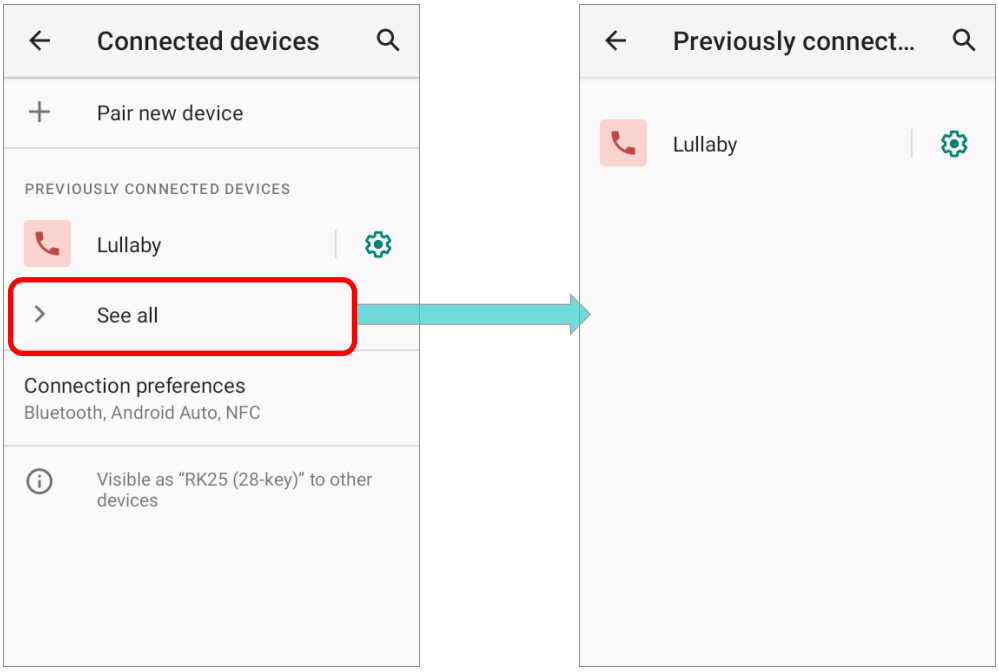
   Tap the switch to **On** and then enter "**Pair new device**" page to scan for available Bluetooth devices nearby. Scroll through the list and tap the device you would like to pair.



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.



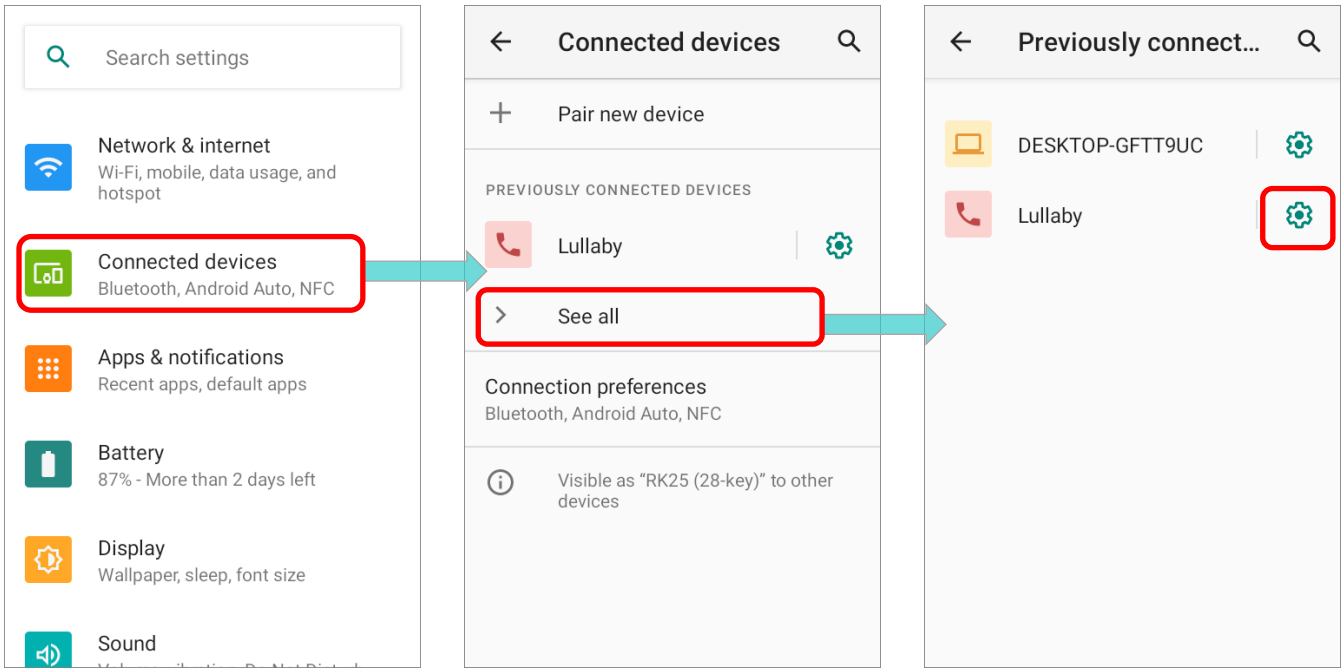
Note:

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

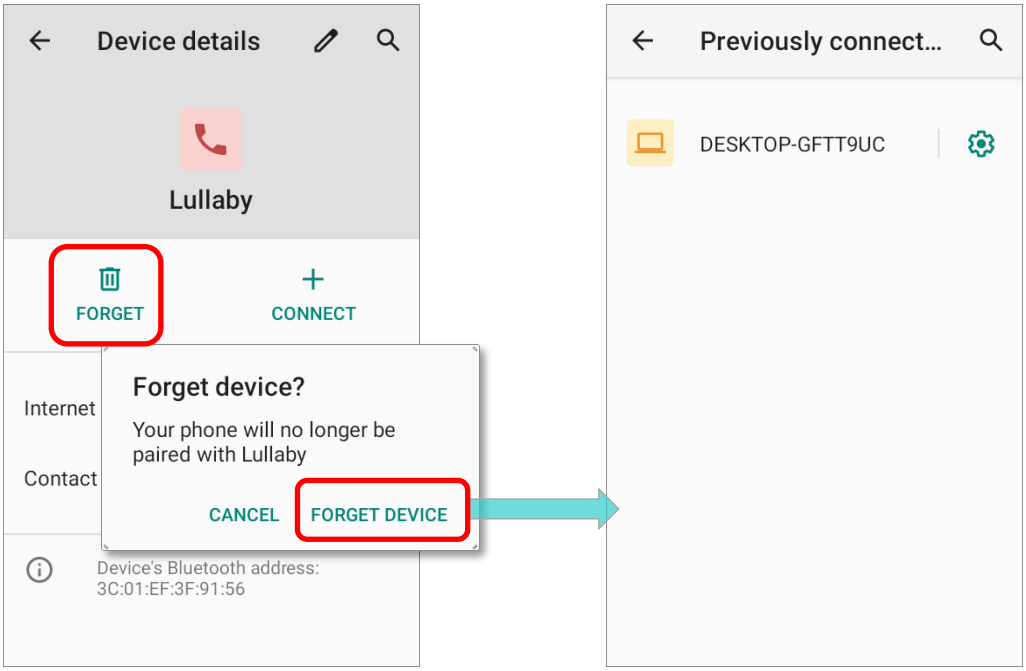
5.2.5. UNPAIR BLUETOOTH DEVICE

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**.

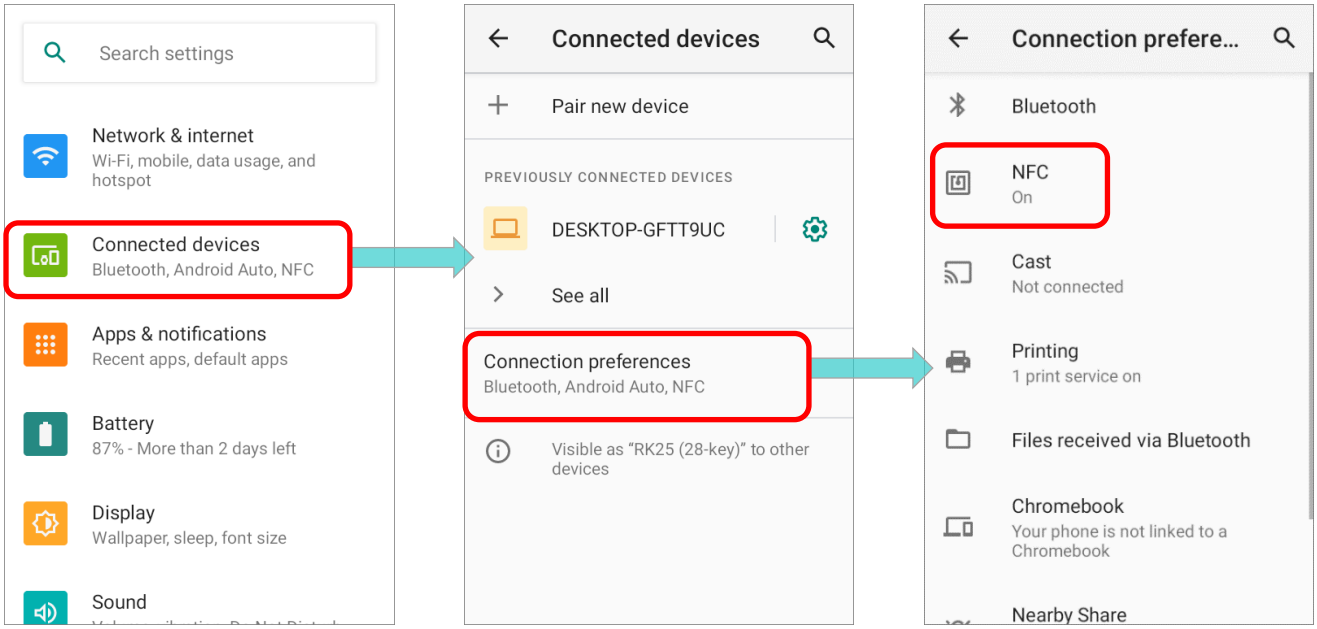


5.3 USE NEAR FIELD COMMUNICATIONS

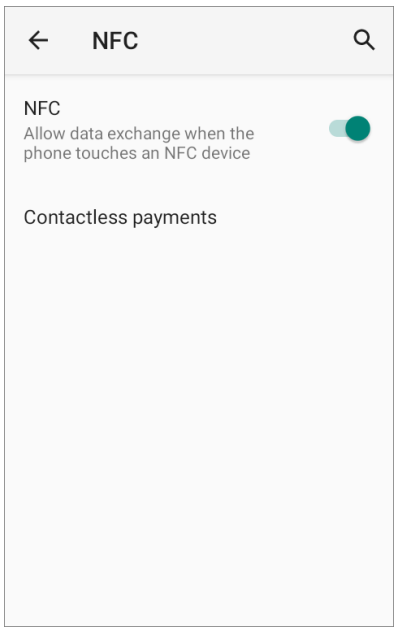
Near field communications (NFC) uses close proximity (4 cm or less) to establish radio communication through electromagnetic fields. With NFC enabled, the mobile computer can collect information from NFC tags, exchange information with other NFC supported devices, and even change information on the NFC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



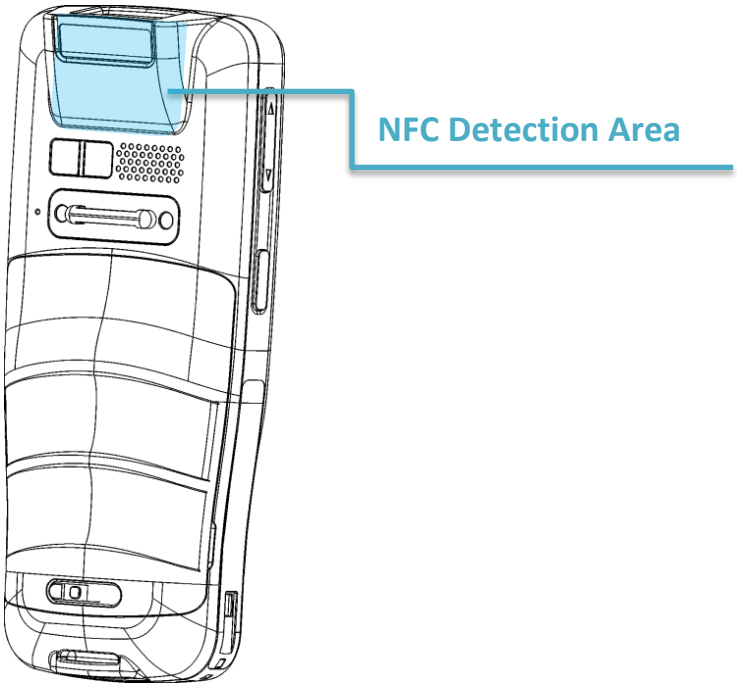
2) Tap on the switch to turn on "**NFC**".



5.3.1 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:

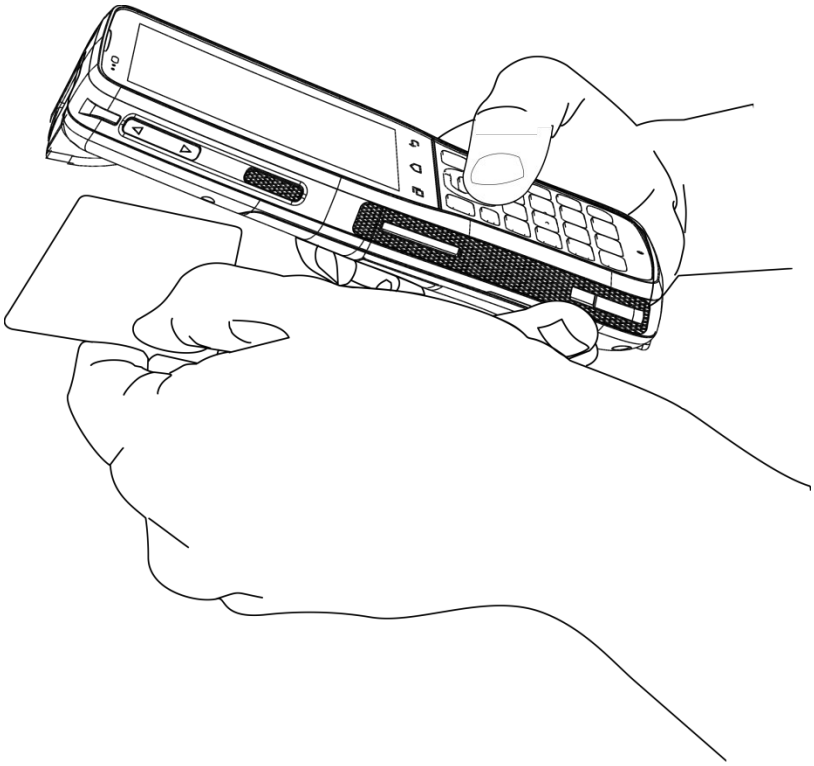
Once the data begins to transfer, the two devices only need to be held within a 10 m (32.8 ft.) range; they no longer have to be held within close range in order to transfer successfully.

COMMUNICATION WITH NFC

1) On the mobile computer, launch an NFC enabled application.

2) Hold the mobile computer without covering the antenna area.

3) Place the mobile computer close to the NFC tag or device until the application indicates data transfer is complete.



Chapter 6

USING THE PHONE

The RK25 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) 10° tilted reader model is equipped with 1 SIM slot & 1 optional SIM/SAM slot, while 70° tilted reader model is equipped with dual SIM slot.

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6.2.Phone Application 191

6.3.Audio Modes 201

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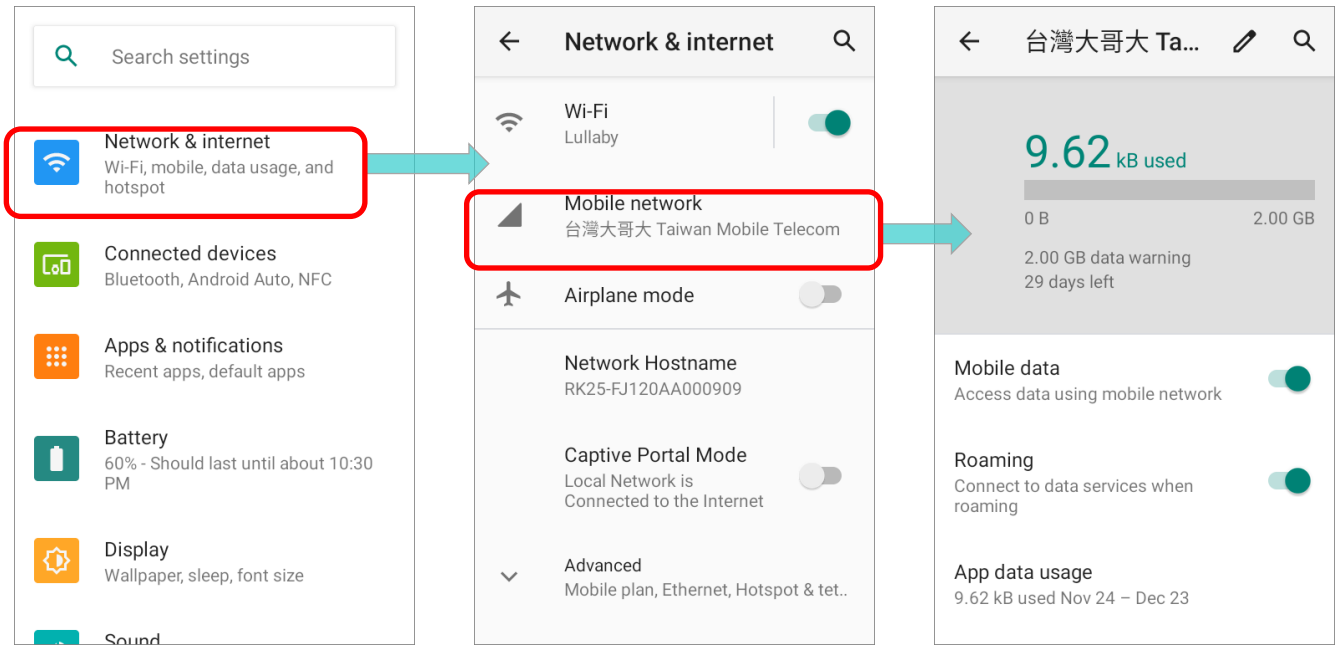
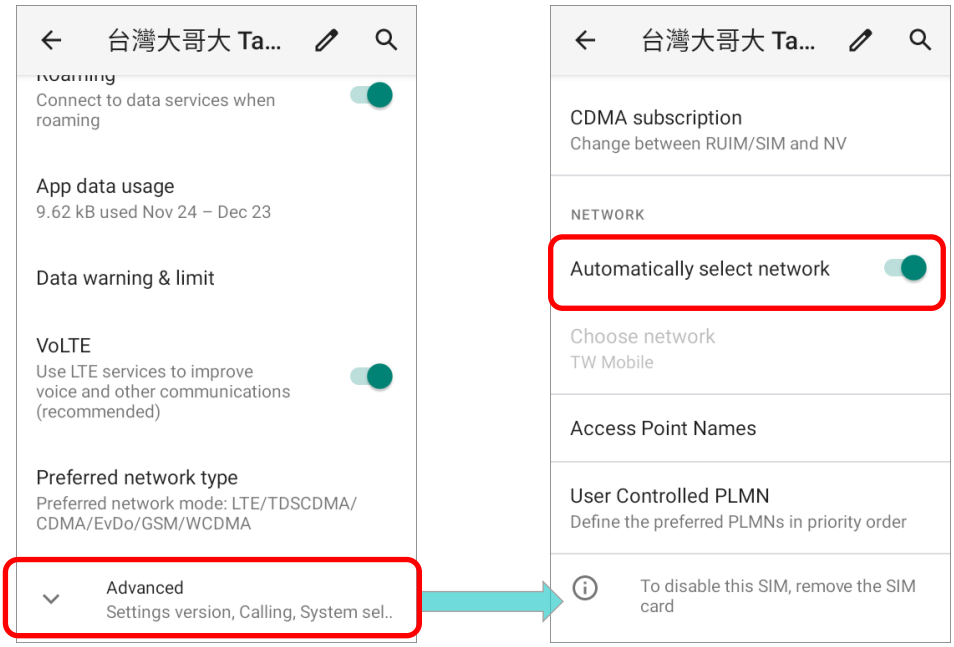
6.1. SIM CARD MANAGEMENT

The default setting for celluar networks is "**Automatically select network**". To manually select the cellular network, please:

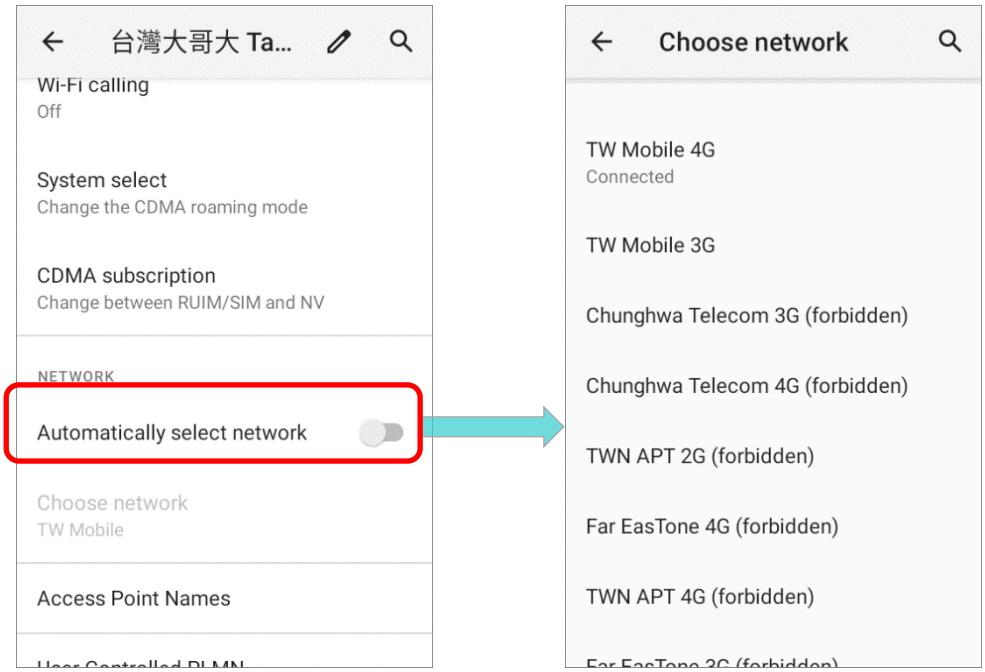
1) Go to **App Drawer (All Apps)** | **Settings** | **Network & Internet** | **Mobile Network** .



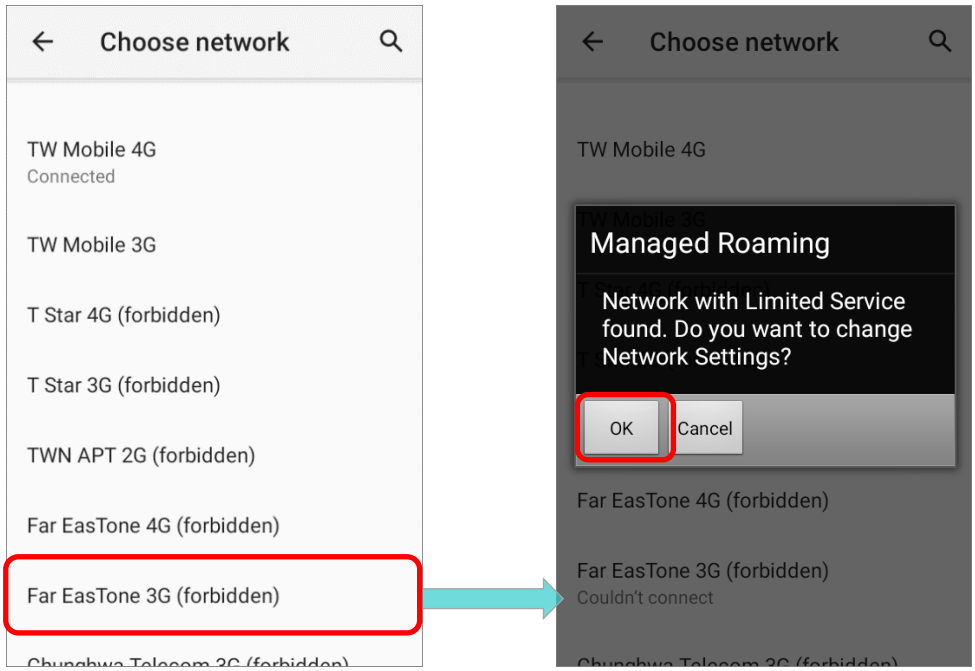
2) On the mobile network page, tap on "**Advanced**" to display more functions, and scroll to find "**Automatically select network**" to disable it.



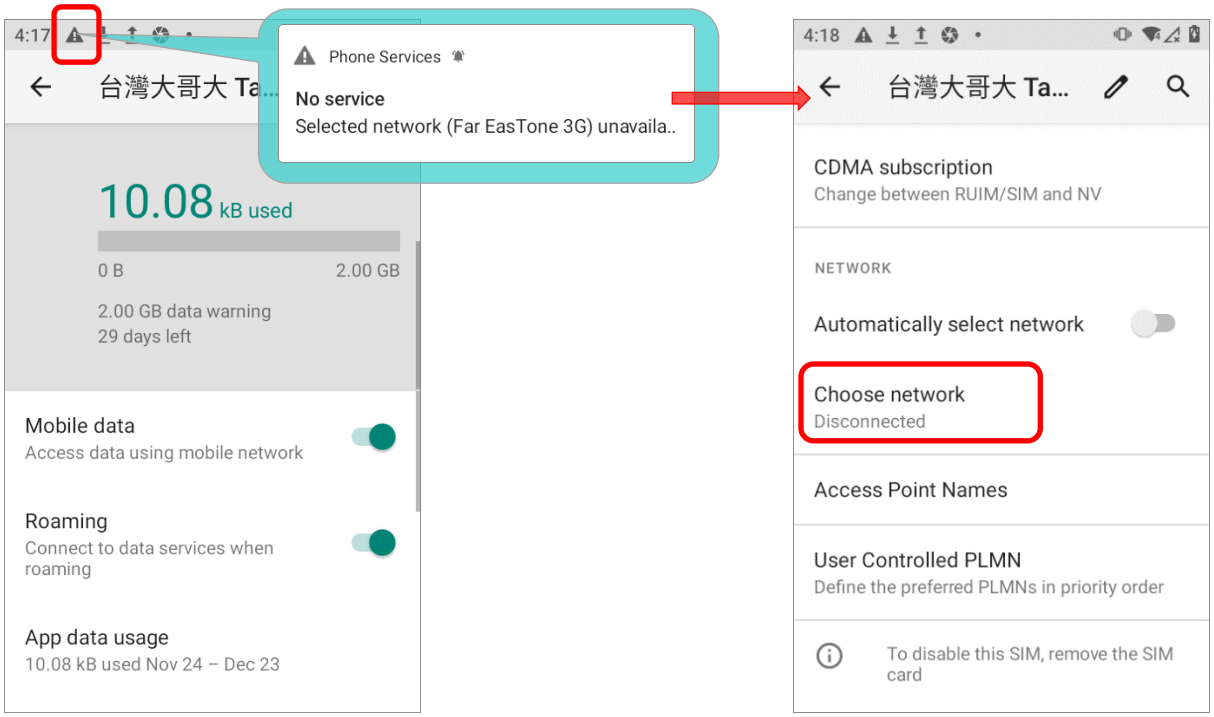
3) "**Choose Network**" page shows up automatically once "**Automatically select network**" is turn off. Available networks will be listed after searching.



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:

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

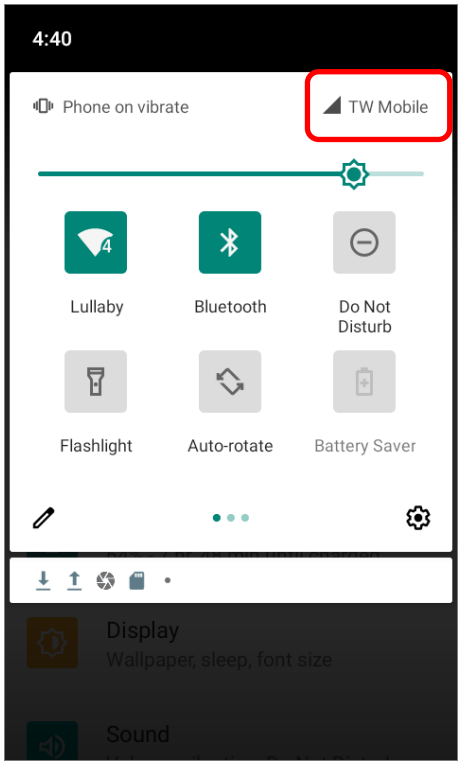
(2) 10° tilted reader model is equipped with 1 SIM slot & 1 optional SIM/SAM slot, while 70° tilted reader model is equipped with dual SIM slot.

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.

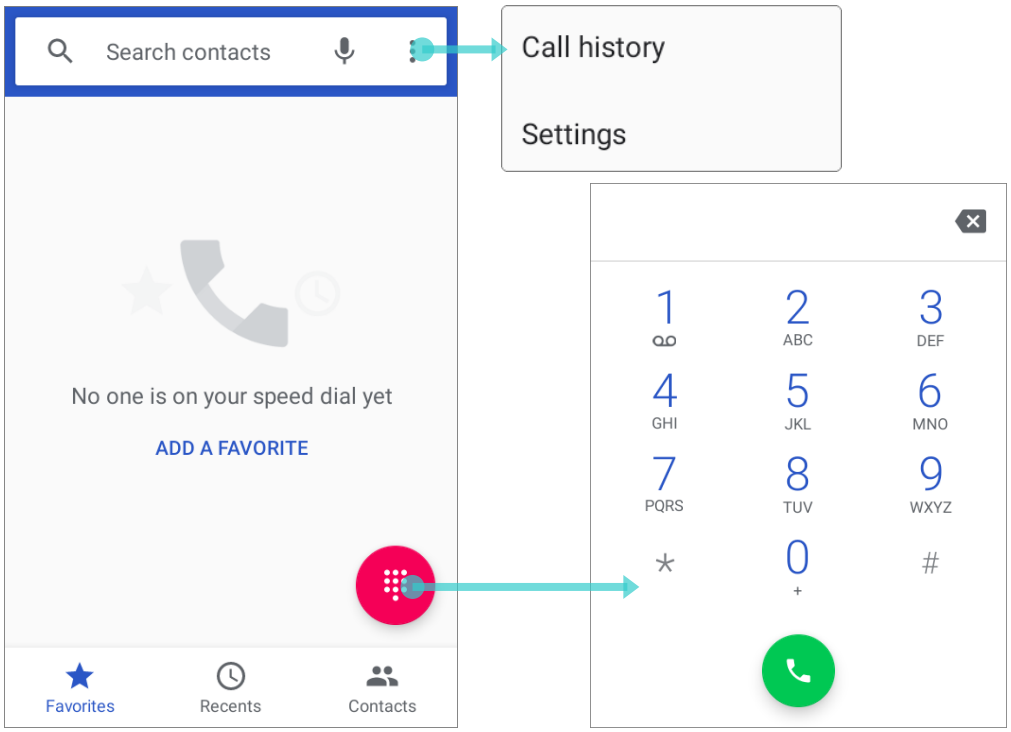
6.2. PHONE APPLICATION

When a SIM card is installed on the mobile computer, a signal icon appears on the upper-right of the **Quick Settings Menu** to indicate the signal strength of the connection.



6.2.1 PHONE INTERFACE

To launch the phone application, please go to **App Drawer (All Apps)** | **Phone** .



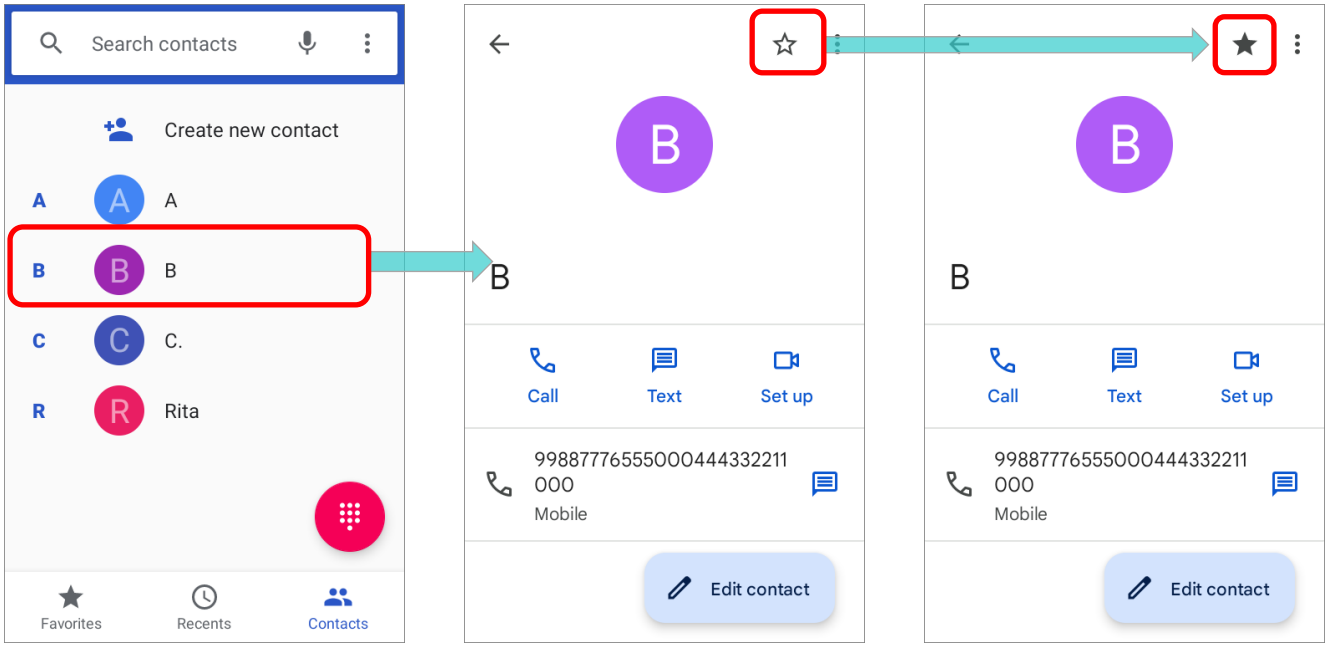
The application "**Phone**" contains 3 tab pages:

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

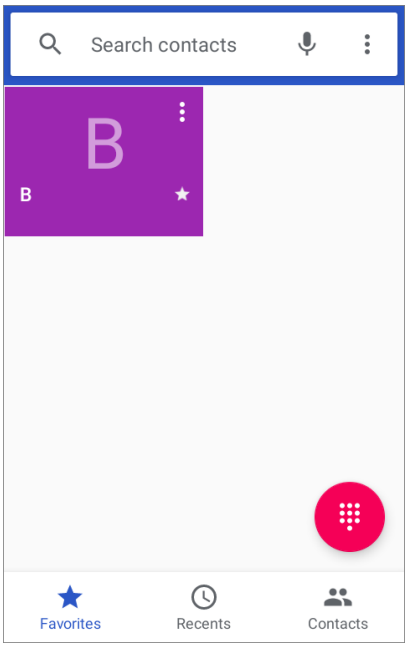
ADD FAVORITE CONTACTS

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.

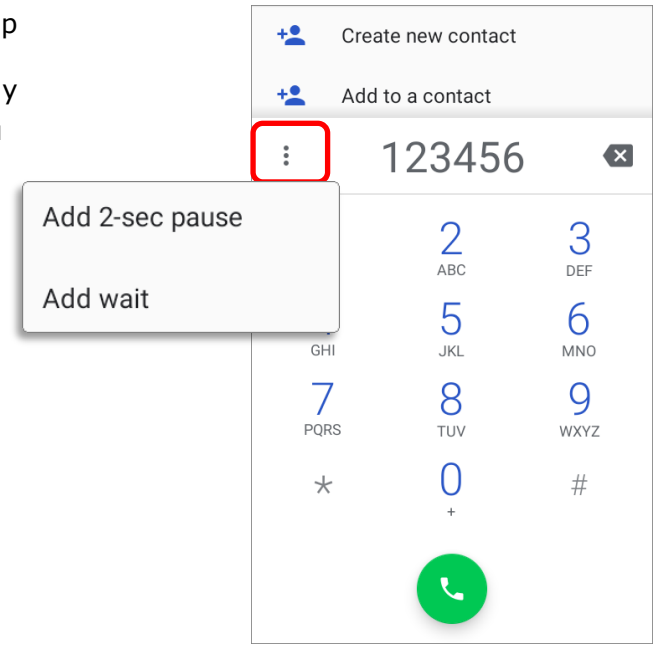


3) Return to "**Favorite**" ★ tab pages, the contact you just marked as favorite is now displayed on "**Favorite**" ★ tab pages.



6.2.2 PLACE CALL

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).

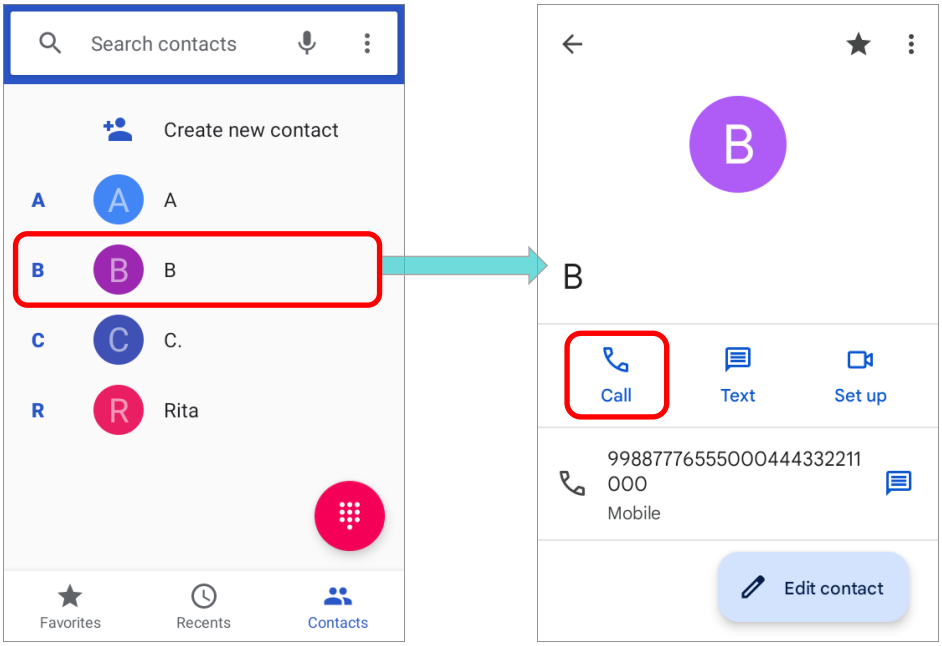


PLACE CALL BY USING CONTACTS

To make a call by using contacts:

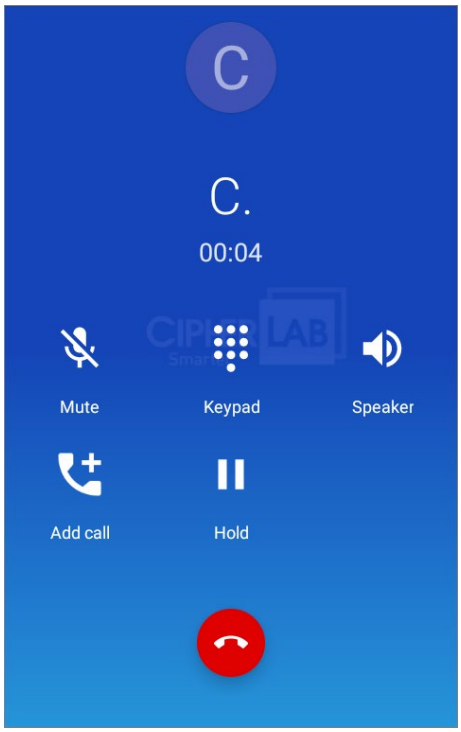
1) In the phone application page, tap to enter "**Contact**" tab page .

2) Tap a contact to enter the contact detail page and then tap on "**Call**" to initiate a call.



6.2.3 DURING A CALL

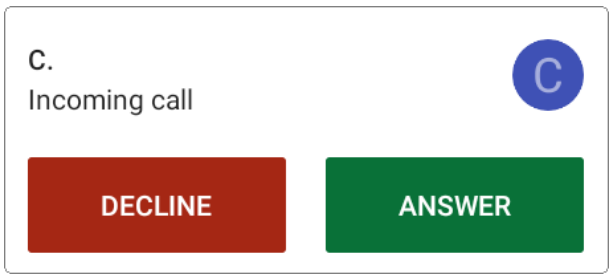
When a call is connected, the phone keypad features the following buttons:



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

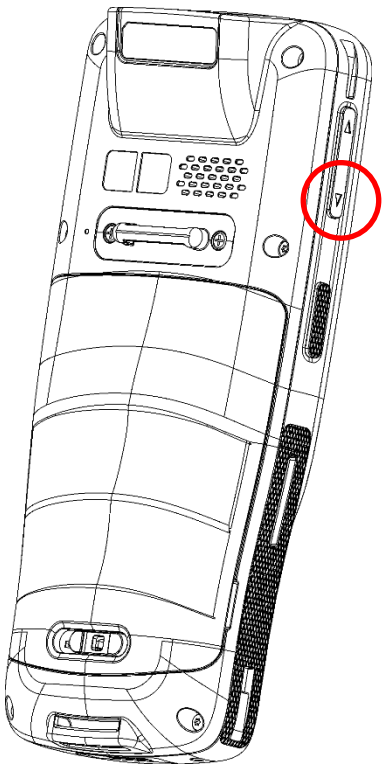
6.2.4 RECEIVE INCOMING CALL

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



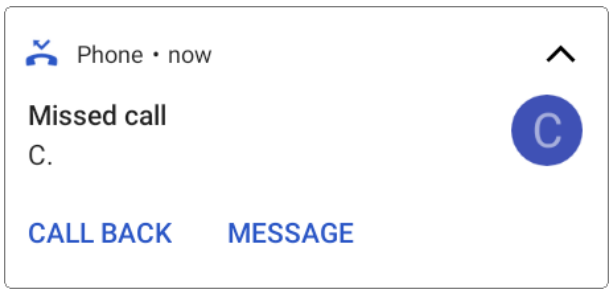
Incoming calls will be logged in the **Phone** application; in the case of a missed call, a notification will be displayed. See Check Missed Calls.

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



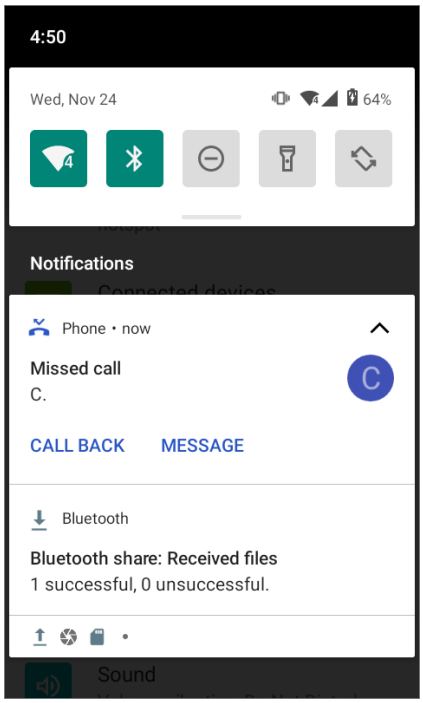
6.2.5 CHECK MISSED CALLS

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 Notifications Drawer to manage the missed call.



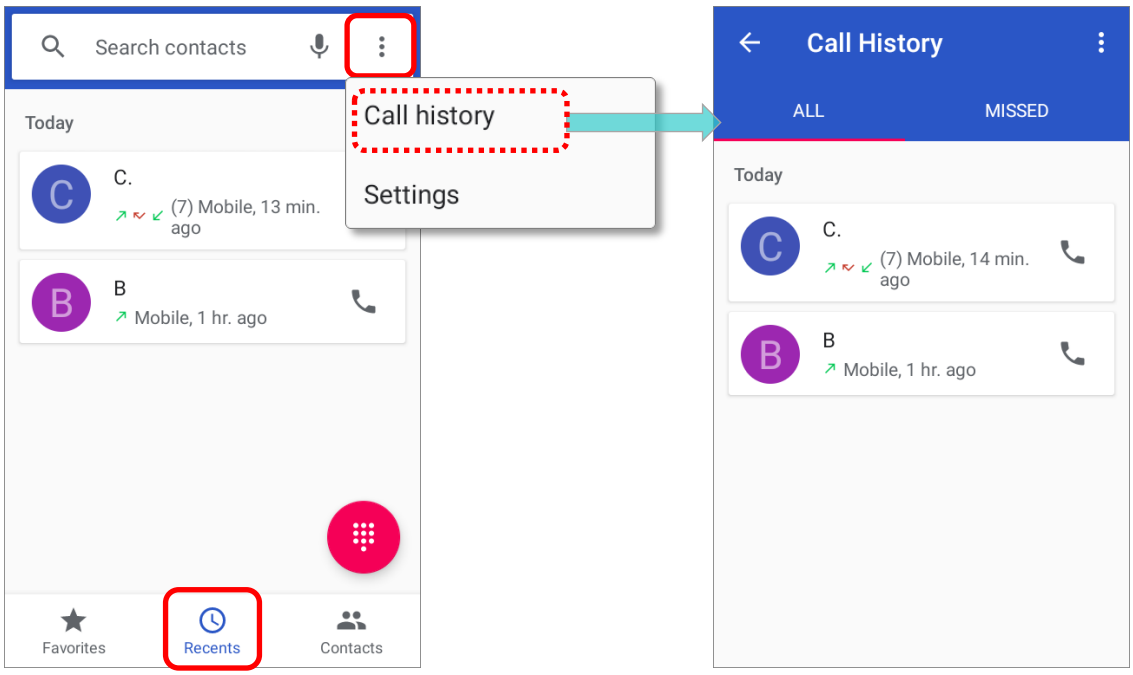
6.2.6 CALL HISTORY

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**.

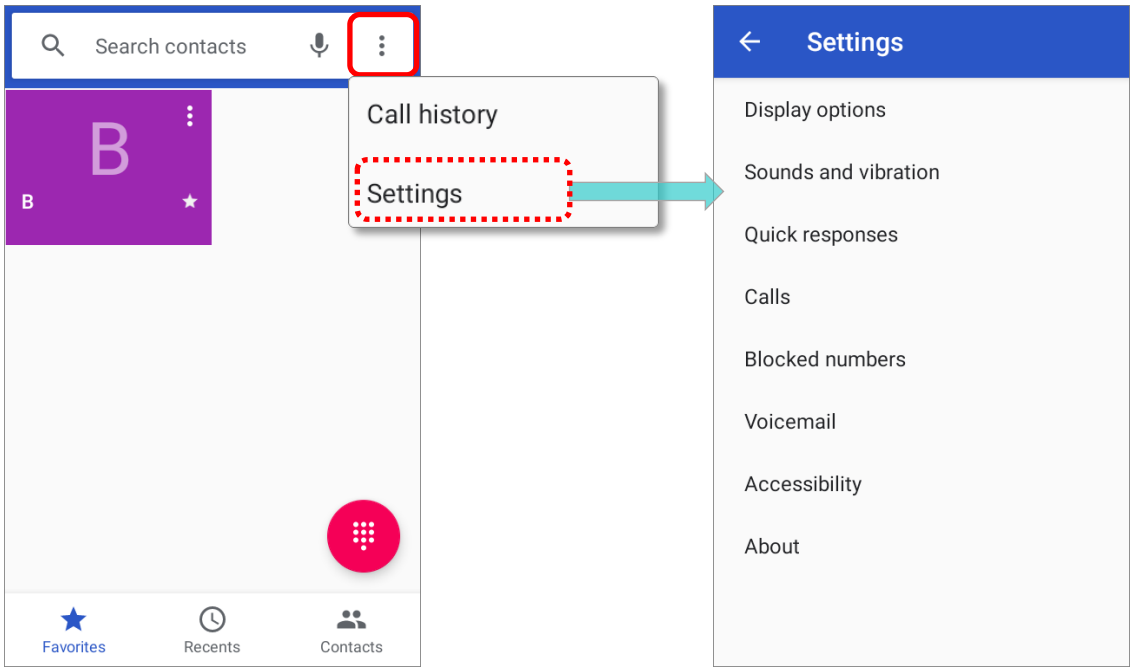


Item	Description
↙ ↗	Connected calls.
↙	Missed calls.

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

6.2.7 CALL SETTINGS

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



Tap on each setting for more setting options.

6.2.8 MAKE MULTI-PARTY CALLS

To make multi-party conference calls:

1) On the Phone application page, enter the 1st number to call and tap to initiate the call.

2) After the call has begun, tap **Add call** to add another member. The 1st call will be put on hold.

3) Select the 2nd 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 2nd call is connected, the first call will continue to be on hold. Tap the merge call button to add the 1st call to the conversation. A three-party conference call is initiated.

   - To add a 4th 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.

6.3. 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

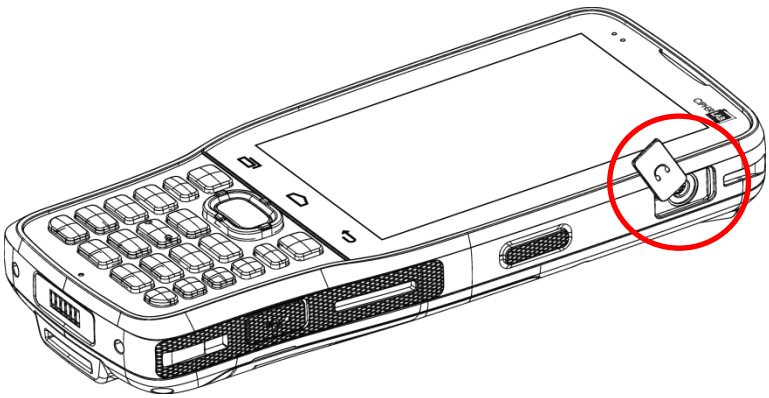
Connect a Bluetooth headset or a wired headset to the mobile computer for audio output during calls.

USE BLUETOOTH HEADSET

See Pair Bluetooth Deices to connect the mobile computer to a Bluetooth device. The speaker phone becomes muted when a Bluetooth headset is connected.

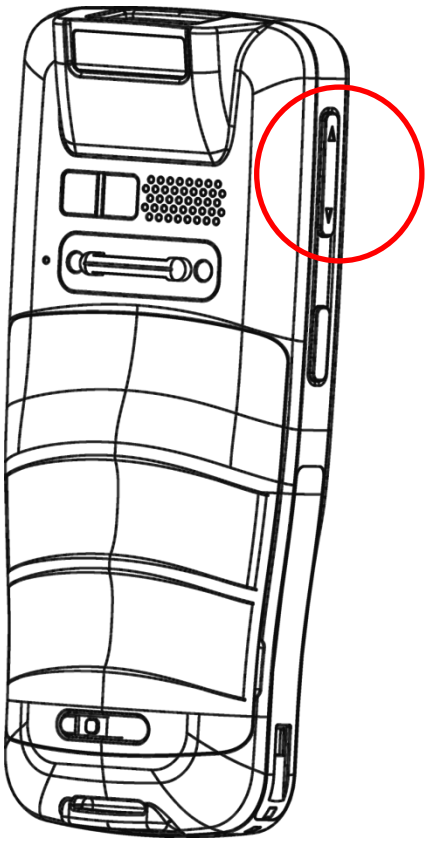
USE WIRED HEADSET

Insert a wired headset in the Headset Jack. The speaker phone becomes muted when a wired headset is connected.



6.4. 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 7

CIPHERLAB UTILITIES

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

IN THIS CHAPTER

7.1 A-Demo 204
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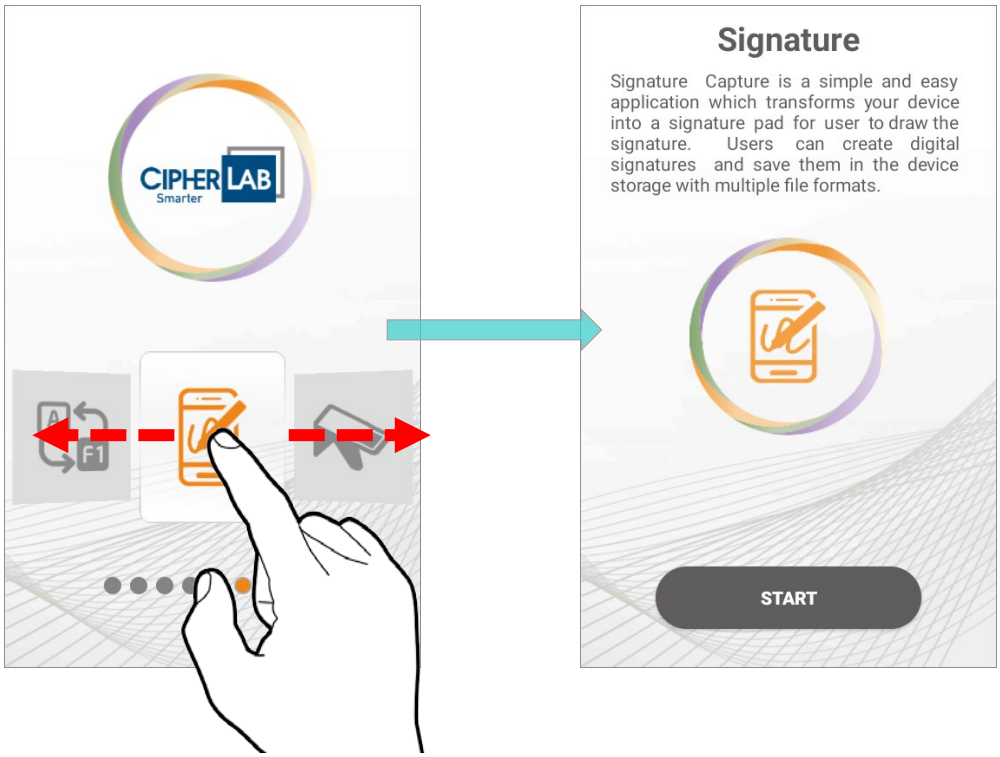
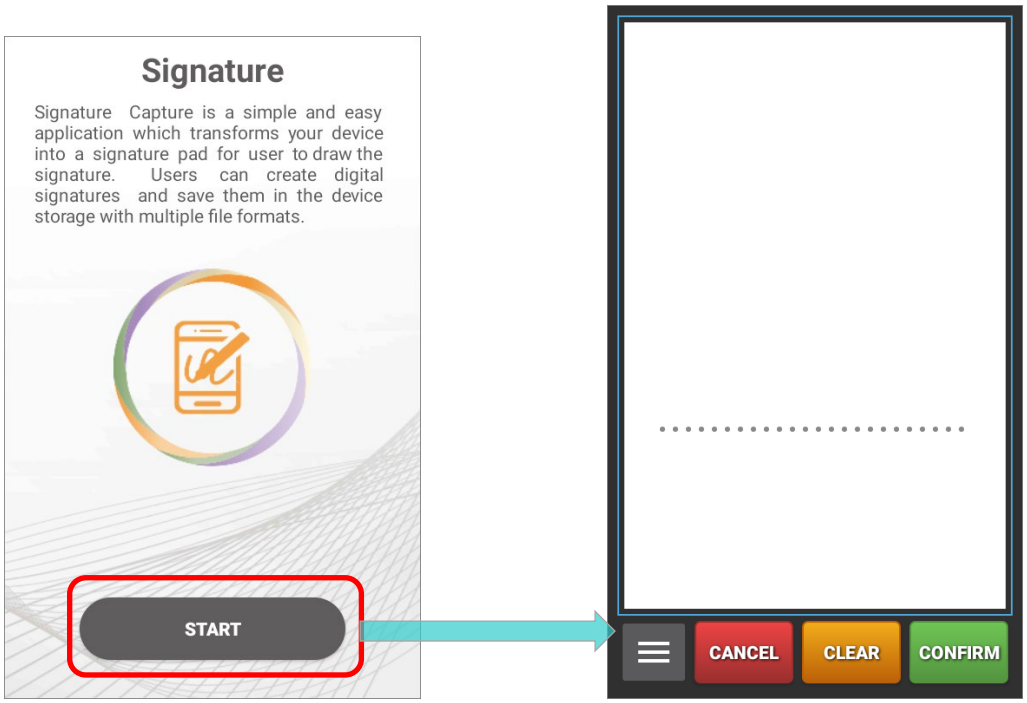
7.1. A-DEMO

"**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.



7.2. APPLOCK

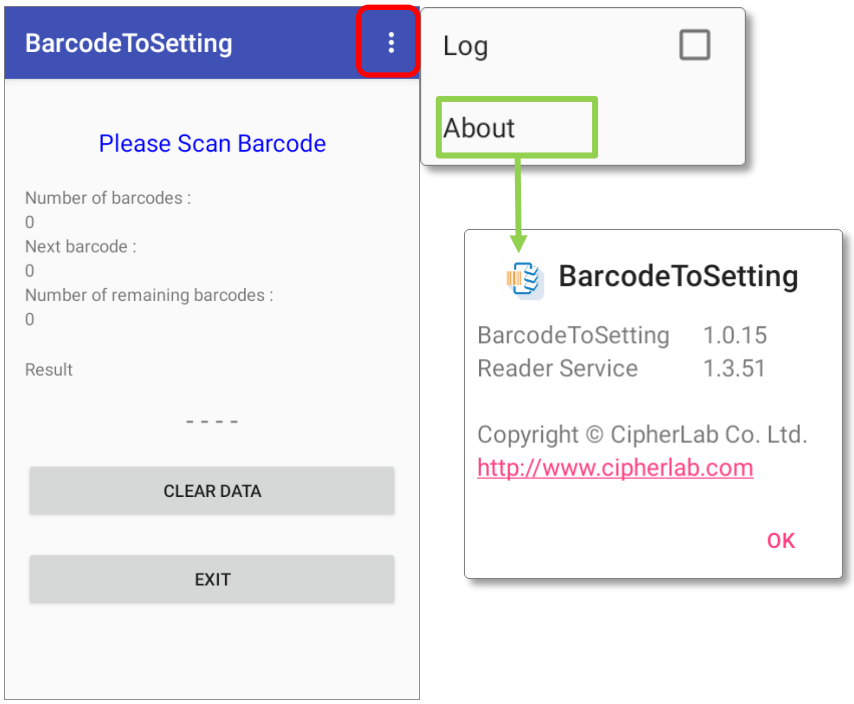
AppLock controls the interface provided to users. It dominates over the O.S. and limits the system resources made available to users. Properly tuned, AppLock gives way to ordinary working applications while locking out those that are not so productive.

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**.

7.3. BARCODE TO SETTING

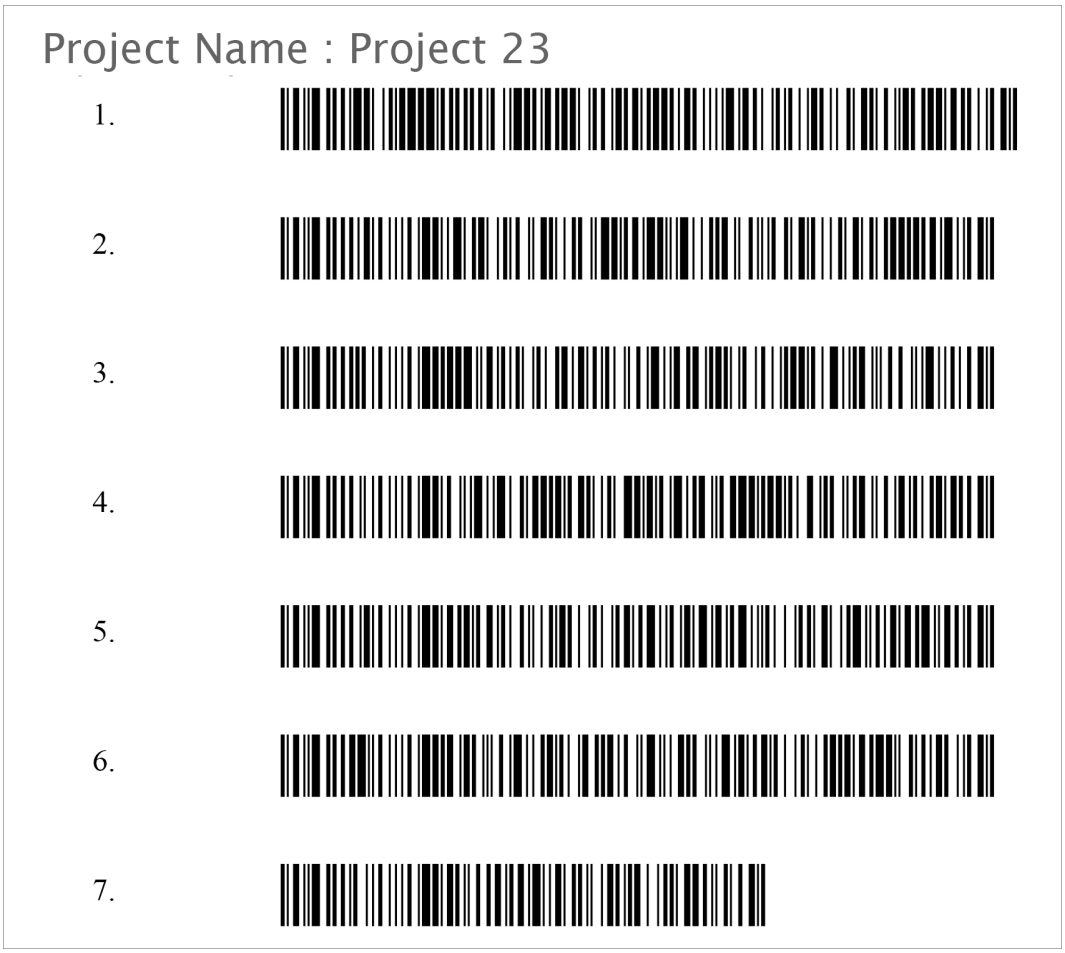
"**BarcodeToSettings**" is to read the setting barcodes generated by **ADC** (Android Deployment Configurator) to apply the configuration. Launch "**BarcodeToSettings**" and the main screen shows as below:



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

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

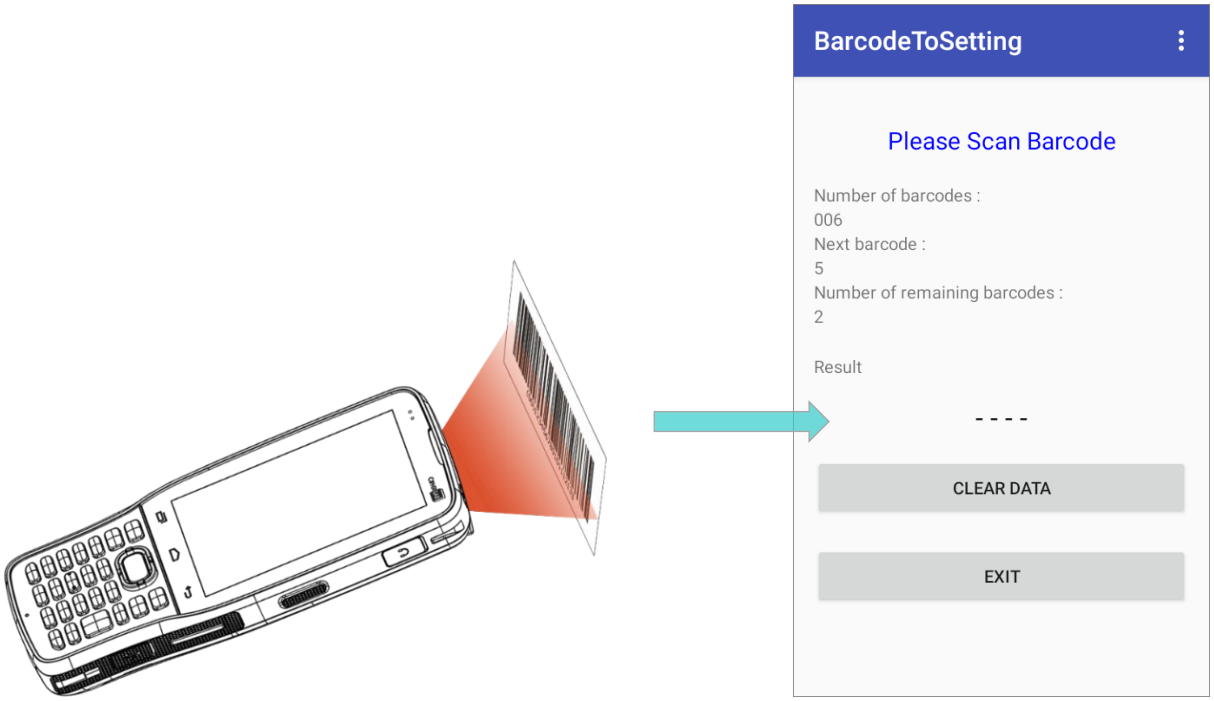
- **1D barcodes:**



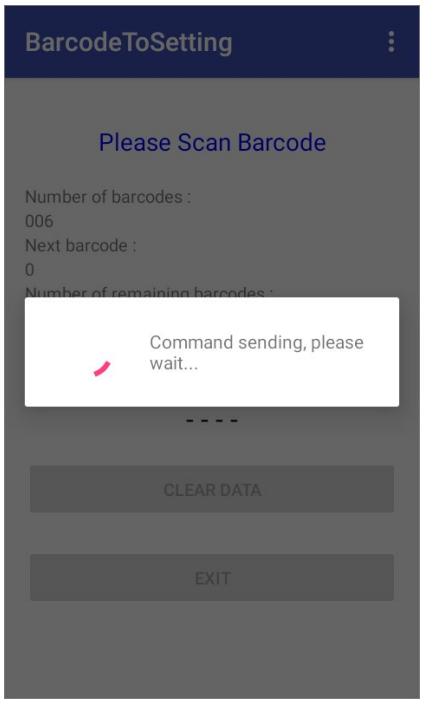
- **2D barcode:**

HOW TO APPLY THE SETTINGS BY SCANNING BARCODE(S)

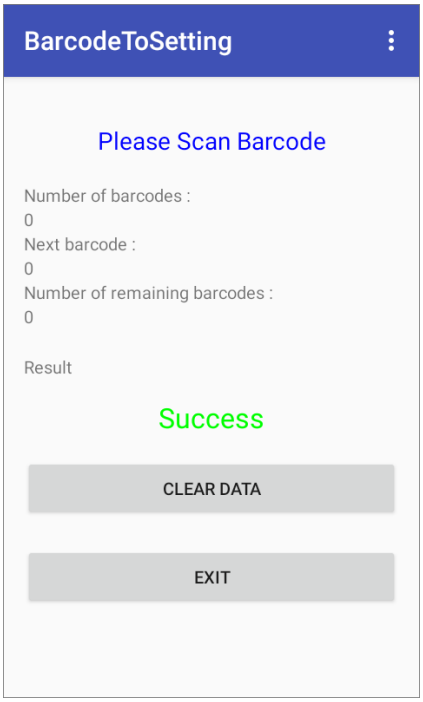
Simply aim the scanning window at the barcode to read and press any of the side trigger. The scanning light beams to read the printed barcodes.



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

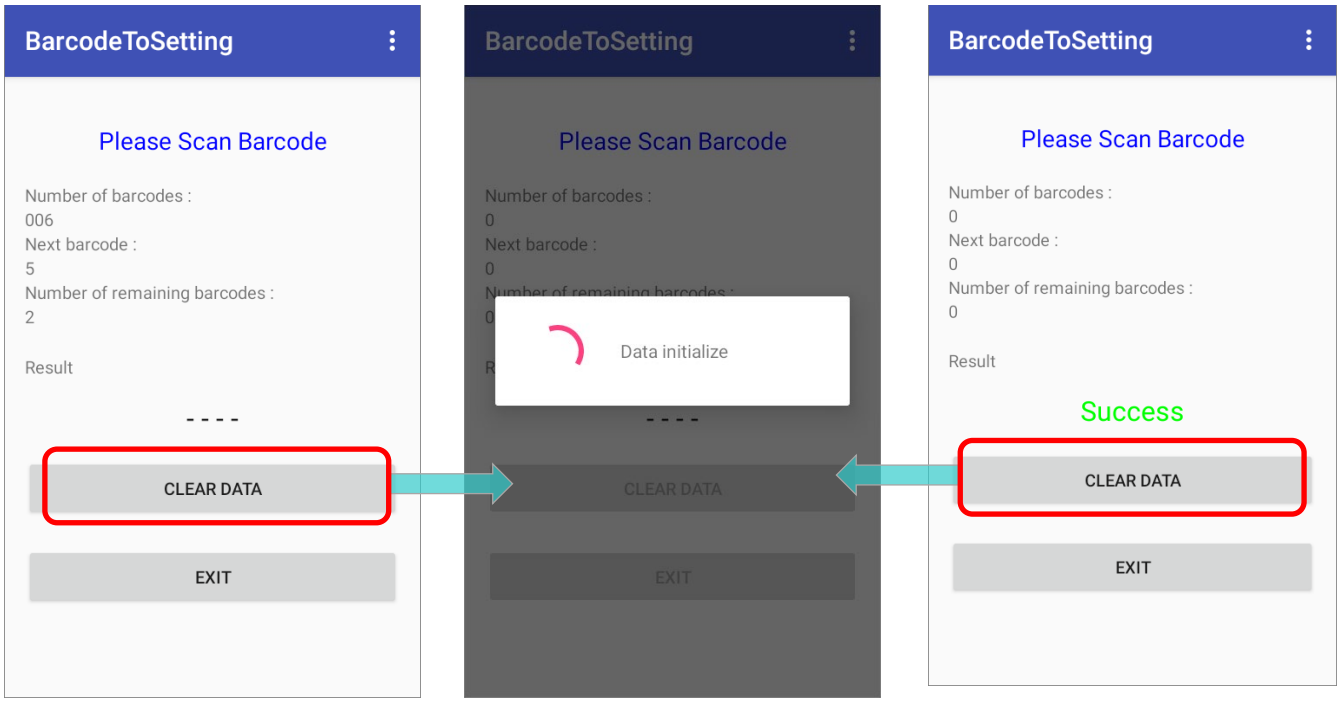


Configuration is complete.



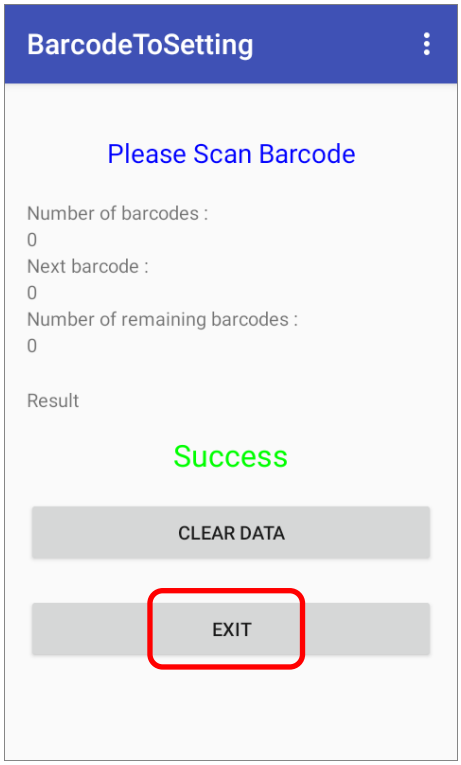
CLEAR DATA

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**".



7.4. BT PRINTER MATE

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

7.5. 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.

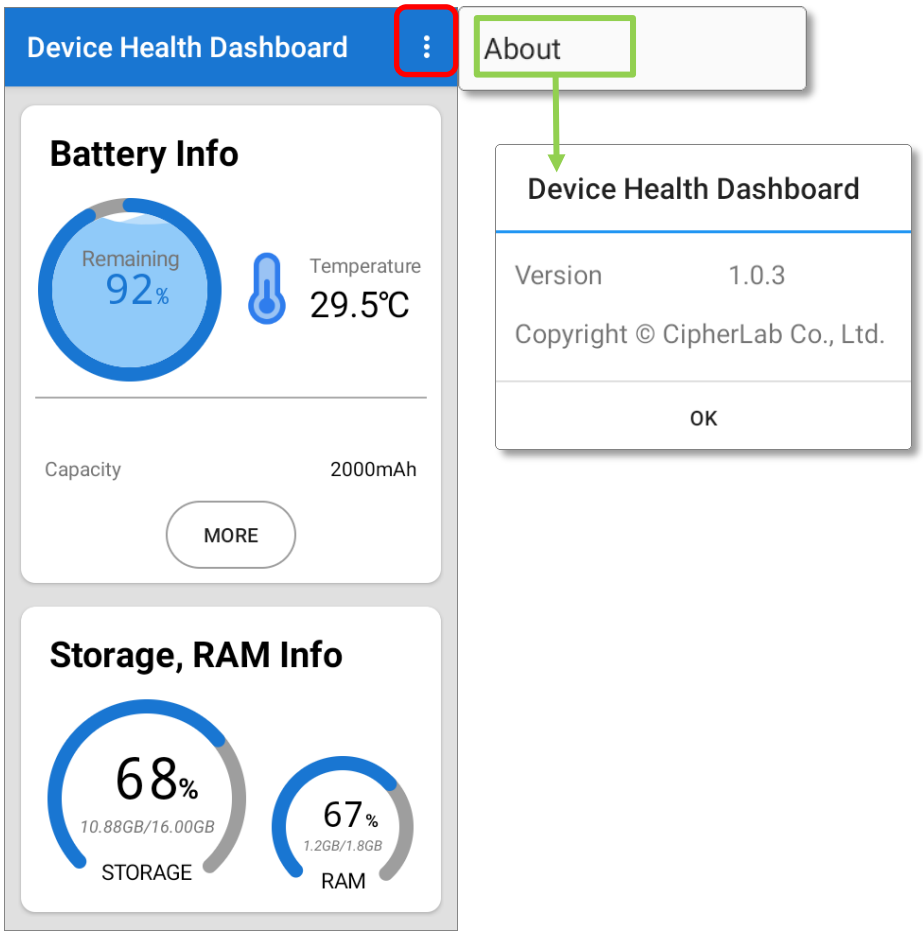
Users can change key behavior of the device with keypad by the application "**Button Assignment**" while changing the key behavior of device without keypad by "**Programmable Keys**" in settings.

Please refer to **Button Assignment User Guide for Android**.

7.6. DEVICE HEALTH DASHBOARD

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

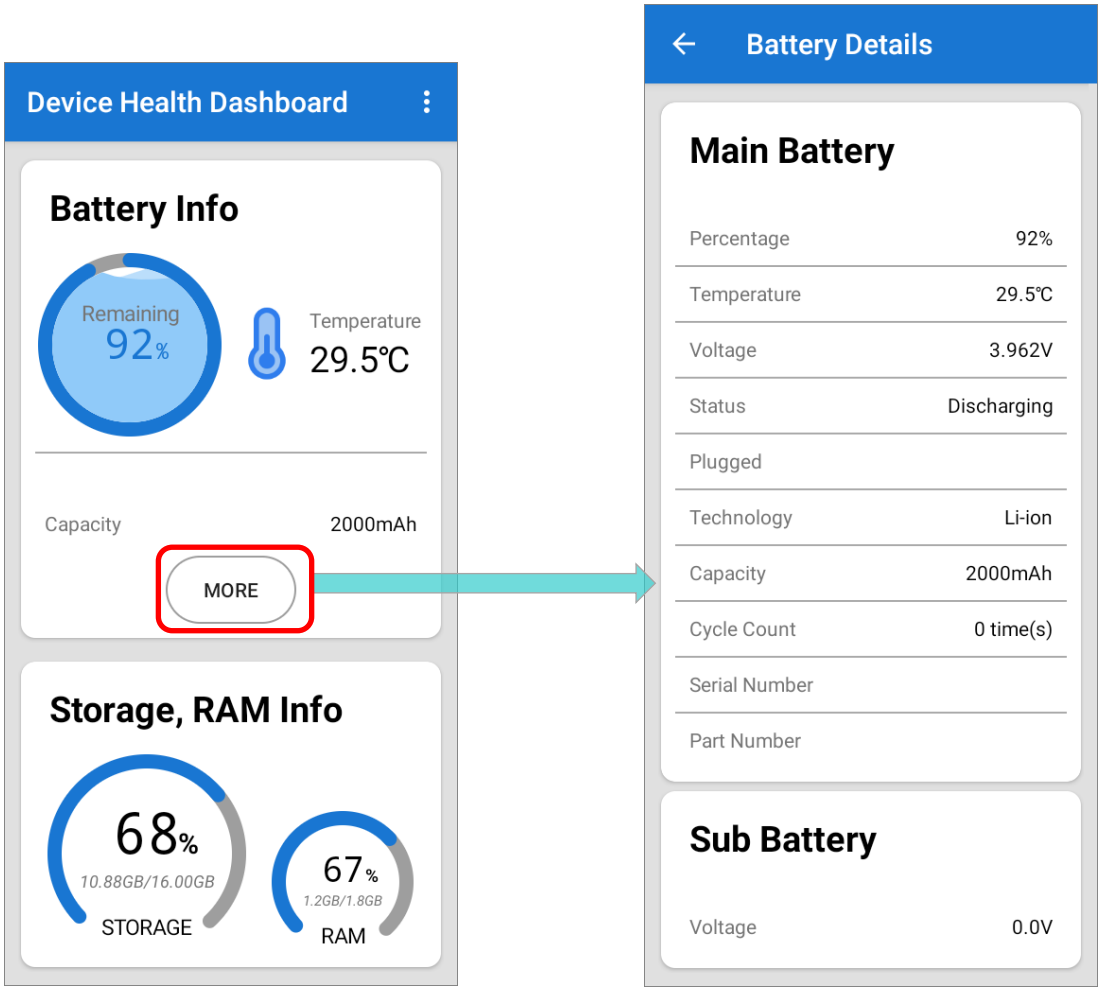
Please go to **App Drawer (All Apps)** and tap on the app "**Device Helth**" to enter its main page, and here you can check "**Battery Info**" and "**Storage, RAM Info**".



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**".

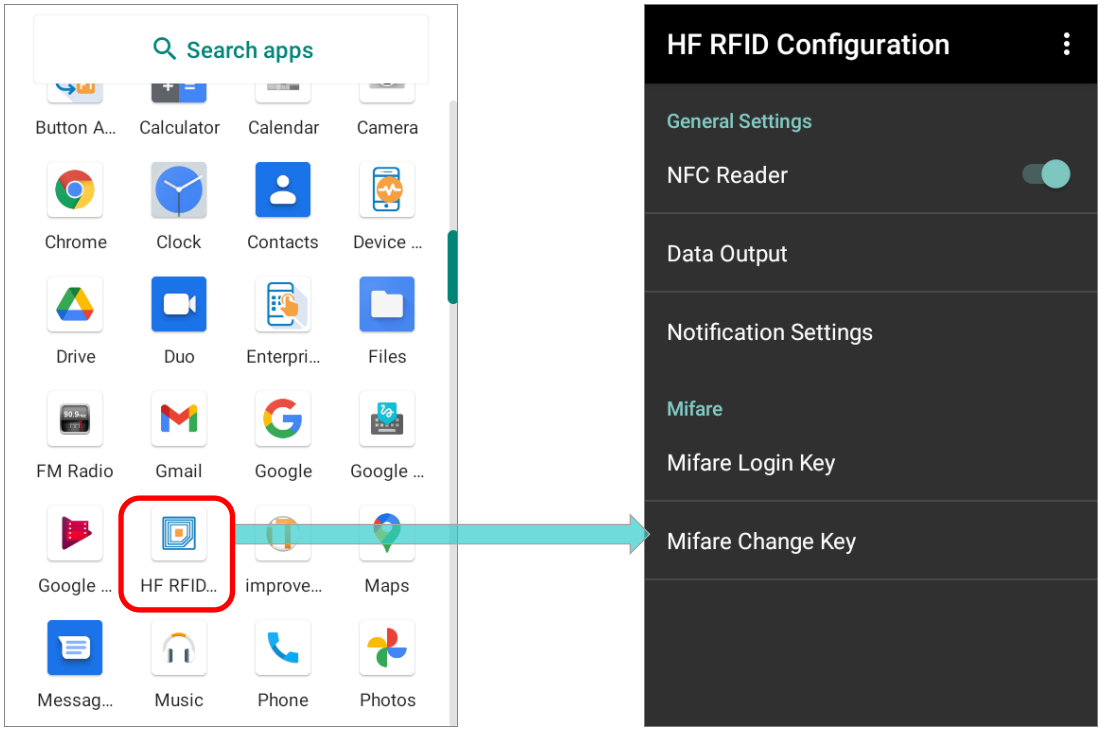


7.7. ENTERPRISE SETTINGS

For the details about **Enterprise Settings** in RK25 mobile computer, please refer to **Enterprise Settings**.

7.8. HF RFID CONFIGURATION

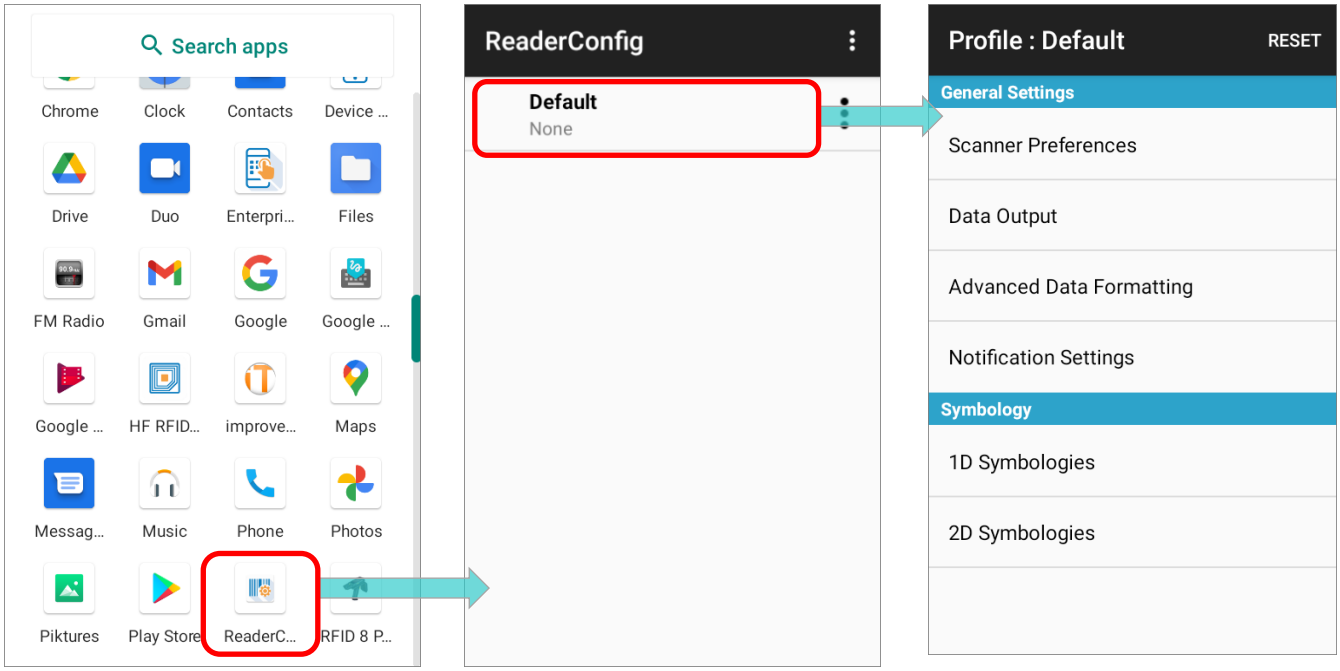
HF RFID Configuration is a NFC application which is for reading and writing NFC tags and RFID compatible chips by putting the NFC tag/ RFID chip close to the NFC detecting area of your device. User can control how the NFC reader works by settings in HF RFID Configuration and enabling it.



Please refer to **HF RFID Configuration User Guide for Android**.

7.9. READER CONFIG

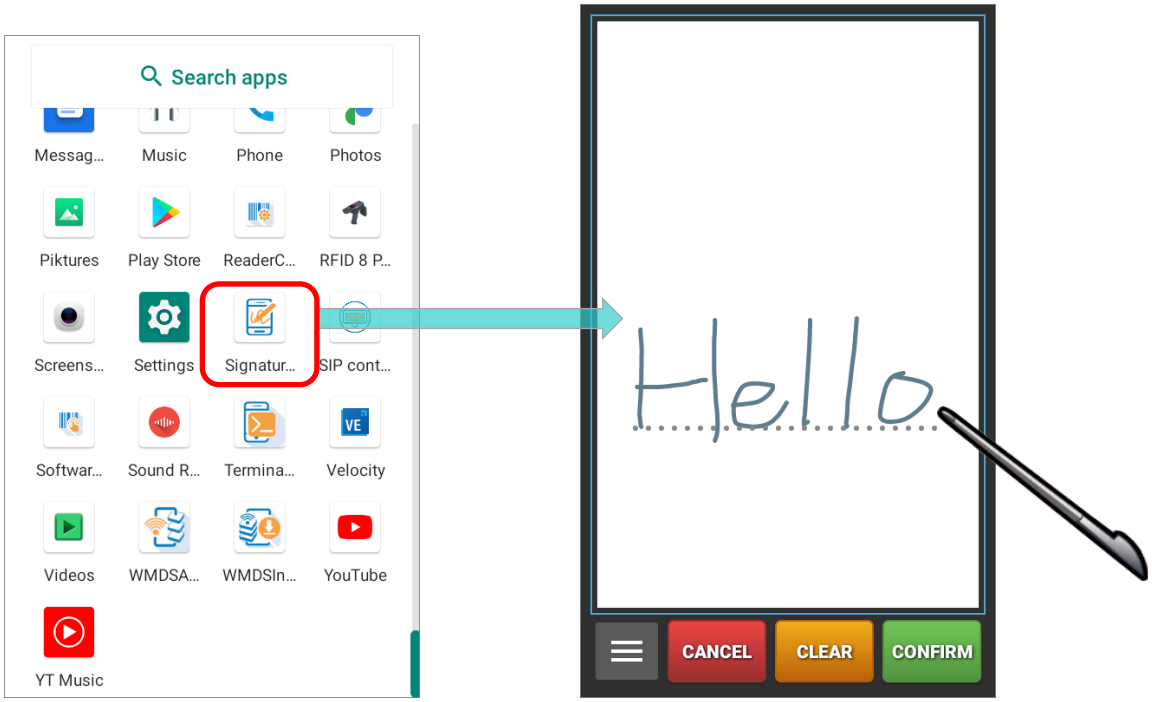
ReaderConfig, a built-in app for configuring the scan engine inside the mobile computer, allows users to set their scanner preferences and the way to output decoded data. Symbology and scanner settings can be saved and exported as a profile for importing again or implementing identical ReaderConfig settings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



Please refer to **ReaderConfig User Guide for Android**.

7.10.SIGNATURE CAPTURE

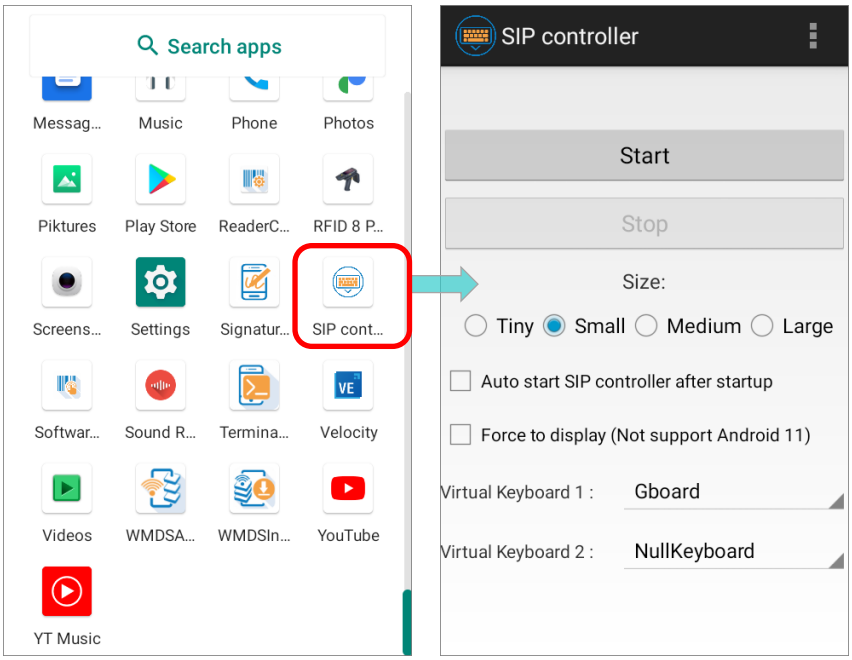
Signature Capture is a simple and easy application which transforms your device into a signature pad for user to draw the signature. Users can create digital signatures and save them in the device storage with multiple file formats.



Please refer to **Signature Capture User Guide for Android**.

7.11.SIP CONTROLLER

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

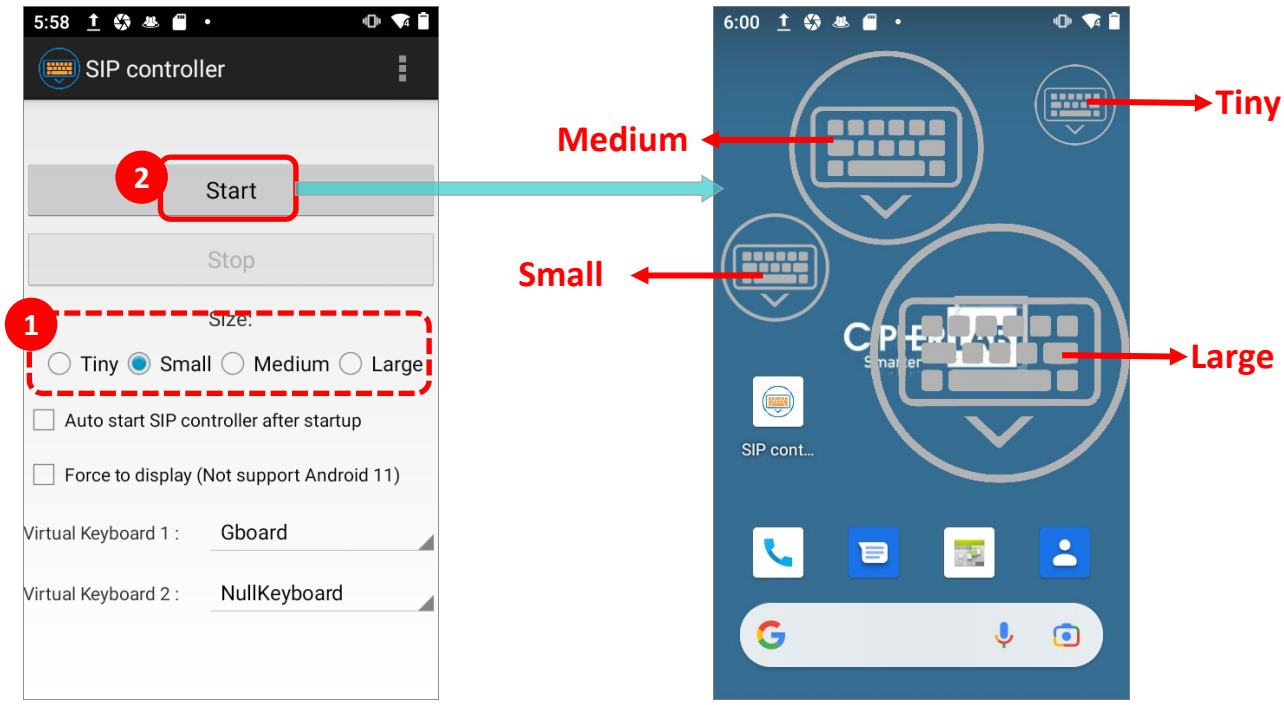


LAUNCH SIP CONTROLLER

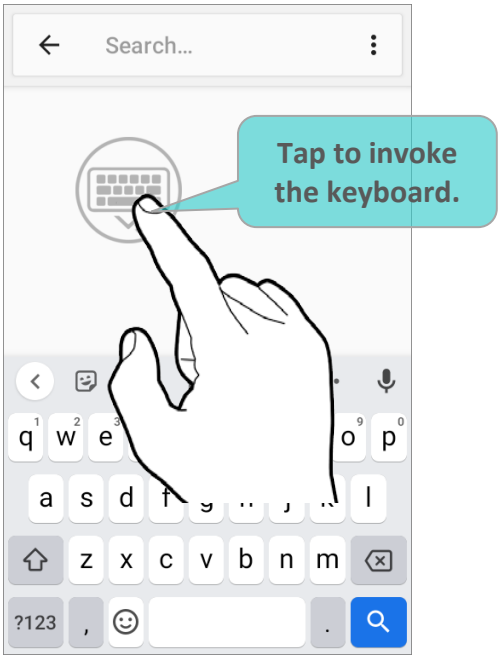
To launch SIP Controller:

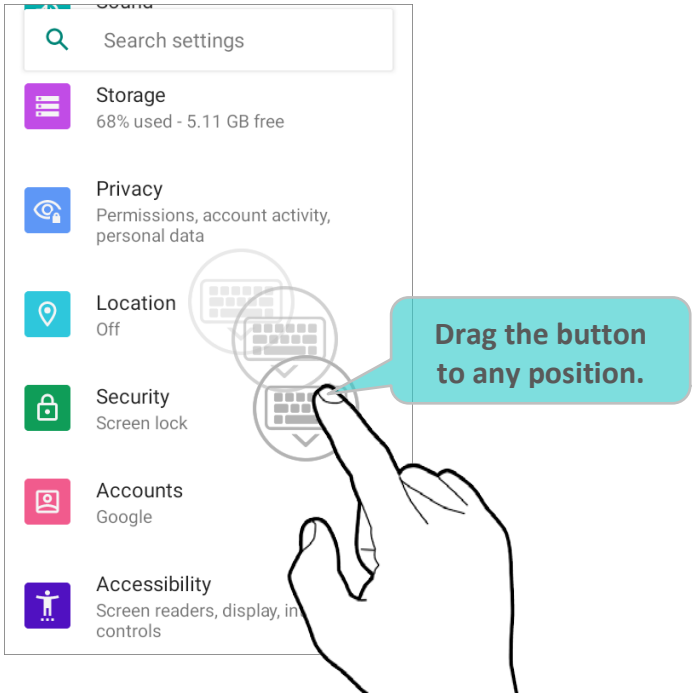
1) On **App Drawer** screen, tap on "**SIP Controller**" to enter the main screen.

2) Select the button size, and then tap on "**Start**".



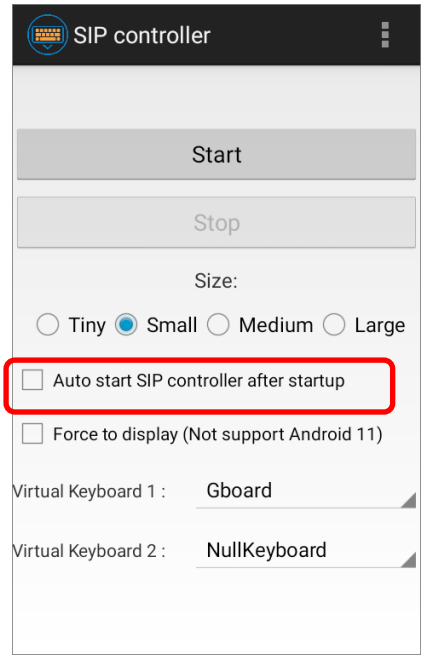
3) Now the "**SIP Controller**" button appears on screen, and you can invoke the virtual keyboard by tapping on it. You can drag this button to any position on the screen.





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.

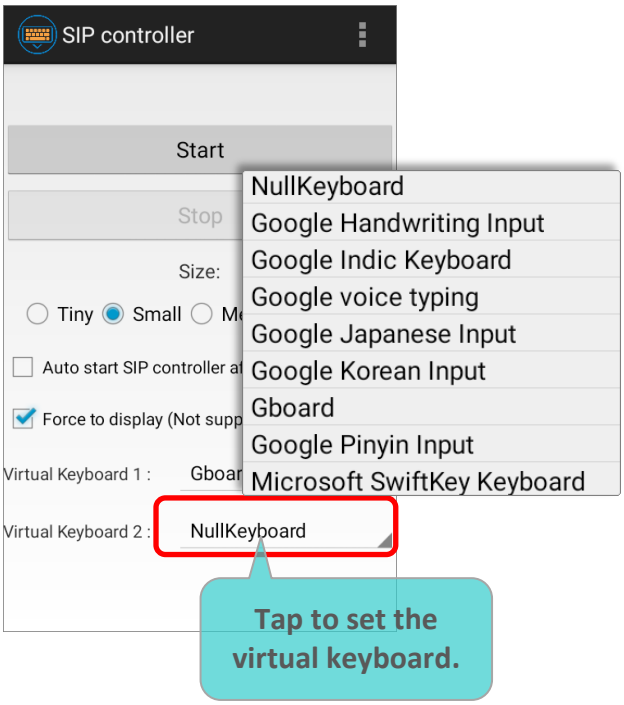


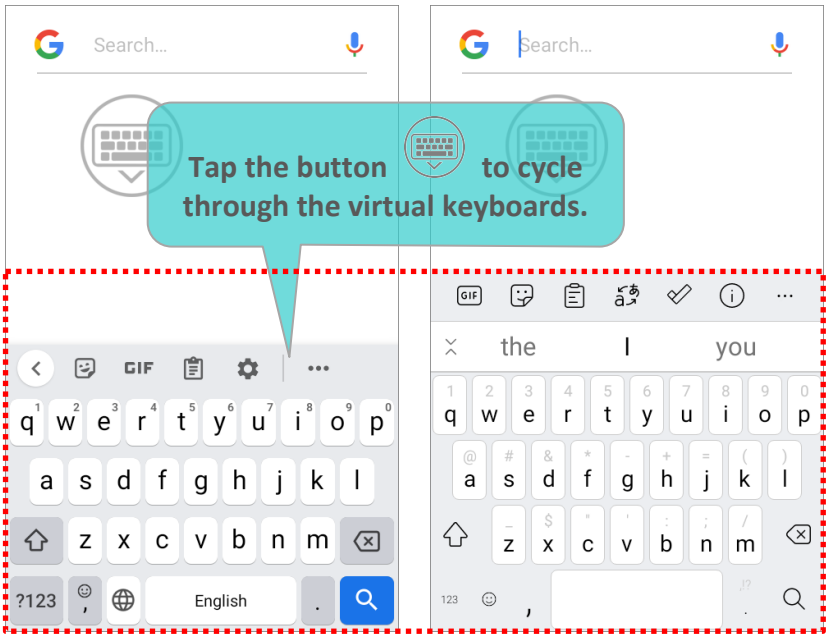
FORCE TO DISPLAY

"**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.





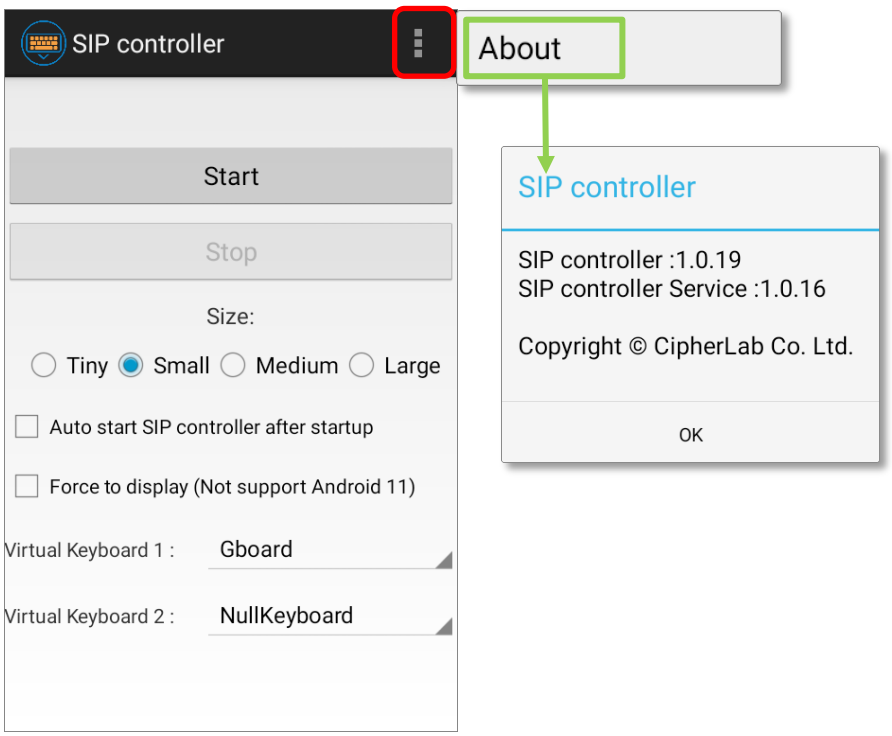
As to the keyboard to be selected on the drop-down menu, please refer to On-screen Keyboard for how to enable the keyboard.

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**.



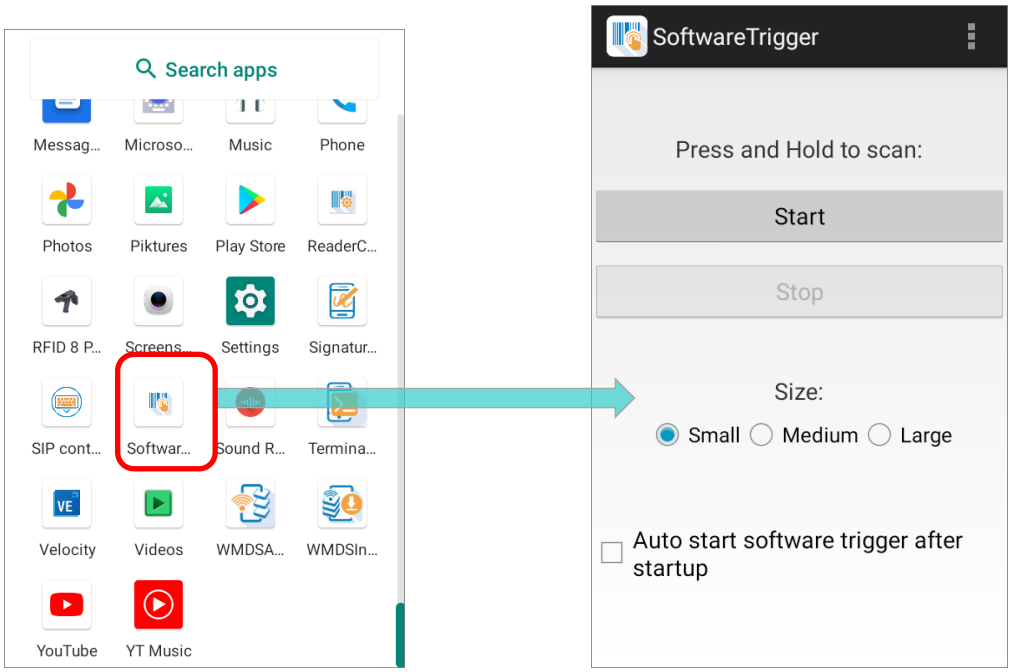
7.12.SOFTWARE TRIGGER

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 bardcode scanner; by tapping and holding this virtual button, the device will keep casting a red beam to scan the code.

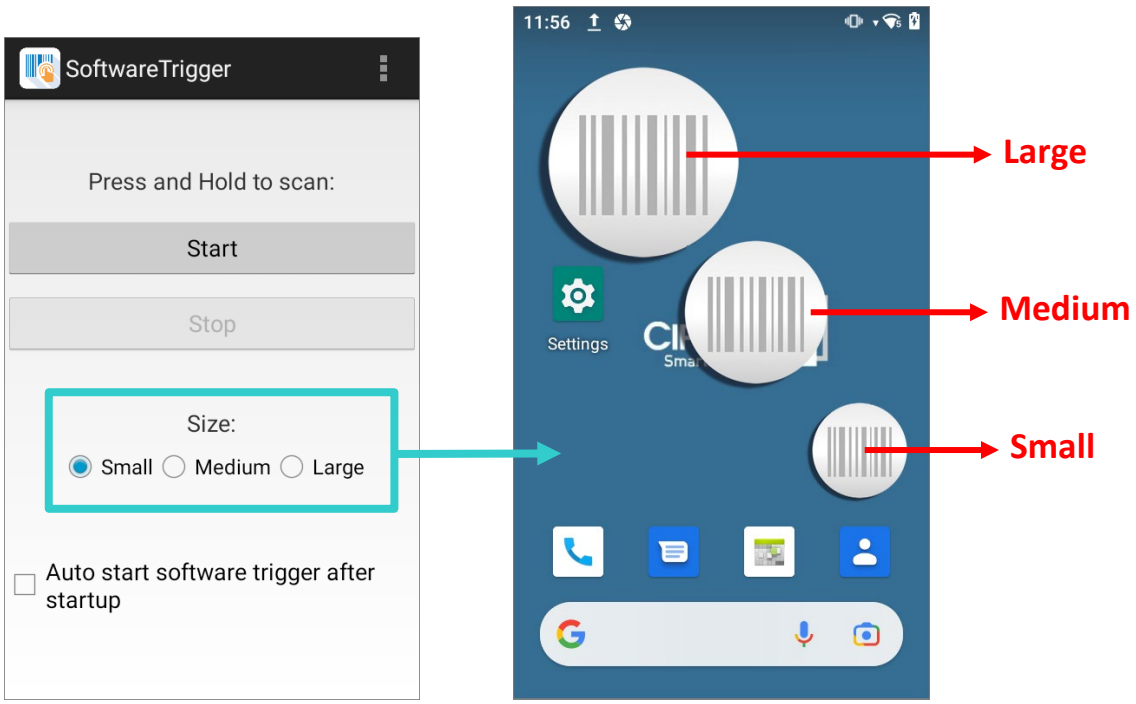
LAUNCH SOFTWARE TRIGGER

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

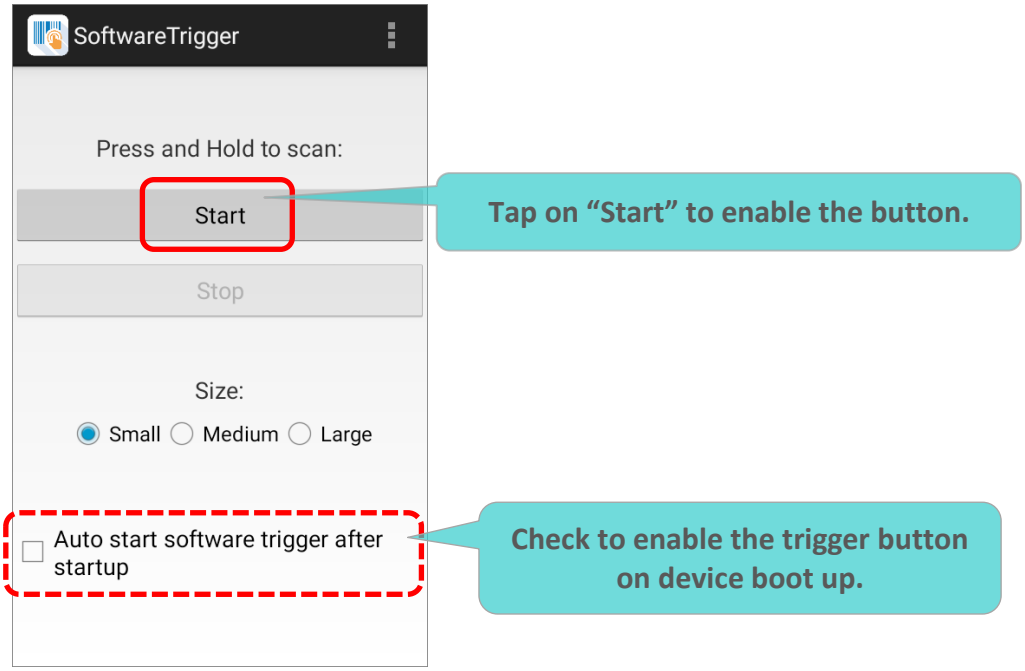
1) Go to **App Drawer** and tap on the app "**Software Trigger**" to enter the main screen.



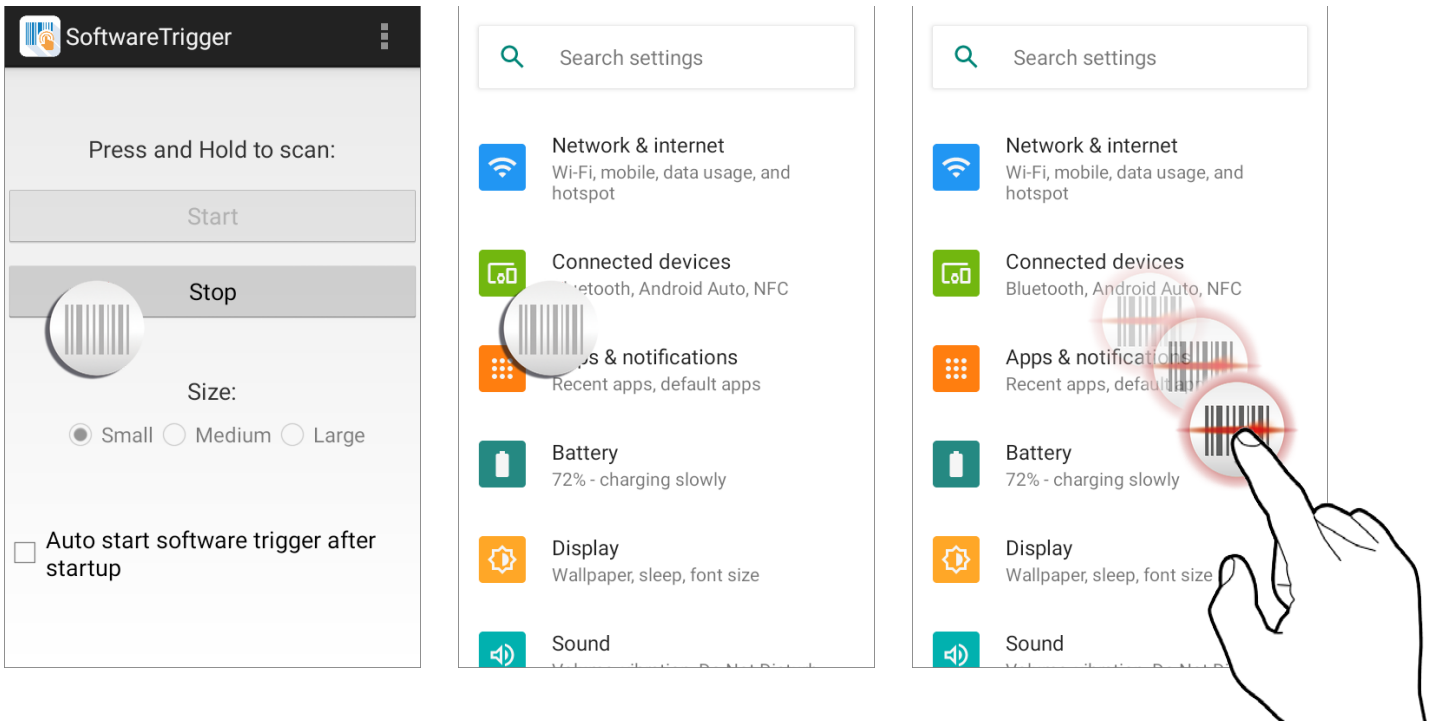
2) Select the size of the virtual trigger button:



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.

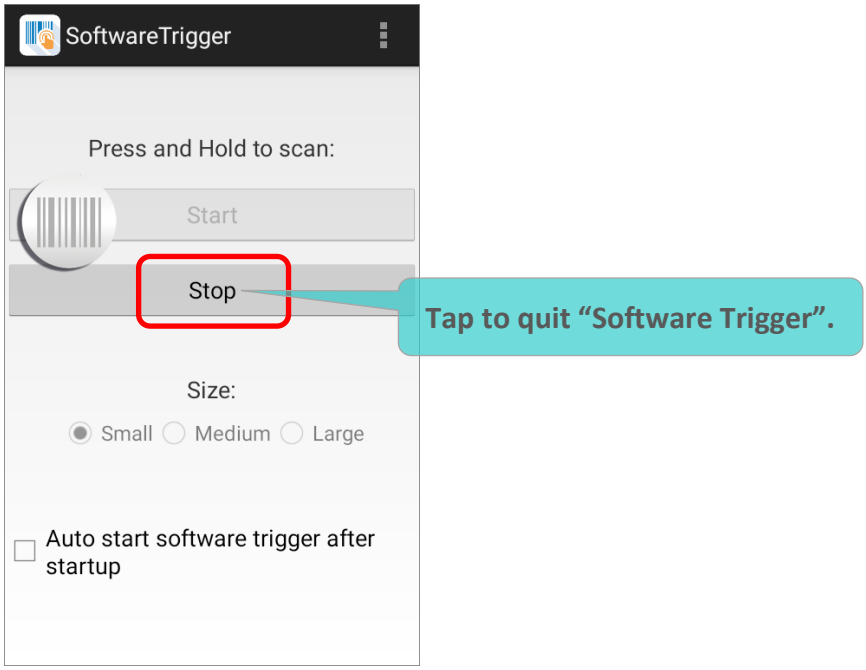


4) An always-accessible software keys will appear on your screen. This trigger button can be dragged to the position on the screen where you feel easy to control the trigger.



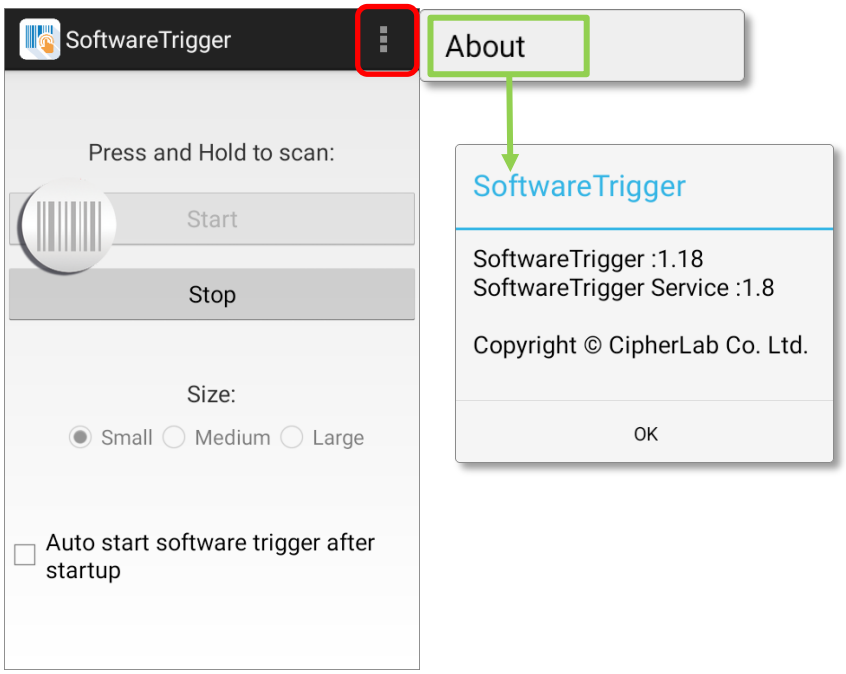
EXIT SOFTWARE TRIGGER

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**".



7.13. TERMINAL EMULATION

Terminal Emulation is brought to support mobile devices, which are high performance products powered by the Android platform. 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.

MIRROR VT/5250 Terminal Emulation is a telnet client with extended ability to launch and configure reader module(s). It links to available reader module(s) when a physical scan button is pressed, to collect decoded data and submit data to the host afar.

Please refer to **Terminal Emulation User Guide (Android)**.

7.14. 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

PLATFORM, PROCESSOR & MEMORY

Operating System & CPU	
OS Version	Android 11 with GMS Certified
CPU	4x Cortex A53 Quad core 1.45GHz

Memory	
ROM	16GB eMMC(MLC) / User data 10GB
RAM	2GB LPDDR3 SDRAM
Expansion Slot	One Micro SDHC card slot (up to 32GB) SDXC supported (up to 64GB) Micro SIM socket x1, Micro SAM socketx1

COMMUNICATION & DATA CAPTURE

Communication	
USB Client	USB 2.0 OTG
WPAN	Bluetooth Class I, v4.0, v4.1,V4.2 v2.1, BLE, (2402~2480 MHz: 4.05dBm)
WLAN	802.11 b/g/n and 802.11 a/ac/n networking (2412~2472 MHz: 18.34dBm 5180~5240MHz: 17.04dBm, 5260~5320MHz: 17.04dBm, 5500~5700MHz: 17.01dBm)
WWAN	Built-in WWAN modem for Quad-band GSM, UMTS, LTE functions: GSM/GPRS/EDGE/WCDMA/UMTS/HSDPA/HSUPA/HSPA+/LTE **Frequency band** GSM: Quad Band(850/900/1800/1900Mhz) TD-SCDMA: Band34, Band39 WCDMA: Band1, Band2, Band5, Band8, TDD-LTE: Band38, Band39, Band40, Band41 FDD-LTE: Band1,Band2, Band3, Band5, Band7, Band8, Band20
GPS	GPS, GLONASS, BeiDou, AGPS

Data & Image Capture	
Digital Camera	Rear: 8 Mega pixels with user-controllable flash
Barcode Reader	2D Imager
HF RFID Reader	HF RFID 13.56 MHz (-1.17 dBuA/m at 10m) frequency which supports ISO14443A, ISO14443B, ISO15693, Felica ▪ Supports NFC (Peer-to-Peer, Card Reader, Card Emulation)

ELECTRICAL CHARACTERISTICS

Li-Polymer

Main Battery Pack	Rechargeable Li-polymer battery: 3.8V, 4000 mAh Charging temperature: 0-45°C Minimum charging time: 4 hours @25°C 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-Polymer battery: 3.7V, 60 mAh 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 BSMI, CCC, FCC, CE, RCM, PSE, PSB

Working Time

Supports working time for up to 10 hours at 25 degrees.

PHYSICAL CHARACTERISTICS

Color Touch Screen Display	
Display	4.0 inch, LCD, Corning Gorilla Glass 3
Resolution	800(RGB) X 480 Pixel

Notifications	
Status LED	2 LEDs include one bi-color (green & red) LED for power indications, and one tri-color (blue, green, & red) LED for reader and system notification.
Audio	Integrated with one speaker, microphones with echo and noise cancellation, HD voice support

Dimensions & Weight	
Dimensions	168 mm (L) x 73.8mm (W) x 25.85mm (H)
Weight	292g (with 4000mAh battery pack and SE4750 reader) ±5g

ENVIRONMENTAL CHARACTERISTICS

Temperature	
Operating	-20°C to 50°C
Storage	-30°C to 70°C
Charging	0°C to 45°C

Humidity	
Operating	10% to 90% (non-condensing)
Storage	5% to 95% (non-condensing)

Resistance	
Impact Resistance	Multiple drops onto concrete at 1.5m on all six sides
Tumble Test	150 tumbles (300 drops/hits) at 0.5 meter per applicable IEC tumble specifications
Splash/Dust Resistance	IP65 per applicable IEC sealing specifications
Electrostatic Discharge	±15 kV air discharge, ±8 kV contact discharge

PROGRAMMING SUPPORT

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

APPENDIX I

APPLICATION MENU

Icon	Name	Description
	A-Demo	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.
	AppLock	An application used to limit the system resources made available to users.
	BarcodeToSettings	An application for reading the setting barcodes generated by ADC (Android Deployment Configurator) to apply the configuration.
	BT Printer Mate	An application for providing user interface to pair with Bluetooth printers.
	Button Assignment	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.
	Calculator	Performs mathematical calculations.
	Camera	Takes pictures and shoots videos.
	Calendar	Creates and manages events, meetings and appointments.
	Chrome	An Android built-in browser application developed by Google.
	Clock	Sets date, time, time zone according to your locale, and sets and manages alarms.
	Contacts	Manages contact information, and shares or exports/imports the information to other devices or SD card.
	Drive	An Android built-in application for a file storage and synchronization service created by Google.

Icon	Name	Description
	Duo	A one-to-one video call application developed by Google.
	Enterprise Settings	An application to control how the physical keypad works.
	File	Browses and manages files on the local storage and storage card.
	Gmail	An Android built-in application for Gmail, a free email service provided by Google.
	Google	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.
	Google Movies & TV	An Android built-in application for an online video on demand service operated by Google.
	HF RFID Configuration	An application for the configuration of RFID & NFC.
	Maps	An Android built-in app developed by Google.
	Messages	Sends SMS and MMS messages.
	Music	An application for playing the music stored on your device.
	Phone	Places and receives calls, accesses voicemail, views call history, manages phone contacts, and adjusts phone settings.
	Photos	An Android built-in application for a photo and video sharing and storage service developed by Google.
	Play Store	An Android built-in application providing access to a digital distribution service, including a digital media store, Play Store operated and developed by Google.
	Reader Config	Sets scanner preferences, data output format and destination, symbology settings, and reads barcodes.

Icon	Name	Description
	Settings	Opens settings to configure the mobile computer.
	Signature Capture	A simple and easy application which transforms your device into a signature pad.
	SIP Controller	An application for quickly open or close virtual keyboard by tapping on the floating button.
	Software Trigger	An application serving as a real trigger key, floating on top of all other programs for convenient trigger control of the barcode scanner.
	Sound Recorder	Records and plays audio information.
	Terminal Emulation	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.
	Video	An application for playing the videos stored on your device.
	WMDSAgent	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.
	WMDSInstaller	The WMDSInstaller will fetch the latest WMDS Agent version over the Internet and then perform auto-installation.
	YouTube	An Android built-in application for a video-sharing service.
	YT Music	A music streaming service application developed by YouTube. which allows users to browse through songs and music videos on YouTube.

APPENDIX II

OPEN SOURCE LICENSE

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

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