CipherLab

Reference Manual

RK95 Mobile Computer

Android™ 9, Pie

Version 1.04

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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 Radiation Exposure Statement
This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

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

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

Find the certificate information from:

Setup → About Phone → Regulatory information

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. 1.42 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. 0.868 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。

- Thailand SAR Caution:
  เครื่องวิทยุคมนาคมนี้มีอัตราการดูดกลืนพลังงานจำเพาะ (Specific Absorption Rate - SAR)
  อันเนื่องมาจากเครื่องวิทยุคมนาคมเท่ากับ 0.868 W/kg
  ซึ่งสอดคล้องตามมาตรฐานความปลอดภัยต่อสุขภาพของมนุษย์จากการใช้เครื่องวิทยุคมนาคมที่คณะกรรมการกิจการโทรคมนาคมแห่งชาติประกาศกำหนด

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

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

GENERAL GUIDELINE AND WARNING

- Use specific Lithium Polymer/Li-ion charger from CipherLab only. Failure to do so may cause fire, which may result in personal injury and property damage.
- Never charge batteries unattended. When charging Lithium Polymer/Li-ion batteries, you should always remain in constant observation to monitor the charging process and react to potential problems that may occur.
- Some Polymer/Li-ion chargers on the market may have technical deficiencies that may cause it to charge the LiPo/Li-ion batteries incorrectly or at an improper rate. Assure the charger you purchased works properly and always monitor charging process to ensure batteries are being charged properly. Failure to do so may result in fire.
- If at any time you witness a battery starting to balloon, swell up, smoke or hot; stop using this battery at once and contact your dealer immediately.
- If you accidentally short the battery polarity, the battery must be placed in a safe area for observation for approximately 15 minutes. Additionally, if a short occurs and contact is made with metal (such as rings on your hand), severe injuries may occur due to the 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°C to 30°C.
- Do NOT charge battery under direct sunlight.
- When selecting the cell count or voltage for charging purposes, select the cell count and voltage as it appears on the battery label. As a safety precaution, please confirm the information printed on the battery is correct.
- Lithium Polymer/Li-ion batteries has limited life cycle for charging and discharging. When life cycle has been reached, battery may swell.
- The allowed charging temperature is from 0°C to 45°C.
- During discharge and handling of batteries, do not exceed 50°C.

STORAGE & TRANSPORTATION

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

TO USE, HANDLE, AND DISPOSE BATTERY

- For Li-ion / Li-polymer battery, it is normal to balloon, expand, or swell after one year or 500 cycles (full charge-discharge cycles). Although we guarantee it will NOT cause any damage, it can't be used again and must be disposed at once, therefore we strongly recommend to replace battery every year or after 500 cycles, depend on which comes first.
- If a battery performance decreases more than 20%, it means the battery is at the end of its life cycle. Please stop using this battery, dispose properly according to the location's safe battery disposal procedures, and replace with a new / healthy one.
- The actual number of charge cycle will vary depending on usage conditions, patterns, ambient temperature, and other variables.
- Do NOT discharge battery to a level below 5V per battery under load. Deep discharge below 3V per battery can deteriorate battery performance.

- 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

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.
- Overuse may damage your eyes.

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 **3000mAh** main battery to full while it takes 6 hours to charge an **6000mAh** main battery. 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.
- **Main battery for Cold Chain Model:** The main battery for Cold Chain model is **5500mAh** and it takes 6 hours to charge it to be full. For the first time charging the main battery, please charge it for at least 8 to 12 hours.
- When the main battery is removed, RTC retention will be maintained for at least 30 minutes.
- **Backup battery:** The backup battery is mounted on the main board. Its role is to temporarily keep the mobile computer in suspension when the main battery is drained out so data in DRAM will be retained. The backup battery takes approximately 4 hours to charge to full by the main battery or power adapter.
- 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 行動電腦
Model : RK95

CIPHERLAB

INPUT
5 V ⎓, 2 A

US
FCC ID : Q3N-RK95

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.

CA
IC : 5121A-RK95

Complies with Canadian ICES-003 Class B.
Conforme a la NMB-003 classe B du Canada.

This device complies with ISED's licence-exempt RSSs.
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

CCAL19LP2980T1

減少電磁波影響,請妥適使用

AU/NZL

IN

IS 13252(PART1)/
IEC60950-1

R-41077615
www.bis.gov.in

CE DECLARATION

CIPHER LAB

Declaration of Conformity

Manufacturer

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Type of Equipment

Mobile Computer

Model(s) Declared

RK95

Initial Year of Manufacture **2019**

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

EN 62311:2008
EN 50566:2017
EN 50663:2017
EN 62479:2010
EN 300 328 V2.1.1
EN 301 893 V2.1.1
EN 300 330 V2.1.1
EN 60950-1：2006+A2:2013
EN 301 489-1 V2.2.1
EN 301 489-3 V2.1.1
EN 301 489-17 V3.2.0
EN 55024 :2010+A1:2015
EN 61000-3-2 :2014 classA
EN 61000-3-3 :2013
EN 55032: 2015+AC:2016

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

Manufacture Signature Vicky Chiang

Full Name :Vicky Chiang
Title : Senior Engineer
Date: 2019.07.04

RELEASE NOTES

Version	Date	Notes
1.04	Jan. 22, 2021	Update **Chapter 4: Cold Chain Model**.
1.03	Sep. 24, 2020	Update **Section 2.7.7: Keypad Lock**. Update **Section 3.4: OS Update**. Update **Section 3.6.3: Welcome Wizard**. Add new chapter: **Cold Chain Model**. Update **Chapter 6: Using Reader Configuration Utility**. Update **Specifications**.
1.02	April 1, 2020	Add description about "Intent Action" & "Intent Decode Data" to **Section 5.2.1: General Settings**.
1.01	March 16, 2020	Update the figures of RK95 mobile computer. Add the description about the Wi-Fi connection during battery swap. Update the description about how to turn off Alpha mode for 52-key model in **Section 2.7.2: Alpha Key**. Update **Specifications**.
1.00	Jan. 27, 2020	Initial release

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INTRODUCTION

The **RK95** mobile computer, powered by Android 9 Pie, 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, 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 802.11 a/b/g/n/ac ,dual band , MU-MIMO 2x2 networking technologies, the mobile computer gains greater speeds and optimal mobility.

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 9 Pie operating system with a powerful Qualcomm Octa-core CPU.
- 64GB eMMC flash memory to store OS and software programs.
- 4GB LPDDR4 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 2TB.
- Built-in 13 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 802.11 a/b/g/n/ac ,dual band , MU-MIMO 2x2 networking, and near field communication (NFC, available on request)
- A 4.3 inch, LCD, Corning Gorilla Glass 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.

- RK95 Mobile Computer
- Snap-on Cable
- AC Power Adaptor
- Hand Strap
- Quick Start Guide

ACCESSORIES

- 1-slot Charging + Communication Cradle
- Pistol Grip
- Rubber Boot
- 4-Slot Battery Charger
- 5-Slot Terminal Cradle
- 5-Slot Charging Cradle
- 4-Slot Terminal & 4-Slot Battery Cradle
- 4-Slot Charging & 4-Slot Battery Cradle

RELATED DOCUMENTATION

Log in to **GoBetween** to access related documentation about the RK95 mobile computer from the CipherLab Central Service (CCS) platform. Download the **GoBetween desktop** or mobile device application, or launch the GoBetween Lite web application from the following site: http://ccs.cipherlab.com/.

Chapter 1

QUICK START

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

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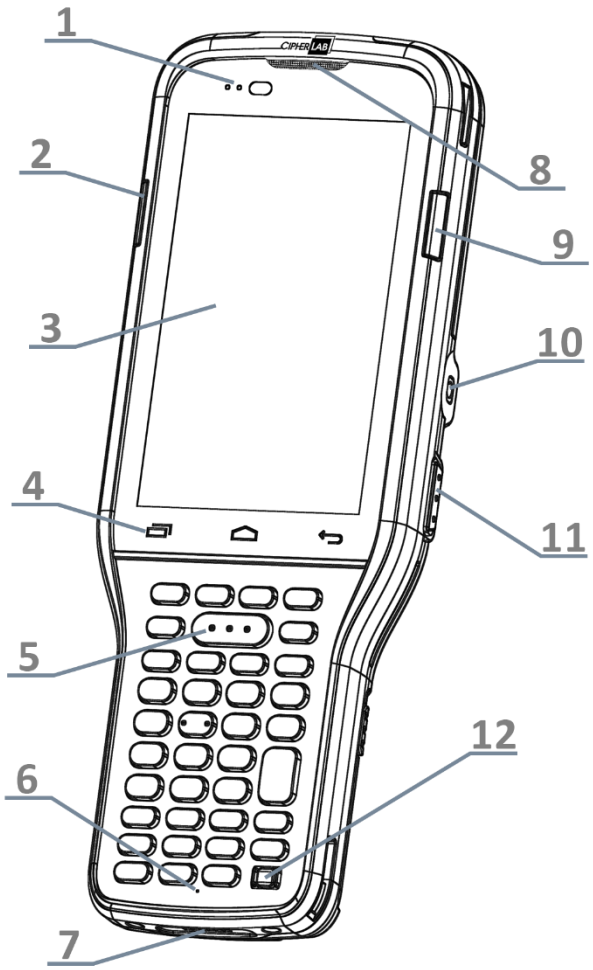
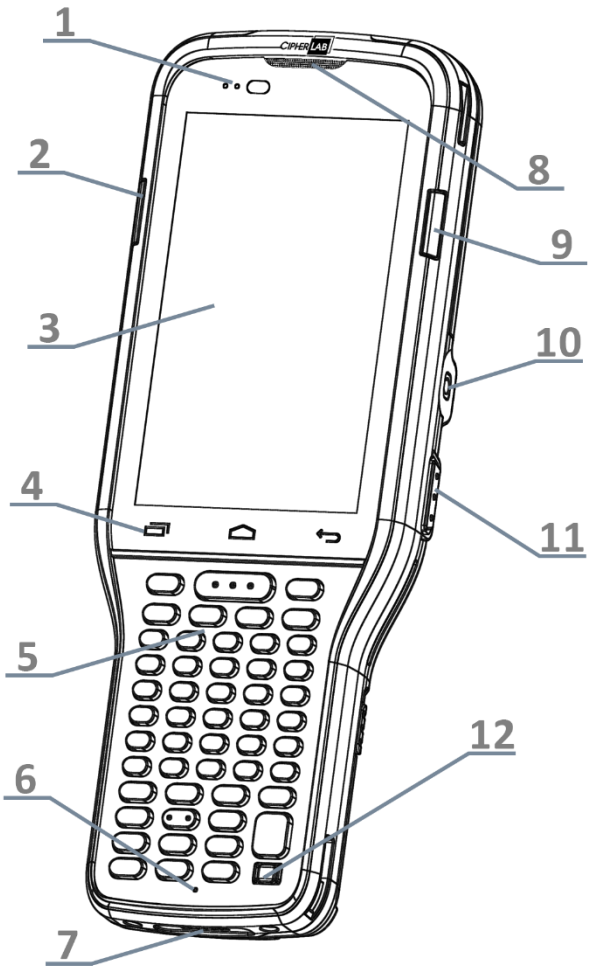
1.2 Charging & Communication 29

1.1. OVERVIEW

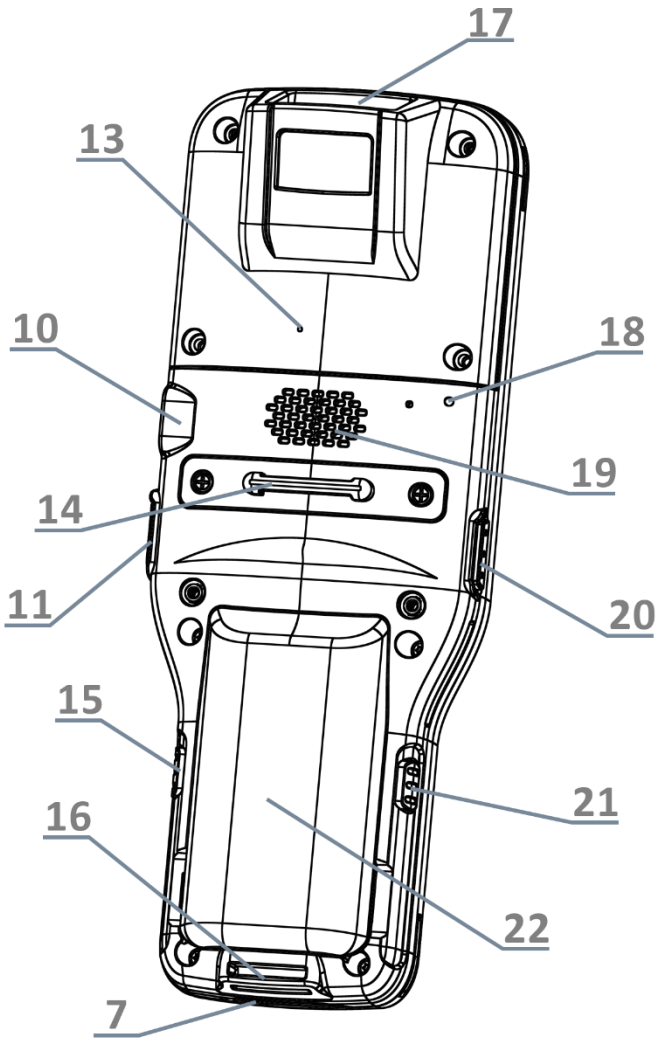


38-Key Model

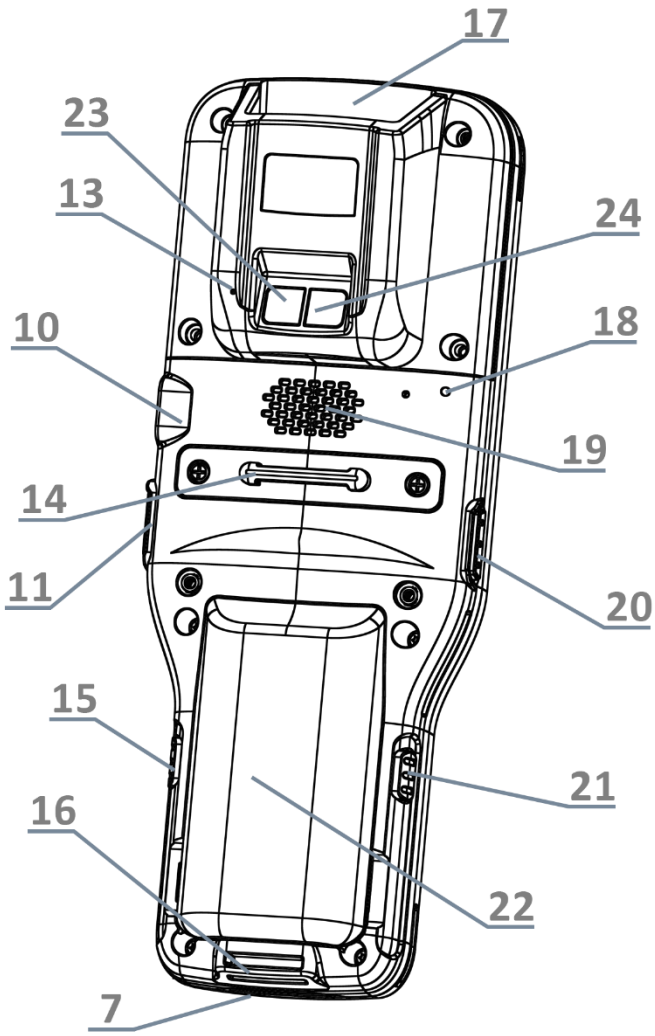


52-Key Model

No.	Description	No.	Description
1	Status LED	2	Side LED (Left)
3	Touchscreen	4	Hardware Buttons
5	Scan Key	6	Microphone
7	Charging & Communication Pins	8	Receiver
9	Side LED (Right)	10	Headset Jack
11	Side-Trigger (Right)	12	Power Button



Without Camera



With Camera

No.	Description	No.	Description
13	Rear Microphone	14	Handstrap Cover
15	Battery Cover Release Button (Right)	16	Handstrap Hole
17	Scan Window	18	Back Cover LED
19	Speaker	20	Side-Trigger (Left)
21	Battery Cover Release Button (Left)	22	Battery (with Cover)
23	Camera Flash	24	Camera

1.1.1. INSTALL/ REMOVE BATTERY

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

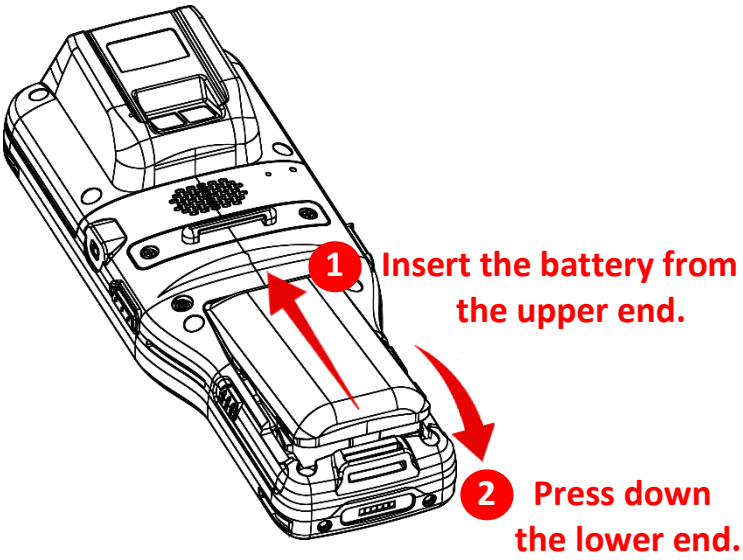
Note:

(1) Any improper handling may reduce the battery life.

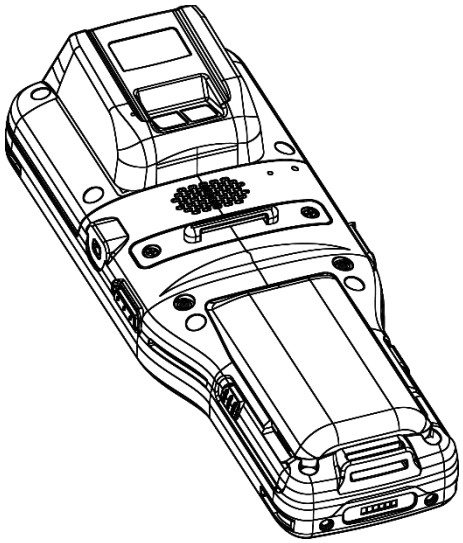
(2) Always use a fully-charged main battery for battery replacement.

INSTALL

To install the battery (which is with the battery cover), please insert a fully-charged main battery into the battery chamber from the upper end, and then press down the lower edge of the battery.



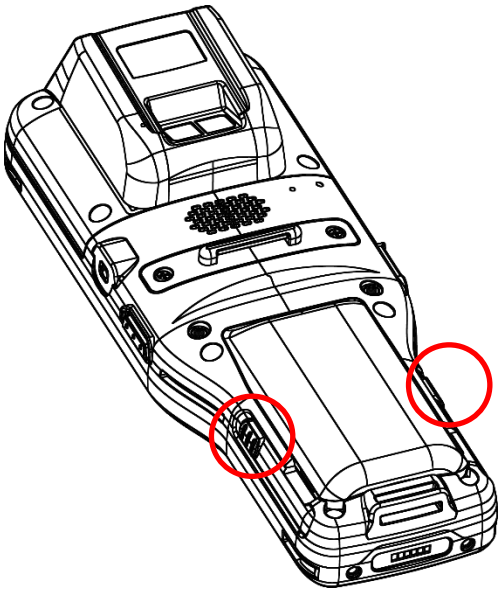
A click sound is made once the battery is in place.

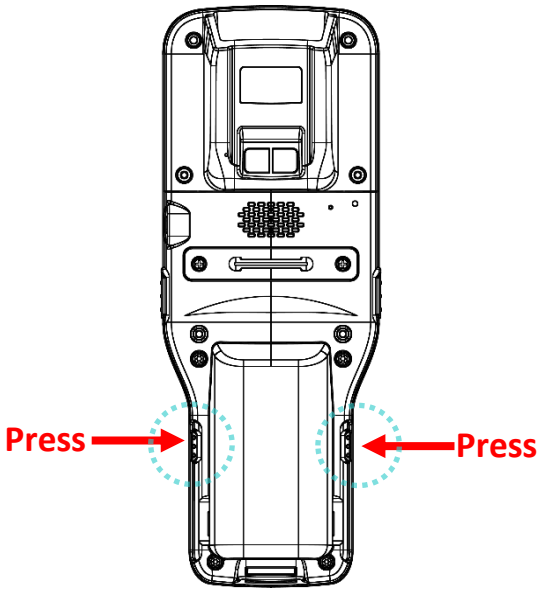


REMOVE

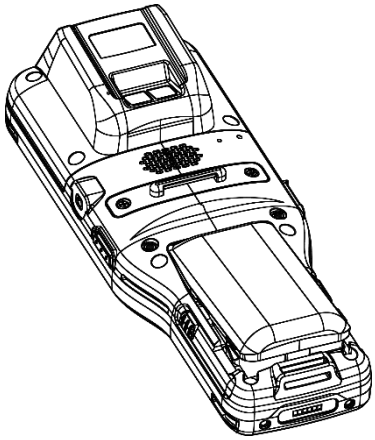
To Remove the main battery:

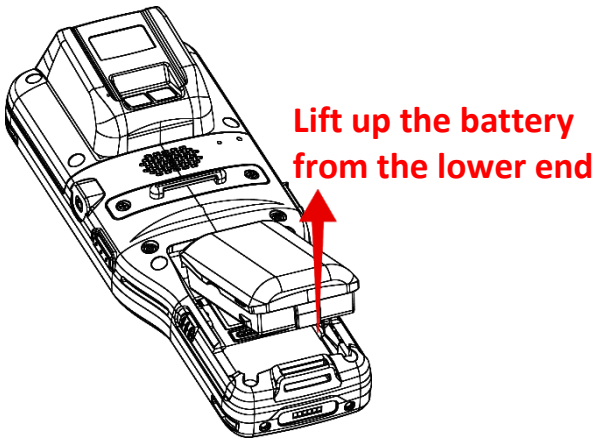
1) Press the release buttons on the two sides of the device at the same time.

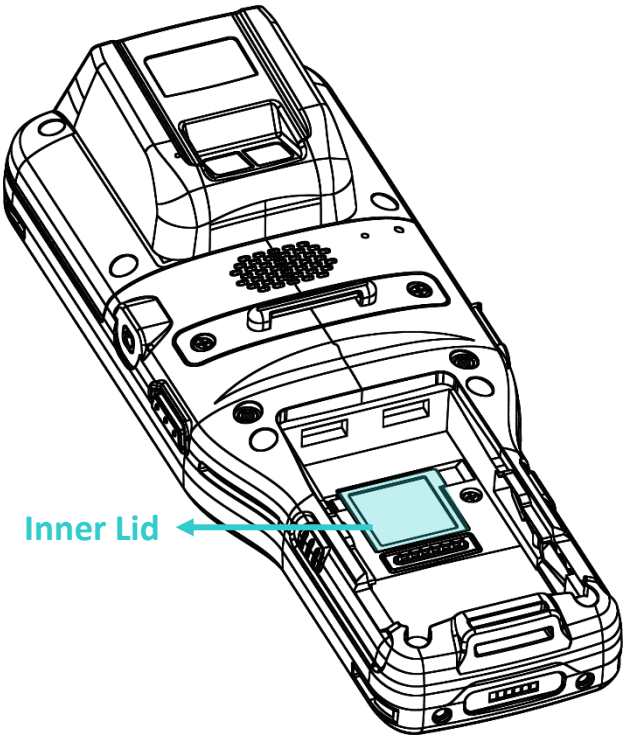




2) The battery slightly tilts up and it is ready to be removed. By holding the two sides of the battery cover, lift up the main battery (which is with the battery cover) from its lower end to remove it.







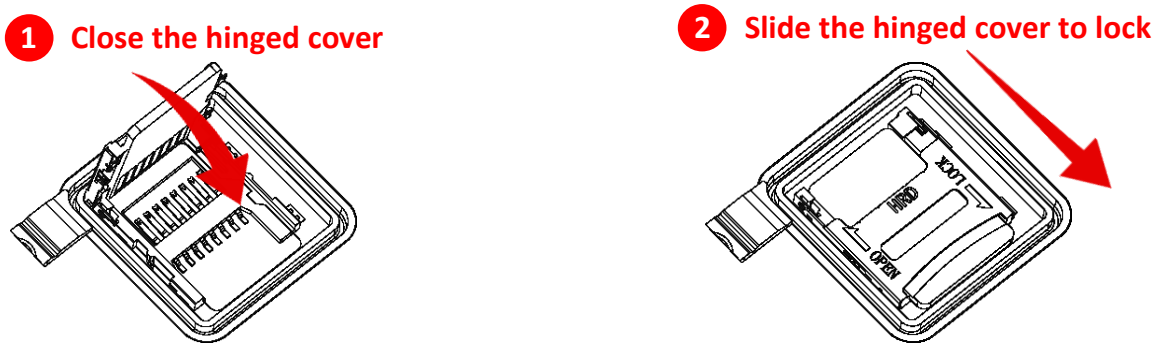
1.1.2. INSTALL/ REMOVE MEMORY CARD

The RK95 mobile computer is equipped with 1 memory card slot:

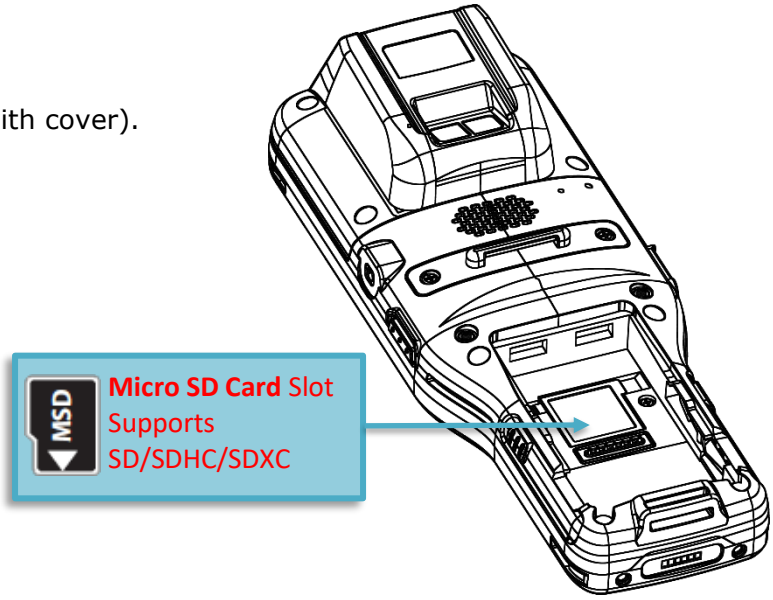
To insert or take out the card:

1) Remove the battery as described in Remove Battery.
2) Slide the hinged cover backward, and swing the top to open.

3) **Install**: Place the card into the slot with its metal contacts downward.
   Remove: Take out the cards directly from their slots.
4) Close the hinged cover, and then push it toward to lock.



5) Install the battery (with cover).

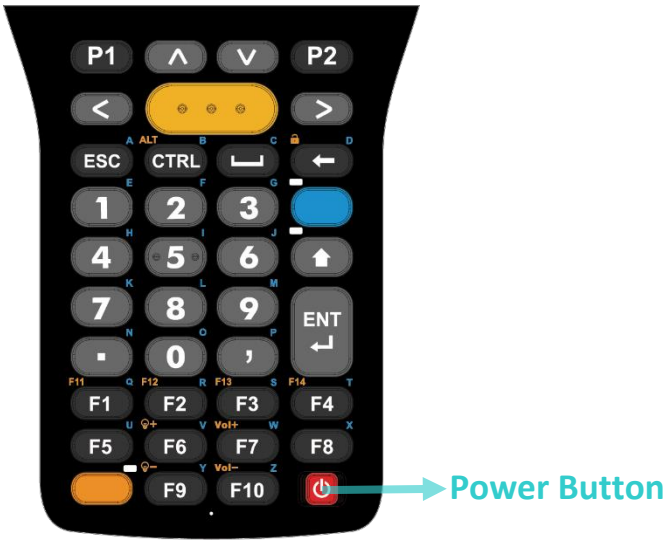


1.1.3. POWER ON/OFF MOBILE COMPUTER

POWER ON

To power on the mobile computer, press and hold the power button located on the bottom right of the keypad. The mobile computer will turn on and show the Home Screen after splash screen.

38-Key Model



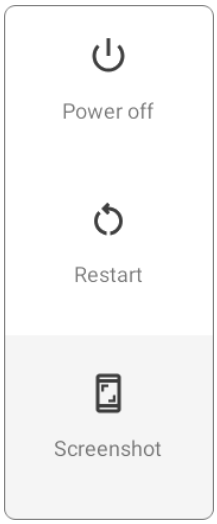
52-Key Model

VT emulator keypad	TN3270 emulator keypad	TN5250 emulator keypad

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. USING HARDWARE BUTTONS

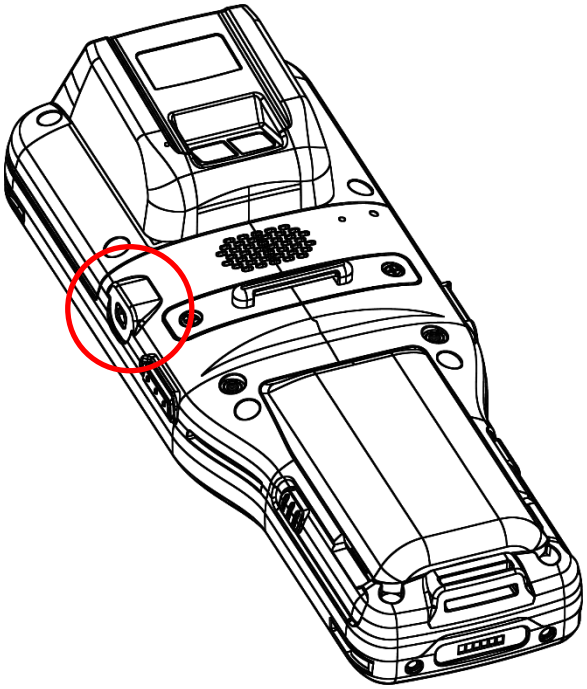
Beneath the LCD display are three hardware buttons that deliver the following functions:

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.

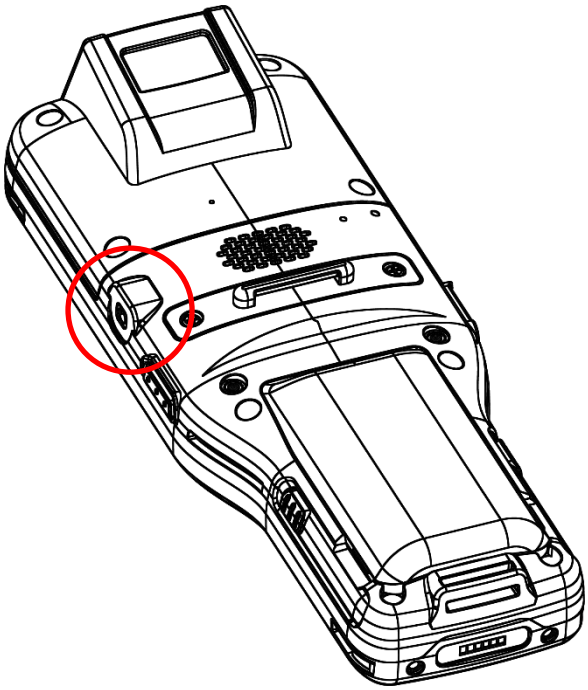
1.1.5. CONNECTING HEADSET

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

With Camera:



Without Camera:



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 **3000mAh** main battery to full while it takes 6 hours to charge an **6000mAh** main battery. For Cold Chain model battery whose capacity is **5500mAh**, it takes 6 hours to charge it to be 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 4 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 2802.11 a/b/g/n/ac ,dual band , MU-MIMO 2x2 networking 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

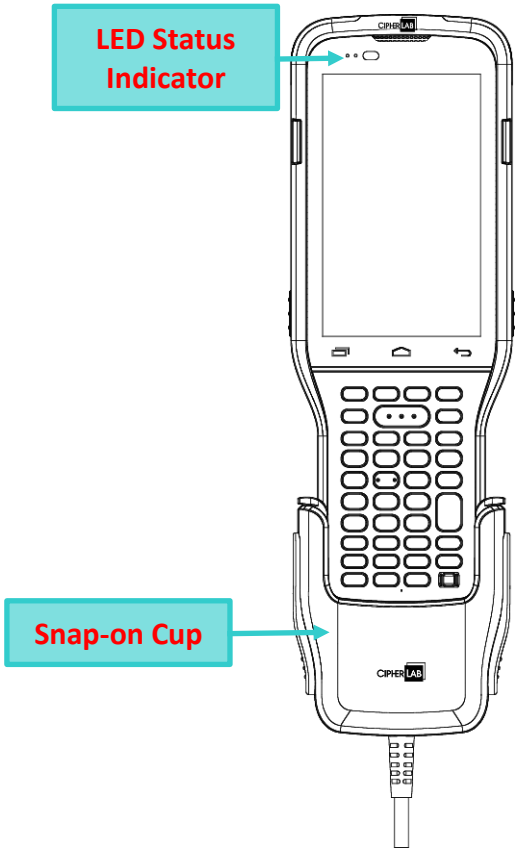
To prevent the battery from keeping being continuously charged and discharged, RK95 mobile computer will automatically stops charging the battery when the battery level reaches 100% even if it is connected with a snap-on cable or a charging & communication cradle for external power supply.

When RK95 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
Red, blink	Charging error
Green, solid	Charging complete
No light	The cable is not correctly connected

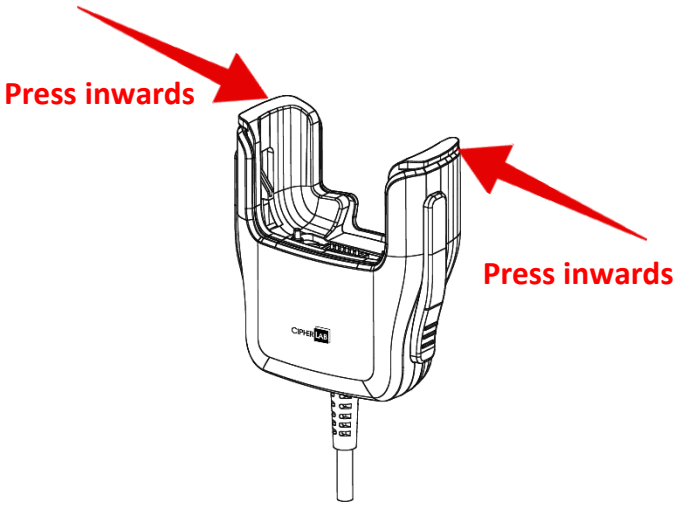
USE SNAP-ON CABLE

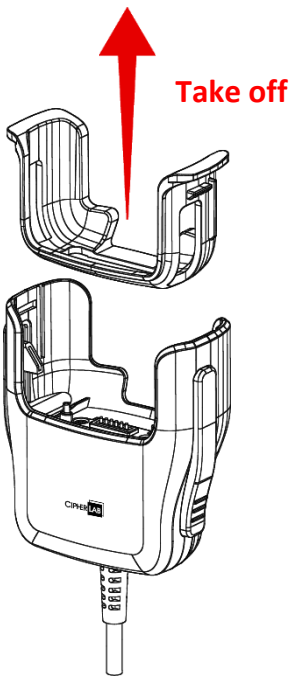
The Snap-on Cable provides a convenient way to charge your mobile computer as well as data communication.



Before connecting the snap-on cable with the RK95 mobile computer, the internal cup must be removed if the device is equipped with the rubber boot:

1) Press the two top edges inwards.
2) Take off the internal cup.

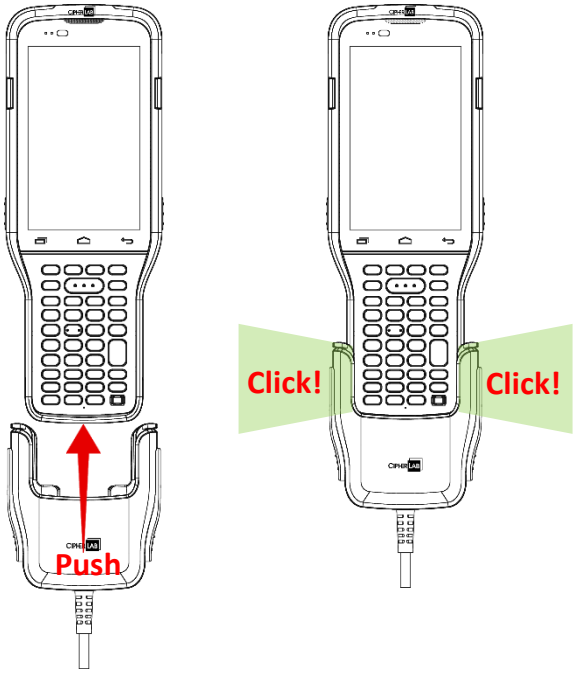




To install the internal cup, simply push it into the snap-on cup till a "click" sound is made.

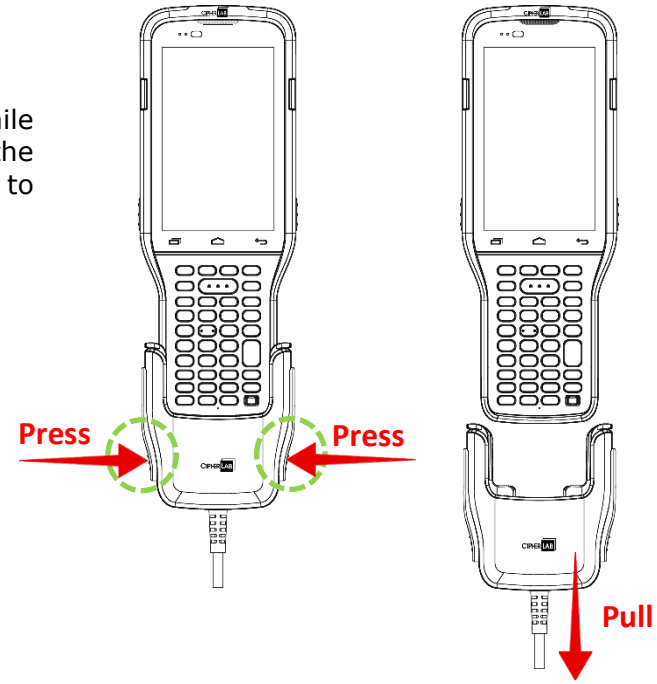
To install the snap-on cup:

Simply hold the snap-on cup toward the bottom of the RK95 mobile computer, and push the snap-on cup upwards to make it to be attached to the device. A "click" sound is made once the snap-on cable is connected with the bottom of the device in place.



To remove the snap-on cup:

Holding the RK95 device by one hand while pressing the release buttons and pulling the snap-on cable downwards by the other hand to make the device and the snap-on cup apart.

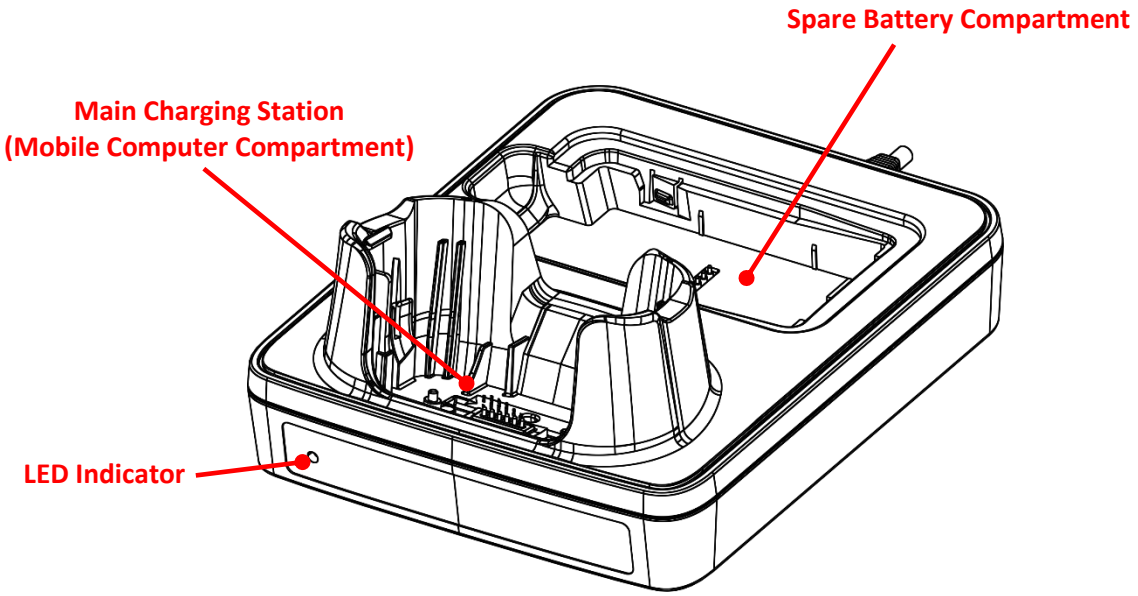


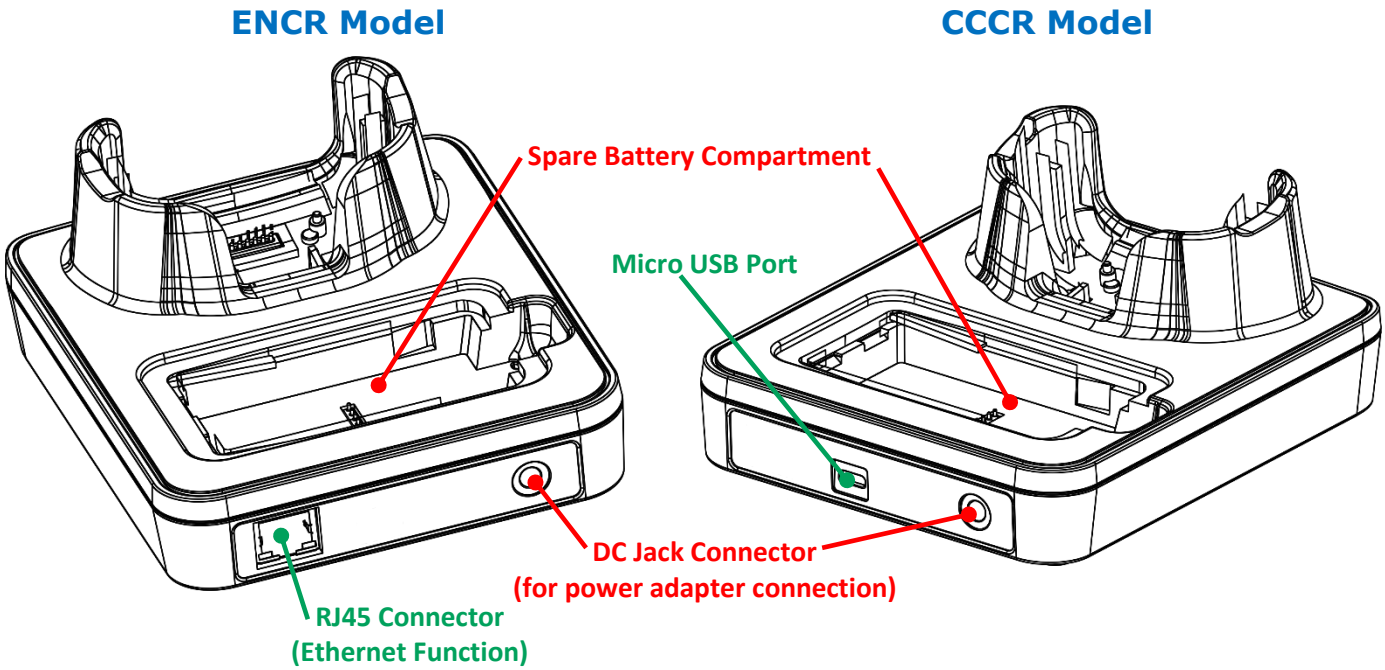
While the device battery is being charged, the LED on mobile computer will indicate charging status.

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

USE CHARGING 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.





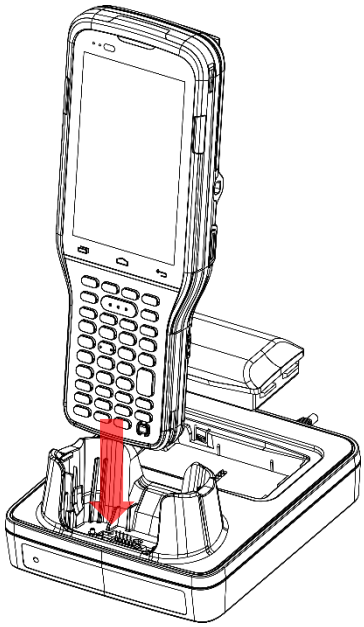
Note:

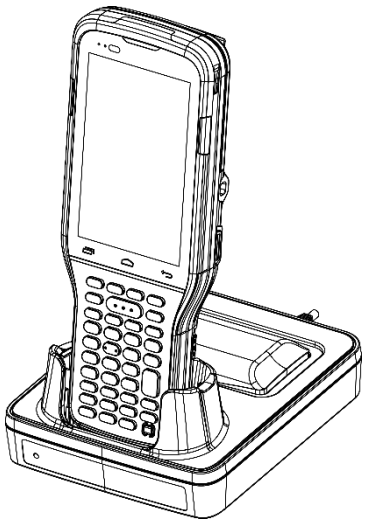
The Charging & Communication Cradle is equipped with either one Micro USB Port (CCCR Model) or one RJ45 Connector (ENCR Model).

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

1) Insert the RK95 mobile computer onto the Cradle. The installed rubber boot is not necessary to be removed in advance before inserting the mobile computer.
2) Connect the adapter to the Cradle, and plug the other end into an electrical outlet.

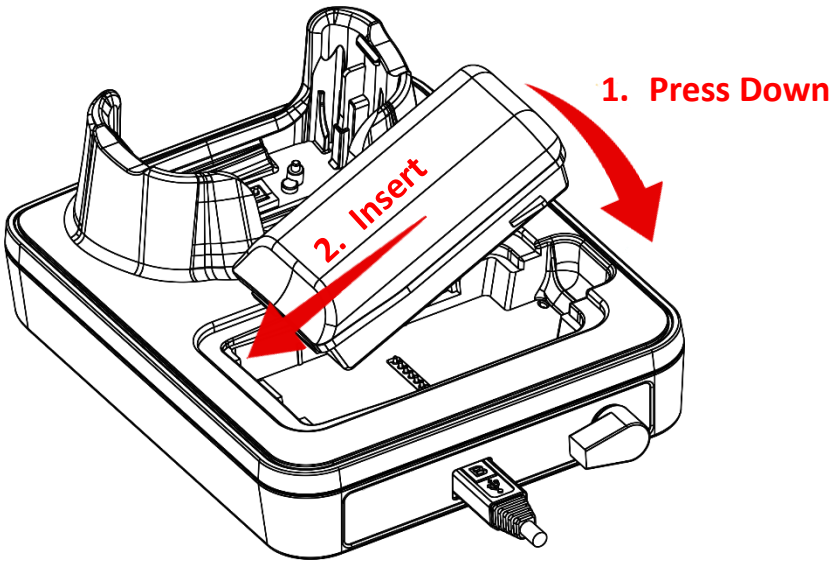
To remove, please take out the RK95 mobile computer directly.



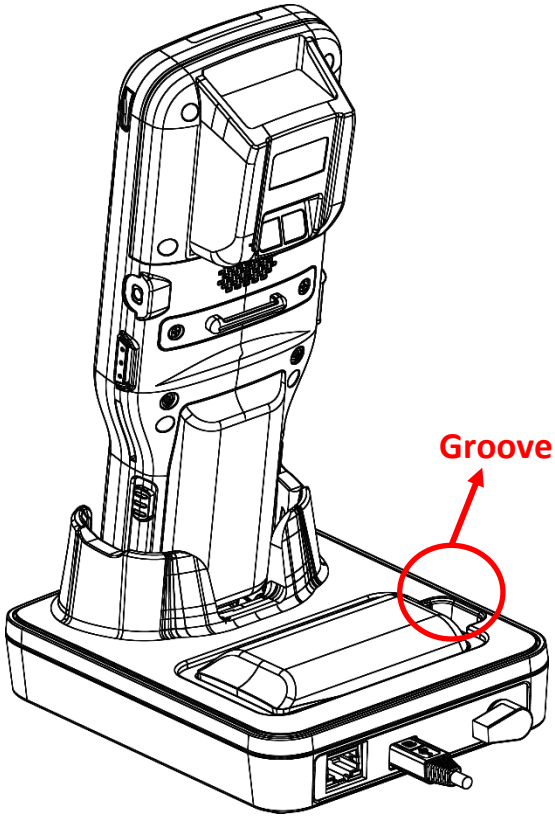


To install the spare battery into the Charging & Communication Cradle:

1) Insert the battery from its top side into the spare battery comparment.
2) Press down the bottom side of the battery. A "click" sound is made once the battery is in place.
3) Connect the adapter to the Cradle, and plug the other end into an electrical outlet.



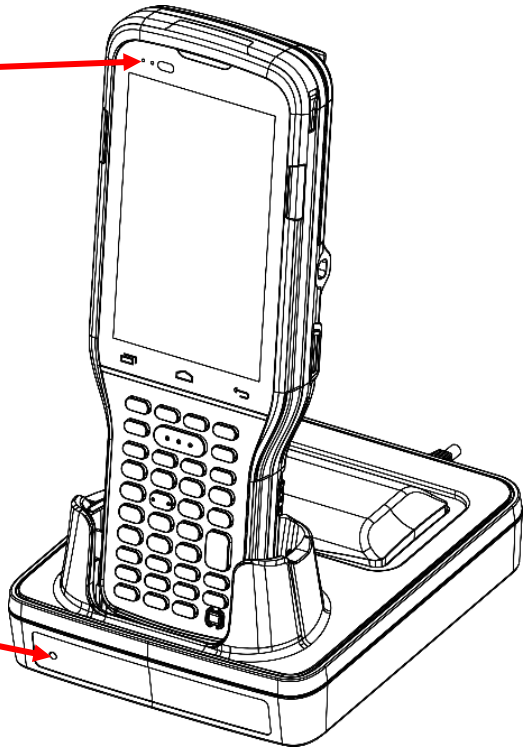
To remove the battery from the spare battery comparment, please place your finger into the groove and pull to take the battery out.



The status of the mobile computer charging is shown on the device itself, while the LED indicator on RK95 Charging & Communication Cradle shows the status of battery charging as below:

LED on RK95 mobile computer:
Indicates the charging status of the main battery.

LED on Cradle:
Indicates the charging status of the spare battery.



Cradle LED Indicator	Status	Description
Charging	Red, solid	Charging the spare battery
	Red, blink	Charging error
	Red, flash once	No battery is in the spare battery compartment. (when the adapter is plugged in)
	Green, solid	Charging complete

Note:

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

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

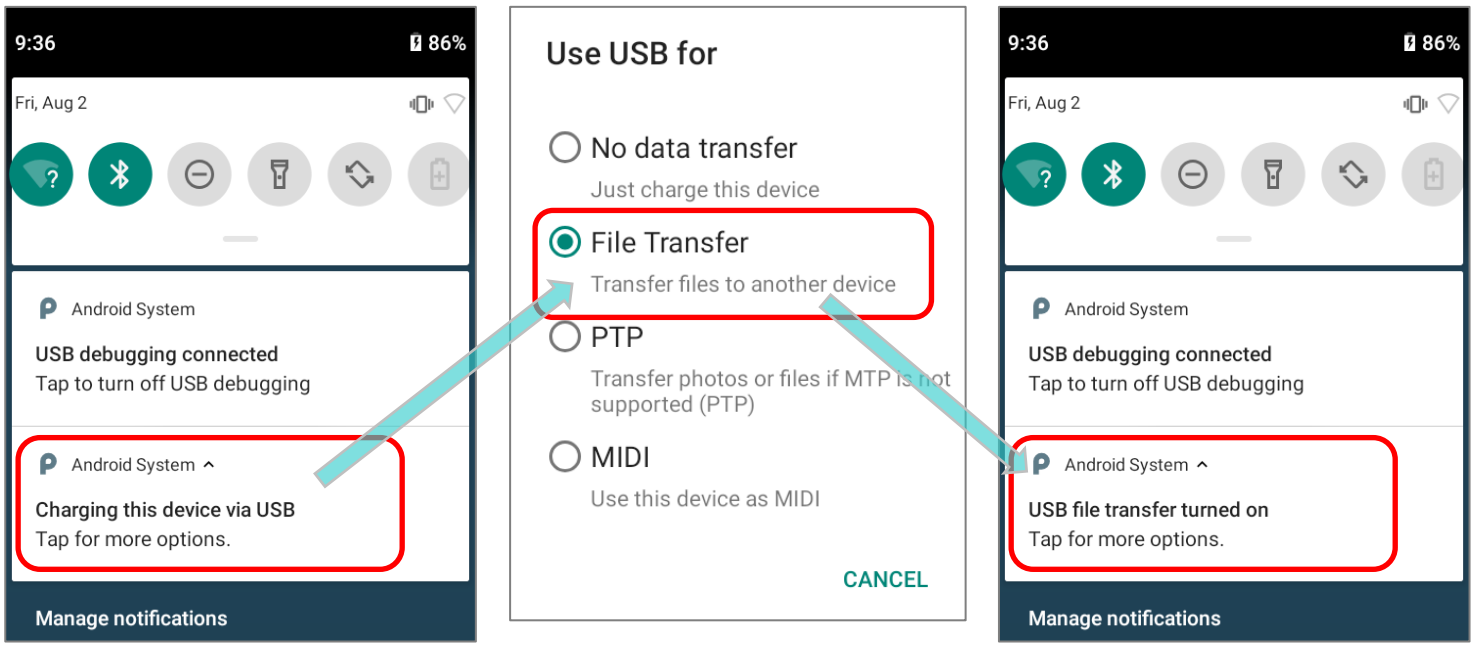
1.2.2. WIRED DATA TRANSMISSION

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

1) Connect your device to the PC with supplied Snap-on Cable or Charging 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 "**File Transfer**". 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 802.11 a/b/g/n/ac ,dual band , MU-MIMO 2x2 networking is able to send/receive data in real time in an efficient way.

Chapter 2

USING RK95 MOBILE COMPUTER

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

IN THIS CHAPTER

2.1 Battery 40
2.2 Memory 50
2.3 Touch Screen 61
2.4 Notifications 70
2.5 Date and Time 76
2.6 Language & Keyboard Input 78
2.7 Physical Keypad 82
2.8 Data Capture 109

2.1. BATTERY

- **Main Battery**

  The mobile computer is powered by a rechargeable 3.7V / 3000mAh or 3.7V / 6000mAh Li-ion battery pack, and it takes approximately 4 or 6 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.

- **Main Battery for Cold Chain Model**

  The main battery for Cold Chain model is a rechargeable 3.7V / 5500mAh Li-ion battery pack. It takes approximately 6 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). Please note that 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 can retain data in the DRAM for 3 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 4 hours to charge to full.

Warning:

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

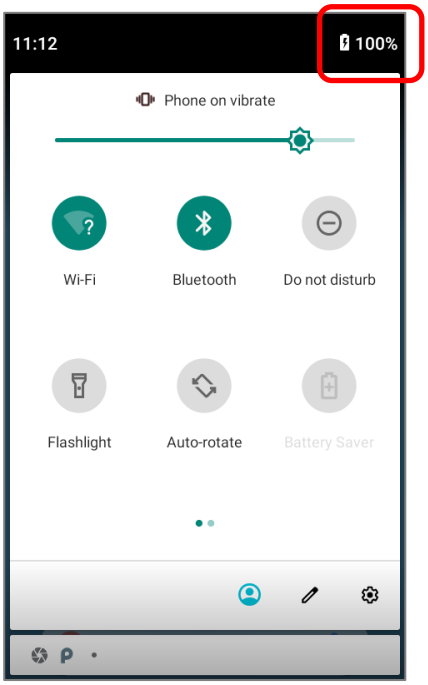
(2) For a new battery, make sure it is fully charged before using.

(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 3 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

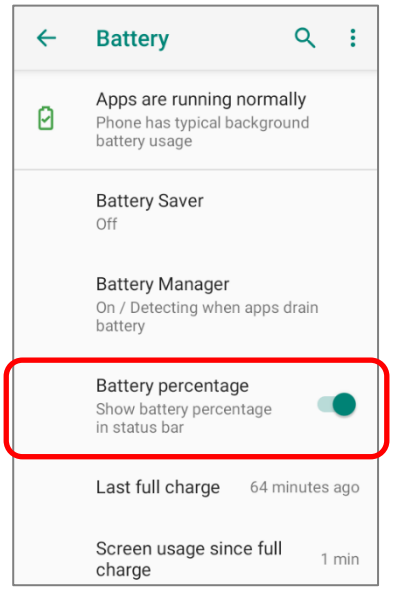
The main battery pack is the only power source for the mobile computer to work. Therefore, when the main battery level goes low, you need to replace the battery pack with a charged one or charge it as soon as possible. Most of all, you should backup important data on a regular basis.



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

Battery Icon	Descriptions
	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

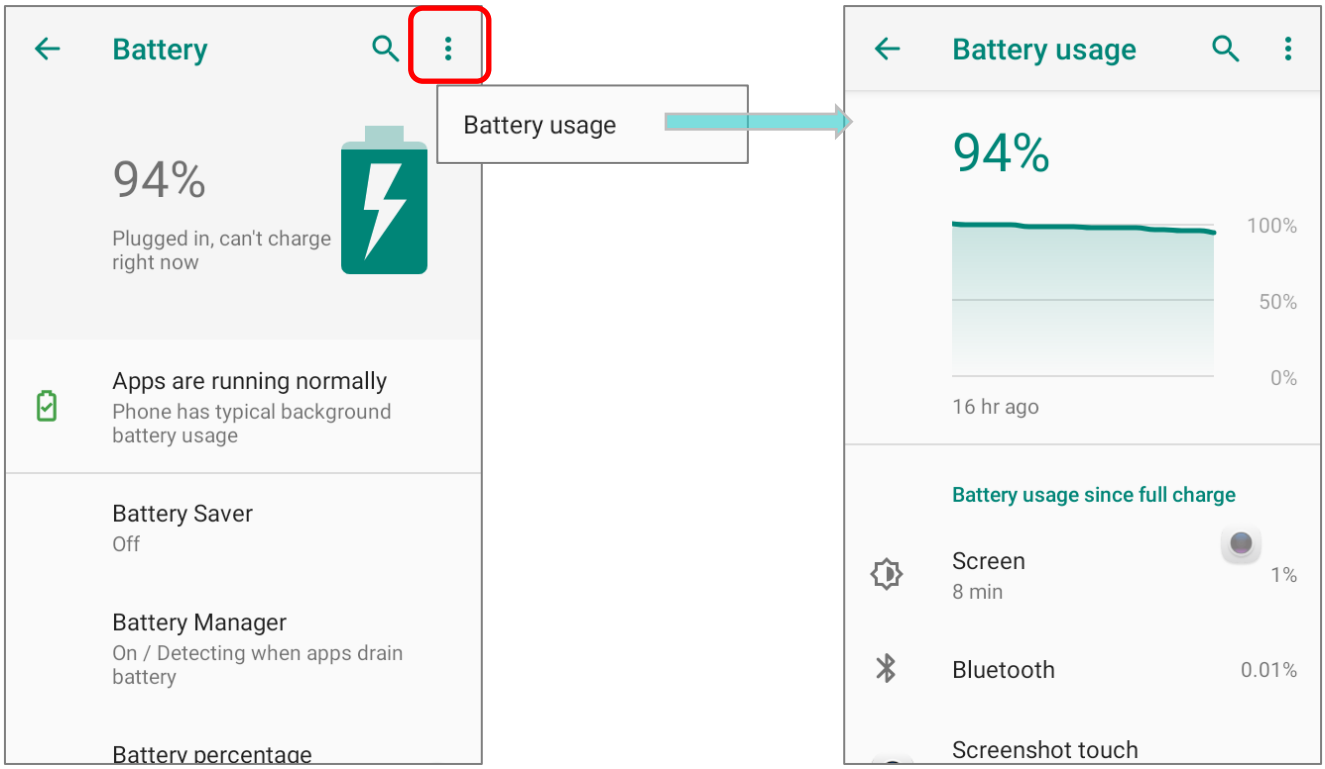
The main battery is the only source that feeds the mobile computer to work. It also supplies the backup battery on the main board in order to retain the data stored in DRAM. When main battery level gets low, recharge it or replace it as soon as possible. Most critically, back up the important data from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

To check main battery level:

Go to **App Drawer (All Apps)** | **Settings** | **Battery**

Battery level percentage is shown to provide a clear grasp of the remaining battery power.

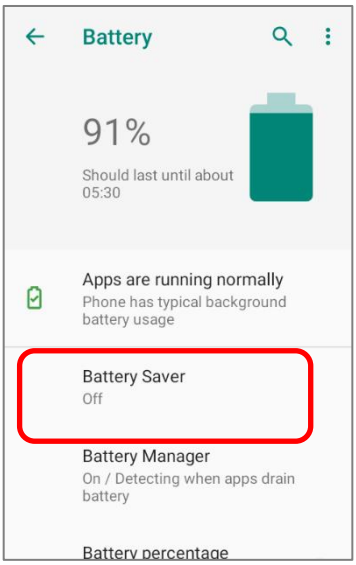
Tap the "**More**" button on action bar and then tap on "**Battery usage**" to enter "**Battery usage**" page, the screen shows the rate of battery discharge since the last battery charging session, how long the device has been running on battery power, and which applications are consuming the most battery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

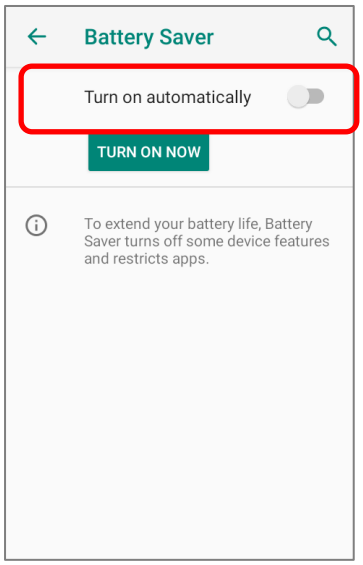


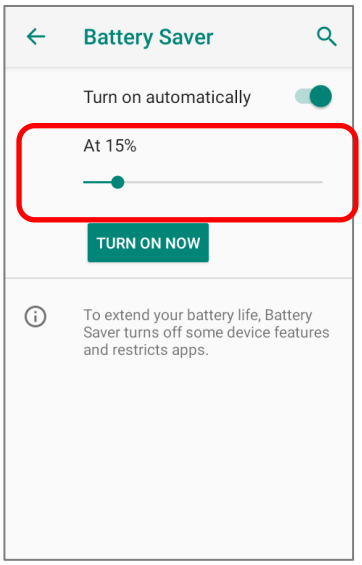
BATTERY SAVER MODE

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.

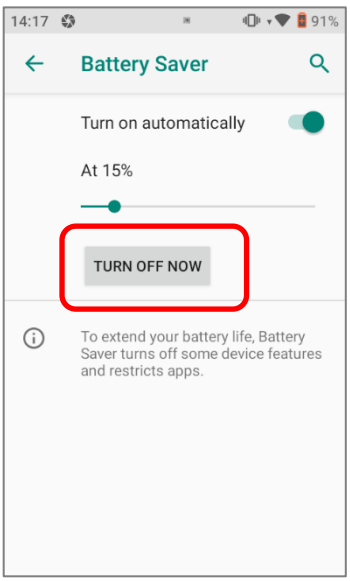
1) On Battery screen, tap "**Battery saver**".
2) Switch on "**Turn on automatically**" and drag the slider to set when to have this mode automatically activated.

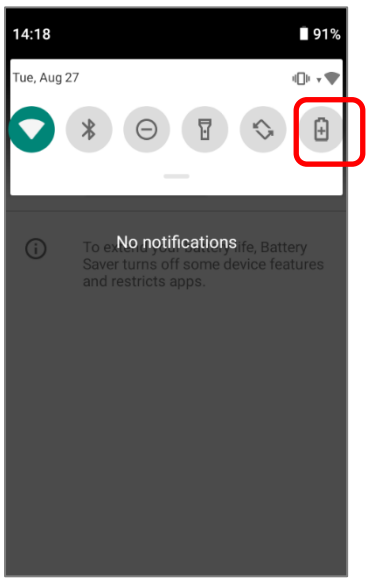


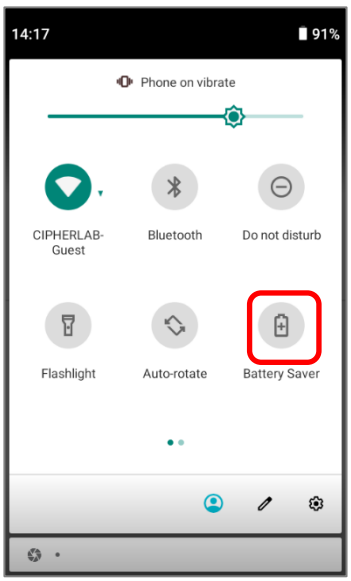




Tap on "**TURN ON NOW"** to directly enable battery saver function, and the battery icon on status bar will turn orange once this function is enabled. Also, you can swipe down from the status bar to reveal **Quick Settings Panel** or **Quick Settings Menu**, and tap the battery saver icon to enable/ disable it.





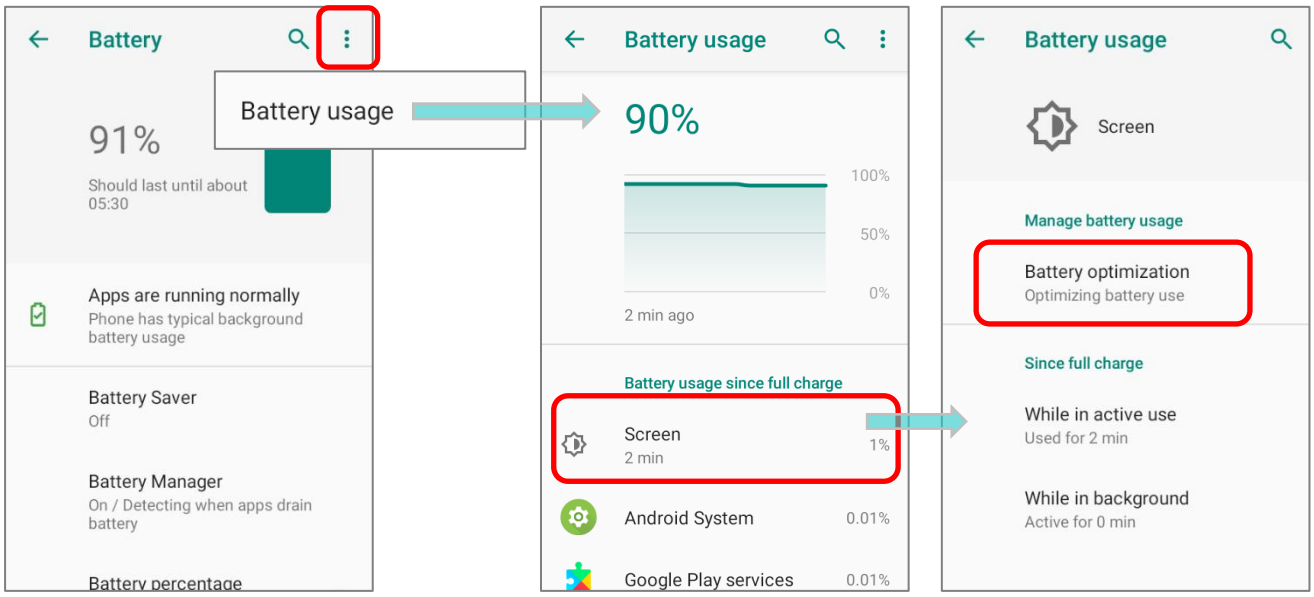


Note: This mode will automatically become inactive when your device is being charged.

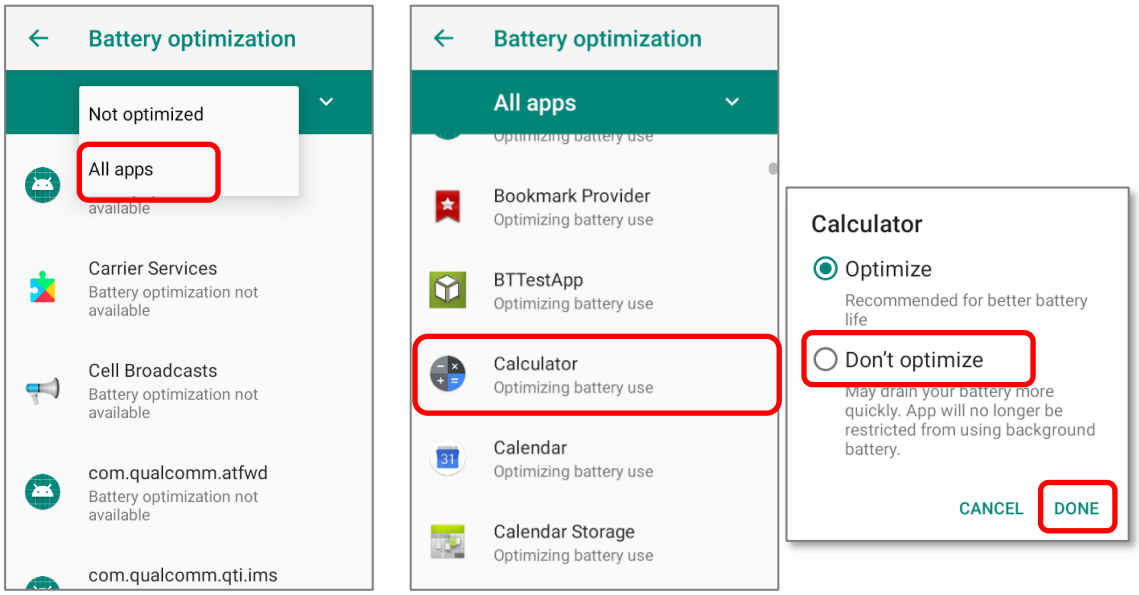
BATTERY OPTIMIZATION

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**". Tap on any item under "**Battery usage since full charge**" to enter its detail page and tap on "**Battery optimization**".



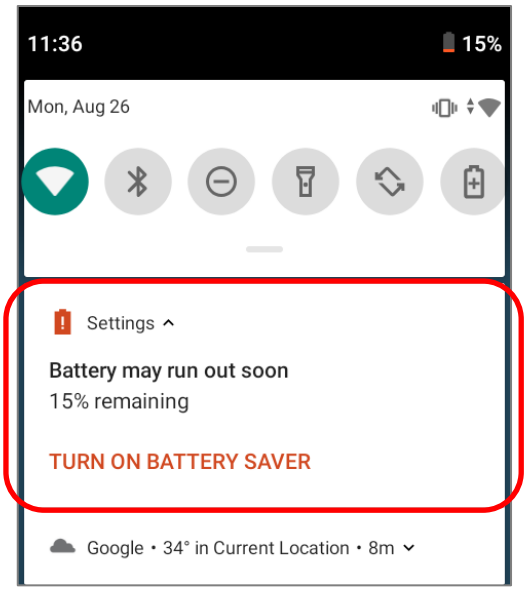
2) On dropdown list, select "**All apps**"; all the applications will be optimized by this function by default. You can individually turn off the optimization mode of a certain app if you would like it always activated by tapping on the app name and select "**Don't optimize**" and then "**DONE**".

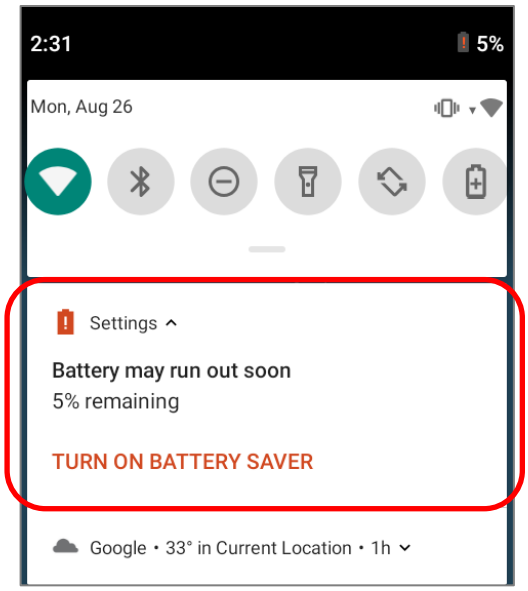


LOW BATTERY ALERT

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

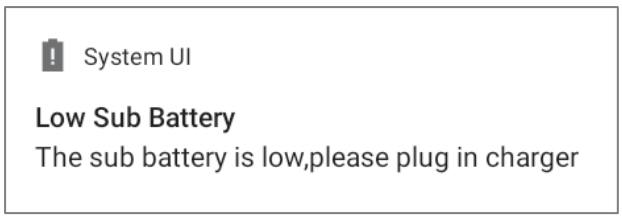
Opening Notifications Drawer, you will also see this warning appearing on the notifications list; you may turn on Battery Saver Mode, connect the mobile computer to an external power source, or replace the main battery pack as soon as possible. To replace the main battery pack, see Replace Main Battery.





LOW SUB BATTERY ALERT

When the main battery's power is drained out, RK95 mobile computer will automatically suspend by backup battery's power for 3 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 shut the device down to replace the main battery.

Note: **Always use a fully-charged main battery for battery replacement.**

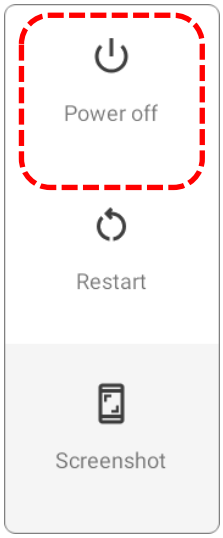
SHUT DOWN TO REPLACE THE MAIN BATTERY

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 bottom-right of the physical keypad.

3) Tap "**Power off**" in the pop-up menu. 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

RK95 backup battery supplies system power during battery swap. When battery cover is removed, the system will enter suspend mode and not wake up until the battery 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.

During the period of battery swap, the Wi-Fi connection is remained for 30 seconds.

1) Directly remove the main battery. The screen is off and the system enters suspend mode.
2) When the main battery is removed, system can stay in suspend mode at least **3** minutes. Please replace with a fully-charged main battery as soon as possible.
3) Install a fully-charged main battery by following the steps described in Install/ Remove Battery.
4) Make sure the main battery is properly installed 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.

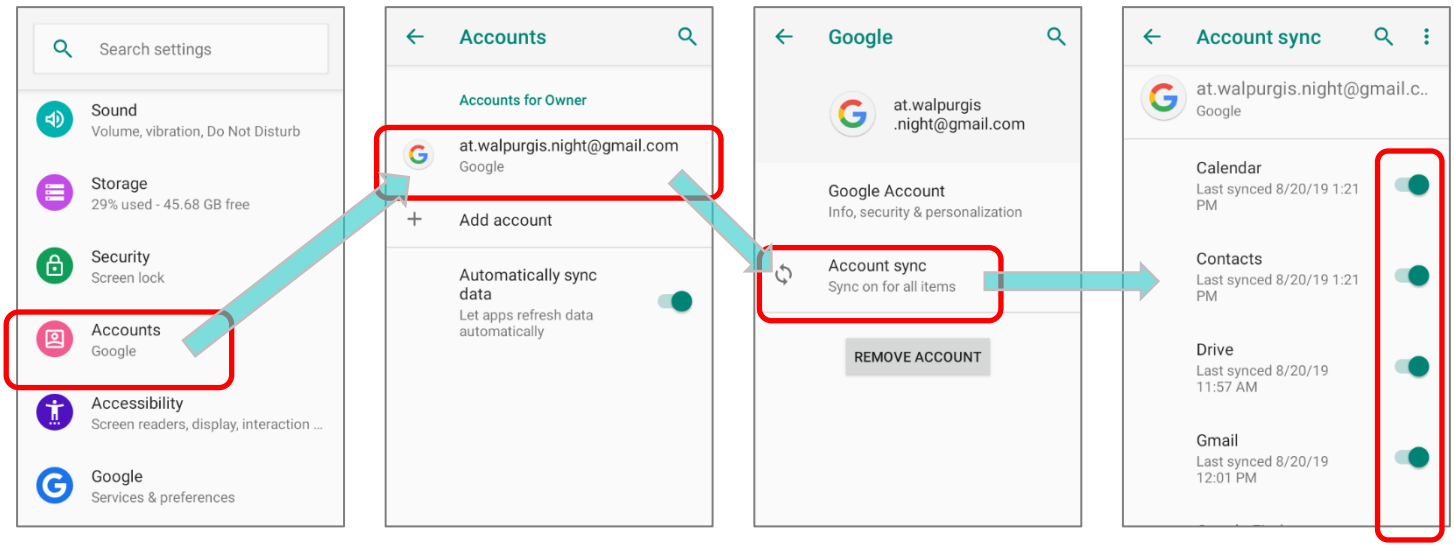
2.1.4. POWER MANAGEMENT

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, etc.) 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.

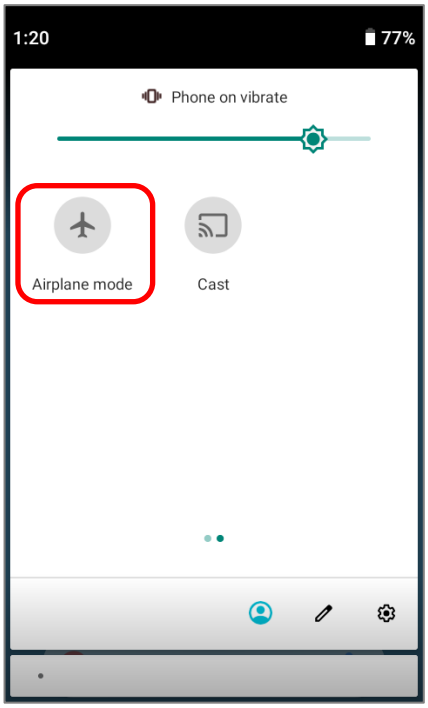
ENTER AIRPLANE MODE

You can enable **Airplane** mode to have all the wireless radios (including data connections such as Bluetooth and Wi-Fi) 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.



2.2. MEMORY

- **Flash Memory (ROM)**
  64GB flash memory for storing the OS (Android 9 Pie and custom application programs).

- **Random-access Memory (RAM)**
  4GB 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 2TB). When choosing an SD card for best compatibility and performance with RK95, 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 **3 minutes**. When the backup battery is drained out as well, the mobile computer will shut down, and only the contents of RTC will be retained. All other unsaved data will be lost.

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

2.2.1. CHECK MEMORY USAGE

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

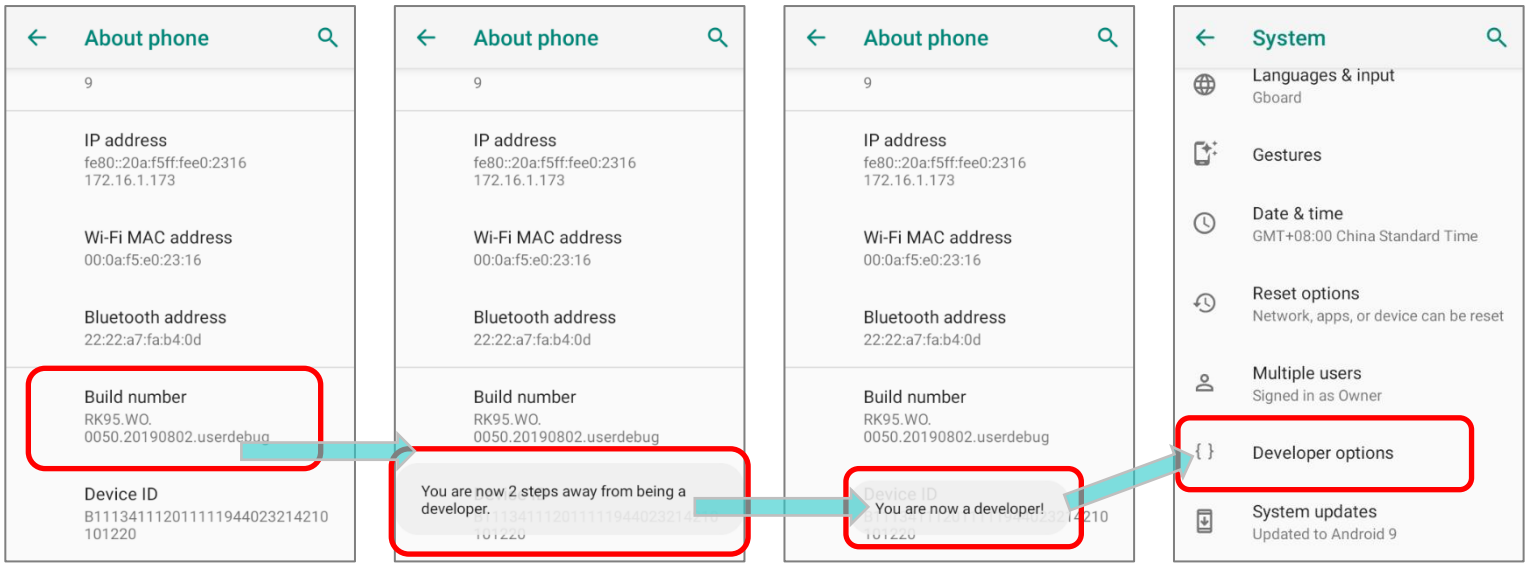
ENABLE DEVELOPER OPTION

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

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

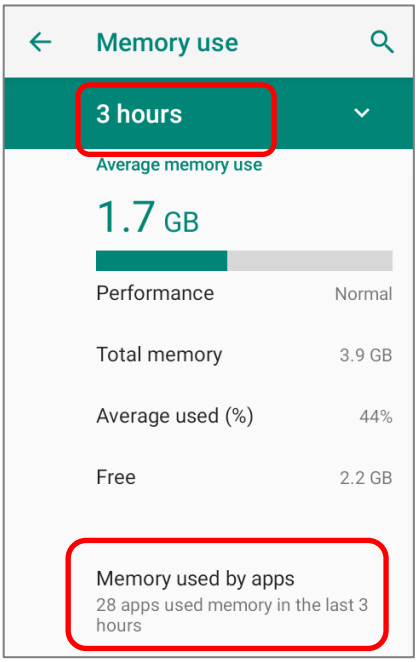
2) Tap on "**Build number**" 7 times to enable it. During the process, you'll see a prompt with a countdown reading "**You are now X steps way from being a developer**."

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.



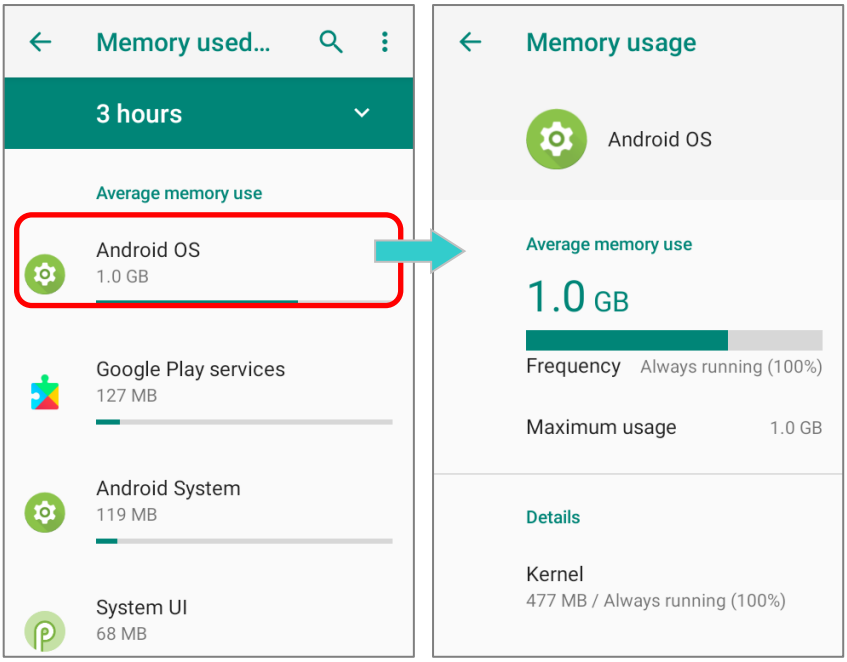
CHECK MEMORY USAGE

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.

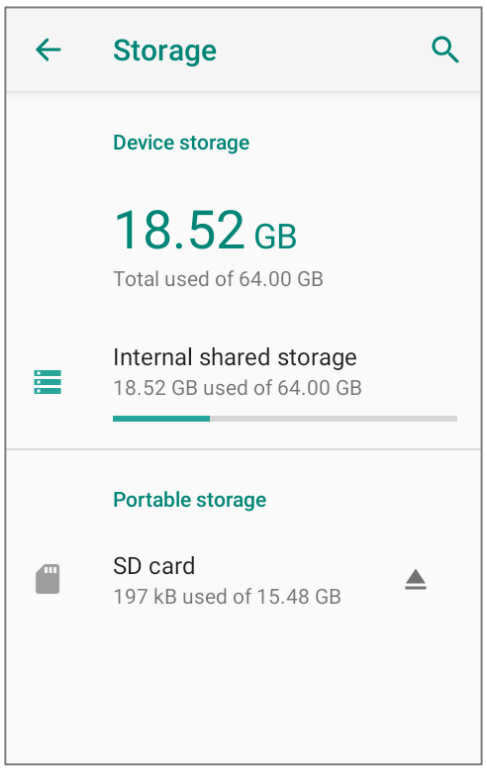
2.2.2. MANAGE STORAGE SPACE

To your Android device, the SD card can serve as an extension of your device's internal storage (which comes as 64 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.

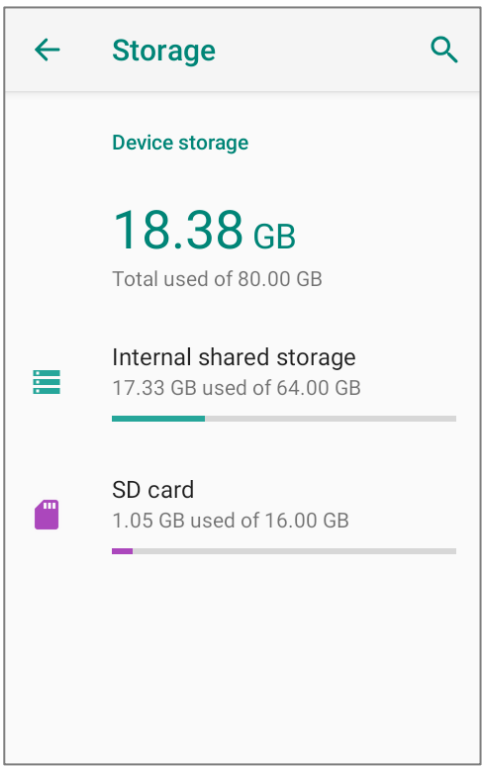
By default, all the videos, photos and downloaded files are directly saved to the device's internal storage. If you have previously inserted and mounted an SD card as portable storage, you could transfer/save photos & other media in this SD card; if the SD card is set as internal storage, photos, files,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

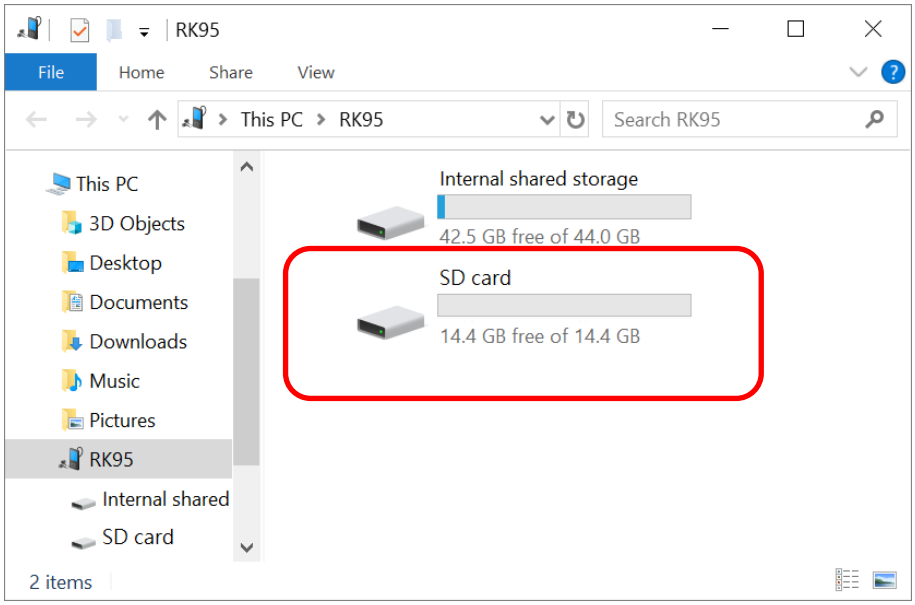


The SD card is used for storing anything on this device only, including apps and photos. Requires formatting that prevents it from working with other devices.

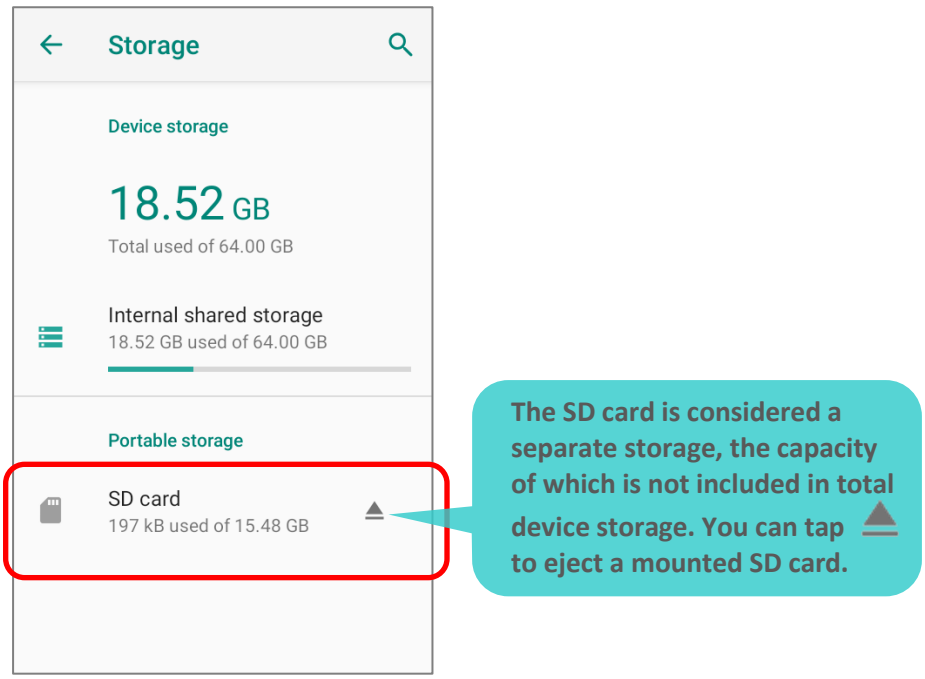
SET UP SD CARD AS PORTABLE STORAGE

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:

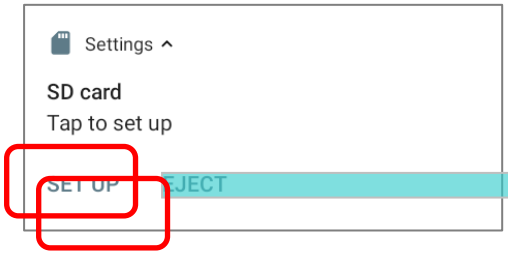


On **Storage** screen, this disk can be managed separately.

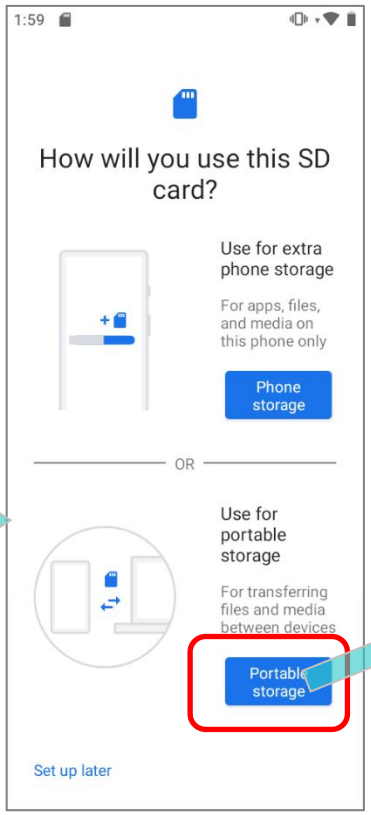


To start:

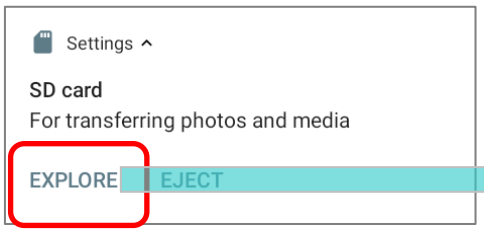
1) Insert the SD card. A notification icon indicating that an SD card is detected will be shown in the status bar; swipe down from the status bar and tap "**SET UP**".

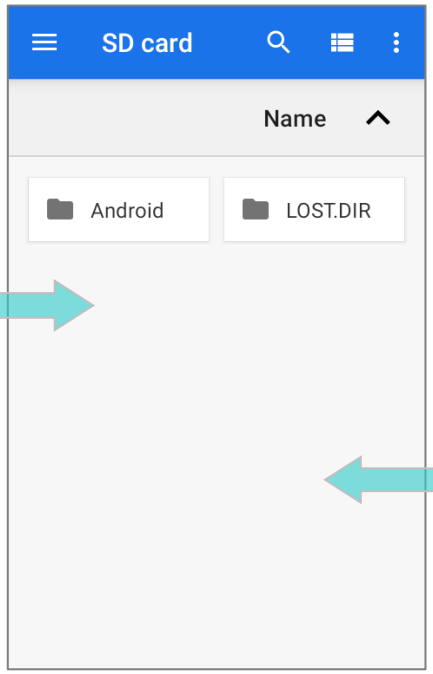


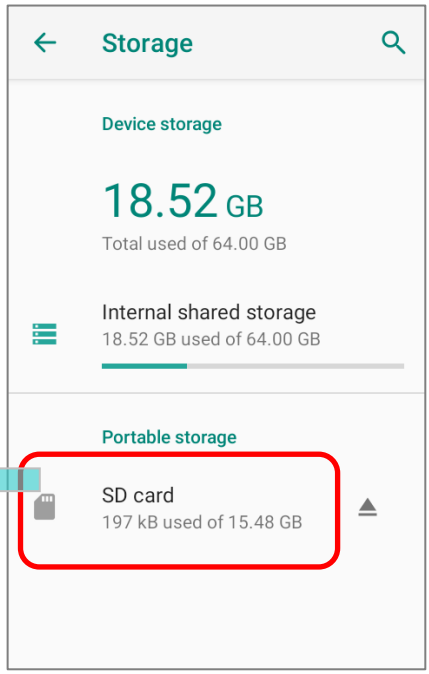
2) Tap "**Portable storage**", and complete the setting by tapping "**DONE**".



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.







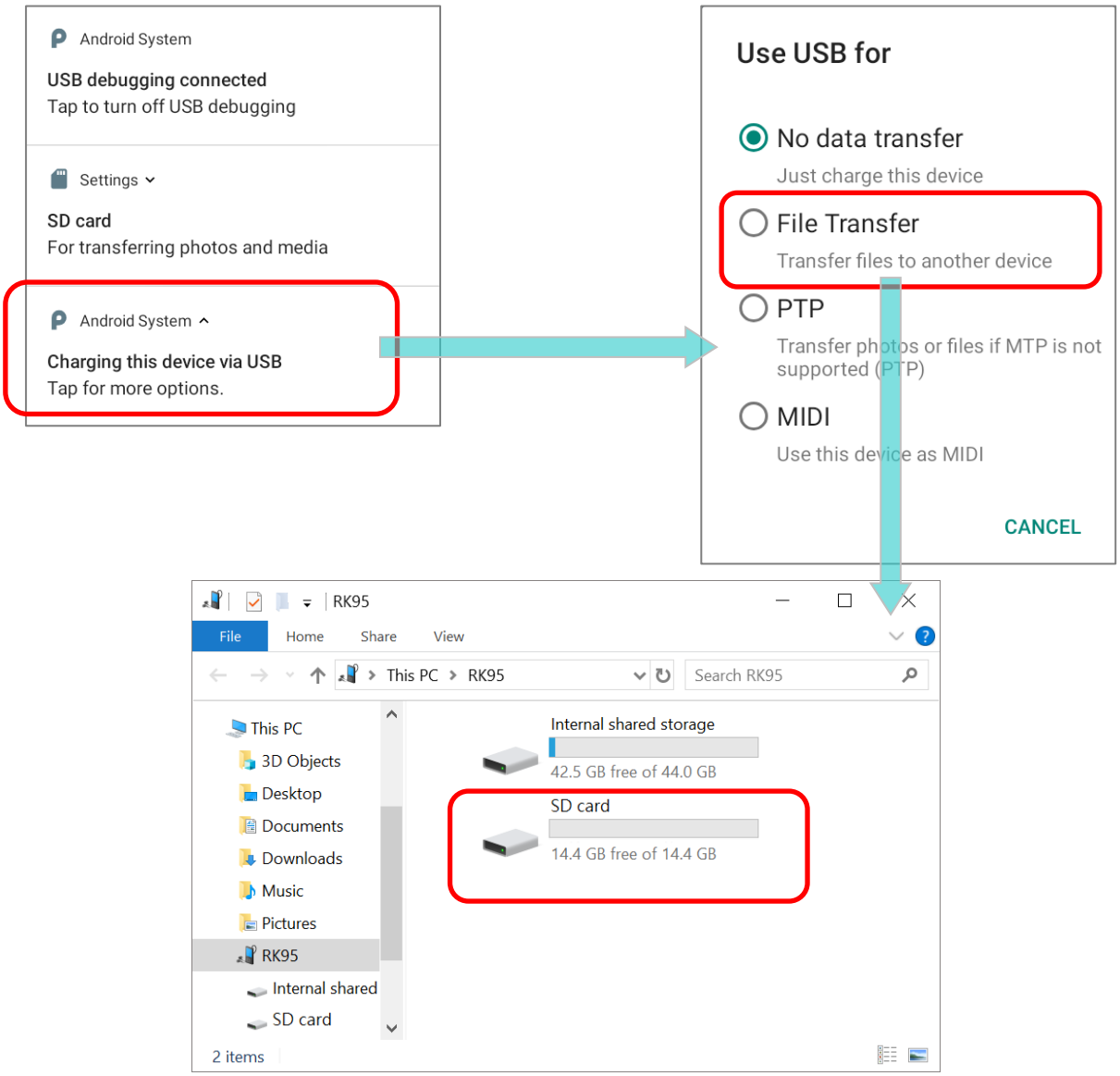
TRANSFER PHOTOS & MEDIA BETWEEN THE DEVICE & PC

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 the supplied Snap-on cable.

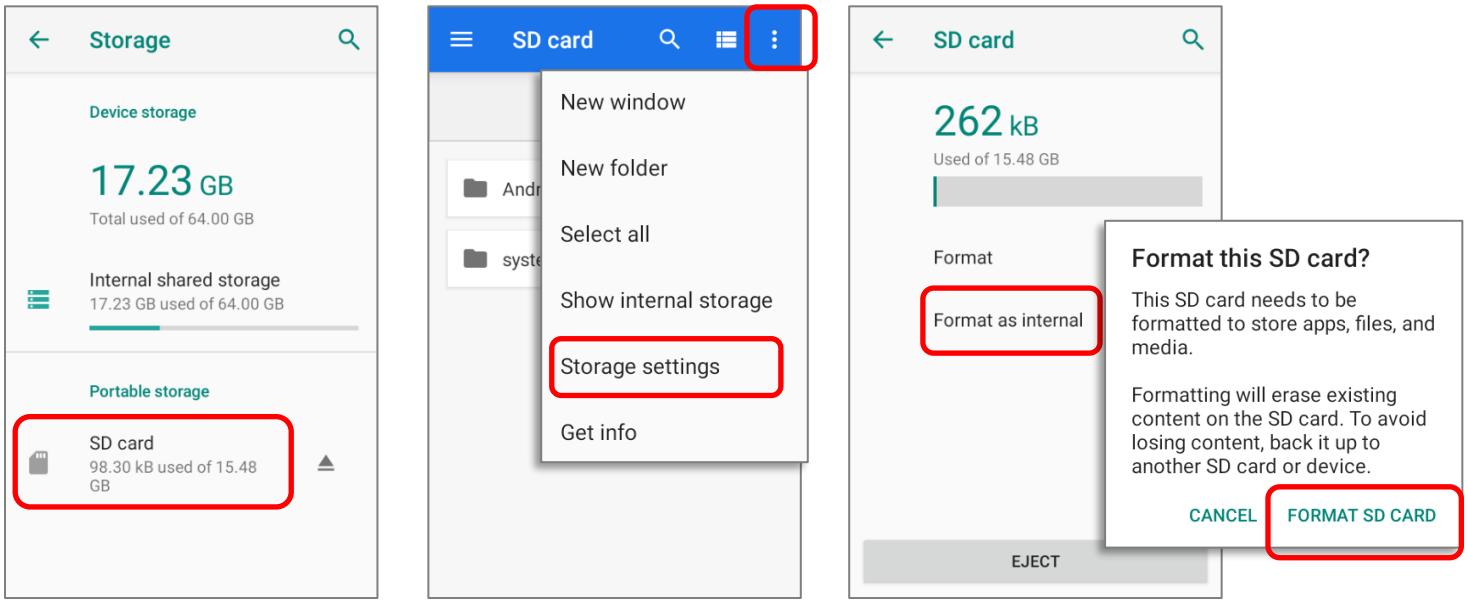
2) Swipe down from the status bar to reveal Notifications Drawer, and tap on the Android System notification "**Charging this device via USB**" to enter USB options menu.

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

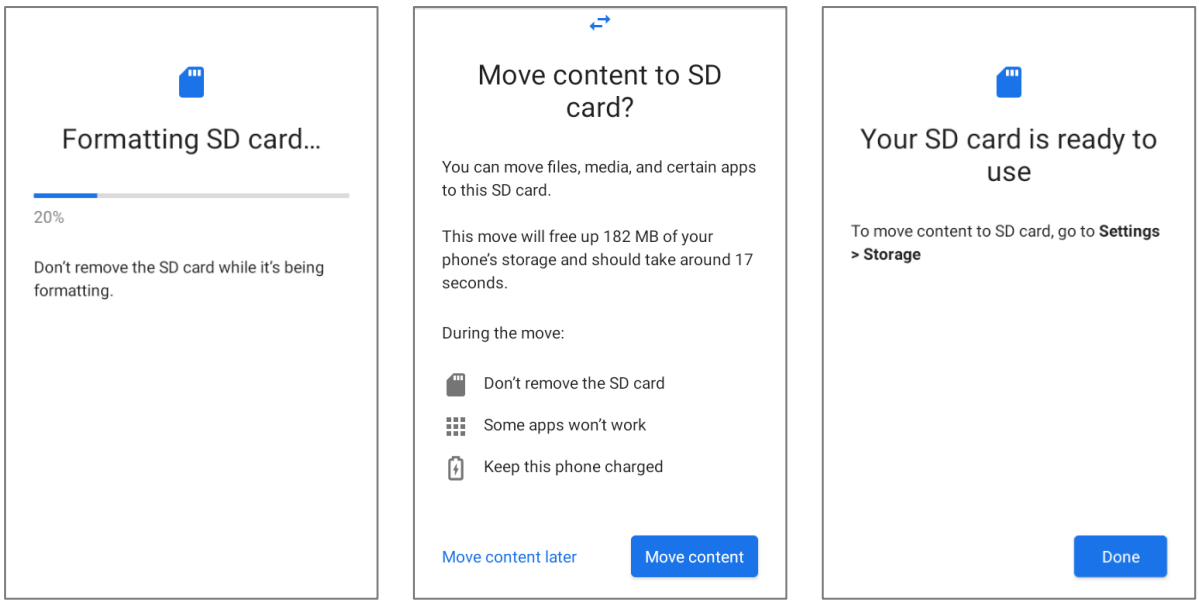


CONVERT THE SD CARD TO INTERNAL STORAGE

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



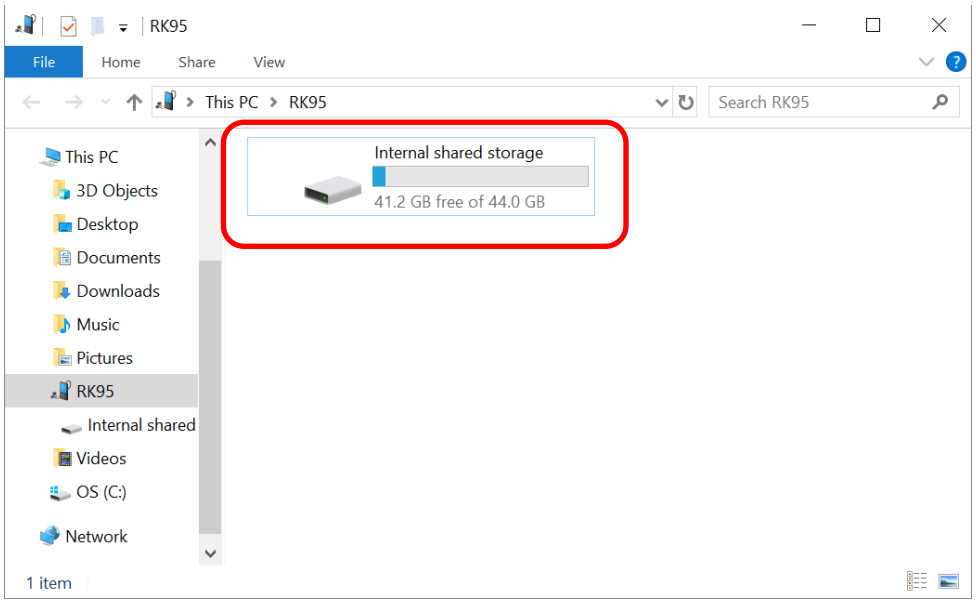
4) On "**Format this SD card**" popup window, tap "**FORMAT SD CARD**" to format the card.
5) You will then be asked whether to move multimedia files to this new SD card right away or later; tap to make your choice.
6) When the formatting is completed, tap "**DONE**".



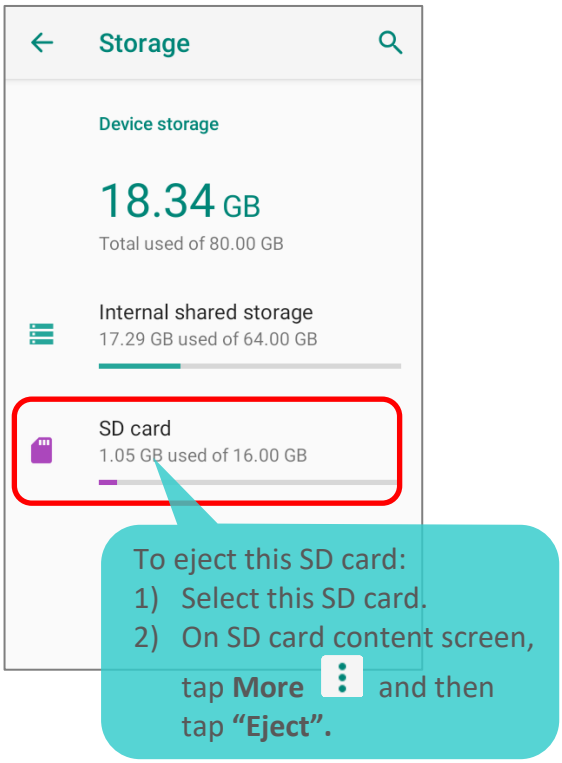
SET UP SD CARD AS INTERNAL STORAGE

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

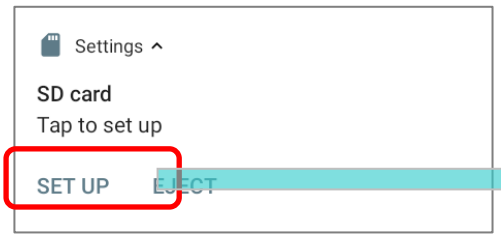


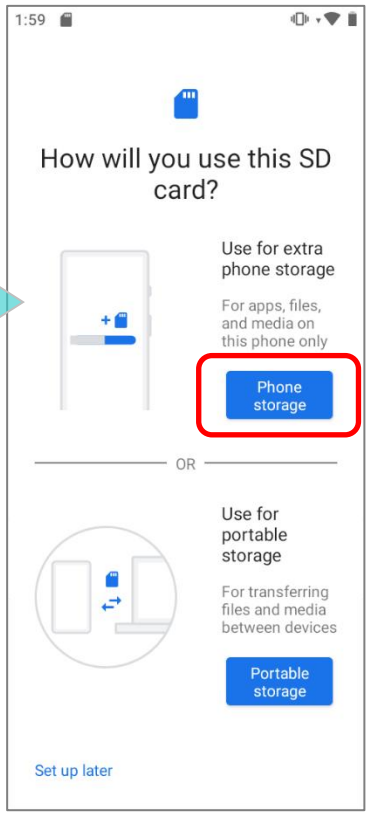
Warning:

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

To start:

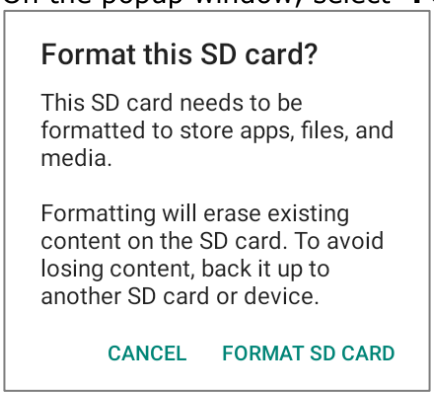
1) Insert the SD card. A notification will pop up indicating that an SD card is detected tap "**SET UP**".





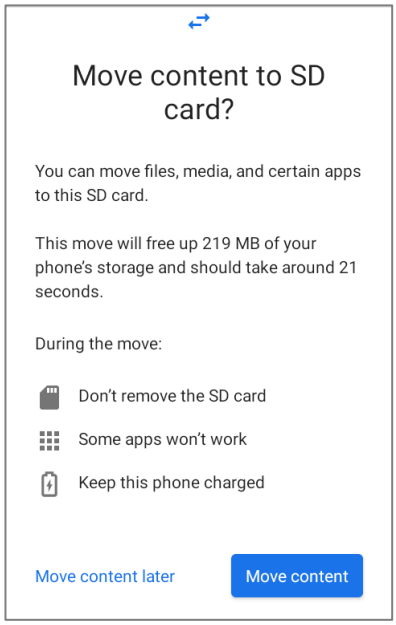
2) Tap on "Phone storage".

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:

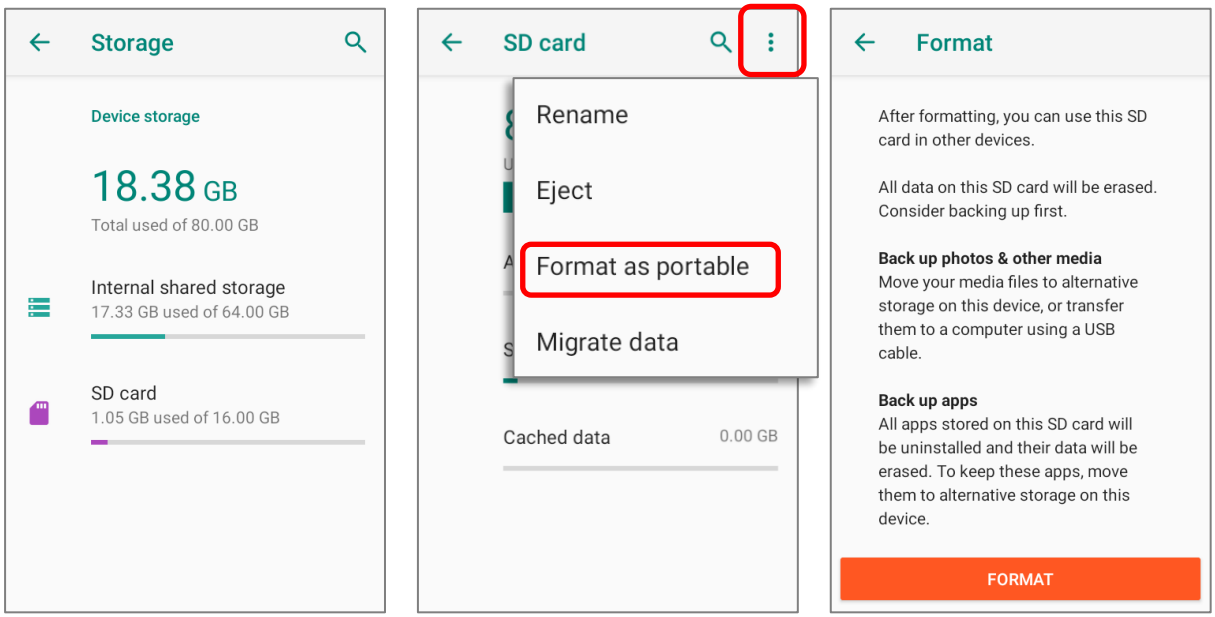
It is recommended that you select "Move now" at Step 4 to have the device immediately start making use of SD card space. If you select "Move later", the device will continue to consider device's original storage the primary location to save files.

CONVERT THE SD CARD TO PORTABLE STORAGE

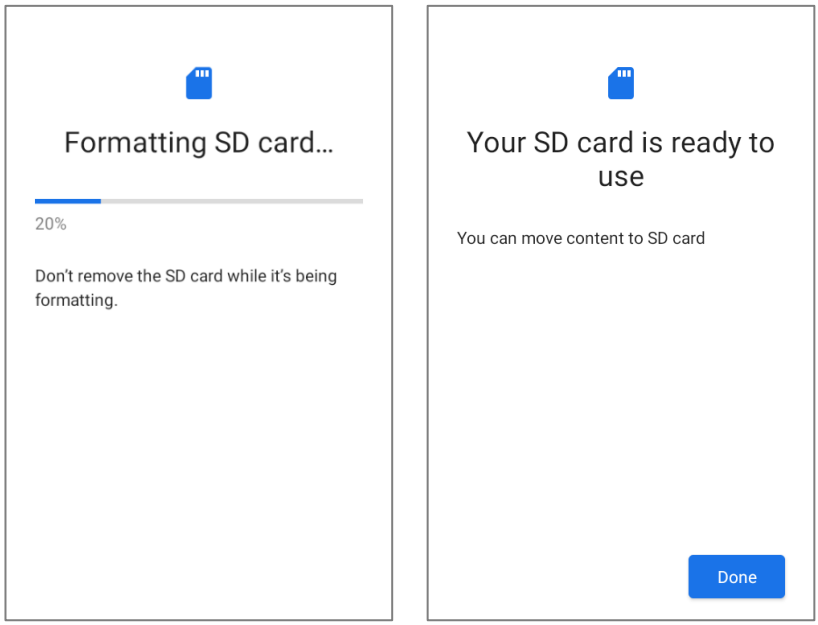
1) You can always convert the SD Card from internal storage to portable storage. On **Storage** screen, tap the SD card. Before you start, make a backup of the files on this disk if you would like to keep them.

2) On SD card content screen, tap **More** and then tap "**Format as portable**".

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



4) 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 4.3 inch, LCD, Corning Gorilla Glass display with 480RGBx800 resolution. The LED backlight of the screen, which helps ease reading under dim environments, can be controlled manually and automatically.

Warning:

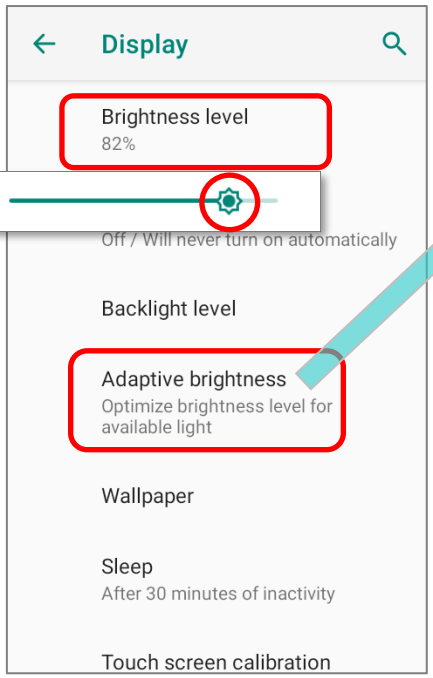
DO NOT use any pointed or sharp objects to move against the surface of the screen.

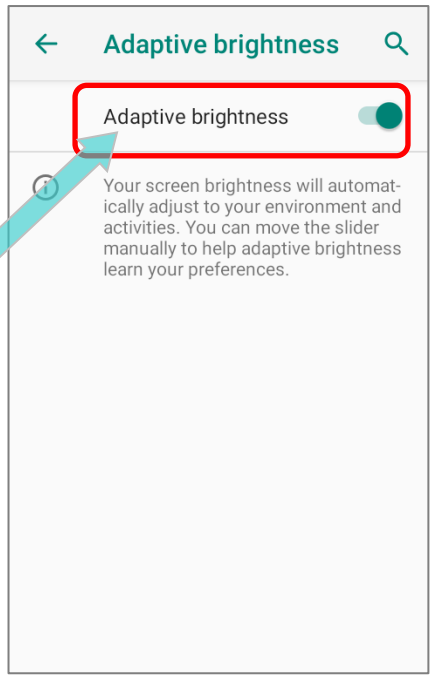
2.3.1. SCREEN BRIGHTNESS

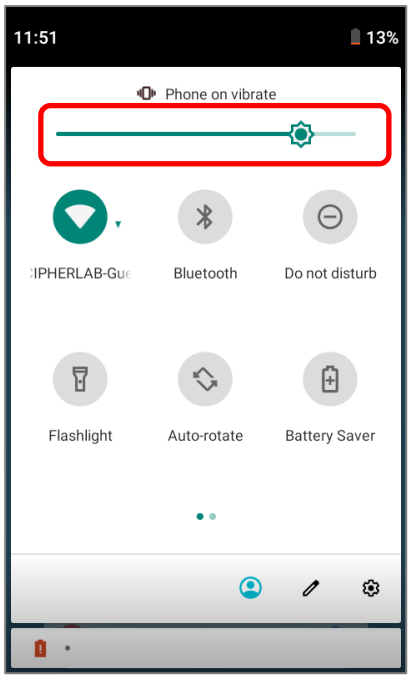
Go to **App Drawer (All Apps)** | Settings | Display | Brightness level.

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.

ADJUST SCREEN BRIGHTNESS BY KEYPAD

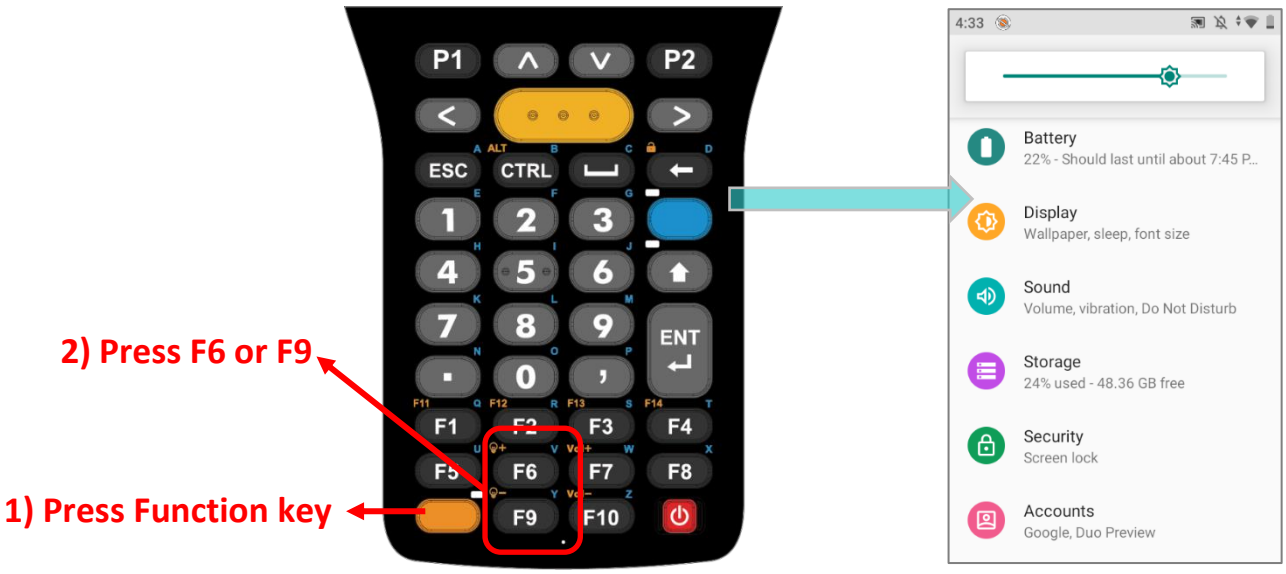
You can also trigger the brightness slider by keypad for rapidly adjustment.

38-KEY MODEL

1) Press "**Function key**" to enable **Function Mode** .
2) Press "**F6**" key to trigger the brightness slider to brighten up the screen while press "**F9**" to to dim the screen.
   Repeat pressing "**Function key**" and "**F6**" or "**F9**" to adjust the screen brightness.

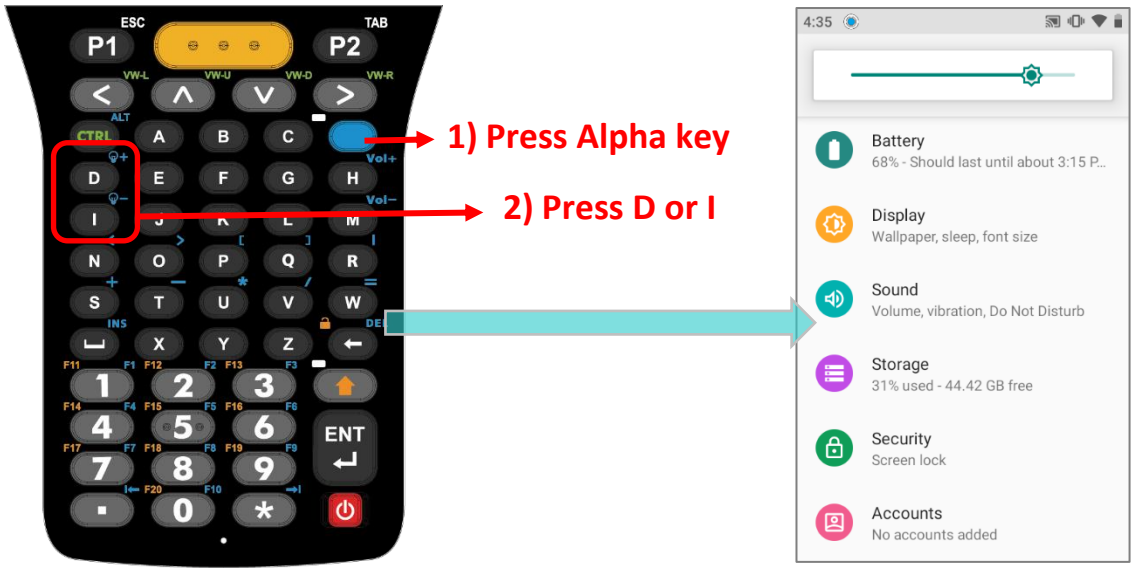
OR

1) Press **Function key** twice to enable **Function Lock Mode** .
2) Keep pressing "**F6**" or "**F9**" to adjust the screen brightness.



52-KEY MODEL

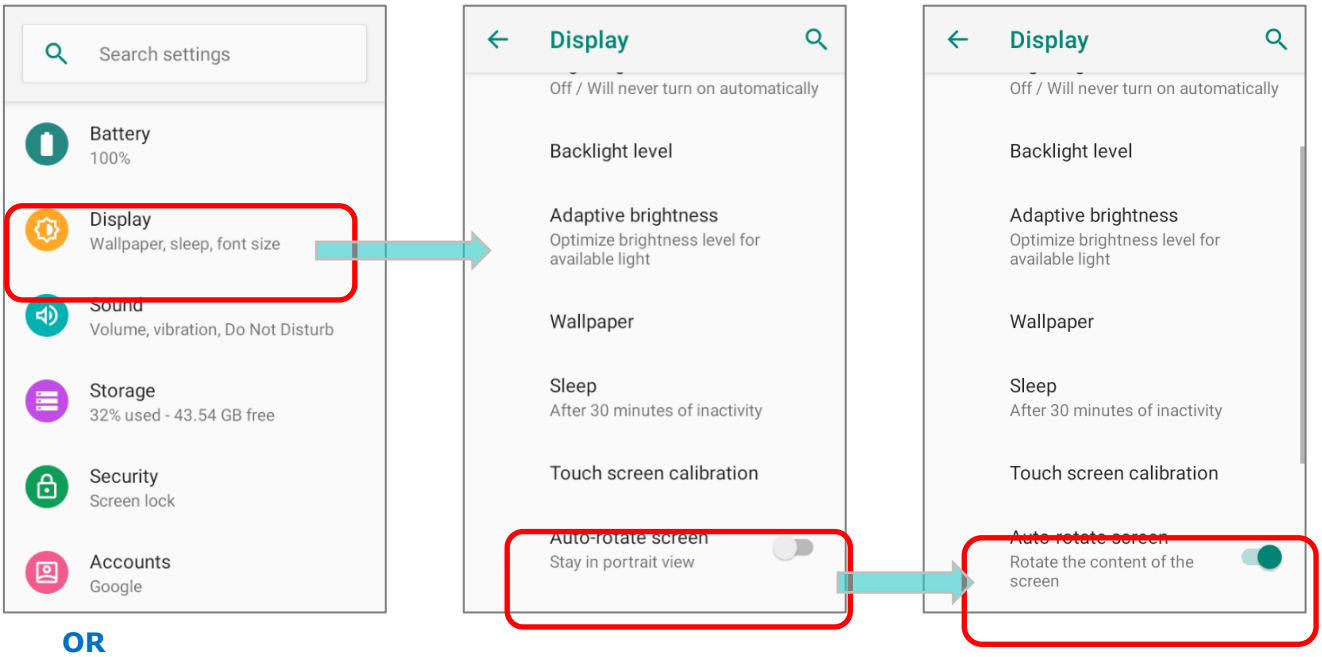
Press **Alpha key** to enable **Alpha Mode** and then press "**D**" to the brightness slider to brighten up the screen and dim the screen by pressing "**I**".



2.3.2. SCREEN ROTATION

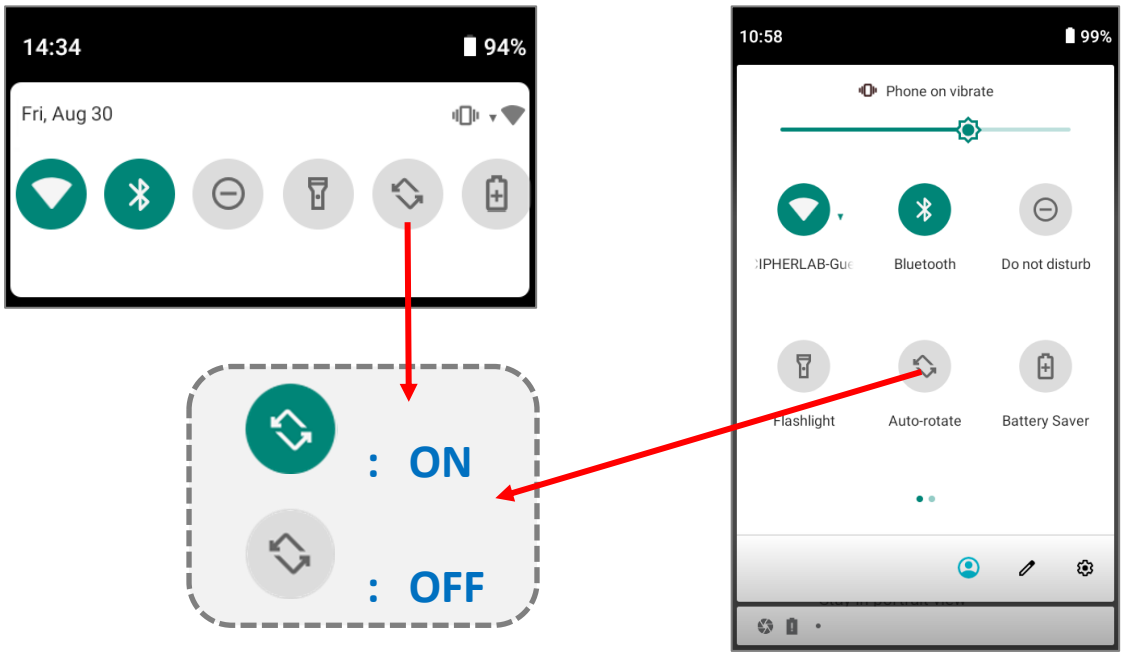
By default, the device automatically rotates the screen to when you turn the device sideways. To switch this function on or off:

1) Go to **App Drawer (All Apps)** | **Settings** | **Display**
2) Tap **Advanced** for more display settings, and switch on or off **Auto-rotate screen**.

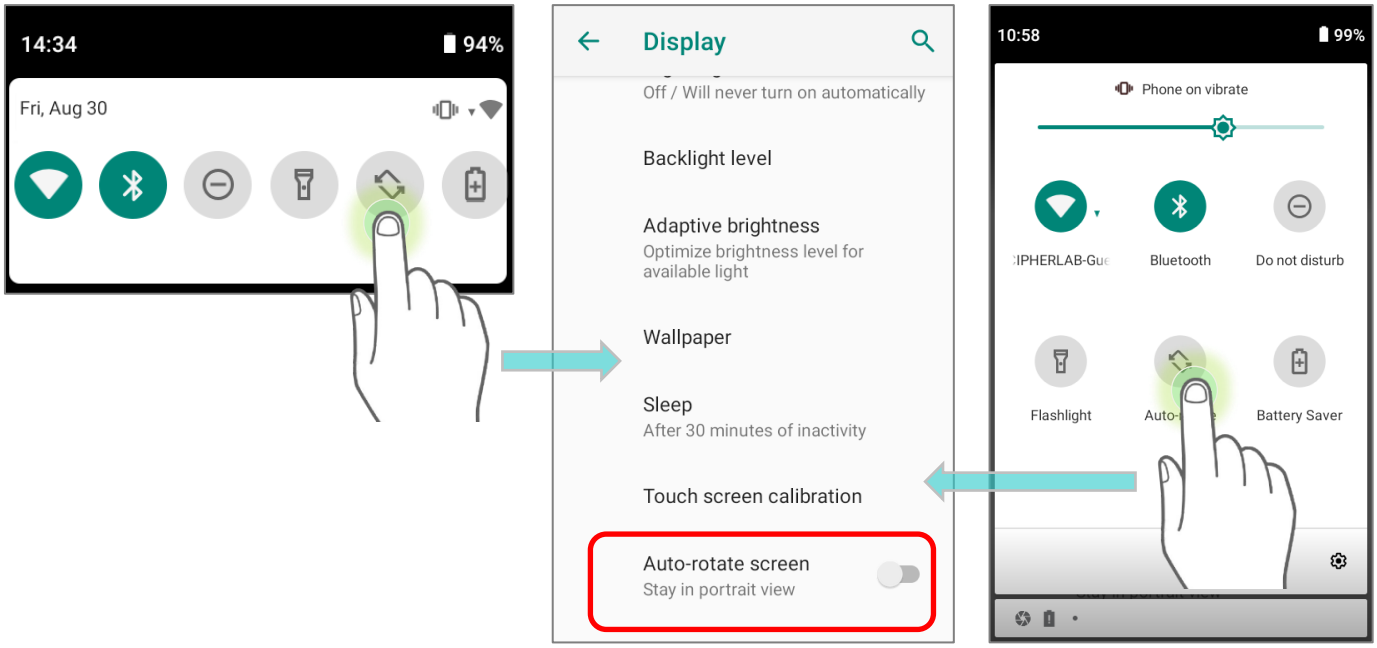


OR

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.



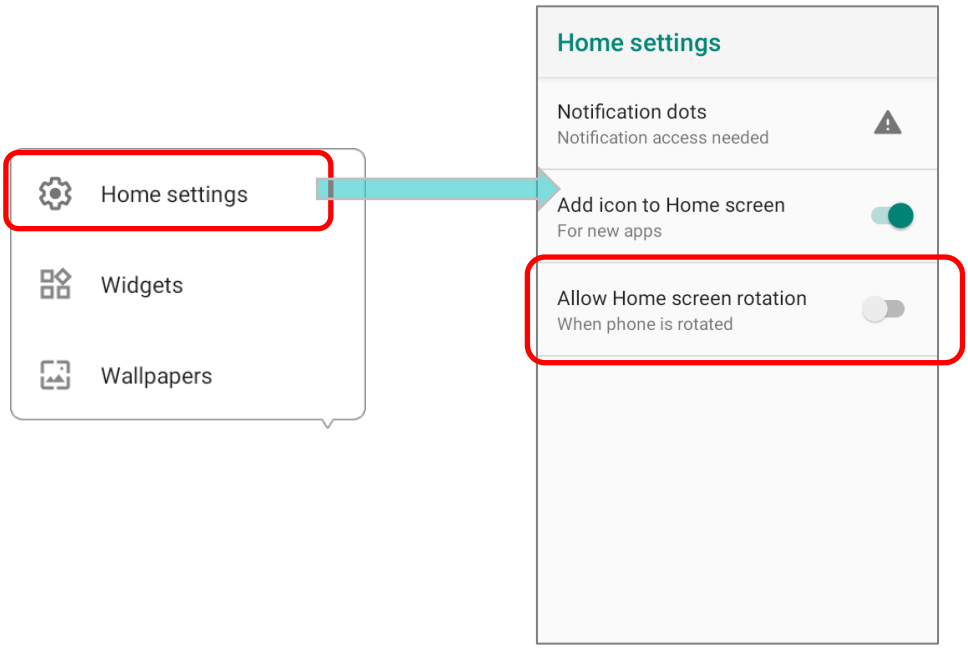
You can enter "**Display**" page to enable or disable screen rotation by long pressing the **Auto rotate** icon on **Quick Settings Panel** or **Quick Settings Menu**.



HOME SCREEN ROTATION

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

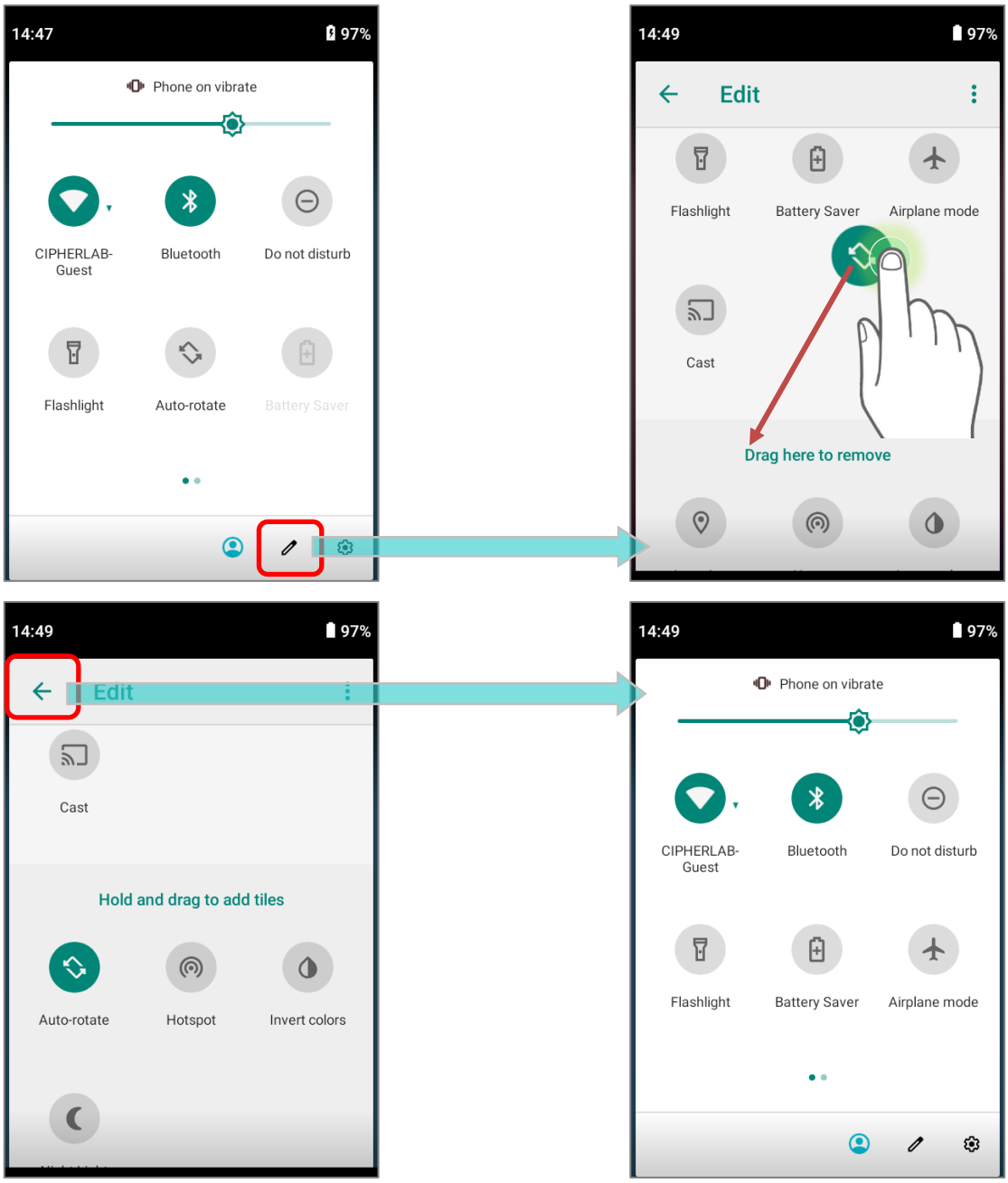
1) Press any empty spot on Home screen.
2) Tap "Home Settings" and enable "**Allow Home screen rotation**".



REMOVE AUTO ROTATION FROM QUICK SETTING MENU

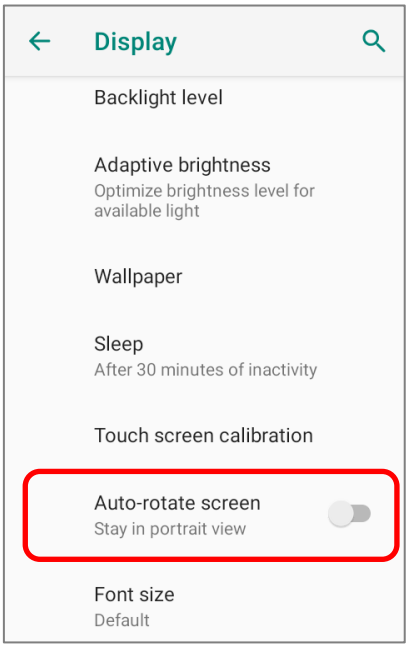
You can remove the **Auto rotate** switch icon on **Quick Settings Menu** to minimize the possibility of accidentally turning on the auto-rotation function:

1) Swipe down from the top of the screen to open **Quick Settings Menu**.
2) Click **Edit** button to get into **Edit** page; 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.



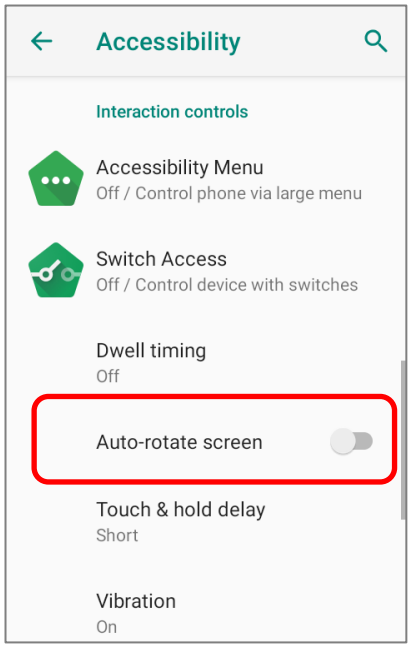
REMOVE AUTO ROTATION FROM DISPLAY SETTINGS

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** .



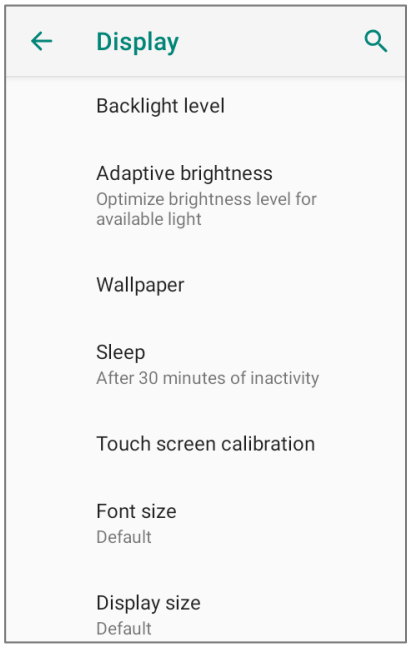
Step 1:

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



Step 2:

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



Step 3:

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

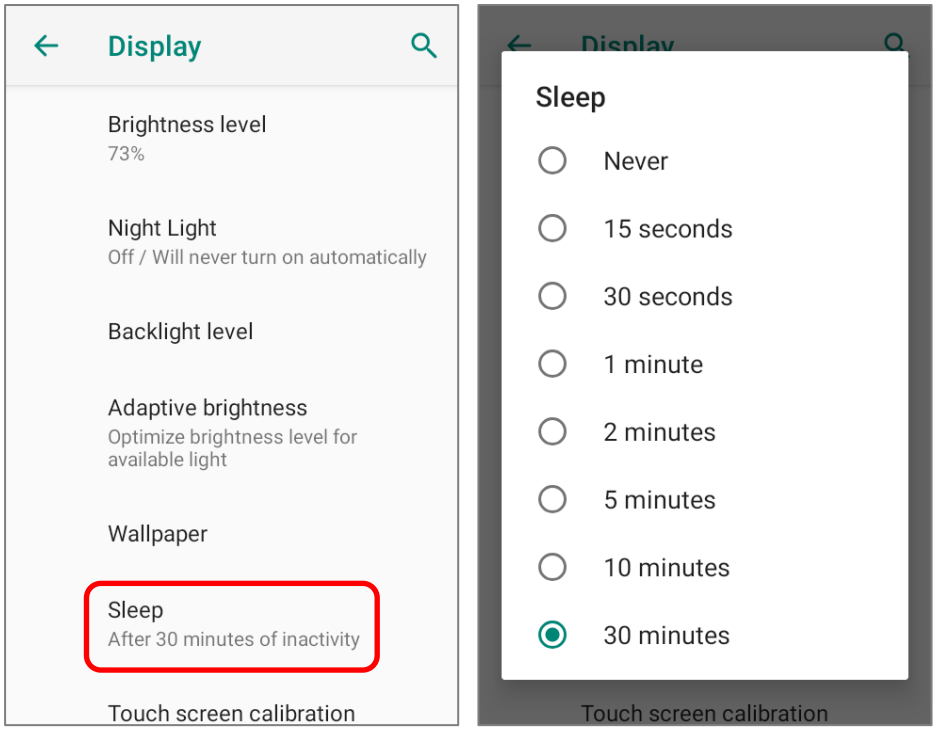
Note:

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**.

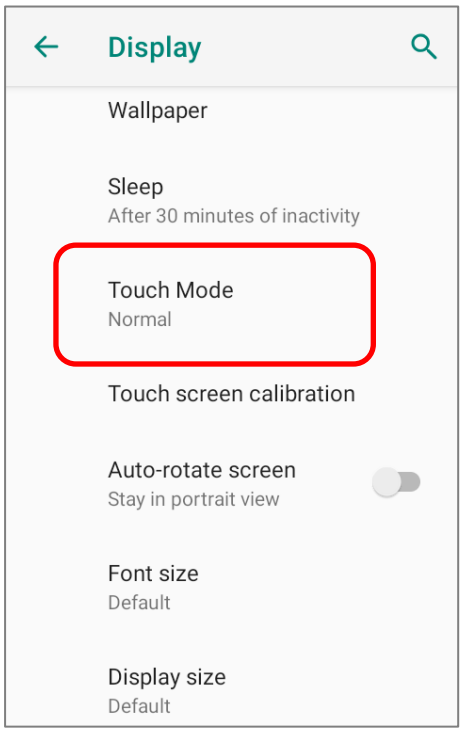
Select the time lapse for screen timeout.

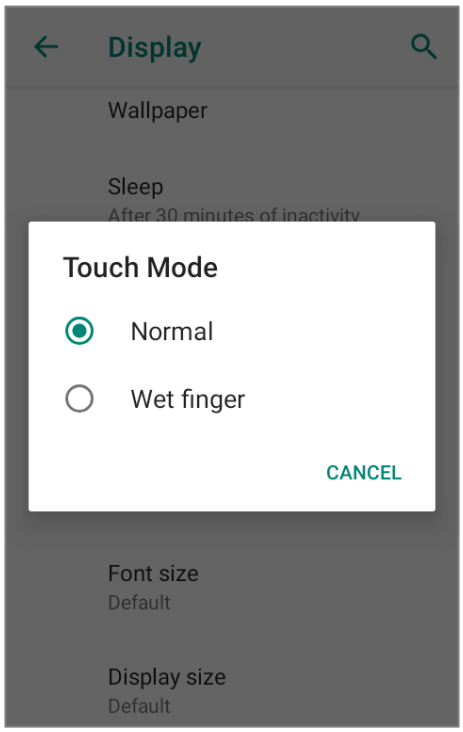


2.3.4. TOUCH MODE

Go to **App Drawer (All Apps)** | **Settings** | **Display** | **Touch Mode**, and select the touchscreen mode according to the environment you use with the mobile computer:

Touch Mode	Description
Normal	The default setting of "**Touch Mode**" is "**Normal**" which is for bare fingers, gloves, and styluses.
Wet finger	The mode "**Wet finger**" is applied to a humid environment or in drizzly weather with bare fingers only.

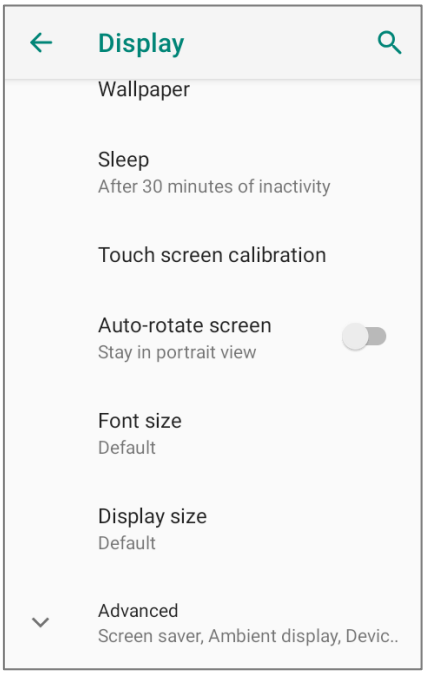


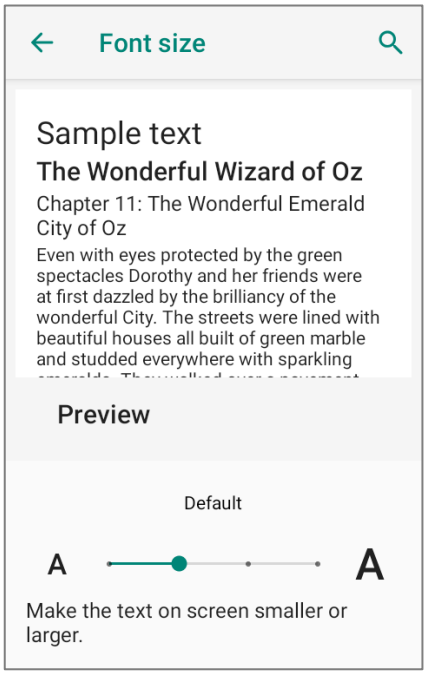


2.3.5. TEXT SIZE & DISPLAY SIZE

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

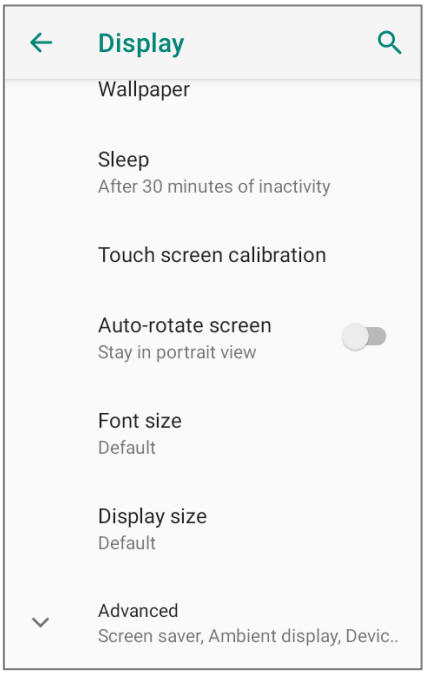
Tap the small A icon A or the large A icon A to select the font size between **Small**, **Default**, **Large** and **Largest**.

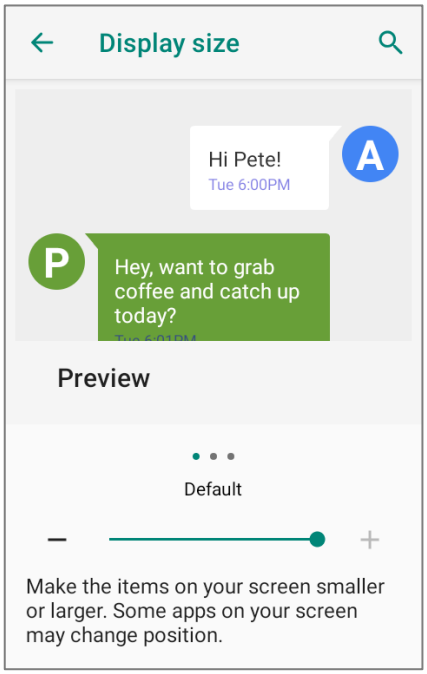




Go to **App Drawer (All Apps)** | **Settings** | **Display** | **Display size**.

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
	Red, solid	Charging the mobile computer
	Red, blinking	Charging temperature error (lower than 0°C or exceed 45°C)

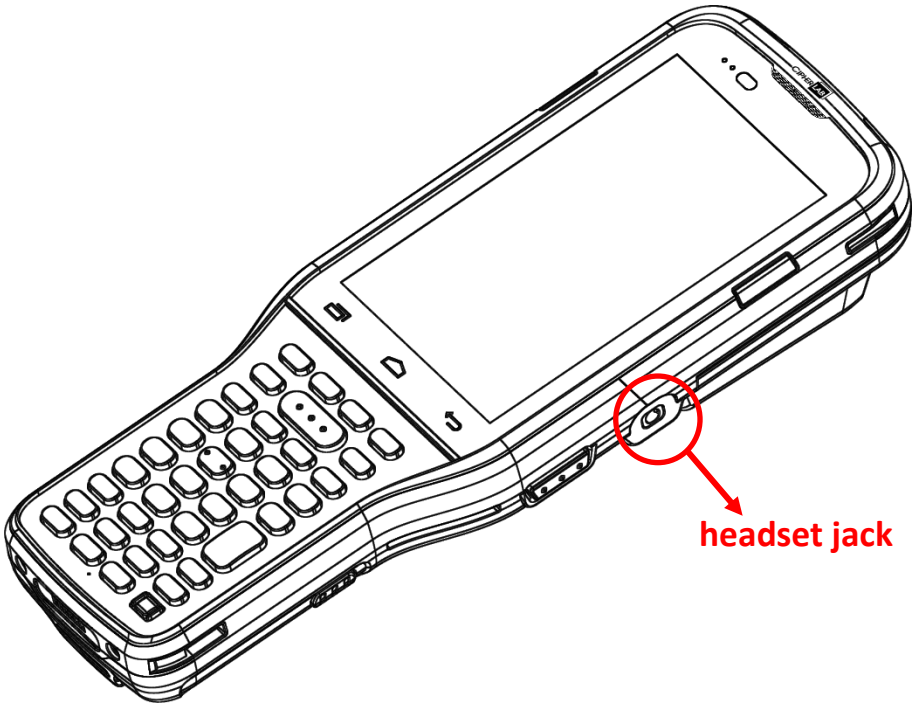
LED 2 for Reader & System Notification		
Indicator	Status	Description
Barcode decode	Green, flash once	Good read
System notification	White, blinking	New notification

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 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,v2; WMA 9/Pro; Dolby AC-3, eAC-3, DTS-HD, FLAC, APE, ALAC, AIFF, and EVS.



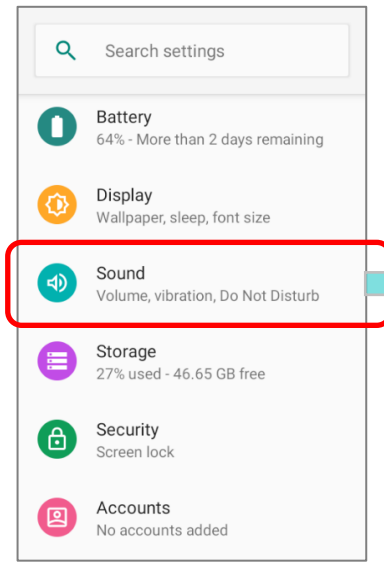
2.4.3. SOUNDS AND VIBRATION

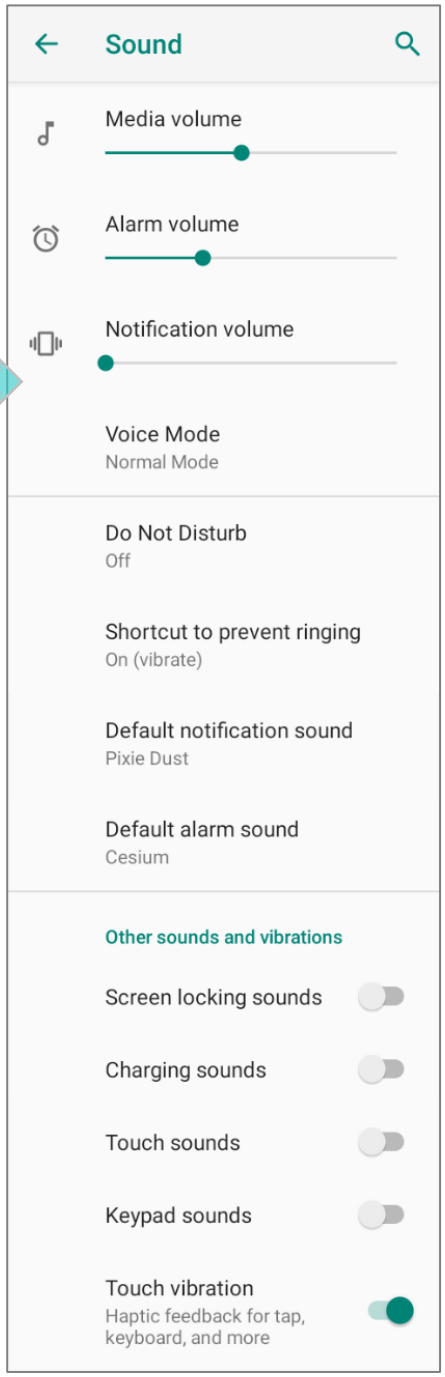
The mobile computer is integrated with a vibrator, which is software programmable for tactile feedback. This can be helpful when working in noisy environments.

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

SOUND SETTINGS

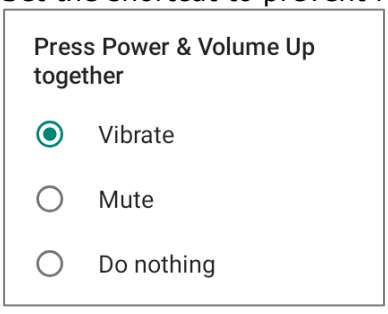
Go to **App Drawer (All Apps)** | **Settings** | **Sound** for more sound settings.





On "**Sound**" screen, you can:

1) Adjust the volume for **media** , **alarm** , and **notification** by dragging the sliders. The media icon turns to be if it is off while notification icons turns to be to indicates it is off.
2) Enter "**Do Not Distrub**" for its detailed settings.
3) Set the shortcut to prevent ringing.



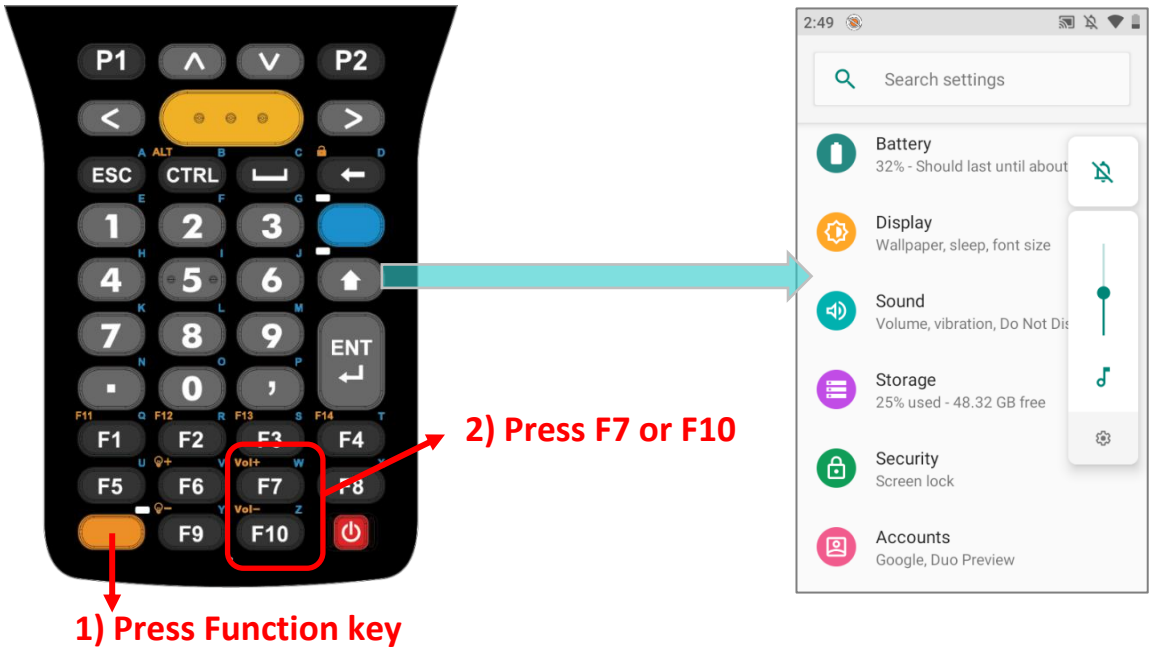
4) Select the sound for "Default notification soud" and "Default alarm sound".
5) Turn on or off the switch of the items under "**Other sounds and vibrations**".

ADJUST THE SOUND BY KEYPAD

To adjust the sound by keypad:

For **38-Key Model**, please press "Function key" to enable **Function Mode** and then press "**F7**" key to trigger the volume box pop-up window and increase the volume, or press "**F10**" to decrease the volume. Repeat pressing "**Function key**" and "**F7**" or "**F10**" to adjust sound volume.

By press **Function key** twice to enable **Function Lock Mode**, then you can keep pressing "**F7**" or "**F10**" to adjust sound volume.

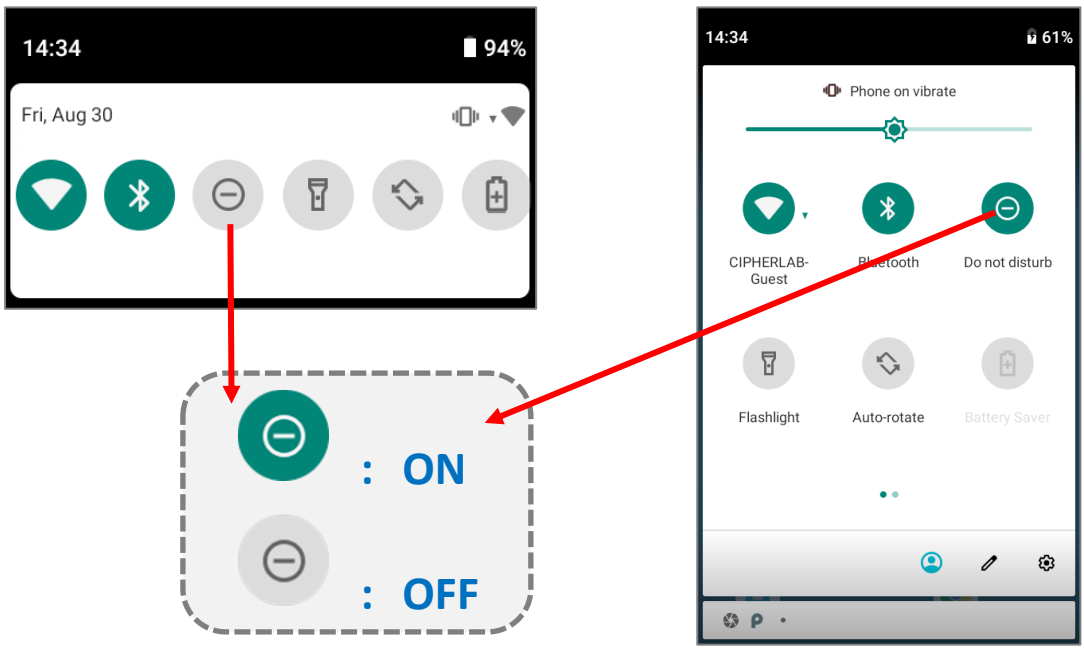


For **52-Key Model**, please press **Alpha key** to enable **Alpha Mode** and then press "**H**" to trigger the volume box pop-up window and increase the volume or "**M**" to decrease the volume.

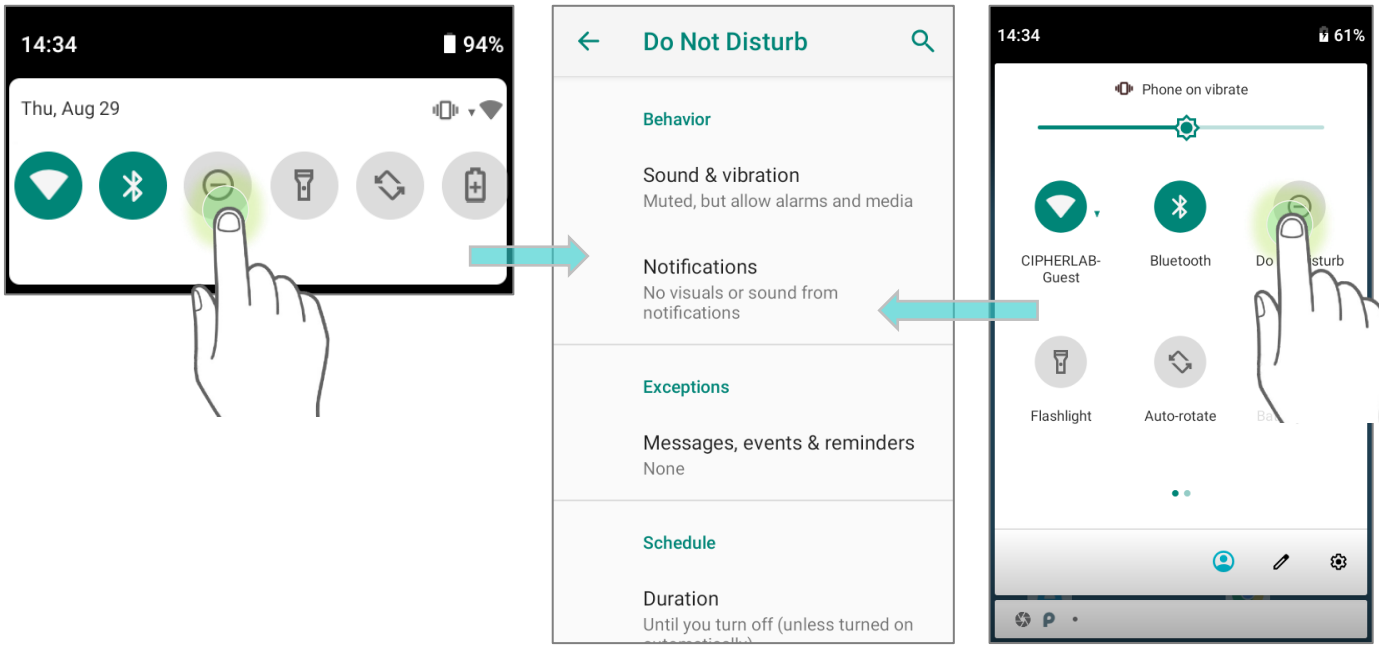
DISABLE UNWANTED NOTIFICATIONS WITH "DO NOT DISTURB"

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.

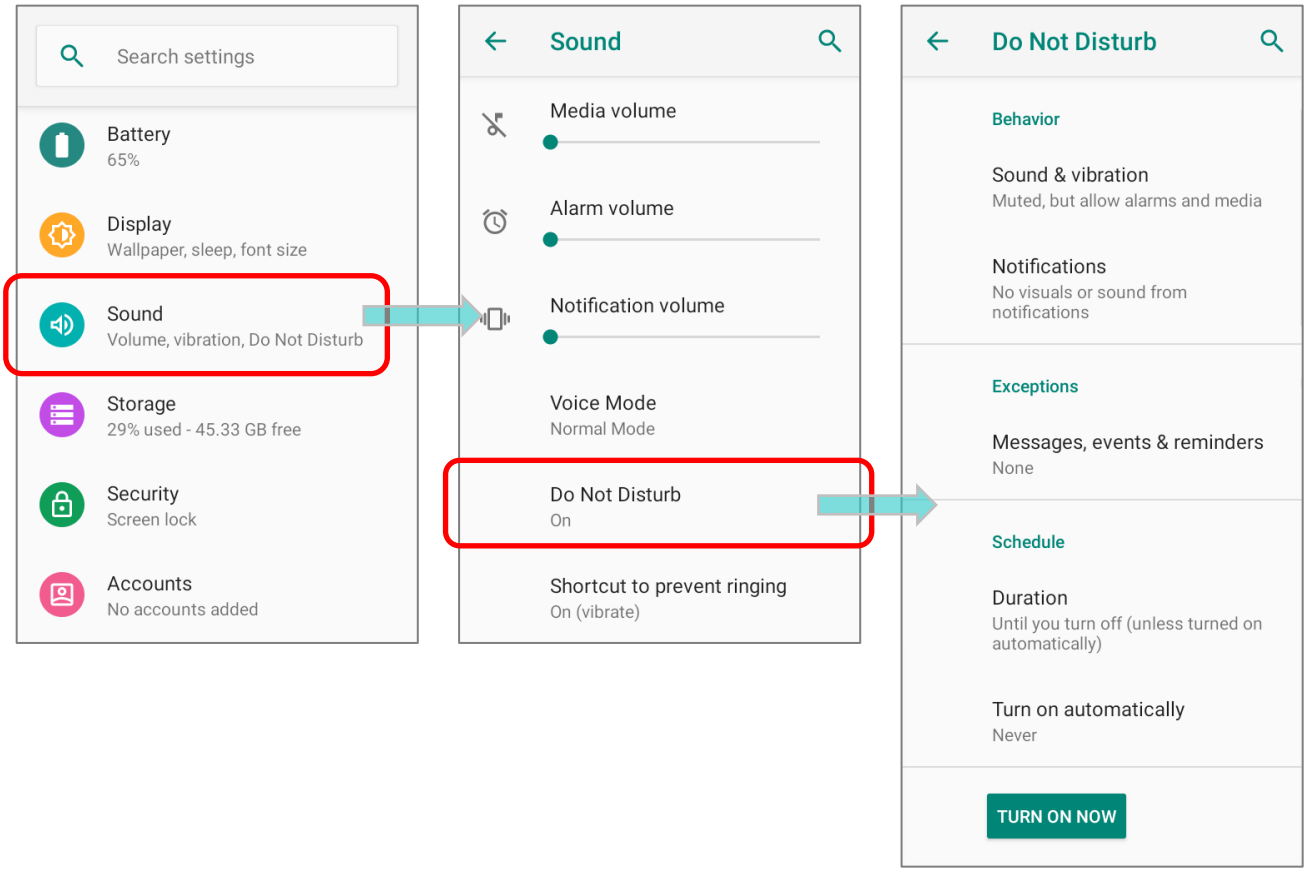


You can enter "**Do Not Disturb**" page for further settings by long pressing the **Do Not Disturb** icon on **Quick Settings Panel** or **Quick Settings Menu**.



OR

Go to **App Drawer (All Apps)** | **Settings** | **Sound** | **Do Not Disturb**

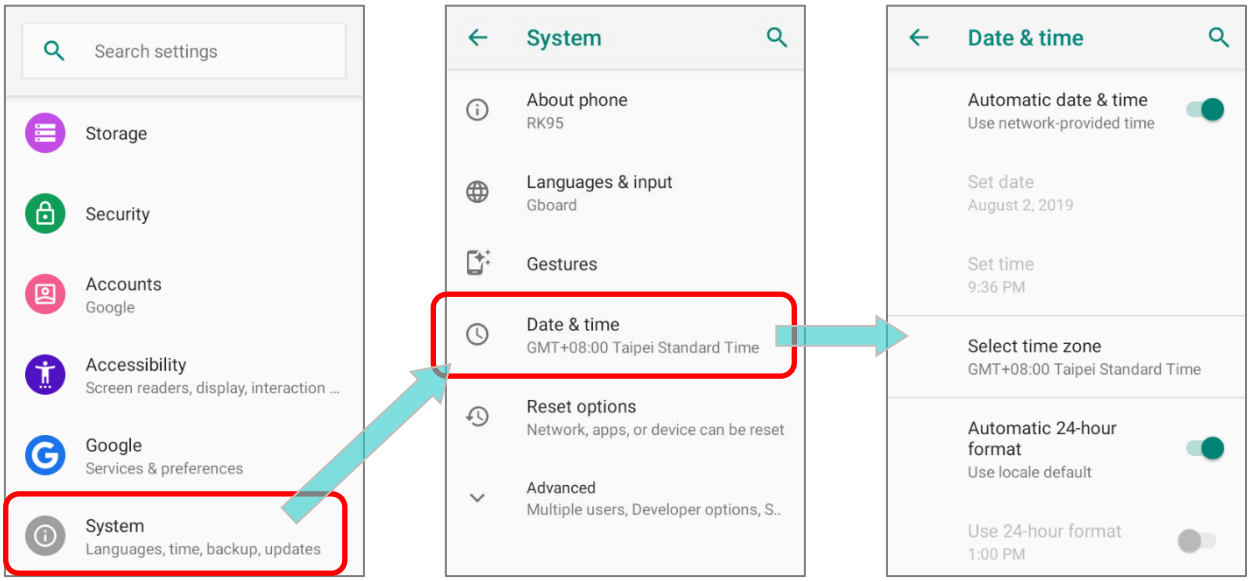


2.5. DATE AND TIME

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

To set the date and time manually:

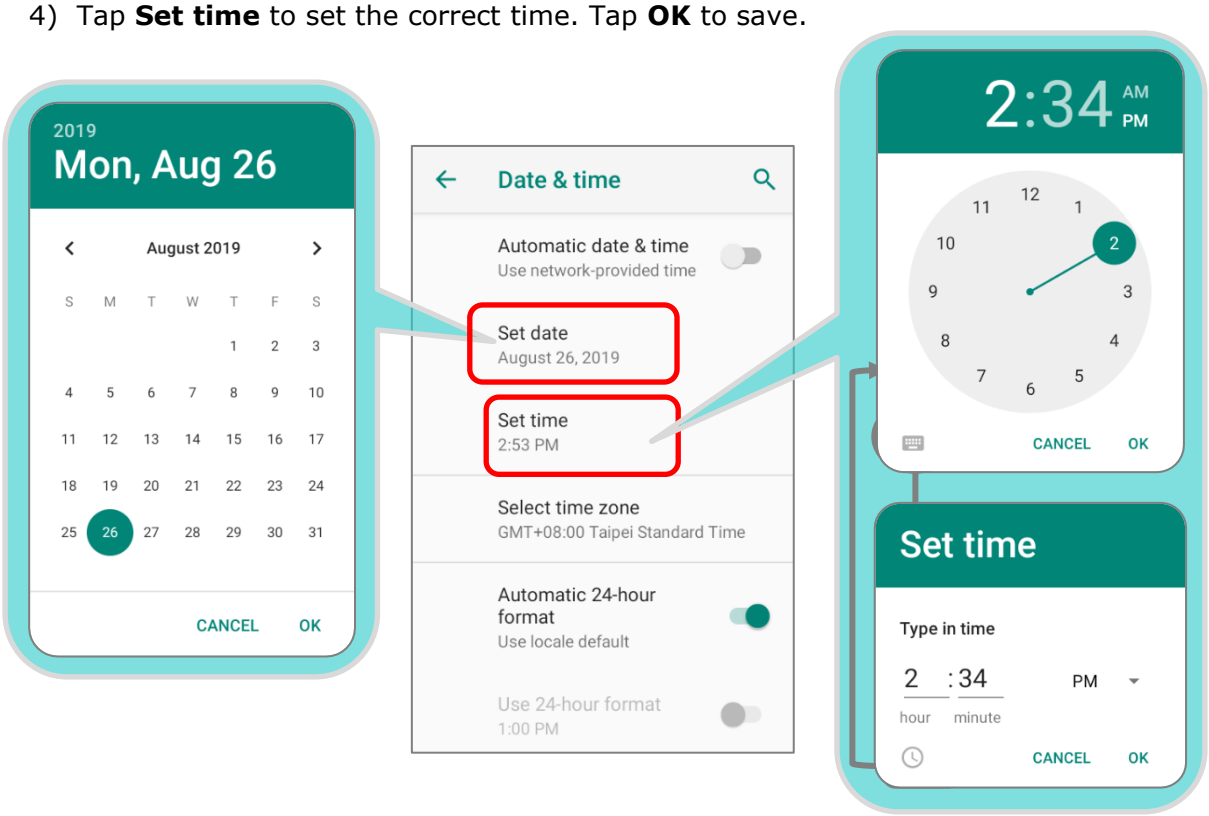
1) Go to **App Drawer (All Apps)** | Settings | System | Date & time



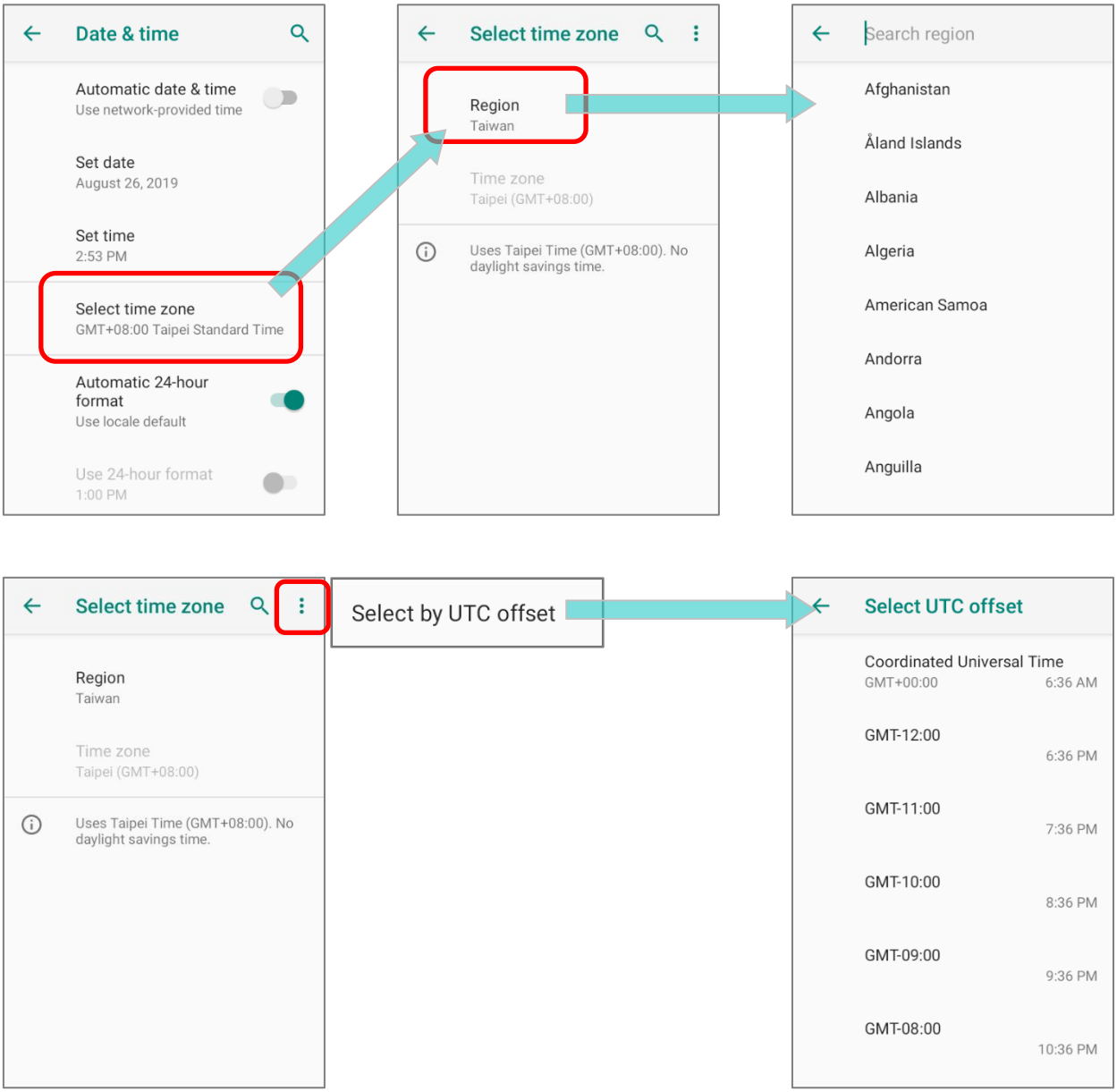
2) Tap to turn off **Automatic date & time** to disable using network-provided time.

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) Tap **Select time zone**, and select the correct time zone from the list.

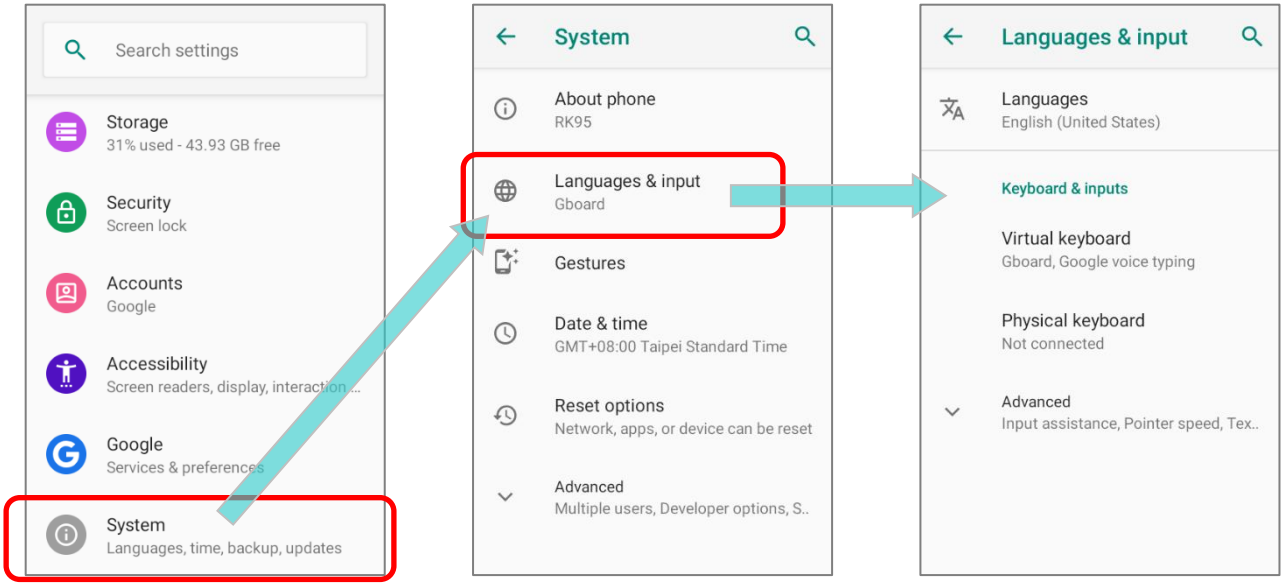


6) Disable "**Automatic 24-hour format**" and tap "**Use 24-hour format**" to switch on or off to change the displayed time.

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

2.6. LANGUAGE & KEYBOARD INPUT

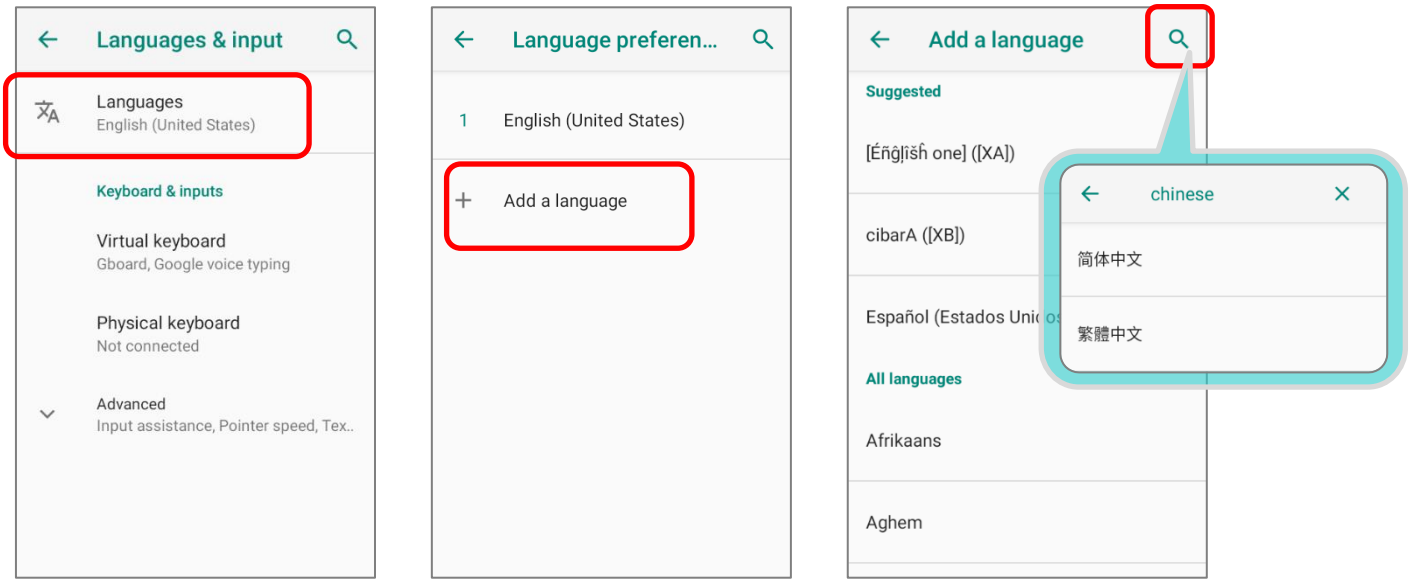
Tap **App Drawer (All Apps)** | **Settings** | **System** | **Language & input** to change the system language, default keyboard type, and configure keyboard input and speech settings.



2.6.1. CHANGE DISPLAY LANGUAGE

To change display language:

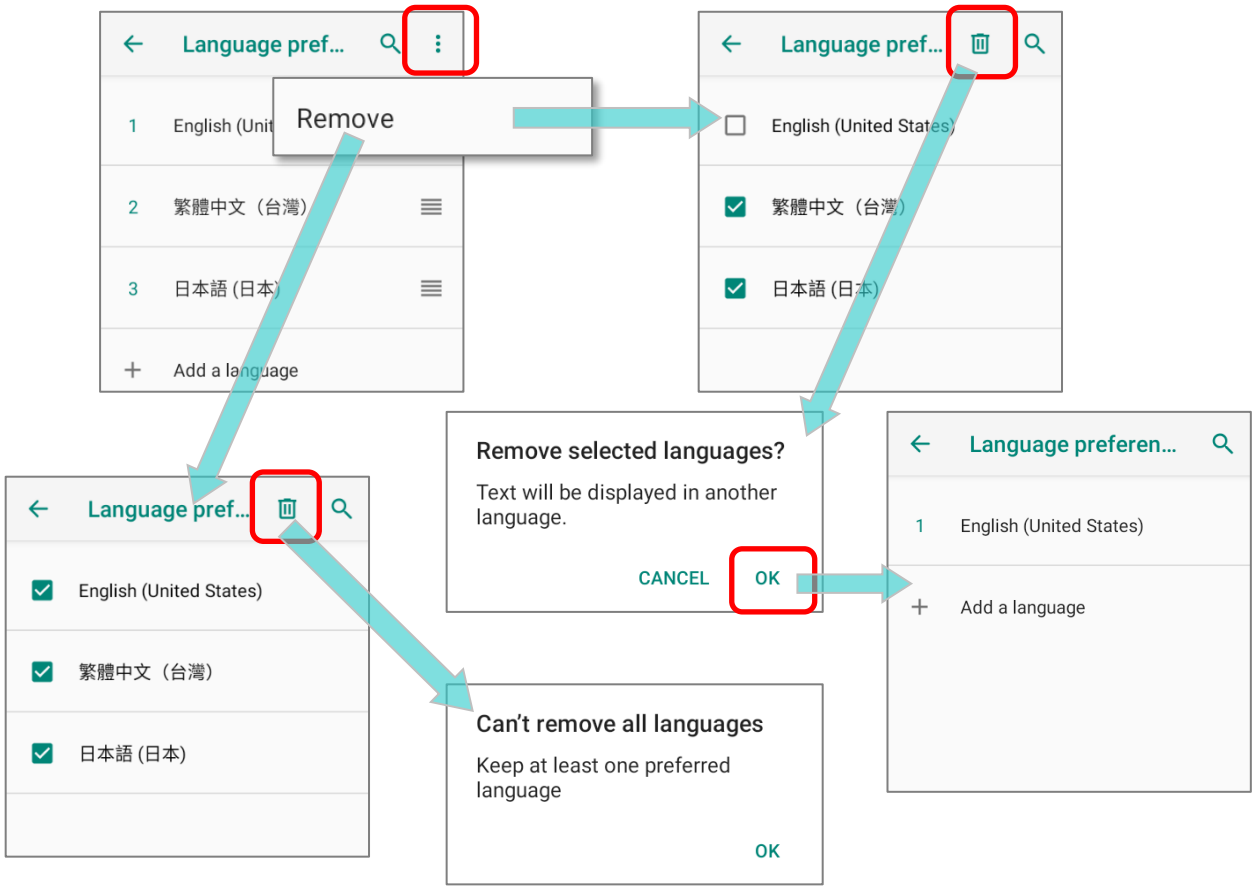
1) On **Language & input** screen, tap on **Language** to get into "**Language preference**" page, and then click "**Add a language**" to select your desired system language.



2) 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.

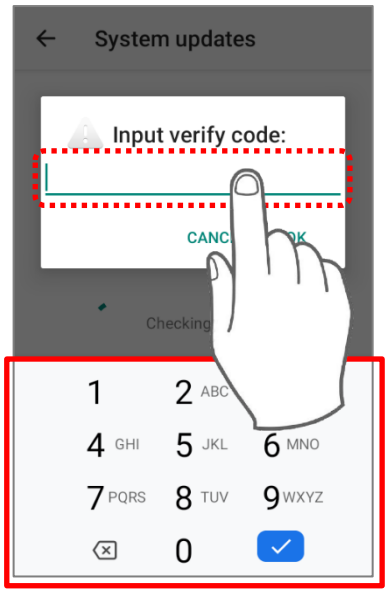
DELETE LANGUAGE

Tap ⋮ in the upper right corner and tap "**Remove**" option; select the language to delete. Please note that the display language will be changed if it is selected to be deleted.



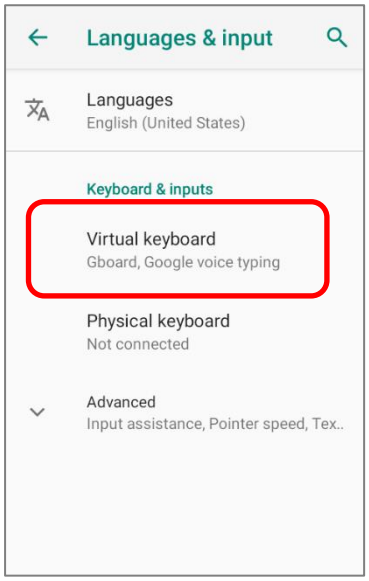
2.6.2. ON-SCREEN KEYBOARD

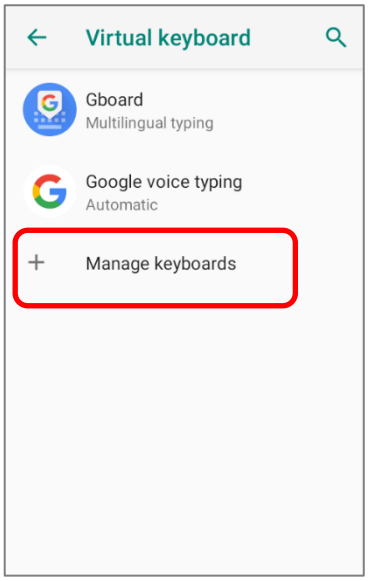
Tap a text input field to automatically open an on-screen keyboard. The virtual keyboard will vary depending on the data type (text or numbers) this field requires.

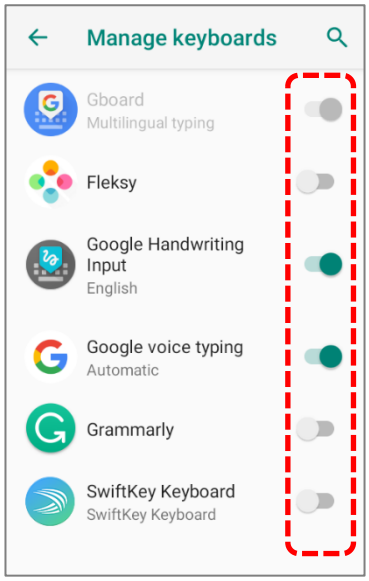


SELECT KEYBOARD (INPUT METHOD)

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

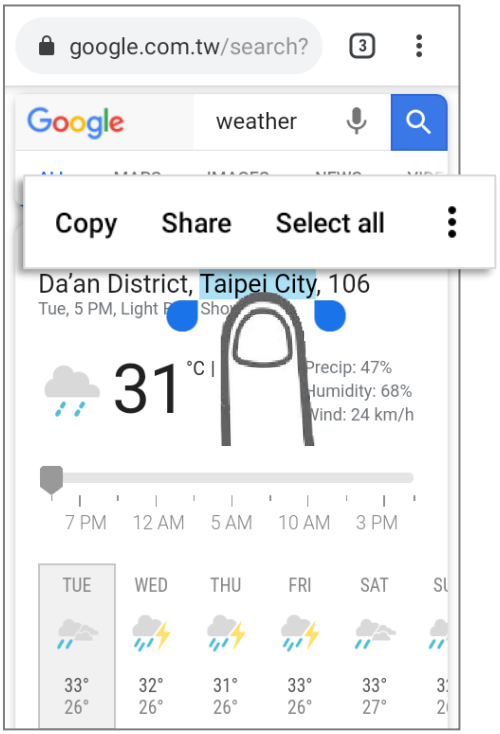






EDIT TEXT

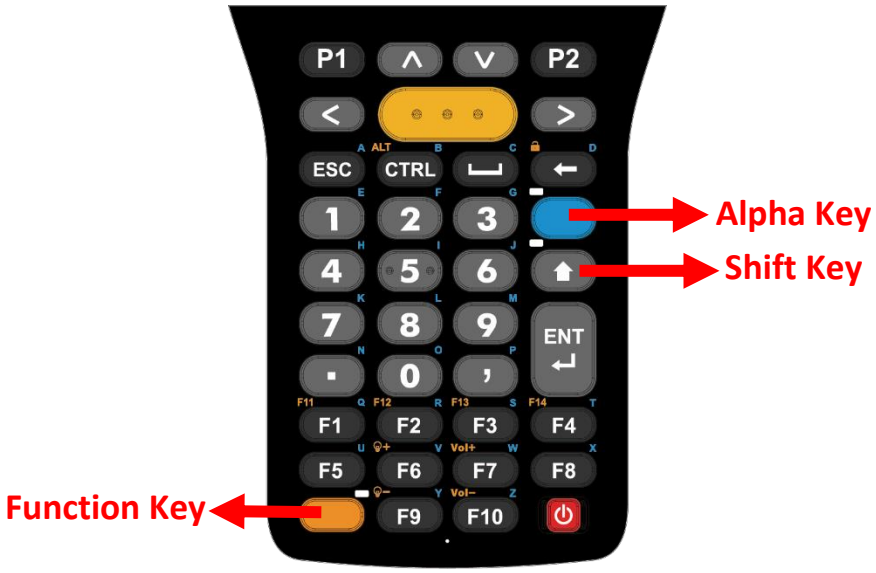
Tap and hold text on the screen to enable a text editing menu for selecting all text, or copying and pasting text within or across applications. Some applications may use different ways to select or edit text.



2.7. PHYSICAL KEYPAD

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.

38-Key Model

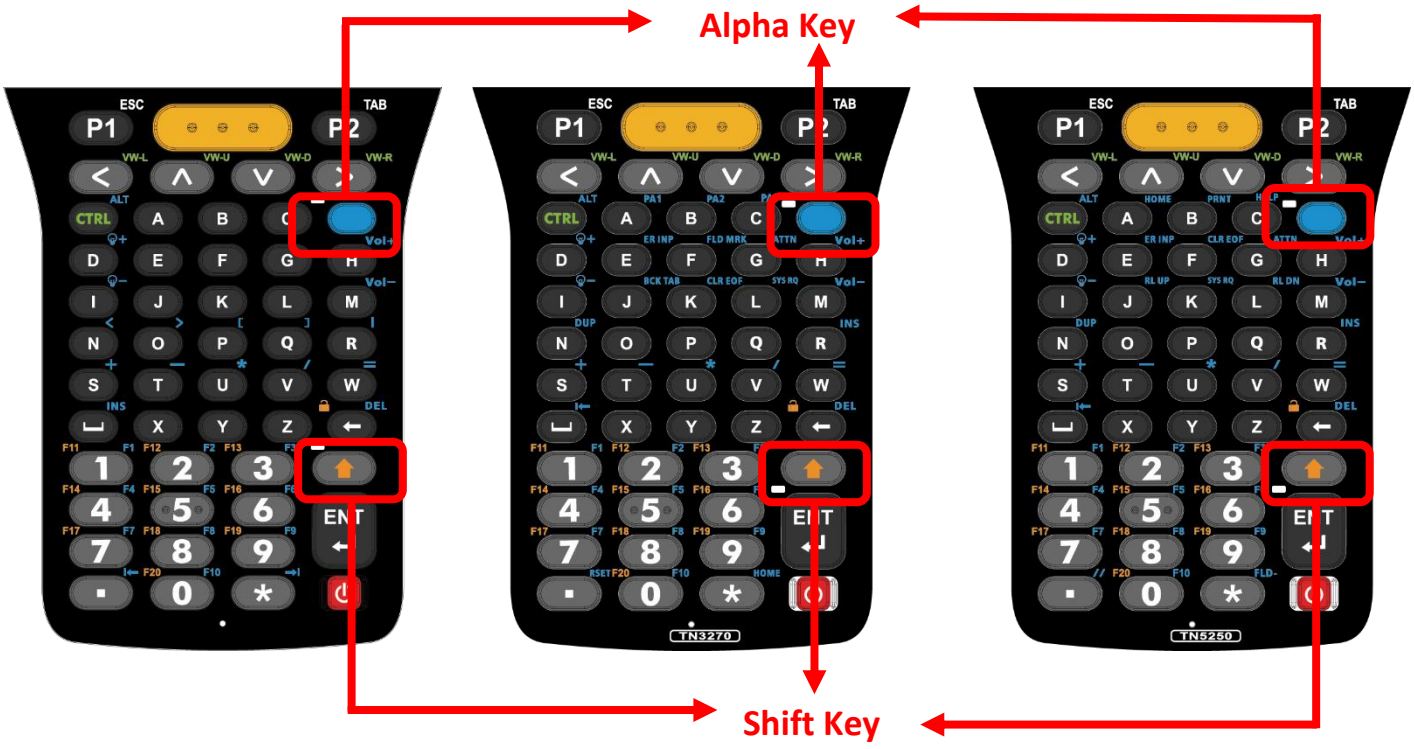


52-Key Model

VT emulator keypad

TN3270 emulator keypad

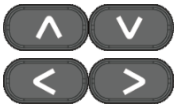
TN5250 emulator keypad



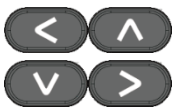
2.7.1. BASIC KEY

Basic Keys deliver the folloing functions:

BASIC KEYS OF 38-KEY MODEL

Key		Description
Scan		Press the scan key to read a barcode in place.
Backspace		To remove the input letter in front of the cursor.
Arrow		The arrow keys are used to move the cursor up, down, left or right during text input, or move between items in certain applications.
Enter		Enter key works as tap or double-tap.

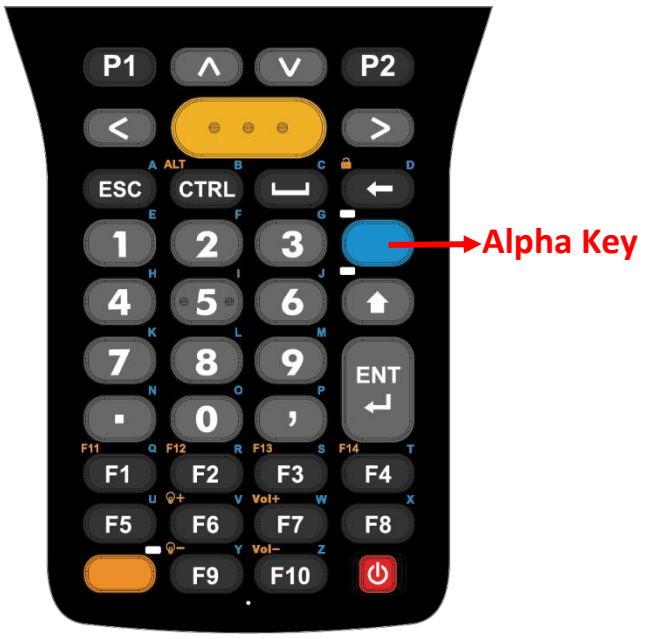
BASIC KEYS OF 52-KEY MODEL

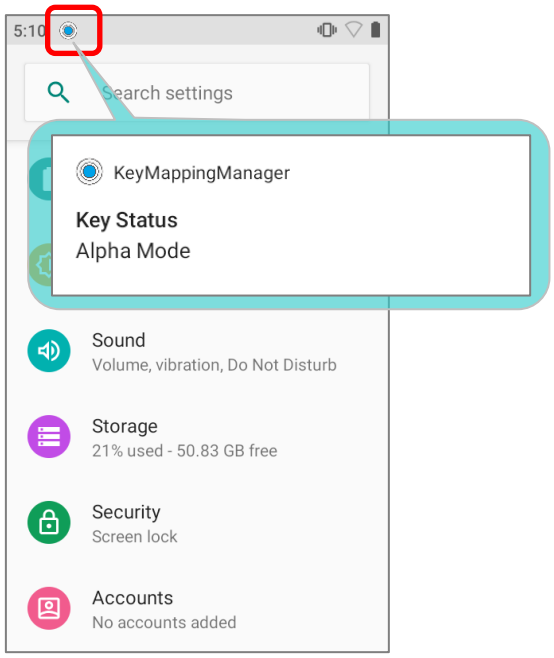
Key		Description
Scan		Press the scan key to read a barcode in place.
Backspace		To remove the input letter in front of the cursor.
Arrow		The arrow keys are used to move the cursor up, down, left or right during text input, or move between items in certain applications.
Enter		Enter key works as tap or double-tap.

2.7.2. ALPHA KEY

ALPHA KEY OF 38-KEY MODEL

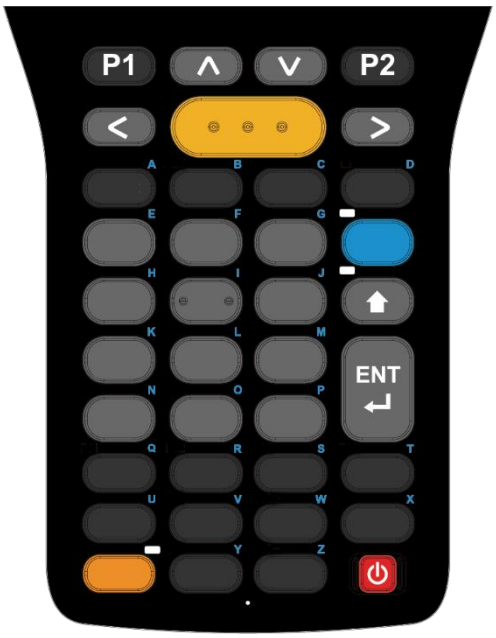
The Alpha key is the blue button located right above the shift key. When the Alpha key is pressed, a blue icon shows up in the status bar to indicate that **Alpha Mode** is on:





When **Alpha Mode** is on, the keypad enter Alpha lock mode, and the keys deliver the function as the text in blue on the upper right side of 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



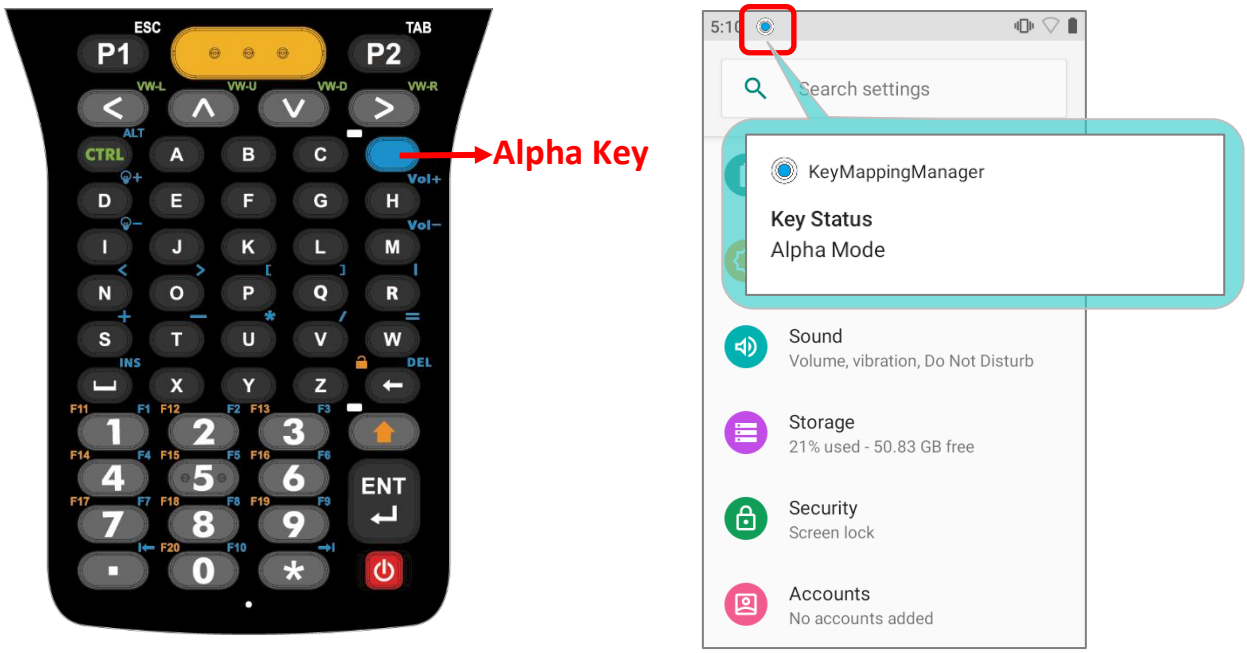
Alpha Mode

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.

ALPHA KEY OF 52-KEY MODEL

The Alpha key is the blue button located below the arrow key (rightward). 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 **Key Functions in Different Modes** shows.

Once any key is press, Alpha Mode will be turned off, and the keypad returns to the default input 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.

RK95 mobile computer 52-key model offers 3 kinds of keypad, and therefore the key functions differ according to the keypad type your device equipped.

Please refer to **Key Functions in Different Modes (for 52-key model)** for details.

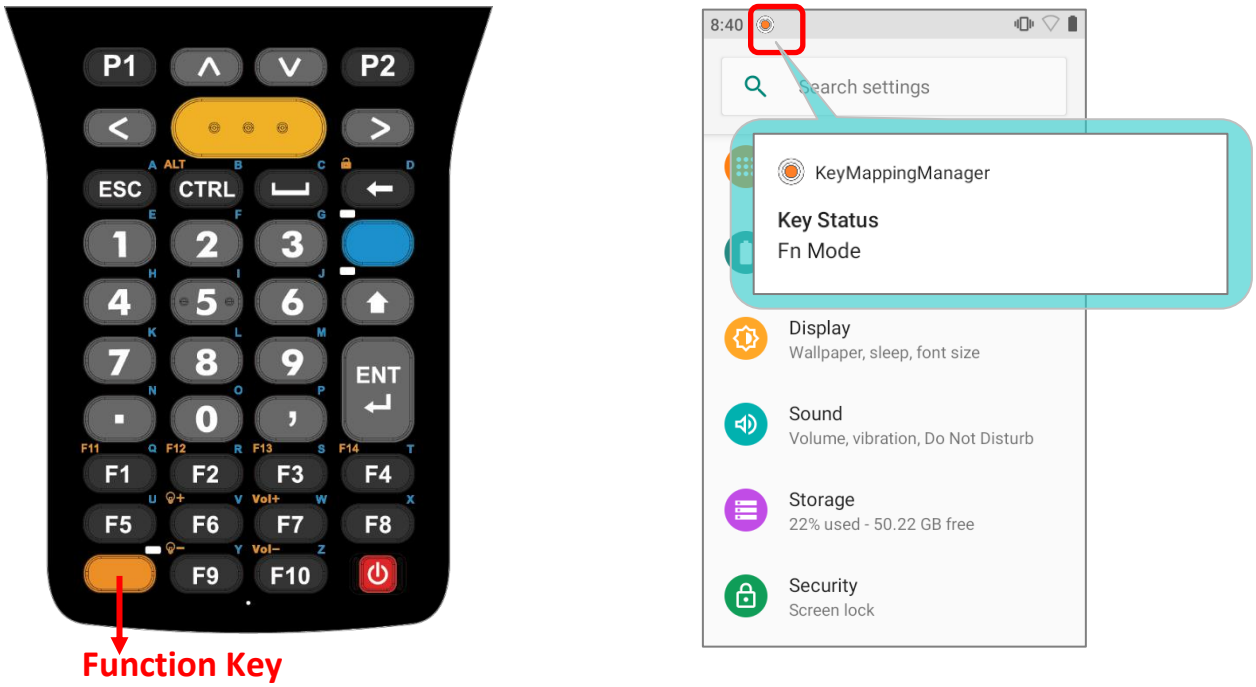
VT emulator keypad

TN3270 emulator keypad

TN5250 emulator keypad

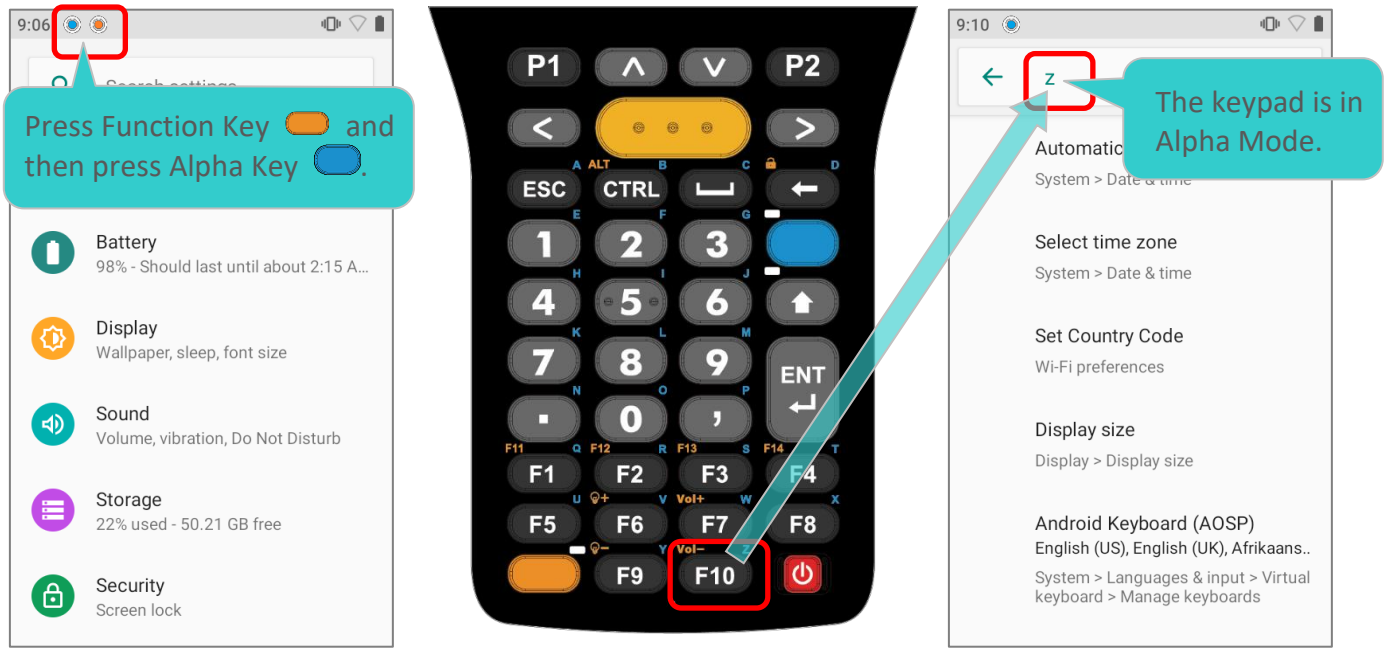
2.7.3. FUNCTION KEY (ONLY FOR 38-KEY MODEL)

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

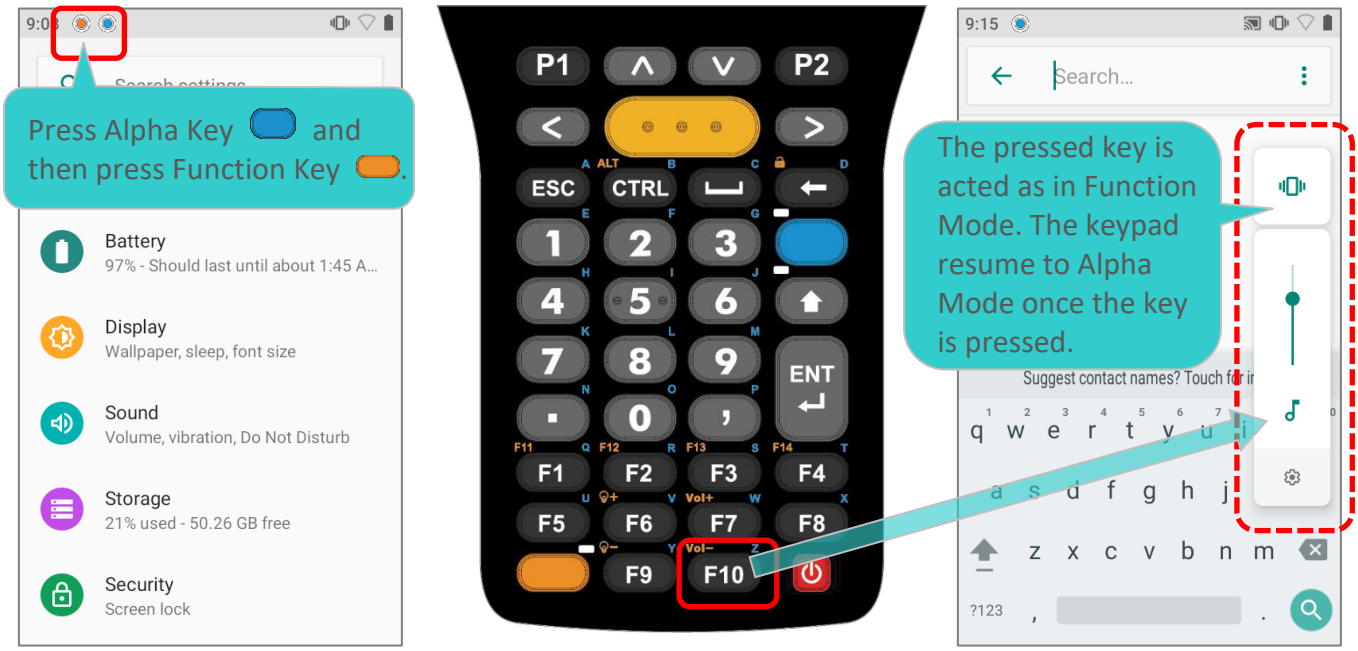


Keypad returns from **Function Mode** to **Default Input Mode** upon pressing any button except of **Alpha** key, **Shift** key, and **Function** key.

If **Alpha key** is pressed after pressing **Function key**, keypad will be in Alpha mode, and **Function Mode** will be off after pressing any key (except of **Alpha** key and **Function** key) which acts as in **Alpha Mode**.

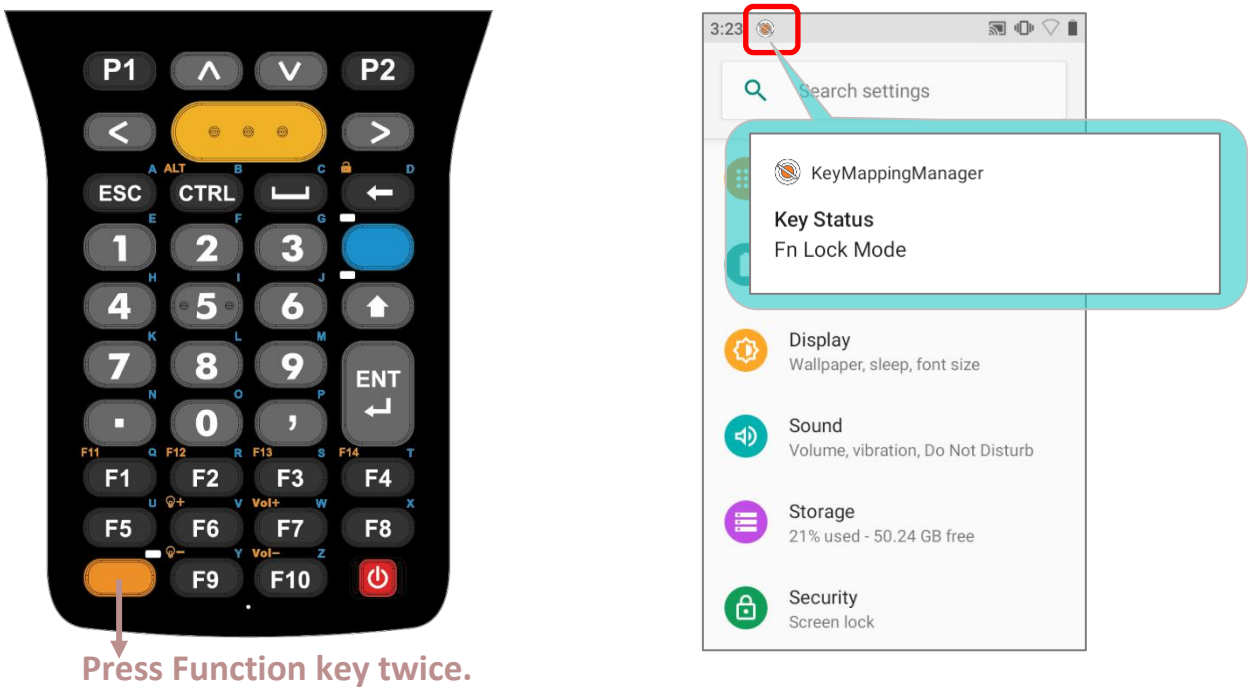


If **Alpha key** is pressed before pressing **Function key**, keypad will be in **Function Mode**, and **Function Mode** will be off after pressing any key (except of **Function** key) which acts as in **Function Mode**.

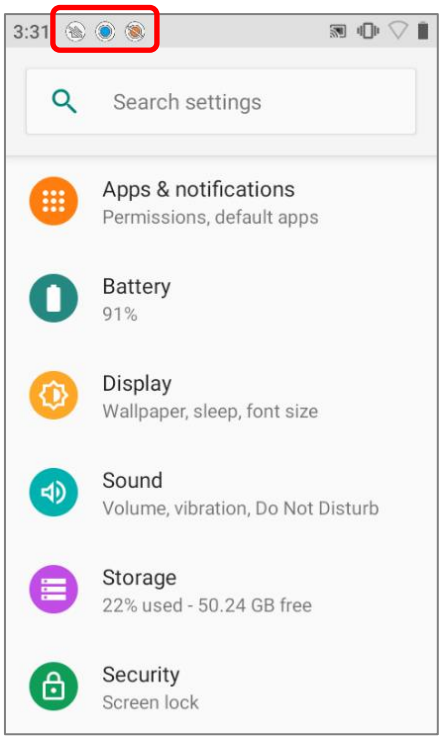


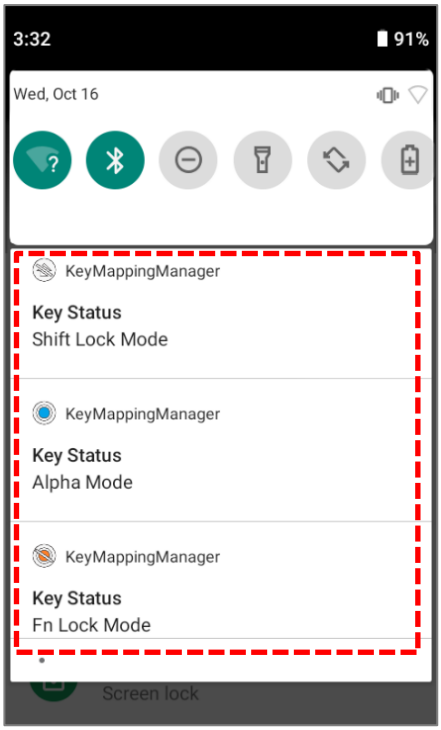
FN LOCK MODE

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.





2.7.4. SHIFT KEY

The **Shift key** is located beneath the **Alpha key** for 38-key Model, while it is ight above the **Enter key** on 52-key model keypad. 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**.

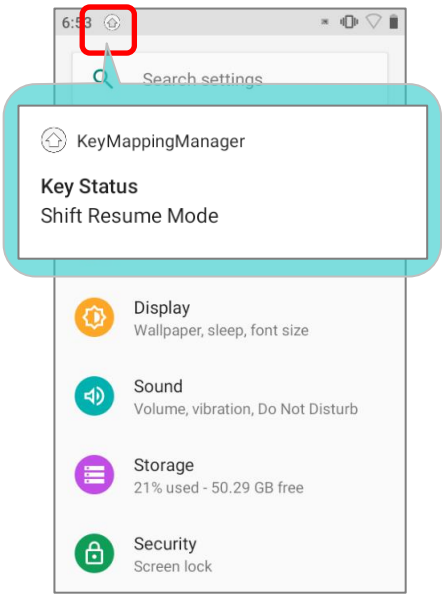
The keypad will return to the **Default Input Mode** right after pressing any key (except of **Alpha key**, **Function key**, and **Control key** for 38-key Model, and **Backspace key**, **Alpha key**, and **Control key** for 52-key Model).

38-Key Model

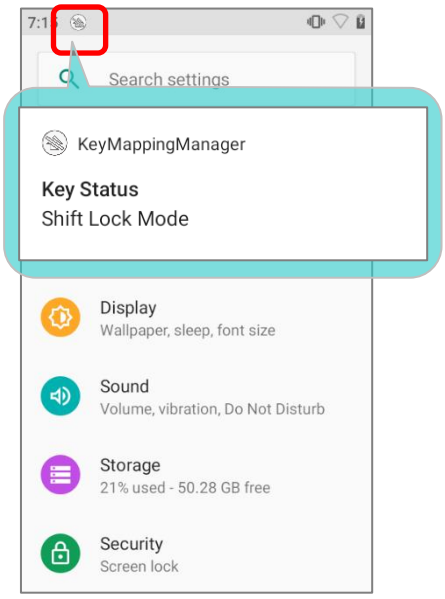
52-Key Model

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

Shift Resume Mode



Sfift Lock Mode

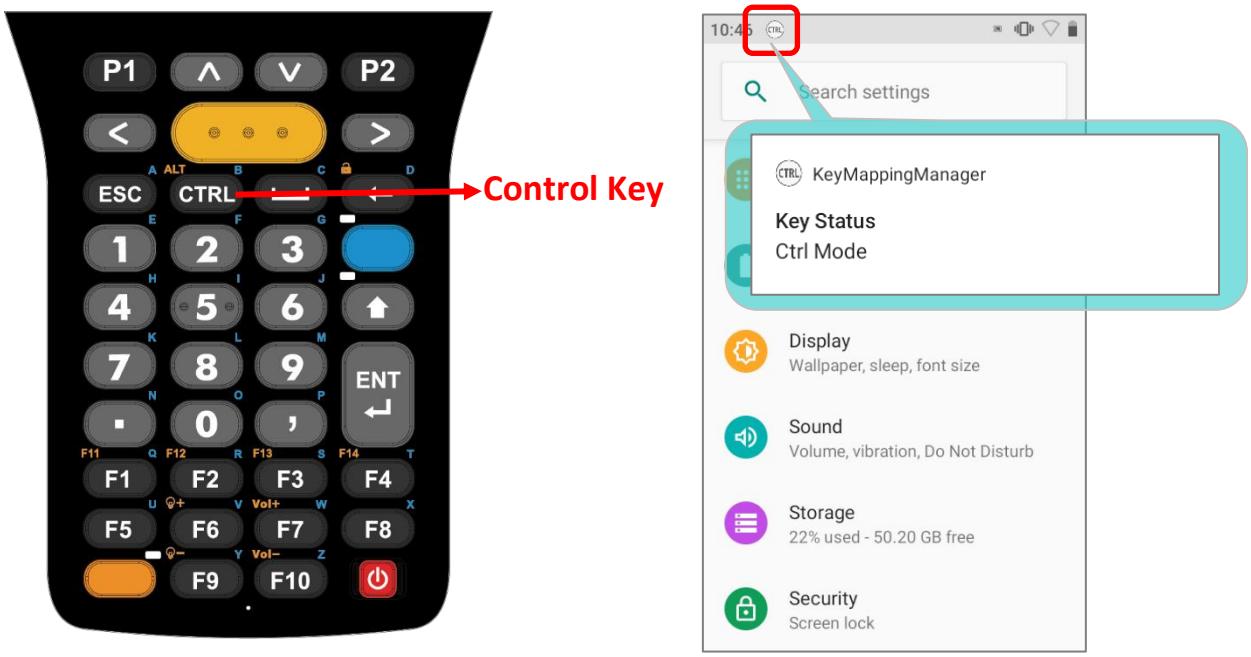


The keys in both **Shift Resume Mode** and **Shift Lock Mode** deliver the functions as **Key Functions in Different Modes** describes.

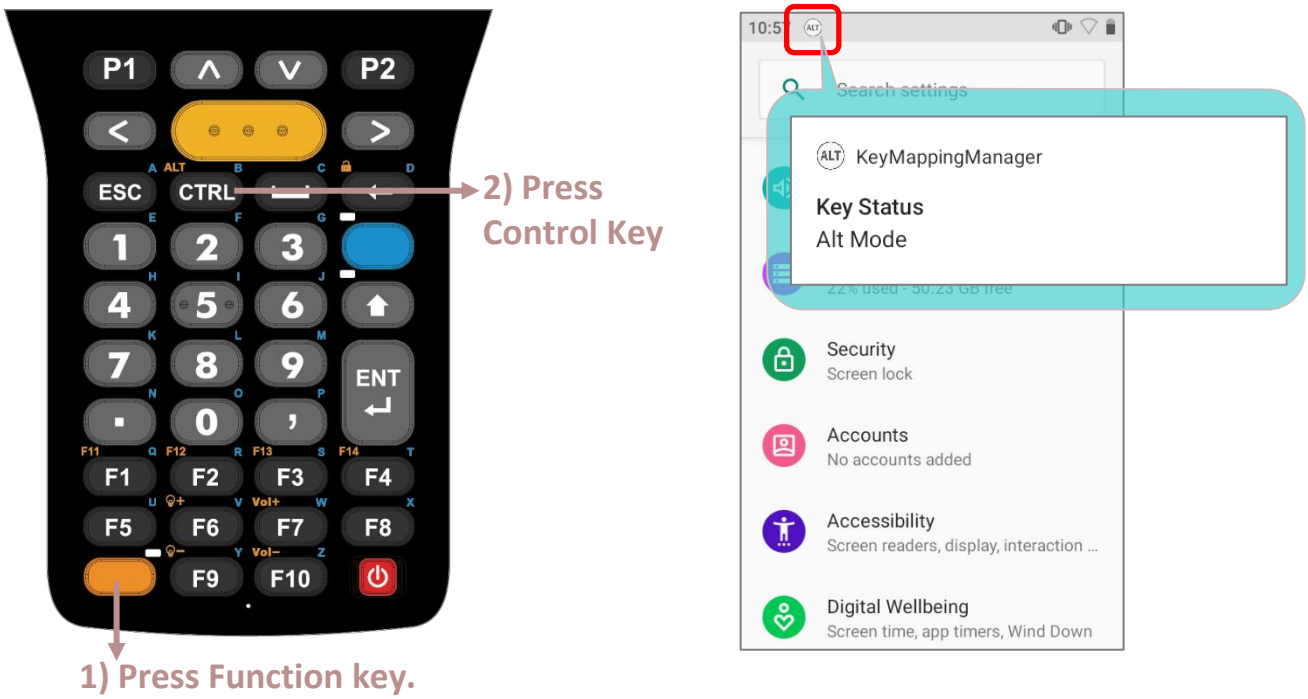
2.7.5. CONTROL KEY

CONTROL KEY OF 38-KEY MODEL

Control key is located next to **Escape key** on 38-Key Model. Press Control key to enable **Control Mode** (CTRL) and press again to disable it.

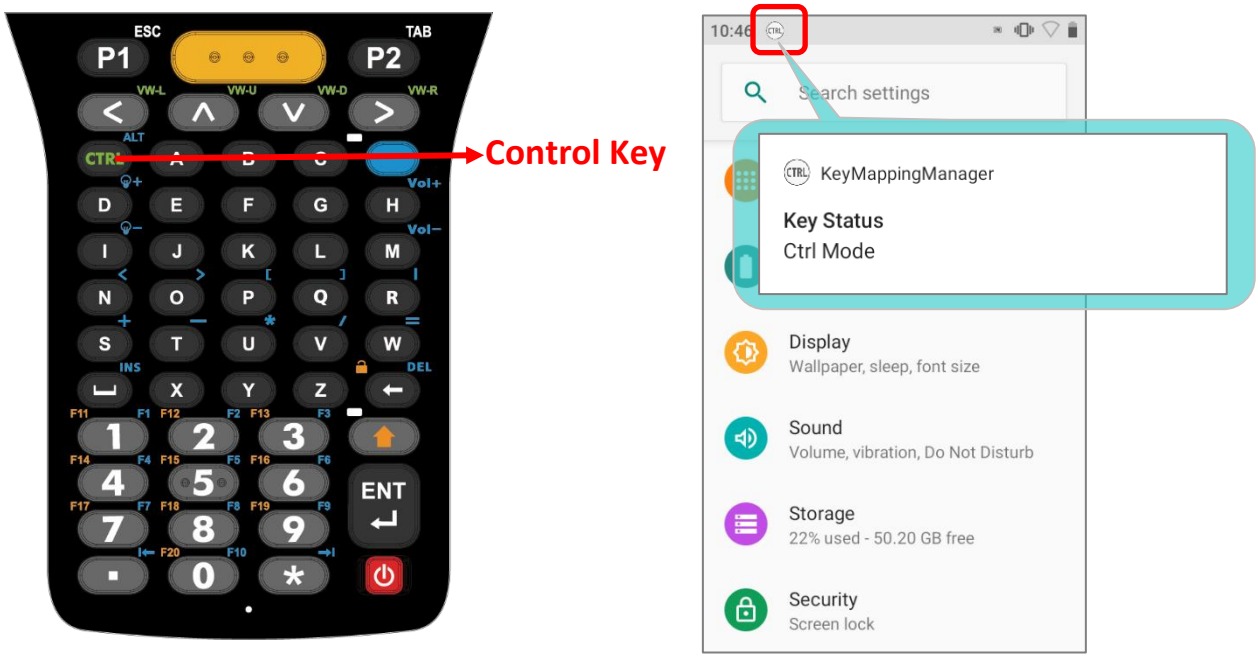


Control key can work with **Function key** to trigger **Alternate Mode** (ALT) by pressing Function key and then Control key. Press any key (except of **Alpha key**, **Function key**, **Shift key**, and **Control key**) to resume **Default Input Mode**.

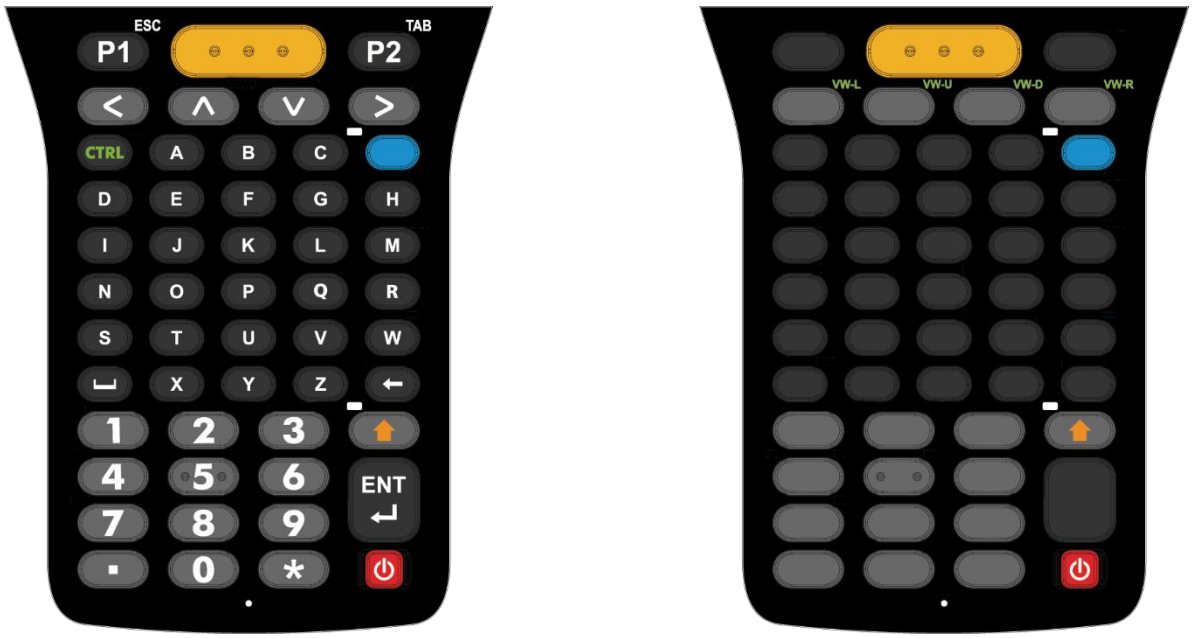


CONTROL KEY OF 52-KEY MODEL

Control key is located beneath **the arrow key (Leftwards)** on 52-Key Model. Press Control key to enter **Control Mode** (CTRL), and **the arrow keys** will work as the text in green on the upper right side of the keys (please refer to **Key Functions in Different Modes** for details).

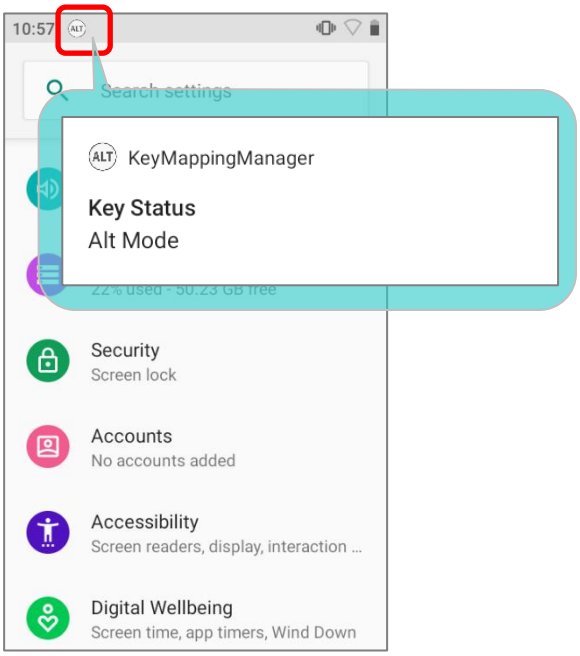


The keypad returns from **Control Mode** to **Default Input Mode** once you press any key (except of **Alpha key** and **Shift key**).



Default Input Mode **Control Mode**

Press **Alpha key** and then **Control key** will enable **Alternate Mode** (ALT), and resume **Default Input Mode** by pressing any key except of **Alpha key**, **Shift key**, and **Control key**.



For key function details, please refer to **Key Functions in Different Modes**.

2.7.6. KEY FUNCTIONS IN DIFFERENT MODES

FOR 38-KEY MODEL

Key	Normal Mode	Function Mode	Alpha Mode	Alpha + Shift	Shift Mode
1	1	1	e (lowercase)	E (uppercase)	! (exclamation mark)
2	2	2	f (lowercase)	F (uppercase)	@ (at sign)
3	3	3	g (lowercase)	G (uppercase)	# (pound)
4	4	4	h (lowercase)	H (uppercase)	$ (currency symbol)
5	5	5	i (lowercase)	I (uppercase)	% (percent)
6	6	6	j (lowercase)	J (uppercase)	^ (caret)
7	7	7	k (lowercase)	K (uppercase)	& (ampersand)
8	8	8	l (lowercase)	L (uppercase)	* (asterisk)
9	9	9	m (lowercase)	M (uppercase)	((parentheses)
0	0	0	o (lowercase)	O (uppercase)	) (parentheses)
∧	Up	Page Up	Up	Up	Highlight Up
∨	Down	Page Down	Down	Down	Highlight Down
<	Left	Home	Left	Left	Highlight Left
>	Right	End	Right	Right	Highlight Right
ENT ↵	Enter	Enter	Enter	Shift+Enter	Shift+Enter
←	Backspace	Keypad Lock	d (lowercase)	D (uppercase)	Shift+Backspace
ESC	Esc	Esc	a (lowercase)	A (uppercase)	Shift+Esc

Key	Normal Mode	Function Mode	Alpha Mode	Alpha + Shift	Shift Mode
.	.	.	n (lowercase)	N (uppercase)	> (more than sign)
,	,	,	p (lowercase)	P (uppercase)	< (less than sign)
Space	Space	Window	c (lowercase)	C (uppercase)	Shift+Space
CTRL	Ctrl	Alt	b (lowercase)	B (uppercase)	Ctrl
P1	P1	P1	P1	Shift+P1	Shift+P1
P2	P2	P2	P2	Shift+P2	Shift+P2
F1	F1	F11	q (lowercase)	Q (uppercase)	Shift+F1
F2	F2	F12	r (lowercase)	R (uppercase)	Shift+F2
F3	F3	F13	s (lowercase)	S (uppercase)	Shift+F3
F4	F4	F14	t (lowercase)	T (uppercase)	Shift+F4
F5	F5	F15	u (lowercase)	U (uppercase)	Shift+F5
F6	F6	Brightness Up	v (lowercase)	V (uppercase)	Shift+F6
F7	F7	Volume Up	w (lowercase)	W (uppercase)	Shift+F7
F8	F8	F16	x (lowercase)	X (uppercase)	Shift+F8
F9	F9	Brightness Down	y (lowercase)	Y (uppercase)	Shift+F9
F10	F19	Volume Down	z (lowercase)	Z (uppercase)	Shift+F10
Scan	Scan	Scan	Scan	Scan	Scan
Left Scan	Left Scan	Left Scan	Left Scan	Left Scan	Left Scan
Right Scan	Right Scan	Right Scan	Right Scan	Right Scan	Right Scan

ALPHA MODE + FUNCTION MODE + SHIFT MODE

If **Alpha Mode**, **Function Mode**, and **Shift Mode** are all enabled, the keypad function differs according to the permutations as below:

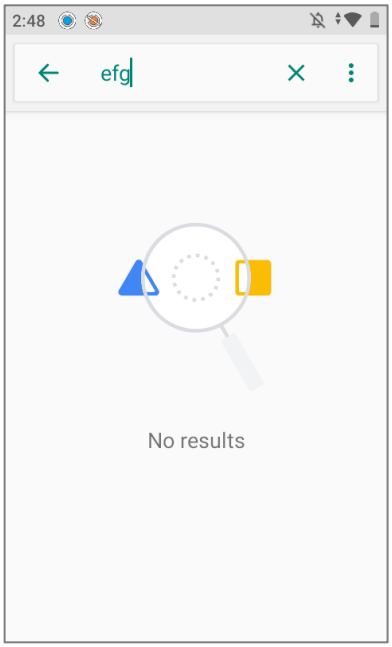
Key	Alpha + Function + Shift, or Alpha + Shift + Function, or Shift + Alpha + Function	Function + Alpha + Shift, or Function + Shift +Alpha, or Shift + Function + Alpha
1	! (exclamation mark)	E (uppercase)
2	@ (at sign)	F (uppercase)
3	# (pound)	G (uppercase)
4	$ (currency symbol)	H (uppercase)
5	% (percent)	I (uppercase)
6	^ (caret)	J (uppercase)
7	& (ampersand)	K (uppercase)
8	* (asterisk)	L (uppercase)
9	((parentheses)	M (uppercase)
0	) (parentheses)	O (uppercase)
∧	Move the cursor to the beginning of the text input field.	Move the cursor to the beginning of the text input field.
∨	Move the cursor to the end of the text input field.	Move the cursor to the end of the text input field.
<	Move the cursor to the beginning of the text input field.	Left
>	Move the cursor to the end of the text input field.	Right
ENT ↵	Space Key	Space Key
←	Keypad Lock Mode	D (uppercase)
ESC	N/A	A (uppercase)

Key	Alpha + Function + Shift, or Alpha + Shift + Function, or Shift + Alpha + Function	Function + Alpha + Shift, or Function + Shift +Alpha, or Shift + Function + Alpha
.	> (more than sign)	N (uppercase)
,	< (less than sign)	P (uppercase)
␣	Space Key	C (uppercase)
CTRL	ALT Alternate Mode	B (uppercase)
P1	N/A	N/A
P2	N/A	N/A
F1	N/A	Q (uppercase)
F2	N/A	R (uppercase)
F3	N/A	S (uppercase)
F4	N/A	T (uppercase)
F5	N/A	U (uppercase)
F6	Trigger the brightness slider to brighten up the screen.	V (uppercase)
F7	Trigger the volume box pop-up window and increase the volume.	W (uppercase)
F8	N/A	X (uppercase)
F9	Trigger the brightness slider to dim the screen.	Y (uppercase)
F10	Trigger the volume box pop-up window and decrease the volume.	Z (uppercase)
Scan	Scan	Scan
Left Scan	Left Scan	Left Scan
Right Scan	Right Scan	Right Scan

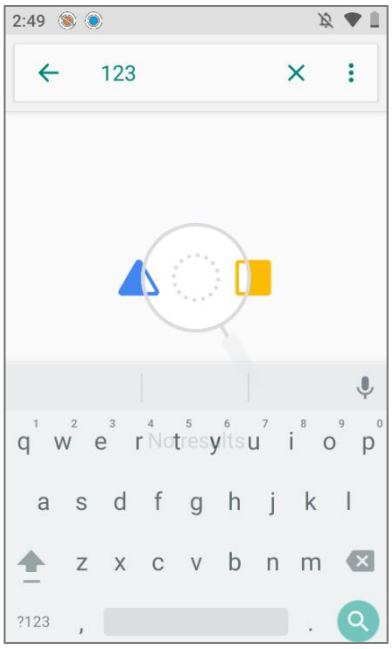
ALPHA MODE + FUNCTION MODE

When both **Alpha Mode** and **Function Mode** are enabled, the keypad acts based on the last enabled mode, which means the keypad is in **Alpha Mode** if you press **Function key** and then **Alpha key**, while it is in **Function Mode** if **Alpha key** is pressed first and then **Function key**.

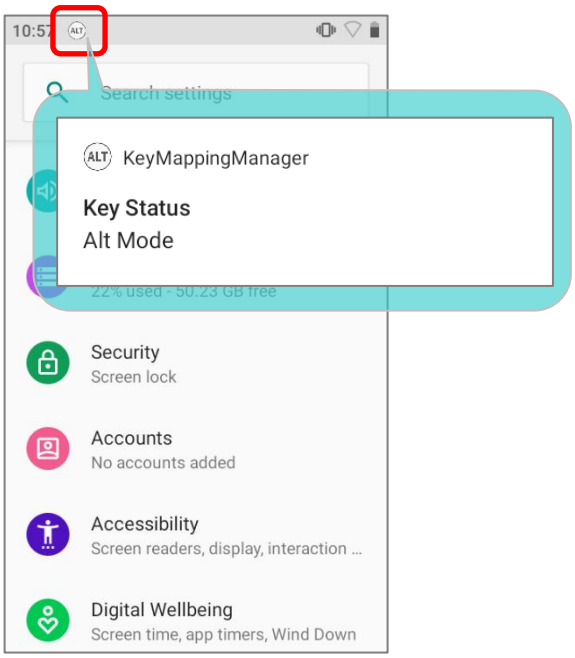
Keypad acts as in Alpha Mode:



Keypad acts as in Function Mode:



ALTERNATE MODE



To enable "**Alternate Mode**", please press on "**Function Key**" and then "**Control key**".

In **Alternate Mode**, you can disable it and return to the **Default Input Mode** by pressing any key except of the followings:

Key	Description
ESC	Exit the currently used application (except of browser apps).
CTRL	Enable "Control Mode".
	Enable "Alpha Mode".
	Enable "Function Mode".
	Enable "Shift Mode".

FOR 52-KEY MODEL

All three configurations of the 52-key keypad deliver the same functions. However, certain key functions may differ according to the application in use, for instance when terminal emulation software is running.

VT emulator keypad

TN3270 emulator keypad

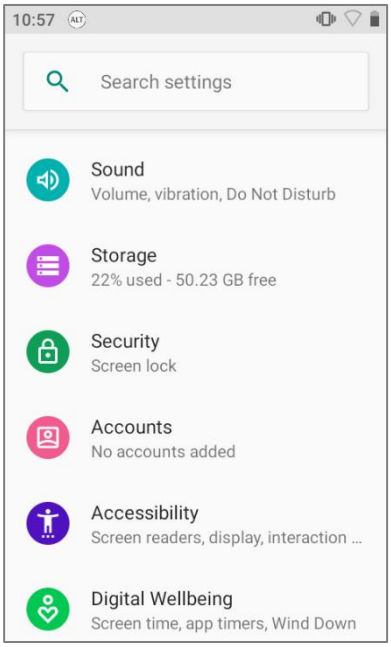
TN5250 emulator keypad

Key	Normal Mode	Shift Mode	Alpha Mode	Control Mode
1	1	! (exclamation mark)	F1	Ctrl+1
2	2	@ (at sign)	F2	Ctrl+2
3	3	# (pound)	F3	Ctrl+3
4	4	$ (currency symbol)	F4	Ctrl+4
5	5	% (percent)	F5	Ctrl+5
6	6	^ (caret)	F6	Ctrl+6
7	7	& (ampersand)	F7	Ctrl+7
8	8	* (asterisk)	F8	Ctrl+8
9	9	((parentheses)	F9	Ctrl+9
0	0	) (parentheses)	F10	Ctrl+0

Key	Normal Mode	Shift Mode	Alpha Mode	Control Mode
*	* (asterisk)	* (asterisk)	Page Down (TN3270: HOME; TN5250: FLD-)	Ctrl+*
Up	Up	Highlight Up	Up	Ctrl+Up
Down	Down	Highlight Down	Down	Ctrl+Left
Left	Left	Highlight Left	Left	Ctrl+21
Right	Right	Highlight Right	Right	Ctrl+Right
Enter	Enter	Enter	Insert	Ctrl+Enter
Backspace	Backspace	Keypad Lock	End	Ctrl+Backspace
.	. (period)	> (more than sign)	Page Up (TN3270: RSET; TN5250: //)	Ctrl+.
Space	Space	Space	Tab (TN3270 & TN5250: Page Up)	Ctrl+Space
P1	Esc	Shift+P1	P1	Ctrl+P1
P2	Tab	Shift+P2	P2	Ctrl+P2
A	a (lowercase)	A (uppercase)	, (comma) (TN3270: PA1; TN5250: HOME)	Ctrl+a
B	b (lowercase)	B (uppercase)	. (period) (TN3270: PA2; TN5250: PRNT)	Ctrl+b
C	c (lowercase)	C (uppercase)	‘ (apostrophe) (TN3270: PA3; TN5250: HELP)	Ctrl+c
D	d (lowercase)	D (uppercase)	Brightness Up	Ctrl+d
E	e (lowercase)	E (uppercase)	[(open bracket) (TN3270 & TN5250: ER INP)	Ctrl+e
F	f (lowercase)	F (uppercase)	] (close bracket) (TN3270: FLD MRK; TN5250: CLR EOF)	Ctrl+f
G	g (lowercase)	G (uppercase)	\ (backslash) (TN3270 & TN5250: ATTN)	Ctrl+g
H	h (lowercase)	H (uppercase)	Volume Up	Ctrl+h
I	i (lowercase)	I (uppercase)	Brightness Down	Ctrl+i

Key	Normal Mode	Shift Mode	Alpha Mode	Control Mode
J	j (lowercase)	J (uppercase)	` (backtick) (TN3270: BCK TAB; TN5250: RL UP)	Ctrl+j
K	k (lowercase)	K (uppercase)	F12 (TN3270: CLR EOF; TN5250: SYS RQ)	Ctrl+k
L	l (lowercase)	L (uppercase)	F11 (TN3270: SYS RQ; TN5250: RL DN)	Ctrl+l
M	m (lowercase)	M (uppercase)	Volume Down	Ctrl+m
N	n (lowercase)	N (uppercase)	- (hyphen) (TN3270 & TN5250: DUP)	Ctrl+n
O	o (lowercase)	O (uppercase)	F13	Ctrl+o
P	p (lowercase)	P (uppercase)	F14	Ctrl+p
Q	q (lowercase)	Q (uppercase)	F15	Ctrl+q
R	r (lowercase)	R (uppercase)	; (semicolon) (TN3270 & TN5250: INS)	Ctrl+r
S	s (lowercase)	S (uppercase)	+ (plus)	Ctrl+s
T	t (lowercase)	T (uppercase)	- (hyphen)	Ctrl+t
U	u (lowercase)	U (uppercase)	* (asterisk)	Ctrl+u
V	v (lowercase)	V (uppercase)	/ (slash)	Ctrl+v
W	w (lowercase)	W (uppercase)	= (equals sign)	Ctrl+w
X	x (lowercase)	X (uppercase)	: (colon)	Ctrl+x
Y	y (lowercase)	Y (uppercase)	Y (uppercase)	Ctrl+y
Z	z (lowercase)	Z (uppercase)	Z (uppercase)	Ctrl+z
Scan	Scan	Scan	Scan	Scan
Left Scan	Left Scan	Left Scan	Left Scan	Left Scan
Right Scan	Right Scan	Right Scan	Right Scan	Right Scan

ALTERNATE MODE



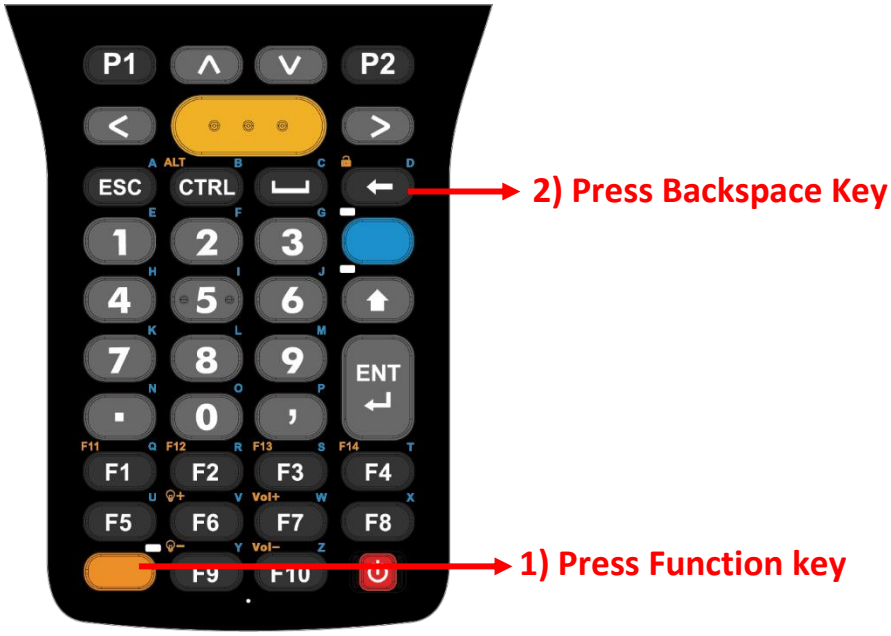
"**Alternate Mode**" (ALT) can be triggered by pressing **Alpha key** and then **Control key**. To resume **Default Input Mode**, please press any key except of **Alpha key**, **Shift key**, and **Control key**.

Key	Description
CTRL	Enable "Control Mode".
	Enable "Alpha Mode".
	Enable "Shift Mode".

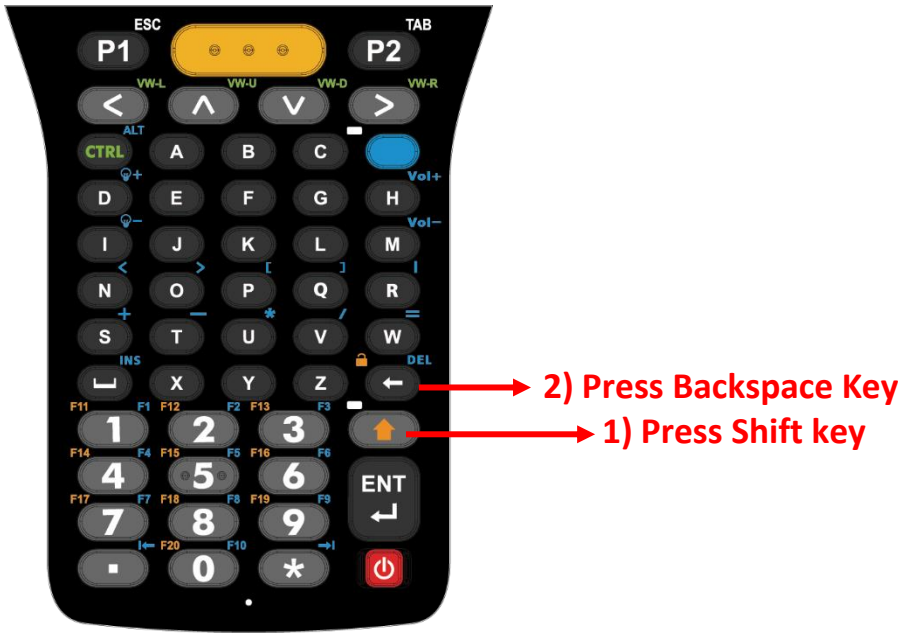
2.7.7. KEYPAD LOCK

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

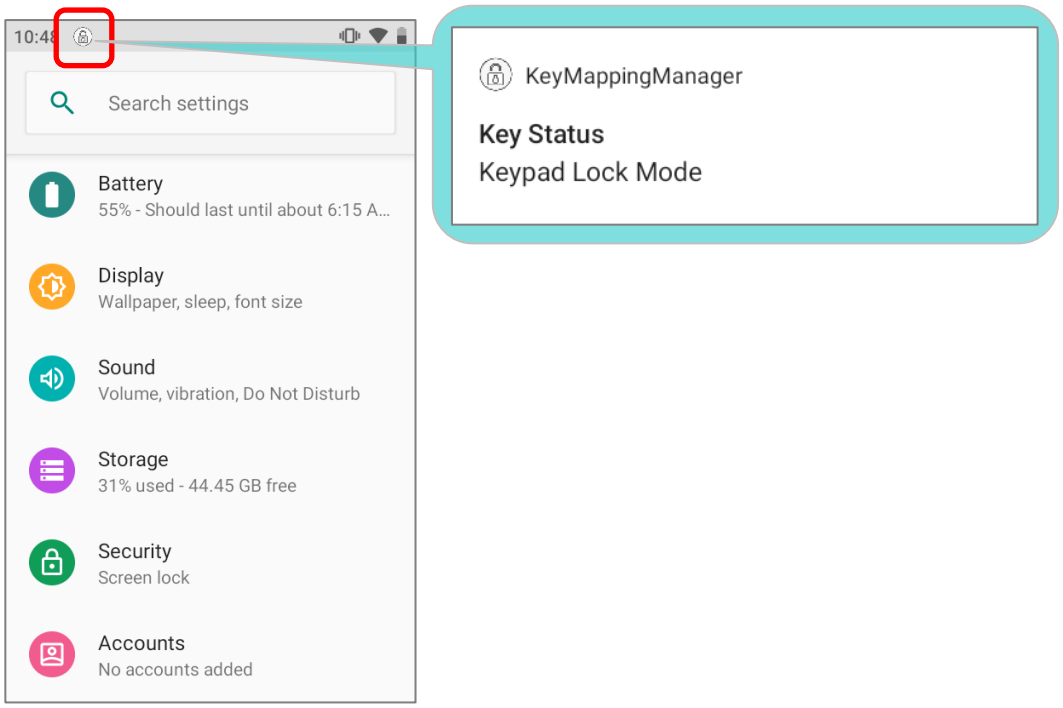
To lock the keypad of **38-Key Model**, please press **Function key** and then **Backspace key**.



For **52-Key Model**, please press **Shift key** and then **Backspace key**.



When the keypad lock mode is triggered, a keypad lock icon will appear on the status bar to indicate keys are currently locked.

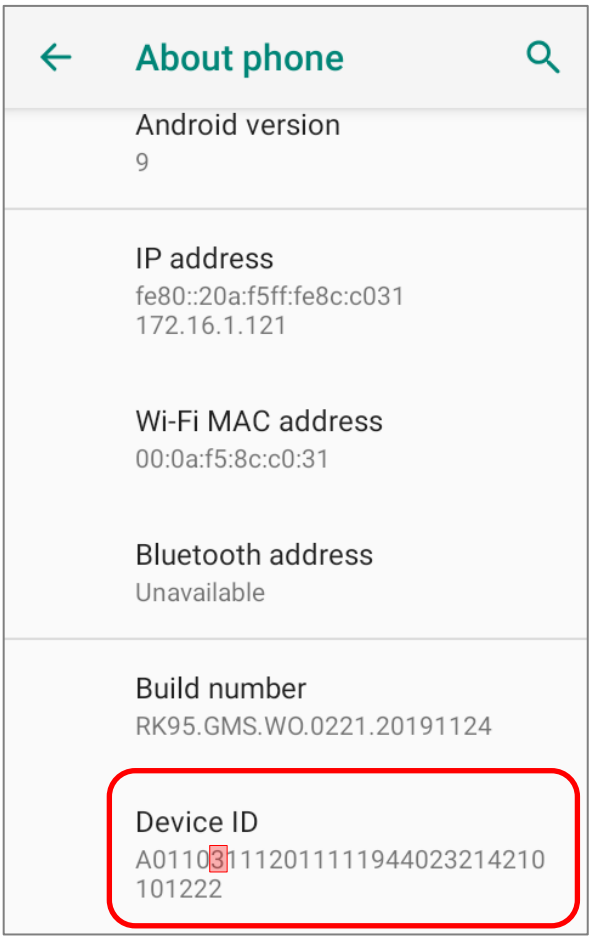


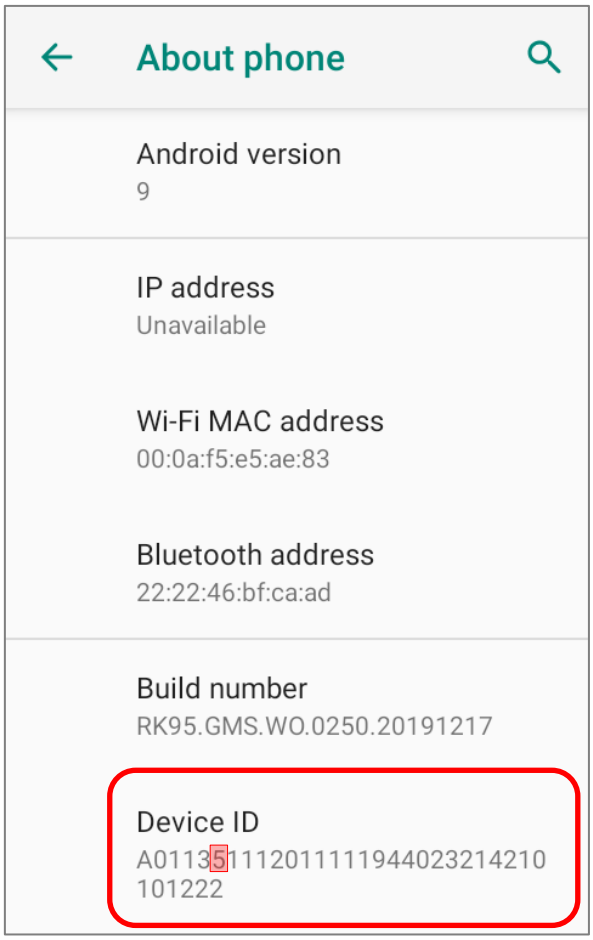
Note:

The hot key combination (Shift key + Backspace key) doesn't not work for 52-key Model in Alpha Mode , because Backspace key becomes "Delete" in Alpha Mode.

2.7.8. DEVICE ID

Please go to **App Drawer** | **Settings** | **System** | **About Phone** and check the **Device ID** which is a sequence of digits that deliver information about the hardware integrated on the mobile computer.





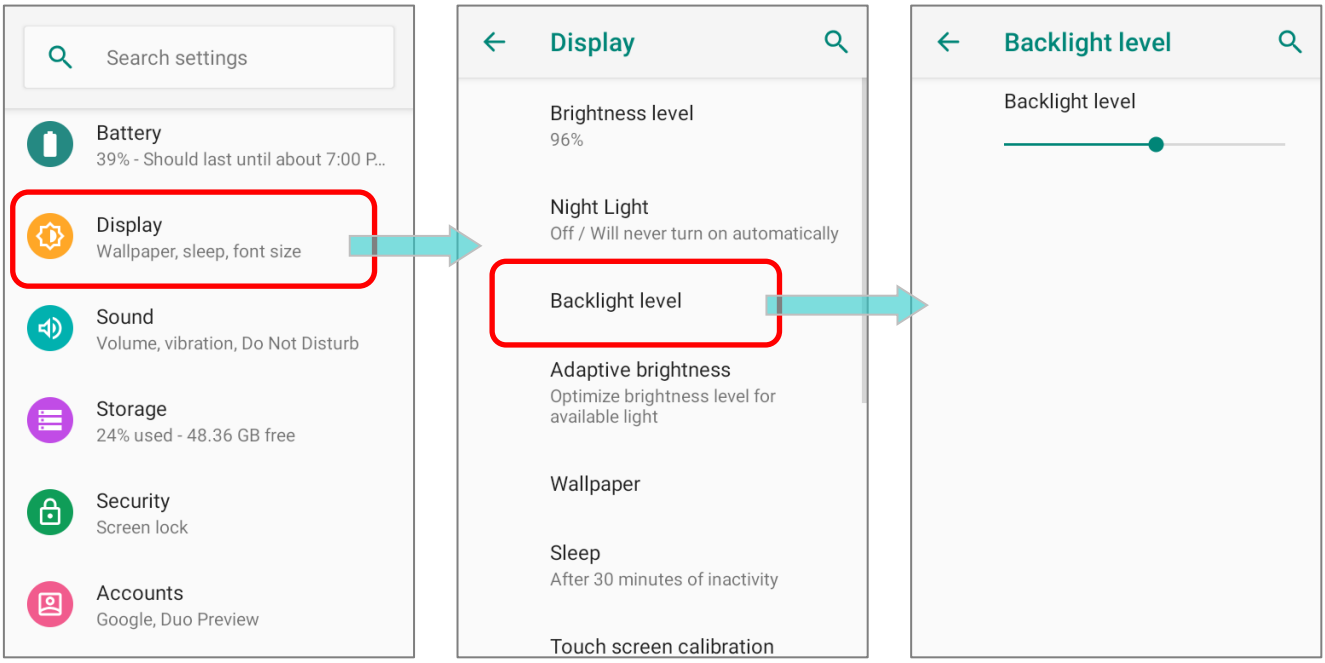
Check the sixth digit pair to find out which keypad type is equipped with your RK95 mobile computer:

Code	Description
3	Numeric + Function (38 keys)
5	Numeric + Alpha (52 keys; VT emulator keypad)
6	52 keys-TN3270 emulator keypad
8	52 keys-TN5250 emulator keypad

2.7.9. KEYPAD BACKLIGHT

The keypad backlight is adjustable from **App Drawer (All Apps)** | **Settings** | **Display** | **Backlight level**.

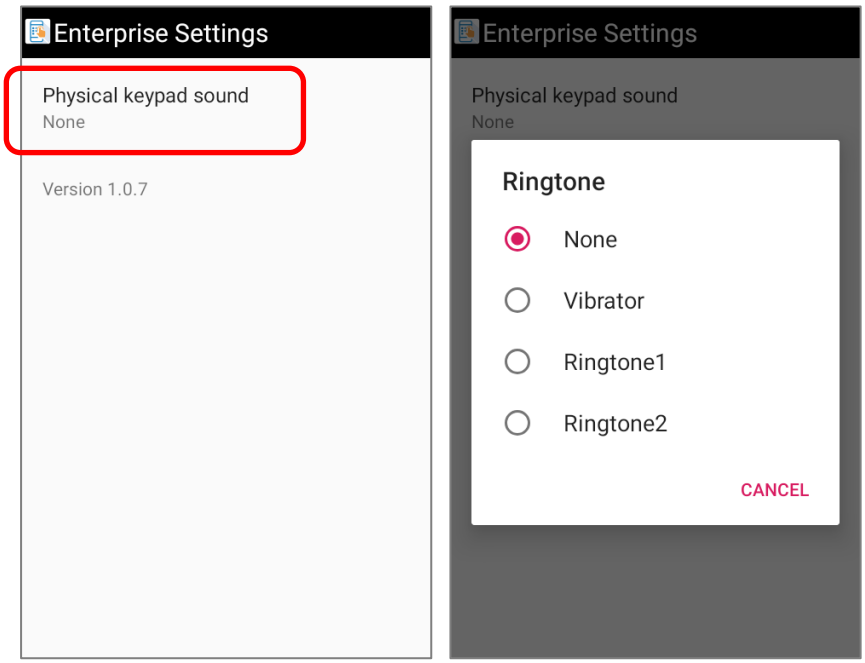
Simply drag the slider to the right (to increase brightness) or left (to reduce brightness) to adjust the backlight brightness level.



2.7.10. 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 setting physical keypad sound. The default setting is "**None**".



For RK95 Cold Chain Model, please refer to Enterprise Settings for Cold Chain.

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.

2.8.2. DIGITAL CAMERA

An integrated 13-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

BASIC OPERATION

This chapter describes the basic skills to work with the RK95 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

3.1 Home Screen 111
3.2 Status Bar 116
3.3 Suspend & Lock 124
3.4 OS Update 126
3.5 Back up Your Data 129
3.6 Reset to Factory Default 131

3.1. HOME SCREEN

When the mobile computer is fully charged, press the Power key for three seconds to turn on the mobile computer. After splash screen, a lock screen appears.

LOCK SCREEN

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

Simply slide the lock button upward 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

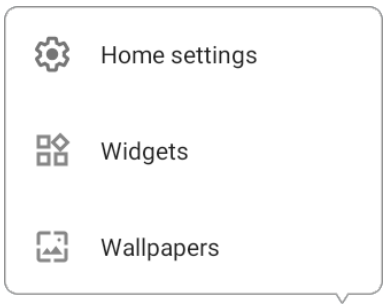
1) Tap and hold any empty spot on the home screen.

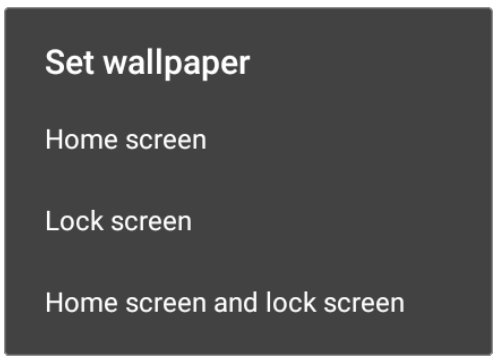
2) Tap **Wallpapers** in the menu that appears, and select the app you would like to use.

3) Select an image to apply as the wallpaper.

4) Tap Set wallpaper.

5) Select between "Home screen", "Lock screen", and "Home screen and lock screen" from the "Set wallpaper" menu.





3.1.1. APPLICATION & WIDGET ON HOME SCREEN

ADD APPLICATION TO HOME SCREEN

To add an application to Home screen:

1) Open **App Drawer (All Application)** on the home screen you would like to customize.

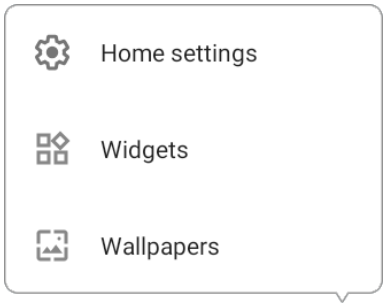
2) Locate the application to add, tap and hold the application icon.

3) While tapping and holding on the application icon, its "**App info**" or "**app shortcuts**" menu shows up. Simply ingnore the menu and directly drag it toward any position.

4) 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 THE ACTION FROM THE 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, ACTIONS, AND WIDGETS ON HOME SCREEN

To move or remove an appliccation:

1) Tap and hold the application icon, and its "**App info**" or "**app shortcuts**" menu shows up. Simply ingnore the menu and directly drag it toward any position.
2) The layout edit mode shows up, and an option "**X Remove**" will appear on top of the screen, to which you can drag the unwanted aplication to remove it, or drag the icon to the preferred position and release it to have it placed.

To move or remove an action/ widget:

1) Tap and hold the action icon to enter layout edit mode.
2) Drag it to area "**X Remove**" to delete it while drag it 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.

3.1.2. FOLDER ON HOME SCREEN

CREATE FOLDER

1) On the home screen you would like to customize, tap and hold the application/ action/ widget 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 from a small circle to a full rectangle to show all the shortcuts in it. Tap "**Unnamed Folder**" 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

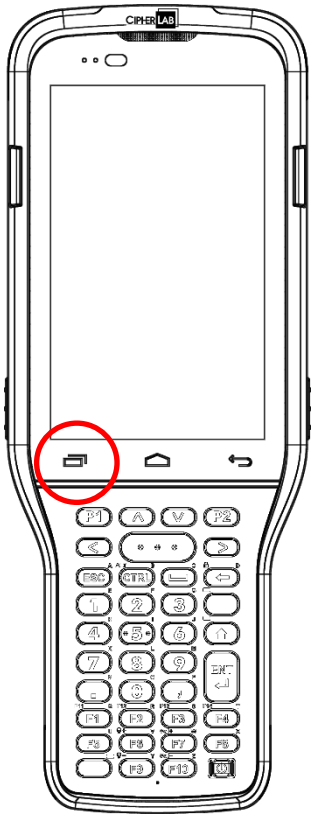
1) Tap and hold the folder you would like to remove.
2) Drag the folder to the top of the screen where the option **"X Remove**" is located.

Note:

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

3.1.3. CURRENT APPLICATIONS

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



On Recent App Menu, 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.

3.2. STATUS BAR

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

3.2.1. ICONS ON STATUS BAR

STATUS ICONS

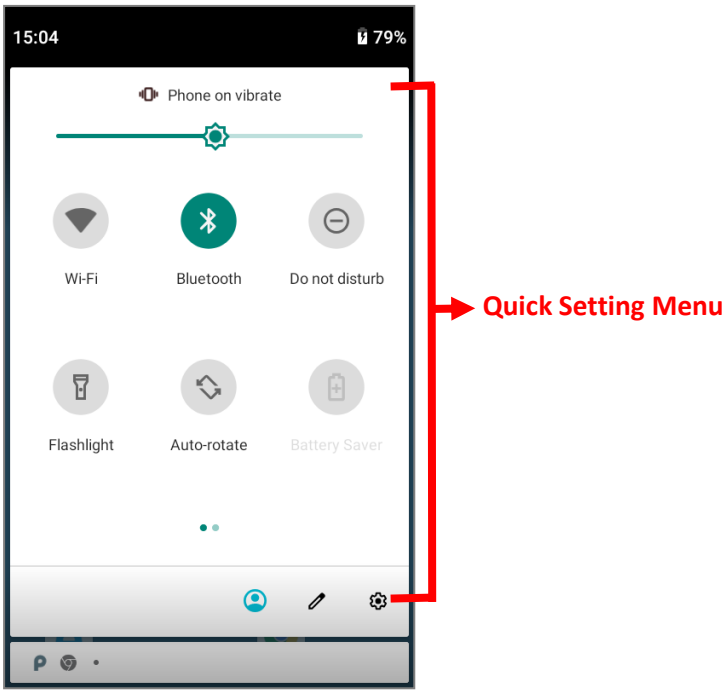
Icon	Description
	The device has been connected to a Bluetooth device.
	The device is currently connected to a Wi-Fi network and performing data transmission.
	Airplane mode is active, which means all radios are inactive now.
	Alarm is active.
	All sounds are silent except for alarms (Vibration mode).
	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 hotspot is active.
	Wi-Fi will turn on automatically when there’s the saved network with a strong signal nearby

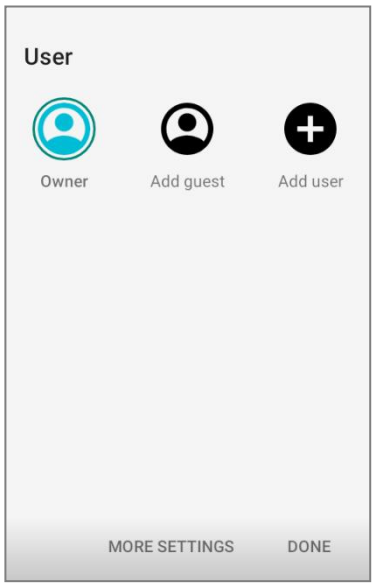
3.2.2. OPEN QUICK SETTING MENU

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**, use you two fingers, 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.

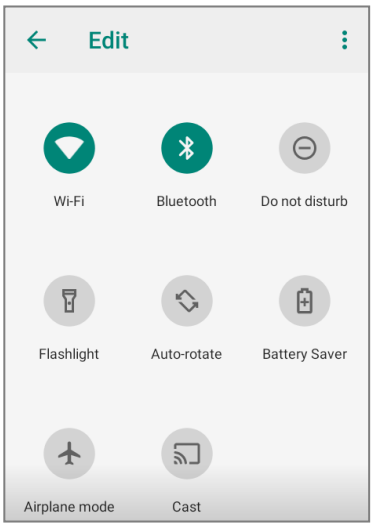


Tap on the three buttons, , , and on the bottom side of the **Quick Setting Menu** will respectively enter the below pages:

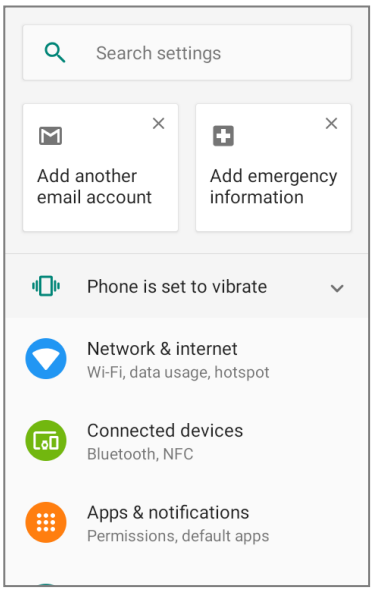
"User" Setting Page



Quick Setting Menu Edit Page



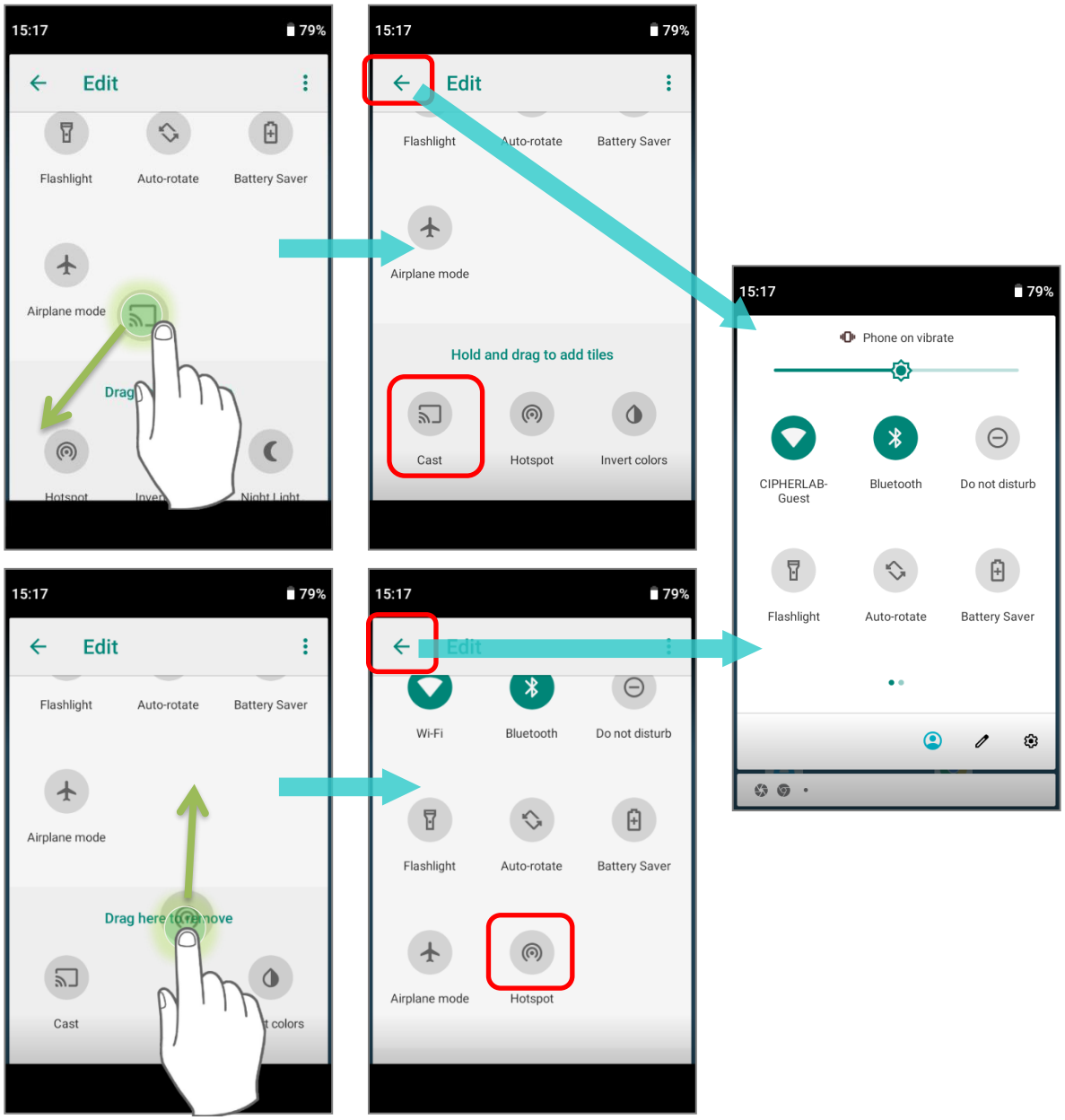
"Settings" Page



EDIT QUICK SETTING MENU

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

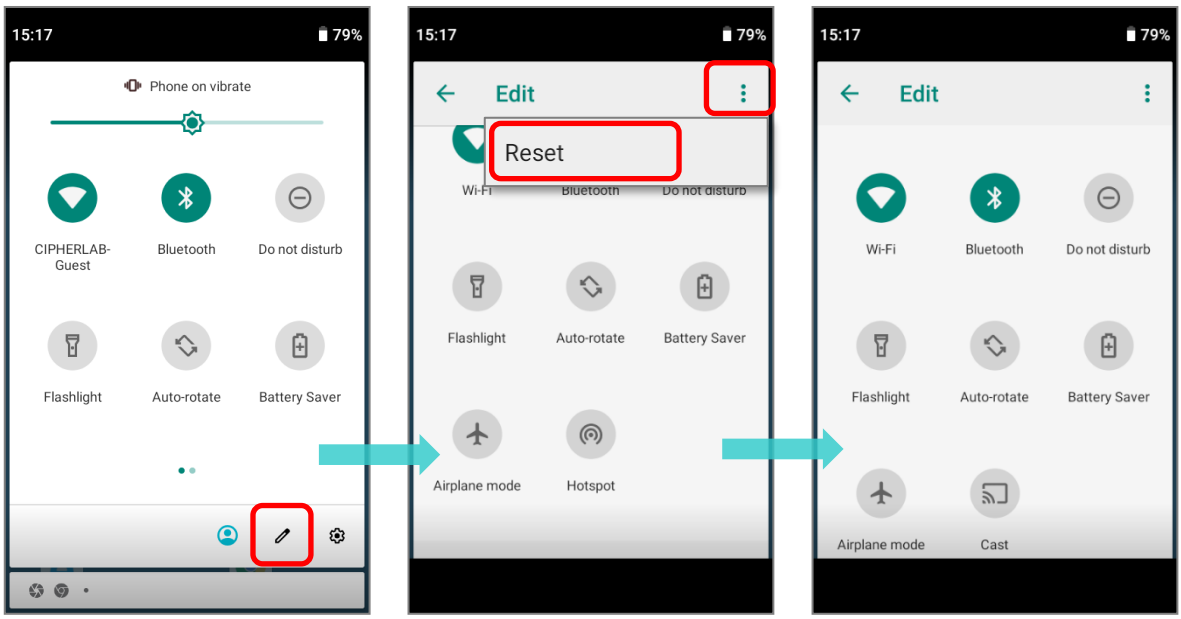
1) Click "**EDIT**" to get into **Edit** page.
2) **Remove**: To remove certain item, please tap on and hold the icon to be removed, and drag it to the "**Drag here to remove**" area and then release it.
3) **Add**: To add certain item, please tap on and hold the icon to be added and drag it to the upper area and then release it.
4) Return to the **Quick Settings Menu**, all the settings are done.



To reset the **Quick Setting Menu**, please:

1) Tap "**EDIT**" to enter **Edit** page.

2) Tap **More** icon in the upper-right corner, and tap "**Reset**".

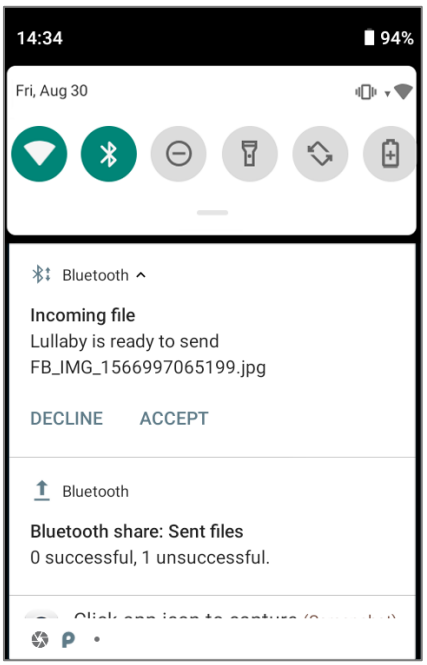


3.2.3. OPEN NOTIFICATIONS DRAWER

The **notifications icons** on status bar inform you of the new events such as available open Wi-Fi networks or USB connection.

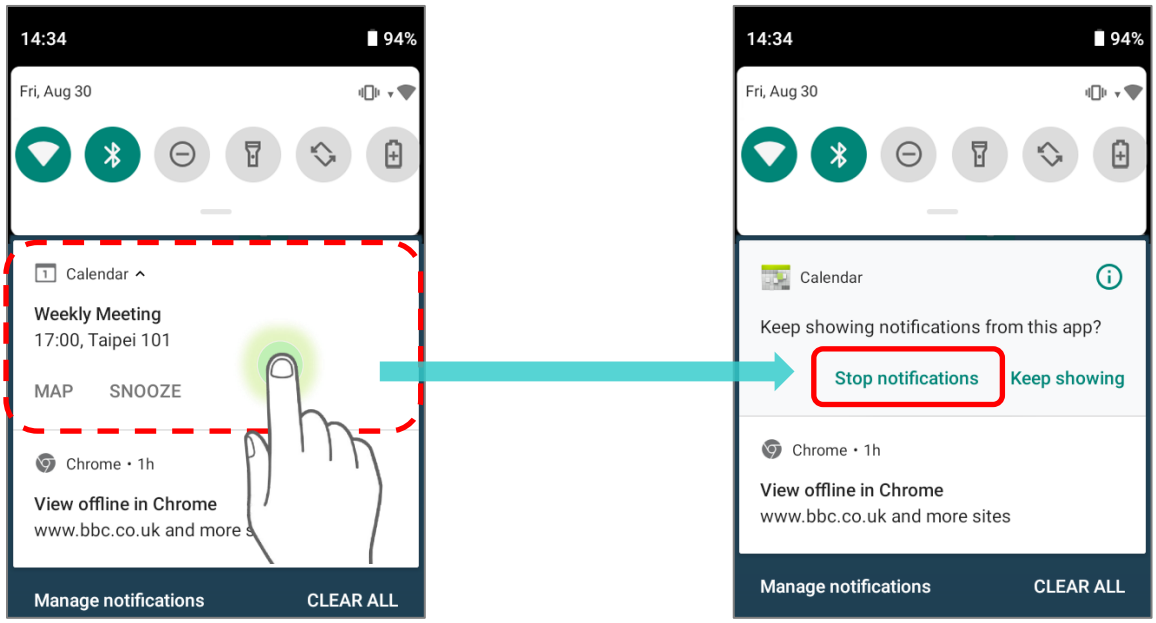
CHECK OUT NOTIFICATION

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.



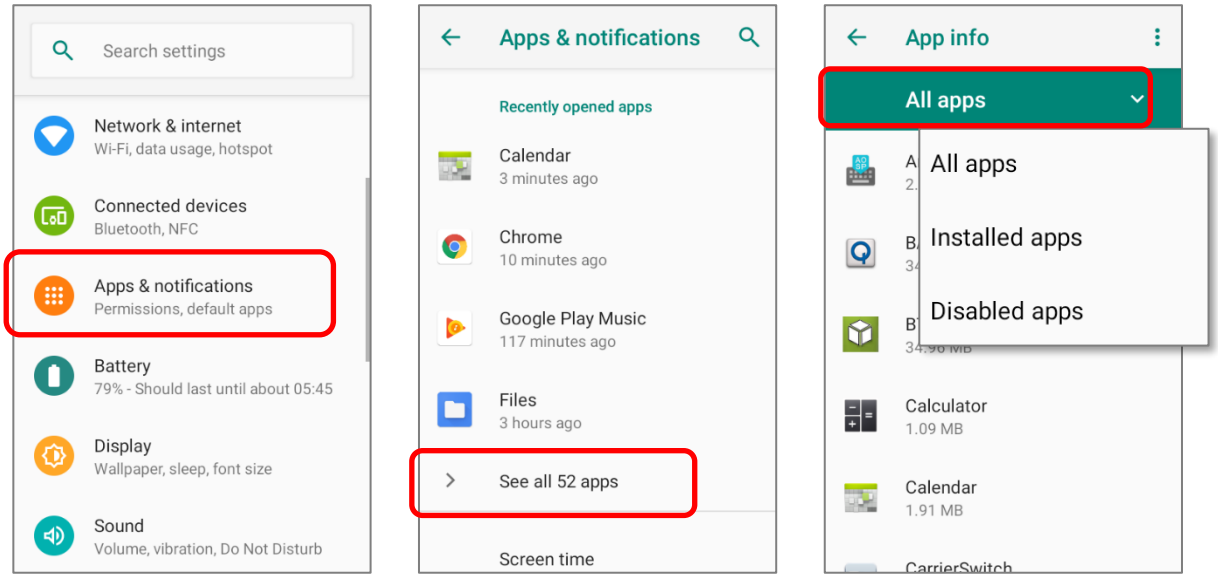
DISABLE NOTIFICATION

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 "**Stop notifications**" to turn it off.

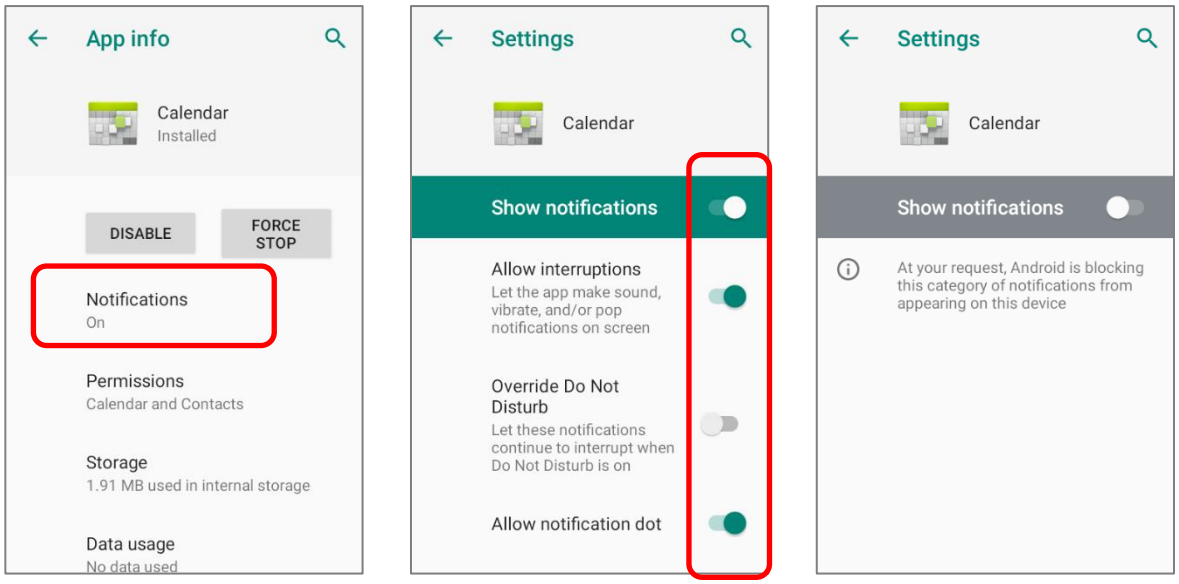


OR

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.

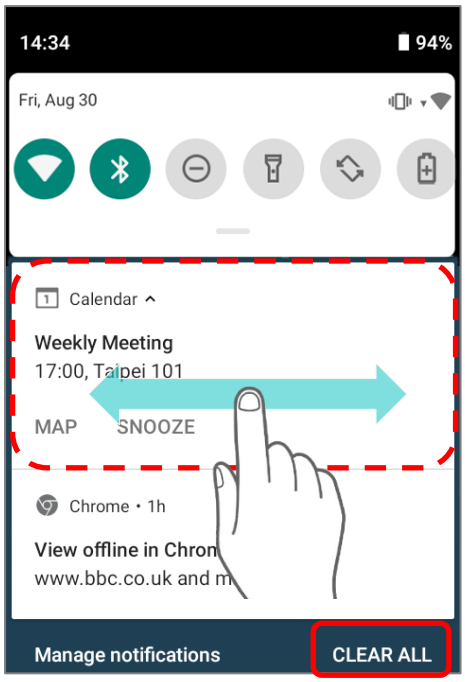


2) Tap to enter the "**App info**" page and tap "**Notifications**" to switch on or off "**Show notifications**" and other settings.



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.



3.3. SUSPEND & LOCK

3.3.1. 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 the side buttons will also be unavailable until the device is unlocked.

SUSPEND RK95

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.

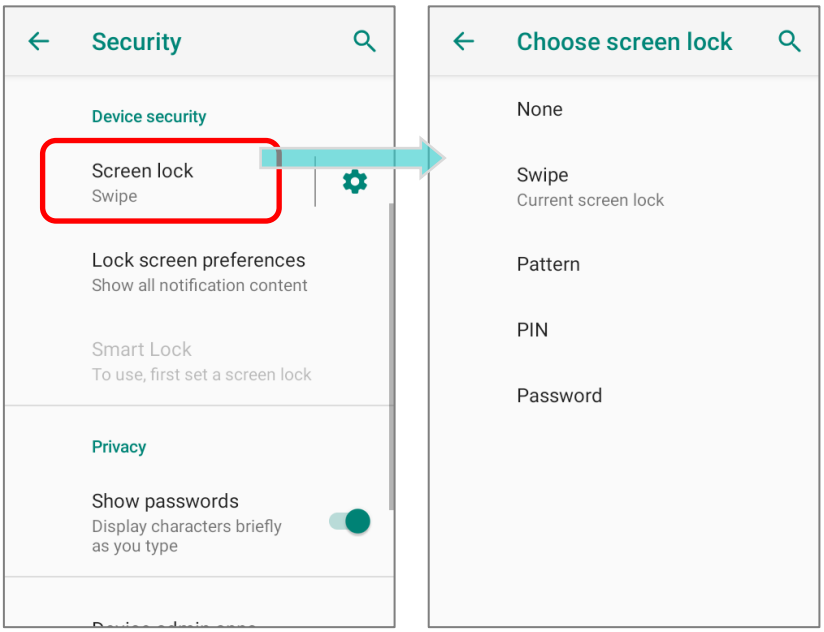
Warning: **To save battery power, suspend the mobile computer when not in use.**

3.3.2. 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.

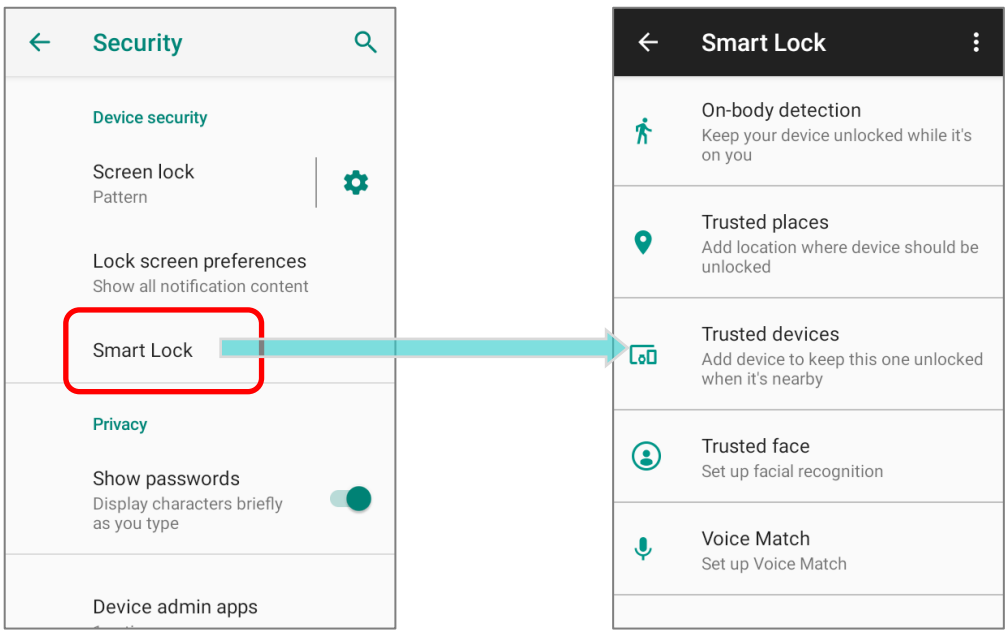
LOCK RK95

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



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 advanced settings and **Smart Lock** to customize personal lock settings.



3.4. 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.

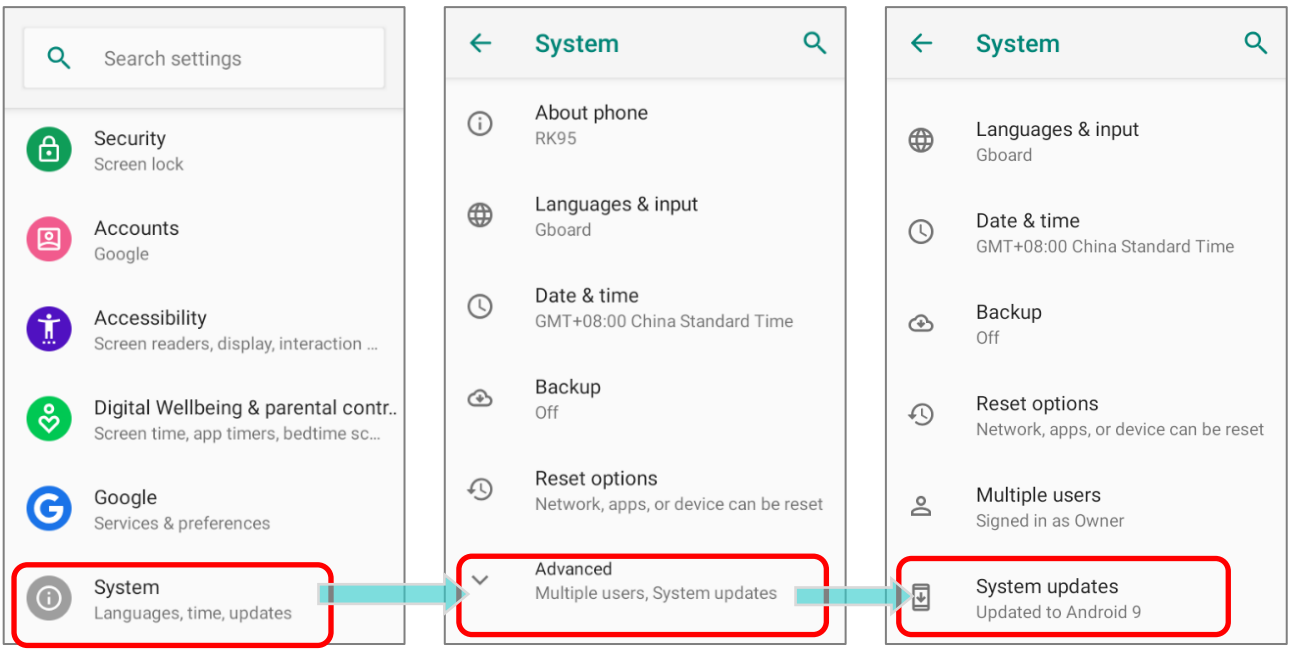
3.4.1. NETWORK UPDATE

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.

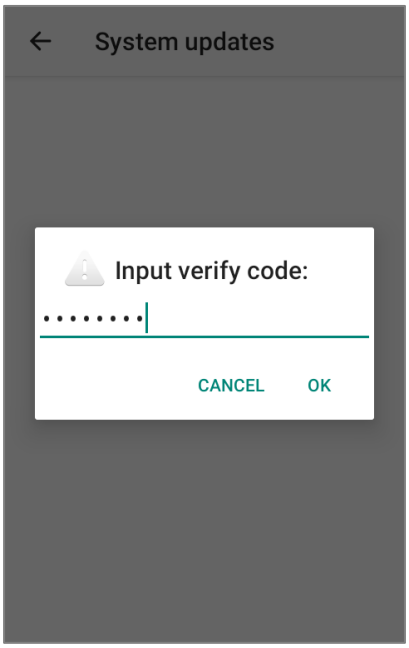
Note:

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 RK95 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, RK95 mobile computer automatically detects whether there's the latest OS update and downloads it. The update is scheduled to proceed on early morning when the device is on and left idle.

3.4.2. SD CARD UPDATE

RK95 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 copy the file "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 USB Type-C 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.

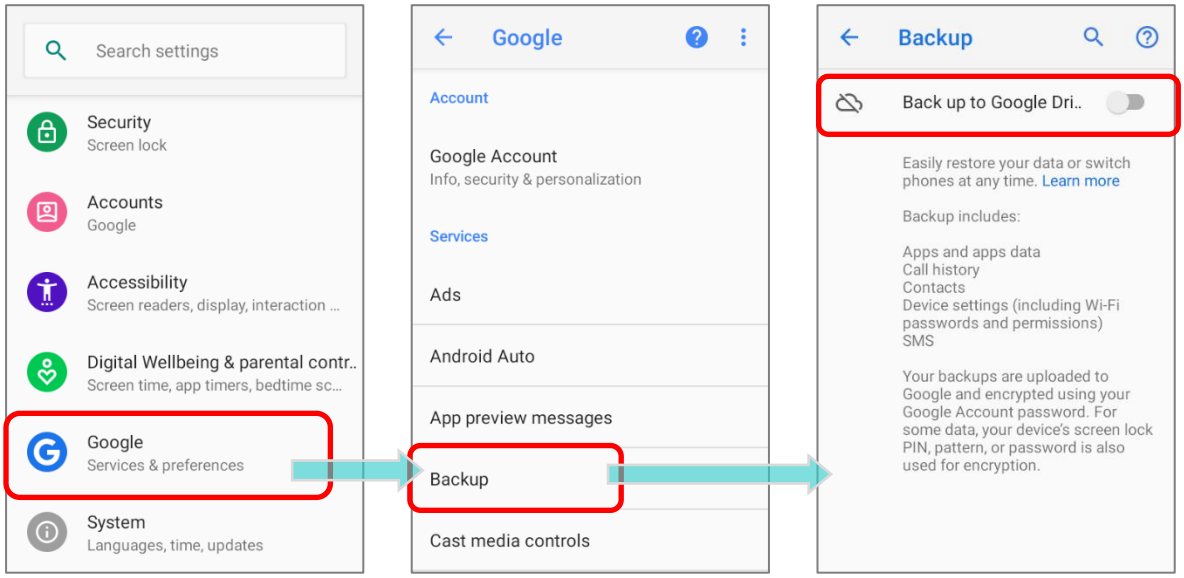
3.5. BACK UP YOUR DATA

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).

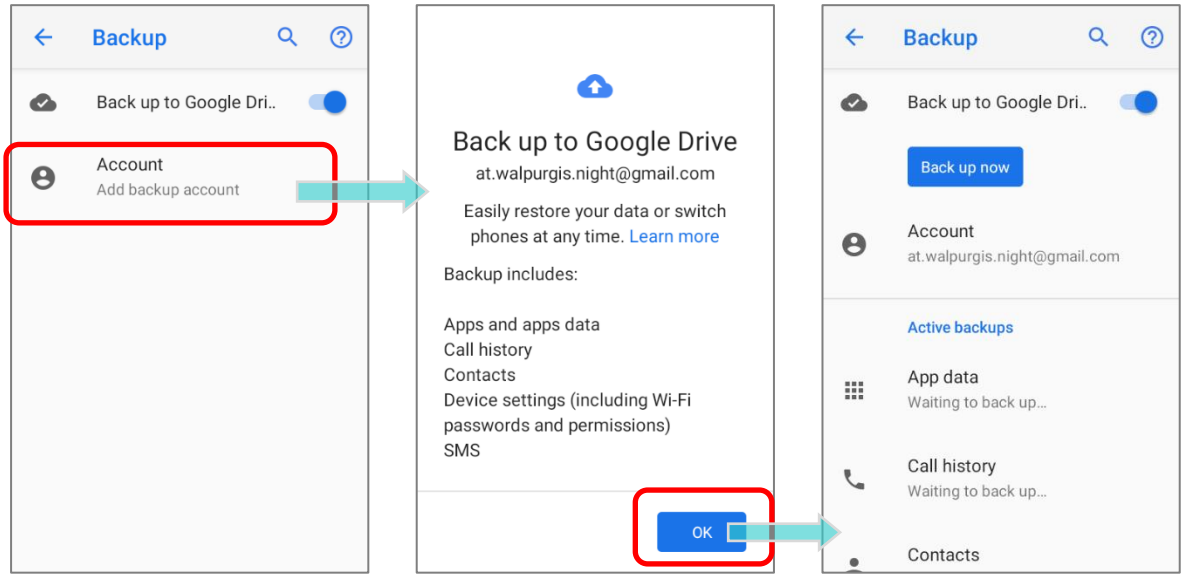
To start:

1) Make sure your device is connected with network.

2) Go to **App Drawer (All Apps)** | Settings | Google | Backup and enable Back up to Google Drive.



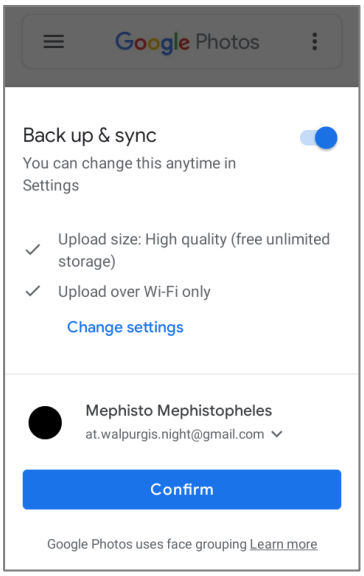
3) Tap **Backup Account** to log in to your Google account.



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.

3.6. 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.

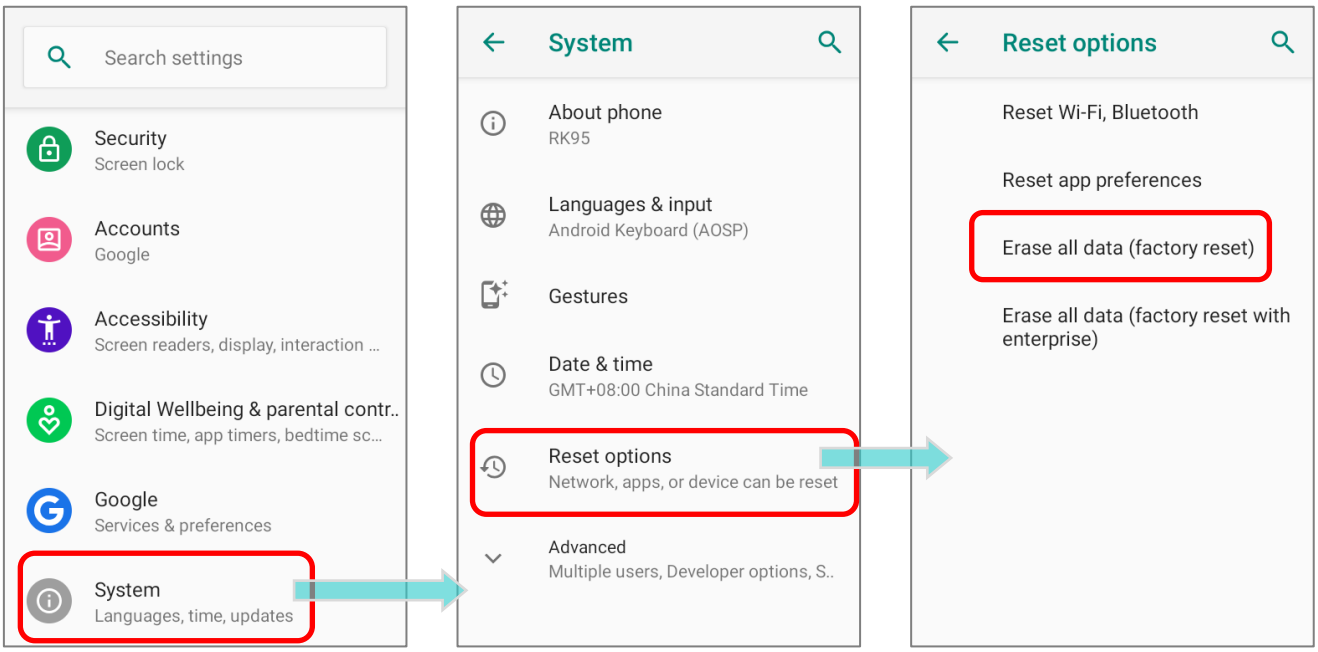
When setting your RK95 mobile computer by **ADC** (Android Deployment Configurator), the settings will automatically backup to "**enterprise partition**" of your RK95 mobile computer, and the settings saved in enterprise partition will not be erased by proceeding "**Erase all data (factory reset)**". To erase all the settings, please select "Erase all data (factory reset with enterprise)".

3.6.1. ERASE ALL DATA (FACTORY RESET)

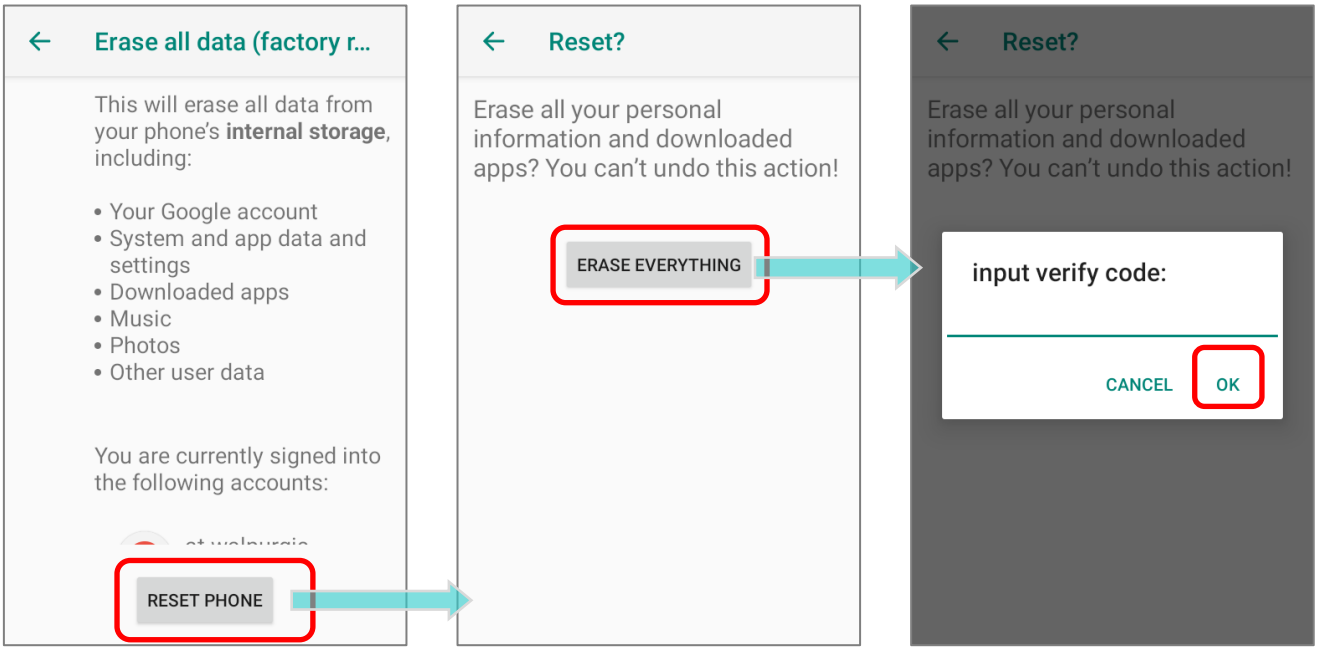
"**Erase all data (factory reset)**" will erase all the data except of the settings backed up in enterprise partition by ADC (Android Deployment Configurator).

To start:

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



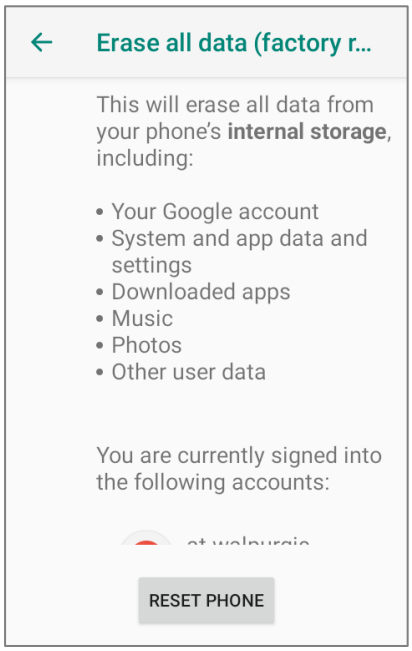
2) Confirm the action by tapping on the buttons and input the verification code (Please contact with support@cipherlab.com.tw to obtain your verification code). Finally, tap **OK** to perform a factory reset.



3.6.2. ERASE ALL DATA (FACTORY RESET WITH ENTERPRISE)

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

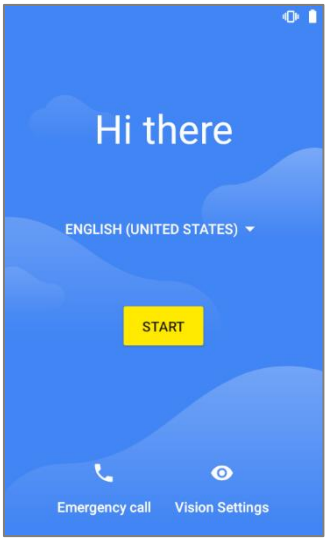
Confirm the action by tapping on the buttons and input the verification code (Please contact with support@cipherlab.com.tw to obtain your verification code), and tap **OK** to perform a factory reset.



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

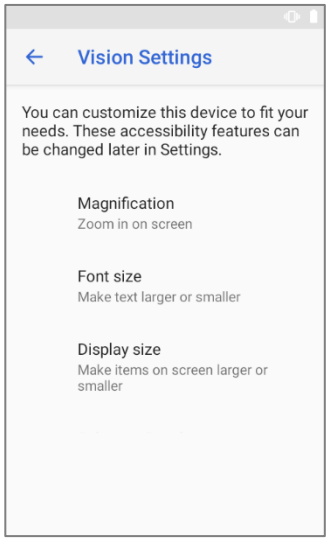
3.6.3. WELCOME WIZARD

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**.



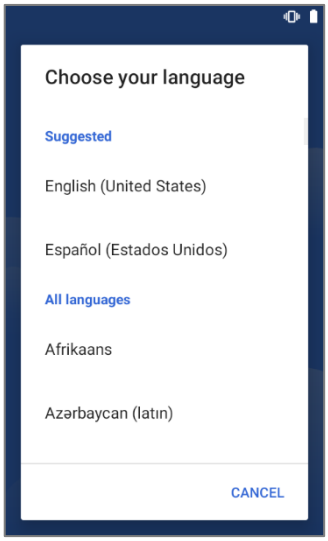
Step 1-1:

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



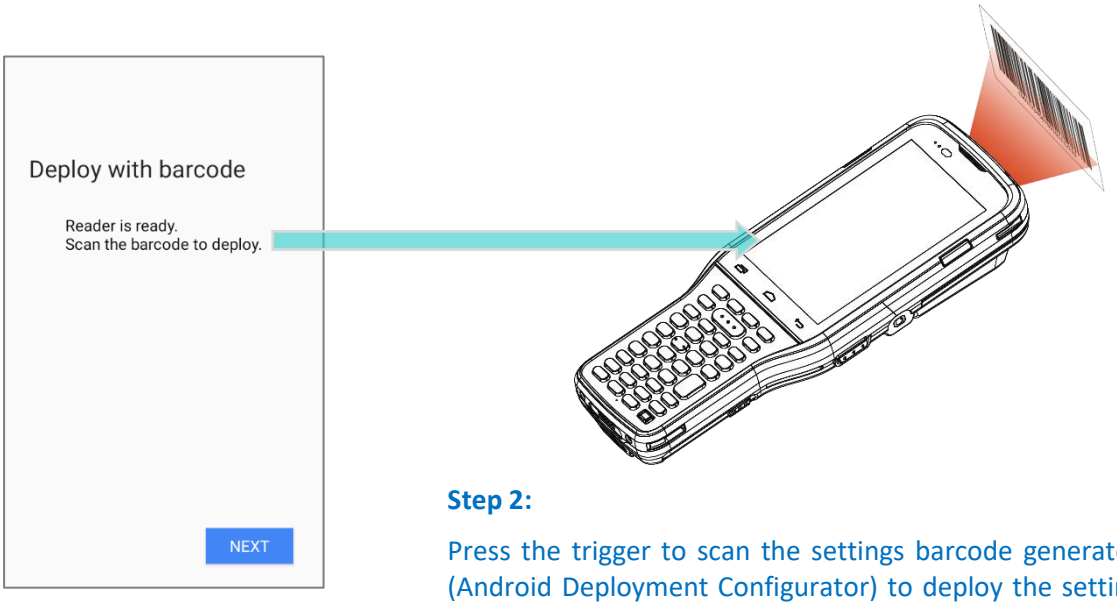
Step 1-2:

Customize your device if needed.



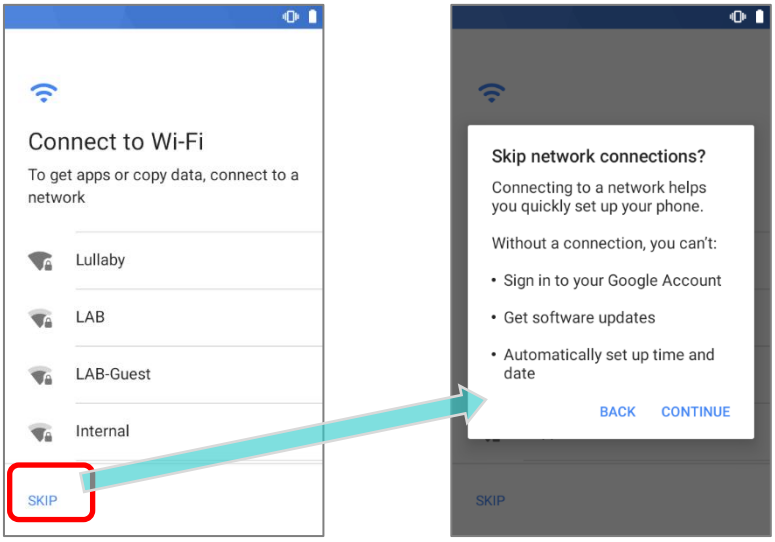
Step 1-3:

Select your system language.



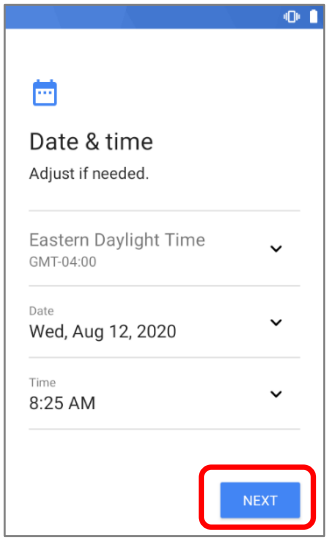
Step 2:

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



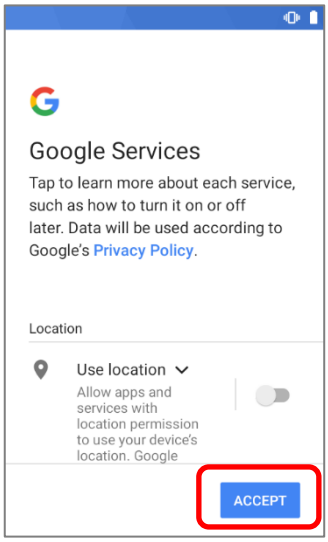
Step 3:

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



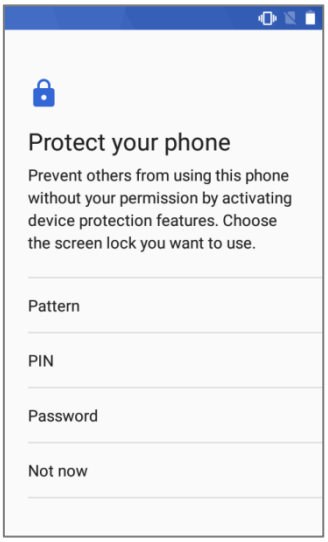
Step 4:

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. Select "**Not now**" to skip.

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

Chapter 4

COLD CHAIN MODEL

This chapter introduces the user interface of the RK95 mobile computer cold chain model.

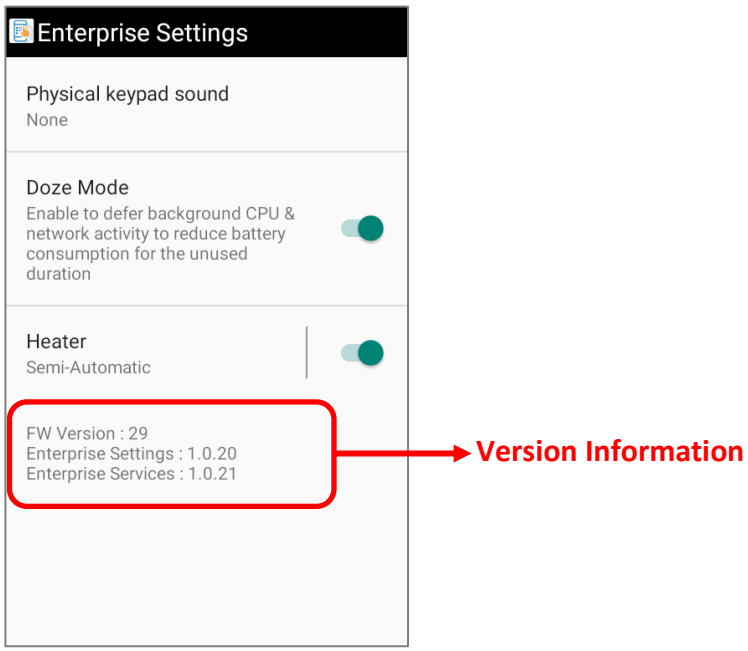
IN THIS CHAPTER

4.1 Enterprise Settings for Cold Chain 137
4.2 Switch Mode 144
4.3 Notifications & Warnings 151

4.1. ENTERPRISE SETTINGS FOR COLD CHAIN

The default application "**Enterprise Settings**" helps you to control the physical keypad and the heaters.

To launch "**Enterprise Settings**", please go to **App Drawer (All Apps)** and tap on "**Enterprise Settings**".



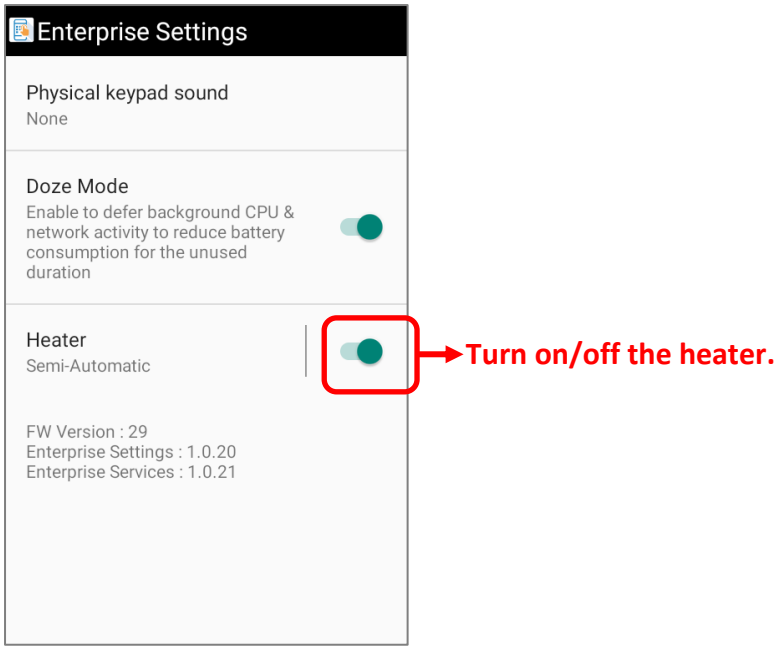
The available functions listed on "**Enterprise Settings**" main page are as below:

Item	Description
Physical keypad sound	Setting the physical keypad sound. The default setting is "**None**".
Doze Mode	"**Doze Mode**" is enabled by default. Please refer to https://developer.android.com/training/monitoring-device-state/doze-standby for details.
Heater	Monitoring the temperature of the device and the heater.
Version Information	The version information for trouble shooting.

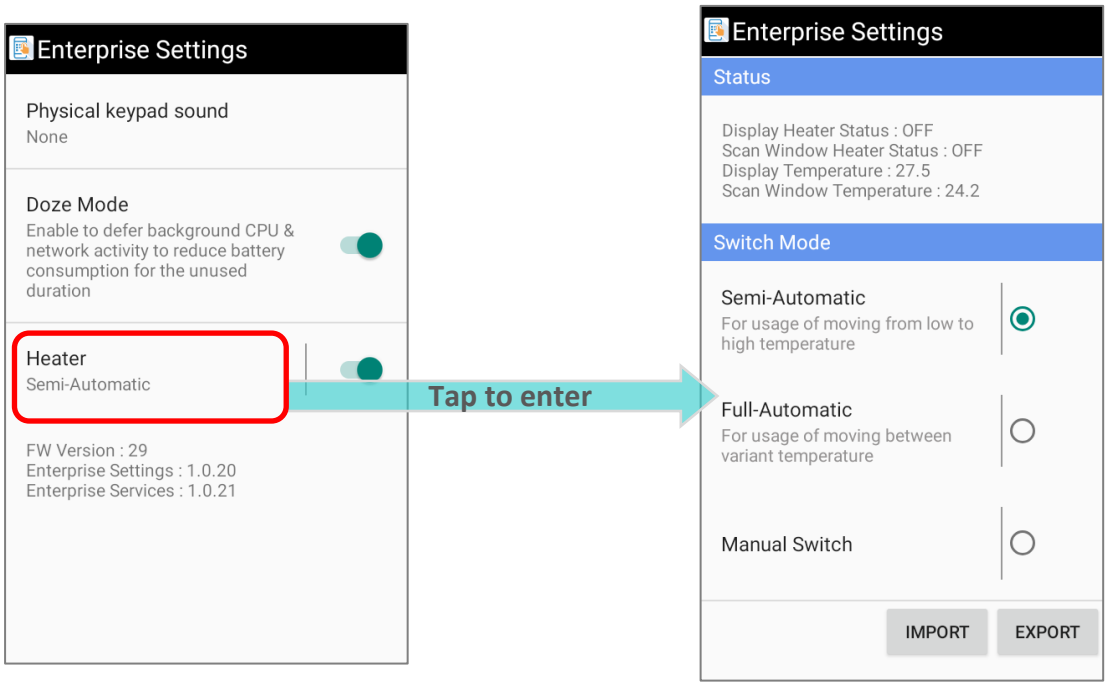
Note: Always use a fully-charged main battery for battery replacement.

4.1.1. HEATER SETTINGS: OVERVIEW

"**Heater**" is for monitoring the temperature of the device and the heaters. Please tap on the switch to turn on or off the heaters depends on the real operating environments.

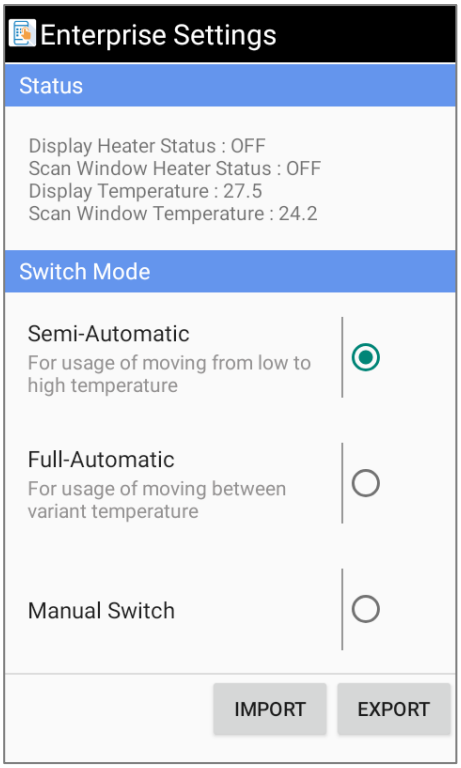


Tap to enter the detail page of "**Heater**" for advanced settings:



4.1.2. HEATER SETTINGS: STATUS

"**Status**" shows the status of the display heater and the scan window heater for the users to monitor and check.



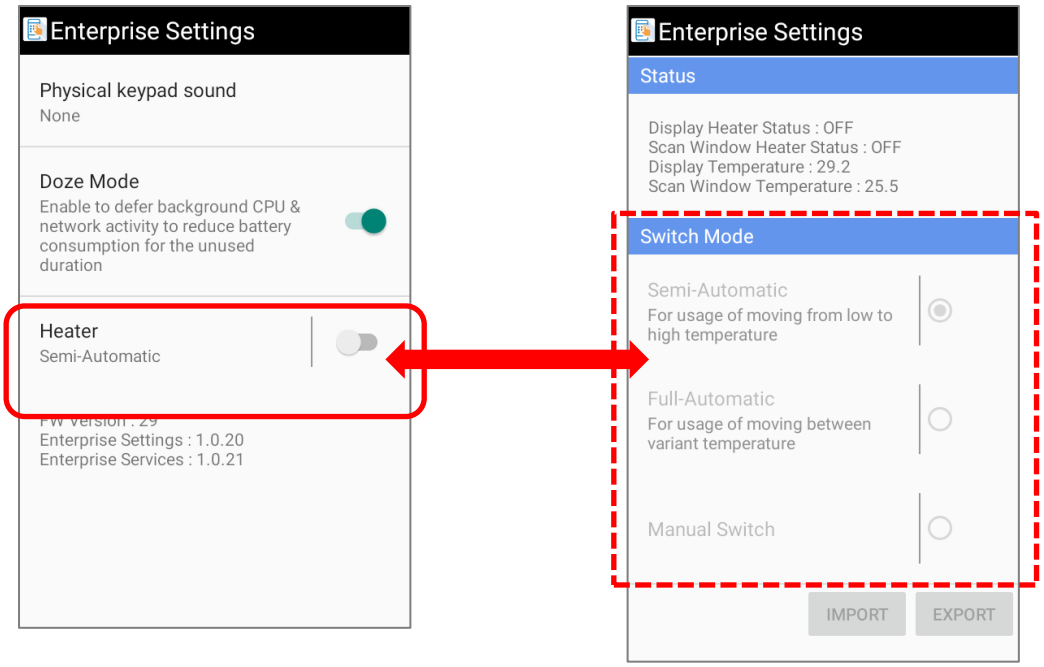
The status information are:

Item	Description
Display Heater Status	Showing whether the heater for the device display is **ON** or **OFF**.
Scan Window Heater Status	Showing whether the scan window heater is **ON** or **OFF**.
Display Temperature	Showing the current temperature of the heater for the device display. The value is refreshed every 2 seconds.
Scan Window Temperature	Showing the current temperature of the scan window heater. The value is refreshed every 2 seconds.

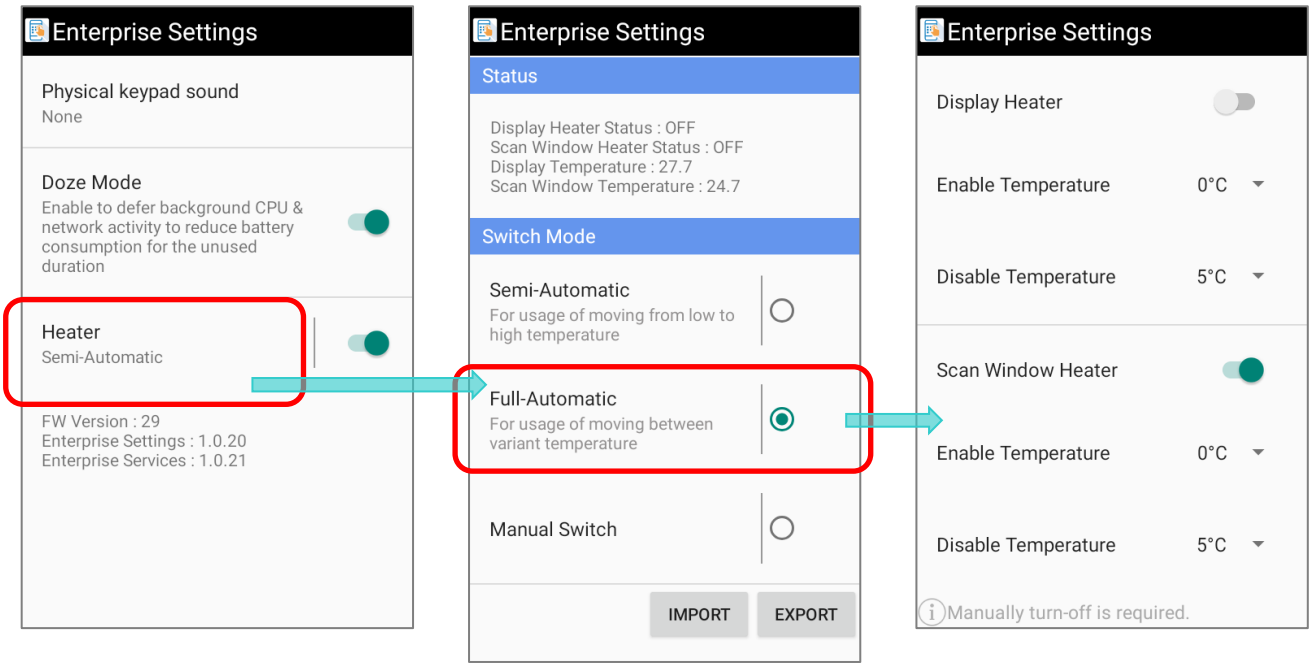
4.1.3. HEATER SETTINGS: SWITCH MODE

"**Switch Mode**" allows users to set the switch mode that controls the heaters according to the users' real operating enviroments. To configure the switch modes, "**Heater**" must be enabled. Once "**Heater**" is enabled, users can select the mode from "**Semi-Automatic**", "**Full-Automatic**", and "**Manual Switch**".

- **"Switch Mode" is unavailable if "Heater" is disabled.**

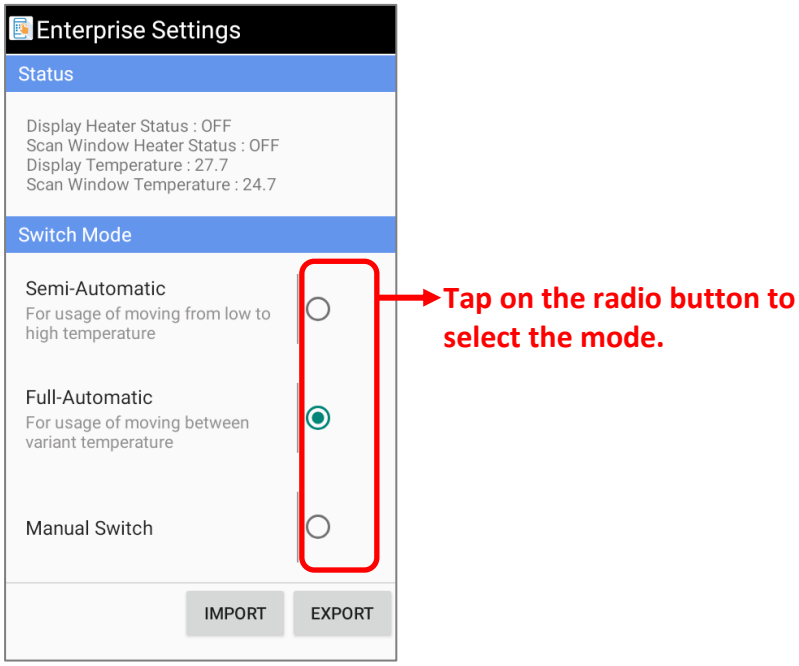


- **Enable "Heater" to select the switch mode and set the further configuration.**

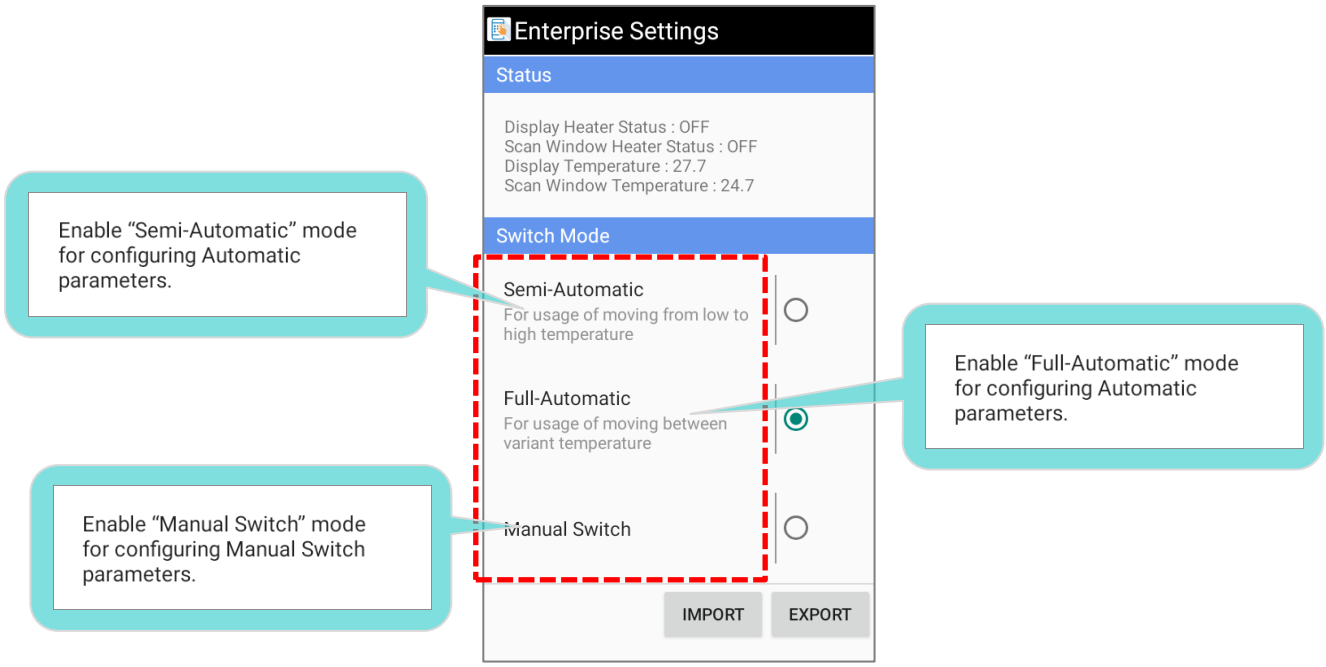


SELECT THE MODE TO BE APPLIED

To select the mode, please tap on the radio button of the mode to be applied.



Tap on the mode which is unselected, its brief description shows up.



For the detailed functions of "**Semi-Automatic**", "**Full-Automatic**", and "**Manual Switch**, please refer to "**Switch Mode**".

4.1.4. HEATER SETTINGS: IMPORT & EXPORT

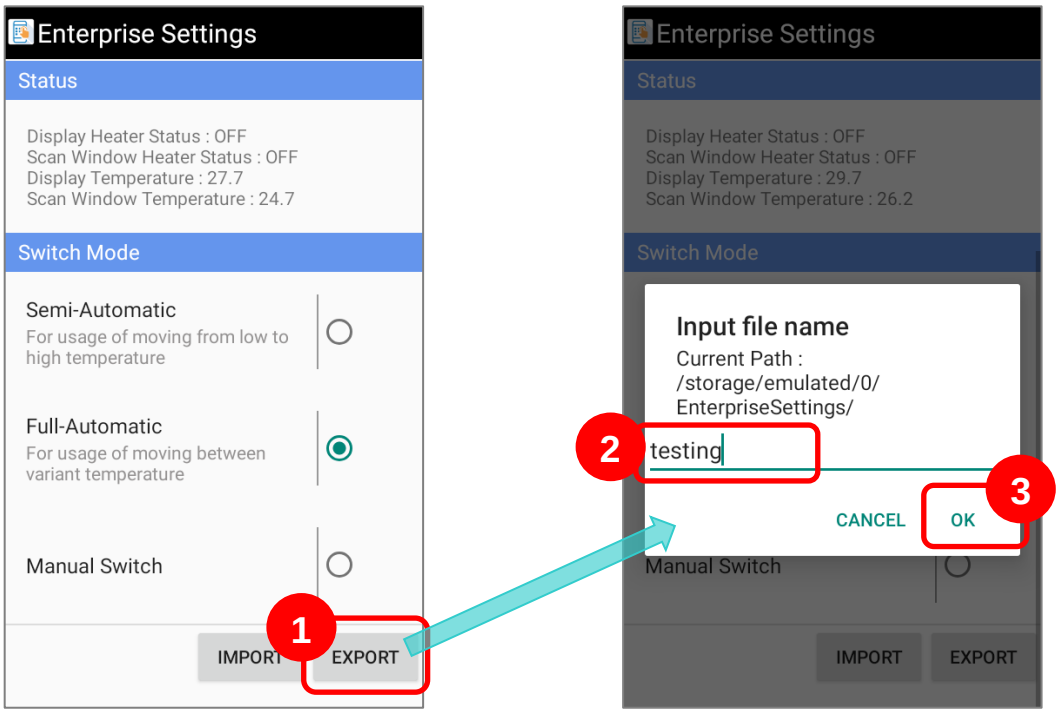
The functions "**Import**" and "**Export**" are to save the settings as a .json file and allow you to apply the same settings to other devices.

EXPORT

Tap on "**Export**" to save your deployment as a .json file for applying the same settings to other devices or for troubleshooting purpose.

1) Tap on "**Export**".

2) Enter the file name and then tap on "**OK**".

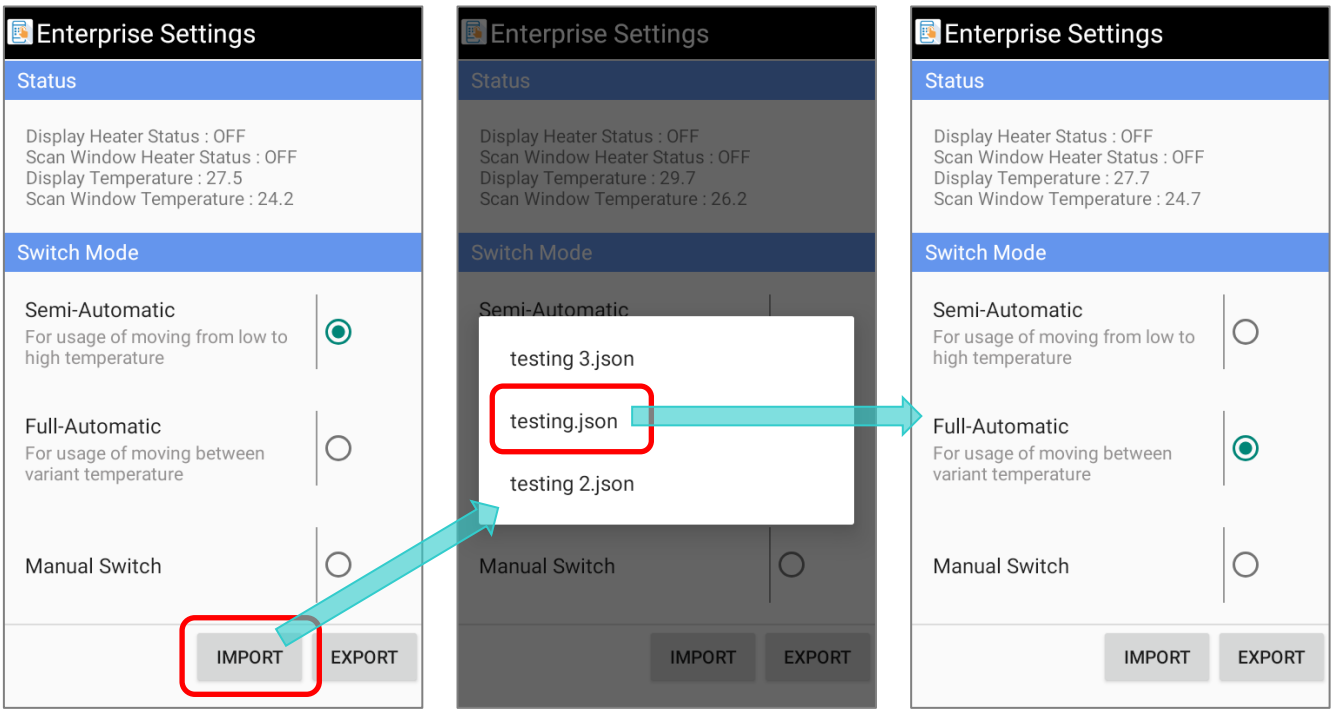


3) The exportation is complete.

IMPORT

"**Import**" is for applying the deployment to your "**Enterprise Settings**":

1) Tap on "**Import**".
2) Select the .json file you would like to import, and the deployment is applied immediately.



4.2. SWITCH MODE

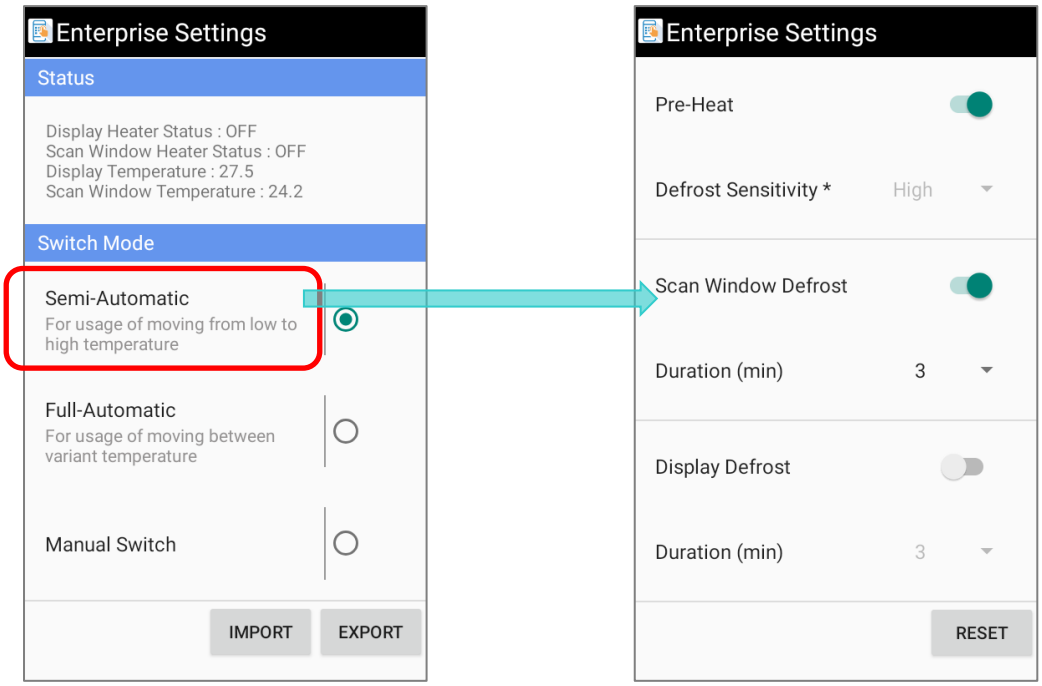
Select the switch mode which is applicable to the working environment, and enter the selected switch mode for further settings.

Switch Mode	Description
Semi-Automatic	Heater(s) automatically turns on and off to defrost in response to the temperature change.
Full-Automatic	Heater(s) automatically turns on and off at the designated degree.
Manual Switch	Manually turn on or off the heaters.

4.2.1. SEMI-AUTOMATIC

By enabling "**Semi-Automatic**", the heaters will be automatically turned on and off in the designated period to prevent frosting.

To configure the parameters of "**Semi-Automatic**", please turn "**Semi-Automatic**" on and then tap to enter its detail page.

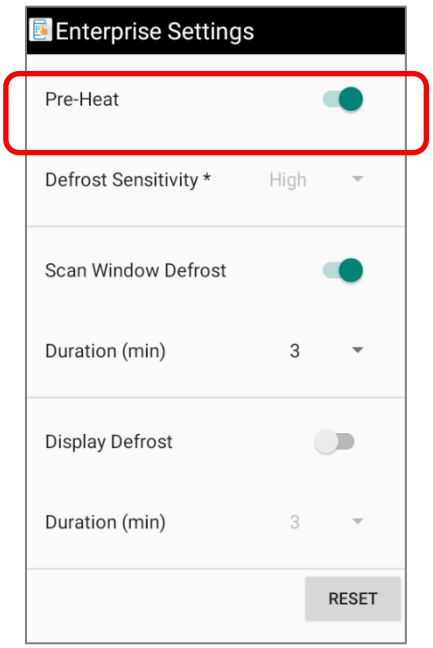


The configurable parameters are:

PRE-HEAT

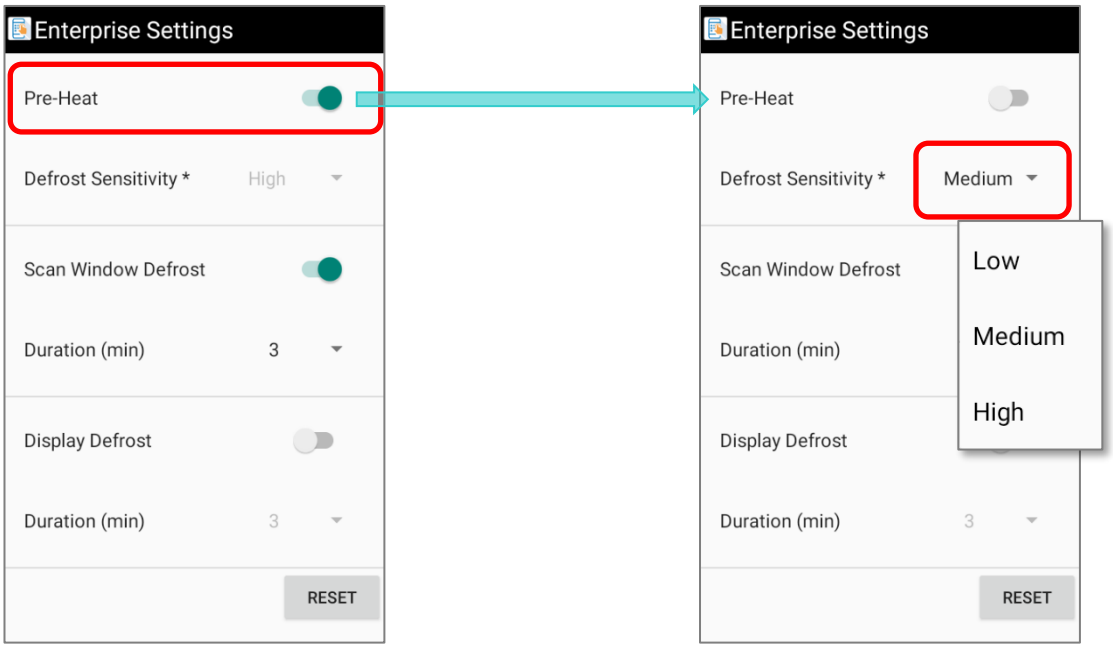
Enable "**Pre-heat**" mode to shorten the defrost time.

Please note that enabling "**Pre-heat**" mode may slightly reduce the battery life for the Display heater stays in the pre-heat stage to keep at a constant temperature till a rise in ambient temperature is detected by the device.

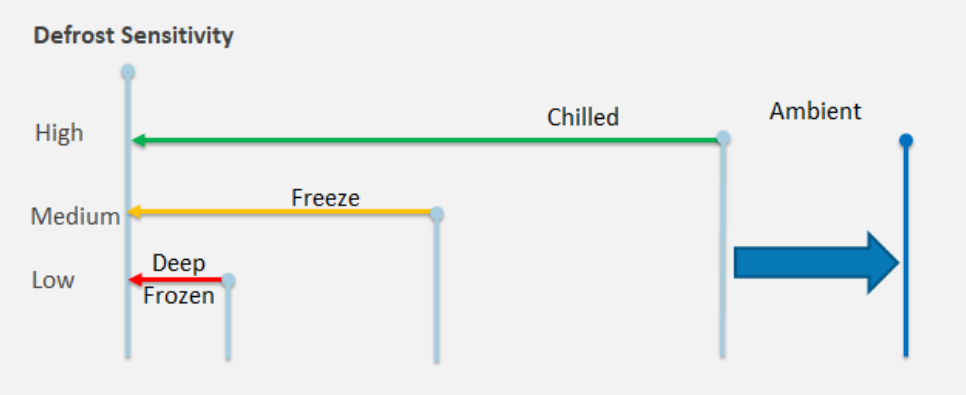


DEFROST SENSITIVITY

"**Defrost Sensitivity**" is inflexible to be "**High**" if "**Pre-heat**" mode is on while it is configurable when "**Pre-heat**" mode is off. Turn off "**Pre-heat**" mode and then tap to set the sensitivity by selecting from **Low**, **Medium**, and **High** for triggering the heater.



"**High**" is suggested for little temperature delta value. User may select the "**Defrost Sensitivity**" according to the temperature difference in the workplaces:

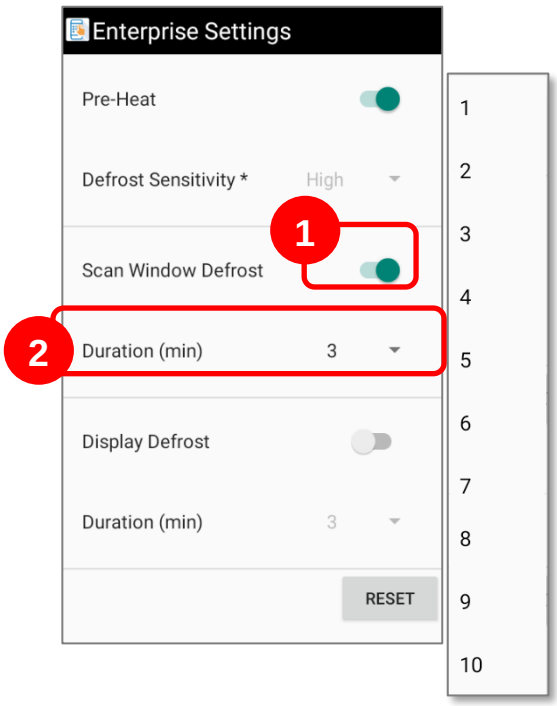


Defrost Sensitivity	Description
Low	Sharp temperature difference between workplaces, e.g. employees move from the deep frozen storage to ambiet temperature, and thus it requires low sensitivity.
Medium	"Medium" caters for a remarkable temperature difference between workplaces, e.g. employees move from freeze storage to ambiet temperature.
High	Slight temperature difference in workplaces, e.g. employees move from the freeze storage to the chilled buffer zone, and then move to the ambiet temperature area.

SCAN WINDOW DEFROST

By enabling "**Scan Window Defrost**", the heater will be automatically turned on and turned off to defrost the scan window.

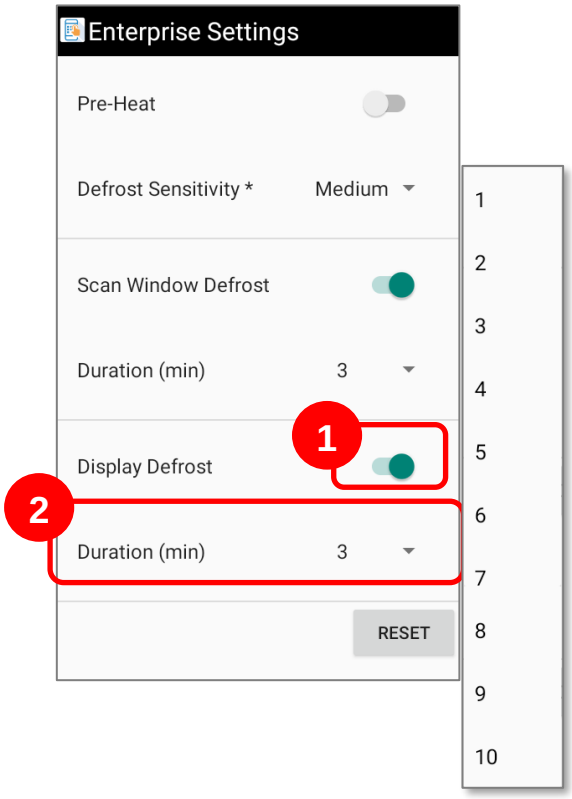
Once "**Scan Window Defrost**" is turned on, you can further set "**Duration**" which is the time period that the scan window keeps defrosting. The time unit is minute, and the default duration is 3 minutes.



DISPLAY DEFROST

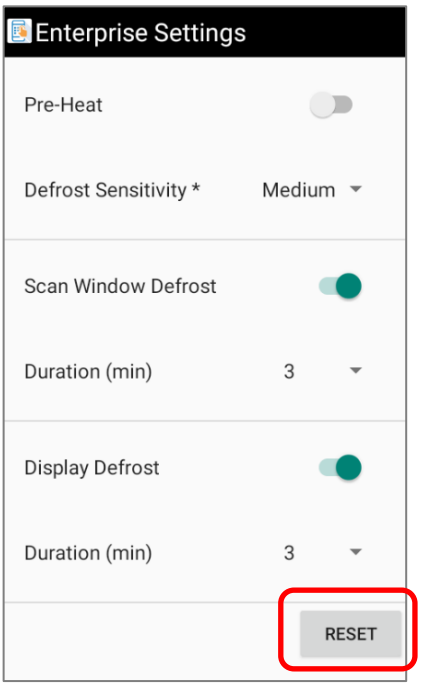
Turn on "**Display Defrost**" to enable the heater to be automatically on and off to defrost the device display.

By turning on "**Display Defrost**", "**Duration**" can be set to specify the time period that the device display keeps defrosting. The time unit is minute, and the default duration is 3 minutes.



RESET

To restore all the settings to the default, simply tap on "**RESET**" to proceed.

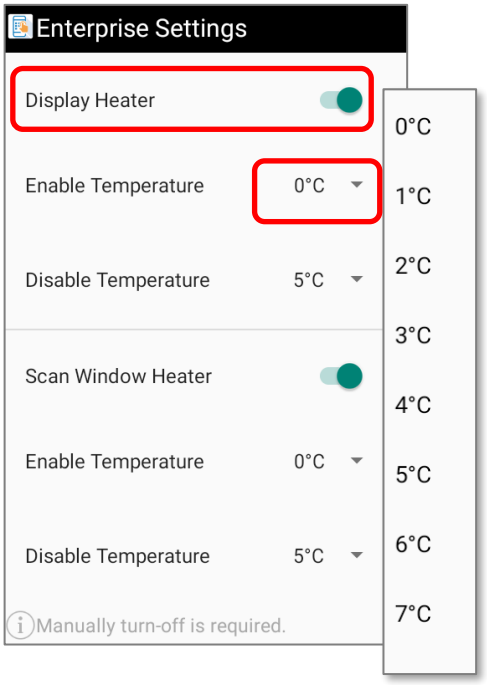


4.2.2. FULL-AUTOMATIC

"**Full-Automatic**" mode is for keeping the heater(s) on to make the device stay in your designated temperature range. When the device temperature is at the designated "**Enable Temperature**", the heater(s) automatically turns on, and once the device temperature reaches the upper temperature limit you set, the heater(s) is off.

DISPLAY HEATER

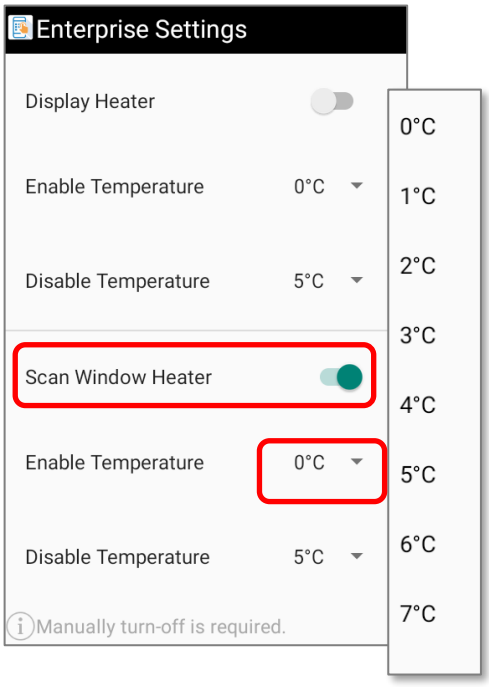
"**Display Heater**" is off by default. Tap to turn it on and set the "**Enable Temperature**" and "**Disable Temperature**". The available temperature is from 0°C to 30°C, and the default setting to enable display heater is 0°C and it stops heating at 5°C.



SCAN WINDOW HEATER

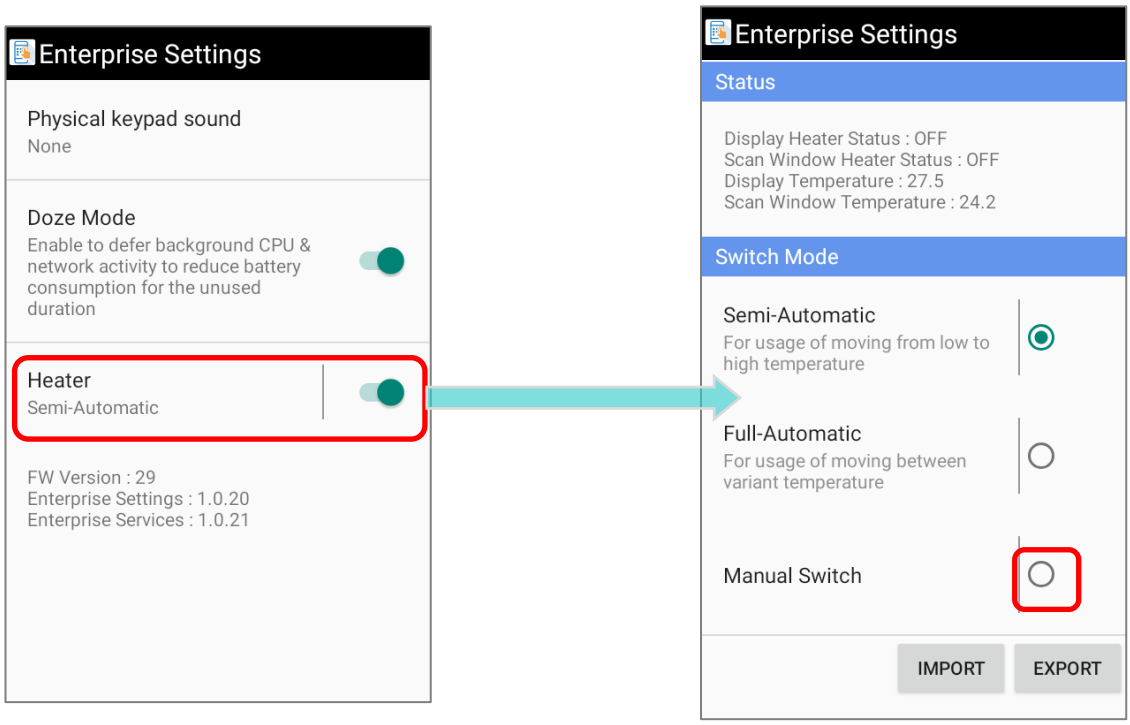
The default setting of "**Scan Window Heater**" is on, and its "**Enable Temperature**" is 0°C while "**Disable Temperature**" is 5°C.

Tap on the switch to turn it on or off, and tap to expand the drop down menu to set "**Enable Temperature**" and "**Disable Temperature**" from the available temperature range (0°C to 30°C).

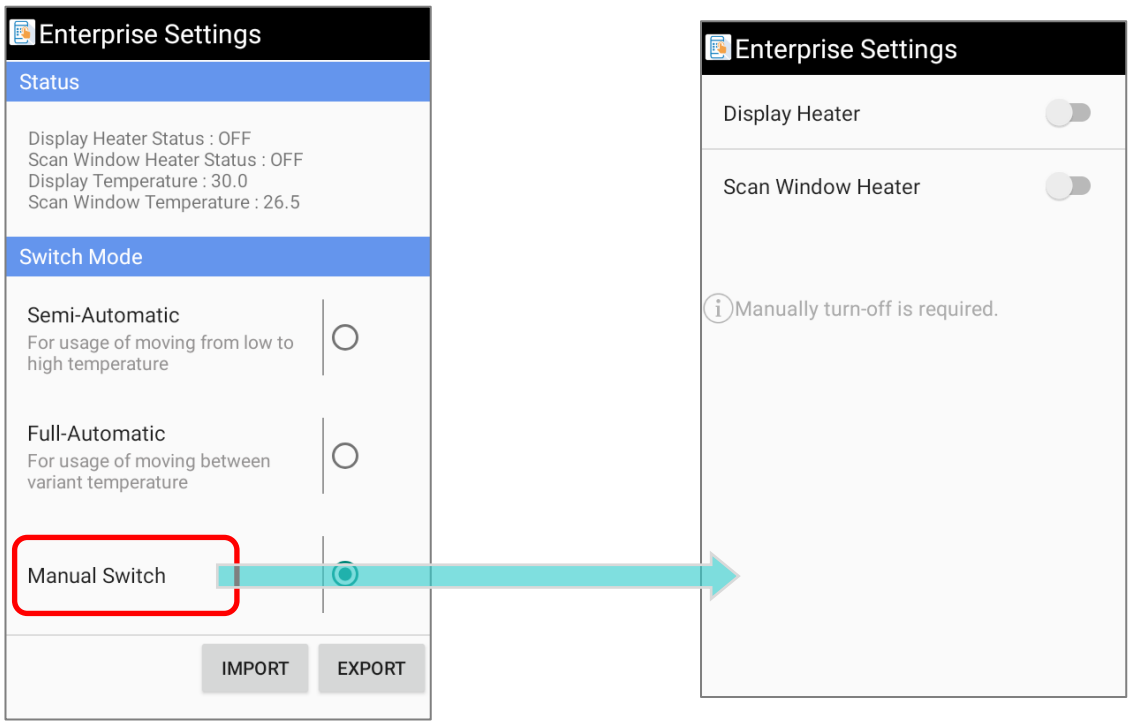


4.2.3. MANUAL SWITCH

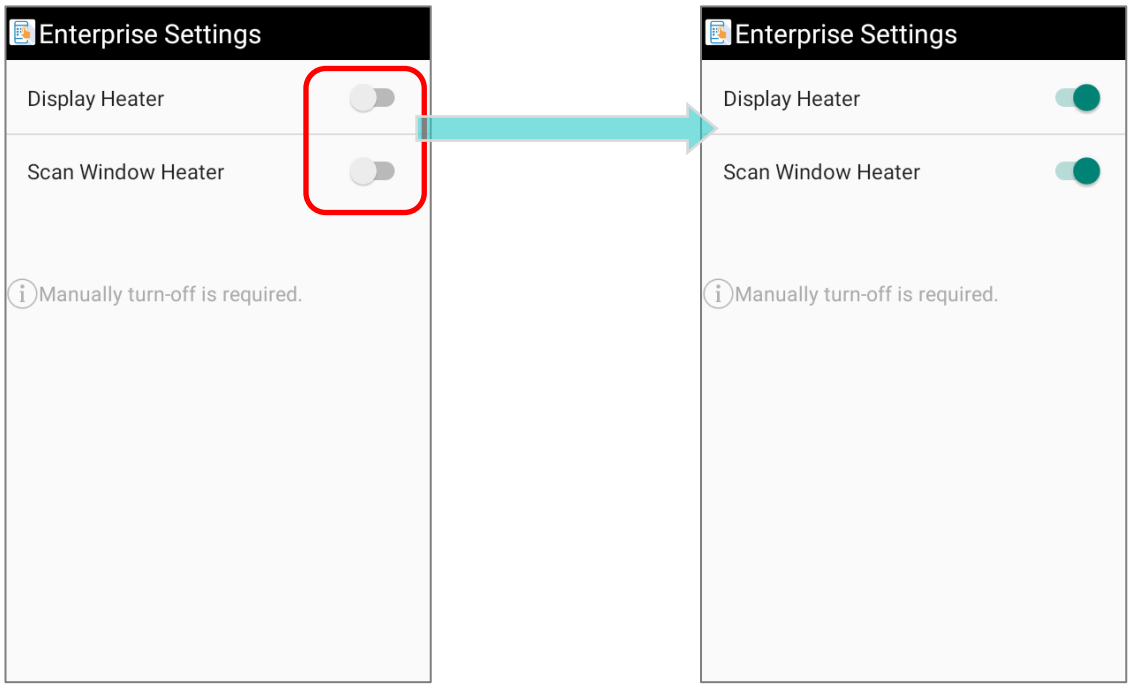
By enabling "**Heater**", users can further turn on "**Semi-Automatic**" or "**Full-Automatic**" or "**Manual Switch**". "**Manual Switch**" is disable by default. To enable "**Manual Switch**", simply tap on its radio button.



For advanced settings of "**Manual Switch**", please tap to enter the detail page.



When "**Manual Switch**" is on, both "**Display Heater**" and "**Scan Window Heater**" need to be activated respectively by the user.



Please note that it may cause unnecessary power consumption if keeping the heaters on.

To save the battery power, please manually turn off the heaters.

4.3. NOTIFICATIONS & WARNINGS

The followings are the notifications and warnings shown on the status bar for you to monitor the status of your RK95 mobile computer cold chain model.

4.3.1. PRE-HEAT

When the device is in "**Pre-heat**" status, the pre-heat notification icon is displayed on the status bar:

You may swipe down from the status bar to open the notification drawer for checking the related notification.

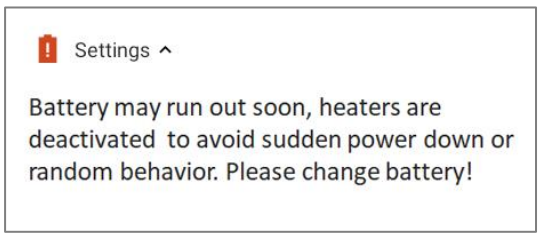
4.3.2. DEFROST

When the device is defrosting, the defrost icon is shown on the status bar.

You may swipe down from the status bar to open the notification drawer for checking the related notification.

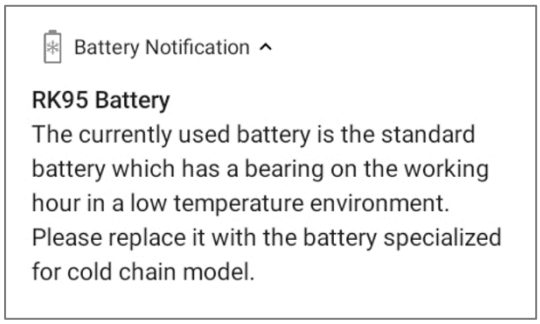
4.3.3. LOW BATTERY

When the battery power is pretty low, the low battery icon is shown on the status bar. Swipe down from the status bar to open the notification drawer to check this notification:



4.3.4. STANDARD BATTERY

If you accidentally install the standard battey, the standard battery icon is displayed on the status bar as well as the notification is on the notification drawer:



Chapter 5

WIRELESS RADIOS

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

IN THIS CHAPTER

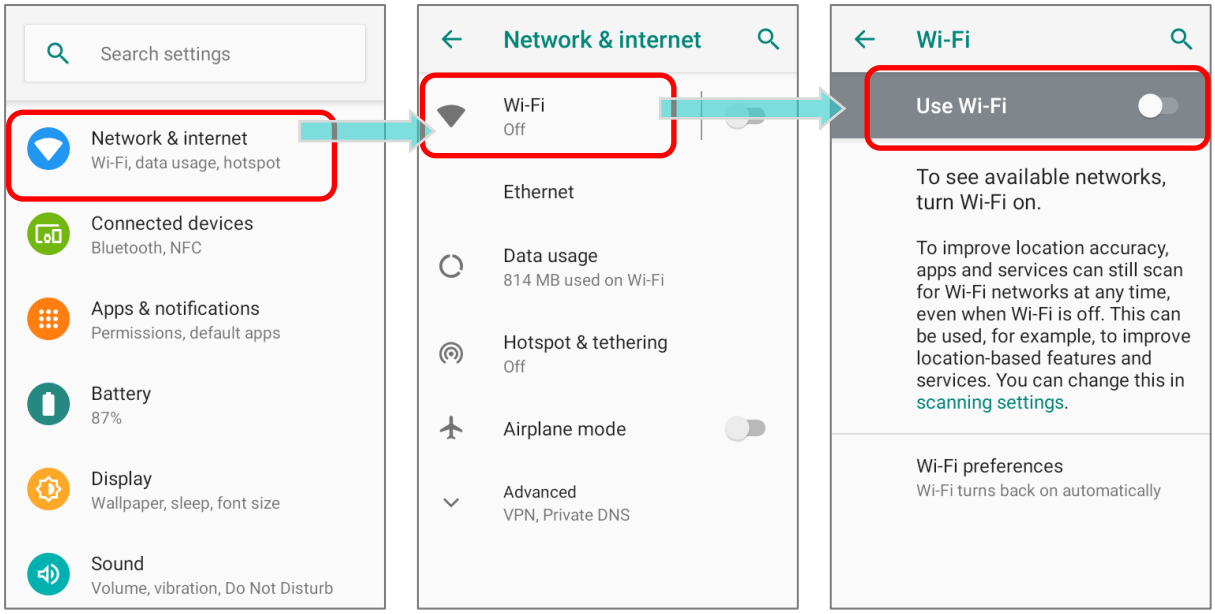
5.1 Use Wireless Local Area Network (Wi-Fi) 154
5.2 Use Bluetooth 161

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** .

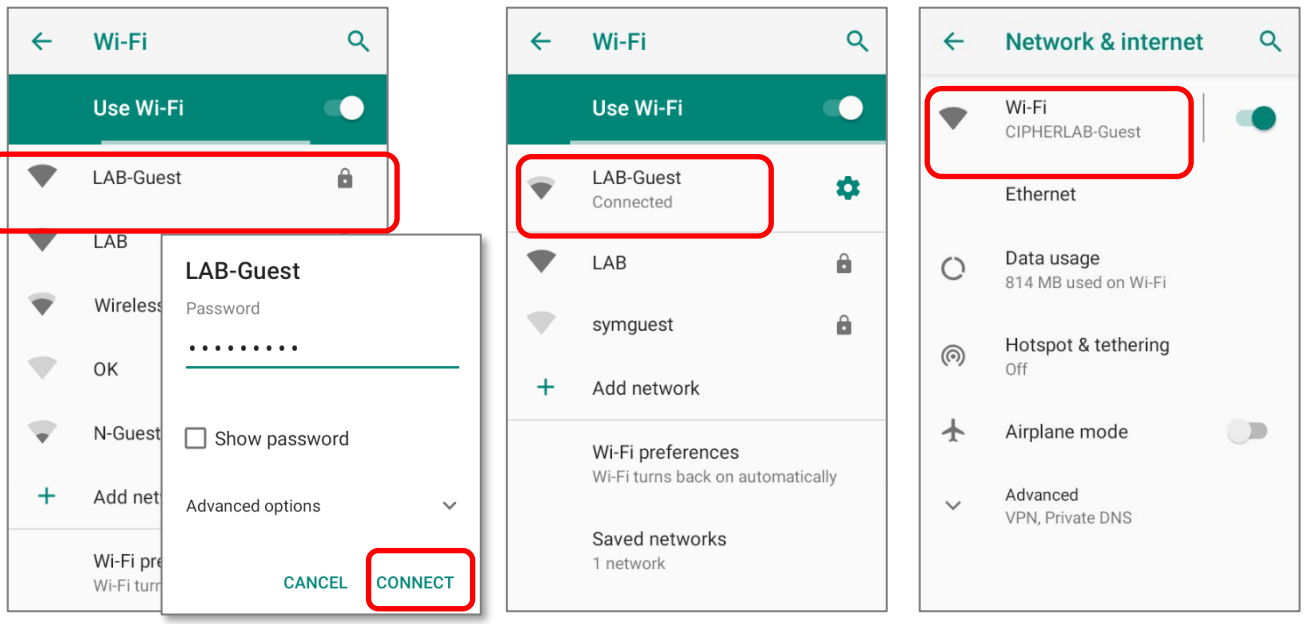


2) Tap the Wi-Fi switch to scan for available networks.

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**".

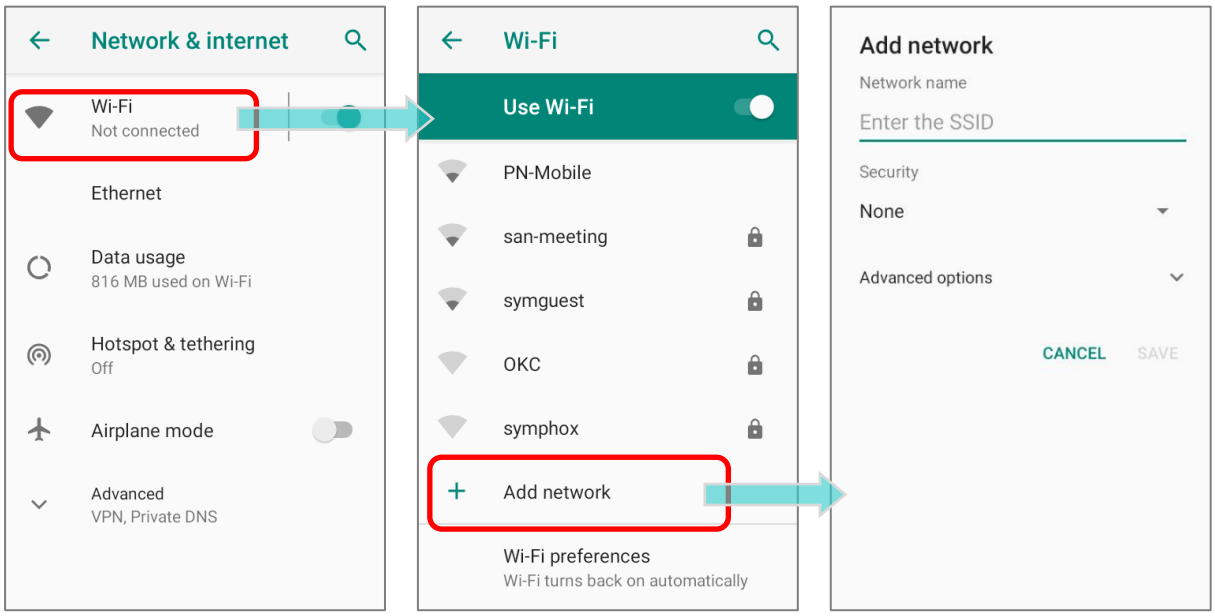
   If the network is a secured one, the mobile computer prompts a dialog to enter the password for the connection.



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**".



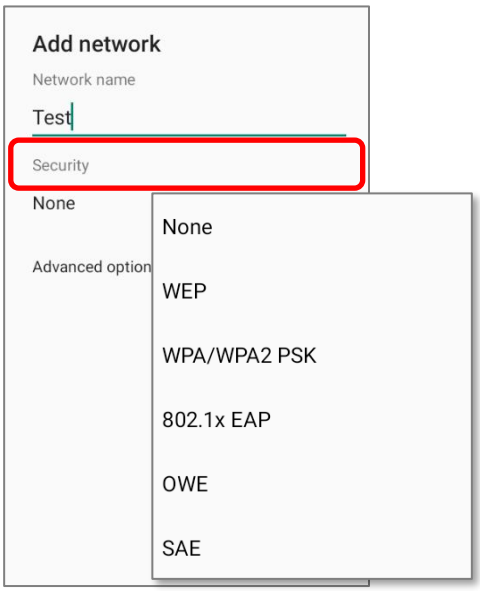
4) On "**Add network**" page, enter the name of the network in the **Network name** field, and select a security method (None, WEP, WPA/WPA2 PSK, 802.1x EAP, OWE, or SAE).

- For **WEP/WPA/WPA2 PSK** connections:
  Enter the required password and tap Save.

- For **802.1x EAP** connections:
  Select the **EAP method** in the drop-down box (PEAP, TLS, TTLS, PWD), and the **Phase 2 authentication** in the drop-down box (None, MSCHAPV2, GTC). Select a **CA certificate** and User certificate if required.

  (certificates may be installed under:
  App Drawer (All Apps) | **Settings** | **Network & internet** |**Wi-Fi** | **Wi-Fi preferences** | **Advanced** | **Install certificates.**)

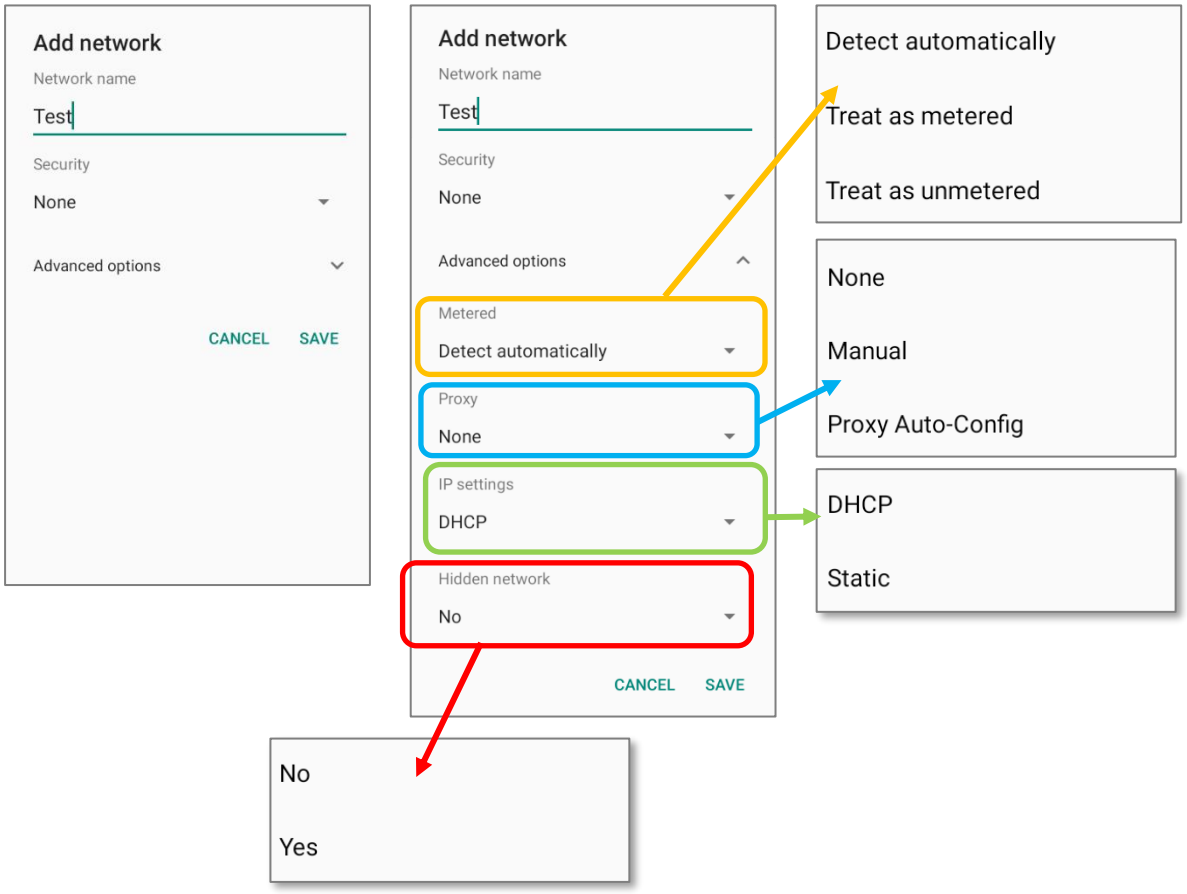
  Enter your username in the Identity box and the password in the Password box if required.



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**.



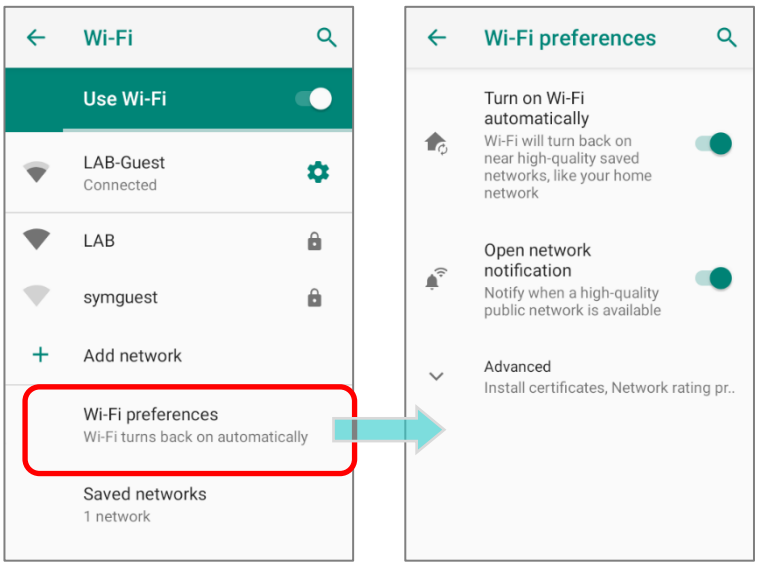
5.1.3. WI-FI PREFERENCES

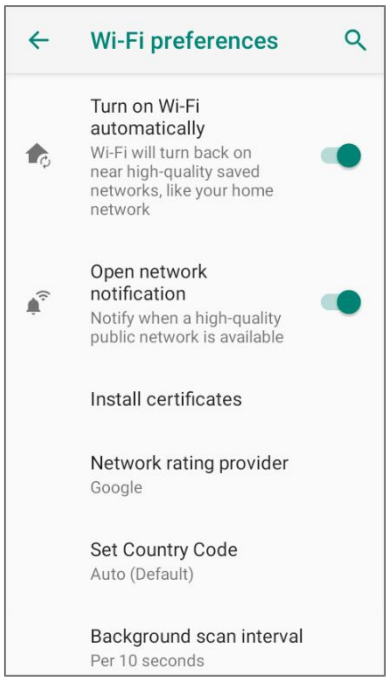
To access advanced Wi-Fi settings:

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

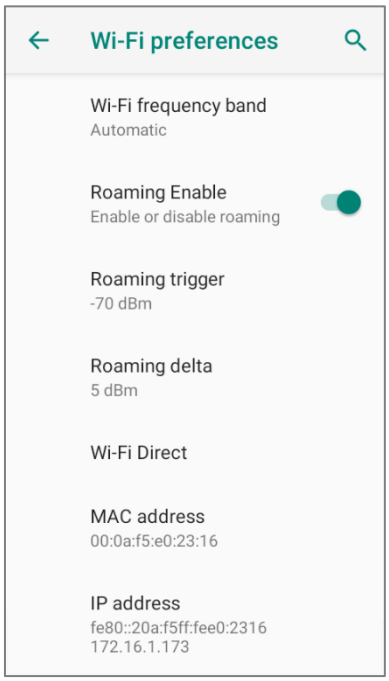
2) Scroll down to the bottom of the page, and tap on "**Wi-Fi preferences**".

3) Tap "**Advanced**" to expand more settings. Available settings are as below:





Item	Description
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.
Set Country Code	Select the Wi-Fi country code for your device.
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.



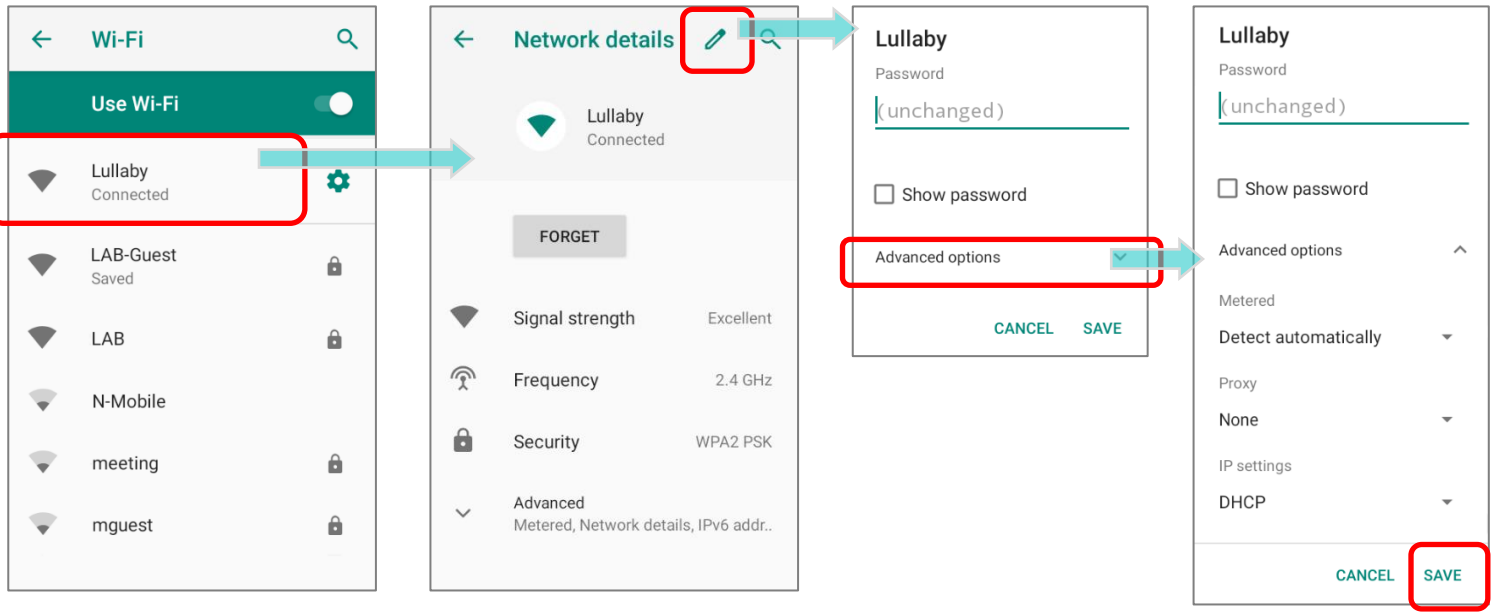
Item	Description
Wi-Fi frequency band	Select **Automatic**, **5 GHz only**, or **2.4 GHz only** for your Wi-Fi frequency band. The default setting is **Automatic**.
Roaming Enable	Select whether to enable Wi-Fi roaming or not.
Roaming trigger	The signal strength when triggering Wi-Fi roaming. The higher 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.
Wi-Fi Direct	Enables your device to connect with a Wi-Fi Direct-capable device.
MAC address	Displays the MAC address of the device when connecting to Wi-Fi networks.
IP address	Displays the IP address of the device.

5.1.4. MODIFY WI-FI NETWORK

MODIFY THE CONNECTED NETWORK

To change the settings for a connected network:

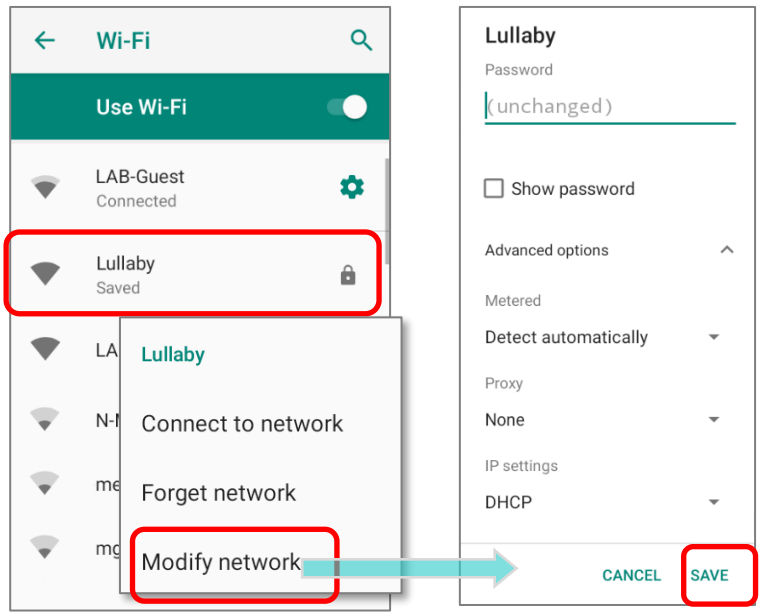
1) Tap a connected network in the Wi-Fi hotspot list to enter its "**Network details**" page.
2) Tap **Edit** button to open the pop-up menu.
3) Modify the network settings, and tap **Save**.



MODIFY THE SAVED NETWORK

To change the settings for a saved network:

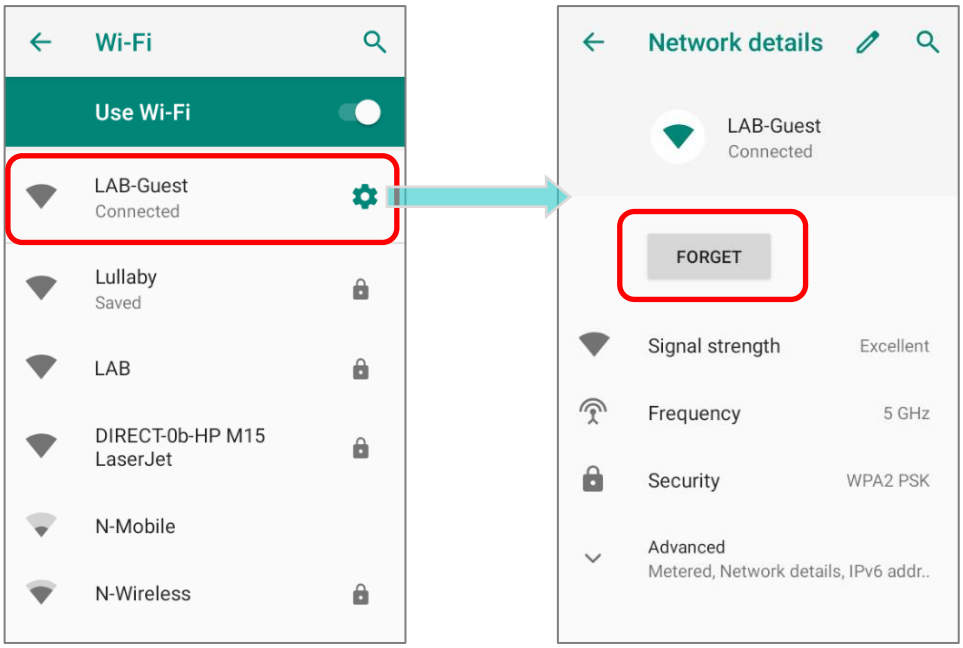
1) Tap and hold a saved network in the Wi-Fi hotspot list.
2) Tap **Modify network** in the pop-up menu.
3) In the dialog box that opens, modify the network settings, and tap **Save**.



5.1.5. DISCONNECT WI-FI NETWORK

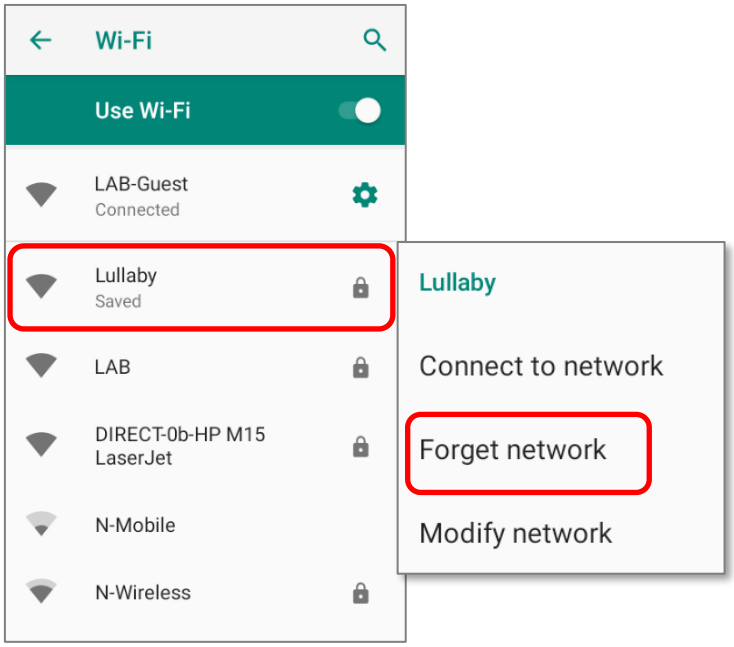
To disconnect a connected network:

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

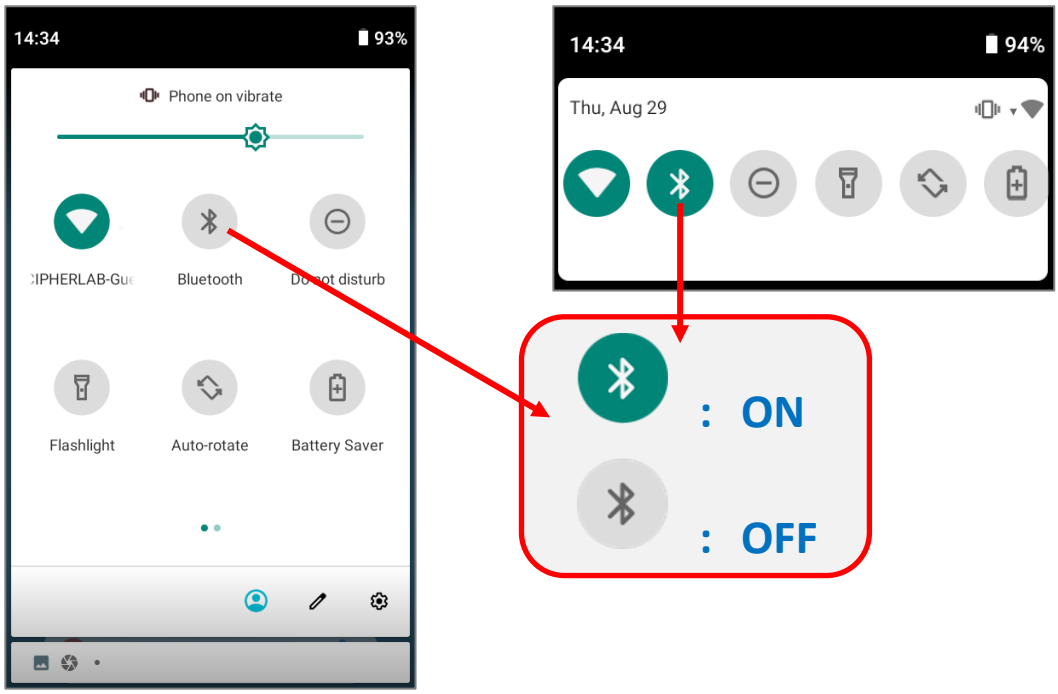
The RK95 mobile computer lets you configure Bluetooth settings and manage Bluetooth services provided on remote devices.

5.2.1. BLUETOOTH PROFILES

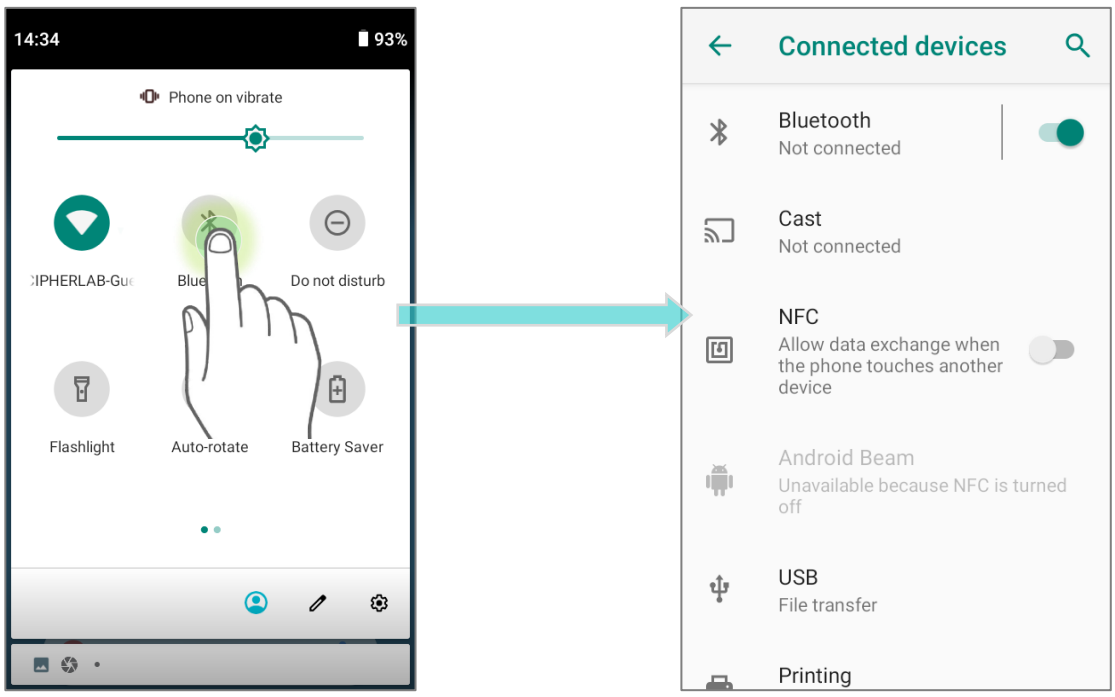
Bluetooth Profiles Supported		
Generic Access Profile	(GAP)	For device discovery and authentication.
Service Discovery Access Profile	(SDAP)	Discovers services on remote devices.
Headset Profile	(HSP)	Describes how a Bluetooth enabled headset should communicate with a Bluetooth enabled device
Hands-Free 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 off by default, and you can turn it on by tapping the Bluetooth icon on **Quick Settings Menu** or **Quick Settings Panel**:

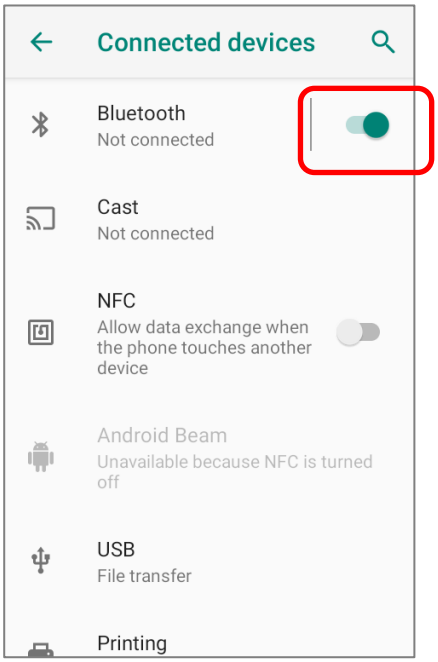


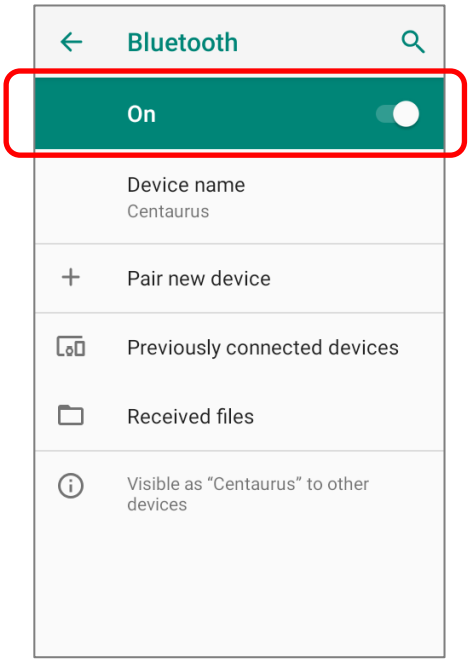
To enter "**Connected devices**" page for further Bluetooth settings, please long press the Bluetooth icon on **Quick Settings Menu** or **Quick Settings Panel**:



OR

1) Go to **App Drawer** | **Settings** | **Connected devices** | **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.

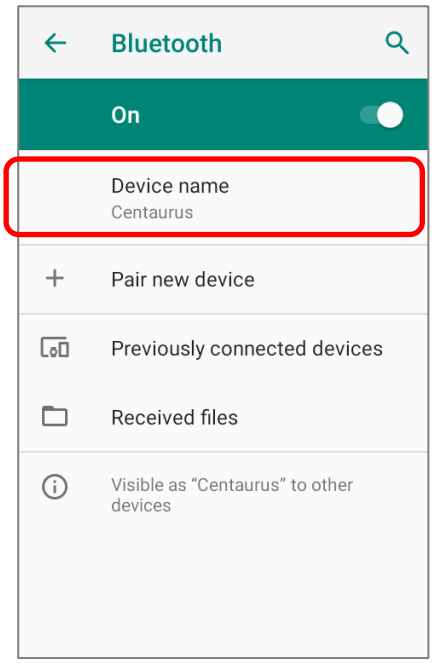
5.2.3. CHANGE BLUETOOTH NAME

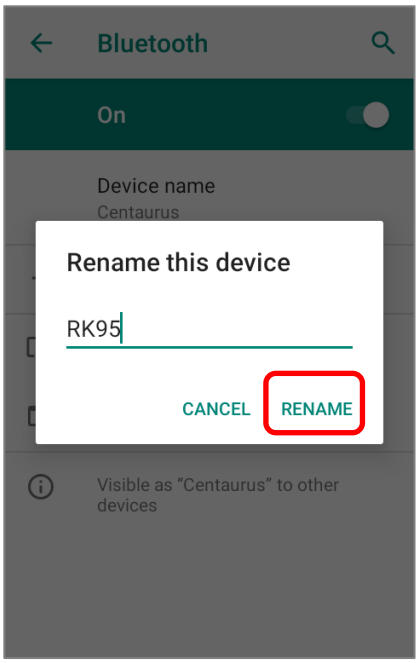
To change the Bluetooth name of this mobile computer:

1) Go to **App Drawer** | **Settings** | **Connected devices** | **Bluetooth** .

2) Tap "**Device name**" and the pop-up window "**Rename this device**" shows up.

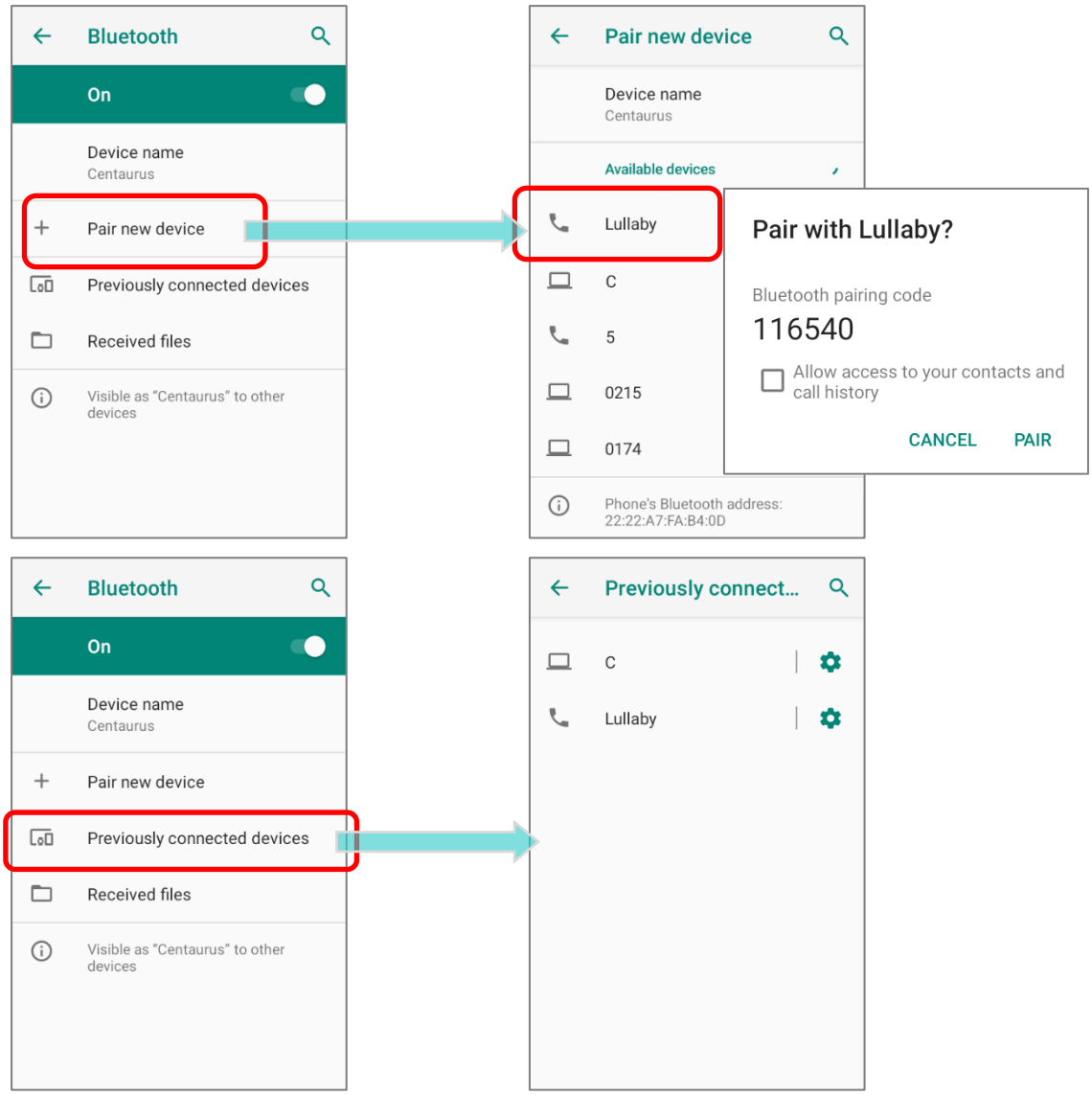
3) Type a new name in the field and tap **RENAME**.





5.2.4. PAIR BLUETOOTH DEVICES

1) Go to **App Drawer** | **Settings** | **Connected devices** | **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.



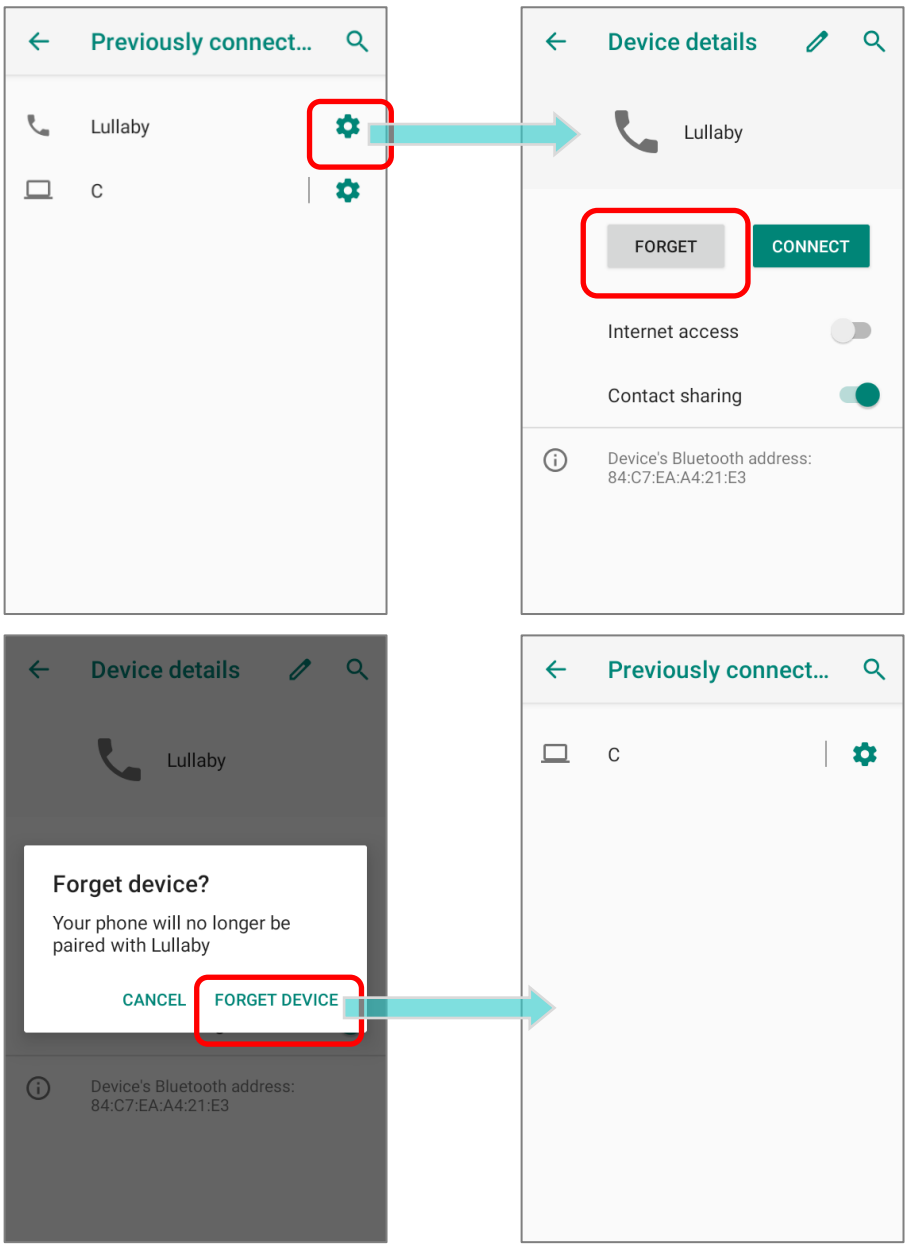
Note: If the device you would like to pair with is not listed, make sure Bluetooth visibility is enabled on the device.

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**.



Chapter 6

USING READER CONFIGURATION UTILITY

The **Reader Configuration** utility allows you to manage the barcode reader integrated on the mobile computer.

IN THIS CHAPTER

6.1 ReaderConfig Profile Managment 168
6.2 Configuring Reader 178
6.3 Read Printed Barcodes 205

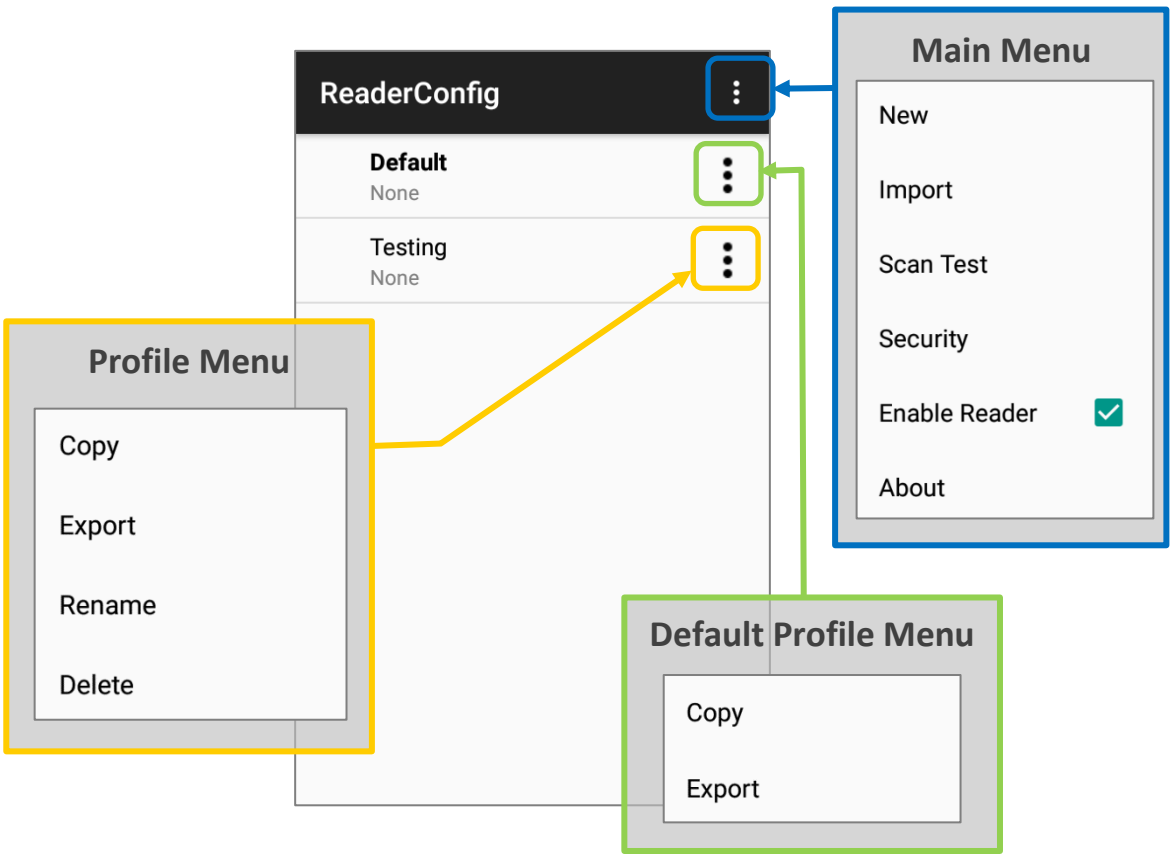
6.1. READERCONFIG PROFILE MANAGMENT

The mobile computer is capable of reading printed barcodes. The reader module can be either a (laser) 1D reader or a 2D imager. The mobile computer is installed with a **ReaderConfig** to configure the scan engine built inside. Use it to create a profile of settings that best suits your needs.

LAUNCH READERCONFIG

To launch **ReaderConfig**, please go to **App Drawer (All Apps)** | **ReaderConfig** to open the reader configuration utility.

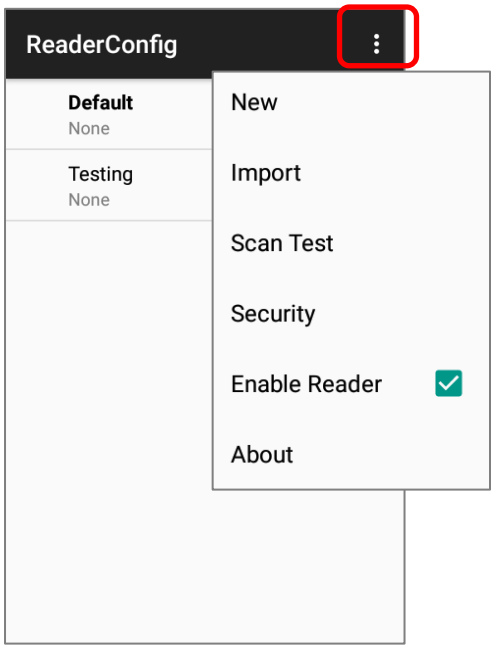
The main screen of **ReaderConfig** consists of main menu and a list of profiles, including a "**Default**" profile which cannot be deleted. Next to each profile, there is also a profile menu which includes a set of operations that are specific to the profile.



Note:
The "Default" profile is always enabled. Please refer to "Profile" for how to enable a profile.

6.1.1. READERCONFIG MAIN MENU

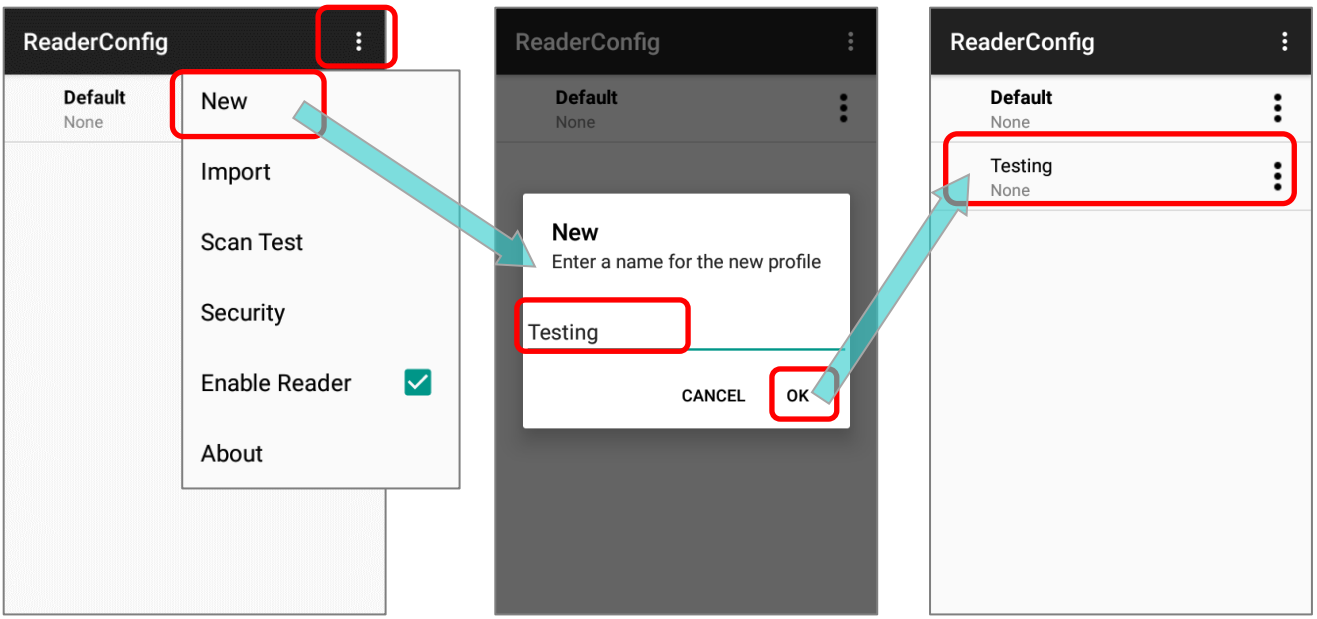
ReaderConfig provides an main menu which is accessible on the action bar of the main screen. This menu allows you to create new profiles, import profile(s) in a re-usable format, test scan barcodes, set a password for certain configurations of **ReaderConfig**, and view copyright and version information.



NEW

To create a new profile, please:

1) Tap the more button ⋮ on the action bar to display the main menu.
2) Tap "**New**" and enter a name for new profile in the pop-up dialog. Tap "**OK**" to create the profile.



IMPORT

ReaderConfig supports saving the profile settings and exporting them as a ***.json*** file.

Previously exported profile(s) can be imported again on the mobile computer. This can also be used to implement identical ReaderConfig settings on multiple devices.

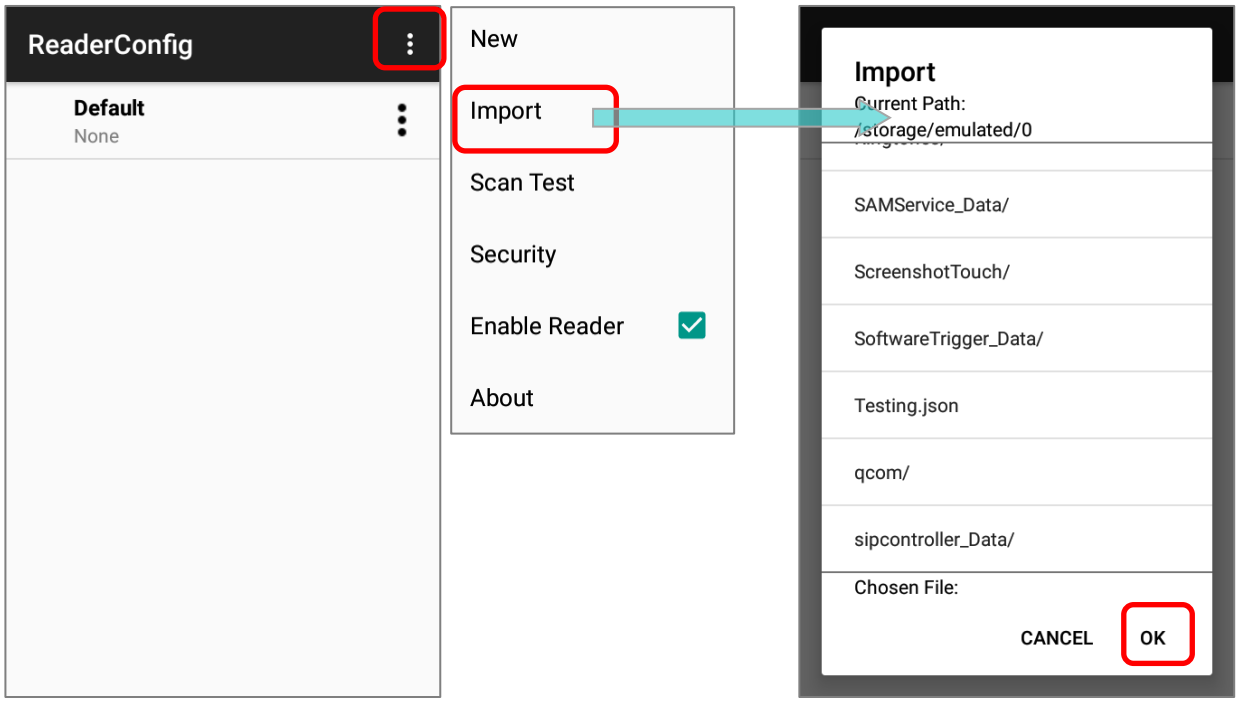
To import settings:

1) Launch the app **ReaderConfig**.

2) Tap the more button on the action bar to open the main menu.

3) Tap **Import** in the option menu.

   A page opens allowing you to select a previously saved profile.

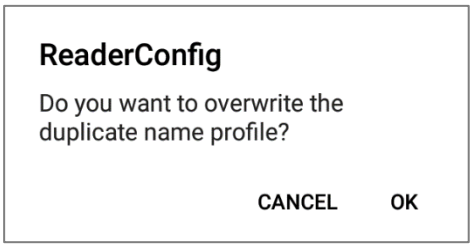


4) Tap **OK**. In a few seconds a prompt will appear on the mobile computer to indicate settings have been imported successfully.

Note:
As to exporting a profile, please refer to "Export" of "Profile Menu".

When importing a profile that has the same name with an existing profile, a confirmation dialog appears to make sure whether you really want to replace existing profile with the one to be imported.

Tap on **OK** to proceed importing.



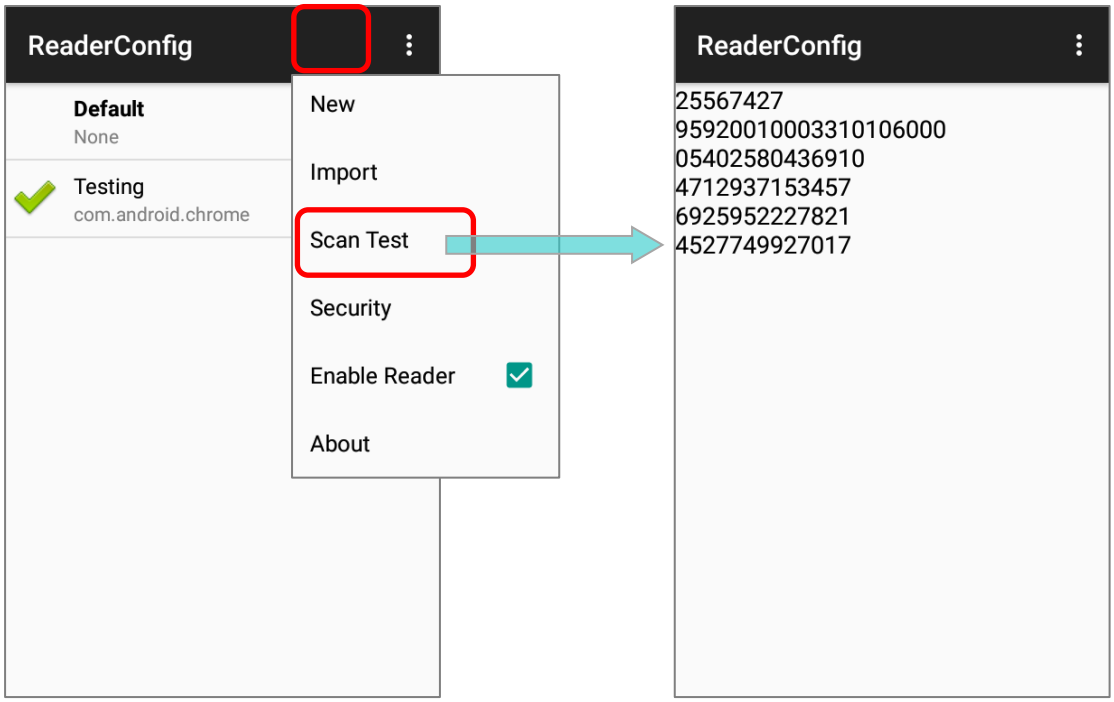
SCAN TEST

To test scan a barcode:

1) Launch the app **ReaderConfig**.

2) Tap the more button on the action bar to open the option menu.

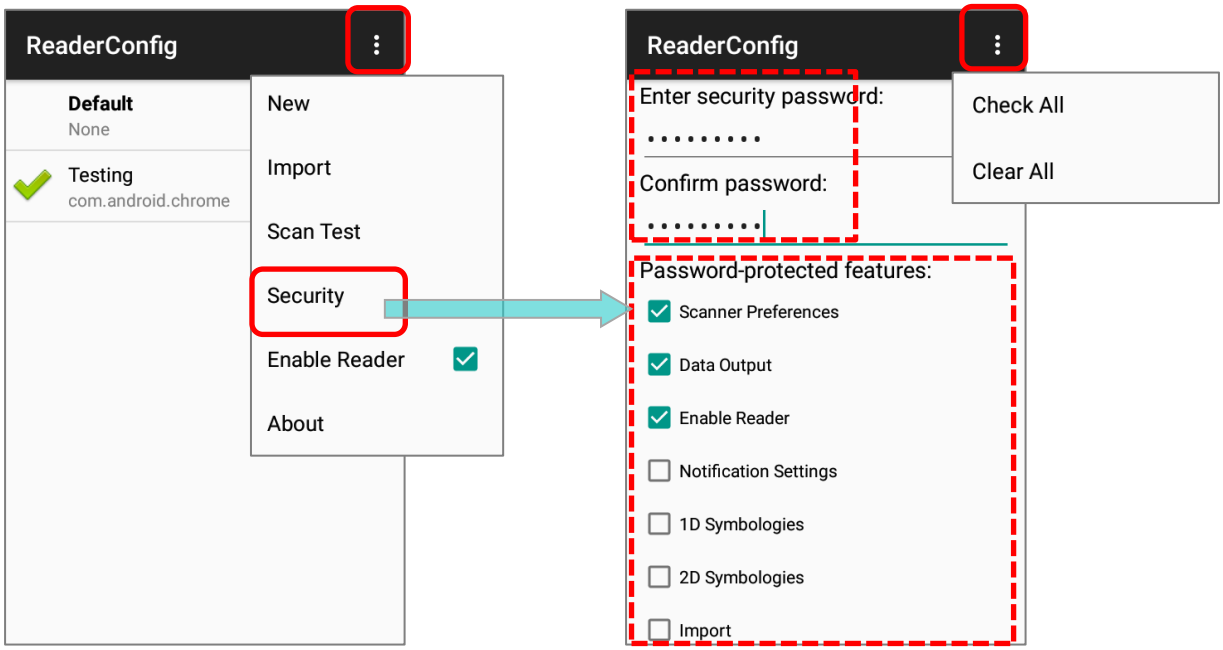
3) Tap **Scan Test** in the main menu. A page opens for test scanning.



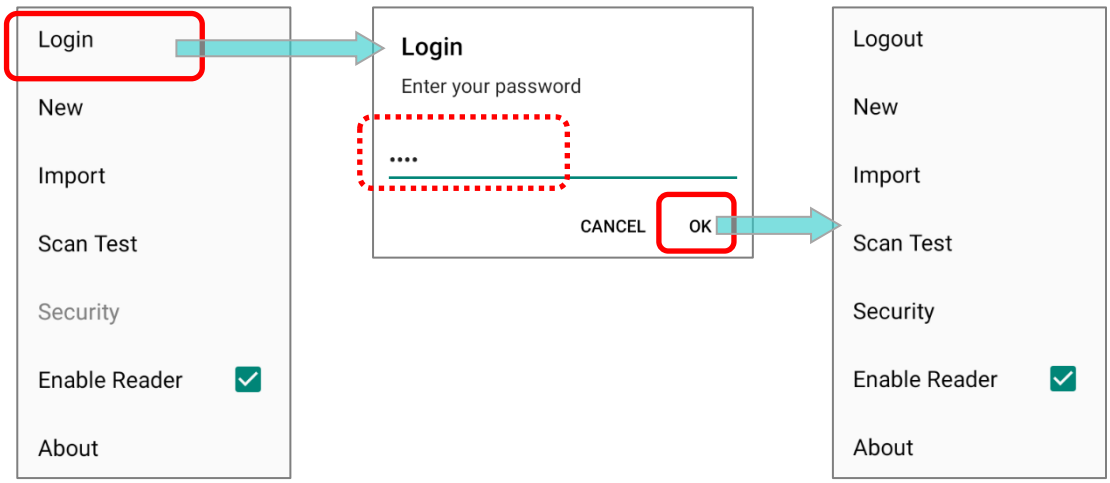
SECURITY

You can set a password to restrict other users of this mobile computer from changing certain configurations or accessing certain functions in ReaderConfig.

1) Open **ReaderConfig** as described in Launch ReaderConfig.
2) Tap the more button ⋮ on the action bar to open the option menu.
3) Tap **Security**.
4) Enter and confirm a password
   (up to 32 characters, containing at least 1 digit or 1 alphabetic letter).
5) Check the items that will be protected by this password.



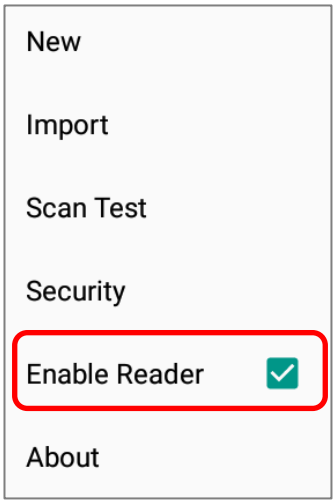
Once security password is enabled, "**Security**" and the password-protected features become unavailable after logging out. User needs to enter the password to login to perform the function(s) locked by the password.



ENABLE READER

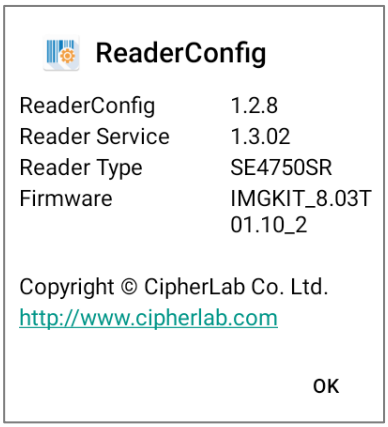
Tick or untick the checkbox to enable or disable reader scanning ability. When enabled, a light beam will be sent out from the scanning window each time the trigger (scan key) is pressed.

By default, the reader is enabled.



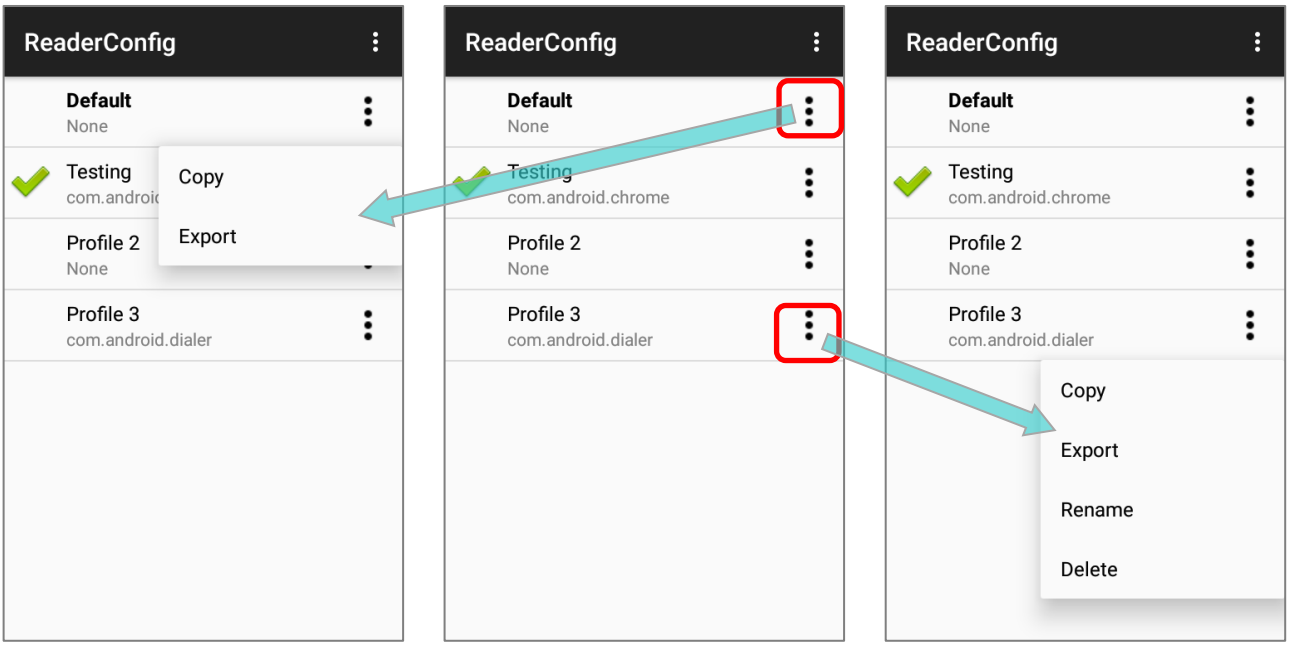
ABOUT

Tap **About** in the **ReaderConfig** main menu to display software version and copyright information.



6.1.2. PROFILE MENU

Tap more button on the right of the profile to display the profile menu. The profile menu contains options that are specific to the profile. The options are described in the followings sections:

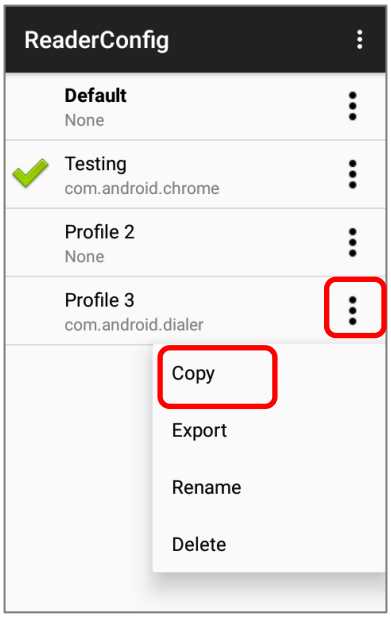


Default Profile Menu **Profile Menu**

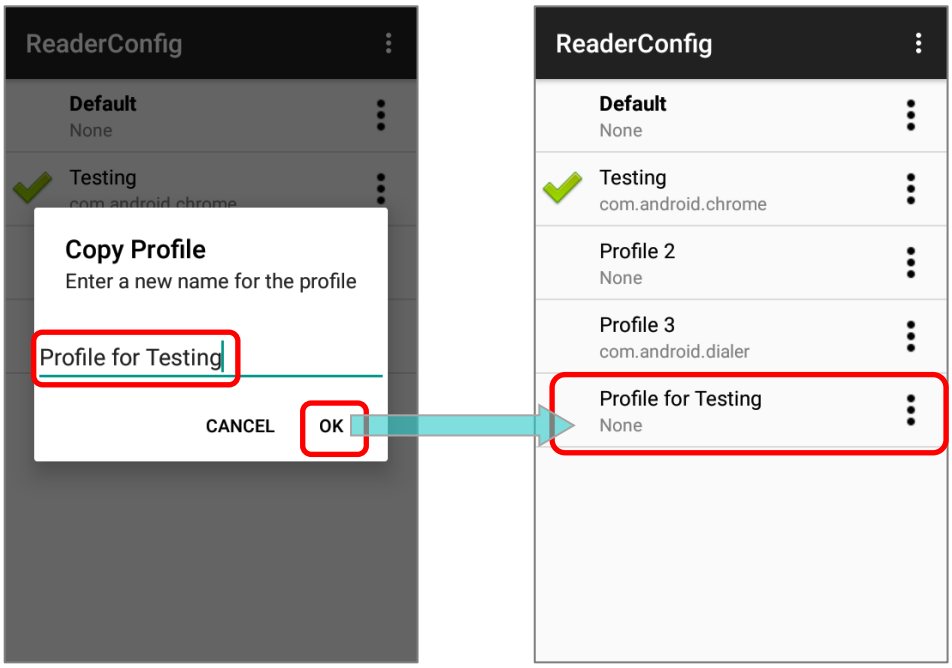
COPY

You can copy an existing profile and make changes from it. To copy a profile:

1) Tap the more button next to the profile you would like to copy, and select "**Copy**" from its profile menu.



2) Enter a name for the new profile and press the "**OK**" button to make a copy.



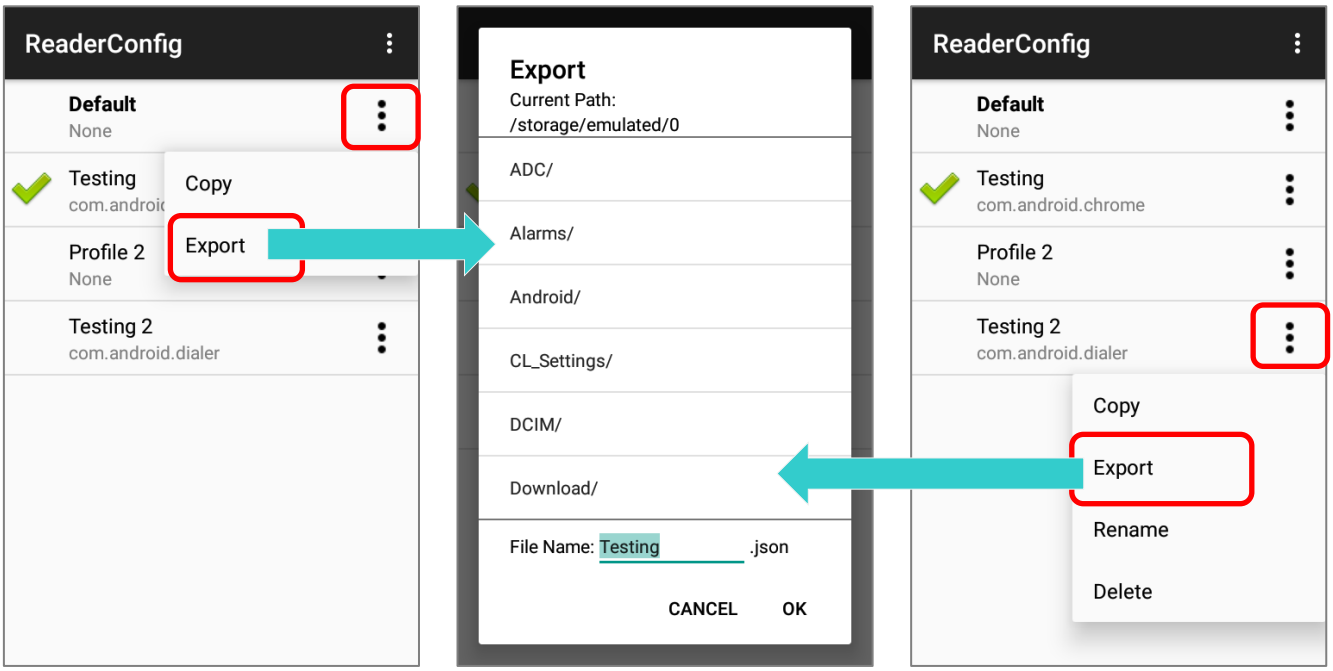
Note:
An app can be set as the associated app to only one profile. Thus, the "Profile" part will not be duplicated when copying a profile.

EXPORT

To export a profile, tap the more button next to the profile that you would like to export and select "**Export**". An export page opens allowing you to enter the name and location of the profile to save.

Tap **OK** to export. A prompt will appear on-screen to notify that settings have been exported.

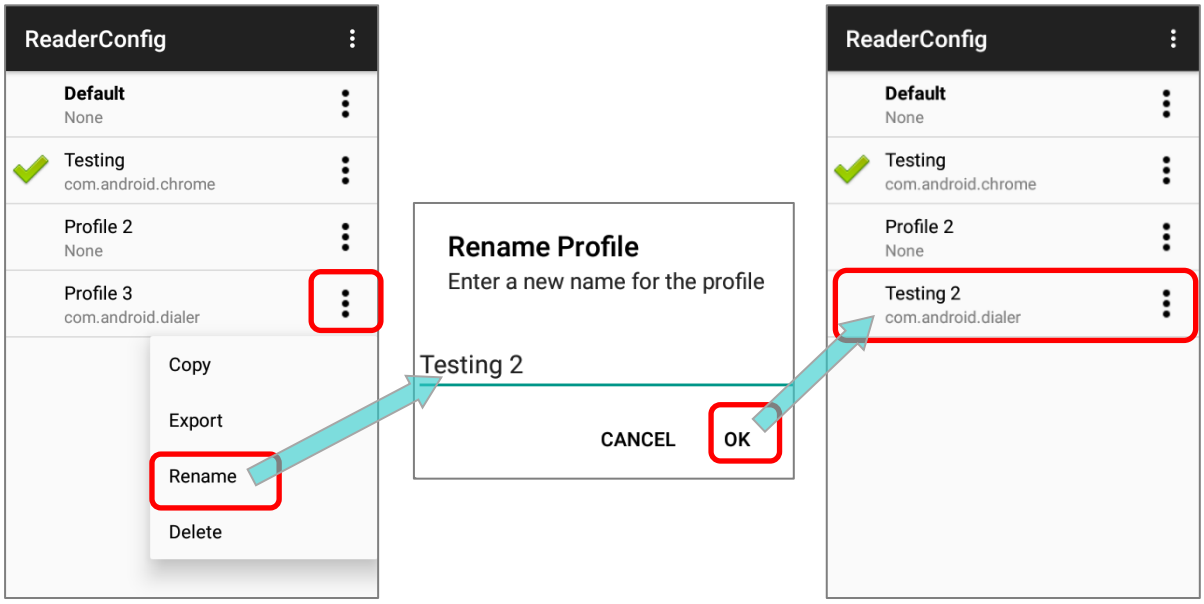
Default Profile Menu **Profile Menu**



Note: **The exporting profiles will be saved as a .json file.**

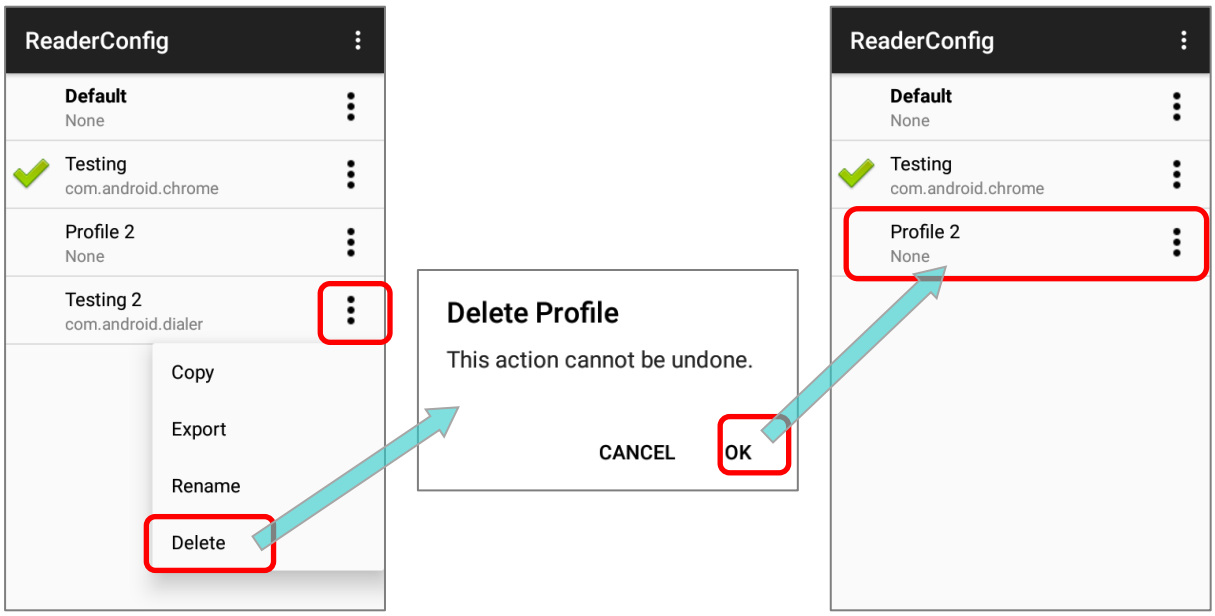
RENAME

To rename an existing profile, simply tap on the more button next to the profile you'd like to rename and select "**Rename**". Then, enter a new name for the profile. Finally, tap "**OK**" button to change its name.



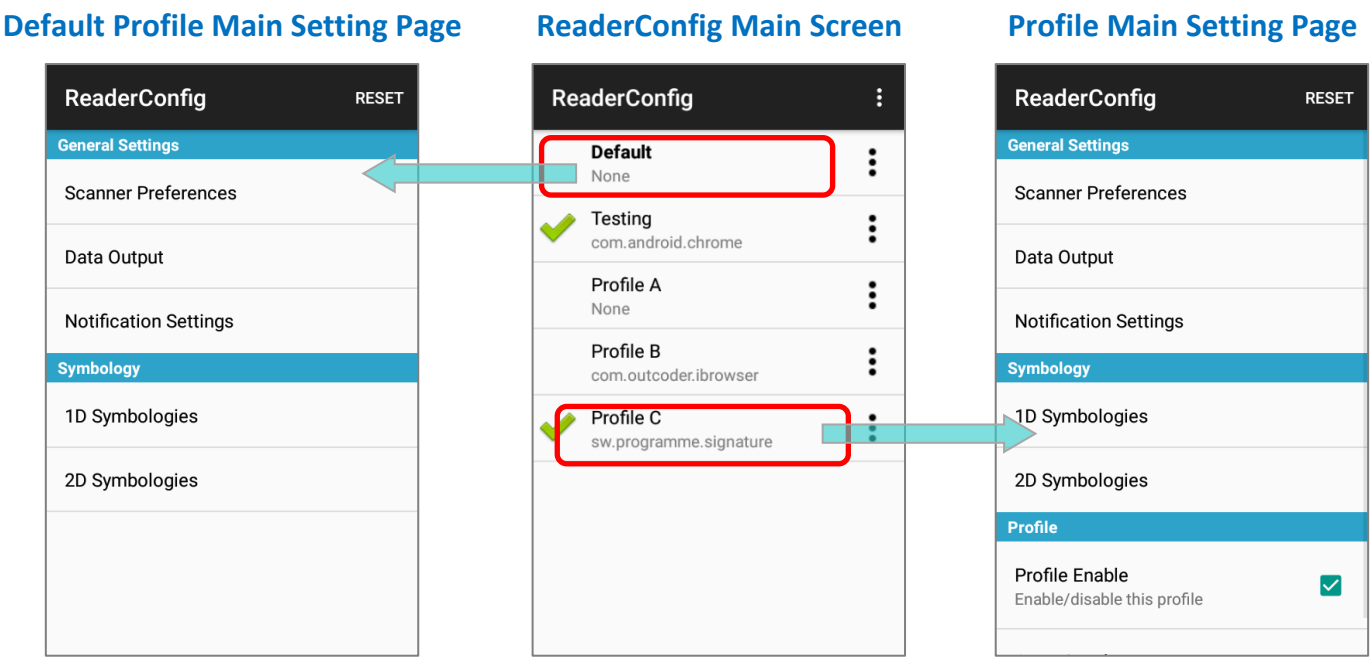
DELETE

To delete a profile, simply tap on the more button next to the profile you would like to delete and select "**Delete**". Tap "**OK**" on the confirmation dialog to delete the profile.



6.2. CONFIGURING READER

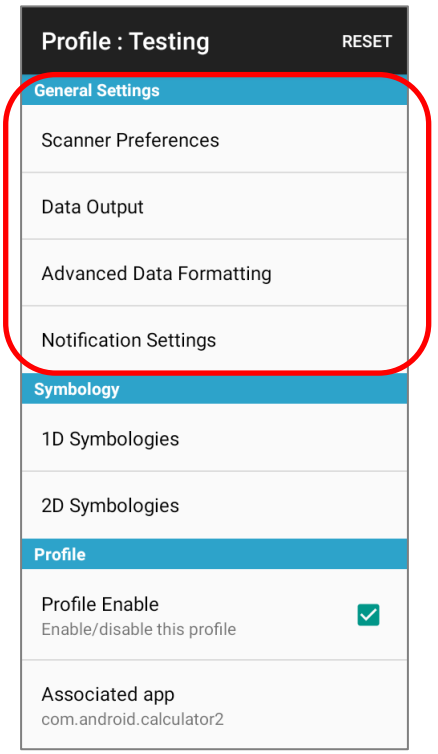
Tap on a profile to enter the profile main page for further settings.



ReaderConfig launches in context with the reader module(s) on board the mobile computer. On the profile main settings page are three sections: **General Settings**, **Symbology** and **Profile**.

6.2.1. GENERAL SETTINGS

General Settings is where all reader settings are accessed from. Tap each item to enter its sub-menu.



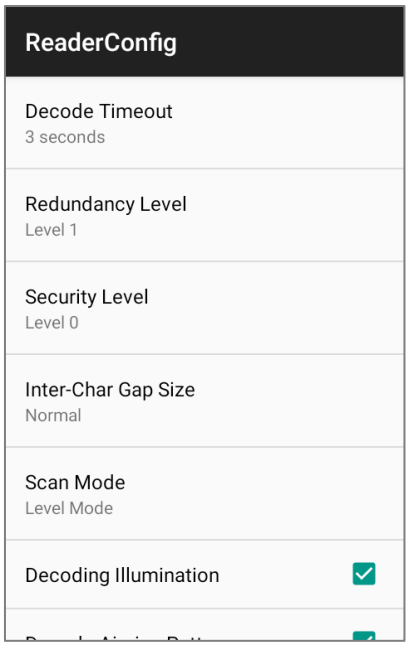
The functions under **General Settings** include:

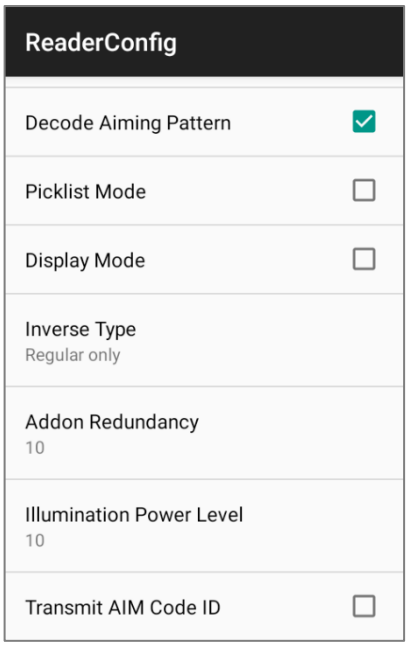
- Scanner Preferences
- Data Output
- Advanced Data Formatting
- Notification Settings

SCANNER PREFERENCES

Options on the **Scanner Preferences** page differ according to the type of scan engine built within the mobile computer.

Simply tap on Scanner Preferences to open Scanner Preferences page:





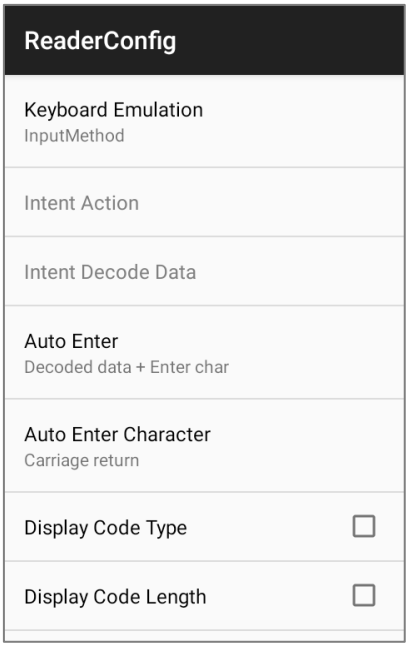
2D IMAGER SETTINGS

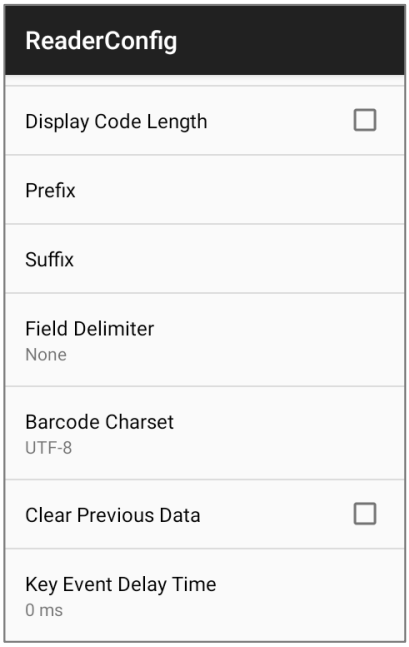
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Timeout</td><td>Sets the maximum time for the decoding process during a scan. Configurable between 1 sec to 9 sec.</td><td>3 sec.</td></tr>
<tr><td>Redundancy Level</td><td>Sets how many successful readings should be done before linear barcodes such as Codabar, MSI, and Interleaved 2 of 5 can be decoded. Levels 1 to 4 available.</td><td>Level 1</td></tr>
<tr><td>Security Level</td><td>Sets the security level to ensure decoding accuracy considering the printed quality of barcodes such as Code 128, Code 93, and UPC/EAN. The higher the level is, the more security is ensured. Options are:
<table>
<tr><th>Level</th><th>Description</th></tr>
<tr><td>0</td><td>With this default, the scan engine is aggressive enough to decode most “in-spec” barcodes.</td></tr>
<tr><td>1</td><td>Select this level if misdecodes have occurred. It fixes most misdecodes.</td></tr>
<tr><td>2</td><td>Select this level if Level 1 should fail to eliminate misdecodes.</td></tr>
<tr><td>3</td><td>Select this level if Security Level 2 should fail to prevent misdecodes. However, as this level actually impairs the decoding ability of the decoder, a safer solution would be to improve the quality of the bar codes to read.</td></tr>
</table></td><td>Level 0</td></tr>
</table>

Setting	Description	Default
Inter-Char Gap Size	Sets the intercharacter gap size for Code 39 and Codabar. This option is to allow the digital scanner to adjust its decoding standard so as to tolerate out-of-specification bar codes that are improperly printed out (which may cause the intercharacter size to become larger). Switch between **Normal** and **Large**.	Normal
Scan Mode	Sets the reader's scanning behavior. **Level Mode**: The decoding process is activated by a trigger event, and continues until the trigger event ends, a valid decode happens or decode session time-out is reached. **Presentation Mode:** When this device is executing Barcode reader service under this mode, the reader module will stay active and automatically turn off after the user-defined period of time (Presentation Usage Time). **Release Scan Mode**: Keep pressing the scan key to project the aiming pattern, and the decoding process is not triggered till the scan key is released. **Aimer Mode**: Press the scan key once to project the aiming pattern, and then press the scan key again (before the aiming pattern fades) to trigger the decoding process. The aiming pattern fades after decoding successfully. **Level and Aim Mode:** Press the scan key once to project the aiming pattern and then press again to decode. The aiming pattern remains after successfully decoding, and the reader is ready to decode by pressing the scan key again.	Level Mode
Aimer Mode Timeout	A time period that the aiming pattern is projected for **Aimer Mode**. This function is only available when setting **Scan Mode** as **Aimer Mode**.	3
Decoding Illumination	Enables an LED light beam to aid barcode reading.	Selected (Enabled)
Decode Aiming Pattern	Projects a crosshair at the center of the laser light beam to facilitate barcode reading.	Selected (Enabled)
Picklist Mode	When selected, only barcodes aligned at the crosshair of the laser light beam will be decoded.	Deselected (Disabled)
Display Mode	Enable improved performance for reading barcodes on electronic displays and mobile phones.	Deselected (Disabled)
Inverse Type	Decide whether to disable or enable decoding inverse barcodes, or set as auto.	Regular only
Addon Redundancy	Functions when "auto-discriminate" is applied for UPC/EAN addons. Decides the number of times of supplemental decoding of the same barcode in order to count as a valid read. Configurable between 2 and 30.	10
Illumination Power Level	Users can adjust the illumination brightness of the LED light source. Move the slider to specify a value ranging from 1 to 10 to set the brightness level which is set to 10 by default meaning 100% illuminated.	10
Transmit AIM Code ID	Sets whether to include AIM code ID character in the decoded data. For AIM code ID, see the following: Code 128 Emulation of 2D Imager Symbology Settings.	Deselected (Disabled)

DATA OUTPUT

Data Output allows users to set the way to output decoded data.





DATA OUTPUT METHOD

Keyboard Emulation setting controls in which way the data is sent. Tap the switch to enable. When enabled, the reader module treats decoded data as typed text and outputs it to the active application on the mobile computer. The default setting is "**Input Method**", and the options are:

Item	Descriptions
None	Disables keyboard emulation. The decoded data will be sent by the broadcast intent message. By selecting "None", you can further set the followings: ▸ **Intent Action:** Specify the intent name according to the application which will receive the decode intent. ▸ **Intent Decode Data:** Define the intent data name according to the application which will receive the decode intent.

Item	Descriptions
Input Method	Allows the active application to receive characters or symbols that can be input by the input method.
Key Event	Allows the active application to receive characters or symbols that can be input by key events.
Copy & Paste	Copy the decoded data and paste it to the active application.
Intent & KeyEvent	To send the decoded data by both “None” & “Key Event”.

HOW TO OUTPUT

After determining the keyboard emulation type, please configure how to output decoded data, i.e. the “format” to present decoded data.

Setting	Description	Default
Timeout between Input Method	To specify the pause time between data to be transmitted. The function is unavailable if “**Data Output**” is set as “**Password-protected features**”.	
Auto Enter	Adds an ENTER character before or after each string of decoded data. The ENTER character can be defined in the “Auto Enter character” field below. This function saves the trouble of pressing a confirmation key to accept each string of decoded data. Options are: ▸ Disable ▸ Decoded data + Enter char ▸ Enter char + Decoded data	Decoded data + Enter char
Auto Enter character	Adds a key code before or after the decoded data. If [Auto Enter] is enabled, select the ENTER character to send. Options are: ▸ None ▸ Carriage Return ▸ Tab ▸ Space ▸ Comma ▸ Semicolon	Carriage Return
Display Code Type	Prefixes the output data with code type information.	Deselected (Disabled)
Display Code Length	Suffixes the output data with code length information.	Deselected (Disabled)

Setting	Description	Default
Prefix	Affixes 0 to 20 characters to the left of the output data. Tap the label to open a character table for entering the prefix. Prefixes containing invisible characters are supported.	--
Suffix	Affixes 0 to 20 characters to the right of the output data. Tap the label to open a character table for entering the suffix. Suffixes containing invisible characters are supported.	--
Field Delimiter	Sets the delimiter to separate the output barcode data to the following pieces: code type, decoded barcode data, and code length (if applicable). Options are: ▸ None ▸ Comma ▸ Semicolon ▸ Full stop	None
Barcode charset	Specifies the current decoding for barcode data.	Windows-1252:Western European
Clear Previous Data	By enabling this option, only the last scanned data entry will be output.	Deselected (Disabled)
Key Event Delay Time	Set the millisecond you need to postpone the key event triggered by the decoded data.	0 ms

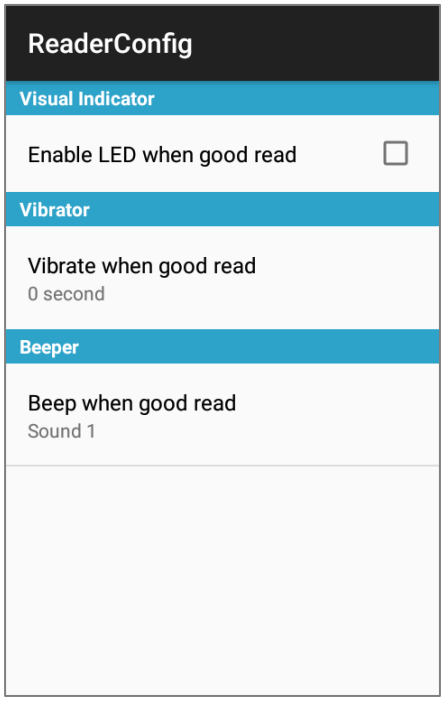
ADVANCED DATA FORMATTING

Advanced Data Formatting is to customize the decoded data and then output it by rules, and therefore **Advanced Data Formatting** rule(s) needs to be created beforehand. A rule combines "**criteria**" with "**actions**" to be performed. If the decoded data meets the "criteria", it will be output according to the "actions".

Please refer to section 6.2.2 "Advanced Data Formatting" for further description.

NOTIFICATION SETTINGS

Notification Settings enables audible, visible and tactile feedback for scanning good read, which helps notify the user of a successful decoding.



Setting		Description	Default
LED	Enable LED when good read	Selects to enable/disable LED light (left) for scanning good read. See **Status LED** for details.	Deselected (Disabled)
Vibrator	Vibrate when good read	Enables/disables tactile feedback (vibration) for good read and sets the duration to vibrate.	0 second (Disabled)
Beeper	Beep when good read	Sets the beeper sound for scanning good read. Users can choose to mute the beeper sound, or configure the beeper between sounds 1 to 9.	Sound 1

6.2.2. ADVANCED DATA FORMATTING

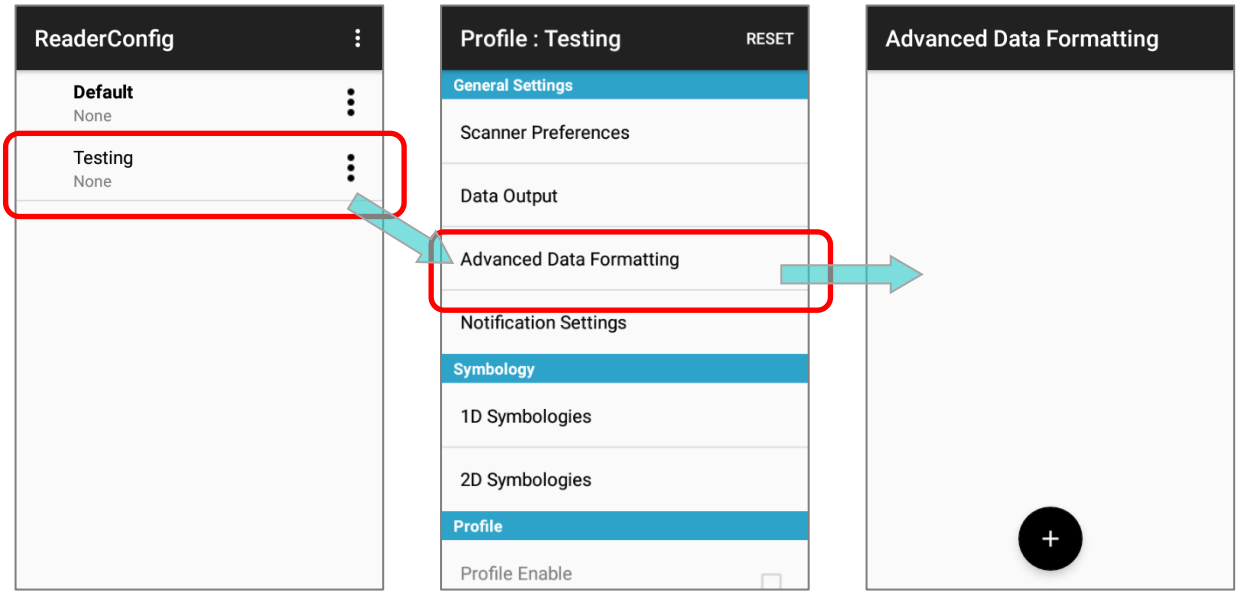
User can customize the output data through the defined rules in "**Advanced Data Formatting**".

CREATE A NEW RULE

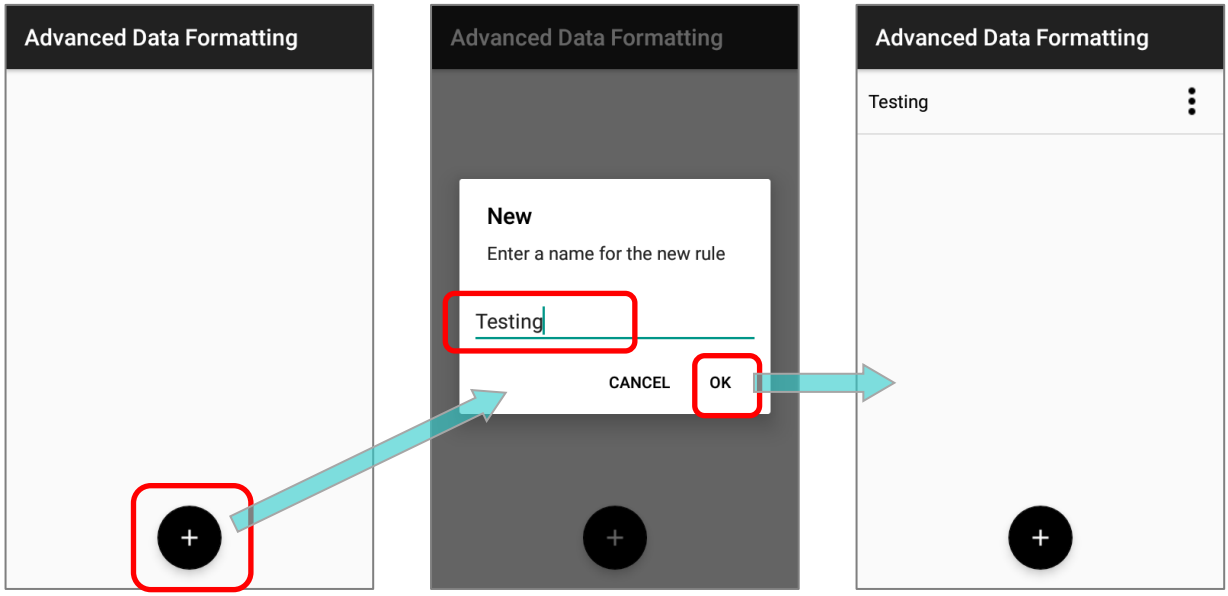
Please follow the steps below to create a new rule:

1) Launch the app **ReaderConfig** and tap to enter the profile you would like to set.

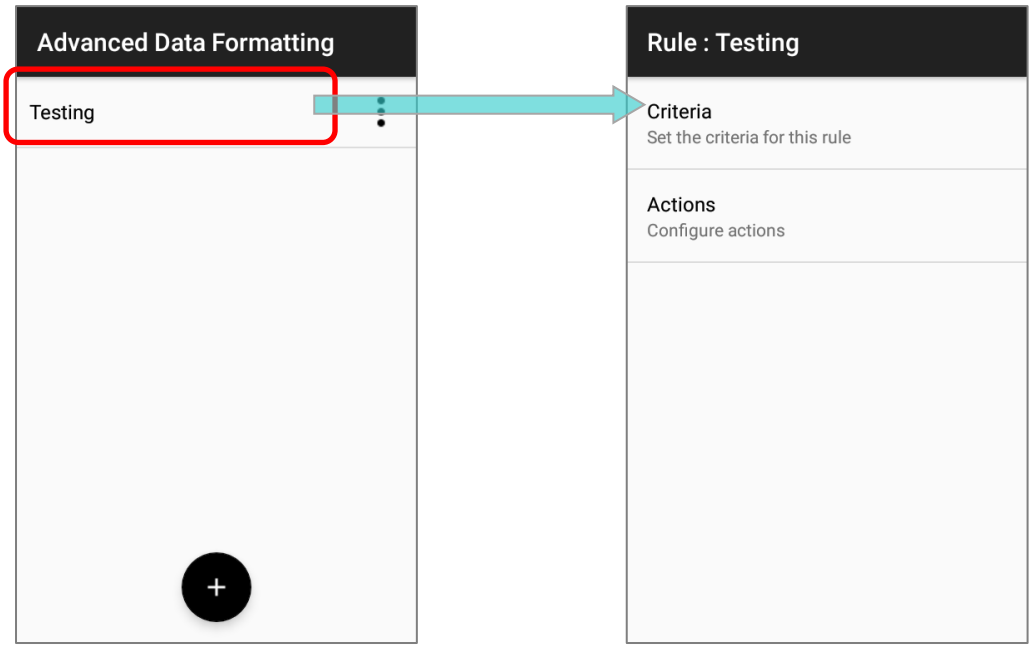
2) Tap on "**Advanced Data Formatting**".



3) Tap on the "**Add**" button + and enter the name for this new rule. Create it by tapping on "**OK**".

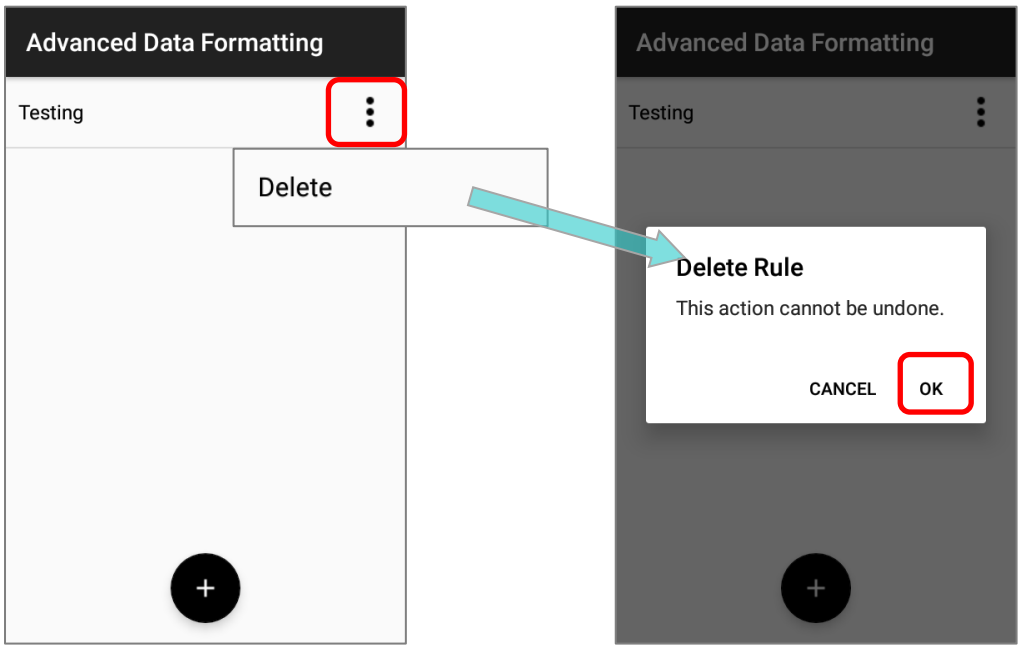


The rule is created, and now you can enter its main page for further settings in "**Criteria**" and "**Actions**" to specify your customized reformatting instructions.



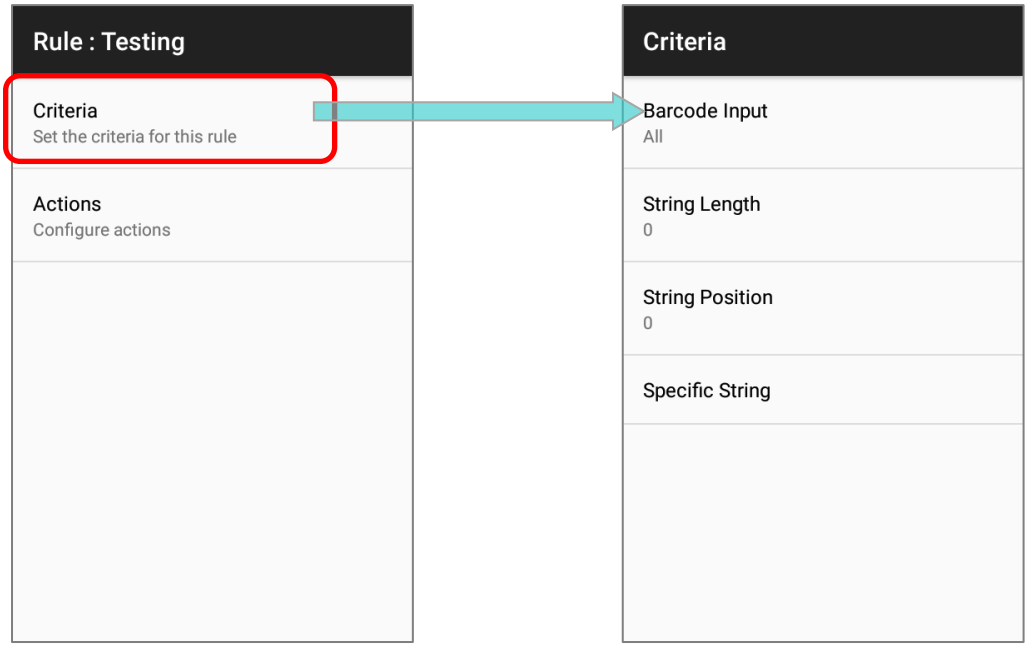
DELETE A RULE

To delete a rule, tap on the more button next to the rule to be removed and then "**Delete**". Confirm deleting it by tapping on "**OK**".



CRITERIA

"**Criteria**" is to set the limits and requirements to filter the decoded data. When the barcode is read and the input data fulfils the "**criteria**", it will be dealt with by the associated "**actions**" which defines the output data format.



The available criteria to be set are:

Item	Description
Barcode Input	To designate the barcode symbology. By selecting "**All**", all the barcode symbologies will be reformatted by "**actions**".
String Length	To set the barcode length to limit the decoded data to be reformatted.
String Position	This function works with "**Specific String**" to designate the particular position this specific string should be in. By selecting "**0**", the specific string can be in any position.
Specific String	To designate the string the decoded data must include.

The decoded data should meet all the criteria you set and then the data will be reformatted by "**actions**" before outputting.

EXAMPLE

The followings are the examples of barcodes to be filtered by criteria:

Barcode	Details	
Barcode 1	**Symbology:**	EAN13
	Barcode data:	0001112223334
	Length:	13
Barcode 2	**Symbology:**	EAN13
	Barcode data:	4445556667778
	Length:	13
Barcode 3	**Symbology:**	EAN13
	Barcode data:	888999000
	Length:	9A
Barcode 4	**Symbology:**	Code39
	Barcode data:	5555222221111
	Length:	13

If the criteria are set as:

1) "**Barcode Input**" is "**All**":

Barcode 1 (EAN13), Barcode 2 (EAN13), Barcode 3 (EAN13), and Barcode 4 (Code39) all match the criteria.

2) "**Barcode Input**" is "**EAN13**":

Barcode 1 (EAN13), Barcode 2 (EAN13), and Barcode 3 (EAN13) meet the criteria.

3) "**Barcode Input**" is "**EAN13**", and "**String Length**" is "**9**":

Only Barcode 3 (EAN13; length= 9) matches the criteria.

4) "**Barcode Input**" is "**EAN13**", and "**String Length**" is "**10**":

None of the barcodes fulfils the criteria.

5) "**Barcode Input**" is "**All**", and "**String Length**" is "**13**":

Barcode 1 (EAN13; length= 13), Barcode 2 (EAN13; length= 13), and Barcode 4 (Code39; length= 13) meet the criteria.

6) "**Barcode Input**" is "**All**", and "**Specific String**" is "**000**":

Barcode 1 (EAN13; 0001112223334) and Barcode 3 (EAN13; 888999000) meet the criteria.

7) "**Barcode Input**" is "**All**", and "**Specific String**" is "**111**":

Barcode 1 (EAN13; 0001112223334) and Barcode 4 (Code39; 5555222221111) match the criteria.

8) "**Barcode Input**" is "**All**", "**Specific String**" is "**111**", and "**String Position**" is "**4**":

Only Barcode 1 (EAN13; 0001112223334) matches the criteria.

9) "**Barcode Input**" is "**All**", "**Specific String**" is "**111**", and "**String Position**" is "**1**":

None of the barcodes fulfils the criteria.

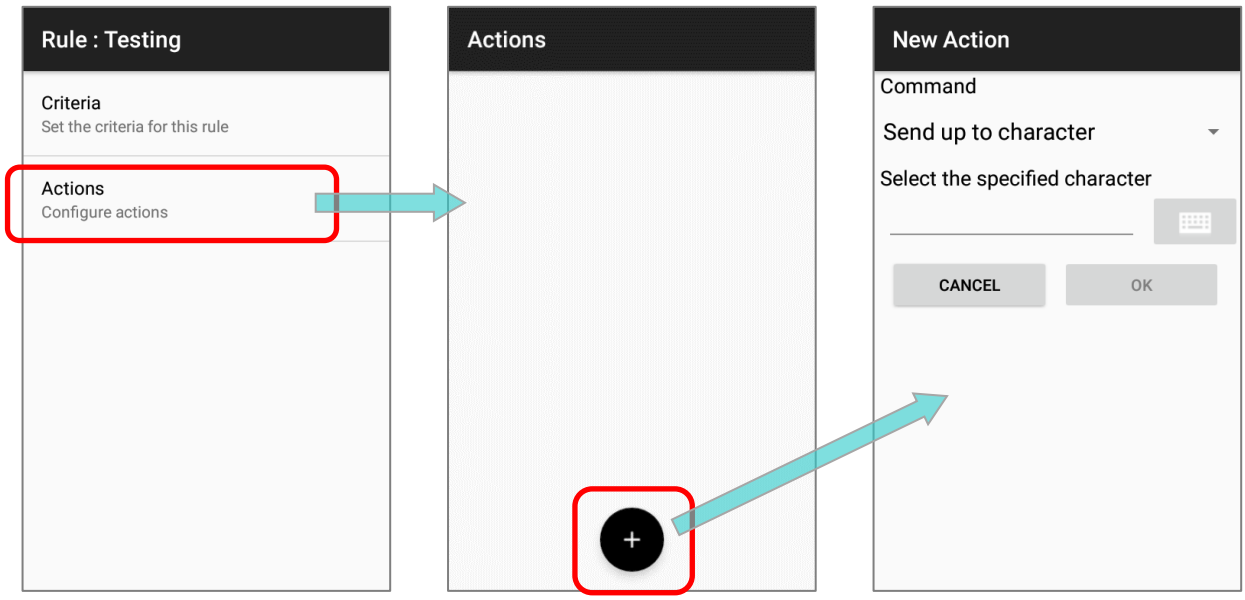
ACTIONS

A rule contains multiple "**actions**" which process the decoded barcode data conforms to the "**criteria**" and reformat the data to be transmitted.

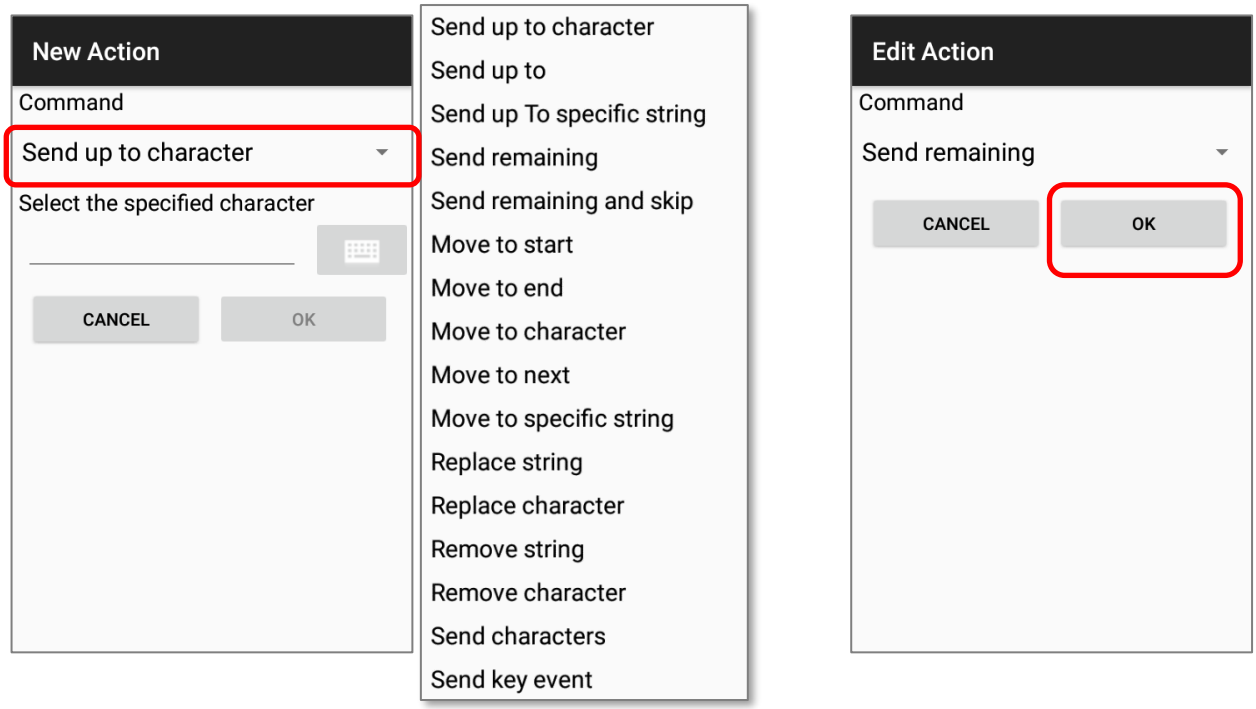
CREATE A NEW ACTION

Please follow the steps to create a new action and define the reformatting instructions:

1) Tap on the "**Add**" button ⊕ and "**New Action**" page shows up:



2) Select the command from the drop-down menu, enter the necessary item(s) depending on the command you choose, and tap on "**OK**" to save the action.



The available commands are devided into 6 groups:

SEND BARCODE DATA

"**Send Barcode Data**" actions affect the output character field and the output length (count of characters). All the other kinds of actions must collaborated with the "**Send Barcode Data**" actions to reformat the barcode data to be sent out.

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>Send up to character</td><td>To set a specific character as a period, and only the part anterior to this specific character will be output.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Send data up to "3".</td></tr>
<tr><td>The output data:</td><td>000111222</td></tr>
</table></td></tr>
<tr><td>Send up to</td><td>To set how many characters to be output.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Send up to "3" characters.</td></tr>
<tr><td>The output data:</td><td>000</td></tr>
</table></td></tr>
<tr><td>Send up To specific string</td><td>To send the part up till the specific string (this specific string is excluded).
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Send up to the string "333".</td></tr>
<tr><td>The output data:</td><td>000111222</td></tr>
</table></td></tr>
<tr><td>Send remaining</td><td>This command works with those commands of "Move Cursor" to send the data posterior to the cursor.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Move cursor to next 1.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>001112223334</td></tr>
</table></td></tr>
<tr><td>Send remaining and skip</td><td>To send all the data (posterior to the cursor) aside from the last character(s) you set.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Send all the data that remains and skip the last 1.</td></tr>
<tr><td>The output data:</td><td>000111222333</td></tr>
</table></td></tr>
</table>

MOVE CURSOR

The actions of "**Move Cursor**" must work with those "**Send Barcode Data**" actions to define the start position to output the decoded data.

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>Move to start</td><td>To move the cursor to the very beginning.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Move cursor to the start.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>0001112223334</td></tr>
</table></td></tr>
<tr><td>Move to end</td><td>To move the cursor to the end.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Move cursor to the end.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>None.</td></tr>
</table></td></tr>
<tr><td>Move to character</td><td>To move the cursor in front of the specific character you set.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Move cursor to the character "2".
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>2223334</td></tr>
</table></td></tr>
<tr><td>Move to next</td><td>To move the cursor to the specific position from the beginning.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Move cursor to the next "5".
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>12223334</td></tr>
</table></td></tr>
<tr><td>Move to specific string</td><td>To move the cursor in front of the specific string you set.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Move cursor to the string "333".
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>3334</td></tr>
</table></td></tr>
</table>

REPLACE DATA

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>Replace String</td><td>To replace the speicifc string with the one you designate.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Replace the string “333” with “CCC”.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>000111222CCC4</td></tr>
</table></td></tr>
<tr><td>Replace character</td><td>To replace the speicifc character with the one you designate.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Replace the character “0” with “C”.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>CCC1112223334</td></tr>
</table></td></tr>
</table>

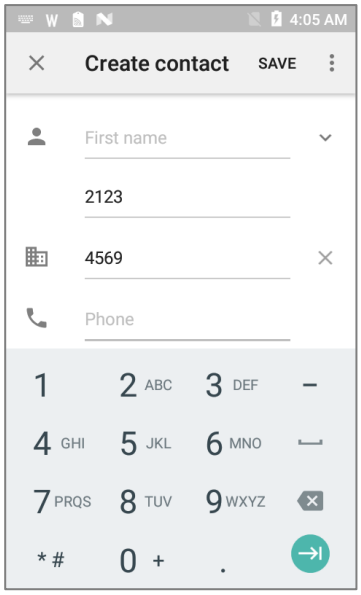
REMOVE DATA

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>Remove string</td><td>To delete the specific string.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Remove the string “222”.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>0001113334</td></tr>
</table></td></tr>
<tr><td>Remove character</td><td>To delete the specific character.
<table>
<tr><th colspan="2">Example</th></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Remove the character “3”.
Send all the data that remains.</td></tr>
<tr><td>The output data:</td><td>0001112224</td></tr>
</table></td></tr>
</table>

SEND CHARACTER

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>Send character</td><td>To add a specific character in front of the output data.
<table>
<tr><td colspan="2">Example</td></tr>
<tr><td>The decoded data:</td><td>0001112223334</td></tr>
<tr><td>Actions:</td><td>Send the character “C”.
Send up to “5” characters</td></tr>
<tr><td>The output data:</td><td>C00011</td></tr>
</table></td></tr>
</table>

SEND KEYEVENT

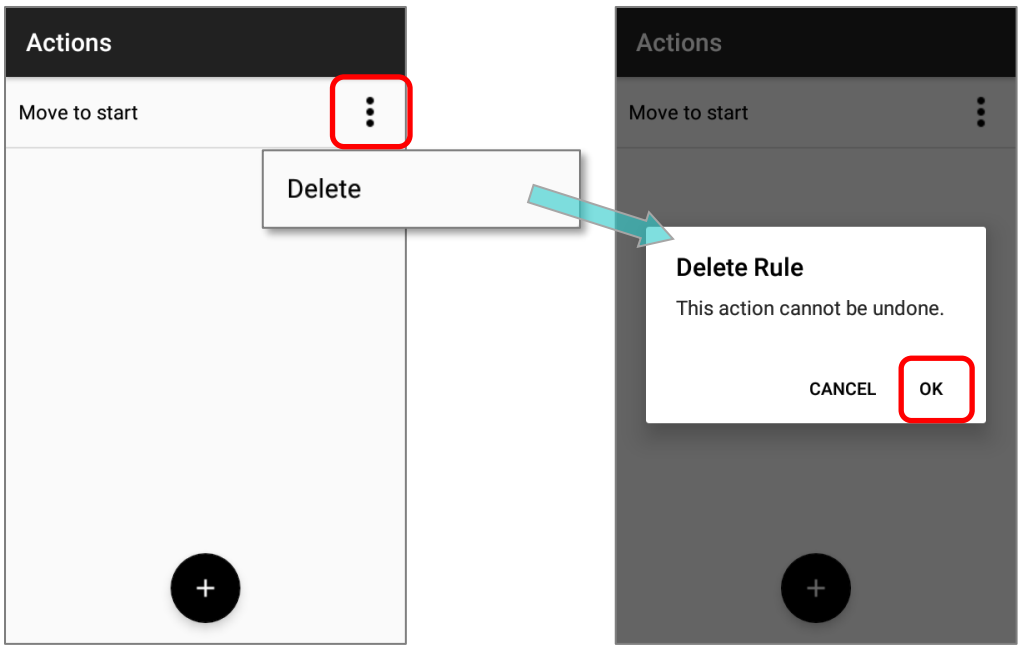
<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>Send key event</td><td>To make a “Send key event” action to be effective, “Keyboard Emulation” should be set as “KeyEvent”.
The following example is to output the data to two fields by “KeyEvent”:
<table>
<tr><td colspan="2">Example</td></tr>
<tr><td>The decoded data:</td><td>21234569</td></tr>
<tr><td>Actions:</td><td>Send data Next 4
Send KeyEvent 0x1D
Sebd Data Next 4</td></tr>
<tr><td>The output data:</td><td> 
</td></tr>
</table></td></tr>
</table>

Note: The decoded data is processed by actions sequentially. The permutation of actions affects the output data, that is, different permutations of actions may result in different output data.

DELETE AN ACTION

1) Tap on more button on the right of the action and select "**Delete**" from the menu.

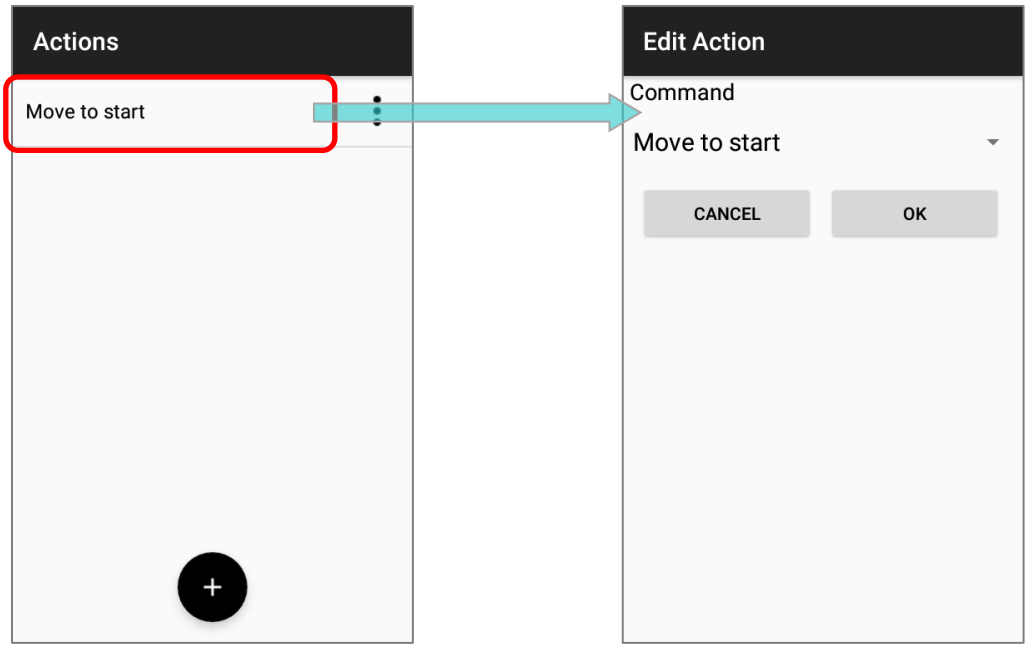
2) Confirm that deleting this action by tapping on "**OK**".



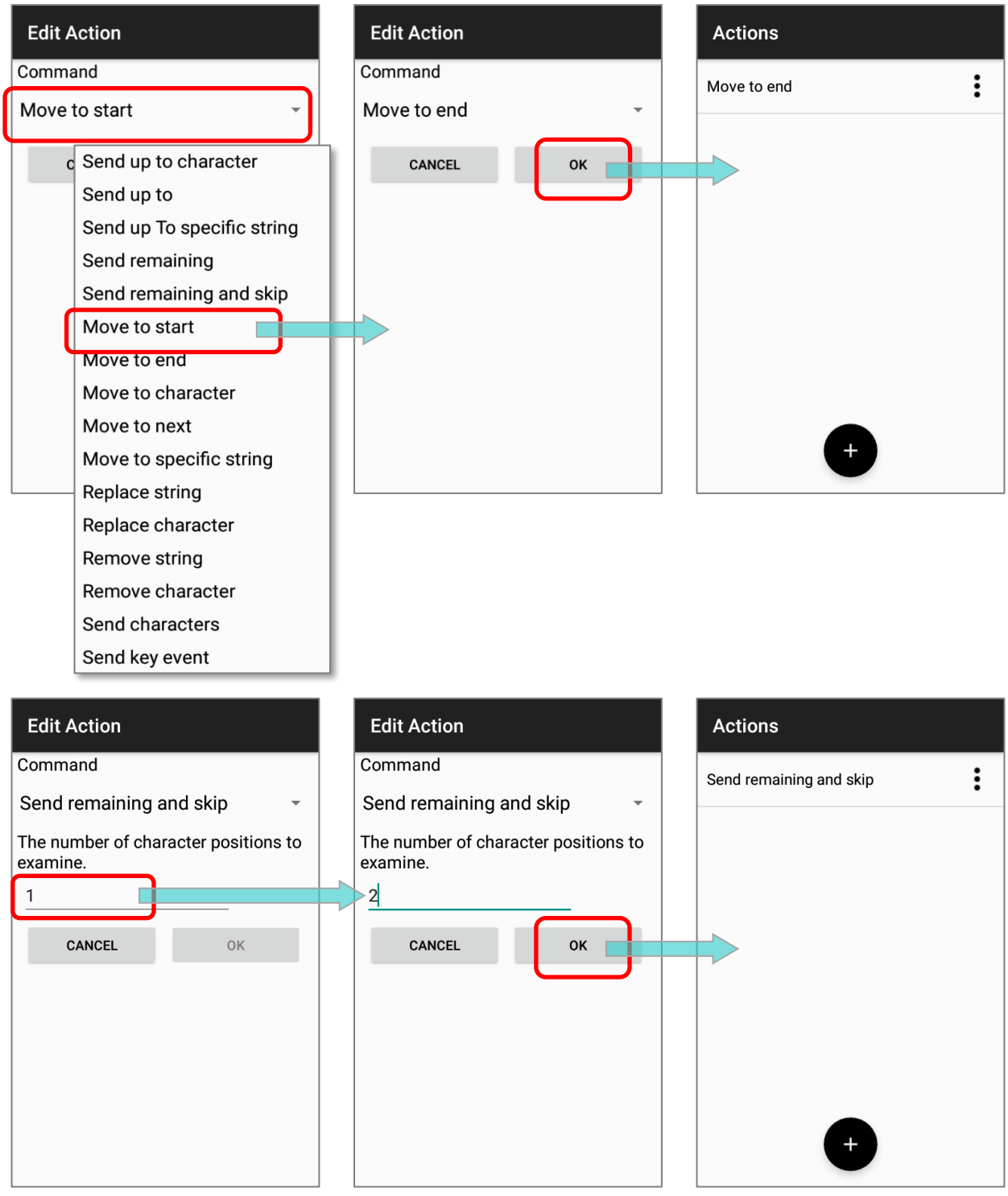
EDIT AN ACTION

To modify an existed action:

1) Tap on the action to be modified to enter "**Edit Action**" page.



2) Select other command or make change of this command and then tap on "**OK**" to complete editing action.



Note:

To make "Advanced Data Formatting" work, the profile must be enabled.

EXAMPLES

The followings are some examples of **Advanced Data Formatting**:

EXAMPLE 1

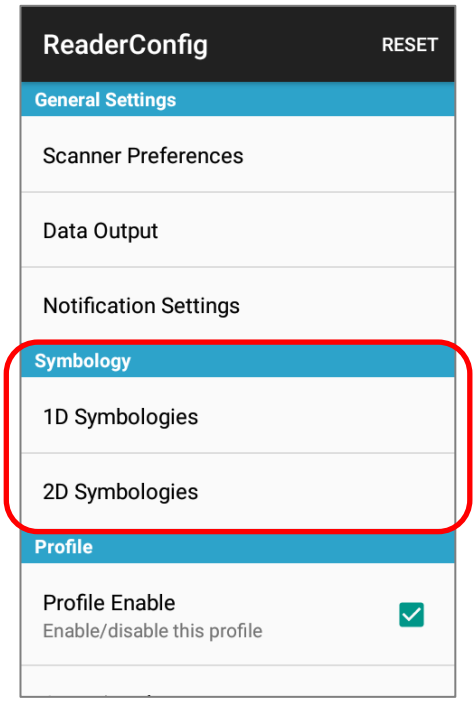
<table>
<tr><td>Code Type</td><td>GS1-128</td></tr>
<tr><td>Barcode</td><td>1193160905021011063294</td></tr>
<tr><td>Criteria</td><td>Barcode Input = GS1-128 (EAN 128)</td></tr>
<tr><td>Actions</td><td>
<table>
<tr><th>Action</th><th>Process</th></tr>
<tr><td>Move Cursor To Next 3</td><td>1193160905021011063294</td></tr>
<tr><td>Send Data Next 5</td><td>1193160905021011063294</td></tr>
<tr><td>Move Cursor To Next 7</td><td>1193160905021011063294</td></tr>
<tr><td>Send Data Next 7</td><td>119316090502101063294</td></tr>
</table>
</td></tr>
<tr><td>Result</td><td>316091063294</td></tr>
</table>

EXAMPLE 2

<table>
<tr><td>Code Type</td><td>EAN8</td></tr>
<tr><td>Barcode</td><td>21234569 and 11234569</td></tr>
<tr><td>Criteria</td><td>Barcode Input = EAN8
Specific String = 2
String Position = 1</td></tr>
<tr><td>Actions</td><td>Send All Data That Remains
Send Character 0
Send Character 0
Send Character 0
Send Character 0
Send Character 0</td></tr>
<tr><td>Result</td><td>2123456900000
But barcode is 11234569 without change.</td></tr>
</table>

6.2.3. SYMBOLOGY

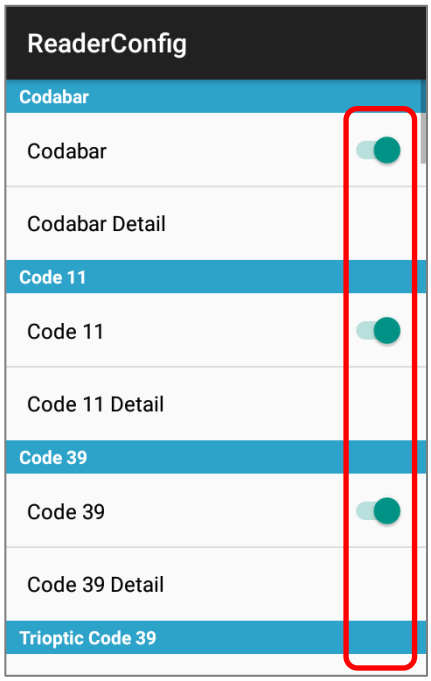
The **Symbology** page sets the symbologies to read, and also enables/disables some feature(s) for a symbology to read, such as:



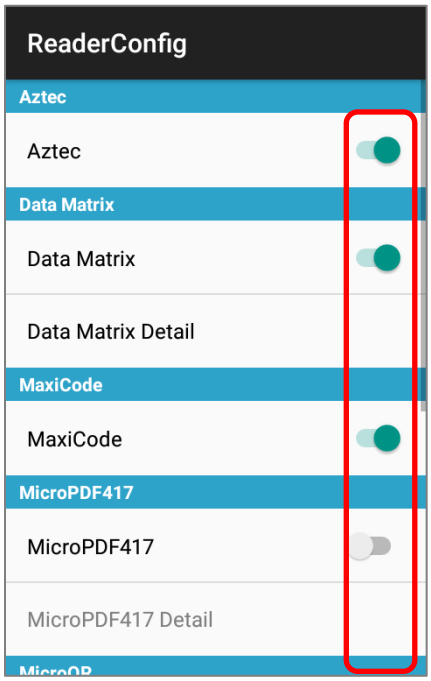
- Customize and transmit start/stop characters
- Verify/transmit check digits
- Enable/disable addon digits
- Convert to another symbology
- Transmit symbology ID

To open **Symbology** settings page, simply tap **1D Symbologies** or **2D Symbologies** (in case of a 2D imager) to list all symbologies which can be decoded.

1D Symbologies



2D Symbologies

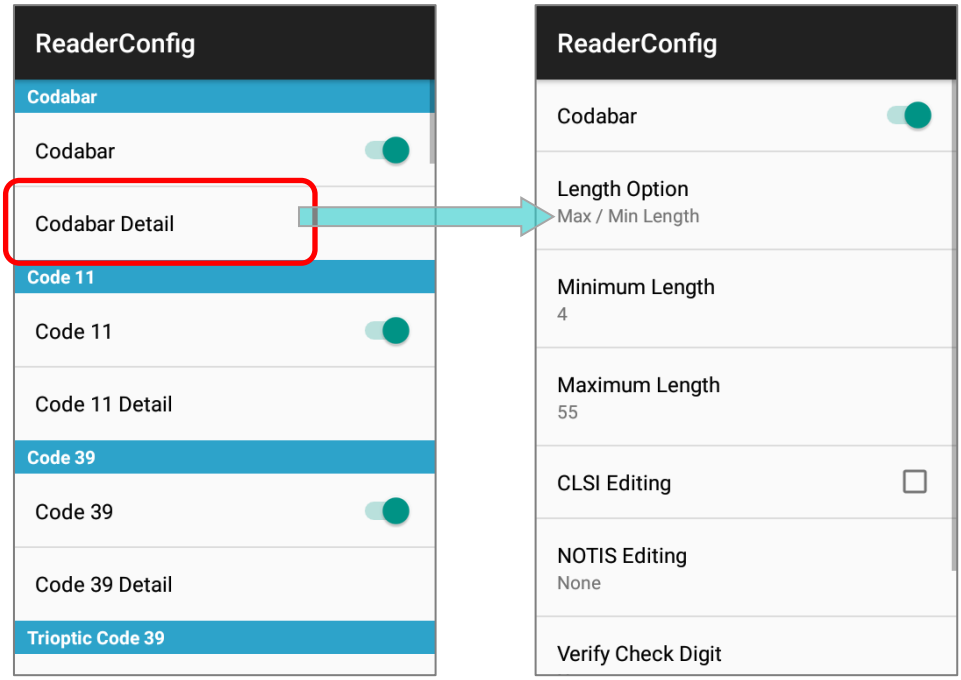


ENABLE/DISABLE SYMBOLOGY

Tap the label of each symbology to enable or disable it.

SYMBOLOGY SETTINGS

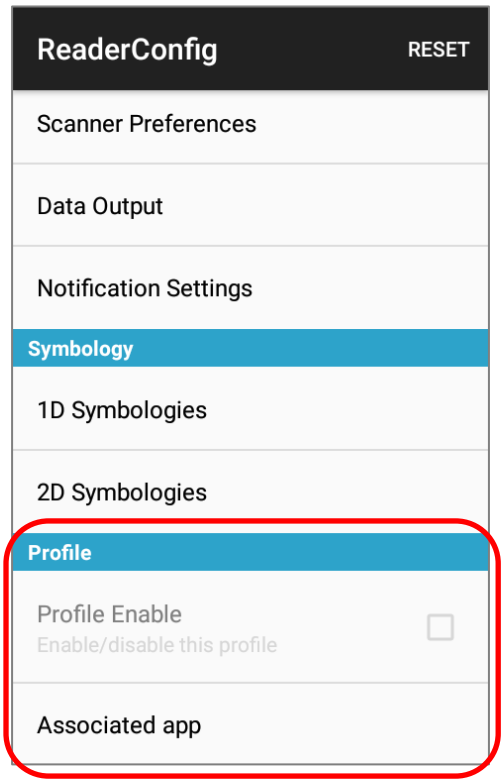
Tap the **Detail** label below each symbology to access detailed settings for the specific symbology.



For details about the featured settings, please refer to 2D Imager Symbology Settings.

6.2.4. PROFILE

With an "**Associated app**", the profile can be enabled, and the "**Associated app**" will receive the decoded data output by **ReaderConfig** once the profile is enabled.



Note:

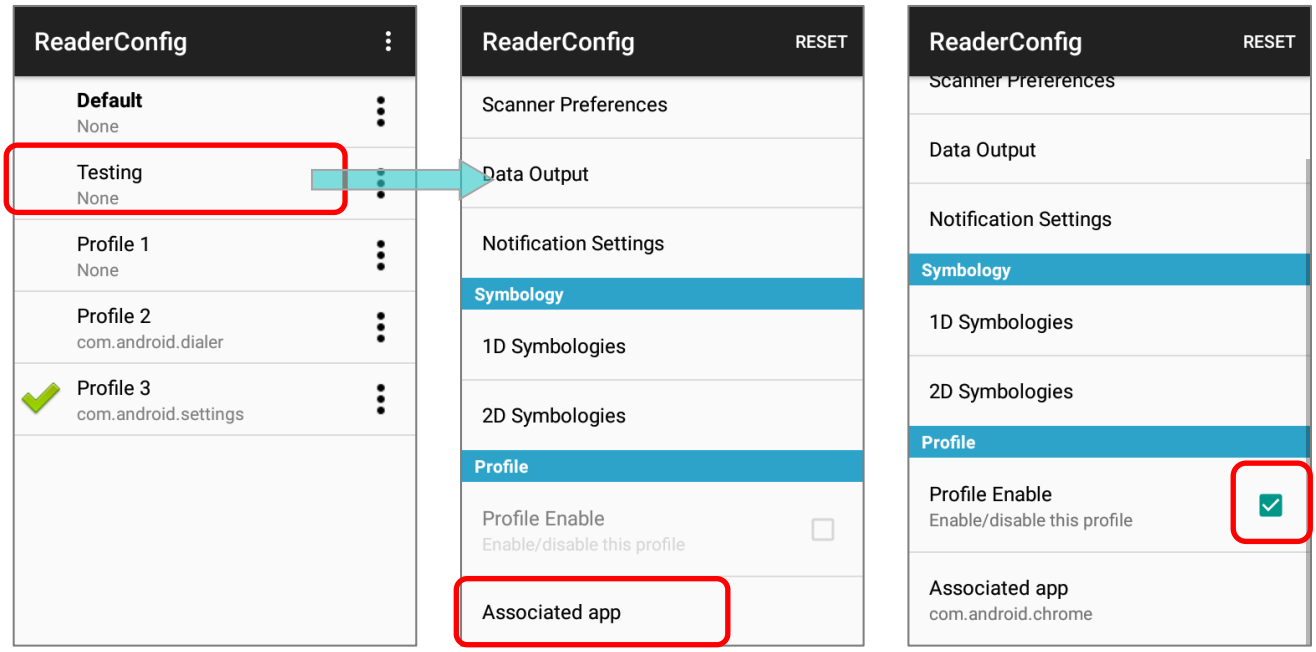
(1) The "Default" profile doesn't support "Associated app", please assign "Associated app" to the profile(s) you create.

(2) Multiple profiles can be enabled at the same time.

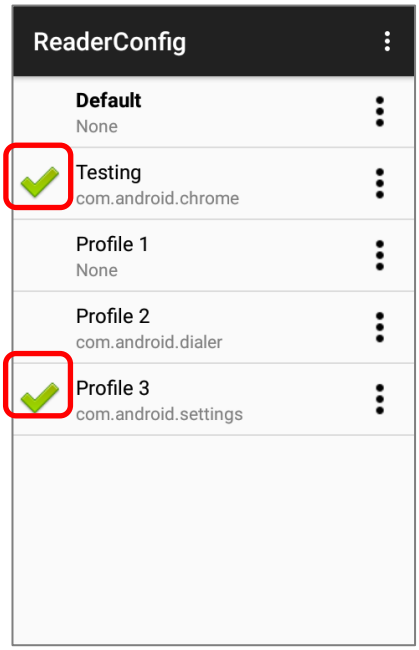
PROFILE ENABLE

To enable a profile:

1) Tap on the profile you'd like to enable to enter the profile main page.
2) Tap on "**Associated app**" under "Profile" to assign an app to be the "**Associated app**" to this profile.
3) Now the function "**Profile Enable**" is available for user to tick the checkbox to enable this profile.



Return to **ReaderConfig** main screen, and you will find that the enabled profile(s) is with a check mark next to it.

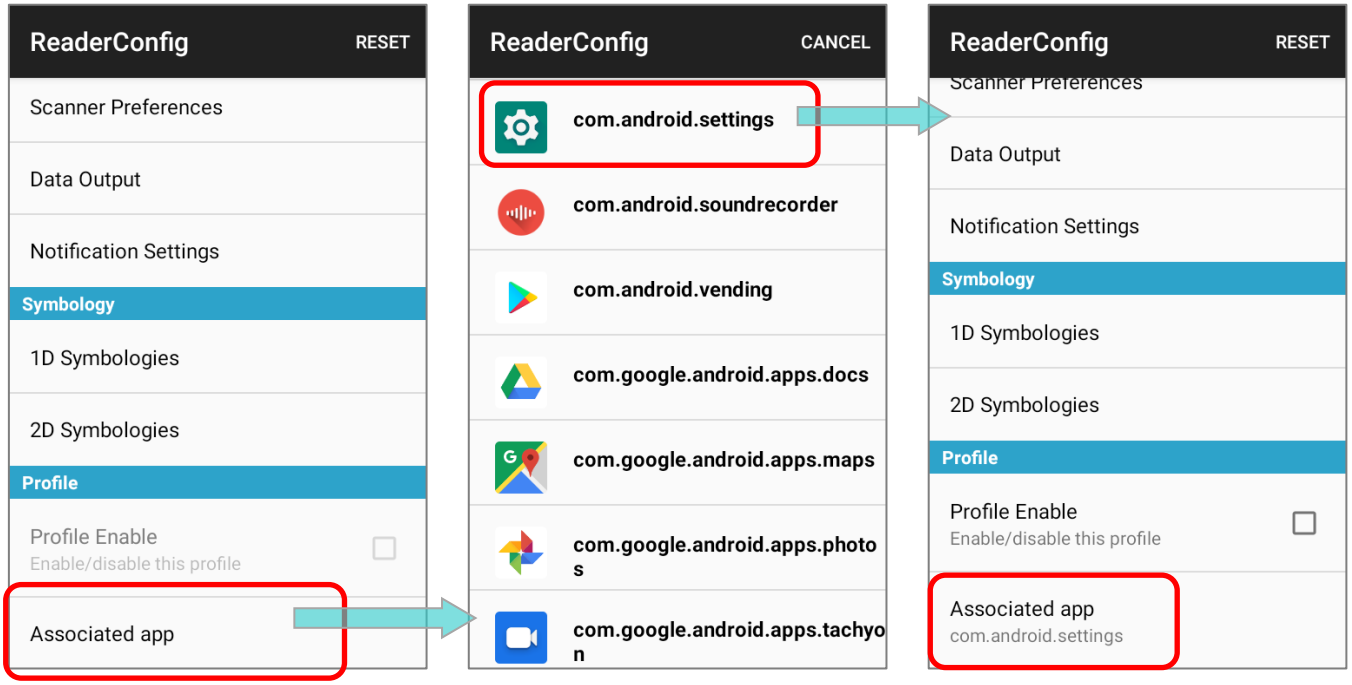


Note: Multiple profiles can be enabled at the same time.

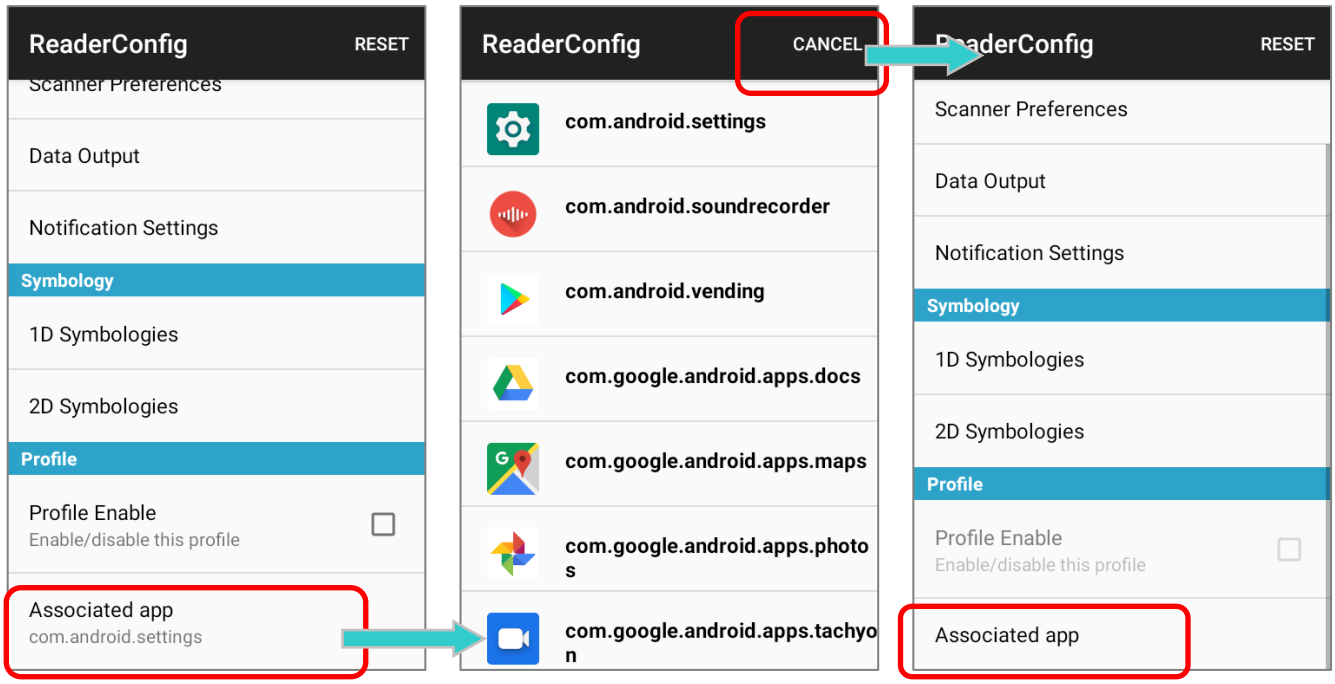
ASSOCIATED APP

To assign an app as the "**Associated app**" to a profile:

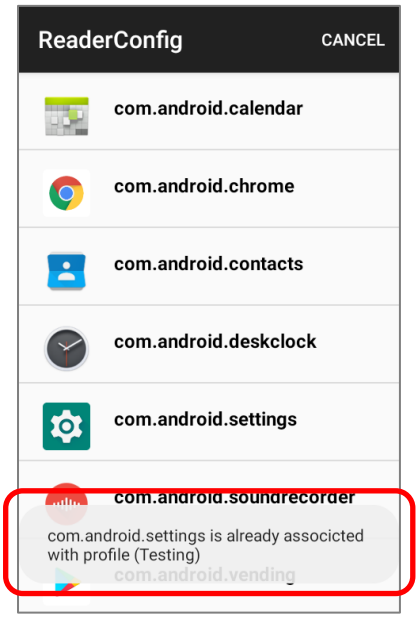
1) Enter the profile main page and tap on ap on "**Associated app**" under "**Profile**".
2) Select the app to be the "**Associated app**" of this profile.



To clear the assigned "**Associated app**", please tap on "**Associated app**" to enter the app list page, and tap on "**CANCEL**" on the action bar:

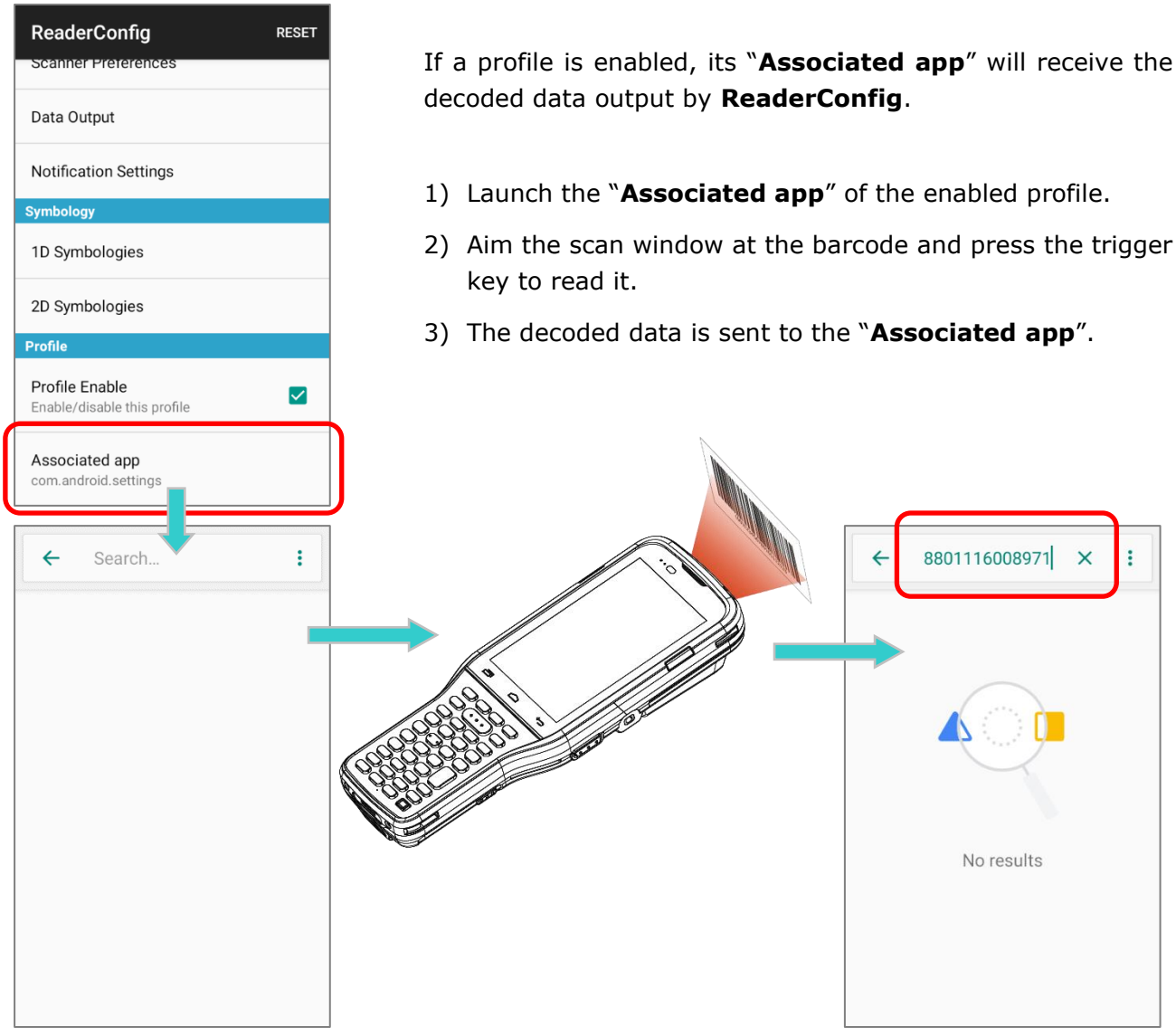


An app can be set as the associated app to only one profile. If the app you would like to select is already assigned to other profile, a prompt appears to remind you about this app is occupied by which profile.



If a profile is enabled, its "**Associated app**" will receive the decoded data output by **ReaderConfig**.

1) Launch the "**Associated app**" of the enabled profile.
2) Aim the scan window at the barcode and press the trigger key to read it.
3) The decoded data is sent to the "**Associated app**".



6.2.5. RESET

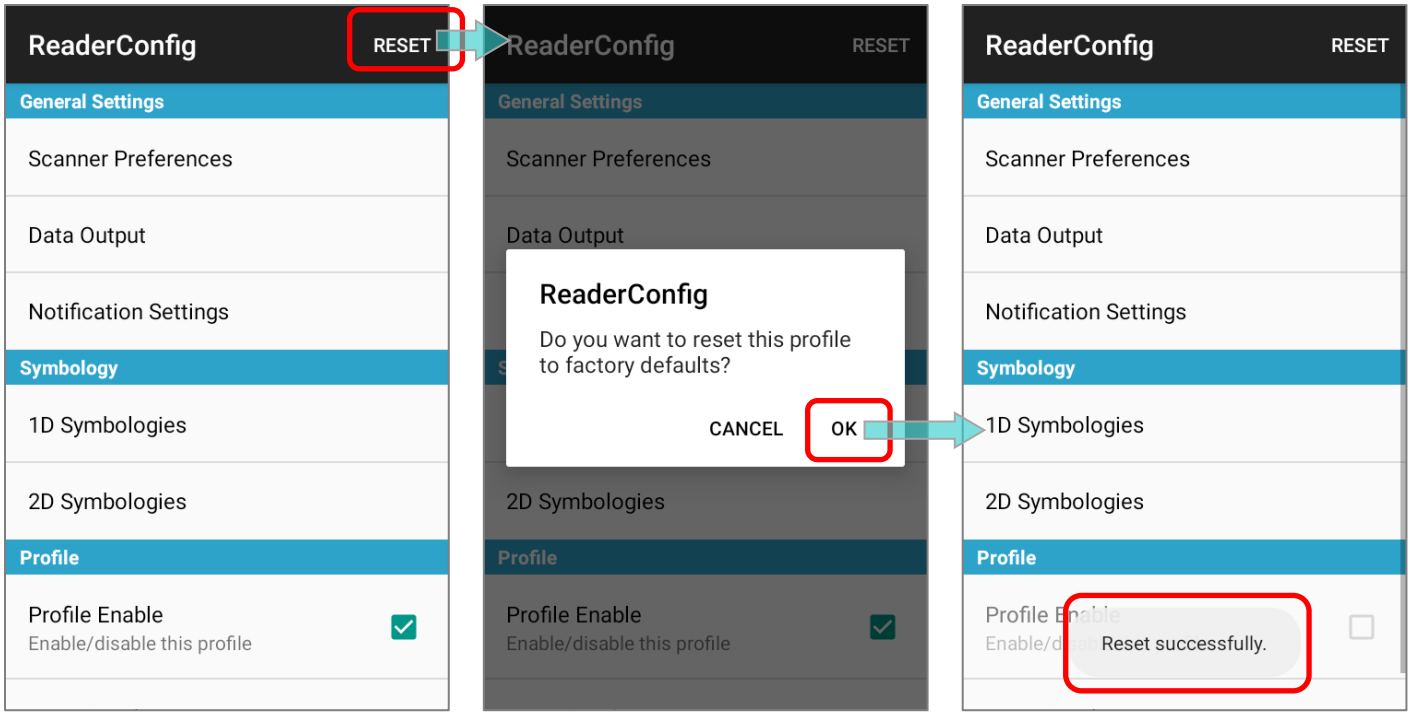
This function restores all settings in a profile to default.

To enable **Reset**:

1) Enter the profile main page of the profile you'd like to reset its settings.

2) Tap on "**Reset**" on the action bar.

3) Tap on "**OK**" on the confirmation dialog to reset or **Cancel** to close the dialog.



6.3. READ PRINTED BARCODES

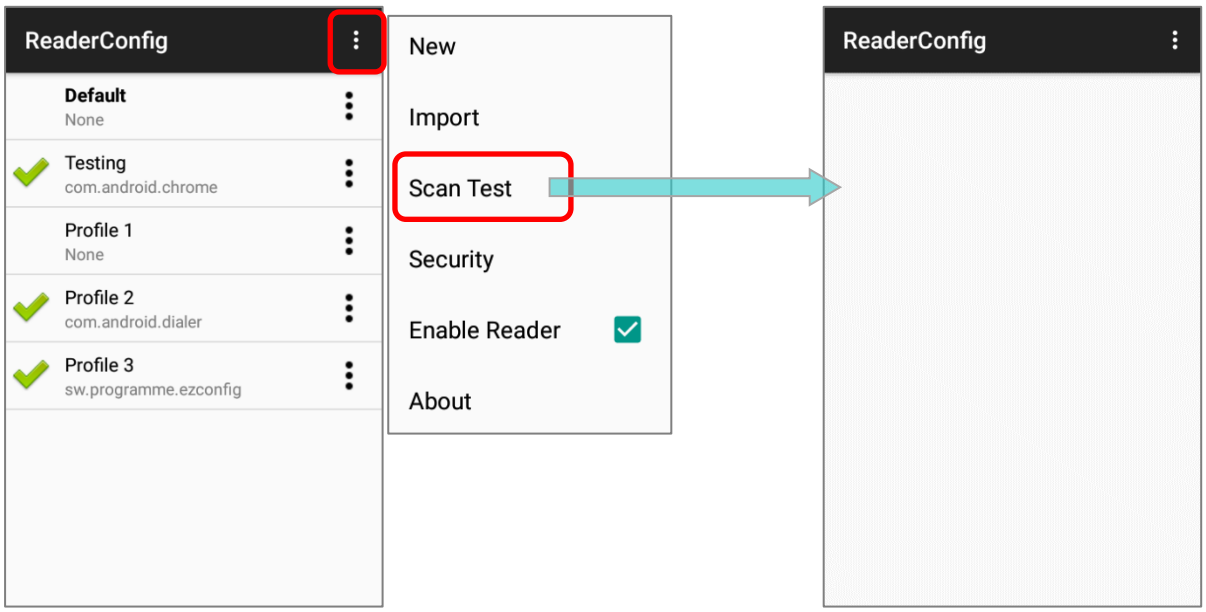
Aside from output to destinations as per Keyboard Emulation settings, **ReaderConfig** provides a **Scan Test** feature for quick viewing of decoded data.

To perform test scanning of barcodes:

1) Launch the app **ReaderConfig**.

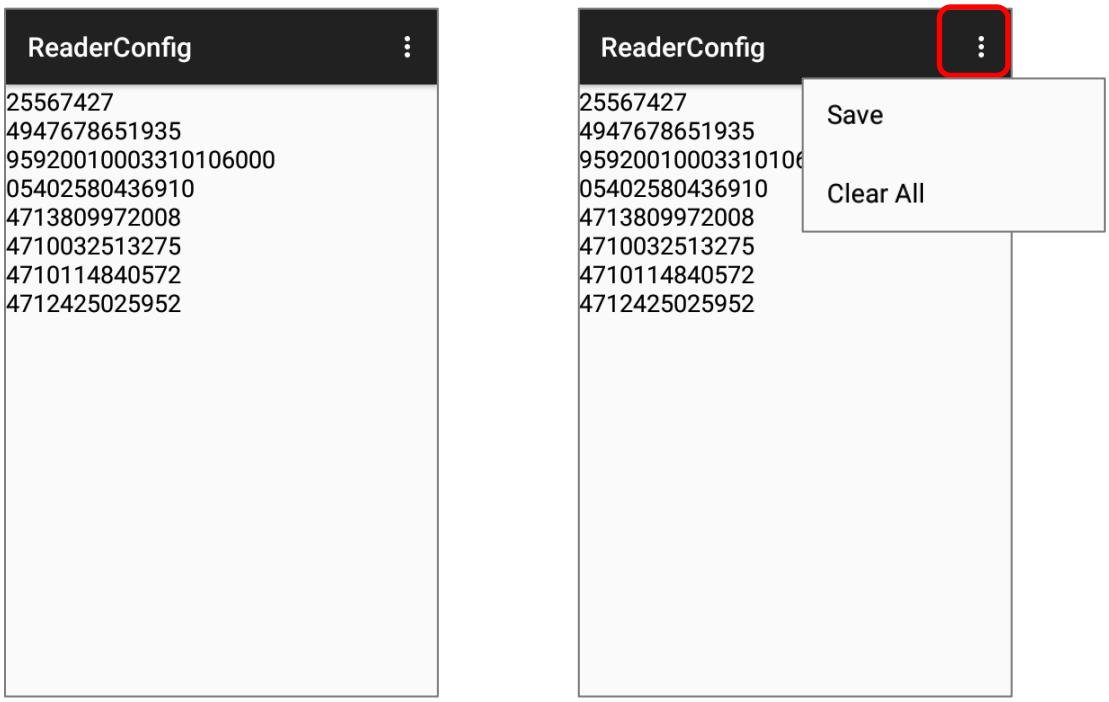
2) On **ReaderConfig** main screen, tap the more button ⋮ on the action bar to open the main menu.

3) Tap on **Scan Test**. A Test Scan Form opens for displaying the scanned data.



4) 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. The scanning light goes off once the data is decoded, or when the decode timeout period has passed.

The decoded data will appear on the page. When finished viewing, tap ⮌ to leave the test scan page; or tap the more button ⋮ and then "***Save***" to save the decoded data as a .txt file, or "***Clear All***" to clear all data on the screen.



SPECIFICATIONS

PLATFORM, PROCESSOR & MEMORY

Operating System & CPU

OS Version	Android 9 Pie with GMS Certified
CPU	Qualcomm Octa-core CPU

Memory

ROM	64GB eMMC (Support at least eMMC 5.1)
RAM	4GB LPDDR4
Expansion Slot	One Micro SDHC card slot (up to 32GB) SDXC supported (up to 2TB)

COMMUNICATION & DATA CAPTURE

Communication

USB Client	USB 2.0 OTG
WPAN	Bluetooth 2.1EDR/4.0 BLE/V4.1/V4.2/5.0 (2400~2480MHz) (EU / AU / NZL : 8.28dBm; US / CA / TW: 11.06dBm)
WLAN	IEEE 802.11 b/g/n, IEEE 802.11 a/n/ac , MU-MIMO 2x2 b/g/n: 2412~2462 MHz (EU / AU / NZL) (b: 18.92dBm/g:19.99dBm/ n:19.75dBm) 2412~2472 MHz (US / CA / TW) (b: 18.03dBm/g:18.68dBm/ n:23.18dBm) a/n/ac: 5150~5725MHz (EU) (a: 20.81dBm/ an: 22.80dBm/ ac:22.86dBm) 5150~5825MHz (US / CA / TW / AU / NZL) (a: 18.59dBm/ an: 20.68dBm/ ac:20.33dBm)

Data & Image Capture

Digital Camera	Rear: 13 Mega pixels with user-controllable flash
Barcode Reader	2D Imager
HF RFID Reader	Full tags support base on NFC forum, ISO14443A&B, FeliCa, ISO15693

ELECTRICAL CHARACTERISTICS

Battery

Main Battery Pack	Replaceable and rechargeable Li-ion battery: 3.7V, 3000mAh/ 3.7V, 6000mAh 3.7V, 5500mAh (for Cold Chain model) Minimum charging time: 4 hours (3000mAh)/ 6 hours (6000mAh) at 25°C 6 hours (5500mAh; for Cold Chain Model) at 25°C Charging temperature: 0°C to 45°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.

Power Adaptor

Power Supply Cord with Universal Power Adaptor	Input	AC 100~240 V, 47-63Hz
	Output	DC 5V, 2A CE, CB, BSMI, FCC, CCC, PSE, KC, CU, INMETRO (AC plug only), BIS, PSB

Working Time

Standard Battery	Supports working time for up to 8/12 hours (for 3000mAh/6000mAh) at 25 degrees
Cold Chain Battery	Minimun 6 hours under SE4750SR scanning per 20 seconds, LCD 50% backlight and speaker on (volume is degault) at -30°C Minimun 5 hours under SE4850 scanning per 20 seconds, LCD 50% backlight and speaker on (volume is degault) at -30°C

PHYSICAL CHARACTERISTICS

Color Touch Screen Display

Display	4.3 inch, LCD, Corning Gorilla Glass
Resolution	800(RGB) X 480 Pixel

Notifications

Status LED	Tri-color LED x 1(Green/RED/Blue) Dual color LED x 1(Green/RED) Side Tri-color LED x 2(Green/RED/Blue)
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	Approx. 400g (with 3000mAh battery pack and 4750 reader) Approx. 450g (with 6000mAh battery pack and 4750 reader) Approx. 435g (with 3000mAh battery pack and 4850 reader) Approx. 480g (with 6000mAh battery pack and 4850 reader) Approx. 520g (with 5500mAh battery for Cold Chain model)

ENVIRONMENTAL CHARACTERISTICS

Temperature

Operating	-20°C to 50°C
Storage	-30°C to 70°C (battery pack is not included)
Charging	0°C to 45°C

Humidity

Operating	5% to 95% (non-condensing)
Storage	5% to 95% (non-condensing)

Resistance

Impact Resistance	Meets MIL-STD 810G standards for up to 1.8 meter drops
Tumble Test	1000 tumbles (1000 drops/hits) at 1 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

SCAN ENGINE SETTINGS

Reader Configuration sets the following reader types:

- 2D Imager

SYMBOLOGIES SUPPORTED

Depending on the scan engine integrated on the mobile computer, supported symbologies will differ as listed below. For details on configuring associated settings, refer to Appendix II.

		2D
Codabar		✓
Code 11		✓
Code 39	Code 39	✓
	Trioptic Code 39	✓
	Italian Pharmacode (Code 32)	✓
Code 93		✓
Code 128	Code 128	✓
	GS1-128 (EAN-128)	✓
	ISBT 128	✓
Code 2 of 5	Chinese 25	✓
	Industrial 25 (Discrete 25)	✓
	Interleaved 25	✓
	Convert Interleaved 25 to EAN-13	✓
	Matrix 25	✓
Composite Code	Composite CC-A/B	✓
	Composite CC-C	✓
	Compostie TLC 39	✓

GS1 DataBar (RSS)	GS1 DataBar-14 (RSS-14)	✓
	GS1 DataBar Limited (RSS Limited)	✓
	GS1 DataBar Expanded (RSS Expanded)	✓
	Convert to UPC/EAN	✓
Korean 3 of 5		✓
MSI		✓
Postal Codes	Australian Postal	✓
	Japan Postal	✓
	Netherlands KIX Code	✓
	US Postnet	✓
	US Planet	✓
	USPS Postal	✓
	UPU FICS Postal	✓
	UK Postal	✓
EAN/UPC	EAN-8	✓
	EAN-8 Extend	✓
	EAN-13	✓
	Bookland EAN (ISBN)	✓
	ISSN EAN	✓
	UPC-A	✓
	UPC-E	✓
	Convert to UPC-A	✓
	UPC-E1	✓
	Convert to UPC-A	✓

Coupon Code		✓
2D Symbologies	Aztec	✓
	Data Matrix	✓
	Maxicode	✓
	MacroPDF	✓
	MicroPDF417	✓
	MicroQR	✓
	PDF417	✓
	QR Code	✓

APPENDIX II

2D IMAGER

The tables below list the symbology settings for 2D imager.

SYMBOLOGY SETTINGS

1D SYMBOLOGIES

Symbology	Description	Default
CODABAR		
Codabar		Enable
Codabar	Switch to enable Codabar decoding.	Enable
Length Option	Set the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS Editing	Set whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
NOTIS Editing Type	Options are **None**, **ABCD/ABCD**, **abcd/abcd**. ▸ "NOTIS Editing" must be enabled.	None
Verify Check Digit	Select whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	None
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ "Verify Check Digit" must be enabled.	Enable

Symbology	Description	Default
CODE 11		
Code 11		Enable
Code 11	Switch to enable Code 11 decoding.	Enable
Check Digit Option	Set whether to verify check digits according to the selected option. If the check digits are incorrect, the barcode will not be accepted. ▸ Disable ▸ One Check Digit ▸ Two Check Digit	Disable
Transmit Check Digit	Selects whether to include check digits in the transmitted data. ▸ "Check Digit Option" must be enabled.	Disable
Length option	Sets the length of the Code 11 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 39		
Code 39		Enable
Code 39	Switch to enable Code 39 decoding.	Enable
Convert to Code 32	Selects whether to convert decoded data to Italian Pharmacode.	Disable
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. ▸ "Convert to Code 32" must be enabled for this to function properly.	Disable
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ "Verify Check Digit" must be enabled.	Disable
Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Security Level	Select the security level from **Level 0** to **Level 3**	Level 1

Symbology	Description	Default
Trioptic Code 39		
Trioptic Code 39		Disable
Trioptic Code 39	Switch to enable Trioptic Code 39 decoding.	Disable
Code 93		
Code 93		Enable
Code 93	Switch to enable Code 93 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		Enable
Code 128	Switch to enable Code 128 decoding.	Enable
Length option	Sets the length of the Code 128 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
GS1-128		Enable
GS1-128	Switch to enable GS1-128 decoding.	Enable
Separator Character	Enable the function code character separator, which is used to separate data fields of variable length and application identifiers of subsequent data fields in concatenated data strings. Tap on to choose your input method between **Keyboard input** and **Symbol table input** to set a separator character to replace with.	None
Enable App ID Separator	Check to enable the separator configuration for Application Identifier. You can respectively set the Left Separator and Right Separator. Tap on to choose your input method between Keyboard input and Symbol table input to set a separator character to replace with.	Disable

Symbology	Description	Default
ISBT 128		Enable
ISBT 128	Switch to enable ISBT 128 decoding.	Enable
Concatenation	Sets whether to enable decoding ISBT 128 by performing concatenation of ISBT data. ▸ **Disable**: Does not perform concatenation ▸ **Enable**: Performs concatenation on all ISBT-128 barcodes. ▸ **Auto-discriminate**: Auto-discriminates between the ISBT 128 barcodes which require concatenation and those which do not need concatenation.	Auto-discriminate
Redundancy	When "Auto-discriminate" is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 20.	10
CODE 2 OF 5		
Chinese 25		Enable
Chinese 25	Switch to enable Chinese 2 of 5 decoding.	Enable
Discrete 25		Enable
Discrete 25	Switch to enable Discrete 2 of 5 decoding.	Enable
Length option	Sets the length of the Discrete 2 of 5 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Interleaved 25		
Interleaved 25		Enable
Interleaved 25	Switch to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of Interleaved 2 of 5 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit.	Disable
Convert to EAN-13	Convert a 14-character Interleaved 25 barcode into EAN-13 if the following requirements are met: ▸ The barcode must have a leading 0 and a valid EAN-13 check digit.	Disable
Security Level	Select the security level from **Level 0** to **Level 3**	Level 1

Symbology	Description	Default
Matrix 25		Enable
Matrix 25	Switch to enable Matrix 2 of 5 decoding.	Enable
Length option	Sets the length of the Matrix 2of 5 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Redundancy	Enables or disable read redundancy for Matrix 2 of 5.	Disable
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit.	Disable
Composite		
Composite CC-A/B		Disable
Composite CC-A/B	Switch to enable Composite CC-A/B decoding.	Disable
Composite CC-C		Enable
Composite CC-C	Switch to enable Composite CC-C decoding.	Enable
Composite TLC-39		Disable
Composite TLC-39	Switch to enable Composite TLC-39 decoding.	Disable
Composite General Preference		
UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. ▸ **UPC Never Linked**: Transmit UPC barcodes regardless of whether a 2D barcode is detected. ▸ **UPC Always Linked**: Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. **Note: CC-A/B or CC-C must be enabled.** ▸ **Auto-discriminate**: Transmit UPC barcodes as well as the 2D portion if present.	UPC always Linked
GS1-128 Emulation Mode	Sets GS1-128 emulation mode for UCC/EAN Composite Codes.	Disable

Symbology	Description	Default
GS1 DataBar		
GS1 DataBar-14		Enable
GS1 DataBar-14	Switch to enable GS1 DataBar-14 decoding.	Enable
Convert to UPC/EAN	Strips the leading '010' of GS1 DataBar and converts the barcode to EAN-13.	Disable
Security Level	Select the security level from **Level 0** to **Level 3**	Level 1
GS1 DataBar Limited		Enable
GS1 DataBar Limited	Switch to enable GS1 DataBar Limited decoding.	Enable
Convert to UPC/EAN	Strips the leading '010' of GS1 DataBar Limited and converts the barcode to EAN-13.	Disable
Security Level	Select the security level from **Level 0** to **Level 3**	Level 3
Transmit Check Digit	Decide whether to include the check digit in the data to transmit.	Enable
Transmit Application ID	Decide whether to transmit the Application ID ("01").	Enable
GS1 DataBar Expanded		Enable
GS1 DataBar Expanded	Switch to enable GS1 DataBar Expanded decoding.	Enable
Separator Character	Separator Character Enable the function code character separator, which is used to separate data fields of variable length and application identifiers of subsequent data fields in concatenated data strings.	None
Security Level	Select the security level from **Level 0** to **Level 3**	Level 1
Korean 3 OF 5		
Korean 3 of 5		Disable
Korean 3 of 5	Switch to enable Korean 3 of 5 decoding.	Disable
MSI		
MSI		Enable
MSI	Switch to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)

Symbology	Description	Default
Verify Check Digit	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data to transmit.	Disable
Algorithm	When two check digits are set for verification, two choices are available for the pair of check digits. ▸ Modulo10 / Modulo11 ▸ Double Modulo 10	Double Modulo 10
Postal		
Australian Postal		Enable
Japan Postal		Enable
Netherlands KIX Code		Enable
US Postnet		Enable
US Planet		Enable
USPS Postal		Enable
UPU FICS Postal		Enable
UK Postal		Enable
Postal General Preference		
US Postal Check Digit	Decide whether to transmit check digit for US Postnet or US Planet.	Enable
UK Postal Check Digit	Decide whether to transmit check digit for UK Postal.	Enable
EAN		
EAN-8		Enable
EAN-8	Switch to enable EAN-8 decoding.	Enable
Addon 2	Decide whether to decode EAN-8 with addon 2. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Addon 5	Decide whether to decode EAN-8 with addon 5. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Enable
Convert to EAN-13	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable

Symbology	Description	Default
EAN-13		Enable
EAN-13	Switch to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format below.	Disable
Bookland ISBN Format	Decodes Bookland data starting with 978 in 10-digit format along with the Bookland check digit, or Bookland data starting with 978/979 in 13-digit format.	Bookland ISBN-10
Addon 2	Decide whether to decode EAN-13 with addon 2. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Addon 5	Decide whether to decode EAN-13 with addon 5. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
ISSN EAN	Checkbox to enable ISSN EAN decoding.	Disable
UPC		
UPC-A		Enable
UPC-A	Switch to enable UPC-A decoding.	Enable
Addon 2	Decide whether to decode UPC-A with addon 2. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Addon 5	Decide whether to decode UPC-A with addon 5. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Preamble	Decide whether to include the UPC-A preamble System Character (and Country Code) in the data being transmitted. ▸ **No transmit**: transmits none of the above ▸ **Transmit System Character**: transmits system number only ▸ **Transmit Sys. Character and Country Code**: transmits system number and country code	Transmit System Character
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable
Convert to EAN-13	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable

Symbology	Description	Default
UPC-E		Enable
UPC-E	Switch to enable UPC-E decoding.	Enable
Addon 2	Decide whether to decode UPC-E with addon 2. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Addon 5	Decide whether to decode UPC-E with addon 5. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Preamble	Decide whether to include the UPC-E preamble System Character (and Country Code) in the data being transmitted. ▸ **No transmit**: transmits none of the above ▸ **Transmit System Character**: transmits system number only ▸ **Transmit Sys. Character and Country Code**: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E1		Disable
UPC-E1	Switch to enable UPC-E1 decoding.	Disable
Addon 2	Decide whether to decode UPC-E1 with addon 2. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Addon 5	Decide whether to decode UPC-E1 with addon 5. ▸ Ignore Addon ▸ Auto-discriminate	Ignore addon
Preamble	Decide whether to include the UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ **No transmit**: transmits none of the above ▸ **Transmit System Character**: transmits system number only ▸ **Transmit Sys. Character and Country Code**: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable

Symbology	Description	Default
Coupon Code		
Goupon Code		Disable
Coupon Code	Switch to enable Coupon Code decoding.	Disable

2D SYMBOLOGIES

Symbology	Description	Default
Aztec		
Aztec		Enable
Aztec	Switch to enable Aztec decoding.	Enable
Data Matrix		
Data Matrix		Enable
Data Matrix	Switch to enable Data Matrix decoding.	Enable
Decode Mirror Image	Switch to enable decode mirror images. ▸ **Never**: Does not decode Data Matrix barcodes that are mirror images. ▸ **Always**: Decodes Data Matrix barcodes that are mirror images. ▸ **Auto-discriminate**: Decodes both mirrored and unmirrored Data Matrix barcodes.	Never
Separator Character	Enable the function code character separator, which is used to separate data fields of variable length and application identifiers of subsequent data fields in concatenated data strings. Tap on to choose your input method between Keyboard input and Symbol table input to set a separator character to replace with.	None
Enable App ID Separator	Check to enable the separator configuration for Application Identifier.You can respectively set the **Left Separator** and **Right Separator**. Tap on to choose your input method between **Keyboard input** and **Symbol table input** to set a separator character to replace with.	Disable

Symbology	Description	Default
MaxiCode		
MaxiCode		Enable
MaxiCode	Switch to enable MaxiCode decoding.	Enable
MicroPDF417		
MicroPDF417		Disable
MicroPDF417	Switch to enable MicroPDF417 decoding.	Disable
Code 128 Emulation	Transmit data from certain Micro PDF 417 barcodes as if it was encoded in Code 128 barcodes. **Note: Transmit AIM code ID character in "Scanner Preferences" must be enabled first. When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes:** ▸ **The first codeword of MicroPDF417 is 903-905**: The original Code ID "]L3" will be changed to "]C1". ▸ **The first codeword of MicroPDF417 is 908 or 909**: The original Code ID "]L4" will be changed to "]C2". ▸ **The first codeword of MicroPDF417 is 910 or 911**: The original Code ID "]L5" will be changed to "]C0".	Disable
MicroQR		
MicroQR		Enable
MicroQR	Switch to enable MicroQR decoding.	Enable
PDF417		
PDF417		Enable
PDF417	Switch to enable PDF417decoding.	Enable
QR Code		
QR Code		Enable
QR Code	Switch to enable QR Code decoding.	Enable
MRZ		
MRZ		Disable
MRZ	Switch to enable MRZ decoding.	Disable
MRZ Mode	Tap to select: ▸ OCR-B Travel Documents Version 1 (3-Line ID Cards) ▸ OCR-B Travel Documents Version 2 (2-Line ID Cards) ▸ OCR-B Travel Documents 2 or 3-Line ID Cards Auto-Detect ▸ OCR-B Passport ▸ OCR-B Visa Type A ▸ OCR-B Visa Type B ▸ OCR-B ICAO Travel Documents	OCR-B ICAO Travel Documents

Symbology	Description	Default
Dot Code		
Dot Code		Disable
Dot Code	Switch to enable Dot Code decoding.	Disable
Decode Mirror Image	Switch to enable decode mirror images. ▸ **Never**: Does not decode Dot Code barcodes that are mirror images. ▸ **Always**: Decodes Dot Code barcodes that are mirror images. ▸ **Auto-discriminate**: Decodes both mirrored and unmirrored Dot Code barcodes.	Never
Inverse Type	Select to decode regular barcodes, inverse barcodes, or set as auto.	Regular only
Prioritize	As Dot Code is the most barcode to be read, it is suggest to enable “Prioritize” for batter performance.	Disable

APPENDIX III

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
	BT Printer	An application which provide 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.
	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.
	Gallery	A photo and video storage application.

Icon	Name	Description
	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.
	HF RFID Configuration	An application for the configuration of RFID & NFC.
	Maps	An Android built-in app developed by Google.
	Photos	An Android built-in application for a photo and video sharing and storage service developed by Google.
	Play Movies & TV	An Android built-in application for an online video on demand service operated 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.
	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.
	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 IV

38-KEY KEYCODE

Key	Normal Mode	Fn Mode	Alpha Mode	Alpha + Shift	Shift Mode
1	8	8	33	Shift+33	Shift+8
2	9	9	34	Shift+34	Shift+9
3	10	10	35	Shift+35	Shift+10
4	11	11	36	Shift+36	Shift+11
5	12	12	37	Shift+37	Shift+12
6	13	13	38	Shift+38	Shift+13
7	14	14	39	Shift+39	Shift+14
8	15	15	40	Shift+40	Shift+15
9	16	16	41	Shift+41	Shift+16
0	7	7	43	Shift+43	Shift+7
Up	19	92	19	Shift+19	Highlight+19
Down	20	93	20	Shift+20	Highlight+20
Left	21	3	21	Shift+21	Highlight+21
Right	22	123	22	Shift+22	Highlight+22
Enter	66	66	66	Shift+66	Shift+66
Backspace	67	600	32	Shift+32	Shift+67
Esc	111	111	29	Shift+29	Shift+111

Key	Normal Mode	Fn Mode	Alpha Mode	Alpha + Shift	Shift Mode
.	56	56	42	Shift+42	Shift+56
,	55	55	44	Shift+44	Shift+55
Space	62	171	31	Shift+31	Shift+62
Ctrl	502	501	30	Shift+30	502
P1	539	539	539	Shift+539	Shift+539
P2	540	540	540	Shift+540	Shift+540
F1	131	141	45	Shift+45	Shift+131
F2	132	142	46	Shift+46	Shift+132
F3	133	601	47	Shift+47	Shift+133
F4	134	602	48	Shift+48	Shift+134
F5	135	603	49	Shift+49	Shift+135
F6	136	221	50	Shift+50	Shift+136
F7	137	24	51	Shift+51	Shift+137
F8	138	604	52	Shift+52	Shift+138
F9	139	220	53	Shift+53	Shift+139
F10	140	25	54	Shift+54	Shift+140
Scan	505	505	505	505	505
Left Scan	507	507	507	507	507
Right Scan	508	508	508	508	508

52-KEY KEYCODE

VT emulator keypad

TN3270 emulator keypad

TN5250 emulator keypad

Key	Normal Mode	Shift Mode	Alpha Mode	Control Mode
1	8	Shift+8	131	Ctrl+8
2	9	Shift+9	132	Ctrl+9
3	10	Shift+10	133	Ctrl+10
4	11	Shift+11	134	Ctrl+11
5	12	Shift+12	135	Ctrl+12
6	13	Shift+13	136	Ctrl+13
7	14	Shift+14	137	Ctrl+14
8	15	Shift+15	138	Ctrl+15
9	16	Shift+16	139	Ctrl+16
0	7	Shift+7	140	Ctrl+7

Key	Normal Mode	Shift Mode	Alpha Mode	Control Mode
*	17	Shift+17	93 (**TN3270: 521**; **TN5250: 533**)	Ctrl+17
Up	19	Highlight+19	19	Ctrl+19
Down	20	Highlight+20	20	Ctrl+20
Left	21	Highlight+21	21	Ctrl+21
Right	22	Highlight+22	22	Ctrl+22
Enter	66	Shift+66	124	Ctrl+66
Backspace	67	600	123	Ctrl+67
.	56	Shift+56	92 (**TN3270: 522**; **TN5250: 534**)	Ctrl+56
Space	62	Shift+62	61 (**TN3270: 92**; **TN5250: 92**)	Ctrl+62
P1	111	Shift+111	539	Ctrl+111
P2	61	Shift+61	540	Ctrl+61
A	29	Shift+29	55 (**TN3270: 523**; **TN5250: 521**)	Ctrl+29
B	30	Shift+30	56 (**TN3270: 524**; **TN5250: 535**)	Ctrl+30
C	31	Shift+31	75 (**TN3270: 525**; **TN5250: 536**)	Ctrl+31
D	32	Shift+32	221	Ctrl+32
E	33	Shift+	71 (**TN3270: 526**; **TN5250: 526**)	Ctrl+33
F	34	Shift+34	72 (**TN3270: 527**; **TN5250: 530**)	Ctrl+34
G	35	Shift+35	73 (**TN3270: 528**; **TN5250: 528**)	Ctrl+35
H	36	Shift+36	24	Ctrl+36
I	37	Shift+37	220	Ctrl+37

Key	Normal Mode	Shift Mode	Alpha Mode	Control Mode
J	38	Shift+38	68 (**TN3270: 529**; **TN5250: 537**)	Ctrl+38
K	39	Shift+39	142 (**TN3270: 530**; **TN5250: 531**)	Ctrl+39
L	40	Shift+40	141 (**TN3270: 531**; **TN5250: 538**)	Ctrl+40
M	41	Shift+41	25	Ctrl+41
N	42	Shift+42	69 (**TN3270: 532**; **TN5250: 532**)	Ctrl+42
O	43	Shift+43	601	Ctrl+43
P	44	Shift+44	602	Ctrl+44
Q	45	Shift+45	603	Ctrl+45
R	46	Shift+46	74 (**TN3270: 520**; **TN5250: 520**)	Ctrl+46
S	47	Shift+47	157	Ctrl+47
T	48	Shift+48	156	Ctrl+48
U	49	Shift+49	155	Ctrl+49
V	50	Shift+50	154	Ctrl+50
W	51	Shift+51	161	Ctrl+51
X	52	Shift+52	Shift+74	Ctrl+52
Y	53	Shift+53	Shift+53	Ctrl+53
Z	54	Shift+54	Shift+54	Ctrl+54
Scan	505	505	505	505
Left Scan	507	507	507	507
Right Scan	508	508	508	508

CL CUSTOMIZE KEYCODE

New Keycode	Value
KEYCODE_ALT	501
KEYCODE_CTRL	502
KEYCODE_ALPHA	503
KEYCODE_SHIFT	504
KEYCODE_TRIGGER	505
KEYCODE_FN	506
KEYCODE_TRIGGER_LEFT	507
KEYCODE_TRIGGER_RIGHT	508
KEYCODE_TN_INS	520
KEYCODE_TN_HOME	521
KEYCODE_TN_RSET	522
KEYCODE_TN_PA1	523
KEYCODE_TN_PA2	524
KEYCODE_TN_PA3	525
KEYCODE_TN_ER_INP	526
KEYCODE_TN_FLD_MRK	527
KEYCODE_TN_ATTN	528
KEYCODE_TN_BCK_TAB	529
KEYCODE_TN_CLR_EOF	530
KEYCODE_TN_SYS_RQ	531
KEYCODE_TN_DUP	532
KEYCODE_TN_FLD-	533
KEYCODE_TN_//	534
KEYCODE_TN_PRNT	535
KEYCODE_TN_HELP	536
KEYCODE_TN_RL_UP	537
KEYCODE_TN_RL_DN	538

New Keycode	Value
KEYCODE_P1	539
KEYCODE_P2	540
KEYCODE_BATTERY_COVER	541
KEYCODE_CL_KEY1	542
KEYCODE_CL_KEY2	543
KEYCODE_CL_KEY3	544
KEYCODE_PISTOL	545
KEYCODE_PISTOL_CONNECT	548
KEYCODE_F13	601
KEYCODE_F14	602
KEYCODE_F15	603

APPENDIX V

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