

SHENZHEN CHAINWAY INFORMATION TECHNOLOGY CO., LTD.

# C60 User Manual

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# Statement

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# **Chapter 1 Brief Instruction**

## **1.1 Brief Instruction**

Chainway C60 is our newly-developed rugged handheld computer which exhibits extremely powerful performance, and that too while being immensely lightweight and portable. Built with Android 10 OS and Qualcomm high-performance processor, it features a removable large capacity battery and vigorous system configuration. It has rich functionality features for barcode scanning, RFID, NFC, front and rear cameras, etc., and can support 4G and WiFi. The ergonomic narrow-edge design makes it immensely comfortable to operate & employ for numerous projects. The device can be implemented in a wide spectrum of industries, including logistics, warehousing, retail, asset tracking, etc., assisting customers to improve operation and management level significantly.

## 1.2 Precaution Before Using Battery

- Do not leave batteries unused for extended periods of time, either in the product or in storage. When the battery has been unused for 6 months, check the charge status and charge or dispose of the battery as appropriate.
  - The typical estimated life of a Lithium-Ion battery is about two to three years or 300 to 500 charge cycles, whichever occurs first. One charge cycle is a period of use from fully charged, to fully discharged, and fully recharged again. Use a two to three year life expectancy for batteries that do not run through complete charge cycles.
  - Rechargeable Lithium-Ion batteries have a limited life and will gradually lose their capacity to hold a charge. This loss of capacity (aging) is irreversible. As the battery loses capacity, the length of time it will power the product (run time) decreases.
  - Lithium-Ion batteries continue to slowly discharge (self-discharge) when not in use or while in storage. Routinely check the battery's charge status. The user manual typically includes information on how to check battery status, as well as battery charging instructions.
  - Observe and note the run time that a new fully-charged battery provides for powering your product. Use the new battery run time as a basis to compare run times for older batteries. The run time of your battery will vary depending on the product's configuration and the applications that you run.
    - Routinely check the battery's charge status.
    - Carefully monitor batteries that are approaching the end of their estimated life.
    - Consider replacing the battery with a new one if you note either of the following conditions:
      - The battery run time drops below about 80% of the original run time.

- The battery charge time increases significantly.
- If a battery is stored or otherwise unused for an extended period, be sure to follow the storage instructions in this document. If you do not follow the instructions, and the battery has no charge remaining when you check it, consider it to be damaged. Do not attempt to recharge it or to use it. Replace it with a new battery.
  - Always follow the charging instructions provided with your product. Refer to your product's user manual and/or online help for detailed information about charging its battery.
  - Charge or discharge the battery to approximately 50% of capacity before storage.
  - Charge the battery to approximately 50% of capacity at least once every six months.
  - Remove the battery and store it separately from the product.
  - Store the battery at temperatures between 5 °C and 20 °C (41 °F and 68 °F).

# Chapter 2 Installation Guide

## 2.1 Appearance

The C60 device appearance is as follows.



## 2.2 Buttons

Button	Function
Power Button	Press and hold to turn the device on or off.
Custom Function Button	Customize function by software
SCAN	Scan Button
X	Cancel Button
Num	Switch white keyboard function
Fn	Switch orange keyboard function
Direction Buttons	Move cursor and select different functions
Enter	Enter Button

## 2.3 Micro SD、SIM card Installation

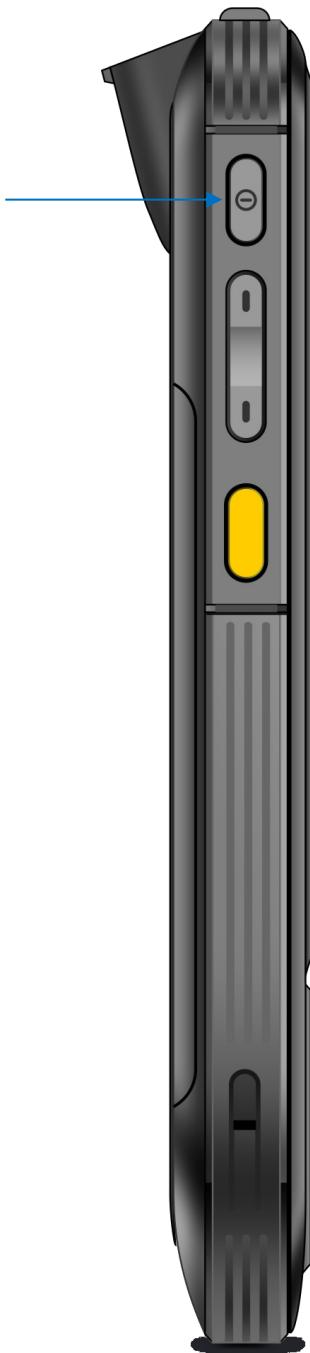
User need to install TF card and SIM card according to the slots of card tray as below. Then insert into slot of SIM/TF.



## 2.4 Battery Charging

Use the adapter to charge the battery. Don't use other brands of charger for device.

## 2.5 Device Power on/off



Press the 'Power' button on side about 3s due to power on/off. And press it shortly to wake up.

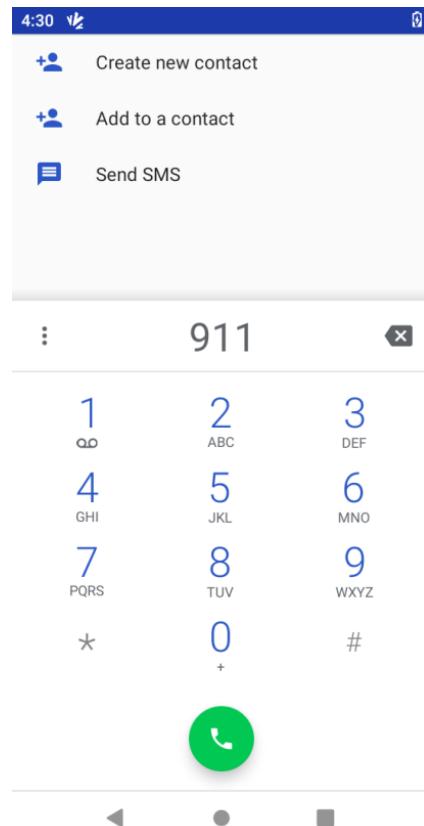
# Chapter 3 Call Function

## 3.1 Phone

Click this icon  .  
Click the number button to input the numbers.

Click the  button to confirm and dial.

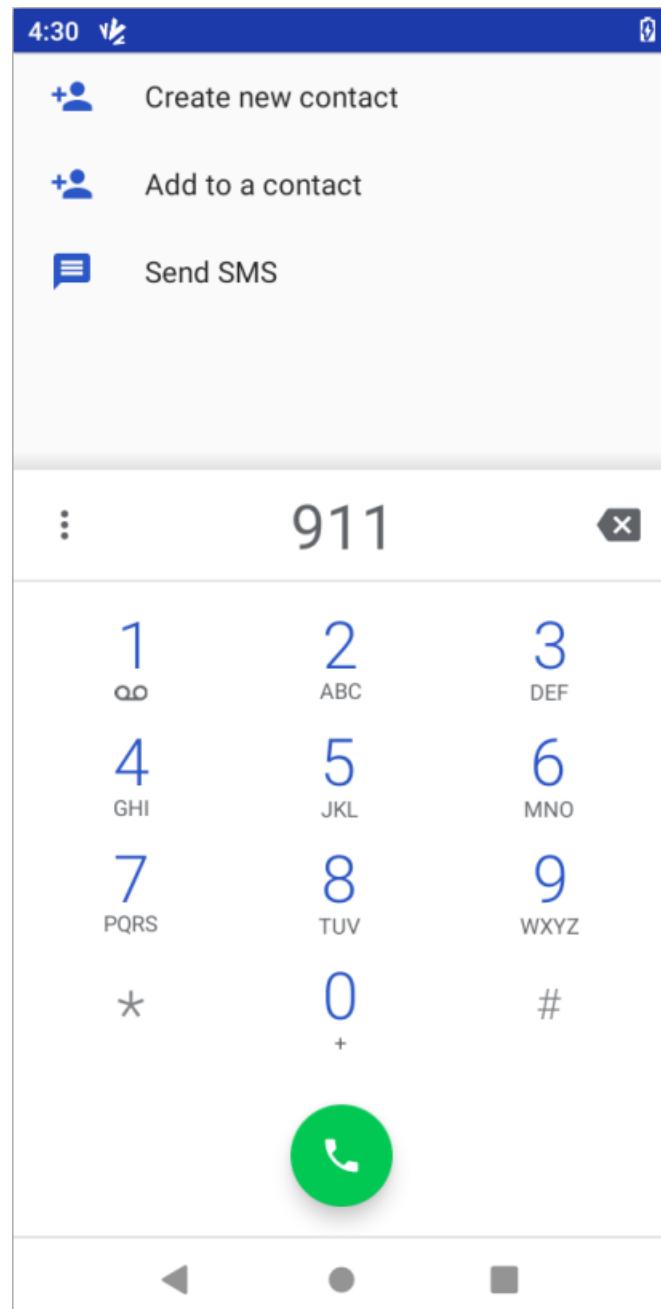
Click the  to end the calling.



## 3.2 Contacts

Click 'Contacts' to open the contacts list.

Click "Create new contact" to add the new contact.



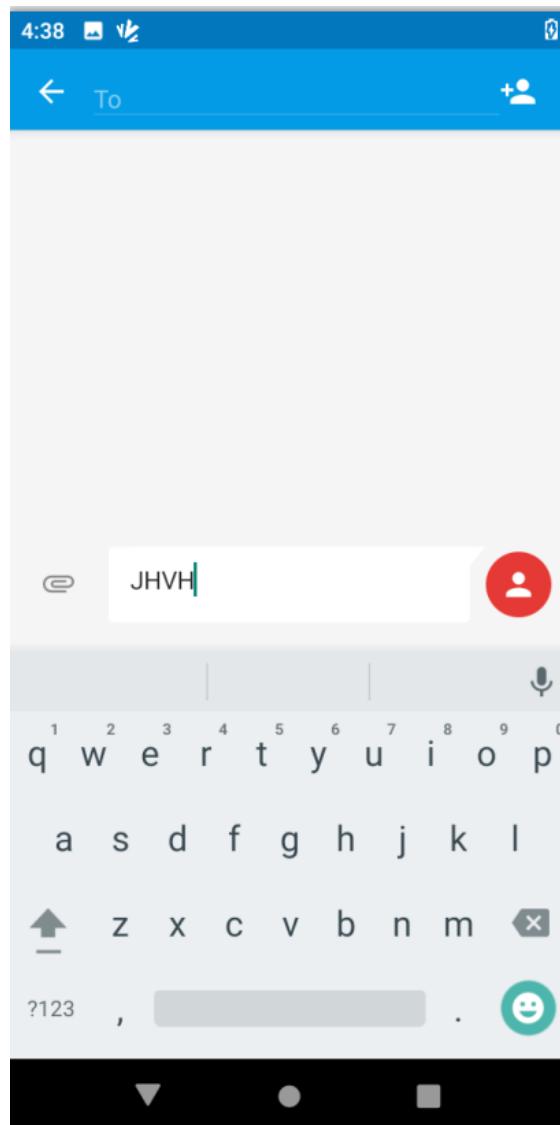
### 3.3 Messaging

Click  to open the message list.

Click  to input the content.

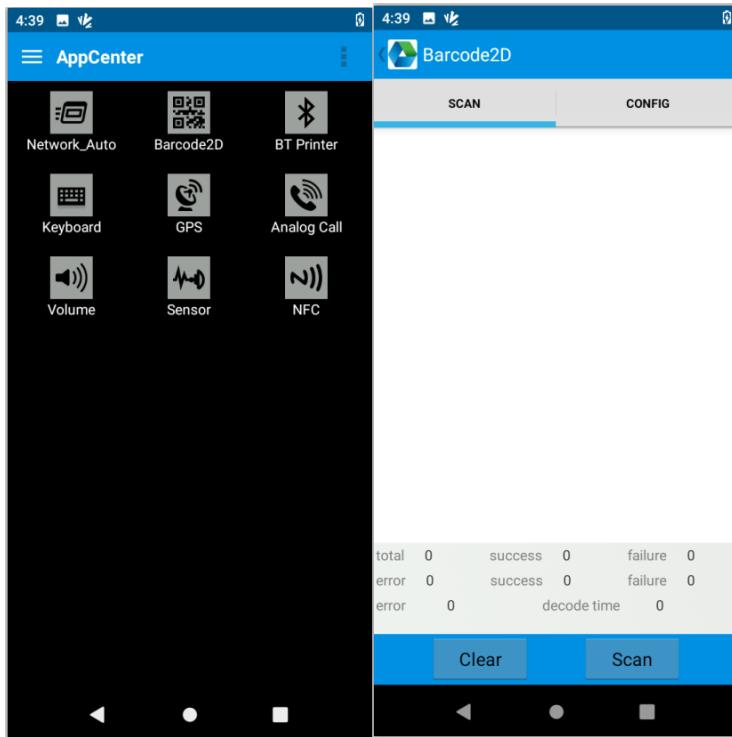
Click  to send the message.

Click  to add photos, videos.



# Chapter 4 Barcode Reader

Open the Barcode2D Demo in APP Center and then press the 'Scan' button to start scanning.



*Note: Please scan the barcode correctly, otherwise the scanning might be failed.*

1D Barcode



Right



Wrong

2D Image



Right

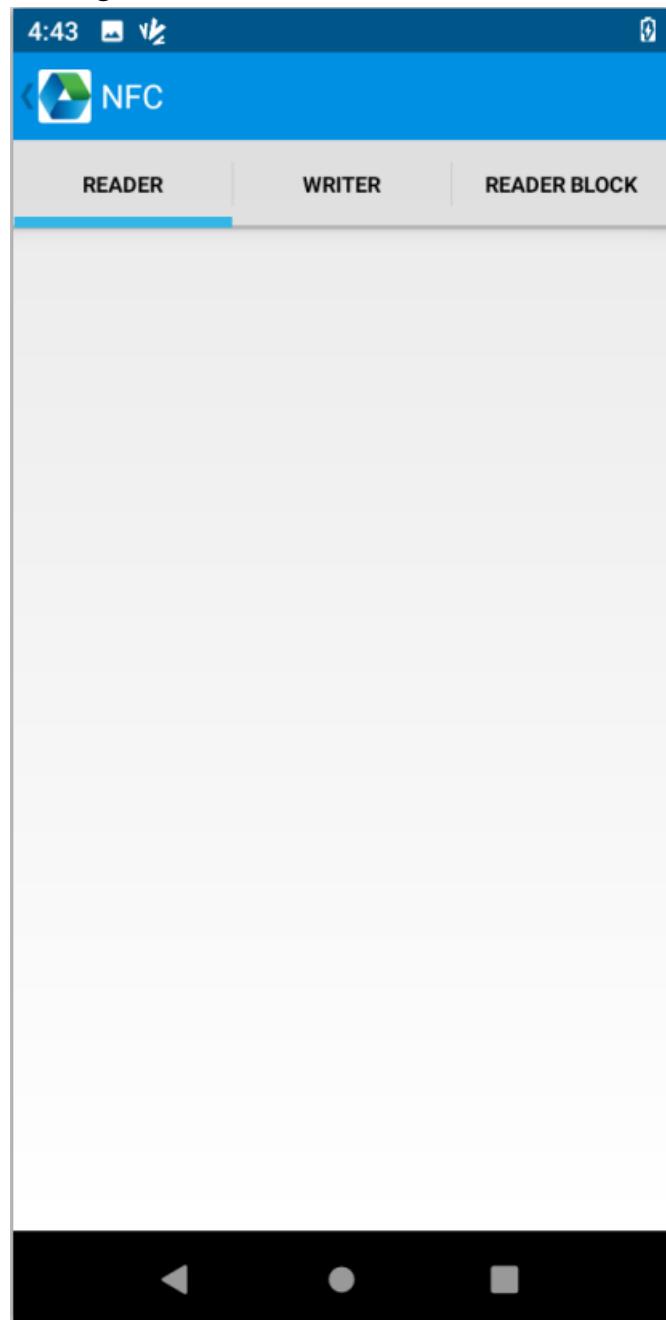


Wrong

# Chapter 5 RFID Reader(optional)

## 5.1 NFC

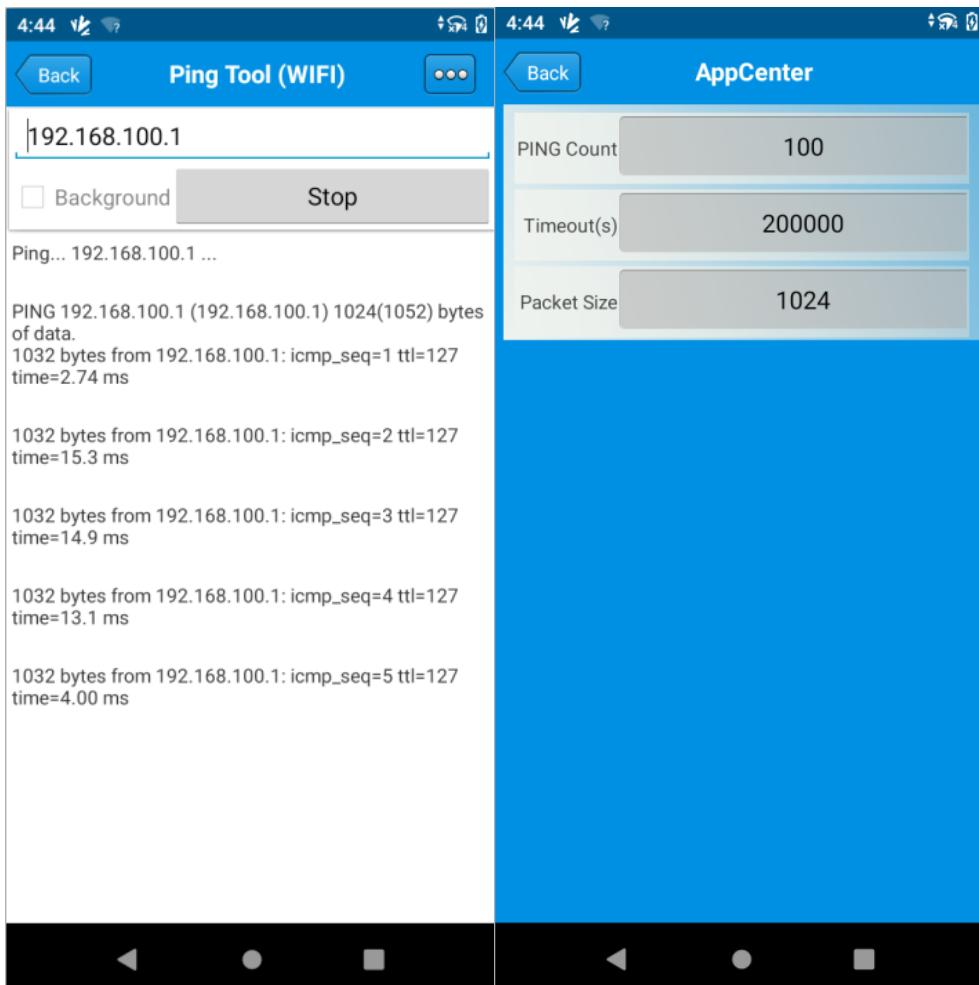
Open the “NFC” demo within Appcenter, and then reading and writing information of the tag.



# Chapter 6 Other Functions

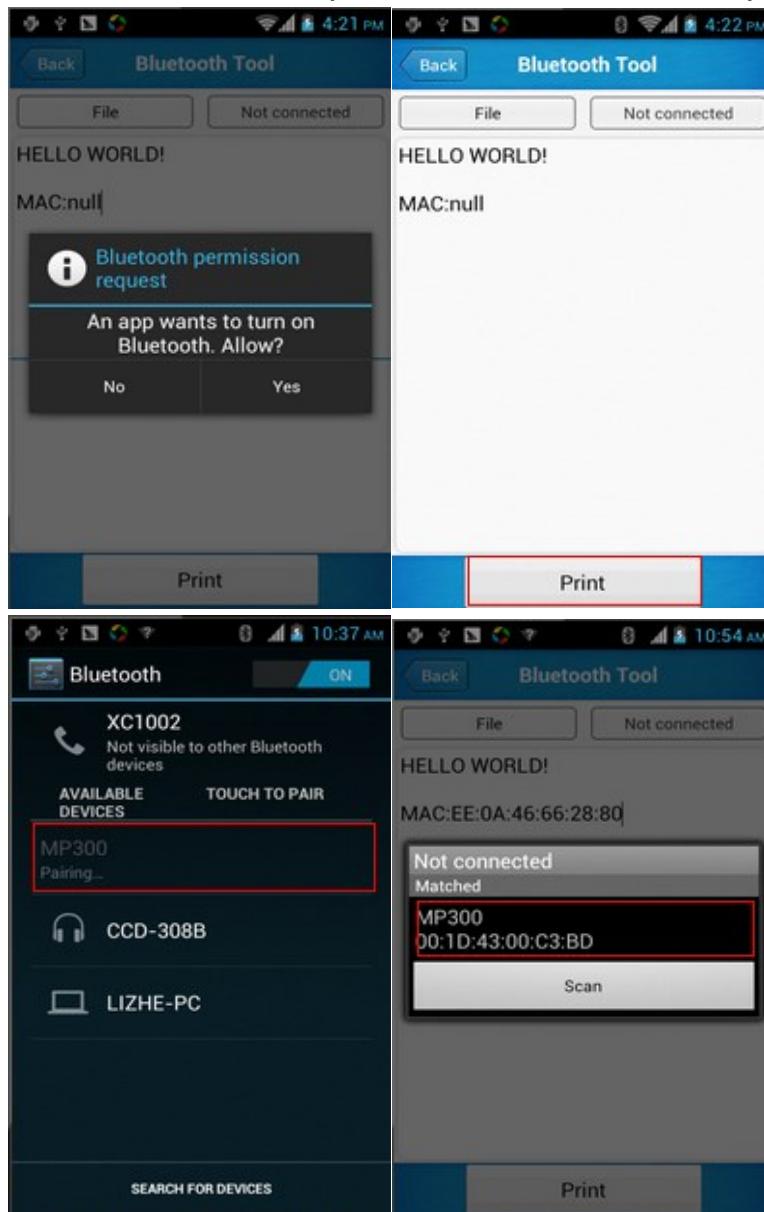
## 6.1 PING

1. Open the Ping in Appcenter.
2. Set the Ping parameters and select the internal/external addresses.



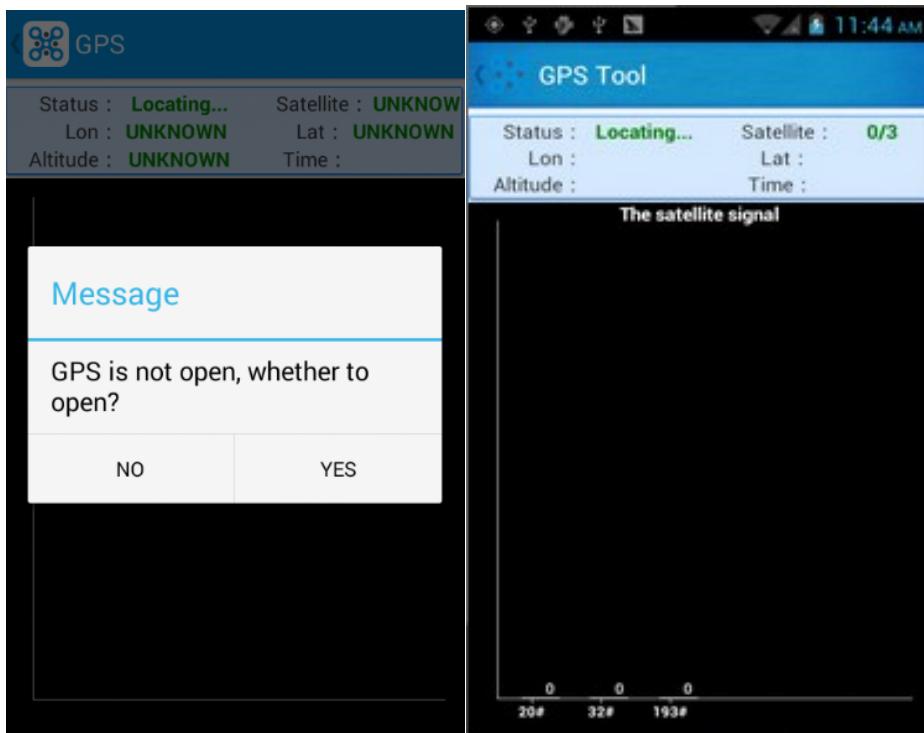
## 6.2 Bluetooth

1. Open the Bluetooth demo in Appcenter and turn on the Bluetooth.
2. Input the content or select the file, then scan the nearby Bluetooth printer and pair them.
3. Select the printer and click 'Print' to print the content.



## 6.3 GPS

1. Open the GPS demo in Appcenter and turn on GPS module.
2. Set the GPS parameters and get the GPS data information.



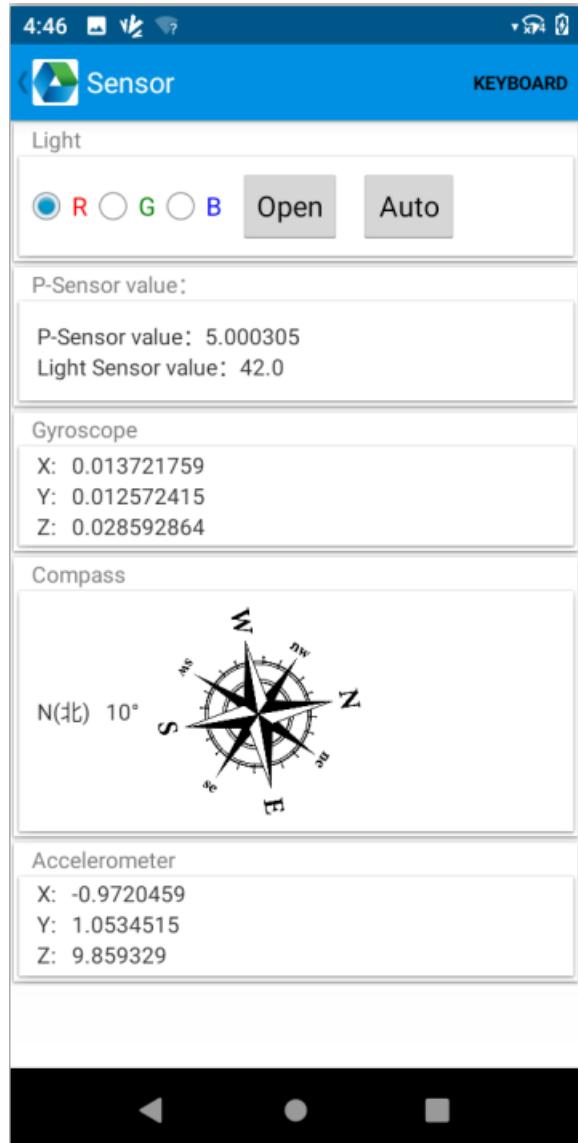
## 6.4 Volume Settings

1. Open the Volume Setting demo in Appcenter.
2. Set the volumes based on the requirements.



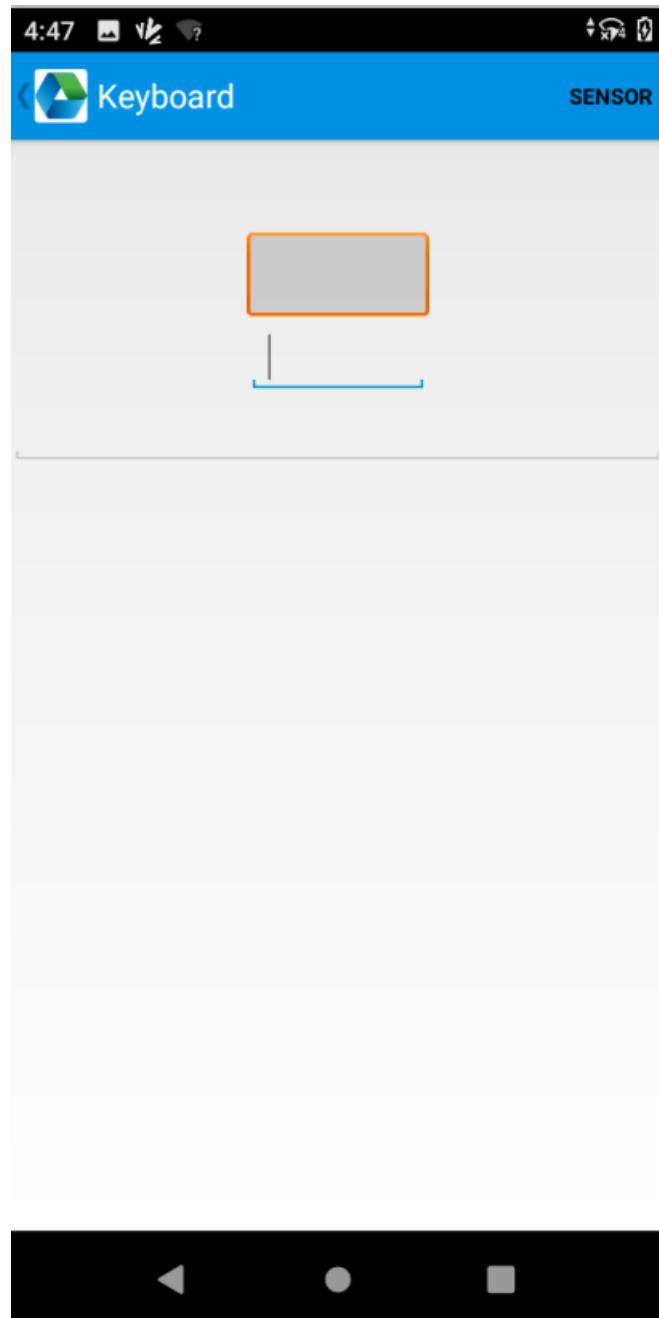
## 6.5 Sensor

1. Open the Sensor demo in Appcenter.
2. Test the sensor based on the requirements.



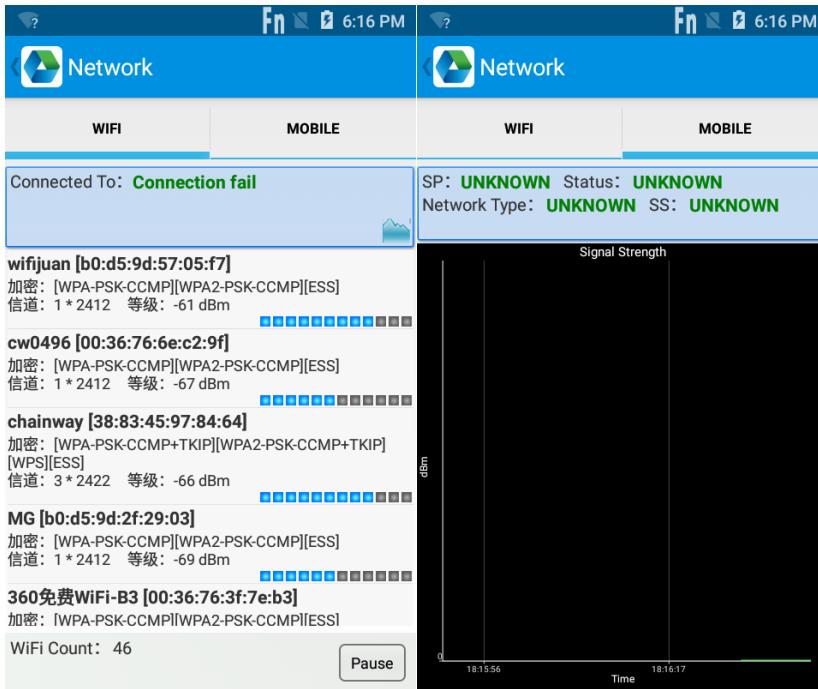
## 6.6 Keyboard

1. Open the Keyboard demo in Appcenter.
2. Set and test the key values of the device.



## 6.7 Network

1. Open the Network demo in Appcenter.
2. Test the WIFI/Mobile signal based on the requirements.



# Chapter 7 Device Specifications

## Physical Parameters

Dimensions	159.5 x 65.7 x 16.8 mm / 6.28 x 2.58 x 0.66 in.
Weight	219g / 7.72 oz. (device with battery)
Screen	4-inch (16:9), IPS LTPS 800*480 4-inch (18:9), IPS LTPS 1080*540
Keyboard	5 side keys : power, 2 scan keys, volume +/- Main keyboard: 22 keys (numeric keys, direction key, screen-lock key, Enter, Del, F1-F10, etc.)
Battery	4250 mAh removable main battery, 2600 mAh pistol battery (UHF version optional) Standby: up to 490 hours (only main battery) ; WiFi: up to 470h; 4G: up to 440h) Continuous use: over 12 hours (depending on user environment) Charging time: 2.5 hours (charge device by standard adaptor and USB cable)
Expansion Slot	1 slot for SIM card, 1 slot for SIM or TF card Supports up to 128 GB Micro SD card
SIM Slot	1 slot for SIM card, 1 slot for SIM or TF card
Camera	Front Camera 5MP Rear Camera Rear 13MP Autofocus with flash

## Performance Parameters

CPU	Qualcomm 1.8 GHz Octa-core
OS	Android 10
Memory	2GB+16GB / 3GB+32GB / 4GB+64GB
Interface	USB2.0, Type-C, OTG

Storage Card Type	TF card
Maximum Expansion Storage	128GB

### Environmental Parameters

Operating Temperature	-20 °C~+50 °C
Storage Temperature	-40 °C~+70 °C
Humidity	5%RH-95%RH (non-condensing)
Dropping Survive	Multiple 2.0 m / 6.56 ft. drops to the concrete across the operating temperature range
Sealing	IP65, IEC compliance
Tumble Specification	1000 x 0.5 m/1.64 ft falls at room temperature

### Wireless Communication

WWAN	2G: 850/900/1800/1900 MHz 3G: CDMA EVDO: BC0 WCDMA: 850/900/1700/1900/2100MHz TD-SCDMA: A/F(B34/B39) 4G: B1/B2/B3/B4/B5/B7/B8/B12/B13/B17/B20/B28/B38/B39/B40/B41
WLAN	Support 802.11 a/b/g/n/ac/d/e/h/i/k/r/v,2.4G/5G dual-band, IPV4,IPV6; Fast roaming: PMKID caching, 802.11r, OKC Operating Channels: 2.4G(channel 1~13), 5G(channel 36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132, 136,140,144,149,153,157,161,165),Depends on local regulations

	Security and Encryption: WEP,WPA/WPA2-PSK(TKIP and AES),WAPI-PSK—EAP-TTLS,EAP-TLS, PEAP-MSCHAPv2, PEAP-LTS,PEAP-GTC,etc.
Vo-LTF	Support Vo-LTE HD video voice call
Bluetooth	Bluetooth 4.2/4.1+HS/4.0/3.0+HS/2.1+EDR
GNSS	GPS/AGPS, GLONASS, BeiDou, Galileo, internal antenna

### Data Collection

2D Barcode Scan Engine	Zebra: SE4710; Honeywell: N6603; DS7000, IA166S, IA171S  1D Symbologies      UPC/EAN, Code128, Code39, Code93, Code11, Interleaved 2 of 5, Discrete 2 of 5, Chinese 2 of 5, Codabar, MSI, RSS, etc.  2D Symbologies      PDF417, MicroPDF417, Composite, RSS, TLC-39, Datamatrix, QR code, Micro QR code, Aztec, MaxiCode; Postal Codes: US PostNet, US Planet, UK Postal, Australian Postal, Japan Postal, Dutch Postal (KIX),etc.
RFID	NFC

### Developing Environment

SDK	Chainway SDK
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Programming Language	Java
Developing Tool	Eclipse/Android Studio

## **Warning**

### **FCC:**

The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types C60(FCC ID: 2AC6AC60) has also been tested against this SAR limit.

The exposure standard for wireless mobile hotspots employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg. Tests for SAR are conducted using standard operating (10 mm) positions accepted by the FCC with the mobile hotspot transmitting at its highest certified power level in all tested frequency bands. The SAR guideline includes a considerable safety margin designed to assure the safety of all persons regardless of age and health.

The FCC has granted an Equipment Authorization for this model mobile hotspot with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines.

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.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

NOTE: 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 communications. 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.

The device for operation in the band 5150 – 5350 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

**CE:**

## EU Regulatory Conformance

Declaration of Conformity Hereby, Shenzhen Chainway Information Technology Co., Ltd. declares that the radio equipment type Mobile Data Terminal of C60 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: [www.chainway.net](http://www.chainway.net)

Your device has been designed and produced to comply with international norms (ICNIRP) for exposure to radiofrequencies. The safety instructions related to exposure to radio frequencies use a measuring unit called SAR (Specific Absorption Rate). The SAR limit adopted by the European Directive 2014/53/EU is 2.0 W/ kg.

For this device, the highest reported SAR value for usage against the head is 1.120W/kg, for usage near the body is 1.577W/kg.

SAR is measured against head and with the device at a separation of 5mm to the body, while transmitting at the highest certified output power level in all frequency bands of the mobile device.

Batteries must be used with caution.

Do not attempt to disassemble the battery yourself. Do not destroy the batteries and chargers. Never use a battery or charger that has been damaged. Keep batteries away from electronic objects.

You should not expose the batteries to very low or very high temperatures (below 0° C or above 45° C).

Battery charging time changes with temperature and battery usage. Please charge it at a reasonable temperature range. To optimise battery life, only use the battery and charger supplied in the box. Incorrect use of the battery or replacement with an incorrect type of battery may cause fire, explosion or other risks. Dispose of used batteries according to the instructions.

5150~5250 MHz can be used indoor only.

	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IE
IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK	

Laser radiation, do not stare into beam, class 2 laser product.

WWAN	
Frequency Band	Maximum output power (dBm)
GSM 900	32
GSM 1800	30.5
WCDMA I	23.5
WCDMA VII	23
FDD LTE B1	23.5
FDD LTE B3/B7/28	23
FDD LTE B8	22.5
FDD LTE B20	24
TDD LTE B38	23
TDD LTE B40	22.5
WLAN	
Frequency Band	EIRP Power(dBm)
Bluetooth	12.35
2.4G WiFi	17.78
5G WiFi	13.85
NFC/GPS/GLONASS/BDS/Galileo	
NFC	-14.95dB $\mu$ A/m at 10m
GPS/GLONASS/BDS/Galileo	N/A