

SHENZHEN CHAINWAY INFORMATION TECHNOLOGY CO., LTD

C90 User Manual



Statement

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Chapter 1 Brief Instruction

1.1 Brief Instruction

CHAINWAY C90 is our newly-developed rugged handheld computer that exhibits extremely powerful performance. Built with Android 10 OS and Qualcomm high-performance processor, it features vigorous system configuration. With rich functionality features like barcode scanning, sturdy WiFi performance, NFC, front and rear cameras, it possesses the best price versus performance ratio. All these make C90 immensely perfect to be implemented in a wide spectrum of industries, including logistics, warehousing, retail, asset tracking etc., and assisting customers to improve operation and management levels 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 C90 device appearance is as follows.



2.2 Buttons

Button	Function
Power Button	Press and hold to turn the device on or off.
SCAN	2 Scan Buttons (Left&Right)
Volume	Volume +/-

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

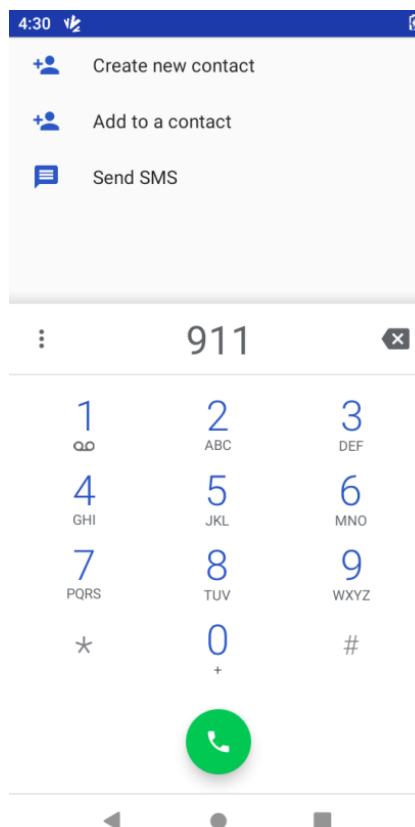
Click this icon



Click the number button to input the numbers.

Click the  button to confirm and dial.

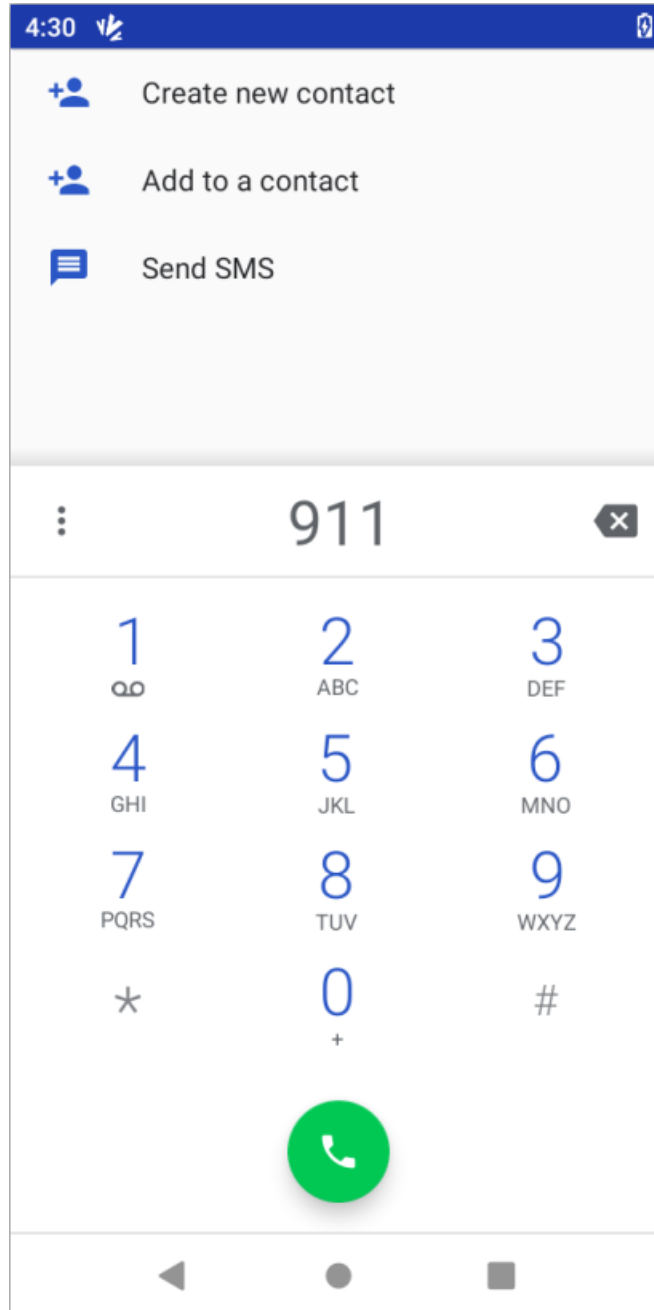
Click the  to end the calling.




3.2 Contacts

Click 'Contacts' to open the contacts list.

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




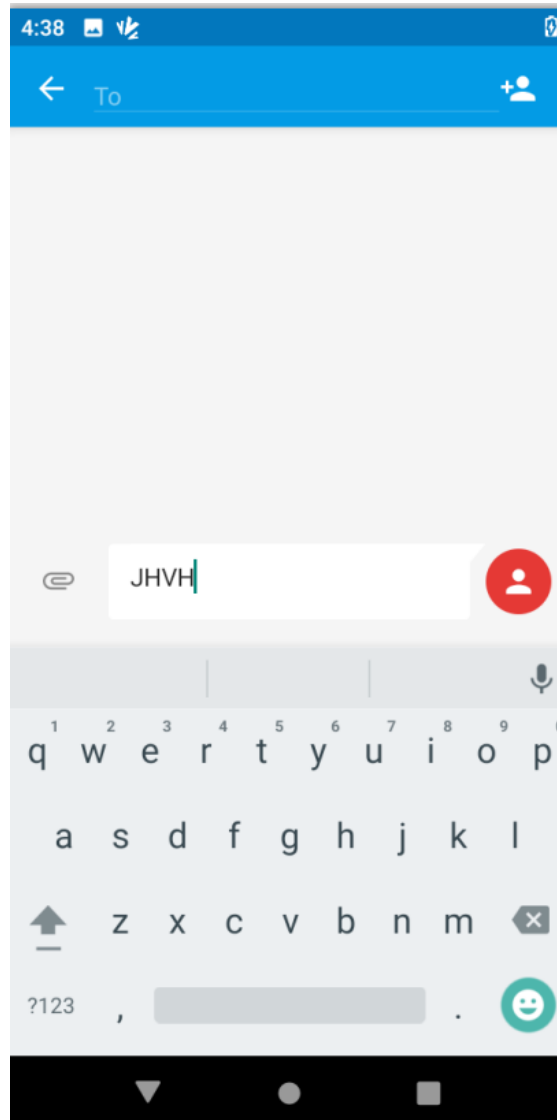
3.3 Messaging

Click  to open the message list.

Click  to input the content.

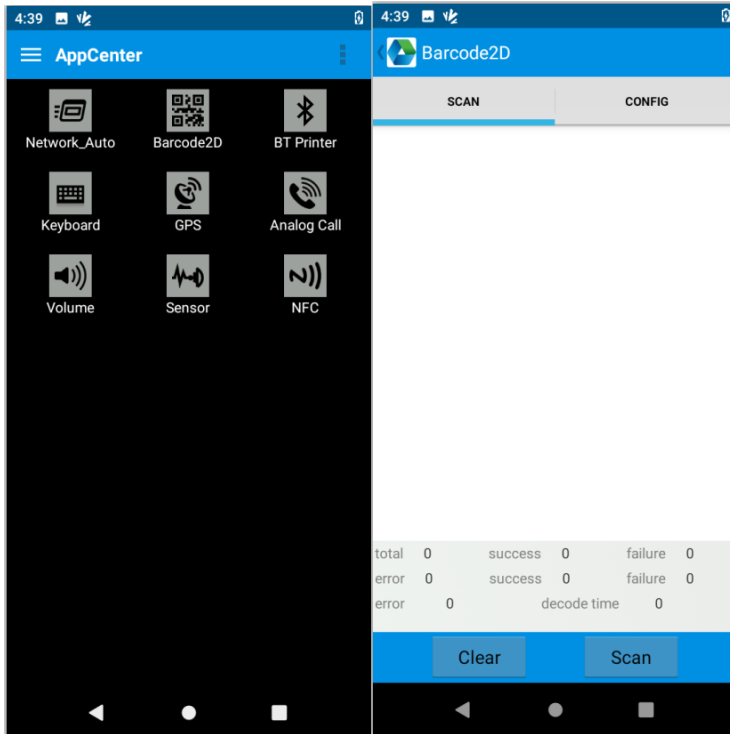
Click  to send the message.

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

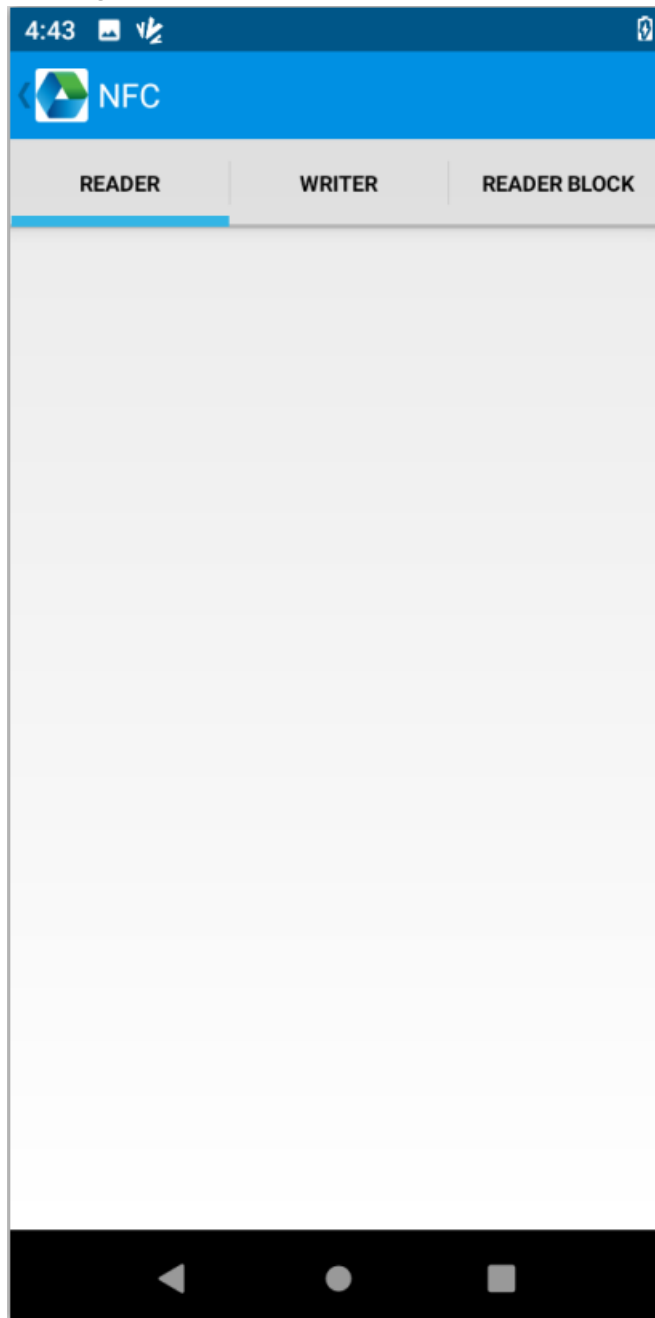


Wrong

Chapter 5 RFID Reader(optional)

5.1 NFC

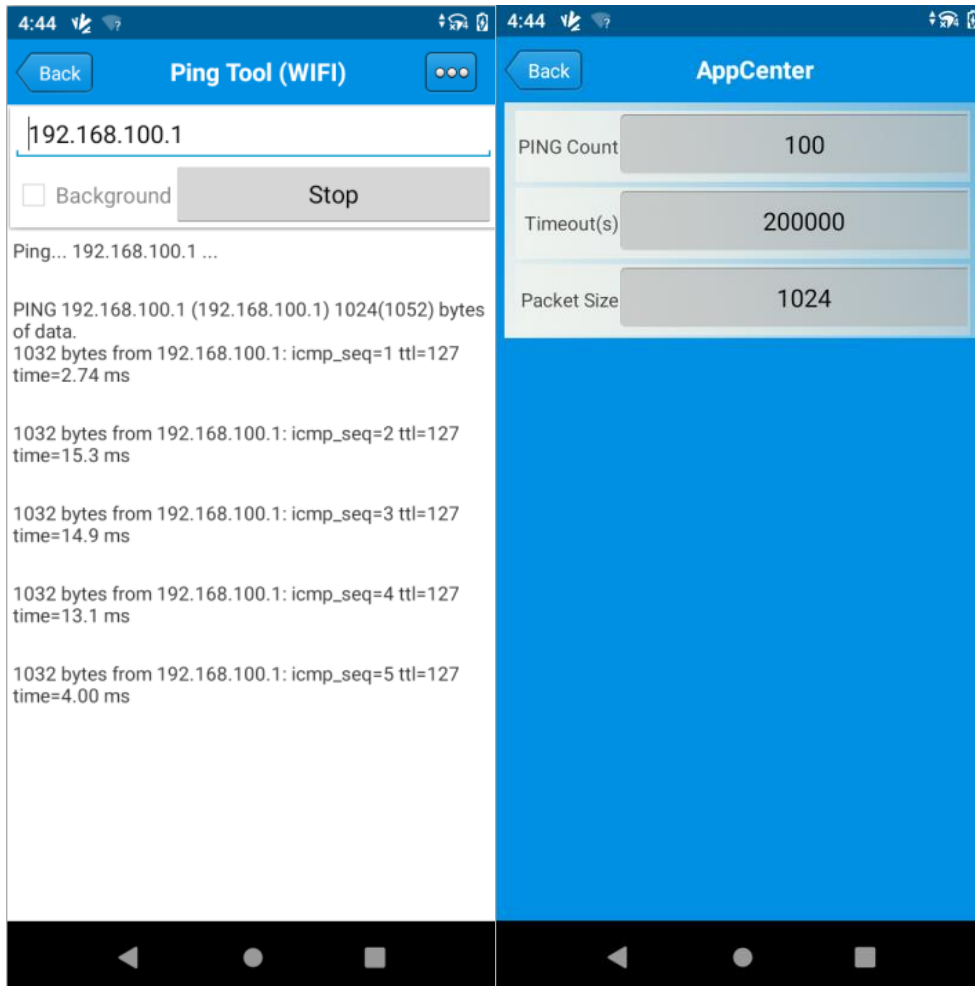
Open the “NFC” demo within Appcenter, and then reading and writing information of the tag.



Chapter 6 Other Functions

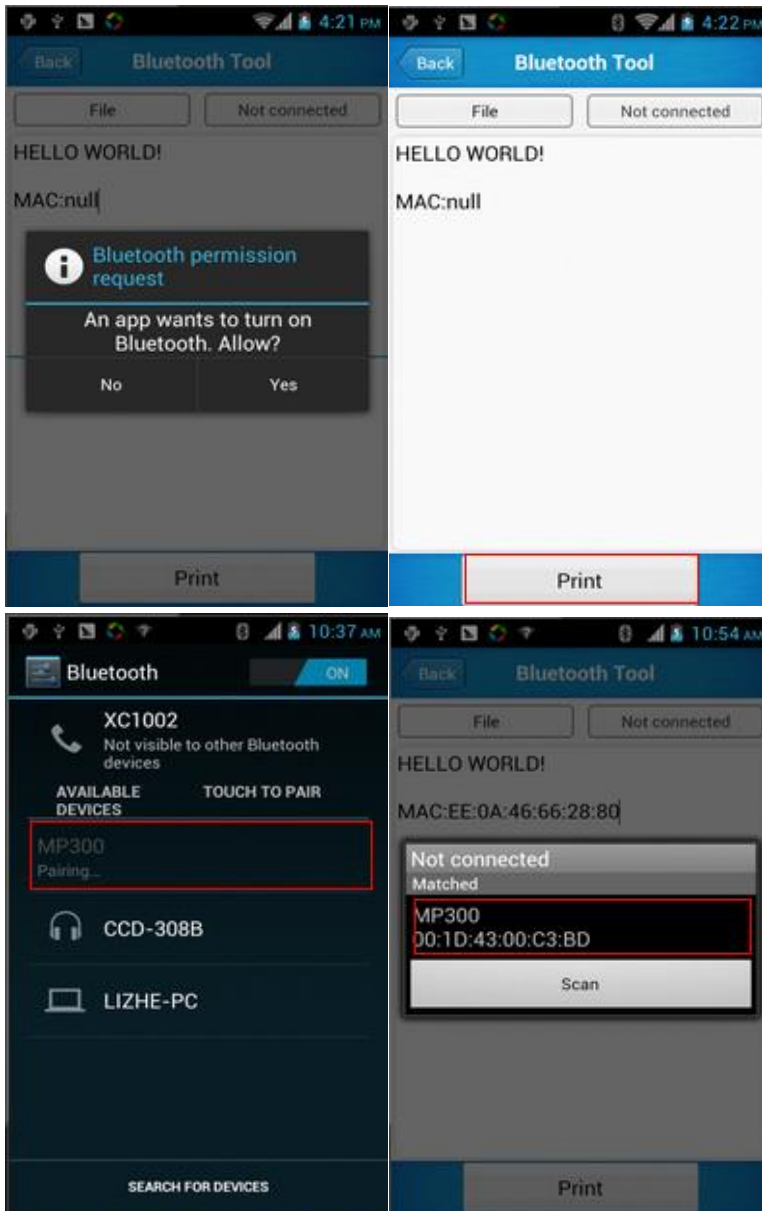
6.1 PING

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



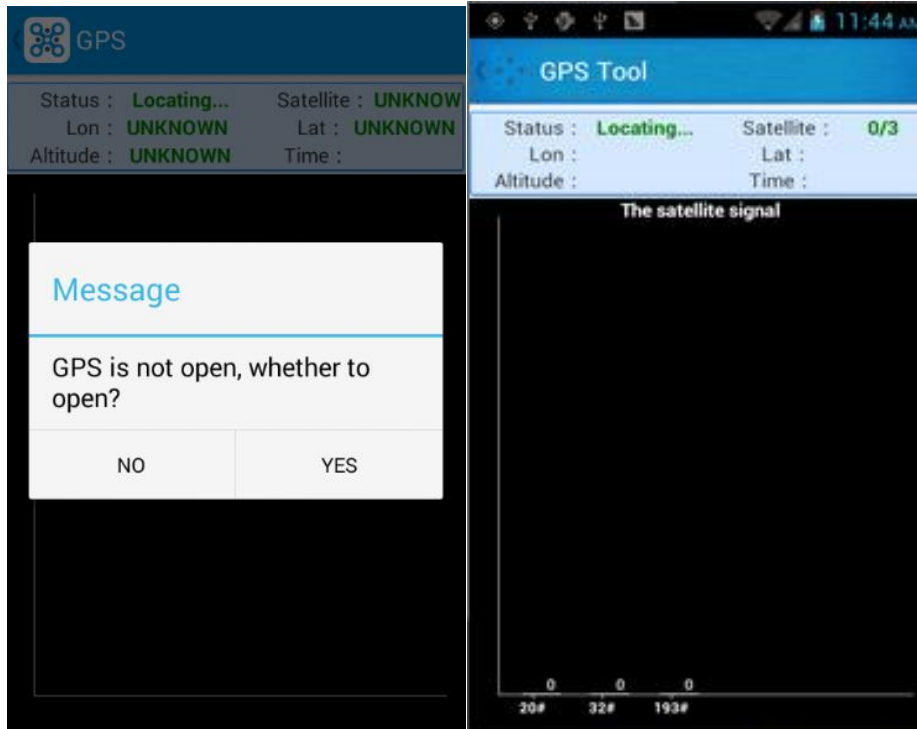
6.2 Bluetooth

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.



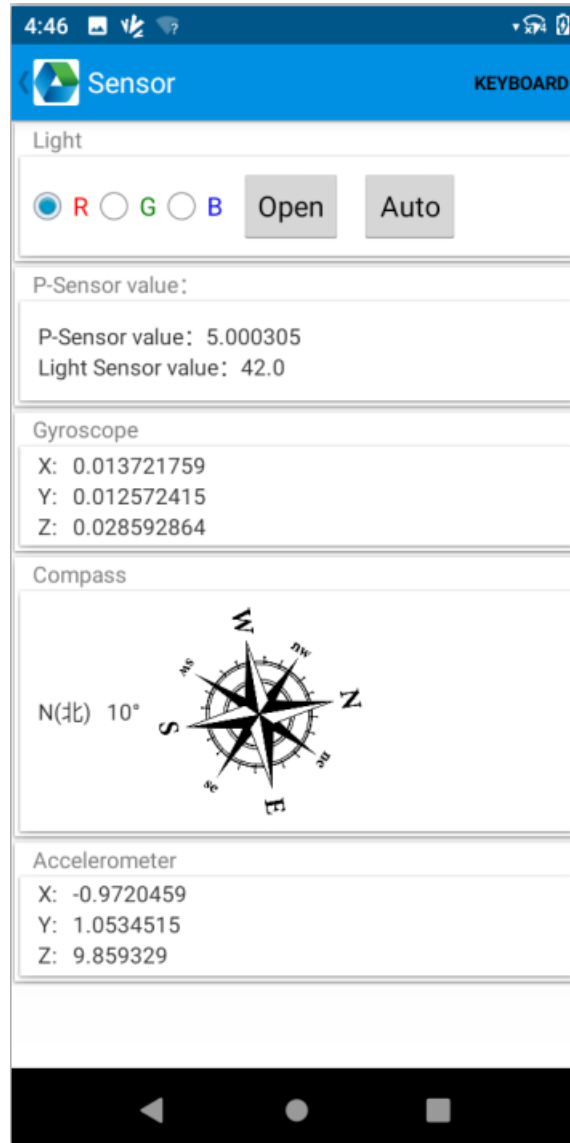
6.4 Volume Settings

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



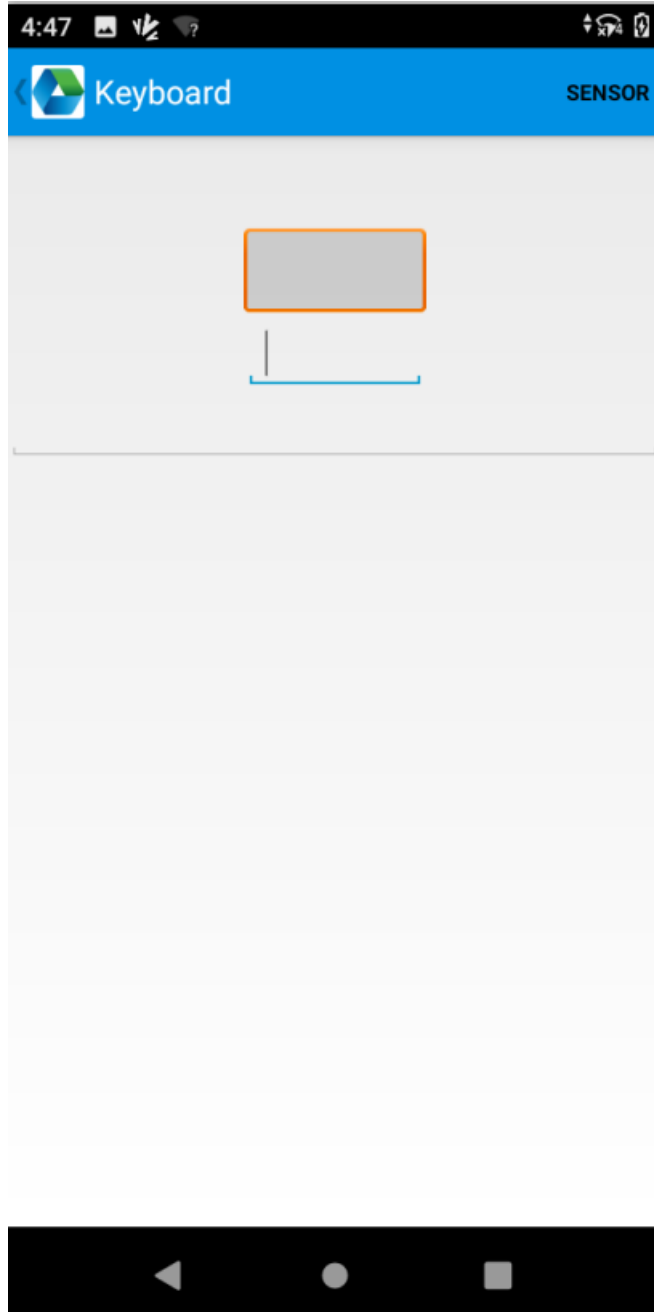
6.5 Sensor

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



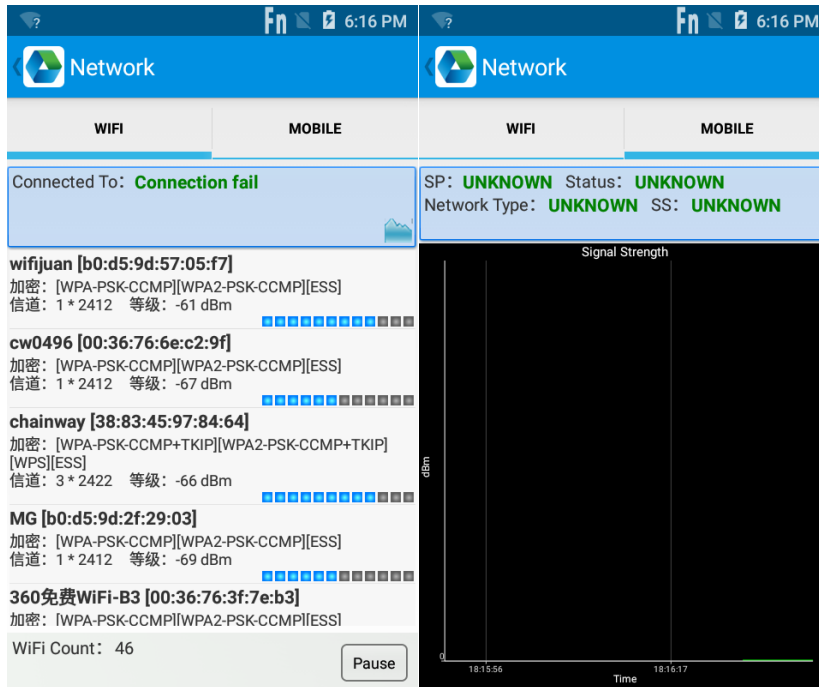
6.6 Keyboard

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	158.5 x 76.0 x 13.1 mm / 6.24 x 2.99 x 0.52 in.
Weight	230g / 8.11 oz. (device with battery)
Screen	5.7-inch (18:9), IPS LTPS 1440 x 720
Touch Panel	Corning Gorilla Glass, multi-touch panel, gloves and wet hands supported
Battery	Main battery: built-in 5000 mAh 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 Nano SIM card, 1 slot for Nano SIM or TF card
SIM Slot	1 slot for nano SIM card, 1 slot for nano SIM or TF card
Camera	Front Camera 8MP Rear Camera Rear 16MP Autofocus with flash

Performance Parameters

CPU	Cortex-A53 2.0 GHz Octa-core
OS	Android 10
Memory	3GB + 32GB 4GB + 64GB (optional)

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	IP67, IEC compliance
Tumble Specification	1000 x 0.5 m/1.64 ft falls at room temperature

Wireless Communication

WWAN	<p>EU/APAC: 2G: GSM850/GSM900/DCS1800/PCS1900 3G: CDMA EVDO: BC0 WCDMA: B1/B2/B4/B5/B8 TD-SCDMA: A/F(B34/B39) 4G: B1/B2/B3/B4/B5/B7/B8/B20/B34/B38/B39/B40/B41</p> <p>US: 2G: GSM850/GSM900/DCS1800/PCS1900 3G: CDMA EVDO: BC0/BC1 WCDMA: B2/B4/B5/B8 4G: B2/B4/B5/B7/B8/B12/B17/B28A/B28B/B38</p>
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WLAN	Support IEEE802.11 a/b/g/n/ac/d/e/h/i/k/r/v/w, 2.4G/5G dual-band, IPV4, IPV6; Support 5G PA Fast roaming: PMKID caching, 802.11r, OKC Operating Channels: 2.4G(channel 1~13), 5G(channel 36,38,40,42,44,46,48,52,56,60,64,100,104,108,112, 116,120,124,128,132,136,140,149,153,157,161,165), 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.
Bluetooth	V2.1+EDR,3.0+HS and V4.1+HS, BT5.0
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
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	Postal, Dutch Postal (KIX),etc.
RFID	NFC

Developing Environment

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

FCC Caution.

§ 15.19 Labeling requirements.

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.

§ 15.21 Information to user.

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

§ 15.105 Information to the user.

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.

Specific Absorption Rate (SAR) information:

This **wireless phone** meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.

The highest SAR value reported under this standard during product certification for use at the **ear is 0.664W/kg** and when properly worn on the **body is 1.2W/kg**. This device was tested for typical body-worn operations with the back of the handset kept **1.0cm** from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain a **1.0cm** separation distance between the user's body and the back of the handset. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

Body-worn Operation

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of **1.0 cm** must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.