



# SOL PA501

User's Manual



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# About This Manual

The PA501 User's Manual provides instructions for qualified personnel to follow when setting up a new PA501 device.

This document is intended for use by qualified personnel to compliment the training and expertise, not to replace it.

## Related Information

Current information and manuals are available for download at the following website:

<https://www.ruggon.com>

## Conventions

Bolded or underlined text is used to emphasize the designated information.



A Note is used to provide additional information for the device or settings.



A Caution is used to warn against potential hazards or to caution against unsafe practices.



A Warning is used to identify immediate hazards for property damage, injury or death.

# Basic Safety Guidelines

The following safety guidelines are intended to help protect the user from injury and prevent damage to the hardware.

- Do not place anything on the AC adapter's power cable and make sure the cable is not located where it can be tripped over or stepped on.
- Do not cover the AC adaptor as it reduces the cooling.
- Do not use the AC adapter while it is inside the carrying case.
- Use only the AC adapter, power cord, and batteries that are approved for use with the device. Use of another type of battery or AC adapter may cause risk of fire or explosion.
- If you use an extension cable with the AC adapter, ensure that the total ampere rating of all products plugged in to the extension cable does not exceed the ampere rating of the extension cable.
- If the device is moved between environments with very different temperature and/ or humidity ranges, condensation may form on or within the device. Avoid damaging the device by allowing sufficient time for the moisture to evaporate before using the device.
- When disconnecting cables, pull on the connector or on its strain relief loop, not on the cable itself. When pulling out or plugging in the connector, keep it evenly aligned to prevent bending the connector pins.

## Intended Use

The PA501 rugged tablet is equipped with multi-functional terminals for stationary and mobile applications in industrial environments such as logistics, warehousing, fleet management, manufacturing and the automotive industry.

Read the safety guidelines thoroughly before starting any servicing on the device. Read the guidelines before powering up the device, and keep this document for later use.

The operator is solely responsible for any damage resulting from unauthorized modifications to the device.

### ***Unintended Application Use***

The device is not designed for use in life-support systems or critical safety/security systems where system malfunction can lead to the direct or indirect endangerment of human life. The operator is fully responsible for using the device in these situations.

## Maintenance and Operation Overview

The PA501 is designed and manufactured according to strict controls and following the stated safety regulations. The following list identifies incorrect operating uses of the PA501. Incorrect use of the PA501 can lead to hardware damage, safety issues and possible risk to personnel health:

- The PA501 is under operation by untrained personnel;
- The PA501 is not maintained as recommended;
- The PA501 is not used as intended

# Safety

To prevent injury and damage, read the following safety guidelines prior to operating the device. The manufacturer assumes no liability for any and all damages arising from misuse or noncompliance with these guidelines.

## Electrical Hazards

### ***Cleaning/Service: Power Off the PA501***

- Disconnect the PA501 from power before cleaning or servicing it.

### ***Power Adapter***

Contact an authorized service personnel for repairs to the power pack. In the event of a blown fuse after replacing the fuse, contact an authorized service personnel to avoid electrical shock.

### ***Use only Supplied Power Cables***

RuggON power cables meet industrial requirements for low-temperature flexibility, UV resistance, and oil resistance. Use only supplied power cables from RuggON.

If other power cables are used, the following may apply:

- The operator is solely responsible for the resulting damage;
- All RuggON warranties are void.

### ***Environmental Hazards***

Do not use the PA501 in locations near/with flammable gases or vapor. The use of electrical equipment in explosive environments can be dangerous.

- Turn off the device when near a gas station, fuel depot, chemical plant or a place where blasting operations take place.

## Environmental

### ***Ambient Temperature***

The PA501 operates on the basis of a fanless concept which internal waste heat is released via the housing surface and requires fresh airflow in the environment.

- Operating the PA501 with no fresh cooling air may cause overheating and damage to the device.
- The operating environment should not be enclosed to prevent the cool air being heated by the heat waste from the device.

### ***Connecting and Disconnecting External Devices***

To prevent the considerable damage, the PA501 and the external device should be disconnected from power when connecting/disconnecting excluding USB devices.

### ***Only Use Authorized Accessories***

Only use the supplied cables, power packs and other accessories that have been tested and approved by RuggON. Contact your local distributor for further information.

# Radio Transmissions

## ***Permitted Transmission Power***

Follow the national regulations for the maximum permitted transmission power.

The operator is solely responsible for this type of operation.

## ***Radio Frequency Limited Locations***

Considering the radio frequency limitation in hospitals and aircraft, the PA501 can only be installed with permission.

Industrial computers may affect the function of implanted medical devices such as pacemakers and may cause malfunction.

# Cleaning and Servicing

- Disconnect the PA501 from power before cleaning or servicing.
- Never clean the PA501 with compressed air, a pressure washer or a vacuum cleaner.
- If necessary, clean the housing of the PA501 with a damp cloth.
- Clean the touch-screen with a nonabrasive cloth.

# Regulatory and Certification

## ***Canada***

IC No.: 25233-PA501B

Contains IC No.: 25233-MS01PRO

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Industry Canada rules.

### Antenna Statement

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

### License exempt

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

this device may not cause interference, and

this device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES- 003.

This Category II radio communication device complies with Industry Canada Standard RSS-310.

### IMPORTANT NOTE: IC Radiation Exposure Statement

This EUT is compliant with SAR for general population/uncontrolled exposure limits in IC RSS-



102 and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528. SAR is measured with the device at 0 mm to the extremity, while transmitting at the highest certified output power level in all frequency bands of the device.

The maximum SAR value is 1.17/kg (WLAN) / 0.73 (WWAN) W/kg (extremity) averaged over 10 gram of tissue.

This equipment should be installed and operated with a minimum distance of 0 cm between the radiator and your extremity. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. The County Code Selection feature is disabled for products marketed in the US/Canada.

#### IC SAR warning

#### Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has been evaluated for and shown compliant with the IC Specific Absorption Rate ("SAR") limits when installed in specific host products operated in portable exposure conditions.

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems; the maximum antenna gain permitted (for devices in the bands 5250-5350 MHz and 5470-5725 MHz) to comply with the e.i.r.p. limit; and The maximum antenna gain permitted (for devices in the band 5725-5850 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate, as stated in section A9.2(3). In addition, High-power radars are allocated as primary users (meaning they have priority) of the band 5250-5350 MHz and this radar could cause interference and/or damage to LE-LAN devices.

## **Canada**

Numéro IC: 25233-PA501B

Contient le numéro IC: 25233-MS01PRO

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Les changements et modifications non expressément approuvés par le fabricant ou le détenteur de cet équipement peuvent annuler votre droit à utiliser cet appareil en vertu des règles d'Industrie Canada.

#### Déclaration d'antenne

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Licence exempte

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

l'appareil ne doit pas produire de brouillage, et

l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Ce dispositif de radiocommunication de catégorie II respecte la norme CNR-310 d'Industrie Canada.

#### Avertissement IC SAR

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie émise par l'appareil de sans fil est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC). Utilisez l'appareil de sans fil de façon à minimiser les contacts humains lors du fonctionnement normal.

Ce périphérique a été évalué et démontré conforme aux limites SAR (Specific Absorption Rate – Taux d'absorption spécifique) d'IC lorsqu'il est installé dans des produits hôtes particuliers qui fonctionnent dans des conditions d'exposition à des appareils portables.

## **FCC**

FCC ID: 2ABTU-PA501B

Contains FCC ID: 2ABTU-MS01PRO

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.



Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This device is operable in 5.15 – 5.25GHz frequency range, and restricted in indoor use only. Outdoor operation in 5.15 – 5.25GHz is prohibited.


This device is slave equipment that it is not for radar detection and ad-hoc DFS band operation.

## 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.

Users are able to access information in a device's settings.

Settings->About tablet->Regulatory labels

1. Turn on your device
2. Draw down from top side of device
3. Tap settings icon 
4. Slide down and choose system
5. Slide down and choose Regulatory information

## RF Exposure Information (SAR)

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels.

## CE Marking



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

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. Please contact your local representative for ordering information.

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

European declaration of conformity

According to ISO / IEC Guide 22 and EN 450 14

Manufacturer's Name: RuggON Corporation

Manufacturer's Address: 4F, No.298, Yang Guang St., Neihu Dist., Taipei City, Taiwan

Declares, under our sole responsibility, that the product: Product Name: Rugged Tablet

Model Number: PA501B

Conforms to the following Product Specifications:

- RED 2014/53/EU LVD 2014/35/EU EMC 2014/53/EU RED
- ETSI EN 301 511
- ETSI EN 301 908-1
- ETSI 301 489-1
- ETSI 301 489-52
- ETSI EN 301 489-1
- ETSI EN 301 489-3
- ETSI 300 330
- ETSI EN 303 413
- ETSI EN 301 489-19
- ETSI EN 300 328
- ETSI EN 300 893
- ETSI EN 301 489-17
- EN 55032: 2015+AC: 2016
- EN 55035: 2017
- EN 55024: 2010+A1:2015
- EN 60950-1:2006/A11:2009 /A1:2010/A12:2011/A2:2013

#### Supplementary information

In addition, the product is battery powered and the power supply provided with this product has been certified to IEC 60950-1: 2005 2nd edition +Am1:2009+Am2: 2013. As manufacturer, we declare under our sole responsibility that the equipment follows the provisions of the Standards stated above.

Importer of Record

**CAUTION** - Only approved accessories may be used with this equipment. In general, all cables must be high quality, shielded, correctly terminated and normally restricted to two meters in length. Power supplies approved for this product employ special provisions to avoid radio interference and should not be altered or substituted. Unapproved modifications or operations beyond or in conflict with these instructions for use may void authorization by the authorities to operate the equipment.

This RuggON product has been tested and found to comply with all requirements for CE Marking and sale within the European Economic Area (EEA). The device has Bluetooth and wireless LAN approval and satisfies the requirements for Radio and Telecommunication Terminal Equipment specified by European Council Directive 2014/53/EU. These requirements provide reasonable protection against harmful interference when the equipment is operated appropriately in a residential or commercial environment.

The device is intended for connection to European Networks

#### a. Caution:

- Risk of explosion if battery replaced by an incorrect type.
- Dispose of used batteries according to the instructions.

#### b. Make sure the temperature for adapter will not be higher than 40 °C

# CE RF Power Table

2.4GHz Maximum Conducted Power													
MIMO A						MIMO B						Avg	Peak
CH.	802.11b Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11b Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
1	2412	14	13.07	15.94		1	2412	14	14.06	16.9		16.6	19.46
7	2442	14	12.95	15.75		7	2442	14	13.81	16.67		16.41	19.24
13	2472	14	13.04	15.71		13	2472	14	13.97	16.85		16.54	19.33
CH.	802.11g Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11g Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
1	2412	14.5	13.07	17.87		1	2412	14.5	14.06	18.9		16.6	21.43
7	2442	14.5	13.16	17.85		7	2442	14.5	14.04	18.8		16.63	21.36
13	2472	14.5	13.16	18.65		13	2472	14.5	14.09	19.1		16.66	21.89
CH.	802.11n20 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11n20 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
1	2412	14.5	12.89	17.87		1	2412	14.5	13.91	18.79		16.44	21.36
7	2442	14.5	13.17	18.08		7	2442	14.5	13.68	18.53		16.44	21.32
13	2472	14.5	13.14	18.74		13	2472	14.5	13.74	18.81		16.46	21.79
CH.	802.11n40 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11n40 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
3	2422	14	13.1	19.54		3	2422	14	13.72	20		16.43	22.79
7	2442	14	13.03	19.35		7	2442	14	13.84	20.31		16.46	22.87
11	2462	14	13.01	19.92		11	2462	14	13.81	20.35		16.44	23.15
CH.	BT-1Mbps Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason								
0	2402	8	5.69	5.89									
39	2441	8	4.44	4.66									
78	2480	8	6.52	6.69									
CH.	BT-3Mbps Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason								
0	2402	8	2.33	5.54									
39	2441	8	1.03	4.19									
78	2480	8	3.17	6.35									
CH.	BLE Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction								

					Reason
0	2402	N/A	1.48	1.79	
19	2440	N/A	-0.02	0.37	
39	2480	N/A	0.99	1.29	


5GHz Maximum Conducted Power													
MIMO A						MIMO B						Avg	Peak
CH.	802.11a Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11a Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
36	5180	16	15.05	19.71		36	5180	16	14.87	19.53		17.97	22.63
64	5320	16	14.64	19.26		64	5320	16	14.72	19.4		17.69	22.34
100	5500	17	15.42	19.89		100	5500	17	14.81	19.46		18.14	22.69
140	5700	16.5	15.87	20.45		140	5700	16.5	13.73	18.33		17.94	22.53
CH.	802.11n20 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11n20 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
36	5180	16.5	15.28	20.07		36	5180	16.5	15.33	20.1		18.32	23.1
64	5320	16	14.5	19.34		64	5320	16	14.61	19.37		17.57	22.37
100	5500	17	15.11	19.87		100	5500	17	14.76	19.62		17.95	22.76
140	5700	16.5	15.75	20.59		140	5700	16.5	13.64	18.45		17.83	22.66
CH.	802.11n40 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11n40 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
38	5190	16	15.24	21.41		38	5190	16	15.15	21.42		18.21	24.43
62	5310	15.5	14.42	20.67		62	5310	15.5	14.55	20.99		17.5	23.84
102	5510	16.5	15.23	21.29		102	5510	16.5	14.65	20.97		17.96	24.14
134	5670	16	15.55	21.75		134	5670	16	13.62	19.81		17.7	23.9
CH.	802.11ac80 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	CH.	802.11ac80 Freq.(MHz)	Setting	Avg (dBm)	Peak (dBm)	Power Reduction Reason	MIMO A+B (dBm)	MIMO A+B (dBm)
42	5210	16	14.88	21.44		42	5210	16	15.09	21.72		18	24.59
58	5290	16	14.58	21.07		58	5290	16	14.85	21.48		17.73	24.29
106	5530	17	15.59	21.75		106	5530	17	14.64	21.17		18.15	24.48
122	5610	16.5	15.48	21.74		122	5610	16.5	14.04	20.48		17.83	24.17


## Lithium Battery Safety Statement




Lithium battery inside. Danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by battery manufacturer.

Lithium-Ion batteries are classified by the U. S. Federal Government as non-hazardous waste and are safe for disposal in the normal municipal waste stream. These batteries contain recyclable materials and are accepted for recycling. Dispose of used batteries in accordance with local regulations.


 **WARNING** – Non-approved batteries will not function in the device. Use only the battery for the system for which it was specified. Only use the battery with a charging system that has been qualified with the system per this standard. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.

 **WARNING** – There are no user-serviceable parts in the batteries. Do not disassemble or open, crush, bend or deform, puncture, or shred the battery. Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard. Do not expose to temperatures above +60 °C (+140 °F).

 **WARNING** – Improper battery use may result in a fire, explosion, or other hazard.

- Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.
- Avoid dropping the device or battery. If dropped, especially on a hard surface, and the user suspects damage to the battery, take it to a service center for inspection.
- In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.
- Battery usage by children should be supervised.

## ***Power supply safety***

 **WARNING** – Use only AC and vehicle adapters intended for the device. Output rating 19 Vdc, minimum 3.42A. Other external power sources may damage your product and void the warranty.

- Ensure the input voltage on the adapter matches the voltage in your location. Ensure the Class I adapter has prongs compatible with your outlets and earthing connection.
- The AC power supply is designed for indoor use only. Avoid using the AC power supply in wet areas.
- Unplug the power supply from power when not in use.
- Do not short the output connector.

# Chapter 1. Introduction

The PA501 is a rugged device equipped with 802.11, Bluetooth and GNSS for wireless data communications.

The PA501 is a rugged 10.1” tablet computer capable of 1920 x 1200 resolution. The PA501 supports the following operating systems:

- Android 11.0 (R) with Google Mobile Services(GMS) certified

## About this Guide

The PA501 User Manual provides instructions for qualified personnel to use as a guide for setup of the device. This document is not intended to replace the training and expertise of the end-user.

## Unpacking the Device

Before you begin the installation or configuration process make sure to inspect all components and accessories. Contact your representative if there are any missing or damaged items. See “Contacting RuggON” on page 70

## PA501 Configuration Options

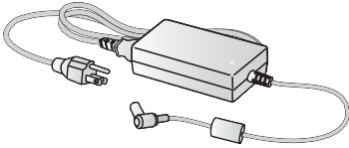
The following options are available for the PA501:

- Built-in NFC module
- Built-in 2D barcode reader (OCR supported)
- High capacity external battery
- Fingerprint reader
- Snap-on connector easy for customization



# Parts List

The PA501 is shipped with the Power Adapter and Stylus. Other accessories are sold and ordered separately. For help, contact your local RuggON sales representative. See “*Contacting RuggON*” on page 70.



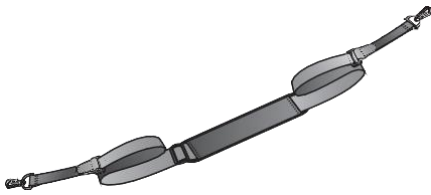
Power Adapter



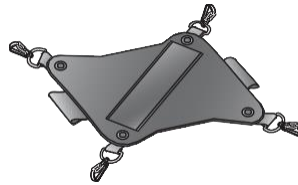
Stylus



2-Point Handle



2-Point Shoulder Strap



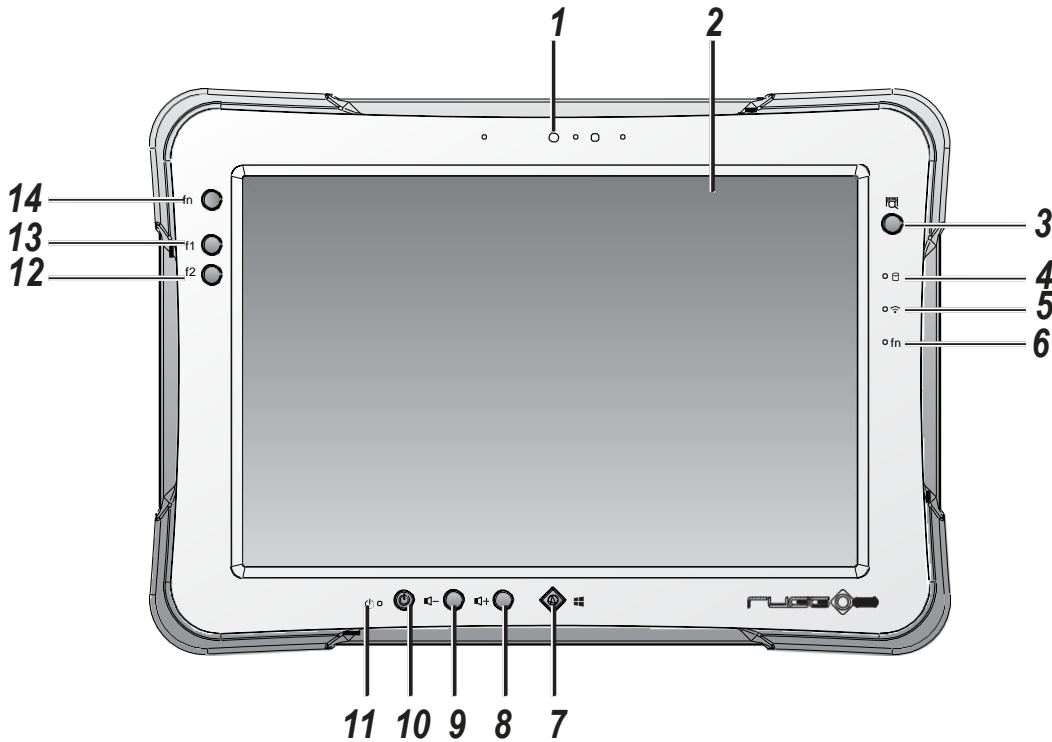
4-Point Handstrap



D-rings

# Identifying the Device

## Front View

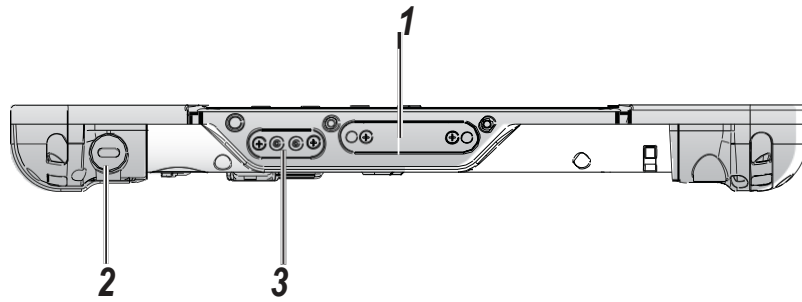


No	Item	Description
1	Front camera	8.0 Mega-Pixels camera.
2	Touch screen	10-point capacitive touch.
3	Barcode trigger	If barcode scanner is installed, press to scan.
4	Battery LED	Display battery status
5	Wi-Fi LED	The Wi-Fi LED lights up to indicate Wi-Fi is enabled.
6	FN LED	The FN LED lights up when the function is switched on.
7	Home key	Back to Android home.
8	Volume +	Volume increase.
9	Volume -	Volume decrease.
10	Power key	Turns the PA501 on or off.
11	Power LED	The power LED lights up when the device is on.
12	F2 key	Programmable function key.
13	F1 key	Programmable function key.
14	FN key	Programmable function key.

### LED Status

Item	Status	Description
Power	Green: On	Power on
	Off	Power off
Battery	Green: On	Fully charged
	Amber: On	Charging
	Amber: Blinking	Low power < 15%
	Off	Not charging / no battery
FN	Blue: On	FN function switch on
	Blue: Off	FN function switch off
Wi-Fi	Blue: On	Wi-Fi on
	Blue: Off	Wi-Fi off

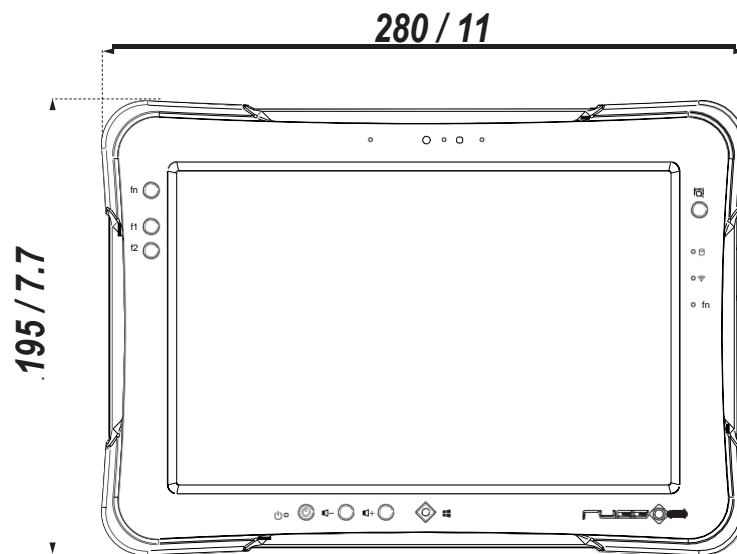
## Bottom View



No	Item	Description
1	Docking connector	26-pin connector for docking onto a station.
2	Kensington lock	Lock the PA501 to a stationary object for security.
3	Pass-through	Dual pass-through for WLAN, GNSS and WWAN.

## Dimensions

The following image lists the device dimensions without add-ons (mm/inches).



23 / 0.9



# Chapter 2. Getting Started

This section provides an outline of the steps necessary to setup a new PA501. A detailed guide follows the listed items, see as follows.

For additional technical assistance, contact your RuggON representative. See “*Contacting RuggON*” on page 70.



It is recommended to install or remove accessories on a clean, well-lit work surface. To protect yourself and the device from electrostatic discharge, wear anti-static wrist straps or place the device on an anti-static mat.

## First Time Use

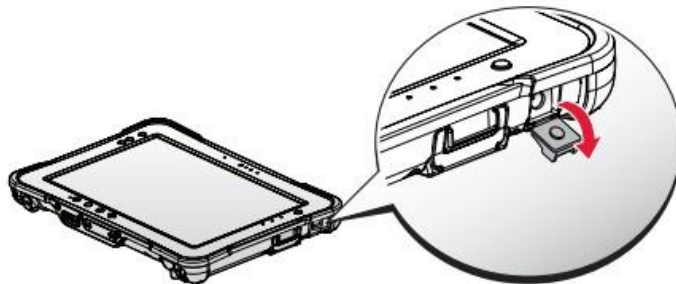
PA501 is under “Battery Ship Mode” and will not power on to preserve the battery and prevent power loss. To enable “Regular Mode” and activate the battery, please connect the power adapter to power on.

## Charging the Battery

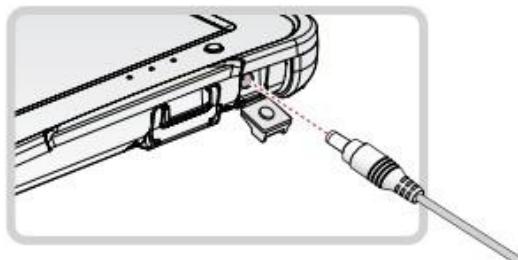
When you use the AC adapter to connect your PA501 to a power outlet, the standard and external (optional) battery will automatically begin to recharge.

While the battery is charging, the power LED will be active. When the battery is fully charged, the power LED is lit as solid green.

1. Flip open the DC-IN cover to expose the DC-IN jack.

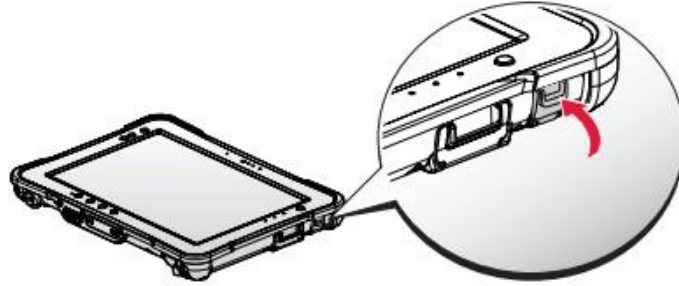


2. Connect the AC adapter to the DC-IN port.



After charging the battery, disconnect the AC adapter and close the DC-IN cover.

1. Insert one end of the cover first and angle the cover to seat it in place.
2. Push in the cover to seal the DC-IN compartment



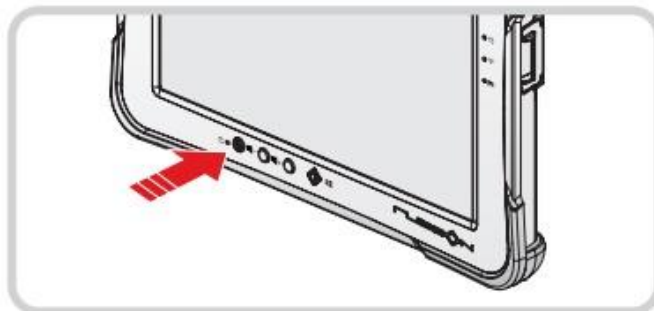
The DC-IN cover must be inserted correctly to prevent internal damage to the device.

## Powering the Device On and Off



### **Powering On the Device**

Only power on the PA501 after connecting all of the peripherals and cabling.

1. Press and hold the power button until the screen lights. The device runs through the start-up sequence and powers up.



### **Powering Off the Device**

- Start screen:  
Tap  > **Shut down**.
- Desktop screen:
  1. Tap and hold  at the bottom right corner of the Desktop screen.
  2. Tap **Shut down or sign out** > **Shut down**.
- Both Start screen and Desktop screen:
  1. Display charm bar and tap **Settings**.
  2. Tap **Power** > **Shut down**.

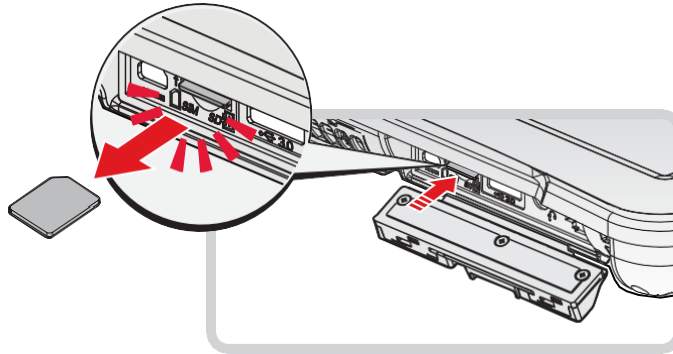
## Installing/Removing the Micro SIM 1 Card

The device includes a micro SIM card slot for cellular and wireless connection. Only a micro SIM card is supported in the slot.



Support hot-swappable design  
Check with your network or cellular service provider for availability and cost rate

1. Power off the PA501. See “Powering Off the Device” on page 17.
2. Open the left I/O compartment cover.
3. Locate the micro SIM 1 slot in the left I/O parts.
4. Take the micro SIM card from its packaging.
5. The micro SIM card has a corner missing. Align the SIM card with the slot and make sure that the corners match.
6. Insert the micro SIM card and press it in until an audible click sounds.
7. Grasp the micro SIM card and remove it from the slot.



8. Close the left I/O compartment cover.

## Installing/Removing the Micro SIM 2 Card

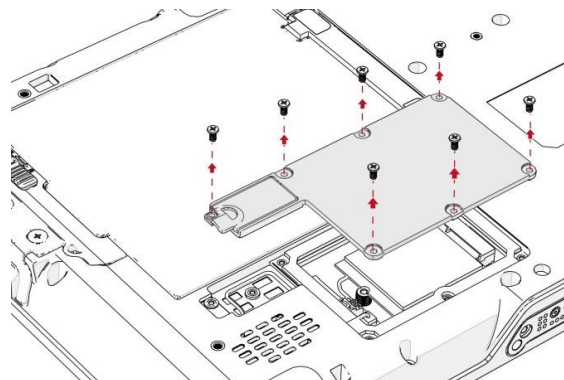
The device includes a micro SIM 2 card slot for cellular and wireless connection. Only a micro SIM card is supported in the slot.



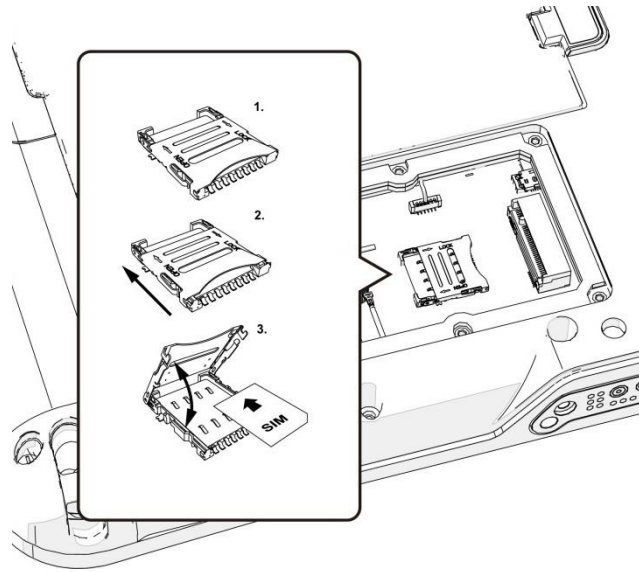
Check with your network or cellular service provider for availability and cost rates.

1. Power off the PA501. See “Powering Off the Device” on page 17.
2. Remove the service door and its screws.

### **Back View**



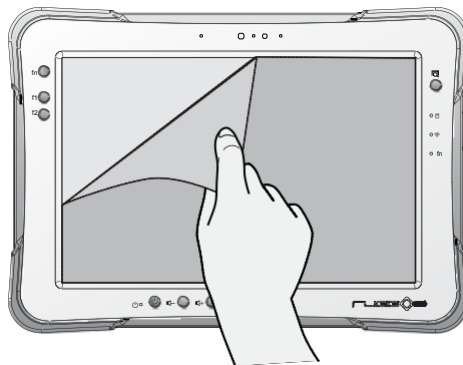
3. Take the micro SIM card from its packaging.
4. Push the SIM 2 card cover to open position and place the micro SIM card to the slot.
5. Push the SIM 2 card cover to open position and remove the micro SIM card from the slot.
6. Close the SIM 2 card cover.



## Removing the Protective Film from the Display

The front display of the PA501 is protected by a transparent film during transport. This film should remain on the front display during assembly to avoid damage to the front display surface.

Only remove the film once all of the assembly work has been completed.

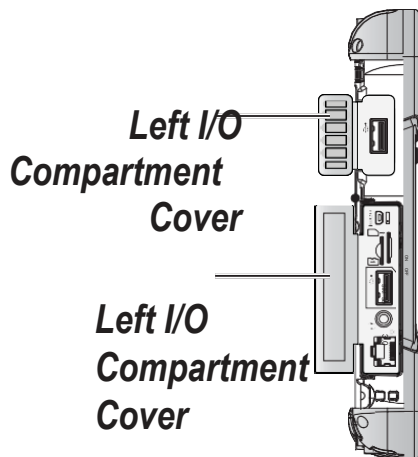


# Chapter 3. Operation

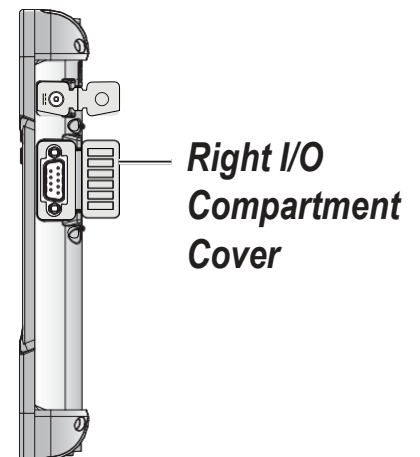
## Opening the I/O Compartment Cover

1. Place the device display side down on a clean work surface.
2. Locate the I/O compartment cover.

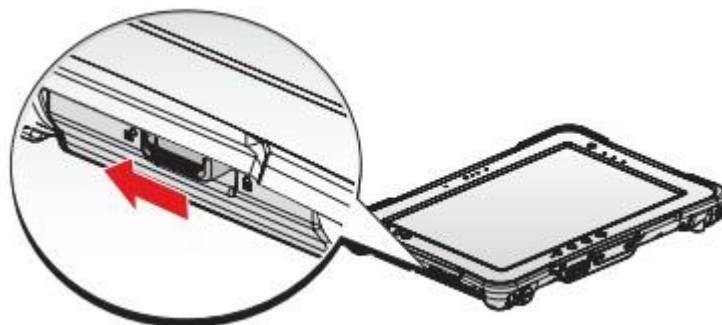
**Left view**



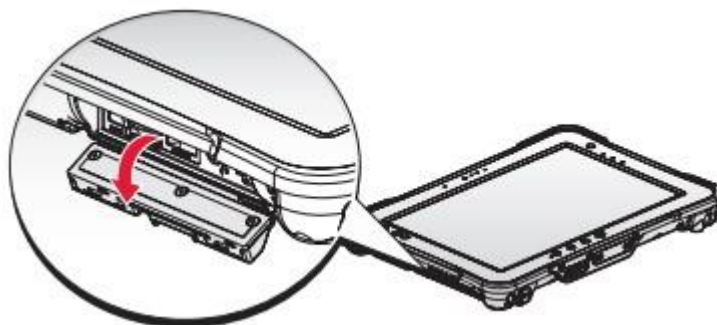
**Right view**



3. Unlock the latch. (Only available for the left I/O compartment cover)



4. Pull out the I/O compartment cover.

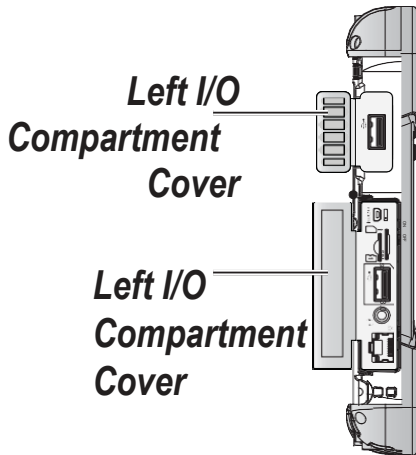




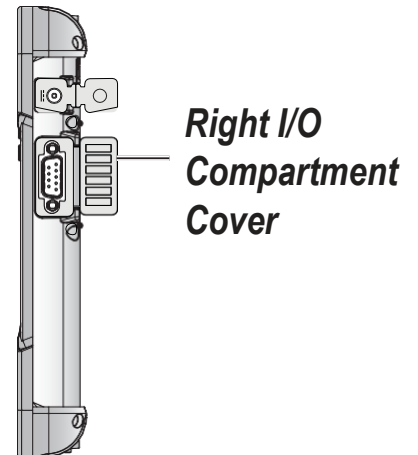
## Closing the I/O Compartment Cover

1. Place the device display side down on a clean work surface.
2. Locate the I/O compartment cover.

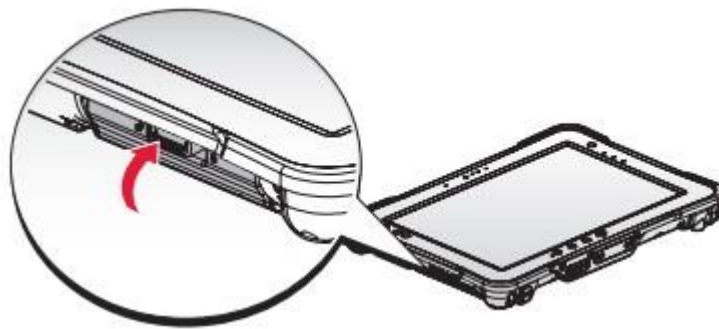
**Left view**



**Right view**



3. Flip the I/O compartment cover and install.



4. Lock the latch. (Only available for the left I/O compartment cover)



The I/O compartment cover must be inserted correctly to prevent internal damage to the device.

## Connecting to External Cabling



To prevent damage to the device, connect all cabling and accessories before powering up the device.

### **Connect USB Cabling**

The PA501 has one USB 3.1 Type C and two USB 2.0 Type A port for connecting USB devices, such as a digital camera, scanner, printer, modem, and mouse. The USB Type A port supports USB 2.0 devices.

### **Connect Ethernet Cabling**

**The PA501 provides an Ethernet port for connecting Ethernet.**



Using a shielded cable is required to maintain emissions and susceptibility compliance.

Connect LAN cable to Ethernet port on the PA501.

### **Connect Audio Cabling**

For higher audio quality, you can send sound through external audio devices such as speakers, headphones, or earphone using audio connector.

### **Connect RS-232 Cabling**

Connect to RS-232 devices with an RS-232 cable.

1. Open the right I/O compartment cover
2. Align the RS-232 cable with the port in the device and connect it.
3. Turn the locking screws on the cable to secure it to the device.

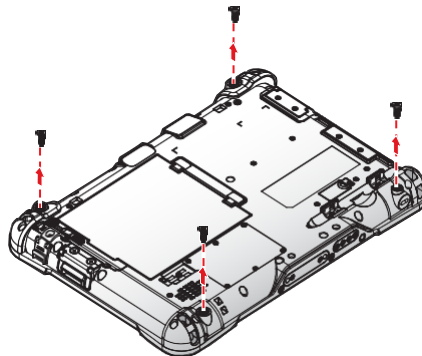
## Handstrap, Handle and Shoulder Strap (Optional)

The PA501 can be optionally equipped with a handstrap, a handle or a shoulder strap for convenience and choice. Select the accessory that is right for your needs.

The handstrap can be installed with either the shoulder strap or the handle. However, the handle and shoulder strap cannot be installed together due to space constraints.

### **Connecting the Handstrap**

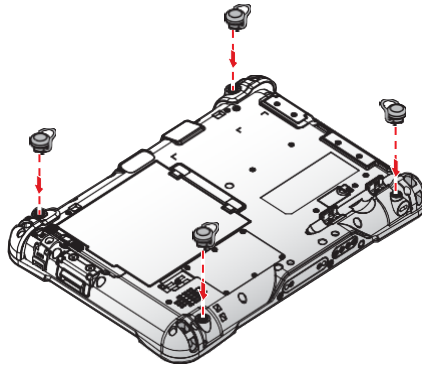
1. Remove the screws securing the bumpers.



2. Install the D-rings



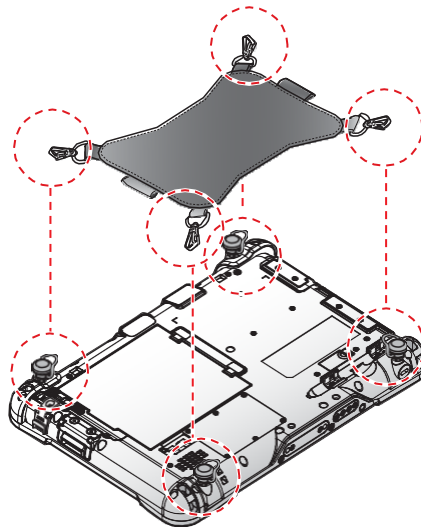
Make sure the D-rings are tightly secured before installing the handstrap.



3. Connect the handstrap on the D-rings.

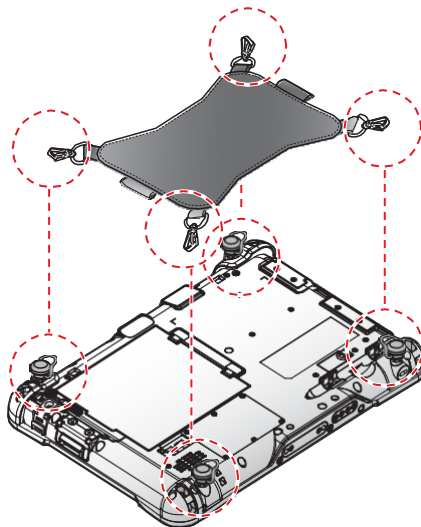


When the handstrap is installed, the digitizer can be placed under the strap.

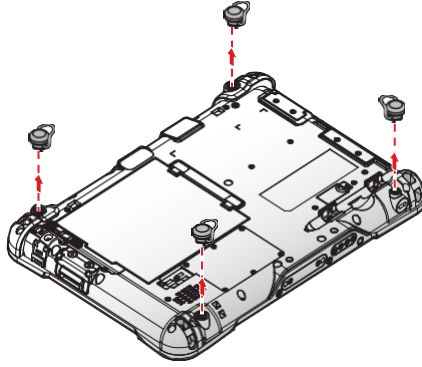


### ***Removing the Handstrap***

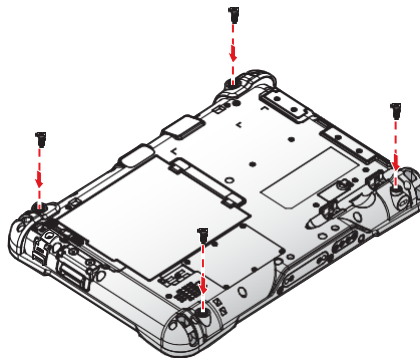
1. Unlock the handstrap from the D-rings.



2. Remove the D-rings.

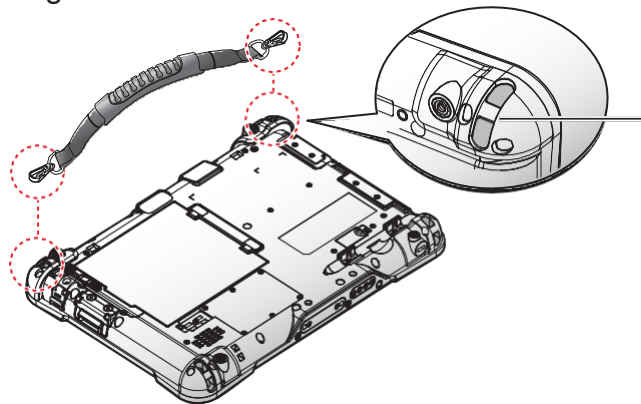


3. Secure the bumper and the PA501 with screws.



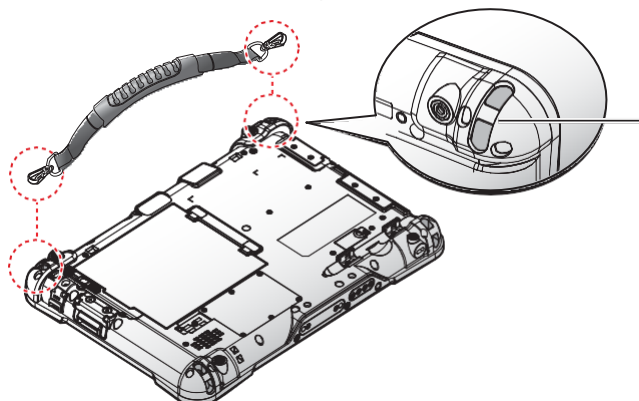
### ***Connecting the Handle***

1. Attach the clips to the D-rings.



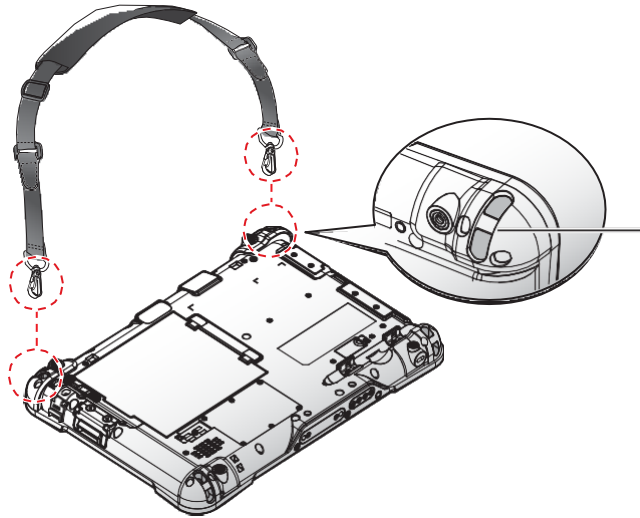
### ***Removing the Handle***

1. Press in the clips to release them from the D-rings.
2. Remove the clips.



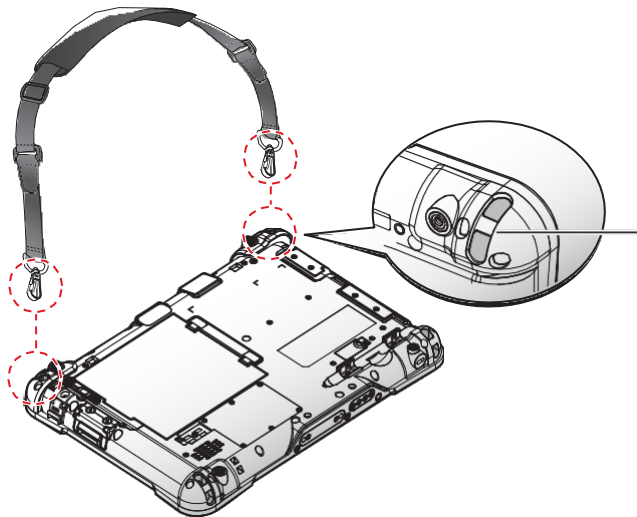
## Connecting the Shoulder Strap

1. Attach the clips to the D-rings.



## Removing the Shoulder Strap

1. Press in the clips to release them from the D-rings.
2. Remove the clips.



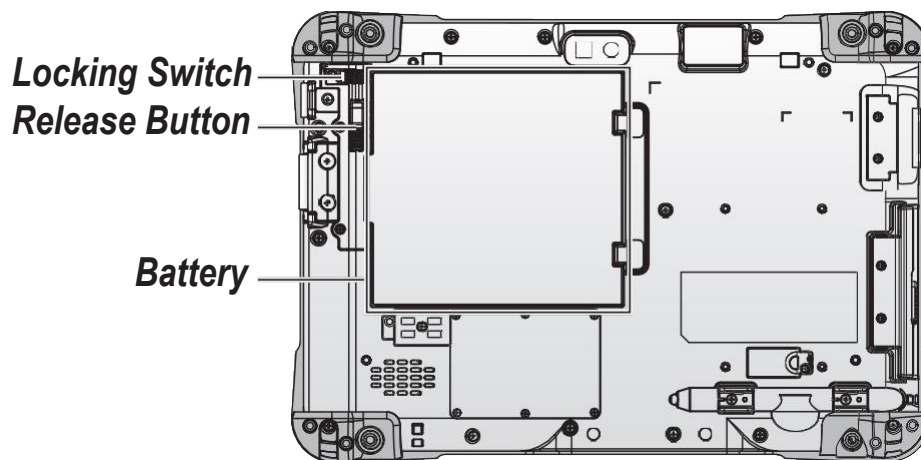
## Installing the Standard Battery

The following instructions are for both standard and external batteries. The external battery is an optional component. Only use components specifically designed for this device. Contact your local representative for ordering information.

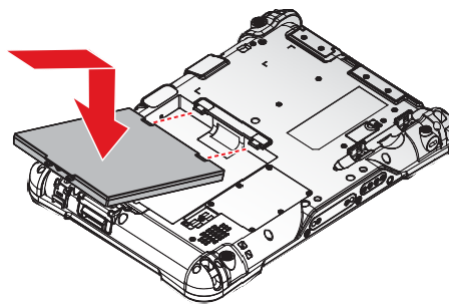


Make sure the power switch is switched to ON before installing the standard/external battery

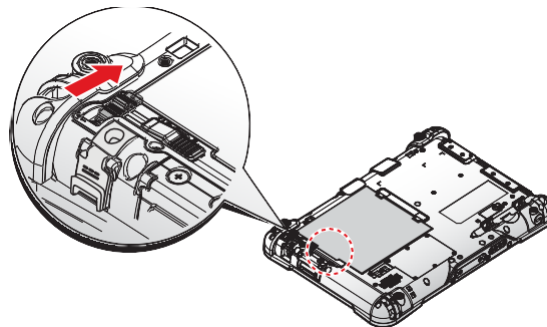
1. Place the device display side down on a clean work surface.
2. Locate the battery.



3. Align the tabs on the battery with the slots on the chassis.
4. Angle the battery in place and set the tabs in the chassis slots.
5. Lower the raised end of the battery and press in place until an audible click is heard.



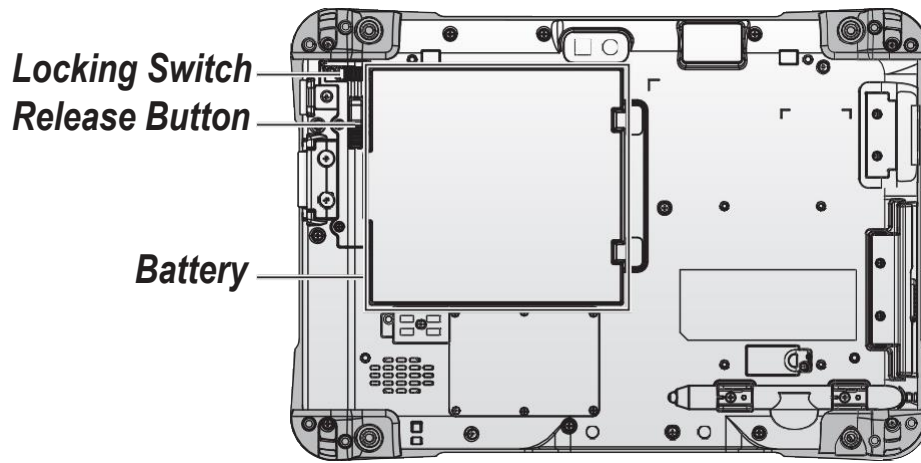
6. Slide the locking switch on the top-left side to lock the battery.



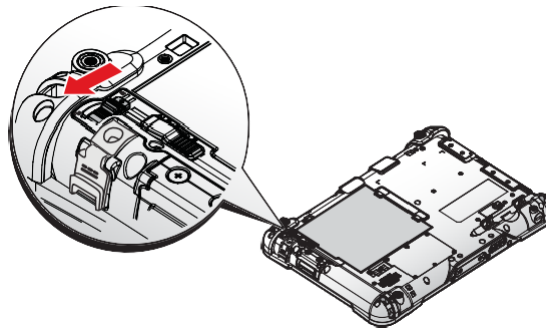
Make sure the latch is securely locked to prevent the battery from falling.

## Removing the Standard Battery

1. Place the device display side down on a clean work surface.
2. Locate the battery.

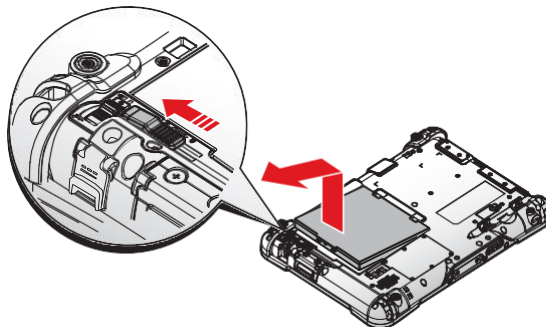


3. Slide the locking switch on the top-left side to the unlock position.



4. Press and hold the release button as shown in the image to release the battery.

5. Hold the battery and angle the left side up to remove.



## Checking Battery Status

You can check battery status without turning on PA501. When PA501 is off, press “Barcode trigger” key and the LED indicators will show the battery status as below:

Battery Status	LED Indicator
Above 80% capacity	Three indicators on
50% - 80% capacity	Two indicators on
20% - 50% capacity	One indicator on
Below 20% capacity	One indicator blinking



# Connecting to a Wireless Network

Before you can make use of the PA501 wireless functions, you need to connect to a network. The following is a set of procedures for connecting to a wireless network.

1. Before beginning, make sure your Wi-Fi setting is enabled and you are within range of a wireless network. If your Wi-Fi setting is disabled, proceed to step 2.
  - Look at the Network icon located at the right side of the taskbar. If the icon displays an X in a red circle, you are not within range of a wireless network. Move to a different spot until the Wi-Fi icon changes status indicating availability to a wireless network.
2. From any screen, open the Charms bar by sliding your finger inward from the screen's right edge. The Charms bar displays along the screen's right side.
3. In the Charms bar, tap **Settings** to open the **Settings** menu.
4. In **Settings**, tap the Network icon to display the Networks connection settings.
5. The Wi-Fi menu displays. By default, the Wi-Fi menu is set to Off. Tap the bar next to Off to toggle Wi-Fi to On. This enables the Wi-Fi option.
6. Once W-Fi is enabled a listing of all available wireless networks displays. The wireless networks with the strongest signal are atop the list.
7. Select the network you want to connect to, and tap the **Connect** button. You can tap the **Connect Automatically** check box if you connect to this network frequently. If you connect to the network, you are finished with the process. The network is considered an Open unsecured network, no password is required.
8. If a password is required, type the password in the **Enter the network security key** field. Alternatively, you can also push the WPS button on your router to begin the security handshake.
9. Tap **Next** to finish the connection process.

You have successfully connected to a wireless network.

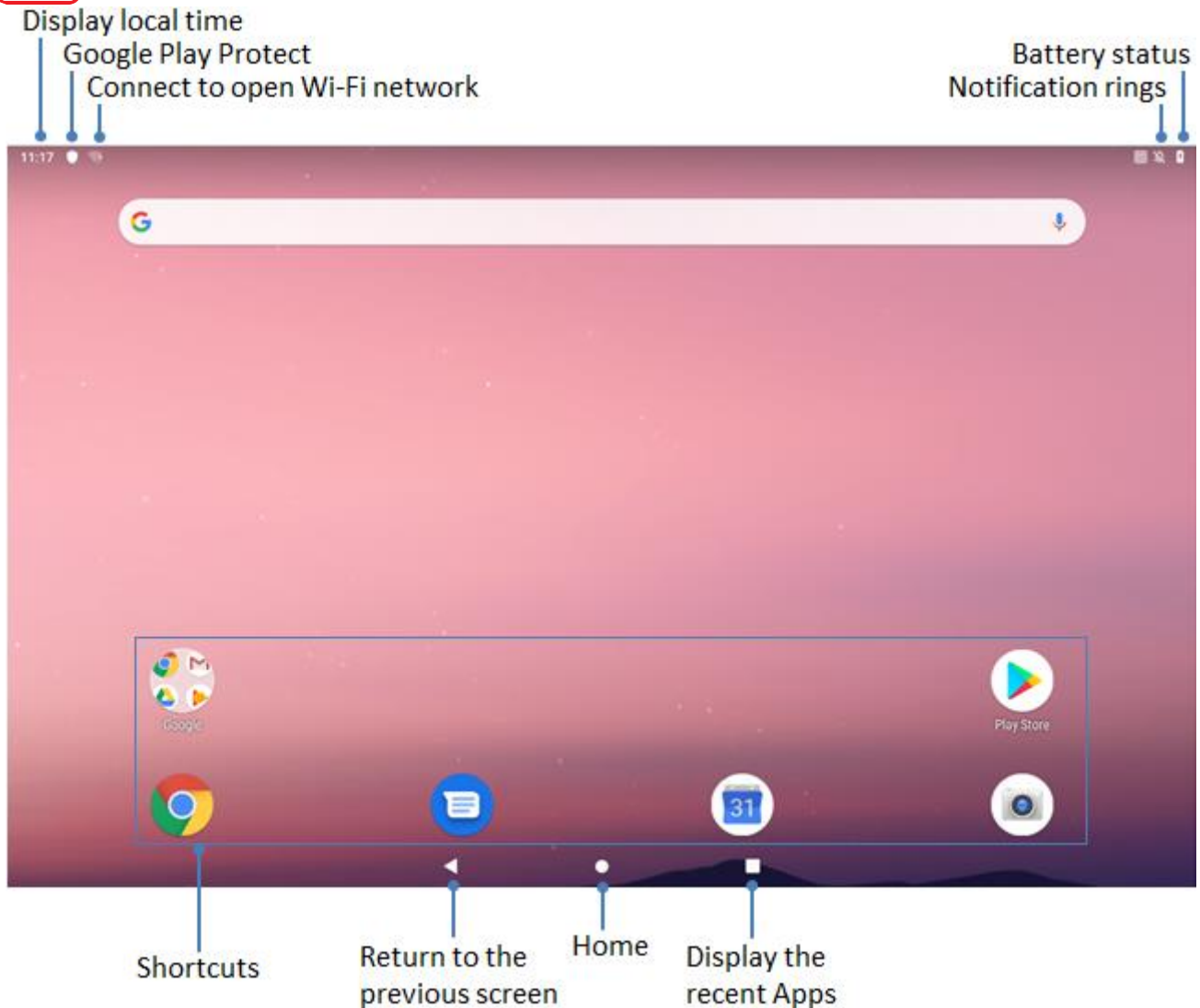


# Chapter 4. Apps and Settings

## Home Screen



The screen may appear differently depending on the region or service provider.



## Touch Panel Control



Do not allow the touchscreen to come into contact with other electrical devices. Electrostatic discharges can cause the touchscreen malfunction.

To avoid damaging the touchscreen, do not tap it with anything sharp or apply excessive pressure to it with your fingertip.

It is recommended not to use fixed graphics on part or all of the touchscreen for extended periods. Doing so may result in afterimages (screen burn-in) or ghosting.



The device may not recognize touch inputs close to the edges of the screen, which are outside of the touch input area.

It is recommended to use fingers when you use the touchscreen

## **Single tap**

Single tap on the touch panel screen lets you activate an application.

## **Longer press tap**

Long-pressing an application allows you to drag and drop the application or the application shortcut to another desktop.

Long-pressing a desired file in the File Manager allows you to copy, cut, rename or delete the selected file

## **Swiping**

Swipe upward, downward, to the left, or to the right.

## **Spreading and pinching**

Spread two fingers apart or pinch on the screen.

## **Input, insert, select or copy texts**

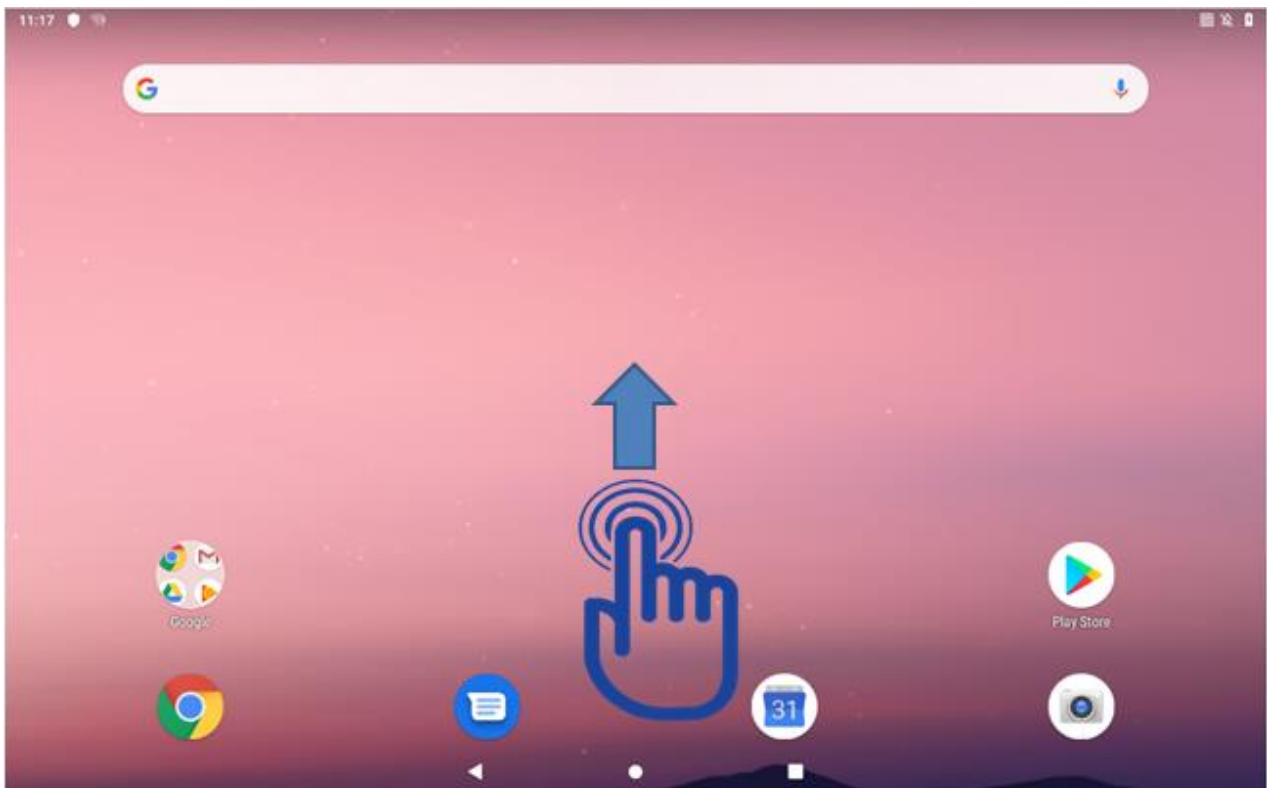
The keyboard appears when you use word processor to edit documents or enter the web address on the web browser address bar.

# Check System Information

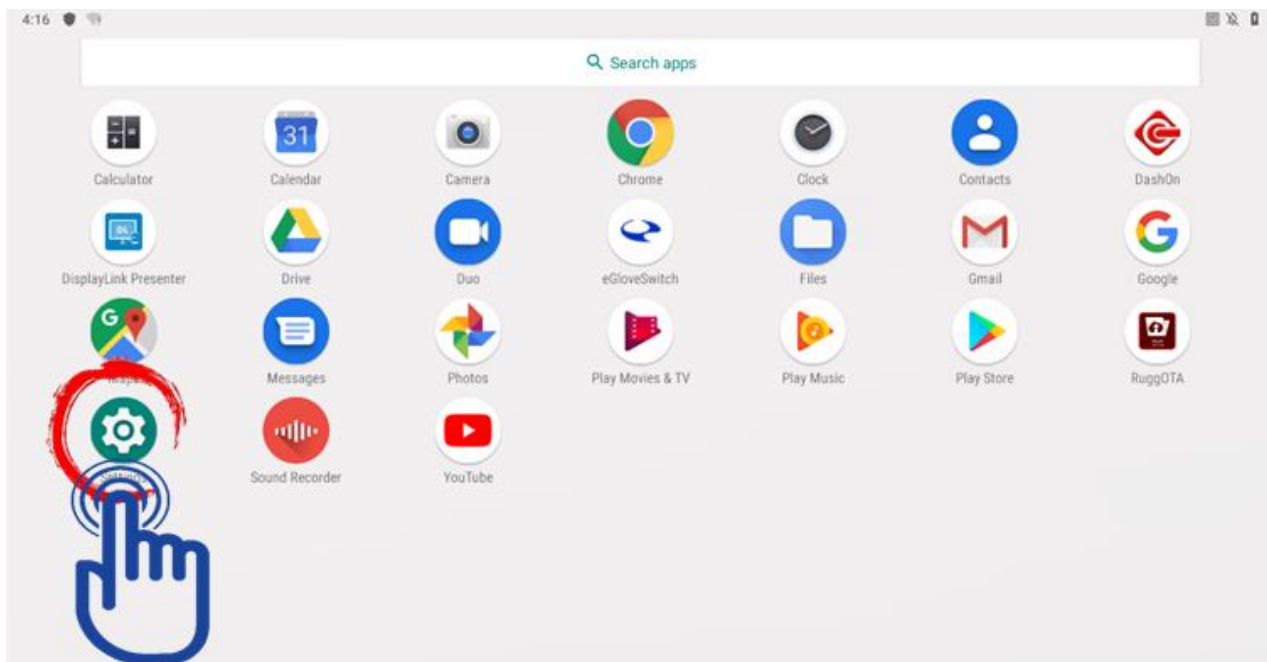
## **View system specifications**

On the Home screen, swipe upward to open the Apps screen.

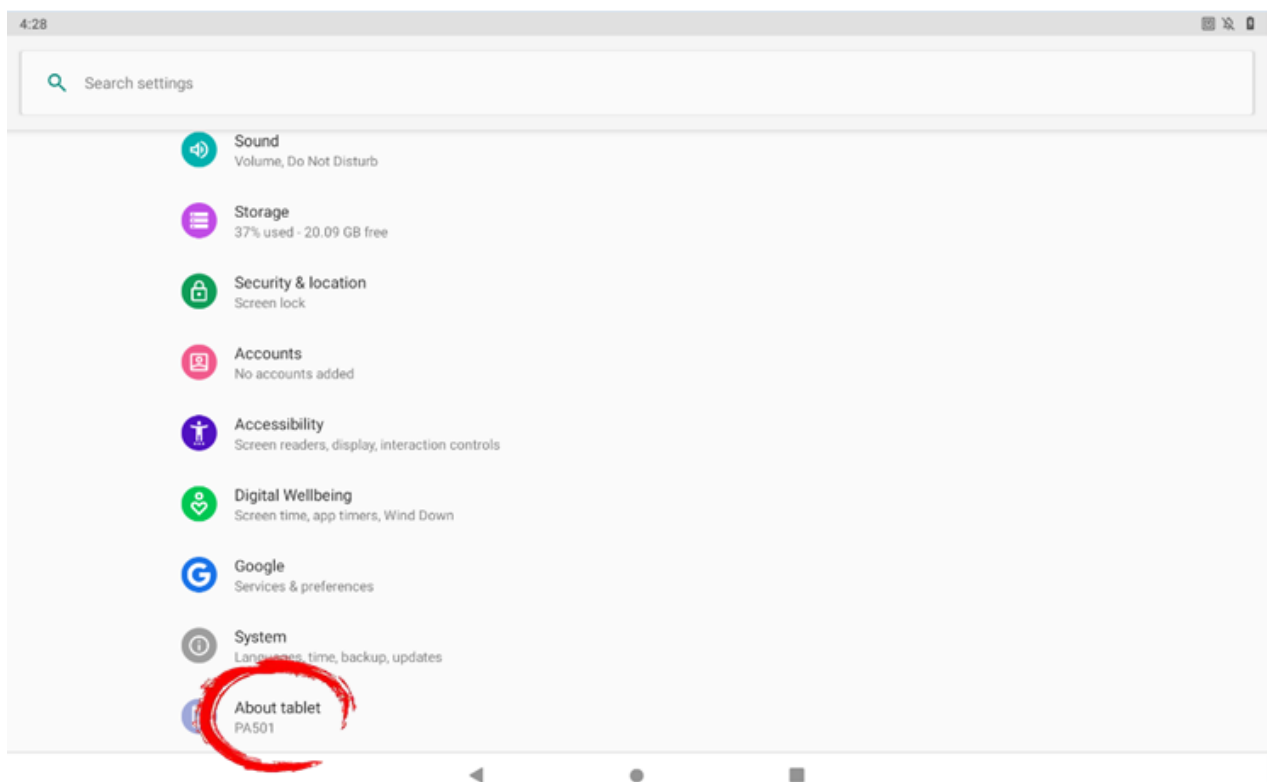
To return to the Home screen, swipe downward on the Apps screen. Alternatively, tap the Home button or the Back button



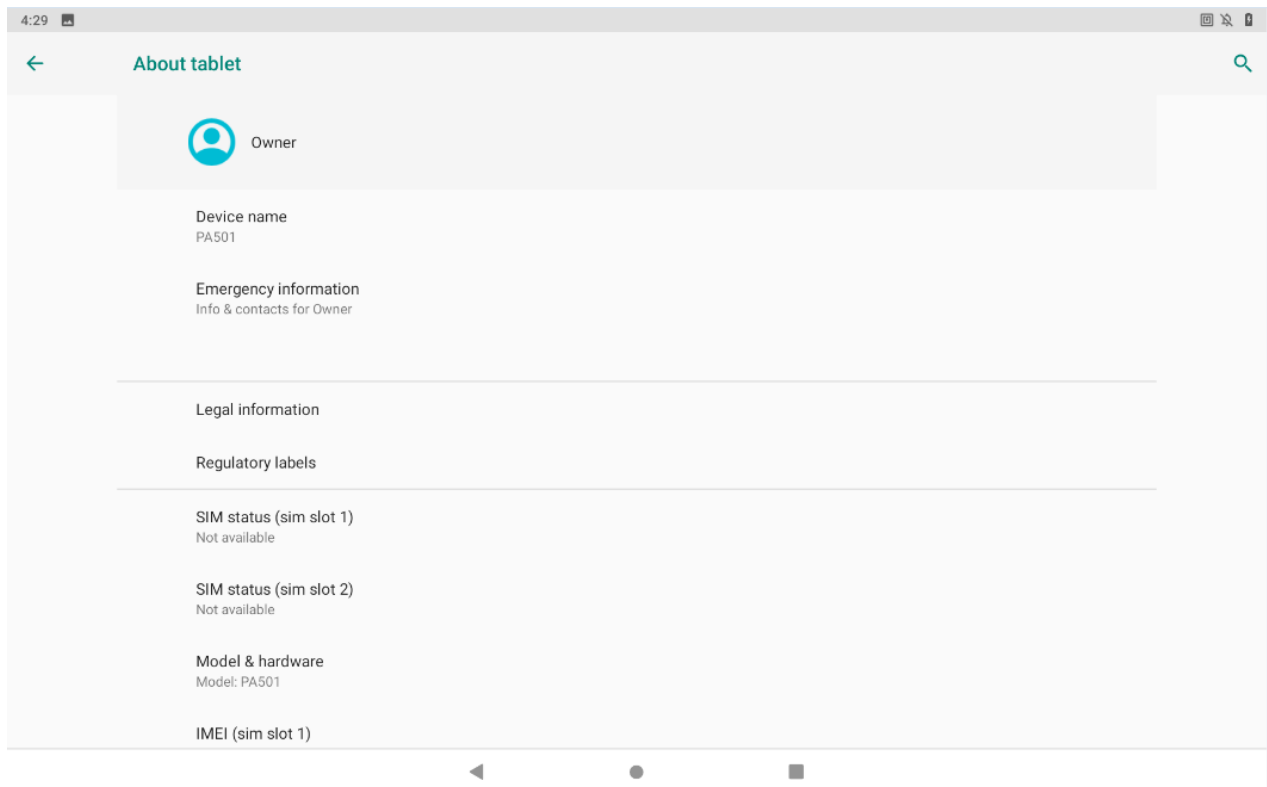
Tap “Settings” to view and configure all of the system settings



Select “About tablet” to view the tablet information

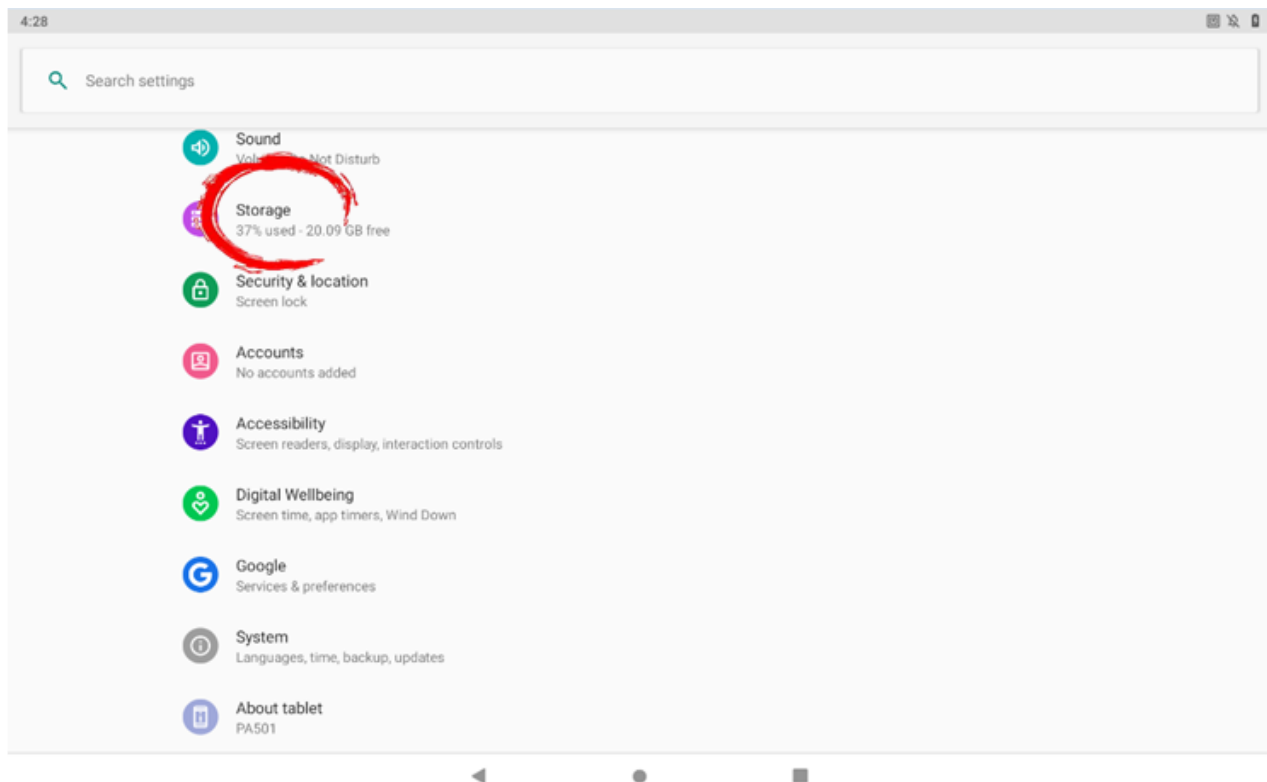


## Display the system specifications

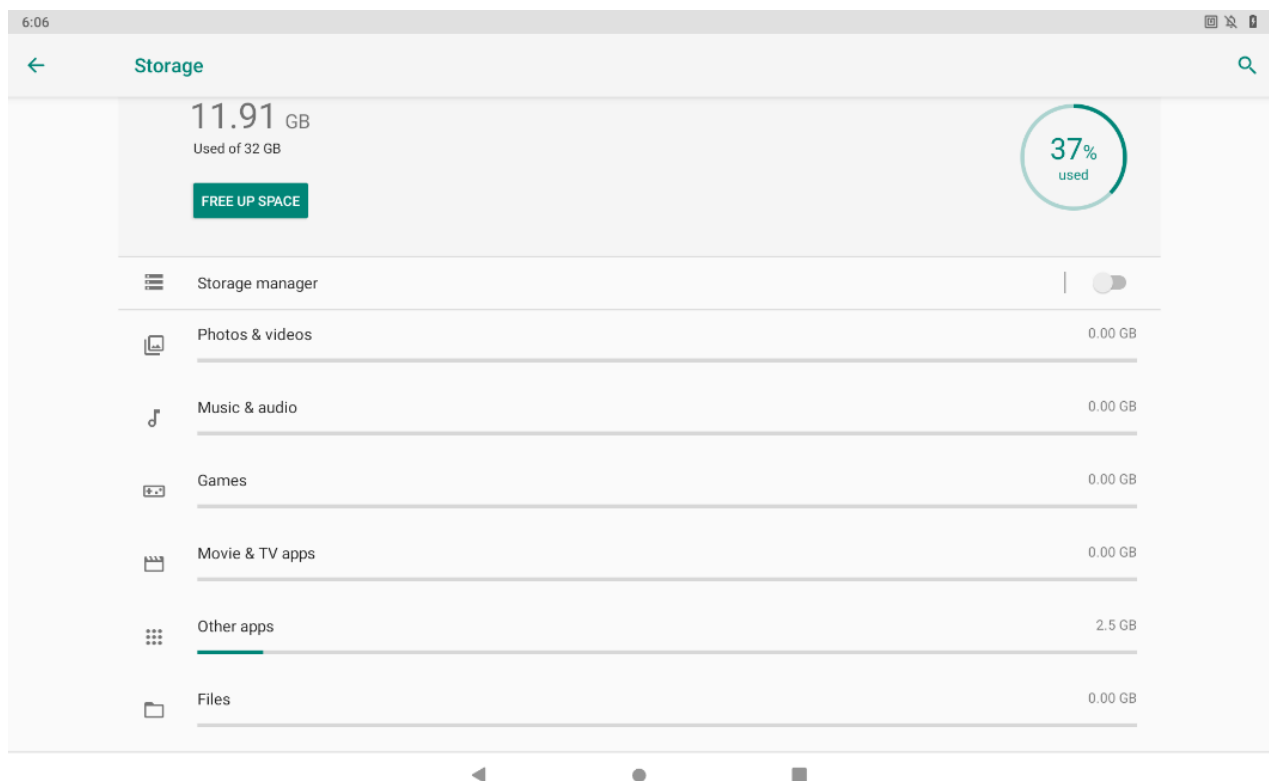


## Check the storage status

Select "Storage" to view the storage information



Display the internal storage (eMMC & SD card) location

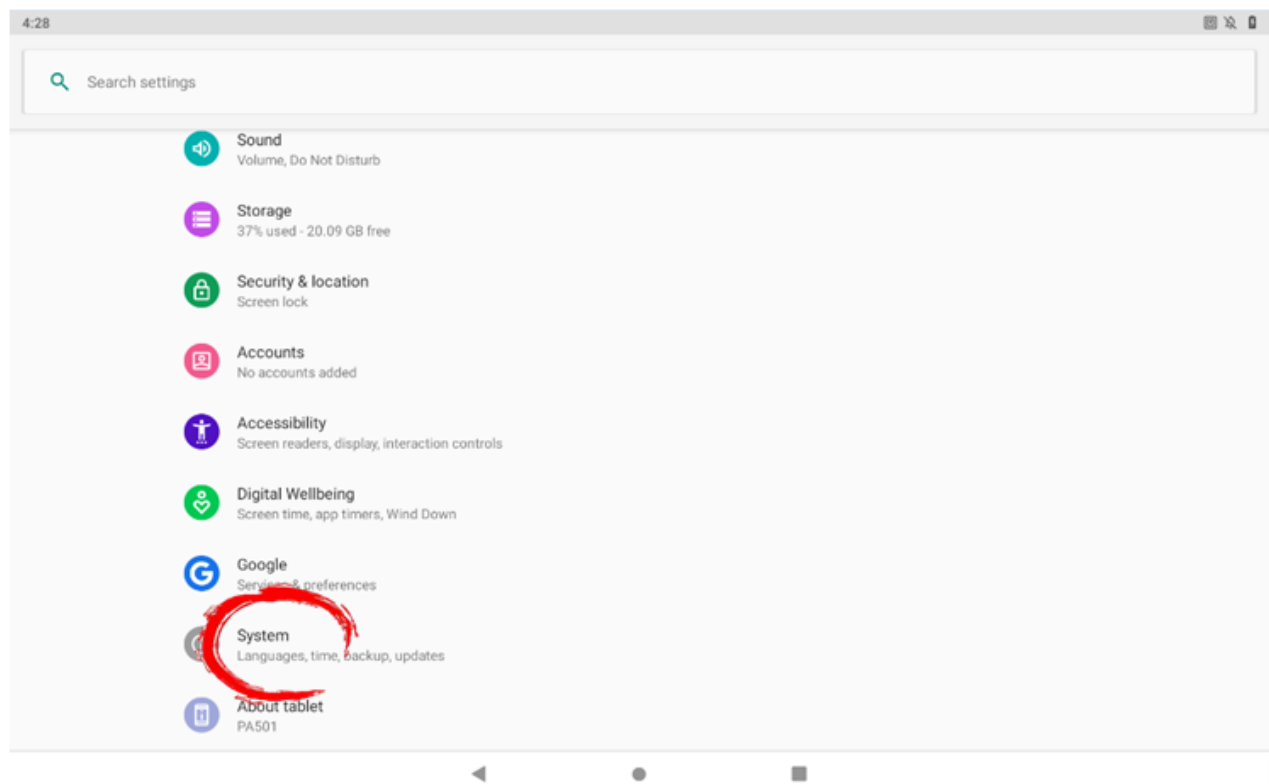


### ***Check the system languages***

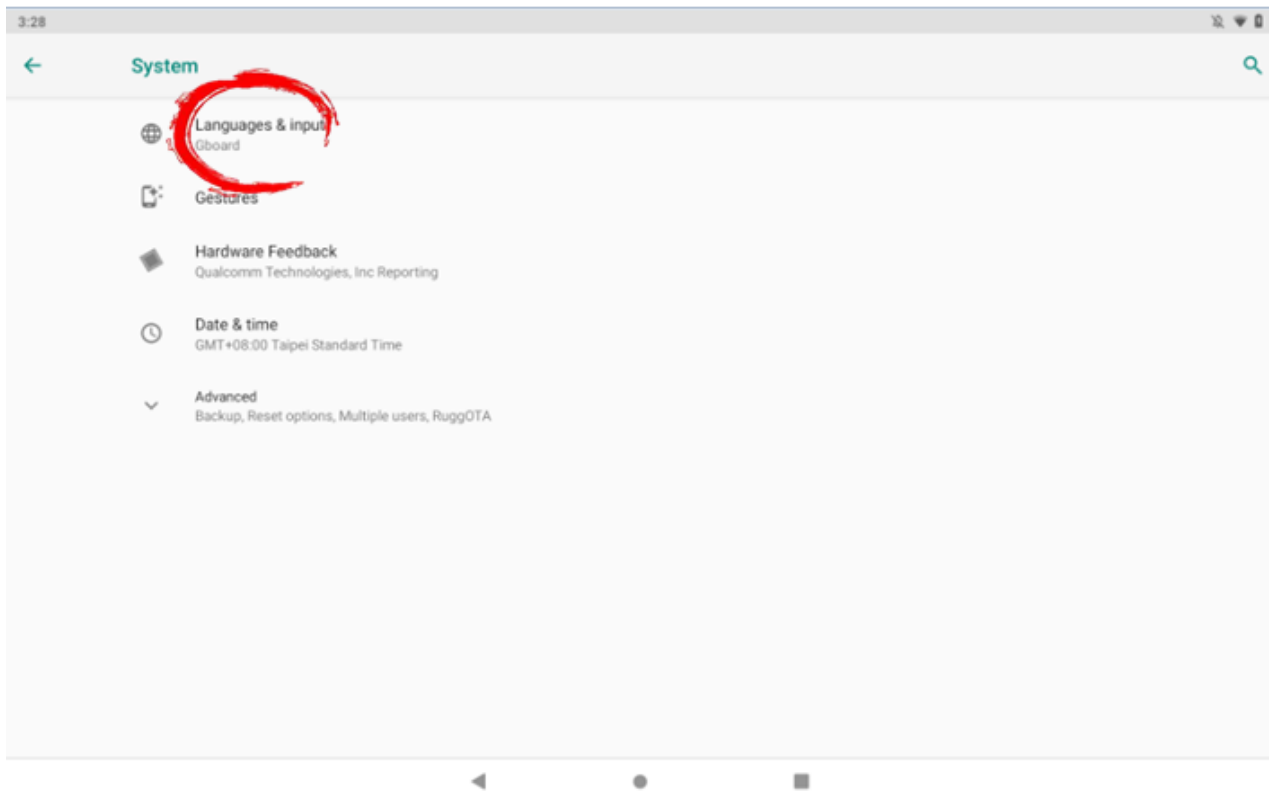
Select "System" to view and configure system settings



After enter "System", you can tap Advanced to do more settings



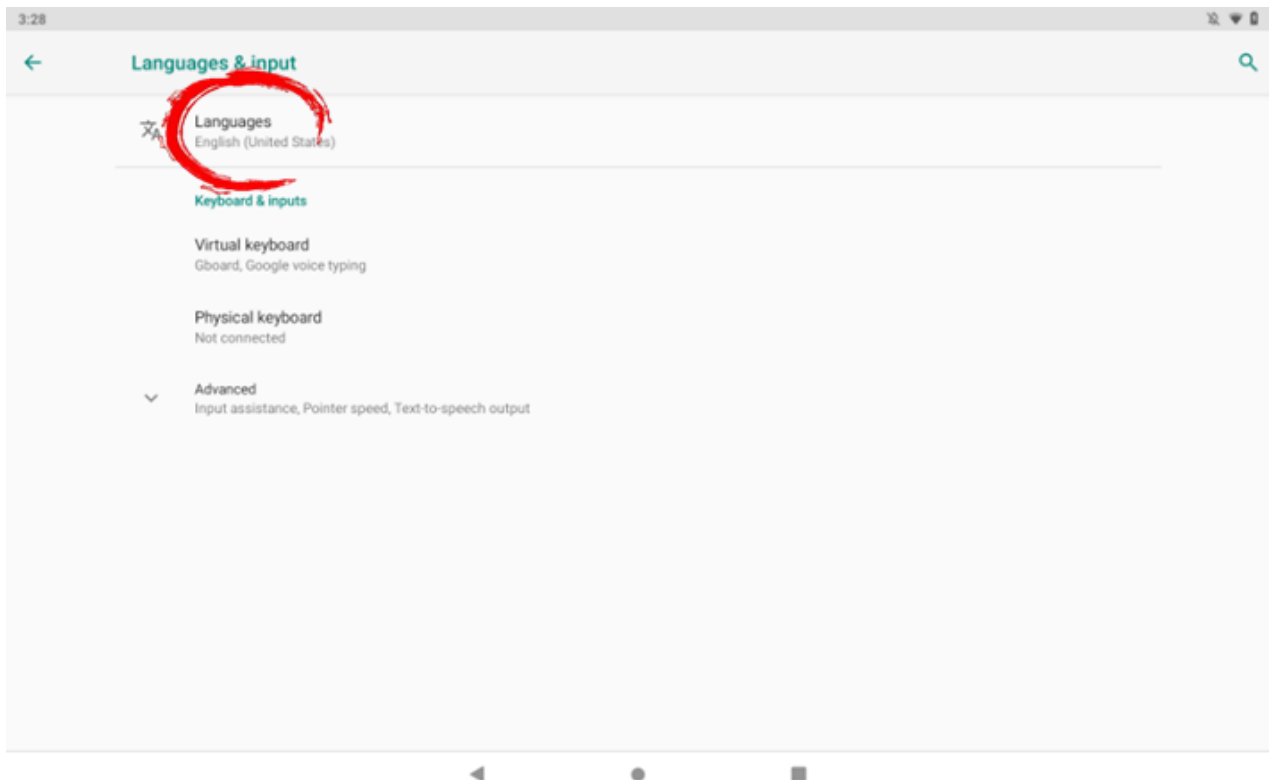
Select "Languages & Input"



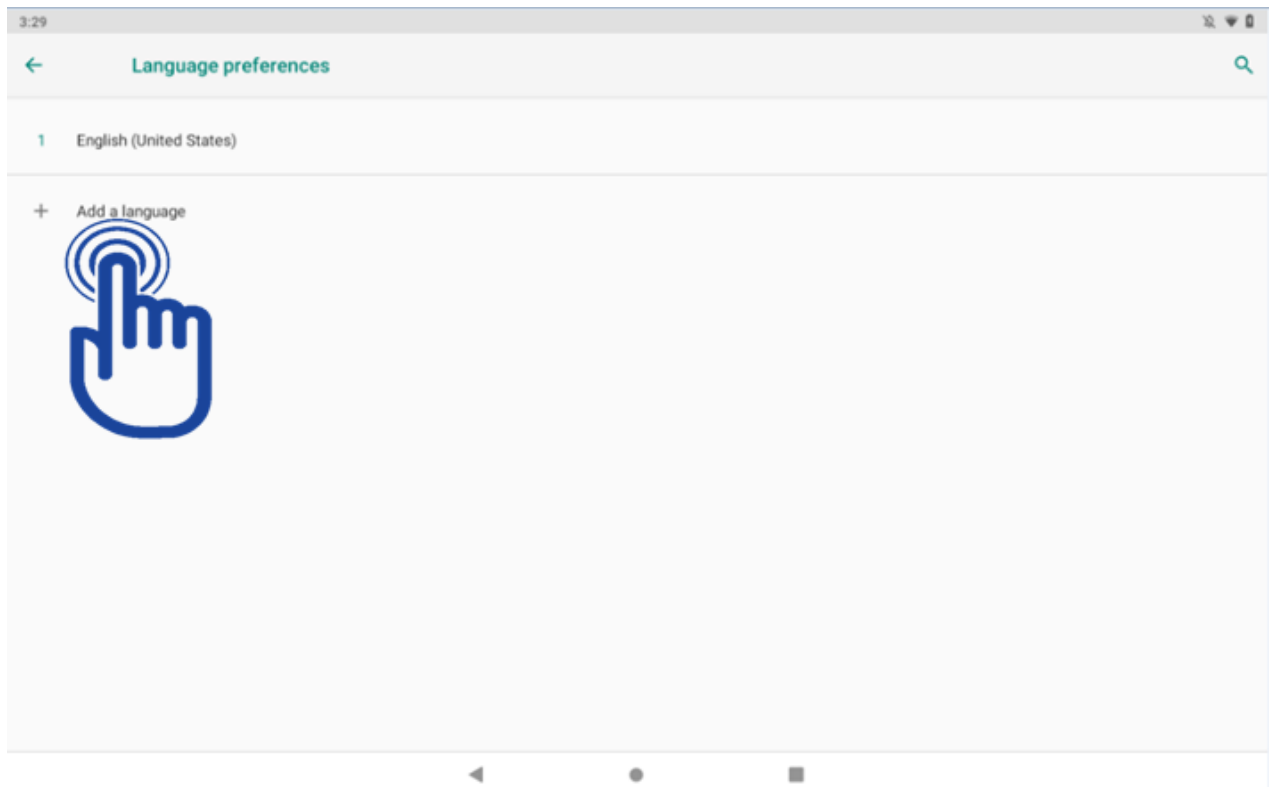
Select "Languages" to configure the language settings



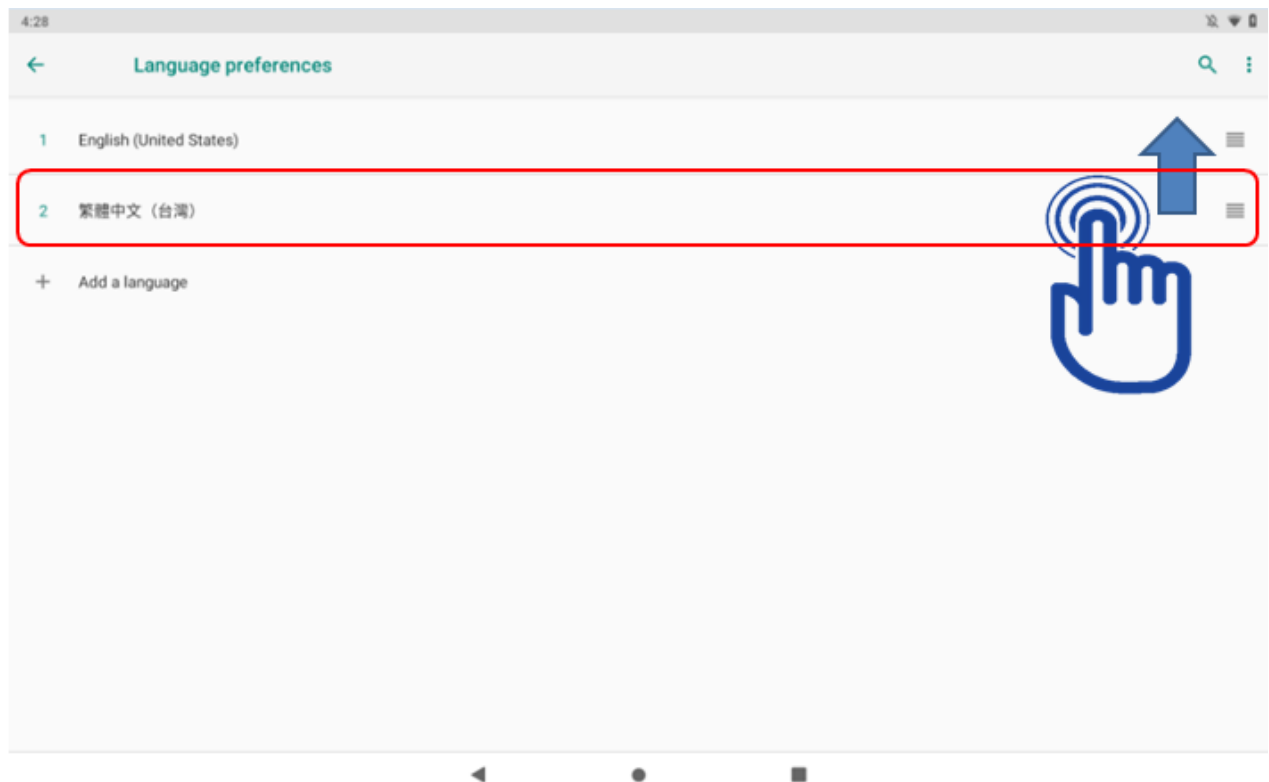
English (United States) is the default



Tap “add a language” to choose and change languages

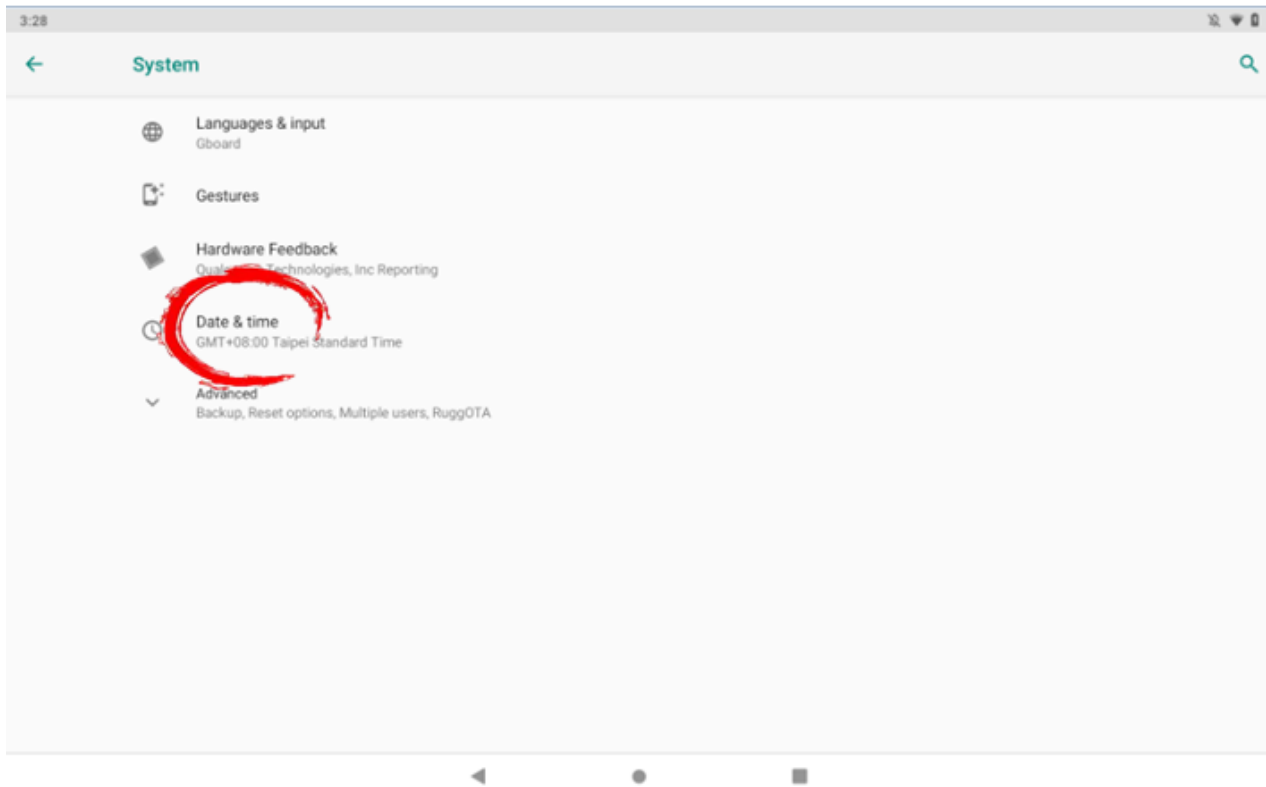


After adding a language, please long-press the bar and move it to the “1” position

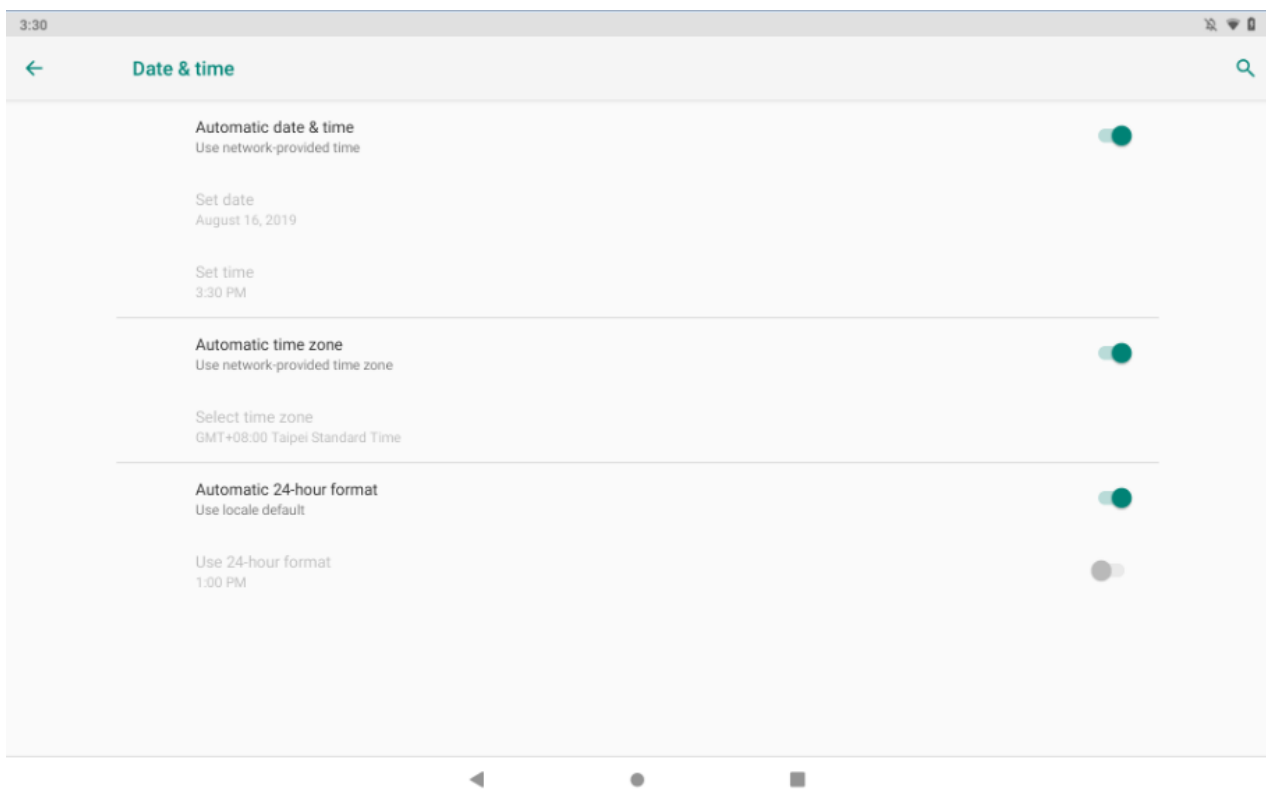


***Check the system date and time***

Select “Date & time” appropriate for your time zone



Display the date & time and check if it is correct



## Setting the Network, Internet and Connected Devices

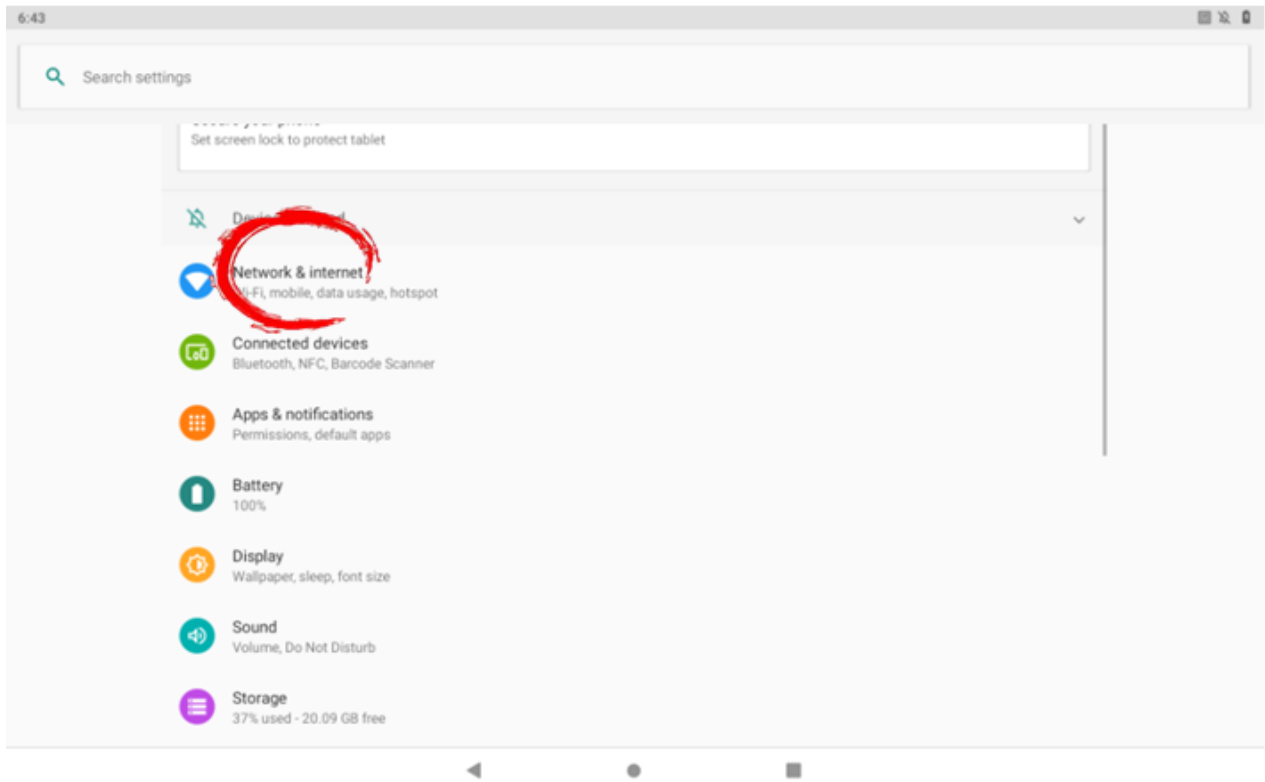
### ***Check the Network & Internet***

Tap "Settings" and select "Network & Internet"

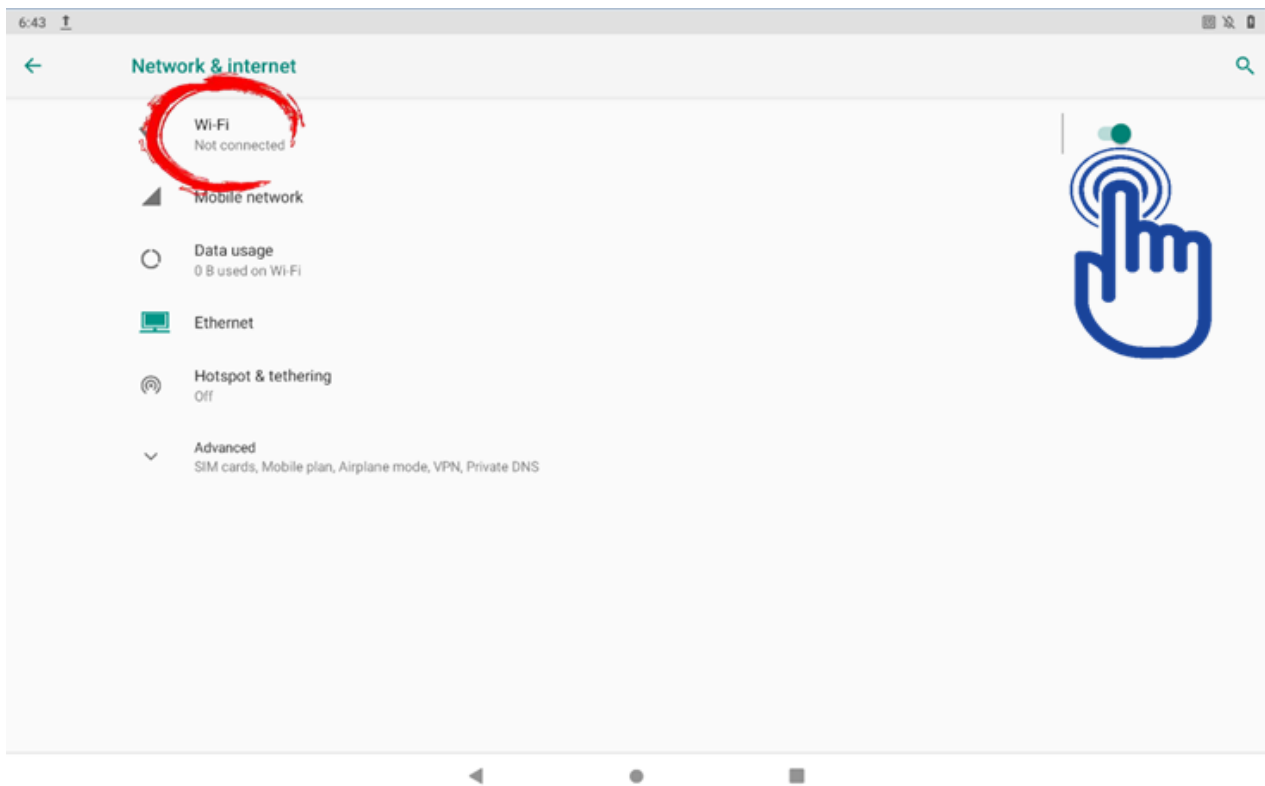


After enter "Network & Internet", you can tap Advanced to do more settings

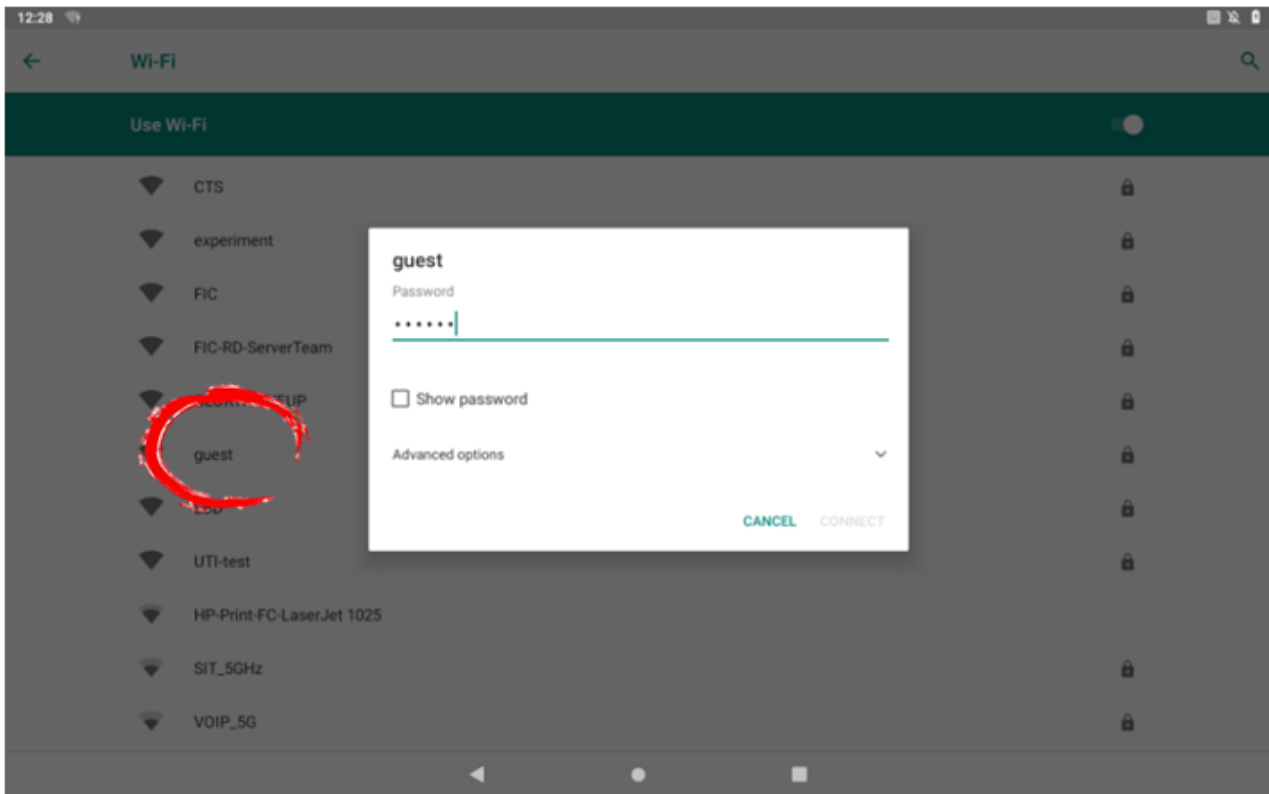




1) Select “Wi-Fi” and turn on the function



Select the name of your network and key in your password



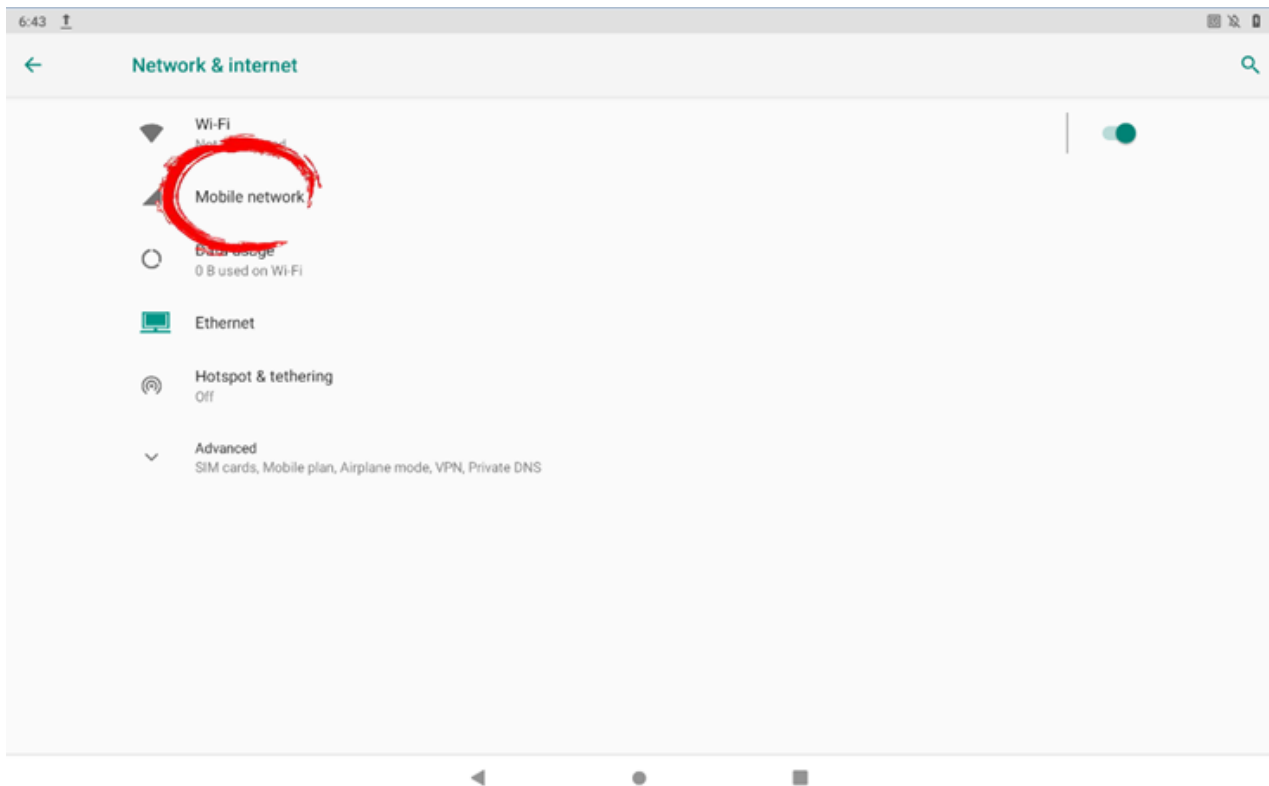
2) Select “Mobile network” to check Networking settings

Make sure the SIM#1 card or SIM#2 card is plugged in



Hot-swappable SIM#1 card design

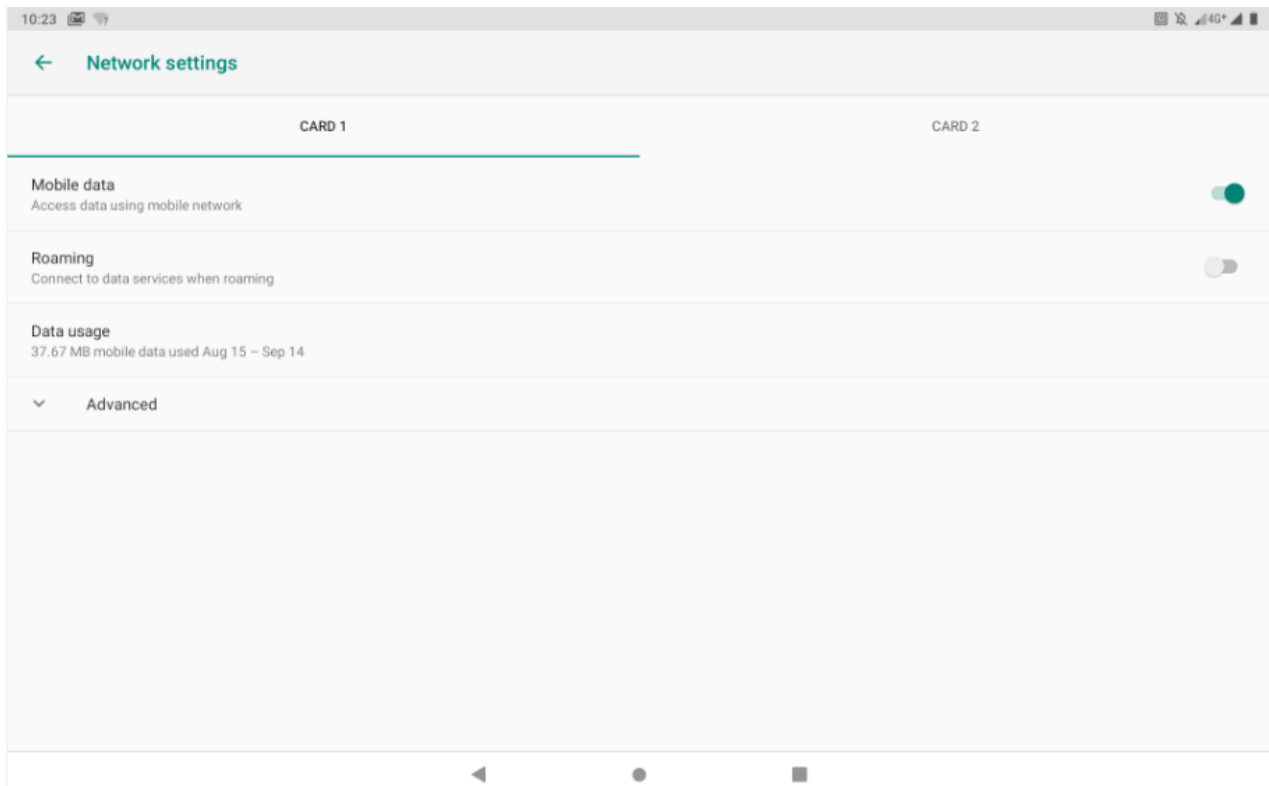
Support Dual SIM Dual Standby (DSDS) for Data only



Show SIM#1 card information



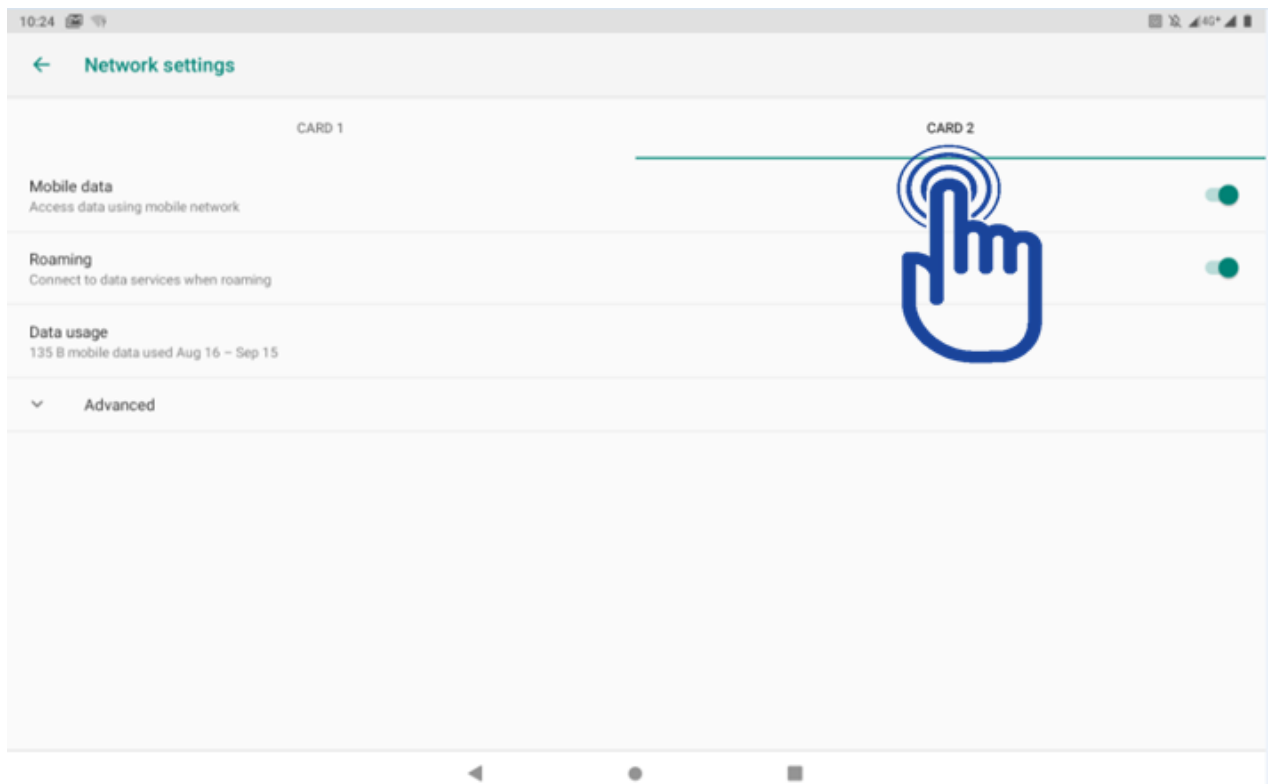
Tap Advanced to see more information



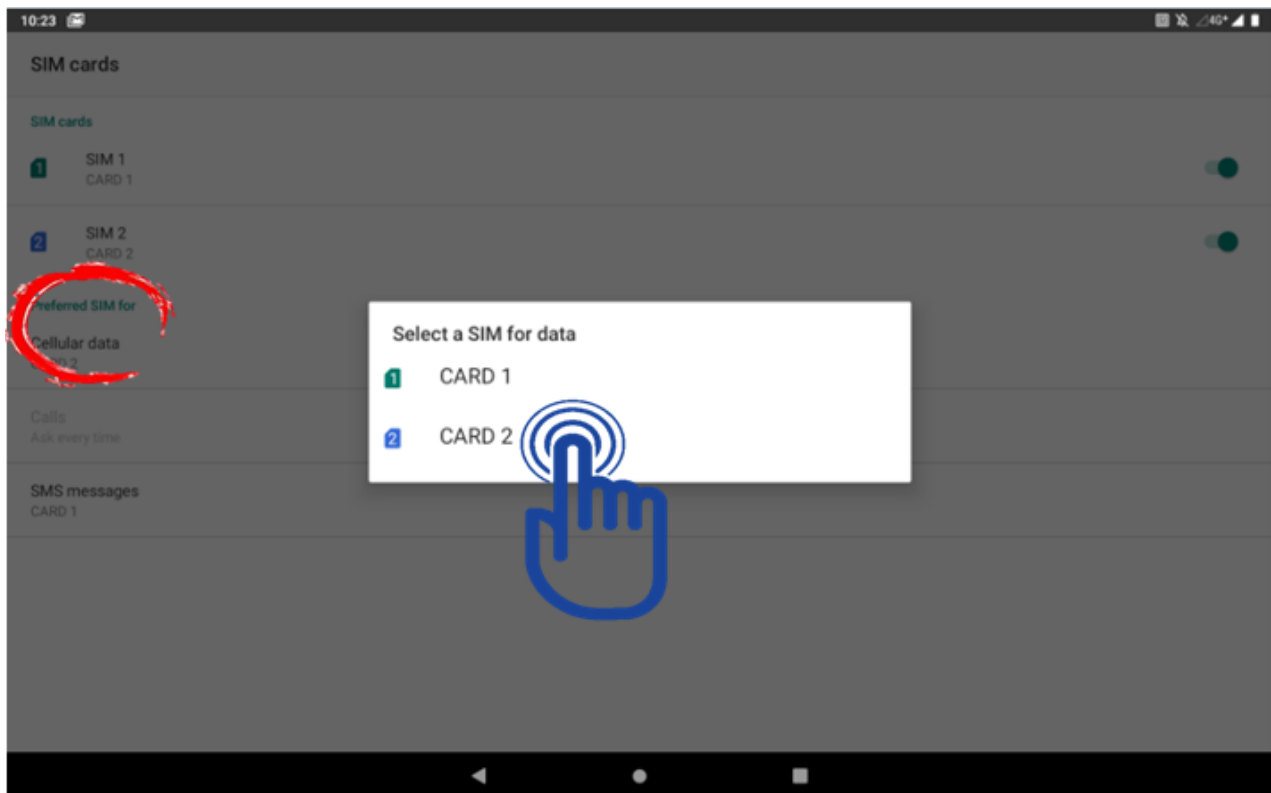
Tap "card 2" to show SIM#2 card information



Tap Advanced to see more information



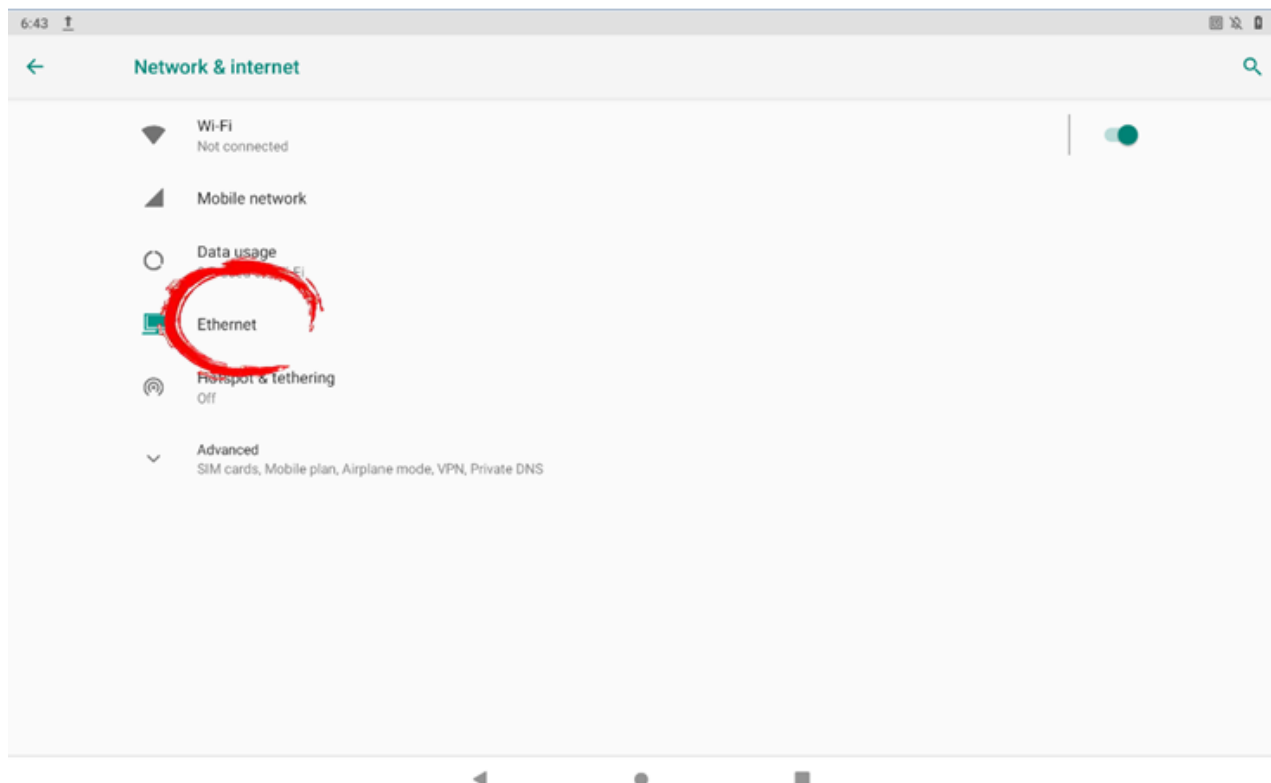
Go back to the “Mobile network” and select “SIM cards” to choose a preferable carrier.



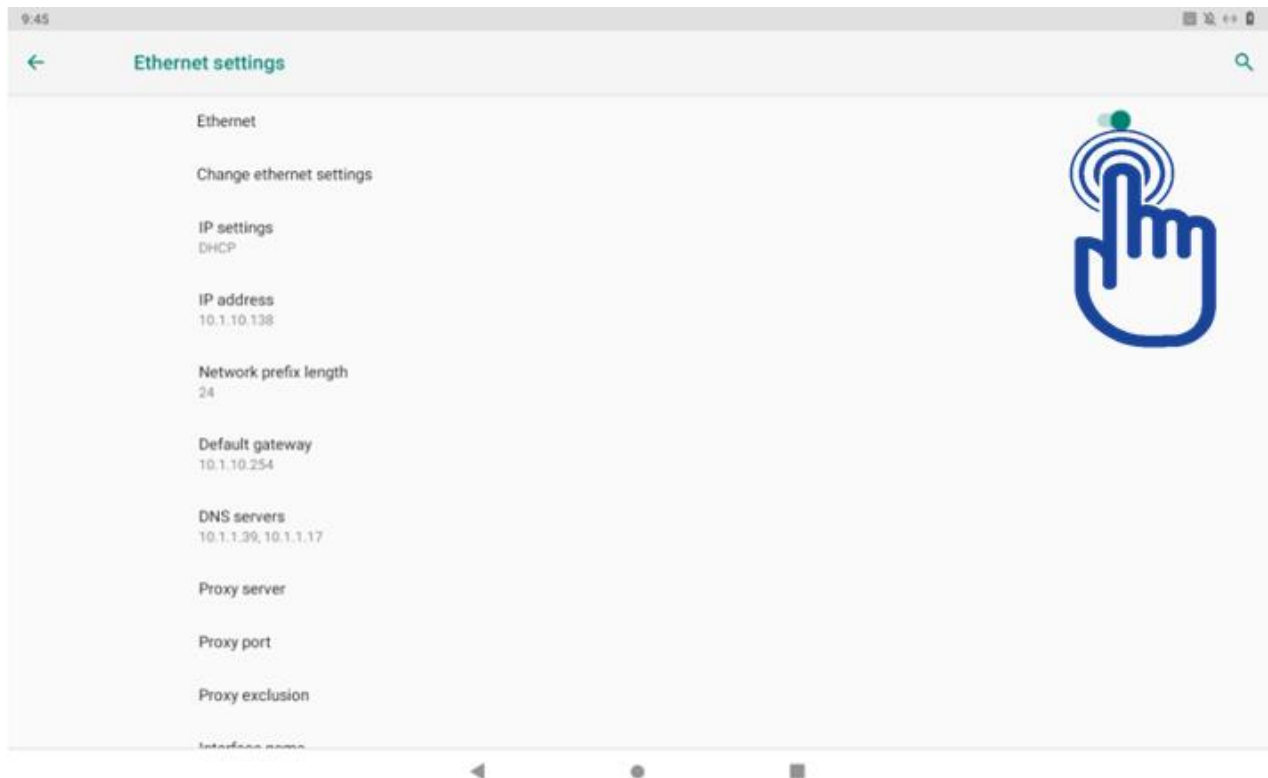
3) Select “Ethernet” to check Ethernet settings



Make sure RJ45 cable is plugged in



Turn on “Ethernet” function to check Ethernet settings

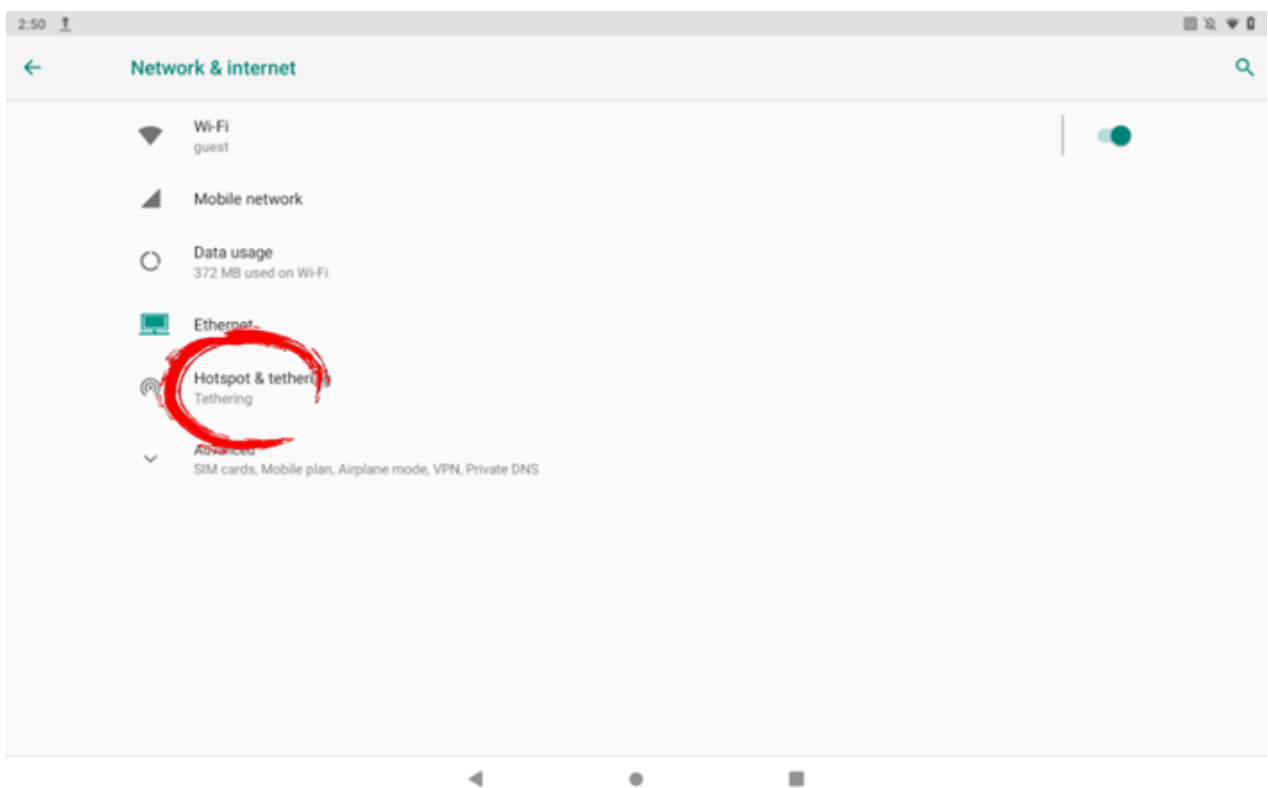


## Hotspot & tethering

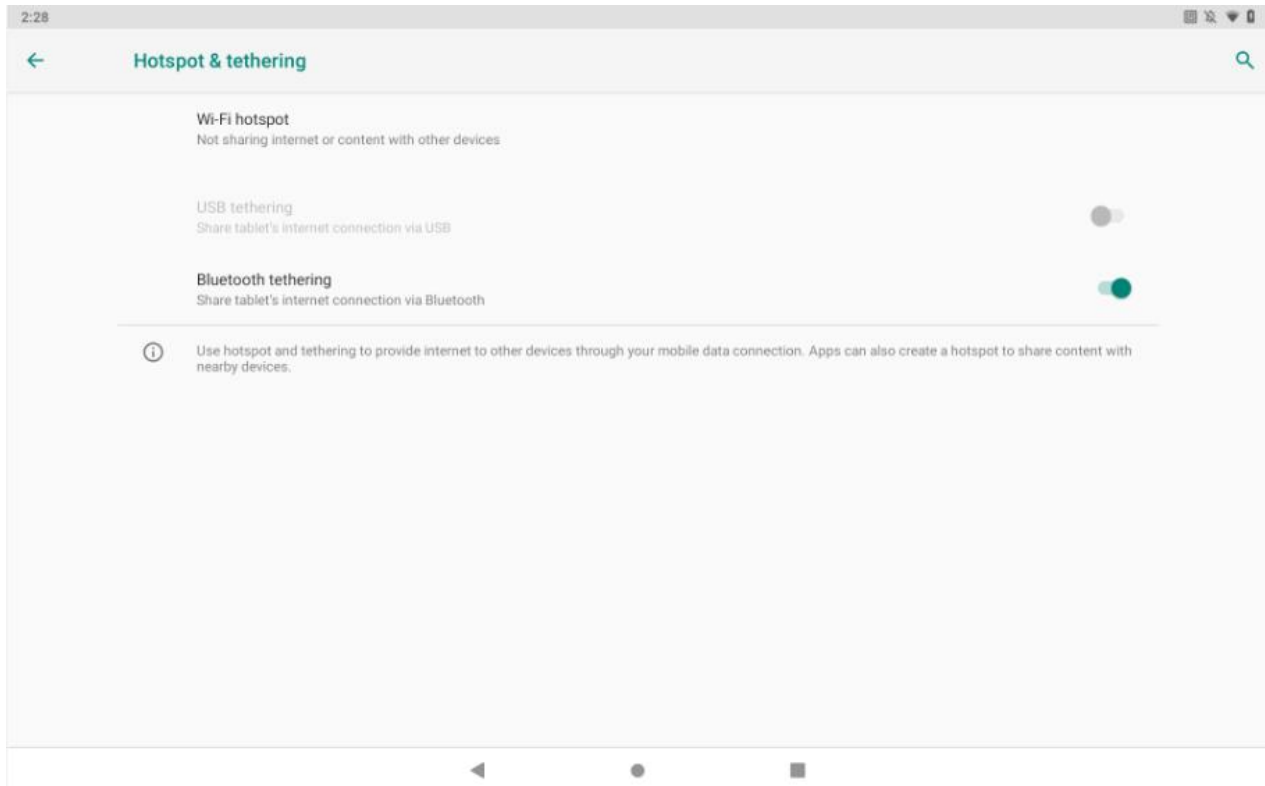
Select “Hotspot & tethering” to configure the device settings



Wi-Fi hotspot only supports 2.4GHz

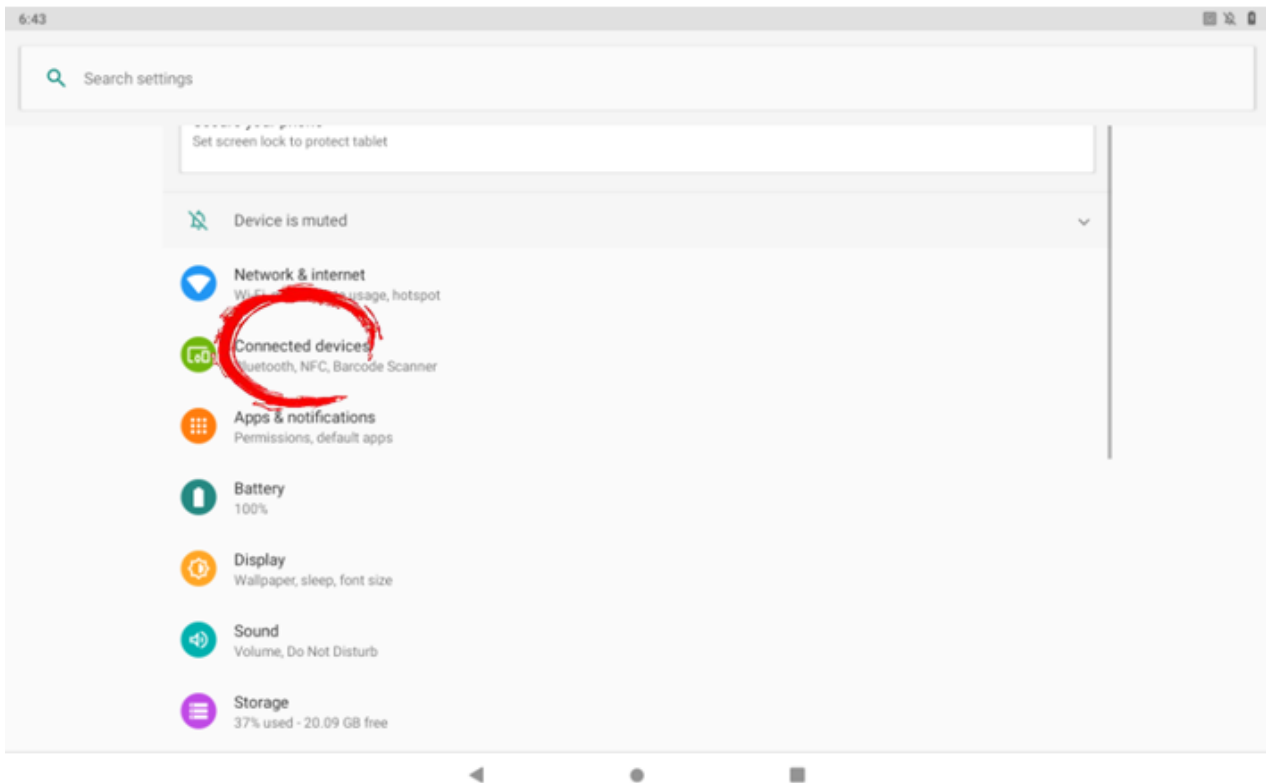


Connection of a mobile device with other devices can be done over wireless LAN (Wi-Fi), over Bluetooth or by USB



## ***Connected devices***

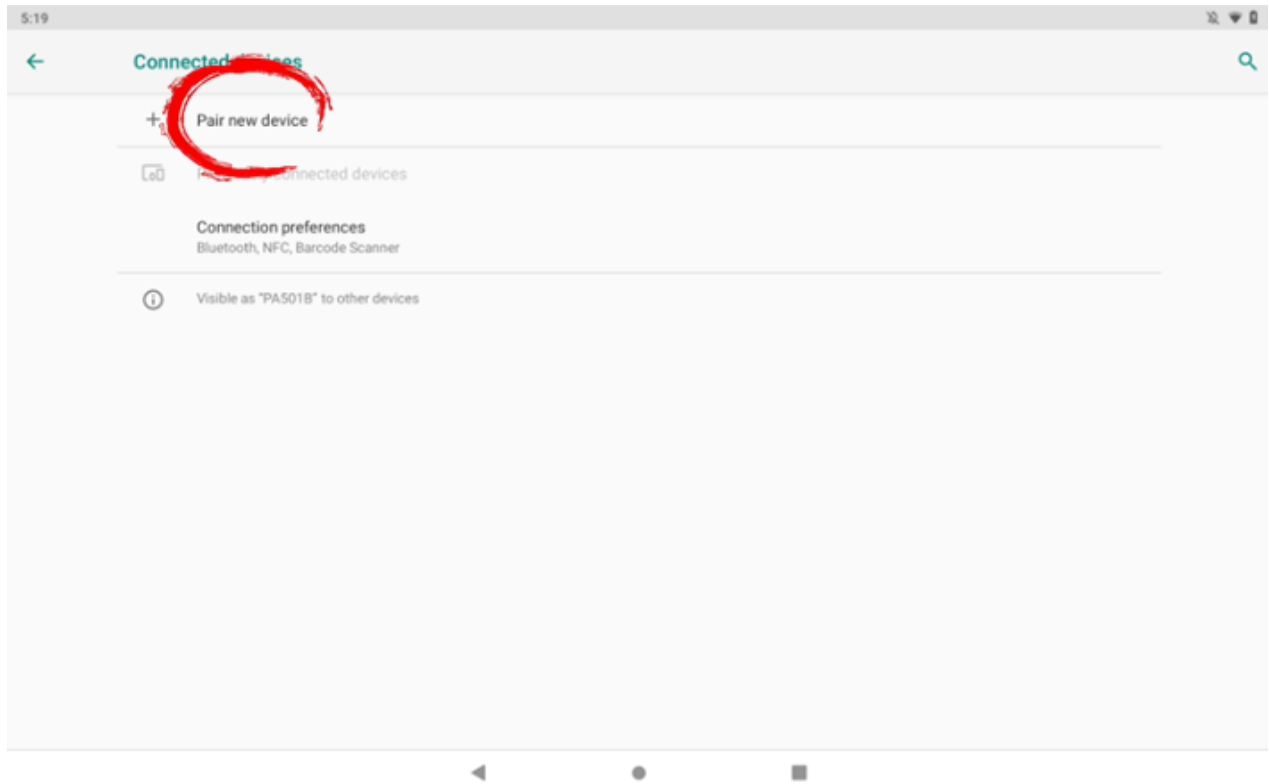
Select "Connected devices" to configure the device settings



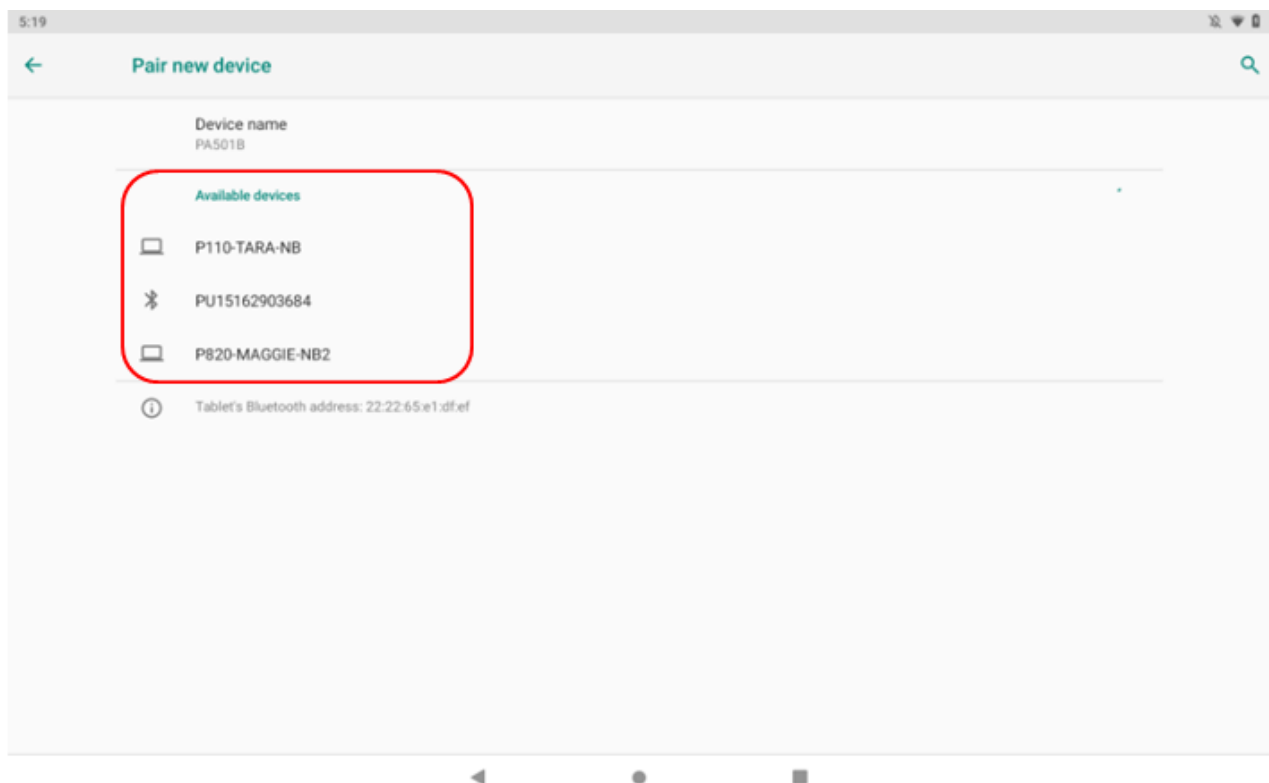
Select "Pair" new device" to search the device



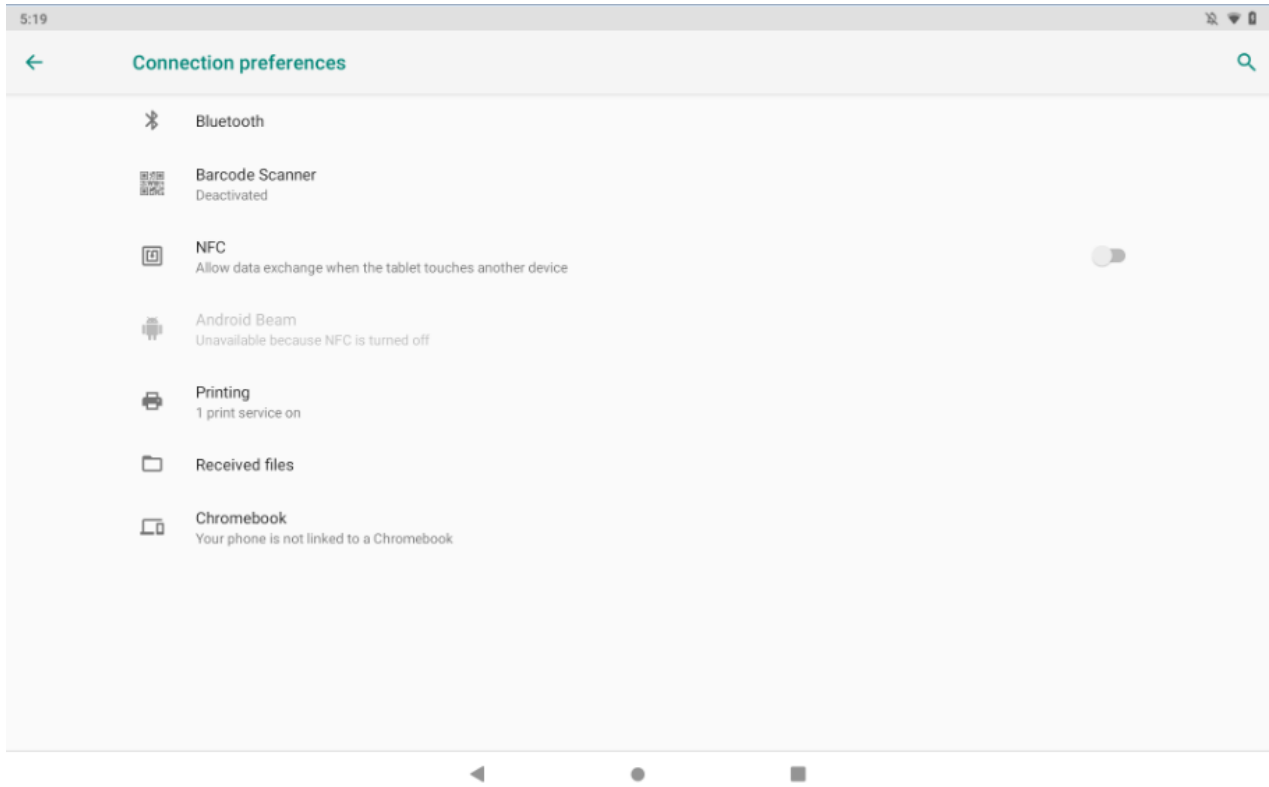
Must turn on the wireless functions



Choose one of the available device names



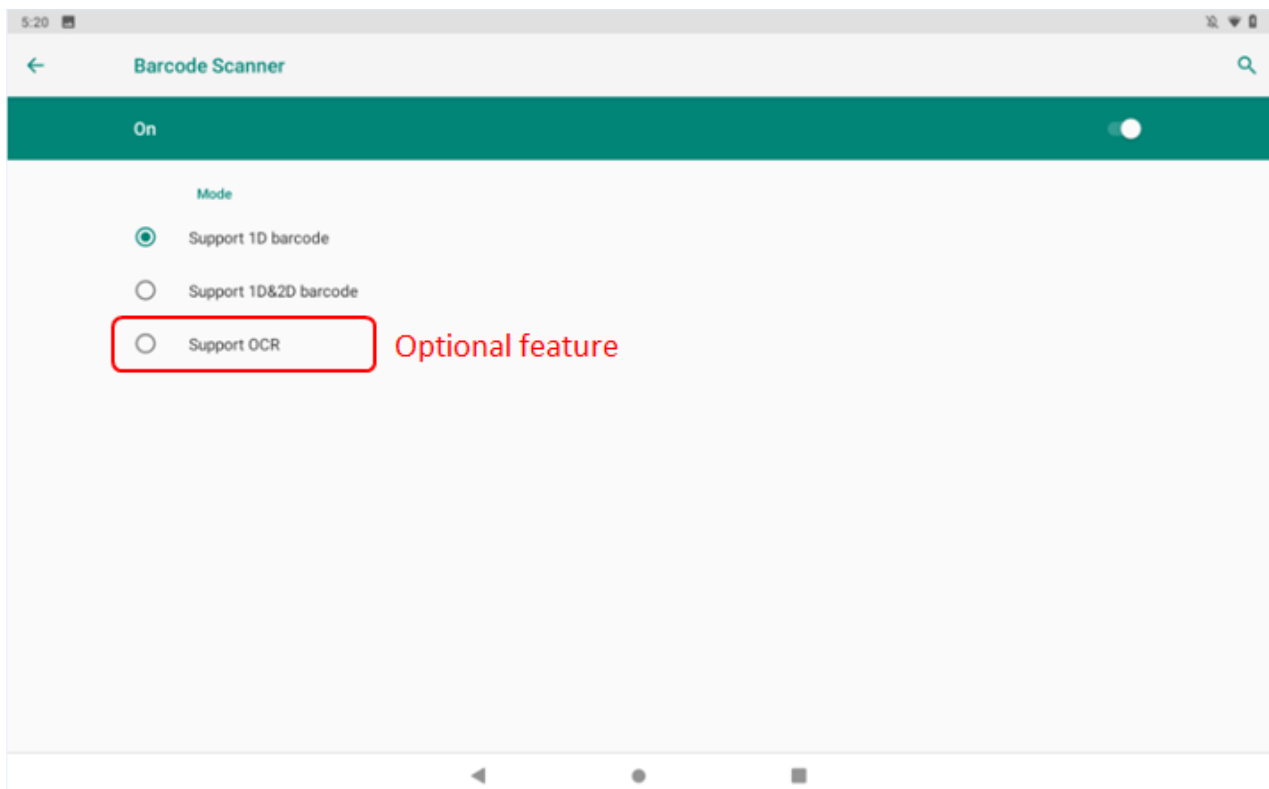
Select "Connection preferences" to choose which devices you prefer to connect, like Bluetooth, barcode scanner or NFC...etc.



When 2D barcode is integrated in the system, three modes are available for selection after you turn on the function.



OCR is an optional feature



## Basic Operations and Settings

### ***Moving items***

Tap and hold an item, and then drag it to a new location. To move the item to another panel,



drag it to the side of the screen.

To add a shortcut to an app on the Home screen, tap and hold an item on the Apps screen, and then tap Add to Home. A shortcut to the app will be added on the Home screen.

You can also move frequently used apps to the shortcuts area at the bottom of the Home screen.

## ***Creating folders***

Create folders for similar apps to quickly access and launch apps. On the Home screen or Apps screen, tap and hold an app, and then drag it over another app.

Thus, creates a new folder that contains the selected apps. Tap Enter folder name and enter a folder name.

- Adding more apps: Tap Add apps on the folder. Tick the apps to add and tap Add. You can also add an app by dragging it to the folder.
- Moving apps from a folder: Tap and hold an app to drag it to a new location.
- Deleting a folder: Tap and hold a folder, and then tap Delete folder. Only the folder will be deleted. The folder's apps will be relocated to the Apps screen.

## ***Editing the Home screen***

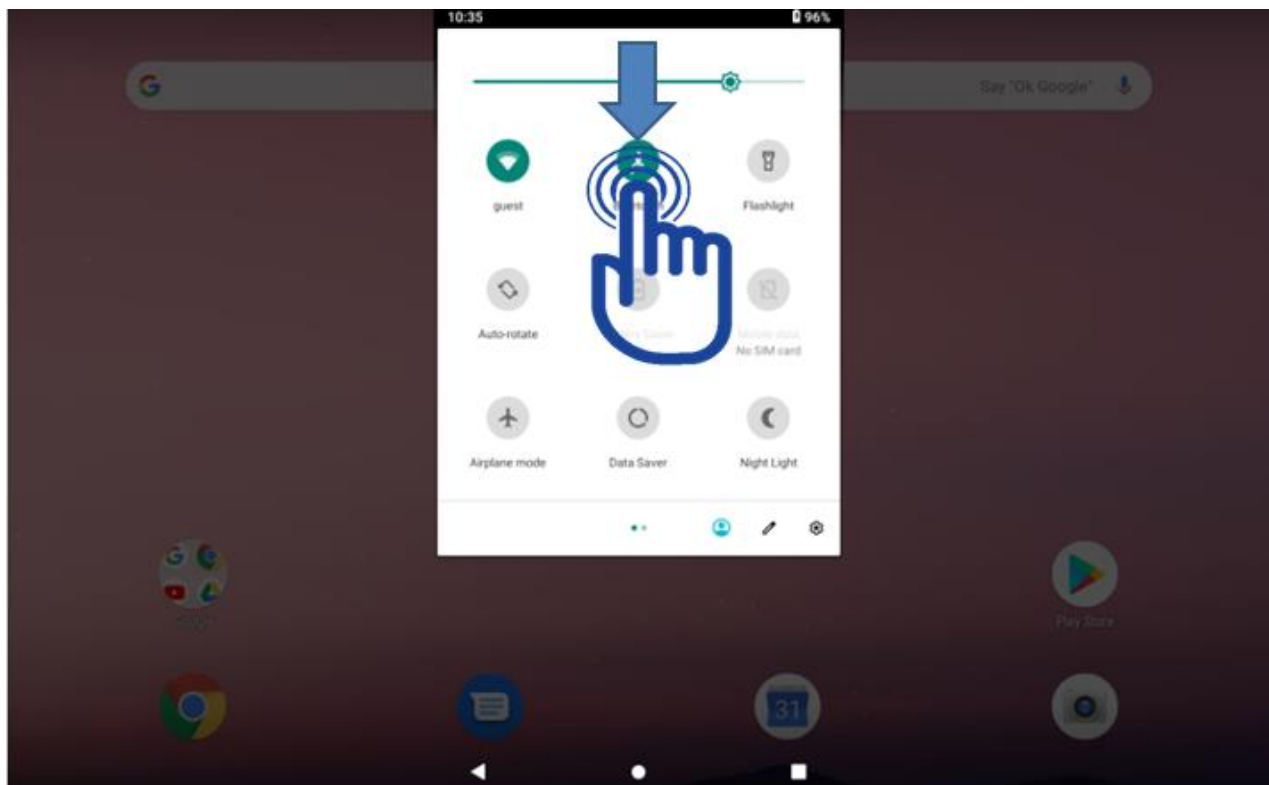
On the Home screen, tap and hold an empty area, or pinch your fingers together to access the editing options. You can set the wallpaper, add widgets, and more.

- Wallpapers: Change the wallpaper settings for the Home screen and the locked screen.
- Widgets: Small apps that activate specific app functions for information and convenient access on your Home screen. Tap and hold a widget, and then drag it to the Home screen. The widget will be added on the Home screen.
- Home screen settings: Change the size of the grid to display more or fewer items on the Home screen and more.

## ***Notification panel***

On the Home screen, swipe downward to open the Notification panel.

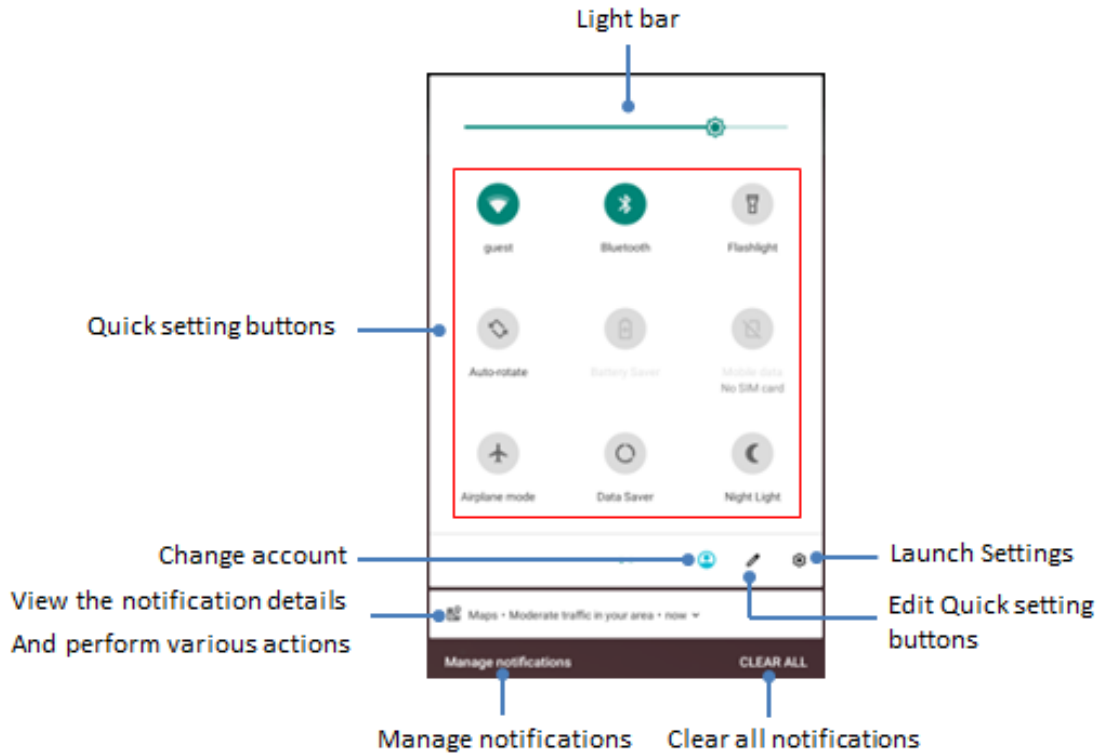
To return to the Home screen, swipe upward on the Apps screen. Alternatively, tap the Home button or the Back button



You can use the following functions on the notification panel

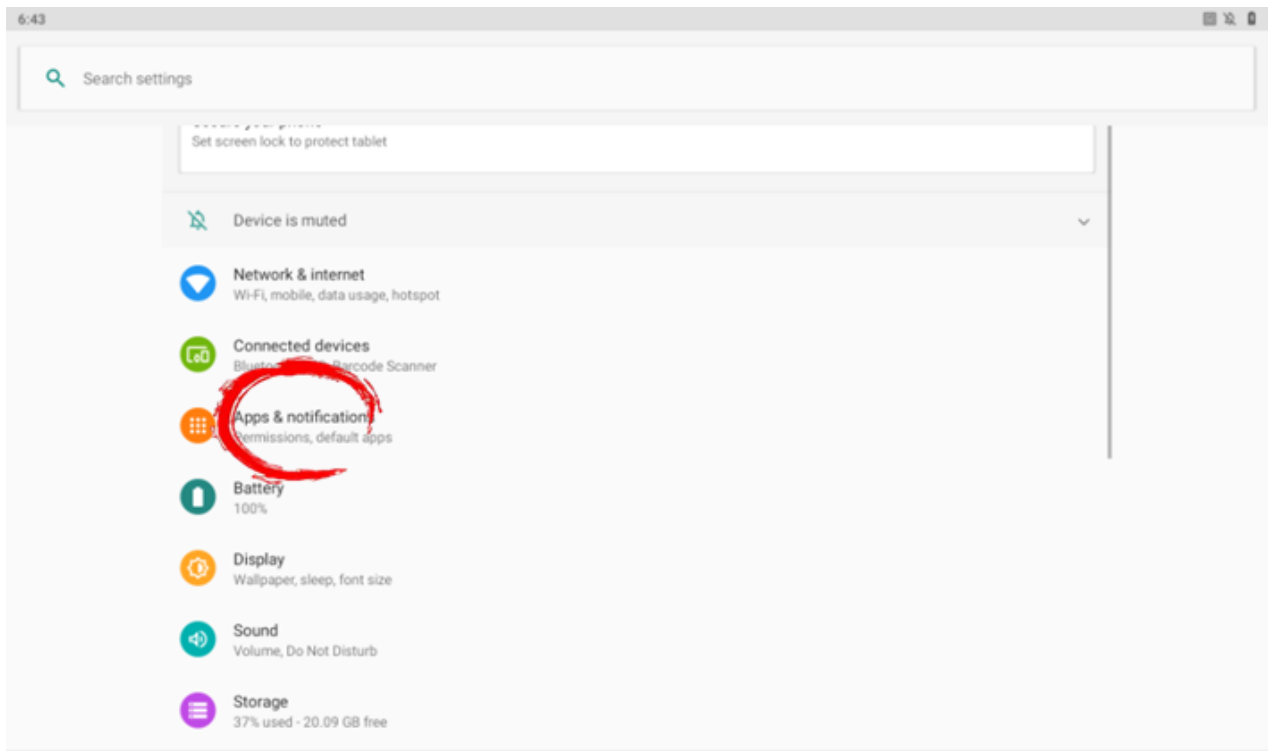
Indicator icons will appear on the status bar for notifications when you miss calls or receive new messages. To see more information about the icons, open the notification panel and view the details.

Tap quick setting buttons to activate certain features. Swipe downward on the notification panel to view more buttons.



## Apps & notifications

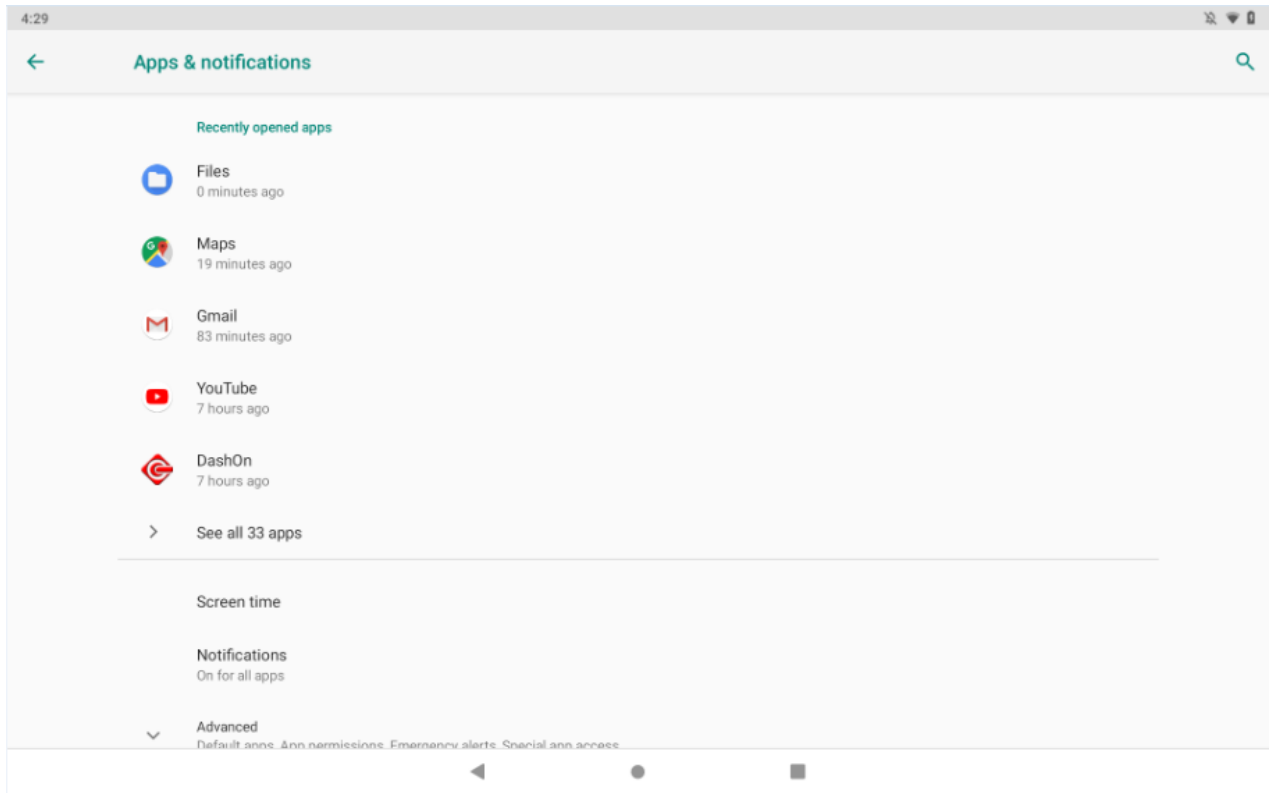
Select “Apps & notifications” to manage Apps settings



Display all apps to set “Disable” or “Force stop” of them

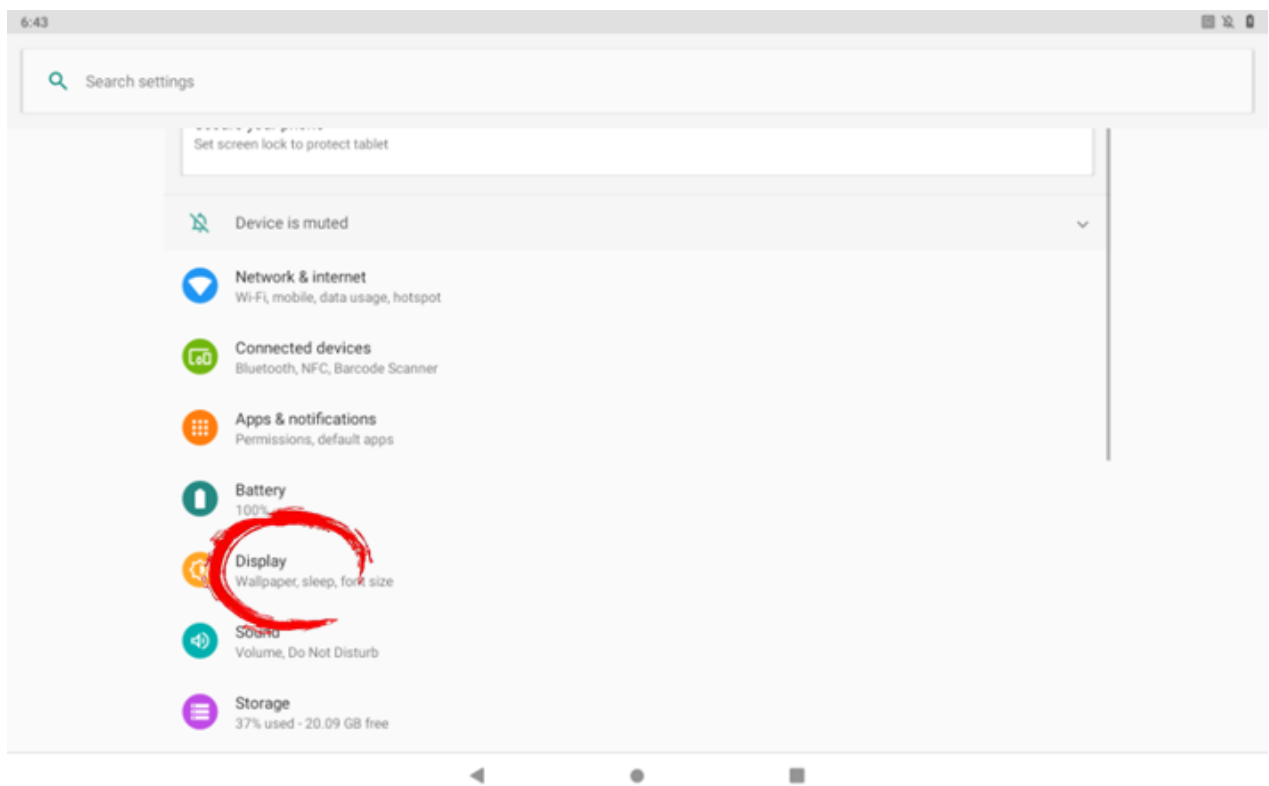


Tap Advanced to do more settings

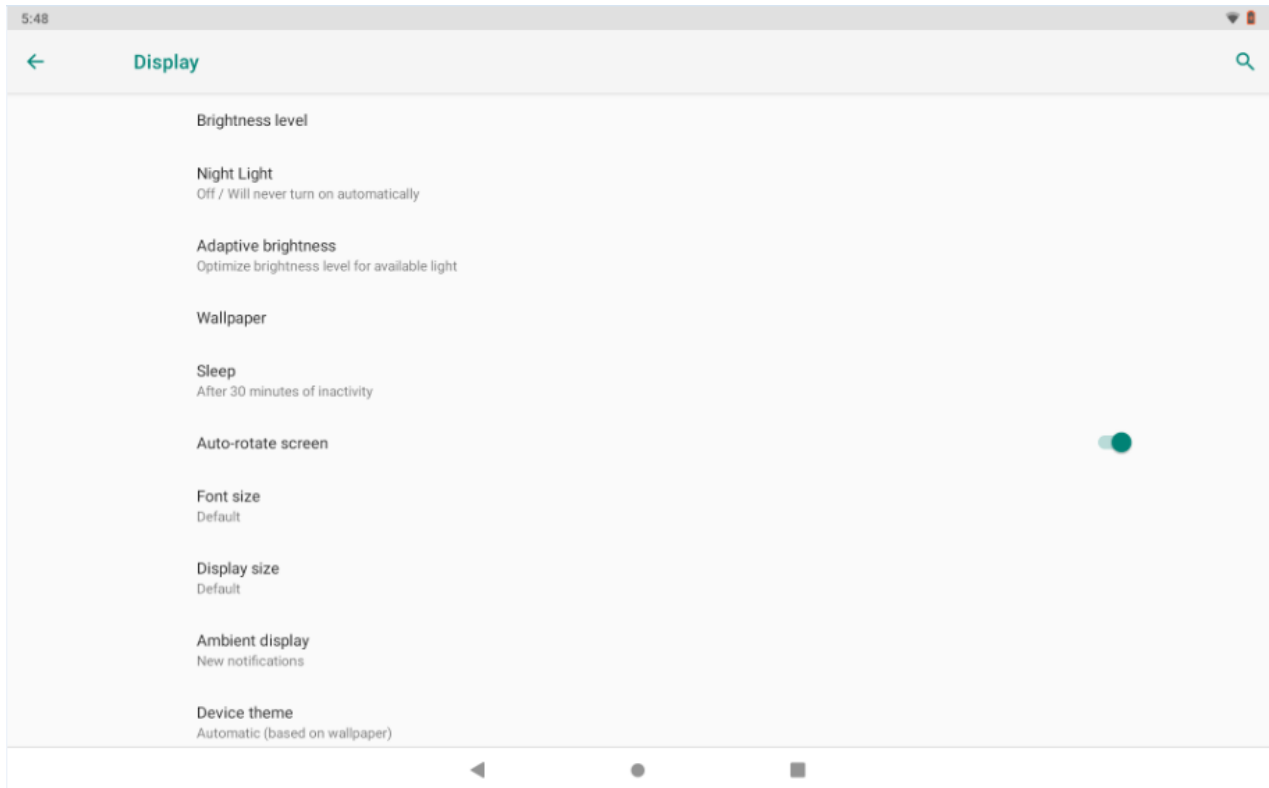


## Display

Select “Display” to configure display settings

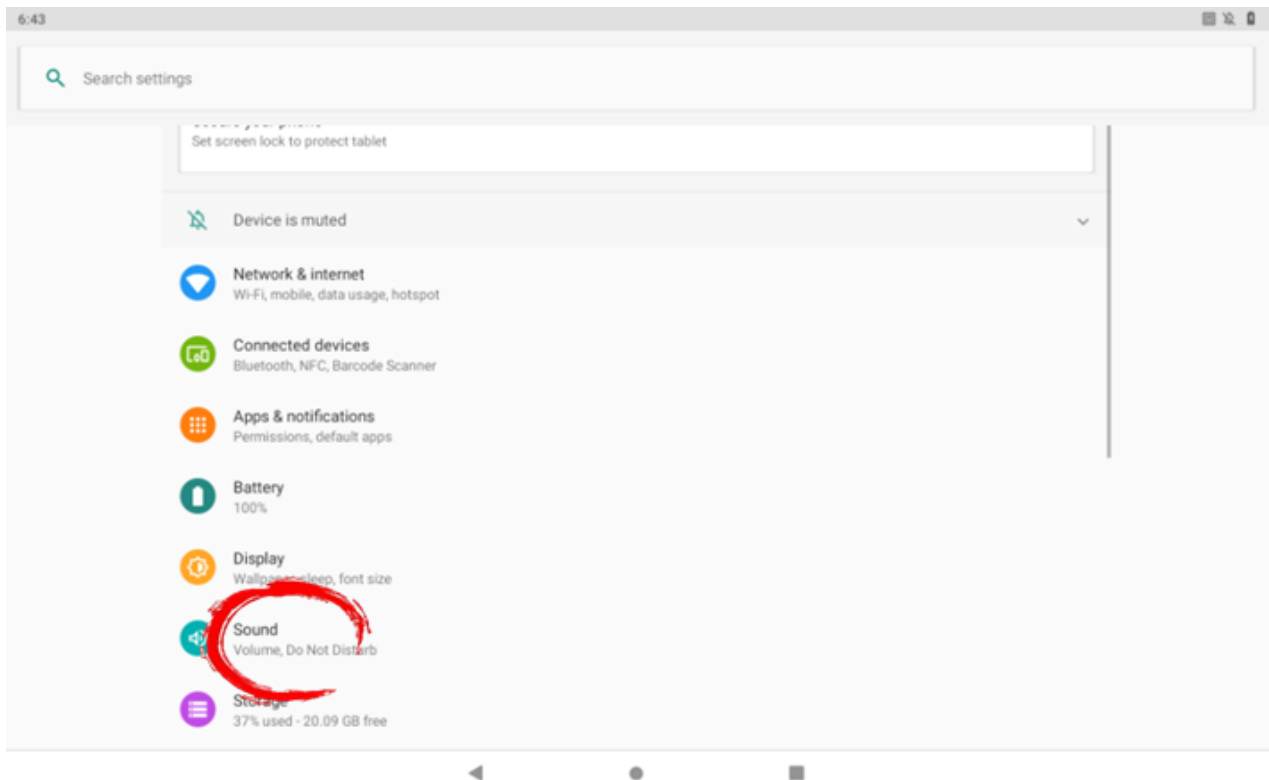


Adjust the configuration of Night Light, Brightness, Wallpaper, Sleep mode, Auto-rotate, Font size, Display size and other display settings.

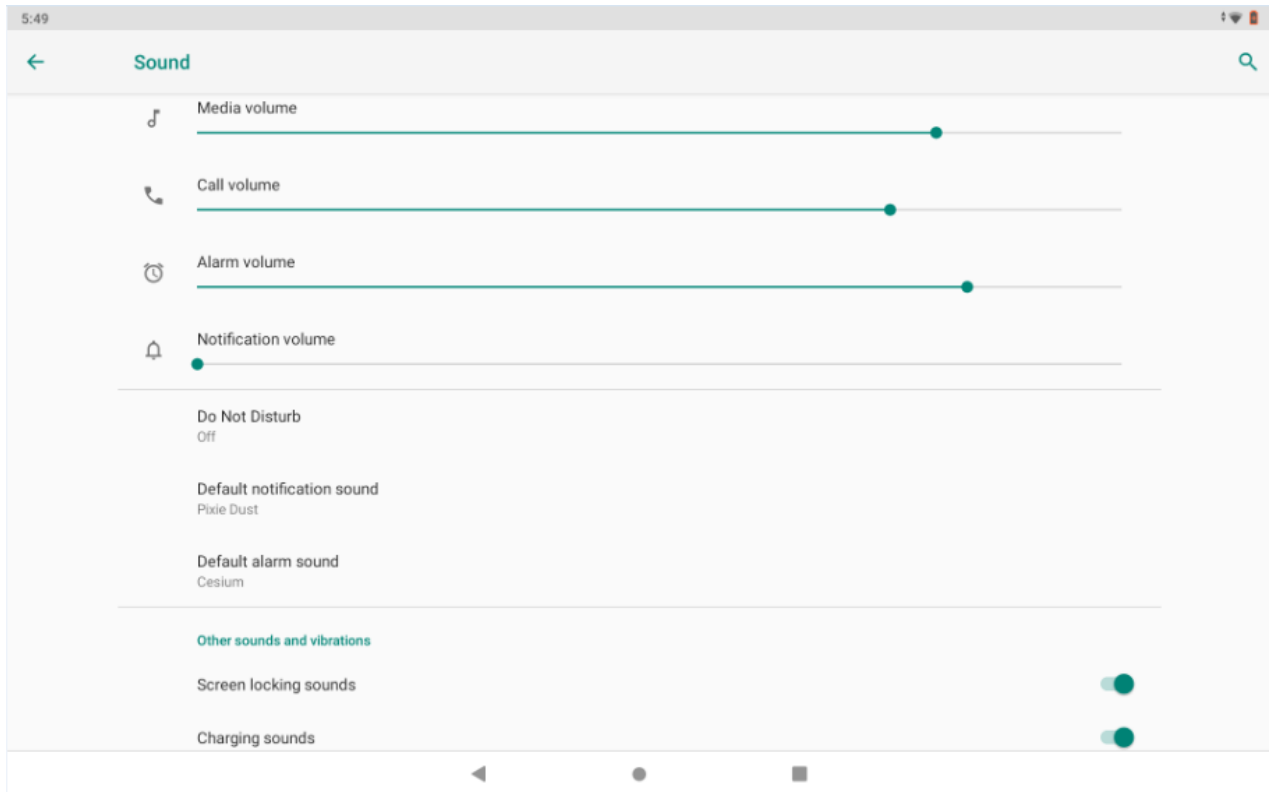


## Sound

Select "Sound" to configure volume settings for audio broadcasts

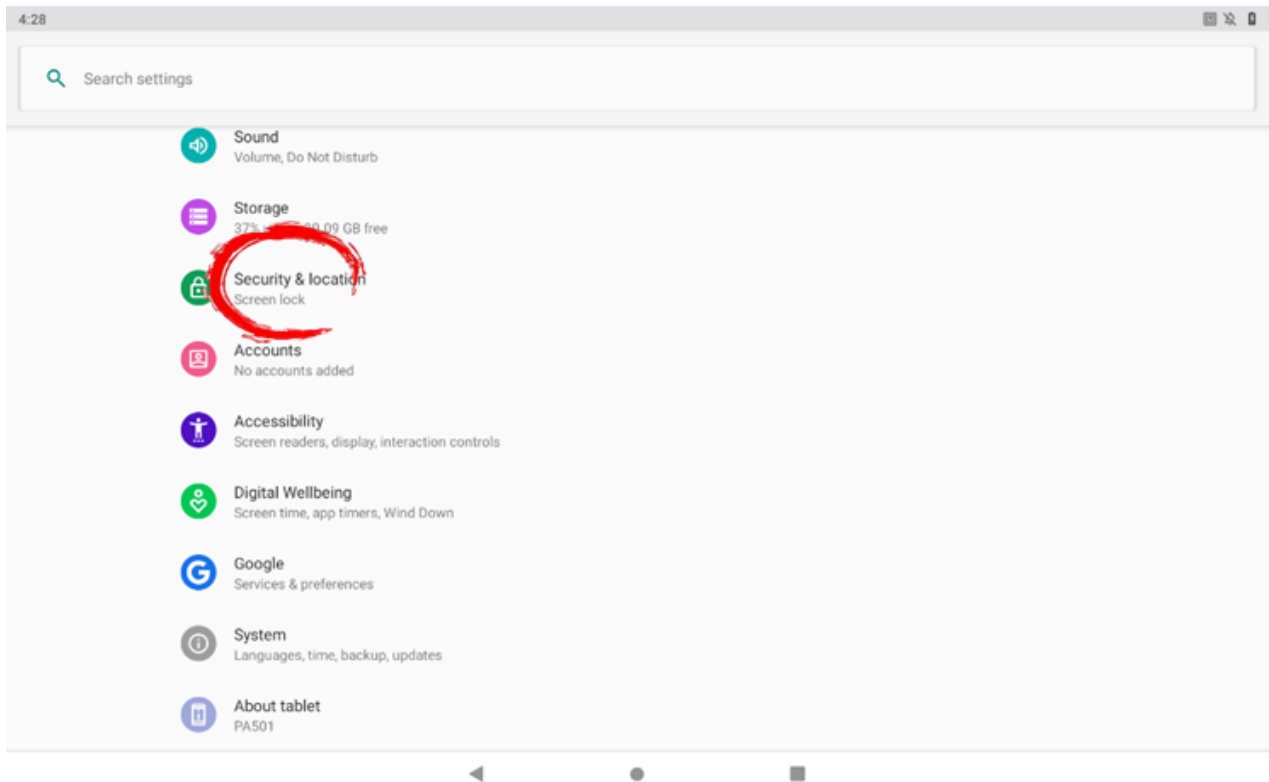


Configure the settings of Media volume, Call volume, Alarm volume, Notification volume and other sound settings..

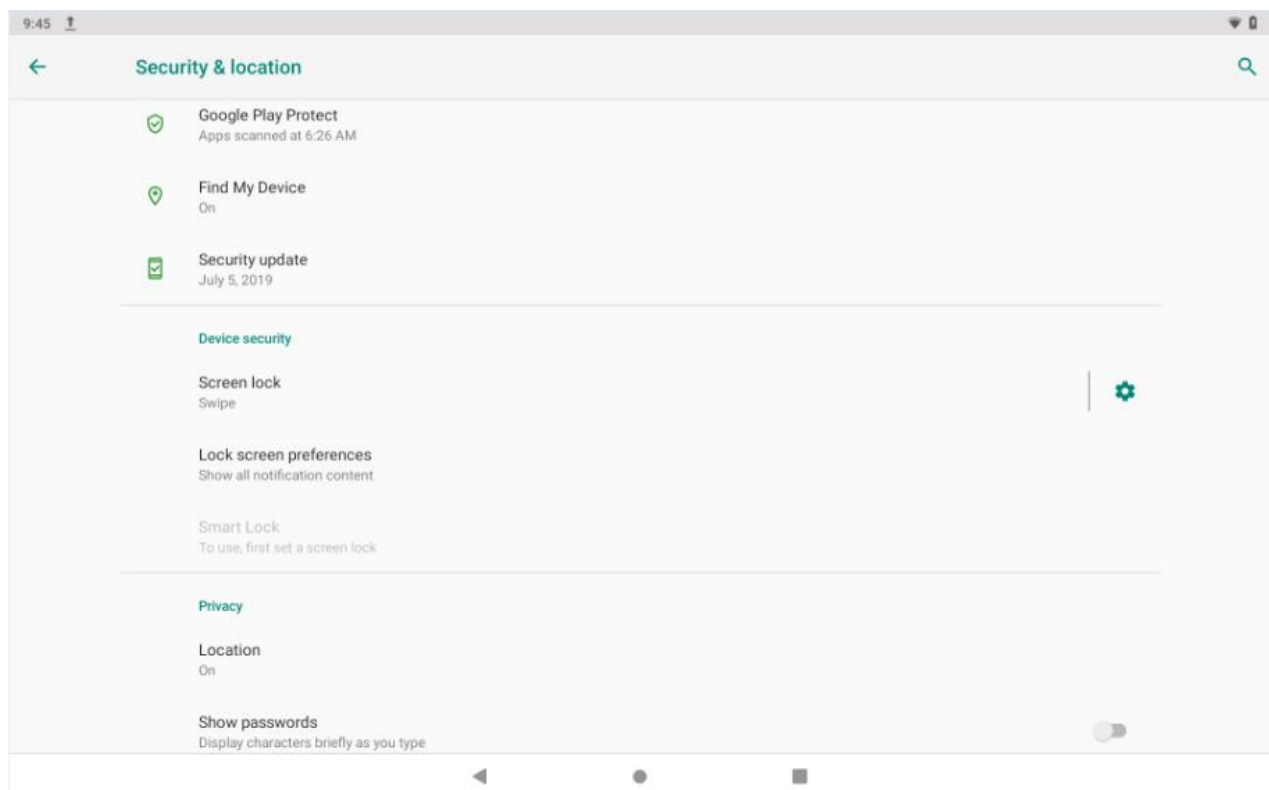


## Security & Location

Select "Security & Location" to configure security settings

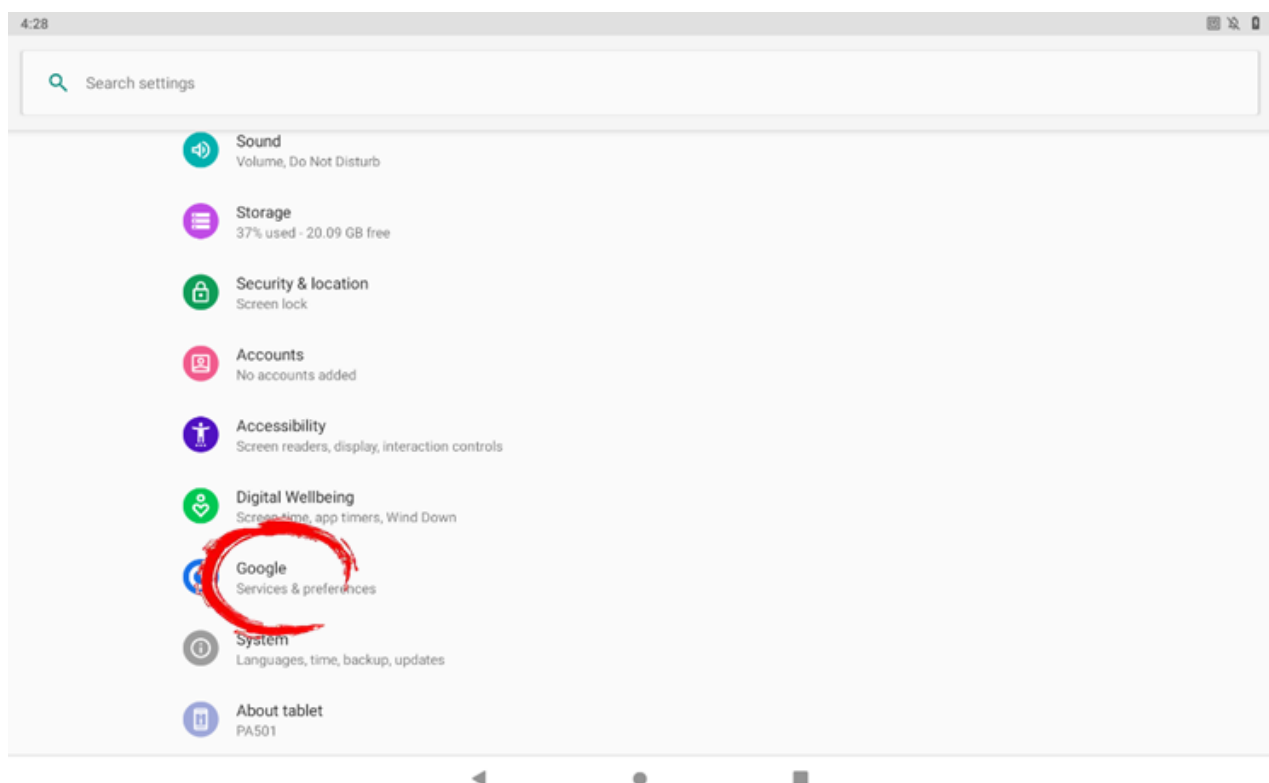


## Display the security status and set device security

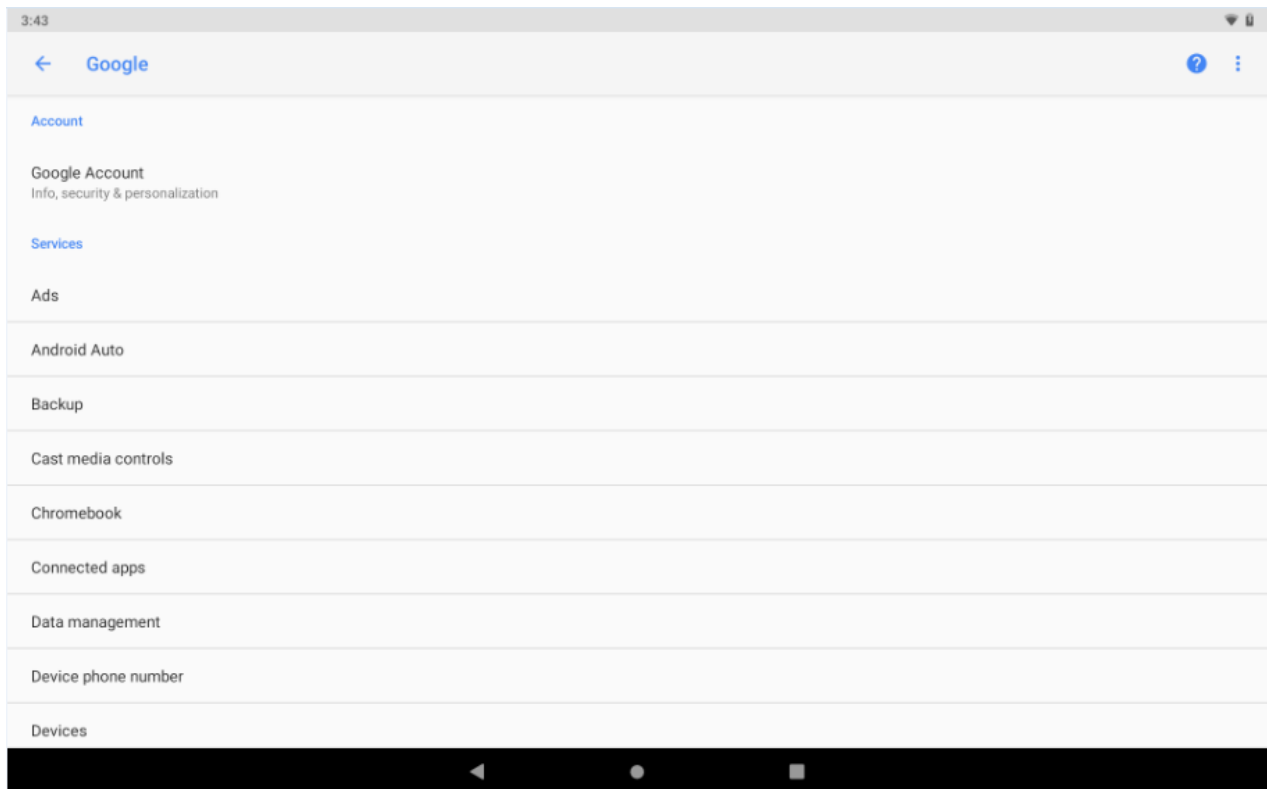


## Google

Select "Google" to manage Google services and preference

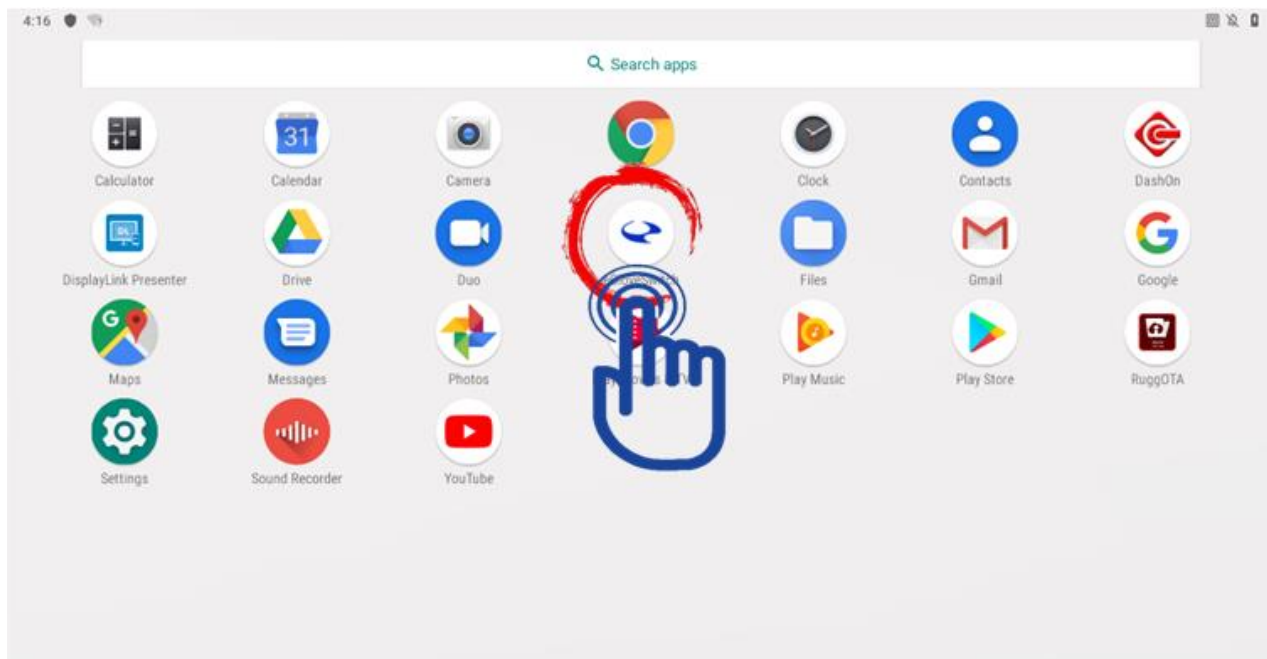


## Check Google account information and configure Google service settings

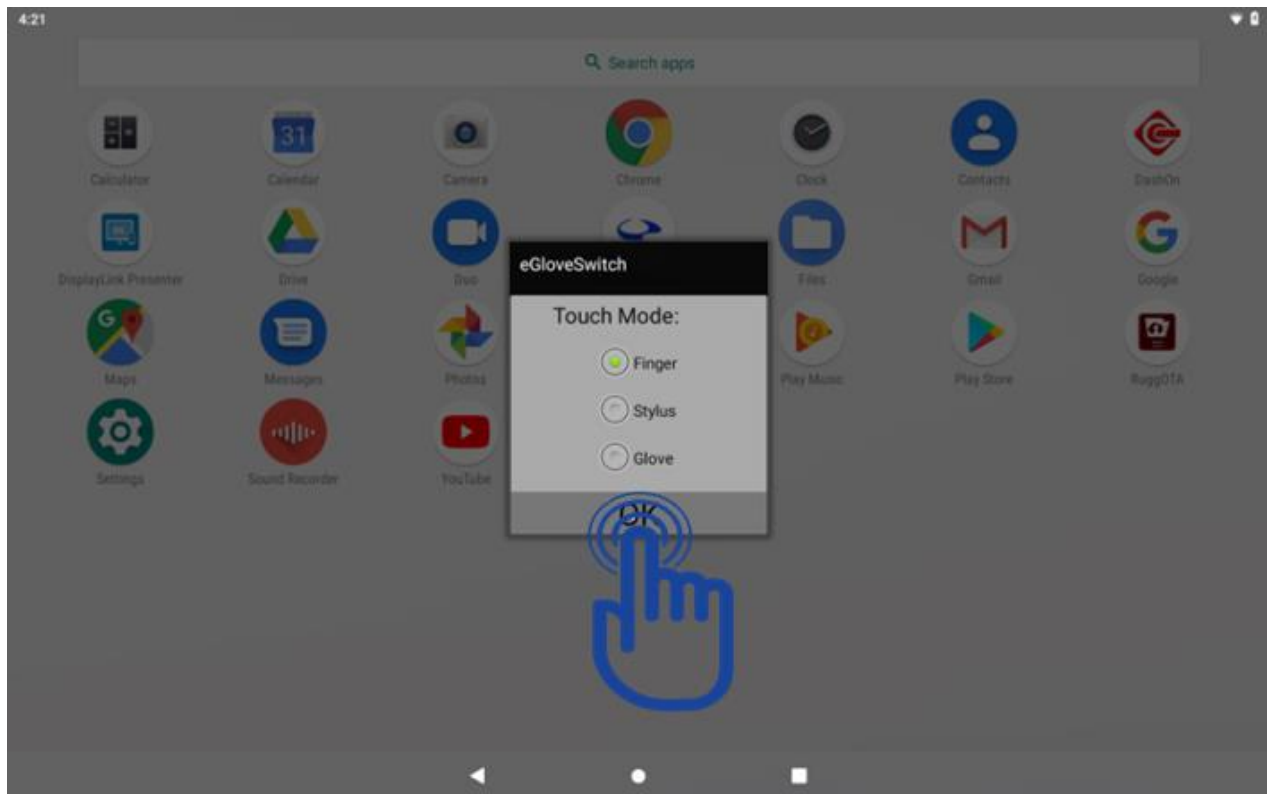


## ***Touch mode***

Tap “eGloveSwitch” to activate the touch mode app



Provide Finger mode, Stylus mode and Glove mode.  
Choose which one you prefer and tap “OK” button

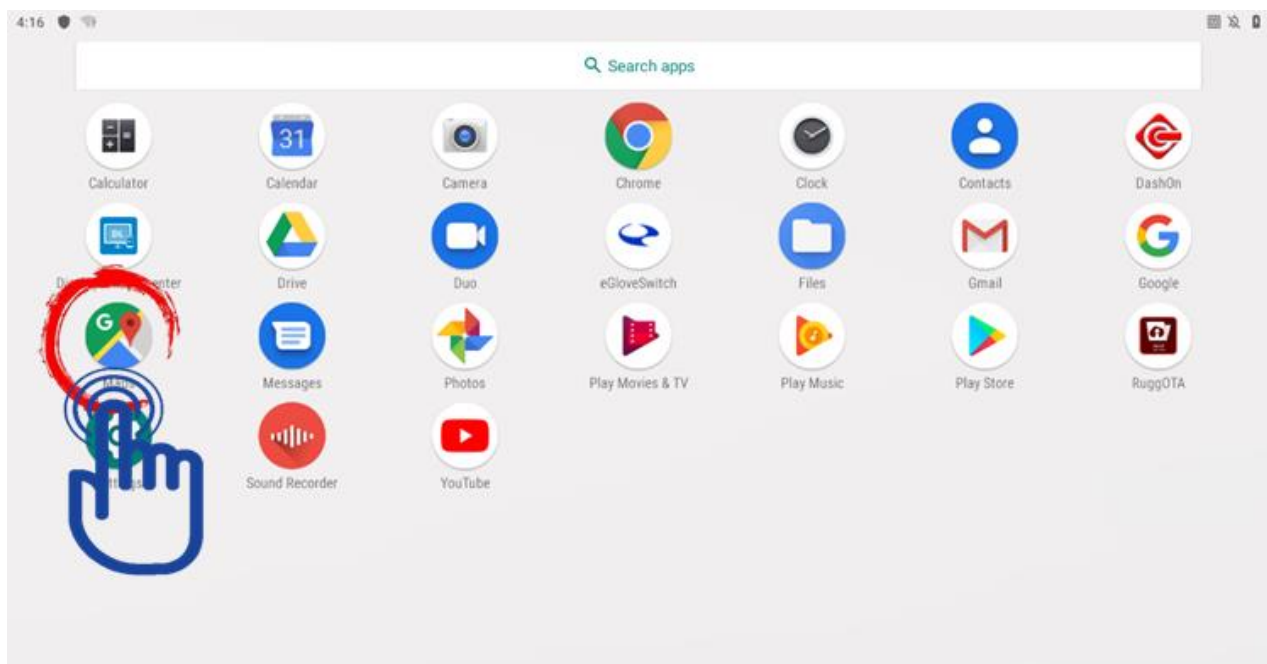


## Google Map

Tap “Maps” to activate the Google map app



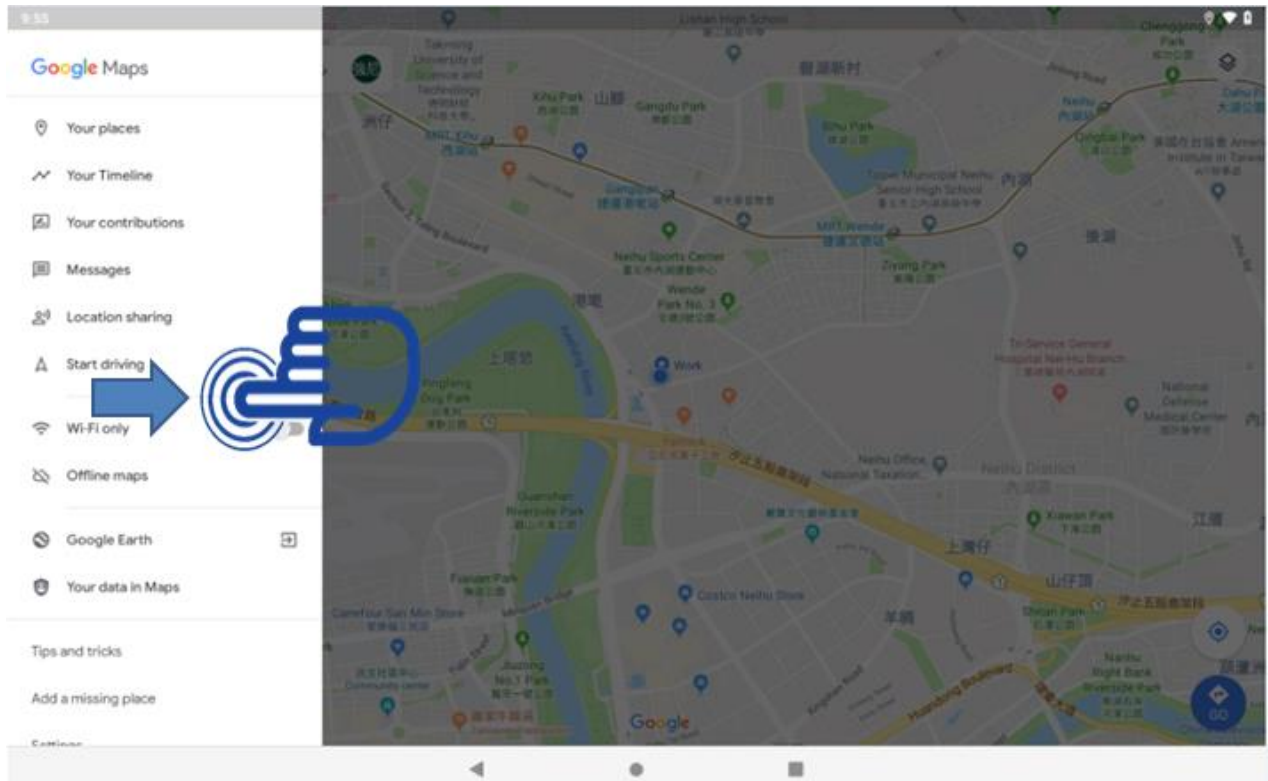
Make sure GPS function is turned on.





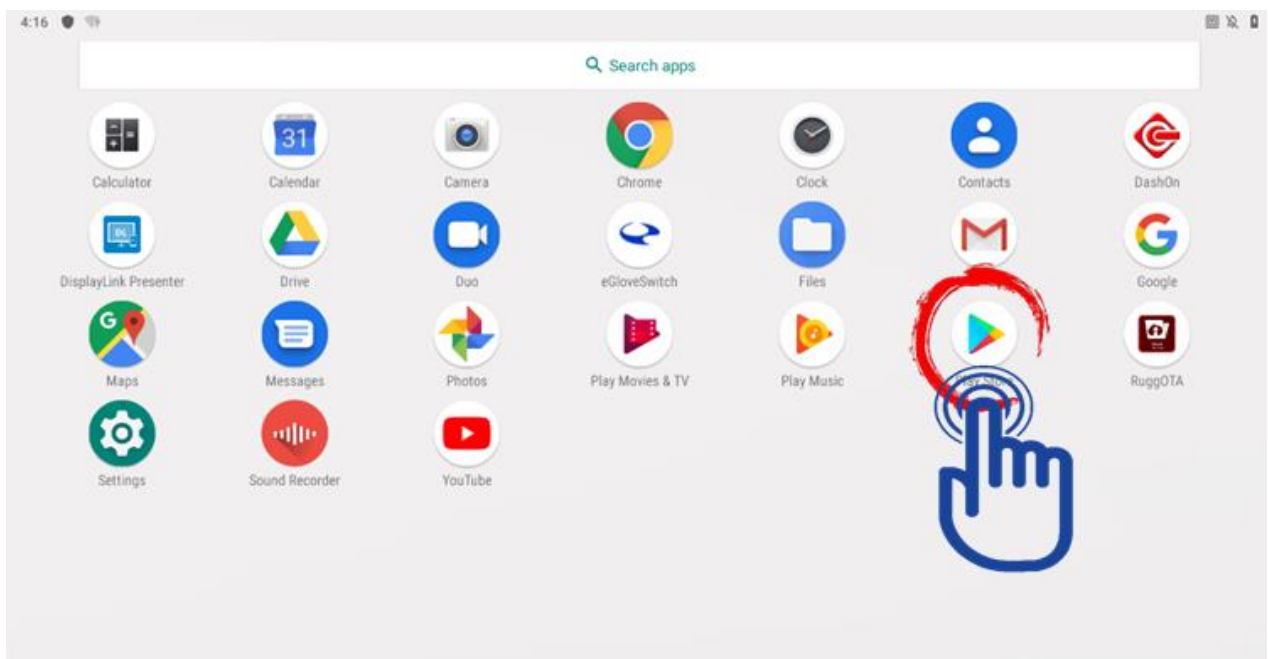
Google Maps helps you locate where you are.

Swipe to the left to get directions or to create customized maps or configure more settings.

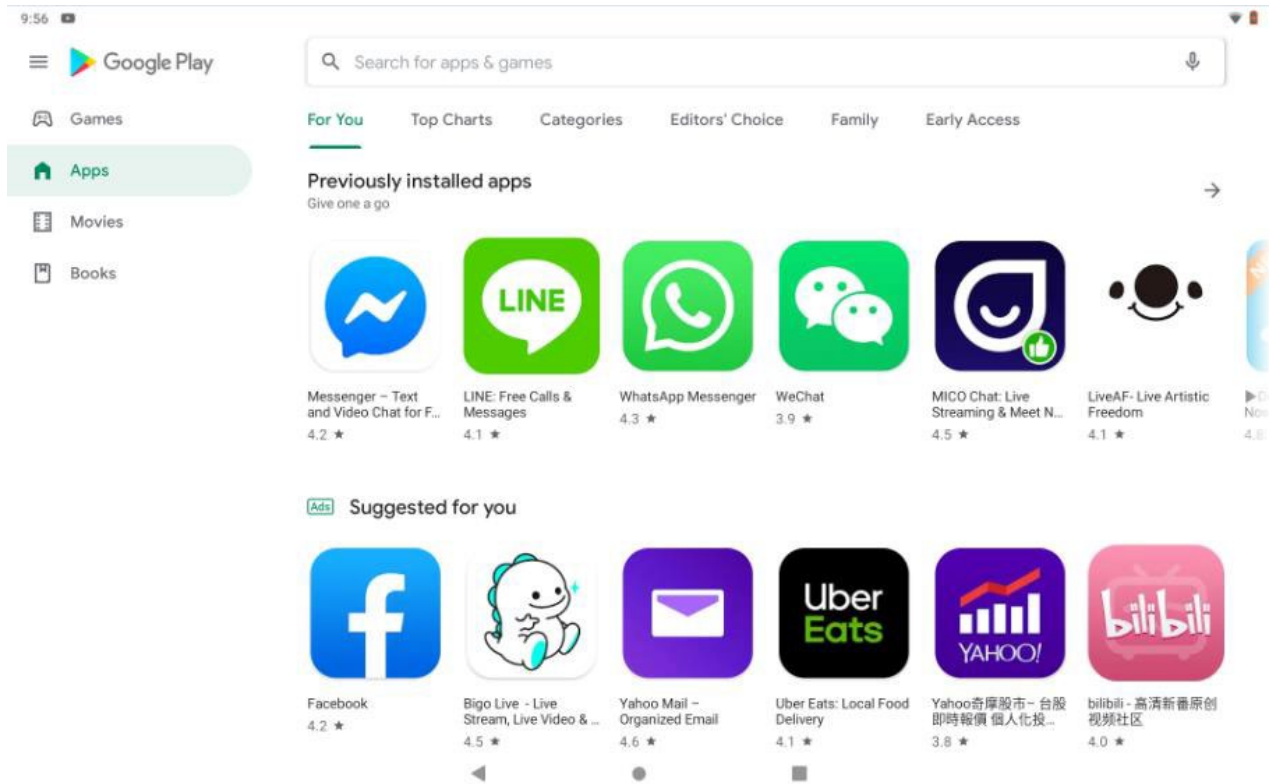


## Play store

Tap “Play store” to launch the Play store app



You can access many tools in the play store with your Google account. After setting up your account, you can log into the store at your discretion. After signing in, you are able to download and install applications from the “ Google Play Store ”.

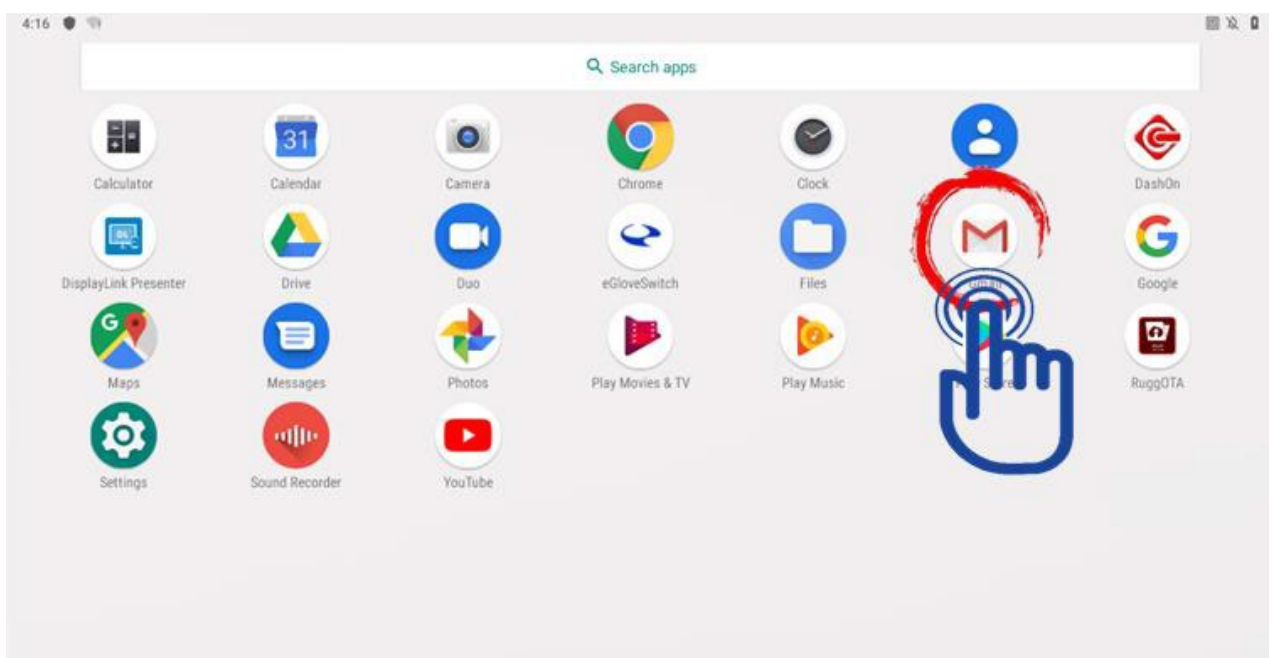


## Gmail

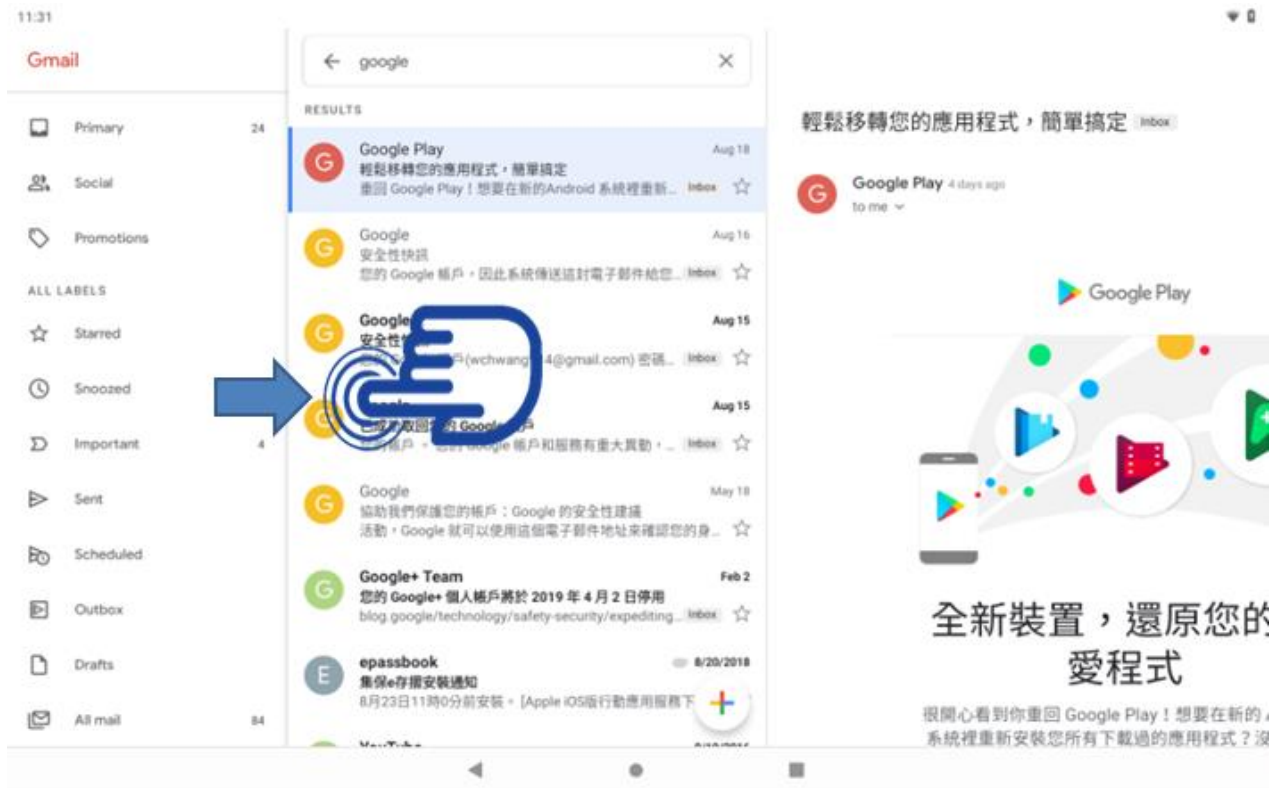
Tap "Gmail" to launch the mail app



Set up an email account when opening Email for the first time.



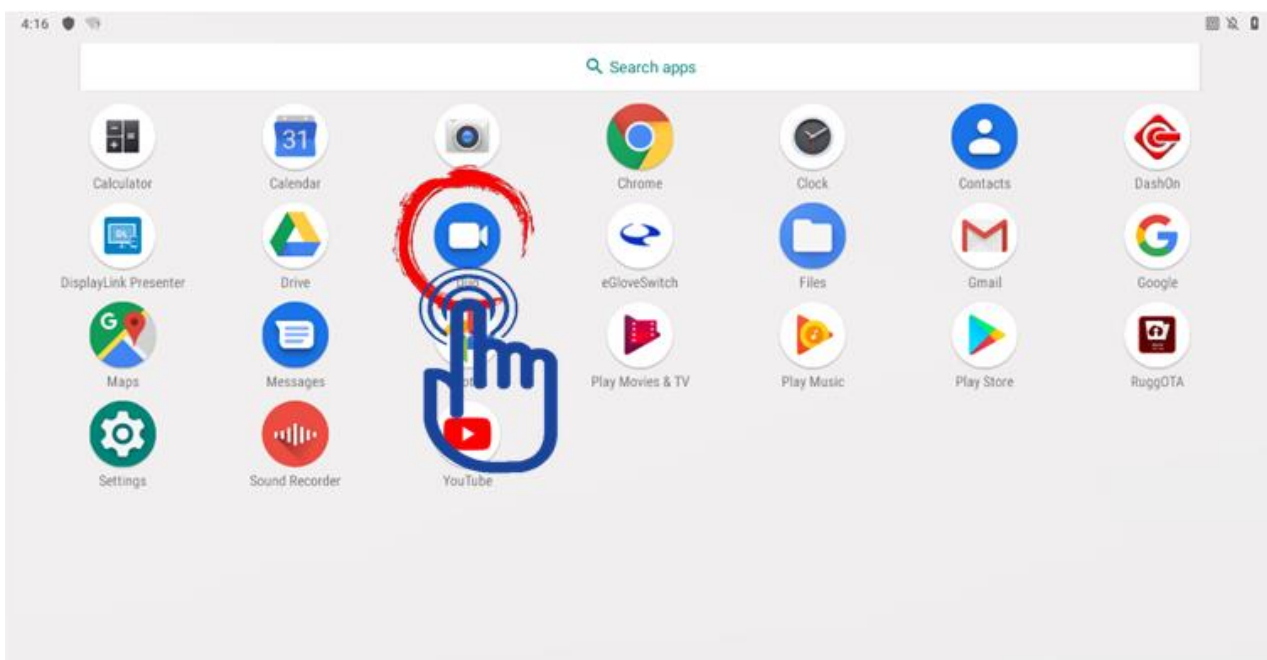
Gmail (Google Mail) allows you to access your Gmail account, receive and compose emails. If you have several email accounts, use Gmail to save time and access all email accounts. Swipe to the left to configure more settings.



## Google Duo

Tap “Duo” to launch the Google duo app

Google Duo is the new, simple video calling app that brings you face-to-face with all the people that matter most.



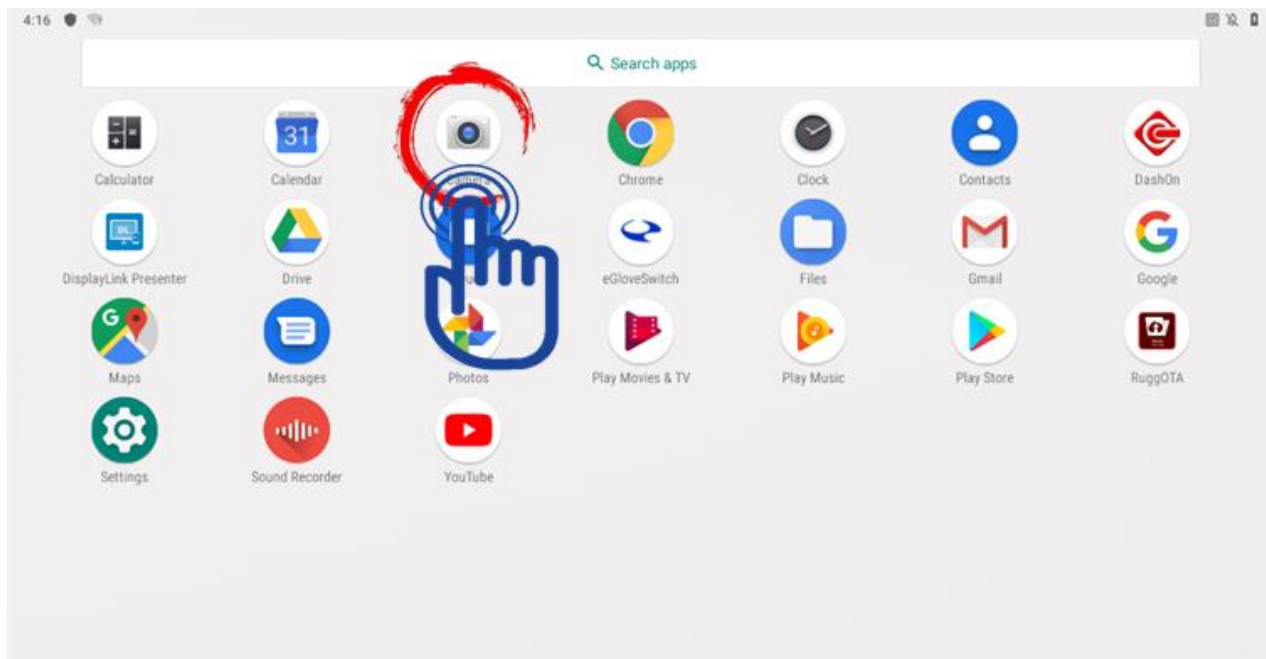
## Camera

Tap “Camera” to launch the camera app

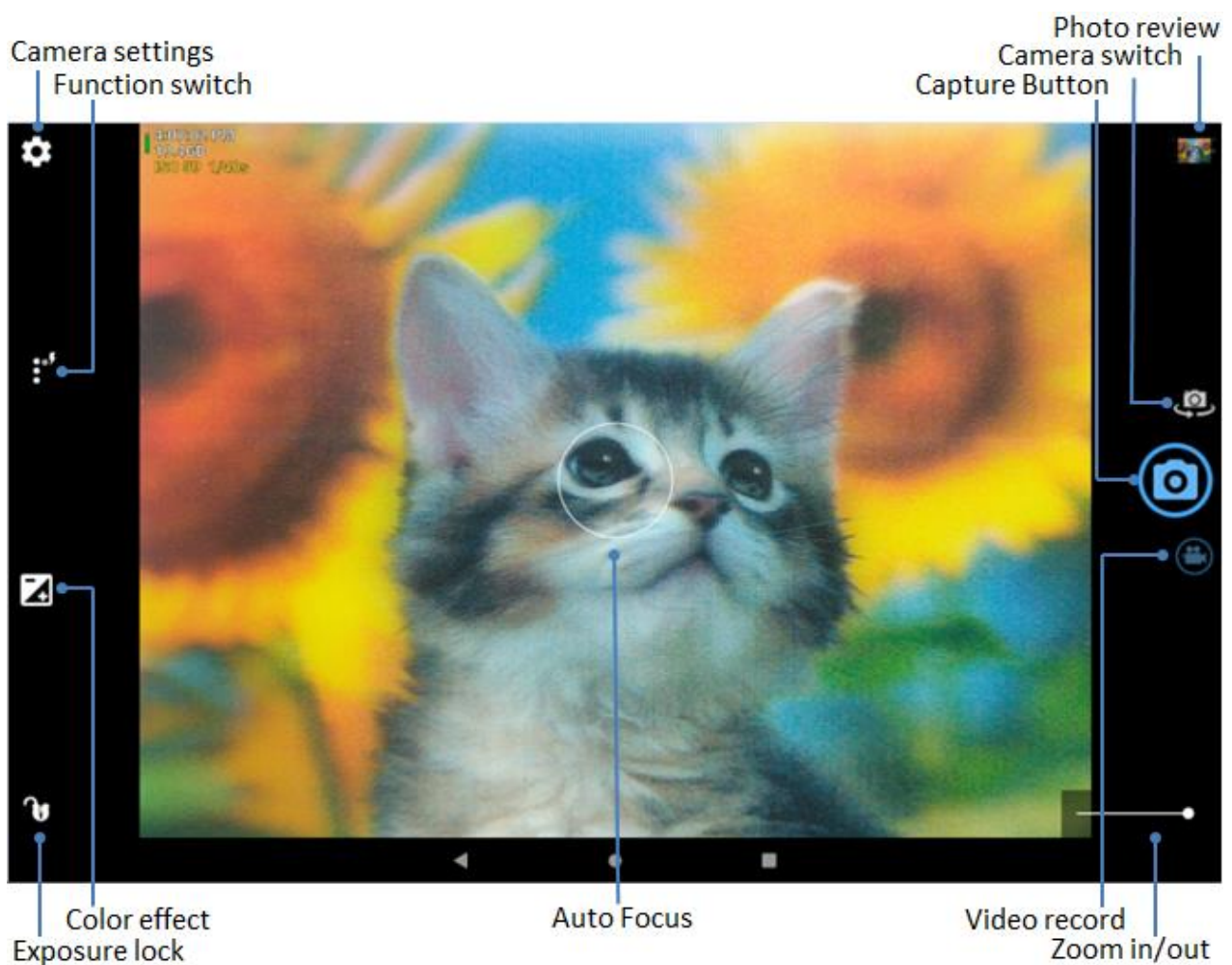


Some camera features are not available when you launch the camera app from the locked screen or when the screen is turned off while the screen lock method is set.

If photos you take appear blurry, clean the camera lens and try again



You can use the following functions on camera app





## RuggOTA

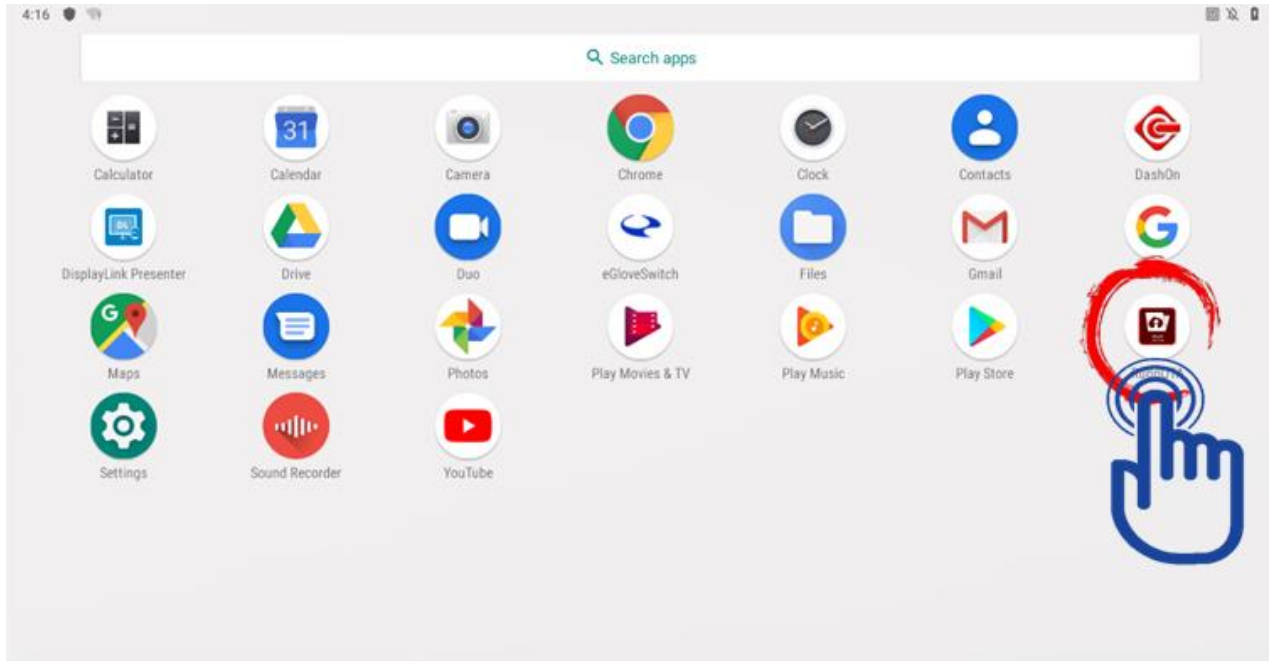
RuggON provides the free service that allows you to update the latest version of MCU and OS.

Tap “RuggOTA” to launch RuggOTA app



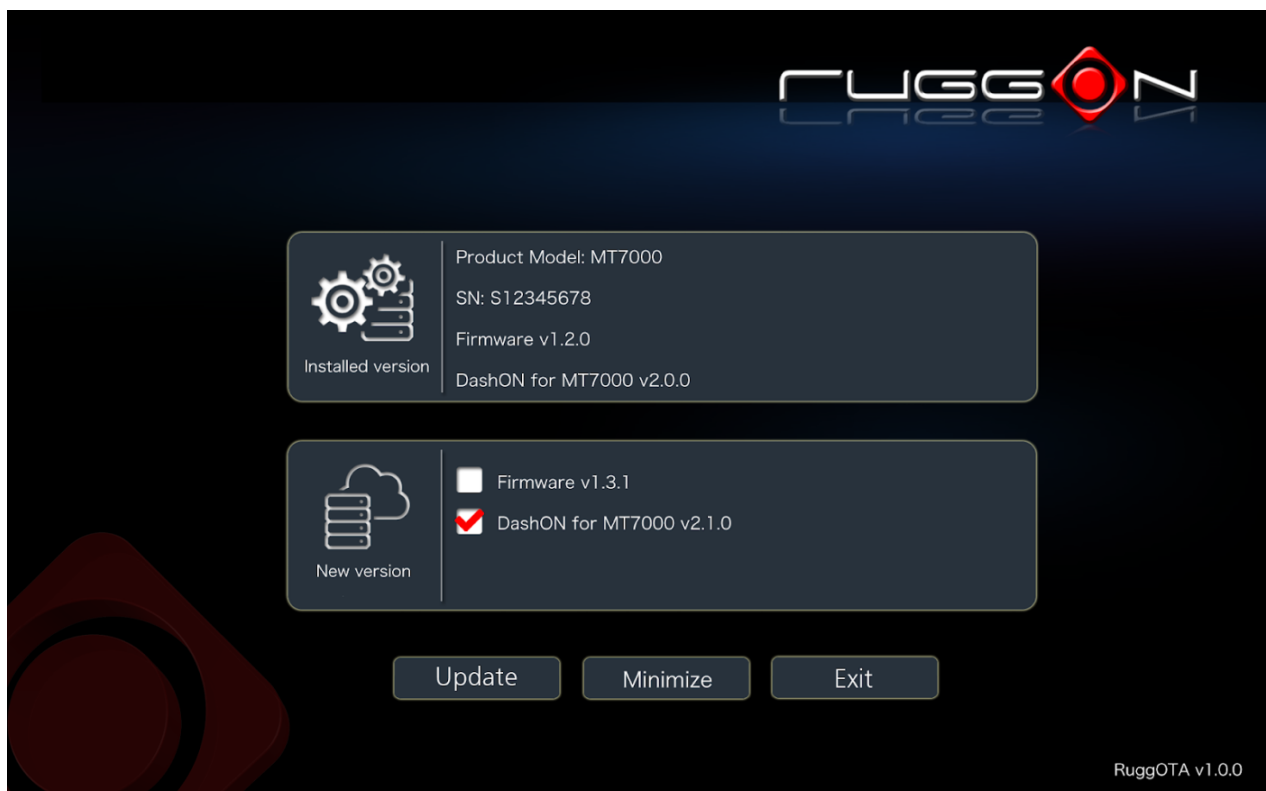
Do not download or update any packages while your device is of low battery.

Make sure Wireless function is turned on.



After entering the installed software, its version panel shows the info of product name, serial number, firmware, and software version.

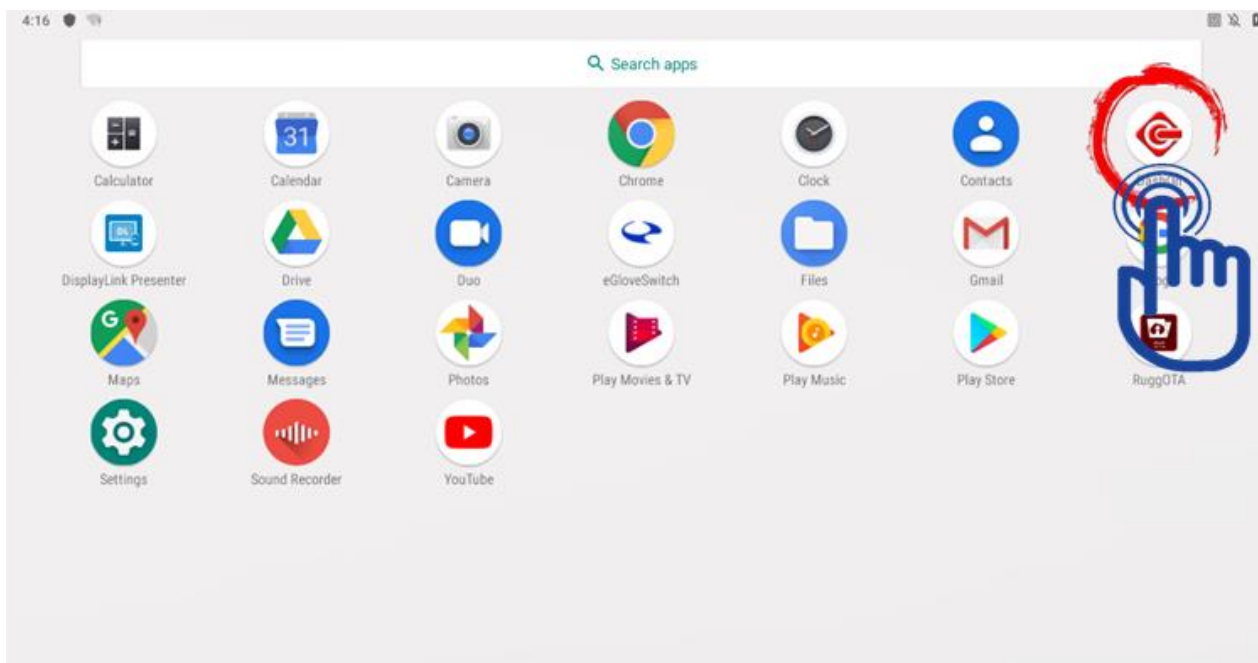
On the new version panel, system will automatically check the latest version of MCU and software, and you can choose to automatically or manually update it.



# Chapter 5. RuggON DashON Utility

## Overview

Tap “DashON” to activate the RuggON DashON app



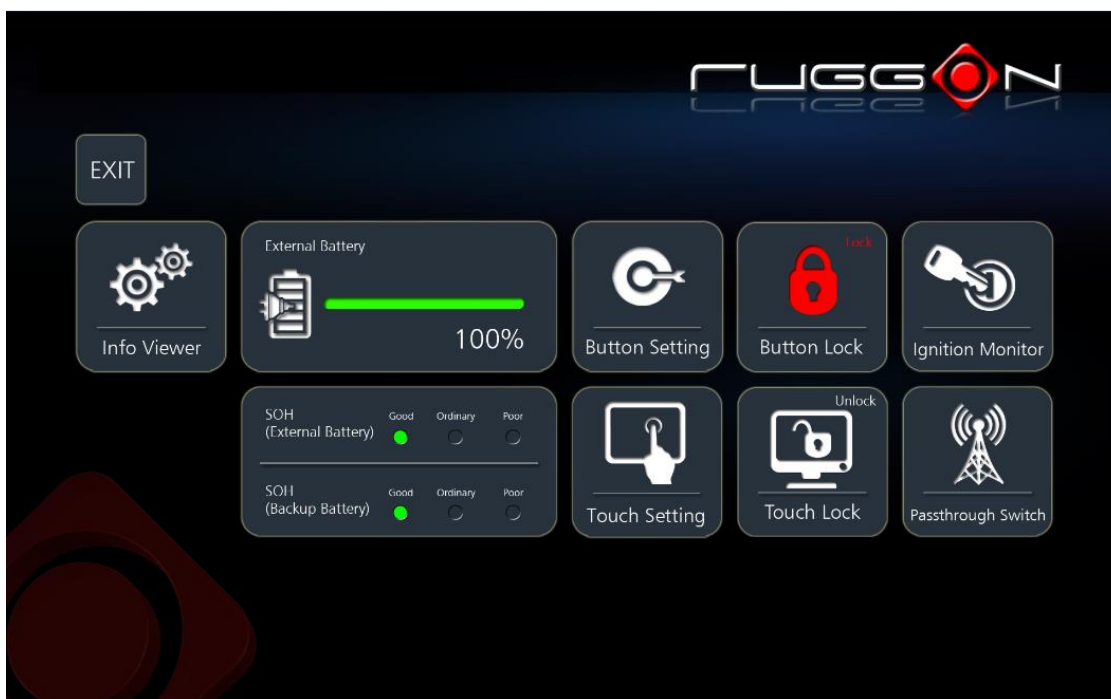
The DashON resident program is designed to provide near-instant access to your device’s settings and configuration within a single, easy to use interface.

The following information illustrates and describes the various settings available for configuration through the DashON menus.

Important: Do not terminate or remove the DashON program manually or the ambient light sensor and the function buttons will be malfunction.



Available functions are dependent on tablet model and operating system.



Function	Description
EXIT	Minimize DashON and return to the desktop.
Info Viewer	View system specifications. The menu is for display only.
Battery	Shows the battery level or charging status.
SOH(External Battery)	Shows the Health of external battery.
SOH(Backup Battery)	Shows the Health of backup battery.
Button Setting	Pre-defined functions settings. Supports function button customizing.
Touch Setting	Choose touch mode of finger, glove or stylus
Button Lock	Lock or unlock all the physical buttons except Power button.
Touch Screen Lock	Lock or unlock the touch screen.
Ignition Monitor	Select turn-on and turn-off time in seconds on vehicle docking
Pass-through Switch	Switch the usage of internal antenna or external antenna on vehicle docking

## Function Settings

### **Info Viewer**

The Info Viewer displays the system's hardware specifications.

Tap to display system information. The setting is for display purposes only



### **Battery**

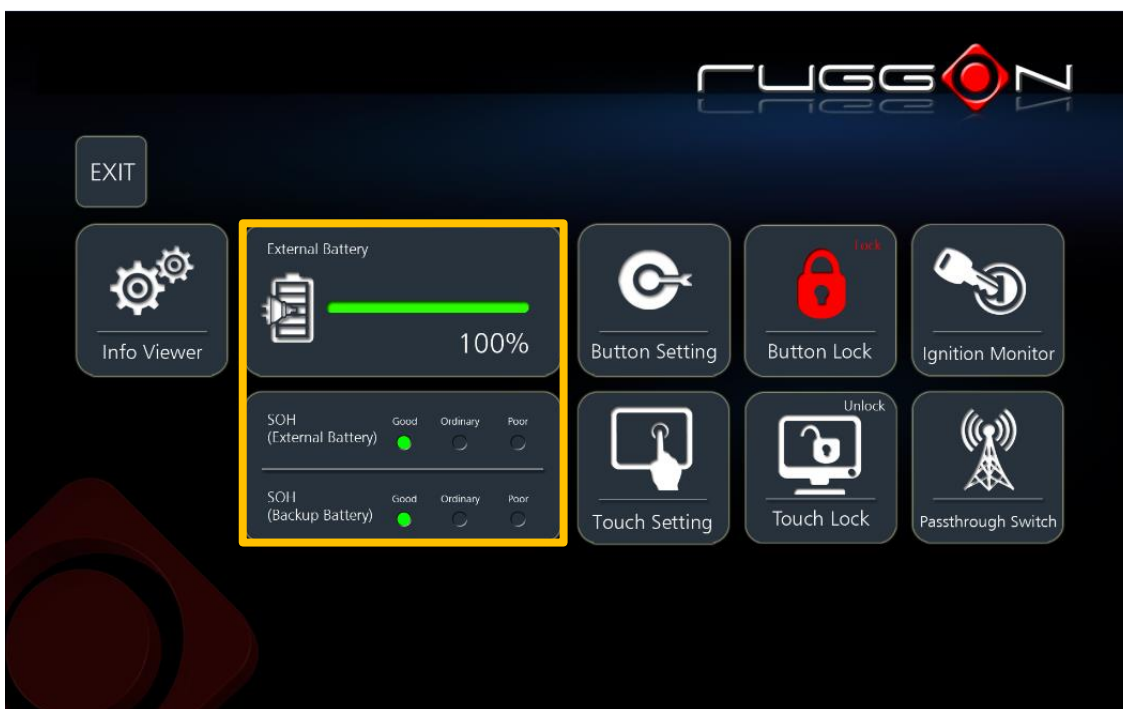
Shows the battery level or charging status. The icon depends on your battery condition.

### **SOH (External Battery)**

Shows health status of the external battery. The icon depends on your battery condition.

## SOH (Backup Battery)

Shows health status of the backup battery. The icon depends on your battery condition.



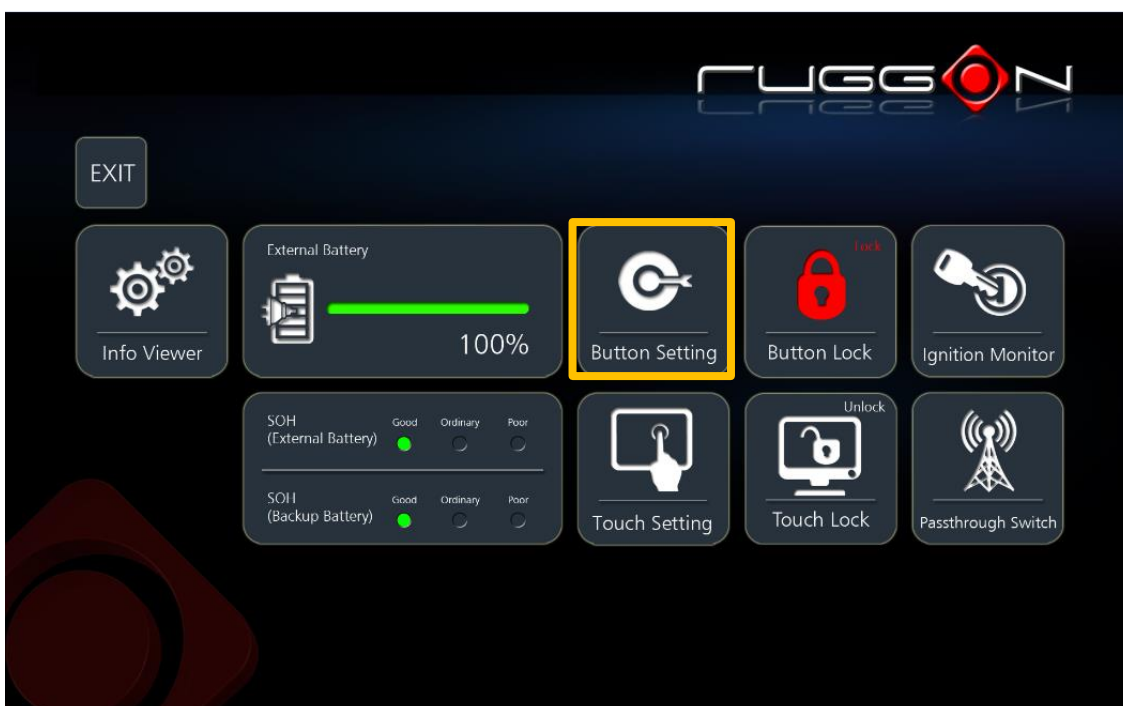
## Button Setting

The physical function buttons are configured with pre-defined commands. However, the buttons can be configured to open any number of executable commands. In combination with the Fn key, the function buttons can trigger more commands.



Fn key depends on your tablet setting.

Barcode trigger button is not allowed for programming if barcode reader is turned on.





Select the function key to define and tap the drop-down menu to choose from a pre-defined list of commands.

Alternatively, tap “Other” to select a specific executable file to attach to the function key.

Additional shortcuts can be created by enabling the Fn + button. This allows the creation of a second set of shortcuts available by pressing Fn + Function Button.

Tap “Default” to restore each programmable button to the factory settings.



Name an App and save it to a designated file.

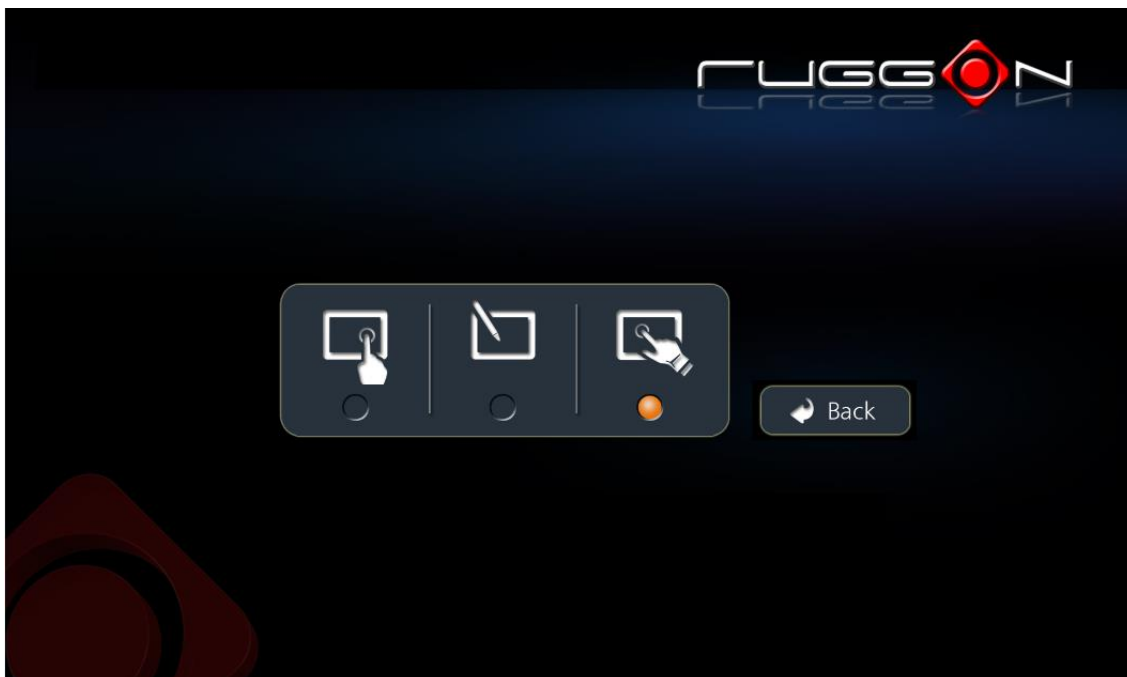


## Touch Setting

Select a desired mode to begin operation



Provide finger mode, glove mode and Stylus mode to be selected



## Button Lock

The Button Lock function disables or enables the use of the physical buttons except Power button. Tap to enable or disable the function.

1. You can again tap Button Lock icon in DashON to unlock the button. If Touch Lock function is already activated, you can only press the physical button on the display to unlock the button.
2. Long-press the physical “BCR trigger +Fn” button for 6 seconds to unlock the button.
3. If the system enters “Suspend/ Shutdown” mode, you can no longer use the physical button to unlock the button. Let the system wake up from “Suspend/ Shutdown” mode to enable the physical button’s unlock function.



## Touch Lock

The Touch Lock function disables the touch functionality on the screen. Tap to enable the function.

1. Only physical button on the display can unlock the touch lock function.
2. Long-press the physical “BCR trigger + F1” button for 6 seconds to unlock the touch lock function.
3. If the system enters “Suspend/ Shutdown” mode, you can no longer use the physical button to unlock the touch lock function. Let the system wake up from “Suspend/ Shutdown” mode to enable the physical button’s unlock function.



## Ignition Monitor

Ignition Monitor only works after the device is connected to RuggON Vehicle Dock(VD06)



Select turn-on or turn-off time in seconds



## Pass-through Switch

This function is only available on the models with pass-through connector. This function is only available when tablet is well connected to vehicle docking (VD06, VD10), GPS, WWAN and Wi-Fi settings are available once the optional RF antenna is connected.



The external antenna can be selected two from WWAN, Wi-Fi or GPS.



- Ext. 1: Wi-Fi and GPS cannot work at the same time.
- Ext. 2: Wi-Fi and WWAN cannot work at the same time.
- Ext. 1 Wi-Fi and Ext. 2 Wi-Fi cannot work at the same time.

The system may display an error when an incompatible external GPS antenna is detected or setup is not completed after selecting GPS on Ext. 1.

Possible solutions for this issue are as follows:

Tap OK: The system reverts to the use of the built-in GPS antenna

At this time do not tap OK. See a possible solution as follows

Remove and re-connect the external antenna. If a connection is established, the error no longer displays.

Remove the current external GPS antenna and replace it with a different one. If a connection is established, the error no longer displays. The original GPS antenna may not be compatible or is malfunctioning



Display status delay is normal when detecting an external GPS antenna.

# Chapter 6. Troubleshooting

Use the troubleshooting tables in this section to fix problems with the Wi-Fi connection, 802.1x security, or general problems with operating the computer.



If you send the computer in for service, it is your responsibility to save the computer data and configuration. RuggON is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

## Troubleshoot the Wi-Fi Connection

Use this troubleshooting table to help solve problems with your 802.11 radio connection.

- Q.** When you turn on the computer after it was suspended for a while (10 to 15 minutes or longer), it can no longer send or receive messages over the network.
- A.** Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the “Keep Alive” message from host to maintain the TCP session while the computer is suspended.
- Q.** The computer is connected to the network and you move to a new site to collect data. Your computer now shows you are not connected to the network.
- A.** Move closer to an access point or to a different location to reestablish communications until you reconnect with the network.
- Q.** The computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host computer.
- A.** There may be a problem with the host computer, or with the connection between the access point and the host computer. Check with the network administrator to make sure the host is running and allowing users to log in to the system.
- Q.** The computer appears to be connected to the network, but the host computer is not receiving any information from the computer.
- A.** There may be a problem with the connection between the access point and the host computer. Check with the network administrator or use your access point user’s manual.
- Q.** A network connection icon appears in the toolbar, but then disappears.
- A.** The computer may not be communicating with the intended access point. Make sure the network name matches the access point network name. The access point may not be communicating with the server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled.



## Troubleshoot Operating the Computer

Use this section to troubleshoot problems that may prevent you from being able to operate the computer.

**Q.** You press the Power button and nothing happens.

**A.** Make sure that power is connected to the computer.

**Q.** The computer appears to be locked up and you cannot enter data.

**A.** Restart the computer.

## Call Product Support

Simple instructions please contact the dealer, contact ruggon representative, or leave a message visit the RuggON website at [www.ruggon.com](http://www.ruggon.com).

To better assist you have the following information ready:

- Configuration number
- Serial number
- Operating system, and MCU versions
- Service pack version
- System component versions
- If you are using security, know the type and the full set of parameters

# Chapter 7. Maintenance

## Cleaning the Device



Danger to electric shock when cleaning or maintaining the PA501.

To avoid electric shock, turn the PA501 off and disconnect it from the power supply before cleaning or maintaining it.

### ***Housing***

- The housing of the PA501 is best cleaned with a damp cloth.
- Use compressed air, a high-pressure cleaner or vacuum cleaner may damage the surface.
- Use a high-pressure cleaner, the additional risk of water entering the PA501 may damage the electronics or touch screen.

### ***Touch Screen***

- Use neutral detergent or isopropyl alcohol on a clean soft cloth to clean the panel surface.
- Prevent using any kind of chemical solvent, acidic or alkali solution.

## Returning the Device

Please put the contents in the original package gently when you need to return the PA501.

## Contacting RuggON

If you experience technical difficulties, please consult your distributor or contact the technical services department at [info@ruggon.com](mailto:info@ruggon.com) or <https://www.ruggon.com>

