

# Embedded Computer User Manual



## **Safety maintenance:**

Please maintain your system properly to make sure its service life and reduce the damage risk.

- It should avoid the humidity and extreme temperature when being used.
- Avoid prolonged exposure of the unit to direct sunlight or strong ultraviolet light.
- Do not drop the unit or let it be in any place with severe shock / vibration.
- Please avoid the collision as the LCD screen is very easy to be scratched. Do not use any sharp object to touch the screen.
- To clean the outside fuselage, please turn off the power, unplug the power cord, scrub / wipe with slightly damp soft cloth. When cleaning the screen, please wipe with the lint free soft cloth.
- Never attempt to disassemble or repair the machine, otherwise the unit may be damaged.
- Do not place your unit or accessories together with other flammable liquids, gases, or other explosive materials, to avoid danger.
- Please unplug the power plug and remove the built-in battery if long-term no-use, or thunder weather.

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# 1. Product Description

## 1.1. Brief Introduction

- 7" Digital touch wide screen, 1280×800 physical resolution;
- Comply with IP 64 rating;
- Android 6.0.1 operation system;
- Micro SD (TF) card storage.

## 1.2. Optional Functions

- NFC (built-in);
- Camera (built-in) 2.0MP front camera, 5.0MP rear camera;
- Docking station.

## 1.3. Basic Parameters

Configuration	Parameters	
Display	7" LED Backlit	
Touch Panel	Capacitive	
Power supply	DC10-36V	
Screen Resolution	1280×800	
Brightness	300cd/m <sup>2</sup>	
Contrast	800:1	
Viewing Angle	178°/ 178° (H/V)	
System hardware	<b>CPU:</b> Qualcomm Quad core 1.1GHz processor; 4 × ARM Cortex-A7; <b>ROM:</b> 8GB FLASH; <b>RAM:</b> LPDDR3 1GB; <b>GPU:</b> Adreno 304; <b>OS:</b> Android 6.0.1.	
Interfaces	SIM card	1.8v / 2.95v
	TF card	1.8v / 2.95v, up to 64G
	USB OTG	High speed up to 480Mbps
	Wi-Fi	802.11a/b/g/n 2.4GHZ&5GHZ

			Support Wake-on-WLAN (WoWLAN) Support ad hoc mode Support WAPI SMS4 hardware encryption Support AP mode Support Wi-Fi Direct Support MCS 0-7 for HT20 and HT40
	Bluetooth		2402MHz~2480MHz
			BT4.0&BLE
	GNSS		GPS: 1575.42MHz±1.023MHz GLONASS: 1597.5MHz~1605.8MHz BeiDou: 1561.098MHz±2.046MHz
	ACC (See "3. Extended Cable Definition" for details.)		
	RS232x2 (Share the same interface with NFC. one RS232 serial port will be occupied)		
	Gpiox2 Input, Gpiox2 Output (See "3. Extended Cable Definition" for details.)		
	Earphone jack		
	DC Power		
Optional Function	Camera		2.0MP front camera, 5.0MP rear camera
	NFC	Agreement	ISO14443A 、 ISO14443B 、 ISO15693
		F-WL	S50、S70、UltraLight、Mifare Pro、Mifare PLUS 、Mifare Desfire 、ISO1444A CPU card、ISO14443B CPU card、I CODE2 card
	Docking station		
Multimedia	Audio	MP3/AAC/AAC+/eAAC/AMR-NB/-WB/G.711/WMA 9/10 Pro	
	Video	Encode: 30fps 720P (H.264), 30fps WVGA(MPEG-4/VP8)	
Voice	Speech Codec Modes:		HR/FR/EFR/AMR/AMR-WB
	Echo Arithmetic:		Echo Cancellation/Noise Reduction
	VoLTE:		Digital Audio and VoLTE (Voice over LTE) (Optional)
Power Consumption (Normal mode)	≤8W		Power Consumption (Charging mode) ≤13W

<b>Working Temperature</b>	-20°C - 60°C
<b>Storage Temperature</b>	-30°C - 70°C
<b>Dimension (LWD)</b>	199.4 × 125.6 × 17.5 (mm)
<b>Weight</b>	465g

## 1.4. 3G / 4G Support Parameter

<b>Band (Different versions support different bands)</b>	<b>Version 1</b> China/India	LTE FDD: B1/B3/B8 LTE TDD: B38/B39/B40/B41 TDSCDMA: B34/B39 EVDO/CDMA: BC0 WCDMA: B1/B8 GSM: 900/1800MHz
	<b>Version 2</b> EMEA/Korea/Thailand	LTE FDD: B1/B3/B5/B7/B8/B20 LTE TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 850/900/1800/1900MHz
	<b>Version 3</b> North America	LTE FDD: B2/B4/B5/B7/B12/B13/B25/B26 WCDMA: B1/B2/B4/B5/B8 GSM: 850/1900MHz
	<b>Version 4</b> Australia/Taiwan/Brazil	LTE FDD: B1/B3/B5/B7/B8/B28 LTE TDD: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz
	<b>Version 5</b> Japan	LTE FDD: B1/B3/B8/B18/B19/B26 LTE TDD: B41 WCDMA: B1/B6/B19
<b>Data Transmission</b>	LTE	LTE-FDD Max 150Mbps(DL)/Max 50Mbps(UL) LTE-FDD Max 130Mbps(DL)/Max 35Mbps(UL)
	DC-HSPA+	Max 42 Mbps(DL)/Max 5.76Mbps(UL)
	WCDMA	Max 384Kbps(DL)/Max 384Kbps(UL)
	TD-SCDMA	Max 4.2 Mbps(DL)/Max 2.2Mbps(UL)
	EDGE	Max 236.8Kbps(DL)/Max 236.8Kbps(UL)
	GPRS	Max 85.6Kbps(DL)/Max 85.6Kbps(UL)

## 2. Structure Function Explanation



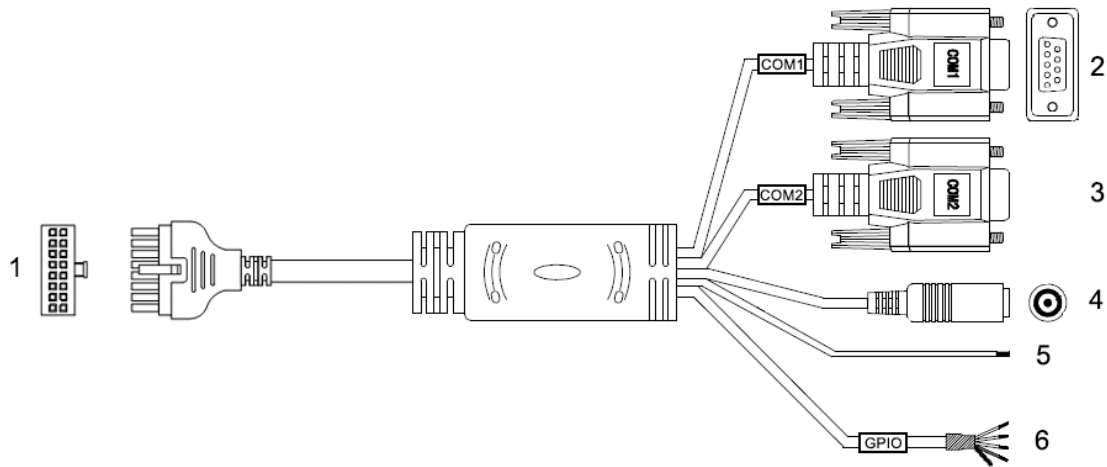
1. Power on/off button:  
Short press: power on, lock the screen and light up the screen.  
Long press: power off and restart.
2. Camera (optional).
3. NFC (optional).
4. Power indicator.
5. Automatic backlight induction.
6. HOME:  
Click to return to the home screen under any interface.  
Long press to pop-up most recently used list.
7. Menu:  
Enter the menu interface.
8. Return:  
Click to return to the previous interface.

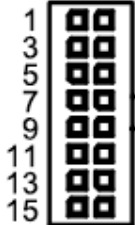



1. TF card slot.
2. SIM card slot.
3. Earphone jack.
4. Mini USB.
5. Extend port.
6. Programming hole (please consult factory, do not operate on your own).



### 3. Extended Cable Definition



NO.	Item	Definition				
1		1	2		3	
		DC+		DC-		ACC
		6	8	9	10	12
		RX1	TX1	GND	TX2	RX2
		11	13	14	15	16
		GPIO GND	GPIO4	GPIO2	GPIO3	GPIO1
2	Com 1	RS232 /dev/ttyHSL0.				
3	Com 2	RS232 /dev/ttyHSL1. (Optional: NFC )				
4	Power	Connect with power adapter.				
5	ACC Input	Connect with vehicle power adapter. Voltage range: 8-30V. Ps: With ACC function, the device is requested to connect the power source via DC adaptor simultaneously to power on after ignition. please refer to 3-2 for the DEMO and source code of ACC.				
6	GPIO output 	Red	White	Green	Yellow	Black
		Voltage range: 0-5V		Voltage range: 0-3.7V		
		Input 1	Input 2	Output 1	Output 2	GND

### 3-1 Serial Port

Serial Port ID: COM1, COM2

Correspondence between RS232 tail line and device node.

COM1=/dev/ttyHSL0.

COM2=/dev/ttyHSL1.

The screenshot shows a serial port interface with two main sections: COMA and COMB. Each section has a large text area for input/output, a 'CLEAR' button, and a 'SEND' button. Below the text areas, there are dropdown menus for selecting the serial port (ttyHSL0 for COMA, ttyHSL1 for COMB) and a baud rate (115200). There are also checkboxes for 'Auto' and 'ms' (500) and a 'SEND' button.

### 3-2 GPIO\_DEMO Interface

1. GPIO\_DEMO as shown below,

The screenshot shows the GPIO\_DEMO interface with a table of GPIO pins. The table has three columns: Name, Direction, and State. The pins listed are GPIO\_92, GPIO\_88, GPIO\_89, and GPIO\_16. Below the table are two buttons: READ\_IN and SET\_OUT\_LOW.

Name	Direction	State
GPIO_92	IN	HIGH
GPIO_88	IN	HIGH
GPIO_89	OUT	HIGH
GPIO_16	OUT	HIGH

2. The file system path of the gpio port corresponding device node folder.

The path of the Gpio92 node in the folder is: **/sys/class/gpio/gpio1003/**

The path of the Gpio88 node in the folder is: **/sys/class/gpio/gpio999/**

The path of the Gpio89 node in the folder is: **/sys/class/gpio/gpio1000/**

The path of the Gpio16 node in the folder is: **/sys/class/gpio/gpio927/**

3. How to read or set the value of gpio port.

**READ:** Read the value directly within the device node folder, function is as follows, please refer to the usage within demo for more details.

**public String *gpioReadStateOne*(String state)**

Read the data: 1----→the gpio port input is high level

0----→the gpio port input is low level

**SETTING:** Write the value directly within the device node folder, function is as follows, please refer to the usage within demo for more details. (Input pin can't be set.)

**public boolean *gpioSetStateOne*(String name, int state)**

Set a value: 1----→ set the gpio port output as high level

2----→ set the gpio port output as low level

#### 4. Note

The Gpio port setting needs hardware fit, do NOT make any changes on the input/output status of gpio nodes. The standard gpio of the device is two inputs and two outputs. The gpio92 and gpio88 are input pins, the gpio89 and gpio16 are output pins.

### 3-3 ACC

ACC settings located in ACC Settings under the category of System in the Settings of Android OS. Please refer to Figure 1, 2 and 3.

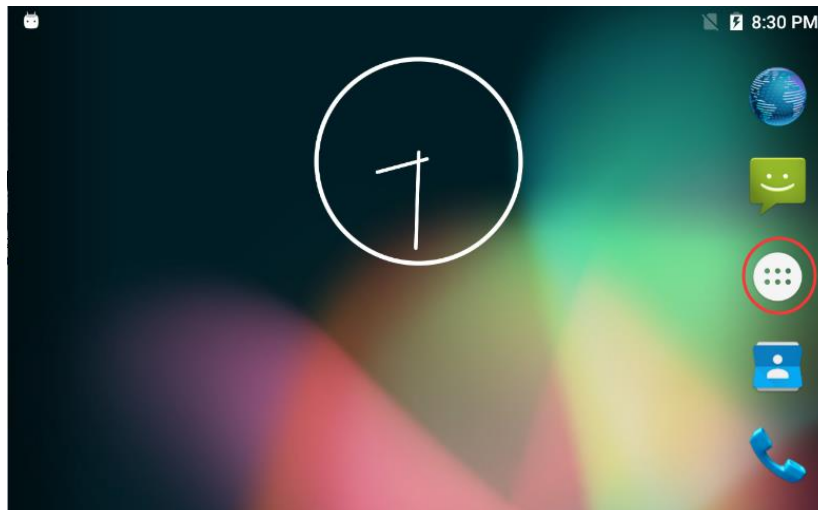


Figure 1

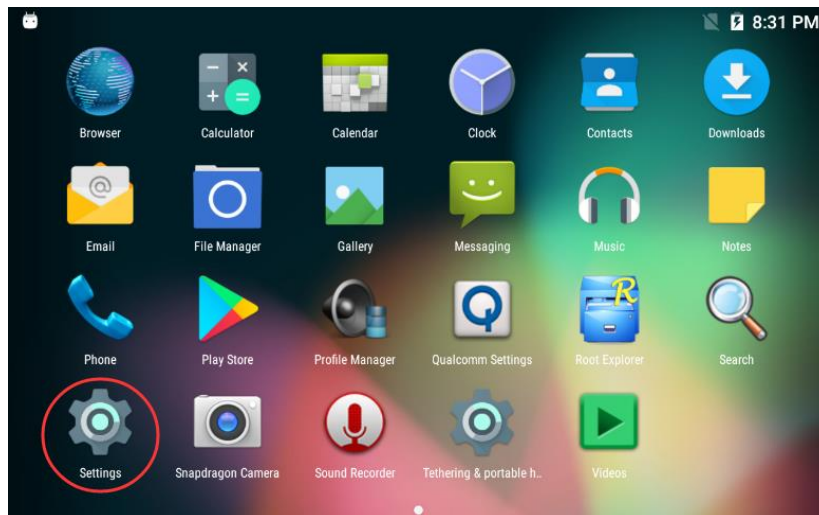


Figure 2

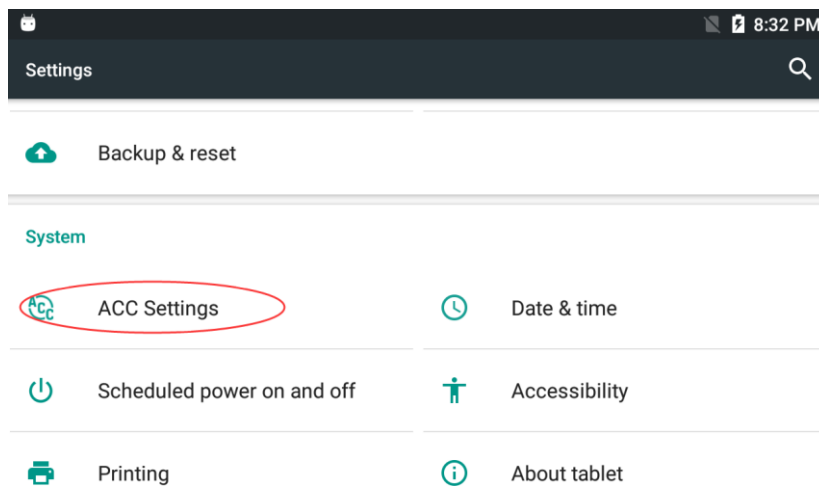


Figure 3

## ACC Settings

ACC settings as shown in Figure 3-3-4 & Figure 3-3-5.

Mark 1: The main switch of the three functions controlled by ACC, namely, light up the screen, close the screen and shut down.

Mark 2: The switch of close screen function controlled by ACC.

Mark 3: Click to pop-up dialog box as shown in Figure 3-3-6, to edit the screen off delay time after ACC outage.

Mark 4: The current screen off delay time after ACC outage.

Mark 5: The switch of Trigger to shut down function by ACC outage.

Mark 6: Click to pop-up dialog box as shown in Figure 3-3-7, to edit the shut down delay time after ACC outage.

Mark 7: The current shut down delay time after ACC outage.

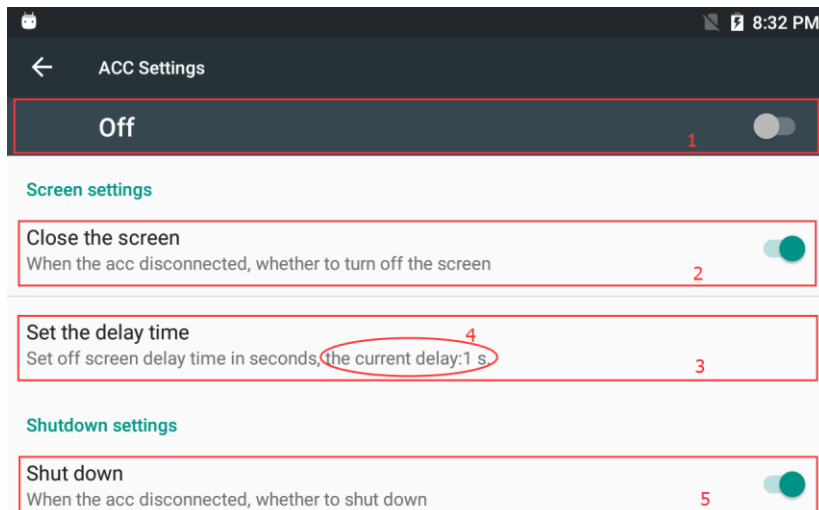


Figure 4 ACC Settings interface 1

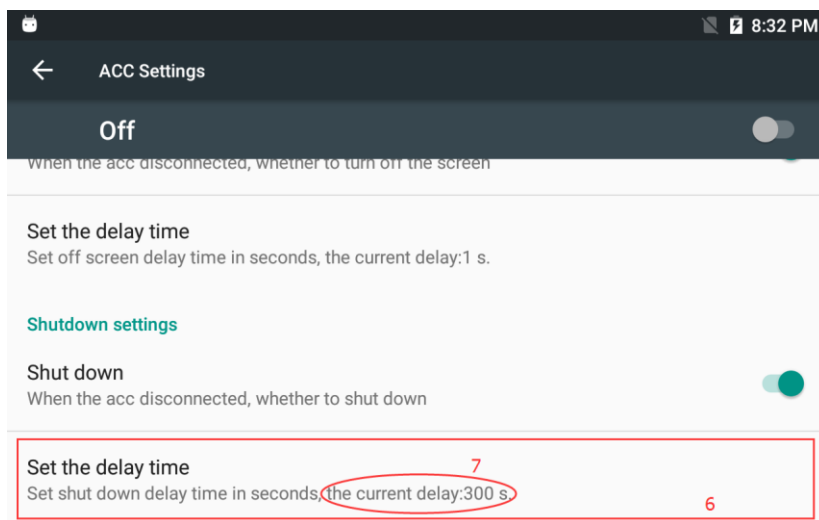


Figure 5 ACC Settings interface 2

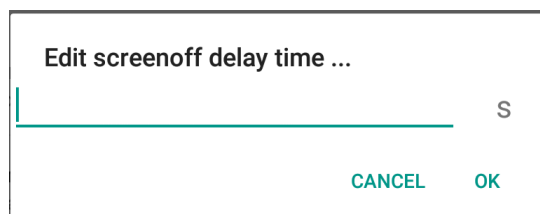


Figure 6 Screen off delay time setting dialog box

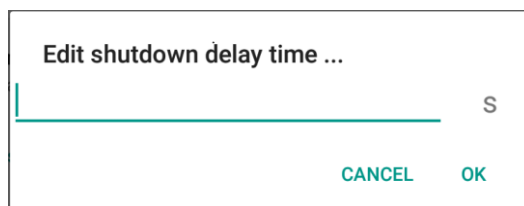


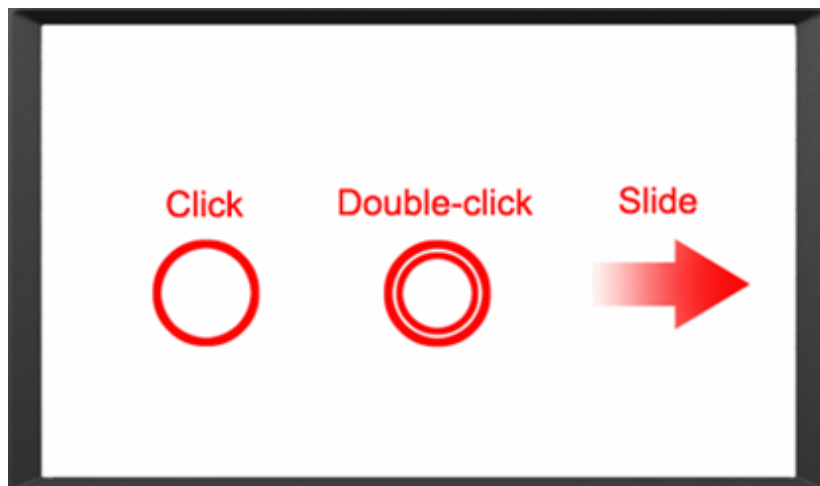
Figure 7 Shut down delay time setting dialog box

## 4. Micro SIM Card & Memory Card Instructions

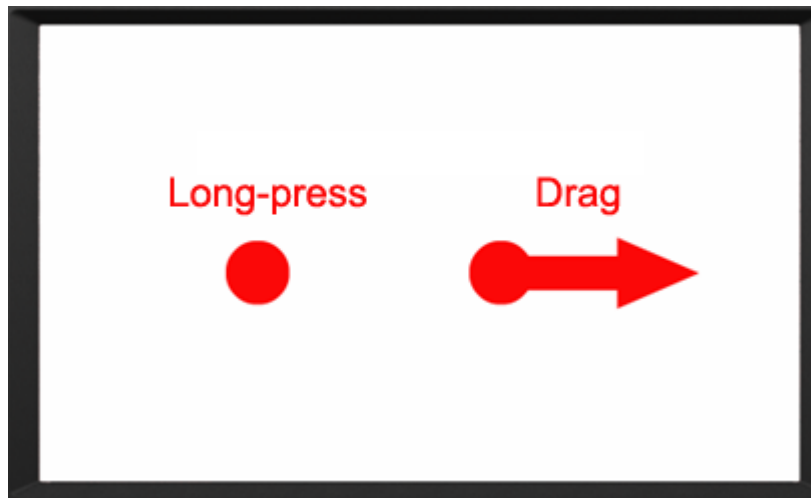
- In order to avoid damaging of the 3G/4G card & memory card, please insert the card smoothly and push slightly before you draw it out.
- The memory card will be heat after long time working.
- If you don't correctly use the memory card or cut the power when it being read, maybe some data will be damaged.
- If you don't correctly use 3G/4G card or cut the power when it being read, the network will be interrupted.
- If you do not use Micro SD card for a long time, please put it into packing box.

## 5. Basic Operation

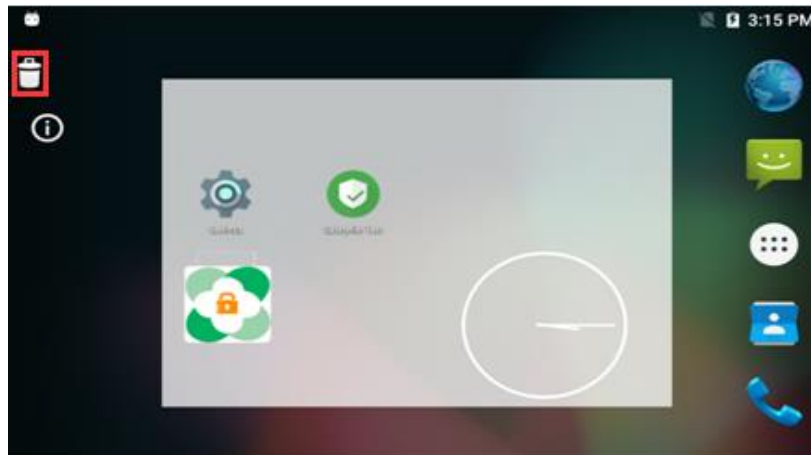
### Click and Slide



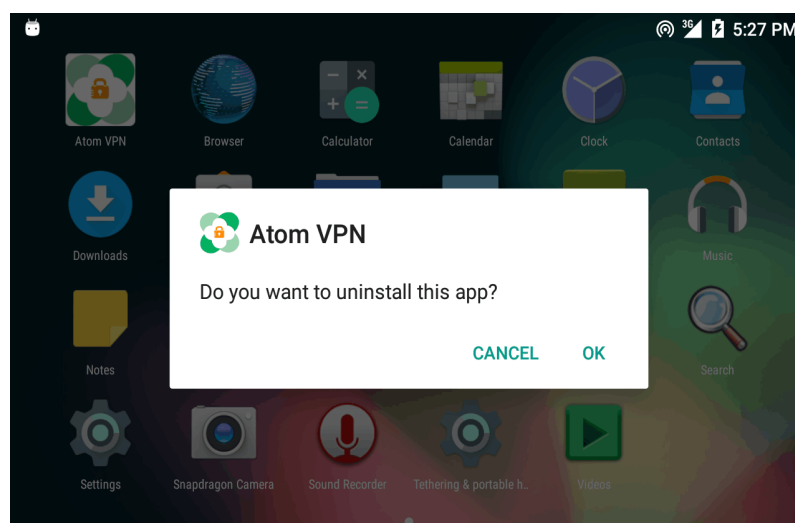
## Long-press and Drag



## Delete












Long-press the application icon, and drag to the Home screen, then drop to the recycle lift-up to delete this software.



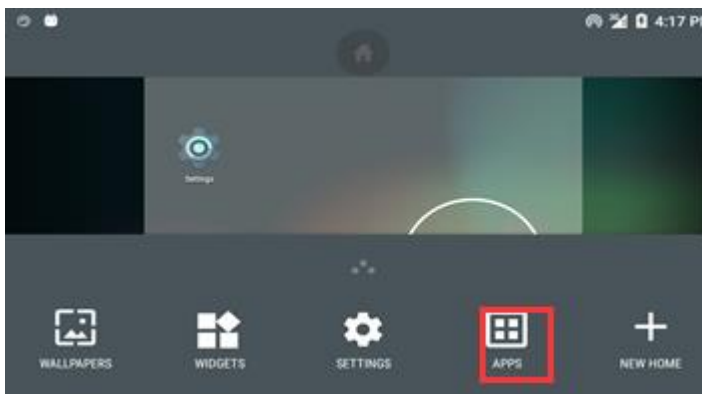
## 6. MENU

### Icon Bar

Icon bar shows on the top of screen.

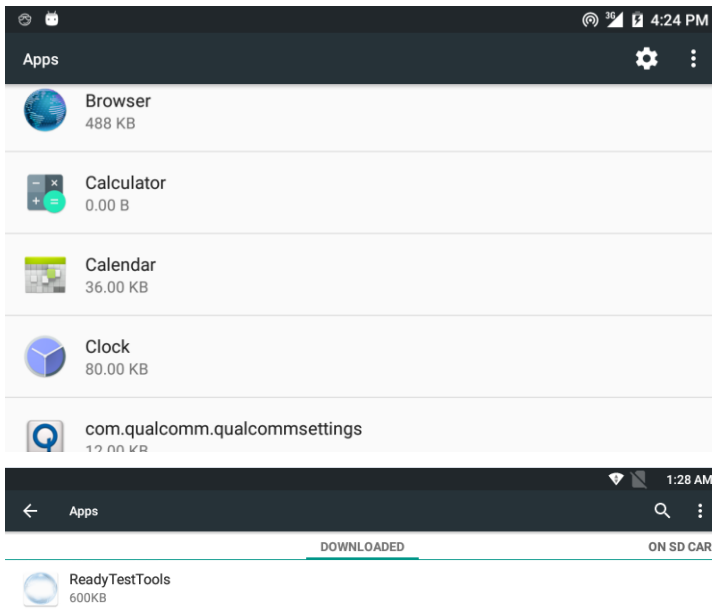
Icon	Name	Description
	Wi-Fi	Wi-Fi signal connection and status of signal weakness or strength.
	No SIM card	Icon displayed when no SIM card.
	Mobile Network	Network available but not surf the Internet via 2G/3G/4G.
		Signal connection and status.
	Time	Current time
	Wi-Fi Hotspot	Wi-Fi Hotspot available
	Bluetooth	Bluetooth available
	Position	GPS positioning
	Flight Mode	Flight mode status

### Menu Setting



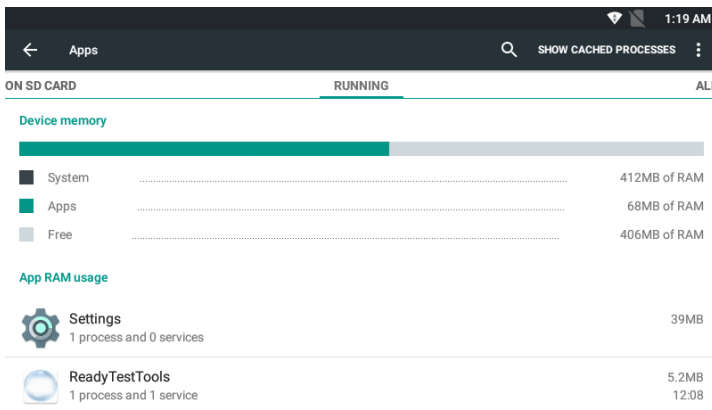
2. Press menu on screen to pop-up options, click “Manage apps” to manage applications.





2-1. Click “APPS” applications: to view and manage all applications.

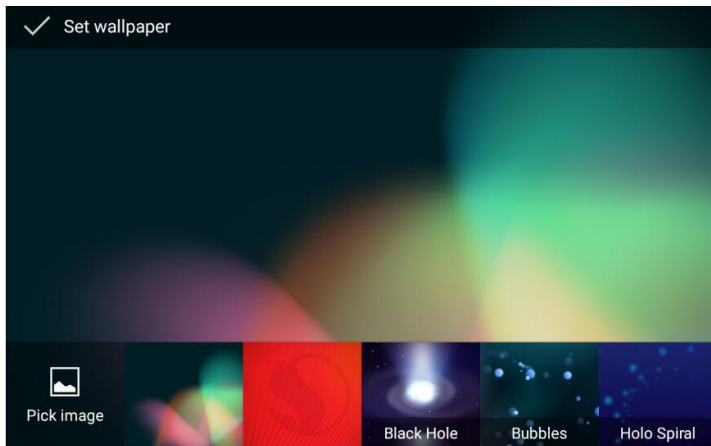
2-2. Left slide to “DOWNLOADED”: to view and manage downloaded applications.



2-3. Slide to “RUNNING”: to view and manage running applications.



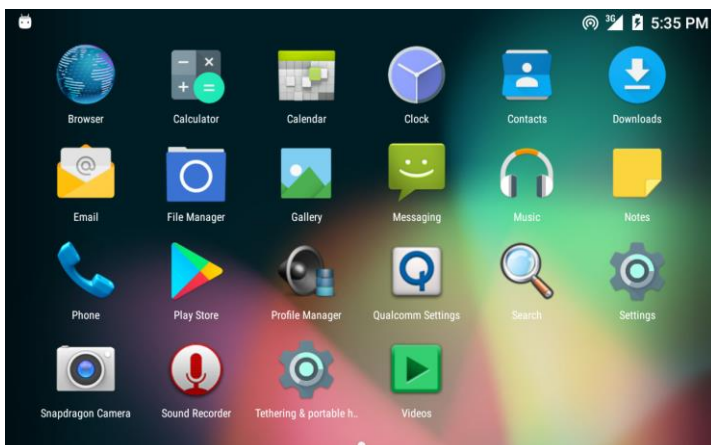
3. Click “Wallpaper” to launch wallpaper.



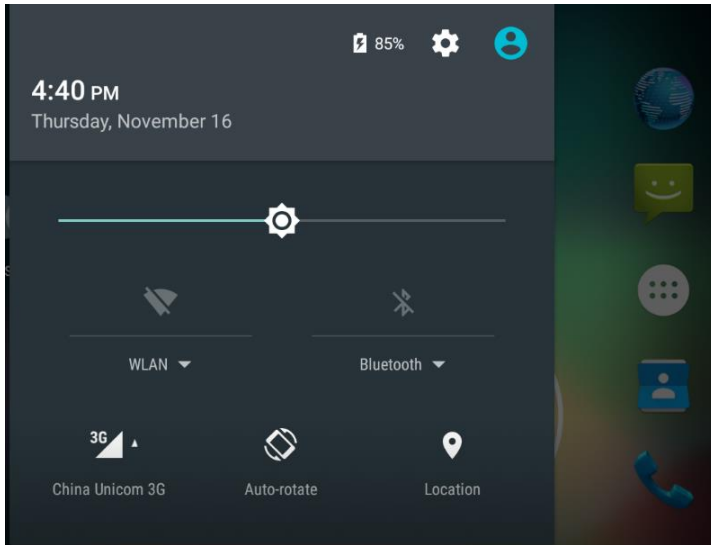
3-1. Choose favorite wallpaper.



4. Click  to enter application list.




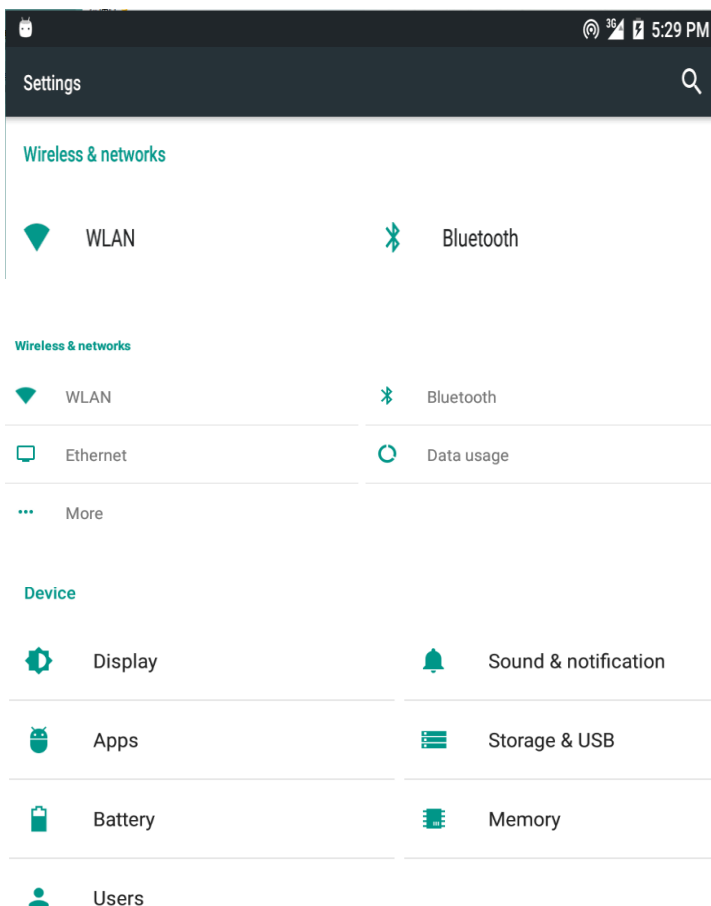
4-1. Apps will be displayed in the application list after installed. Click related icon to enter application.



5. Drop down from the top of the screen to enter notification bar.
- 5-1. The notification bar shows system, running and error notice.



6. Click  to launch setting in the application list.










- 6-1. Setting according to users' needs. Click search icon to search function options on the upper right corner of screen.

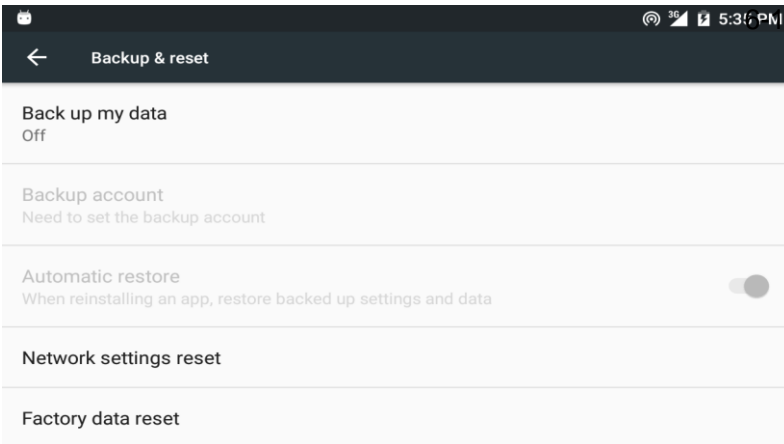
- 6-1-1. To set Wi-Fi, Bluetooth, mobile network and other functions in "Wireless & networks" option.

- 6-1-2. To view and set brightness, sleep time, font, rotation, notification, TF card, USB flash disk and other functions in "Device" option.

#### Personal






 System profiles	 Location
 Security	 Accounts
 Google	 Language & input
 Backup & reset	

6-1-3. To manage position, screen lock, password, account, language, input and other functions in "Personal" option.



4. When unrecovered problems occurred, try to click "Backup & reset" and "Factory data reset" then follow the instructions. Device will delete settings and applications after restart, and restore to factory defaults. (Please backup all important files before reset. Otherwise files will be deleted automatically and restore to factory defaults.)

#### System

 Date & time	 Scheduled power on and off
 Accessibility	 Printing
 About tablet	

6-1-5. To set date & time and accessibility in "System" option; Do NOT operate if unfamiliar with "Developer options".

## 7. Accessories

### Standard accessories:



- |                    |                   |
|--------------------|-------------------|
| 1. DC 12V adapter  | 1piece            |
| 2. Extended cable  | 1piece            |
| 3. OTG cable       | 1piece            |
| 4. Mini USB cable  | 1piece            |
| 5. CD drive        | 1piece            |
| 6. User Manual     | 1copy             |
| 7. Docking station | 1piece (optional) |

## 8. Trouble Shooting

### Power Problem

#### Cannot boot up

- 1、 Wrong cable connection:

Connect Extended cable with device first, and connect the AC end of DC adapter with DC input port of Extended cable, then the other end of DC adapter connect with power plug socket.

- 2、 Bad connection:

Check every connection and socket of power source.

### Screen Problem

- 1、 No picture on screen.

- 2、 The application reaction time is too long and cannot be activated when clicked.

- 3、 The image appears delay or still when switching.

**Please restart your system if the device has any problem as described above.**

- 4、 Display screen is misty.

Please check whether the display screen surface has dust filth or not.  
Please simply wipe with clean and soft cloth.

**Note: Due to constant effort to improve products and product features, specifications may change without prior notice.**