USER MANUAL
FOR
10.1 " PANEL PC

Important Safety Instructions

Read these safety instructions carefully:

- Keep this equipment away from humidity and extreme temperature.
- Avoid exposing the device to direct sunlight or strong ultraviolet light for a long time.
- Do not drop the device or expose it to strong vibrations.
- Do not scratch or rub the screen with a hard or sharp object.
- Please turn off the power and unplug the power cable before cleaning the device, then wipe it with a moist and soft cloth.
- Do not disassemble or repair the device by yourselves without our authorization. If the damage is caused during the disassembly or repair, it will be out of warranty.
- Do not place your device or its accessories with flammable liquids, gases or explosive materials to avoid danger.

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Chapter 1 Introduction

1.1 Product Introduction

- Qualcomm Cortex-A53 64bit Octa-core Processor 1.8GHz
- 10.1 " Multi-point Capacitive Touch Screen, with 1280*800 Resolution
- Full Fit Screen
- 1000cd/m² Brightness, suitable for Outdoor Environment
- IP65 Rating Front Panel
- Android 9.0 Operating System
- Light Sensor (Auto Dimming)
- ISO 7637-2
- Supports 2GB RAM and 16GB ROM
- Micro SD Card (TF Card) Storage
- With Wifi and Bluetooth

1.2 Optional Features

- 4GB RAM and 64GB ROM
- 3G/4G Network Cellular
- GNSS
- Optional POE/POE+ Function (Power Over Ethernet)
- Front Camera

1.3 Specification Parameters

Display	10.1" IPS
Touchscreen	Multi-point Capacitive Touchscreen
Power Input	DC 9-36V
Display Resolution	1280×800
Display Brightness	1000cd/m²
CPU	Qualcomm Cortex-A53 64bit Octa-core Processor 1.8GHz

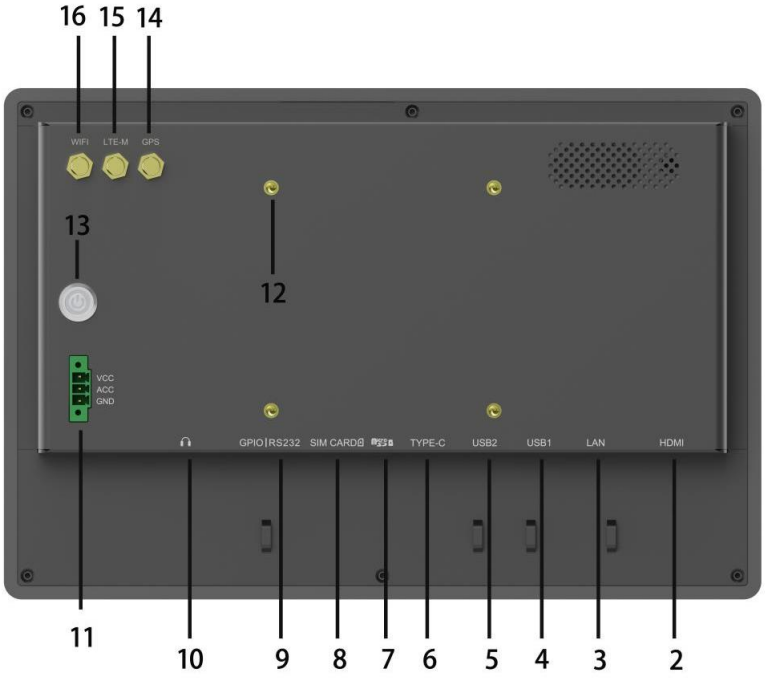
ROM & RAM	16GB eMMC, 2GB LPDDR3 (64GB eMMC & 4GB LPDDR3 for optional)	
GPU	Adreno 506	
Operating System	Android 9.0	
Interfaces	SIM Card Slot×1	1.8v/2.95v
	TF Card Slot×1	1.8v/2.95v, up to 128GB
	USB OTG×1 USB Host×1	Up to 480Mbps
	GPIO (Inputs×2, Outputs×2)	Details in Chapter Three
	ACC×1	Details in Chapter Three
	RS232×3	
	LAN 100M×1 (POE/POE+ for Optional)	
	HDMI Output×1	
	Earphone Jack×1	
	DC In×1	
Functions	Wi-Fi	802.11a/b/g/n/ac 2.4GHZ&5GHZ Supports Wake-on-WLAN (WoWLAN) Supports ad hoc mode Supports WAPI SMS4 hardware encryption Supports AP mode Supports Wi-Fi Direct Supports MCS 0-7 for HT20 and HT40
	Bluetooth	2402MHz~2480MHz
		Built-in Bluetooth 4.2LE+EDR2, compatible with HID, A2DP, AVRCP, BIP, BPP, FTP, HTP, HFP, HSP, OPP and SPP
Optional Functions	Front Camera	5.0 MP
	3G / 4G	LTE, HSPA+, UMTS, EDGE, GPRS, and GSM
	GNSS	GPS and GLONASS
Multimedia	Audio	MP3/AAC/AAC+/eAAC/AMR-NB/-WB/G.711/WMA 9/10 Pro

	Video	Encoding: 30fps 720P (H.264), 30fps WVGA(MPEG-4/VP8)
		Decoding: 30fps 1080P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263)
Speaker	Built-in 2W, 85db	
Power Consumption	≤12W	
Operating Temperature	-10℃ ~60℃	
Storage Temperature	-20℃ ~65℃	
Dimension (LWD)	255×172×32mm	
Weight	1.3kg	

1.4 Supported Parameter for Cellular Network

Supported Frequency Band	EU version for EMEA, Korean and Thailand	LTE FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900MHz
	America version for North America	LTE FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71 LTE TDD: B41 WCDMA: B2/B4/B5
Data Transmission	LTE	Cat 6 FDD: Max 300Mbps (DL)/Max 50Mbps (UL) Cat 6 TDD: Max 265Mbps (DL)/Max 35Mbps (UL)
	UMTS	DC-USDPA: Max 42Mbps (DL) DC-HSUPA: Max 11.2Mbps (UL) WCDMA: Max 384Kbps (DL/UL)

Chapter 2 Parts of The Device



1. Front Camera (Optional)
2. HDMI Output
3. LAN Port
4. and 5. USB Host×2

6. USB Type-C OTG

7. Micro SD Card Slot

8. SIM Card Slot

9. GPIO/RS232/ACC Pin Port

   GPIO: Input×2, Output×2

   RS232: Details in Chapter Three

   ACC: Details in Chapter Three

10. 3.5mm Earphone Jack
11. DC and ACC Interface
12. VESA 75mm
13. Power Button
14. GPS
15. LTE-M
16. WIFI

17. Cable Clips

Chapter 3 Using Extended Interfaces

3.1 The Definition of Extended Cable

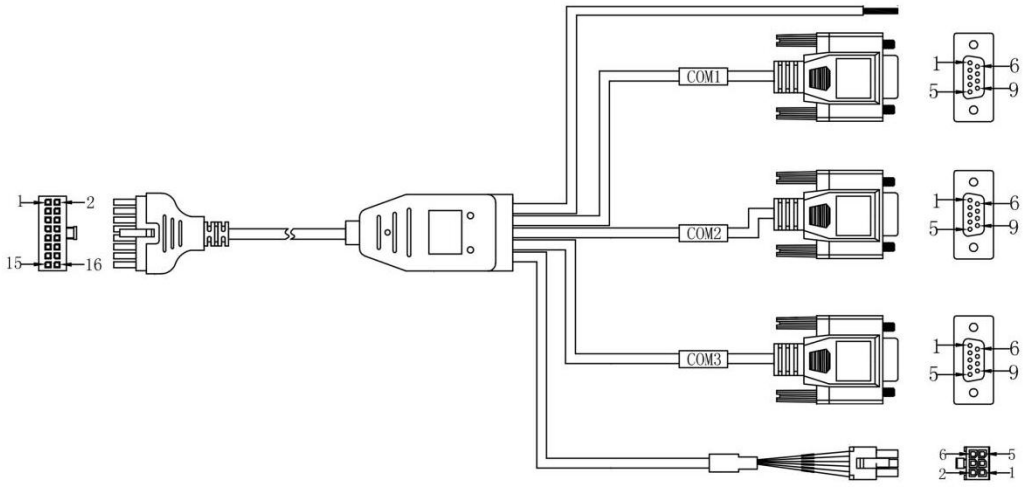
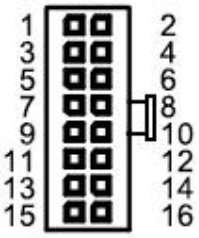


Figure 3.1 Extended Cable for RS232/GPIO/ACC

<table>
<tr><th>Pin</th><th colspan="7">Definition</th></tr>
<tr><td rowspan="11">  </td><td colspan="7">ACC：Pin 12 （Allowable voltage: 8-30V）</td></tr>
<tr><td rowspan="6">Serial Ports</td><td rowspan="2">COM1</td><td>Pin 1</td><td colspan="2">Pin 3</td><td colspan="2">Pin 5</td></tr>
<tr><td>RS232 Pin2</td><td colspan="2">RS232 Pin3</td><td colspan="2">RS232 Pin5</td></tr>
<tr><td rowspan="2">COM2</td><td>Pin 2</td><td colspan="2">Pin 4</td><td colspan="2">Pin 6</td></tr>
<tr><td>RS232 Pin2</td><td colspan="2">RS232 Pin3</td><td colspan="2">RS232 Pin5</td></tr>
<tr><td rowspan="2">COM3</td><td>Pin 7</td><td colspan="2">Pin 8</td><td colspan="2">Pin 9</td></tr>
<tr><td>RS232 Pin2</td><td colspan="2">RS232 Pin5</td><td colspan="2">RS232 Pin9</td></tr>
<tr><td rowspan="2">GPIO</td><td>Pin 14</td><td>Pin 16</td><td>Pin 13</td><td>Pin 15</td><td>Pin 11</td><td>Pin 10</td></tr>
<tr><td>GPIO Pin2</td><td>GPIO Pin4</td><td>GPIO Pin1</td><td>GPIO Pin3</td><td>GPIO Pin5</td><td>GPIO Pin6</td></tr>
</table>

		Input 1	Input 2	Output 1	Output 2	GND	COM
		Allowable voltage：0-50V		Allowable voltage：0-50V			

3.2 Serial Ports

3.2.1 Serial Ports' ID

Serial ports' IDs are COM1,COM2 and COM3, the ports on the extended cable as shown in Figure 3.2.

Figure 3.2 COM Ports

3.2.2 Instruction for Serial Ports Demo App

- Installation Steps for Demo App

  - Please download the SDK provided and install the "ComAssistant_forCOM1&COM3_20200619.apk " and "ComAssistant1_forCom2.apk" into the device.

  - Then there will be two icons in the device. The ComAssistant is for COM1 and COM3, while the ComAssistant1 is for COM2.

Figure 3.3 Demo App

- Correspondence between RS232 ports and device node as below,

  COM1=/dev/ttyHSL0

  COM2=/dev/ttyHSL2

  COM3=/dev/ttyHSL1

- ComAssistant Application Interface Description

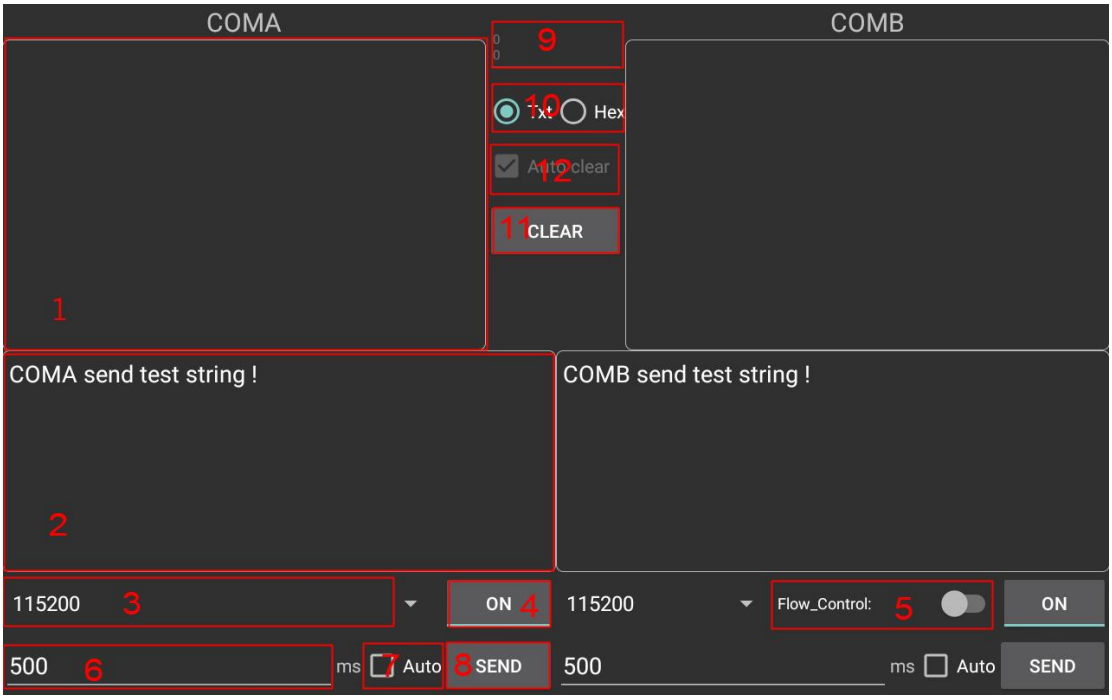


Figure 3.4 The Home Interface of ComAssistant

1) The text box in red displays the information received by corresponding COM port.

2) In this text box in red, you can input the information which will be sent by corresponding COM port.

3) Baud rate of corresponding COM port can be selected here.

4) Switch on/off corresponding COM port.

5) Switch control of flow control function: It is only used to identify whether the serial port enable the flow control function or not (Default as enabled and displayed

as ON when flow control function is available; otherwise, disabled and displayed as OFF).

6) Set the interval time of auto sending information.

7) Select auto send mode.

8) The button of COM port information sending.

9) It indicates the number of information rows displayed in the information receiving text box. The upper number corresponds to the receiving text box on the left, and the lower number corresponds to the one on the right.

10) The codec format of sending/receiving information can be selected. Select "Txt" to send information with string code, select "Hex " to send information with hexadecimal format code.

11) The button of manually clearing the information. Click it to clear all of the information in both of the receiving text boxes.

12) Auto clear the information in the receiving text box, default as auto clear once the text is up to 100 rows (Please note that auto clear function can't be canceled, and the number of text rows triggering auto clear can't be changed.)

3.3 ACC

3.3.1 ACC Connection

Please connect power port of the device to vehicle battery, and connect the ACC wire of the device to the ACC of vehicle.

3.3.2 ACC Function

- Power on the device via ACC.
- Wake up the screen via ACC when the PC is in sleep mode.
- Turn off the screen via ACC according to the delay time set in advance.
- Power off the device via ACC according to the delay time set in advance.

Note:

- The ACC is triggered by the electric level.
- The function of "Power on the device by ACC" can't be modified from the system.
- It will take about 10 seconds to completely shut down the system after ACC is started. Please do not try to use any boot-triggered action during this process.

3.3.3 ACC Setting

- Find ACC Settings from Settings as the Figures shown:

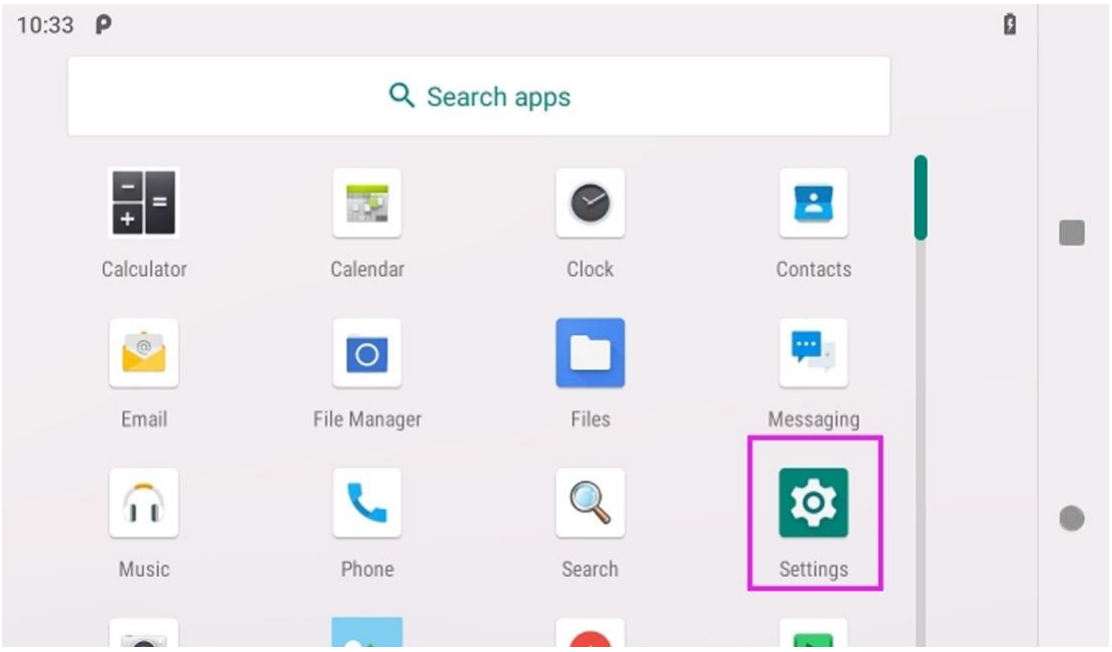


Figure 3.5 Main Interface

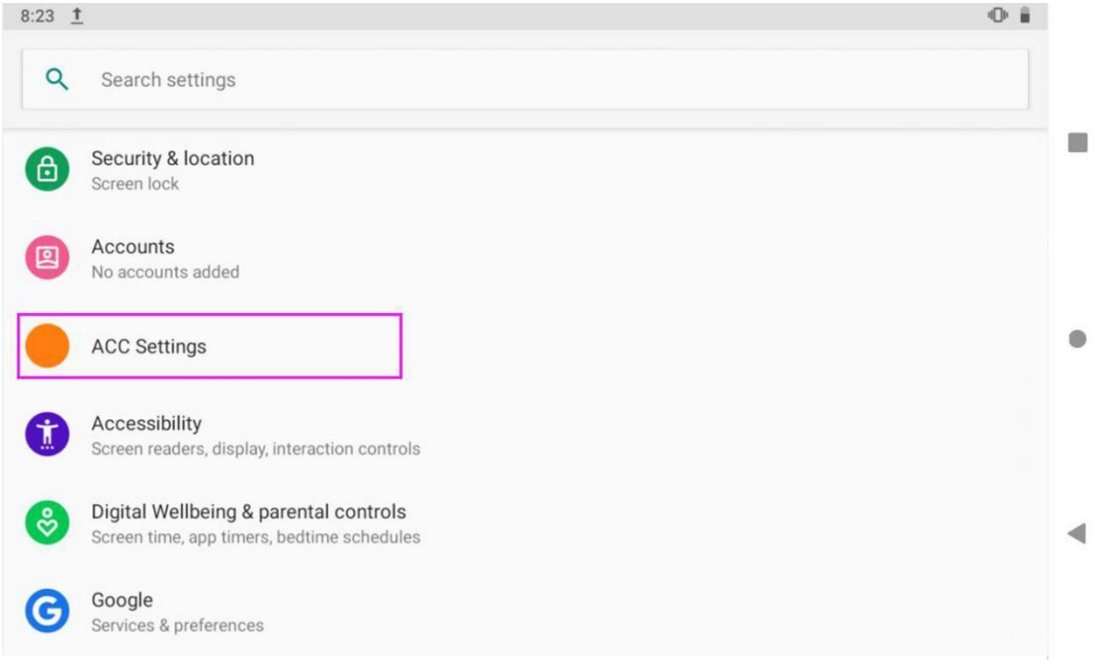


Figure 3.6 Settings Interface

- After entering the ACC Settings, the following options can be set (corresponding to the rose-red number in the Figure 3.6.

  1) Controls the switch of turning off the screen and turning off the power after ACC is disconnected.

  2) Controls the switch of turning off the screen after ACC is disconnected.

  3) Click "Set the delay time" to pop up the dialog box (as shown in Figure 3.7) to set the delay time to turn off the screen after ACC is disconnected.

  4) Displays current delay time.

  5) Controls the switch to turn off the tablet after ACC is disconnected.

  6) After clicking, the dialog box shown in Figure 3.9 to set the delay time for shutdown after ACC is disconnected.

  7) Display current delay time.

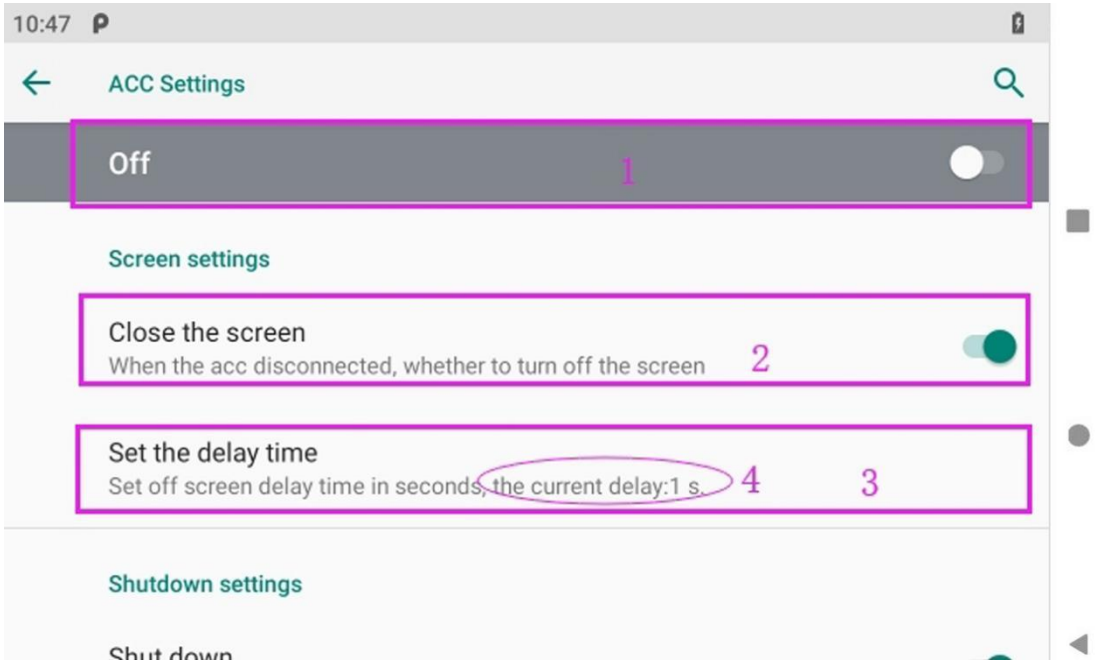


Figure 3.7 ACC Settings

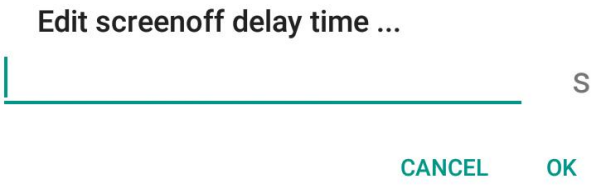


Figure 3.8 Dialog Box for Set The Delay Time to Set Off Screen

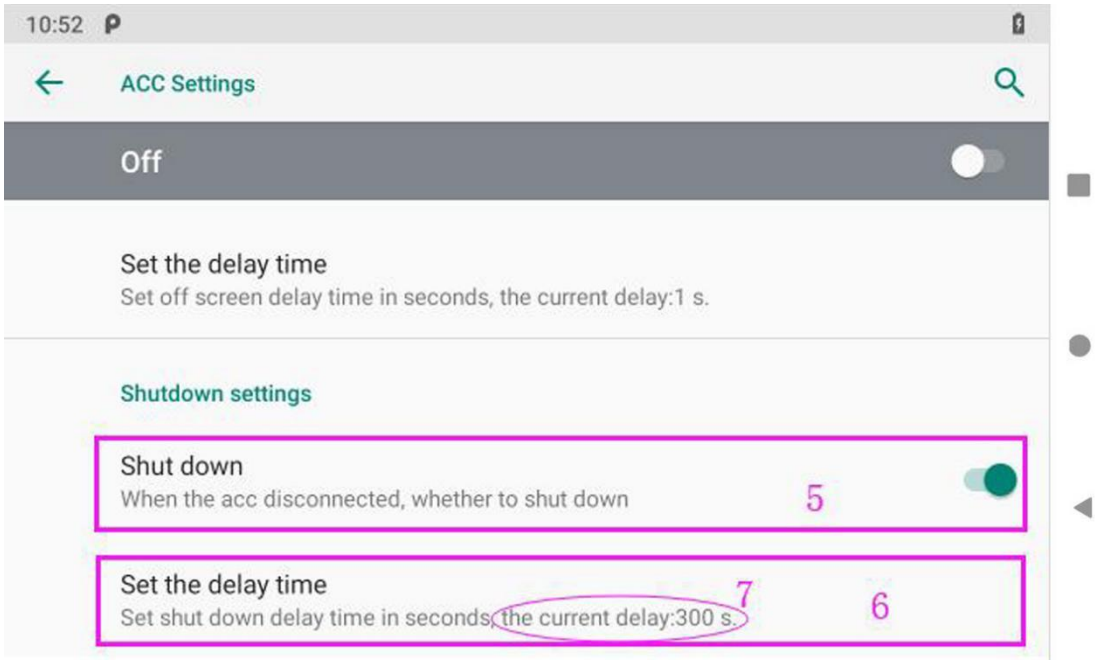


Figure 3.9 ACC Settings

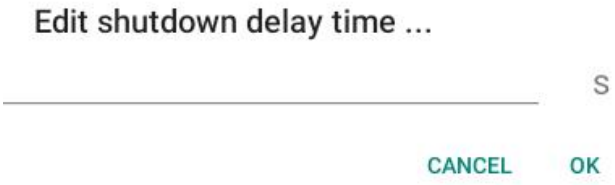


Figure 3.10 Dialog Box for Set The Shutdown Delay Time

3.4 Using GPIO

3.4.1 GPIO Specification

Regarding the definition diagram of GPIO port, please see the details in *Chapter 3.1 The Definition of Extended Cable*.

The GPIO interface instruction diagram is as follows.

GPIO	**1**	**2**	**3**	**4**	**5**
	Input 1	Input 2	Output 1	Output 2	GND
	GPIO 36	GPIO 42	GPIO 3	GPIO 24	--
	Digital input, Positive Trigger input		Open Drain Output, 150mA current		Digital GND

In case of inductive load of motor, relay, and so on, be sure to use the clamp diode externally.

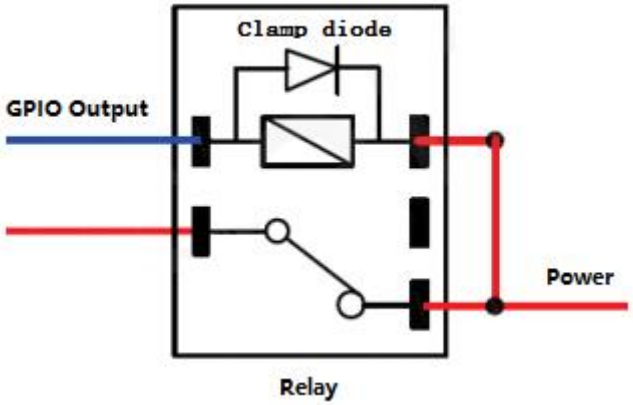


Figure 3.11 Typical Relay Connection

3.4.2 GPIO_DEMO Instruction

Please download the SDK provided and install "GPIO_Demo_20201224.apk" into the device. This software is only used for developing GPIO function of the device, and it isn't suitable for factory's standard software.

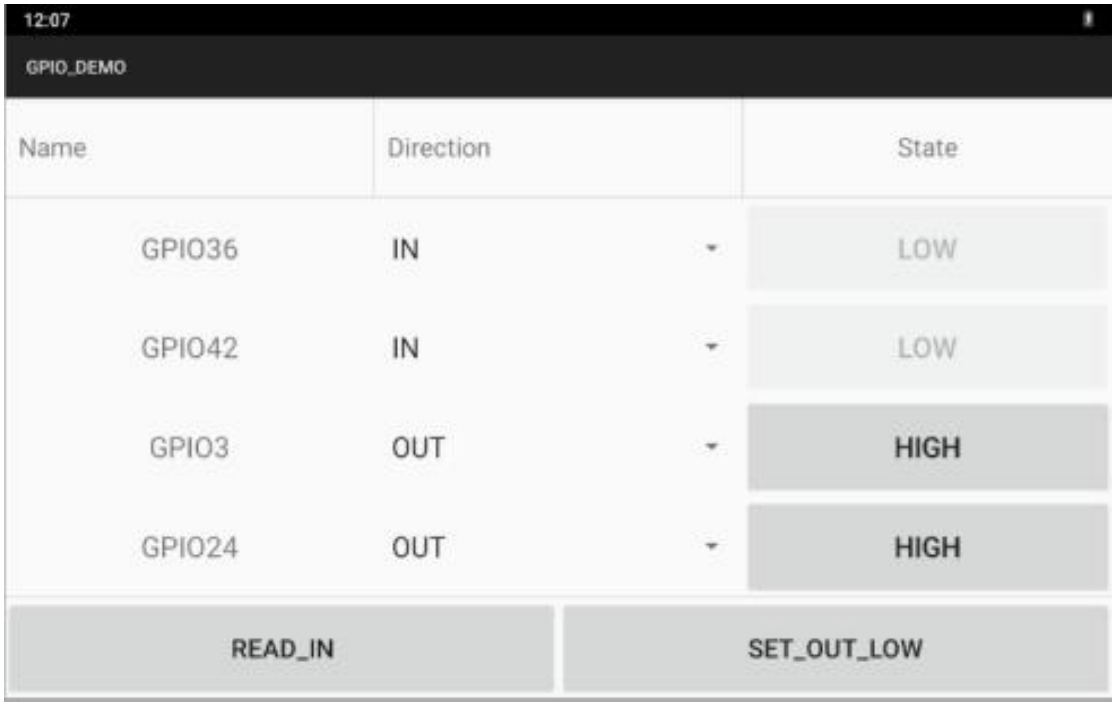


Figure 3.12 GPIO_DEMO Main Interface

Please check the main parts in Figure 3.11.

- **Name:** indicates the port names of GPIO.
- **Direction:** indicates the input or output direction of the ports.
- **State:** indicates the current level state of the GPIO ports. When the direction of GPIO port is IN, it shows the level state of corresponding GPIO ports read by the software last time. When the direction is OUT, the level state of corresponding GPIO ports can be set.
- **READ_IN:** Reads the level state of GPIO ports simultaneously when GPIO is set as the input direction.
- **SET_OUT_LOW:** Sets the high or low for all of GPIO output simultaneously.

Chapter 4 Device Files Transfer

The files, such as pictures and audio files, can be transferred between your computer and your device by an USB Type-C cable.

Connect the device to the computer by an USB Type-C cable, and open the prompt message of the device, and then select "File Transfer".

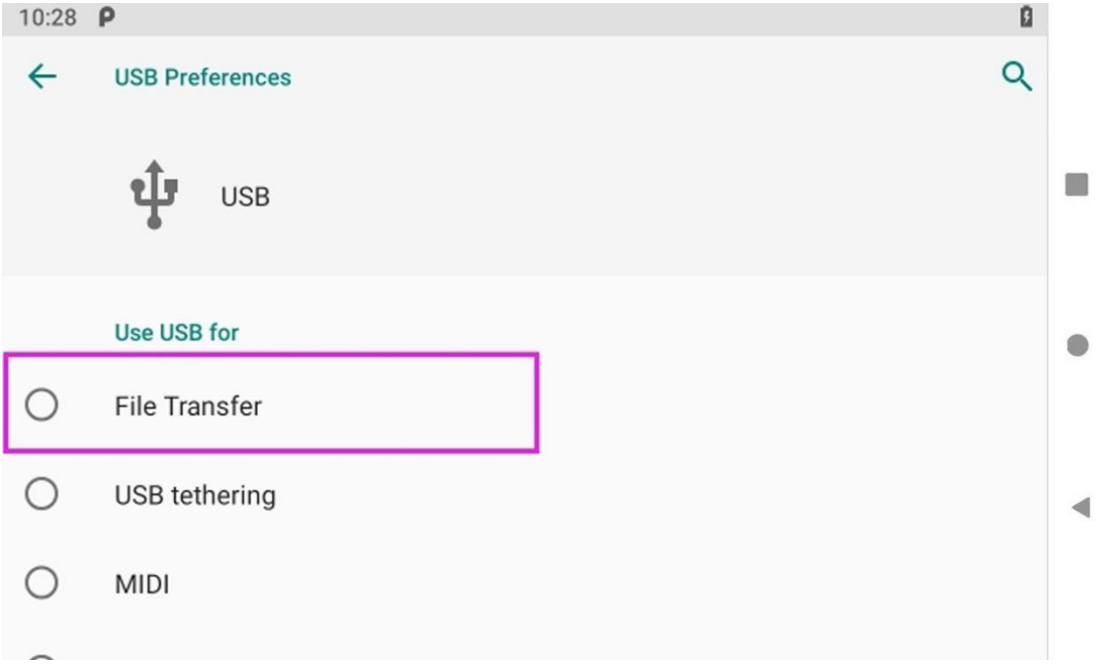


Figure 4.1

Find out the "Device" in "This PC".

Figure 4.2

Chapter 5 Root Access Switch Steps

Step 1: Enter the interface of the Root Access setting from "Settings" -> "Accessibility" -> "System root", as shown in the Figure 6.1.

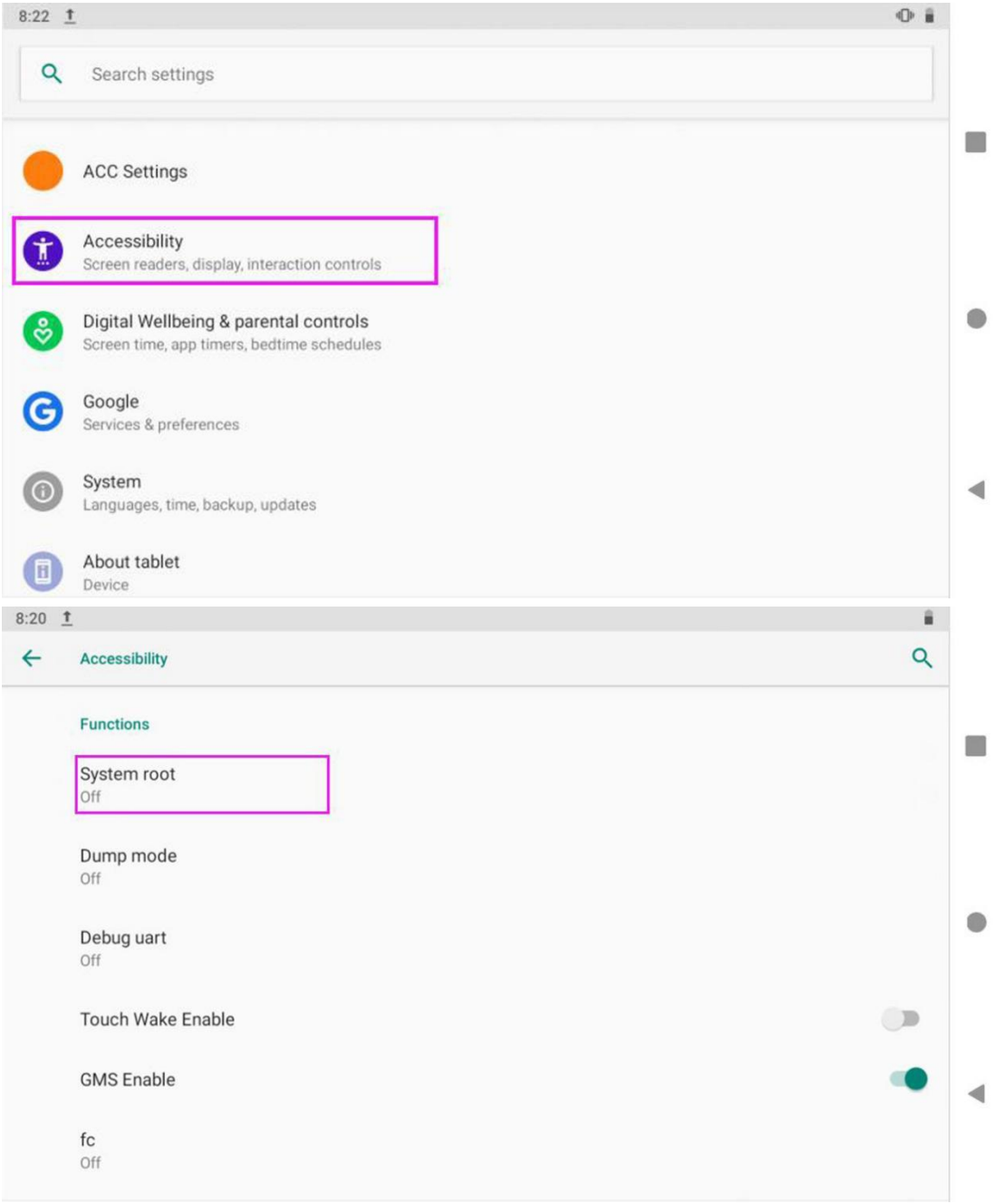


Figure 6.1

Step 2:

1) Turn on/off the Root Access. A dialog box as shown in Figure 6.3 will pop up and please enter the password (The initial password is qwertyuiop).

2) Modify the password after clicking the Password Config. A dialog box will pop up, as shown in Figure 6.4.

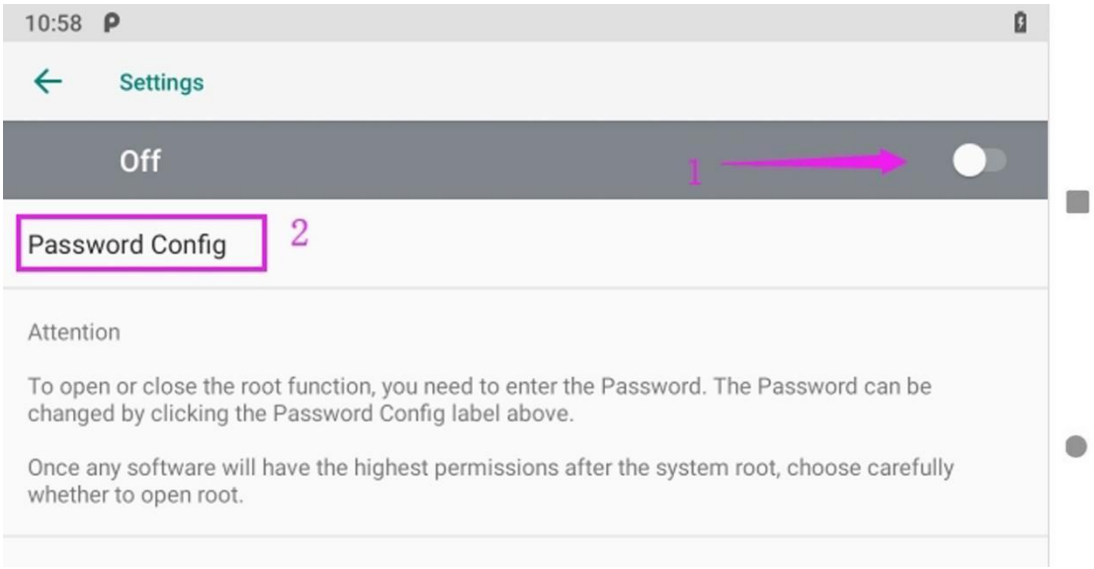


Figure 6.2 The Interface of Root Access Setting

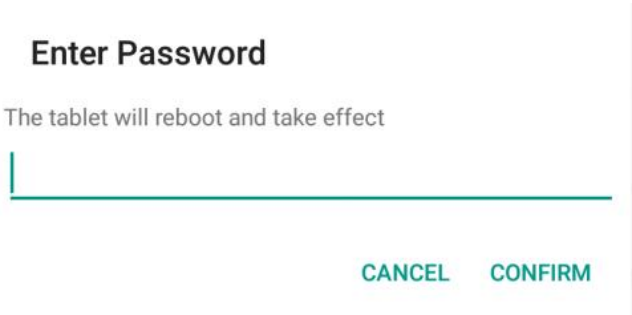


Figure 6.3

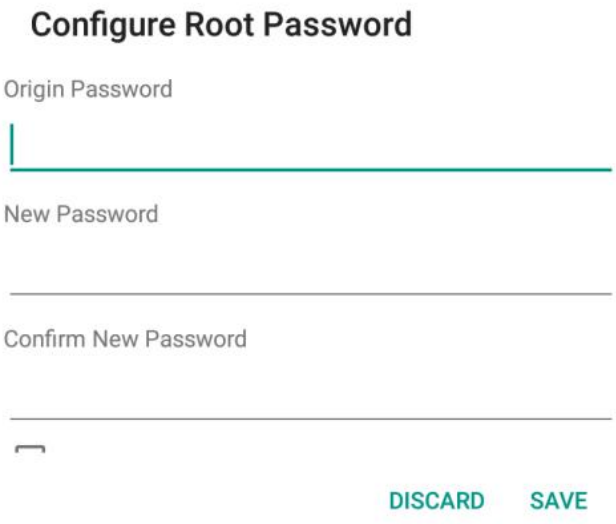


Figure 6.4 The Dialog Box of Modifying Password

Note: If the device is restored to the factory setting, the state of the root access will be reset to off, and the password will be restored to the initial password.

Chapter 6 SD Card Usage Instruction

- The memory card and the card holder on the machine are precision electronic components. When inserting the memory card into the card holder, it must be aligned before inserting to prevent damage to the device. When taking out the card, please press the upper edge of the card lightly to release the card, and then pull the card out.
- It is normal that the memory card will heat up after a long time of use.
- If the memory card is not used correctly or the power is disconnected or the memory card is removed during reading, the data in the memory card may be damaged.
- If you do not use it for a long time, please take it back into the card box or pocket.
- Do not forcibly insert the memory card to avoid damage to the memory card.

Chapter 7 Icons

There is a drop-down notice bar in the Home Page.

Name	Icon	Description
Wi-Fi		Long press to enter the setting windows. Choose a available network to connect. The number of displayed signal bars indicates the strength of the connection signal.
Bluetooth		Long press to open the Bluetooth setting, choose the Bluetooth name of the corresponding device to connect. After successfully connect, files can be sent and transferred.
Do not disturb		After activating the Do not Disturb mode, the device will be in a silent state, no notifications are displayed,

		and no notification sound.
Auto-rotate		Fix the interface of the device or auto flip the interface of the device.
Mobile data		The SIM card is not inserted.
Airplane mode		When the airplane mode is activated, the phone call, Internet and Bluetooth cannot be used.
Location		Activate/deactivate the GNSS.
Hotspot		After activating the Wi-Fi hotspot, the device can be used as a Wi-Fi transmitter.
Grayscale		After activating it, the display color will be only as gray.
Data saver		After activating, it can help users save the data usage.
Cast		Activate/Deactivate the cast screen function.
Invert colors		After activating, the UI interface will show as black.
Night Light		Eye protection mode.

Chapter 8 Accessories

Standard Accessories

1) USB Type-A to Type-C Cable 1pcs
2) Extension Cable 1pcs
3) WIFI Stick Antenna 1pcs
4) Phoenix Terminal 1pcs
5) Fixed Screw 4pcs

Optional Accessories

6) 4G Stick Antenna 1pcs
7) 12V 2A DC Adapter 1pcs
8) GPS External Antenna 1pcs
9) DC Female Cable 1pcs

Chapter 9 Troubleshooting

Problems	Problem Description	Solutions
Power Problems	Unable to boot	Please check if the connection is correct.

		Bad contact: please check the power socket and plug.
Display Problems	No display	Please restart the system.
	When clicking a function, the execution time is too long to activate.	
	The screen switching process is delayed and stagnant, causing the screen to fail to switch smoothly.	
	Touch not correctly	Please calibrate the touchscreen.
	Blurred display	Check whether there is dust on the surface of the display. If yes, please wipe the dust on the surface with a soft cloth that does not drop cotton chips.