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SHENZHEN DECARD SMARTCARD TECH CO.,LTD.

P18Q BUS VALIDATOR USER MANUAL

Prepared by Decard Team



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Chapter 1-----Provides an overview of bus validator P18Q

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dimensions

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Chapter 5-----Provides info on how to order accessories or
documentation from Decard



Content

Preface

This document is the primary source of information for setting up and installing bus validator (P18Q-X1).

Audience

This document describes P18 features, and provides the basic information for its installation and configuration.

Organization

This document is organized as follows:

Chapter 1, overview. Provides an overview of bus validator P18Q

Chapter 2, setup, explains setup and installation of P18Q

Chapter 3, Specifications. Discusses power requirements and dimensions

Chapter 4, Maintenance and cleaning. Explains maintenance of bus validator

Chapter 5, Service and support, Provides info on how to order accessories or documentation from Decard

Chapter 1

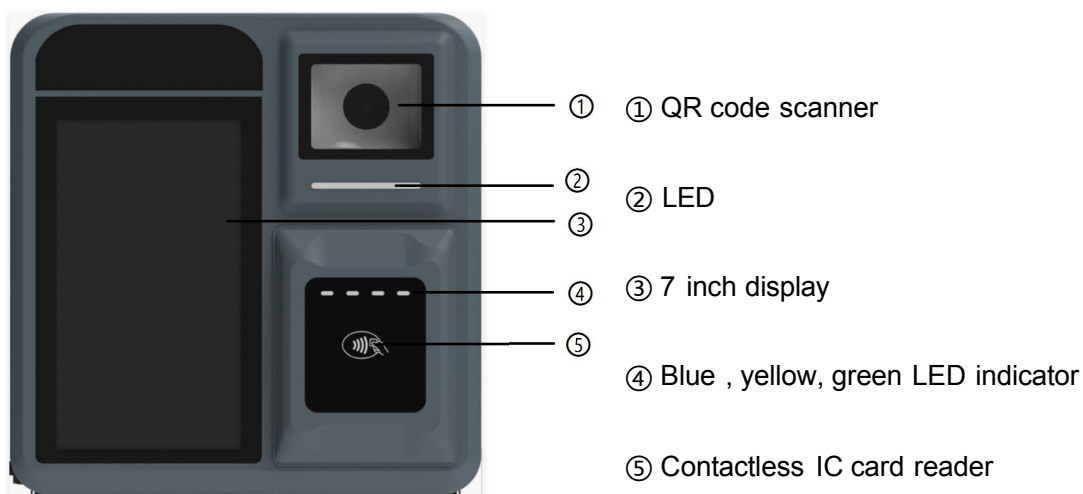
Overview

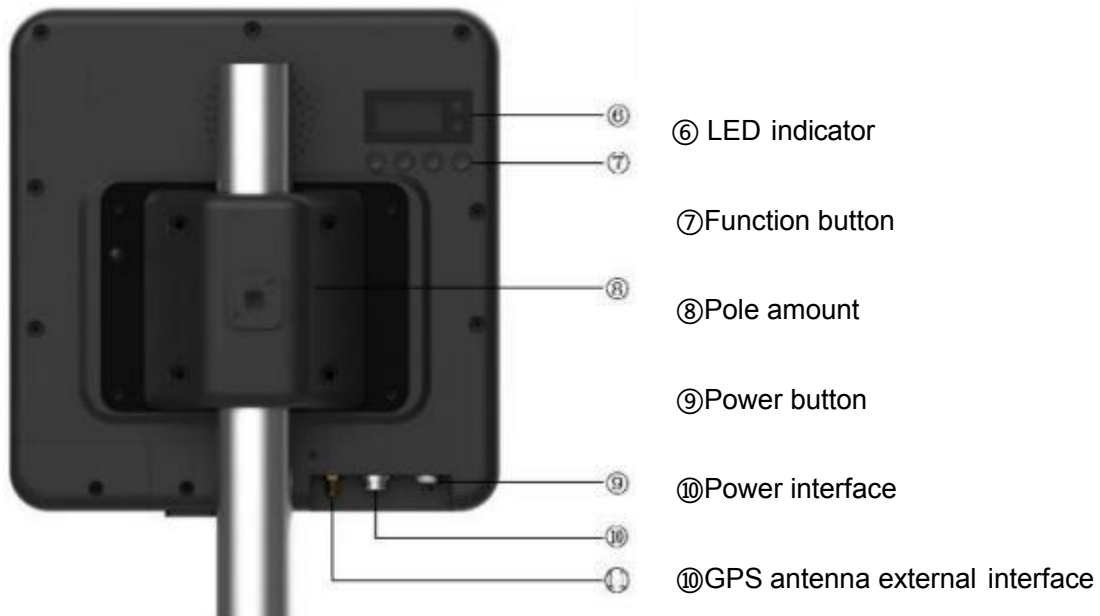
This chapter provides a brief description of Decard bus validator P18Q

P18 Q takes the most usable and ergonomic industrial-level contactless payment device and takes it to a new level by adding color larger display, linux system inside, QR code scanner, and integrated contactless capability. It is designed to fit in a variety of payment environments to suit nearly any need. P18Q is easily to use under any light conditions. A tampered design and ergonomically balanced midpoints help P18Q fit comfortably in any conditions, and the rugged design holds up to the most demanding conditions.

Features at a Glance

P18 Q has a sleek and stylish ergonomic design that offers power and performance in a smart card and QR code scanner device. The P18Q provides the right combinations of features and and functions in a sleek, stylish, device that fits in the palm of your hand. This includes smat card reader and QR code scanner





Chapter 2

SET UP

This chapter describes the setup procedure for the P18Q , in the following sections:

- Unpack shipping carton
- Examine P18Q features
- Installation Tools

Unpack shipping carton

I Electrical Considerations

- Avoid using this product during electrical storms
- Avoid locations near electrical appliance or other device that cause

excessive voltage fluctuations or emit electrical noise (for example, air conditioners, electric motors, neon signs, high-frequency or magnetic-security devices, or computer equipment)

- Do not use P18Q near water or in moist conditions

Warning: due to risk of shock or damage, do not use P18Q near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.

II Unpack shipping carton procedures

① Open the shipping carton and carefully inspect its contents for possible

tampering or shipping damage. P18Q is a secure product and any tampering can cause it to cease to function or to operate in an unsecured manner.

Remove and inspect the contents of the shipping carton , since P18Q ships in multiple configurations , the carton may include any or all of the following:

- P18Q
- Data cable
- Power pack



② Remove all plastic wrapping from the terminal and components

③ Remove the clear protective film from the display

④ Save the shipping carton and packing material for future repacking or moving of the device

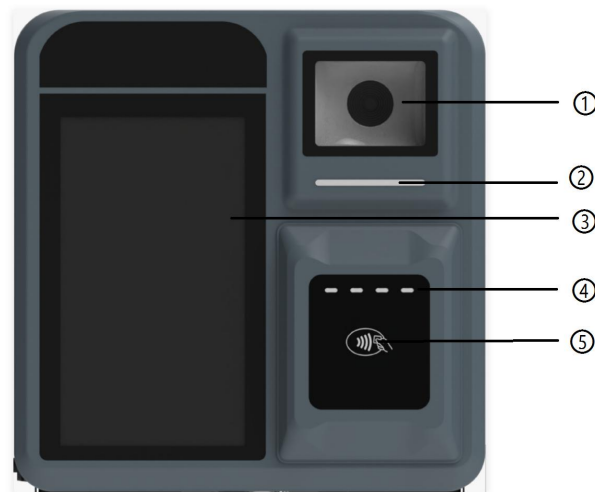
Warning: Do not use a unit that has been tampered with or damaged.

The P18Q comes equipped with tamper-evident labels. If a label or component appears damaged, please notify the shipping company and Decard immediately.

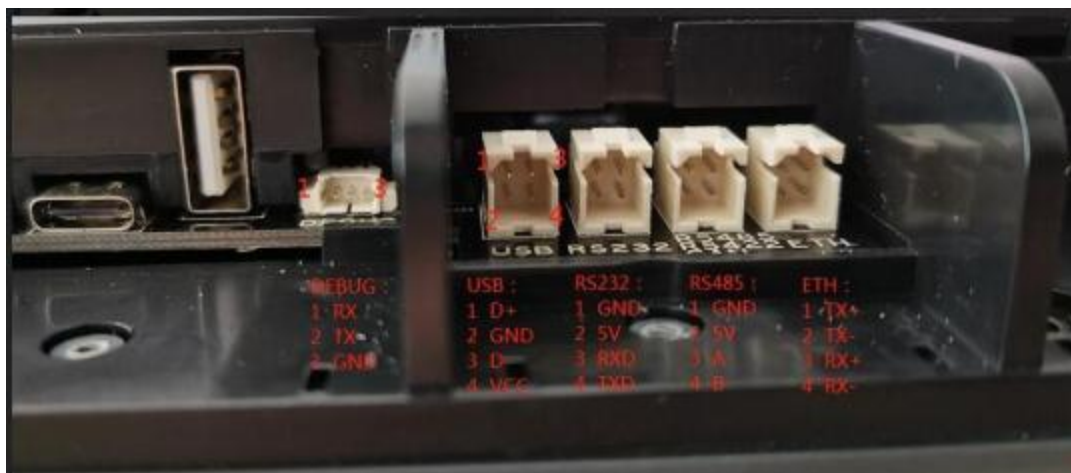
Examine all features



Before you continue with the installation process, you should familiar with P18Q 's function



- A touch-screen display
- QR code reader for barcode scanning, built into the units front side, An icon indicates the proper QR code scanner area
- Smart card reader, built onto the right side, an icon indicates the proper card reader position





FCC Requirement

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

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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

*RF warning for Mobile device:

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.

Figure 1 Connector Description

Connector	Description	
3-pin	Debug	1.RX, 2.TX, 3.GND
	USB	1.D+, 2.GND, 3. D-, 4.VCC
4-pin	RS232	1.GND, 2.5V, 3.RXD, 4.TXD
	RS485	1.GND, 2.5V, 3. A, 4.B
	ETH	1.TX+, 2.TX-, 3.RX+, 4. RX-

Circuit Power Properties

Circuit	Voltage	Current
Power input	12v	2A
USB	5v	0.5A
RS232	5v	0.5A
RS485	5v	0.05A

Installation Procedures

Accessories



STEP 1:

Attach the silicone sheet of the fixed plate to the hardware fixed plate (see this picture)



STEP 2:

Attach the hardware fixing plate with the silicone sheet and the package that is assembled at the time of shipment. The bracket is tightened with 4 PWM4*12 screws with flat washers (see this picture).



Figure 1 Well Mounted back case

STEP 3:

Tighten the screws according to the red arrow in this picture (tighten with 4 PCS PM 4 *10)



Note: The standard design steel pipe diameter is: 32~34mm. When the steel pipe diameter is 29~32mm, the anti-loosening silicone sheet needs to be attached to the guarantee bracket assembled.



Chapter 3

Specification

- Support linux operating system
- Storage space 4+64GB
- Support 7-inch display touch screen
- Support voice broadcast function
- Support card type: Support TypeA/B non-contact IC card conforming to ISO/IEC 14443 standard Support contact type CPU card conforming to ISO7816 standard Scalable to support the reading of second-generation resident ID card information
- Support QR code/1D code recognition
- Support 4G wireless network communication
- Support Beidou/GPS positioning function
- Support 9-48V wide voltage input

Chapter 4

Maintenance and Cleaning

The P18 Q has no user-serviceable parts.

To clean the unit, use a clean cloth slightly dampened with water and a drop or two of mild soap. For stubborn stains, use alcohol, or an alcohol-based cleaner.

Never use thinner, trichloroethylene, or ketone-based solvents-they can deteriorate plastic or rubber parts.



Do not spray cleaner or other solutions directly onto the keypad or display.

P18-Q Validator belongs to industrial-grade intelligent terminal products.

Including LCD display, horn, indicator light, digital tube, buzzer and other display and prompt functions;

Including identification and payment functions such as barcode scanner, Contactless NFC card operation, and SAM card operation ;

Including WIFI, 4G, Ethernet, 485, 232 and other communication functions;

Including customized models IO expansion functions.

Most of these functions are composed of electronic devices and fixed structural parts, Therefore it's no need involve transmission mechanical devices, oil and water consumption, etc.,

So the P18-Q Validator is no need to be maintained regularly, but it is necessary to pay attention to the working environment and conditions.

The working environment and conditions of P18-Q validator are as follows:

(1) voltage range: 9V~48V

(2) temperature range: -20°C ~ 70°C

(3) Avoid hitting the equipment, especially the LCD and Barcode Scanner windows.

(4) Avoid flushing equipment with water.

(5) Avoid the influence of the strong magnetism and electricity to the equipment.



P18-Q Validator is composed of electronic components and structural parts.

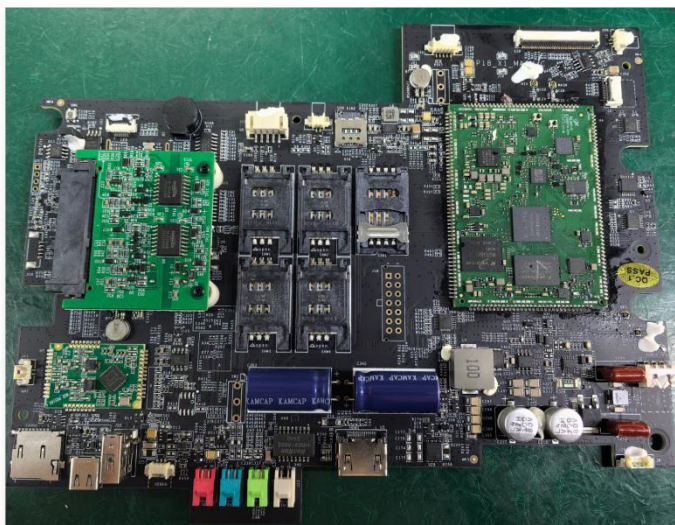
Normal electronic devices and structural parts have a life span of three to five years abvoce. We provide 1 year warranty with free repair service and lifetime paid repair service.

Based on the self-repair requirement, we list the common replaceable parts so when the validator error occurred, client can replace the spare parts by themselves for repair.

Items	Replaceable parts
1	Motherboard
2	Coreboard
3	Expansion IO board
4	Barcode scanner part
5	LCD module
6	Speaker
7	Indicator light, antenna board
8	Nixie tube, button board:
9	Shell and other Structural Parts:

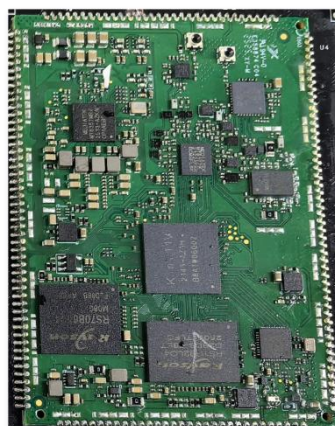
- **Motherboard:**

When the motherboard-related error occurred, please replace the motherboard-related parts. (soldering repair is not recommended).



- **Core board:**

When an abnormal system startup is occurred, the core board needs to be replaced (when confirmed it's the core board problem).



- **Expansion IO board:**

Needs to be replaced when there is a problem with the expansion IO function.



- **Barcode scanner module:**

When the barcode scan function error occurred, just replace the Barcode scanner module.



- **LCD module:**

When the display function be failed, just replace the LCD module.



- **Speaker:**

Replace when the sound of the speaker fails.



- **Indicator light, Antenna board:**

Replace when there is a problem with the indicator light or antenna induction. (These two functions are used at the same time and cannot be replaced separately)



- **Nixie tube, button board:**

Replace when the digital tube display or button fails.

(These two functions are used at the same time and cannot be replaced separately)





- **Shell and other Structural Parts:**

When the shell and other structural parts are damaged, the spare parts can be replaced.

Chapter 5

Service and support

For P18Q problem, contact your Decard representative or service provider.

Gather the following information from the printed label on the bottom of each P18 (product ID)

Describe the problems and provide the shipping address where the repaired or replacement unit must be returned

Keep a record of the following items: serial number, shipping documentation.

Attachment:

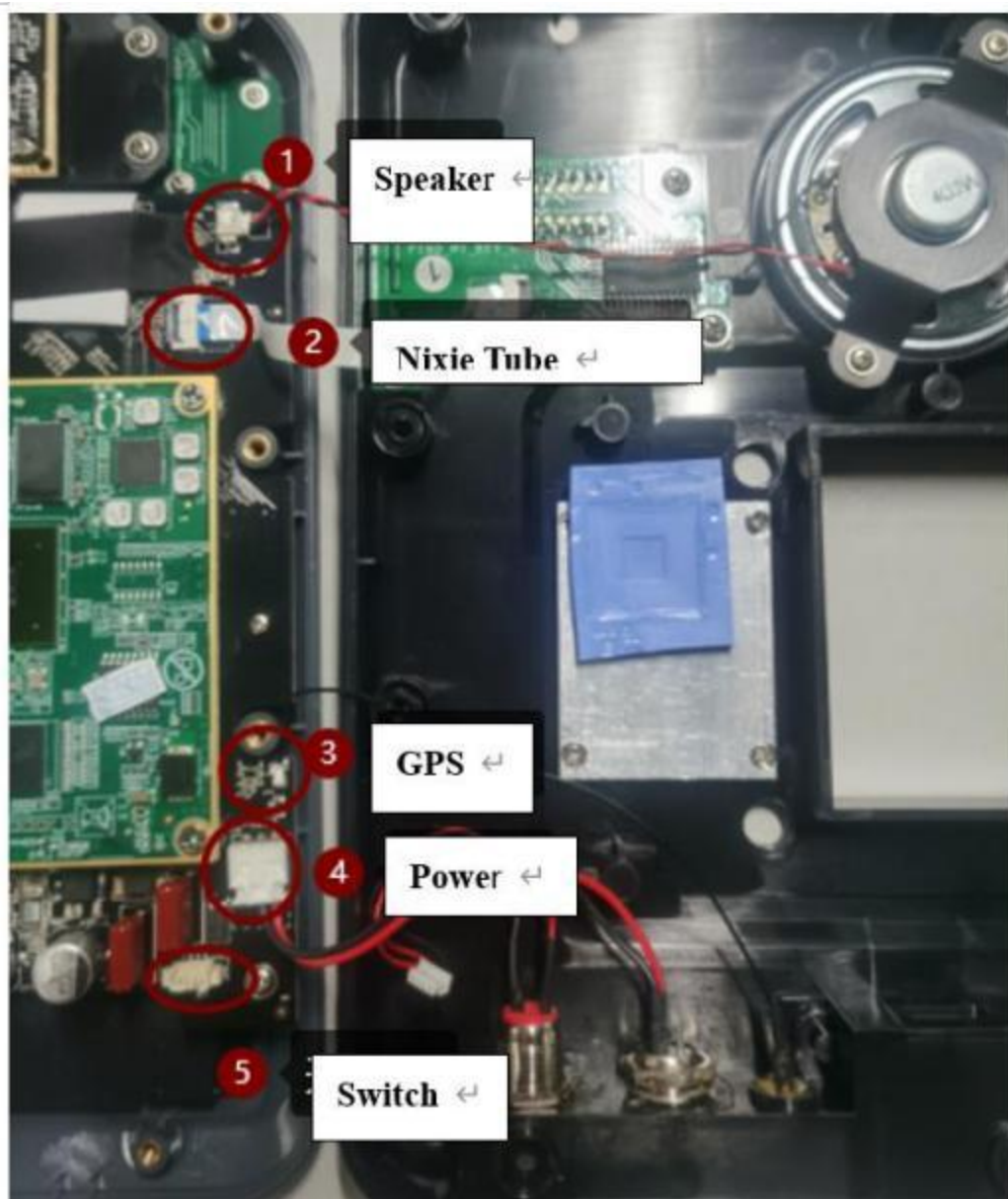
Instructions on How to Change the Replaceable Part

1. Rear cover

1.1 Unscrew screws (10 PCS) on the back cover and open the back cover from left to right



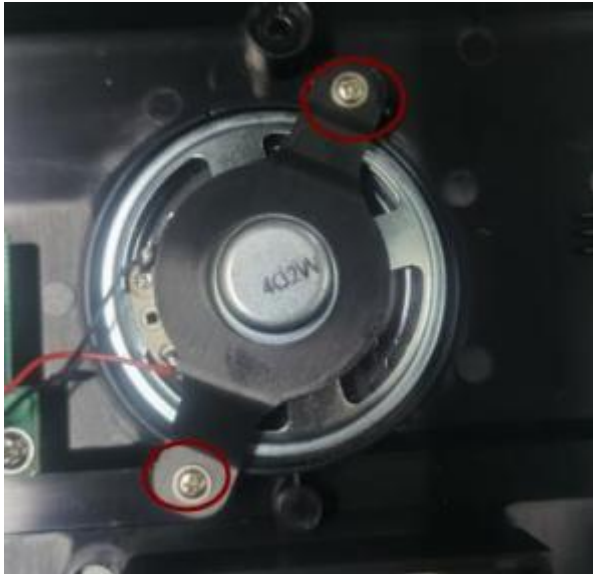
1.2 After opening, remove 5 connecting wires between the back cover and the motherboard



1.3 After the replacement of each part is completed, plug the 5 cables back into the motherboard, close the back cover and screw

2.Speaker

2.1 After finding the speaker on the back cover, remove screws and fixing bracket, replace the speaker and install it back as it is



Digital tube, Keyboard

3.1 Locate the digital tube and the key board on the back cover, unscrew screws (4 PCS), replace the digital tube & key board, replace them as they are



Coreboard

4.1 Unscrew screws on the core board (4 PCS) and take off the core board. Reinstall it as it is after replacement.



Extension IO board

5.1 Unscrew screws (2 PCS) on the expansion IO board and take off the expansion IO board. Replace as is after replacement.



QR code module

6.1 First remove the cable between the QRcode module and the motherboard, and then unscrewscrews; after replacing the entire module, fix the screws and plug the cable back into the motherboard.

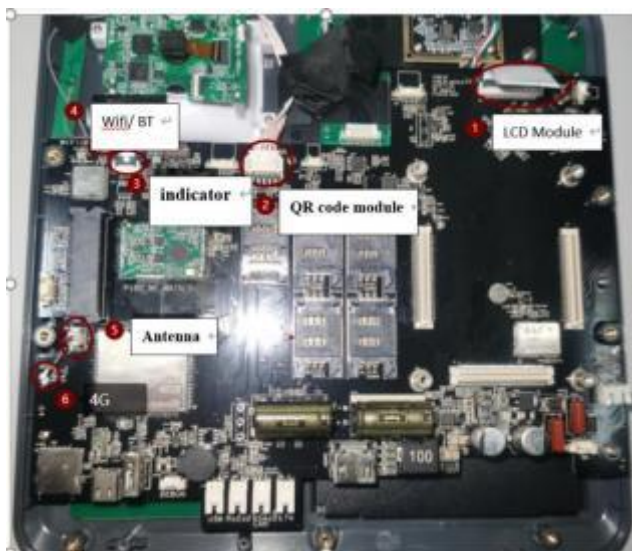


Motherboard

7.1 Open the back cover, remove the core board and expansion IO board, revealing the motherboard below



7.2 Remove 6 connecting wires between the main board and the LCD module, QR code scanning module, indicator light, WiFi/BT antenna, antenna board, and 4G antenna



Unscrew screws (5 PCS) that fix the motherboard and replace the motherboard; insert the 6 connecting wires back as they are, and fix the screws.

8. Indicator, antenna

8.1 After removing the motherboard, the lower indicator and antenna board are exposed

8.2 Unscrew the 6 screws that fix the indicator light and the antenna board,

And replace the antenna part

9.LCD module

9.1 After removing the motherboard, the LCD module below is exposed

9.2 Remove the connecting wire between the LCD module and the touch panel, unscrew 6 screws to replace the LCD module



9.3 After replacement, insert the connecting wire between the touch panel and the LCD module as it is, and fix the screw.