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# MANUAL

## 使用手冊

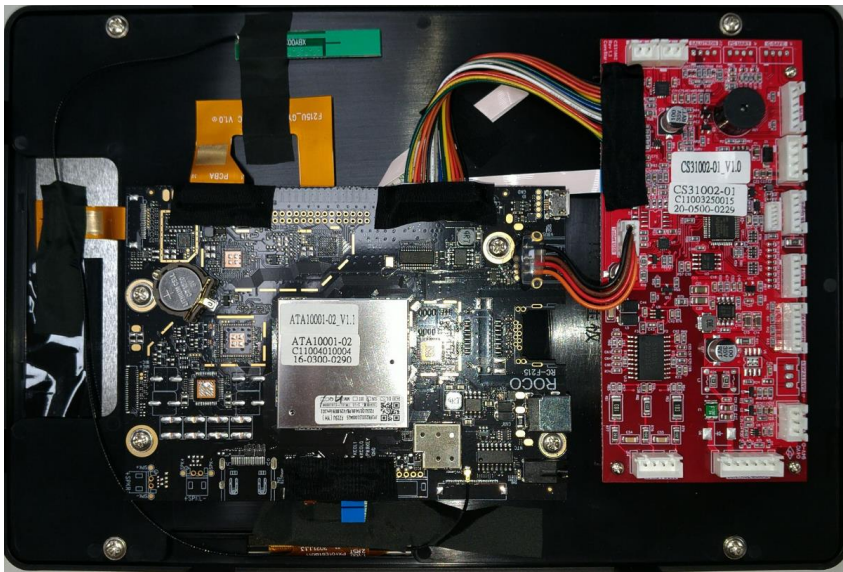
<i>CUSTOMER</i>	
<i>Item P/N</i>	F215U
<i>DESCRIPTION</i>	Function board
<i>Document Number</i>	F215U
<i>DATE</i>	

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## 1. Hardware overview

### 1.1 Main Board PCB Physical Specifications



### 1.2 Connector Definitions

#### *U1304*

IPEX Wi-Fi / BT Antenna connector

#### *J3001/J1 CTRL CON*

Pin No.	Description	Pin No.	Description	Pin No.	Description	Pin No.	Description
1-4	+12V	5-7、 10、13	GND	8	+5V	9	+3.3V
Pin No.	Description	Pin No.	Description	Pin No.	Description	Pin No.	Description
11	UART Rx	12	UART Tx	14	RS232 Tx	15	RS232 Rx

#### *J2301/J17*

System Key and Headphone connector

#### *CON2501*

12V DC Power input

#### *AJ11/BJ1*

Speaker connector

#### *J15*

External Line-in socket connector

#### *J2*

FAN control connector

#### *J6*

External USB socket connector

#### *J10*

Keyboard connector

#### *J11*

Hand Rail key connector

J5

5Khz Heart rate receiver module connector

J14

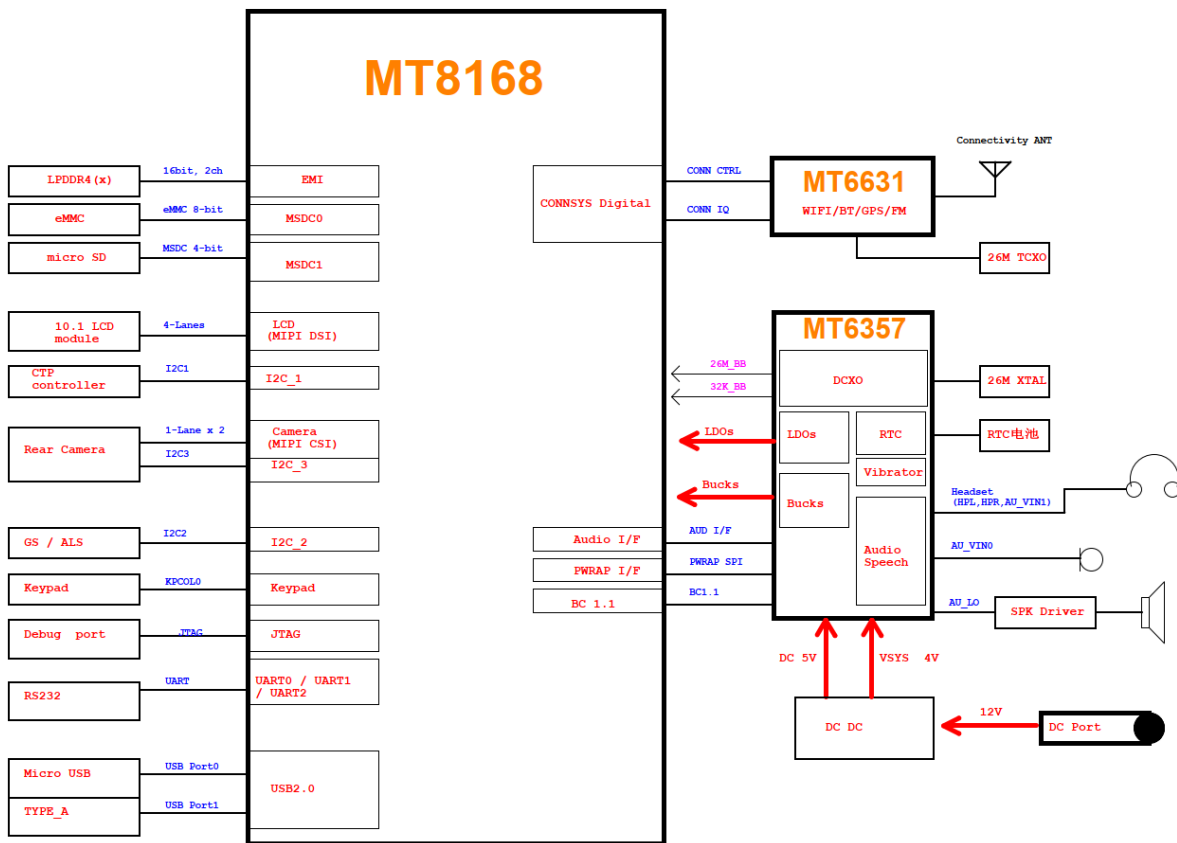
Wired heart rate sensor connector

J7

USB bridge connector

## 2. Operational description

### 2.1 System block diagram



2.2 Processor: MediaTek MT8168, Quad-core ARM® 2.0GHz Cortex-A53 MPCore

Memory: 2GB LPDDR4

Connectivity: 2.4 GHz and 5.0 GHz IEEE 802.11a/b/g/n/ac wireless LAN

Supports Bluetooth 5 dual mode

2 × USB 2.0 ports

GPIO: UART \* 2

RS232 \* 1

Video & sound: HDMI ports \* 1(up to FHD supported)

4-lane MIPI DSI display port

stereo audio port

Multimedia: Mali-G52 3EE MC1

H.264 decoder: Main/high profile 1080p @60fps/40Mbps

H.264 encoder: High profile 1080p @ 60fps

OpenGL ES 3.2/2.0/1.1

OpenCL 2.0 full profile

Input power: The 12V DC power will powered the console and whole system included the RF system.

lifetime: The Model will remain in production until at least January 2026.

2.3 Operating frequency : 2142-2472MHz / 5150~5250Mhz, support IEEE 802.11b/g/n/a/ac (Frequency Bandwidth : 20MHz / 40MHz/80MHz).

2.4 PCB antenna 0.69dbi (2.4GHz) , 1.24dBi(5GHz)

2.5 Modulation

2.5.1 BT/BLE: GFSK / DSSS

2.5.2 Wi-Fi: DBPSK/DQPSK/CCK(DSSS)

2.6 System BT can search the A2DP devices manually and connecting to one of them.

2.7 User can search Wi-Fi AP manually via system setting menu and connecting to one of them.

#### FCC WARING STATEMENT

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.

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 of the device.

■ **FCC RF Radiation Exposure Statement:**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

■ **FCC RF Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

The end product shall have the words "Contains Transmitter Module FCC ID:2ANCG-FU215."

■ **OEM statement**

The Original Equipment Manufacturer (OEM) must ensure that the OEM modular transmitter must be labeled with its own FCC ID number. This includes a clearly visible label on the outside of the final product enclosure that displays the contents shown below. If

the FCC ID is not visible when the equipment is installed inside another device, then the outside of the device into which the equipment is installed must also display a label referring to the enclosed equipment.

The end product with this module may be subject to perform FCC part 15B unintentional emission test requirement and be properly authorized while installation to host(s), and platform, and integrator are obligated to have its manual or instruction with the related compliance warning to end users.

This device is intended for OEM integrator only

The end product with this module may be subject to re-evaluate RF exposure as per 47CFR § 2.1091, and §2.1093 if antenna or usage, including co-located usage of other transmitters, of the subsequent installation are changed.

This radio transmitter has been approved by FCC/Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antennas gain: 0.69dBi (2.4G) ,1.24dBi(5G)

## IC WARING STATEMENT

### ■ Canada, Industry Canada (IC)

This Class B digital apparatus complies with Canadian ICES-003

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

- ***This device complies with Industry Canada licence-exempt RSS standard(s).*** Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

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

### ■ Conformité des appareils de radiocommunication aux limites d'exposition humaine aux radiofréquences (CNR-102)

L'ordinateur utilise des antennes intégrales à faible gain qui n'émettent pas un champ électromagnétique supérieur aux normes imposées par Santé Canada pour la population. Consultez le Code de sécurité 6 sur le site Internet de Santé

Canada à l'adresse suivante : <http://www.hc-sc.gc.ca/>

L'énergie émise par les antennes reliées aux cartes sans fil respecte la limite d'exposition aux radiofréquences telle que définie par Industrie Canada dans la clause 4.1 du document CNR-102, version 4.

### ■ Caution: Exposure to Radio Frequency Radiation.

To comply with RSS 102 RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

Pour se conformer aux exigences de conformité CNR 102 RF exposition, une distance de séparation d'au moins 20 cm doit être maintenue entre l'antenne de cet appareil et toutes les personnes.

### ■ ISED RF Radiation Exposure Statement:

- (i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;
- (ii)
- (iii) where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

### **Avertissement:**

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

- (i) (i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de

satellites mobiles utilisant les mêmes canaux;

- (ii) (iv) lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3, doivent être clairement indiqués

Note: The end product shall has the words "Contains Transmitter Module IC : 22282-F215U.

Le produit final doit être étiqueté dans une zone visible avec ce qui suit "Contient IC : 22282-F215U

#### ■ OEM statement

Cet émetteur radio a été approuvé par FCC/Innovation, Science et Développement économique Canada pour fonctionner avec les types d'antennes répertoriés ci-dessous, avec le gain maximal autorisé indiqué. Les types d'antenne non inclus dans cette liste qui ont un gain supérieur au gain maximum indiqué pour tout type répertorié sont strictement interdits pour une utilisation avec cet appareil.

Antennes Gain : 0.69dBi (2.4G) ,1.24dBi(5G)