



®

Electronic Way Technology Co., Ltd.

Version

V1.0

24 -inch Product Specifications

Number

E W-RD-20 241009 001

Edit Date

2024.10.09

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24 -inch Product Specifications

Customer Name: Tablet

Client Type: 453085

Yiwei product number: AZMJ06010002

Specifications: MT8390 - 24TG-A0

Product certification requirements:

RoHS IC ID California 65 FCC GS CE BQB Others: _____

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Notice:



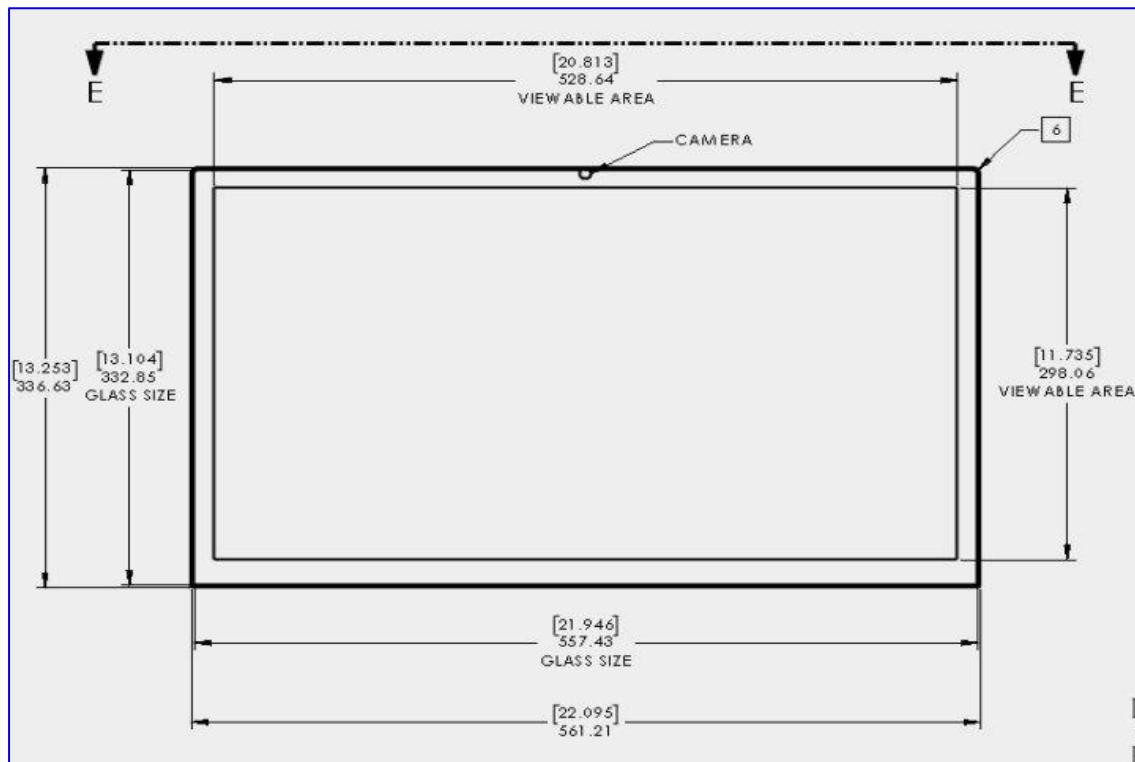
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1. Product images:



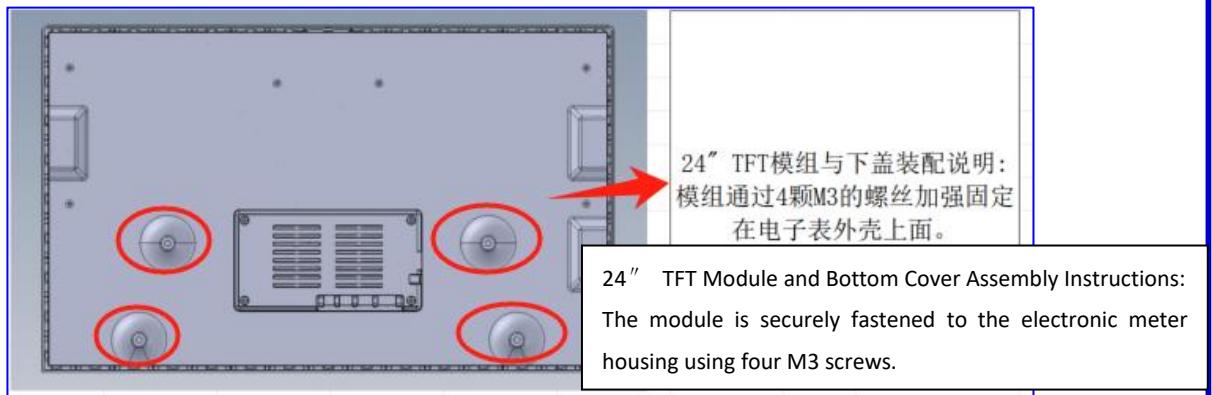


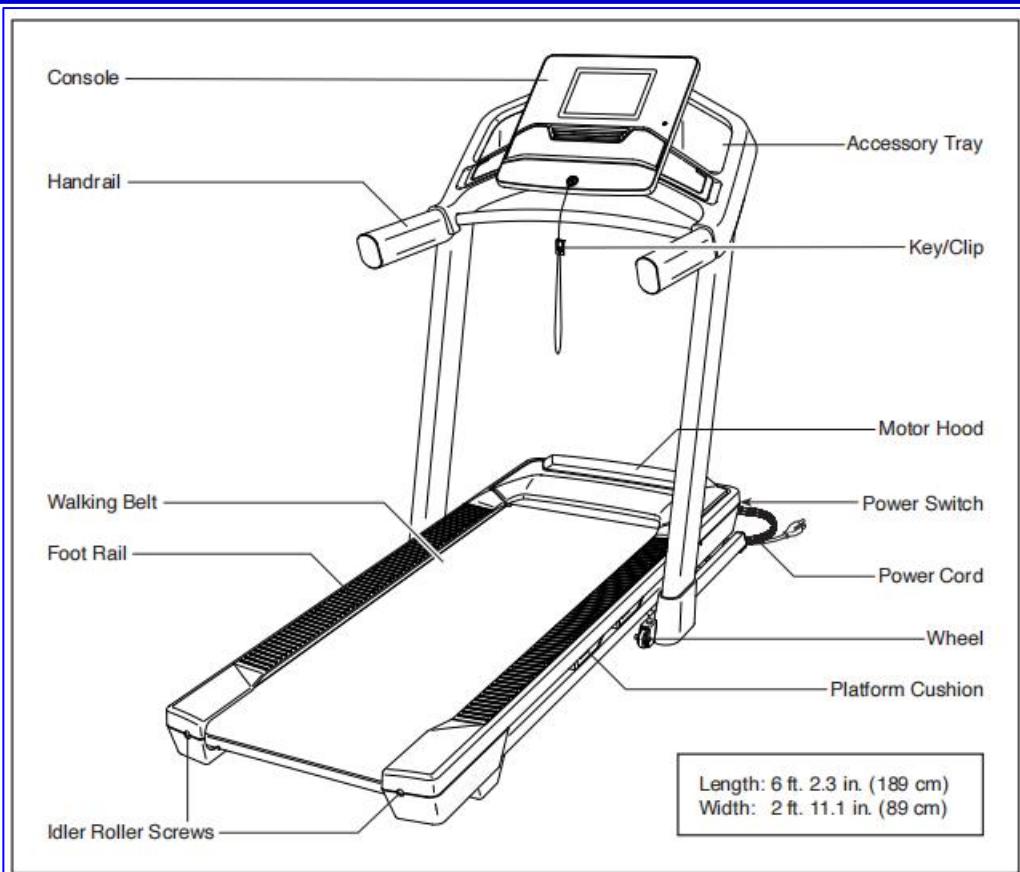
2.1 Installation instructions and diagram :

This tablet product is directly installed on the electronic watch by embedding .

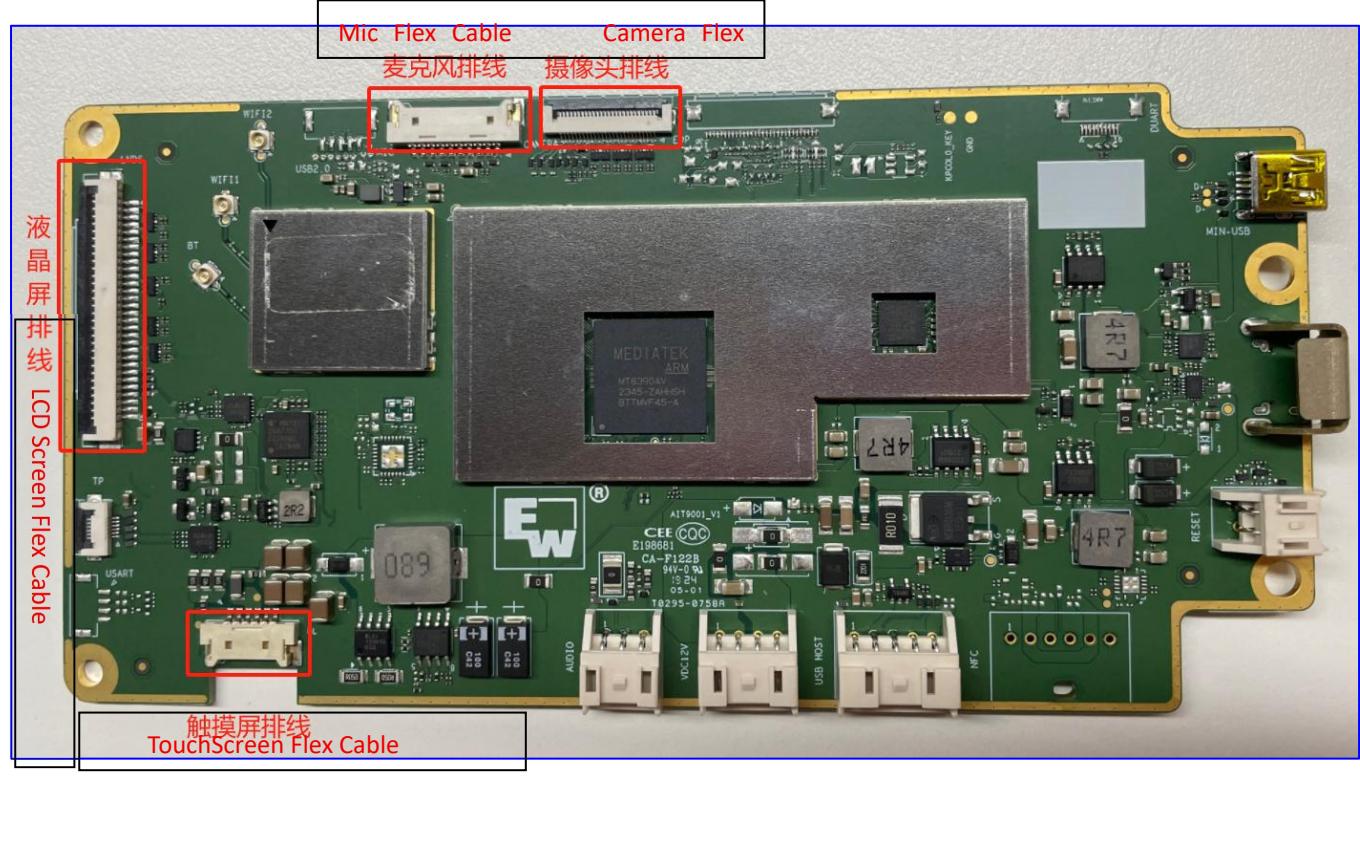
Installation steps:

- (1) Directly clip the tablet onto the electronic watch housing;
- (2) Strengthen the fixation with four screws at the tail ;
- (3) The tablet product housing is embedded in the electronic watch housing ;
- (4) Product fire protection is provided by the electronic meter product of the end product;
- (5) Only the screen of the product is touchable, and the back shell is not touchable .





3.1 Interface terminal definition:





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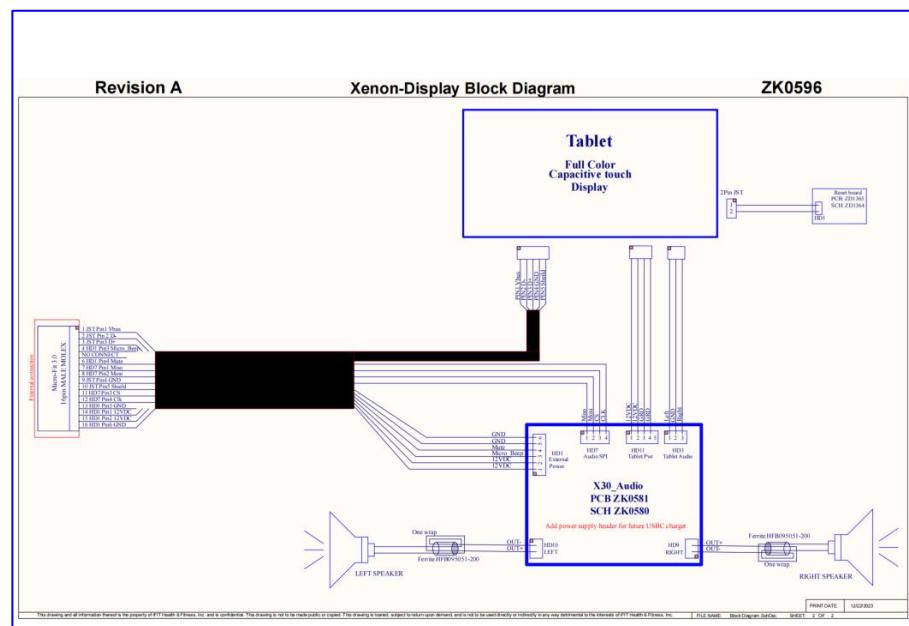
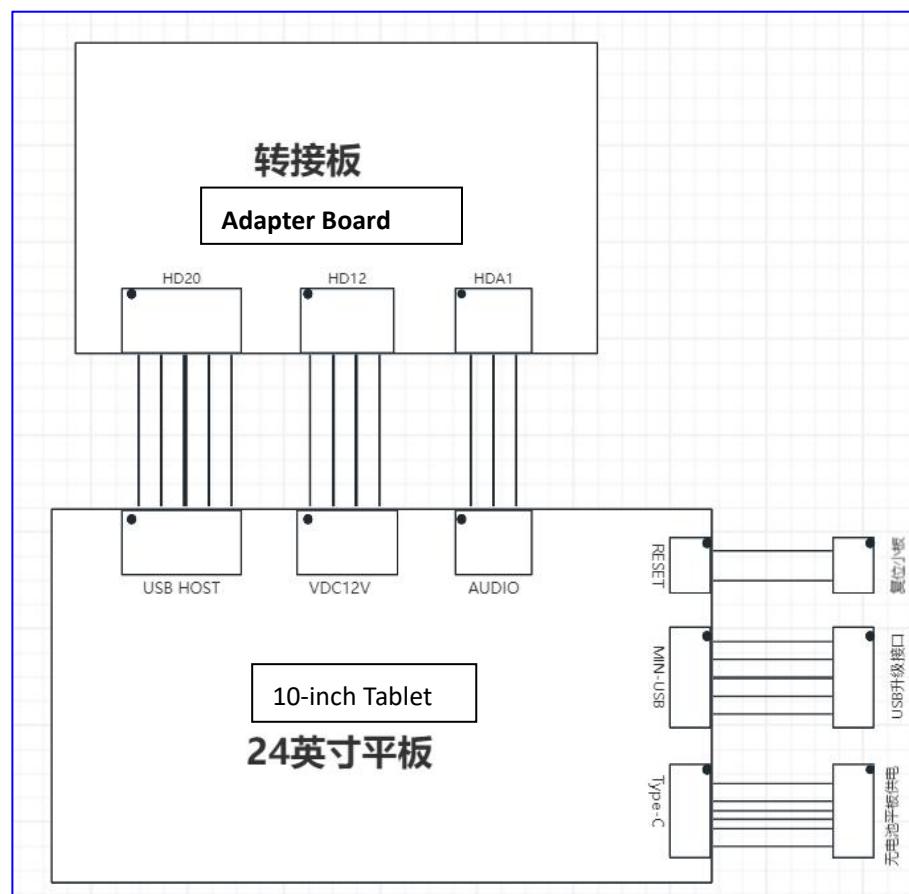
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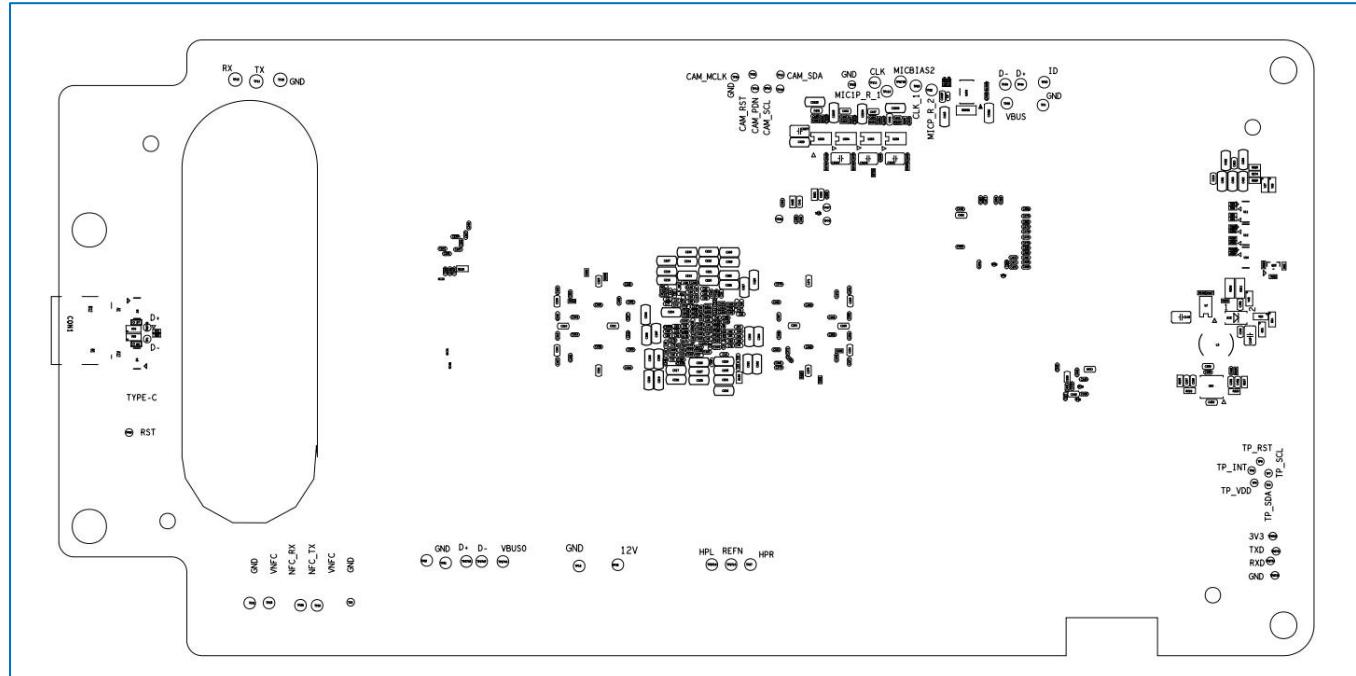
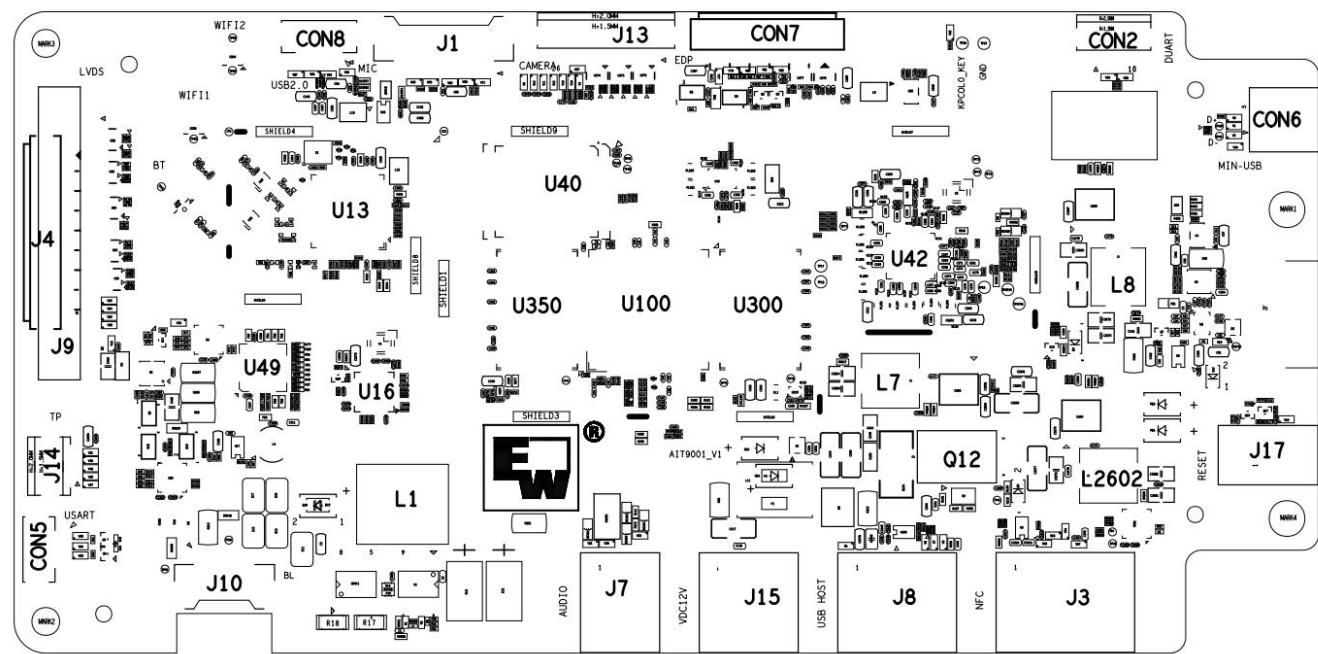
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3.2 System connection schematic diagram:



3. 3Core board layout diagram:



4.1 Functional description :

4.1.1 24 " TFT is suitable for various display equipment products.

4.1.2 24 " TFT uses a color screen as the display interface and is used with a high-sensitivity touch screen. The screen is connected to the mainboard via FPC. The touch screen interface is a universal I2C interface and supports up to five-finger effects.

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4.1.3 24 " TFT uses USB to communicate with the electronic watch, which can realize the running interface required by customers and watch sports teaching videos to ensure the comfort of users during exercise.

4.1.4 The 24 " TFT key functions are completely realized by touch, and the key functions include: START key, STOP key, speed increase and decrease, slope increase and decrease and other commonly used functions. It is also equipped with a volume adjustment function to ensure the comfort of the video playback sound when the user is using it.

4.1.5 24 " TFT has built-in WIFI/Bluetooth module, supports Falsh expansion to 64GB, and supports OTA upgrade function.

4.2 Electrical parameters:

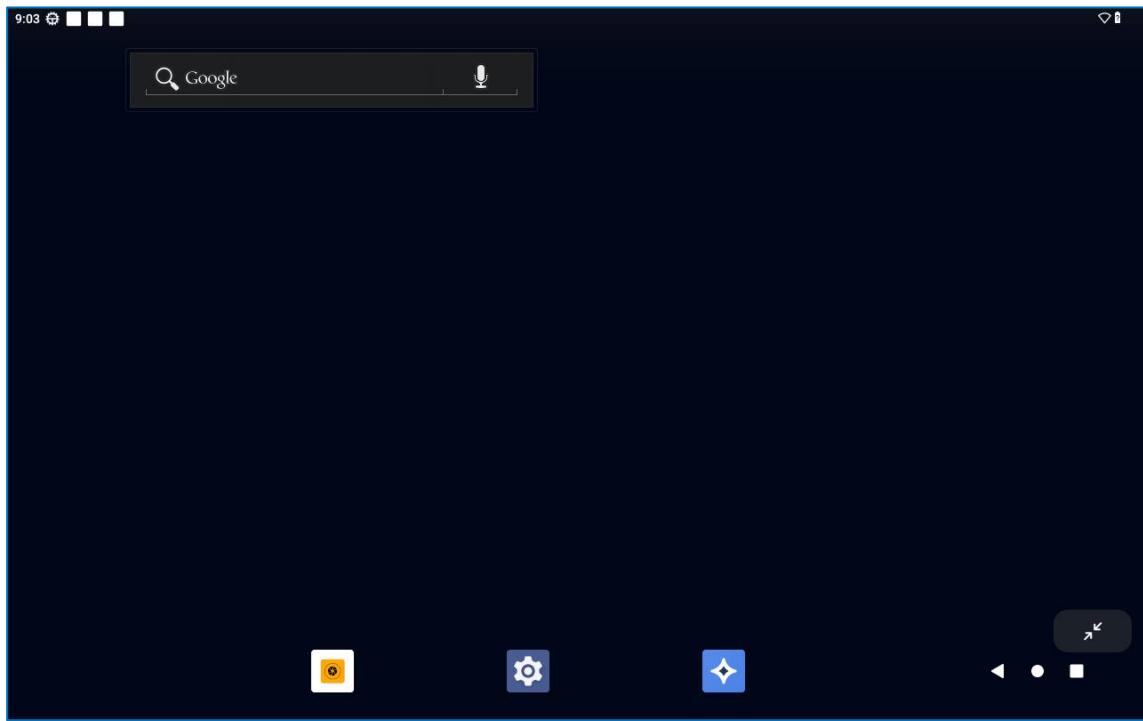
content	Foot position	Functional Description	Remark
Communication interface	1 Pin	Upper control power supply + 5 V , lower control power supply to the instrument	Connect to 5-pin JST terminal
	2 Pin	USB D-, data line negative	
	3 Pin	USB D+, data line positive	
	4 Pin	GND , the power system ground provided by the lower control to the upper control	
	5 Pin	GND , shielding layer grounding of USB cable	
power supply	Input voltage	DC 12V 3A	Connect to 4-pin JST terminal
	Power supply mode	Downstream control power supply	
	Standby power consumption	<0.5W	
	power	MAX POWER 36W	
CPU	Kernel	Dual-core ARM Cortex-A78 and hexa-core ARM Cortex-A55	
	Operating frequency	2000 MHz	
Capacity Storage	DDR3	4GB	
	Falsh	32GB	Expandable up to 64GB

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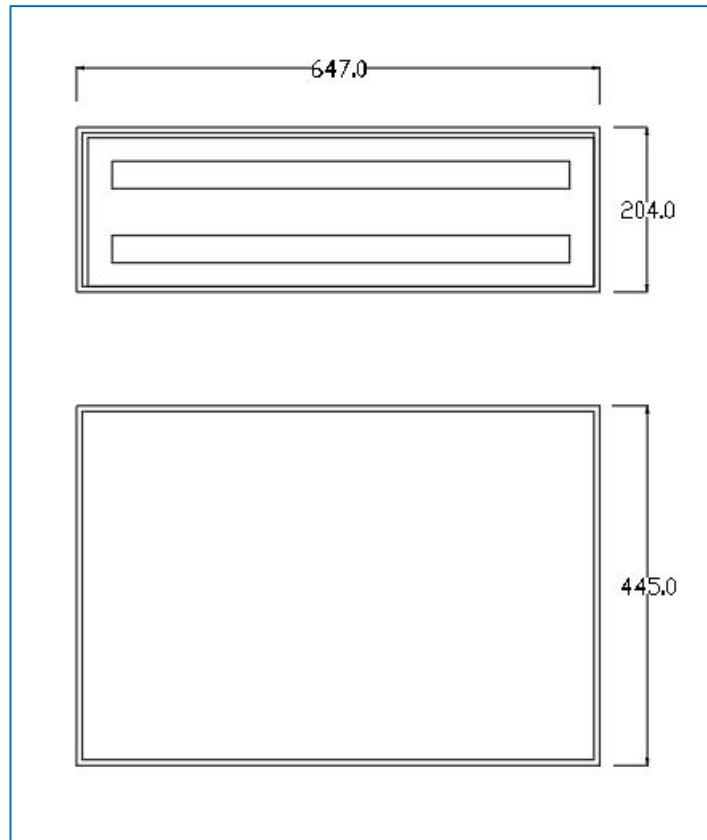
Firmware Upgrade	branch hold	OTG USB upgrade, also supports Bluetooth OTA upgrade	
Camera	support	5 megapixels, 30fps, ISP	
microphone	support	Dual microphones, using separate microphone boards	
system	Android	Android 13	
TFT color screen	Display Type	PC238CT01-2	
	L CM Brightness	250nits(cd/m ²)	
	Resolution	1920 (RGB)* 1080	
Type-C interface	Input voltage	DC 12V 3A	
	protocol	PD3.0	
	power	MAX POWER 36W	
Audio Interface	1 Pin	Right Channel	Connect to 3Pin JST terminal
	2 Pin	Grounding	
	3 Pin	Left Channel	

4.3 Motion display effect: (UI interface **can** be customized)

4.4 Android display effect: (UI interface can be **customized**)



5. Packaging method:



Carton specifications: length 647 MM * width 204 MM * height 445

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MM, wall thickness: 7MM

Packing quantity: 2 PCS

6. Communication protocol (attached)

7. Encoder T FT naming rules:

Product Name: MT 8390 - 2 4 TG-AO

MT 8390 : stands for MediaTek 8390 CPU

Temperature = 100 °C, TET = 1.0 GPa

Geometrical and physical quantities

A0: represents the first generation of products

8. Change of resume :

Change History

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9. Overview

9.1 Introduction

This product is a low power, high performance main board for fitness equipment (treadmill, bike, stepper, elliptical, cardio). The CPU integrates Dual-core ARM Cortex-A78 and Hexa-core ARM Cortex-A55 coprocessor. It has two pieces 2GB LPDDR4X with total capacity of 4GB. Support EMMC5.1 protocol, mass memory 32GB. The wireless module complies with IEEE 802.11 a/b/g/n/ac standard and it support Bluetooth 5.1. This system is based on android-13.0.0. Linux kernel is licensed under version 2 of the Free Software Foundation's General Public License (GPLv2). Android is licensed under version 2 of the Apache Software License (ASL).

This product uses a core board and a base board. Core board is used for Android core system. The base board is used to control the treadmill and some interfaces.

10. Hardware Description

This chapter describe the hardware Features include, layout, switch, connector and interface.

10.1 Connector

10.1.1 LVDS display connector(J9)

Pin No.	Name	Type	Description
Pin 1	RX00-	Differential signal	LVDS Odd Data (-)
Pin 2	RX00+	Differential signal	LVDS Odd Data (+)
Pin 3	RX01-	Differential signal	LVDS Odd Data (-)
Pin 4	RX01+	Differential signal	LVDS Odd Data (+)
Pin 5	RX02-	Differential signal	LVDS Odd Data (-)
Pin 6	RX02+	Differential signal	LVDS Odd Data (+)
Pin 7	GND	Ground	GND
Pin 8	RXOCLK-	Differential signal	LVDS Odd CLK (-)
Pin 9	RXOCLK+	Differential signal	LVDS Odd CLK (+)
Pin 10	RX03-	Differential signal	LVDS Odd Data (-)
Pin 11	RX03+	Differential signal	LVDS Odd Data (+)
Pin 12	RXE0-	Differential signal	LVDS Even Data (-)
Pin 13	RXE0+	Differential signal	LVDS Even Data (+)
Pin 14	GND	Ground	GND
Pin 15	RXE1-	Differential signal	LVDS Even Data (-)
Pin 16	RXE1+	Differential signal	LVDS Even Data (+)
Pin 17	GND	Ground	GND
Pin 18	RXE2-	Differential signal	LVDS Even Data (-)
Pin 19	RXE2+	Differential signal	LVDS Even Data (+)



Pin 20	RXECLK-	Differential signal	LVDS Even Clock (-)
Pin 21	RXECLK+	Differential signal	LVDS Even Clock (+)
Pin 22	RXE3-	Differential signal	LVDS Even Data (-)
Pin 23	RXE3+	Differential signal	LVDS Even Data (+)
Pin 24	WP	GPI	Write Protection
Pin 25	SCL	I2C	I2C Clock
Pin 26	SDA	I2C	I2C Data
Pin 27	BIST MODE	GPI	For HKC test only,no connection
Pin 28	VCC	Power	Power supply +5.0V
Pin 29	VCC	Power	Power supply +5.0V
Pin 30	VCC	Power	Power supply +5.0V

10.1.2 Reserve USB connector(J8)

Pin No.	Name	Type	Description
Pin 1	5V	PWOER	Power Supply, 5V
Pin 2	DM	Differential signal	Data minus
Pin 3	DP	Differential signal	Data plus
Pin 4	ID	GPIO	ID PIN
Pin 5	GND	Ground	GND

10.1.3 Microphone (J1)

Pin No.	Name	Type	Description
Pin 1	NC	-	No connection
Pin 2	DMIC_CLK0	MIC CLK	DMIC_CLK
Pin 3	DMIC_DATA0	MIC DATA	DMIC_DATA
Pin 4	NC	-	No connection
Pin 5	VMIC	Power	Power Supply
Pin 6	DMIC_CLK1	MIC CLK	DMIC_CLK
Pin 7	GND	Ground	GND
Pin 8	DMIC_DATA1	MIC DATA	DMIC_DATA
Pin 9	GND	Ground	GND
Pin 10	NC	-	No connection

10.1.4 Camera digital video port (J13)

Pin No.	Name	Type	Description
Pin 1	GND	Ground	GND
Pin 2	D3-	Differential signal	MIPI data pair 3 negative signal



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Pin 3	D3+	Differential signal	MIPI data pair 3 positive signal
Pin 4	GND	Ground	GND
Pin 5	D2-	Differential signal	MIPI data pair 2 negative signal
Pin 6	D2+	Differential signal	MIPI data pair 2 positive signal
Pin 7	GND	Ground	GND
Pin 8	D1-	Differential signal	MIPI data pair 1 negative signal
Pin 9	D1+	Differential signal	MIPI data pair 1 positive signal
Pin 10	GND	Ground	GND
Pin 11	D0-	Differential signal	MIPI data pair 0 negative signal
Pin 12	D0+	Differential signal	MIPI data pair 0 positive signal
Pin 13	GND	Ground	GND
Pin 14	CK-	Differential signal	MIPI CLK negative signal
Pin 15	CK+	Differential signal	MIPI CLK positive signal
Pin	GND	Ground	GND
Pin	M CLK	clock signal	Main clock
Pin 18	GND	Ground	GND
Pin	RST	GPIO	RST pin
Pin	PDN	GPIO	PDN pin
Pin	SCL	I2C bus	I2C CLK
Pin	SDA	I2C bus	I2C DATA
Pin 23	VAF	PWOER	Power Supply, 2.8V
Pin 24	VCAMD	PWOER	Power Supply, 1.8V
Pin 25	VCAMIO	PWOER	Power Supply, 1.8V
Pin 26	VCAMA	PWOER	Power Supply, 2.8V

10.1.5 Debug UART(CON2)

Pin No.	Name	Type	Description
Pin 1	NC	-	No connection
Pin 2	NC	-	No connection
Pin 3	NC	-	No connection
Pin 4	NC	-	No connection
Pin 5	NC	-	No connection
Pin 6	GND	Ground	Ground
Pin 7	Module TX	Digital signal	TX DATA
Pin 8	Module RX	Digital signal	RX DATA
Pin 9	NC	-	No connection
Pin 10	NC	-	No connection

10.1.6 Mini USB(CON6)

Pin No.	Name	Type	Description
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Pin 1	5V	PWOER	Power Supply, 5V
Pin 2	DM	Differential signal	Data minus
Pin 3	DP	Differential signal	Data plus
Pin 4	ID	GPIO	ID PIN
Pin 5	GND	Ground	GND

10.1.7 Type-C connector(CON1)

Pin No.	Name	Type	Description
A1	GND	Ground	GND
A2	SSTXp1	Differential signal	SuperSpeed TX1(+)
A3	SSTXn1	Differential signal	SuperSpeed TX1(-)
A4	VBUS	Power	Power Supply
A5	CC1	Configuraiton channel	Configuraiton channel1
A6	DP1	Differential signal	USB2.0 Data (+)
A7	DN1	Differential signal	USB2.0 Data (-)
A8	SBU1	Sideband use	No connection
A9	VBUS	Power	Power Supply
A10	SSRXn2	Differential signal	SuperSpeed RX2(-)
A11	SSRXp2	Differential signal	SuperSpeed RX2(+)
A12	GND	Ground	GND
B1	GND	Ground	GND
B2	SSTXp2	Differential signal	SuperSpeed TX2(+)
B3	SSTXn2	Differential signal	SuperSpeed TX2(-)
B4	VBUS	Power	Power Supply
B5	CC2	Configuraiton channel	Configuraiton channel2
B6	Dp2	Differential signal	USB2.0 Data (+)
B7	Dn2	Differential signal	USB2.0 Data (-)
B8	SBU2	Sideband use	No connection
B9	VBUS	Power	Power Supply
B10	SSRXn1	Differential signal	SuperSpeed RX1(-)
B11	SSRXp1	Differential signal	SuperSpeed RX1(+)
B12	GND	Ground	GND

10.1.8 RESET port(J17)

Pin No.	Name	Type	Description
Pin 1	GND	Ground	GND
Pin 2	RESET	GPIO	RESET port



10.1.9 NFC (J3)

Pin No.	Name	Type	Description
Pin 1	GND	Ground	GND
Pin 2	VNFC	Power	Power Supply
Pin 3	NFC_TXD	Digital signal	TX DATA
Pin 4	NFC_RXD	Digital signal	RX DATA
Pin 5	VNFC	Power	Power Supply
Pin 6	GND	Ground	GND

10.1.10 USB2.0 HOST (J8)

Pin No.	Name	Type	Description
Pin 1	5V	PWOER	Power Supply, 5V
Pin 2	DM	Differential signal	Data minus
Pin 3	DP	Differential signal	Data plus
Pin 4	GND	Ground	GND
Pin 5	NC	-	No connection

10.1.11 DC IN(J15)

Pin No.	Name	Type	Description
Pin 1	12VDC	Power	Main Power
Pin 2	12VDC	Power	Main Power
Pin 3	GND	Ground	GND
Pin 4	GND	Ground	GND

2.2.12 AUDIO (J7)

Pin No.	Name	Type	Description
Pin 1	HPOR	Analog signal	Sound source
Pin 2	HPGND	GND	GND
Pin 3	HPOL	Analog signal	Sound source

10.1.13 LED BACKLIGHT (J10)

Pin No.	Name	Type	Description
Pin 1	LEDK	Power	LED cathode
Pin 2	LEDK	Power	LED cathode
Pin 3	LEDA	Power	LED anode



Pin 4	LEDA	Power	LED anode
Pin 5	LEDK	Power	LED cathode
Pin 6	LEDK	Power	LED cathode

10.1.14 UART(CON5)

Pin No.	Name	Type	Description
Pin 1	3V3	Power	Power Supply
Pin 2	TXD	Digital signal	TX DATA
Pin 3	RXD	Digital signal	RX DATA
Pin 4	GND	Ground	GND

10.1.15 Touch I2C connector(J14)

Pin No.	Name	Type	Description
Pin 1	GND	Ground	GND
Pin 2	VDD	Power	Power Supply, 3.3V
Pin 3	SDA	I2C bus	I2C DATA
Pin 4	SCL	I2C bus	I2C CLK
Pin 5	TP_INT	GPIO	INT pin
Pin 6	TP_RST	GPIO	Reset pin

11. Specification of core parts

11.1 CPU(U100)

MediaTek MT8390 is a highly integrated SOC which Integrates Dual-core ARM Cortex-A78 and Hexa-core ARM Cortex-A55 coprocessor, 3D graphics (OpenGL ES 3.2), up to 32-megapixel camera ISP for single camera or 16-megapixel + 16-megapixel for dual camera, up to LPDDR4(X)-3733 or DDR4-3200 and high-definition 4K video decoder. MT8390 helps tablet manufacturers build a high-performance media tablet with PC-like browser, 3D gaming and cinema class home entertainment experiences.

11.2 Power management(U42)

MT6365 is a power management system chip optimized for handsets and IOT devices, especially based on mediatek

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MT8390 system solutions. MT6365 contains 9 Buck converters and 33 LDOs optimized, which are optimized subsystems for specific IOT device subsystems. MT6365 is ideal for power management of IOT devices and other portable systems. Sophisticated controls are available for power-up and the RTC alarm. MT6365 adopt SPI interface and two SRCLKEN control pins to control buck converters, LDOs, and various drivers; it provides enhanced safety control and protocol for handshaking with baseband. The MT6365 has following feature: handles devices baseband power management; Full-set high-quality audio feature: supports uplink/downlink audio CODEC; 32K-Crystal-less RTC oscillator for system timing, clock buffer output; Over-current and thermal overload protection; Programmable under voltage lockout protection; Watchdog reset; Flexibility hardware PMIC reset function; Power-on reset and start-up timer; Precision voltage, temperature, and current measurement fuel gauge; Storage card plug-out protection;

11.3 DDR(U350,U300)

The LPDDR4(X)-SDRAM is a high-speed synchronous DRAM device internally configured with 2 channels. Dual channel is comprised an 8-bank with 8Gb per channel density.

This device contains the following number of bits:

Dual-channel SDRAM devices contain the following number of bits

16 Gb has 17,179,869,184 bits

The system uses two pieces 16GbLPDDR4(X)-SDRAM, so the system with total capacity of 32Gb.

LPDDR4X devices use a 2 or 4 clocks architecture on the Command/Address (CA) bus to reduce the number of input pins in the system. The 6-bit CA bus contains command, address, and bank information. Each command uses 1, 2 or 4 clock cycle, during which command information is transferred on the positive edge of the clock. These devices use a double data rate architecture on the DQ pins to achieve high speed operation. The double data rate architecture is essentially an 16n prefetch architecture with an interface designed to transfer two data bits per DQ every clock cycle at the I/O pins. A single read or write access for the LPDDR4X SDRAM effectively consists of a single 16n-bit wide, one clock cycle data transfer at the internal DRAM core and eight corresponding n-bit wide, one-half-clockcycle data transfers at the I/O pins.

11.4 eMMC(U40)

The eMMC is an embedded MMC solution designed in a BGA package following the JEDEC eMMC™ 5.1 standard. eMMC operation is identical to a MMC device and therefore is a simple read and write to memory using MMC protocol which is an industry standard.

eMMC consists of NAND flash and a MMC controller. 3V supply voltage is required for the NAND area (VDD or VCC) whereas 1.8V or 3V dual supply voltage (VDD or VCCQ) is supported for the MMC controller. The eMMC supports 200MHz DDR – up to 400MBps with bus widths of 8 bit in order to improve sequential bandwidth, especially sequential read performance.

There are several advantages of using eMMC. It is easy to use as the MMC interface allows easy integration with any microprocessor with MMC host. Any revision or amendment of NAND is invisible to the host as the embedded MMC controller insulates NAND technology from the host. This leads to faster product development as well as faster times to market.

The embedded flash management software or FTL(Flash Transition Layer) of eMMC manages Wear Leveling, Bad Block Management and ECC. The FTL supports all features of the NAND flash and achieves optimal performance.

11.5 WIFI&BT connection chip(U13)



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MT7663 is highly integrated single chip which features a low power 2X2 11a/b/g/n/ac dual-band Wi-fi subsystem and a Bluetooth subsystem. The Wi-Fi subsystem contains the 802.11a/b/g/n/ac radio, baseband, and MAC that are designed to meet both the low power and high throughput application. MT7663 has a 32-bit RISC MCU that handles Wi-Fi and Bluetooth tasks. The Bluetooth subsystem contains the Bluetooth radio, baseband, link controller. It also uses the 32-bit RISC MCU for the Bluetooth protocols.

12. Firmware and download

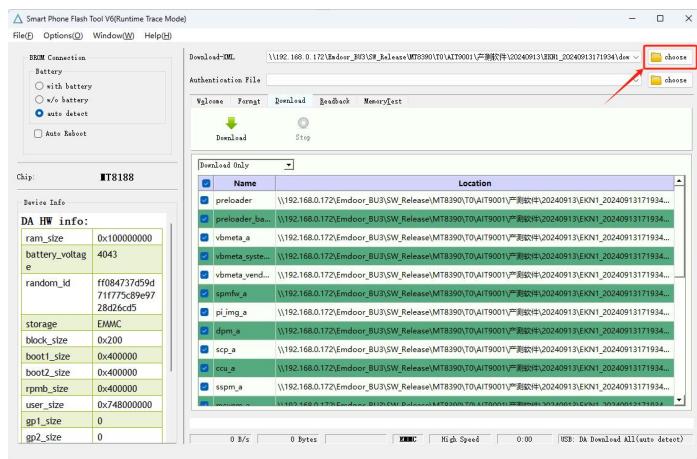
12.1 Image instruction

Image	Instruction
boot.img	including ramdis, kernel, dtb
dtbo.img	Device Tree Overlays refer to dtbo chapter instruction later
preloader.bin	MTK in-house developed loader
cache.ing	Cache partition, the files in this partition are cleared after restarting.
lk.ing	Executed after being loaded into DRAM by the preloader to initialize the hardware module
logo.bin	Configure the boot log file
MT8163_android_scatter.txt	Download and upgrade this file read by the burning program
recovery.img	including recovery-ramdis, kernel, dtb
secro.img	Anti-piracy function when the Android system starts
system.img	including android system, involved in super.img partition, and should be flashed together with fastboot
trust.img	including BL31 、 BL32
tee.img	TrustZone, Trust Zone, hardware-level security solutions provided by arm
vbmeta.img	including avb verification information, used for AVB verification
vendor.img	including android vendor, involved in super.img partition, and should be flashed together with fastboot
userdata.img	User data area

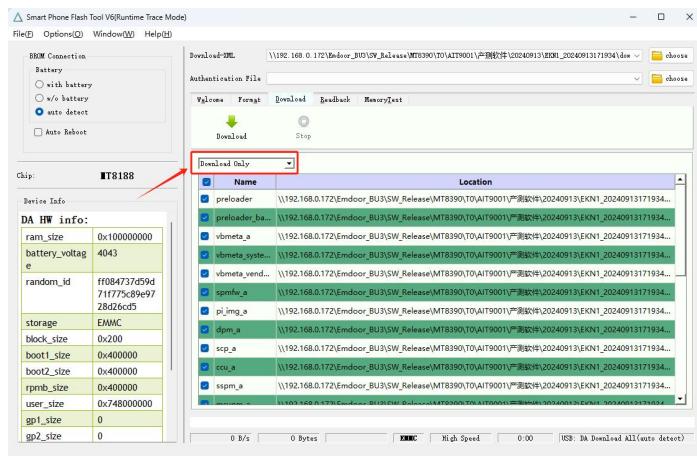
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12.2 Image flashing tool

- 12.2.1 Decompression Driver_Auto_Installer_EXE_v5.1632.00.zip
- 12.2.2 Double click Driverinstall.exe
- 12.2.3 Install driver
- 12.2.4 If the installation is successful, success is displayed, Reset computer
- 12.2.5 Decompression SP_Flash_Tool_Selector_exe_Windows_v1.2316.00.000.rar
- 12.2.6 Double FlashToolSelector.exe
- 12.2.7 Double click flash_tool.exe
- 12.2.8 In the Scatter-loading File item, click choose, double-click to select :flash.xml

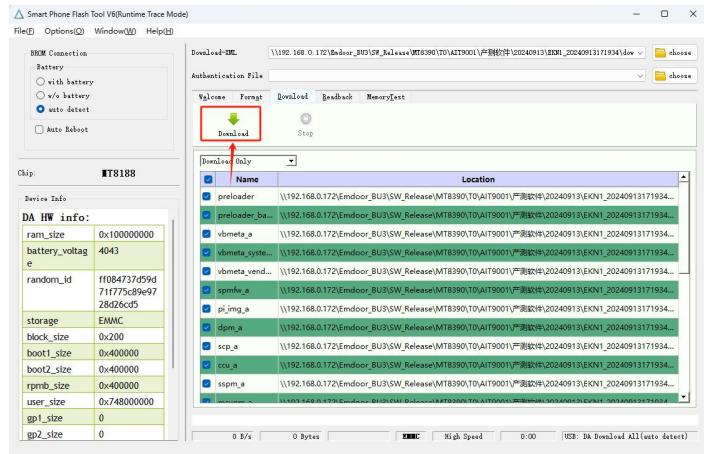


12.2.9 Select the Download



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12.2.10 click Download,Power off the machine, plug in the upgrade cable to start the upgrade,If the upgrade is successful, it will display green ✓



13. Development and debugging

13.1 Use serial port to view real time log

Debug UART(CON2)

Pin No.	Name	Type	Description
Pin 1	NC	-	No connection
Pin 2	NC	-	No connection
Pin 3	NC	-	No connection
Pin 4	NC	-	No connection
Pin 5	NC	-	No connection
Pin 6	GND	Ground	Ground
Pin 7	Module TX	Digital signal	TX DATA
Pin 8	Module RX	Digital signal	RX DATA
Pin 9	NC	-	No connection
Pin 10	NC	-	No connection

The Debug UART(CON2) is connected to USB uart devices, and USB uart is connected to computer. The baud rate is set to 921600.If the main board is turned on, the computer will output the early log of the system.

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13.2 USB ADB

Use USB cable to connect the MINI USB (CON6) and computer, and use the ADB command to control the system.

You can use some ADB commands.

For example:

```
adb devices
adb install <apk file path>
adb uninstall <package>
adb shell rm <filepath>
adb shell
adb push <local path> <remote path>
adb pull <remote path> <local path>
adb shell getprop
.....
```

13.3 Network ADB

This chapter assumes the device IP is 192.168.1.5. This IP will be used for adb connection and device debugging in the following context.

- Firstly the Android device should boot up, if possible, confirm adbd is started (use ps command to check).
- In PC cmd, input:

```
adb connect 192.168.1.5:5555
```

If successful, it will prompt relative hints, if fail, you can execute kill-server command and then retry connection.

```
adb kill-server
```

- After connected, you can input ADB related commands to debug in PC, such as adb shell, it will connect the device through TCP/IP which is the same as USB debugging.
- After debugging, input the following command to disconnect the connection in PC:

```
adb disconnect 192.168.1.5:5555
```

13.4 Procrank tool

Procrank is a debugging tool with Android, running in the shell environment of the device, used to output the memory snapshot of the process in order to effectively observe the memory usage status of the process. Include the following memory information:

VSS : Virtual Set Size The memory size used by virtual (including the memory used by the shared lib)

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RSS : Resident Set Size The actually used physical memory size (including the memory used by the shared lib)

PSS : Proportional Set Size The actually used physical memory size (allocate the memory used by the shared lib in proportion)

USS : Unique Set Size The physical memory used exclusively by the process (not including the memory used by the shared lib)

13.5 Dumpsys tool

Dumpsys tool is a debugging tool in Android system, running in the shell environment of the device, and provides the service status information running in the system. The running service means the service process in the Android binder mechanism. The conditions for dumpsys to output the print:

1. Only print the services already loaded to ServiceManager.
2. If the dump function in the service code is not implemented, there will be no information output.

13.6 FIQ mode

You can input fiq command through the serial port to check the system status when the device crashes or gets stuck. The specific command is as below:

```
127|console:/ $ fiq
debug> help
FIQ Debugger commands:
pc          PC status
regs        Register dump
allregs    Extended Register dump
bt          Stack trace
reboot [<c>]  Reboot with command[<c>]
reset [<c>]   Hard reset with command[<c>]
irqs        Interrupt status
kmsg        Kernel log
version     Kernel version
```

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sleep	Allow sleep while in FIQ
nosleep	Disable sleep while in FIQ
console	Switch terminal to console
cpu	Current CPU
cpu <number>	Switch to CPU<number>
ps	Process list
sysrq	sysrq options
sysrq <param>	Execute sysrq with <param>

13.7 log auto collection

Enter #mtklog in the search input box of Settings to open MTKLoggerApp

Log path: /data/debuglogger/

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CE statements

Manufacturer's Name: Electronic Way Technology Co., Ltd

Address: No. 369, Liyi Road, Qiandeng Town, Kunshan City, Jiangsu, China, 215343 Product name : Tablet

Model number: MP24-Xenon-E

Family Model: 453084

Operating Temperature: -10° C to 40° C

This device in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. All essential radio test suites have been carried out.

1. The product shall only be connected to a USB interface of version USB 2.0
2. The device complies with RF specifications when the device used at 20cm form your body
3. The WLAN function for this device is restricted to indoor use only when operating in the 5180 to 5825 MHz frequency range.
4. Electronic Way Technology Co., Ltd hereby declares that this Tablet is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
5. According to Article 10(2) of Directive 2014/53/EU, the Tablet can be used in Europe with restriction.



Restrictions in the 5 GHz band:

According to Article 10 (10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), Turkey (TR), Norway (NO), Switzerland (CH), Iceland (IS), and Liechtenstein (LI).



ES	LU	RO	CZ	FR
HU	SI	DK	HR	BE
BG	DE	EE	IE	EL
IT	CY	LV	LT	SK
MT	NL	AT	PL	PT
FI	SE	LI	TR	NO
CH	IS			



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RF POWER

Function	Operation Frequency	Max RF outputpower:
BLE	2402MHz~2480MHz	3.15dBm
BT(BR+EDR)	2402MHz~2480MHz	6.18dBm
WIFI 2.4G 802.11b/g/n(HT20,HT40)	802.11b/g/n(20MHz): 2412~2462MHz; 802.11n(40MHz): 2422~2452MHz	16.67dBm
5.2G WIFI 802.11a/n(HT20,HT40)	802.11a/ac/n20: 5180~5240MHz; 802.11ac40/n40: 5190~5230MHz; 802.11ac80: 5210~5210MHz	14.14dBm
5.3G WIFI 802.11a/n(HT20,HT40)	802.11a/ac/n20: 5260~5320MHz 802.11ac40/n40: 5270~5310MHz 802.11ac80: 5290~5290MHz	13.23dBm;
5.6G WIFI 802.11a/n(HT20,HT40)	802.11a/ac/n20: 5500~5700 MHz 802.11ac40/n40: 5510~5670MHz 802.11ac80: 5530~5610MHz	14.05dBm
5.8G WIFI 802.11a/n(HT20,HT40)	802.11a/ac/n20: 5745~5825 MHz 802.11ac40/n40: 5755~5795 MHz 802.11ac80: 5775~5775MHz	12.88dBm

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FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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 device and its antenna(s) 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.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

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ISED Statement

EN

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

FR

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Pour maintenir la conformité aux directives d'exposition RF de la FCC, cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps : utilisez uniquement l'antenne fournie.