

UW-M806-V-V1.0Face Recognition Attendance/Gate Control Motherboard Technical Specifications

Document Revision History

Version	Note	Date
1	Initial Release	2022-06

1 Product Overview

UW-M806-V-V1.0 is a face attendance and face access control motherboard based on the EEASYTECH SV806 main chip. This board is equipped with 256MB DDR3 + 8GB eMMC (16GB or 32GB optional) and supports MIPI & RGB display output and dual cameras.

Its main control IC is based on the ARM Cortex-A7 architecture, 40nm process, and has an integrated convolutional neural network accelerator NPU with 0.6T computing power. It is a product formed after tens of millions of algorithm training, integrating functions such as image acquisition, face detection, face tracking, and face comparison. It not only has a high recognition rate but also a fast recognition speed. It can be widely used in scenarios such as community access control, face attendance, barrier gates, office buildings, etc.

Main features:

- ARM Cortex-A7 architecture, up to 1GHz frequency
- Supports MIPI, RGB dot screens, with a resolution of up to 1280*720
- Dual visible light + infrared 850nm 2-megapixel cameras, with a built-in high-performance ISP, automatic exposure + ultra-wide dynamic range
- 3 serial ports, fill light, relay, Wiegand IN, Wiegand OUT and other rich expansion interfaces

2 Specifications

Hardware specifications:

CPU	EEASYTECH SV806, ARM Cortex A7 1GHz
NPU	Built-in CNN accelerator NPU, 0.6TTOPS
Memory	Built-in 256M DDR3
Storage	EMMC 8GB/16G/32G (default 8GB)
Display Interface	MIPI&RGB interface, supports up to 720×1280
Network	RJ45 standard port, 100Mbps Ethernet interface, supports Ethernet
	Supports 4G, onboard 4G module (optional, not populated by default)
	Integrated Wi-Fi & Bluetooth module, supports Wi-Fi 802.11b/g/n and Bluetooth 4.0 protocols
Image Rotation	Supports manual rotation at 0° , 90° , 180° , and 270°
RTC	2PIN Battery Interface
Interfaces	Supports MIPI+DVP Binocular Camera
	USB OTG function

	3 TTL interfaces, 1 Wiegand IN, 1 Wiegand OUT, onboard relay, and other rich peripheral interfaces
	Built-in amplifier, supports 3W 4 Ω speaker
Audio Input	Supports MIC, 1 microphone interface
Touch Screen	Supports capacitive touch screen
Fill Light	Supports RGB light and infrared fill light
Human Detection	Supports PIR (Passive Infrared) human detection module or mmWave (microwave) human sensing module

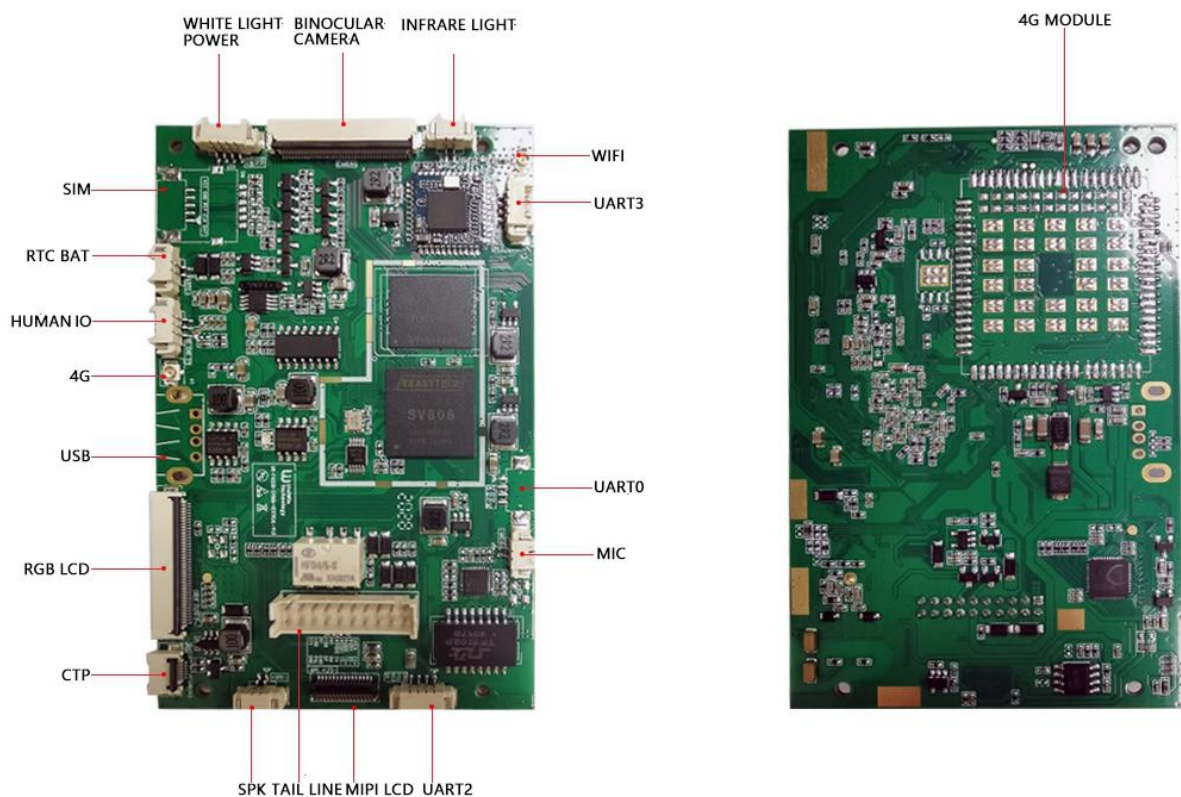
Software Specifications:

OS	Linux system
Face Algorithm	<p>Dynamic face detection and tracking based on video stream, 1:N recognition algorithm;</p> <p>Dynamic dual camera anti-counterfeiting, completely solving the deception of photos and videos on various carriers;</p> <p>Supports 5,000 face database entries and 100,000 recognition records;</p> <p>At 5,000 face entries, achieves 0.01% false acceptance rate and 97% pass rate</p>
Application Software	<p>Supports saving on-site images during face recognition or stranger detection;</p> <p>Management system backend deployed via public cloud;</p> <p>Supports local face registration, database import, network settings, liveness detection switch, and other basic functions.</p>

API Interface	Framework provides C/C++ API; Supports online API(HTTPS);
---------------	--

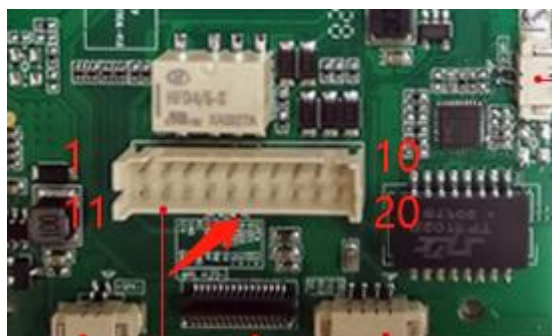
3 main interfaces

3.1 Interface diagram



3.2 Main Interfaces Introduction

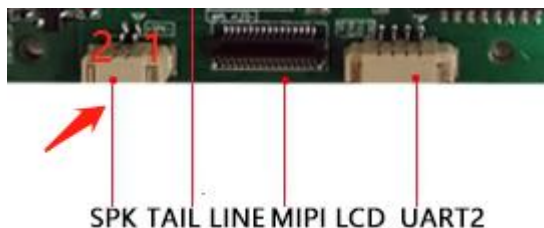
- ◆ **TAIL LINE (J48/20PIN/PHD 2.0mm) Wiring harness connector location (as indicated by the arrow in the diagram)**



SPK TAIL LINE MIPI LCD UART2

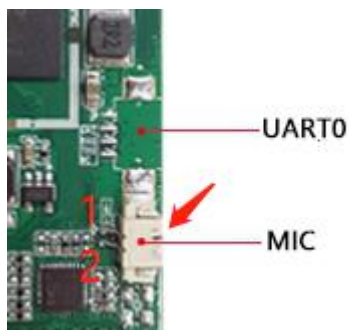
S/N	Definition	Attribute	Description
1	12V	Power	+12V Power Input
2	GND	Ground	Ground
3	NC	Control Wire	Relay Normally Closed (NC)
4	COM	Control Wire	Relay Common Terminal (COM)
5	NO	Control Wire	Relay Normally Open
6	WGOD0	Data cable	Wiegand out D0
7	WGOD1	Data cable	Wiegand outD1
8	WGID0	Data cable	Wiegand in D0
9	WGID1	Data cable	Wiegand in D1
10	OPEN	Data cable	Input interface for door open button connection
11	GND	Ground	Ground
12	POL	Data cable	Force upgrade input
13	GND	Ground	Ground
14	USB DP	I/O	D+ Signal Line
15	USB DM	I/O	D- Signal Line
16	USB 5V	Power Output	Power Output +5V
17	TX-	Ethernet Line	Ethernet TX-
18	TX+	Ethernet Line	Ethernet TX+
19	RX-	Ethernet Line	Ethernet RX-
20	RX+	Ethernet Line	Ethernet RX+

◆ **SPK(J55/2PIN/1.25mm)Speaker Interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	OUTN	Output	Audio - signal (connect to speaker -)
2	OUTP	Output	Audio + signal (connect to speaker +)

◆ **MIC(J57/2PIN/1.25) Microphone Interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	MIC-	Audio Input	Audio input negative
2	MIC+	Audio Input	Audio input positive

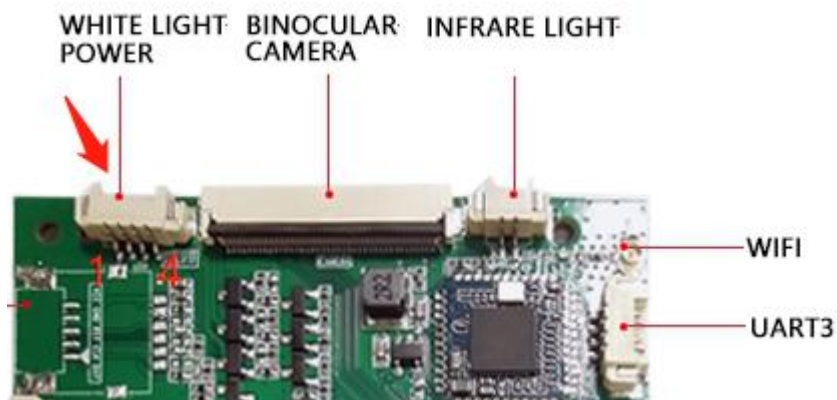
◆ **INFRARED LIGHT(J64/2PIN/1.25mm) Infrared Light power interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	3.3V	Power	Infrared LED power supply

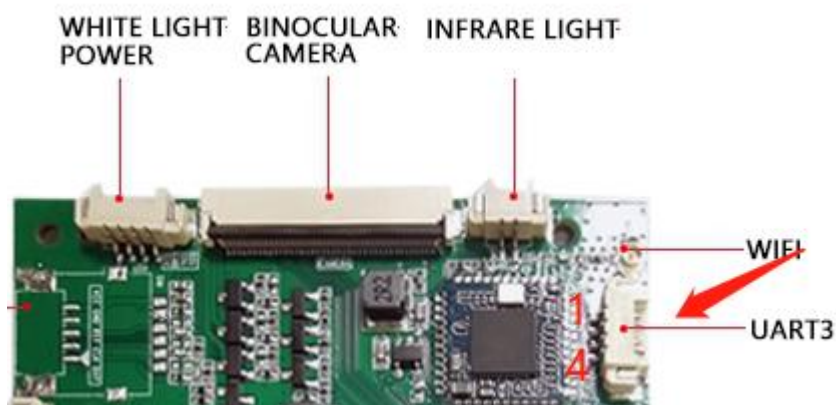
◆ **WHITE LIGHT POWER(J62/4PIN/1.25mm) RGB Fill Light Power Interface,**

as indicated by the arrow



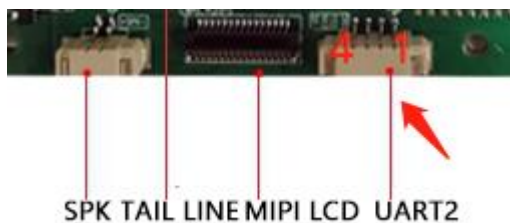
S/N	Definition	Attribute	Description
1	12V	Power	White LED Power Supply
2	GND	Ground	Ground
3	12V	Power	Green LED Power Supply
4	12V	Power	Red LED Power Supply

◆ **UART3(J61/4PIN/1.25mm) TTL Serial Port 3, as indicated by the arrow**



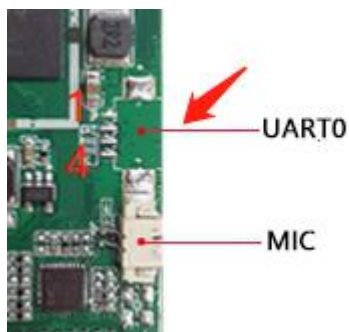
S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	TX3	Signal Output	TTL Serial Port
3	RX3	Signal Input	TTL Serial Port
4	5V	Power	Power Supply

◆ **UART2(J47/4PIN/1.25mm) TTL Serial Port 2, as indicated by the arrow**



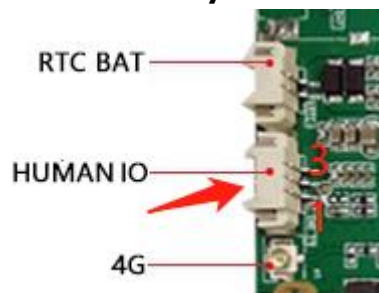
S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	TX2	Signal Output	TTL Serial Port
3	RX2	Signal Input	TTL Serial Port
4	5V	Power	Power Supply

- ◆ **UART0(J47/4PIN/1.25mm) TTL Serial Port 0, Debug port, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX0	Signal Input	Debug Reception
3	TX0	Signal Output	Debug Reception
4	NC	NC	NC

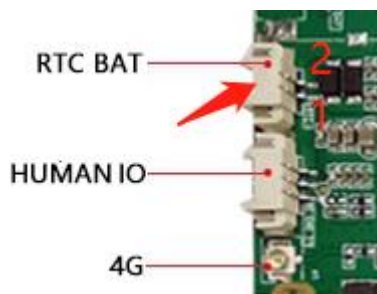
- ◆ **HUMAN IO(J59/3PIN/1.25mm) Infrared Human Detection Interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
-----	------------	-----------	-------------

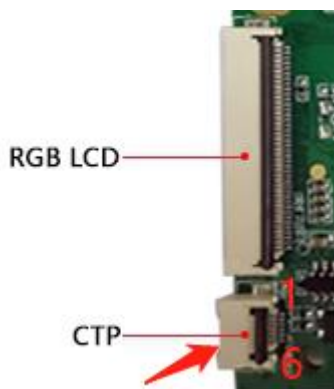
1	5V	Power	Power Supply
2	GND	Ground	Ground
3	GPIO	Signal Input	SIO4, Infrared Human Motion Sensor (Active-High by Default)

◆ **RTC BAT(J54/2PIN/1.25mm) RTC Power Supply Interface, as indicated by the arrow**



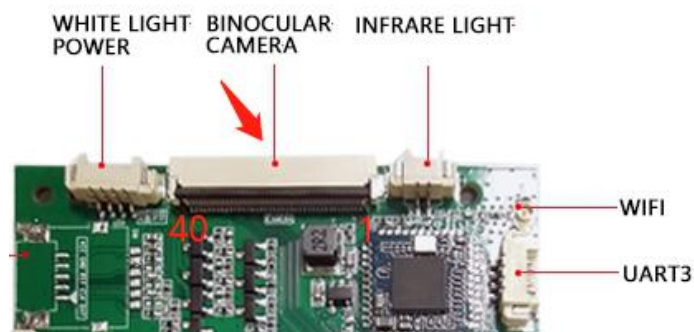
S/N	Definition	Attribute	Description
1	3V Battery Negative	Power	3V Battery Negative
2	3V Battery Positive	Power	3V Battery Positive

◆ **CTP(J4/6PIN/0.5mm) CTP Capacitive Touch Screen Interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	SDA	I/O	I2C Data
2	SCK	Output	Clock Signal
3	REST	Output	Reset
4	INT	Input	Interrupt
5	GND	Ground	Ground
6	3.3V	Output	3.3V Output

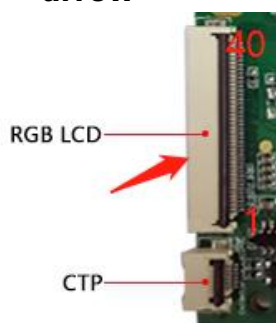
◆ **BINOCULAR CAMERA(CON1/40PIN/0.5mm) Binocular Camera Interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	CSI-SCK	Output	I2C CLK
2	CSI-SDA	I/O	I2C DAT
3、5、23、26、29、32、36	GND	Ground	Ground
4	DVP-PCLK	Input	DVP PCLK
6	DVP-MCLK	Output	DVP MCLK
7	DVP-PWDN	Output	DVP PWDN
8	DVP-RESET	Output	DVP RESET
9	DVP-HSYNC	Output	DVP HSYNC
10	DVP-VSYNC	Output	DVP VSYNC
11	DVP-D11	Input	DVP DATA
12	DVP-D10	Input	DVP DATA
13	DVP-D9	Input	DVP DATA
14	DVP-D8	Input	DVP DATA
15	DVP-D7	Input	DVP DATA
16	DVP-D6	Input	DVP DATA
17	DVP-D5	Input	DVP DATA
18	DVP-D4	Input	DVP DATA
19	DVP-D3	Input	DVP DATA
20	DVP-D2	Input	DVP DATA
21	DVP-D1	Input	DVP DATA
22	DVP-D0	Input	DVP DATA
24	MCSI-CKN	Output	MIPI CLK-
25	MCSI-CKP	Output	MIPI CLK+

27	MCSI-D1N	Input	MIPI D1-
28	MCSI-D1P	Input	MIPI D1+
30	MCSI-D0N	Input	MIPI D0-
31	MCSI-D0P	Input	MIPI D0+
33	MCSI-RESET	Output	MIPI RESET
34	MCSI-PWDN	Output	MIPI PWDN
35	MCSI-MCLK	Output	MIPI MCLK
37、38	3V3	Power	3.3V Power Supply
39、40	NC	NC	NC

◆ **RGB LCD(LCD1/40PIN/0.5mm), RGB Display Interface, as indicated by the arrow**



S/N	Definition	Attribute	Description
1	LED-	Power	Backlight Negative
2	LED+	Power	Backlight Positive
3、29、35、36、37、38、39、40	GND	Ground	Ground
4	VDD	Power	3.3V Power Supply
5-12	Red Data	Input	RGB Red Data
13-20	Green Data	Output	RGB Green Data
21-28	Blue Data	Output	RGB Blue Data
30	LCD-CLK	Output	RGB LCD-CLK
31	STBY#	Output	LCD STBY#
32	LCD-HSYNC	Output	LCD HSYNC
33	LCD-VSYNC	Output	LCD VSYNC
34	LCD-DE	Input	RGB LCD-DE

◆ **MIPI LCD(CON2/31PIN/0.3mm) MIPI Display Interface, as indicated by the arrow**



SPK TAIL LINE MIPI LCD UART2

S/N	Definition	Attribute	Description
1	AVCC	Power	3.3V Power Supply
2	AVCC	Power	3.3V Power Supply
3	DVCC	Power	1.8V Power Supply
4	GND	Ground	Ground
5	RESET	Signal Input	Reset Pin
6	DVCC	Power	1.8V Power Supply
7	GND	Ground	Ground
8	DSI-D3N	Output	MIPI DATA
9	DSI-D3P	Signal Input	MIPI DATA
10	GND	Ground	Ground
11	DSI-D0N	Output	MIPI DATA
12	DSI-D0P	Signal Input	MIPI DATA
13	GND	Ground	Ground
14	DSI-CLKN	Output	MIPI CLK
15	DSI-CLKP	Signal Input	MIPI CLK
16	GND	Ground	Ground
17	DSI-D1N	Output	MIPI DATA
18	DSI-D1P	Signal Input	MIPI DATA
19	GND	Ground	Ground
20	DSI-D2N	Output	MIPI DATA
21	DSI-D2P	Signal Input	MIPI DATA
22	GND	Ground	Ground
23	GND	Ground	Ground
24	LED-	Power	Backlight Negative
25	LED-	Power	Backlight Negative
26	LED-	Power	Backlight Negative
27	LED-	Power	Backlight Negative
28	NC	NC	NC
29	LED+	Power	Backlight Positive
30	LED+	Power	Backlight Positive
31	LED+	Power	Backlight Positive

PCB length 95.4mm, PCB width : 61mm, overall board height is approximately 8mm. For detailed drawings, please contact sales for DXF files.

