



PRODUCT SPECIFICATION

LED Display Asynchronous Controller
HD-C16H

Version: V1.0

Update history:

Release version	Release time	Release Notes
V1.0	Oct. 10, 2025	First release

Shenzhen Huidu Technology Co., Ltd.

1. Overview

HD-C16H is an LED asynchronous full-colour control card that integrates sending, receiving and playing. The 16 HUB75E interfaces on board can directly drive the LED screen, and can also be cascaded with all the way Gigabit output network port and HD series receiver card, with a total loading capacity of up to 650,000 pixels; the motherboard is equipped with Wi-Fi as standard, which can operate in AP and STA modes simultaneously; it supports the communication methods of U-disk, Ethernet, and 4G, supports mobile APP - "LedArt" wireless control; It supports access to the "XiaoHui Cloud" platform to easily realize remote cluster management on the Internet; it supports various environmental monitoring sensors, and Supports various content formats including video, images, GIF, text, animated text, colorful fonts, documents, tables, clocks, and timers; stable system, smooth walking words, is widely used in intelligent light pole screen, door screen, car screen, community screen and other scenes.

2. Features

Input:

1. Support 1 channel 100M communication network port, communicate with the other devices via TCP/UDP.
2. Support 1 channel USB communication interface, which can be used to update programs and expand capacity;
3. Support 2 universal sensor inputs and 1 single-temperature sensor input.
4. Support optional HDMI adapter small board, maximum support for 1920×1080 @60Hz input.

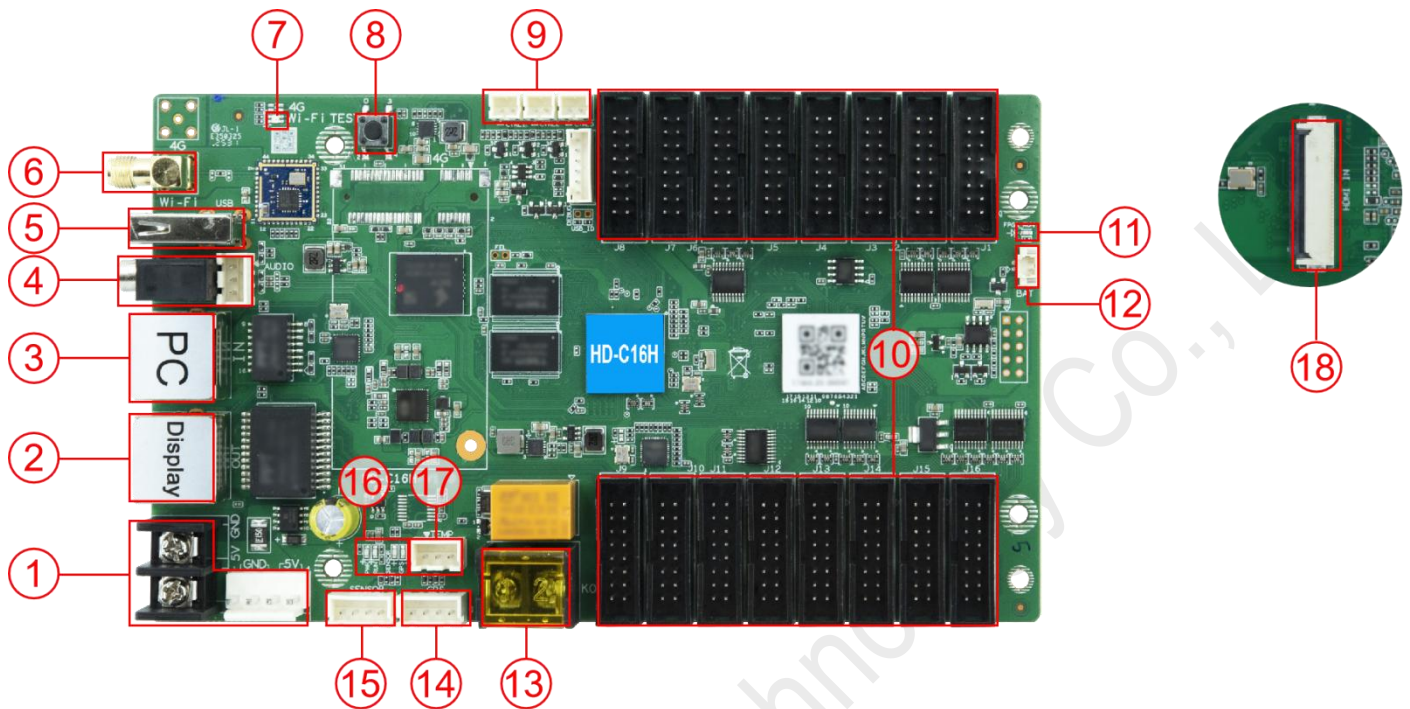
Output:

1. The maximum control range is 650,000 pixels, only C16H can load 260,000 pixels (Note: the actual bandwidth is related to the number of interfaces/module resolution), support for the widest 2048 pixels; cascade receiver card with 650,000 pixels, support for the widest support for 8192 pixels (width > 2048 discount), or support for the highest 3840 pixels (height > 2048 discount);
2. Support 1 channel Gigabit output network port, cascade HD receiver card display;
3. 16 HUB75E interfaces on board;
4. Support 1 channel TRS 3.5mm standard dual-channel audio output and 3PIN dual-channel audio output interface.

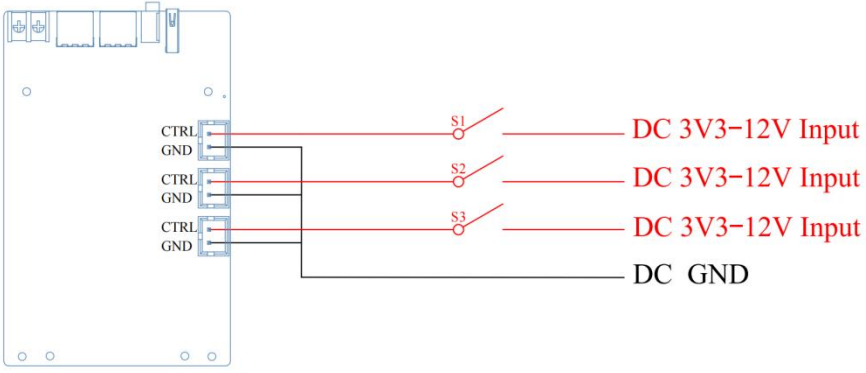
Functions:

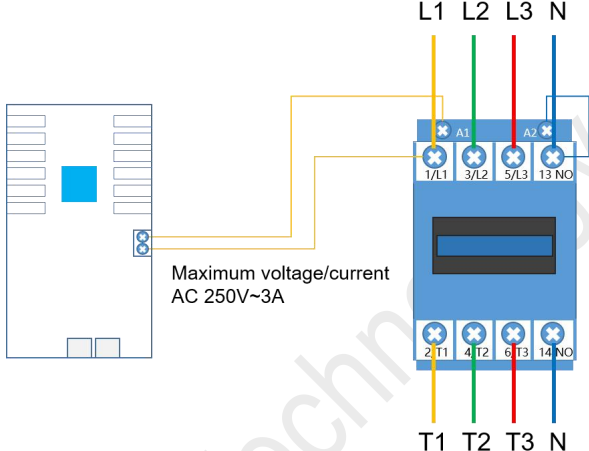
1. Comes with 2.4GHz Wi-Fi and supports mobile APP wireless control (support Wi-Fi AP, Wi-Fi STA mode switching and simultaneous switching on, recommended operating distance within 15M);
2. Onboard 1-channel relay (operating voltage: 4.6V-5.5V) can remotely control the power supply;
3. Video playback performance: 1-way 4K or 3-way 1080P or 8-way 720P or 16-way 360P;
4. Support 3 groups of CTRL function, switching detection, detecting 12V level input, controlling bright screen/black screen/switching programme;
5. Support 4G access to XiaoHui Cloud platform to realize remote management on the Internet (optional);
6. Support UART communication;
7. Supports 2 channel RS-232 or RS-485 communication.

3. Interface Description



Serial number	Name	Description
1	Power input terminal	5V DC Power Input or 4PIN Anti-Dumping Power Input (choose one or the other)
2	Output network port	Gigabit output network port, cascaded with HD-R series receiving cards;
3	Input network port	100M input network port, communicate with the other devices via TCP/UDP
4	Audio output	TRS 3.5mm standard two-channel audio output port and 3PIN dual-channel audio output connectors
5	USB	Used to update programs or expand capacity
6	Wi-Fi antenna	Connect Wi-Fi antenna to enhance wireless signal
7	Wi-Fi indicator light	AP mode:

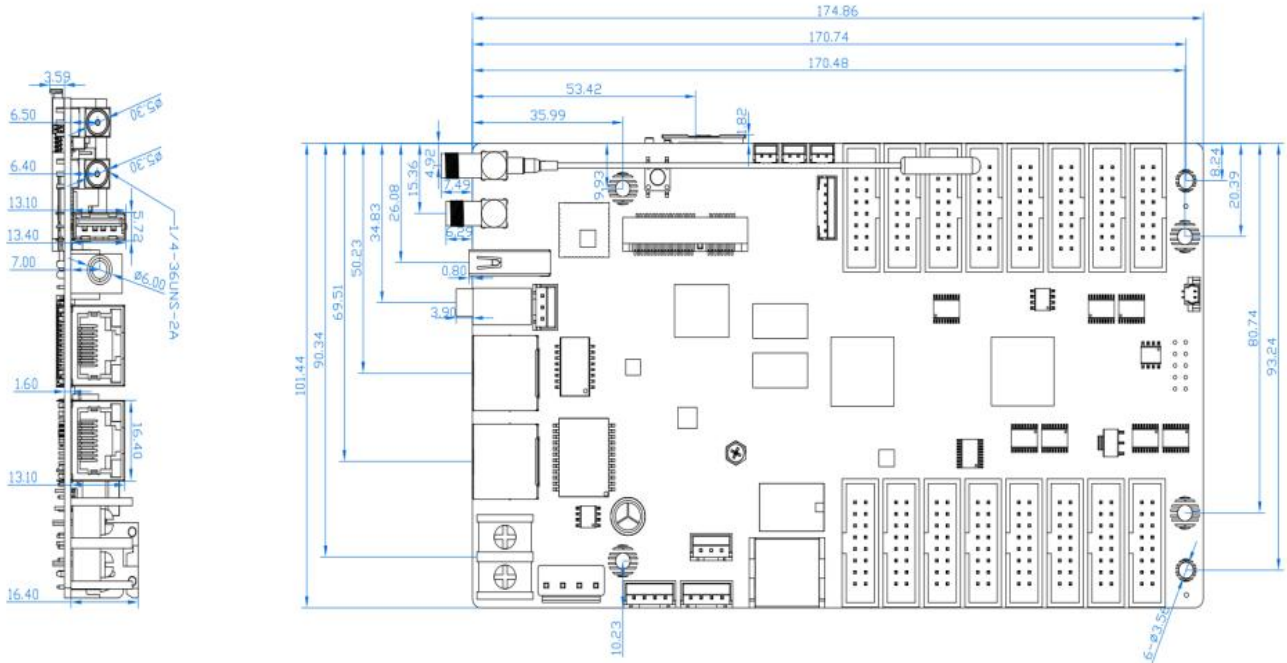
		<p>①The green light flashes, the AP mode is normal;</p> <p>②The red light flashes, Cannot connect to the hotspot;</p> <p>③The light does not light up, the module cannot be detected and;</p> <p>STA mode:</p> <p>①The green light is always on, bridge to the router, and the connection to the cloud server is successful;</p> <p>②The red light flashes, STA mode exception;</p> <p>③The red light is always on, router not bridged;</p> <p>④The yellow light is always on, bridge to router, not connected to cloud server;</p> <p>⑤The light does not light up, STA mode exception;</p>
8	Test button	for test the brightness and contrast of the display screen
9	3 sets of CTRL	<p>Switching quantity detection, detecting 12V level input, controlling on/off screen</p> 
10	HUB75E interface	Connection interface to module via cable
11	Display indicator light	If the green light flashes, the FPGA system is running normally; if the green

		light is on or off, the system is running abnormally.
12	Battery interface	Connect the 2PIN RTC battery
13	Relay	<p>Relay on/off (operating voltage: 4.6V-5.5V), supports maximum load: AC 250V~3A or DC 30V-3A</p> <p>The connection method is as follows:</p> 
14	GPS interface	<p>Serial Port</p> <p>①Default TTL level, supports RS-232 or RS-485</p> <p>②Connect GPS module for timing or positioning</p>
15	Sensor interface	<p>Serial Port</p> <p>①Default TTL level, supports RS232 or RS485</p> <p>②Connection of external sensor accessories such as environmental monitoring, multi-function sensors, etc.</p>
16	System indicator light	<p>PWR: Power indicator light, green light is always on, power input is normal</p> <p>RUN: System running light. If the green light flashes, the system is running normally; if the green light is always on or off, the system is running</p>

		abnormally.
	Sensor & GPS indicator light	<p>Sensor:</p> <p>①When detecting that no sensor is connected, the light does not light up;</p> <p>②When detecting that a sensor is connected, the green light is always on.</p> <p>GPS:</p> <p>①When detecting that there is no GPS signal, the light does not light up;</p> <p>②When the GPS star search number < 4, the green light flashes;</p> <p>③When the GPS star search number >= 4, the green light is always on.</p>
17	Temperature sensor dedicated interface	Connect a temperature sensor to monitor the surrounding environment temperature in real time
18	HDMI IN	Optional HDMI adapter small board, maximum support 1920 x 1080 @ 60Hz input

4. Dimensions

Size (mm) :



Tolerance: ± 0.3 Unit: mm

Specifications

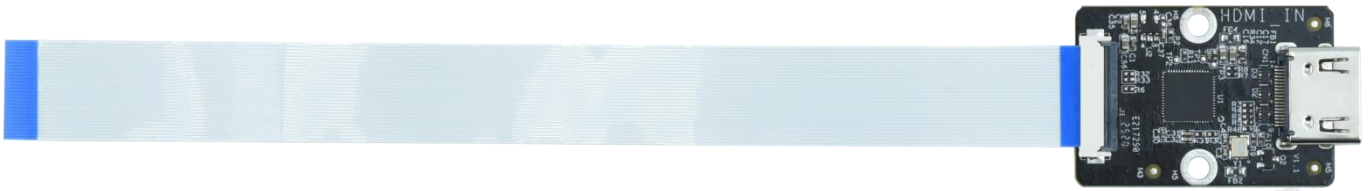
Electrical parameters	Input power	DC 5V (3.8V~5.5V)
	Maximum power consumption	8W
Storage	Internal storage	16GB (7.9GB available)
Storage environment	Temperature	-40°C ~ 80°C
	Humidity	0%RH ~ 80%RH (no condensation)
Working environment	Temperature	-40°C ~ 80°C
	Humidity	0%RH ~ 80%RH (no condensation)
Packaging Information	Checklist: 1×C16H 1×WiFi antenna 1×certificate	

	Note: 4G antenna comes with 4G module optional 1PCS
Size	174.9mm×101.5mm
Net weight	0.15KG (±10g)
Protection level	The bare board is not waterproof, prevent water from dripping into the product, and do not get the product wet or rinsed
System software	Android 10.0 operating system software Android terminal application software FPGA software

Options List:

HDMI IN	Optional HDMI adapter small board, maximum support 1920 x 1080 @ 60Hz input
RS232	RS232 communication, supported by soldered chips
RS485	RS485 communication, supported by soldered chip
SENSOR	Optionally available with different sensor accessories
GPS	Optional GPS module for use
TEMP	For use with optional single temperature sensor module
4G Module	Optional 4G module according to different regions, with 4G antenna to be used
Infrared receiving probe	Optional single-temperature interface infrared remote control sensor accessories to use

* HDMI adapter board is shown as below, it is optional, if you need it, please contact grey sales or technical support for consultation in advance.



Media decoding specifications:

Picture

Form	Decoder	Size	Formatting
BMP	4096×2304 pixels	BMP	N/A
GIF	4096×2304 pixels	GIF	N/A
JPG	4096×2304 pixels	JPG	N/A
JPEG	4096×2304 pixels	JPEG	N/A
PNG	4096×2304 pixels	PNG	N/A

Video

Codecs	Resolution	Maximum frame rate	Maximum Bit Rate	Formatting
H.265	64×64 pixels to 4096×2304 pixels	60fps	100Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
H.264	64×64 pixels to 4096×2304 pixels	30fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
MPEG-4	64×64 pixels to 1920×1088 pixels	60fps	29Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
VP9	64×64 pixels to 4096×2304 pixels	30fps	49Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
MJPEG	64×64 pixels to 1920×1088 pixels	22fps	6Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
AVS2	64×64 pixels to 3840×2160 pixels	25fps	20Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
H.263	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV

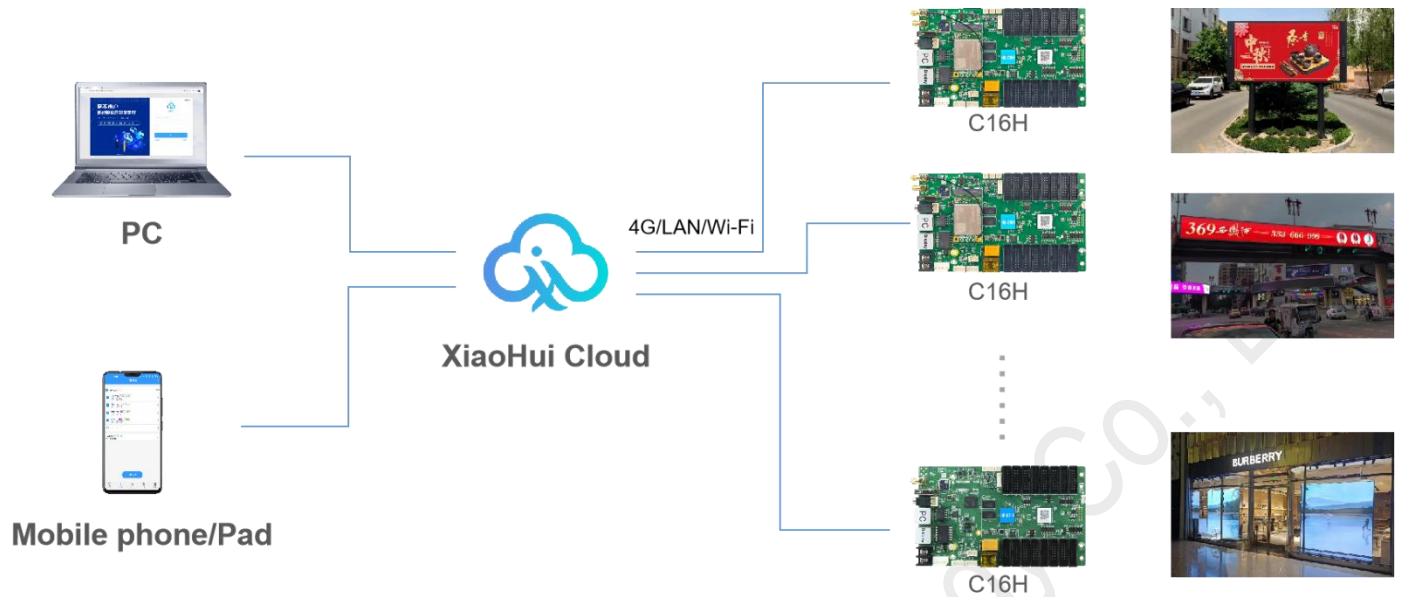
VP8	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
MPEG-2	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
MPEG-1	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
VC-1	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
Sorensen Spark	64×64 pixels to 1920×1088 pixels	60fps	60Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV
CAVS	64×64 pixels to 1920×1088 pixels	60fps	30Mbps	MP4 、 AVI 、 RMVB 、 FLV、 MKV、 MOV

5. Way of Communication

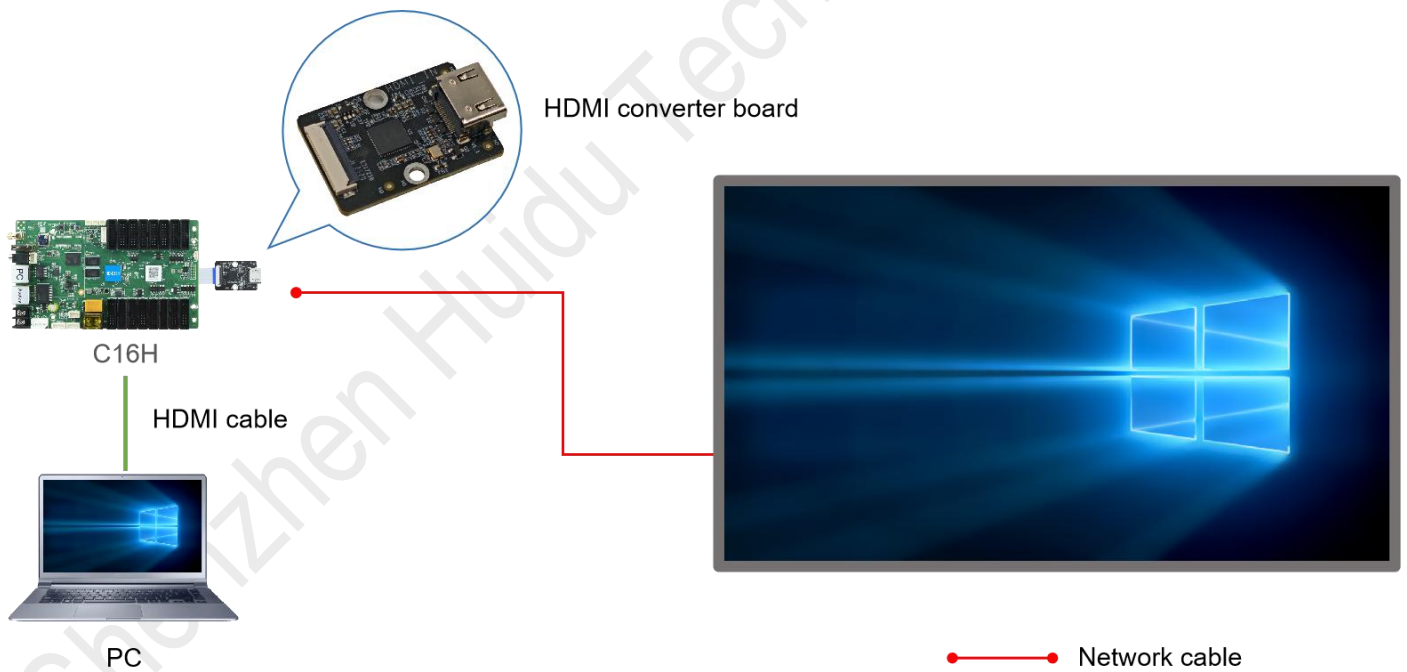
1. Stand-alone control, supports Wi-Fi, network port direct connection, and USB interface for communication.



2. Cluster control, supports Internet remote control.



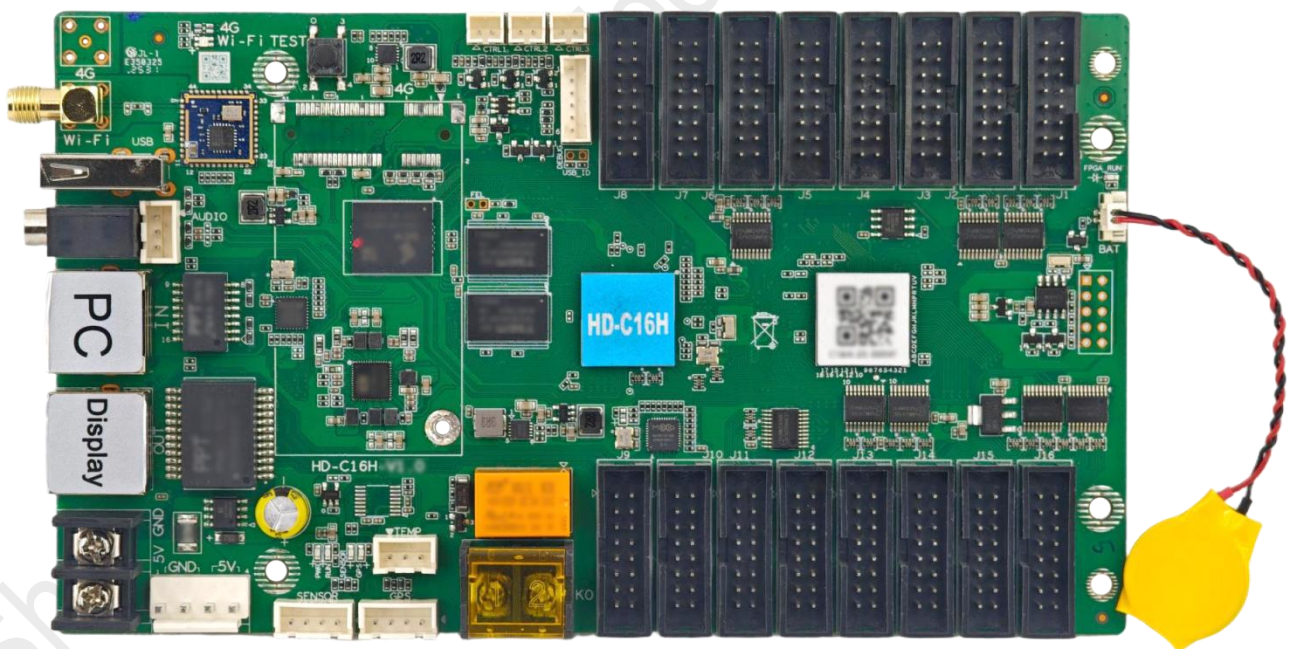
3. Synchronised control, synchronised playback via HDMI signal input.

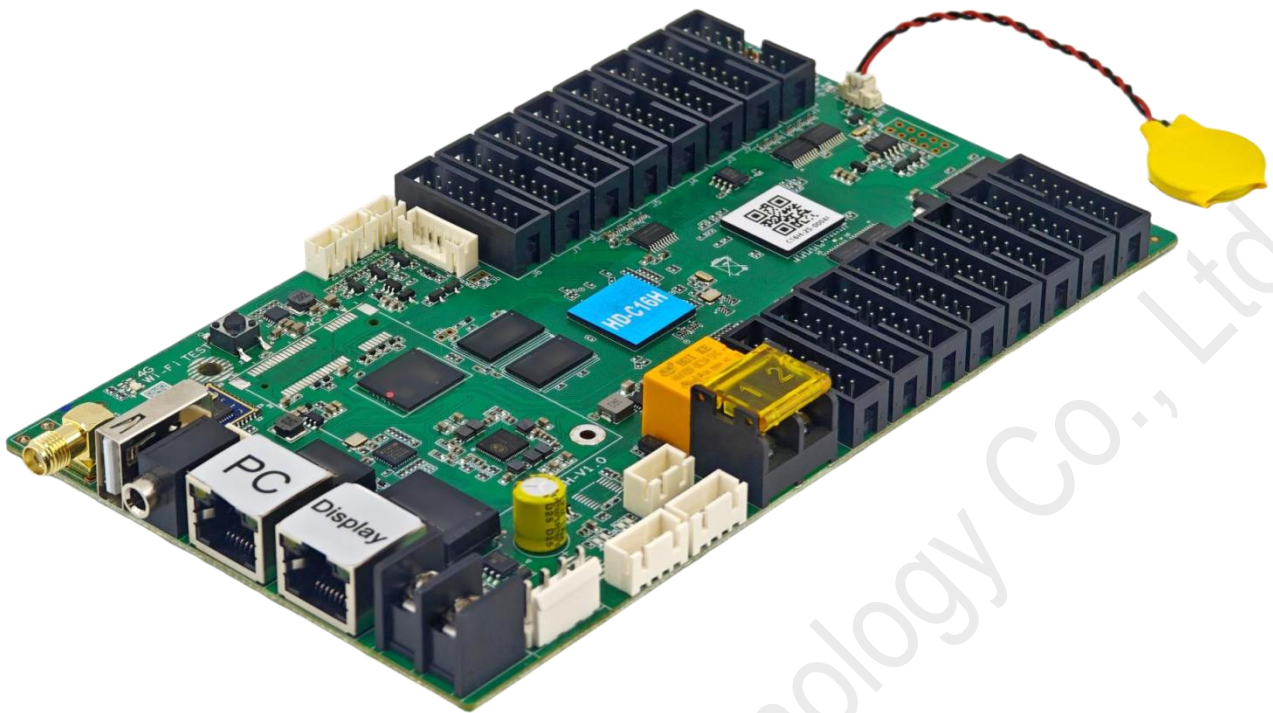


6. Supporting Software for the System

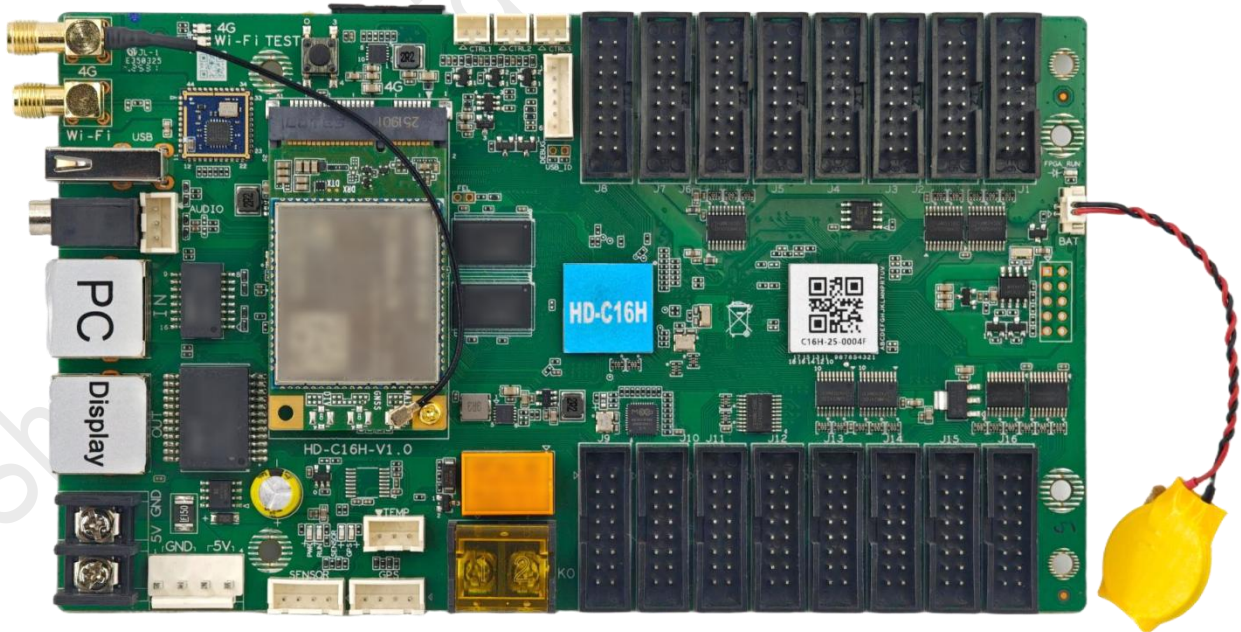
Name	Type	Description
HDPlayer	PC Client	Local management system for LED displays for debugging, program editing, program distribution, etc.
XiaoHui Cloud	Web Client	Cloud display information release system, through the browser login, to realize the LED display remote cluster management and information release and other functions.
LedArt	Mobile Client	Support Android, iOS, Harmony platforms, to realize the control of LED display and program wireless distribution and other functions.

7. Appearance





The following is the appearance of the optional 4G module



Illustrate:

Welcome to choose Huidu Technology products. There may be differences between the product pictures in the specification and the actual appearance (such as interface caps, antenna installation, etc.). Please refer to the actual product. If you have any questions, please contact technical support or salesperson for confirmation.