灰度科技
HUIDU TECHNOLOGY

# PRODUCT SPECIFICATION

Professional LED

Poster Screen Control System

# HD-B6L

Version：V1.3

**Updates:**

| Release version | Release time | Update Notes |
|---|---|---|
| V1.3 | Jun. 3, 2025 | Update the product dimensions |
| V1.2 | Nov. 28, 2024 | The maximum loading capacity of the height increased to 8192 pixels. |
| V1.1 | Oct. 24, 2024 | Added LED indicator board |
| V1.0 | May 30, 2024 | First release |

# 1. Overview

HD-B6L (B6L for short) is a multimedia control card for LED poster screens. It comes with HDMI input and output as standard, and supports HDMI splicing display. It also supports playing videos, pictures, Gif animations, text, WPS documents, tables, clocks, timing and other program contents.

B6L comes with Wi-Fi as standard, and supports wireless control via the mobile phone APP "LedArt". It supports remote cluster management and power control via the Internet; it supports USB interface to update/play programs. It supports synchronous playback of HDMI signals. It supports external connection of various environmental monitoring sensors to realize real-time viewing of environmental monitoring data. It is widely used in display fields such as mobile poster screens, mirror screens, and splicing screens.

# 2. Features

**Input:**

1. Support 1 Gigabit input network port for debugging parameters, sending programs and accessing the Internet;
2. Support 1 HDMI input interface, support automatic zooming of synchronous images, and support synchronous and asynchronous picture-in-picture functions;
3. Support 1 USB communication interface for updating programs and expanding capacity;
4. Support 2 dedicated sensor interfaces for external environmental monitoring sensors or GPS, etc.

**Output:**

1. Standard 2 Gigabit output network ports, Cascade with receiving card to realize display screen loading.
2. The maximum control range of Single B6L is 130W pixels, supports a maximum width of 16,384 pixels or a maximum high of 8,192 pixels, and the cascade splicing can reach 260W pixels(for Multiple B6L);
3. 1 TRS 3.5mm and 1 4PIN standard two-channel audio output;
4. 1 HDMI signal output for cascade splicing, supporting up to 10 levels.

**Function:**

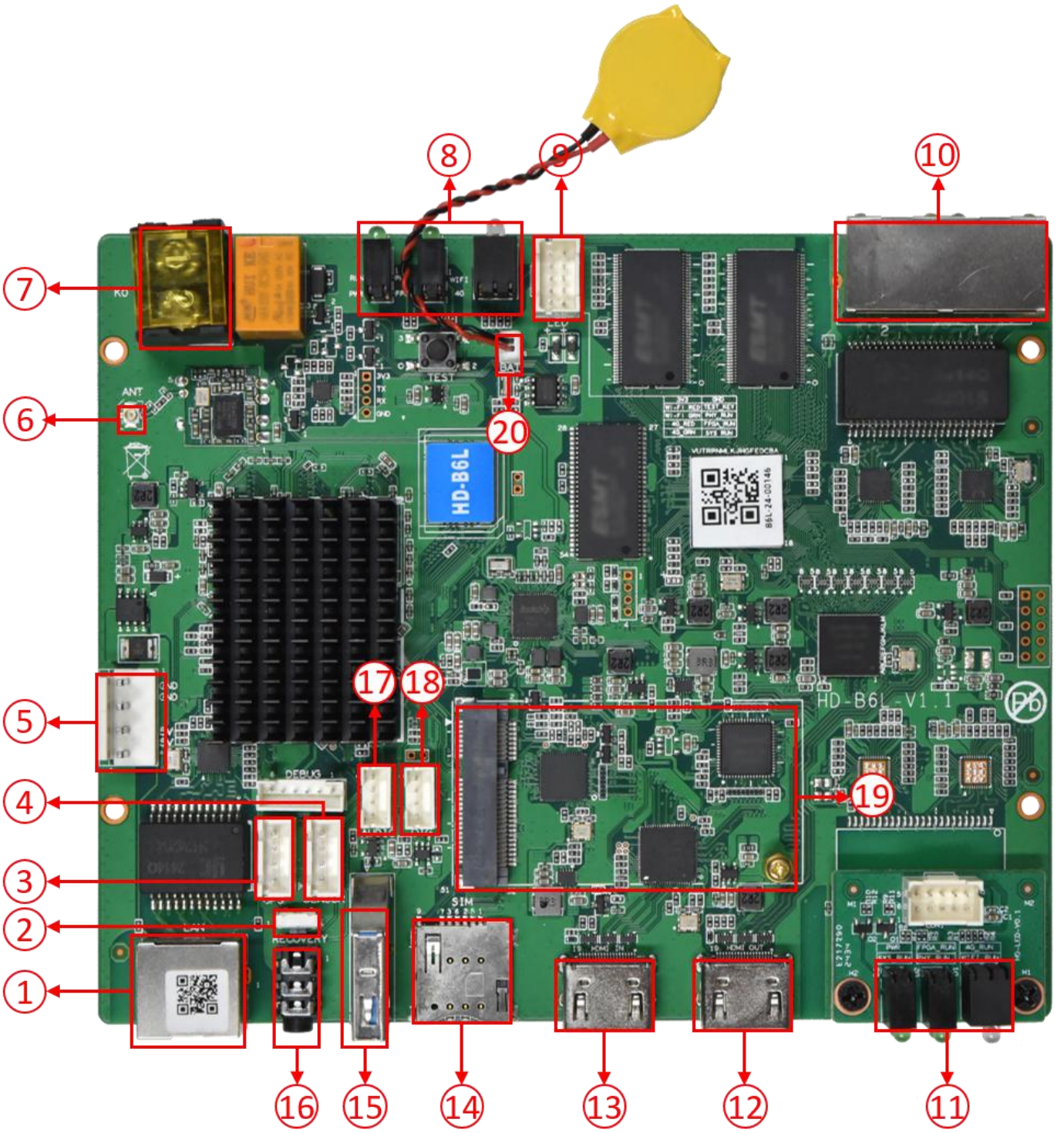
1. Standard 2.4GHz Wi-Fi, supports mobile phone APP wireless control (supports Wi-Fi AP, Wi-Fi STA mode);
2. Onboard 1 relay for remote power control;
3. Support multi-channel video window playback (support up to 2 channels of 4K or 6 channels of 1080P or 10 channels of 720P or 20 channels of 360P);

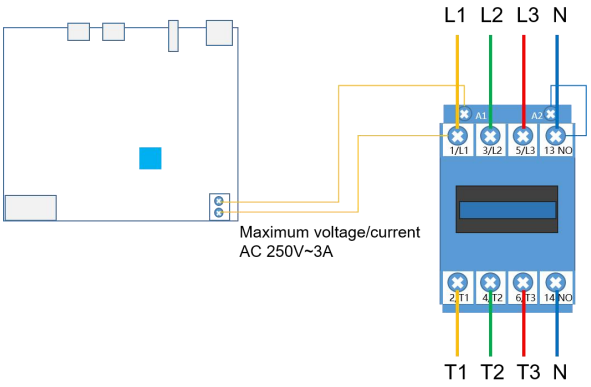
4. Support 4G access to XiaoHui Cloud Platform to achieve Internet remote cluster management (optional);

5. The cascade state supports the basic parameters, connection relationship and brightness parameters of the secondary screen synchronization receiving card of the main screen;

6. Support synchronous playback, asynchronous playback and synchronous and asynchronous mixed playback.

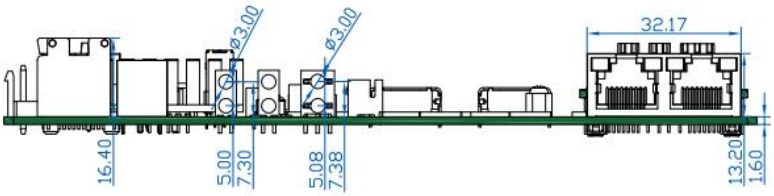
## 3. Interface Description

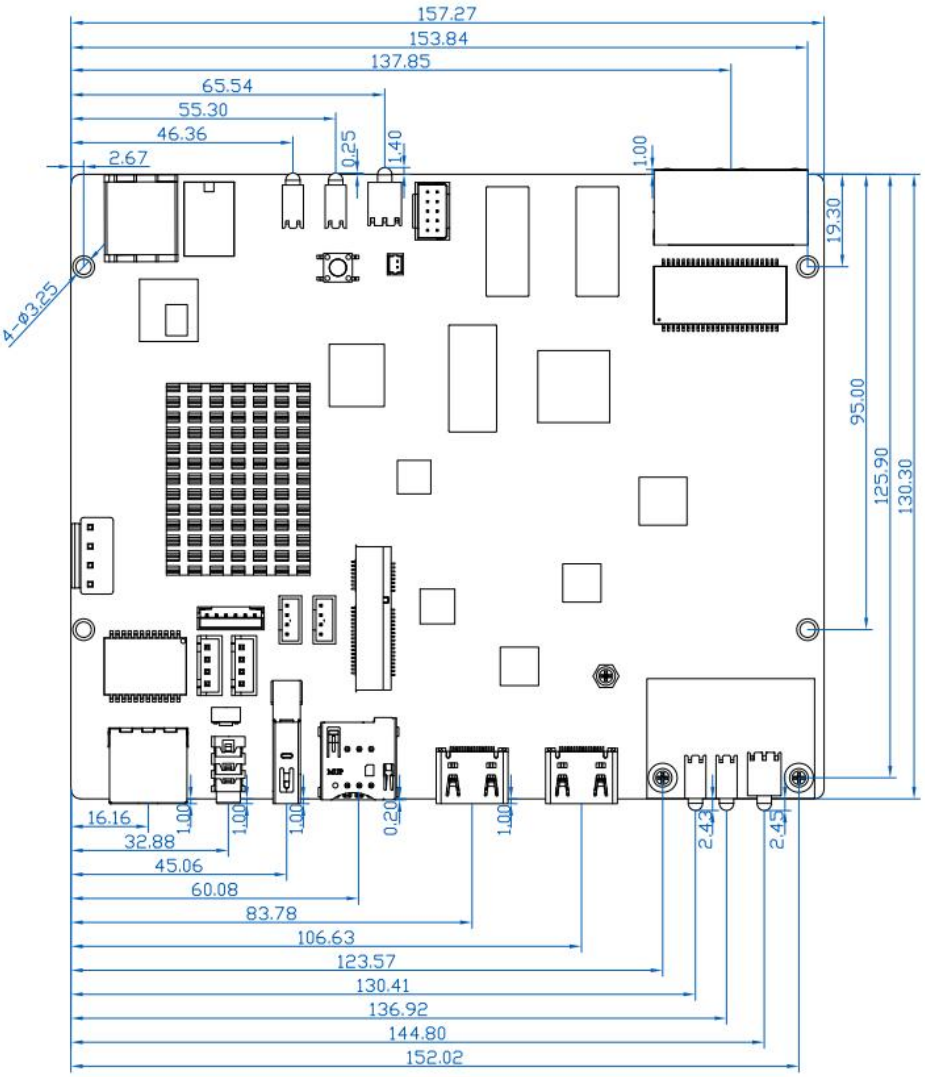


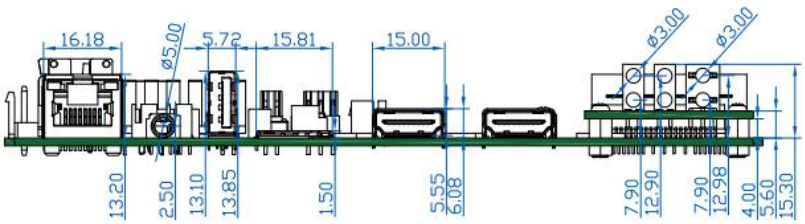
| Number | Name | Description |
|---|---|---|
| 1 | Ethernet port | Gigabit input network port communication, and is used for Configuration, sending programs and accessing the Internet. |
| 2 | Reset button | Reset pinhole button, power off and restart device, long press button to restore the initial parameters. |
| 3 | Sensor interface | External temperature, humidity, brightness, wind speed, wind direction, noise, PM2.5, PM10, $CO_2$ and other sensors. |
| 4 | GPS Interface | Connect a GPS module for positioning and time calibration. |
| 5 | Power seat | 5V DC input interface. |
| 6 | Wi-Fi antenna interface | Wi-Fi dedicated interface, connect the Wi-Fi antenna to enhance the wireless signal. |
| 7 | Relay | Relay on/off, supports maximum load: AC 250V~3A or DC 30V~3A.<br>Connection method is as follows:<br>  |
| 8 | Indicator lights | **PWR**: Power indicator light, green light is always on, power input is normal.<br>RUN: System operation light, green light flashes, operating system is running normally; green light is always on or off, system is running abnormally.<br>**DISP**: Display indicator light, green light flashes, FPGA system is running normally; green light is always on or off, system is running abnormally.<br>**Wi-Fi**: Wireless indicator light<br>A. In AP mode, green light flashes to indicate normal; red light flashes to indicate abnormality;<br>B. In STA mode, green light is always on to indicate normal; red light flashes to indicate abnormality; yellow light is always on to indicate failure to connect to the server.<br>**4G**: 4G network indicator light<br>A. Green light always on means: connection to cloud server is successful;<br>B. Yellow light always on means: cannot connect to cloud service;<br>C. Red light always on means: no signal or SIM card is in arrears or cannot dial;<br>D. Red light flashing means: SIM card cannot be detected;<br>E**:** No light on means: 4G module cannot be detected without LAN port cable |

| | | |
|---|---|---|
| | | connection. |
| 9 | Indicator light external interface | 10PIN external extension interface. |
| 10 | Output network port | Gigabit output network port, cascaded with receiving card. |
| 11 | LED indicator board | Connect to serial number 9 via the light board cable (below) to synchronize the indicator status.  |
| 12 | HDMI output | HDMI1.4b output interface. |
| 13 | HDMI input | HDMI1.4b synchronous signal input interface, supports adaptive scaling. |
| 14 | SIM card slot | Micro SIM card slot, insert a SIM card to provide 4G networking, and remote control can be achieved through XiaoHui Cloud Platform (optional 4G module required). |
| 15 | USB interface | USB3.0, used for updating programs, insert programs or expanding capacity. |
| 16 | TRS audio output | TRS 3.5mm standard dual-channel audio output port. |
| 17 | 4PIN audio output | Reserved 4PIN dual-channel audio output interface. |
| 18 | OTG interface | Used for debugging. |
| 19 | PCIE-4G seat | 4G module holder (optional function, installed with 4G antenna by default). |
| 20 | Battery interface | Connect 2PIN RTC battery. |

# 4. Product Size




Tolerance: ±0.3, Unit: mm

# 5. Product Specifications

**1.Basic parameters：**

| | | |
|---|---|---|
| **Electrical parameters** | Input power | DC 5V（4.6V~5.5V） |
| | Maximum power consumption | 18W |
| **Storage** | Running memory | 2GB |
| | Internal storage | 16GB |
| **Storage environment** | Temperature | -40℃～80℃ |
| | Humidity | 0%RH～80%RH(No condensation) |
| **Work environment** | Temperature | -40℃～70℃ |
| | Humidity | 0%RH～80%RH(No condensation) |
| **Packaging information** | List：<br>● 1×B6L；<br>● 1×HDMI Cable；<br>● 1×WiFi Antenna；<br>● 1×Certificate of conformity；<br>● Note: 4G antenna is optional with 4G module | |
| **Size** | 157mm×130mm | |
| **Net weight** | 0.16kg | |

| | |
|---|---|
| **Protection level** | Please pay attention to waterproofing, such as preventing water from dripping into the product, and do not get the product wet or rinse it |
| **System software** | Android 11.0 operating system software<br>Android terminal application software<br>FPGA software |

**2. Image decoding specifications:**

| Category | Decoding | Size | Format | Note |
|---|---|---|---|---|
| JPEG | JFIF file fommat 1.02 | 96x32piels to 817×8176 pixels | JPG、JPEG | Does not support non-interlaced scanning, supports SRGB JPEG, supports AdobeRGB JPEG |
| BMP | BMP | Unlimited | BMP | NA |
| GIF | GIF | Unlimited | GIF | NA |
| PNG | PNG | Unlimited | PNG | NA |
| WEBP | WEBP | Unlimited | WEBP | NA |

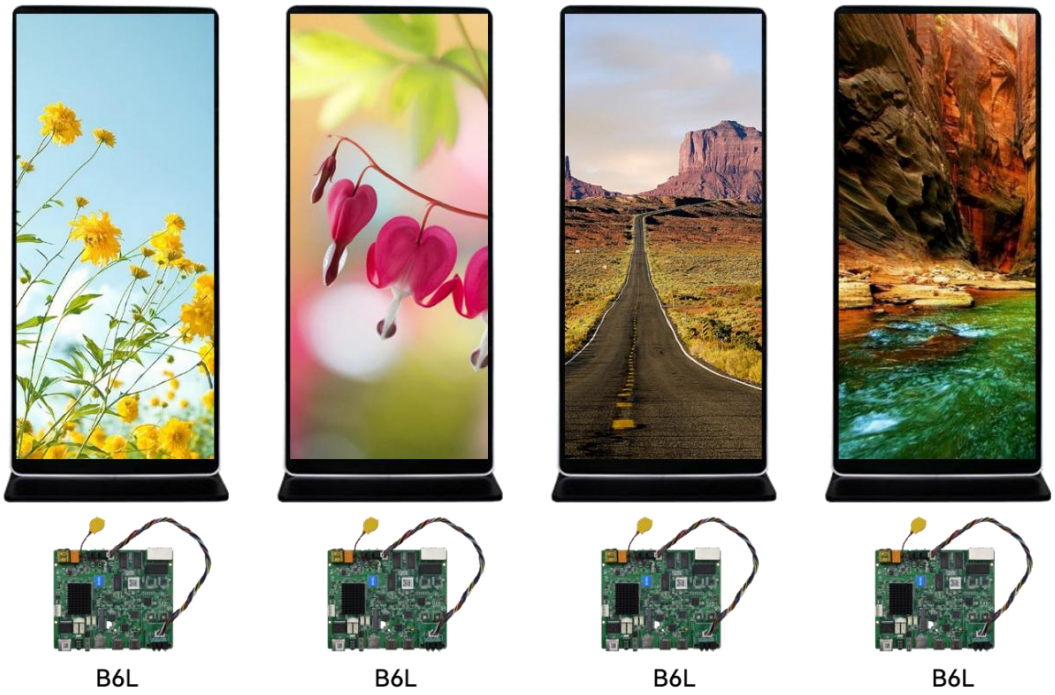
**3. Video decoding specifications**

| Category | Decoding | Resolution | Maximum frame rate | Maximum bit rate | Format | Note |
|---|---|---|---|---|---|---|
| MPEG-1/2 | MPEG-1/2 | 48×48 pixels to 1920×1088 pixels | 30fps | 80Mbps | DAT、MPG、VOB、TS | Support Field Coding |

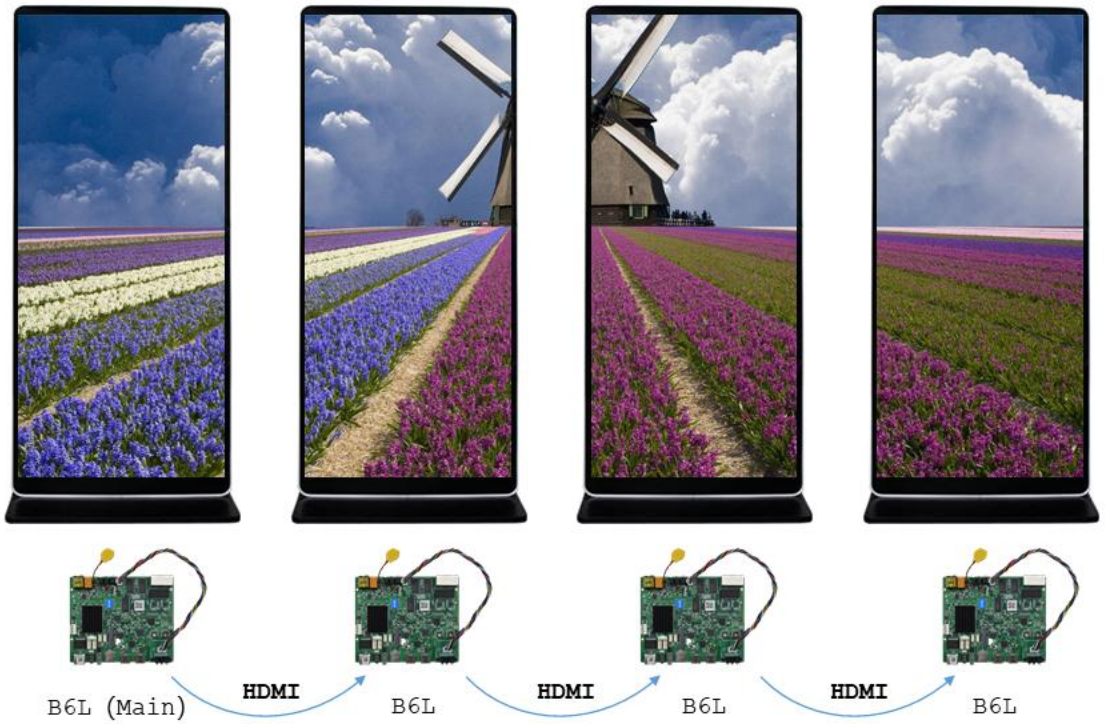
| | | | | | | |
|---|---|---|---|---|---|---|
| MPEG-4 | MPEG-4 | 48×48 pixels to 1920×1088 pixels | 30fps | 38.4Mbps | AVI、MKV、MP4、MOV、3GP | Not Support MS、MPEG4 v1/v2/v3、GMC |
| H.264/AVC | H.264 | 48×48 pixels to 4096×2304 pixels | 2304P@60fps | 80Mbps | AVI、MKV、MP4、MOV、3GP、TS、FLV | Support Field Coding、MBAFF |
| MVC | H.264 MVC | 48×48 pixels to 4096×2304 pixels | 2304P@60fps | 100Mbps | MKV 、TS | Only Support Stereo High Profile |
| H.265/HEVC | H.265/HEVC | 64×64 pixels to 4096×2304 pixels | 2304P@60fps | 100Mbps | MKV 、MP4、MOV 、TS | Support Main Profile、 Tile & Slice |
| GOOGLE VP8 | VP8 | 48×48 pixels to 1920×1088 pixels | 30fps | 38.4Mbps | WEBM 、MKV | NA |
| GOOGLE VP9 | VP9 | 64×64 pixels to 4096×2304 pixels | 60fps | 80Mbps | WEBM 、MKV | NA |
| H.263 | H.263 | SQCIF(128×96) QCIF(176×144) CIF(352×288) 4CIF(704×576) | 30fps | 38.4Mbps | 3GP、MOV、MP4 | 不支持 H.263+ |
| VC-1 | VC-1 | 48×48 pixels to 1920×1088 pixels | 30fps | 45Mbps | WMV、ASF、TS、MKV、AVI | NA |
| MOTION JPEG | MJPEG | 48×48 pixels to 1920×1088 pixels | 60fps | 60Mbps | AVI | NA |

# 6. Poster Screen Application

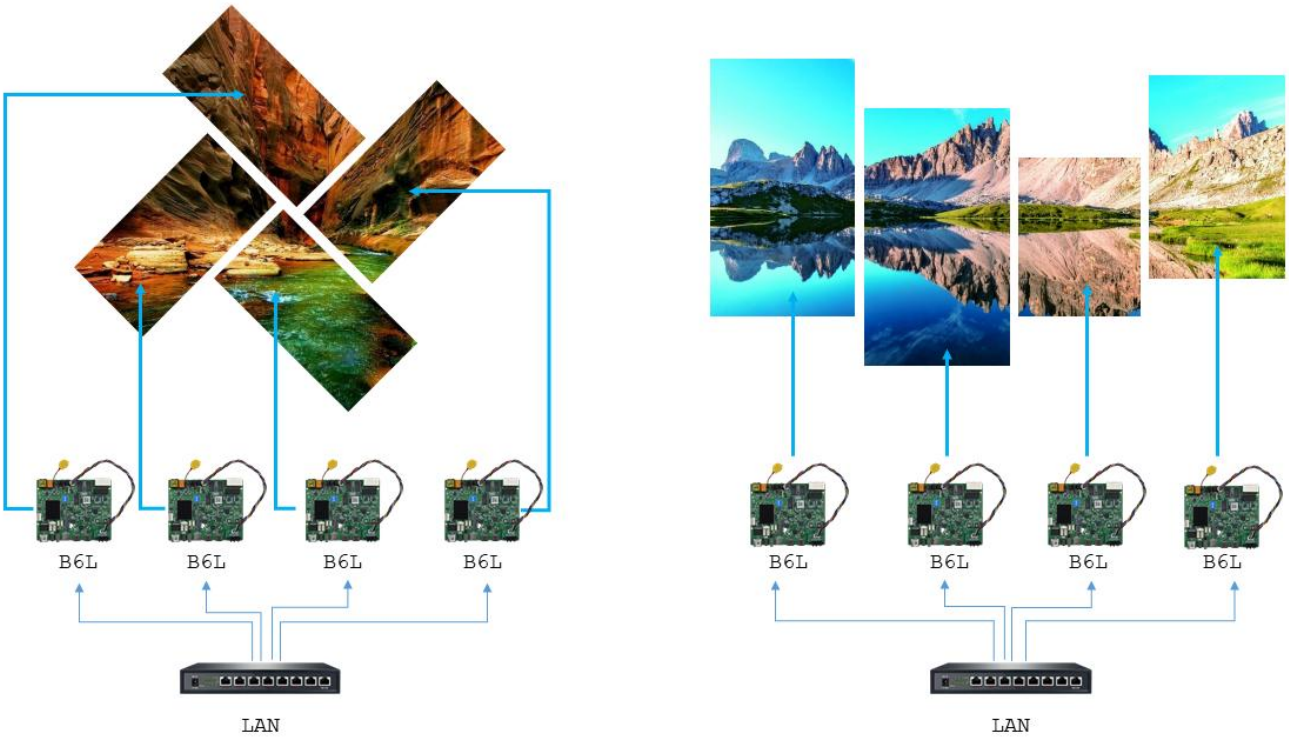
1. **Display independently**: Each display screen is independent and plays independently without interfering with each other.




2. **Spliced display**: With HDMI high-definition cable connected to put the contents of multiple display screens into a whole picture.



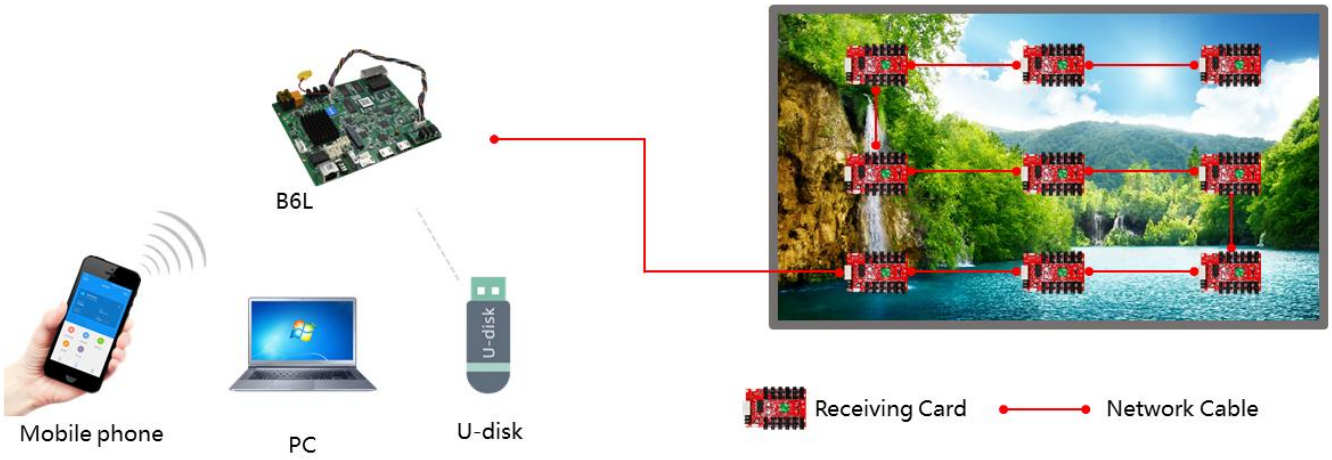
3. **Creative display**: supports 360° free splicing of multiple displays with different resolutions in any direction.



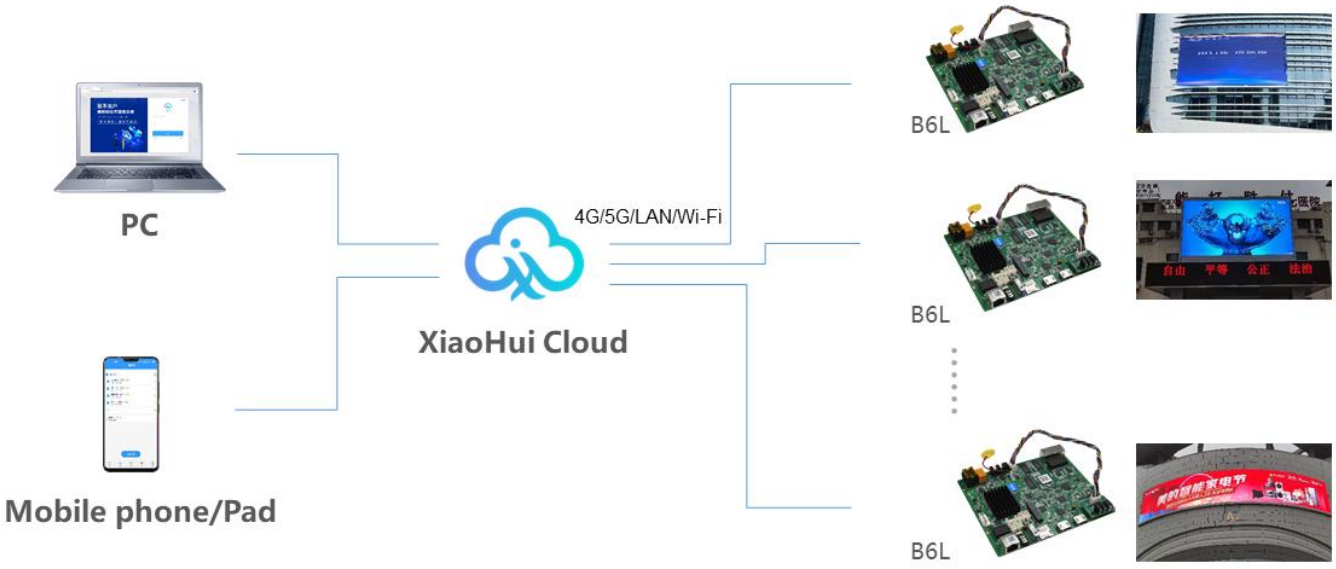

4. **Multi-screen synchronization display** : Multiple independent displays synchronously display the same image at the same time.

# 7. Communication Methods

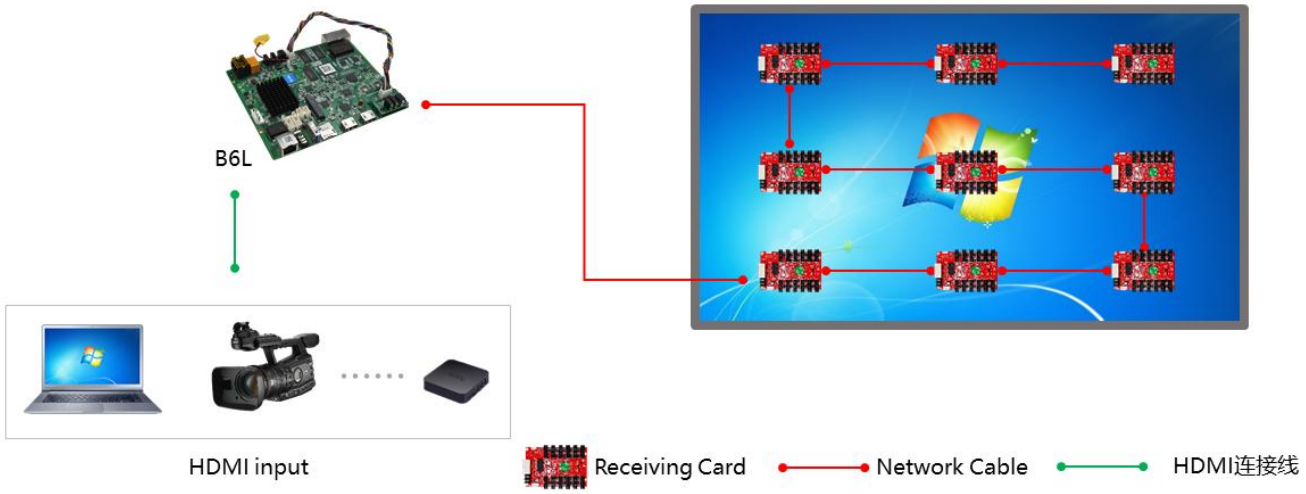
1. Stand-alone control, supports Wi-Fi, network port direct connection, and USB interface for communication.




2. Cluster control, support Internet remote control.



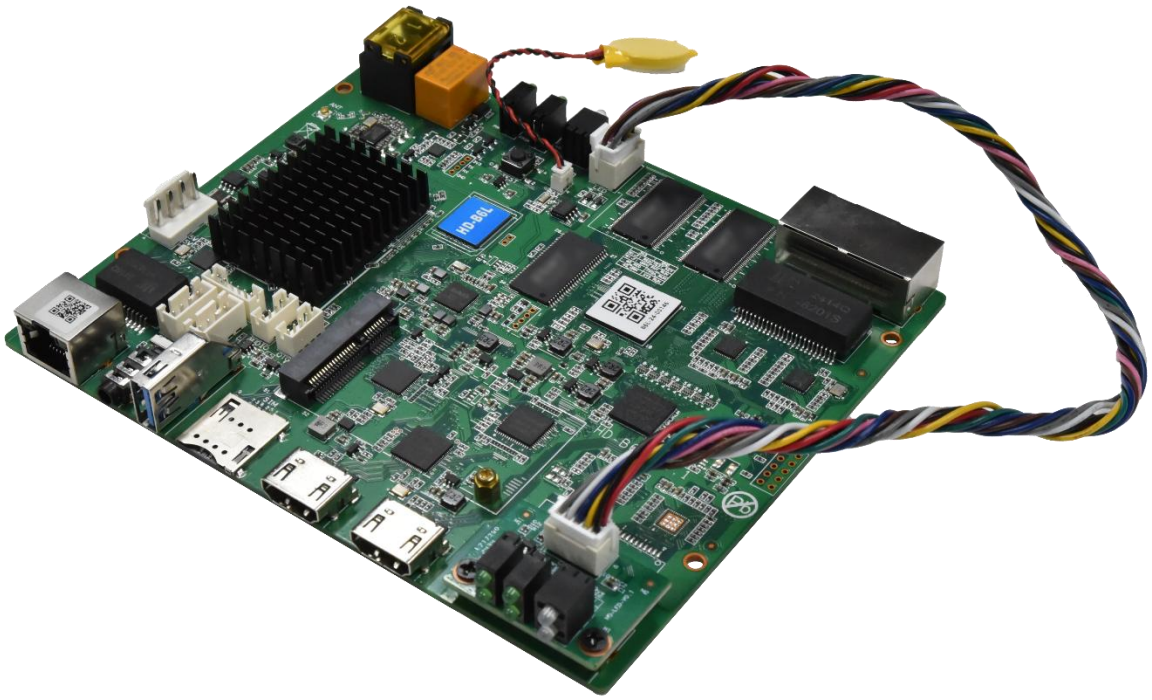
3. Synchronous control, synchronous playback via HDMI signal input.

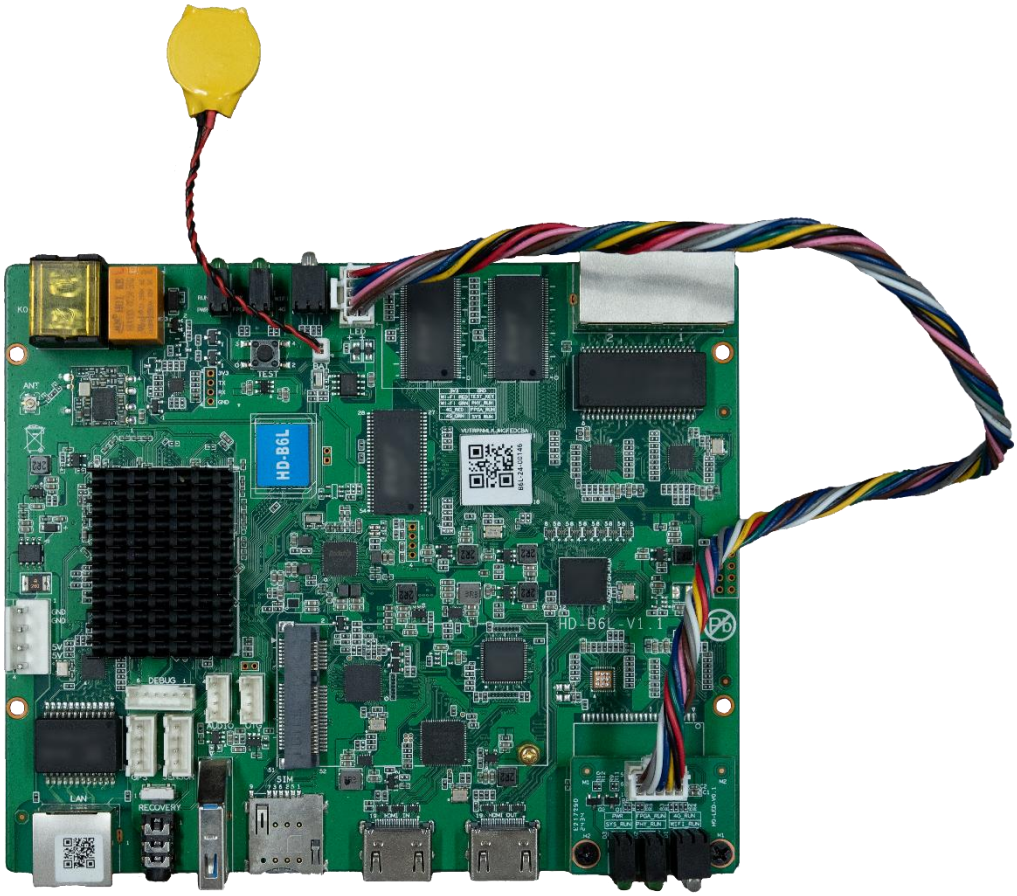



## 8. System Supporting Software

| Name | Type | Description |
|---|---|---|
| HDPlayer | PC | Local display screen management system, used for configuring, program editing, program publishing, etc. |
| Xiaohui Cloud | Web | Cloud display information release system, log in through the browser, realize LED display remote cluster management and information release functions |
| LEDArt | Mobile APP | Supports Android, IOS, and Harmony platforms to realize the control of LED display screens and wireless program publishing. |

# 9. Attachment: Product Appearance



**Declaration:**



Due to factors such as production batches, production processes, and function upgrades, our company will appropriately adjust and revise relevant pictures, text descriptions, product parameters and other related contents. In the event of the above circumstances, no further notice will be given. The product pictures in the specification are for reference only. Please refer to the actual product.