C-Power New X1 Card
Hardware Manual

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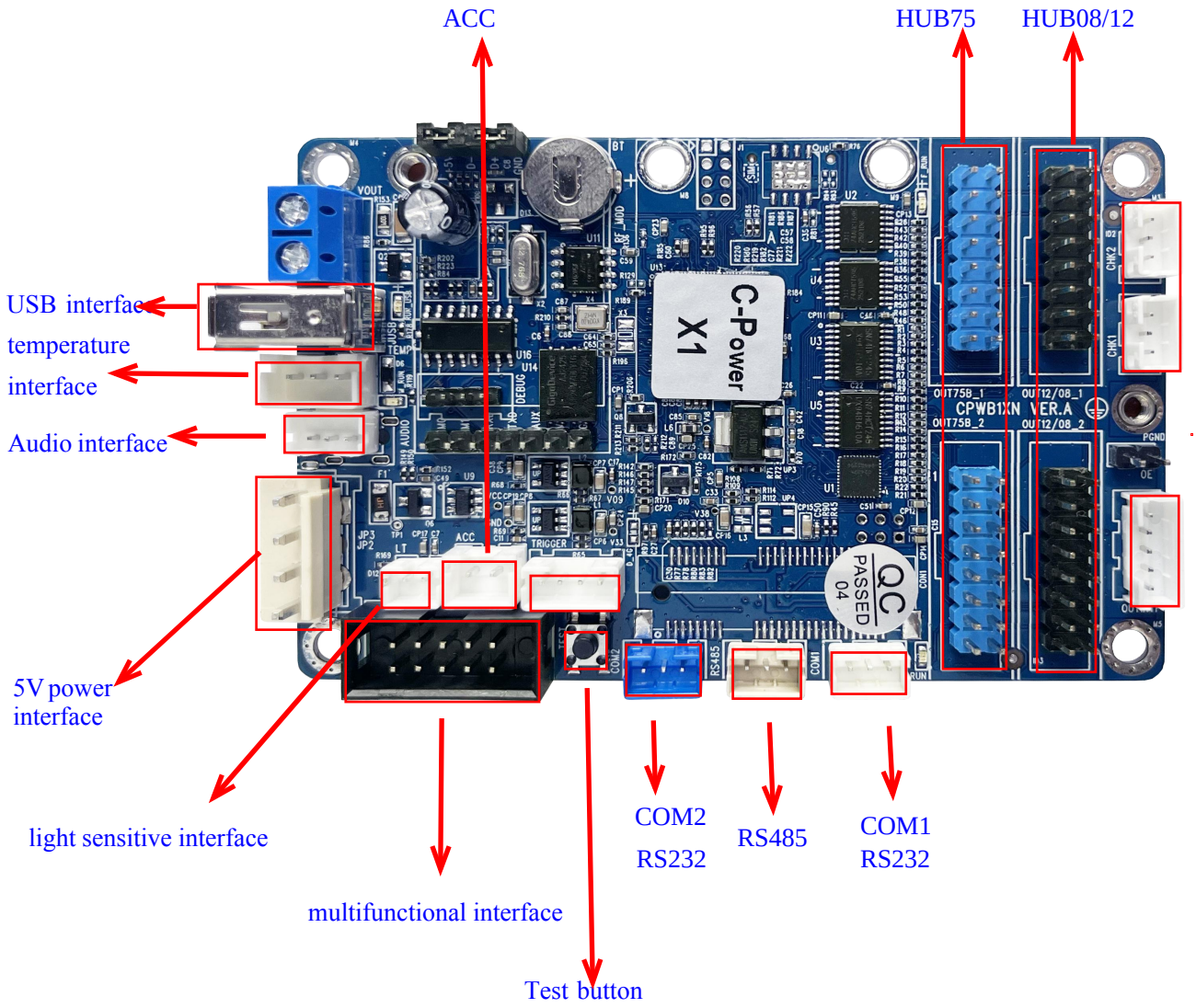
I. Control Card Image



II. Control Card Interface

1、 Power Interface

- +5V DC power supply interface

  Operating current: 300～600mA

  Working environment: in accordance with GB/T 2423.25 and GB/T 2423.26

- Power supply anti-reverse connection: The single board automatically protects against reverse power input.
- Soft start: The power plane of the board will not be impacted when power is supplied.
- Overvoltage protection: When the input voltage exceeds 6V, the board automatically cuts off the power supply.
- Undervoltage protection: The board automatically cuts off the power supply when the input voltage drops below 3.5V.
- Short-circuit self-recovery: When the 5V output interface of the control card is short-circuited, the self-recovery fuse automatica-lly cuts off the power supply for protection. After the short circuit is resolved and normal operation resumes, the control card can automatically return to normal operation.

2、 Display Interface

[OUT1-4]: Two standard HUB75 and two HUB08/12 interface outputs

3、 Functional Extension Interface

Standard 10-pin expansion function interface

Pin definition diagram:

Signal name	Pin number	Pin number	Signal name
Analog signal input pin	1	2	+5V power output pin
Multifunctional digital signal pin 1	3	4	+5V power output pin
Multifunctional Digital Signal Pin 2	5	6	GND
Multifunctional digital signal pin 3	7	8	GND
Screen power switch control	9	10	GND

function declaration ：

Pin number	Signal name	Function declaration
1	Analog signal input pin	Supports external analog signal inputs for monitoring, with standard optical sensor input pins.
3	Multifunctional Digital Interface 1	Input or output foot, standard remote control input
5	Multifunctional Digital Interface 2	Input or output foot, reserved
7	Multifunctional Digital Interface 3	Input or output foot
9	Screen power switch control	The external circuit is directly driven to control the power supply of the screen, which requires an external relay to achieve this function.
2、4	+5V power output pin	Power the external attachment
6、8、10	GND	Ground pin connected to external accessory

4、 Communication Interface

1) U Tray

The remote control supports updating programs via USB flash drives and comes with a standard USB port.

2) Gorge Line

Serial port cable description

	Control card signal name	Interface foot	COM port pin (DB9 interface)
1	TX1	1	2
2	RX1	2	3
3	GND	3	5

Table 1 Connection Mode With RS232

	Control card signal name	Interface pin	485 converter interface
1	A	1	485+
2	B	2	485-
3	GND	3	GND

Table 2 Connection Mode With RS485

III. Parameter Settings

C-Power control cards support most indoor and outdoor LED displays available on the market. Since each display has distinct application scenarios, LED driver chip selection, PCB design, and wiring differ, requiring parameter settings on the control card to match different LED display panels. Additionally, different communication methods require specific configurations.

1、 Parameter Settings and Steps

Click 'Tools'> 'LedTool Setup Tool' in the LedCenterM software menu bar to access the setup interface.

2、 Detailed Parameter Description

A、 Communicational Parameter

Serial communication parameters: Serial port number, baud rate.

Note: These parameters must match the software settings.

B、 Basic Parameters of the Display Screen

Disabling: In the scanning version, to prevent signal serialization during line switching that may cause faint serial images on the screen, the screen can be turned off during the line switching process. This action is called

For "stamping".

- Different chips have different requirements for shadow elimination. Some chips have good shadow elimination effect in front of LD signal, while others have good shadow elimination effect in back of LD signal.
- Cancelling will reduce screen brightness and delay normal display.
- The static screen does not need to eliminate the shadow because there is no serial phenomenon.

Column adjustment: The direction of signal lines across the entire display. From the front of the screen, positive signals enter from the right side, while negative signals enter from the left side. If this parameter is set incorrectly, the left and right images will appear inverted.

OE signal polarity: The polarity of the screen enable signal, which is related to circuit design. When this parameter is set correctly, the highest brightness level (31) displays the brightest, and the lowest level (0) displays the darkest or a black screen. If the setting is incorrect, the brightness control will be reversed.

Row sequence adjustment: During PCB design, the scanned screen may not follow the standard 1-31 row sequence for wiring convenience. This parameter compensates for row sequence displacement in unit modules.

Adapter type: An adapter is added to the base plate to accommodate different requirements. There are three configurations: no adapter, full-color adapter, and single/double-color adapter.

C、 Scanning Parameters

Gray scale options: This setting allows more diverse color display. The display supports 64k,4096,1024, and 256 gray levels.

Refresh modes: There are three refresh modes: default refresh, standard refresh, and high refresh. High refresh has the highest refresh rate, while standard refresh has the lowest.

Scan mode: Determined by the number of lines in time-division multiplexing displayed on the screen. Display scan

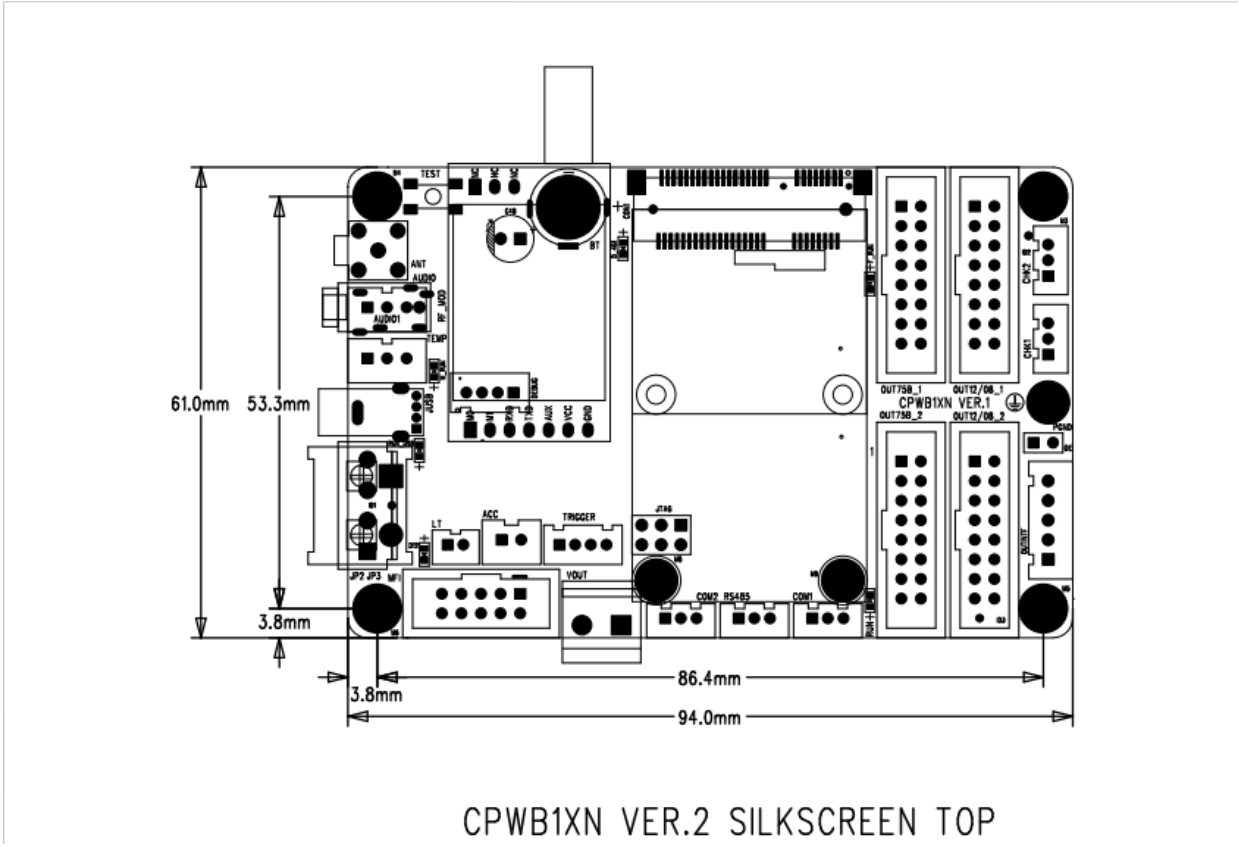
The scan pattern size cannot exceed the unit module size. For example, a screen with a unit module size of 16 lines may be scanned in modes such as 1/16,1/8, 1/4, 1/2, or static. A screen with a module size of 8 lines may be scanned in modes such as 1/8, 1/4, or 1/2, but not 1/16.

Unit module size: This term refers to a signal line-controlled area, typically measured by height with width being configurable for cascading. For example, a 1/16-inch LED screen module with 16 rows of signal lines has a unit module size of 16 rows. In practical LED modules, if the input/output interface has only one signal line, the unit module size equals the module height. If the LED module has two or more signal line groups (e.g., R1/G1/B1/R2/G2/B2), the unit module size is divided by the number of signal line groups. For instance, a 16-row pixel LED screen module with six input signal lines (R1/G1/B1/R2/G2/B2) and two R/G/B signal lines has an unit module size of 8 rows.

D、 **Other Settings**

Gamma setting: When displaying grayscale images, different program sources and display panels require different gamma values for each color to achieve better visual effects and clearer images.

Auto screen off and brightness control: Set automatic display tasks. Customers can also

In the Settings menu of the LedCenterM software, you can configure the On/Off Screen and Brightness Adjustment options.

IV. Dimension Diagram