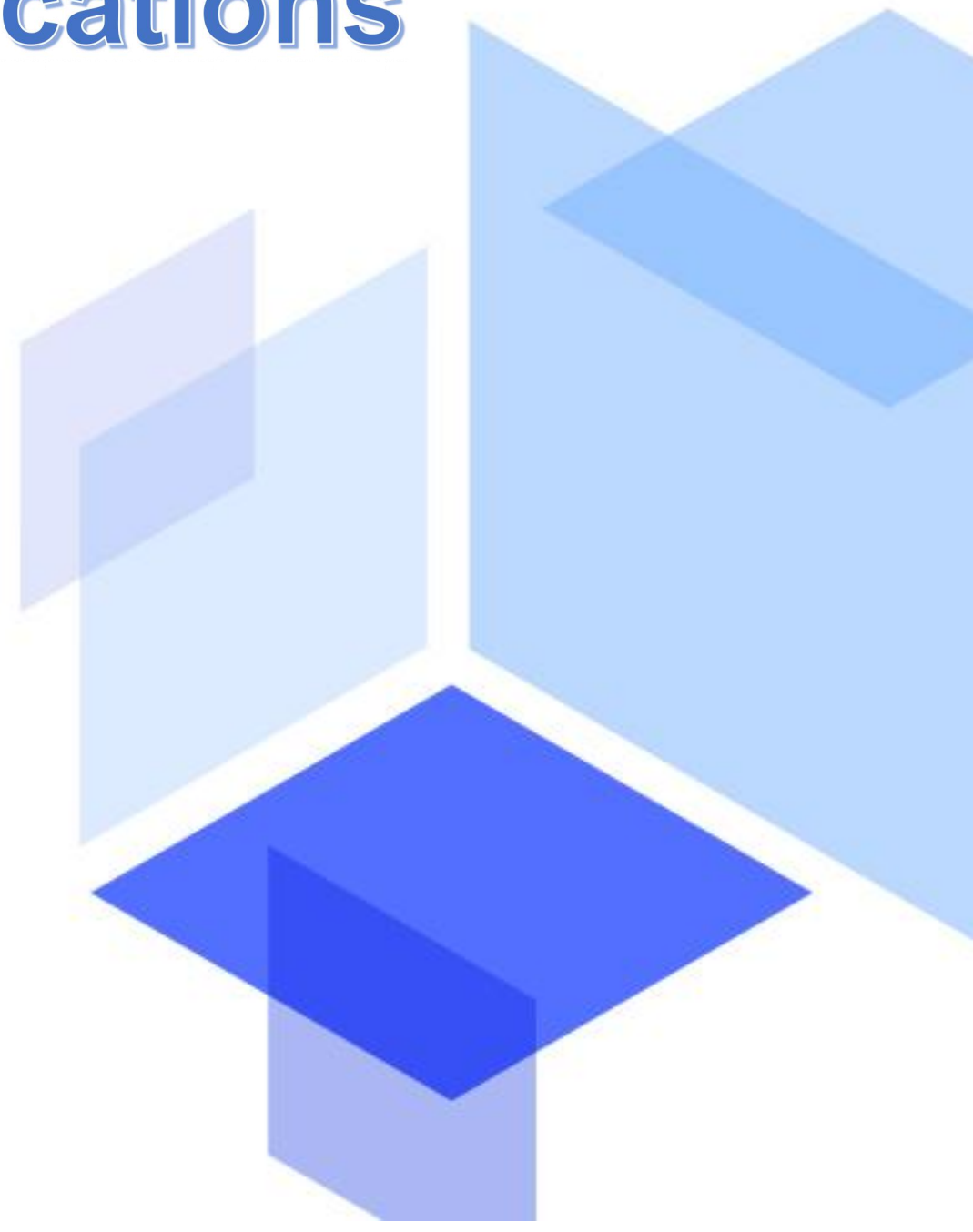
灰度科技
HUIDU TECHNOLOGY

Product Specifications

Receiving Card

HD-R3210



V1.0

Update History

Release version	Release Time	Update Notes
V1.0	October 15, 2025	First official release.

1. Overview

R3210 is an LED display receiving card that supports both synchronous and asynchronous control systems. It has 10 standard HUB 320F interfaces onboard, offers good stability, supports 40 groups of RGB parallel data or 120 groups of serial data , and has a large load capacity up to 260,000 pixels.

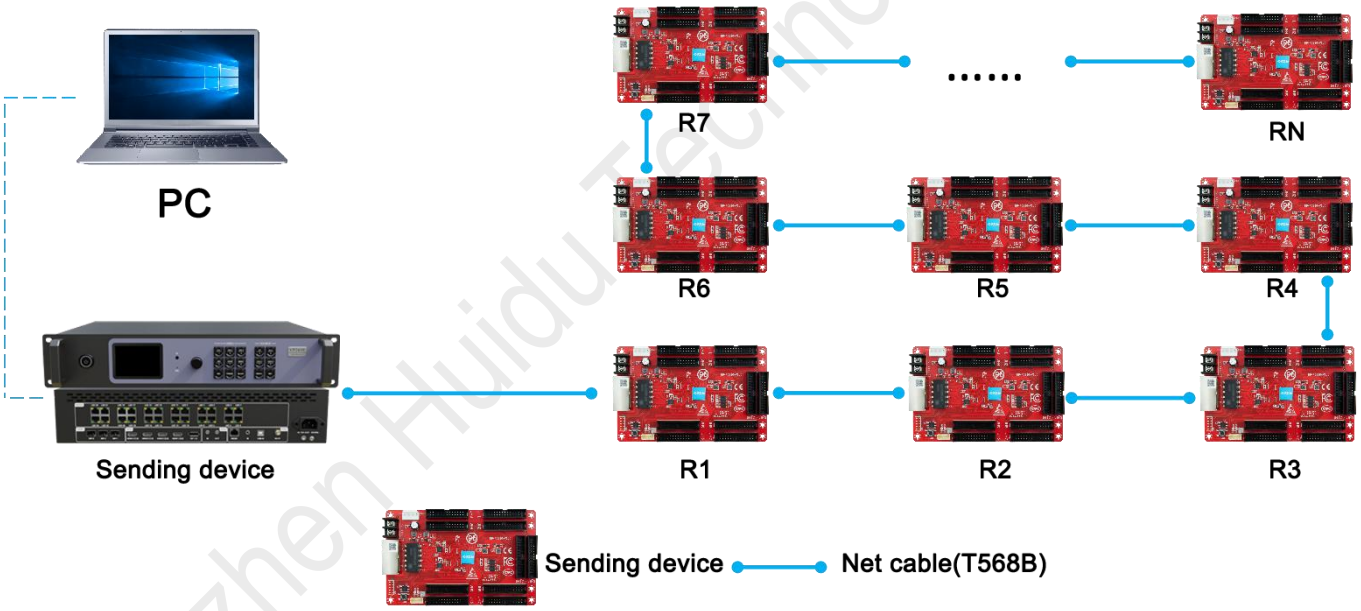
2. Parameter table

Function items	parameter
Supported sending types	Dual-mode sending box, Asynchronous sending card, Synchronous sending card, Video processor of VP series.
Supported modules	Compatible with all common IC module, supported most PWM IC module.
Scanning method	Supports any scanning mode from static to 1/128 scan , supports point extraction and empty point setting Note: 138 series decoding does not support 1/8 scan or above (138, 5166, 5266, 2012, 2013, 7258, 32019)
Communication method	Gigabit Ethernet
Control range	Maximum loading capacity: 512*512@60Hz P1.25 modules*8, ≥P1.5 modules*10 Note: The actual load capacity is related to the number of interfaces / module resolution.
Multi-card connection	Receiving cards can be arranged in any order, synchronized in nanoseconds
Grayscale	Support 256~65536 levels
Smart Settings	A few simple steps to complete the smart settings, through the screen layout can be set to go with any alignment of the screen unit board
Test function	Receiving card integrated screen test function, Test display brightness uniformity and display module flatness
Communication distance	Super Cat5, Cat6 network cable within 80 meters
90 degree image rotation	The screen support rotate in multiples of 90 degrees (0/90/180/270 degrees)
Point-by-point correction	Cooperating with the grayscale correction system, it supports point-by-point brightness and color correction, as well as light and dark line adjustment/seams repair, etc.
RGB independent gamma adjustment	By adjusting the gamma values of " R ", " G ", and " B " , problems such as uneven low gray and inaccurate white balance of the display screen can be solved , thus improving the realism of the picture.

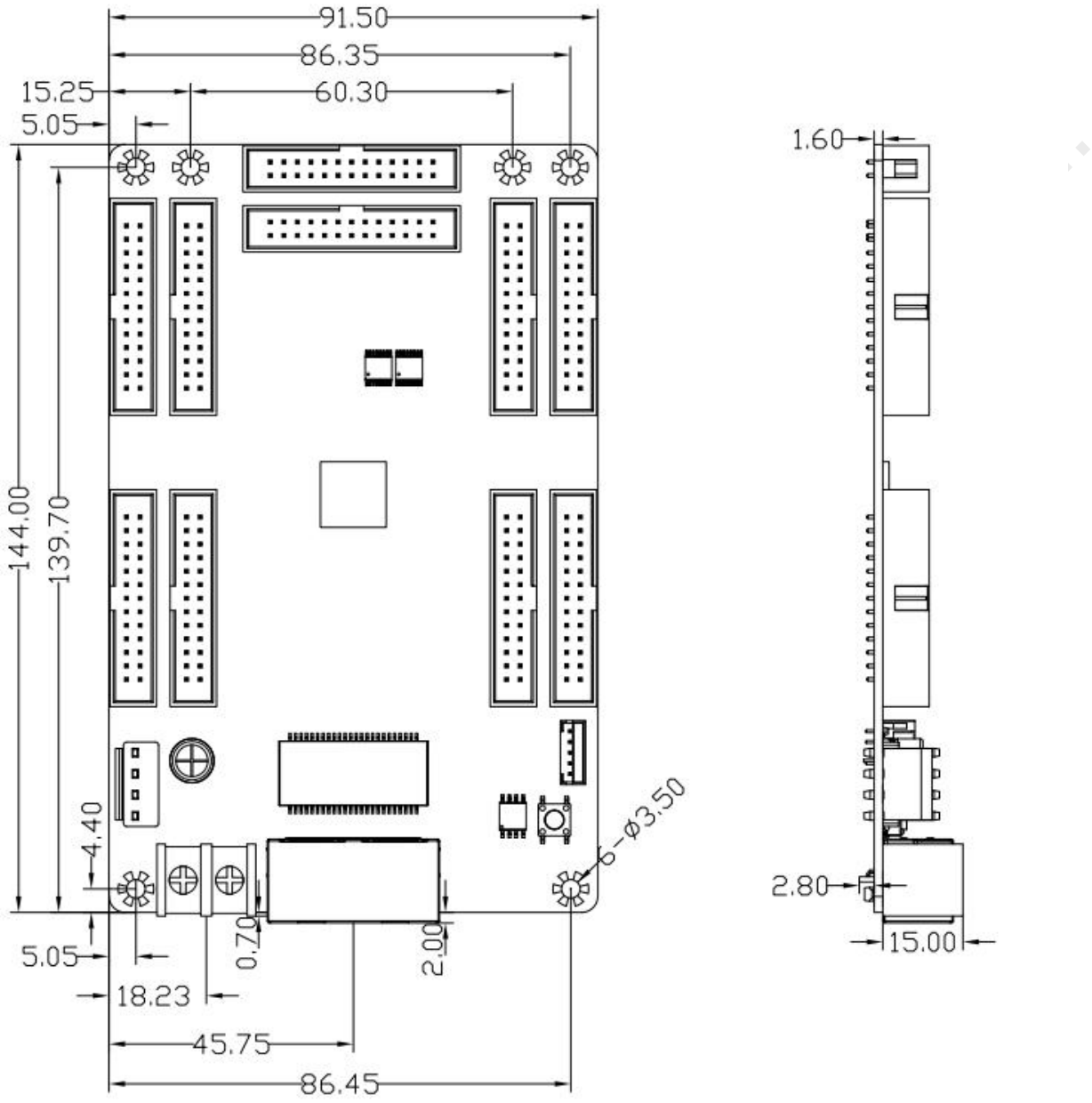
Module Flash	For modules with Flash, the correction coefficient can be stored and read back.
Pre-saved screen	In certain abnormal conditions (such as power on, network cable disconnected, no video source signal), the preset screen is displayed.
Monitoring function	Directly monitor the temperature and voltage of the receiving card itself without external equipment and record the current running time
Dual backup of configuration parameters	The receiving card configuration parameters can be saved to the factory area . When the configuration parameters are modified , they can be restored from the factory area .
Dual backup of programs	Two firmware programs are saved in the receiving card before leaving the factory to prevent the receiving card from deadlocking due to abnormal program update process.

3. Connection method

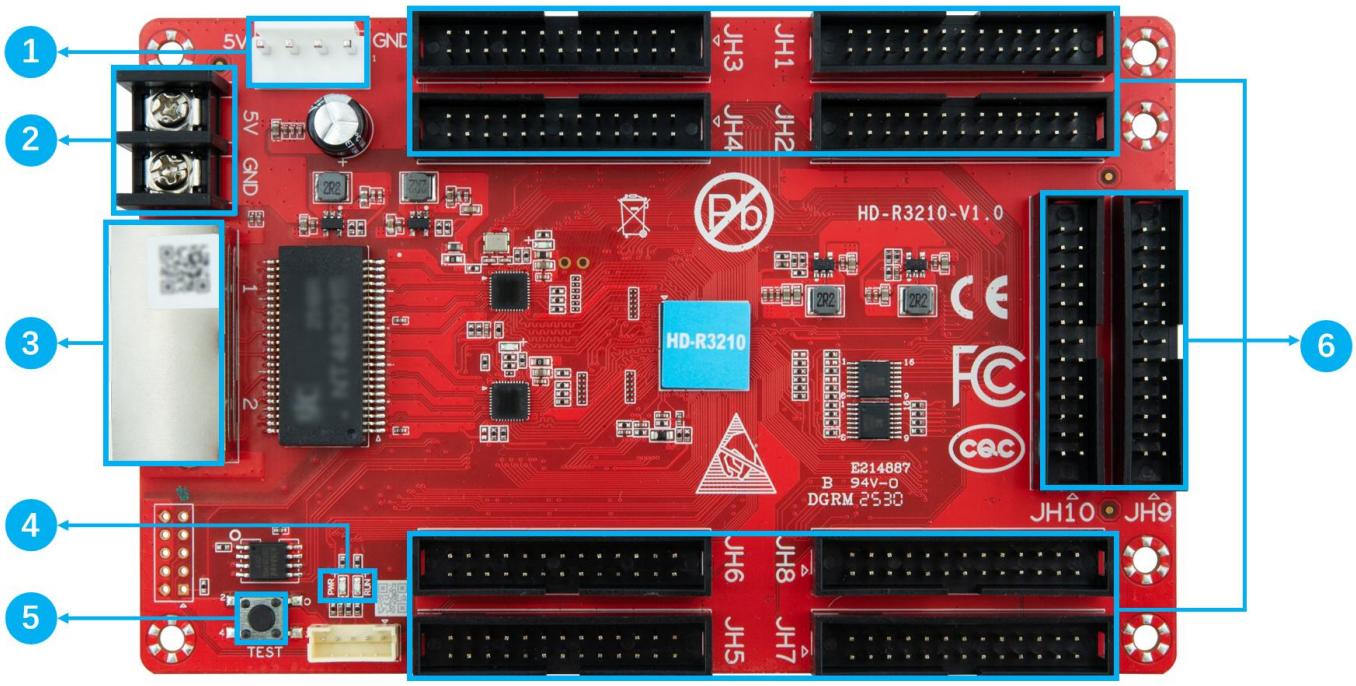
Diagram of the connection between the controller and the receiving card:



4. Dimensions

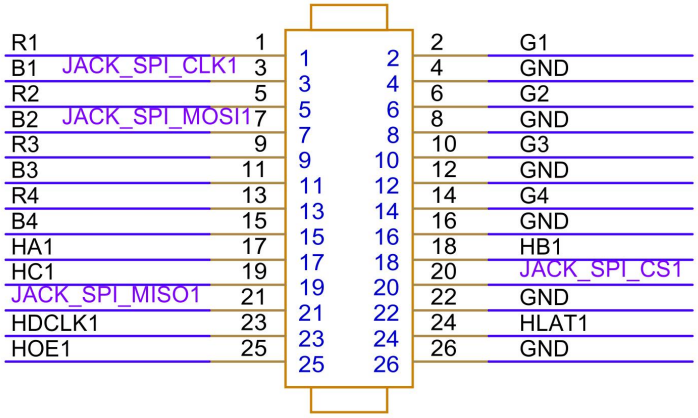


5. Interface Description



Serial number	interface	illustrate	
1	Power input interface 1	Smart power input interface .	
2	Power input interface 2	Binding post power input interface.	
3	Gigabit Ethernet port	Connect to sending card or receiving card, regardless of input/ output interface.	
4	Working indicator	Power indicator (PWR) green	Steady on, the power input is normal.
		Running light (RUN) green	1 second on and 1 second off, network connection abnormality or no video signal; Flashes 4 times per second, the receiving card is working normally and the video signal is normal; Flashes 5 times in 2.5 seconds and goes off in 1.5 seconds. The receiving card parameters are locked.
5	Test button	Used to test the brightness uniformity of the display and the flatness of the display module.	
6	Flat cable interface	10 HUB320F interfaces, connect to the LED modules by flat cable.	

6. Interface Definition (Take JH1 as an example)



RGB real pixel data interface/3-light data interface-data interface definition					
/	R1	1	2	G1	/
B1/Serial interface clock signal	B1/ JACK_SPI_CLK1	3	4	GND	/
/	R2	5	6	G2	/
B2/Light board Flash storage data input	B2/ JACK_SPI_MOSI1	7	8	GND	/
/	R3	9	10	G3	/
/	B3	11	12	GND	/
/	R4	13	14	G4	/
/	B4	15	16	GND	/
Line decoding signal	HA1	17	18	HB1	Line decoding signal
Line decoding signal	HC1	19	20	JACK_SPI_CS1	CS signal of serial interface
Light board Flash storage data output	JACK_SPI_MISO1	21	22	GND	/
Shift Clock	HDCLK1	23	24	HLAT1	Latch signal
Display enable signal	HOE1	25	26	GND	/

7. Technical Parameters

Parameter items	Parameter value
Operating voltage (V)	DC 3.8V ~ 5.5V
Power consumption (W)	3W
Operating temperature (°C)	-25 ℃~ + 75 ℃
Operating humidity (RH)	0 ~95%RH
Storage temperature (℃)	-40 ℃ ~105 ℃
Storage humidity (RH)	0 ~95%RH
Net weight (unit: g)	About 97g

Precautions

1) To ensure long-term stable operation of the system, please use a power supply that meets the standards;

2) Do not operate with power on;

3) Due to production batches, random inspections, etc., there may be slight discrepancies between the photos and the actual product. If you have any questions, please confirm with our company.