

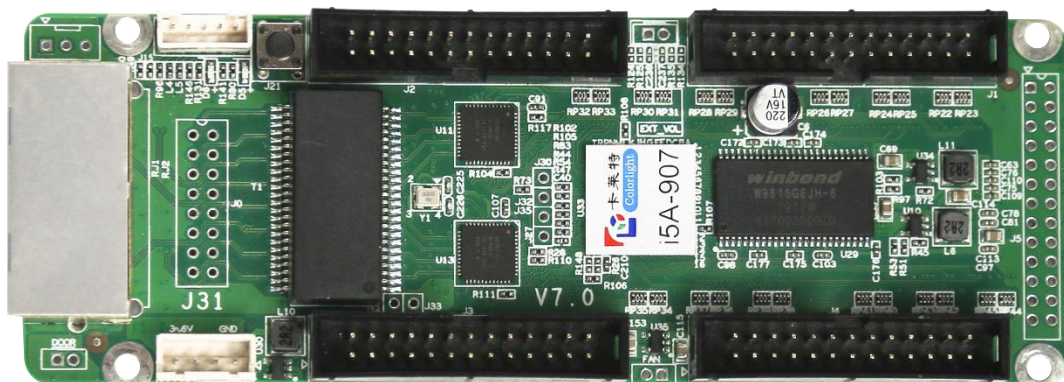
i5A-907 Receiving Card

Specification

i5A-907 Receiving Card

Overview

i5A-907 is specially designed for the compact and portable LED displays, such as LED color screen or casting aluminum cabinet, etc. It inherits all the advantages and features i5A series had, adopts a new generation image processing core, and greatly improve the display effect; adopts a new generation of system architecture, and possesses more intelligent functions and more stable system. Make its size and interfaces perfectly suit for LED color screen and casting aluminum display.



Features

- Tiny size, specially designed for the compact structure, like color screen and casting aluminum cabinet
- Power supply from carrier board without the need of external power supply, enhancing hardware stability
- New processing core, perfect in display effect
- High refresh rate, high gray scale and high brightness with conventional chips
- Perfect performance under lower grayscale status
- Better detail processing: partial dark at row, reddish at low gray, shadow

problems can be solved

- Supports the effective display at first grayscale value
- Supports high-precision pixel level calibration in the brightness and the chromaticity
- Supports up to 1/64 scan
- Supports any pumping point and data group offset to realize various freeform display, spherical display, creative display, etc.
- Supports 16 groups of R'GBR' signal output and 24 groups of RGB signal output at most
- Large load capacity
- Advanced design, high quality components, rigorous aging test, zero malfunction of final products
- Wide working voltage range with DC 3.3~5.5V
- Supports loop backup and dual-machine backup with seamless switching
- Compatible with all series of Colorlight's sending devices

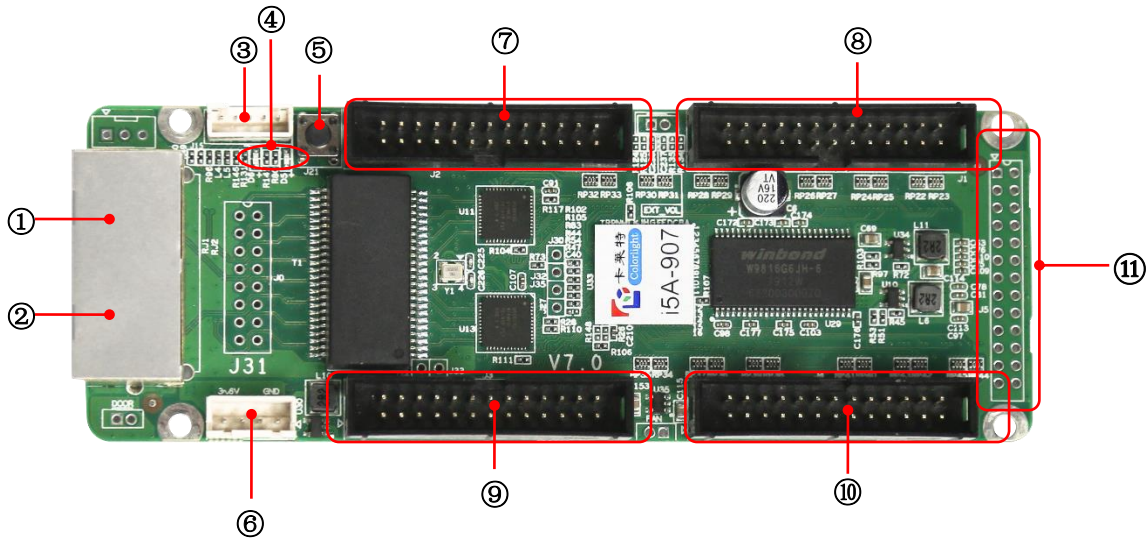
Specifications

Control System Parameters	
Control Area	Full-color: conventional: 256×256 pixels, for special applications the column can be extended to 1024 pixels
Calibration Area	256×256 pixels
Cascade Control Area	65536×65536 pixels
Cascade Card Number	65536 PCS
Network Port Exchange	Support, arbitrary use
Synchronization	Nanosecond synchronization between cards
Display Quality	
Refresh Rate for Conventional Chip	Static: 64×64, up to 16000Hz 1/8 scan: 128×128, up to 10000Hz
Serial Frequency	0.2~41.7MHz

Gray Level	Maximum 65536 levels
Minimum Unit of OE Values	8ns, 8ns multiples steps
Blanking Circuit	Supports CD4051 blanking circuit
Gray Scale Compensation	Each level grayscale compensates separately
Display Module Compatibility	
Chip Supports	Supports conventional chips, PWM chips, lighting chips and other mainstream chips
PWM Chip Supports	Supports hundreds of different specifications of the PWM chip, such as MBI, MY, and SUM
Scan Mode	Conventional mode and high refresh rate mode to support refresh rate to multiply
Scan Type	Supports up to 1/64 scan
Module Specifications Support	Supports 8192 pixels within any row, any column
Cable Direction	Supports route from left to right, from right to left, from top to bottom, from bottom to top.
Data Group	16 groups of RGBR' parallel data; 24 groups of RGB parallel data
Data Folded	Supports 2 splits in the same or opposite direction, improving refresh rate significantly
Module Pumping Point	Supports any pumping point
Data Serial Transmission	RGB, R8G8B8, R16G16B16, etc.
Compatible Device and Interface Type	
Communication Distance	UTP cable≤140M CAT6 cable≤170M Optic fiber: Single Mode Fiber Transceiver≤20KM Multi-Mode Fiber Transceiver ≤550M (Use RP Repeater to extend unlimitedly)
Compatible with Transmission Equipment	Gigabit switch, fiber transceiver, optical switches
DC Power Interface	Wafer VH2.54mm-4P
HUB Interface Type	Refer to signal interface definition below

Physical Parameters	
Size	137×48mm
Input Voltage	DC 3.3~5.5V
Rated Current	0.6A
Rated Power	3W
Storage and Transport Temperature	-50℃~125℃
Operating Temperature	-25℃~75℃
Body Static Resistance	2KV
Weight	70g
Monitoring Function (in conjunction with multi-function card)	
Monitoring Functions	Real time monitoring environment information like temperature, humidity and smoke
Remote Control	Supports for relay switch to turn on/off the power supply of equipment remotely
Pixel Level Calibration	
Brightness Calibration	Supported
Chromaticity Calibration	Supported
Other Features	
Hot Backup	Supports loop backup and dual-machine backup
Shaped Screen	Supports various freeform display, spherical display, creative display, etc. through data group offset

Hardware



1. Interface function

No.	Name	Function	Remarks
1	Network port A	RJ45, for transmitting data signals	The dual network ports can achieve import/export at random, which can be identified in an intelligent way by the system.
2	Network port B	RJ45, for transmitting data signals	
3	External interfaces	For indicator light and test button	
4	Indicator light	For power indicator light and signal transmission status	Red for power Green for signal
5	Test button	The attached test procedures can achieve four kinds of monochrome display (red, green, blue and white), as well as horizontal, vertical and other display scan modes	
6	Power	Connects to DC 3.3~5.5V power supply for the receiving card	
7	Signal output J1	Connects to the LED module, interface definition shown below	
8	Signal output J2	Connects to the LED module, interface definition shown below	

9	Signal output J3	Connects to the LED module, interface definition shown below	
10	Signal output J4	Connects to the LED module, interface definition shown below	
11	Signal output J5	Connects to the LED module, the same definition as J1	

2. Signal output definitions

i5A-907 has five 26P data output interface, and J5 and J1 output the same data. J5 is a horizontal interface, for the special structure using.

i5A-907 supports different work modes, and 26P output interface definitions are different in each work mode, which are shown as follows:

2.1 Standard Mode (Default Mode)

J1/J5				J2				J3				J4			
1	A	B	2	1	A	B	2	1	A	B	2	1	A	B	2
3	OE	LAT	4	3	OE	LAT	4	3	OE	LAT	4	3	OE	LAT	4
5	CLK	VCC	6	5	CLK	VCC	6	5	CLK	VCC	6	5	CLK	VCC	6
7	C	D	8	7	C	D	8	7	C	D	8	7	C	D	8
9	R1	G1	10	9	R5	G5	10	9	R9	G9	10	9	R13	G13	10
11	R1'	B1	12	11	R5'	B5	12	11	R9'	B9	12	11	R13'	B13	12
13	GND	R2	14	13	GND	R6'	14	13	GND	R10	14	13	GND	R14	14
15	G2	R2'	16	15	G6	R6'	16	15	G10	R10'	16	15	G14	R14'	16
17	B2	R3	18	17	B6	R7	18	17	B10	R11	18	17	B14	R15	18
19	G3	GND	20	19	G7	GND	20	19	G11	GND	20	19	G15	GND	20
21	R3'	B3	22	21	R7'	B7	22	21	R11'	B11	22	21	R15'	B15	22
23	R4	G4	24	23	R8	G8	24	23	R12	G12	24	23	R16	G16	24
25	R4'	B4	26	25	R8'	B8	26	25	R12'	B12	26	25	R16'	B16	26

2.2 20 Groups Mode

JI/J5				J2				J3				J4			
1	A	B	2	1	A	B	2	1	A	B	2	1	A	B	2
3	OE	LAT	4	3	OE	LAT	4	3	OE	LAT	4	3	OE	LAT	4
5	CLK	VCC	6	5	CLK	VCC	6	5	CLK	VCC	6	5	CLK	VCC	6
7	C	D	8	7	C	D	8	7	C	D	8	7	C	D	8
9	E	R1	10	9	E	R6	10	9	E	R11	10	9	E	R16	10
11	G1	B1	12	11	G6	B6	12	11	G11	B11	12	11	G16	B16	12
13	GND	R2	14	13	GND	R7	14	13	GND	R12	14	13	GND	R17	14
15	G2	B2	16	15	G7	B7	16	15	G12	B12	16	15	G17	B17	16
17	R3	G3	18	17	R8	G8	18	17	R13	G13	18	17	R18	G18	18
19	B3	GND	20	19	B8	GND	20	19	B13	GND	20	19	B18	GND	20
21	R4	G4	22	21	R9	G9	22	21	R14	G14	22	21	R19	G19	22
23	B4	R5	24	23	B9	R10	24	23	B14	R15	24	23	B19	R20	24
25	G5	B5	26	25	G10	B10	26	25	G15	B15	26	25	G20	B20	26

2.3 24 Groups Mode

Include A and B scan signal; For 1/4~1/32, there needs a serial decoding circuit as is shown below.

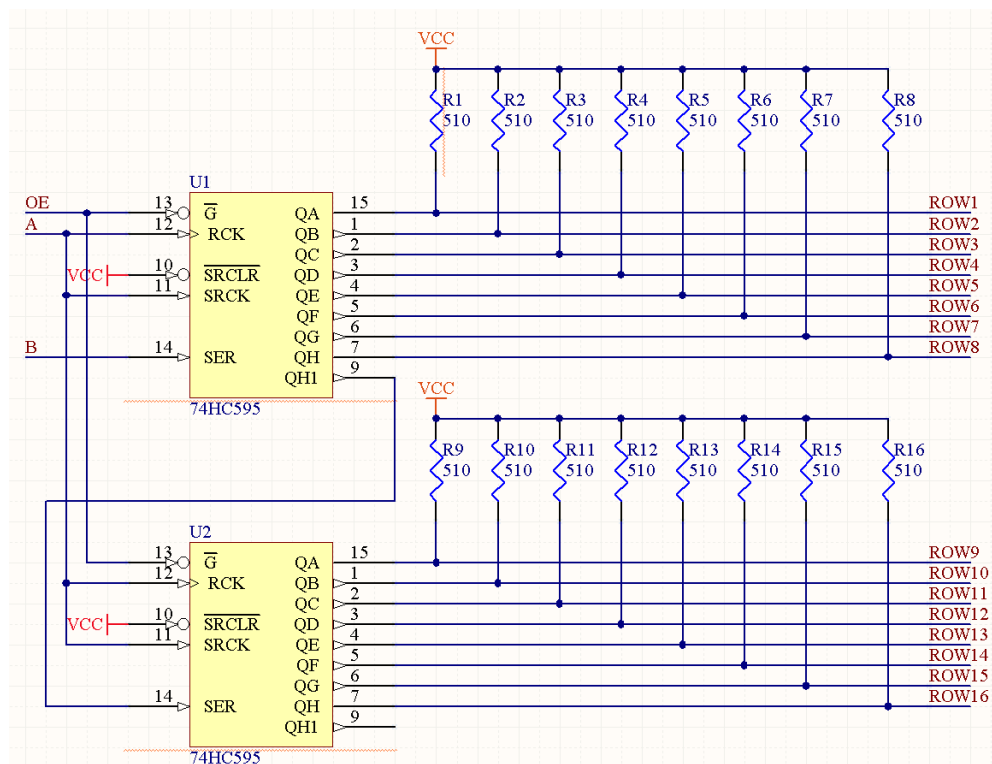
JI/J5				J2				J3				J4			
1	A	B	2	1	A	B	2	1	A	B	2	1	A	B	2
3	OE	LAT	4	3	OE	LAT	4	3	OE	LAT	4	3	OE	LAT	4
5	CLK	VCC	6	5	CLK	VCC	6	5	CLK	VCC	6	5	CLK	VCC	6
7	R1	G1	8	7	R7	G7	8	7	R13	G13	8	7	R19	G19	8
9	B1	R2	10	9	B7	R8	10	9	B13	R14	10	9	B19	R20	10
11	G2	B2	12	11	G8	B8	12	11	G14	B14	12	11	G20	B20	12
13	GND	R3	14	13	GND	R9	14	13	GND	R15	14	13	GND	R21	14
15	G3	B3	16	15	G9	B9	16	15	G15	B15	16	15	G21	B21	16
17	R4	G4	18	17	R10	G10	18	17	R16	G16	18	17	R22	G22	18
19	B4	GND	20	19	B10	GND	20	19	B16	GND	20	19	B22	GND	20
21	R5	G5	22	21	R11	G11	22	21	R17	G17	22	21	R23	G23	22
23	B5	R6	24	23	B11	R12	24	23	B17	R18	24	23	B23	R24	24
25	G6	B6	26	25	G12	B12	26	25	G18	B18	26	25	G24	B24	26

2.4 16 Groups Serial Mode

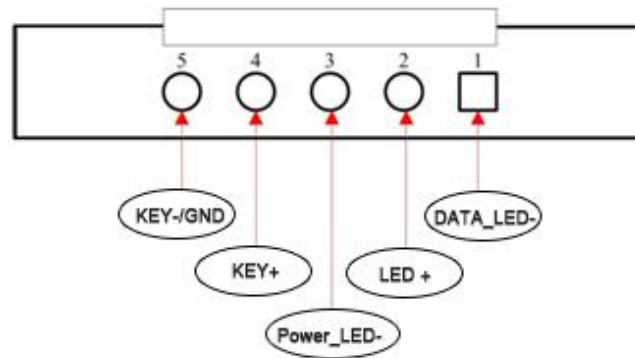
Only J1 and J5 works, outputting the same data. Either of the two can be selected. Detailed definitions are as below:

J1/J5			
1	A	B	2
3	OE	LAT	4
5	CLK	VCC	6
7	C	D	8
9	R1	R2	10
11	R3	R4	12
13	GND	R5	14
15	R6	R7	16
17	R8	R9	18
19	R10	GND	20
21	R11	R12	22
23	R13	R14	24
25	R15	R16	26

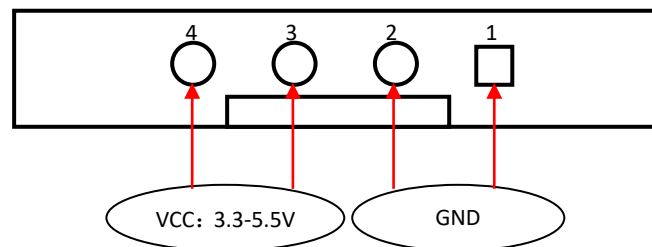
3. Serial decoding circuit



4. External interface definition



5. Power interface pin definition



6. Figure for receiving card size and hole position

