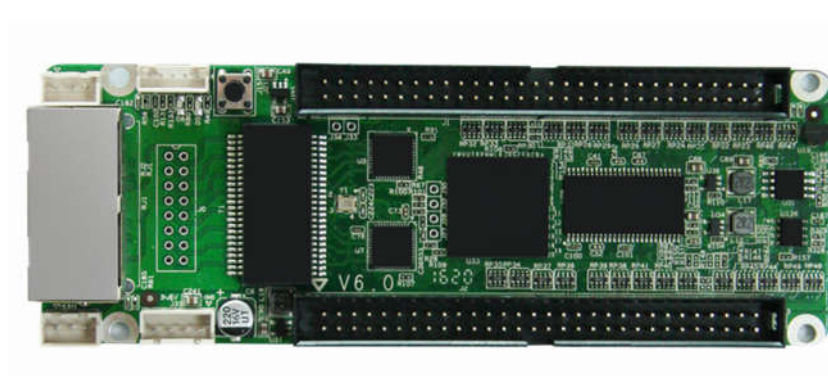


## **i5A-905**

### **Overview**

i5A-905 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 function and more stable system. Make its size and interfaces perfectly suit for LED color screen and casting aluminum display.

Meanwhile, i5A-905 possesses Colorlight unique dual receiving card backup technique, to support one cabinet with two receiving cards, mutual backup, more reliable in the key moment.



## Features

- Tiny size, special designed for the compact structure designs ,like color screen and casting aluminum cabinet.
- Power supply from pin board without the need of external power supply, enhance 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 garyscale status.
- Better detail processing: Partial dark at row, reddish at low gray, shadow problems can be solved.
- Support the effective display at first grayscale value.
- Support 14 bits high-precision point-by-point calibration in the Brightness and chromaticity.
- Support conventional chips, PWM chips and lighting chips, etc.
- Support any scan mode from static to 1/32 scan.
- Support any pumping point and data arbitrary offset, and realize various freeform display, spherical display, diamond display, creative display, etc.
- Support 16 groups of RGBR' signal output and 24 groups of RGB in maximum.
- Large load capacity.
- Advanced design, high quality components, rigorous aging test, zero malfunction of final products.
- Wide working voltage range with DC3.3 -6V
- Support dual receiving card backup, loop backup, and dual-machine backup, etc.
- Compatible with iT7, iQ7, iQ7E, T7, Gigabit NIC, and C series Sender, etc.

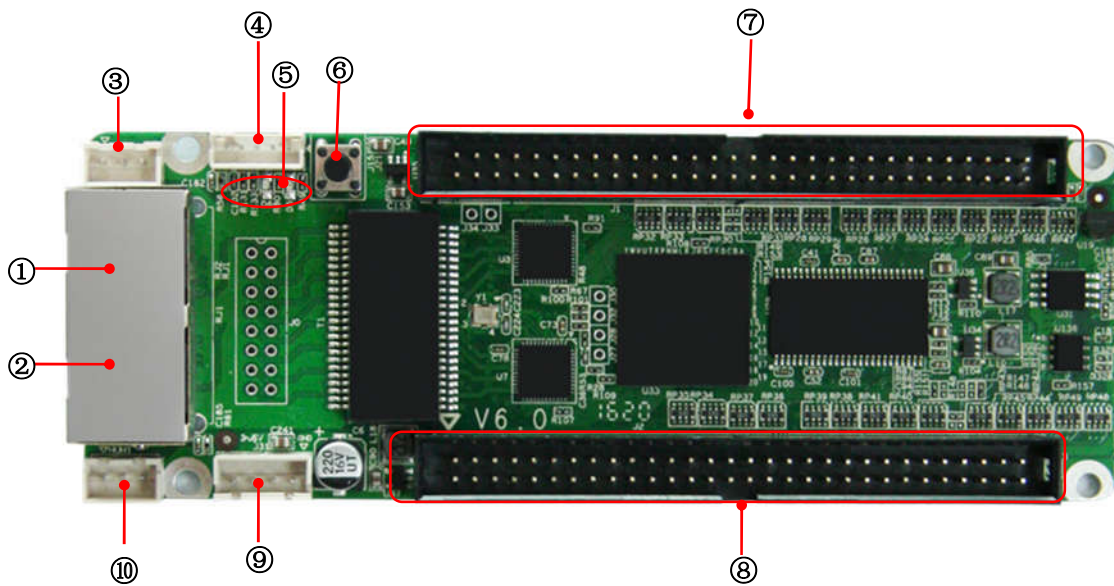
## Specifications

<b>Control system parameters</b>	
Sending device	iT7 Sender , iQ7 HD Sender, iQ7E UHD Sender, Gigabit NIC, and C Series Sender, etc.
Control area of every card	Full-color: 256*128 Pixels, and for special applications the column can be extended to 1024 pixels.
Calibration area of every card	256*128 pixels
Cascade control area of the largest regional	65536*65536 pixels
Cascade card number	65536 PCS
Network port exchange	Support, arbitrary use
Synchronization	Nanosecond synchronization between cards
<b>Display Quality</b>	
Refresh rate for conventional chip	Static: 64*64, up to 16000Hz 1/8 scan: 128*128, up to 10000Hz
Serial frequency	0.2MHz-41.7MHz
Gray Level	Maximum 65536 levels
Minimum unit of OE values	8ns, 8ns multiples steps
Blanking Circuit	Support CD4051 blanking circuit
Gray scale compensation	Each level grayscale compensate separately
<b>Display module compatibility</b>	
Chip supports	Support conventional chips, PWM chips, lighting chips and other mainstream chips
PWM chip supports	Support hundreds of different specifications of the PWM chip, such as MBI, MY, SUM, etc
Scan mode	Conventional mode and high refresh rate mode to support refresh rate multiplied
Scan type	Support static sweep to 1/32 scan
module specifications Support	Support 4096 pixels within any row, any column
The direction of the cable	Support route from left to right, from right to left, from top to bottom, from bottom to top

Data Sets	Different sets in different work modes, refer to interface definitions
Data folded	Support to fold on the same or opposite direction, which improve refresh rate significantly
Module snapshot	Support any pumping point
Data serial transmission	RGB, R8G8B8, R16G16B16, etc
<b>Compatible device and interface type</b>	
Communication distance	UTP cable≤140M CAT6 cable≤170M Optic fiber: Single Mode Fiber Transceivers≤20KM Multi-Mode Fiber Transceiver ≤550M (Use RP Repeater to extend unlimited)
Compatible with transmission equipment	Gigabit switch, fiber transceiver, optical switches
DC power interface	Wire terminal or HUB board
HUB Interface Type	Refer to signal interface definition below
<b>Physical parameters</b>	
Size	137* 48mm
Input voltage	DC 3.3V-6V
Rated current	0.6A
Rated power	3W
Storage and transport temperature	-50℃ to 125℃
Operating Temperature	-25℃ to 75℃
Body static resistance	2KV
Weight	70g
<b>Monitoring function (in conjunction with multi-function card)</b>	
Monitoring functions	Real time monitoring environment information like temperature, humidity, smoke
Remote control	Support for relay switch to turn on/off the power supply of equipments remotely
<b>Pixel level calibration</b>	
Brightness calibration	Support
Chromaticity calibration	Support

<b>Other features</b>	
Dual Receiving Card Backup	Support one cabinet with two receiving card. Consult our technicians for more details
Hot backup	Support loop backup and dual-machine backup
Shaped screen	Support various freeform display, spherical display, creative display, etc. through the data arbitrary 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	Temp	For temperature detection	
4	External interfaces	For Indicator light and test button	
5	Indicator Light	For power indicator light and signal transmission status	Red for power Green for signal
6	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	
7	signal output J1	Connect to the LED module, interface definition shown below	
8	signal output J2	Connect to the LED module, interface definition shown below	
9	Power	Connect DC3.3~6V power supply for the receiving card	

10	HUMI	For humidity detection	
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## 2. Interface definition

The i5A-905 has two 60P data output interfaces. i5A-905 Receiving card supports 3 different working modes, each mode has different interface definitions of the 60P outputs, which list as follows:

### 2.1 Standard mode :

Support 1/32 scanning , 16 groups RGBR' data parallel output.

J1				J2			
definition	pin	pin	definition	definition	pin	pin	definition
C	1	2	A	C	1	2	A
B	3	4	OE	B	3	4	OE
LAT	5	6	CLK	LAT	5	6	CLK
D	7	8	E	D	7	8	E
R1	9	10	G1	R9	9	10	G9
R1'	11	12	B1	R9'	11	12	B9
GND	13	14	R2	GND	13	14	R10
G2	15	16	R2'	G10	15	16	R10'
B2	17	18	R3	B10	17	18	R11
G3	19	20	GND	G11	19	20	GND
R3'	21	22	B3	R11'	21	22	B11
R4	23	24	G4	R12	23	24	G12
R4'	25	26	B4	R12'	25	26	B12
x	27	28	x	x	27	28	x
x	29	30	VCC	x	29	30	VCC
C	31	32	A	C	31	32	A
B	33	34	OE	B	33	34	OE
LAT	35	36	CLK	LAT	35	36	CLK
D	37	38	E	D	37	38	E
R5	39	40	G5	R13	39	40	G13
R5'	41	42	B5	R13'	41	42	B13
GND	43	44	R6	GND	43	44	R14
G6	45	46	R6'	G14	45	46	R14'
B6	47	48	R7	B14	47	48	R15
G7	49	50	GND	G15	49	50	GND
R7'	51	52	B7	R15'	51	52	B15
R8	53	54	G8	R16	53	54	G16
R8'	55	56	B8	R16'	55	56	B16
x	57	58	x	x	57	58	x

x	59	60	VCC		x	59	60	VCC
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## 2.2 Output 24 groups mode :

Support 1/32 scanning , 24 groups RGB data parallel output.

J1				J2			
definition	pin	pin	definition	definition	pin	pin	definition
C	1	2	A	C	1	2	A
B	3	4	OE	B	3	4	OE
LAT	5	6	CLK	LAT	5	6	CLK
D	7	8	E	D	7	8	E
CTRL1/NC	9	10	R1	CTRL1/NC	9	10	R13
G1	11	12	B1	G13	11	12	B13
GND	13	14	R2	GND	13	14	R14
G2	15	16	B2	G14	15	16	B14
R3	17	18	G3	R15	17	18	G15
B3	19	20	GND	B15	19	20	GND
R4	21	22	G4	R16	21	22	G16
B4	23	24	R5	B16	23	24	R17
G5	25	26	B5	G17	25	26	B17
R6	27	28	G6	R18	27	28	G18
B6	29	30	VCC	B18	29	30	VCC
C	31	32	A	C	31	32	A
B	33	34	OE	B	33	34	OE
LAT	35	36	CLK	LAT	35	36	CLK
D	37	38	E	D	37	38	E
CTRL1/NC	39	40	R7	CTRL1/NC	39	40	R19
G7	41	42	B7	G19	41	42	B19
GND	43	44	R8	GND	43	44	R20
G8	45	46	B8	G20	45	46	B20
R9	47	48	G9	R21	47	48	G21
B9	49	50	GND	B21	49	50	GND
R10	51	52	G10	R22	51	52	G22
B10	53	54	R11	B22	53	54	R23
G11	55	56	B11	G23	55	56	B23
R12	57	58	G12	R24	57	58	G24
B12	59	60	VCC	B24	59	60	VCC



### 2.3 Output 28 groups mode :

Support 1/8 scanning, 28 groups RGB parallel output ; As for 1/8~1/32, there need a serial decoding circuit shown as below.

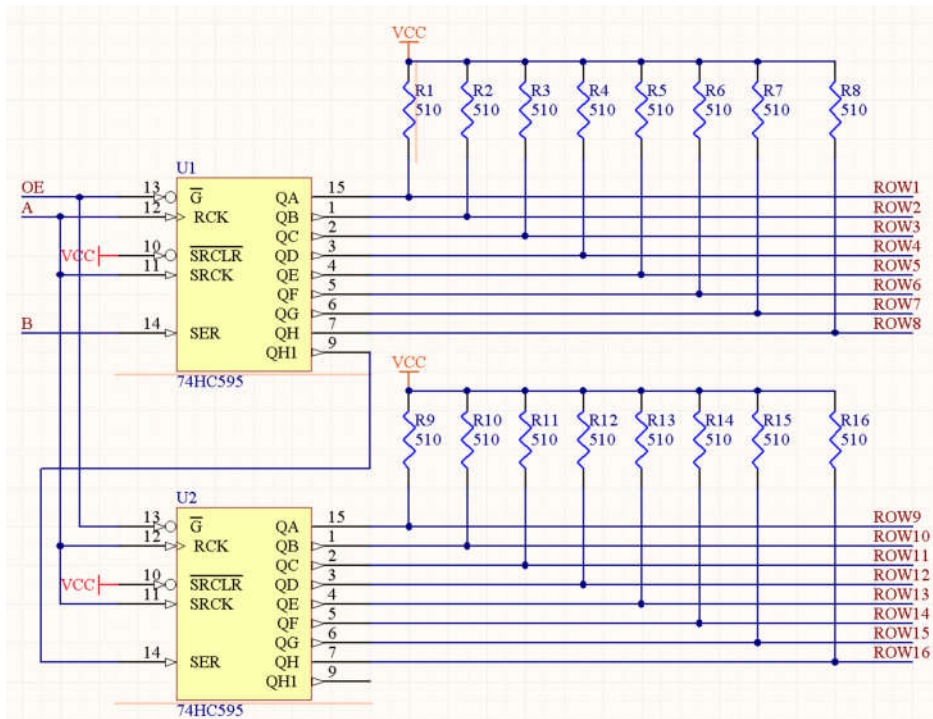
<b>J1</b>				<b>J2</b>			
definition	pin	pin	definition	definition	pin	pin	definition
C	1	2	A	C	1	2	A
B	3	4	OE	B	3	4	OE
LAT	5	6	CLK	LAT	5	6	CLK
R1	7	8	G1	R15	7	8	G15
B1	9	10	R2	B15	9	10	R16
G2	11	12	B2	G16	11	12	B16
GND	13	14	R3	GND	13	14	R17
G3	15	16	B3	G17	15	16	B17
R4	17	18	G4	R18	17	18	G18
B4	19	20	GND	B18	19	20	GND
R5	21	22	G5	R19	21	22	G19
B5	23	24	R6	B19	23	24	R20
G6	25	26	B6	G20	25	26	B20
R7	27	28	G7	R21	27	28	G21
B7	29	30	VCC	B21	29	30	VCC
C	31	32	A	C	31	32	A
B	33	34	OE	B	33	34	OE
LAT	35	36	CLK	LAT	35	36	CLK
R8	37	38	G8	R22	37	38	G22
B8	39	40	R9	B22	39	40	R23
G9	41	42	B9	G23	41	42	B23
GND	43	44	R10	GND	43	44	R24
G10	45	46	B10	G24	45	46	B24
R11	47	48	G11	R25	47	48	G25
B11	49	50	GND	B25	49	50	GND
R12	51	52	G12	R26	51	52	G26
B12	53	54	R13	B26	53	54	R27
G13	55	56	B13	G27	55	56	B27
R14	57	58	G14	R28	57	58	G28
B14	59	60	VCC	B28	59	60	VCC

## 2.4 Output 64 serial mode:

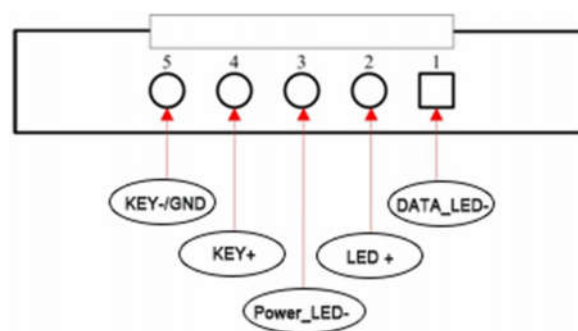
Support 1/32 scan, 32 groups serial data output for each interface, 64 groups in all, definitions as below:

<b>J1</b>				<b>J2</b>			
definition	pin	pin	definition	definition	pin	pin	definition
C	1	2	A	C	1	2	A
B	3	4	OE	B	3	4	OE
LAT	5	6	CLK	LAT	5	6	CLK
D	7	8	E	D	7	8	E
CTRL1/NC	9	10	R1	CTRL1/NC	9	10	R33
R2	11	12	R3	R34	11	12	R35
GND	13	14	R4	GND	13	14	R36
R5	15	16	R6	R37	15	16	R38
R7	17	18	R8	R39	17	18	R40
R9	19	20	GND	R41	19	20	GND
R10	21	22	R11	R42	21	22	R43
R12	23	24	R13	R44	23	24	R45
R14	25	26	R15	R46	25	26	R47
R16	27	28	x	R48	27	28	x
x	29	30	VCC	x	29	30	VCC
C	31	32	A	C	31	32	A
B	33	34	OE	B	33	34	OE
LAT	35	36	CLK	LAT	35	36	CLK
D	37	38	E	D	37	38	E
CTRL1/NC	39	40	R17	CTRL1/NC	39	40	R49
R18	41	42	R19	R50	41	42	R51
GND	43	44	R20	GND	43	44	R52
R21	45	46	R22	R53	45	46	R54
R23	47	48	R24	R55	47	48	R56
R25	49	50	GND	R57	49	50	GND
R26	51	52	R27	R58	51	52	R59
R28	53	54	R29	R60	53	54	R61
R30	55	56	R31	R62	55	56	R63
R32	57	58	x	R64	57	58	x
x	59	60	VCC	x	59	60	VCC

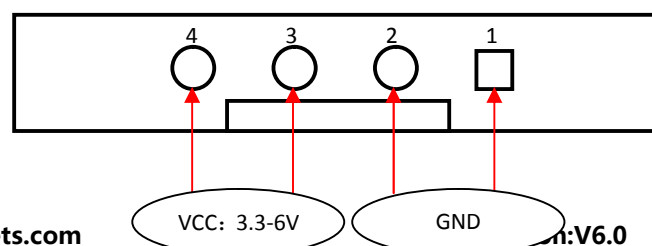
## 2.5 Serial decoding circuit



## 3. External interface definition



## 4. Power interface pin definition



### 5. Figure for receiving card size and hole position

