i5

Receiving Card

Specification

Overview

i5 is a high-end receiving card developed for fine-pitch LED screens featuring a large load capacity and up to 32 parallel data groups or 32 serial data groups. Due to its small form factor, i5 is best fit into concise cabinets. With DDR2 SODIMM interface, it can be effortlessly integrated into the HUBs and the display modules, allows for flexible screen design.

i5 not only has all the functions of mainstream receiving cards, but also a series of practical and powerful features helping high-end displays to maximize video performance with stunning clarity.

Features

Display effect

- 8bit video source input.
- Color temperature adjustment.
- 240Hz frame rate.
- Better gray at low brightness.

Correction processing

- High precise per-pixel calibration in brightness and chromaticity.

Easy maintenance

- Highlight and OSD.
- Screen rotation.
- Data group offset.
- Quick firmware upgrade and quick release of correction coefficients.

Stable and reliable

- Loop redundancy.
- Ethernet cable status monitoring.
- Firmware program redundancy and readback.
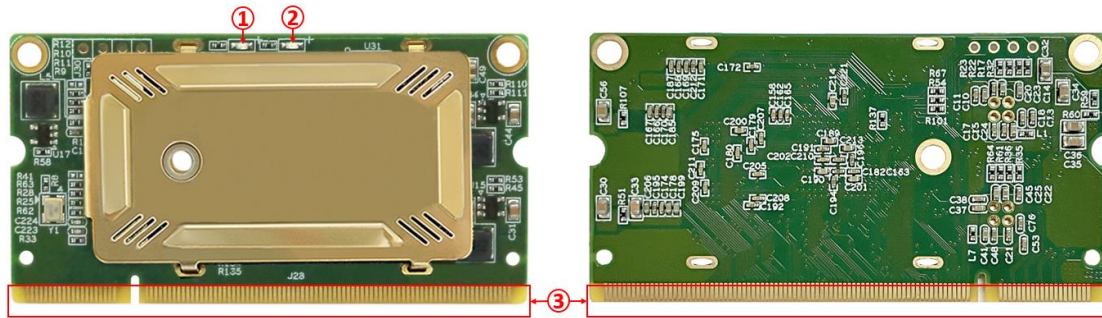- 7×24h uninterrupted work.

Feature details

Display effect	
8bit	8bit color depth video source input and output, monochrome grayscale is 256, can be matched with 16777216 kinds of mixed colors.
Frame rate	Adaptive frame rate technology, not only supports 23.98/24/29.97/30/50/59.94/ 60Hz regular and non-integer frame rates, but also outputs and displays 120/240Hz high frame rate pictures, which greatly improves picture fluency and reduces drag film. (Note: it will affect the load).
Color temperature adjustment	Adjustment of color temperature, that is, saturation adjustment, to enhance the expressiveness of the picture.
Better gray at low brightness	By optimizing the gamma meter algorithm, the display screen can maintain the integrity and perfect display of gray scale when reducing the brightness, showing the display effect of low brightness and high gray scale.
8bit calibration	8bit precision brightness and chromaticity correction point by point, which can effectively eliminate the chromatic aberration of the lamp point, ensure the uniformity and consistency of the color brightness of the entire screen, and improve the overall display effect.
Shortcut operation	
Cabinet highlight	Using the control software, you can quickly mark the selected target cabinet, display a flashing box on the front of the cabinet, and change the flashing frequency of the cabinet indicator at the same time, which is convenient for front and rear maintenance.
Quick OSD	Using the control software, you can quickly mark the actual hardware connection serial number of the receiving card corresponding to the Ethernet port, which is convenient for setting the connection relationship of the screen.
Image rotation	Single cabinet image to be rotated at 90°/180°/270° angles, and with part of the main control, the single cabinet image can be rotated and displayed at any angle.
Hardware monitoring	
Bit error detection	It supports the detection of data transmission quality and error code between receiving cards, and can easily and quickly identify the cabinet with abnormal hardware connection, which is convenient for maintenance.
Redundancy	
Loop redundancy	The redundant Ethernet port is used to increase the connection with the transmitting equipment and increase the reliability of cascading between equipment. When one circuit fails, it can realize seamless switching to the other circuit and ensure the normal display of the screen.
Firmware redundancy	It supports firmware program backup and can be upgraded safely. There is no need to worry about the loss of firmware program due to cable disconnection or power interruption during the upgrade process.

Basic parameters

Control System Parameters	
Control Area	PWM chips: 512×384 pixels. Normal chips:512×256 pixels. Shixin: 512×324 pixels.
Ethernet Port Exchange	Supported, arbitrary use
Grayscale	Up to 65536 grayscale.
Display Module Compatibility	
Supported Chips	PWM chips, normal chips, Shixin chips
Scan Type	Up to 1/128 scan
Module Dimension	Up to 8192 pixels per data group.
Cable Direction	Route from left to right, from right to left, from top to bottom, from bottom to top.
Data Group	32 groups of parallel RGB data and 32 groups of serial RGB data, the later can be extended to 128 groups. Data groups can be exchanged freely.
Data Folded	• Normal chips: 2~8 fold horizontally, 2~4 fold vertically. • PWM and Shixin chips: horizontal or vertical 2~8 fold.
Module pumping point, row and column	Any pumping point and any pumping row and any pumping column
Monitoring Function (work with the module with corresponding sensor)	
Bit Error Monitoring	Monitor the total number of data packets and error packets to check network quality
Pixel-to-Pixel Calibration	
Brightness Calibration	8bit
Chromaticity Calibration	8bit
Other features	
Redundancy	Loop redundancy and firmware redundancy.
Optional functions	Shaped screen, etc.

Hardware

Appearance

Interface

S/N	Name	Function	
1	Signal indicator	Flashes once per second	Receiving card: normal. Ethernet cable connection: normal.
		Flashes 10 times per second	Receiving card: normal. Cabinet: Highlight.
		Flashes 4 times per second	Receiving card: working with back up channel (Loop redundancy status).
2	Power indicator	Red indicator always on: the power supply is normal.	
3	Gold finger interface	Used to connect with the HUB or unit board. From the diagram above, the left side of the guide plate is first pin (Viewing from the front of card)	

* i5 uses DDR2 SODIMM socket, please refer to the connector specification for details. The product photos in this article are for reference only.

Equipment Specifications

Physical Specifications	
Hardware interface	DDR2 SODIMM socket
Ethernet port transmission rate	1Gb/s
Communication Distance	Recommended: CAT5e cable≤100m
Compatible with Transmission Equipment	Gigabit switch, Gigabit fiber converter, Gigabit fiber switch
Size[1]	L×W×H / 67.6mm (2.66") ×35.5mm (1.40") ×4.2mm (0.17")
Weight	9.5g / 0.02lbs, with heat sink.
Electrical specification	
Voltage	DC 3.8~5.5V，0.5A
Rated power	2.5W
Body Static Resistance	2KV
Operating environment	
Temperature	-25℃~75℃ (-13°F~167°F)
Humidity	0%RH-80%RH, no condensation
Storage and transport environment	
Temperature	-40℃~125℃ (-40°F~257°F)
Humidity	0%RH-90%RH, no condensation
Packing information	
Packaging rules	Standard blister box device, 6 cards per box, 600 cards per carton
Package size	W×H×D / 550.0mm (21.65") ×180.0mm (7.09") ×398.0mm (15.67")
Certification	
* RoHS certification, EMC Class A certification, EMC needs to work with the cabinet design, please contact technical support for assistance.	

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[1] Size and weight vary by manufacturing process.

Reference dimensions

Unit: mm

Tolerance: ±0.3mm
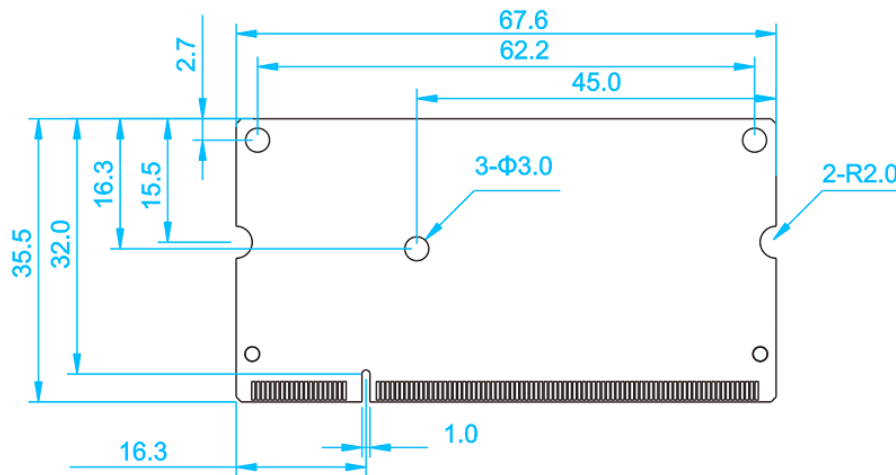
*Studs are not recommended for further fixing.

*If you need to use studs, please contact technical support.

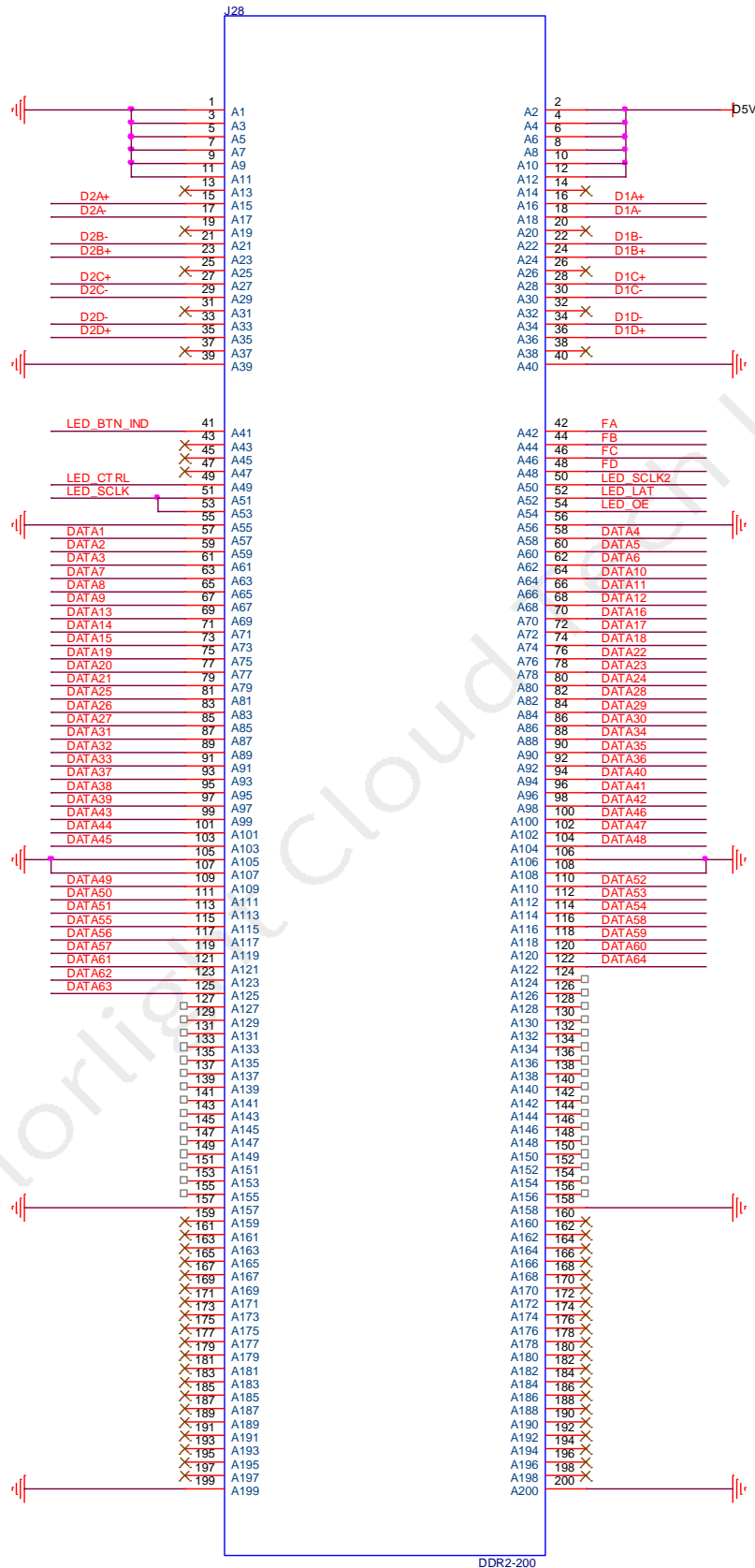## Definition of Pins

32 groups of parallel data interfaces

Instructions	Definition	Pin No.		Definition	Instructions
Ground connection	GND	1	2	D5V	Power supply
	GND	3	4	D5V	
	GND	5	6	D5V	
	GND	7	8	D5V	
	GND	9	10	D5V	
	GND	11	12	D5V	
Empty	NC	13	14	NC	Empty
Ethernet port 2 signal pin	D2A+	15	16	D1A+	Ethernet port 1 signal pin
	D2A-	17	18	D1A-	
	NC	19	20	NC	
	D2B-	21	22	D1B-	
	D2B+	23	24	D1B+	
	NC	25	26	NC	
	D2C+	27	28	D1C+	
	D2C-	29	30	D1C-	
	NC	31	32	NC	
	D2D-	33	34	D1D-	
	D2D+	35	36	D1D+	
Empty	NC	37	38	NC	Empty
Ground connection	GND	39	40	GND	Ground connection
Indicator, reuse button	LED_BTN_IND	41	42	FA	Row decoding signal
Empty	NC	43	44	FB	
	NC	45	46	FC	
	NC	47	48	FD	
Blanking	LED_CTRL	49	50	FE	
Serial clock	LED_SCLK	51	52	LED_LAT	Latch
		53	54	LED_OE	Display enable, it is GCLK when the LED display use PWM chips
Ground connection	GND	55	56	GND	Ground connection
RGB output	LED_R1	57	58	LED_R2	RGB output
	LED_G1	59	60	LED_G2	
	LED_B1	61	62	LED_B2	
	LED_R3	63	64	LED_R4	
	LED_G3	65	66	LED_G4	
	LED_B3	67	68	LED_B4	
	LED_R5	69	70	LED_R6	
	LED_G5	71	72	LED_G6	

	LED_B5	73	74	LED_B6	
	LED_R7	75	76	LED_R8	
	LED_G7	77	78	LED_G8	
	LED_B7	79	80	LED_B8	
	LED_R9	81	82	LED_R10	
	LED_G9	83	84	LED_G10	
	LED_B9	85	86	LED_B10	
	LED_R11	87	88	LED_R12	
	LED_G11	89	90	LED_G12	
	LED_B11	91	92	LED_B12	
	LED_R13	93	94	LED_R14	
	LED_G13	95	96	LED_G14	
	LED_B13	97	98	LED_B14	
	LED_R15	99	100	LED_R16	
	LED_G15	101	102	LED_G16	
	LED_B15	103	104	LED_B16	
Ground connection	GND	105	106	GND	Ground connection
	GND	107	108	GND	
	LED_R17	109	110	LED_R18	
	LED_G17	111	112	LED_G18	
	LED_B17	113	114	LED_B18	
	LED_R19	115	116	LED_R20	
	LED_G19	117	118	LED_G20	
	LED_B19	119	120	LED_B20	
	LED_R21	121	122	LED_R22	
	LED_G21	123	124	LED_G22	
	LED_B21	125	126	LED_B22	
	LED_R23	127	128	LED_R24	
	LED_G23	129	130	LED_G24	
	LED_B23	131	132	LED_B24	
RGB output	LED_R25	133	134	LED_R26	RGB output
	LED_G25	135	136	LED_G26	
	LED_B25	137	138	LED_B26	
	LED_R27	139	140	LED_R28	
	LED_G27	141	142	LED_G28	
	LED_B27	143	144	LED_B28	
	LED_R29	145	146	LED_R30	
	LED_G29	147	148	LED_G30	
	LED_B29	149	150	LED_B30	
	LED_R31	151	152	LED_R32	
	LED_G31	153	154	LED_G32	
	LED_B31	155	156	LED_B32	

Ground connection	GND	157	158	GND	Ground connection
Empty	NC	159	160	NC	Empty
	NC	161	162	NC	
	NC	163	164	NC	
	NC	165	166	NC	
	NC	167	168	NC	
	NC	169	170	NC	
	NC	171	172	NC	
	NC	173	174	NC	
	NC	175	176	NC	
	NC	177	178	NC	
	NC	179	180	NC	
	NC	181	182	NC	
	NC	183	184	NC	
	NC	185	186	NC	
	NC	187	188	NC	
	NC	189	190	NC	
	NC	191	192	NC	
	NC	193	194	NC	
	NC	195	196	NC	
	NC	197	198	NC	
Ground connection	GND	199	200	GND	Ground connection

32 groups of serial data interfaces

Instructions	Definition	Pin No.		Definition	Instructions
Ground connection	GND	1	2	D5V	Power supply
	GND	3	4	D5V	
	GND	5	6	D5V	
	GND	7	8	D5V	
	GND	9	10	D5V	
	GND	11	12	D5V	
Empty	NC	13	14	NC	Empty
Ethernet port 2 signal pin	D2A+	15	16	D1A+	Ethernet port 1 signal pin
	D2A-	17	18	D1A-	
	NC	19	20	NC	
	D2B-	21	22	D1B-	
	D2B+	23	24	D1B+	
	NC	25	26	NC	
	D2C+	27	28	D1C+	
	D2C-	29	30	D1C-	
	NC	31	32	NC	
	D2D-	33	34	D1D-	
	D2D+	35	36	D1D+	
Empty	NC	37	38	NC	Empty
Ground connection	GND	39	40	GND	Ground connection
Indicator, reuse button	LED_BTN_IND	41	42	FA	Row decoding signal
Empty	NC	43	44	FB	
	NC	45	46	FC	
	NC	47	48	FD	
Blanking	LED_CTRL	49	50	LED_SCLK2	Serial clock 2
Serial clock 1	LED_SCLK	51	52	LED_LAT	Latch
		53	54	LED_OE	Display enable, it is GCLK when the LED display use PWM chips
Ground connection	GND	55	56	GND	Ground connection
RGB output	DATA1	57	58	DATA4	RGB output
	DATA2	59	60	DATA5	
	DATA3	61	62	DATA6	
	DATA7	63	64	DATA10	
	DATA8	65	66	DATA11	
	DATA9	67	68	DATA12	
	DATA13	69	70	DATA16	
	DATA14	71	72	DATA17	
	DATA15	73	74	DATA18	
	DATA19	75	76	DATA22	

	DATA20	77	78	DATA23	
	DATA21	79	80	DATA24	
	DATA25	81	82	DATA28	
	DATA26	83	84	DATA29	
	DATA27	85	86	DATA30	
	DATA31	87	88	DATA34	
	DATA32	89	90	DATA35	
	DATA33	91	92	DATA36	
	DATA37	93	94	DATA40	
	DATA38	95	96	DATA41	
	DATA39	97	98	DATA42	
	DATA43	99	100	DATA46	
	DATA44	101	102	DATA47	
	DATA45	103	104	DATA48	
Ground connection	GND	105	106	GND	Ground connection
	GND	107	108	GND	
	DATA49	109	110	DATA52	
	DATA50	111	112	DATA53	
	DATA51	113	114	DATA54	
	DATA55	115	116	DATA58	RGB output
RGB output	DATA56	117	118	DATA59	
	DATA57	119	120	DATA60	
	DATA61	121	122	DATA64	
	DATA62	123	124	NC	
	DATA63	125	126	NC	
	NC	127	128	NC	
	NC	129	130	NC	
	NC	131	132	NC	
	NC	133	134	NC	
	NC	135	136	NC	
	NC	137	138	NC	
	NC	139	140	NC	Empty
Empty	NC	141	142	NC	
	NC	143	144	NC	
	NC	145	146	NC	
	NC	147	148	NC	
	NC	149	150	NC	
	NC	151	152	NC	
	NC	153	154	NC	
	NC	155	156	NC	
Ground connection	GND	157	158	GND	Ground connection
	NC	159	160	NC	

	NC	161	162	NC	
	NC	163	164	NC	
	NC	165	166	NC	
	NC	167	168	NC	
	NC	169	170	NC	
	NC	171	172	NC	
	NC	173	174	NC	
	NC	175	176	NC	
	NC	177	178	NC	
Empty	NC	179	180	NC	Empty
	NC	181	182	NC	
	NC	183	184	NC	
	NC	185	186	NC	
	NC	187	188	NC	
	NC	189	190	NC	
	NC	191	192	NC	
	NC	193	194	NC	
	NC	195	196	NC	
	NC	197	198	NC	
Ground connection	GND	199	200	GND	Ground connection

* FE and LED_SCLK2 are signal multiplexing pins, which are used as row decoding signals in parallel data and as the second serial clock in serial data to achieve 128 sets of serial data expansion, DATA65~DATA128 correspond to multiplexing DATA1 Interface data for ~DATA64.

Statement

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