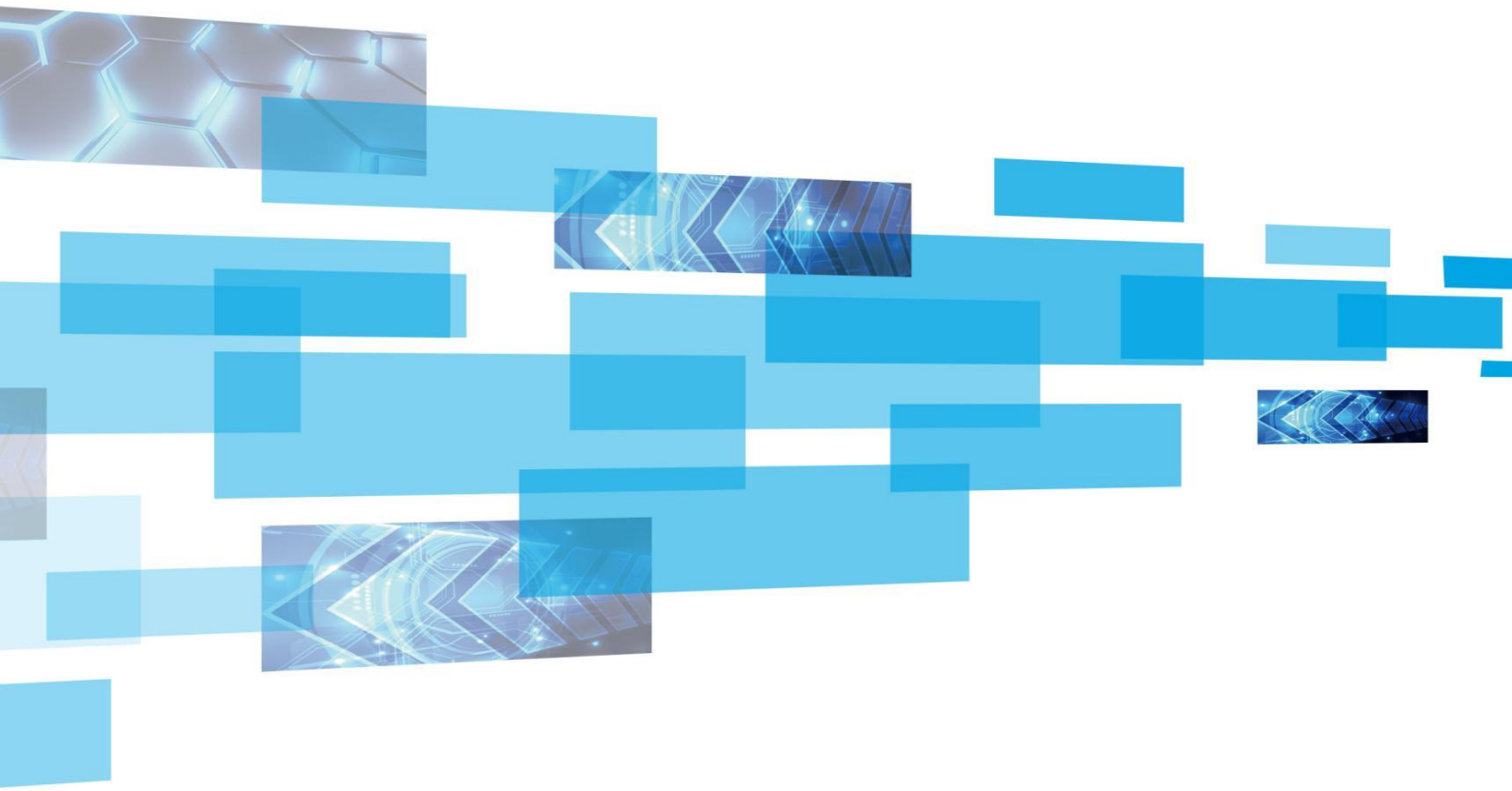
SYSOLUTION

Receiving Card D60-B6S



Product Specification

Version：Ver.1.0

Statement

Dear user friend, thanks for choosing SHENZHEN SYSOLUTION TECHNOLOGY CO.,LTD referred to as Xixun Technology) as your LED advertising equipment control system. The main purpose of this document is to help you quickly understand and use the product. We strive to be precise and reliable when writing the document, and the content may be modified or changed at any time without notice.

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Update Record

No.	Version	Updates	Revision Date
1	Ver.1.0	Initial Release	2023.09.08

The document is subject to change without prior notice.

Product profile

D60-B6S is a small-sized and fully functional receiving card independently developed and launched by Sysolution company; It adopts 84PIN high-precision connector interface; supports up to 32 sets of RGB parallel data; carrying up to 384X512 pixels; has strong processing power, ultra stable performance, and ultra-high cost-effectiveness.

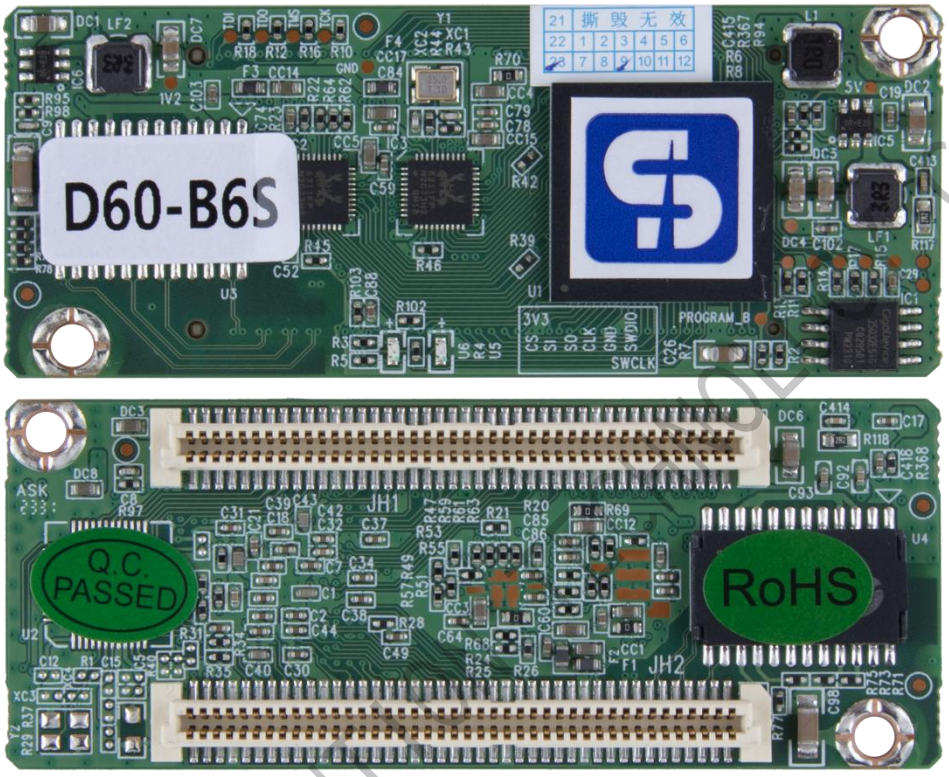
Product features

1. Adopting small size and thickness to save space for increasingly narrow box space and lamp spacing;
2. Adopting high-density connector interfaces, dustproof and shockproof, with high stability and reliability;
3. Integrated network transformer, simplified design, and improved electromagnetic compatibility;
4. Equipped with MCU design to improve product application flexibility;
5. Support dual card backup work to improve stability and reliability;
6. Powerful LED driver chip compatibility.

Application Scenario

It can be widely used in high-end display fields with high requirements, and has significant advantages in application scenarios such as transparent screens and film mounted screens.

Product Picture



Capacity

Three line parallel (RGB)	maximum capactiry (pixels)	Brightness correction load (pixels)	Chromaticity correction load (pixels)
24Group	384*512	480*256	480*160

Cascading quanitites	Support scanning		
≤1000PCS	1-64scan		

Functions & Definition

Functions	Description
Improve display effect	1. 18Bit+: Enabling 18Bit+in the software can increase the gray scale of LED display screens by four times, effectively handling the gray loss caused by reduced brightness of LED display screens, solving the problem of correcting low gray spots, and making images with low gray more delicate. 2. Support for low latency: Support for receiving card low latency control display, that is, based on the use of the sending card, the delay between the signal source output and the light board display is 2 frames. 3. Support RGB independent gamma: You can independently customize the GAMMA value of RGB. 4. Support for color correction by lighting up: In conjunction with correction software, the brightness and chromaticity of each light point

	on the large screen are corrected, effectively eliminating color differences to achieve high consistency in brightness and chromaticity of the display screen, and improving the image quality of the display screen. 5. Support multiple display effect schemes: cooperate with LedSet4.0 software to achieve refresh priority and grayscale priority effects. 6. Support for 90 ° multiple rotation of images: In conjunction with LedSet4.0 software, it can rotate the receiving card images by 90 ° multiple. 7. Support for image scaling function: In conjunction with LedSet4.0 software, it can perform multiple scaling on the pixels loaded on the receiving card, achieving zooming in and out of the displayed image. 8. Support disconnection display settings: Set the status of the receiving card's communication interruption display screen (black screen, standby image, last frame)
Improved operability	1. Support for receiving card serial number detection: In conjunction with the network port

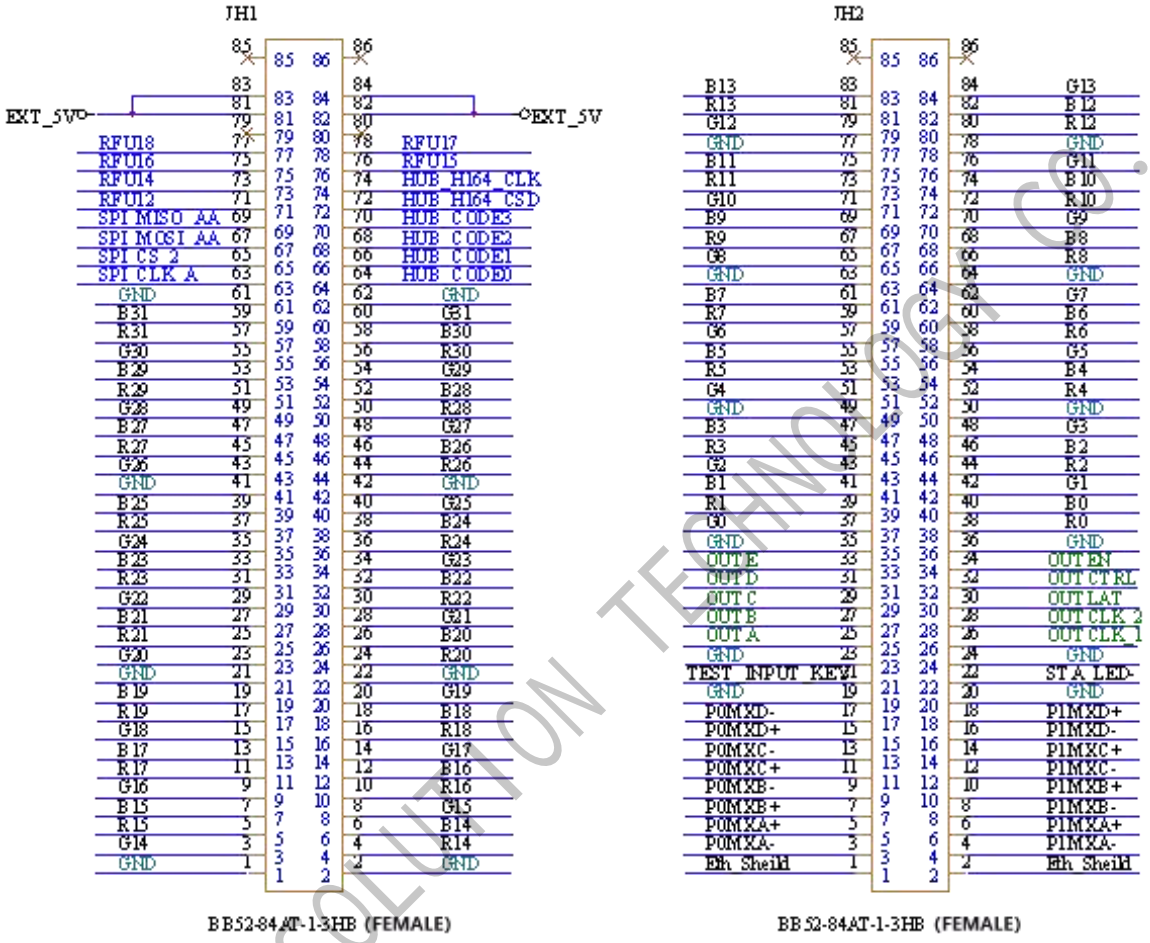
	debugging function in LedSet4.0 software, the target box will display the receiving card number and network port information, allowing users to know the location serial number and connection line of the receiving card. 2. Support for data interface customization: In conjunction with LedSet4.0 software, it can detect and edit the output data of the receiving card. 3. Supporting the construction of complex boxes: In the advanced layout of LedSet4.0 software, the box modules can be quickly arranged and constructed arbitrarily. 4. Supporting the construction of complex large screens: In the complex screen connection of LedSet4.0 software, the box can be quickly arranged and constructed arbitrarily.
Hardware stability	1. Support for hot backup: Network port hot backup: The network port is connected through the main and backup network cable loop to increase the reliability of receiving card series connection. In the main and backup series lines,

	when one of them fails, the other can ensure the normal display of the screen. 2. Support dual power backup: detect power status and provide feedback to the software. 3. Support voltage detection: Support detecting the working voltage of the receiving card. 4. Support temperature detection: Support detecting the working temperature of the receiving card. 5. Support for humidity detection: Support detecting the humidity of the receiving card and providing feedback to the software display. 6. Support for reset function: After the hardware online upgrade is completed, the receiving card can automatically restart the hardware online. 7. FPGA dual program startup: When the FPGA main program configuration is not successful, enter the standby BOOT program to work and achieve normal communication.
Software Intelligence	1. Support for online upgrade: Support software for online firmware upgrade of receiving cards 2. Support for reading back the configuration

	parameters of the receiving card: On LedSet4.0, the current receiving card configuration parameters can be read back. 3. Support for network cable error rate detection: On LedSet4.0, real-time monitoring of the network cable communication signal quality of the system hardware connection can be carried out to quickly determine the quality of the network cable and troubleshoot. 4. Communication monitoring function: Real time monitoring of the receiving card's working status on LedSet4.0.

Output Definition

32 sets of parallel data interface definitions



JH1 definition

function	definition	pin	pin	definition	function
5V	EXT_5V	83	84	OEXT_5V	5V
		81	82		
	NC	79	80	NC	
reserved	RFU18	77	78	RFU17	reserved
	RFU16	75	76	RFU15	

	RFU14	73	74	HUB_H164_CLK	
	RFUI2	71	72	HUB_H164_CSD	
	SPI_MISO_AA	69	70	HUB_CODE3	
	SPI_MOSI_AA	67	68	HUB_CODE2	
	SPI_CS_2	65	66	HUB_CODE1	
	SPI_CLK_A	63	64	HUB_CODE0	
to ground	GND	61	62	GND	to ground
	B31	59	60	G31	
	R31	57	58	B30	
	G30	55	56	R30	
	B29	53	54	G29	
	R29	51	52	B28	
	G28	49	50	R28	
	B27	47	48	G27	
	R27	45	46	B26	
	G26	43	44	R26	
to ground	GND	41	42	GND	to ground
	B25	39	40	G25	
	R25	37	38	B24	
	G24	35	36	R24	

	B23	33	34	G23	
	R23	31	32	B22	
	G22	29	30	R22	
	B21	27	28	G21	
	R21	25	26	B20	
	G20	23	24	R20	
to ground	GND	21	22	GND	to ground
	B19	19	20	G19	
	R19	17	18	B18	
	G18	15	16	R18	
	B17	13	14	G17	
	R17	11	12	B16	
	G16	9	10	R16	
	B15	7	8	G15	
	RI5	5	6	B14	
	G14	3	4	R14	
to ground	GND	1	2	GND	to ground

JH2 definition

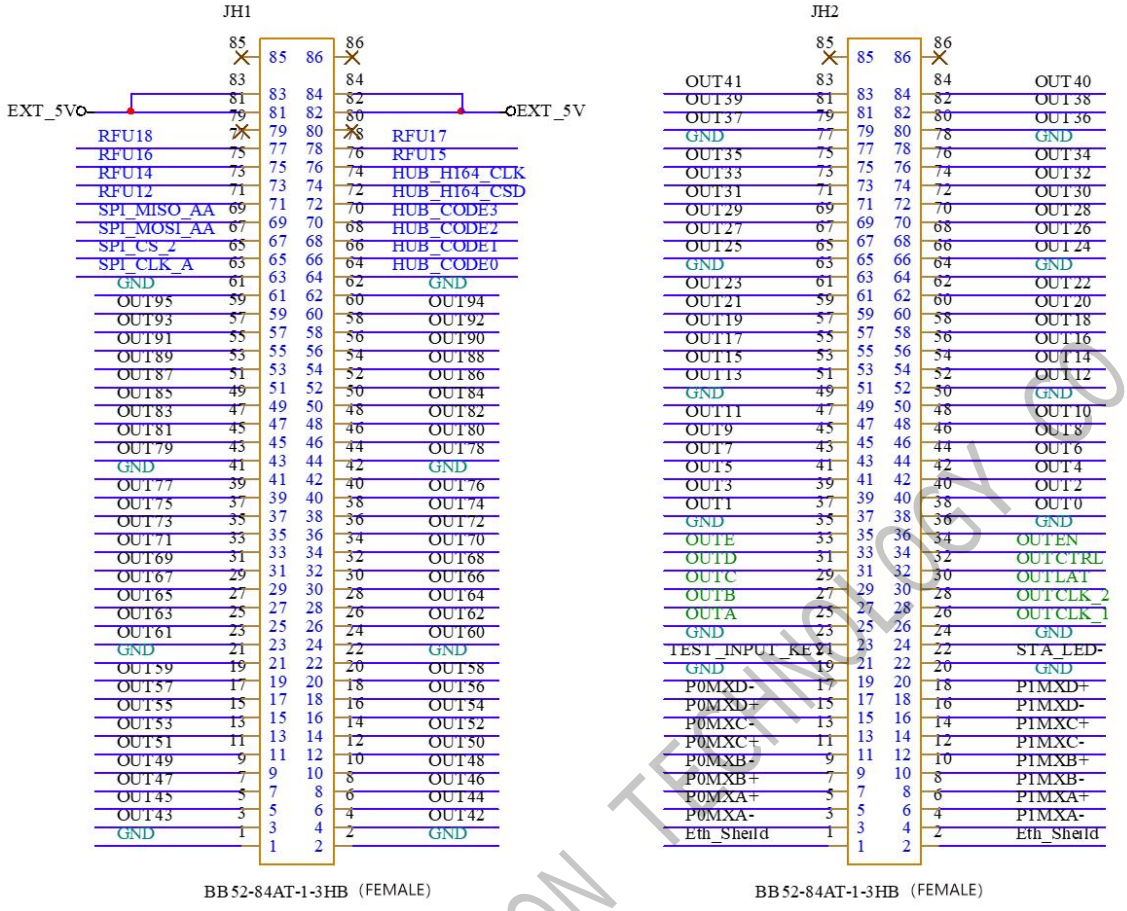
function	**definition**	**pin**	**pin**	**definition**	**function**
	B13	83	84	G13	
	R13	81	82	B12	
	G12	79	80	R12	

to ground	GND	77	78	GND	to ground
	B11	75	76	G11	
	R11	73	74	B10	
	G10	71	72	R10	
	B9	69	70	G9	
	R9	67	68	B8	
	G8	65	66	R8	
to ground	GND	63	64	GND	to ground
	B7	61	62	G7	
	R7	59	60	B6	
	G6	57	58	R6	
	B5	55	56	G5	
	R5	53	54	B4	
	G4	51	52	R4	
to ground	GND	49	50	GND	to ground
	B3	47	48	G3	
	R3	45	46	B2	
	G2	43	44	R2	
	B1	41	42	G1	
	R1	39	40	B0	
	G0	37	38	R0	
to ground	GND	35	36	GND	to ground

Line decoding signal	OUTE	33	34	OUTEN	Display Enable
	OUTD	31	32	OUTCTRL	control signal
	OUTC	29	30	OUTLAT	latch signal
	OUTB	27	28	OUTCLK_2	Shift Clock
	OUTA	25	26	OUTCLK_1	Shift Clock
to ground	GND	23	24	GND	to ground
test button	TEST_INPUT_KEY	21	22	STA_LED-	run inidcator
to ground	GND	19	20	GND	to ground
Gigabit Ethernet port	POMXD-	17	18	PIMXD+	Gigabit Ethernet port
	POMXD+	15	16	PIMXD-	
	POMXC-	13	14	PIMXC+	
	POMXC+	11	12	PIMXC-	
	POMXB-	9	10	PIMXB+	
	POMXB+	7	8	PIMXB-	
	POMXA+	5	6	PIMXA+	
	POMXA-	3	4	PIMXA-	
to groundCase Ground	Eth_Sheild	1	2	Eth_Sheild	to ground

32 sets of serial data interfaces

Serial



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function	definition	pin	pin	definition	function
5V	EXT_5V	83	84	OEXT_5V	5V
		81	82		
	NC	79	80	NC	
reserved	RFU18	77	78	RFU17	reserved
	RFU16	75	76	RFU15	
	RFU14	73	74	HUB_H164_CLK	
	RFU12	71	72	HUB_H164_CS	

				D	
	SPI_MISO_AA	69	70	HUB_CODE3	
	SPI_MOSI_AA	67	68	HUB_CODE2	
	SPI_CS_2	65	66	HUB_CODE1	
	SPI_CLK_A	63	64	HUB_CODE0	
to ground	GND	61	62	GND	to ground
	OUT95	59	60	OUT94	
	OUT93	57	58	OUT92	
	OUT91	55	56	OUT90	
	OUT89	53	54	OUT88	
	OUT87	51	52	OUT86	
	OUT85	49	50	OUT84	
	OUT83	47	48	OUT82	
	OUT81	45	46	OUT80	
	OUT79	43	44	OUT78	
to ground	GND	41	42	GND	to ground
	OUT77	39	40	OUT76	
	OUT75	37	38	OUT74	
	OUT73	35	36	OUT72	
	OUT71	33	34	OUT70	
	OUT69	31	32	OUT68	
	OUT67	29	30	OUT66	

	OUT65	27	28	OUT64	
	OUT63	25	26	OUT62	
	OUT61	23	24	OUT60	
to ground	GND	21	22	GND	to ground
	OUT59	19	20	OUT58	
	OUT57	17	18	OUT56	
	OUT55	15	16	OUT54	
	OUT53	13	14	OUT52	
	OUT51	11	12	OUT50	
	OUT49	9	10	OUT48	
	OUT47	7	8	OUT46	
	OUT45	5	6	OUT44	
	OUT43	3	4	OUT42	
to ground	GND	1	2	GND	to ground

JH2 definition

function	**definition**	**pin**	**pin**	**definition**	**function**
	OUT41	83	84	OUT40	
	OUT39	81	82	OUT38	
	OUT37	79	80	OUT36	
to ground	GND	77	78	GND	to ground
	OUT35	75	76	OUT34	
	OUT33	73	74	OUT32	

	OUT31	71	72	OUT30	
	OUT29	69	70	OUT28	
	OUT27	67	68	OUT26	
	OUT25	65	66	OUT24	
to ground	GND	63	64	GND	to ground
	OUT23	61	62	OUT22	
	OUT21	59	60	OUT20	
	OUT19	57	58	OUT18	
	OUT17	55	56	OUT16	
	OUT15	53	54	OUT14	
	OUT13	51	52	OUT12	
to ground	GND	49	50	GND	to ground
	OUT11	47	48	OUT10	
	OUT9	45	46	OUT8	
	OUT7	43	44	OUT6	
	OUT5	41	42	OUT4	
	OUT3	39	40	OUT2	
	OUT1	37	38	OUT0	
to ground	GND	35	36	GND	to ground
Line decoding signal	OUTE	33	34	OUTEN	Display Enable
	OUTD	31	32	OUTCTRL	control signal

	OUTC	29	30	OUTLAT	latch signal
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test button	TEST_INPUT_KEY	21	22	STA_LED-	run inidcator
to ground	GND	19	20	GND	to ground
Gigabit Ethernet port	POMXD-	17	18	PIMXD+	Gigabit Ethernet port
	POMXD+	15	16	PIMXD-	
	POMXC-	13	14	PIMXC+	
	POMXC+	11	12	PIMXC-	
	POMXB-	9	10	PIMXB+	
	POMXB+	7	8	PIMXB-	
	POMXA+	5	6	PIMXA+	
	POMXA-	3	4	PIMXA-	
to ground	Eth_Sheild	1	2	Eth_Sheild	to ground

Extended Function Reference Design

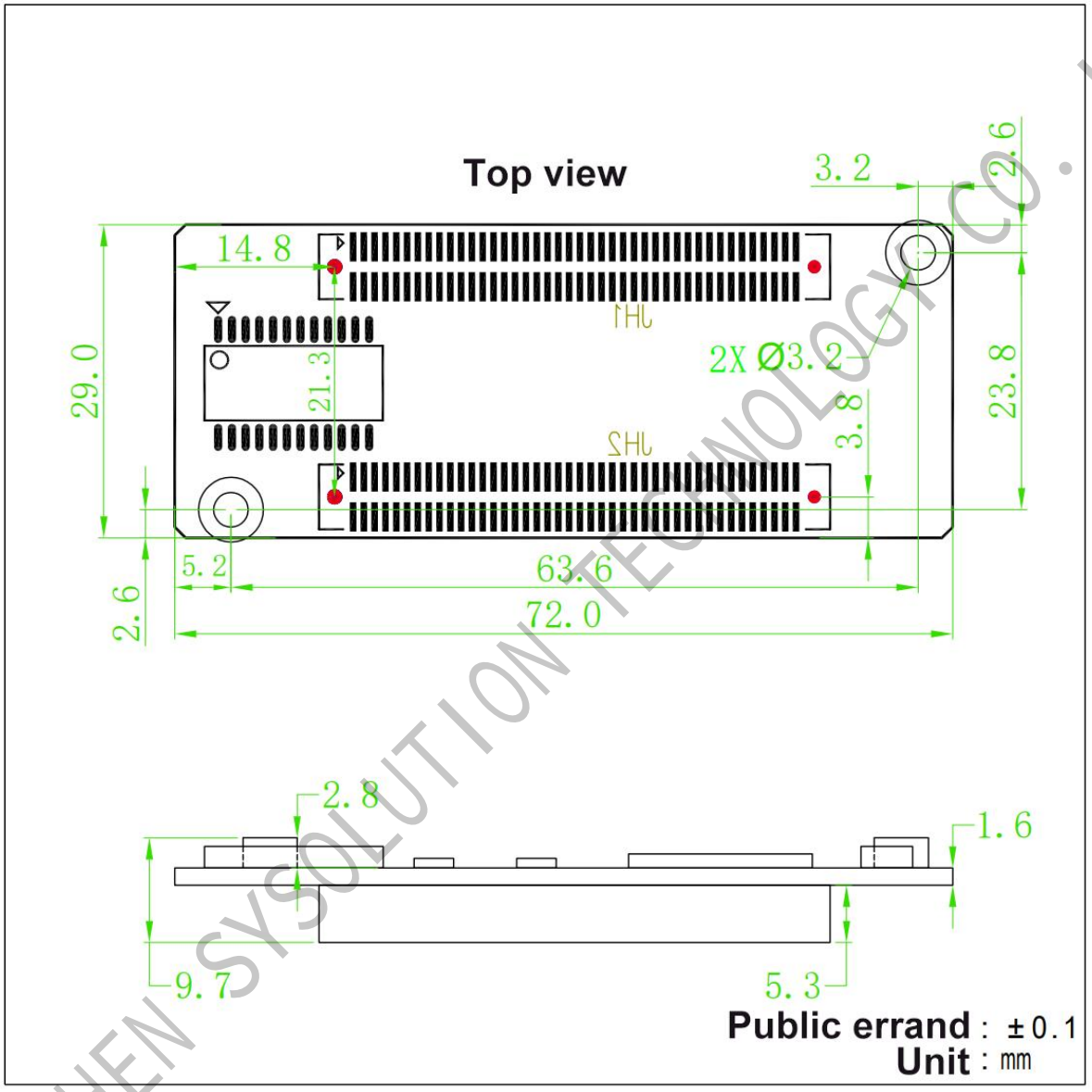
extend interface	**Recommended intelligent module interface**	**Recommended Flash interface for light board**	**description**
RFU1	Reserved	Reserved	Reserved pins connected to MCU
RFU2	Reserved	Reserved	Reserved pins connected to MCU

RFU3	HUB_CODE0	HUB_CODE0	Flash control interface 1
RFU4	HUB_SPI_CLK	HUB_SPI_CLK	Clock signal of serial interface
RFU5	HUB_CODE1	HUB_CODE1	Flash control interface 2
RFU6	HUB_SPI_CS	HUB_SPI_CS	signal of serial interface
RFU7	HUB_CODE2	HUB_CODE2	Flash control interface 3
RFU8	/	HUB_SPI_MOSI	Lamp board Flash storage data input
	HUB_UART_TX	/	Intelligent module TX signal
RFU9	HUB_CODE3	HUB_CODE3	Flash control interface 4
RFU10	/	HUB_SPI_MISO	Lamp board Flash storage data output
	HUB_UART_RX	/	Intelligent module RX signal
RFU11	HUB_H164_CSD	HUB_H164_CSD	74HC164 clock signal
RFU12	/	/	/
RFU13	HUB_H164_CLK	HUB_H164_CLK	74HC164 clock signal
RFU14	POWER_STA1	POWER_STA1	Dual power detection signal 1
RFU15	MS_DATA	MS_DATA	Dual card backup connection signal
RFU16	POWER_STA2	POWER_STA2	Dual power detection signal 2
RFU17	MS_ID	MS_ID	Dual card backup identity identification signal
RFU18	HUB_CODE4	HUB_CODE4	Flash control interface 5

Indicators Description

indicators	Position	status	Description
Status indicator light (Green)	U6	regular slow flash	The receiving card is working properly, the network cable connection is normal, and there is no DVI signal input.
		regular fast flash	The receiving card is working properly, the network cable connection is normal, and there is a DVI signal input.
		solid off	No Gigabit network signal
		fast flash 3 times per interval	The receiving card is working properly, the network cable circuit is connected, and there is a DVI signal input.
Status indicator light (Red)	U5	solid on	power supply is normal

Dimensions



Working Parameters

Electrical parameters	input voltage	DC3.5-5.5V
	Rated current	0.6A
	Rated power	3W
working environment	working temperature	-40℃-80℃
	working humidity	10%RH-90%RH
stock environment	temperature	-25℃～125℃
size	72mmX29mmX9.7mm	
Net weight	14.2g	
certificates	Compliant with RoHS standards and CE-EMC standards	

Note

1. Must be used in accordance with this usage requirement.
2. Installation and commissioning must be done by professionals and must be anti-static.
3. Pay attention to waterproof and dust removal.。