H10s

LED receiver series

Version: v1. 2
Release Date: October 2021

Specification

Version history

The version number	Change details	Publish time
V1.0	The first version was released	2021. 06.12
V1.1	Modify the document device description	2021. 07.08
V1.2	Modify the cover page	2021.10.25

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1　Product overview

1.1　Product application

H10s receiver card is a small size full-featured high-end receiving card, applied to the LED display as a display data receiving device, used to convert the received data into a signal that the driver chip can recognize, and spliced into an image for display on a large screen.

1.2　Features

- Supports 32 groups of parallel data.

- Single card with 512 *512 pixels.

- It adopts high-density connector interface, and the connection is stable and reliable.

- Integrated network transformer for improved electromagnetic compatibility.

- Unique arbitrary frequency doubling technology, the phone shoots without scanning lines.

- Unique color reproduction technology makes the face complexion more realistic.

- Supports a wide range of general-purpose chips, dual-latch chips and PWM chips.

- Support HDR10 high dynamic range display.

- Support low-light high-gray display.

- Supports point-by-point brightness correction function.

- Support dual SIM backup.

- Support dual power backup detection function.

- Support external LCD module.

- Supports flash management of lightboards.

- Supports its own temperature and voltage monitoring functions.

- Support one-click read back profile information function.

- Support one-click repair function, card replacement worry-free.

- Supports real-time detection of network communication status.

- Support display rotation function at any angle.

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- Support any extraction point, easy to set up a variety of special-shaped screens.

- Complies with EU RoHS standards.

- Passed CE, FCC certification.

2 Product appearance
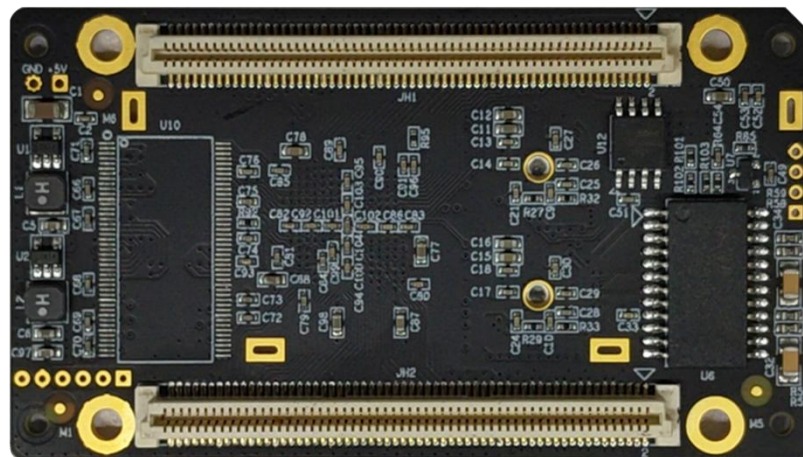

Figure 1 Front view of the H10s receiving card

Figure 2 Back of the H10s receiving card

3 Interface signal definition

3.1 32 sets of parallel data interfaces

JH1						
		GND	1	2	GND	

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LCD	The CS signal of the LCD	EXT_LCD_CS	3	4	NC		
	The RS signal for the LCD	EXT_LCD_RS	5	6	NC		
	The clock signal of the LCD	EXT_LCD_SCL	7	8	NC		
	The data signal of the LCD	EXT_LCD_SDA	9	10	NC		
	LCD backlight signal 1	EXT_LCD_BL0	11	12	NC		
	LCD backlight signal 2	EXT_LCD_BL1	13	14	NC		
	LCD control buttons	EXT_KEY	15	16	NC		
Note 5	/	RFU1	17	18	NC		
	/	RFU2	19	20	NC		
		GND	21	22	NC		
		NC	23	24	NC		
		GND	25	26	GND		
Note 2	/	G17	27	28	R17	/	Note 2
	/	R18	29	30	B17	/	
	/	B18	31	32	G18	/	
	/	G19	33	34	R19	/	
	/	R20	35	36	B19	/	
	/	B20	37	38	G20	/	
		GND	39	40	GND		
Note 2	/	G21	41	42	R21	/	Note 2
	/	R22	43	44	B21	/	
	/	B22	45	46	G22	/	
	/	G23	47	48	R23	/	
	/	R24	49	50	B23	/	
	/	B24	51	52	G24	/	
		GND	53	54	GND		
Note 2		G25	55	56	R25		Note 2
		R26	57	58	B25		
		B26	59	60	G26		
		G27	61	62	R27		
		R28	63	64	B27		
		B28	65	66	G28		
		GND	67	68	GND		
		G29	69	70	R29		
		R30	71	72	B29		

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Note 2		B30	73	74	G30		Note 2
		G31	75	76	B31		
		R32	77	78	B31		
		B32	79	80	G32		
		GND	81	82	GND		
Note 5	/	RFU4	83	84	RFU3	/	Note 5
	/	RFU6	85	86	RFU5	/	
	/	RFU8	87	88	RFU7	/	
	/	RFU10	89	90	RFU9	/	
	/	RFU12	91	92	RFU11	/	
	/	RFU14	93	94	RFU13	/	
		GND	95	96	GND		
Note 5	/	RFU16	97	98	RFU15	/	Note 5
	/	RUF18	99	100	RFU17	/	
		NC	101	102	NC		
		NC	103	104	NC		
		NC	105	106	NC		
		NC	107	108	NC		
		GND	109	110	GND		
		GND	111	112	GND		
		NC	113	114	NC		
Note 1		VCC	115	116	VCC		Note 1
		VCC	117	118	VCC		
		VCC	119	120	VCC		

JH2							
	Enclosure grounded	Eth_Sheild	1	2	Eth_Sheild	Enclosure grounded	
	Enclosure grounded	Eth_Sheild	3	4	Eth_Sheild	Enclosure grounded	
		NC	5	6	NC		
		NC	7	8	NC		
Gigabit Internet Port	/	Port1_T0+	9	10	Port2_T0+	/	Gigabit Internet Port
	/	Port1_T0-	11	12	Port2_T0-	/	

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		NC	13	14	NC		
	/	Port1_T1+	15	16	Port2_T1+	/
	/	Port1_T1-	17	18	Port2_T1-	/
		NC	19	20	NC	
	/	Port1_T2+	21	22	Port2_T2+	/
	/	Port1_T2-	23	24	Port2_T2-	/
		NC	25	26	NC	
	/	Port1_T3+	27	28	Port2_T3+	/
	/	Port1_T3-	29	30	Port2_T3-	/
		NC	31	32	NC	
		NC	33	34	NC	
	Test the keystrokes	TEST_INPUT_KEY	35	36	STA_LED-	Running LED	Note 3
		GND	37	38	GND	
	Line decoding signal	A	39	40	DCLK	The first shift clock output
	Line decoding signal	B	41	42	DCLK_2	Second shift clock output
	Line decoding signal	C	43	44	LAT	Latch signal output
	Line decoding signal	D	45	46	CTRL	The afterglow controls the signal
	Line decoding signal	E	47	48	OE_RED	Display enablement	Note 4
Note 4	Display enablement	OE_BLUE	49	50	OE_GREEN	Display enablement
		GND	51	52	GND	
	/	G1	53	54	R1	/
	/	R2	55	56	B1	/
Note 2	/	B2	57	58	G2	/	Note 2
	/	G3	59	60	R3	
	/	R4	61	62	B3	/
	/	B4	63	64	G4	/
		GND	65	66	GND	
	/	G5	67	68	R5	/
	/	R6	69	70	B5	/
Note 2	/	B6	71	72	G6	/	Note 2
	/	G7	73	74	R7	/

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	/	R8	75	76	B7	/	
	/	B8	77	78	G8	/	
		GND	79	80	GND		
Note 2	/	G9	81	82	R9	/	Note 2
	/	R10	83	84	B9	/	
	/	B10	85	86	G10	/	
	/	G11	87	88	R11	/	
	/	R12	89	90	B11	/	
	/	B12	91	92	G12	/	
		GND	93	94	GND		
Note 2	/	G13	95	96	R13	/	Note 2
	/	R14	97	98	B13	/	
	/	B14	99	100	G14	/	
	/	G15	101	102	R15	/	
	/	R16	103	104	B15	/	
	/	B16	105	106	G16	/	
		GND	107	108	GND		
		NC	109	110	NC		
		NC	111	112	NC		
		NC	113	114	NC		
		NC	115	116	NC		
		GND	117	118	GND		
		GND	119	120	GND		

Note 1　The input supply VCC is 3.5V-5.5V recommended.

Note 2　RGB data sets must be used in groups.

Note 3　The operating LED is active low.

Note 4　OE_RED, OE_GREEN, OE_BLUE are display enable pins. OE_RGB Use OE_RED when control is not separate. When using a PWM chip, it is a GCLK signal.

Note 5　RFU1~18 is a reserved extension function interface, for details, please refer to the "3.2 Extension Function Reference Design"

3.2　Extended Functionality Reference Design

Extended functional interface description			
Extension interface	Recommended smart module interface	The lightboard Flash interface is recommended	illustrate
RFU1	/	/	/
RFU2	/	/	/

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RFU3	HUB_CODE0	HUB_CODE0	Flash control interface 1
RFU4	HUB_SPI_CLK	HUB_SPI_CLK	The clock signal of the serial interface
RFU5	HUB_CODE1	HUB_CODE1	Flash control interface 2
RFU6	HUB_SPI_CS	HUB_SPI_CS	The CS signal of the serial interface
RFU7	HUB_CODE2	HUB_CODE2	Flash Control Interface 3
RFU8	/ HUB_UART_TX	HUB_SPI_MOSI /	Lightboard Flash stores data entry Smart Module TX Signal
RFU9	HUB_CODE3	HUB_CODE3	Flash control interface 4
RFU10	/ HUB_UART_RX	HUB_SPI_MISO /	Lightboard Flash stores data output Smart module RX signal
RFU11	HUB_H164_CSD	HUB_H164_CSD	74HC164 data signal
RFU12	/	/	/
RFU13	HUB_H164_CLK	HUB_H164_CLK	74HC164 clock signal
RFU14	POWER_STA1	POWER_STA1	Dual-supply heartbeat 1
RFU15	MS_DATA	MS_DATA	Dual SIM backup connection signal
RFU16	POWER_STA2	POWER_STA2	Dual-supply heartbeat 2
RFU17	MS_ID	MS_ID	Dual-SIM backup identity signal

Description: RFU8 and RFU10 are signal multiplexing extension interfaces, "Recommended Smart Module Interface" and "Recommended Lightboard Flash Interface" You can only choose one of the two.

4   Description of the LED status

LED status	
Power LED	Constant on means that the power supply is normal, and off means that there is no power
Signal status INDICATOR	Blinks when there is a signal input, and does not light or solid when there is no signal
MCU status LED	Flashing indicates that the MCU is working properly

5   Electrical parameters

project	The parameter value
Rated voltage	DC 3.3V-5.5V
Rated current	0.5A
Operating	-10°C- 70°C

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temperature	
Operating humidity	0% - 95%

6   Dimensional drawings

Unit mm, board thickness is not more than 2.0mm, the total thickness (board thickness + front and back device thickness) is not more than 8.5mm.