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IEM6300-20G

Managed Industrial Ethernet Switch Module Hardware Quick Installation Manual

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Industrial Ethernet Communication Solution Expert

3onedata Co., Ltd.

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Preface

The manual has introduced the following contents:

- Product Overview
- Encapsulation and size
- Pin definition
- Interface Description

Audience

This manual applies to the following engineers:

- Network administrators
- Technical support engineers
- Hardware engineers

Port Convention

The port number in this manual is only an example, and does not represent the actual port with this number on the device. In actual use, the port number existing on the device shall prevail.

Text Format Convention

Format	Description
" "	Words with "" represent the interface words. Such as: "Port No.".
>	Multi-level path is separated by ">". Such as opening the local connection path description: Open "Control Panel> Network Connection> Local Area Connection".
Light Blue Font	It represents the words clicked to achieve hyperlink. The font color is as follows: 'Light Blue'.
About this chapter	The section 'about this chapter' provide links to various sections of this chapter, as well as links to the Principles Operations Section of this chapter.

Symbols

Format	Description
 Notice	Remind the announcements in the operation, improper operation may result in data loss or equipment damage.
 Warning	Pay attention to the notes on the mark, improper operation may cause personal injury.
 Note	Make a necessary supplementary instruction for operation description.
 Key	Configuration, operation, or tips for device usage.
 Tips	Pay attention to the operation or information to ensure success device configuration or normal working.

Revision Record

Version No.	Date	Revision note
01	06/13/2022	Manual development
02	08/29/2022	Renew power consumption
03	09/28/2022	Document maintenance
04	02/17/2023	Document maintenance

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1 Product Overview

1.1 Product Introduction

Welcome to use the core module of embedded industrial Ethernet switch. This module, together with Ethernet switch baseboard, forms a complete industrial network managed Ethernet switch function.

- Supports 16 10/100/1000BASE-T (X) Ethernet copper ports and 4 1000BASE-X fiber ports (SFP slots). All copper ports of this product support automatic flow rate control, full/half duplex mode and MDI/MDI-X self-adaption.
- The standard industrial grade design can meet the requirements of various industrial sites; The device all adopt industrial grade components to achieve high reliability. The module supports 3.3VDC $\pm$ 5% voltage input.

1.2 Product Specification

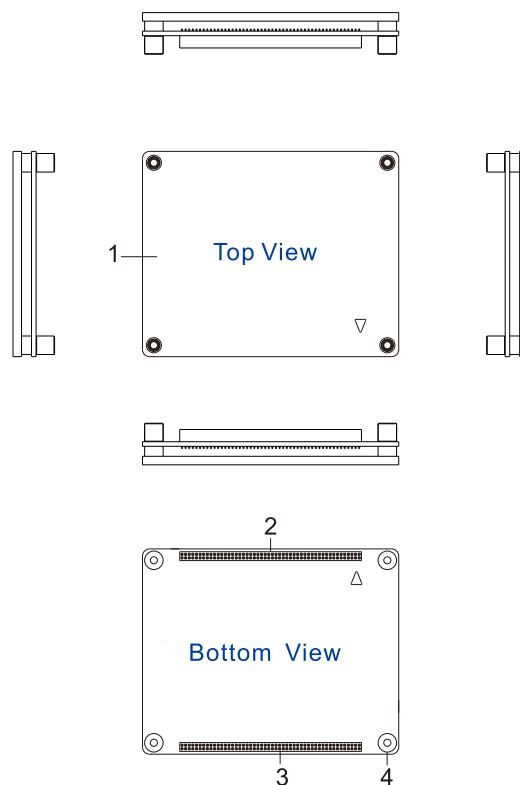
Interface	
Gigabit copper port	16 10/100/1000Base-T(X), Automatic Flow Control, Full/Half Duplex Mode, MDI/MDI-X Autotuning
Gigabit fiber port	4 1000Base-X
CONSOLE port	CLI command management port, TTL level serial data
Alarm interface	1 relay alarm output
Switch Property	
Backplane bandwidth	40G
Packet buffer size	4Mbit
MAC address table	8K

Power Supply	
Input power supply	3.3VDC (±5%)
Power Consumption	
Full load	14.8W (including DEMO board@12VDC)
Working Environment	
Working temperature	-40~75°C
Storage temperature	-40~85°C
Working humidity	5%~95%
Physical Characteristic	
Mounting	Embedded installation (pin and female header type)
Dimension (W x H x D)	90mm×72mm×14.6mm

2 Hardware Description

2.1 Dimension

2.1.1 Capsulation Design

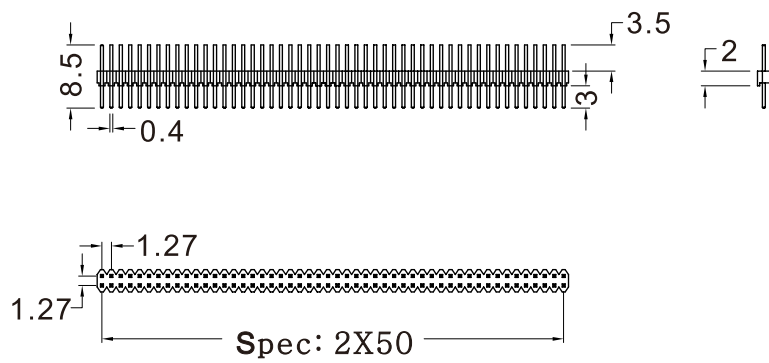


The details of each package label are shown in the following table:

Capsulation	Name	Specification	Note
-------------	------	---------------	------

Capsulation	Name	Specification	Note
1	A blade of thermal conductivity	90mm*72mm	External heat sink available
2	Connector J2	Connector 2*50, pin spacing 1.27mm, connector height 4.3mm, square hole 0.4mm*0.4mm	—
3	Connector J1	Connector 2*50, pin spacing 1.27mm, connector height 4.3mm, square hole 0.4mm*0.4mm	—
4	location hole	The inner diameter is $\Phi 2.5\text{mm}$, and the distance from the center of the circle to the four sides of the PCB is 4mm. Note: 4 positioning holes can be planned on the bottom plate, and M3 screws are used to connect the copper column of the module through the bottom plate to fix the module; - The diameter of the positioning hole of the bottom plate should be greater than $\Phi 3.0\text{mm}$ to avoid the screw being unable to pass because the diameter is too small.	The four positioning holes have the same specifications

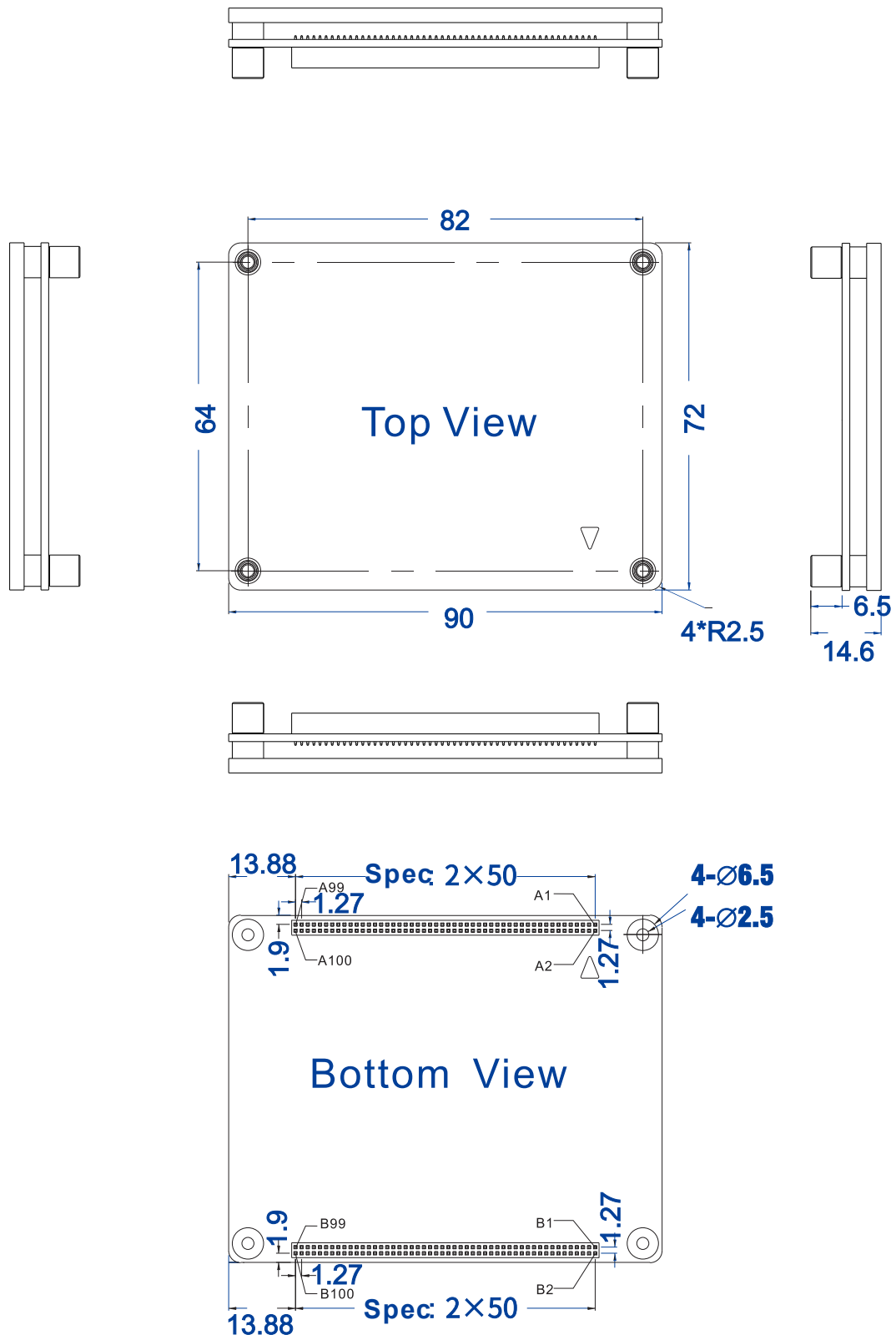
The needle specifications corresponding to J1 and J2 can refer to the following view, unit is mm:



2.1.2 Product Dimension

The diagram of module structure dimension is as follows:

Unit: mm



Note:

Except the connector, the bottom of the module contains some protruding components. In order to avoid installation conflicts, the height of the components in the position

corresponding to the motherboard is limited to 3mm.

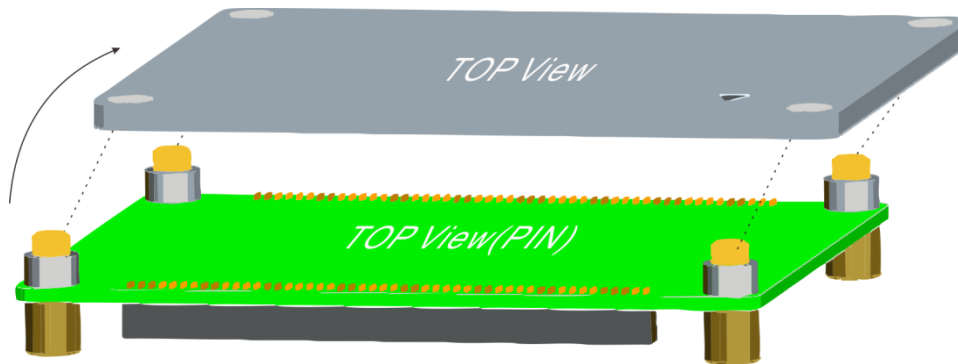
2.2 Pin Definition Description

2.2.1 Pin Definition View

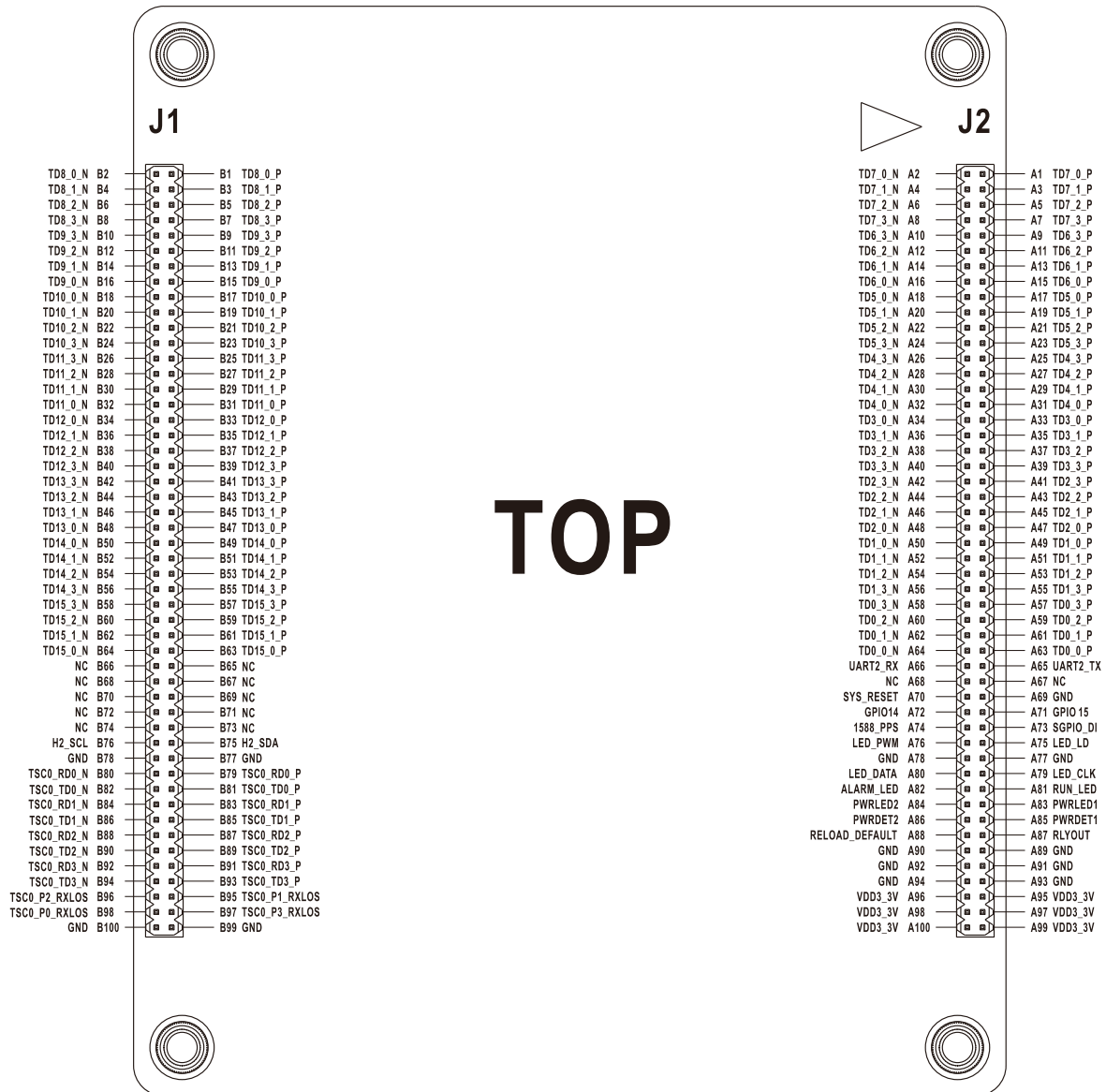


Note

In order to facilitate users to view pin definition when PCB board wiring, the pin definition diagram adopts the top view Angle as shown below.



Top view of module pin number and name is as follows:



2.3 Pin Definition List

A1-A100 pin definition in J2

Pin No.	PIN Name	Pin No.	PIN Name
A1	TD7_0_P	A2	TD7_0_N
A3	TD7_1_P	A4	TD7_1_N
A5	TD7_2_P	A6	TD7_2_N
A7	TD7_3_P	A8	TD7_3_N
A9	TD6_3_P	A10	TD6_3_N

Pin No.	PIN Name	Pin No.	PIN Name
A11	TD6_2_P	A12	TD6_2_N
A13	TD6_1_P	A14	TD6_1_N
A15	TD6_0_P	A16	TD6_0_N
A17	TD5_0_P	A18	TD5_0_N
A19	TD5_1_P	A20	TD5_1_N
A21	TD5_2_P	A22	TD5_2_N
A23	TD5_3_P	A24	TD5_3_N
A25	TD4_3_P	A26	TD4_3_N
A27	TD4_2_P	A28	TD4_2_N
A29	TD4_1_P	A30	TD4_1_N
A31	TD4_0_P	A32	TD4_0_N
A33	TD3_0_P	A34	TD3_0_N
A35	TD3_1_P	A36	TD3_1_N
A37	TD3_2_P	A38	TD3_2_N
A39	TD3_3_P	A40	TD3_3_N
A41	TD2_3_P	A42	TD2_3_N
A43	TD2_2_P	A44	TD2_2_N
A45	TD2_1_P	A46	TD2_1_N
A47	TD2_0_P	A48	TD2_0_N
A49	TD1_0_P	A50	TD1_0_N
A51	TD1_1_P	A52	TD1_1_N
A53	TD1_2_P	A54	TD1_2_N
A55	TD1_3_P	A56	TD1_3_N
A57	TD0_3_P	A58	TD0_3_N
A59	TD0_2_P	A60	TD0_2_N
A61	TD0_1_P	A62	TD0_1_N
A63	TD0_0_P	A64	TD0_0_N
A65	UART2_TX	A66	UART2_RX
A67	NC	A68	NC
A69	GND	A70	SYS_RESET
A71	GPIO15	A72	GPIO14
A73	SGPIO_DI	A74	1588_PPS
A75	LED_LD	A76	LED_PWM
A77	GND	A78	GND

Pin No.	PIN Name	Pin No.	PIN Name
A79	LED_CLK	A80	LED_DATA
A81	RUN_LED	A82	ALARM_LED
A83	PWRLED1	A84	PWRLED2
A85	PWRDET1	A86	PWRDET2
A87	RLYOUT	A88	RELOAD_DEFAULT
A89	GND	A90	GND
A91	GND	A92	GND
A93	GND	A94	GND
A95	VDD3_3V	A96	VDD3_3V
A97	VDD3_3V	A98	VDD3_3V
A99	VDD3_3V	A100	VDD3_3V

B1-B100 pin definition in J1

Pin No.	PIN Name	Pin No.	PIN Name
B1	TD8_0_P	B2	TD8_0_N
B3	TD8_1_P	B4	TD8_1_N
B5	TD8_2_P	B6	TD8_2_N
B7	TD8_3_P	B8	TD8_3_N
B9	TD9_3_P	B10	TD9_3_N
B11	TD9_2_P	B12	TD9_2_N
B13	TD9_1_P	B14	TD9_1_N
B15	TD9_0_P	B16	TD9_0_N
B17	TD10_0_P	B18	TD10_0_N
B19	TD10_1_P	B20	TD10_1_N
B21	TD10_2_P	B22	TD10_2_N
B23	TD10_3_P	B24	TD10_3_N
B25	TD11_3_P	B26	TD11_3_N
B27	TD11_2_P	B28	TD11_2_N
B29	TD11_1_P	B30	TD11_1_N
B31	TD11_0_P	B32	TD11_0_N
B33	TD12_0_P	B34	TD12_0_N
B35	TD12_1_P	B36	TD12_1_N
B37	TD12_2_P	B38	TD12_2_N

Pin No.	PIN Name	Pin No.	PIN Name
B39	TD12_3_P	B40	TD12_3_N
B41	TD13_3_P	B42	TD13_3_N
B43	TD13_2_P	B44	TD13_2_N
B45	TD13_1_P	B46	TD13_1_N
B47	TD13_0_P	B48	TD13_0_N
B49	TD14_0_P	B50	TD14_0_N
B51	TD14_1_P	B52	TD14_1_N
B53	TD14_2_P	B54	TD14_2_N
B55	TD14_3_P	B56	TD14_3_N
B57	TD15_3_P	B58	TD15_3_N
B59	TD15_2_P	B60	TD15_2_N
B61	TD15_1_P	B62	TD15_1_N
B63	TD15_0_P	B64	TD15_0_N
B65	NC	B66	NC
B67	NC	B68	NC
B69	NC	B70	NC
B71	NC	B72	NC
B73	NC	B74	NC
B75	H2_SDA	B76	H2_SCL
B77	GND	B78	GND
B79	TSC0_RD0_P	B80	TSC0_RD0_N
B81	TSC0_TD0_P	B82	TSC0_TD0_N
B83	TSC0_RD1_P	B84	TSC0_RD1_N
B85	TSC0_TD1_P	B86	TSC0_TD1_N
B87	TSC0_RD2_P	B88	TSC0_RD2_N
B89	TSC0_TD2_P	B90	TSC0_TD2_N
B91	TSC0_RD3_P	B92	TSC0_RD3_N
B93	TSC0_TD3_P	B94	TSC0_TD3_N
B95	TSC0_P1_RXLOS	B96	TSC0_P2_RXLOS
B97	TSC0_P3_RXLOS	B98	TSC0_P0_RXLOS
B99	GND	B100	GND

2.4 Detailed Pin Description

2.4.1 Positive Terminal 0 and Negative Terminal 0 of 1000M Ethernet Interface Data Transmission

PIN Name	Pin No.	Type	Function Description
TD0_0_P	A63	Typical output	Positive terminal 0 of 1000M Ethernet interface data transmission When the port is configured as a 1000M copper port, TD[0:15]_0_P is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD1_0_P	A49		
TD2_0_P	A47		
TD3_0_P	A33		
TD4_0_P	A31		
TD5_0_P	A17		
TD6_0_P	A15		
TD7_0_P	A1		
TD8_0_P	B1		
TD9_0_P	B15		
TD10_0_P	B17		
TD11_0_P	B31		
TD12_0_P	B33		
TD13_0_P	B47		
TD14_0_P	B49		
TD15_0_P	B63		
TD0_0_N	A64	Typical output	Negative terminal 0 of 1000M Ethernet interface data transmission. When the port is configured as a 1000M copper port, TD[0:15]_0_P is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD1_0_N	A50		
TD2_0_N	A48		
TD3_0_N	A34		
TD4_0_N	A32		
TD5_0_N	A18		
TD6_0_N	A16		
TD7_0_N	A2		
TD8_0_N	B2		
TD9_0_N	B16		
TD10_0_N	B18		

PIN Name	Pin No.	Type	Function Description
TD11_0_N	B32		
TD12_0_N	B34		
TD13_0_N	B48		
TD14_0_N	B50		
TD15_0_N	B64		

2.4.2 Positive Terminal 1 and Negative Terminal 1 of 1000M Ethernet Interface Data Transmission

PIN Name	Pin No.	Type	Function Description
TD0_1_P	A61	Typical output	Positive terminal 1 of 1000M Ethernet interface data transmission When the port is configured as a 1000M copper port, TD[0:15]_1_P is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD1_1_P	A51		
TD2_1_P	A45		
TD3_1_P	A35		
TD4_1_P	A29		
TD5_1_P	A19		
TD6_1_P	A13		
TD7_1_P	A3		
TD8_1_P	B3		
TD9_1_P	B13		
TD10_1_P	B19		
TD11_1_P	B29		
TD12_1_P	B35		
TD13_1_P	B45		
TD14_1_P	B51		
TD15_1_P	B61		
TD0_1_N	A62	Typical output	Negative terminal 1 of 1000M Ethernet interface data transmission. When the port is configured as a 1000M copper port, TD[0:15]_1_P is directly connected to the receiving network transformer.
TD1_1_N	A52		
TD2_1_N	A46		
TD3_1_N	A36		
TD4_1_N	A30		
TD5_1_N	A20		

PIN Name	Pin No.	Type	Function Description
TD6_1_N	A14		Note: Grounding is recommended when this pin is not in use.
TD7_1_N	A4		
TD8_1_N	B4		
TD9_1_N	B14		
TD10_1_N	B20		
TD11_1_N	B30		
TD12_1_N	B36		
TD13_1_N	B46		
TD14_1_N	B52		
TD15_1_N	B62		

2.4.3 Positive Terminal 2 and Negative Terminal 2 of 1000M Ethernet Interface Data Transmission

PIN Name	Pin No.	Type	Function Description
TD0_2_P	A59	Typical output	Positive terminal 2 of 1000M Ethernet interface data transmission When the port is configured as a 1000M copper port, TD[0:15]_1_P is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD1_2_P	A53		
TD2_2_P	A43		
TD3_2_P	A37		
TD4_2_P	A27		
TD5_2_P	A21		
TD6_2_P	A11		
TD7_2_P	A5		
TD8_2_P	B5		
TD9_2_P	B11		
TD10_2_P	B21		
TD11_2_P	B27		
TD12_2_P	B37		
TD13_2_P	B43		
TD14_2_P	B53		
TD15_2_P	B59		
TD0_2_N	A60	Typical	Negative terminal 2 of 1000M Ethernet

PIN Name	Pin No.	Type	Function Description
TD1_2_N	A54	output	interface data transmission. When the port is configured as a 1000M copper port, TD[0:15]_1_P is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD2_2_N	A44		
TD3_2_N	A38		
TD4_2_N	A28		
TD5_2_N	A22		
TD6_2_N	A12		
TD7_2_N	A6		
TD8_2_N	B6		
TD9_2_N	B12		
TD10_2_N	B22		
TD11_2_N	B28		
TD12_2_N	B38		
TD13_2_N	B44		
TD14_2_N	B54		
TD15_2_N	B60		

2.4.4 Positive Terminal 3 and Negative Terminal 3 of 1000M Ethernet Interface Data Transmission

PIN Name	Pin No.	Type	Function Description
TD0_3_P	A57	Typical output	Positive terminal 3 of 1000M Ethernet interface data transmission When the port is configured as a 1000M copper port, TD[0:15]_1_P is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD1_3_P	A55		
TD2_3_P	A41		
TD3_3_P	A39		
TD4_3_P	A25		
TD5_3_P	A23		
TD6_3_P	A9		
TD7_3_P	A7		
TD8_3_P	B7		
TD9_3_P	B9		
TD10_3_P	B23		
TD11_3_P	B25		

PIN Name	Pin No.	Type	Function Description
TD12_3_P	B39		
TD13_3_P	B41		
TD14_3_P	B55		
TD15_3_P	B57		
TD0_3_N	A58	Typical output	Negative terminal 3 of 1000M Ethernet interface data transmission. When the port is configured as a 1000M copper port, TD[0:15]_1_N is directly connected to the receiving network transformer. Note: Grounding is recommended when this pin is not in use.
TD1_3_N	A56		
TD2_3_N	A42		
TD3_3_N	A40		
TD4_3_N	A26		
TD5_3_N	A24		
TD6_3_N	A10		
TD7_3_N	A8		
TD8_3_N	B8		
TD9_3_N	B10		
TD10_3_N	B24		
TD11_3_N	B26		
TD12_3_N	B40		
TD13_3_N	B42		
TD14_3_N	B56		
TD15_3_N	B58		

2.4.5 BSC Data and BSC Clock

PIN Name	Pin No.	Type	Function Description
H2_SDA	B75	Bidirectional	BSC data output, needs to be pulled up
H2_SCL	B76	Bidirectional	BSC clock output, needs to be pulled up

2.4.6 Universal IO

PIN Name	Pin No.	Type	Function Description
RUN_LED	A81	Universal IO	System running indicator, blinking

PIN Name	Pin No.	Type	Function Description
		Port	indicates that the system is running normally
ALARM_LED	A82		Alarm light output, valid at low level
PWRLED1	A83		Power indicator 1, valid at low level
PWRLED2	A84		Power indicator 2, active-low
PWRDET1	A85		Pin 1 of power supply monitoring, active-high
PWRDET2	A86		Pin 2 of power supply monitoring, active-high
RELOAD_DE FAULT	A88		Restore factory settings, active-low
GPIO15	A71	Bidirectional	RTC serial data input/output, not for other purposes
GPIO14	A72	Output	RTC serial clock output, not for other purposes
SGPIO_DI	A73	Input	Serial universal input/output port, DI input

2.4.7 Positive terminal and negative terminal of TSC receiving

PIN Name	Pin No.	Type	Function Description
TSC0_RD0_P	B79	Output	Positive terminal of TSC0 uplink port receiving
TSC0_RD0_N	B80		Negative terminal of TSC0 uplink port receiving
TSC0_RD1_P	B83		Positive terminal of TSC1 uplink port receiving
TSC0_RD1_N	B84		Negative terminal of TSC1 uplink port receiving
TSC0_RD2_P	B87		Positive terminal of TSC2 uplink port receiving

PIN Name	Pin No.	Type	Function Description
TSC0_RD2_N	B88		Negative terminal of TSC2 uplink port receiving
TSC0_RD3_P	B91		Positive terminal of TSC3 uplink port receiving
TSC0_RD3_N	B92		Negative terminal of TSC3 uplink port receiving
TSC0_TD0_P	B81		Positive terminal of TSC0 uplink port sending
TSC0_TD0_N	B82		Negative terminal of TSC0 uplink port sending
TSC0_TD1_P	B85		Positive terminal of TSC1 uplink port sending
TSC0_TD1_N	B86		Negative terminal of TSC1 uplink port sending
TSC0_TD2_P	B89		Positive terminal of TSC2 uplink port sending
TSC0_TD2_N	B90		Negative terminal of TSC2 uplink port sending
TSC0_TD3_P	B93		Positive terminal of TSC3 uplink port sending
TSC0_TD3_N	B94		Negative terminal of TSC3 uplink port sending
TSC0_P3_RXL OS	B97	Input	LOS signal of TSC3 uplink port (Reserved)
TSC0_P2_RXL OS	B96		LOS signal of TSC2 uplink port (Reserved)
TSC0_P1_RXL OS	B95		LOS signal of TSC1 uplink port (Reserved)
TSC0_P0_RXL OS	B98		LOS signal of TSC0 uplink port (Reserved)

2.4.8 Serial Port Signal

PIN Name	Pin No.	Type	Function Description
UART2_TX	A65	Output	Serial port transmit Note: Serial port is only used as CONSOLE port, not for other purposes.
UART2_RX	A66	Input	Serial port receive Note: Serial port is only used as CONSOLE port, not for other purposes.

2.4.9 Power

PIN Name	Pin No.	Type	Function Description
GND	A69, A77, A78, A89, A90, A91, A92, A93, A94, B77, B78, B99, B100	Ground	Power ground
VDD3_3V	A95, A96, A97, A98, A99, A100	Power	+ 3V3 input

2.4.10 Reset and Relay Output

PIN name	Pin No.	Type	Function Description
RLYOUT	A87	Output	Relay output
SYS_RESET	A70	Output	Reset output for resetting external extended PHY/LED indicator, etc.

2.4.11 Port Signal Indicator

PIN Name	Pin No.	Type	Function Description
LED_CLK	A79	Output	Serial LED clock output
LED_DATA	A80	Output	Serial LED data output
LED_PWM	A75	Output	LED control output, active low

LED_LD	A76	Output	LED storage latch clock line output
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2.4.12 Other Pins

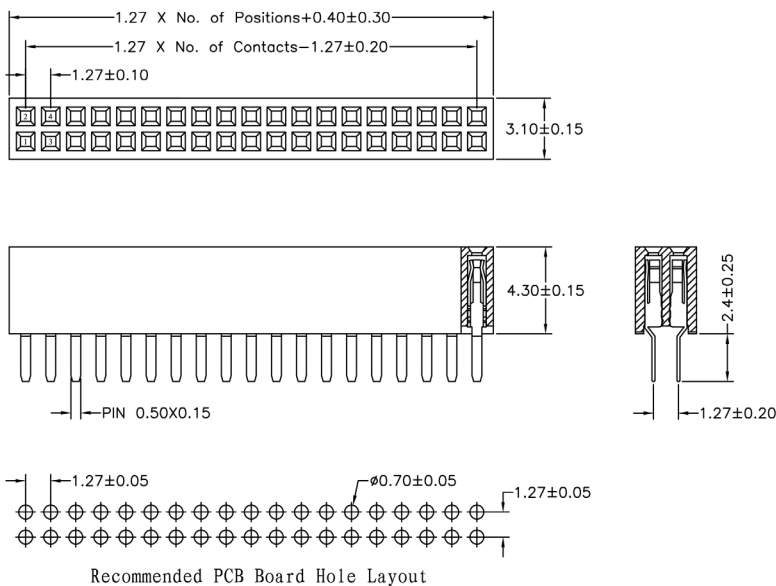
PIN Name	Pin No.	Type	Function Description
1588_PPS	A74	Bidirectional	1588_PPS signal data output
NC	A67-A68, B65-B74	—	Undefined, suspended

2.5 Reference Circuit

2.5.1 Description of Connector Interface

Connector Model	Connector Location	Type
Pin socket: 1.27mm spacing, 4.3mm height	Connector A B	Input

Pin socket specification



Technical Data

Material:
Contact Material: Phosphor Bronze
Contact plating: Au or Sn Over 50μ" Ni
Insulator Material: Black Polyester UL94V-0
Standard: PA6T+30%G.F

Electrical:
Current rating: 0.75Amps/contact max.
Contact resistance: ≤20mΩ/contact
Insulation resistance: ≥1000MΩ at V=100V
Withstanding Voltage: 300V AC/minute

Mechanical:
Average insertion force: <60g
Average withdrawal force: >15g min.
Mechanical life cycle: min.200
Operating temperatures: Gold Plated: -55°C to +105°C
Tin plated: -40°C to +105°C
Soldering temperature: +260°C, 10s max.



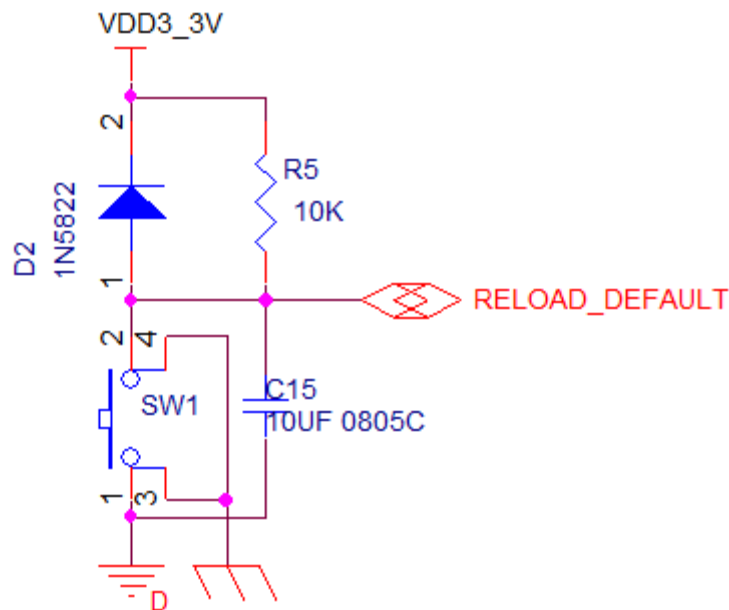
Notice

The power consumption of a single module is less than 12W, and the input voltage range is required to be 3.3VDC $\pm$ 5%

2.5.2 Description of Restore Factory Settings Interface

The following table gives a description of the manual reset interface:

Pin No.	PIN Name	Type	Function Description
RELOAD_ DEFAULT	A88	Input	Restore the factory settings, active low. Notice: Please keep the interface in low level until the restart is completed, and then set it to high level. It takes several tens of seconds to restart.



2.5.3 TSC Port Description

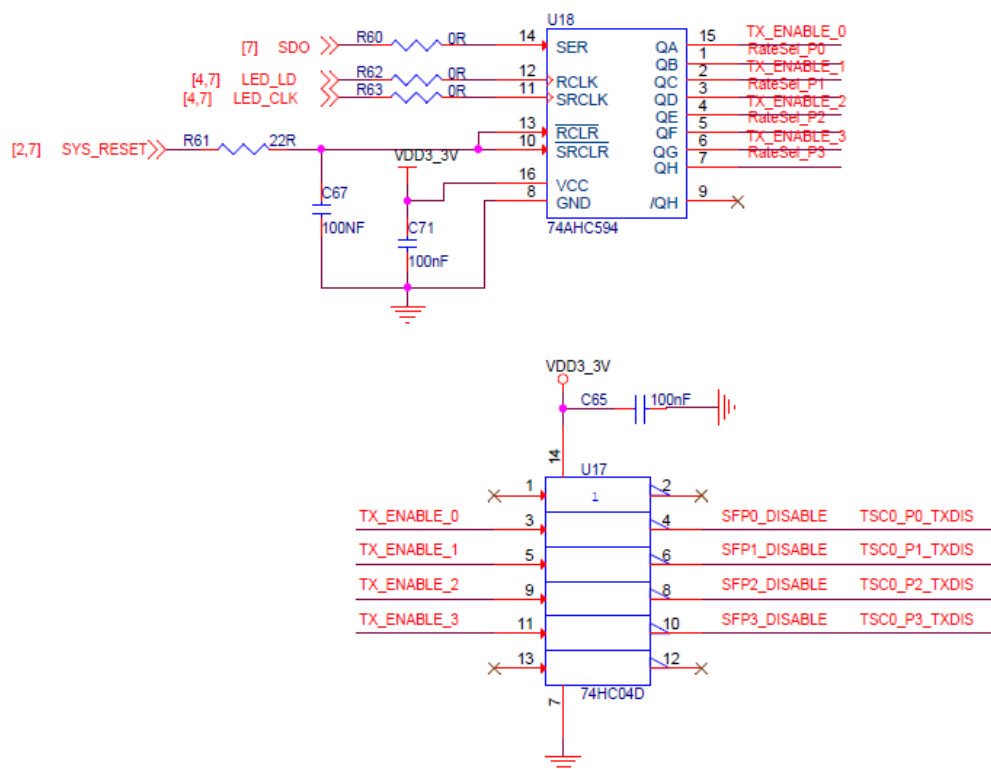
The module provides four SGMII interfaces through TSC port, which can support 1000base-X configuration, sfp or 1x9 optical module and other communication interfaces:

PIN name	Pin No.	Type	Configuration Method
TSC0_TD0_P	B81	Output	TSC0 sgml differential output signal
TSC0_TD0_N	B82		
TSC0_RD0_P	B79	Input	TSC0 sgml differential input

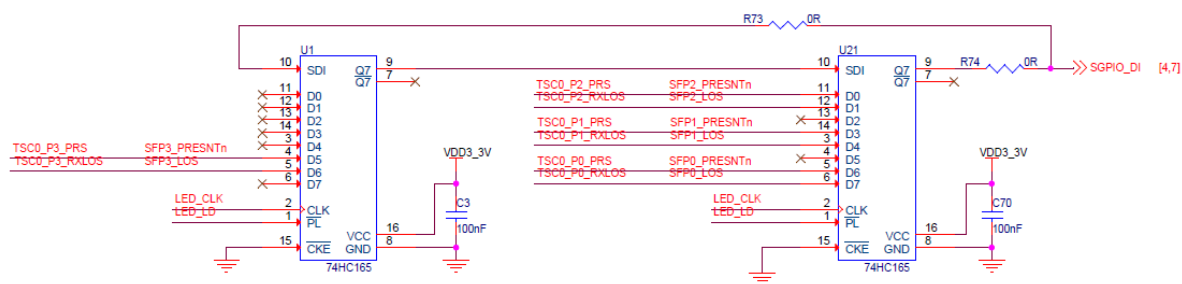
PIN name	Pin No.	Type	Configuration Method
TSC0_RD0_N	B80		signal
TSC0_TD1_P	B85	Output	TSC1 sgmiidifferential output signal
TSC0_TD1_N	B86		
TSC0_RD1_P	B83	Input	TSC1 sgmiidifferential input signal
TSC0_RD1_N	B84		
TSC0_TD2_P	B89	Output	TSC2 sgmiidifferential output signal
TSC0_TD2_N	B90		
TSC0_RD2_P	B87	Input	TSC2 sgmiidifferential input signal
TSC0_RD2_N	B88		
TSC0_TD3_P	B93	Output	TSC3 sgmiidifferential output signal
TSC0_TD3_N	B94		
TSC0_RD3_P	B91	Input	TSC3 sgmiidifferential input signal
TSC0_RD3_N	B92		
H2_SDA	B75	Bidirectional	BSC data output, needs to be pulled up
H2_SCL	B76	Bidirectional	BSC clock output, needs to be pulled up
SGPIO_DI	A73	Input	Serial universal input/output port, DI input
LED_CLK	A79	Output	Serial LED clock output
LED_DATA	A80	Output	Serial LED data output

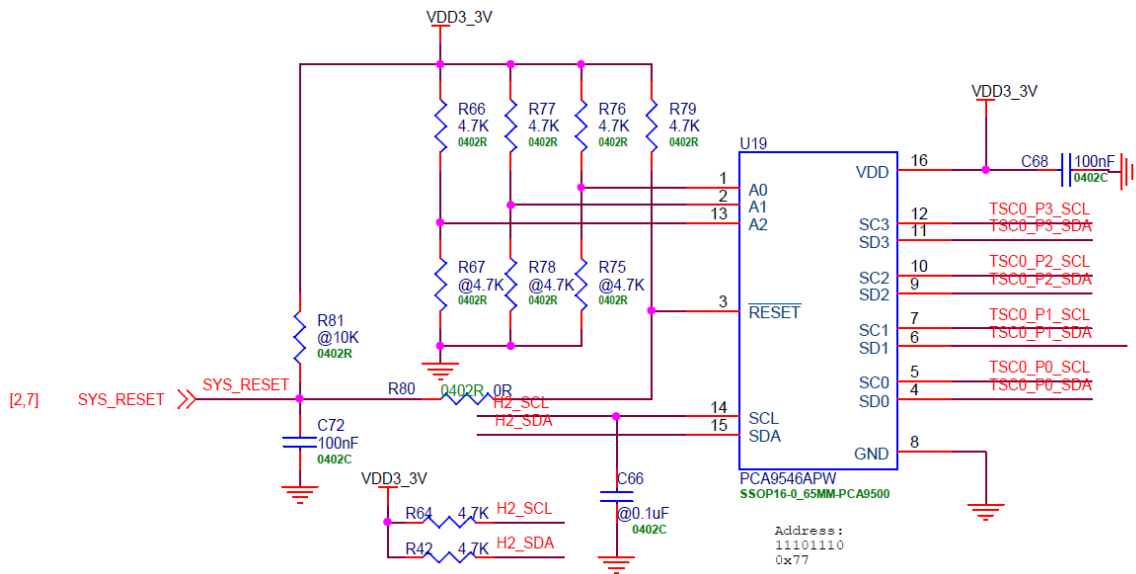
DDMI Reference Circuit

SGPIO_OUTPUT LED



SGPIO_INPUT



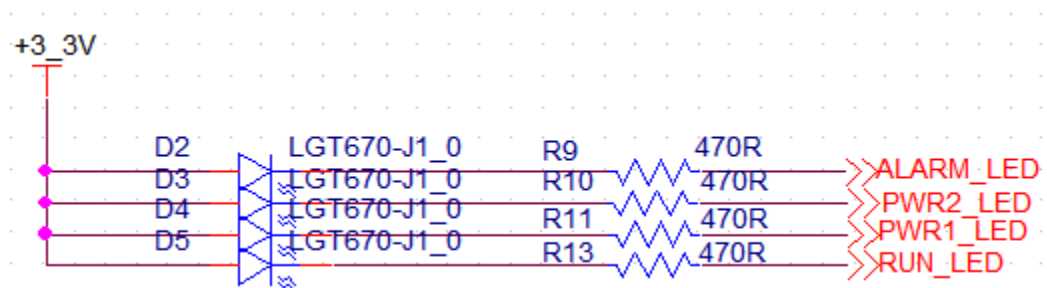


2.5.4 Description of Alarm Interface and Power Indicator Interface

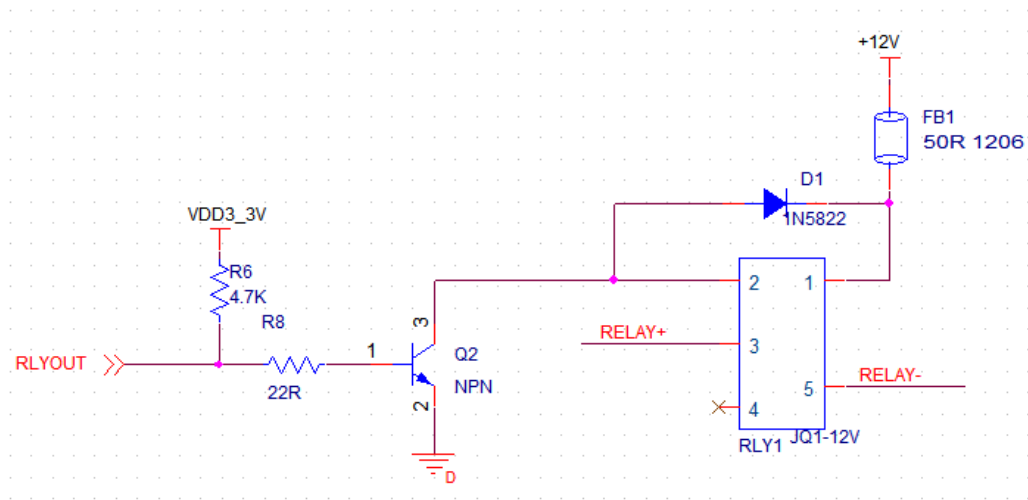
The module has two alarm signal inputs, and the alarm input type can be self-configured. There are two alarm signals outputs, which is active-low. The following table gives the interface descriptions:

Pin No.	PIN name	Type	Configuration Method
A82	ALARM_LED	Output	Alarm light output, valid at low level
A87	RLYOUT	Input	Relay alarm output, active-high
A83	PWRLED1	Output	Power indicator 1
A84	PWRLED2	Output	Power indicator 2

LED Indicator Reference Circuit



Reference circuit of relay alarm

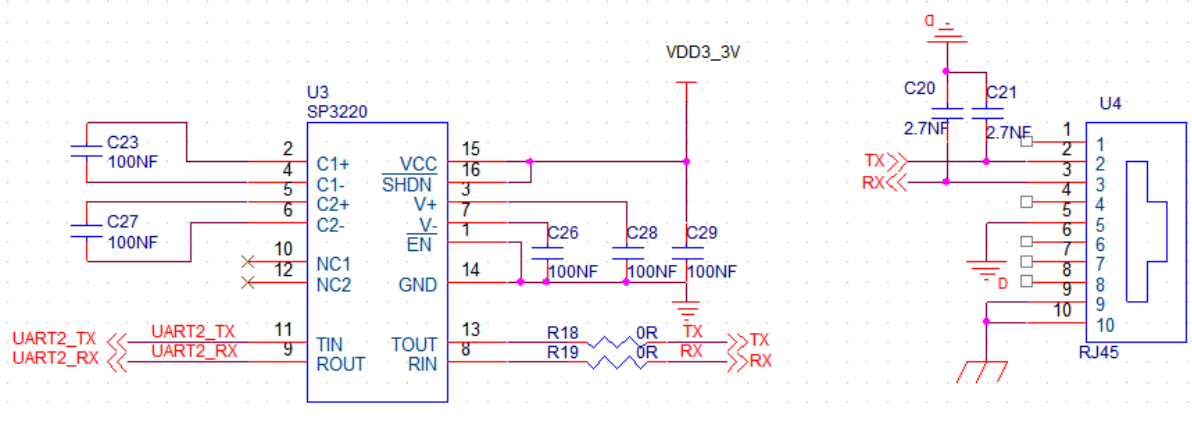


2.5.5 Description of Serial Debug Interface

Serial debugging interface, mainly used to build CLI management platform.

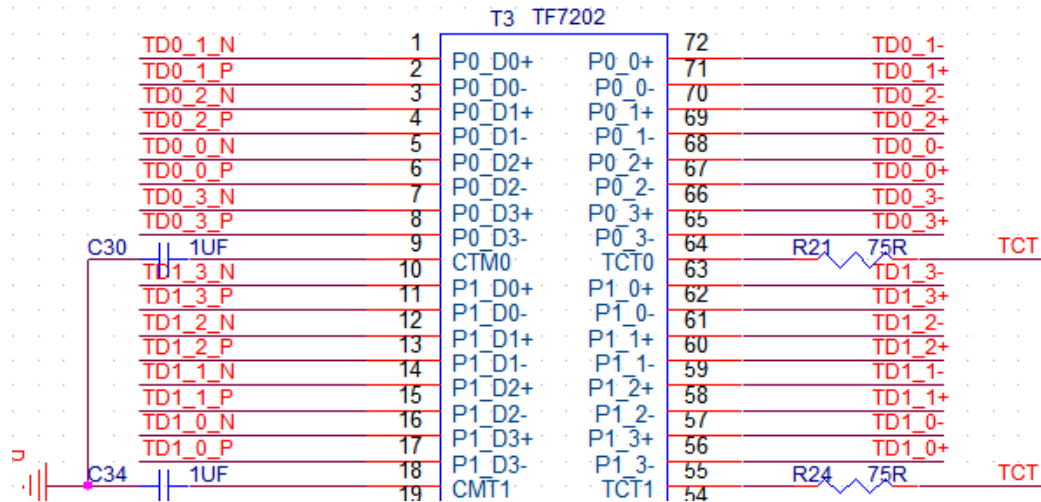
PIN name	Pin No.	Type	Configuration Method
A65	UART2_TX	Output	Serial port transmit Note: Serial port is only used as CONSOLE port, not for other purposes.
A66	UART2_RX	Input	Serial port receive Note: Serial port is only used as CONSOLE port, not for other purposes.

Peripheral reference circuit of serial debugging interface

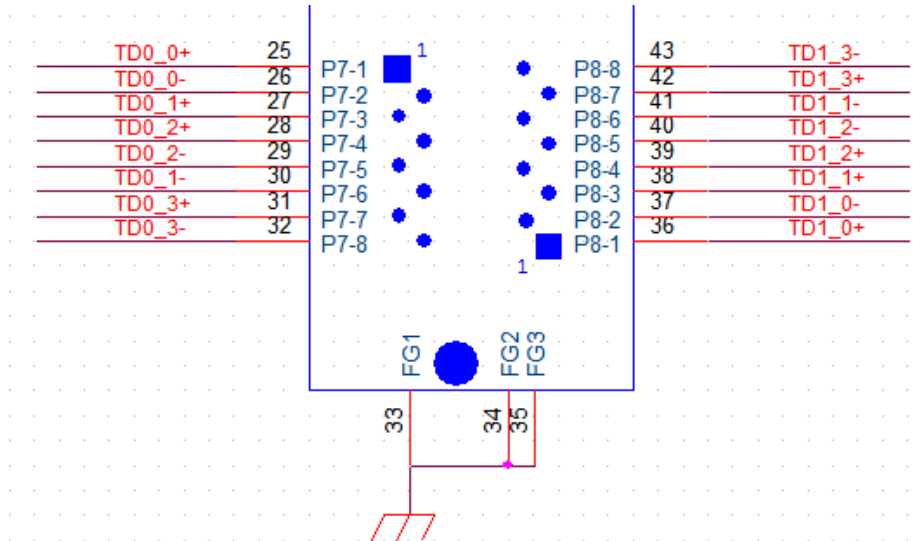


2.5.6 Description of Gigabit Copper Port

Reference circuit of Gigabit network transformer



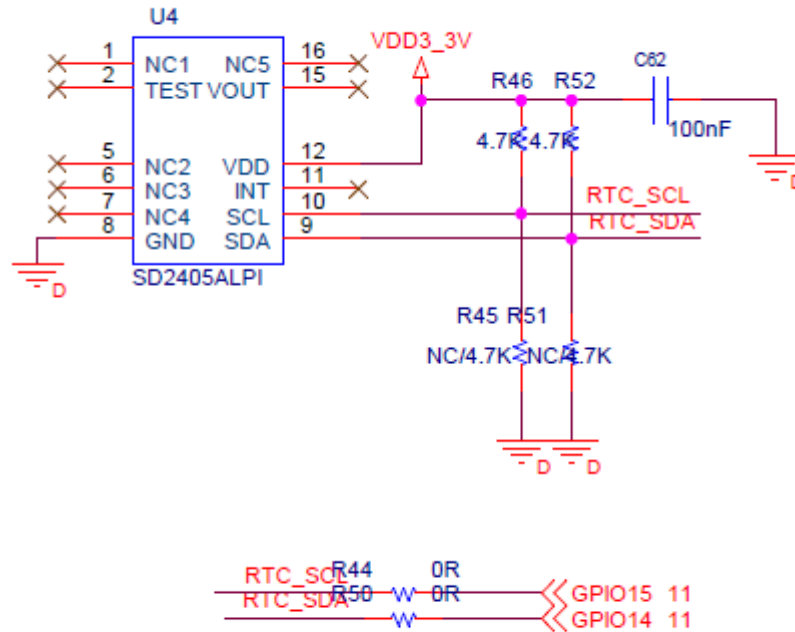
RJ45 Reference Circuit



2.5.7 RTC Clock Description

PIN name	Pin No.	Type	Function description
GPIO15	A71	Bidirectional	RTC serial data input/output
GPIO14	A72	Output	RTC serial clock output

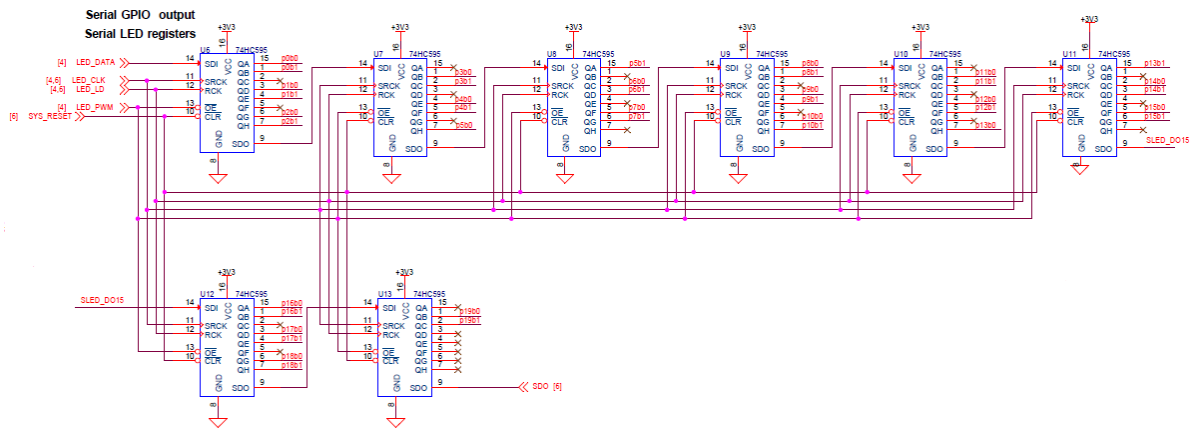
RTC Reference Circuit

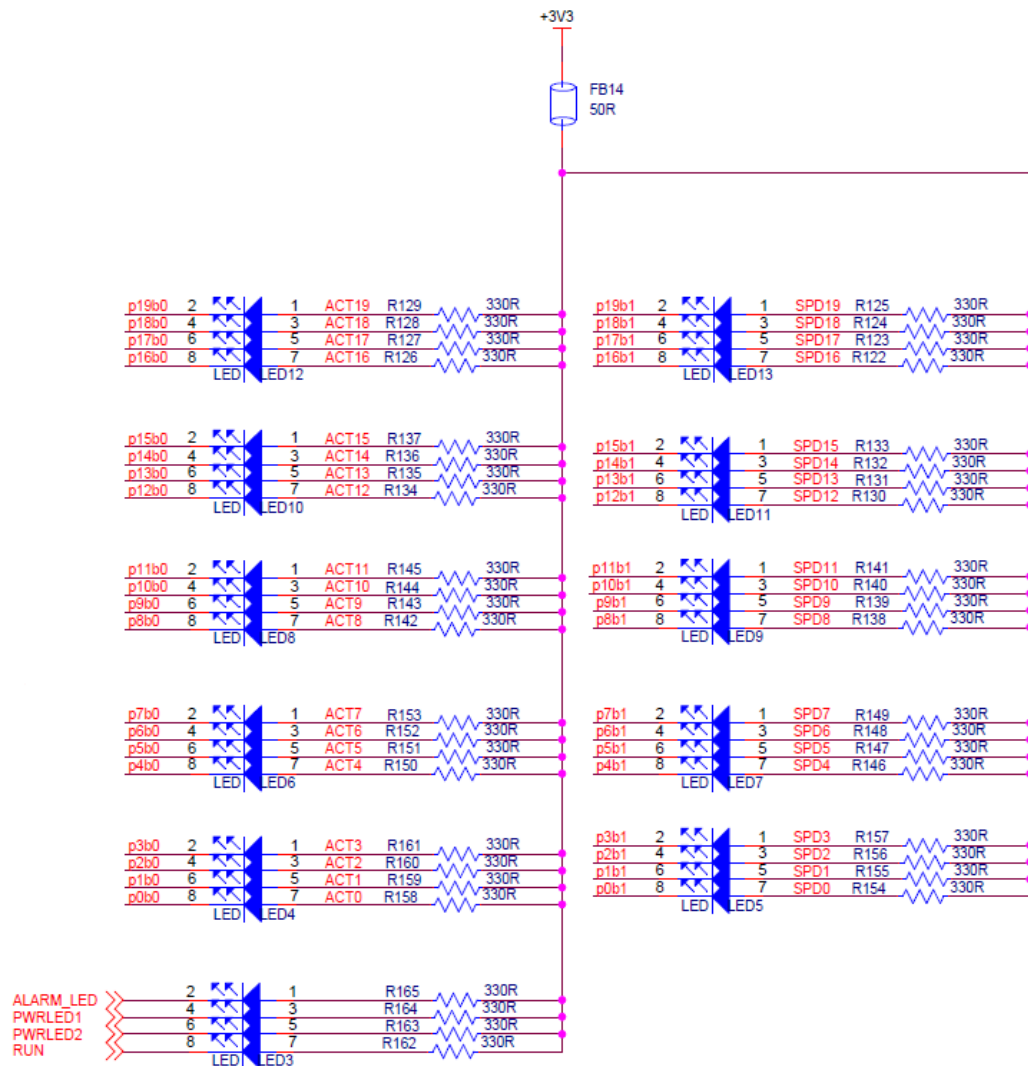


2.5.8 LED Indicator Interface Description

PIN name	Pin No.	Type	Function description
LED_CLK	A79	Output	Serial LED clock output
LED_DATA	A80	Output	Serial LED data output
LED_PWM	A75	Output	LED control output, active low
LED_LD	A76	Output	LED storage latch clock line output

Reference circuit





Description of indicator status

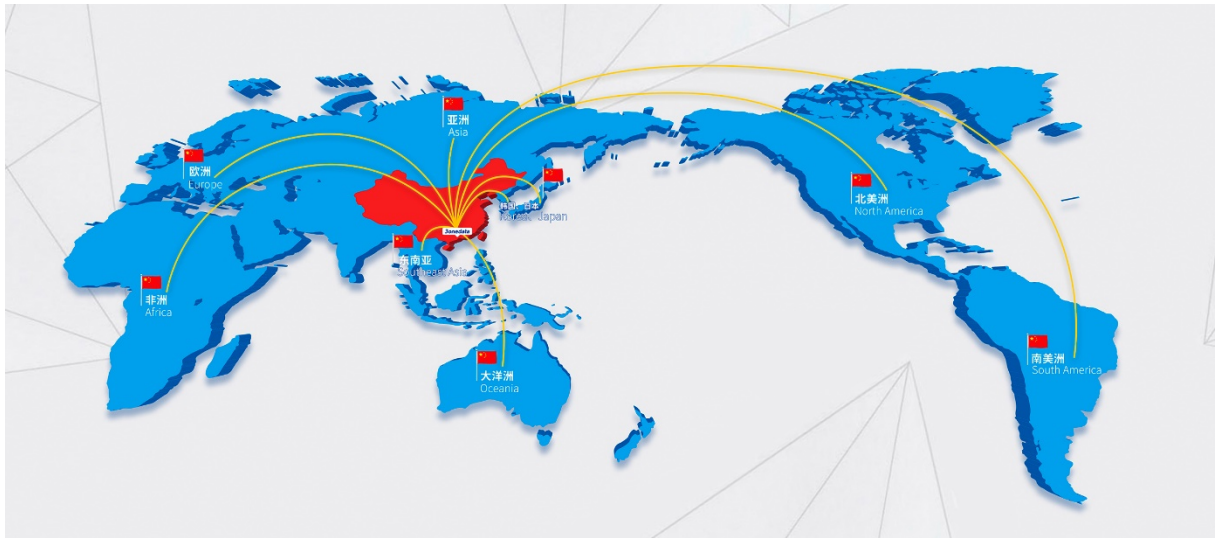
Connection	Status	Note
Power (PWR)	ON	PWR is connected and running normally
	OFF	Power supply is disconnected or running abnormally
System status (RUN)	Blinking	The device is running normally
	ON/OFF	The device is running abnormally
Relay alarm status (ALARM) (By default, relay system is disabled)	ON	Exist alarm
	OFF	No alarm
LINK	ON	Port connection

Connection	Status	Note
	Blinking	It exists data transmission
SPEED	ON	1000/100Mbps connection
	OFF	10Mbps connection

2.5.9 Description of Other Interfaces

PIN name	Pin No.	Type	Configuration Method
A74	1588_PPS	Bidirectional	1588_PPS signal data output
A81	RUN_LED	Output	System running indicator, blinking indicates that the system is running normally
A85	PWRDET1	Input	Pin 1 of power supply monitoring, active-high
A86	PWRDET2	Input	Pin 2 of power supply monitoring, active-high

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