3onedata



ICM6400 Series

Layer 3 Managed Industrial Ethernet Switch Module

Hardware Manual

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Industrial Ethernet Communication Solution Expert **3onedata Co., Ltd.**

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Preface

ICM6400 series manual has introduced the following contents:

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

Audience

This manual applies to the following engineers:

- On-site technical support and maintenance staff
- Hardware engineers

Conventions

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’ provides links to various sections of this chapter, as well as links to the Principles/Operations Section of this chapter.

Icon Convention

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.

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Format	Description
 Note	Conduct necessary supplements and explanations for the description of operation content.
 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.	Revision Date	Revision Note
01	04/30/2026	Product release

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1 Product Overview

1.1 Product Introduction

Welcome to use the ICM6400 series core module of embedded industrial Ethernet switch. This module, together with Ethernet switch backplane, forms a complete industrial network managed Ethernet switch function.

- Supports 16 10/100/1000Base-T (X) Ethernet copper ports, 4 1000Base-X fiber ports (SFP slots) and 8 QSGMII 10/100/1000BASE-T PHY, copper/fiber dual media interface. All copper ports support automatic flow rate control and full/half duplex mode and MDI/MDI-X auto-negotiation.
- Provides advanced management features such as: static/dynamic routing, virtual LAN, Quality of Service, rate control, port loopback, port mirroring, port isolation, fault alarm, and firmware online upgrade. It can be configured and upgraded via the web interface during operation. It supports TCP, UDP, LLDP, LACP and DHCP protocols.
- 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 5VDC (±10%) voltage input.
- Adopt all English configuration interface, each step operation is equipped with detailed help instructions.

In order to make full use of the functions of the switch module, please read this manual and the accompanying software manual carefully.

1.2 Product Specification

Interface	
Ethernet port	16*10/100/1000Base-T(X) Ethernet copper ports, 4*1000Base-X SFP slots, and 8*10/100/1000Base-T

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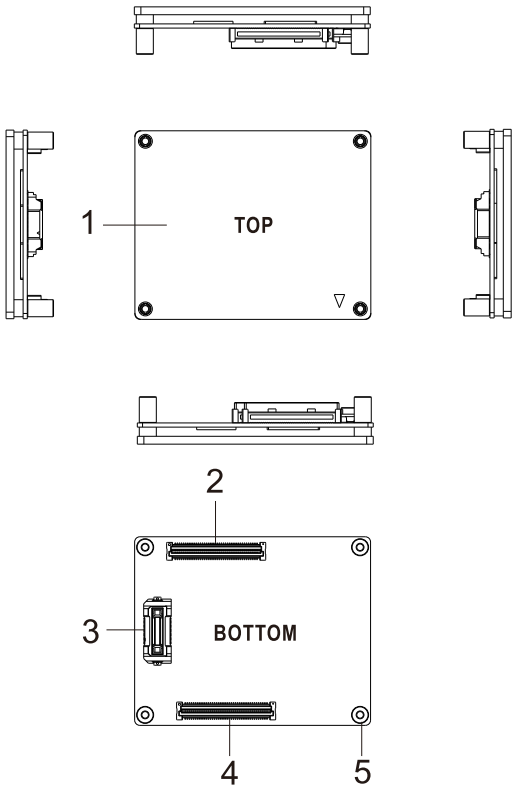
	Ethernet copper ports or 1000Base-X SFP slots (with external PHY signals led out).
CONSOLE port	1 TTL level serial data
Alarm port	1 alarm output, 1 alarm input
Switch Property	
Backplane bandwidth	56Gbps
Buffer size	12Mbit
MAC Address Table	16K
Power Supply	
Input power supply	5VDC (±10%)
Power Consumption	
Normal temperature no load	– 4.73W@5VDC (module) – 24GT4GS: 6.28W@12VDC (Backplane 1 + Module) – 16GT12GS: 8.4W@12VDC (Backplane 2 + Module)
Normal temperature full load	– 24GT4GS: 17.37W@12VDC (Backplane 1 + Module) – 16GT12GS: 21.75W@12VDC (Backplane 2 + Module)
High temperature full load	– 24GT4GS: 19.53W@12VDC (Backplane 1 + Module) – 16GT12GS: 23.27W@12VDC (Backplane 2 + Module)
Working Environment	
Working temperature	-40~75℃
Storage temperature	-40~85℃
Working humidity	5%~95% (no condensation)
Mechanical Structure	
Mounting	Embedded installation (pin and female header type)
Dimension (W x H x D)	90mm×72mm×18.1mm
Weight	0.101kg

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2 Hardware Description

2.1 Dimension

2.1.1 Package Design



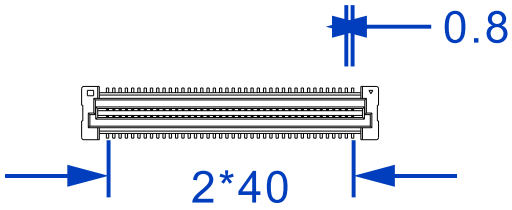
The details of each package label are shown in the following table:

Capsulation	Name	Specification	Note
1	A blade of thermal conductivity	90mm*72mm	External heat sink available
2	Connector J1	Connector 2*40, pin spacing 0.8mm, connector height 7.75mm	—
3	Socket header J2	Connector 2*20, pin spacing 0.5mm, connector height 5.8mm	10Gigabit connector

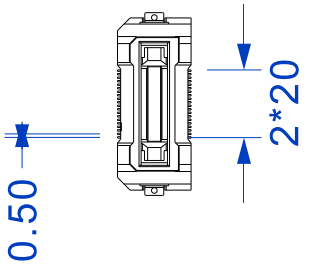
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4	Connector J3	Connector 2*40, pin spacing 0.8mm, connector height 7.75mm	—
5	location hole	The distance from the center of the circle to the four sides of the PCB is 4mm. Note: • 4 positioning holes can be planned on the bottom plate, and M3 screws 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 Φ3.0mm to avoid the screw being unable to pass because the diameter is too small.	The four positioning holes have the same specifications

The specifications of pin header corresponding to socket header J1 and J3 are shown in the following figure and have been included in the packing list. Unit (mm):



The specifications of pin header corresponding to socket header J2 are shown in the following figure and have been included in the packing list. Unit (mm):

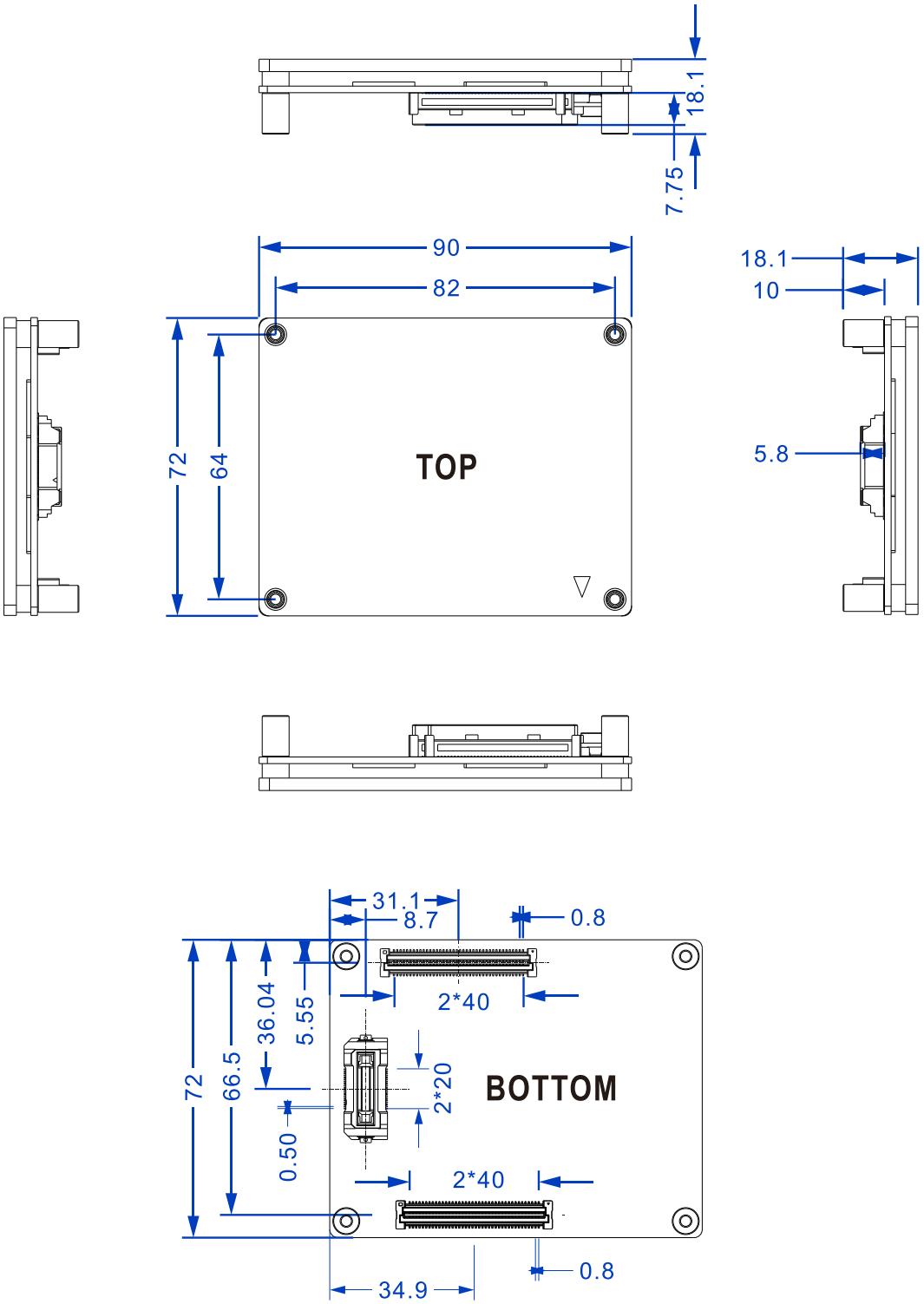


2.1.2 Product Dimension

The diagram of module structure dimension is as follows:

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Unit: mm



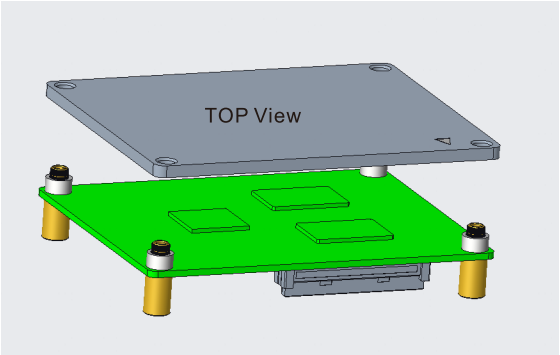
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2.2 Pin Definition Description

2.2.1 Pin Definition View

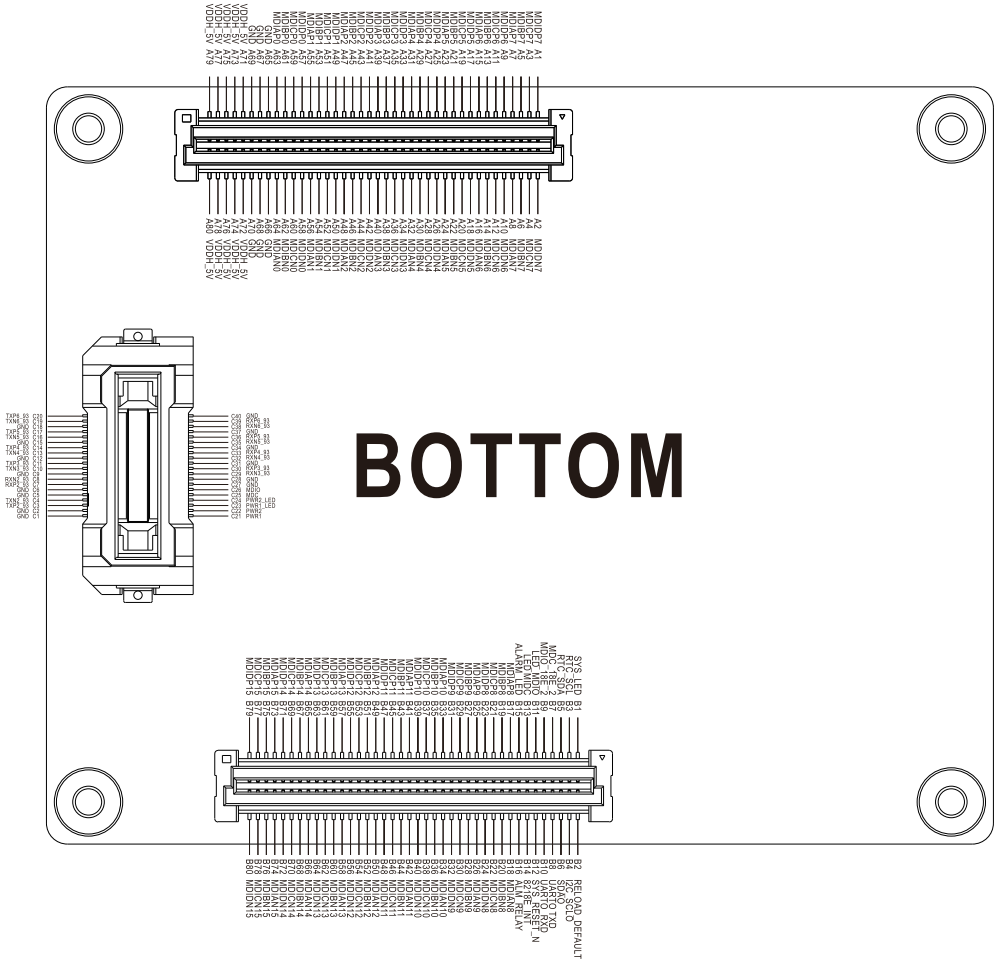
Note

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:

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2.3 Pin Definition List

A1-A80 Pin Definitions in J1

Pin No.	Pin Name	Pin No.	Pin Name
A1	MDIDP7	A2	MDIDN7
A3	MDICP7	A4	MDICN7
A5	MDIBP7	A6	MDIBN7
A7	MDIAP7	A8	MDIAN7
A9	MDIDP6	A10	MDIDN6
A11	MDICP6	A12	MDICN6
A13	MDIBP6	A14	MDIBN6
A15	MDIAP6	A16	MDIAN6
A17	MDIDP5	A18	MDIDN5
A19	MDICP5	A20	MDICN5

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Pin No.	Pin Name	Pin No.	Pin Name
A21	MDIBP5	A22	MDIBN5
A23	MDIAP5	A24	MDIAN5
A25	MDIDP4	A26	MDIDN4
A27	MDICP4	A28	MDICN4
A29	MDIBP4	A30	MDIBN4
A31	MDIAP4	A32	MDIAN4
A33	MDIDP3	A34	MDIDN3
A35	MDICP3	A36	MDICN3
A37	MDIBP3	A38	MDIBN3
A39	MDIAP3	A40	MDIAN3
A41	MDIDP2	A42	MDIDN2
A43	MDICP2	A44	MDICN2
A45	MDIBP2	A46	MDIBN2
A47	MDIAP2	A48	MDIAN2
A49	MDIDP1	A50	MDIDN1
A51	MDICP1	A52	MDICN1
A53	MDIBP1	A54	MDIBN1
A55	MDIAP1	A56	MDIAN1
A57	MDIDP0	A58	MDIDN0
A59	MDICP0	A60	MDICN0
A61	MDIBP0	A62	MDIBN0
A63	MDIAP0	A64	MDIAN0
A65	GND	A66	GND
A67	GND	A68	GND
A69	GND	A70	GND
A71	VDDH_5V	A72	VDDH_5V
A73	VDDH_5V	A74	VDDH_5V
A75	VDDH_5V	A76	VDDH_5V
A77	VDDH_5V	A78	VDDH_5V
A79	VDDH_5V	A80	VDDH_5V

B1-B80 Pin Definitions in J3

Pin No.	Pin Name	Pin No.	Pin Name
B1	GPIO0/SYS_LED/Watchdog	B2	GPIO5/RELOAD_DEFAULT

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B3	GPIO9/RTC_SCL	B4	GPIO8/I2C_SCL0
B5	GPIO17/RTC_SDA	B6	GPIO10/SDA0/UART0_RTS#
B7	MDC_18E_2	B8	UART0_TXD/DDR_DUAL_RANK_EN
B9	MDIO_18E_2	B10	UART0_RXD
B11	LED_MDIO	B12	SYS_RESET_N
B13	LED_MDC	B14	GPIO16/8218E_INT
B15	GPIO4/ALARM_LED	B16	GPIO13/ALM_RELAY
B17	MDIAP8	B18	MDIAN8
B19	MDIBP8	B20	MDIBN8
B21	MDICP8	B22	MDICN8
B23	MDIDP8	B24	MDIDN8
B25	MDIAP9	B26	MDIAN9
B27	MDIBP9	B28	MDIBN9
B29	MDICP9	B30	MDICN9
B31	MDIDP9	B32	MDIDN9
B33	MDIAP10	B34	MDIAN10
B35	MDIBP10	B36	MDIBN10
B37	MDICP10	B38	MDICN10
B39	MDIDP10	B40	MDIDN10
B41	MDIAP11	B42	MDIAN11
B43	MDIBP11	B44	MDIBN11
B45	MDICP11	B46	MDICN11
B47	MDIDP11	B48	MDIDN11
B49	MDIAP12	B50	MDIAN12
B51	MDIBP12	B52	MDIBN12
B53	MDICP12	B54	MDICN12
B55	MDIDP12	B56	MDIDN12
B57	MDIAP13	B58	MDIAN13
B59	MDIBP13	B60	MDIBN13
B61	MDICP13	B62	MDICN13
B63	MDIDP13	B64	MDIDN13
B65	MDIAP14	B66	MDIAN14
B67	MDIBP14	B68	MDIBN14
B69	MDICP14	B70	MDICN14
B71	MDIDP14	B72	MDIDN14

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B73	MDIAP15	B74	MDIAN15
B75	MDIBP15	B76	MDIBN15
B77	MDICP15	B78	MDICN15
B79	MDIDP15	B80	MDIDN15

C1-C40 Pin Definitions in J2

Pin No.	Pin Name	Pin No.	Pin Name
C1	GND	C21	GPIO6/PWR1
C2	GND	C22	GPIO7/PWR2
C3	TXP2_93	C23	GPIO11/PWR1_LED
C4	TXN2_93	C24	GPIO12/PWR2_LED
C5	GND	C25	GPIO1/GPIO_MDC
C6	GND	C26	GPIO2/GPIO_MDIO
C7	RXP2_93	C27	GND
C8	RXN2_93	C28	GND
C9	GND	C29	RXN3_93
C10	TXN3_93	C30	RXP3_93
C11	TXP3_93	C31	GND
C12	GND	C32	RXN4_93
C13	TXN4_93	C33	RXP4_93
C14	TXP4_93	C34	GND
C15	GND	C35	RXN5_93
C16	TXN5_93	C36	RXP5_93
C17	TXP5_93	C37	GND
C18	GND	C38	RXN6_93
C19	TXN6_93	C39	RXP6_93
C20	TXP6_93	C40	GND

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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
MDIAP0	A63	Typical output	Positive terminal 0 of 1000M Ethernet interface data transmission When the port is configured as a 1000M copper port, MDI[0:15] AP is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended
MDIAP1	A55		
MDIAP2	A47		
MDIAP3	A39		
MDIAP4	A31		
MDIAP5	A23		
MDIAP6	A15		
MDIAP7	A7		
MDIAP8	B17		
MDIAP9	B25		
MDIAP10	B33		
MDIAP11	B41		
MDIAP12	B49		
MDIAP13	B57		
MDIAP14	B65		
MDIAP15	B73		
MDIAN0	A64	Typical output	Negative terminal 0 of 1000M Ethernet interface data transmission. When the port is configured as a 1000M copper port, MDI[0:15]AN is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDIAN1	A56		
MDIAN2	A48		
MDIAN3	A40		
MDIAN4	A32		
MDIAN5	A24		
MDIAN6	A16		
MDIAN7	A8		
MDIAN8	B18		
MDIAN9	B26		
MDIAN10	B34		
MDIAN11	B42		

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Pin Name	Pin No.	Type	Function Description
MDIAN12	B50		
MDIAN13	B58		
MDIAN14	B66		
MDIAN15	B74		

2.4.2 1000M Ethernet Interface Data Transmit Positive Terminal 1 and Transmit Negative Terminal 1

Pin Name	Pin No.	Type	Function Description
MDIBP0	A61	Typical output	1000M Ethernet interface data transmit positive terminal 1. When the port is configured as a 1000M copper port, MDI[0:15]BP is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDIBP1	A53		
MDIBP2	A45		
MDIBP3	A37		
MDIBP4	A29		
MDIBP5	A21		
MDIBP6	B13		
MDIBP7	A5		
MDIBP8	B19		
MDIBP9	B27		
MDIBP10	B35		
MDIBP11	A43		
MDIBP12	B51		
MDIBP13	A59		
MDIBP14	B67		
MDIBP15	B75		
MDIBN0	A62	Typical output	1000M Ethernet interface data transmit negative terminal 1. When the port is configured as a 1000M copper port, MDI[0:15]BN is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDIBN1	A54		
MDIBN2	A46		
MDIBN3	A38		
MDIBN4	A30		
MDIBN5	A22		
MDIBN6	A14		
MDIBN7	A6		

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Pin Name	Pin No.	Type	Function Description
MDIBN8	B20		
MDIBN9	B28		
MDIBN10	B36		
MDIBN11	B44		
MDIBN12	B52		
MDIBN13	B60		
MDIBN14	B68		
MDIBN15	B76		

2.4.3 1000M Ethernet Interface Data Transmit Positive Terminal 2 and Transmit Negative Terminal 2

Pin Name	Pin No.	Type	Function Description
MDICP0	A59	Typical output	1000M Ethernet interface data transmit positive terminal 2. When the port is configured as a 1000M copper port, MDI[0:15]CP is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDICP1	A51		
MDICP2	A43		
MDICP3	A35		
MDICP4	A27		
MDICP5	A19		
MDICP6	A11		
MDICP7	A3		
MDICP8	B21		
MDICP9	B29		
MDICP10	B37		
MDICP11	B45		
MDICP12	B53		
MDICP13	B61		
MDICP14	B69		
MDICP15	B77		
MDICN0	A60	Typical output	1000M Ethernet interface data transmit negative terminal 2. When the port is configured as a 1000M copper port, MDI[0:15]CN is directly connected to the
MDICN1	A52		
MDICN2	A44		
MDICN3	B36		

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Pin Name	Pin No.	Type	Function Description
MDICN4	A28		receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDICN5	A20		
MDICN6	A12		
MDICN7	A4		
MDICN8	B22		
MDICN9	B30		
MDICN10	B38		
MDICN11	B46		
MDICN12	B54		
MDICN13	B62		
MDICN14	B70		
MDICN15	B78		

2.4.4 1000M Ethernet Interface Data Transmit Positive Terminal 3 and Transmit Negative Terminal 3

Pin Name	Pin No.	Type	Function Description
MDIDP0	A57	Typical output	1000M Ethernet interface data transmit positive terminal 3. When the port is configured as a 1000M copper port, MDI[0:15]DP is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDIDP1	A49		
MDIDP2	A41		
MDIDP3	B33		
MDIDP4	A25		
MDIDP5	A17		
MDIDP6	A9		
MDIDP7	A1		
MDIDP8	B23		
MDIDP9	B31		
MDIDP10	B39		
MDIDP11	B47		
MDIDP12	B55		
MDIDP13	B63		
MDIDP14	B71		

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MDIDP15	B79		
MDIDN0	A58	Typical output	1000M Ethernet interface data transmit negative terminal 3. When the port is configured as a 1000M copper port, MDI[0:15]DN is directly connected to the receiving network transformer. Note: When this pin is not used, it is recommended to be suspended.
MDIDN1	A50		
MDIDN2	A42		
MDIDN3	A34		
MDIDN4	A26		
MDIDN5	A18		
MDIDN6	A10		
MDIDN7	A2		
MDIDN8	B24		
MDIDN9	B32		
MDIDN10	B40		
MDIDN11	B48		
MDIDN12	B56		
MDIDN13	B64		
MDIDN14	B72		
MDIDN15	B80		

2.4.5 Two Pairs of I2C Data and Clock

Pin Name	Pin No.	Type	Function Description
GPIO8/I2C_SCL0	B4	Bidirectional	I2C0 clock output, used for accessing fiber port DDM information, requiring pull-up.
GPIO10/SDA0/UART0_RTS#	B6	Bidirectional	I2C0 data output, used for accessing fiber port DDM information, requiring pull-up.
GPIO9/RTC_SCL	B3	Bidirectional	I2C1 clock output, used for accessing RTC, requiring pull-up.
GPIO17/RTC_SDA	B5	Bidirectional	I2C1 data output, used for accessing RTC,

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			requiring pull-up.

2.4.6 XSGMII Receive Positive Terminal and Negative Terminal

Pin Name	Pin No.	Type	Function Description
TXP2_93	C3	Output	XSGMII transmit positive terminal
TXN2_93	C4		XSGMII transmit negative terminal
RXP2_93	C7	Input	XSGMII receive positive terminal
RXN2_93	C8		XSGMII receive negative terminal

2.4.7 Universal IO

Pin Name	Pin No.	Type	Function Description
GPIO0/SYS_LED/Watchdog	B1	Universal IO Port	System running indicator, blinking indicates that the system is running normally
GPIO4/ALARM_LED	B15		Alarm light output, valid at low level
GPIO16/8218E_INT	B14		External PHY interrupt report, input
GPIO13/ALM_RELAY	B16		Relay alarm output, active-high
GPIO6/PWR1	C21		Power monitor pin 1, input, active high
GPIO7/PWR2	C22		Power monitor pin 2, input, active high
GPIO11/PWR1_LED	C23		Power indicator 1, output, active

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Pin Name	Pin No.	Type	Function Description
			low
GPIO12/PWR2_LED	C24		Power indicator 2, output, active low
GPIO1/GPIO_MDC	C25		Extended GPIO clock line, for managing extended GPIO ports
GPIO2/GPIO_MDIO	C26		Extended GPIO data line, for managing extended GPIO ports
GPIO5/RELOAD_DEFAULT	B2		Short press: Reset Long press: restore factory settings

2.4.8 SGMII Transmit / Receive Positive Terminal and Negative Terminal

Pin Name	Pin No.	Type	Function Description
TXN3_93	C10	Output	SGMII transmit negative terminal
TXP3_93	C11		SGMII transmit positive terminal
TXN4_93	C13		SGMII transmit negative terminal
TXP4_93	C14		SGMII transmit positive terminal
TXN5_93	C16		SGMII transmit negative terminal
TXP5_93	C17		SGMII transmit positive terminal
TXN6_93	C19		SGMII transmit negative terminal
TXP6_93	C20		SGMII transmit positive terminal
RXN3_93	C29	Input	SGMII receive negative terminal
RXP3_93	C30		SGMII receive positive terminal
RXN4_93	C32		SGMII receive negative terminal
RXP4_93	C33		SGMII receive positive terminal
RXN5_93	C35		SGMII receive negative terminal
RXP5_93	C36		SGMII receive positive terminal
RXN6_93	C38		SGMII receive negative terminal
RXP6_93	C39		SGMII receive positive terminal

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2.4.9 Serial Port Signal

Pin Name	Pin No.	Type	Function Description
UART0_TXD/ DDR_DUAL_ RANK_EN	B8	Output	Serial port transmitting Note: Serial port is only used as CONSOLE port, not for other purposes.
UART0_RXD	B10	Input	Serial port receiving Note: Serial port is only used as CONSOLE port, not for other purposes.

2.4.10 Power

Pin Name	Pin No.	Type	Function Description
GND	A65, A66, A67, A68, A69, A70	Ground	Power ground
VDDH_5V	A71, A72, A73, A74, A75, A76, A77, A78, A79, A80	Power Supply	+5V power input

2.4.11 Reset and Relay Output

Pin Name	Pin No.	Type	Function Description
GPIO13/ALM_RELAY	B16	Output	Relay alarm output, active-high
SYS_RESET_N	B12	Output	Reset output for resetting external extended PHY/LED indicator, etc.

2.4.12 Port signal indicator

Pin Name	Pin No.	Type	Function Description
LED_MDIO	B11	Output	Serial data, management interface for 8231, used to control indicator

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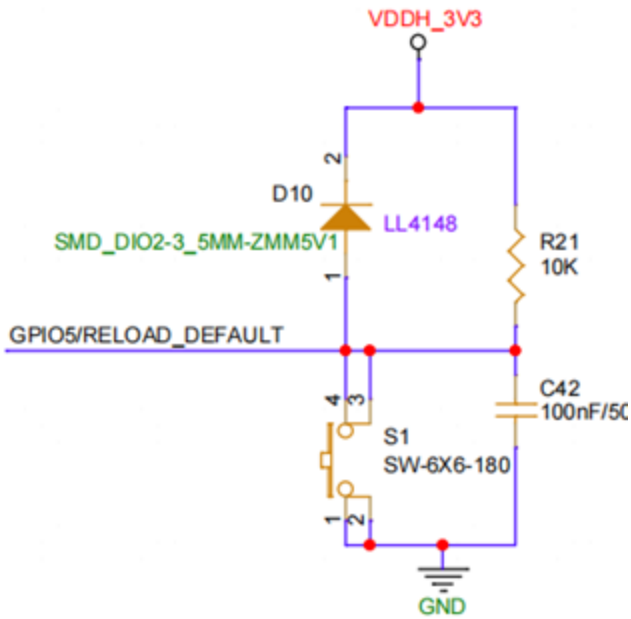
LED_MDC	B13	Output	Serial clock, management interface for 8231, used to control indicator

2.5 Reference Circuit

2.5.1 Description of Restore Factory Settings Interface

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

Pin No.	Pin Name	Type	Function Description
GPIO5/RELOAD_DEFAULT	B2	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.



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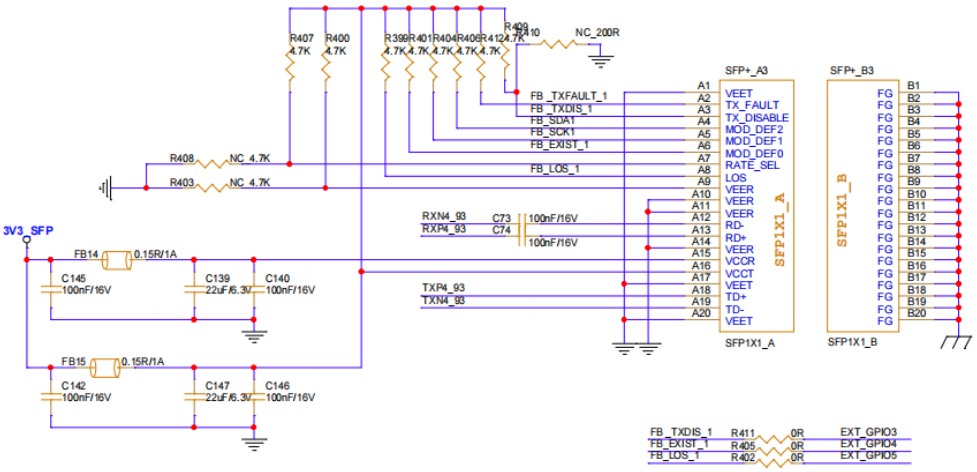
2.5.2 TSC Port Description

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
TXP3_93	C11	Output	SGMII0 differential output signal
TXN3_93	C10		
RXP3_93	C30	Input	SGMII0 differential input signal
RXN3_93	C29		
TXP4_93	C14	Output	SGMII1 differential output signal
TXN4_93	C13		
RXP4_93	C33	Input	SGMII1 differential input signal
RXN4_93	C32		
TXP5_93	C17	Output	SGMII2 differential output signal
TXN5_93	C16		
RXP5_93	C36	Input	SGMII2 differential input signal
RXN5_93	C35		
TXP6_93	C20	Output	SGMII3 differential output signal
TXN6_93	C19		
RXP6_93	C39	Input	SGMII3 differential input signal
RXN6_93	C38		
GPIO1/GPIO_MDC	C25	Output	Extended GPIO clock output, requires pull-up
GPIO2/GPIO_MDIO	C26	Output	Extended GPIO data output, requires pull-up

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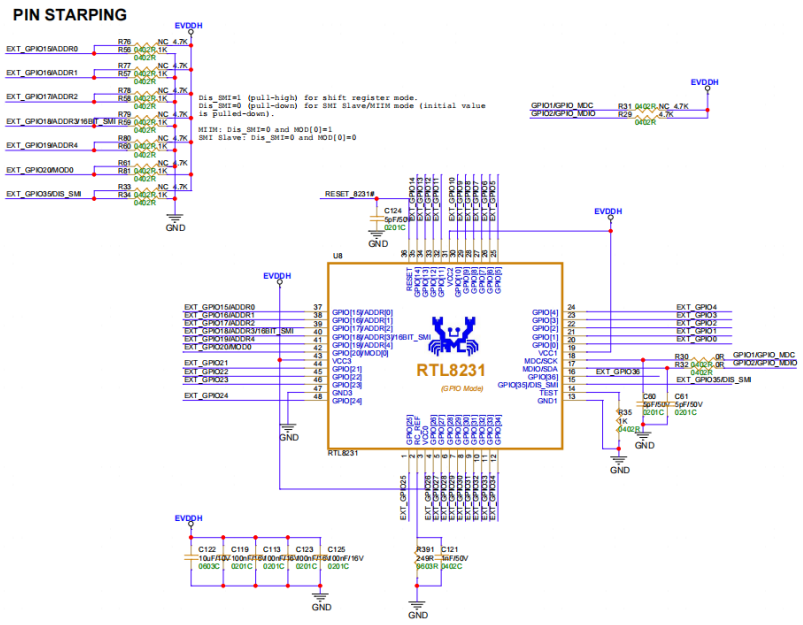
SGMII Reference Circuit



Notice:

Please refer to the schematic diagram of backplane for signals outside the differential line.

Reference Circuit for Extended GPIO Ports



Extended GPIO Port Definition (for Fiber Module Signal Detection)

Port No.	Pin Definition	Function Description
GPIO[0]	FB _TXDIS_0	TXDIS control for SGMII0 uplink port
GPIO[1]	FB_EXIST_0	Presence signal detection for SGMII0 uplink port
GPIO[2]	FB_LOS_0	SGMII0 uplink port LOS signal

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		detection
GPIO[3]	FB _TXDIS_1	TXDIS control for SGMII1 uplink port
GPIO[4]	FB_EXIST_1	Presence signal detection for SGMII1 uplink port
GPIO[5]	FB_LOS_1	SGMII1 uplink port LOS signal detection
GPIO[6]	FB _TXDIS_2	TXDIS control for SGMII2 uplink port
GPIO[7]	FB_EXIST_2	Presence signal detection for SGMII2 uplink port
GPIO[8]	FB_LOS_2	SGMII2 uplink port LOS signal detection
GPIO[9]	FB _TXDIS_3	TXDIS control for SGMII3 uplink port
GPIO[10]	FB_EXIST_3	Presence signal detection for SGMII3 uplink port
GPIO[11]	FB_LOS_3	SGMII3 uplink port LOS signal detection
GPIO[12]	Note: Reserved IO port: functions as fiber port detection IO when paired with 16GT+12GS backplane; configuration refers to backplane design.	
GPIO[13]		
GPIO[14]		
GPIO[15]		
GPIO[16]		
GPIO[17]		
GPIO[18]		
GPIO[19]		
GPIO[20]		
GPIO[21]		
GPIO[22]		
GPIO[23]		
GPIO[24]		
GPIO[25]		
GPIO[26]		
GPIO[27]		
GPIO[28]		
GPIO[29]		
GPIO[30]		
GPIO[31]		

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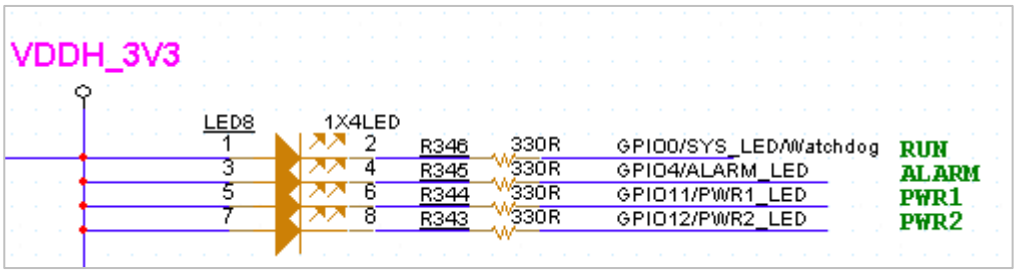
GPIO[32]	
GPIO[33]	
GPIO[34]	
GPIO[35]	
GPIO[36]	

2.5.3 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:

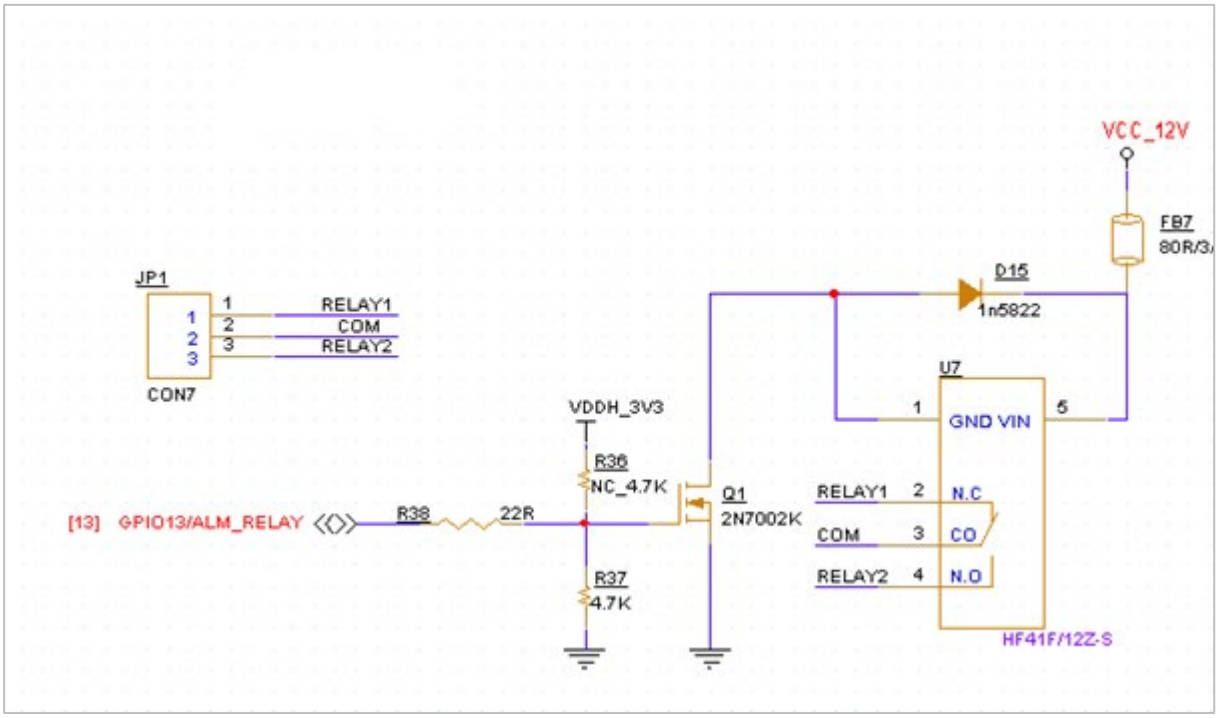
Pin No.	Pin Name	Type	Configuration Method
B15	GPIO4/ALARM_LED	Output	Alarm light output, valid at low level
B16	GPIO13/ALM_RELAY	Input	Relay alarm output, active-high
C23	GPIO11/PWR1_LED	Output	Power indicator 1, active low
C24	GPIO12/PWR2_LED	Output	Power indicator 2, active-low

LED Indicator Reference Circuit



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Reference Circuit of Relay Alarm

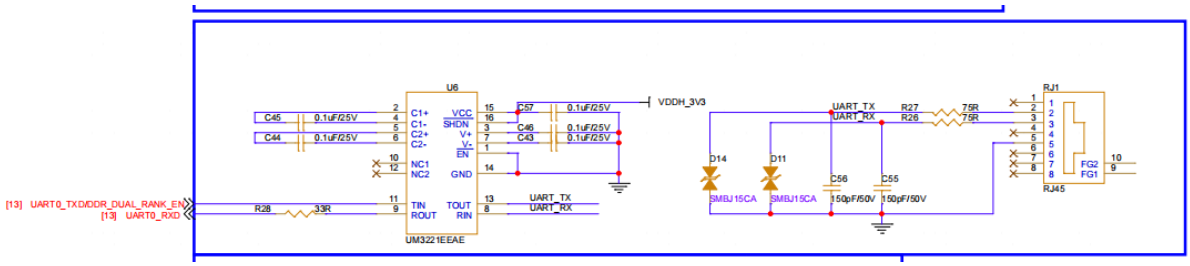


2.5.4 Description of serial debug interface

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

Pin Name	Pin No.	Type	Configuration Method
B8	UART0_TXD/ DDR_DUAL_ RANK_EN	Output	Serial port transmitting Note: Serial port is only used as CONSOLE port, not for other purposes.
B10	UART0_RXD	Input	Serial port receiving Note: Serial port is only used as CONSOLE port, not for other purposes.

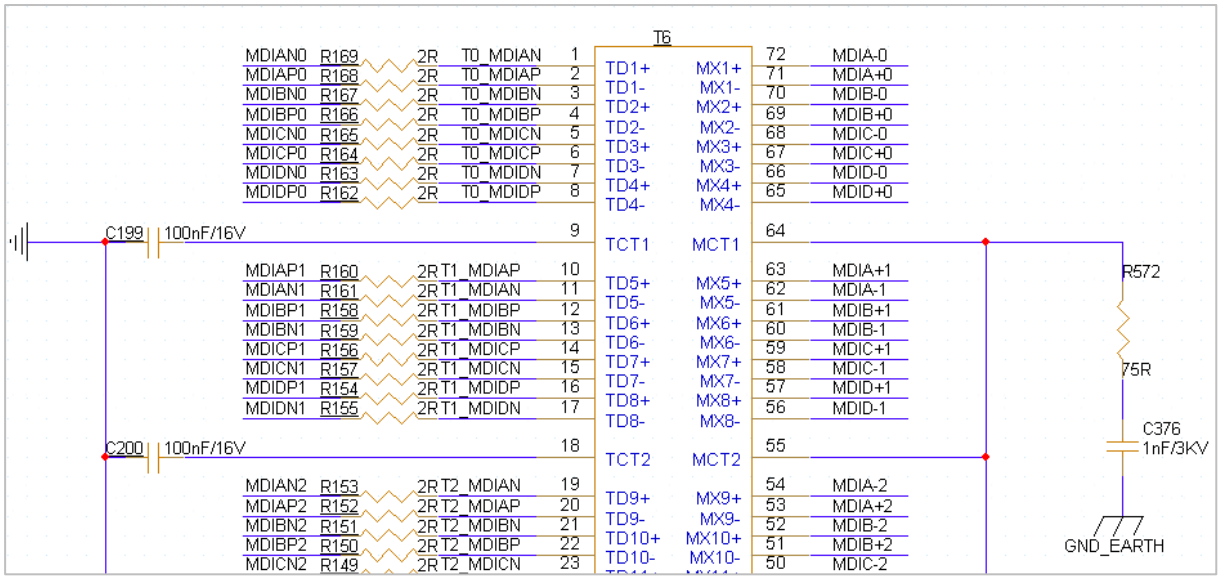
Peripheral Reference Circuit of Serial Debugging Interface



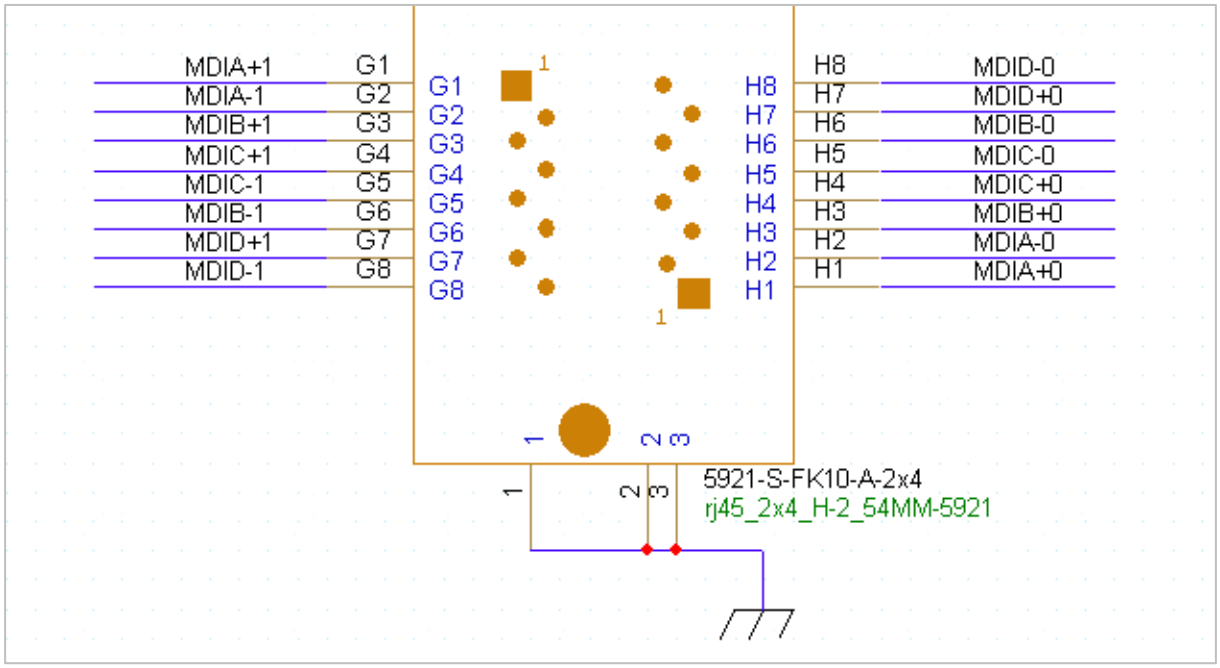
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2.5.5 Description of Gigabit Copper Port

Reference Circuit of Gigabit Network Transformer



RJ45 Reference Circuit



2.5.6 XSGMII Interface Description

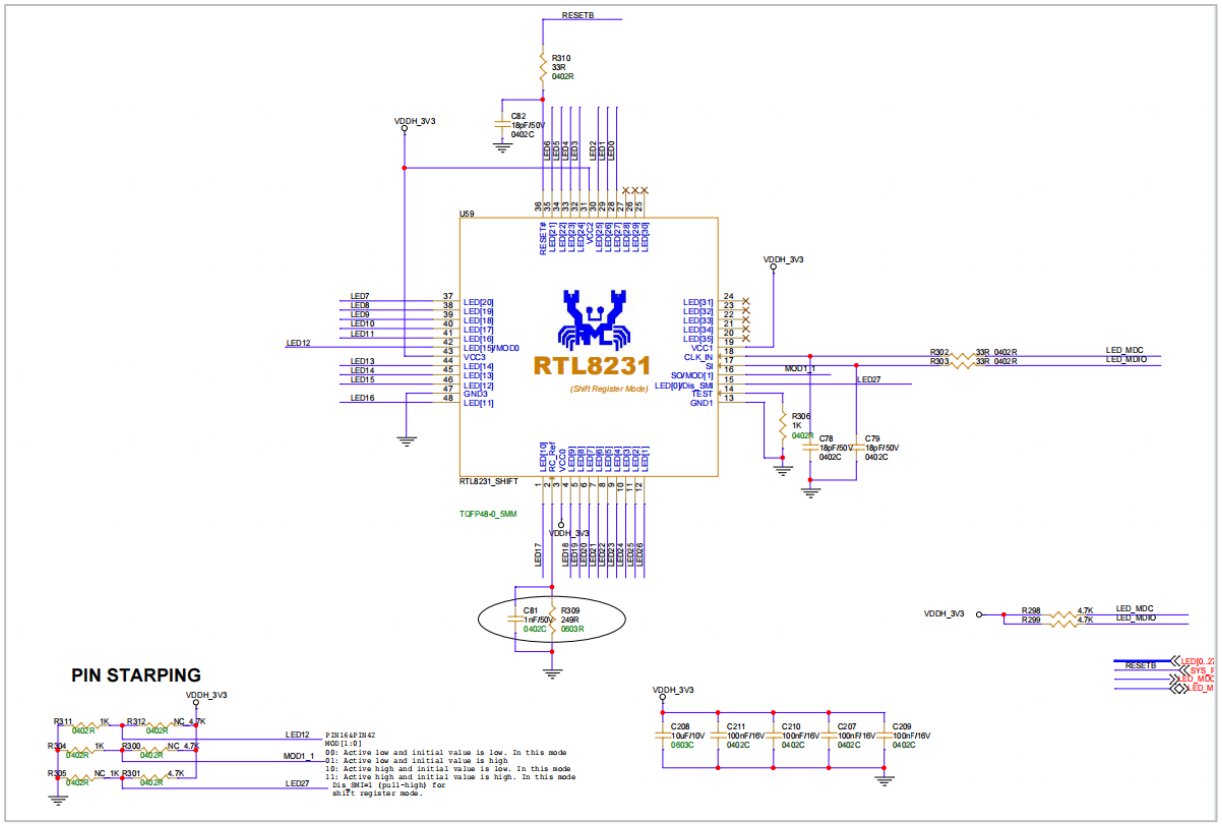
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Pin Name	Pin No.	Type	Configuration Method
TXP2_93	C3	Output	XSGMII transmit positive terminal
TXN2_93	C4	Output	XSGMII transmit negative terminal
RXP2_93	C7	Input	XSGMII receive positive terminal
RXN2_93	C8	Input	XSGMII receive negative terminal

2.5.7 LED Indicator interface description

Pin Name	Pin No.	Type	Function Description
LED_MDIO	B11	Output	Serial data, management interface for 8231, used to control indicator
LED_MDC	B13	Output	Serial clock, management interface for 8231, used to control indicator

Reference Circuit



LED Indicator

The LED indicator number corresponding to the reference circuit is shown in the following table.

Port No.	LINK No.	Port No.	LINK No.	Port No.	LINK No.
1	LED0	11	LED10	21	LED20

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2	LED1	12	LED11	22	LED21
3	LED2	13	LED12	23	LED22
4	LED3	14	LED13	24	LED23
5	LED4	15	LED14	25	LED24
6	LED5	16	LED15	26	LED25
7	LED6	17	LED16	27	LED26
8	LED7	18	LED17	28	LED27
9	LED8	19	LED18	-	-
10	LED9	20	LED19	-	-

LED	Description
ALARM	Alarm indicator
PWR1	Power 1 indicator
PWR2	Power 2 indicator
RUN	Running indicator

Description of Indicator Status

Indicator	Status	Description
Power (PWR)	ON	Power 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
	Blinking	It exists data transmission
	OFF	Port not connected

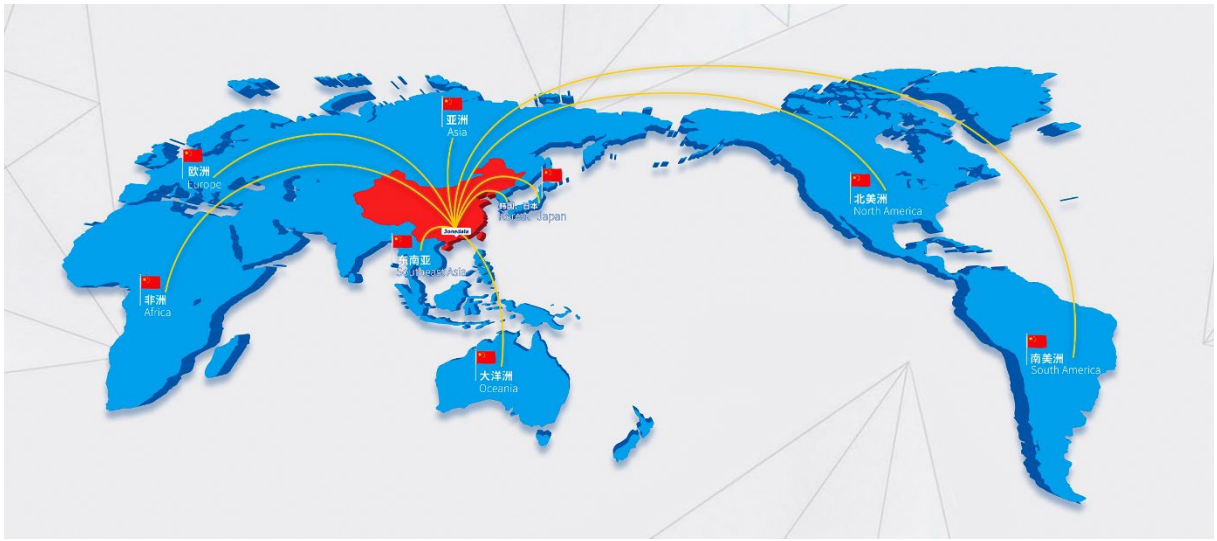
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2.5.8 Description of Other Interfaces

Pin Name	Pin No.	Type	Configuration Method
B1	GPIO0/SYS_LED/Watchdog	Output	System running indicator, blinking indicates that the system is running normally
C21	GPIO6/PWR1	Input	Power monitor pin 1, active high
C22	GPIO7/PWR2	Input	Pin 2 of power supply monitoring, active-high

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