RSC-IMX8M

3.5" NXP IMX8M SBC

User's Manual

7th Ed – 31 July, 2025

Part No. E2047MX8M06R

FCC Statement



THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.
4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Contents

1. Getting Started 8
1.1 Safety Precautions 8
1.2 Packing List 8
1.3 Document Amendment History 9
1.4 Manual Objectives 10
1.5 System Specifications 11
2. Hardware Configuration 15
2.1 RSC-IMX8M Product Overview 16
2.2 RSC-IMX8M Jumper and Connector List 17
2.3 Setting Jumpers & Connectors 19
2.3.1 Boot Mode selector 1/2 (SW1/SW4) 19
2.3.2 RTC connector (JRTC1) 19
2.3.3 MIPI CSI Screen connector 1 (J15) 20
2.3.4 LCD Backlight connector (J19) 20
2.3.5 Front Panel connector (J21) 21
2.3.6 MIC IN connector (CN3) 21
2.3.7 LVDS connector (J18) 22
2.3.8 MIPI DSI connector (J17) 23
2.3.9 UART Debug connector (J3) 24
2.3.10 UART Debug connector (J4) 24
2.3.11 DC-IN power connector (J6) 25
2.3.12 Power Button (CN4) 25
2.3.13 USB3.0 connector (J8) 26
2.3.14 DC-IN power connector (J24) 26
2.3.15 Speaker connector (J23) 27
2.3.16 MIPI CSI Screen connector 2 (J16) 27
2.3.17 Extend connector (J22) 28
2.4 Expansion I/O board-A Product Overview 29
2.5 Expansion I/O board-A (RS-232/485/GPIO/CAN) Jumper and Connector List 30
2.6 Jumpers and Connectors 31
2.6.1 Serial port 1 in RS-232/485 mode select (J3) 31
2.6.2 Port 1 RS-232/485 mode select (J10) 31
2.6.3 Port 1 RS-232/485 mode select (J11) 32
2.6.4 Serial port 2 in RS-232/485 mode select (J5) 32
2.6.5 Port 2 RS-232/485 mode select (J12) 33
2.6.6 Port 2 RS-232/485 mode select (J13) 33

2.6.7 Serial port 1/2 RS232/485 (CON1/2) 34
2.6.8 CAN BUS (CON3) 34
2.6.9 Port 4 RS-232/485 mode select (J1) 35
2.6.10 GPIO (CON4) 36
2.7 Expansion I/O board-B Product Overview 37
2.8 Expansion I/O board-B (RS-232/485) Jumper and Connector List 38
2.9 Jumpers and Connectors 39
2.9.1 Serial port 1 in RS-232/485 mode select (J3) 39
2.9.2 Port 1 RS-232/485 mode select (J10) 39
2.9.3 Port 1 RS-232/485 mode select (J11) 40
2.9.4 Serial port 2 in RS-232/485 mode select (J5) 40
2.9.5 Port 2 RS-232/485 mode select (J12) 41
2.9.6 Port 2 RS-232/485 mode select (J13) 41
2.9.7 Serial port 3 in RS-232/485 mode select (J7) 42
2.9.8 Port 3 RS-232/485 mode select (J14) 42
2.9.9 Port 3 RS-232/485 mode select (J16) 43
2.9.10 Serial port 4 in RS-232/485 mode select (J9) 43
2.9.11 Port 4 RS-232/485 mode select (J15) 44
2.9.12 Port 4 RS-232/485 mode select (J17) 44
2.9.13 Serial port 1~4 RS232/485 (CON1~4) 45
2.9.14 Port 4 RS-232/485 mode select (J1) 46
2.10 Expansion I/O board-C Product Overview 47
2.11 Expansion I/O board-C (RS-232/485/GPIO) Jumper and Connector List 48
2.12 Setting Jumpers & Connectors 49
2.12.1 Serial port 1 in RS-232/485 mode select (J3) 49
2.12.2 Port 1 RS-232/485 mode select (J10) 49
2.12.3 Port 1 RS-232/485 mode select (J11) 50
2.12.4 Serial port 2 in RS-232/485 mode select (J5) 50
2.12.5 Port 2 RS-232/485 mode select (J12) 51
2.12.6 Port 2 RS-232/485 mode select (J13) 51
2.12.7 Serial port 3 in RS-232/485 mode select (J7) 52
2.12.8 Port 3 RS-232/485 mode select (J14) 52
2.12.9 Port 3 RS-232/485 mode select (J16) 53
2.12.10 Serial port 4 in RS-232/485 mode select (J9) 53
2.12.11 Port 4 RS-232/485 mode select (J15) 54
2.12.12 Port 4 RS-232/485 mode select (J17) 54
2.12.13 RS232/485 connector 1/2 connector (CON1/2) 55
2.12.14 RS232/485 connector 3/4 connector (CON3/4) 56
2.12.15 GPIO connector (J2) 57
2.12.16 Extend connector (J1) 58

3. Mechanical Drawing 59

1. Getting Started

1.1 Safety Precautions

Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x RSC-IMX8M



If any of the above items is damaged or missing, contact your retailer.

1.3 Document Amendment History

Revision	Date	Comment
1st	June 2021	Initial Release
2nd	May 2023	Update System Specifications
3rd	May 2024	Update Jumper and Connector List
4th	February 2025	Update System Specifications
5th	June 2025	Update System Specifications
6th	July 2025	Update System Specifications
7th	September 2025	Update System Specifications

1.4 Manual Objectives

This manual describes in detail the Avalue Technology RSC-IMX8M Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to interface with RSC-IMX8M series or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

If you have any suggestions or find any errors concerning this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

1.5 System Specifications

RSC-IMX8M	
Component	
Mother Board	RSC-IMX8M
CPU	NXP® i.MX8M Quad ARM Cortex A53 Quad Core Up to 1.5GHz; Cortex-M4 core processor
Memory **Storage**	16GB eMMC / Onboard (Customizable to the max to 64G) DDR: 2GB Onboard LPDDR4 Memory (expandable up to 4GB Max)
Power Supply	DC IN 12~24V (Note: LVDS and MIPI only support 12V input)
Display	
Chipset	NXP i.MX8M
Resolution	Up to 4Kp60 resolution on the HDMI 2.0a output and 1080p60 resolution on the MIPI-DSI (4-lanes) interface.
Multiple Display	(HDMI / LVDS / MIPI DSI)
LCD Interface	Dual channel 24bit LVDS
Ethernet	
LAN	Giga Lan
Ethernet Interface	2 x RJ45 Industry Version：2pcs(Default) Consumer Version：1pcs
Internal I/O	
Front Panel	2 x 6 pin, pitch 2.0mm header (J21)
MIPI CSI	2 x 2 x 15 pin BTB connector (J15、J16)
DC in	1 x DC Jack (J6) 1 x 4 pin, pitch 2.0mm wafer (J24)
MIPI DSI	1 x 31 pin, pitch 0.3mm FPC connector (J17)
LVDS	2 x 20 pin, pitch 1.25mm wafer (J18)
Back Light	1 x 5 pin, pitch 2.0mm wafer (J19)
USB	2 x 10 pin, pitch 2.0mm wafer, 2 x USB3.0 (J8)
M.2	1 x 2230 M.2 KEY E for WiFi/BT (PCIe& USB Channel) 1 x 3042 M.2 KEY B for 3G/4G Module (USB Only)
SIM	SIM card slot (For Use LTE M.2 Card)(J14)
Extend	2 x 20 pin, pitch 2.00mm female header (J22) (for option Expansion I/O board for RS232/485/GPIO/CAN) Expansion I/O board-A (RS232/485/GPIO/CAN) (option) Expansion I/O board-B (RS232/485) (option) Expansion I/O board-C (RS232/485/GPIO) Recommendation (option)

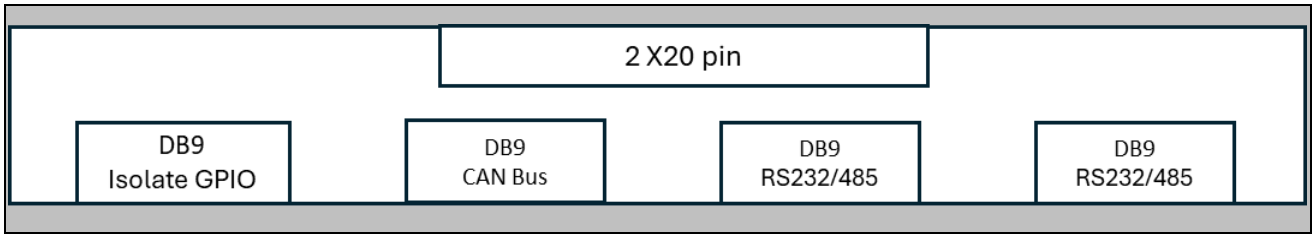
RSC-IMX8M

Extend	Pin Header 2x20pin↲(J22) 1)UART1 TTL(RX,TX,CTS,RTS)=>4pin 2)UART2 TTL(RX,TX,CTS,RTS)=>4pin 3)I2C3 (SCL, SDA) => 2pin 4)GPIO×7 =>7pin 5)PWM => 1pin 6)ECSPI1(SCLK, MISO, MOSI,SSO)=> 4pin 7)ECSPI2(SCLK, MISO, MOSI,SSO)=> 4pin 8)VDD_3.3V=>2pin 9)5V=>2pin 10)GND=>8pin 11)NC=>2pin Note 1: ECSPI1 and ECSPI2 are configured by default as SPI interfaces, but can be reconfigured via software to operate in ECSPI Overlap mode, allowing shared pin functions with UART or I2C3. I2C3 functions as a standard I2C interface. Note 2: To switch between A, B, and C board, the corresponding image must be updated.
Speaker	1 x 1x4P Header (L/R) Support 2W Speaker
Audio	Line-out & Mic-in 2in1 3.5mm Jack
External I/O	
USB	1 x USB 3.0 Type A(Vertical type)
LAN	2x RJ45 connector with indicate LED Industry Version：2pcs(Default) Consumer Version：1pcs
HDMI	1 x HDMI connector (Vertical type)
OTG	1 x USB 3.0 Type C
Micro SD	1 x Micro SD socket
Head Phone	1 x Headphone Jack
Reset	1 x Reset Key
LED	1 x Power LED (Green) (Only power on, no standby light.)
Audio	
I2S Codec	Wolfson WM8960
Mechanical & Environmental	
Power Type	12V~24V wide voltage DC input (Note: LVDS and MIPI only support 12V input）
Power Connector Type	1 x DC Jack (J6)

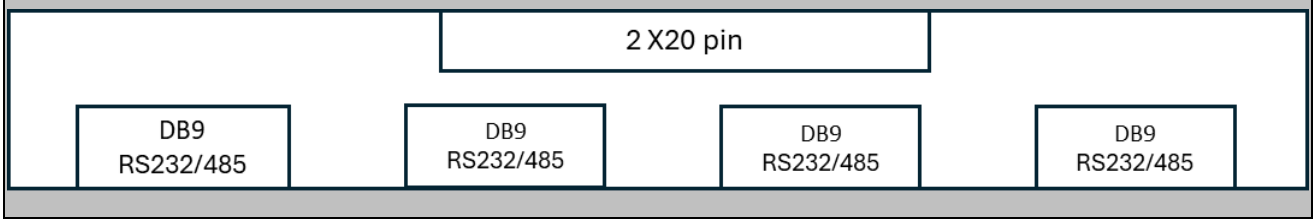
Operating Temp.	Industry Operating temperature：-20 ~ 85 Degree
Storage Temp.	-20 ~ 85 Degree
Operating Humidity	95%
Size (L x W)	3.5" 146mm x 102mm
Random Vibration Operation	1. PSD: 0.00454G^2/Hz , 1.5 Grms 2. operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 minutes per each axis 6. IEC 60068-2-64 Test:Fh 7. Storage : CF or SSD
Random Vibration Non-Operation	1 Test Acceleration : 3G 2 Test frequency : 5~500 Hz 3 Sweep：1 Oct/ per one minute. (logarithmic) 4 Test Axis : X,Y and Z axis 5 Test time :30 min. each axis 6 System condition : Non-Operating mode 7. Reference IEC 60068-2-64 Testing procedures
Bump Test	1. Wave form：Half Sine wave 2. Acceleration Rate：10g for operation mode 3. Duration Time：11ms 4. No. of Shock：Z axis 1000 times 5. Test Axis: Z axis 6. Operation mode 7. Reference IEC 60068-2-29 Testing procedures Test Eb : Bump Test
OS Information	Linux Yocto Version sumo 2.5-kernel 4.14.98 (Default and first)

Expansion I/O board -A (RS232/485/CAN/GPIO) (option)	
Component	
RS232/485	2 x DB9 Connector
CAN Bus	1 x DB9 Connector
Isolate GPIO	1 x DB9 Connector
Extend	2 x 20 pin, pitch 2.0mm header (J1)

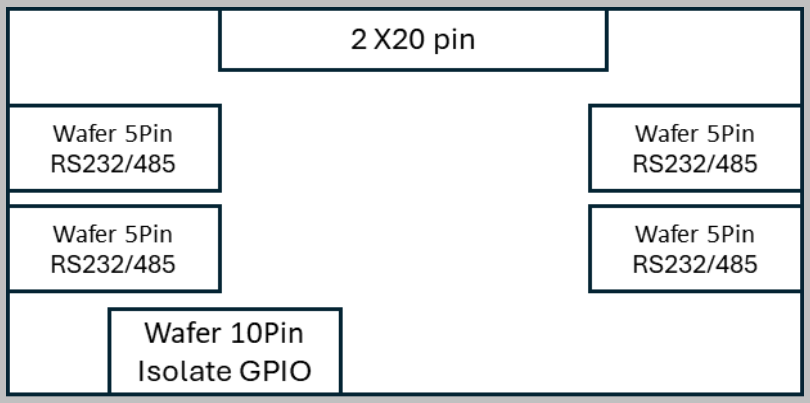
RSC-IMX8M



Expansion I/O board -B(RS232/485) (option)	
Component	
RS232/485	4 x DB9 Connector
Extend	2 x 20 pin, pitch 2.0mm header (J1)



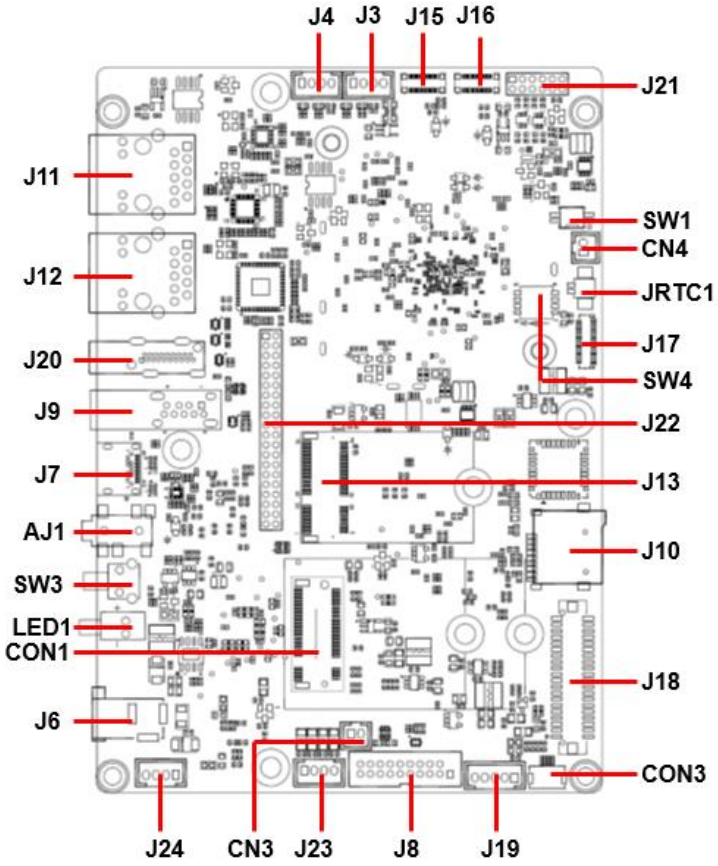
Expansion I/O board-C (RS232/485/GPIO) (option)	
Component	
RS232/485	4 x Wafer header 2.0mm,5Pin
Isolate GPIO	1 x Wafer header 1.25mm,10Pin
Extend	2 x 20 pin, pitch 2.0mm header (J1)

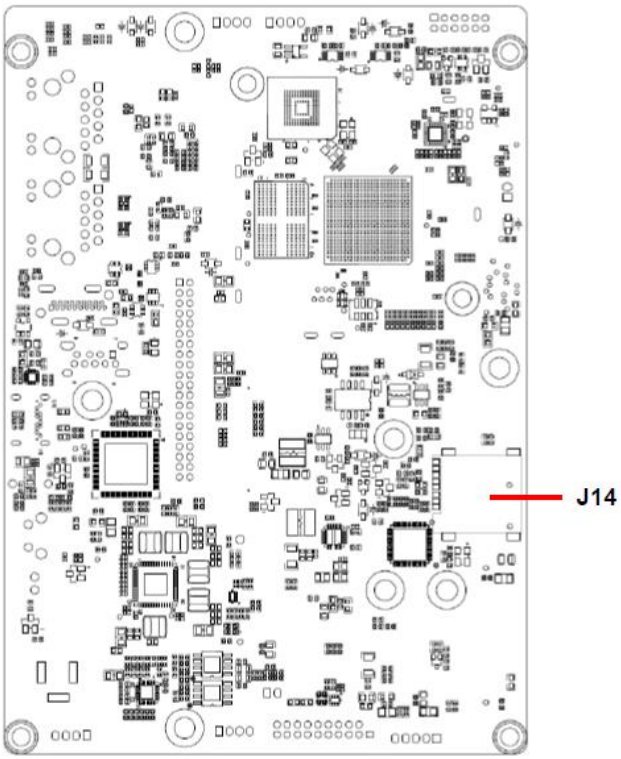


Note: Specifications are subject to change without notice.

2. Hardware Configuration

2.1 RSC-IMX8M Product Overview

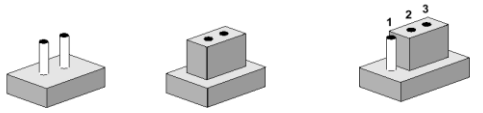




2.2 RSC-IMX8M Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



Open Closed Closed 2-3

The jumper settings are schematically depicted in this manual as follows:



Open Closed Closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

The following tables list the function of each of the board's jumpers and connectors.

Jumpers

Label	Function	Note
SW1	Boot Mode selector 1	
SW4	Boot Mode selector 2	

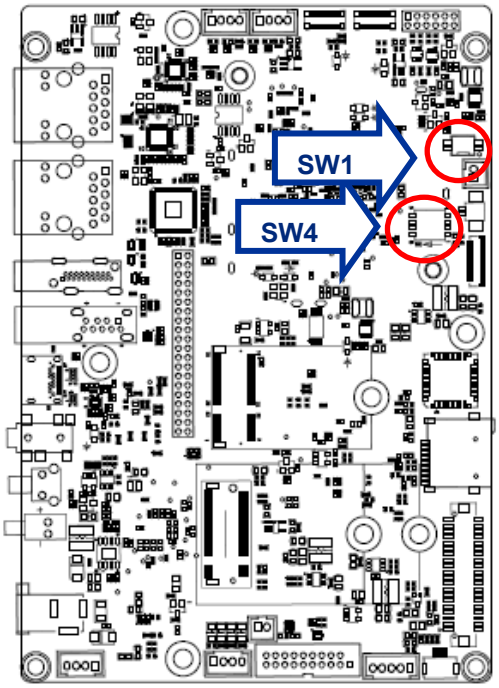
Connectors

Label	Function	Note
J15	MIPI CSI camera connector 1	2 x 15 BTB connector
J16	MIPI CSI camera connector 2	2 x 15 BTB connector
J21	Front Panel connector	2 x 6 header, pitch 2.00mm
J19	LCD Backlight connector	5 x 1 wafer, pitch 2.00mm
J18	LVDS connector	DIN 40-pin wafer, pitch 1.25mm Matching Connector: Hirose DF13-40DS-1.25C

RSC-IMX8M		
CON1	M.2 Key B for 3G/4G Module	
J13	M.2 Key E for WIFI /BT	
CON3	Touch panel connector	6 x 1 FPC, pitch 0.50mm
J17	MIPI DSI connector	31 x 1 FPC, pitch 0.30mm
J3	UART Debug connector	4 x 1 wafer, pitch 2.00mm
J4	UART Debug connector	4 x 1 wafer, pitch 2.00mm
JRTC1	RTC Battery connector	2 x 1 wafer, pitch 1.25mm
SW3	RESET KEY	
LED1	POWER LED	
J6	DC-IN power connector	1 x DC Jack
J10	Micro SD slot	
CN4	Power Button	2 x 1 wafer, pitch 2.00mm
J7	OTG USB3.0-Type C connector	
J8	2 x USB3.0 connector	2 x 10 wafer, pitch 2.00mm
J9	USB3.0-Type A connector	
J11/J12	2 x RJ-45 Ethernet	
J20	HDMI-A connector	
AJ1	HP Jack connector	
CN3	MIC IN connector	2 x 1 wafer, pitch 2.00mm
J23	Speaker connector	4 x 1 wafer, pitch 2.00mm
J14	SIM Card socket	
J24	DC-IN power connector	4 x 1 wafer, pitch 2.00mm
J22	Extend connector	2 x 20 female header, pitch 2.00mm

2.3 Setting Jumpers & Connectors

2.3.1 Boot Mode selector 1/2 (SW1/SW4)



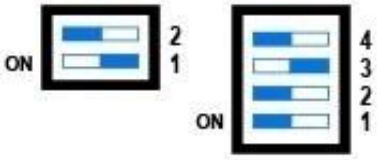
Programming mode

SW1: 01 SW4: XX

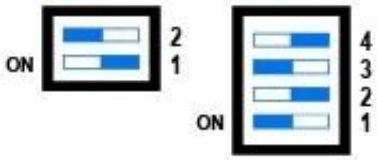
X=don't care

SW1	SW4
10	eMMC boot 0010
	SD boot 0101

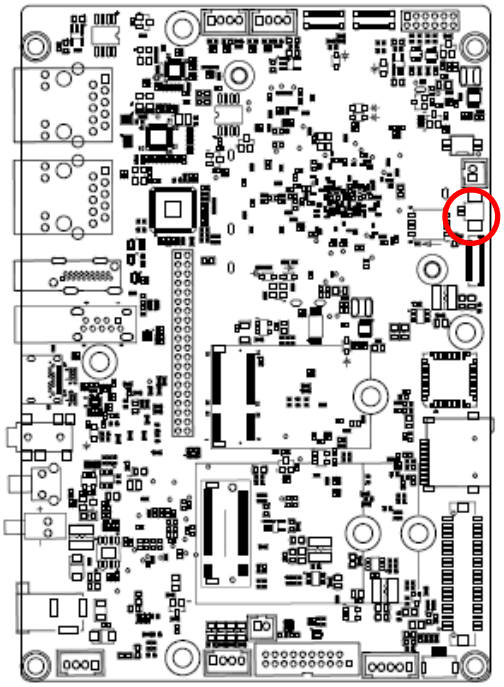
eMMC boot

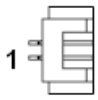


SD boot



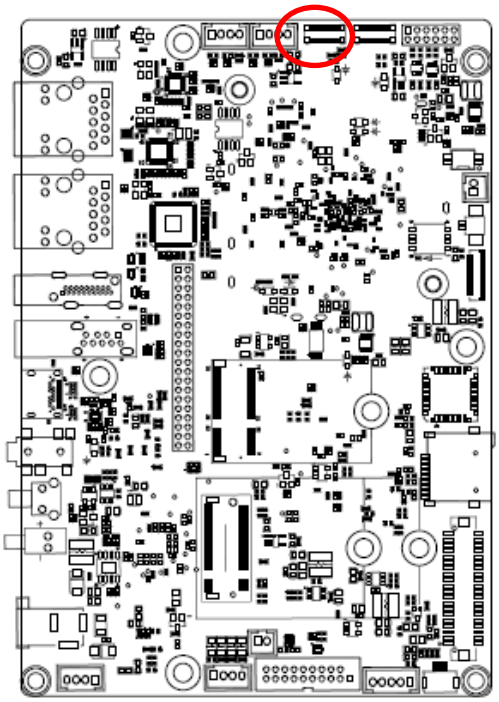
2.3.2 RTC connector (JRTC1)

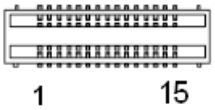




Signal	PIN
GND	2
+VDD_RTC	1

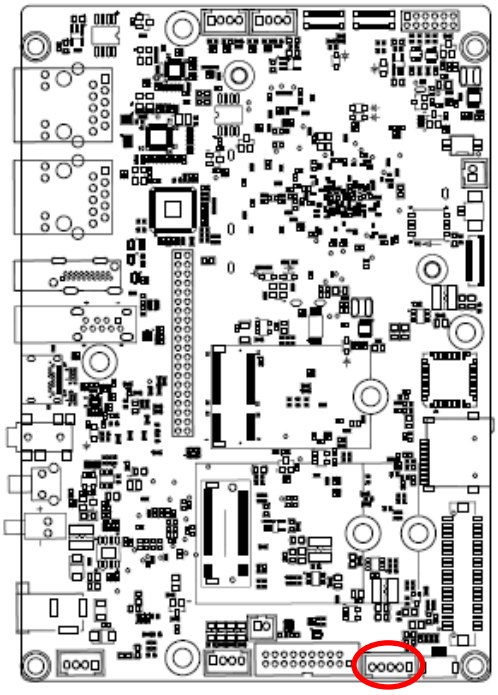
2.3.3 MIPI CSI Screen connector 1 (J15)

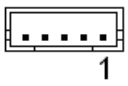




Signal	PIN	PIN	Signal
GND	1	30	CSI1_CKN
CSI1_DP0	2	29	CSI1_CKP
CSI1_DN0	3	28	GND
GND	4	27	CSI1_DP1
CSI1_DP2	5	26	CSI1_DN1
CSI1_DN2	6	25	GND
GND	7	24	+1.8V
CSI1_DP3	8	23	GND
CSI1_DN3	9	22	+1.5V
GND	10	21	CSI1_I2C_SDA
CSI1_MCLK	11	20	CSI1_ I2C_SCL
CSI1_RST	12	19	GND
GND	13	18	+2.8V
CSI1_PWDN	14	17	+2.8V
GND	15	16	GND

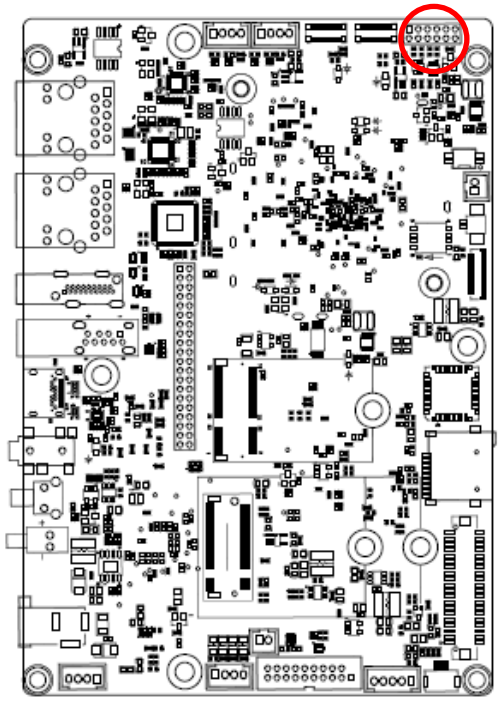
2.3.4 LCD Backlight connector (J19)

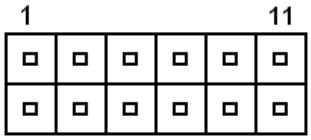




Signal	PIN
+12V	1
GND	2
BL_EN	3
BL_PWM	4
+5V	5

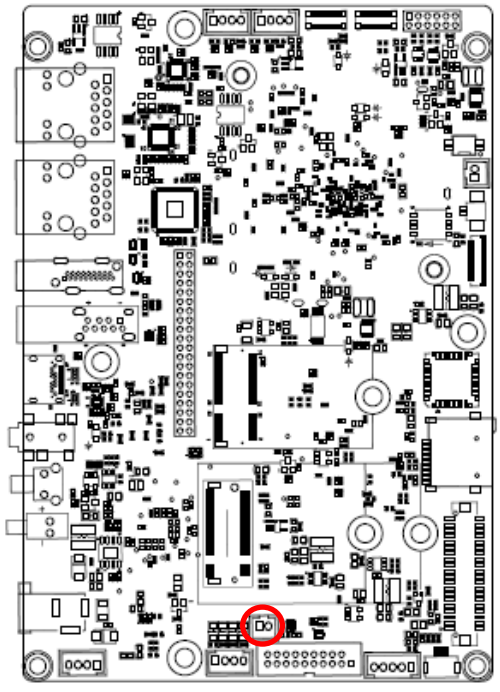
2.3.5 Front Panel connector (J21)

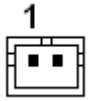




Function	Signal	PIN
VOL_UP	VOL_UP	5
	+3.3V	1
VOL_DOWN	VOL_DN	6
	+3.3V	1
Power button	ON_OFF	7
	+3.3V	1
BRIGHTNESS+	BR_UP	8
	+3.3V	1
BRIGHTNESS-	BR_DN	9
	+3.3V	1
LED GREEN (Power on)	LED_GRN	11
	GND	2
LED ORANGE (Power off)	LED_ORG	12
	GND	2
	NC	3
For internal use only	BU1	4
	BU7	10

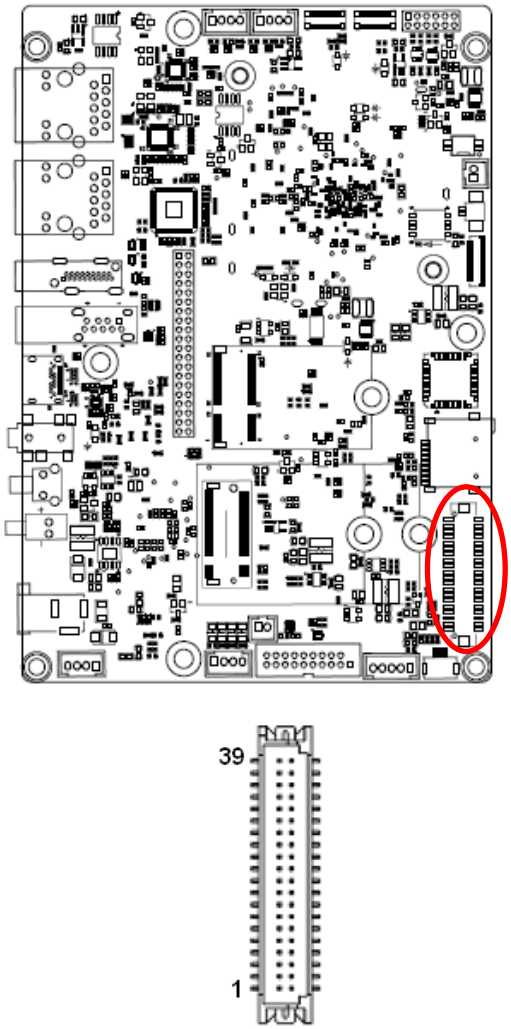
2.3.6 MIC IN connector (CN3)





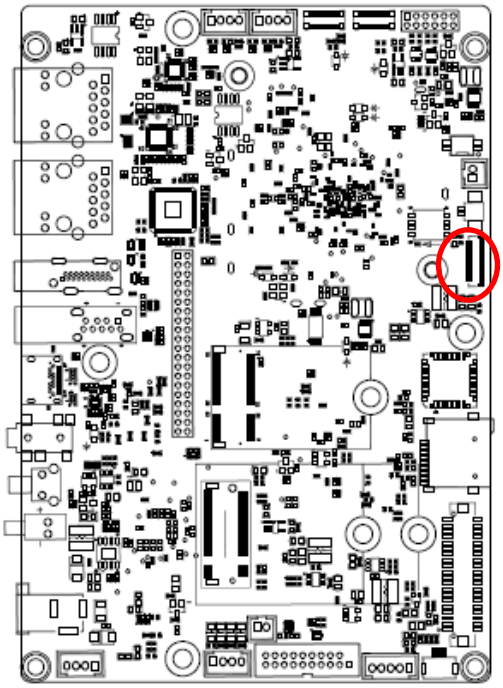
Signal	PIN
MIC_1P	1
MIC_1N	2

2.3.7 LVDS connector (J18)



Signal	PIN	PIN	Signal
+12V	39	40	+12V
GND	37	38	GND
LBCN_D8	35	36	LACN_D17
LBCP_D7	33	34	LACP_D16
GND	31	32	GND
LB3N_D6	29	30	LB2N_D9
LB3P_D5	27	28	LB2P_DCK
GND	25	26	GND
LB1N_D11	23	24	LB0N_D13
LB1P_D10	21	22	LB0P_D12
GND	19	20	GND
LA3N_D15	17	18	LA2N_D19
LA3P_D14	15	16	LA2P_D18
GND	13	14	GND
LA1N_D21	11	12	LA0N_D23
LA1P_D20	9	10	LA0P_D22
GND	7	8	GND
LVDS_DDC_CLK	5	6	LVDS_DDC_DAT
+3.3V	3	4	+5V
+3.3V	1	2	+5V

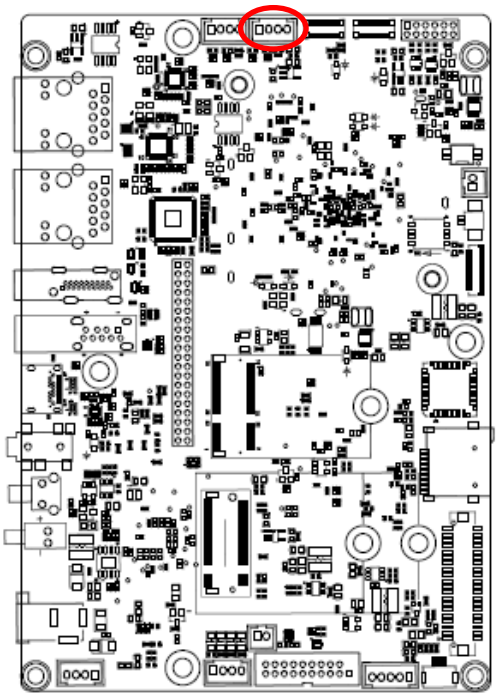
2.3.8 MIPI DSI connector (J17)

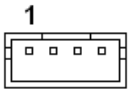




Signal	PIN
VLED+	31
VLED+	30
NC	29
VLED-	28
VLED-	27
VLED-	26
NC	25
GND	24
MIPI_DSI2_D3N	23
MIPI_DSI2_D0N	22
MIPI_DSI2_D3P	21
MIPI_DSI2_D0P	20
GND	19
GND	18
MIPI_DSI2_CN	17
MIPI_DSI2_D1N	16
MIPI_DSI2_CP	15
MIPI_DSI2_D1P	14
GND	13
GND	12
MIPI_DSI2_D2N	11
NC	10
MIPI_DSI2_D2P	9
NC	8
NC	7
MIPI_RST	6
+1.8V	5
+1.8V	4
+3.3V	3
+3.3V	2
+3.3V	1

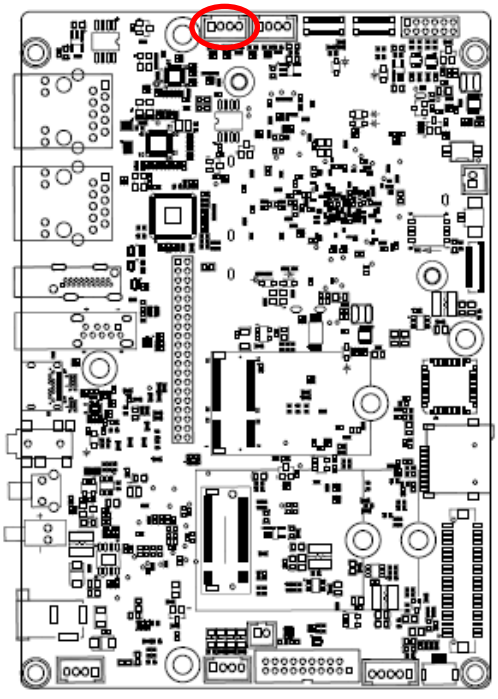
2.3.9 UART Debug connector (J3)

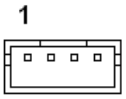




Signal	PIN
UART1_RXD	1
GND	2
UART1_TXD	3
+3.3V	4

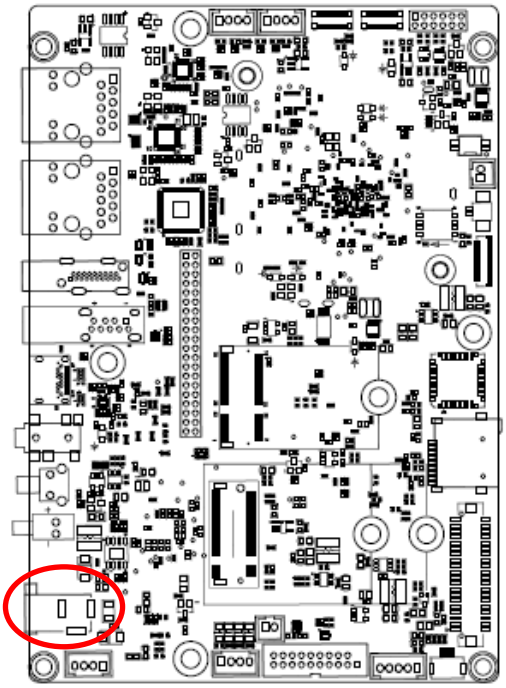
2.3.10 UART Debug connector (J4)

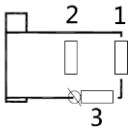




Signal	PIN
UART2_RXD	1
GND	2
UART2_TXD	3
+3.3V	4

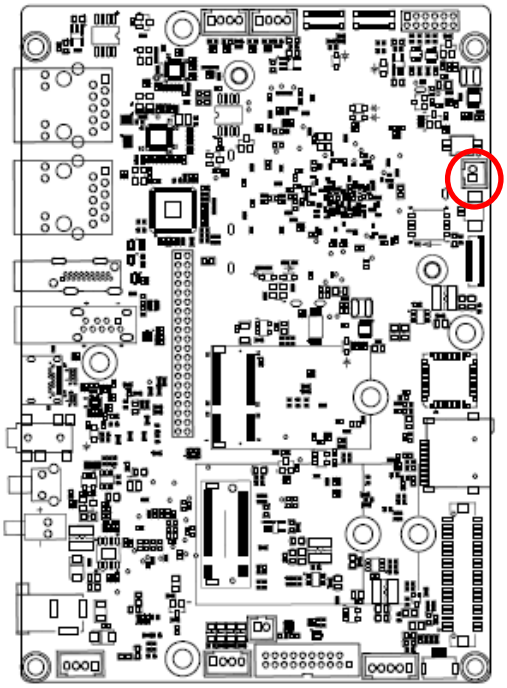
2.3.11 DC-IN power connector (J6)





Signal	PIN
GND	1
12~24V_DC IN	2
GND	3

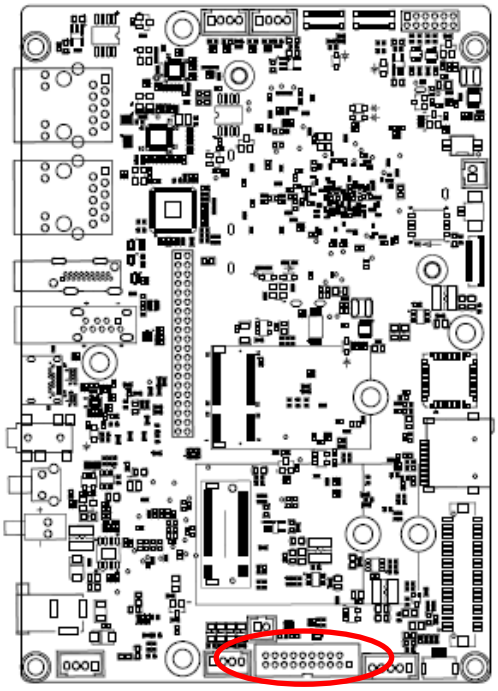
2.3.12 Power Button (CN4)

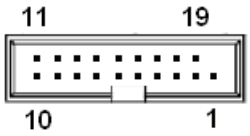




Signal	PIN
GND	2
ONOFF_1	1

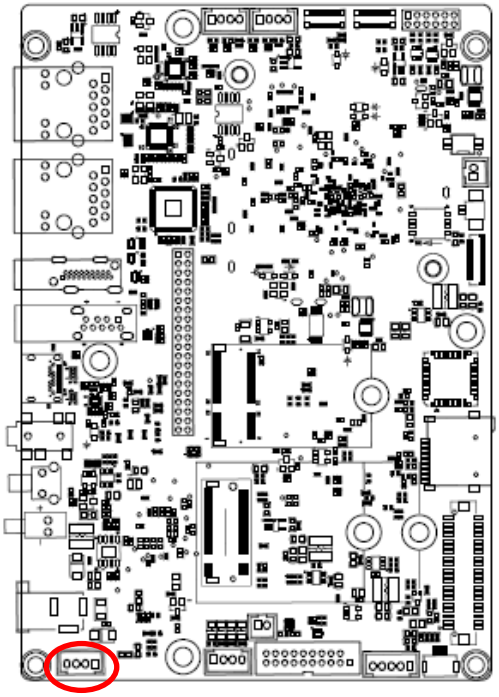
2.3.13 USB3.0 connector (J8)

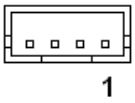




Signal	PIN	PIN	Signal
		1	+5V
+5V	19	2	StdA_SSRX-
StdA_SSRX-	18	3	StdA_SSRX+
StdA_SSRX+	17	4	GND
GND	16	5	StdA_SSTX-
StdA_SSTX-	15	6	StdA_SSTX+
StdA_SSTX+	14	7	GND
GND	13	8	DATA-
DATA-	12	9	DATA+
DATA+	11	10	NC

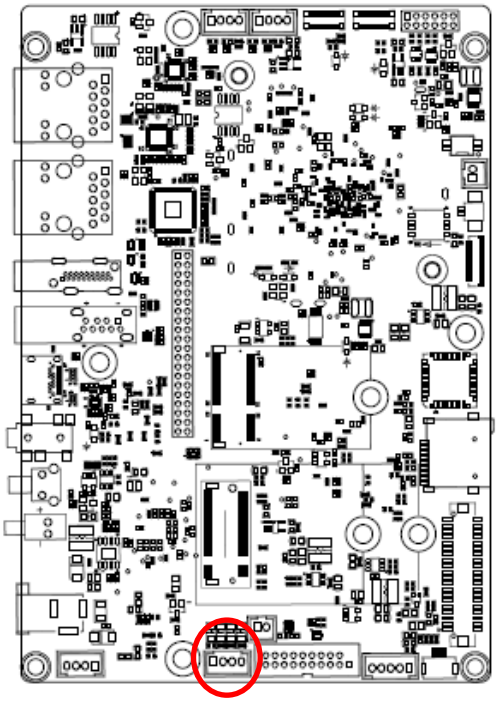
2.3.14 DC-IN power connector (J24)

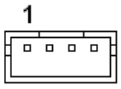




Signal	PIN
12~24V_DC IN	1
12~24V_DC IN	2
GND	3
GND	4

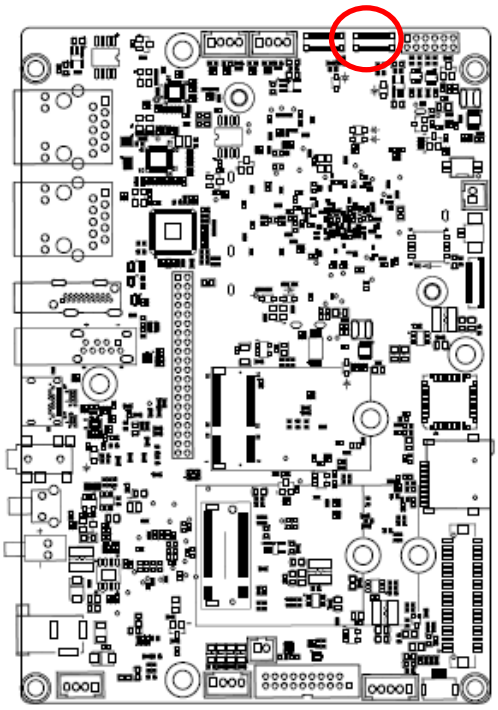
2.3.15 Speaker connector (J23)

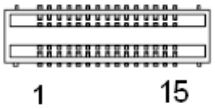




Signal	PIN
SPK_L+	1
SPK_L-	2
SPK_R+	3
SPK_R-	4

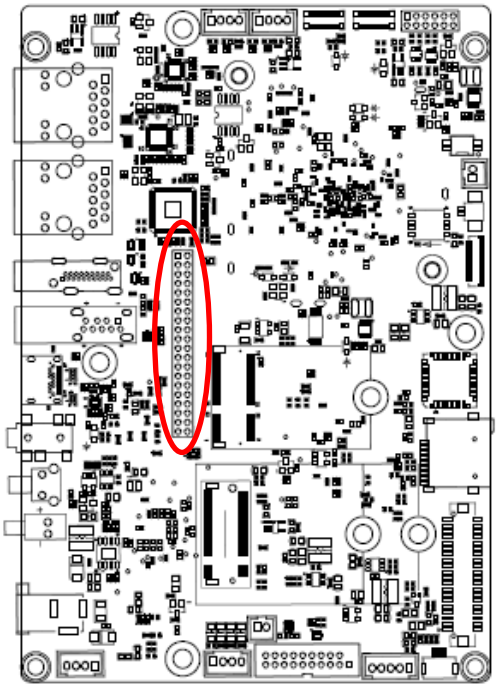
2.3.16 MIPI CSI Screen connector 2 (J16)

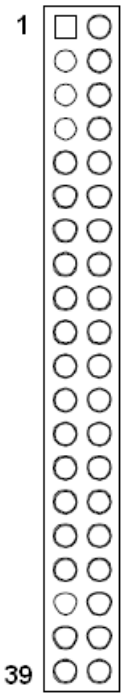




Signal	PIN	PIN	Signal
GND	1	30	CSI2_CKN
CSI2_DP0	2	29	CSI2_CKP
CSI2_DN0	3	28	GND
GND	4	27	CSI2_DP1
CSI2_DP2	5	26	CSI2_DN1
CSI2_DN2	6	25	GND
GND	7	24	+1.8V
CSI2_DP3	8	23	GND
CSI2_DN3	9	22	+1.5V
GND	10	21	CSI2_I2C_SDA
CSI2_MCLK	11	20	CSI2_ I2C_SCL
CSI2_RST	12	19	GND
GND	13	18	+2.8V
CSI2_PWDN	14	17	+2.8V
GND	15	16	GND

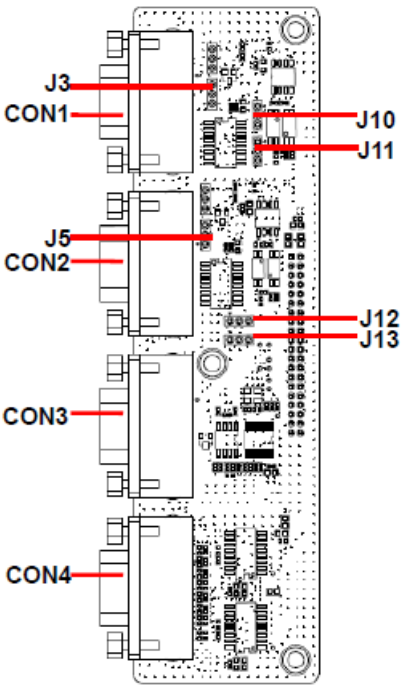
2.3.17 Extend connector (J22)





Signal	PIN	PIN	Signal
+3.3V	1	2	+5V
I2C3_SDA	3	4	+5V
I2C3_SCL	5	6	GND
UART2_RXD	7	8	UART1_RXD
GND	9	10	UART1_TXD
UART2_TXD	11	12	GPIO3.IO[10]
UART2_CTS	13	14	GND
UART2_RTS	15	16	UART1_CTS
+3.3V	17	18	UART1_RTS
ECSPI1_SCLK	19	20	GND
ECSPI1_MOSI	21	22	GPIO4_IO21
ECSPI1_MISO	23	24	ECSPI2_MISO
GND	25	26	ECSPI2_MOSI
NC	27	28	NC
ECSPI1_SS0	29	30	GND
GPIO4_IO20	31	32	ECSPI2_SCLK
GPIO5_IO04	33	34	GND
GPIO4_IO00	35	36	PWM1_OUT
GPIO4_IO01	37	38	ECSPI2_SS0
GND	39	40	GPIO4_IO11

2.4 Expansion I/O board-A Product Overview





2.5 Expansion I/O board-A (RS-232/485/GPIO/CAN) Jumper and Connector List

The following tables list the function of each of the board's connectors.

Jumpers

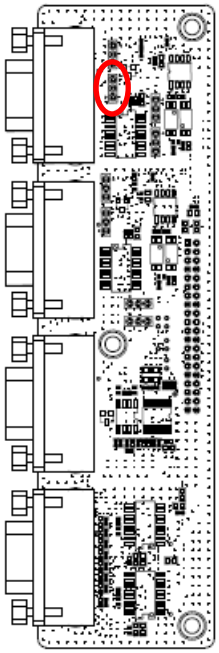
Label	Function	Note
J3	Serial port 1 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J10	Port 1 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J11	Port 1 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J5	Serial port 2 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J12	Port 2 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J13	Port 2 RS-232/485 mode select	3 x 1 header, pitch 2.00mm

Connectors

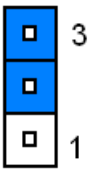
Label	Function	Note
CON1/2	RS232/485 connector 1/2	DB9
CON3	CAN Bus connector	DB9
CON4	GPIO connector	DB9
J1	Extend connector	2 x 20 header, pitch 2.00mm

2.6 Jumpers and Connectors

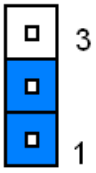
2.6.1 Serial port 1 in RS-232/485 mode select (J3)



RS-485*

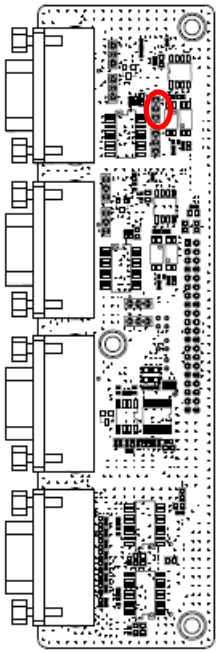


RS-232

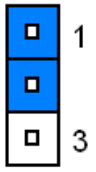


*** Default**

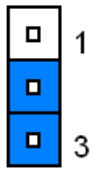
2.6.2 Port 1 RS-232/485 mode select (J10)



RS-232*

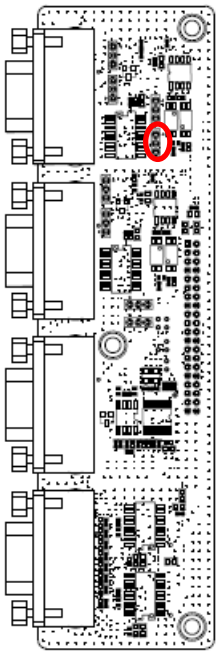


RS-485

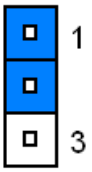


*** Default**

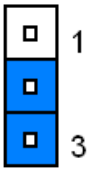
2.6.3 Port 1 RS-232/485 mode select (J11)



RS-232*

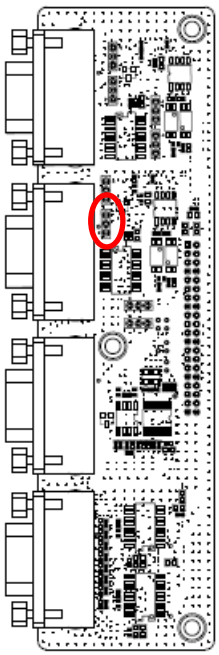


RS-485

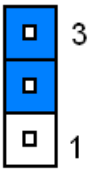


*** Default**

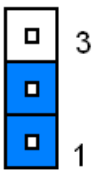
2.6.4 Serial port 2 in RS-232/485 mode select (J5)



RS-485*

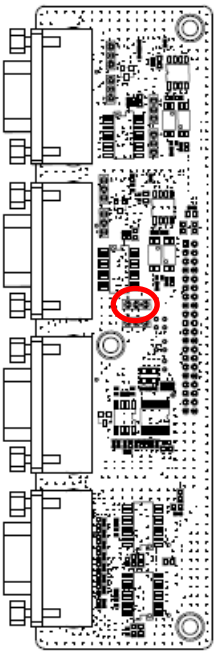


RS-232

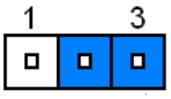


*** Default**

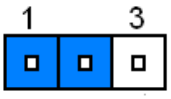
2.6.5 Port 2 RS-232/485 mode select (J12)



RS-485*

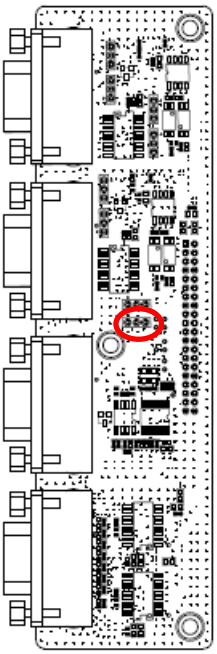


RS-232

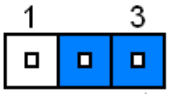


*** Default**

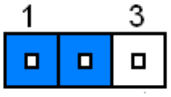
2.6.6 Port 2 RS-232/485 mode select (J13)



RS-485*

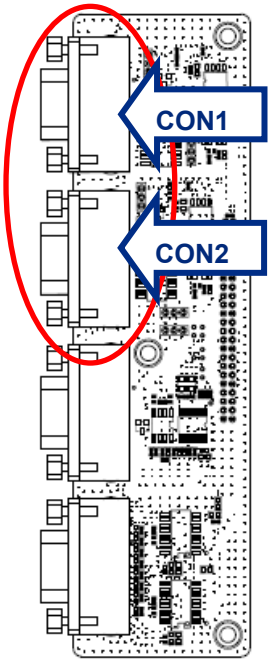


RS-232



*** Default**

2.6.7 Serial port 1/2 RS232/485 (CON1/2)



1



RS232

Signal	PIN	PIN	Signal
NC	1	6	NC
RX	2	7	NC
TX	3	8	NC
NC	4	9	NC
GND	5		

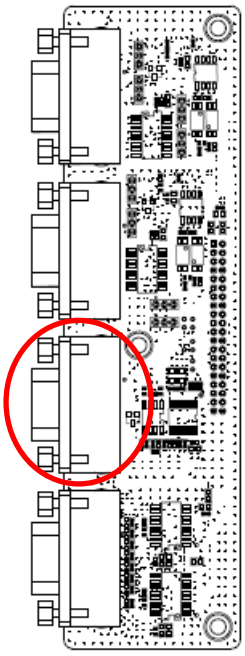
RS485

Signal	PIN	PIN	Signal
DATA-	1	6	NC
DATA+	2	7	NC
NC	3	8	NC
NC	4	9	NC
GND	5		

*** Default**

Note: CON1/2 can be selected to RS232/485 by jumper

2.6.8 CAN BUS (CON3)



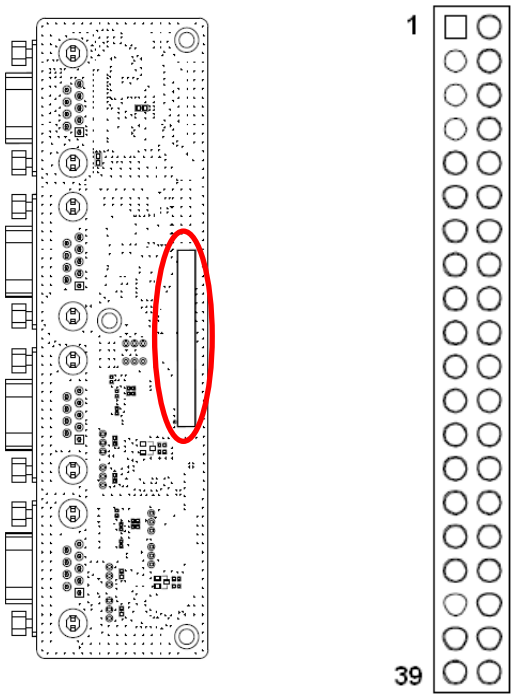
1



Signal	PIN	PIN	Signal
NC	1	6	GND
CAN_L	2	7	CAN_H
GND	3	8	NC
NC	4	9	NC
NC	5		

*** Default**

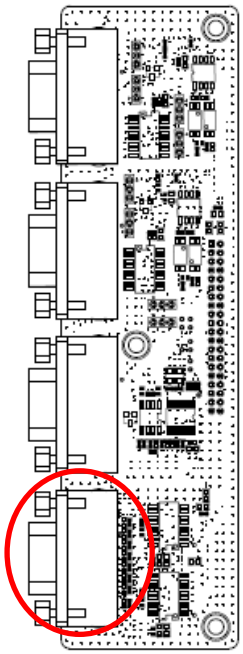
2.6.9 Port 4 RS-232/485 mode select (J1)

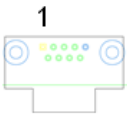


*** Default**

Signal	PIN	PIN	Signal
+3.3V	1	2	+5V
I2C3_SDA	3	4	+5V
I2C3_SCL	5	6	GND
UART2_RXD	7	8	UART1_RXD
GND	9	10	UART1_TXD
UART2_TXD	11	12	GPIO3_IO10
UART2_CTS	13	14	GND
UART2_RTS	15	16	UART1_CTS
+3.3V	17	18	UART1_RTS
ECSPI1_SCLK	19	20	GND
ECSPI1_MOSI	21	22	GPIO4_IO21
ECSPI1_MISO	23	24	ECSPI2_MISO
GND	25	26	ECSPI2_MOSI
NC	27	28	NC
ECSPI1_SS0	29	30	GND
GPIO4_IO20	31	32	ECSPI2_SCLK
GPIO5_IO04	33	34	GND
GPIO4_IO00	35	36	PWM1_OUT
ECSPI1_INT	37	38	CH432T_CS
GND	39	40	GPIO4_IO11

2.6.10 GPIO (CON4)

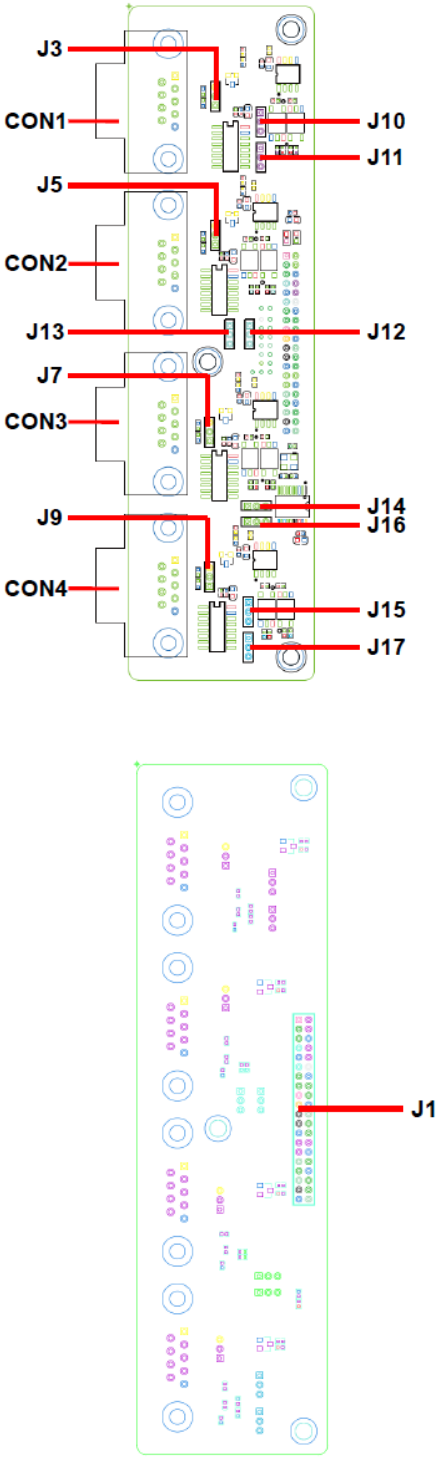




Signal	PIN	PIN	Signal
GP4_IO21	1	6	GP5_IO04
GP4_IO20	2	7	GP4_IO00
GP1_IO01	3	8	GP4_IO11
GP5_IO05	4	9	GP5_IO26
GND	5		

*** Default**

2.7 Expansion I/O board-B Product Overview



2.8 Expansion I/O board-B (RS-232/485) Jumper and Connector List

The following tables list the function of each of the board's connectors.

Jumpers

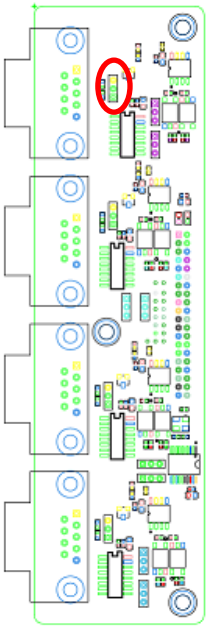
Label	Function	Note
J3	Serial port 1 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J10	Port 1 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J11	Port 1 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J5	Serial port 2 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J12	Port 2 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J13	Port 2 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J7	Serial port 3 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J14	Port 3 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J16	Port 3 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J9	Serial port 4 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J15	Port 4 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J17	Port 4 RS-232/485 mode select	3 x 1 header, pitch 2.00mm

Connectors

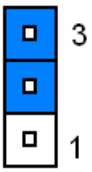
Label	Function	Note
CON1/2/3/4	RS232/485 connector 1/2/3/4	DB9
J1	Extend connector	2 x 20 header, pitch 2.00mm

2.9 Jumpers and Connectors

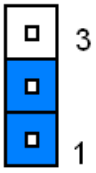
2.9.1 Serial port 1 in RS-232/485 mode select (J3)



RS-485

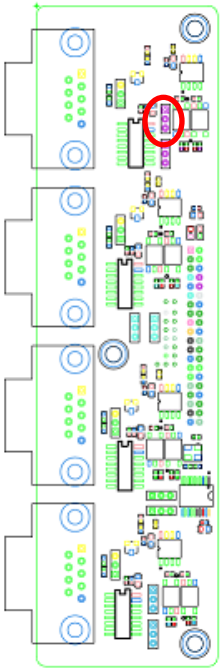


RS-232*

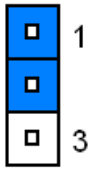


*** Default**

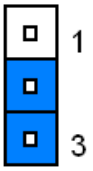
2.9.2 Port 1 RS-232/485 mode select (J10)



RS-232*

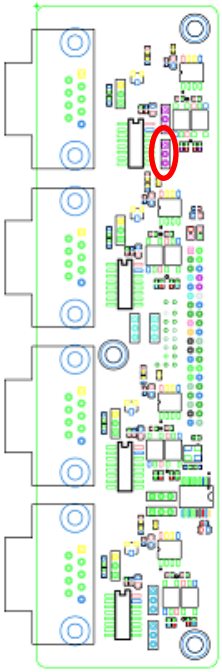


RS-485

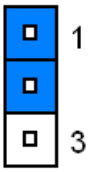


*** Default**

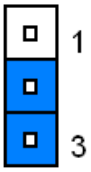
2.9.3 Port 1 RS-232/485 mode select (J11)



RS-232*

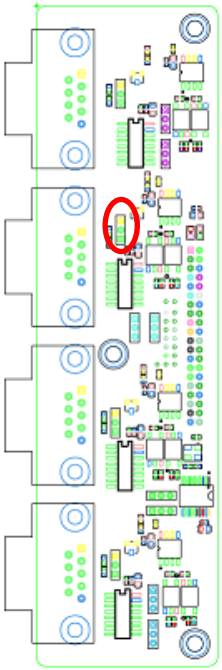


RS-485

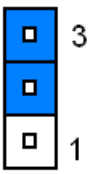


*** Default**

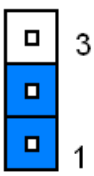
2.9.4 Serial port 2 in RS-232/485 mode select (J5)



RS-485*

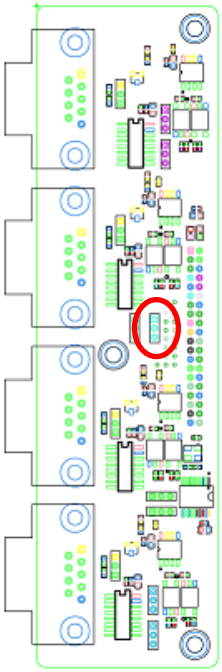


RS-232

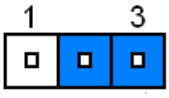


*** Default**

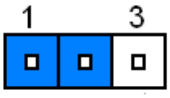
2.9.5 Port 2 RS-232/485 mode select (J12)



RS-485*

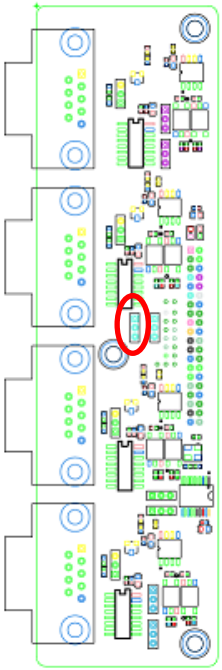


RS-232

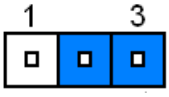


*** Default**

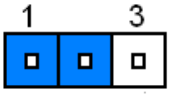
2.9.6 Port 2 RS-232/485 mode select (J13)



RS-485*

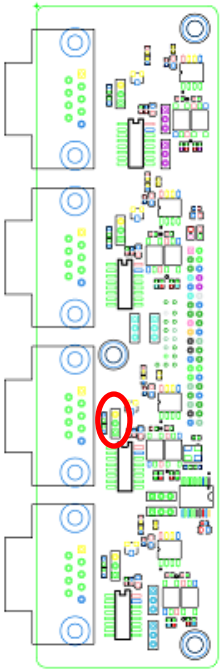


RS-232

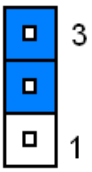


*** Default**

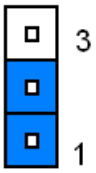
2.9.7 Serial port 3 in RS-232/485 mode select (J7)



RS-485*

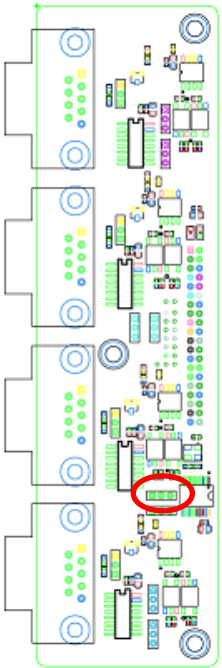


RS-232

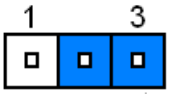


*** Default**

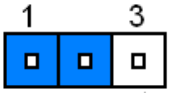
2.9.8 Port 3 RS-232/485 mode select (J14)



RS-485*

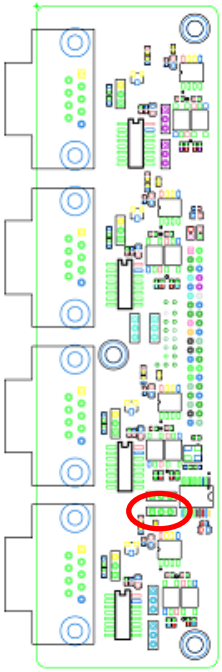


RS-232

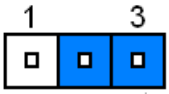


*** Default**

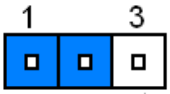
2.9.9 Port 3 RS-232/485 mode select (J16)



RS-485*

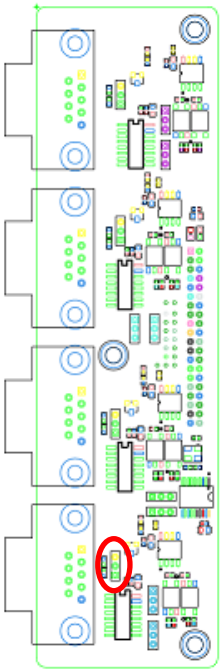


RS-232

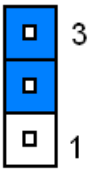


*** Default**

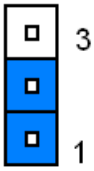
2.9.10 Serial port 4 in RS-232/485 mode select (J9)



RS-485*

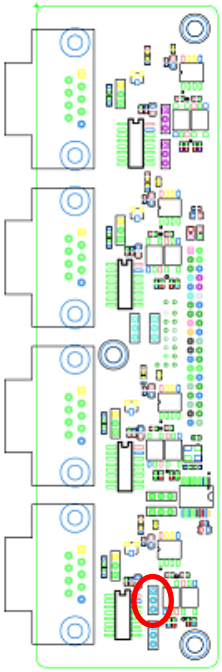


RS-232

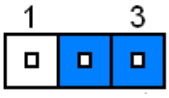


*** Default**

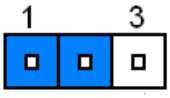
2.9.11 Port 4 RS-232/485 mode select (J15)



RS-485*

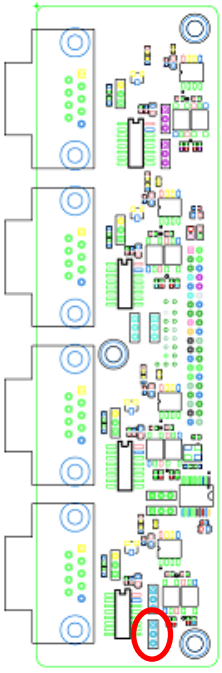


RS-232

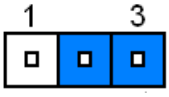


*** Default**

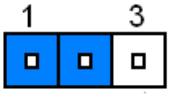
2.9.12 Port 4 RS-232/485 mode select (J17)



RS-485*

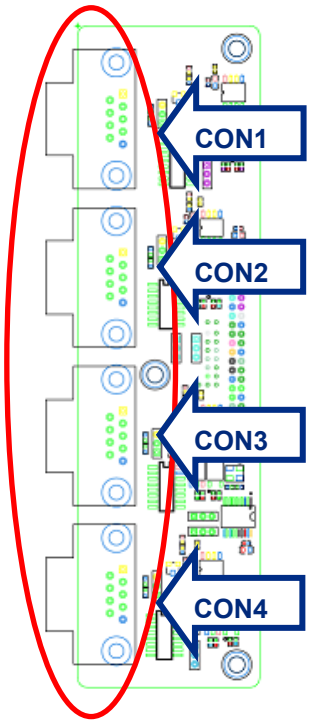


RS-232



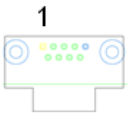
*** Default**

2.9.13 Serial port 1~4 RS232/485 (CON1~4)



*** Default**

Note: CON1~4 can be selected to RS232/485 by jumper



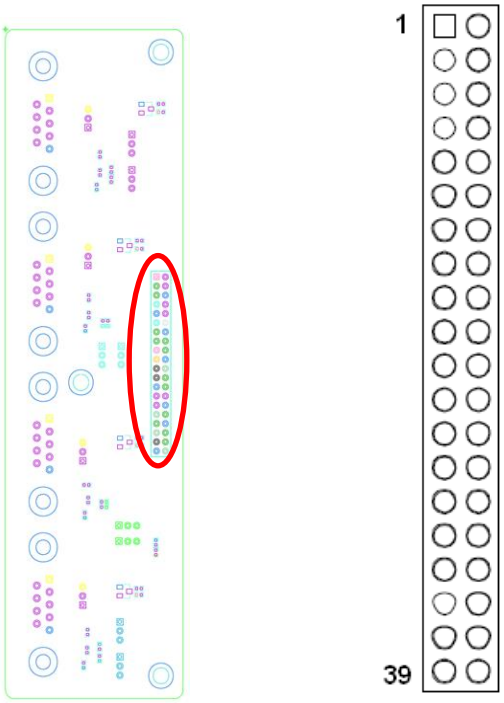
RS232

Signal	PIN	PIN	Signal
NC	1	6	NC
RX	2	7	NC
TX	3	8	NC
NC	4	9	NC
GND	5		

RS485

Signal	PIN	PIN	Signal
DATA-	1	6	NC
DATA+	2	7	NC
NC	3	8	NC
NC	4	9	NC
GND	5		

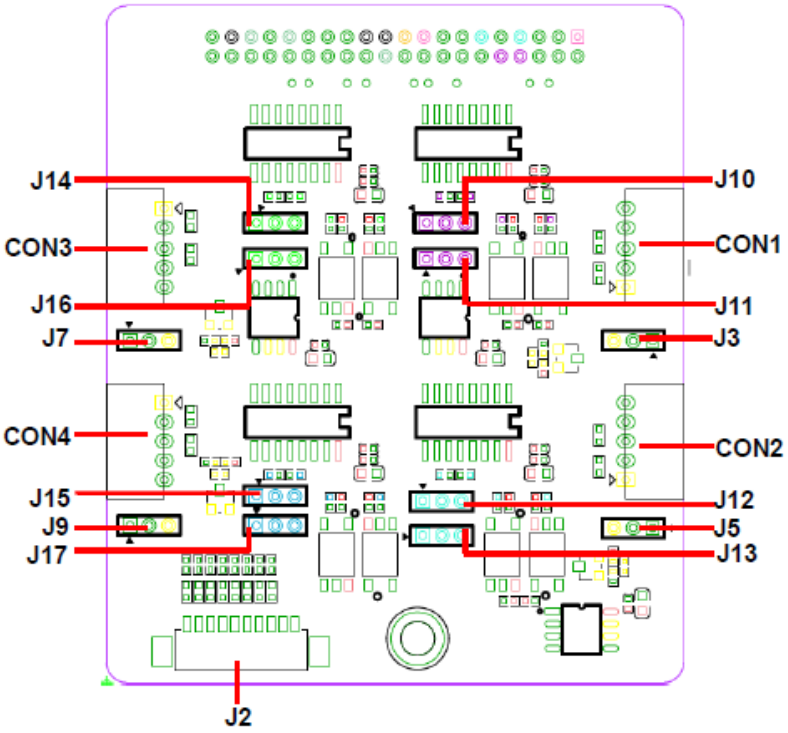
2.9.14 Port 4 RS-232/485 mode select (J1)

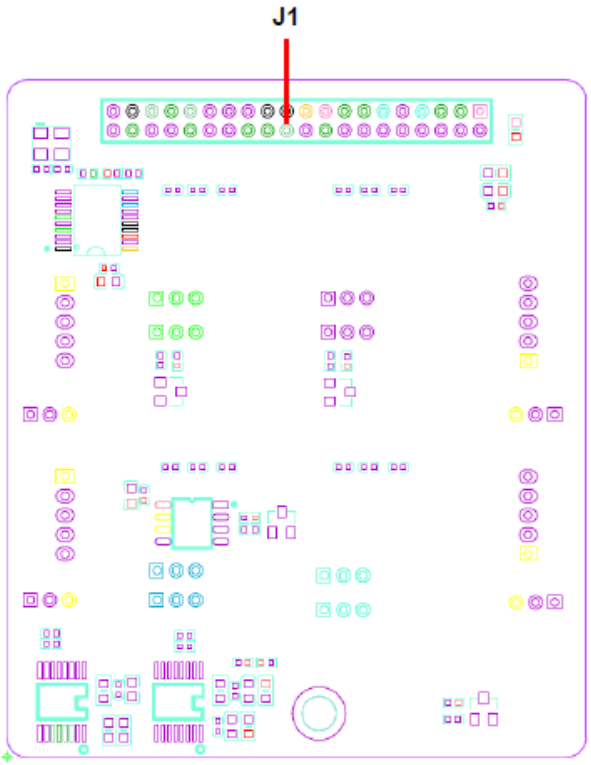


*** Default**

Signal	PIN	PIN	Signal
+3.3V	1	2	+5V
I2C3_SDA	3	4	+5V
I2C3_SCL	5	6	GND
UART2_RXD	7	8	UART1_RXD
GND	9	10	UART1_TXD
UART2_TXD	11	12	GPIO3_IO10
UART2_CTS	13	14	GND
UART2_RTS	15	16	UART1_CTS
+3.3V	17	18	UART1_RTS
ECSPI1_SCLK	19	20	GND
ECSPI1_MOSI	21	22	GPIO4_IO21
ECSPI1_MISO	23	24	ECSPI2_MISO
GND	25	26	ECSPI2_MOSI
NC	27	28	NC
ECSPI1_SS0	29	30	GND
GPIO4_IO20	31	32	ECSPI2_SCLK
GPIO5_IO04	33	34	GND
GPIO4_IO00	35	36	PWM1_OUT
ECSPI1_INT	37	38	CH432T_CS
GND	39	40	GPIO4_IO11

2.10 Expansion I/O board-C Product Overview





2.11 Expansion I/O board-C (RS-232/485/GPIO) Jumper and Connector List

The following tables list the function of each of the board's connectors.

Jumpers

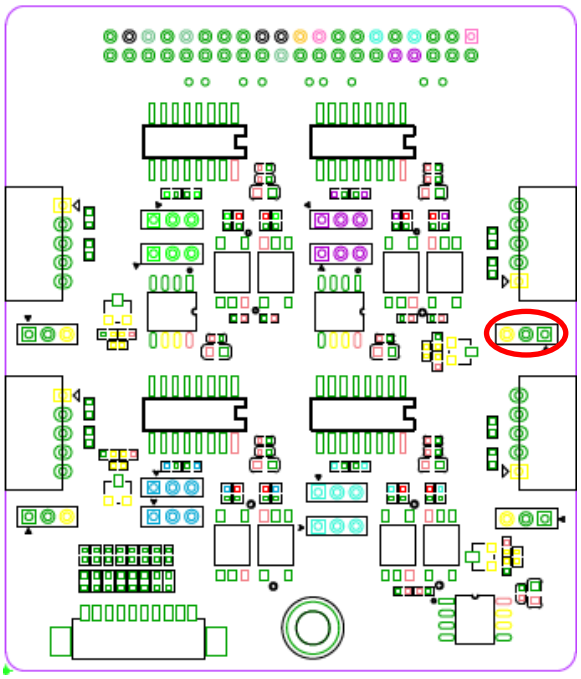
Label	Function	Note
J3	Serial port 1 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J10	Port 1 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J11	Port 1 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J5	Serial port 2 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J12	Port 2 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J13	Port 2 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J7	Serial port 3 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J14	Port 3 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J16	Port 3 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J9	Serial port 4 in RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J15	Port 4 RS-232/485 mode select	3 x 1 header, pitch 2.00mm
J17	Port 4 RS-232/485 mode select	3 x 1 header, pitch 2.00mm

Connectors

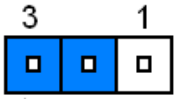
Label	Function	Note
CON1/2/3/4	RS232/485 connector 1/2/3/4 connector	5 x 1 header, pitch 2.00mm
J1	Extend connector	2 x 20 header, pitch 2.00mm
J2	GPIO connector	10 x 1 header, pitch 1.25mm

2.12 Setting Jumpers & Connectors

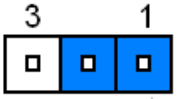
2.12.1 Serial port 1 in RS-232/485 mode select (J3)



RS-485*

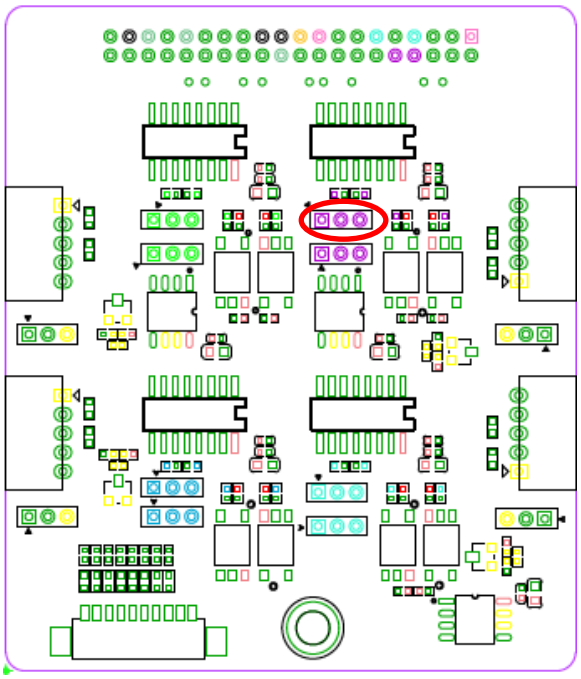


RS-232

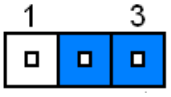


*** Default**

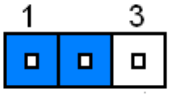
2.12.2 Port 1 RS-232/485 mode select (J10)



RS-485*

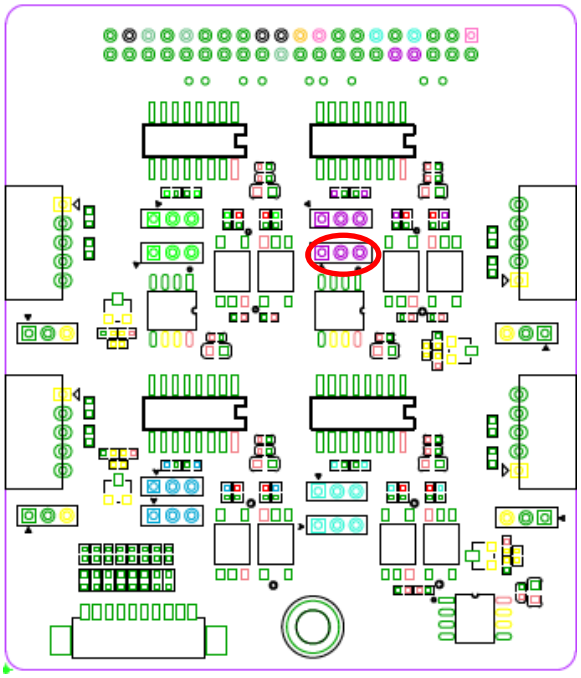


RS-232

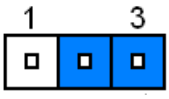


*** Default**

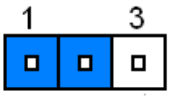
2.12.3 Port 1 RS-232/485 mode select (J11)



RS-485*

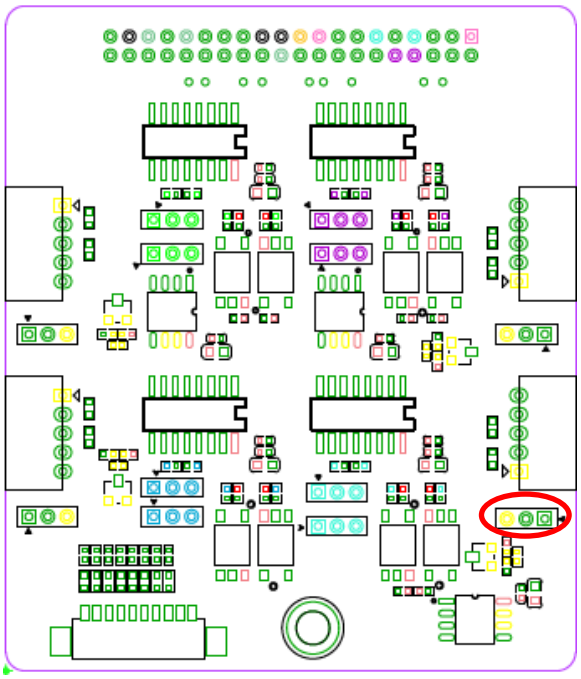


RS-232

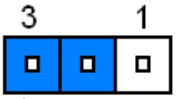


*** Default**

2.12.4 Serial port 2 in RS-232/485 mode select (J5)



RS-485*

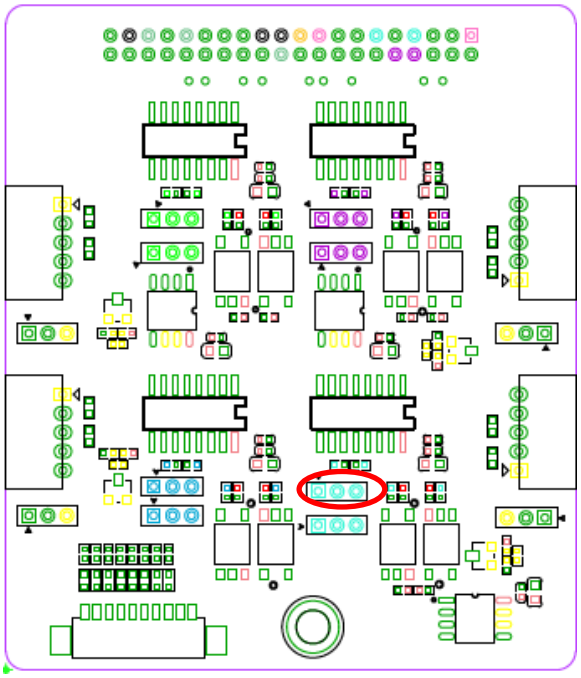


RS-232

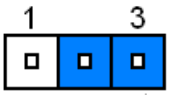


*** Default**

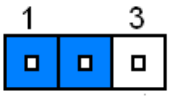
2.12.5 Port 2 RS-232/485 mode select (J12)



RS-485*

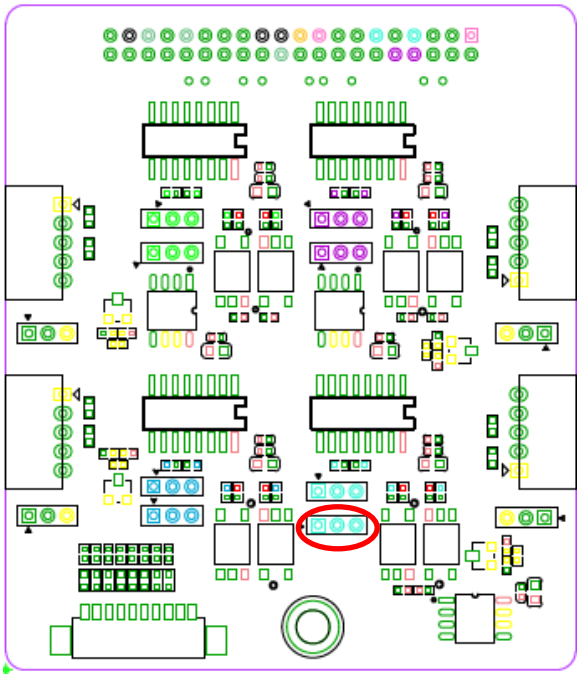


RS-232

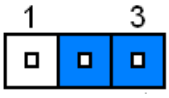


*** Default**

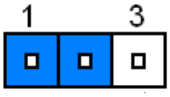
2.12.6 Port 2 RS-232/485 mode select (J13)



RS-485*

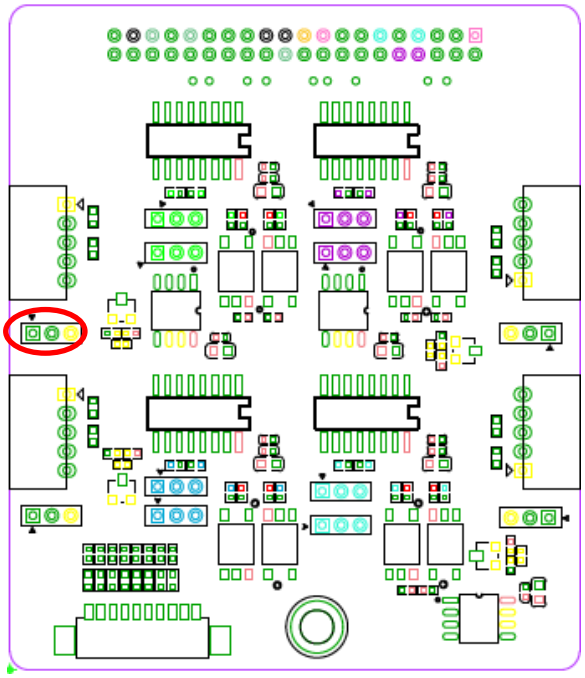


RS-232

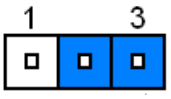


*** Default**

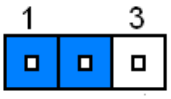
2.12.7 Serial port 3 in RS-232/485 mode select (J7)



RS-485*

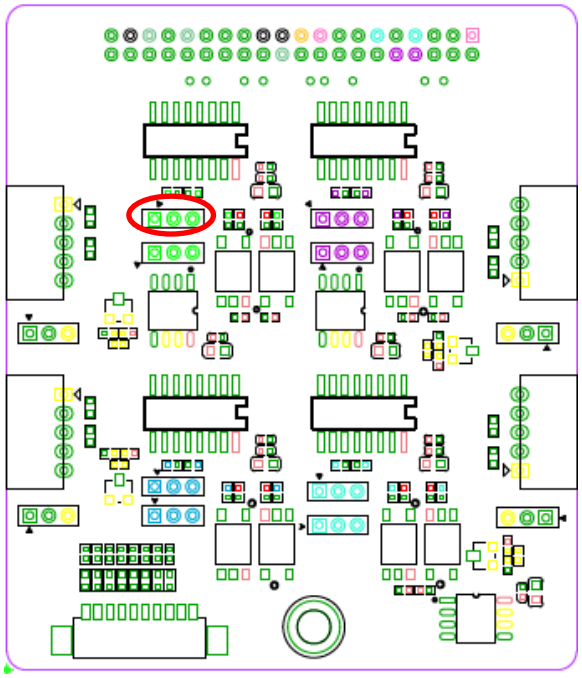


RS-232

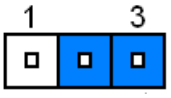


*** Default**

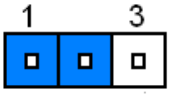
2.12.8 Port 3 RS-232/485 mode select (J14)



RS-485*

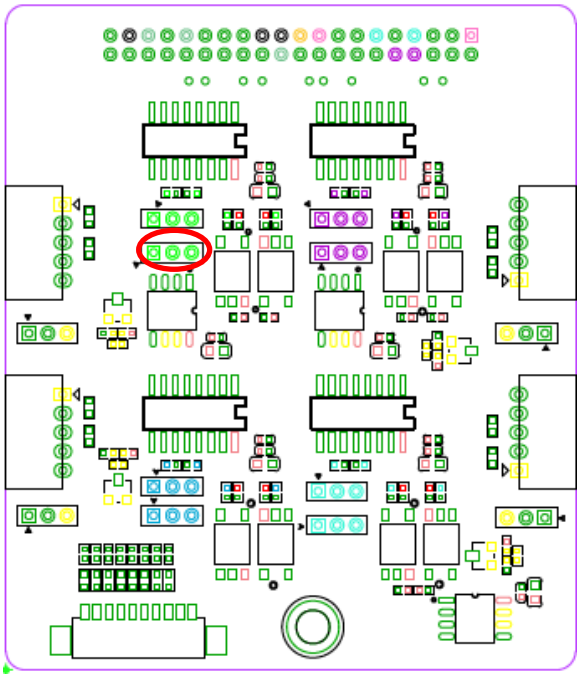


RS-232

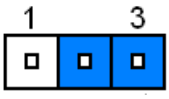


*** Default**

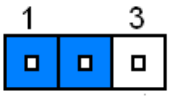
2.12.9 Port 3 RS-232/485 mode select (J16)



RS-485*

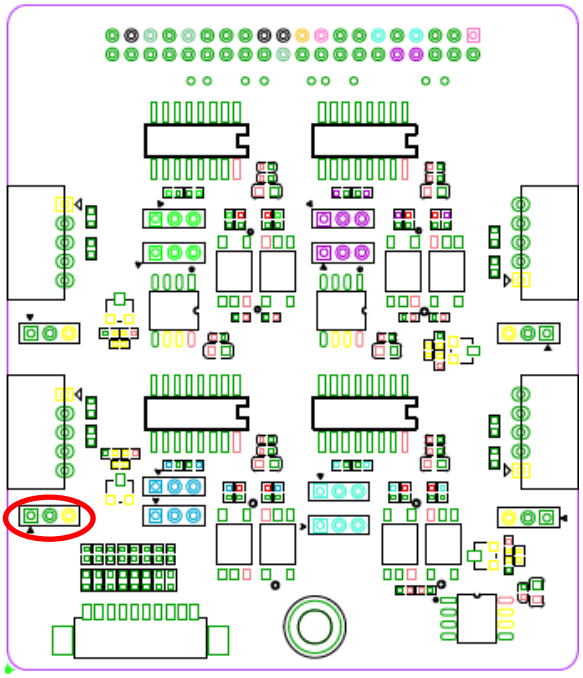


RS-232

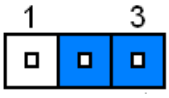


*** Default**

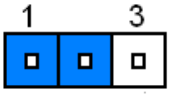
2.12.10 Serial port 4 in RS-232/485 mode select (J9)



RS-485*

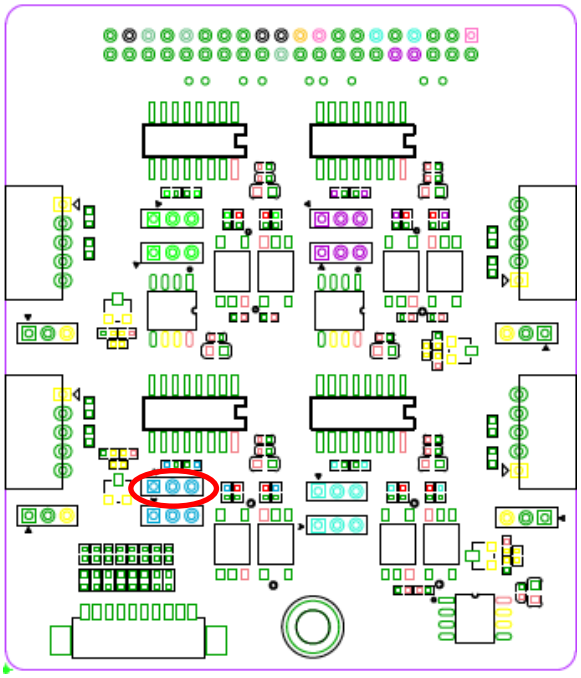


RS-232

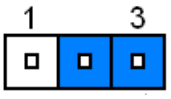


*** Default**

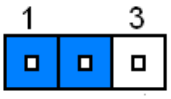
2.12.11 Port 4 RS-232/485 mode select (J15)



RS-485*

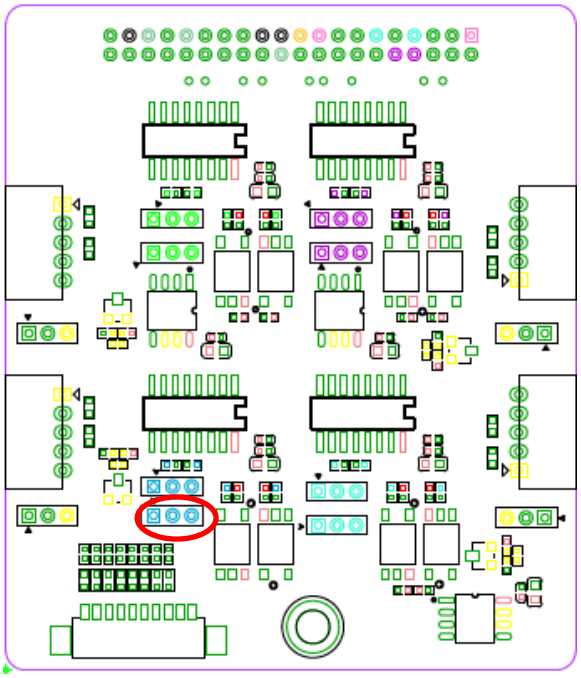


RS-232

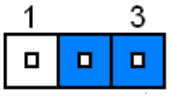


*** Default**

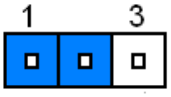
2.12.12 Port 4 RS-232/485 mode select (J17)



RS-485*

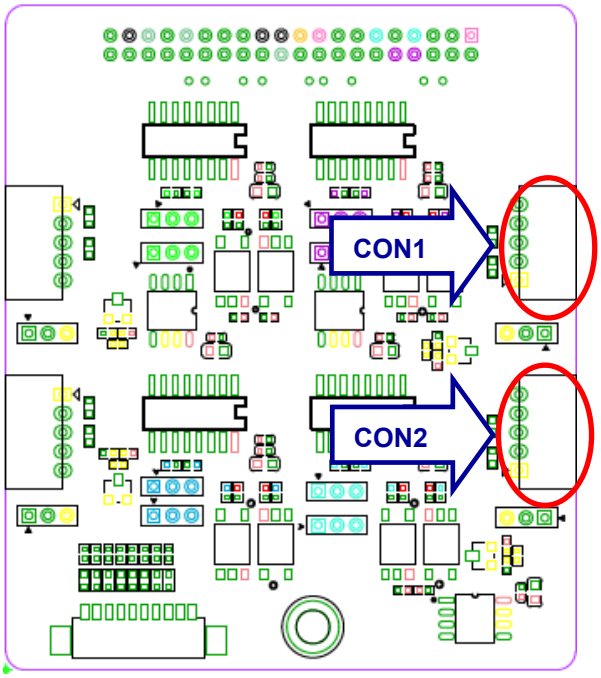


RS-232



*** Default**

2.12.13 RS232/485 connector 1/2 connector (CON1/2)





RS232

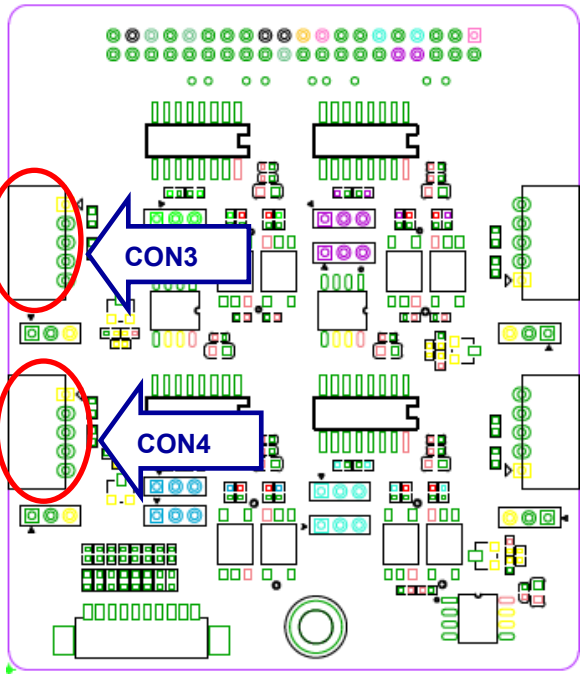
Signal	PIN
NC	5
GND	4
TX	3
RX	2
NC	1

RS485

Signal	PIN
NC	5
GND	4
NC	3
DATA+	2
DATA-	1

Note: CON1/2 can be selected to RS232/485 by jumper

2.12.14 RS232/485 connector 3/4 connector (CON3/4)





RS232

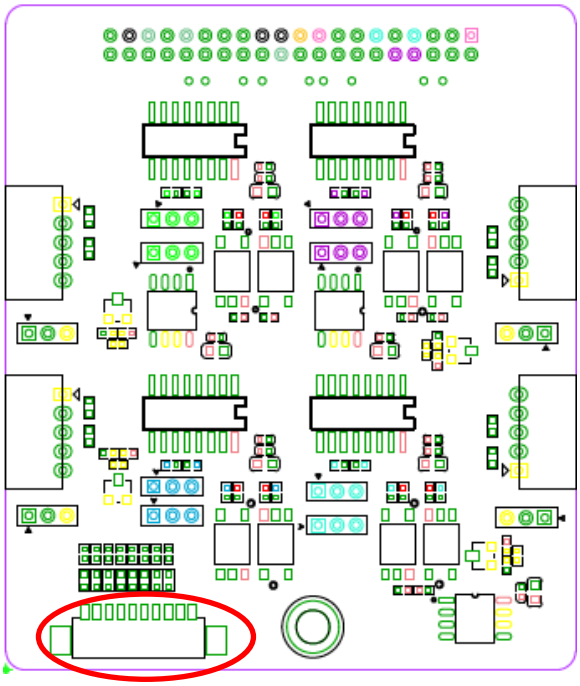
Signal	PIN
NC	5
GND	4
TX	3
RX	2
NC	1

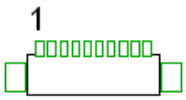
RS485

Signal	PIN
NC	5
GND	4
NC	3
DATA+	2
DATA-	1

Note: CON3/4 can be selected to RS232/485 by jumper

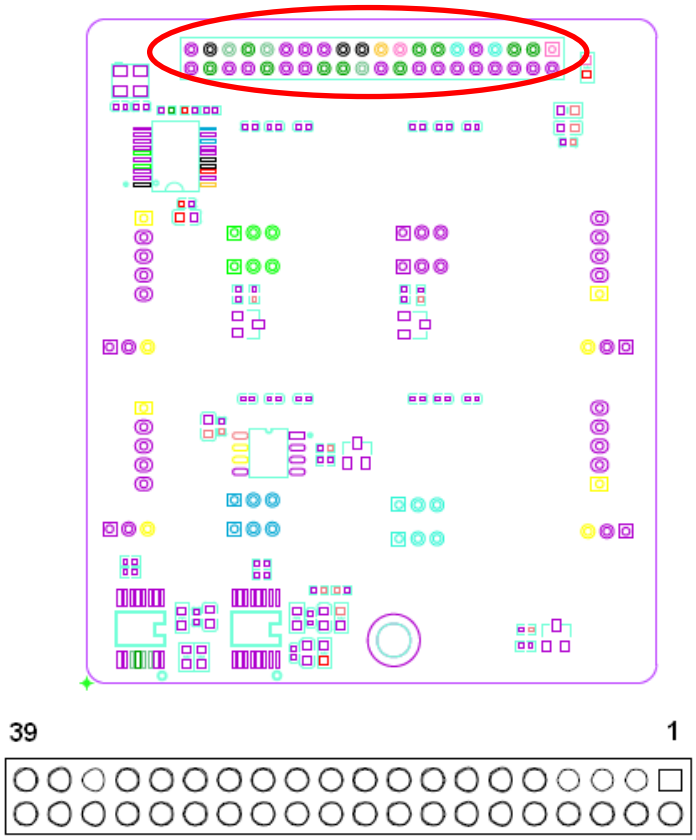
2.12.15 GPIO connector (J2)





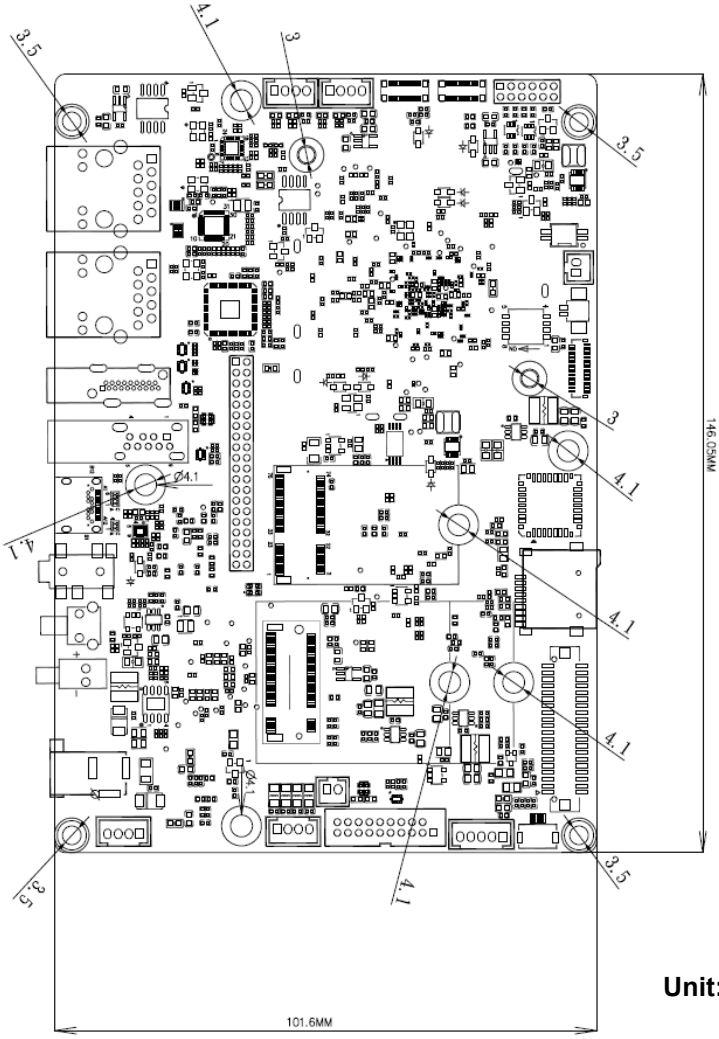
Signal	PIN
GP4_IO21	1
GP4_IO20	2
GP1_IO01	3
GP5_IO05	4
GP5_IO04	5
GP4_IO00	6
GP4_IO11	7
GP5_IO26	8
+5V	9
GND	10

2.12.16 Extend connector (J1)

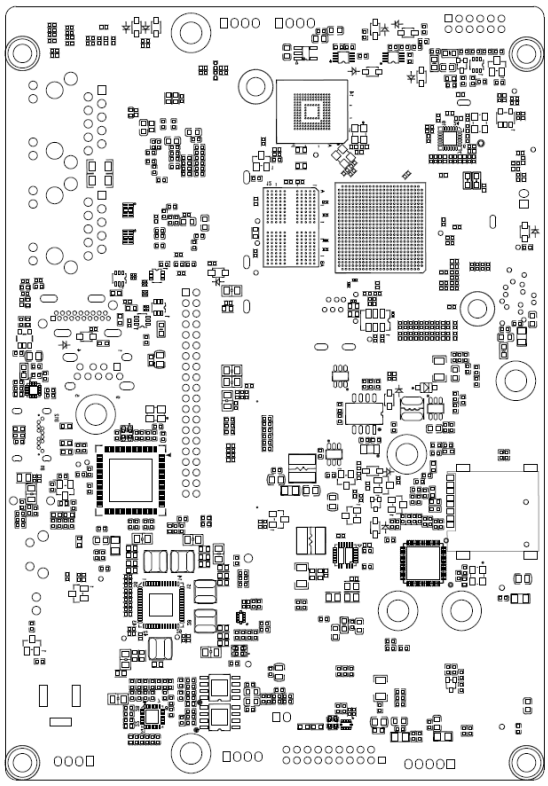


Signal	PIN	PIN	Signal
+3.3V	1	2	+5V
I2C3_SDA	3	4	+5V
I2C3_SCL	5	6	GND
UART2_RXD	7	8	UART1_RXD
GND	9	10	UART1_TXD
UART2_TXD	11	12	GPIO3_IO10
UART2_CTS	13	14	GND
UART2_RTS	15	16	GPIO5_IO26
+3.3V	17	18	UART1_RTS
ECSPI1_SCLK	19	20	GND
ECSPI1_MOSI	21	22	GPIO4_IO21
ECSPI1_MISO	23	24	ECSPI2_MISO
GND	25	26	ECSPI2_MOSI
NC	27	28	NC
ECSPI1_SS0	29	30	GND
GPIO4_IO20	31	32	ECSPI2_SCLK
GPIO5_IO04	33	34	GND
GPIO4_IO00	35	36	GPIO5_IO05
ECSPI1_INT	37	38	CH432T_CS
GND	39	40	GPIO4_IO11

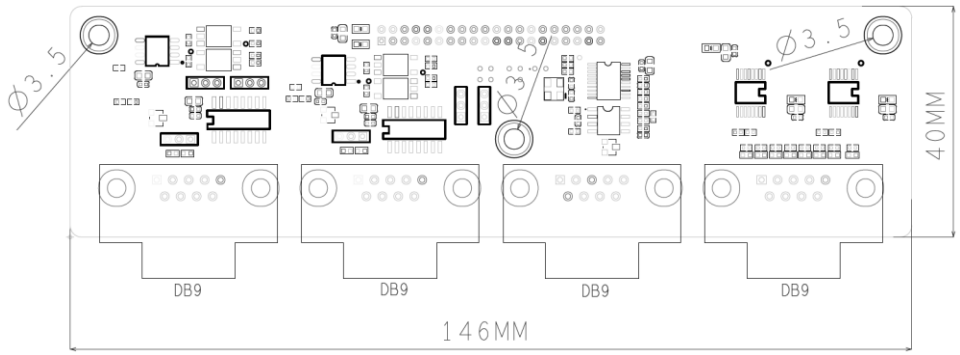
3. Mechanical Drawing



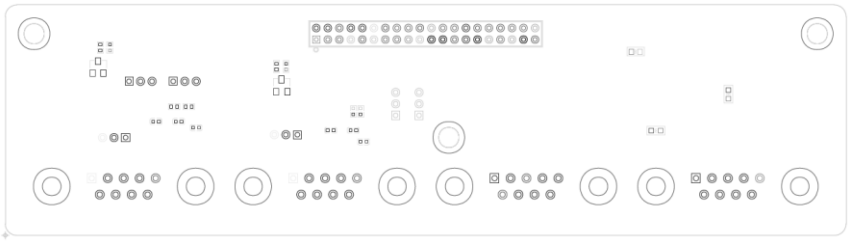
Unit: mm



Unit: mm



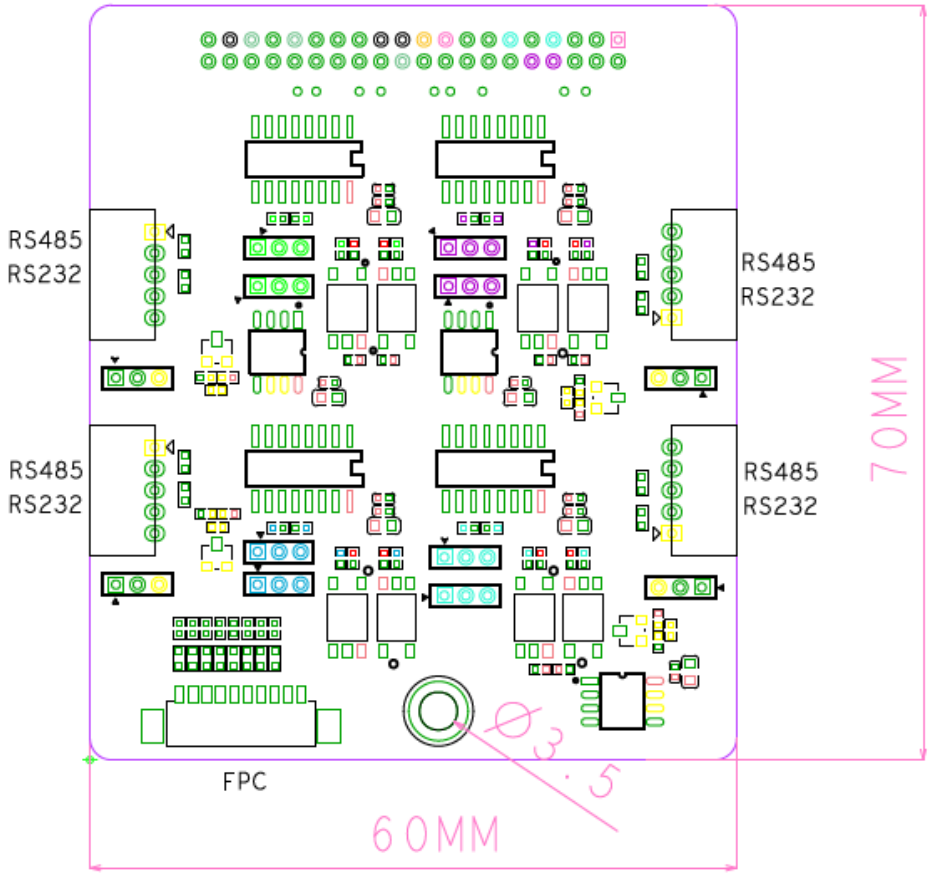
Unit: mm

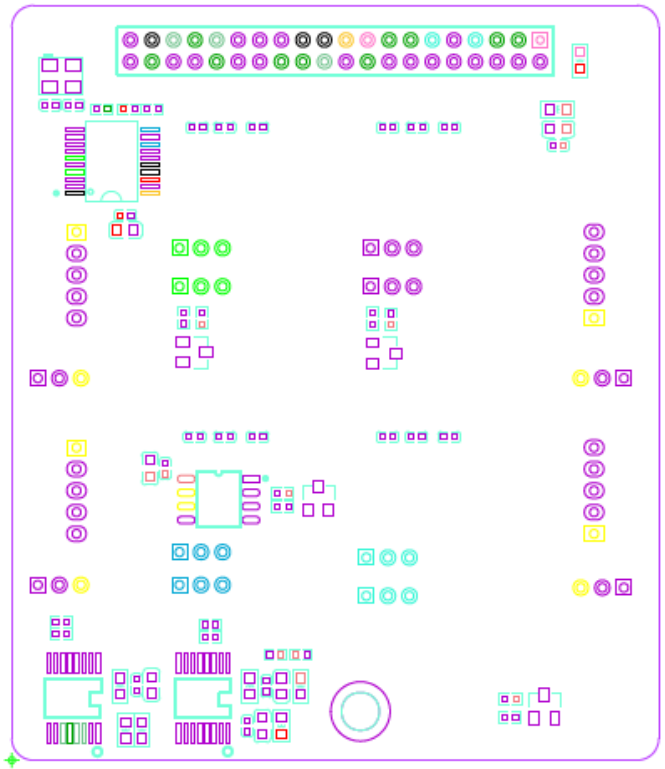


Unit: mm

RSC-IMX8M

RSC-IMX8M-C





Unit: mm