IP-TBOX

Tiny Fanless IP Transmitter Box

Quick Reference Guide

1st Ed – 01 April 2016

Part No. E2017IPOXA0R

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 INSTATLLED 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.

A Message to the Customer

Avalue Customer Services

Each and every Avalue's product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Avalue device is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name Avalue has come to be known.

Your satisfaction is our primary concern. Here is a guide to Avalue's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical Support

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone. So please consult the user's manual first.

To receive the latest version of the user's manual; please visit our Web site at:

http://www.avalue.com.tw/

Content

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

- 1 x IP-TBOX Tiny Fanless IP Transmitter Box
- Other major components include the followings:
  - 12V/5A Adapter
  - EU version Power Cord

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

1.3 System Specifications

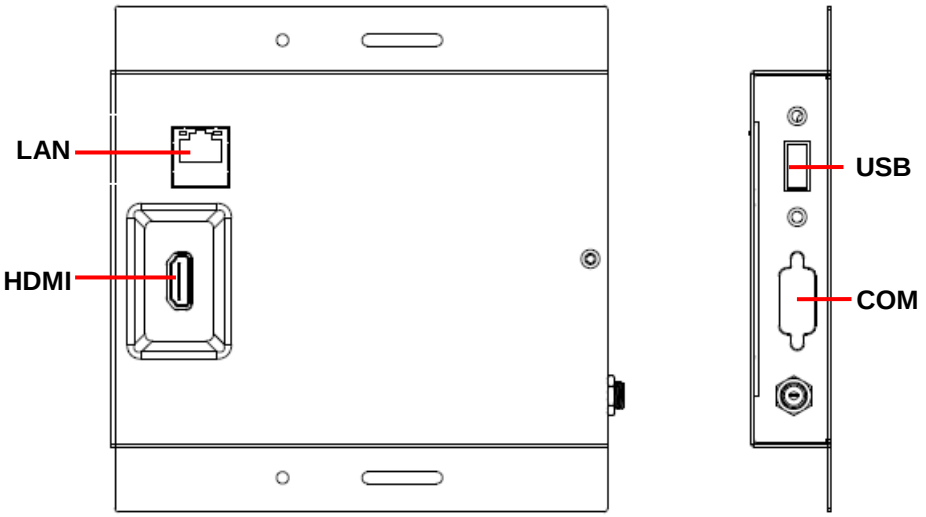
IP TBOX: HDMI + USB over IP Tx Module	
PC-Over-LAN Processor	• ASPEED AST1510
DC In	• DC Jack
Memory	• DDR2 1066MHz 1Gbit
System Fan	• Fan-less
External I/O	
USB	• 1 x USB Type A Connector
HDMI Rx	• HDMI Connector through IT6604
Ethernet	• RJ45 Connector through Realtek Gigabit PHY
Mechanical & Environmental	
Power Requirement	• +12 ~ 19V DC In
Power Connector	• DC Jack
Operating Temp	• 0 ~ 50˚C (32 ~ 122˚F)
Storage Temp	• -40 ~ 75˚C (-40 ~ 167˚F)
Humidity	• 0 ~ 90% Relative Humidity, Non-condensing
Mounting	• Screw fixing
Dimensions	• 145 x148 x 23.5 mm
Weight	• TBC
Cooling	• Fanless design
Reliability	
EMI	• CE & FCC Class A
Safety	• UL/CB design compatible
Vibration Test	• Sine Vibration test (Non-operation) • Reference IEC60068-2-6 Testing procedures • Test Fc : Vibration sinusoidal 1 Test Acceleration : 2G 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 • Package Vibration Test • Reference IEC60068-2-64 Testing procedures • Test Fh : Vibration boardband random Test 1. PSD: 0.026G²/Hz , 2.16 Grms

	2. Non-operation mode 3. Test Frequency : 5-500Hz 4. Test Axis : X,Y and Z axis 5. 30 min. per each axis • Random Vibration Operation • Reference IEC60068-2-64 Testing procedures • Test Fh : Vibration boardband random Test 1. PSD: 0.00454G²/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
Mechanical Shock Test	• Bump Test • Reference IEC 60068-2-29 Testing procedures • Test Eb : 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 300 times 5. Test Axis: Z axis 6. Operation mode
Drop Test	• Packing Drop • Reference ISTA 2A, Method : IEC-60068-2-32 Test: Ed Test Ea: Drop Test 1 One corner , three edges, six faces 2 ISTA 2A, IEC-60068-2-32 Test:Ed
Operating Temperature	• 0°C ~ 50°C (32°F ~ 122°F), ambient w/ air flow
Operating Humidity	• 0% ~ 90% Relative Humidity, Non-condensing
Storage Temperature	• -20°C ~ 75°C (-4°F ~ 167°F)

Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front/Right View

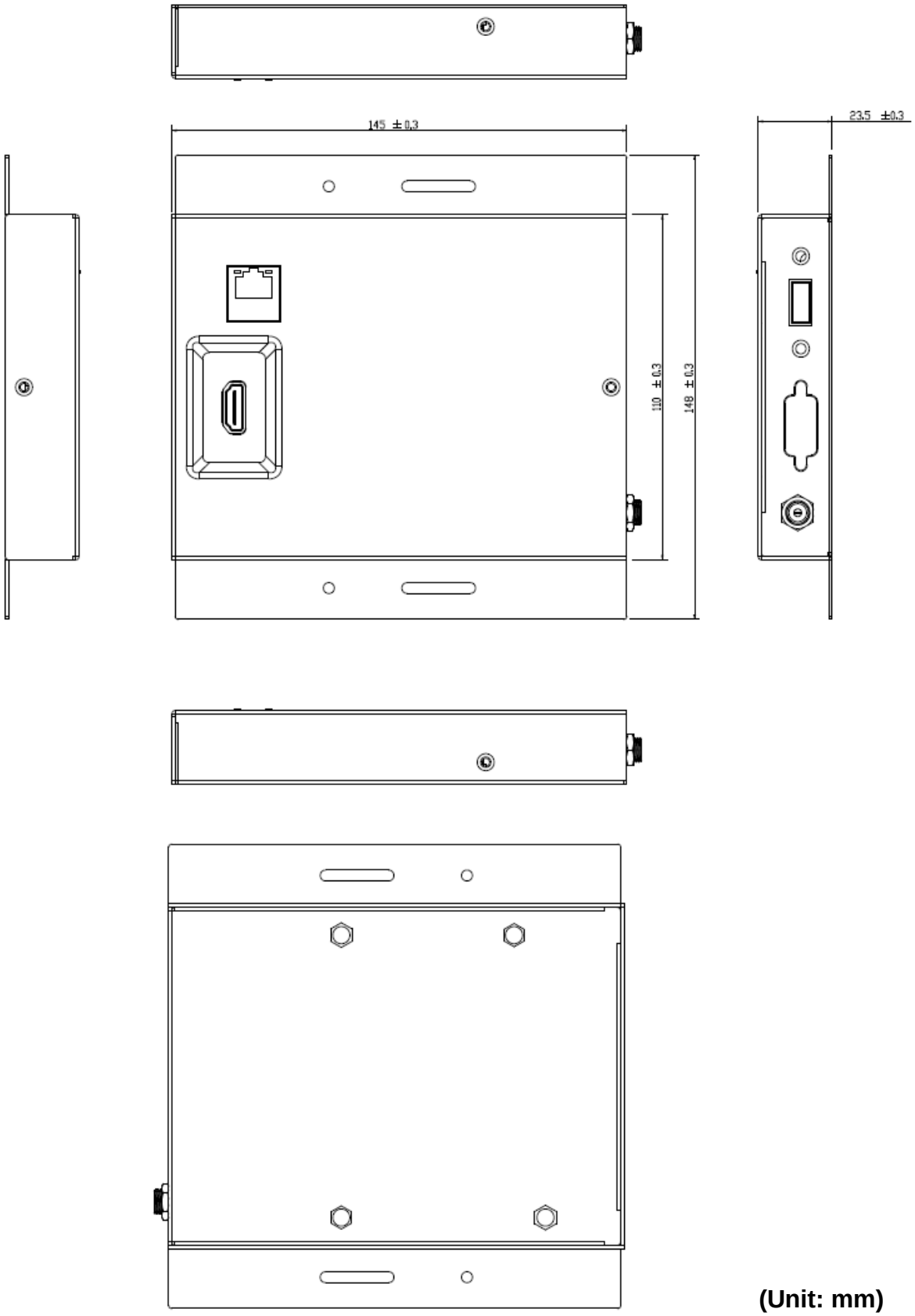


Connectors

Label	Function	Note
LAN	RJ-45 Ethernet	
USB	USB connector	
HDMI	HDMI connector	
COM	Serial port connector	Reserved function (optional)

1.5 System Dimensions

1.5.1 Front & Top View



(Unit: mm)

2. Hardware Configuration

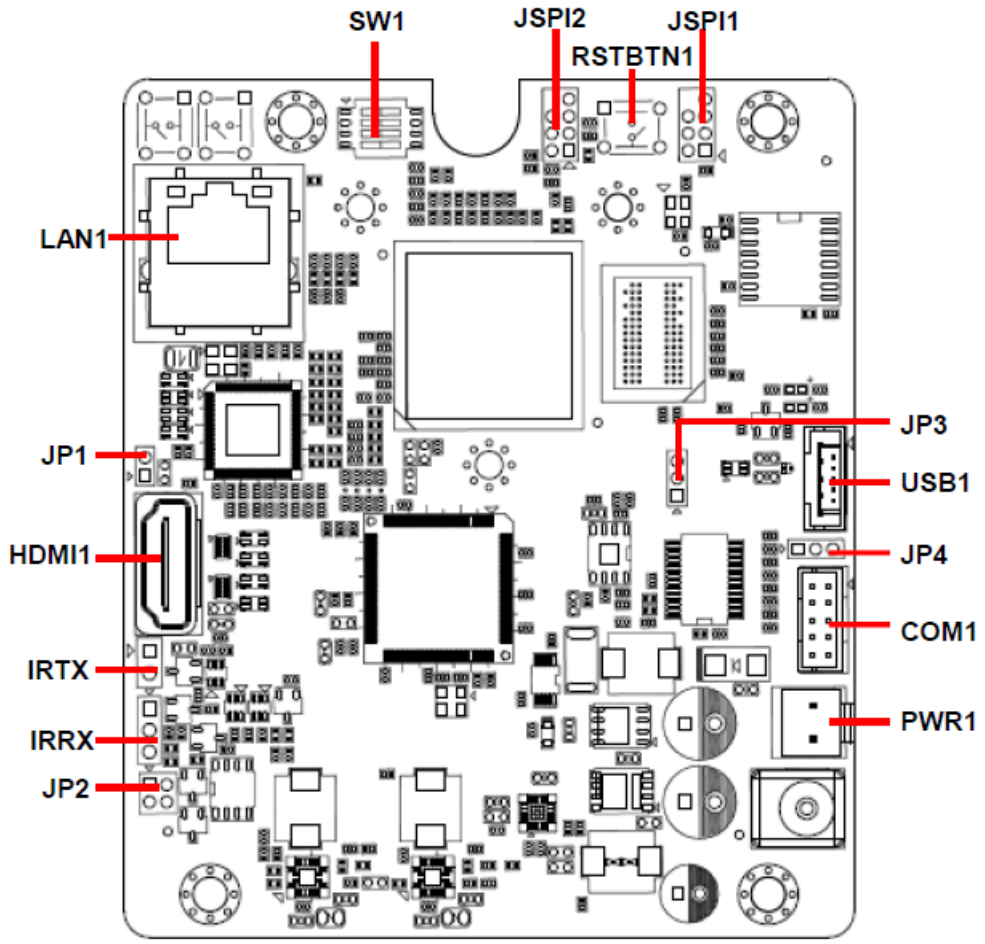
For advanced information, please refer to:

1- AID-185SP1 DB-B included in this manual.

Note: If you need more information, please visit our website:

http://www.avalue.com.tw

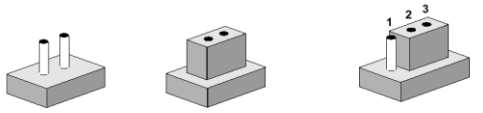
2.2 AID-185SP1 DB-B Overviews



2.3 AID-185SP1 DB-B 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	Multi-function select	DIP switch 6pin
JP3	COM2 for Debug used	3 x 1 header, pitch 2.00mm
JP4	COM2 for Debug used	3 x 1 header, pitch 2.00mm

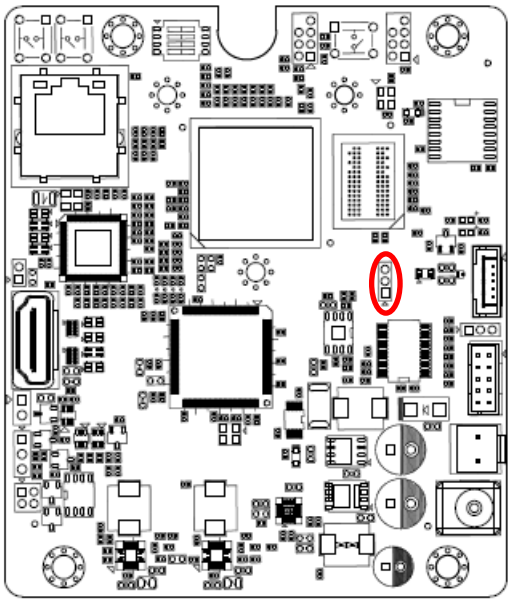
Connectors

Label	Function	Note
COM1	Serial port connector	5 x 2 wafer, pitch 2.00 mm
JHDMI1	HDMI connector	
USB1	USB2.0 connector	5 x 1 wafer, pitch 2.00 mm
LAN1	RJ-45 Ethernet connector	
JP1	Channel Update connector	2 x 1 header, pitch 2.00 mm
JP2	Remote Power ON/OFF connector	2 x 2 header, pitch 2.00 mm

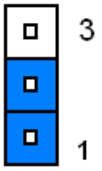
PWR1	Power connector	2 x 1 wafer, pitch 3.96 mm
JSPI1	SPI Flash connector	4 x 2 header, pitch 2.00mm
JSPI2	SPI Master Debug connector	4 x 2 header, pitch 2.00mm
RSTBTN1	Reset button	
IRTX	IR TX connector	2 x 1 header, pitch 2.54mm
IRRX	IR RX connector	3 x 1 header, pitch 2.54mm

2.4 AID-185SP1 DB-B Jumpers & Connectors settings

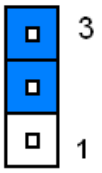
2.4.1 COM2 for Debug used (JP3)



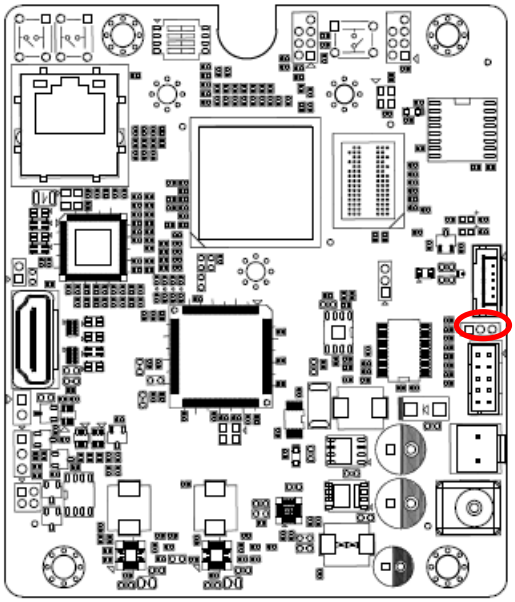
Serial-Over-IP*



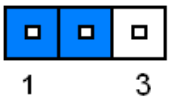
Debug Port



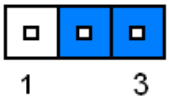
2.4.2 COM2 for Debug used (JP4)



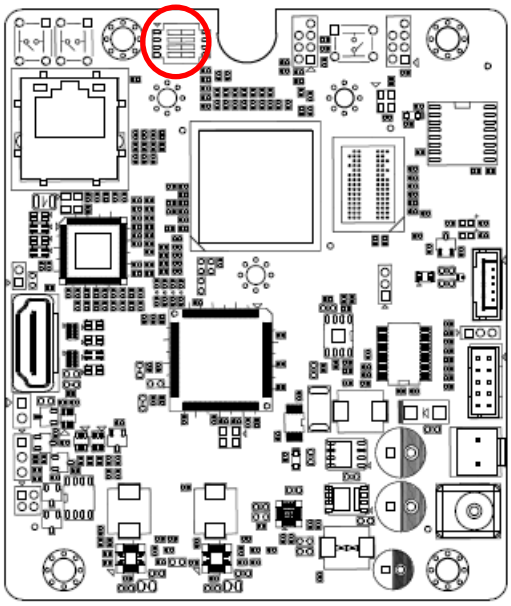
Serial-Over-IP*

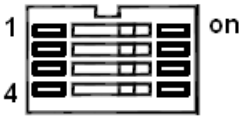


Debug Port



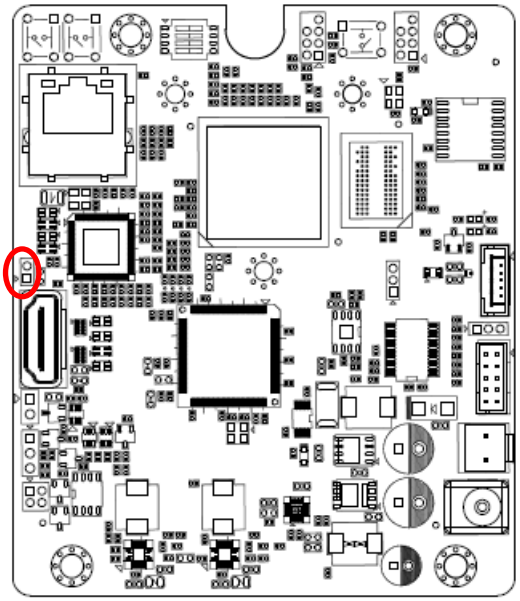
2.4.3 Link Channel selector (SW1)





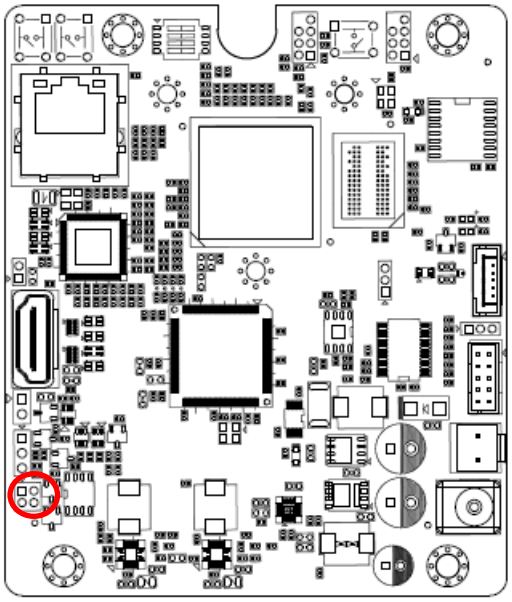
	ON	OFF
1	1	0
2	1	0
3	1	0
4	1	0

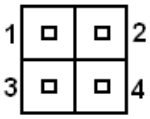
2.4.4 Channel Update connector (JP1)



Signal	PIN
GND	2
H_LinkCH_Update#	1

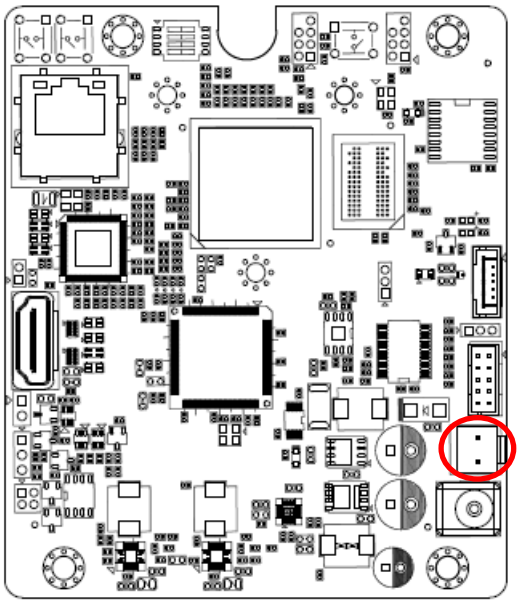
2.4.5 Remote Power ON/OFF connector (JP2)

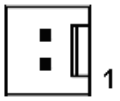




Signal	PIN	PIN	Signal
+V3P3S	1	2	GND
+V3P3S	3	4	GND

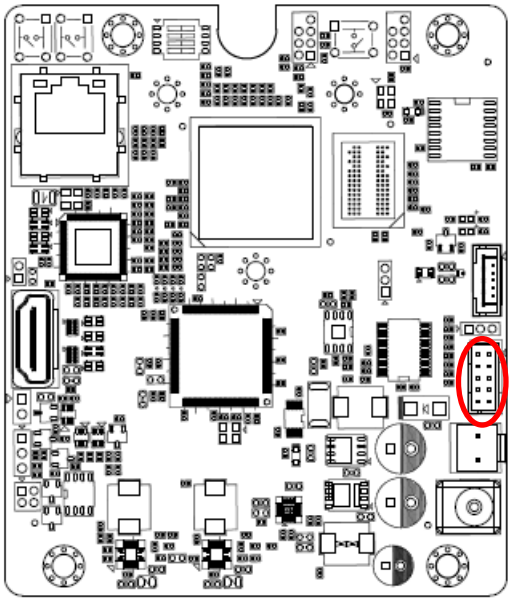
2.4.6 Power connector (PWR1)

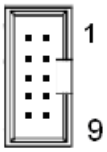




Signal	PIN
GND	2
+VIN	1

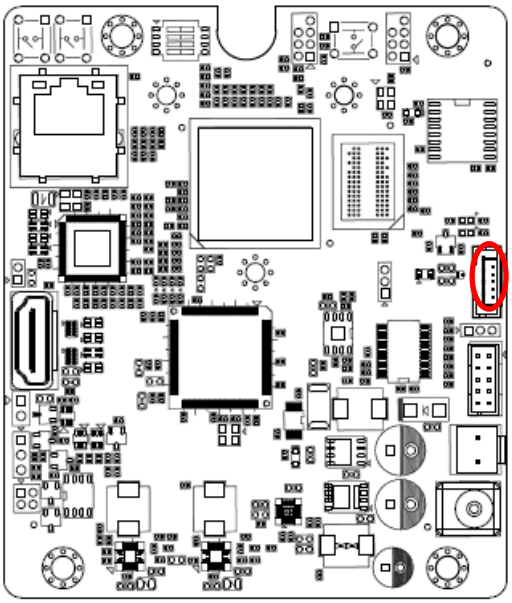
2.4.7 Serial port connector (COM1)





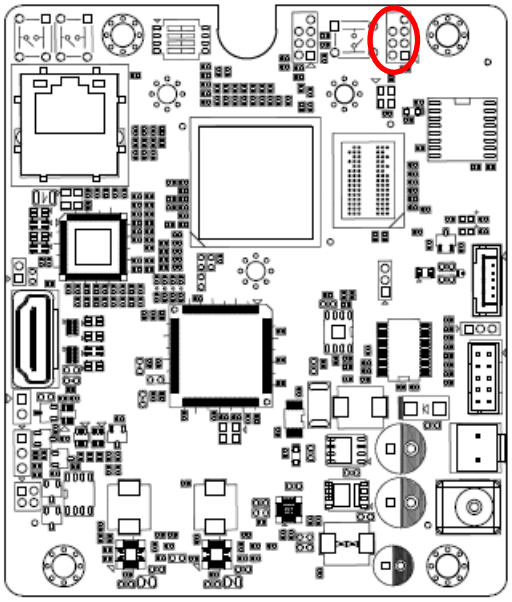
Signal	PIN	PIN	Signal
NRXD	2	1	NDCD#
NDTR#	4	3	NTXD
NDSR#	6	5	GND
NCTS#	8	7	NRTS#
NC	10	9	NRI#

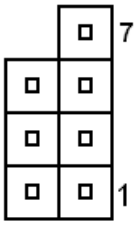
2.4.8 USB2.0 connector (USB1)



Signal	PIN
NC	1
USB2_DNA	2
USB2_DPA	3
GND	4
GND	5

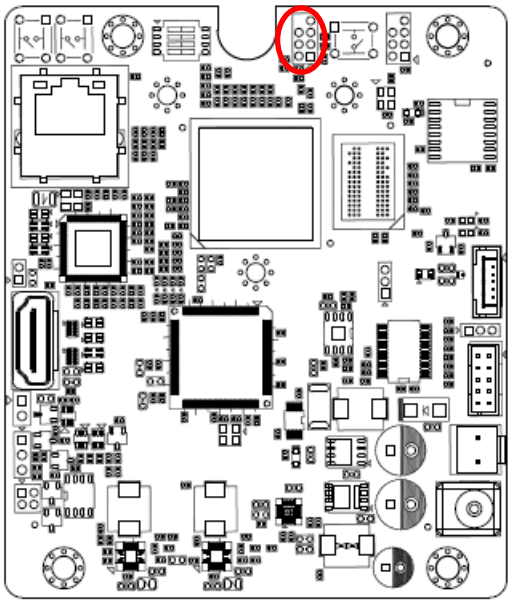
2.4.9 SPI Flash connector (JSPI1)

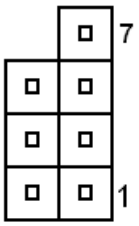




Signal	PIN	PIN	Signal
		7	HOLD#
H_SPIDI	6	5	H_SPIDO
H_SPICK	4	3	H_SPICS
GND	2	1	+V3P3S_SPI

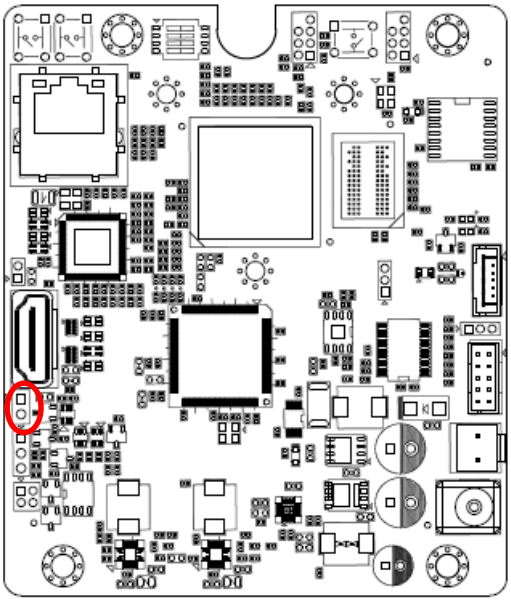
2.4.10 SPI Master Debug connector (JSPI2)

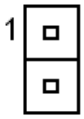




Signal	PIN	PIN	Signal
		7	NC
H_SPIMDI	6	5	H_SPIMDO
H_SPIMCK	4	3	H_SPIMCS
GND	2	1	+V3P3S

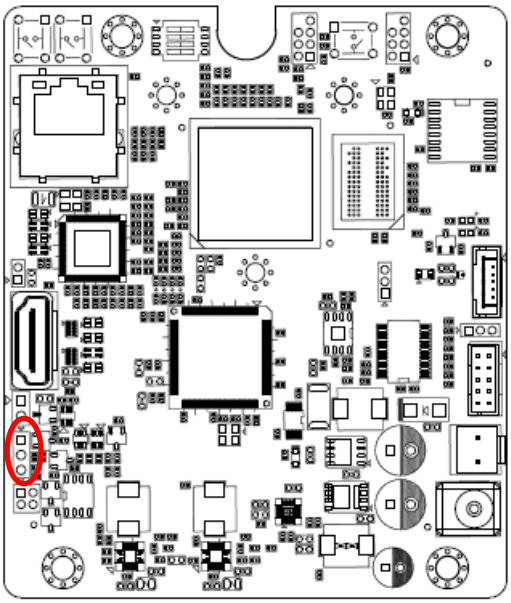
2.4.11 IR TX connector (IRTX)

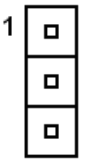




Signal	PIN
+V3P3S	1
GND	2

2.4.12 IR RX connector (IRRX)





Signal	PIN
+V3P3S	1
+V3P3S	2
GND	3