AUX-086

ARC-series IET Board

User's Manual

1st Ed – 21 January 2021

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/

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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.

Always note that improper disassembling action could cause damage to the motherboard. We suggest not removing the heatsink without correct instructions in any circumstance. If you really have to do this, please contact us for further support.

1.2 Packing List

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

- 1 x AUX-086
- 3 x screws for AUX-086
- 1 x bracket for AUX-086

1.2 Product Specifications

Expansion Slot	
mPCIe	1 x Mini PCIe (USB2.0 & PCIe)
Edge I/O	
LAN	1 x LAN Intel WGI211AT
Others	1 x SIM card slot
Mechanical & Environmental	
Operating Temp.	-10~ 50 degree
Storage Temp.	-20 ~ 60 degree
Operating Humidity	0 ~ 90% Relative Humidity, Non-condensing
Size (L x W)	86mm x 55mm
Weight	20g
Vibration Test	Random Vibration Operation: 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 7. Storage : CF or SSD Sine Vibration test (Non-operation) 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 7. Reference IEC 60068-2-6 Testing procedures Package vibration 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

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	6. IEC 60068-2-64 Test:Fh
Shock Test	1. Wave form：Half Sine wave
	2. Acceleration Rate：10g for operation mode
	3. Duration Time：11ms
	4. No. of Shock：Z axis 3 times
	5. Test Axis: Z axis
	6. Operation mode
	7. Reference IEC 60068-2-27 Testing procedures Test Eb : Shock Test

Note: Specifications are subject to change without notice.

2. Hardware Configuration

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2.1 Product Overview
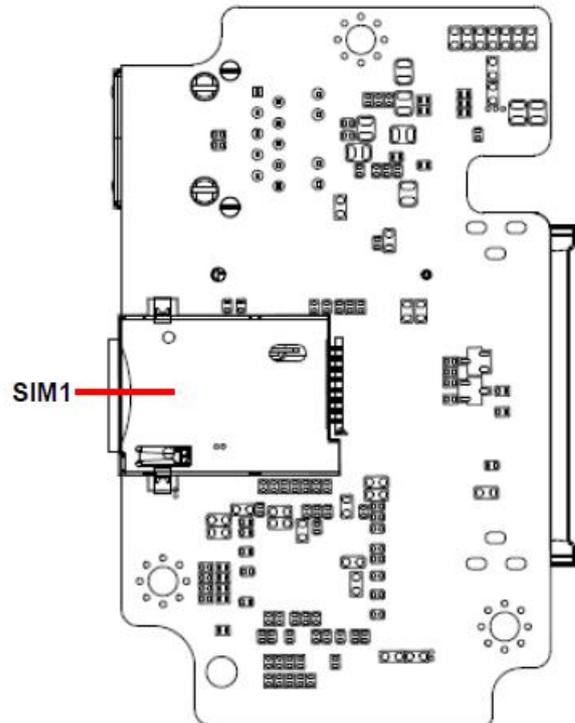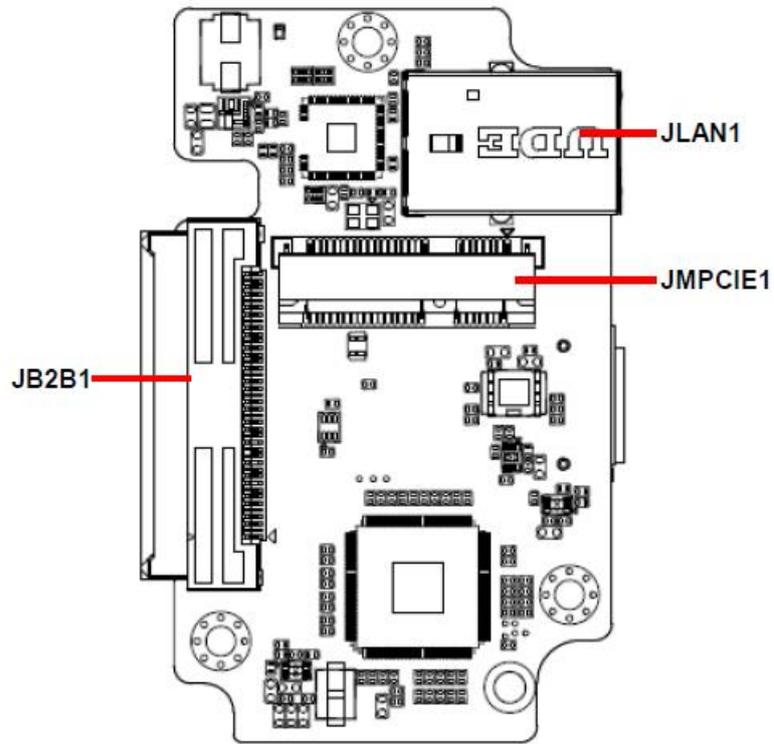
2.2 Connector List

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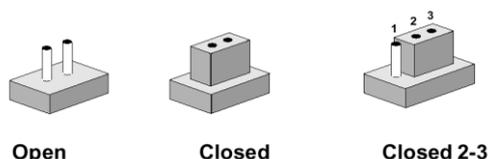
The jumper settings are schematically depicted in this manual as follows:

Open   Closed   Closed 2-3
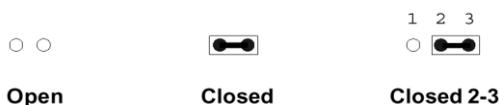
A pair of needle-nose pliers may be helpful when working with jumpers.

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.

Connectors

Label	Function	
JLAN1	RJ-45 Ethernet	
JMPCIE1	Mini PCIe connector	
JB2B1	B2B connector	40 x 2 wafer, pitch 0.80mm
SIM1	SIM card slot	

2.3 Setting Connectors

2.3.1 B2B connector (JB2B1)
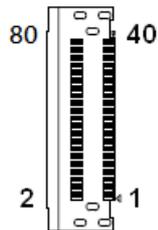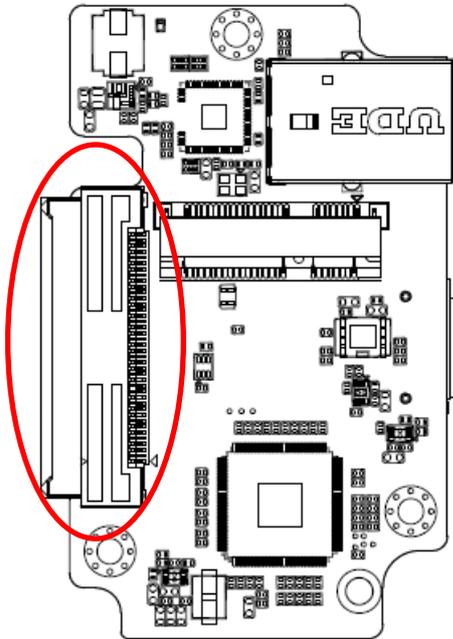
Signal	PIN	PIN	Signal
NC	80	40	NC
NC	79	39	NC
NC	78	38	NC
NC	77	37	NC
NC	76	36	NC
NC	75	35	NC
NC	74	34	NC
GND	73	33	NC
PCIE_CLKP	72	32	GND
PCIE_CLKN	71	31	NC

| Signal	PIN	PIN	Signal
GND	70	30	NC
PCIE_RXP	69	29	GND
PCIE_RXN	68	28	NC
GND	67	27	NC
PCIE_TXP	66	26	GND
PCIE_TXN	65	25	NC
GND	64	24	NC
M_PCIE_CLKREQ#	63	23	GND
M_PCIE_RESET#	62	22	NC
M_PCIE_WAKE#	61	21	NC
NC	60	20	GND
NC	59	19	NC
M_PCIE_DIS_R	58	18	NC
GND	57	17	GND
SMB_DATA	56	16	NC
SMB_CLK	55	15	NC
GND	54	14	PLT_RST#
USB_DN4	53	13	PS_ON_C
USB_DP4	52	12	NC
GND	51	11	NC
+5VSB	50	10	NC
+5VSB	49	9	NC
+5VSB	48	8	NC
+5VSB	47	7	NC
+5VSB	46	6	NC
GND	45	5	GND
GND	44	4	NC
GND	43	3	NC
GND	42	2	GND
GND	41	1	GND

3. Mechanical Drawing

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$\varnothing 3.5$

87

17.5

12

0

51.5

46

5

0

Unit: mm