EMS-BYTC2

Intel® Atom™ SoC processor E3845 IP65 Fanless System

Quick Reference Guide

1st Ed – 15 October 2018

Part No. E2017AA92A0R

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 EMS-BYTC2 Intel® Atom™ SoC processor E3845 IP65 Fanless System
- Other major components include the followings:
  — Independent Power Supply
  — Wall Mount Kit
  — Power cord
  — M12 Assembly Kit

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

1.3 System Specifications

System	
CPU	• Intel Atom® Processor E3845 (2M Cache, 1.91 GHz)
BIOS	• AMI BIOS, 64Mbit SPI Flash ROM
System Memory	• 1 x 204-pin SODIMM Socket Up to 8GB DDR3L 1333MHz SDRAM
Watchdog Timer	• H/W Reset: 1sec. ~ 65535sec./min.
H/W Status Monitor	• Monitoring CPU Temperature, Voltage with Auto Throttling Control
Battery	• CR2032
Expansion	• 2 x Full Size Mini PCIe Socket, (one of them is for USB signal only)
Storage	
Combination	• 1 x Accessible 2.5" Drive Bay • 1 x Compact Flash Type I/II Socket
Side I/O	
Antenna	• 3 x Antenna Mounting
M12 Ports	• 8 x M12 A code
Rear I/O	
Serial Port	• 1 x RS-485
LAN Port	• 2 x RJ45
Others	• 2 x M12
Display	
Chipset	• Intel® Valleyview SoC integrated Graphics
Resolution	• 1 x VGA: Max. Resolution 2560 x 1080 @ 60Hz
Multiple Display	• Single Display
Ethernet	
Chipset	• 2 x Intel® I210AT
Ethernet Interface	• 10/100/1000 Base-Tx compatible
Lan Port	• 2 x RJ45
Mechanical & Environmental	
Power Connector	• LDC Jack
Power Requirement	• 24 Vdc Input
Power Type	• AT/ATX (ATX is default setting)
ACPI	• Single Power ATX Support S0, S3, S4, S5 • ACPI 5.0 Compliant
Dimension	• 239.4mm x 450 mm x 60 mm
Weight	• TBD KG
Color	• Black

EMS-BYTC2

Mounting Kit	• Wall mount kit is the standard accessory
Reliability	
Vibration Test	• With SSD/mSATA : 1.5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
Mechanical Shock Test	• With SSD/mSATA : 50Grms, IEC 60068-2-27, Half Sine, 11ms
Drop Test	• ISTA 2A, IEC-60068-2-32 Test : Ed
Operating Temperature	• With extended temperature peripherals: 0°C ~ 60°C with 1m/air flow
Operating Humidity	• 0% ~ 90% relative humidity, non-condensing
Storage Temperature	• -40 ~ 75°C (-40 ~ 167°F)
Certification	• IP65 Rating (System Level), CE, FCC Class A (System Level), Compliance with C1D2 Explosion-proof certification
OS Supported	• Win 7

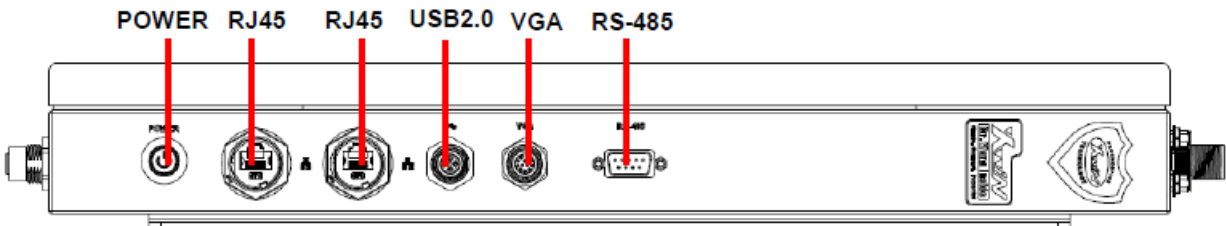**Note:** Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front View
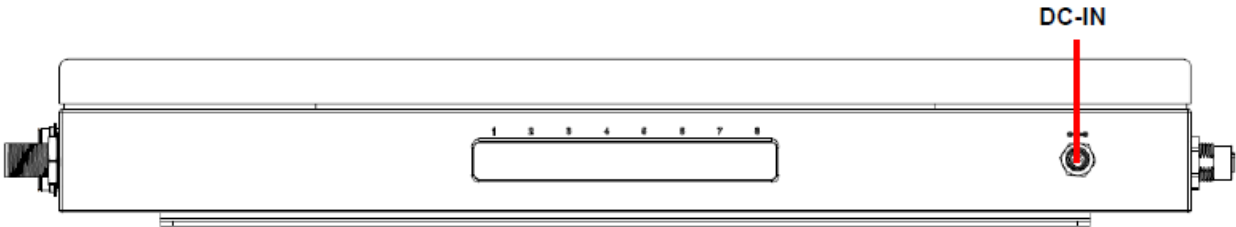
Connectors

Label	Function	Note
DC-IN	DC Power-in connector	

1.4.2 Rear View

Connectors

Label	Function	Note
RS-485	Serial port connector	D-sub 9-pin, male **Note**：Support RS-232/422/485 by BIOS setting (Default: RS-485)
RJ45	RJ-45 Ethernet x 2	
USB2.0	USB2.0 connector	
POWER	Power on button	
VGA	VGA connector	

1.4.3 Side View
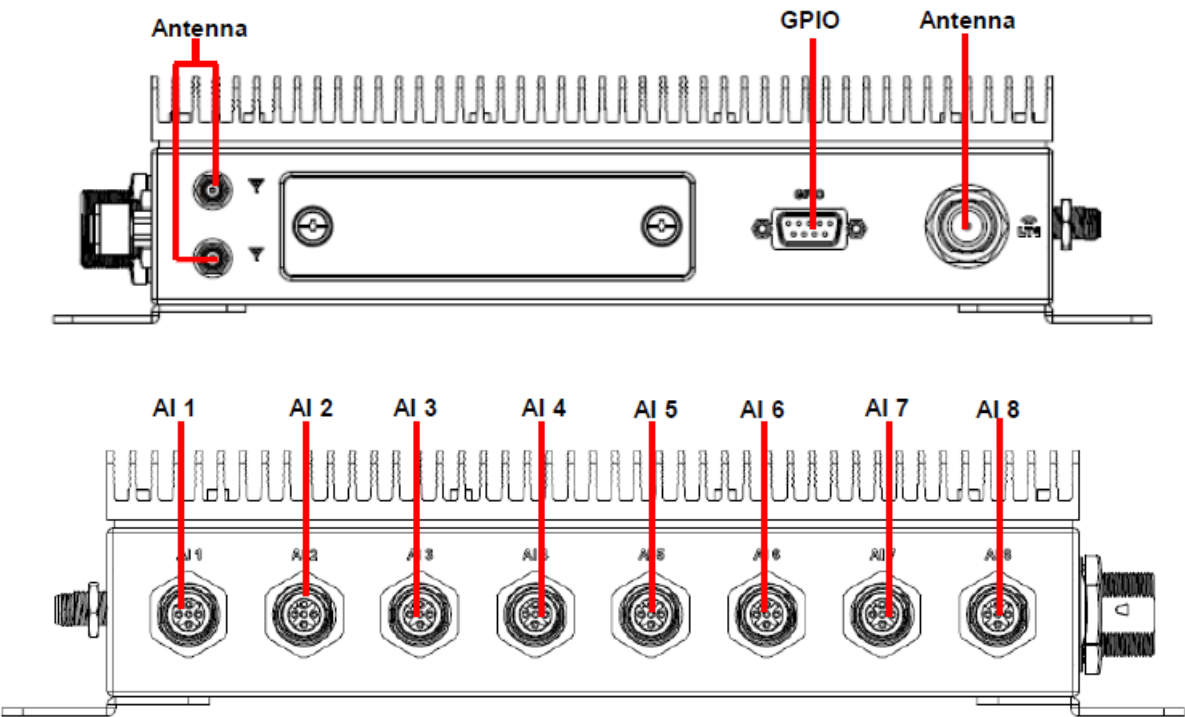
Connectors

Label	Function	Note
Antenna	Antenna Mounting x 3	
GPIO	General purpose I/O connector	
AI 1~AI 8	M12 A code x 8	

1.5 System Dimensions
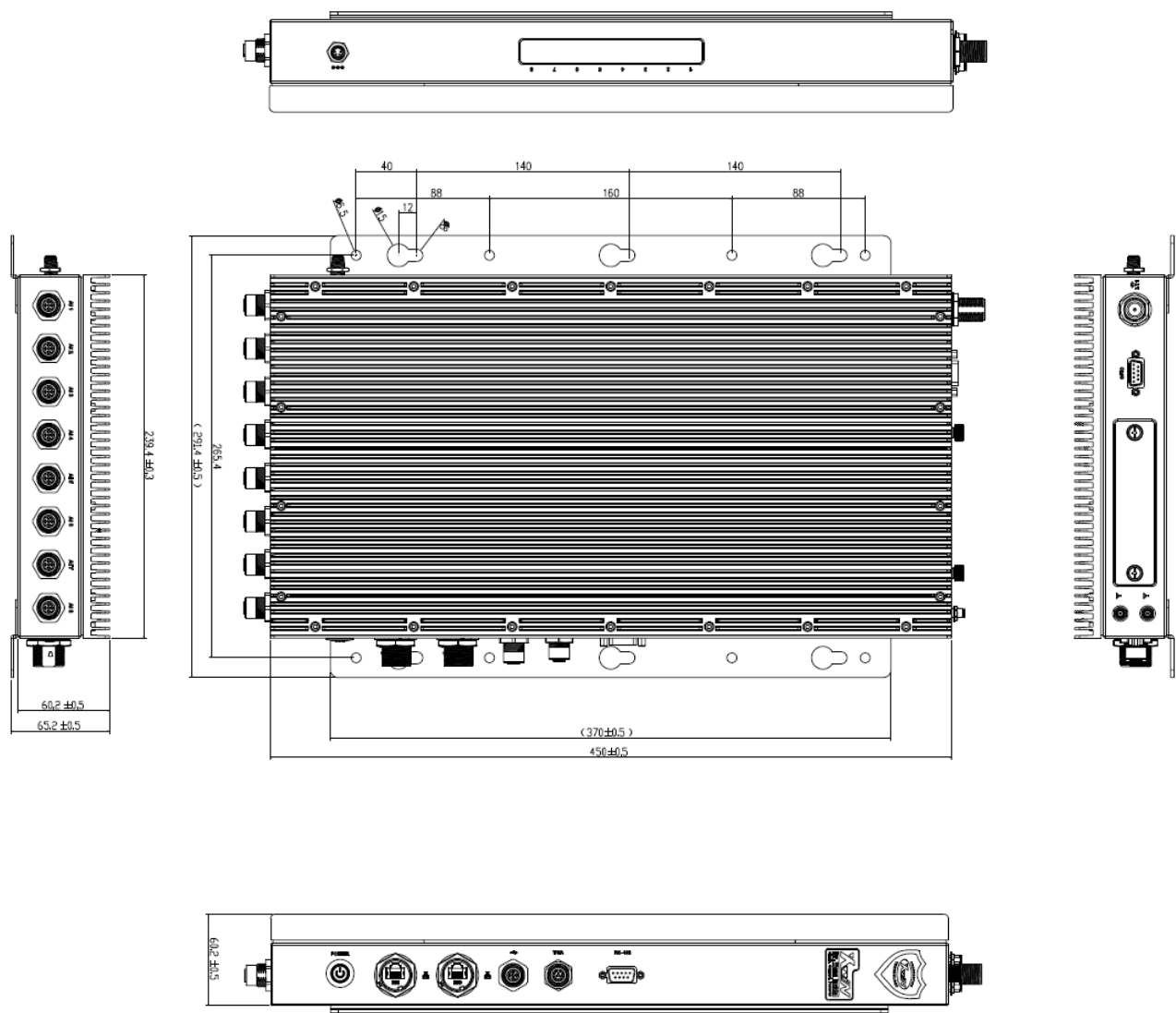
(Unit: mm)

2. Hardware Configuration

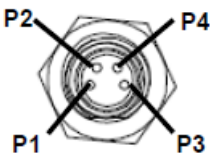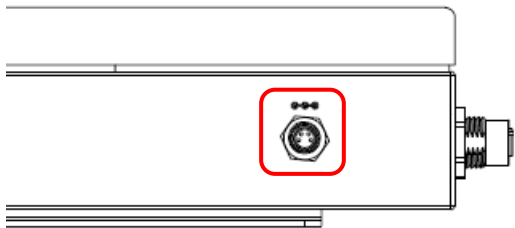For advanced information, please refer to:

1- ECM-BYT User's Manual

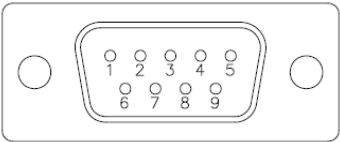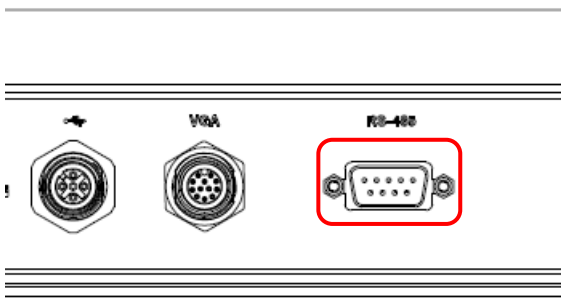**Note:** If you need more information, please visit our website:

http://www.avalue.com.tw

2.1 EMS-BYTC2 connector mapping
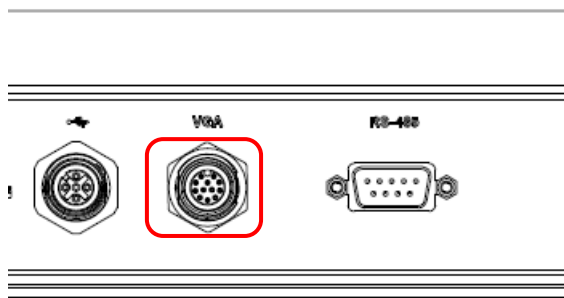
2.1.1   DC Power-in connector (DC-IN)

Signal	PIN	PIN	Signal
GND	2	4	GND
VCC	1	3	VCC

2.1.2   Serial Port connector (RS-485)

Signal	PIN	PIN	Signal
NDCDA#_485TXN	1	6	NDSRA#
NRXDA_485TXP	2	7	RTSA#
NTXDA_485RXP	3	8	NCTSA#
NTXDA_485RXP	4	9	NRIA#
GND	5		

2.1.3   VGA connector (VGA)
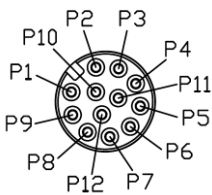
Signal	PIN	PIN	Signal
Red	1	2	Green
Blue	3	4	ID1/SDA
HSYNC	5	6	GND
YSYNC	7	8	ID3/SCL
Key power	9	10	Red GND
Green GND	11	12	Blue GND

2.1.4   USB2.0 connector (USB2.0)
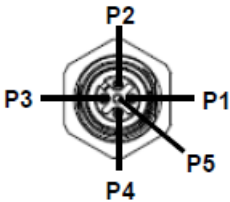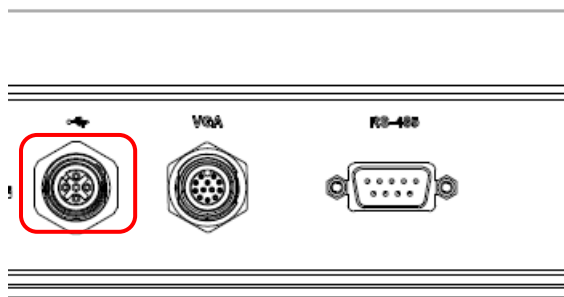
Signal	PIN	PIN	Signal
+5V	1	2	D-
D+	3	4	GND
Shield	5		

2.1.5 General purpose I/O connector (GPIO)
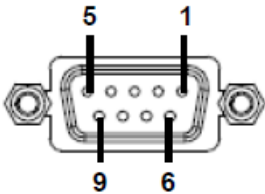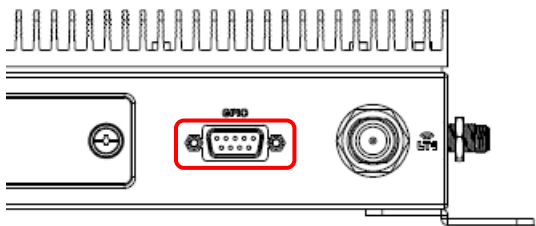
Signal	PIN	PIN	Signal
GPO1	1	6	GPI3
GPI1	2	7	GPO4
GPO2	3	8	GPI4
GPI2	4	9	GND
GPO3	5		

2.1.6 M12 A code (AI 1~AI 8)
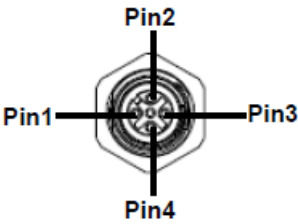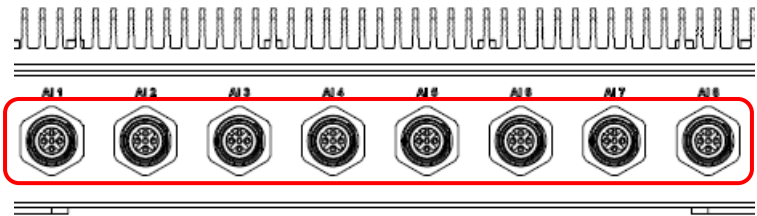
Signal	PIN	PIN	Signal
BNC+	1	2	GND
BNC-	3	4	N/C

2.2 Installing Hard Disk (EMS-BYTC2)
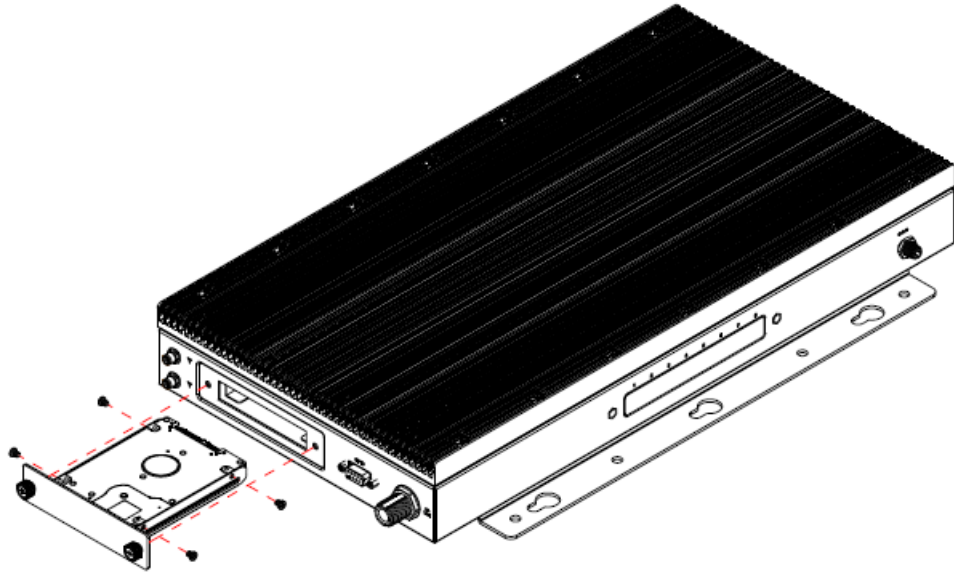
Step1. Fix HDD using the 4 screws in the Accessory Kit.

Step2. Insert HDD bracket and fasten it.