BMX-T522-SK

Fanless Intel® 6th Gen Core™ SoC i7/i5/i3 & Celeron® Processor Mini ITX Box PC

Quick Reference Guide

1st Ed –07 June 2017

Part No. E2017BMSKA0R

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.

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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 BMX-T522-SK
- Other major components include the followings:
  - Adapter
  - Power Cord

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

1.3 System Specifications

System	
Mother Board	• EMX-SKLUP
CPU	• Onboard Intel® 6th Gen Core™ SoC i7/i5/i3 & Celeron® Processor
CPU Cooler (Type)	• Fanless
Memory	• 2 x 260-pin DDR4 2133 MHz SO-DIMM socket, supports up to 32GB Max (non ECC only) (Default: 1 x 4GB DDR4)
Adapter	• 60W Adapter (DC in 12V@5A)
Microphone	• 1 x Mic-in
Bluetooth	• By M.2 module (optional)
Operating System	• Windows
Other Component	• 1 x SIM card slot
Storage	
Hard Disk Drive	• 2 x 2.5” HDD/SSD Internal Bracket
External I/O	
Serial Port	• 6 x RS-232
USB Port	• 4 x USB3.0, 4 x USB2.0
DIO Port	• 2 x 8-bit GPIO (by external DB9 cable)
Video Port	• 1 x DP++, 1 x HDMI, 1 x DP
Audio Port	• 1 x Line-out, 1 x Mic-in
LAN Port	• 1 x Intel® i211AT • 1 x Intel® i219LM
Wireless LAN Antenna	• 2 x SMA Connector (Optional)
Switch	• 1 x Power on/off membrane with Power LED
Indicator Light	• 1 x HDD/SSD LED, • 2 x LAN Activity Indicator LED
Expansion Slots	• 1 x M.2 Type B 3042/2242/2260/2280 with 1 x SIM card slot, supports WWAN+GNSS or SSD. • 1 x M.2 Type A 2230 supports WiFi module • 1 x SD card slot
Mechanical	
Power Type	• AT/ATX mode Switchable Through Jumper (Default: ATX mode)
Power Connector Type	• Lockable DC Jack
Dimension	• 180 x 182 x 76 (L x W x H)
Weight	• 2.3 kg
Color	• Black
Fanless	• Yes

OS Support	• Windows
Reliability	
EMI Test	• CE/FCC Class B design compatible
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 7. Storage : SSD or M.2
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

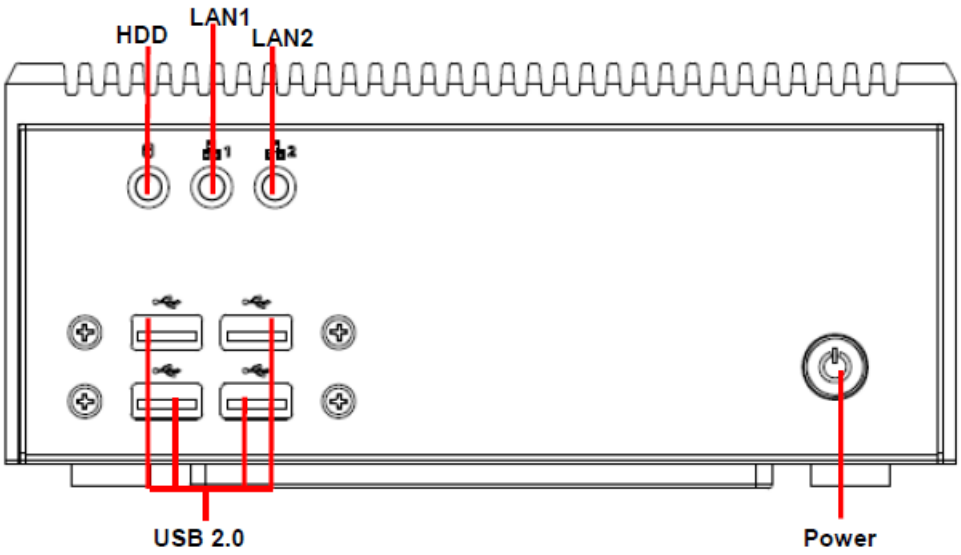
	5. Test Axis: Z axis 6. Operation mode
Drop Test	• Packing Drop • Reference ISTA 2A, Method : IEC-60068-2-32 Test:Ed Test Ea : Drop Test 1. One corner , three edges, six faces 2. ISTA 2A, IEC-60068-2-32 Test:Ed
Operating Temperature	• 0°C ~ 55°C (32°F ~ 131°F) (w/SSD, M.2), ambient w/ air flow
Operating Humidity	• 0% ~ 90% Relative Humidity, Non-condensing
Storage Temperature	• -20°C ~ 75°C (-4°F ~ 167°F)

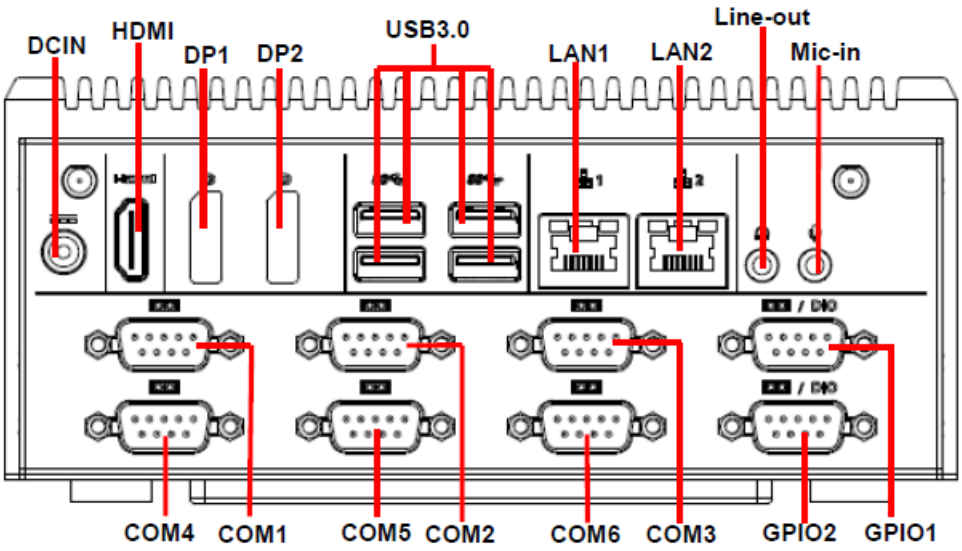
Note:

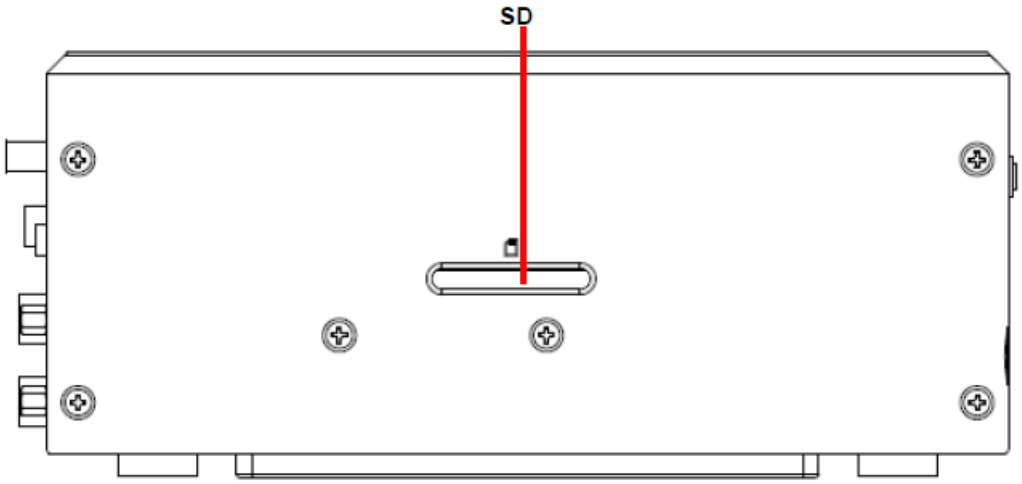
Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front/Rear/Side View



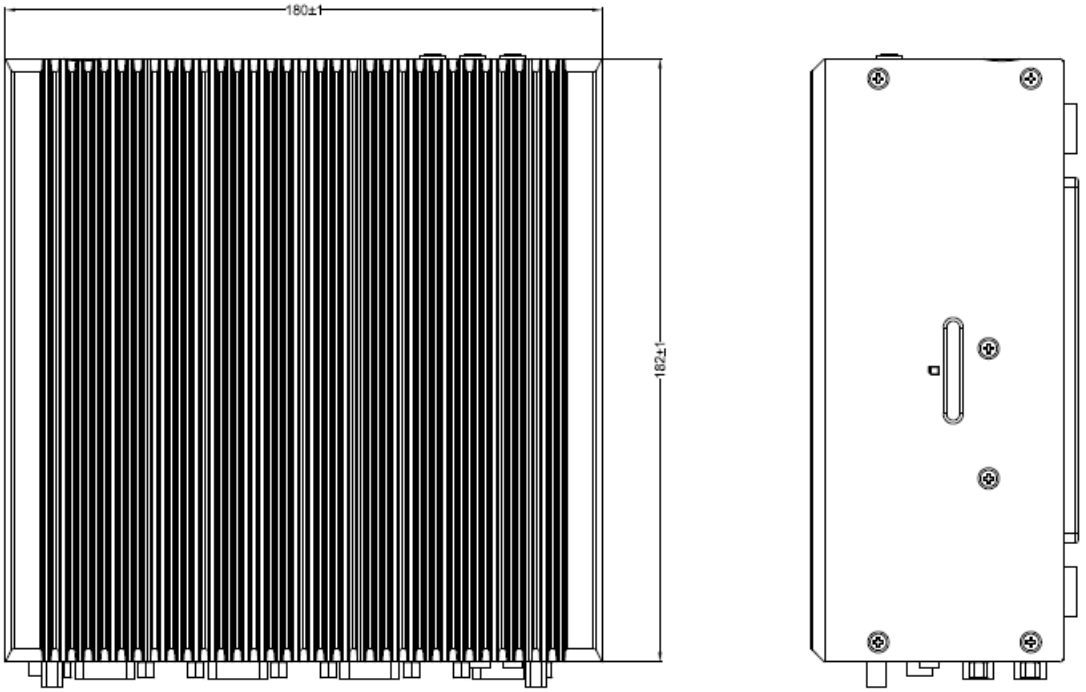


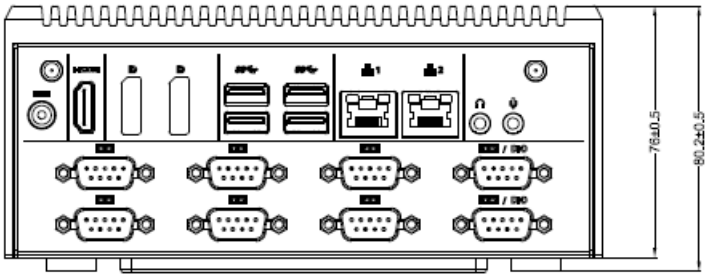


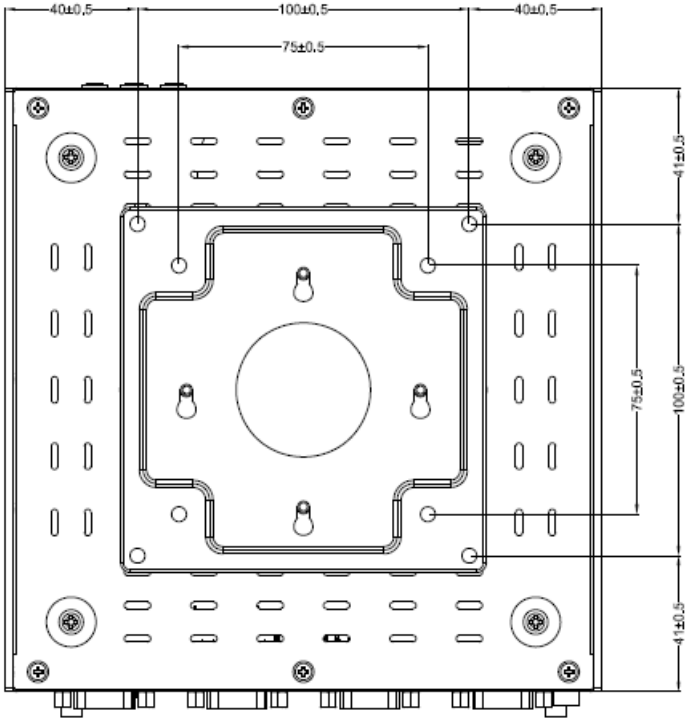
Connectors

Label	Function	Note
Power	Power on button	
HDD	HDD Indicator	
LAN1/2	RJ-45 Ethernet 1/2	
USB2.0	4 x USB2.0 connector	
USB3.0	4 x USB3.0 connector	
COM1~6	Serial port 1~6 connector	
DCIN	DC power-in connector	
HDMI	HDMI connector	
DP1/2	DP connector 1/2	
Line-out	Line-out audio jack	
Mic-in	Mic-in audio jack	
GPIO1/2	General purpose I/O connector 1/2	
SD	SD card slot	

1.5 System Dimensions







(Unit: mm)

2. Hardware Configuration

For advanced information, please refer to:

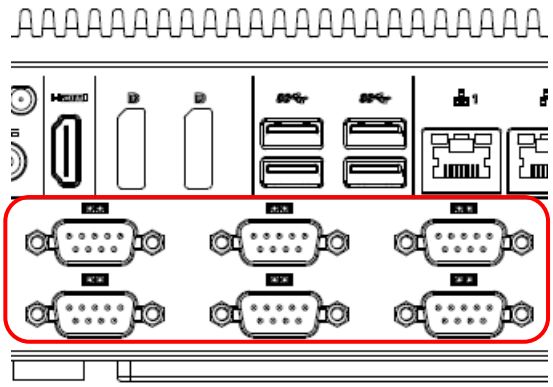
1- EMX-SKLUP User's Manual

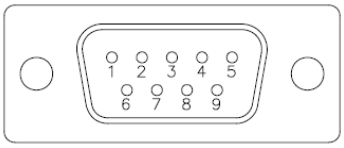
Note: If you need more information, please visit our website:

http://www.avalue.com.tw

2.1 BMX-T522-SK connector mapping

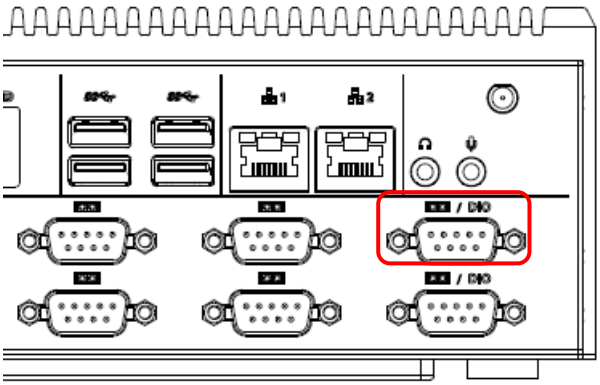
2.1.1 Serial port 1~6 connector (COM1~6)

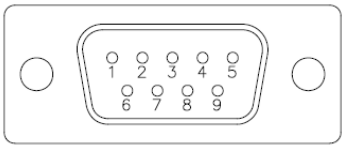




Signal	PIN	PIN	Signal
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5		

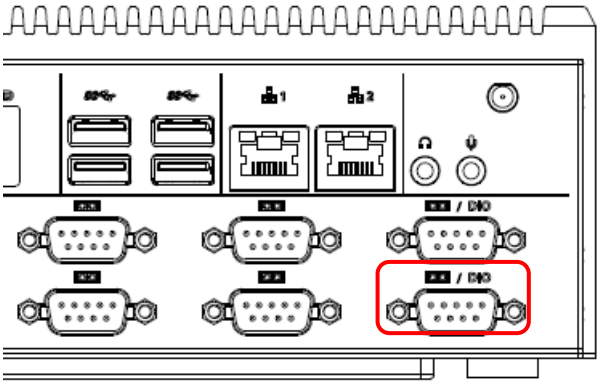
2.1.2 General purpose I/O connector 1 (GPIO1)

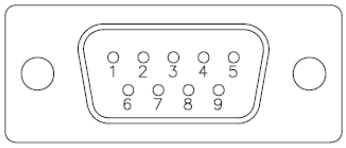




Signal	PIN	PIN	Signal
DI0	1	6	DO2
DO0	2	7	DI3
DI1	3	8	DO3
DO1	4	9	GND
DI2	5		

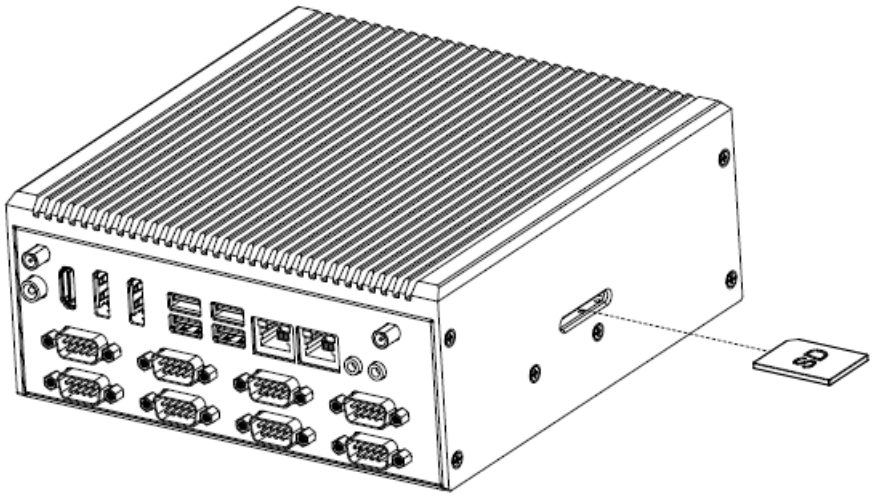
2.1.3 General purpose I/O connector 2 (GPIO2)





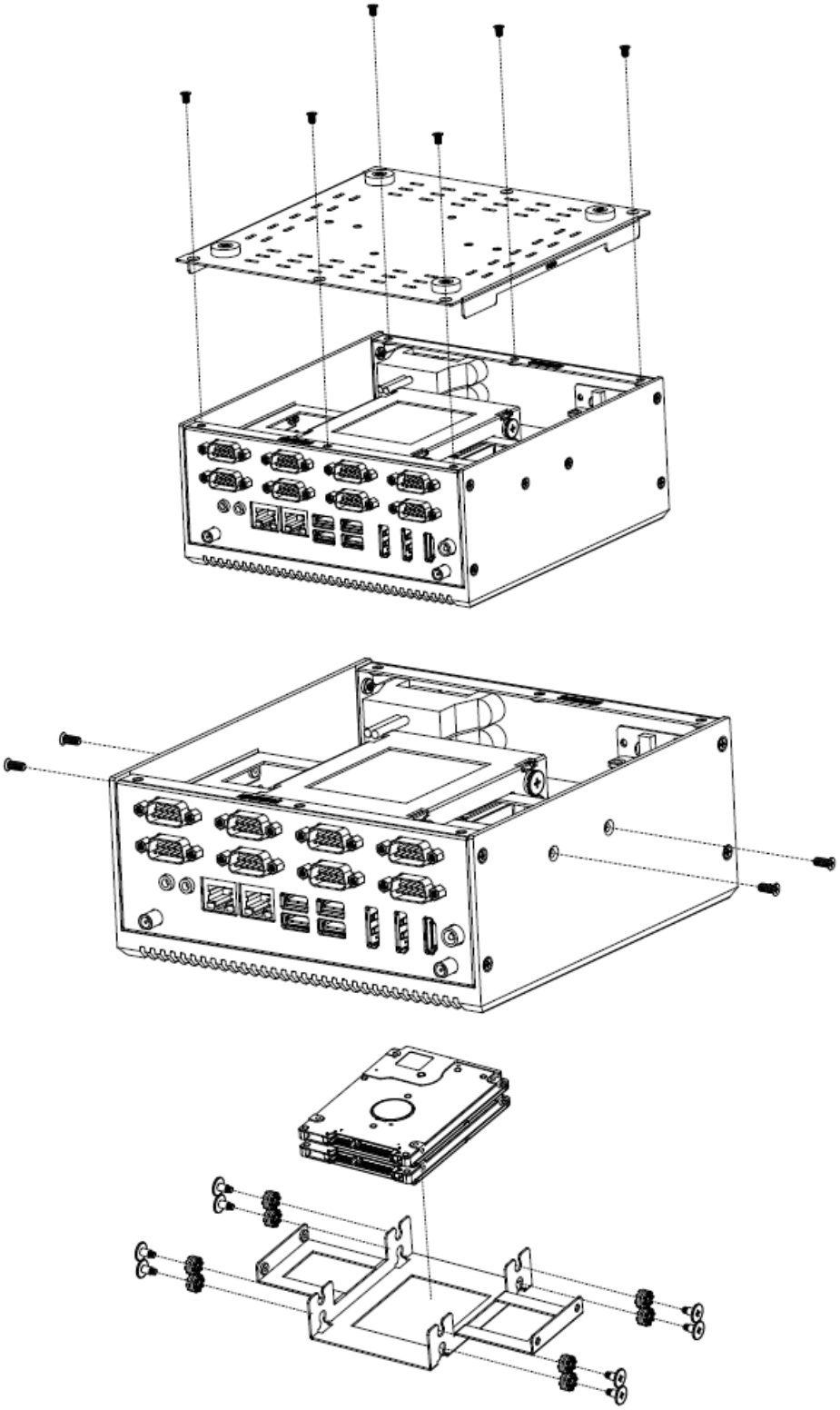
Signal	PIN	PIN	Signal
DI4	1	6	DO6
DO4	2	7	DI7
DI5	3	8	DO7
DO5	4	9	GND
DI6	5		

2.2 Installing SD card (BMX-T522-SK)



Step1. Insert SD card into SD slot.

2.3 Installing Hard Disk (BMX-T522-SK)



Step1. Remove 10 screws from rear and each side before removing back cover.

Step2. Secure HDD by means of 8 screws.

Step3. Re-assemble your system back through previous steps to complete the installation.