

BMX-P521-Q170

Mini ITX Barebone System with Intel® Q170 Chipset

Quick Reference Guide

3rd Ed –20 September 2017

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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 UNDESIRE 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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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-P521-Q170 Mini ITX Barebone System with Intel® Q170 Chipset
- Other major components include the followings:
 - 1 x Power Cord
 - 8 x HDD Screw
 - 4 x Rubber foot



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

1.3 System Specifications

Component	
Mother Board	• EMX-Q170P-A1R
CPU	• Intel® LGA1151 Socket Supports 6th Generation Core™ i7/ i5/ i3 Processors (Max. TDP at 95W)
CPU Cooler (Type)	• CPU cooler 65W (E1961121650002R) • CPU cooler 77W (E1961121770000R) • CPU cooler 110W (ACC-FAN-829R)
Memory	• 2 x 260-pin DDR4 2133MHz SO-DIMM supports up to 32GB
Power Supply	• Standard TFX 300W Power supply
System Fan	• 1 x 80 x 80 x 25 mm Top Fan
Storage	
Hard Disk Drive	• 1 x 3.5" (1") Drive Bay • 1 x 3.5" (0.8") Drive Bay
Optical Disk Drive	• 1 x 5.25" Drive Bay
External I/O	
PS/2 KB & Mouse	• 1 x PS/2 KB or Mouse
Serial Port	• 5 x RS232, 1 x RS232/422/485(Optional)
USB Port	• 4 x USB 3.0 (Rear) • 6 x USB 2.0 (Front x 2, Rear x 4) • 2 x USB 2.0 By low profile bracket(Optional)
Video Port	• 1 x HDMI, 1 x VGA, 1 x DP • Triple display
Audio Port	• 1 x Mic-in, 1 x Line-out, 1 x Line-in
LAN Port	• 1 x Intel® I219LM PCI-e Gigabit Ethernet PHY • 1 x Intel® I211AT PCI-e Gigabit Ethernet
Switch	• 1 x Power Button with LED
Indicator Light	• 1 x HDD LED
Expansion Slots	• 1 x PCI-e x 16 • 1 x Full Size Mini-PCI-e Supports mSATA (SATA III) • 1 x Half Size Mini PCI-e
Others	• 1 x Low Profile Expansion Slot
Mechanical	
Power Type	• ATX
Dimension	• 265 x 100 x 310 mm (H x W x D) • 10.4"x 3.9" x 12.2"
Weight	• 4.4lbs / 2 kg

Color	Black
Reliability	
EMI Test	CE/FCC Class B design compatible
Safety	UL/CB design compatible
Vibration Test	- Package Vibration Test - Test Standard : Reference IEC60068-2-64 Testing procedures - PSD: 0.026G²/Hz , 2.16 Grms - Non-operation mode - Test Frequency : 5-500Hz - Test Axis : X,Y and Z axis 30 min. per each axis - Random Vibration Operation - Test Standard : Reference IEC60068-2-64 - Test Condition : - PSD: 0.00454G²/Hz , 0.5 Grms - Operation mode - Test Frequency : 5-500Hz - Test Axis : X,Y and Z axis 30 minutes per each axis - Storage : HDD - Sine Vibration test (Non-operation) - Test Acceleration : 2G - Test frequency : 5~500 Hz - Sweep : 1 Oct/ per one minute. (logarithmic) - Test Axis : X,Y and Z axis - Test time :10 min. each axis - System condition : Non-Operating mode - Reference IEC 60068-2-6 Testing procedures
Mechanical Shock Test	- Reference IEC 60068-2-29 Testing procedures - Test Eb : Bump Test - Wave form : Half Sine wave - Acceleration Rate : 3g - Duration Time : 11ms - No. of Shock : Z axis 300 times - Test Axis: Z axis - System condition : operation (running burn in test program)
Drop Test	Packing Drop

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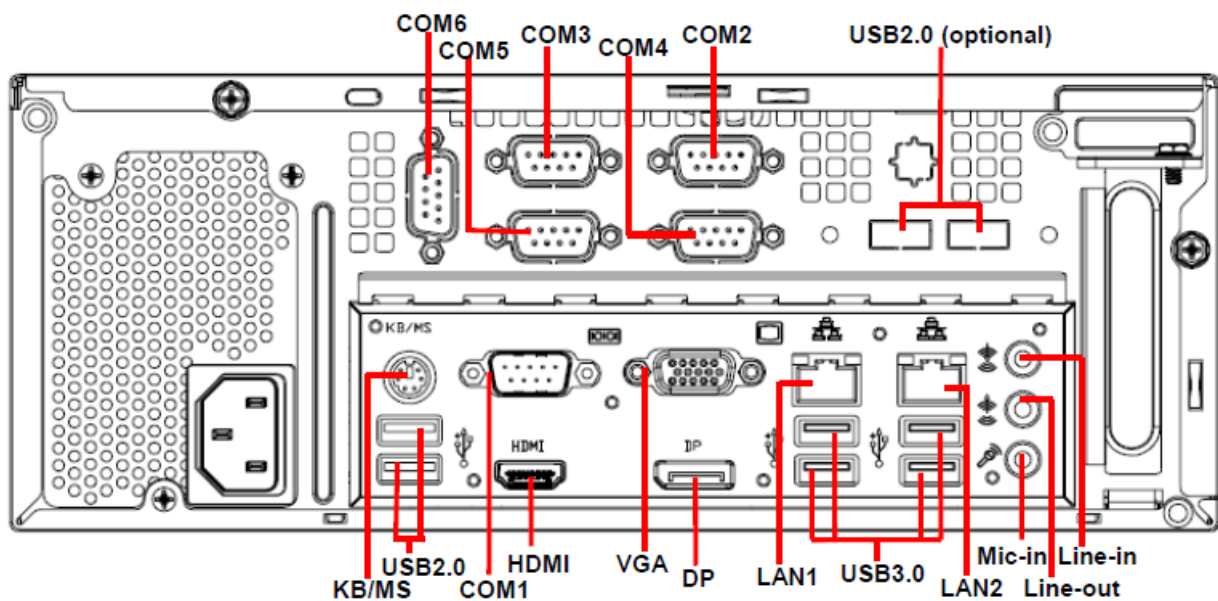
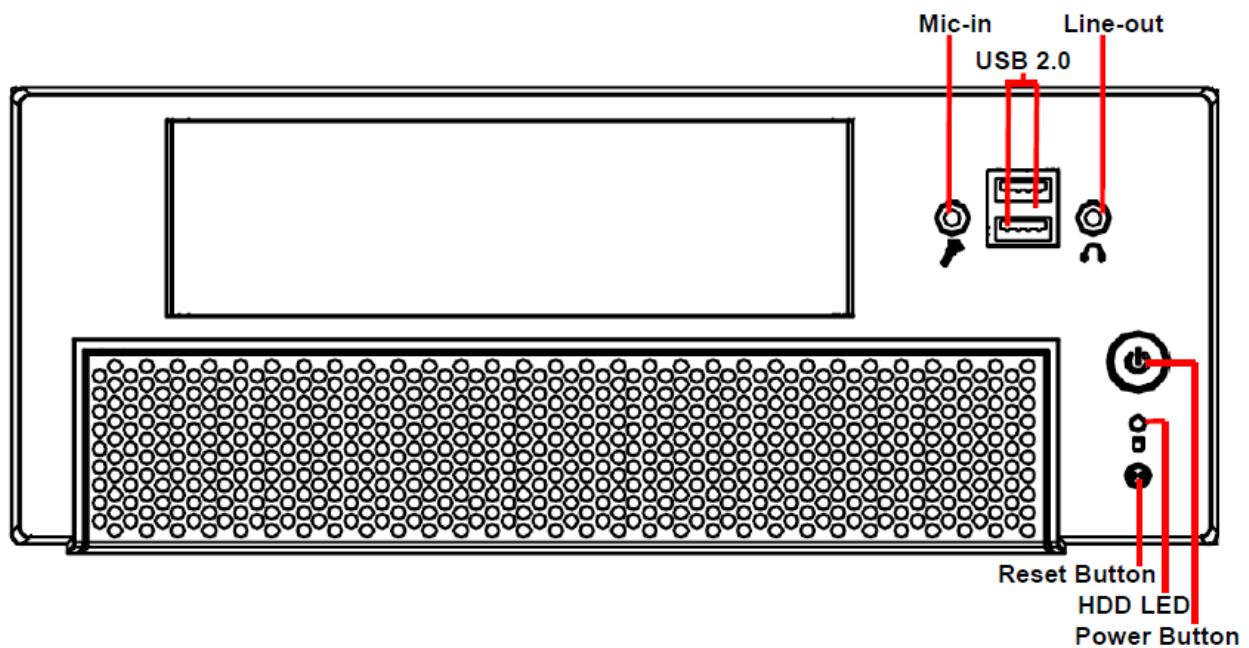
	• Reference ISTA 2A, Method : IEC-60068-2-32 Test:Ed Test Ea : Drop Test • Test phase : One corner, three edges, six faces
Operating Temperature	• (w/HDD), ambient w/ air flow • 0°C ~ 40°C (32°F ~ 104°F)
Operating Humidity	• 0% ~ 90% Relative Humidity, Non-condensing
Storage Temperature	• -20°C ~ 70°C (-4°F ~ 158°F)



Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front/Rear View

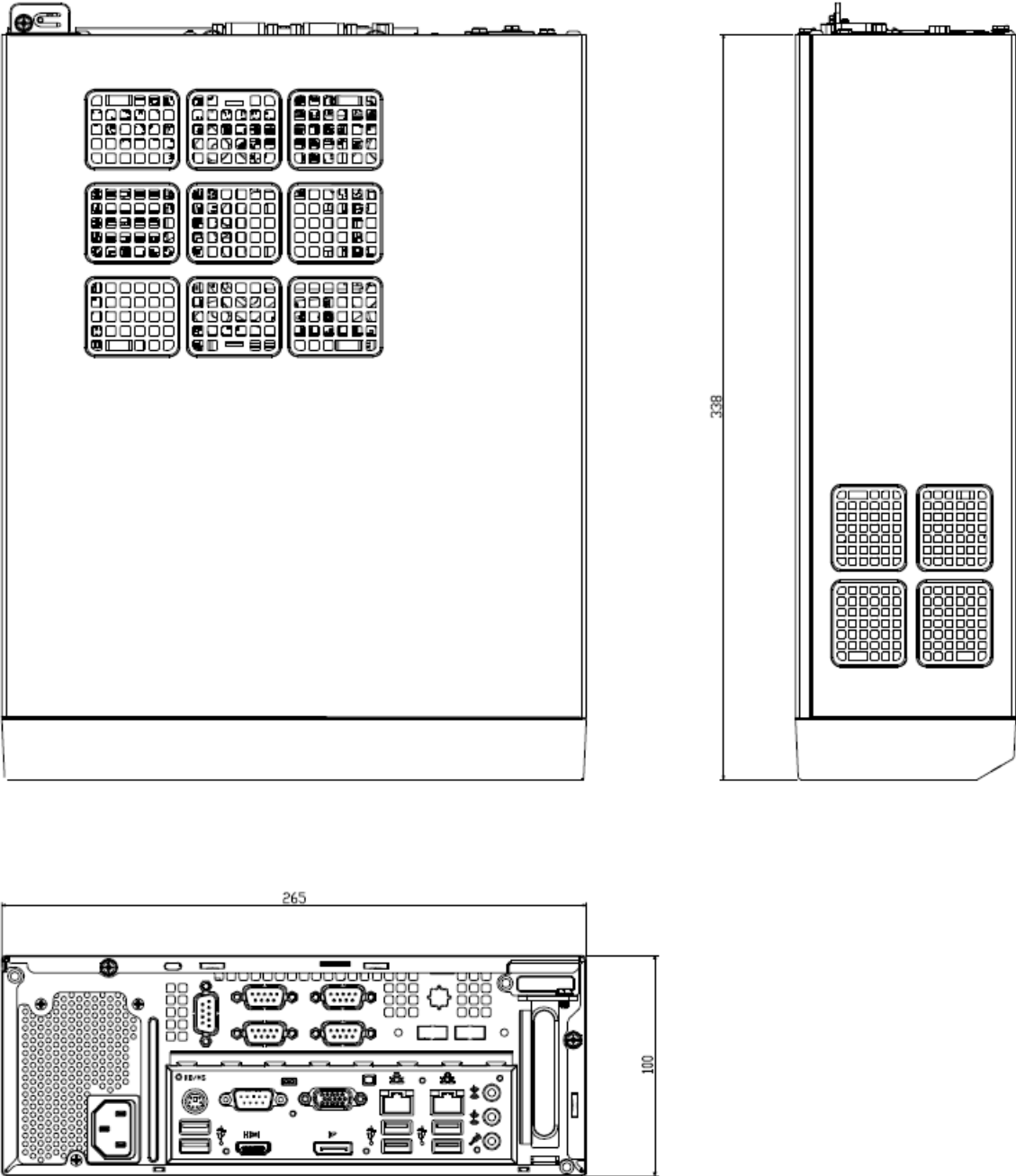


Connectors

Label	Function	Note
RESET	Reset button	
HDD	HDD Indicator	
LAN1/2	RJ-45 Ethernet 1/2	

USB2.0	2 x USB2.0 connector 2 x USB2.0 connector(optional)
USB3.0	4 X USB3.0 connector
COM1~6	Serial port connector 1~6
KB/MS	PS/2 keyboard & mouse connector
HDMI	HDMI connector
Line-out	Line-out audio jack
Line-in	Line-in audio jack
Mic-in	Mic-in audio jack
VGA	VGA connector
DP	DP connector

1.5 System Dimensions



(Unit: mm)

2. Hardware Configuration

For advanced information, please refer to:

- 1- EMX-Q170P User's Manual

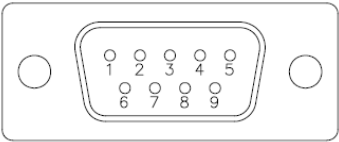
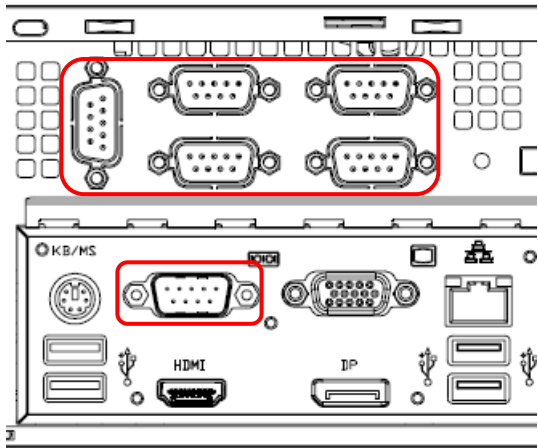


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<http://www.avalue.com.tw>

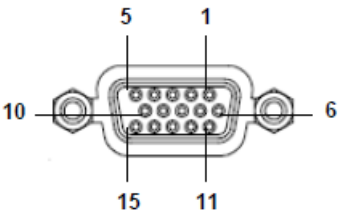
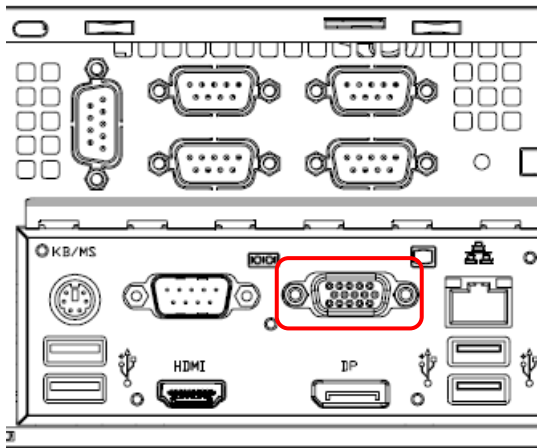
2.1 BMX-P521-Q170 connector mapping

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



PIN	Signal	PIN	Signal	PIN	Signal
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDCDAT
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYSNS
5	GND	10	GND	15	DDCCLK

