BMX-T521-BYT

Intel® Celeron® J1900 Processor Fanless Mini-ITX Barebone System

Quick Reference Guide

1st Ed –28 January 2016

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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 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 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-T521-BYT Intel® Celeron® J1900 Processor Fanless Mini-ITX Barebone System
- 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

Mother Board EMX-BYT2 Onboard Inte® Celeron® Processor Inte® Celeron® Processor J1900 (2M Cache, up to 2.42 GHz)	System					
CPU	-	• FMX-BYT2				
CPU Cooler (Type) Faniless Memory • Faniless Memory • 2 x 204-pin DDR3L 1333 MHz SO-DIMM socket, supports up to 8GB Max (Default: 1 x 2GB DDR3L) Adapter • 60W Adapter (DC in 12V@5A) Microphone • 1 x Mic-in Bluetooth • By Mini PCI-e module (optional) Operating System • Windows/ Linux SIM card slot • 1 x SIM card slot Storage Hard Disk Drive • 2 x 2.5" HDD Bays External I/O Factorial Victorial Serial Port • 6 x RS-232 USB Port • 4 x USB3.0, 2 x USB2.0 DIO Port • 8-bit GPIO (by external cable optional) Video Port • 1 x HDMI, 1 x VGA Audio Port • 1 x Line-out, 1 x Mic-in LAN Port • 2 x Intel I211AT Gigabit Ethernet Wireless LAN Antenna • 2 x SMA Connector (Optional) Switch • 1 x Power on/off membrane with Power LED Indicator Light • 1 x Full size Mini PCI-e support wSATA only (SATA II and mSATA Switchable Through jumper) • 1 x full size Mini PCI-e support WiFi & 3G/4G module • 1 x SD card slot support SD/ SDHC Card	Motrier Board					
CPU Cooler (Type) • Fanless Memory • 2 x 204-pin DDR3L 1333 MHz SO-DIMM socket, supports up to 8GB Max (Default: 1 x 2GB DDR3L) Adapter • 60W Adapter (DC in 12V@5A) Microphone • 1 x Mic-in Bluetooth • By Mini PCI-e module (optional) Operating System • Windows/ Linux SIM card slot • 1 x SIM card slot Storage *** Hard Disk Drive • 2 x 2.5" HDD Bays External I/O *** Serial Port • 6 x RS-232 USB Port • 4 x USB3.0, 2 x USB2.0 DIO Port • 8-bit GPIO (by external cable optional) Video Port • 1 x HDMI, 1 x VGA Audio Port • 1 x Line-out, 1 x Mic-in LAN Port • 2 x Intel I211AT Gigabit Ethernet Wireless LAN Antenna • 2 x SMA Connector (Optional) Switch • 1 x Power on/off membrane with Power LED Indicator Light • 1 x Full size Mini PCI-e socket support mSATA only (SATA II and mSATA Switchable Through jumper) • 1 x full size Mini PCI-e support WiFi & 3G/4G module • 1 x SD card slot support SD/ SDHC Card Mechanical Power Type • AT / ATX mode Switchable Through Jumper	CPU					
Memory • 2 x 204-pin DDR3L 1333 MHz SO-DIMM socket, supports up to 8GB Max (Default: 1 x 2GB DDR3L) Adapter • 60W Adapter (DC in 12V@5A) Microphone • 1 x Mic-in Bluetooth • By Mini PCI-e module (optional) Operating System • Windows/ Linux SIM card slot • 1 x SIM card slot Storage Hard Disk Drive • 2 x 2.5" HDD Bays External I/O Serial Port • 6 x RS-232 USB Port • 4 x USB3.0, 2 x USB2.0 DIO Port • 8-bit GPIO (by external cable optional) Video Port • 1 x HDMI, 1 x VGA Audio Port • 1 x Line-out, 1 x Mic-in LAN Port Wireless LAN Antenna Switch • 1 x Power on/off membrane with Power LED • 1 x HDD LED, • 2 x LAN Activity Indicator LED • 1 x full size Mini PCI-e socket support mSATA only (SATA II and mSATA Switchable Through jumper) • 1 x full size Mini PCI-e support WiFi & 3G/4G module • 1 x SD card slot support SD/ SDHC Card Mechanical Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color	CDU Coolor (Typo)					
### Adapter ### Adapter (DC in 12V@5A) ### Adapter ### Adapter (DC in 12V@5A) ### Microphone ### 1x Mic-in ### Bluetooth ### By Mini PCI-e module (optional) ### Operating System Windows/ Linux ### SIM card slot ## 1 x SIM card slot ### Storage	CPO Coolei (Type)					
Adapter • 60W Adapter (DC in 12V @5A) Microphone • 1 x Mic-in Bluetooth • By Mini PCI-e module (optional) Operating System • Windows/ Linux SIM card slot • 1 x SIM card slot Storage • 2 x 2.5° HDD Bays External I/O Serial Port • 6 x RS-232 USB Port • 4 x USB3.0, 2 x USB2.0 DIO Port • 8-bit GPIO (by external cable optional) Video Port • 1 x HDMI, 1 x VGA Audio Port • 1 x Line-out, 1 x Mic-in LAN Port • 2 x Intel I211AT Gigabit Ethernet Wireless LAN Antenna • 2 x SMA Connector (Optional) Switch • 1 x Power on/off membrane with Power LED Indicator Light • 1 x HDD LED, • 2 x LAN Activity Indicator LED • 1 x full size Mini PCI-e socket support mSATA only (SATA II and mSATA Switchable Through jumper) • 1 x full size Mini PCI-e support WiFi & 3G/4G module • 1 x SD card slot support SD/ SDHC Card Mechanical Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) <th>Memory</th> <th></th>	Memory					
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Wireless LAN Antenna • 2 x SMA Connector (Optional) Switch • 1 x Power on/off membrane with Power LED • 1 x HDD LED, • 2 x LAN Activity Indicator LED • 1 x full size Mini PCI-e socket support mSATA only (SATA II and mSATA Switchable Through jumper) • 1 x full size Mini PCI-e support WiFi & 3G/4G module • 1 x SD card slot support SD/ SDHC Card Mechanical Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color • Black	Audio Port	1 x Line-out, 1 x Mic-in				
Switch Indicator Light Indicator Light	LAN Port	2 x Intel I211AT Gigabit Ethernet				
Indicator Light • 1 x HDD LED, • 2 x LAN Activity Indicator LED • 1 x full size Mini PCI-e socket support mSATA only (SATA II and mSATA Switchable Through jumper) • 1 x full size Mini PCI-e support WiFi & 3G/4G module • 1 x SD card slot support SD/ SDHC Card Mechanical Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • Black	Wireless LAN Antenna	2 x SMA Connector (Optional)				
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2 x LAN Activity Indicator LED 1 x full size Mini PCI-e socket support mSATA only (SATA II and mSATA Switchable Through jumper) 1 x full size Mini PCI-e support WiFi & 3G/4G module 1 x SD card slot support SD/ SDHC Card Mechanical Power Type AT / ATX mode Switchable Through Jumper Power Connector Type Lockable DC Jack Dimension 180 x 182 x 76 (L x W x H) Weight 2.3 kg Color Black	Indicator Light	• 1 x HDD LED,				
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1 x full size Mini PCI-e support WiFi & 3G/4G module 1 x SD card slot support SD/ SDHC Card Mechanical Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color • Black		1 x full size Mini PCI-e socket support mSATA only (SATA II and				
 1 x full size Mini PCI-e support WiFi & 3G/4G module 1 x SD card slot support SD/ SDHC Card Mechanical Power Type AT / ATX mode Switchable Through Jumper Power Connector Type Lockable DC Jack Dimension 180 x 182 x 76 (L x W x H) Weight 2.3 kg Black 	Evnansion Slots	mSATA Switchable Through jumper)				
Mechanical Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color • Black	Expansion olots	1 x full size Mini PCI-e support WiFi & 3G/4G module				
Power Type • AT / ATX mode Switchable Through Jumper Power Connector Type • Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color • Black		1 x SD card slot support SD/ SDHC Card				
Power Connector Type Lockable DC Jack Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color • Black	Mechanical					
Dimension • 180 x 182 x 76 (L x W x H) Weight • 2.3 kg Color • Black	Power Type • AT / ATX mode Switchable Through Jumper					
Weight • 2.3 kg Color • Black	Power Connector Type	Lockable DC Jack				
Color • Black	Dimension	• 180 x 182 x 76 (L x W x H)				
	Weight	2.3 kg				
	Color	Black				
Fanless • Yes	Fanless	• Yes				

BMX-T521-BYT

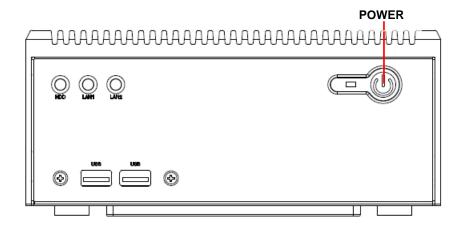
Reliability					
EMI Test		CE/FCC Class B design compatible			
Safety		UL/CB design compatible			
Vibration Test		Avalue standard			
Mechanical Shock Test		Avalue standard			
Drop Test		Avalue standard			
Operating Temperature	•	0°C ~ 40°C (32°F ~ 104°F) (w/HDD), ambient w/ air flow			
Operating Temperature	•	0°C ~ 50°C (32°F ~ 122°F) (w/SSD, mSATA), ambient w/ air flow			
Operating Humidity		0% ~ 90% Relative Humidity, Non-condensing			
Storage Temperature		-20°C ~ 75°C (-4°F ~ 167°F)			

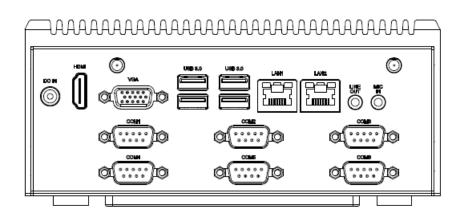


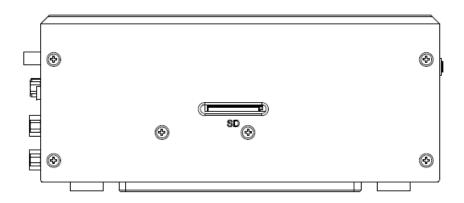
Note: Specifications are subject to change without notice.

1.4 System Overview

1.4.1 Front/Rear/Side View





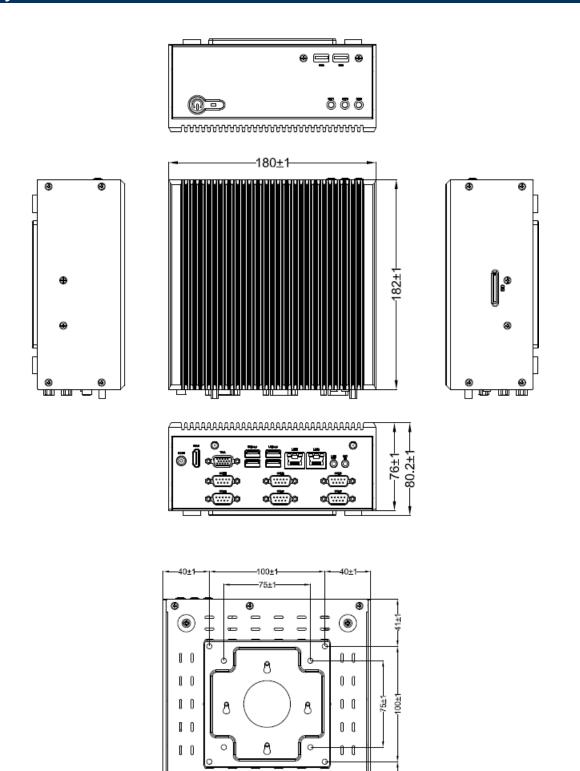


Connectors				
Label	Function	Note		
POWER	Power on button			
HDD	HDD Indicator			

BMX-T521-BYT

LAN1/2	RJ-45 Ethernet 1/2		
USB	2 x USB2.0 connector		
	4 x USB2.0 connector		
HDD	HDD Indicator		
USB	2 X USB2.0 connector		
USB3.0	4 X USB3.0 connector		
COM1~6	Serial port connector 1~6		
DC IN	DC power-in connector		
HDMI	HDMI connector		
LINE OUT	Line-out audio jack		
MIC IN	Mic-in audio jack		
VGA	VGA connector		
SD	SD card slot		

1.5 System Dimensions



(Unit: mm)

2. Hardware Configuration

Jumper and Connector Setting, Driver and BIOS Installing

For advanced information, please refer to:

1- EMX-BYT2 User's Manual

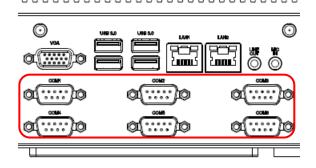


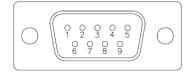
Note: If you need more information, please visit our website:

http://www.avalue.com.tw

2.1 BMX-T521-BYT connector mapping

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

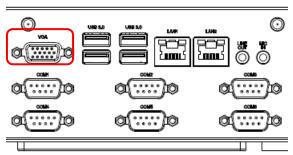


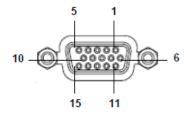


Signal	PIN	PIN	Signal
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5		

VGA connector (VGA) 2.1.2

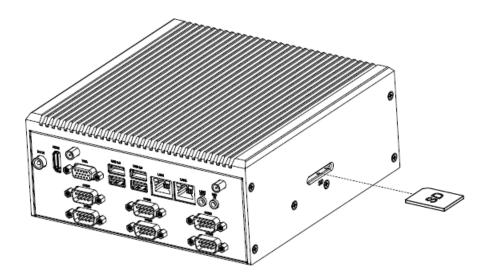






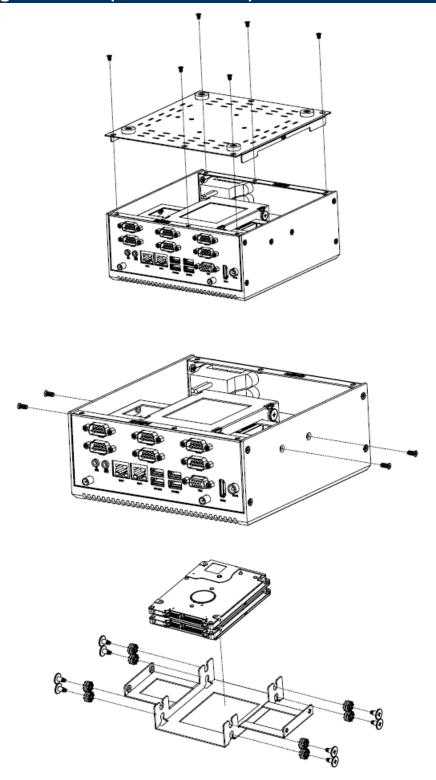
PIN	Signal	PIN	Signal	PIN	Signal
1	RED	6	GND	11	NC
2	GREEN	7	GND	12	DDCDAT
3	BLUE	8	GND	13	HSYNC
4	NC	9	+5V	14	VSYNS
5	GND	10	GND	15	DDCCLK

2.2 Installing SD card (BMX-T521-BYT)



Step 1. Insert SD card into SD slot.

2.3 Installing Hard Disk (BMX-T521-BYT)



- **Step1.** Remove 10 screws from rear and each side before removing back cover.
- **Step2.** Secure HDD by means of 8screws.
- **Step3.** Re-assemble your system back through previous steps to complete the installation.

