ECS-BSW

Fanless Intel® Celeron® Processor N3160 Tiny Box PC

Quick Reference Guide

1st Ed –19 September 2016

Part No. E2017ECSWA0R

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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Disclaimer

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 ECS-BSW Fanless Intel® Celeron® Processor N3160 Tiny Box PC
- Other major components include the followings:
  — 1 x Adapter
  — 1 x Power Cord
  — 1 x HDD mylar

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

1.3 System Specifications

System	
Mother Board	• ECM-BSW-N3160
CPU	• Intel® Celeron® Processor N3160 (2M Cache, up to 2.24 GHz)
CPU Cooler (Type)	• Fanless
Memory	• 1 x 204-pin DDR3L 1600MHz SO-DIMM Socket Supports Up to 8GB
Adapter	• 60W Adapter (DC in 12V@5A)
Microphone	• 1 x Mic-in, 1 x Line-out
Operating System	• Windows/ Linux
Storage	
Hard Disk Drive	• 1 x 2.5" SATA HDD/SSD
External I/O	
USB Port	• 4 x USB 3.0, 2 x USB 2.0
Video Port	• 1 x VGA, 1 x HDMI
Audio Port	• 1 x Mic-in, 1 x Line-out
COM Port	• 5 x RS-232 (Default) *COM1-232/422/485 (Optional)
LAN Port	• 2 x RealTek RTL8119 Gigabit Ethernet
Wireless LAN Antenna	• 1 x SMA connector (Optional)
Switch	• 1 x Power on/off Switch
Indicator Light	• 1 x HDD/SSD LED, 1 x Power LED
Expansion Slots	• 1 x Full-size Mini PCI-e Socket Supports mSATA • 1 x Half Size Mini PCI-e Socket supports WiFi module
Mechanical	
Power Type	• Single power ATX Support S0, S3, S4, S5
Power Connector Type	• DC in 12V
Dimension	• 180mm x 126mm x 68mm
Weight	• 3.3lbs (1.5Kgs)
Color	• Black
Fanless	• Yes
Reliability	
EMI Test	• CE/FCC Class B
Safety	• UL/CB design compatible
Vibration Test	• <u>Sine Vibration test (Non-operation)</u> • Reference IEC60068-2-6 Testing procedures • Test Fc : Vibration sinusoidal

ECS-BSW

<table>
<tr>
<td rowspan="3"></td>
<td>
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 : mSATA or SSD
</td>
</tr>
<tr>
<td>**Mechanical Shock Test**</td>
<td>
- 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
</td>
</tr>
<tr>
<td>**Drop Test**</td>
<td>
- 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
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</table>

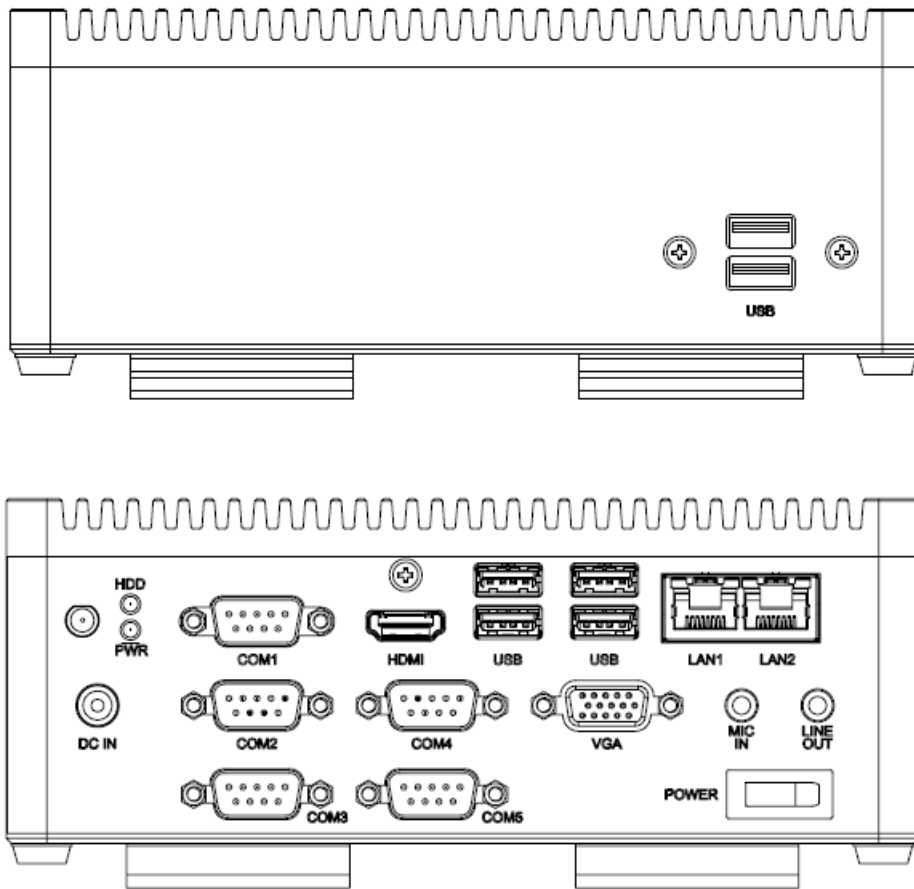|	
Operating Temperature	• 0°C ~ 40°C (32°F ~ 104°F) (w/HDD), ambient w/ air flow • 0°C ~ 45°C (32°F ~ 113°F) (w/SSD, mSATA), ambient w/ air flow
Operating Humidity	• 0% ~ 90% Relative Humidity, Non-condensing
Storage Temperature	• -20°C ~ 75°C (-22°F ~ 167°F)
Mounting	• Din rail (optional)

Note:

Specifications are subject to change without notice.

1.4 System Overview

1.4.1   Front/Rear View

Connectors

Label	Function	Note
POWER	Power on button	
HDD	HDD Indicator	
PWR	System power indicator	
LAN1/2	RJ-45 Ethernet 1/2	
USB	2 x USB2.0 connector 4 x USB3.0 connector	
COM1~5	Serial port 1~5 connector	COM1-232/422/485 (Optional)
DC IN	DC power-in connector	
HDMI	HDMI connector	
LINE OUT	Line-out audio jack	
MIC IN	Mic-in audio jack	
VGA	VGA connector	

1.5 System Dimensions
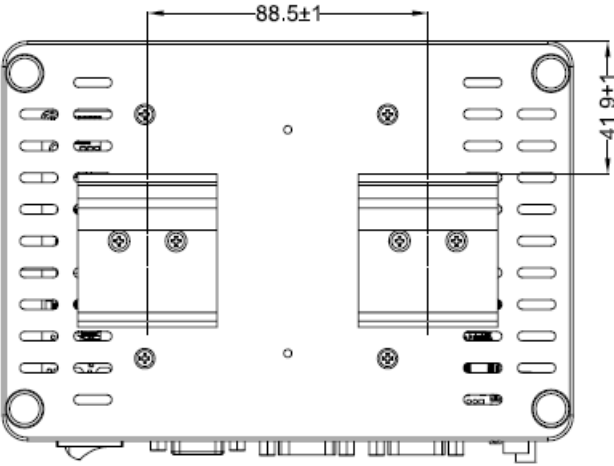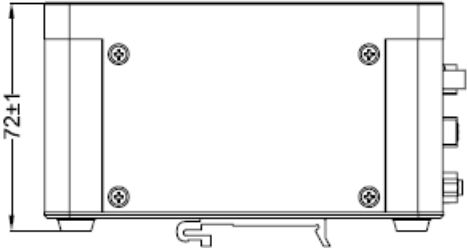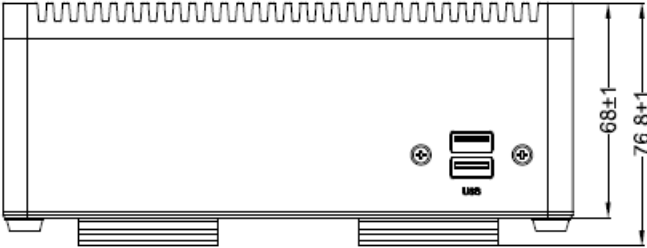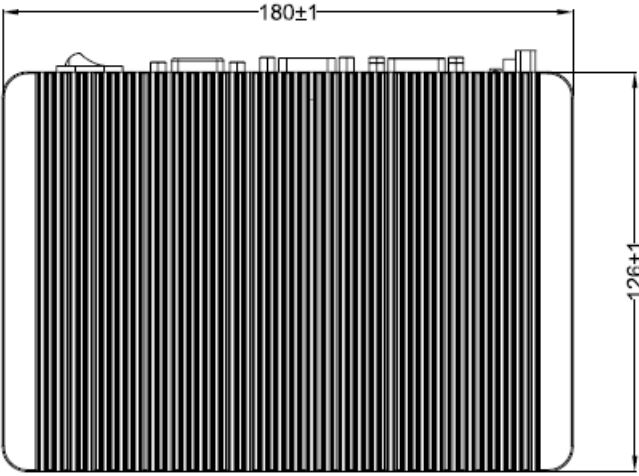
(Unit: mm)

2. Hardware Configuration

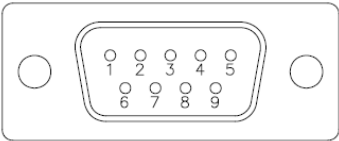For advanced information, please refer to:
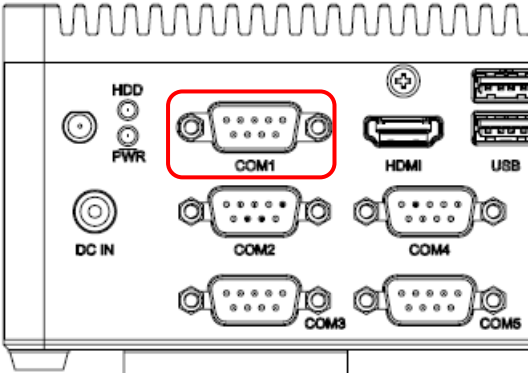
1- ECM-BSW User's Manual

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

http://www.avalue.com.tw

2.1 ECS-BSW connector mapping

2.1.1   Serial Port 1 connector (COM1)

RS-232

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

RS-422/485(D-sub 9pin Male)

Signal	PIN	
TX-	1	
TX+	2	
RX+	3	
RX-	4	
GND	5	

2.1.2   Serial Port 2/3/4/5 connector (COM2/3/4/5)
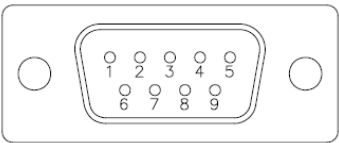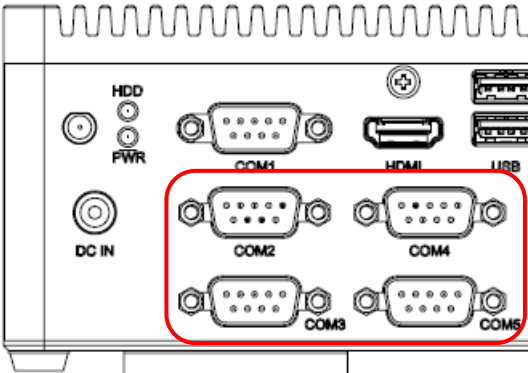
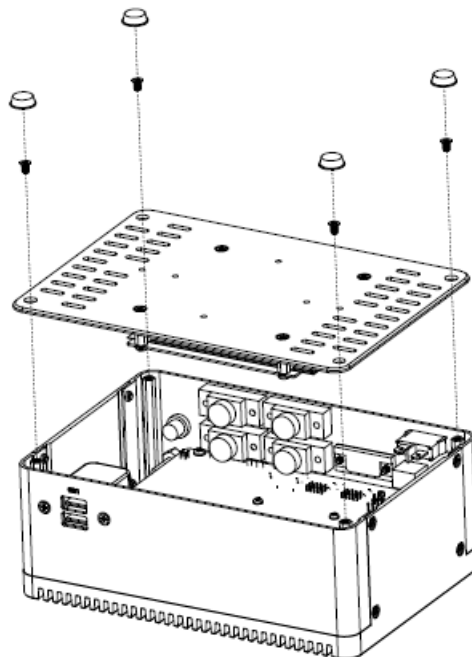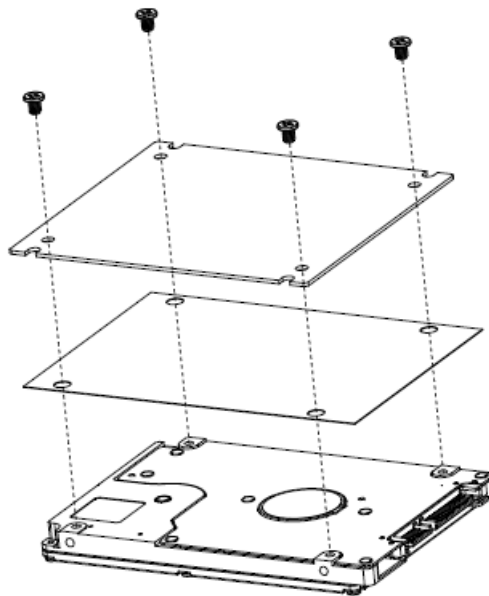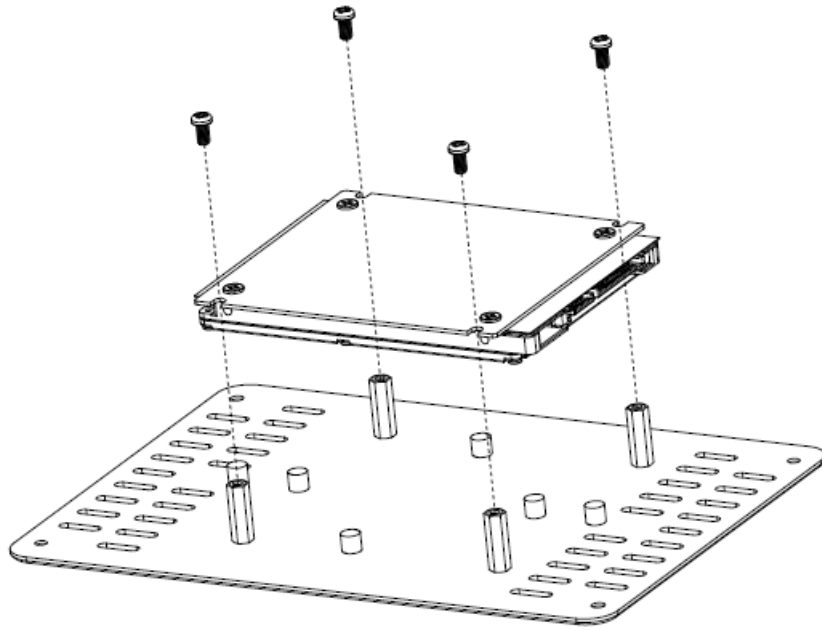| Signal	PIN	PIN	Signal
DCD#	1	6	DSR#
RXD	2	7	RTS#
TXD	3	8	CTS#
DTR#	4	9	RI#
GND	5		

2.2 Installing Din Rail Mounting (ECS-BSW)
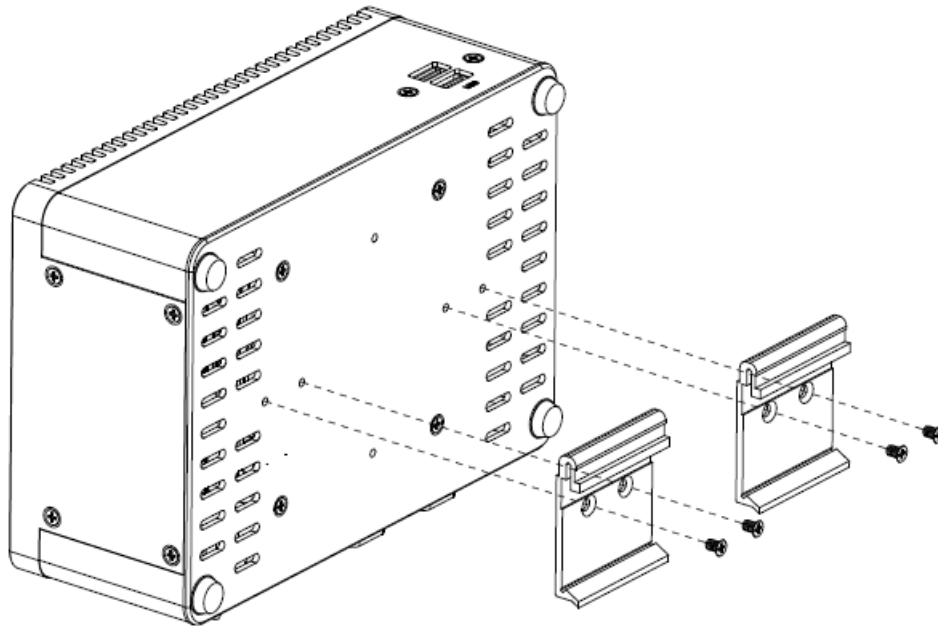
Step1. Position brackets on both sides, matching the holes on the system.

Step2. Insert and fasten screw on each side of the system to secure Mounting brackets.

2.3 Installing Hard Disk (ECS-BSW)

Step1. Remove 4 screws from rear side before removing back cover.

Step2. Secure HDD by means of 4 screws.

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