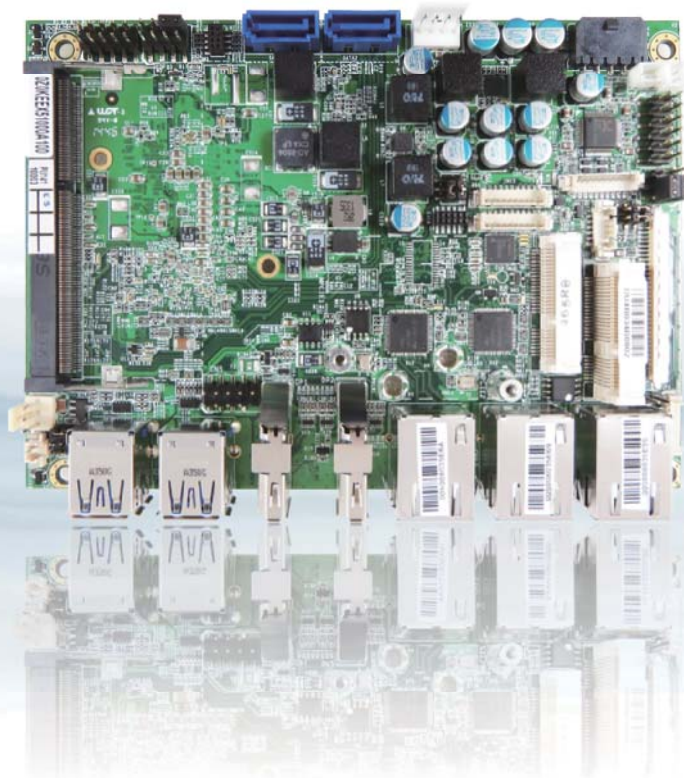


# ECX-BDW-U

## GREATER FLEXIBILITY IN ETHERNET CONNECTIVITY

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Ordered & Served at  
**Kontron Asia**

### 3.5" SINGLE BOARD COMPUTER WITH 5TH GEN INTEL® CORE™ / CELERON® U-SERIES PROCESSORS

- ▶ 1x LVDS, 2x DP for display output
- ▶ 3x GbE LAN for Ethernet
- ▶ 4x USB 3.0, 2x USB 2.0, 2x RS232/422/485, 8-bit DIO for peripherals
- ▶ 2x SATA 3.0, up to 1x mSATA for storage
- ▶ Up to 2x mPCIe for expansion

# ECX-BDW-U

## 3.5" SINGLE BOARD COMPUTER WITH 5TH GEN INTEL® CORE™ / CELERON® U-SERIES PROCESSORS

ECX-BDW-U is a 3.5" single board computer powered by 5th Generation Intel® Core™ / Celeron® U-Series ultra-low-power processors. Featured are 1x DDR3L SO-DIMM, 2x DP, 3x GbE LAN, 2x SATA 3.0, 8-bit DIO, 4x USB 3.0 and 2x USB 2.0.

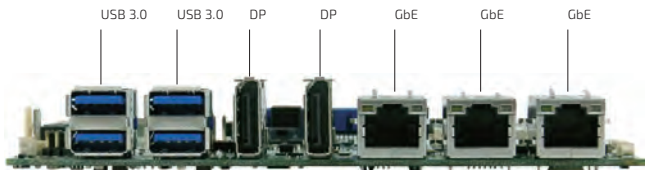
It reserves two mPCIe slots (one is shared with mSATA) and allows

users to extend SSD storage, wireless network or other possible applications.

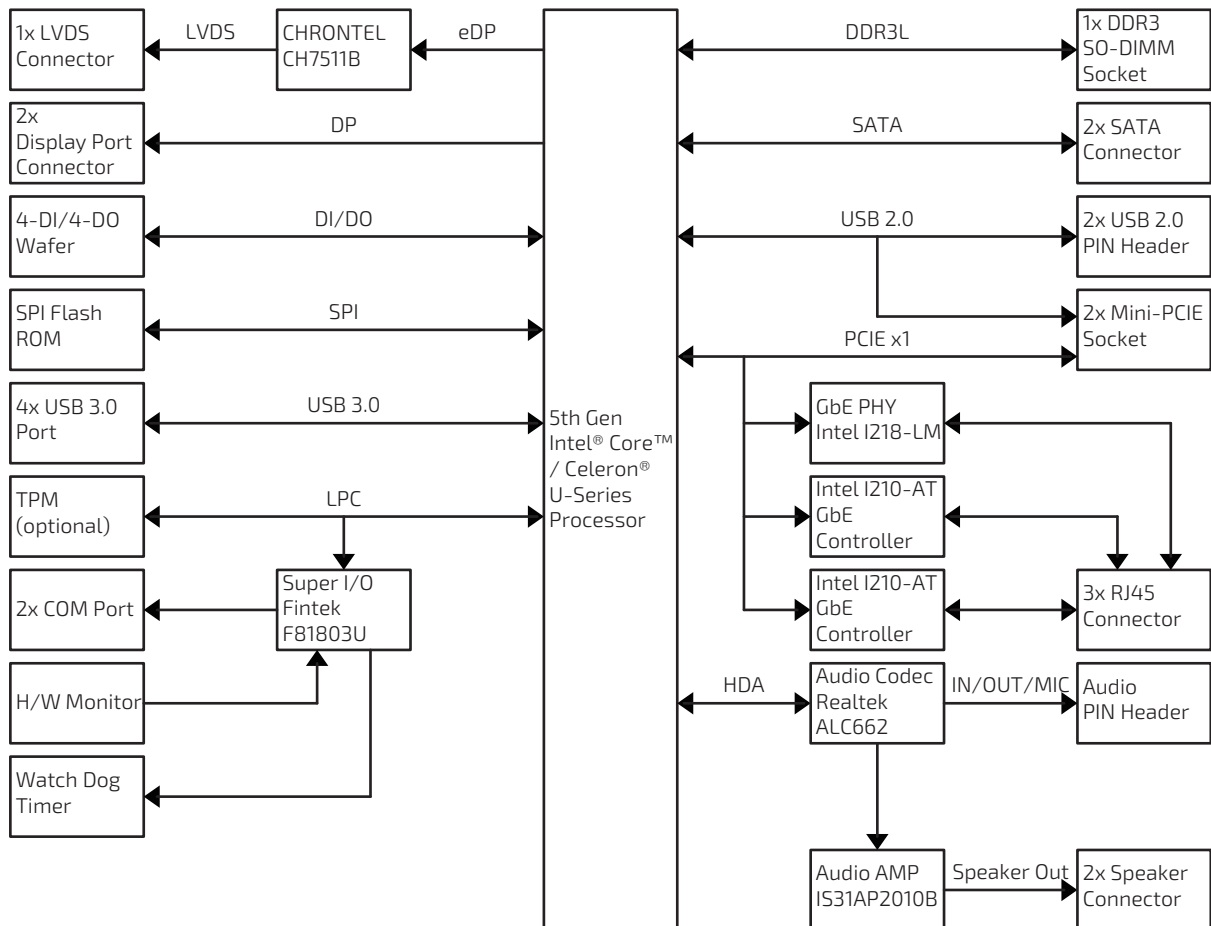
In addition, extended temperature models are available and allow for operation under extreme high, low or radically fluctuating temperatures, which is common in industrial environments.

### ▶ PRODUCT HIGHLIGHTS

- ▶ 5th Generation Intel® Core™ / Celeron® U-Series Processors
- ▶ 1x DDR3L SO-DIMM
- ▶ 1x LVDS, 2x DP for triple display support
- ▶ 3x GbE LAN for Ethernet
- ▶ 4x USB 3.0, 2x USB 2.0 for USB device connection
- ▶ 2x RS232/422/485 for serial device connection
- ▶ 8-bit DIO for device / signal control
- ▶ 2x SATA 3.0, up to 1x mSATA for storage
- ▶ Up to 2x mPCIe for WLAN / Bluetooth / WWAN expansion
- ▶ Extended temperature model available: -20 °C ~ 70 °C



### ▶ BLOCK DIAGRAM



## ► TECHNICAL INFORMATION

<b>SYSTEM</b>	<b>PROCESSOR</b>	Intel® Core™ i7-5650U (Dual Core, 4M Cache, up to 3.20 GHz, FCBGA1168, 15 W TDP) Intel® Core™ i5-5350U (Dual Core, 3M Cache, up to 2.90 GHz, FCBGA1168, 15 W TDP) Intel® Core™ i3-5010U (Dual Core, 3M Cache, 2.10 GHz, FCBGA1168, 15 W TDP) Intel® Celeron® 3765U (Dual Core, 2M Cache, 1.90 GHz, FCBGA1168, 15 W TDP)
	<b>MEMORY</b>	1x DDR3L 1333/1600 SO-DIMM up to 8 GByte
<b>VIDEO</b>	<b>GRAPHICS</b>	Intel® HD Graphics 6000 (for model w/ Core™ i7 / i5) Intel® HD Graphics 5500 (for model w/ Core™ i3)
	<b>DISPLAY INTERFACE</b>	Intel® HD Graphics (for model w/ Celeron®) 1x LVDS (18-bit/24-bit, 1/2-ch, 1920 x 1200 @ 60 Hz)
	<b>MULTIPLE DISPLAY</b>	2x DP (on rear, 3840 x 2160 @ 60 Hz) Triple Display
<b>AUDIO</b>	<b>AUDIO CODEC</b> <b>AUDIO INTERFACE</b>	Realtek ALC662 2x Speaker-out (3 W, ISSI IS31AP2010B) 1x Line-in (by header) 1x Line-out (by header) 1x Mic-in (by header)
<b>NETWORK CONNECTION</b>	<b>ETHERNET</b>	3x GbE LAN (RJ45 on rear, 2x Intel® I210-AT, 1x Intel® I218-LM) (LAN1 shared with half-sized mPCIe and enabled by default)
<b>PERIPHERAL CONNECTION</b>	<b>USB</b>	4x USB 3.0 (Type A on rear)
	<b>SERIAL PORT</b>	2x RS232/422/485 (by header)
	<b>OTHER I/Os</b>	1x 8-bit DIO (by header)
<b>STORAGE &amp; EXPANSION</b>		2x SATA 3.0 1x mSATA / mPCIe (full size) 1x mPCIe (half size, shared with LAN1 and disabled by default) 1x SIM Card Cage (by wafer)
<b>POWER</b>	<b>CONNECTOR</b> <b>INPUT VOLTAGE</b>	1x4-pin pitch 3.0 mm wafer DC 12 V
<b>FIRMWARE</b>	<b>BIOS</b> <b>WATCHDOG</b> <b>H/W MONITOR</b> <b>REAL TIME CLOCK</b> <b>TPM</b> <b>iAMT</b>	AMI uEFI BIOS w/ 128 Mb SPI Flash Programmable WDT to generate system reset event Voltages, Temperatures Processor integrated RTC Supported for models w/ Core™ i7 / i5 (Infineon SLB 9635 TPM 1.2) Supported for models w/ Core™ i7 / i5
<b>SYSTEM CONTROL &amp; MONITORING</b>	<b>FRONT PANEL HEADER</b>	1x Header for Reset button, HDD LED & External Speaker 1x Header for Power button, Power LED & SM bus 1x Header for mPCIe activity LED
<b>COOLING</b>	<b>FAN</b>	1x Wafer for CPU Smart Fan
<b>SOFTWARE</b>	<b>OS SUPPORT</b>	Windows 7, Windows 8, Linux
<b>MECHANICAL</b>	<b>DIMENSION (L x W)</b>	ECX (146 mm x 105 mm / 5.75" x 4.13")
<b>ENVIRONMENTAL</b>	<b>OPERATION TEMPERATURE</b>	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended)
	<b>STORAGE TEMPERATURE</b>	-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended)
	<b>HUMIDITY</b>	0 % ~ 95 %
<b>CERTIFICATION</b>	<b>EMC &amp; SAFETY</b>	CE Class A, FCC Class A

## ▶ ORDERING INFORMATION

ARTICLE	DESCRIPTION
ECX-BDW-U-5650U	Intel® Core™ i7-5650U, with TPM & iAMT, Op. temp.: 0°C ~ 60°C
ECX-BDW-U-5350U	Intel® Core™ i5-5350U, with TPM & iAMT, Op. temp.: 0°C ~ 60°C
ECX-BDW-U-5010U	Intel® Core™ i3-5010U, without TPM & iAMT, Op. temp.: 0°C ~ 60°C
ECX-BDW-U-3765U	Intel® Celeron® 3765U, without TPM & iAMT, Op. temp.: 0°C ~ 60°C
ECX-BDW-U-5650U-ET	Intel® Core™ i7-5650U, with TPM & iAMT, Op. temp.: -20°C ~ 70°C
ECX-BDW-U-5350U-ET	Intel® Core™ i5-5350U, with TPM & iAMT, Op. temp.: -20°C ~ 70°C
ECX-BDW-U-5010U-ET	Intel® Core™ i3-5010U, without TPM & iAMT, Op. temp.: -20°C ~ 70°C
ECX-BDW-U-3765U-ET	Intel® Celeron® 3765U, without TPM & iAMT, Op. temp.: -20°C ~ 70°C

### OPTIONAL ACCESSORIES - CABLING

COM PORT CABLE	10-pin pitch = 1.25 mm to DB-9 connector, L = 35 cm
DIO CABLE	WL1025H-10P (51021) 1x10P 1.25 pitch to F83N-3.81-10P 1x10P + F736-3.81-10P 1x10P, L = 100 mm
USB CABLE (2 PORT)	2.54 mm 2x5P to 2x USB connectors, L = 34 cm
SATA POWER CABLE	SATA 1x15P Pitch: 1.27 mm, L = 460 mm
SATA CABLE	7-pin connector with lock, L = 46 cm
AUDIO CABLE	WL6008H 2x6P 2.54 pitch to EAR phone jack x3 pitch: 3.5 mm, L = 35 cm
DC IN CABLE	2.5 DC Jack w/ 2 mm nut, 0.5 mm washer to H-300F-XX 1x4P 3.0 pitch, L = 30 cm
3G MINI SIM CARD HOLDER KIT	W/ SIM card holder x1, 3G SIM card cable x1

## ▶ PRODUCT CONTACT POINT

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