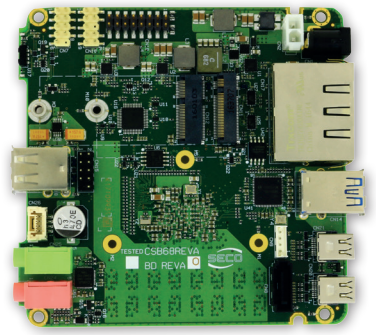
SBC-B68-eNUC

SBC with the Intel® Atom™ X Series, Intel® Celeron® J / N Series and Intel® Pentium® N Series (formerly Apollo Lake) Processors in the embedded NUC™ form factor

Flexible and expandable full industrial x86 eNUC SBC



DEVELOPMENT | SAMPLING | PRODUCTION

HIGHLIGHTS

CPU
Intel® Atom™ X Series, Intel® Celeron® J / N Series and Intel® Pentium® N Series

CONNECTIVITY
2x GbE; M.2 WWAN and WLAN slots; CIR sensor; 2x I2C; 8x GPI/Os

GRAPHICS
Integrated Intel® HD Graphics 500 series controller

MEMORY
Up to 8GB LPDDR4 memory

Available in Industrial Temperature Range

embedded NUC™ | SGeT Standardization Group for Embedded Technologies | intel IoT Solutions Alliance | Windows 10 Enterprise | Windows IoT | Wind River Partner Program PLATINUM | Linux | yocto PROJECT | android

MAIN FIELDS OF APPLICATION

Automotive | Digital Signage - Infotainment | HMI | Industrial Automation and Control | Info Kiosks | Industrial Internet of Things | Multimedia devices | Point of Sales

FEATURES

Processor	Intel® Atom™ **x5-E3930** Dual Core @1.3 GHz (Burst 1.8GHz), 2MB L2 Cache, 6.5W TDP Intel® Atom™ **x5-E3940** Quad Core @1.6 GHz (Burst 1.8GHz), 2MB L2 Cache, 9.5W TDP Intel® Atom™ **x7-E3950** Quad Core @1.6 GHz (Burst 2.0GHz), 2MB L2 Cache, 12W TDP Intel® Pentium® **N4200** Quad Core @1.1GHz (Burst 2.5GHz), 2MB L2 Cache, 6W TDP Intel® Celeron® **N3350** Dual Core @1.1GHz (Burst 2.4GHz), 2MB L2 Cache, 6W TDP Intel® Celeron® **J3455**, Quad Core @1.5GHz (Burst 2.3GHz), 2MB L2Cache, 10W TDP Intel® Celeron® **J3355**, Dual Core @2.0GHz (Burst 2.5GHz), 2MB L2Cache, 10W TDP
Max Cores	4
Max Thread	4
Memory	Quad Channel soldered down LPDDR4 memory, up to 8GB
Graphics	Integrated Intel® HD Graphics 500 series controller, with up to 18 Execution Units 4K HW decoding and encoding of HEVC(H.265), H.264, VP8, VP9, MVC Three independent display support
Video Interfaces	Two DP++ 1.2 interfaces on miniDP connectors (supports HDMI displays through external adapter) embedded Display Port (eDP) internal connector LVDS through optional external adapter
Video Resolution	DP: Up to 4096 x 2160 @60HZ eDP: Up to 3840 x 2160 @60Hz HDMI: Up to 3840 x 2160 @30Hz LVDS: Up to 1920 x 1200 @ 60Hz
Mass Storage	Optional eMMC drive onboard M.2 SATA SSD slot (Socket 2 Key B Type 3042/2260 **) microSD Card slot SATA 7p M connector
Networking	2x Gbit LAN / Intel Gigabit Ethernet i21x family controller M.2 WWAN Slot for Modems (Socket 2 Key B Type 3042/2260 **) M.2 WLAN Connectivity Slot for WiFi/BT (Socket 1 Key E type 2230)
USB	2 x USB 3.0 Host ports on USB 3.0 Type-A sockets 2 x USB 2.0 Host ports on USB 2.0 Type-A sockets 2 x USB 2.0 Host ports on internal pin header 1 x USB 3.0 Host port on SSD/WWAN M.2 slot 1 x USB 2.0 Host port on WLAN M.2 Slot
PCI-e	1 x PCI-e x2 port on M.2 SSD/WWAN Slot 1 x PCI-e x1 port on WLAN M.2 Slot
Audio	HD Audio codec / Cirrus Logic CS4207 Mic In and Line Out Audio jacks Amplified Speaker output on internal pin header
Serial Ports	2 x RS-232/RS-422/RS-485 UARTS software configurable, on internal Pin Header
Other Interfaces	2 x I2C + 8 x GPI/Os on Feature connector Button / LED front panel header CIR (Consumer InfraRed) sensor microSIM slot for M.2 WWAN Modem Optional TPM 2.0 on-board
Power Supply	+18V_{DC} ÷ +32 V_{DC} recommended +15V_{DC} ÷ +36 V_{DC} absolute RTC battery
Operating System	Microsoft® Windows 10 Enterprise (64 bit) Microsoft® Windows 10 IoT Core Wind River Linux (64 bit) Yocto (64 bit) Android (planning)
Operating Temperature*	0°C ÷ +60°C (Commercial version) -40°C ÷ +85°C (Industrial version)
Dimensions	101.6 x 101.6 mm (4” x 4”)

* Measured at any point of SECO standard heatspreader for this product, during any and all times (including start-up). Actual temperature will widely depend on application, enclosure and/or environment. Upon customer to consider application-specific cooling solutions for the final system to keep the heatspreader temperature in the range indicated.
** SATA SSD and WWAN functionalities share the same slot and are therefore mutually exclusive.

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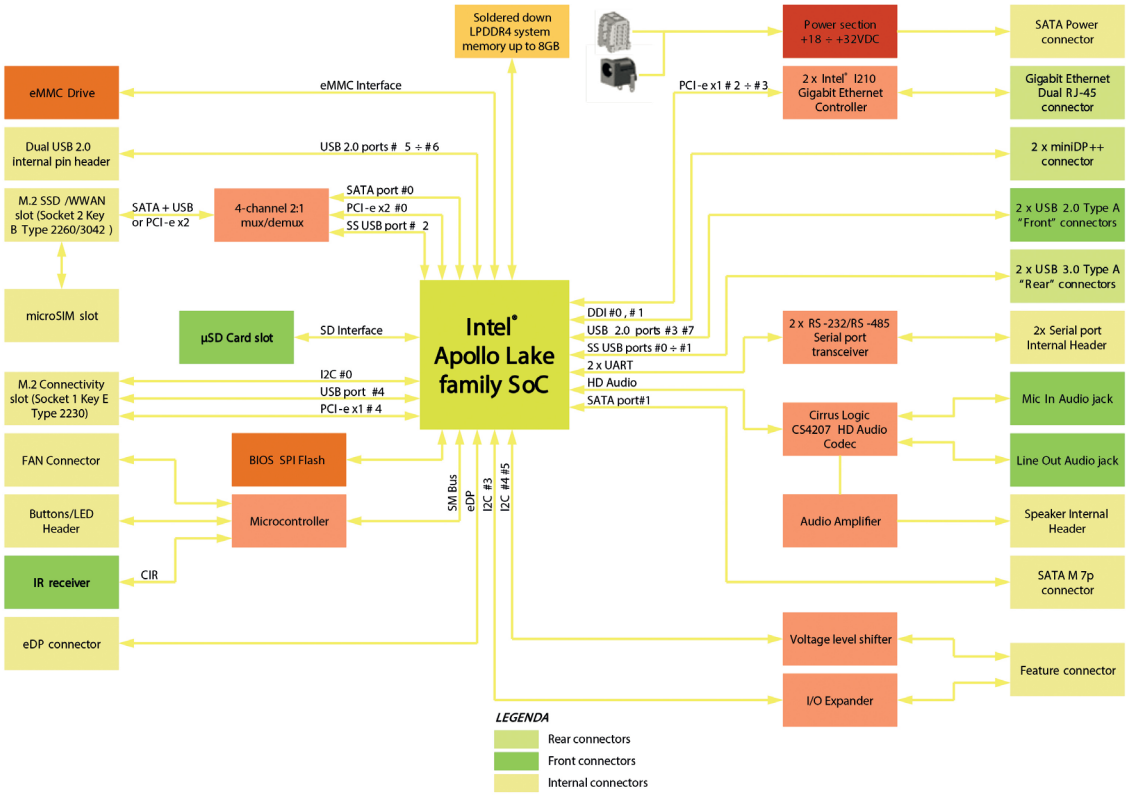
BLOCK DIAGRAM



ORDERING INFORMATION

PN*	DESCRIPTION
SB68-1437-1002-C2	SBC-B68-eNUC - Intel Celeron N3350 - 2GB RAM dual channel - 16GB eMMC - power terminal block - Eth ctrl I211 - GPIO 5V, Panel Backlight 12V, Panel Logic 3.3V - Comm. Temp
SB68-1741-2002-C2	SBC-B68-eNUC - Intel Celeron N3350 - 4GB QuadCh LPDDR4 RAM- 32GB eMMC - power jack connector - Eth ctrl I211 - GPIO 3.3V, Panel Backlight 5V, Panel Logic 3.3V -Comm. Temp
SB68-2741-2002-C2	SBC-B68-eNUC - Intel Pentium N4200 - 4GB QuadCh LPDDR4 RAM - 32GB eMMC - power jack connector - Eth ctrl I211 - GPIO 3.3V, Panel Backlight 5V, Panel Logic 3.3V -Comm. Temp
SB68-3741-2002-C2	SBC-B68-eNUC - Intel Atom E3930 - 4GB QuadCh LPDDR4 RAM - 32GB eMMC - power jack connector - Eth ctrl I211 - GPIO 3.3V, Panel Backlight 5V, Panel Logic 3.3V -Comm. Temp
SB68-4741-2002-C2	SBC-B68-eNUC - Intel Atom E3940 - 4GB QuadCh LPDDR4 RAM - 32GB eMMC - power jack connector - Eth ctrl I211 - GPIO 3.3V, Panel Backlight 5V, Panel Logic 3.3V -Comm. Temp
SB68-5741-2002-C2	SBC-B68-eNUC - Intel Atom E3950 - 4GB QuadCh LPDDR4 RAM - 32GB eMMC - power jack connector - Eth ctrl I211 - GPIO 3.3V, Panel Backlight 5V, Panel Logic 3.3V -Comm. Temp
SB68-5743-1001-I2	SBC-B68-eNUC - Intel Atom E3950 - 4GB RAM Quad channel - 32GB eMMC - power terminal block - Controller I210, GPIO 3.3V, Panel Backlight 12V, Panel Logic 3.3V - Ind. Temp

*Additional configurations may be available. Please inquire for more information.

ACCESSORIES

PN	DESCRIPTION
SB68-DISS-1-C-PK	SBC-B68-eNUC Heat Spreader (PASSIVE) for commercial temp. range CPUs - Packaged
SB68-DISS-1-I-PK	SBC-B68-eNUC Heat Spreader (PASSIVE) for industrial temp. range CPUs - Packaged
CABKITB68	Connection Cables Kit for SB68
VB78-0000-1000-C0	ADAPTER: eDP to LVDS