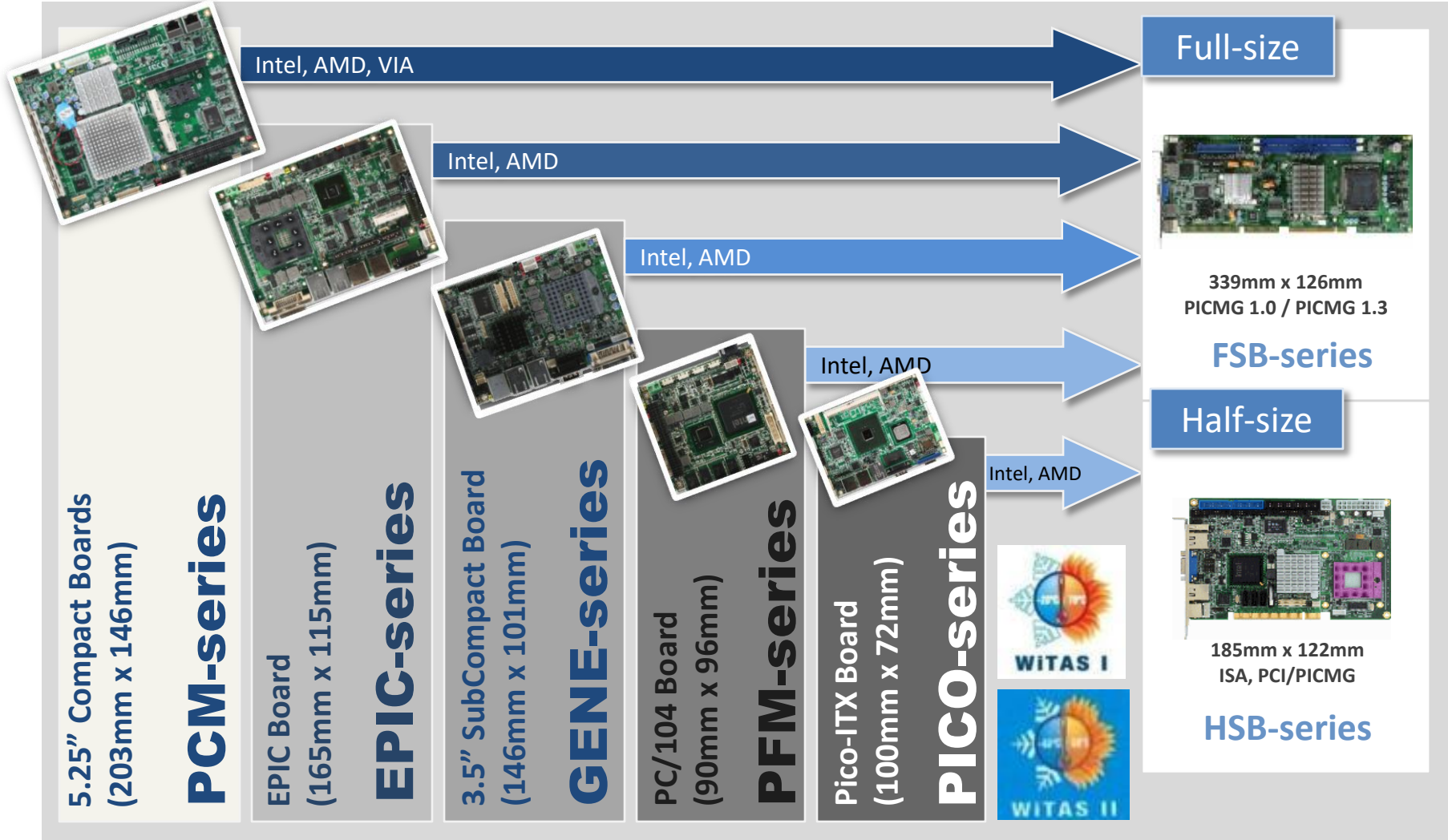




General Update for AAEON Board Products

Presenter : Ian Lin
Division : AEU PSM
Date : Nov 2016

Single Board Computer (SBC) Solutions



Full Range of COM Modules

COM Express



125mm x 95mm
Basic size-series



95mm x 95mm
Compact size-series



84mm x 55mm
NanoCOM-series

ETX



114mm x 95mm
ETX-series

XTX



114mm x 95mm
XTX-series

Qseven



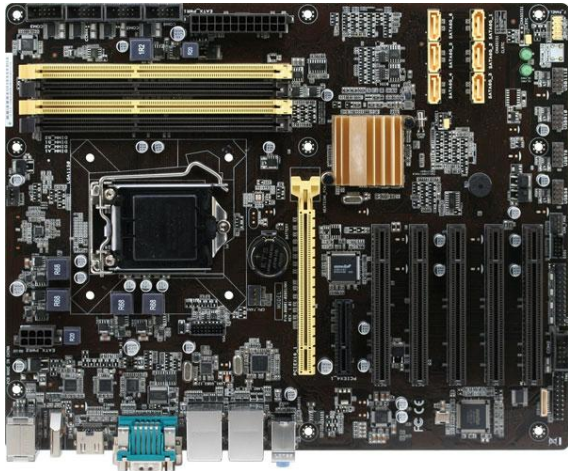
70mm x 70mm
AQ7-series

SMARC

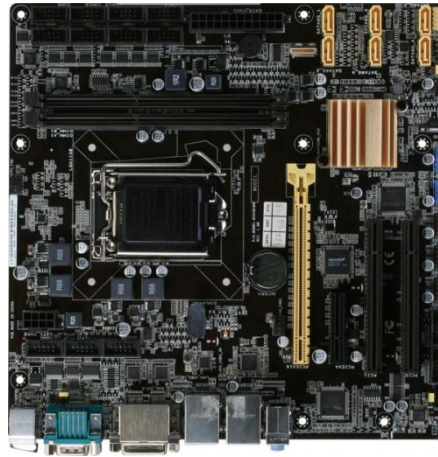


82mm x 50mm
uCOM-series

Full Range of Embedded Boards



ATX (305mm x 244mm)



Micro ATX (244mm x 244mm)



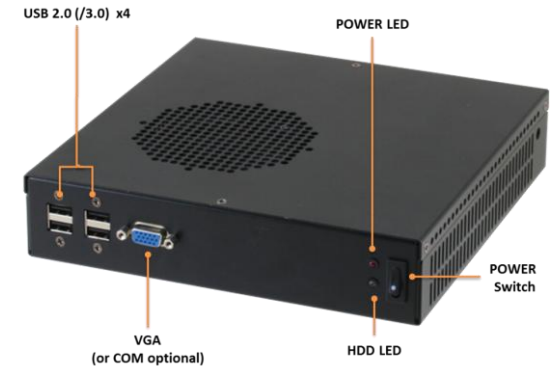
Mini-ITX (170mm x 170mm)



Nano-ITX (120mm x 120mm)



NANO-00X



ACS-1U01

ECD

COM Products Roadmap Summary

New Product Plan (COMe)

- COM-APLC6
- NANOCOM-APL
- AQ7-APL

New Product Plan (Single Board Computer)

- GENE-APL5
- PICO-APL1
- EPIC-KBS7

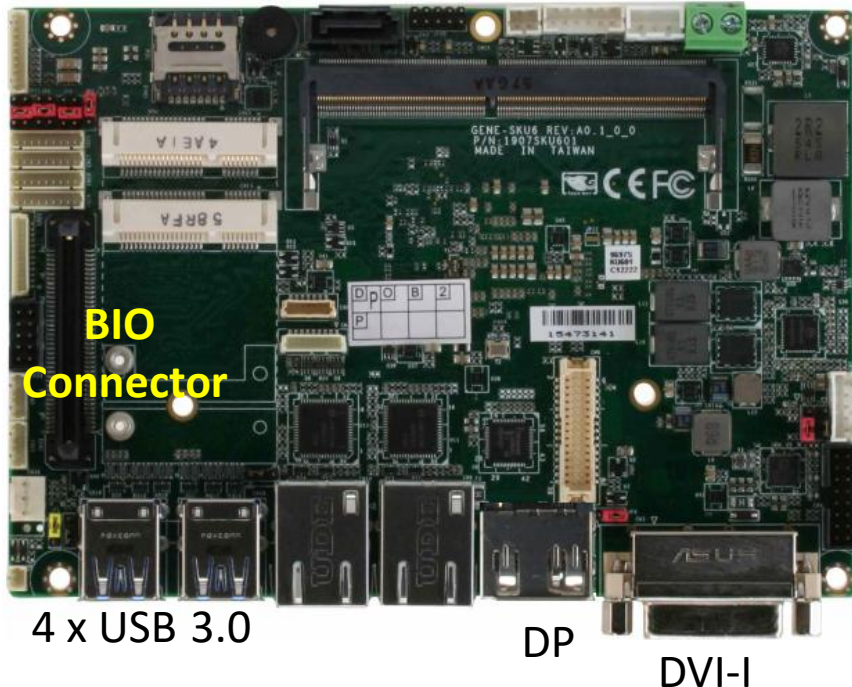
EPIC-KBS7



- EPIC Board with 6th/7th Generation Intel[®] Core™ i-S series Processor (Socket Type)
- Designed up to 35W CPU
 - i3-6100TE (2C) 2.7 GHz (TDP: 35W)
 - i5-6500TE (4C) 2.3 GHz, up to 3.3 GHz (TDP: 35W)
 - i7-6700TE (4C) 2.4 GHz, up to 3.4 GHz (TDP: 35W)
- 12V, 9-24V Wide Voltage, Non-ECC DDR4 SODIMM x 1
- Basic VGA/HDMI/LVDS Display For Mini-server
- USB 3.0 x 4, USB 2.0 x 2 with High Performance CPU
- Mini-card/mSATA Selection
- HDA, SATA x 2, GPIO x 8, COM x 4

Estimated MP: Q1 2017
DVT sample: Nov/Dec 2016

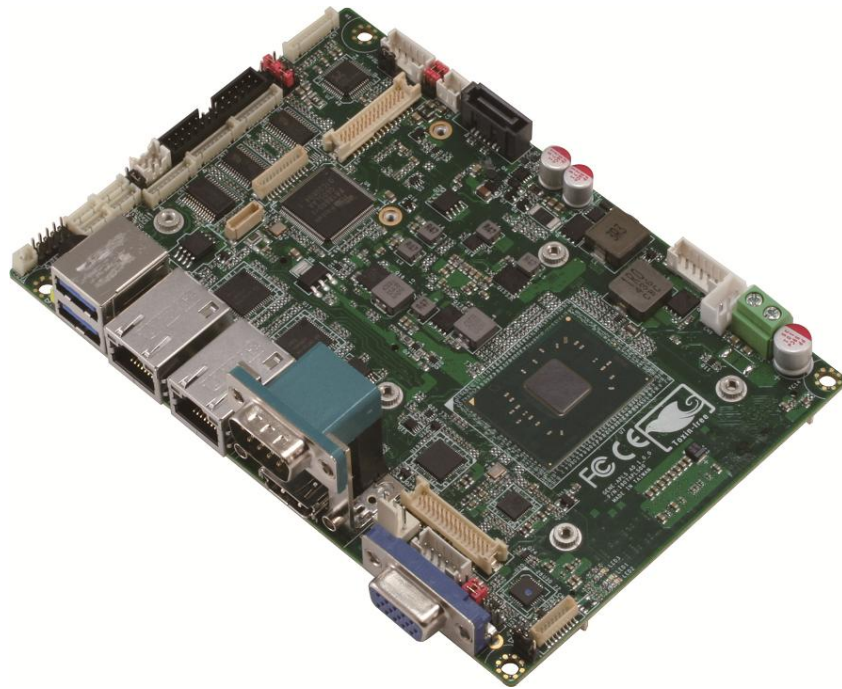
GENE-SKU6



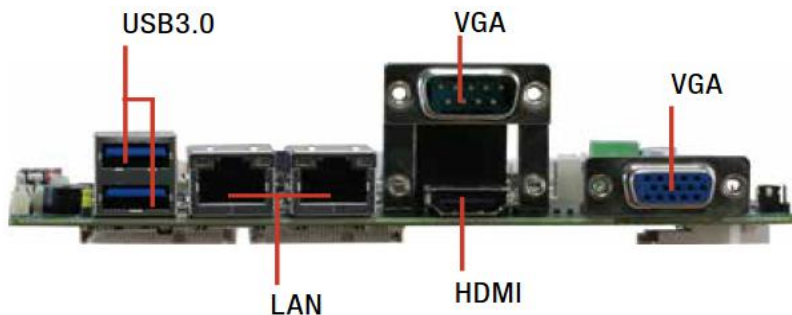
- Intel[®] Core[™] i7/i5/i3/Celeron[®] Processor SoC
- DDR4 1866/2133, SODIMM x 1
- DVI, CRT/DP, 18/24-bit Dual-Channel LVDS/eDP
- 2 CH Audio
- SATA III x 1 & mSATA (Half-size)
- Support 8-bit Digital I/O, USB 2.0 x 2 , USB 3.0 x 4
- COM x 4 (RS-232 x 1, RS-232/422/485 x 3)
- Mini-Card Slot x 1 (Full size), TPM, SIM
- Wide DC Support 9~36V, +12V only
- 4/5/8-wire Resistive Touch Screen Controller
- BIO Connector for Daughter Board
- Solder Design for System Assembly and Thermal

Estimated MP: MP Already
Note: i5-6300U & i7-6600U are
standard model.

GENE-APL5



- Intel[®] Atom[™] E3900 Processor SoC
- DDR3L 1867 MHz SODIMM x 1, up to 8 G
- VGA/LVDS/LVDS2 (HDMI Co-layout with LVDS2)
- 2 CH Audio, SATA III x 1
- Support 8-bit Digital I/O , USB 2.0 x 4 , USB 3.0 x 2 , COM x 4
- Mini Card x 1 (Half size), mSATA x 1 (Full size)
- DC 12V only or +9~19V, AT/ATX Mode
- Supports TPM (Optional)
- 4/5/8-wire Resistive Touch Screen Controller (Optional)



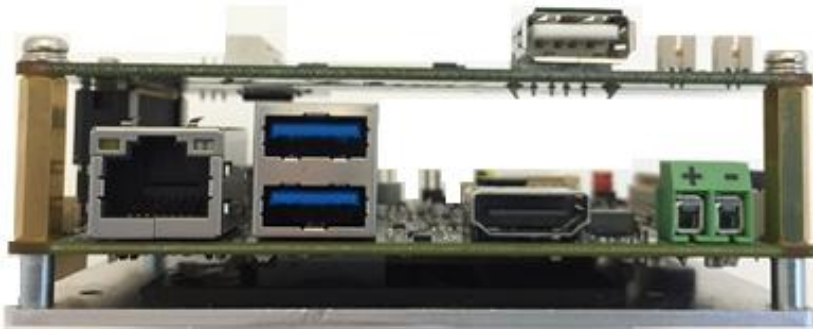
Estimated MP: Feb 2017
DVT Sample: Dec 2016 (B0/B1)

PICO-APL1



- Intel[®] Apollo Lake SoC Processor Series Processor SoC
- DDR3L 1600/1066 SODIMM x 1, Up to 8 GB
- Multiple Display in 18/24-bit 2CH LVDS, HDMI
- SATA 3.0 x 1, mSATA(Full Size) x 1 or MiniCard x 1 (optional)
- Gigabit Ethernet x 1, RJ-45 x 1
- USB3.0 x 2, USB2.0 x 2
- RS-232 x 1, RS-232/422/485 x 1
- Mini-Card / mSATA x 1 (Full Size), Mini-Card x 1 (Half Size),
- Digital I/O 4-bit
- BIO Connector for Daughter Board (Optional)

Estimated MP: Feb 2017
DVT Sample: Dec 2016 (B0/B1)



PICO-BSW1

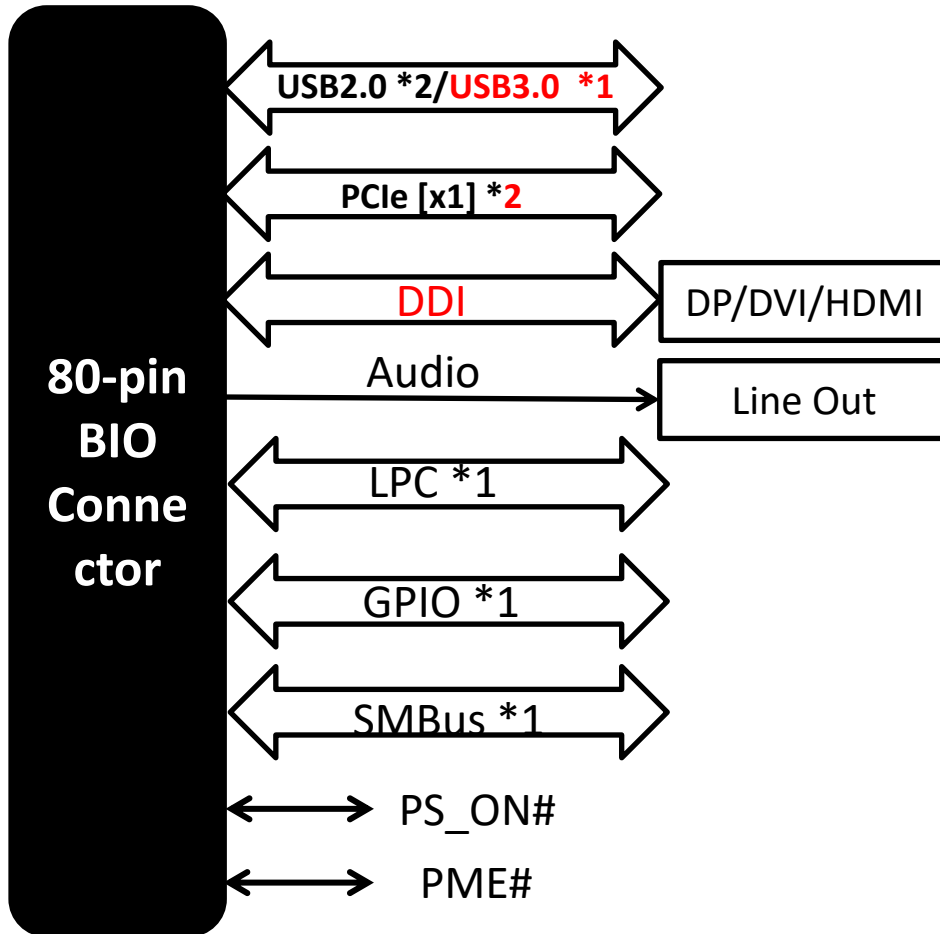


- Onboard Intel[®] Pentium[®]/Celeron[®] N3000 Series Processor SoC
- DDR3L 1600/1066 SODIMM x 1, Up to 8 GB
- Multiple Display in 18/24-bit 2CH LVDS, HDMI
- SATA 3.0 x 1, mSATA(Full Size) x 1 or MiniCard x 1 (optional)
- Gigabit Ethernet x 1, RJ-45 x 1
- USB3.0 x 1, USB2.0 x 1
- RS-232 x 1, RS-232/422/485 x 1
- Mini-Card x 1 (Half-Size)
- Digital I/O 4-bit
- BIO Connector for Daughter Board (Optional)

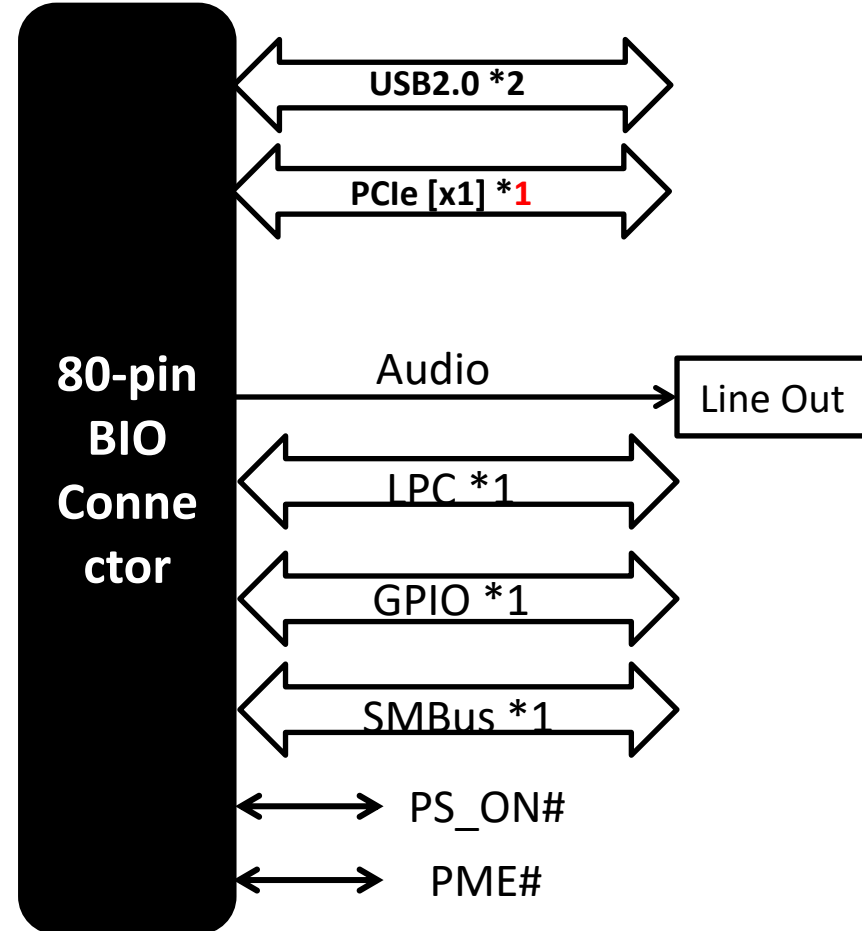
Estimated MP: MP Already
Note: N3160 & X5-E800 are
standard model.

BIO Block Diagram

BIO Full features IOs



BIO for PICO-BSW1 and PICO-BT01



Remark: The final I/O design must depend on MB spec.

Ref. Design 1 : BIO-ST01-L1U2

- Gigabit LANx1, USB x2, Audio Amp.

BIO-ST01-L1U2



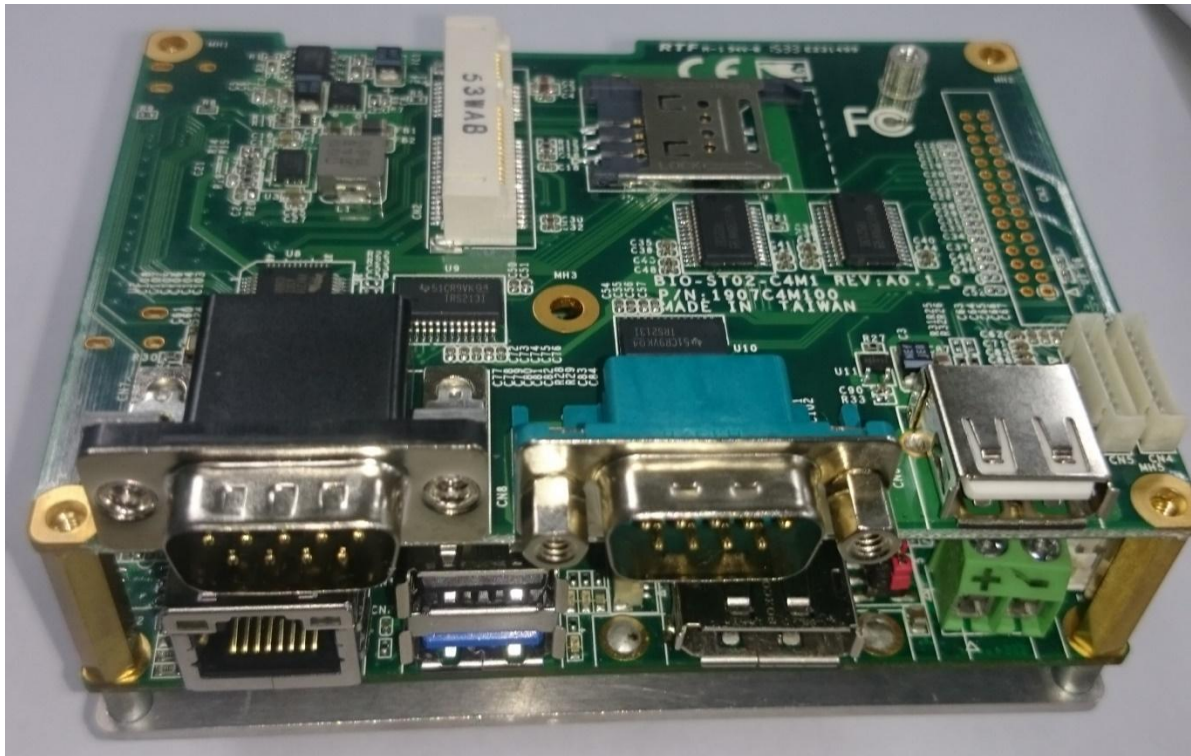
Ref. Design 2 : BIO-ST01-M1U1

- MiniCard x1 with SIM, USB x1, Audio Amp.



Ref. Design 3 : BIO-ST02-C4M1

- RS-232 x4, MiniCard x1 with SIM, USB x1

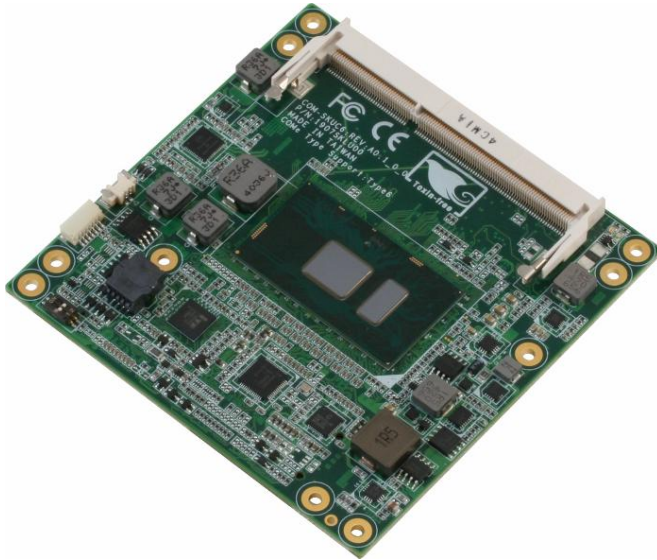


COM-SKHB6



- Intel[®] Core™ i3/i5/i7 Processor with PCH QM170
- DDR4 SODIMM x 2, up to 32 GB, ECC Support
- Gigabit Ethernet x 1
- 18/24-bit Dual Channel LVDS LCD/eDP, DDI x 2 (Default DP Signal),
- VGA, High Definition Audio Interface
- SATA x 4
- USB2.0 x 8, USB3.0 x 4, GPIO 8-bit, PCI-Express [x1] x 8, PCIe[x16] x 1
- COM Express Type 6 Basic Size 125mm x 95mm

COM-SKUC6



- Intel[®] Core™ i3/i5/i7 U-series SoC
- DDR3L SODIMM x 1, up to 8 GB, non-ECC only
- Gigabit Ethernet x 1
- 18/24-bit Dual-Channel LVDS, LCD/eDP, DDI x 2 (1 Sharded to VGA),
- High Definition Audio Interface
- SATA x 3
- USB2.0 x 8, USB3.0 x 4, GPIO 8-bit, PCI-Express [x1] x 8
- COM Express Type 6 Compact Size 95mm x 95mm

HSIO Configurable Options

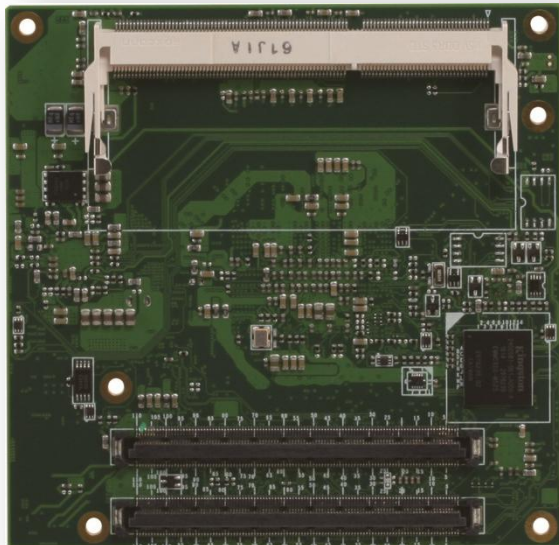
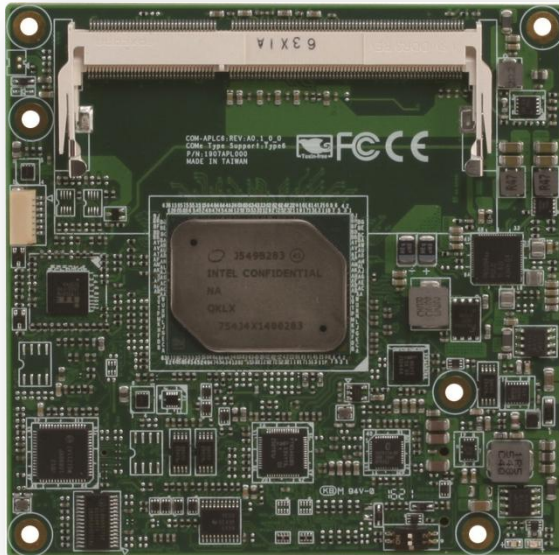
PCIe No.	Config 1 (Default)	Config 2	Config 3	Config 4
PCIe#0	PCIe[x1]	PCIe[x1]	PCIe[x4]	PCIe[x4]
PCIe#1	PCIe[x1]	PCIe[x1]		
PCIe#2	PCIe[x1]	PCIe[x1]		
PCIe#3	X	PCIe[x1]		
PCIe#4	X	X	PCIe[x1]	PCIe[x1]
PCIe#5	X	X	PCIe[x1]	PCIe[x1]
PCIe#6	X	X	X	PCIe[x1]
PCIe#7	X	X	X	X
GbE	GbE	GbE	GbE	GbE
SATA#0	SATA#0	SATA#0	SATA#0	SATA#0
SATA#1	SATA#1	X	SATA#1	X
Remark	6 Device 6 Lanes	6 Device 6 Lanes	6 Device 9 Lanes	6 Device 9 Lanes

*Only a maximum of 6 PCIe port or (Devices) can be enabled at any time.

Side-by-Side Comparison

	COM-SKHB6	COM-SKUC6
COM Express Type	Type 6	Type 6
CPU	Skylake-H. from i3-Xeon.	Skylake-U from Celeron to i7
Memory	2x DDR4, ECC support (option), 32 GB max	DDR3L x1, 8GB max
Display	VGA, LVDS/eDP, DDIx2*, PEG	VGA, LVDS/eDP, DDIx1*
Storage	SATA x4	SATA x3
USB3.0/USB2.0	4/8	4/8
Expansion	PCIe[x16], PCIe[x1] x8	PCIe[x1] up to 4 devices
Power	12V	12V
TPM	option	option

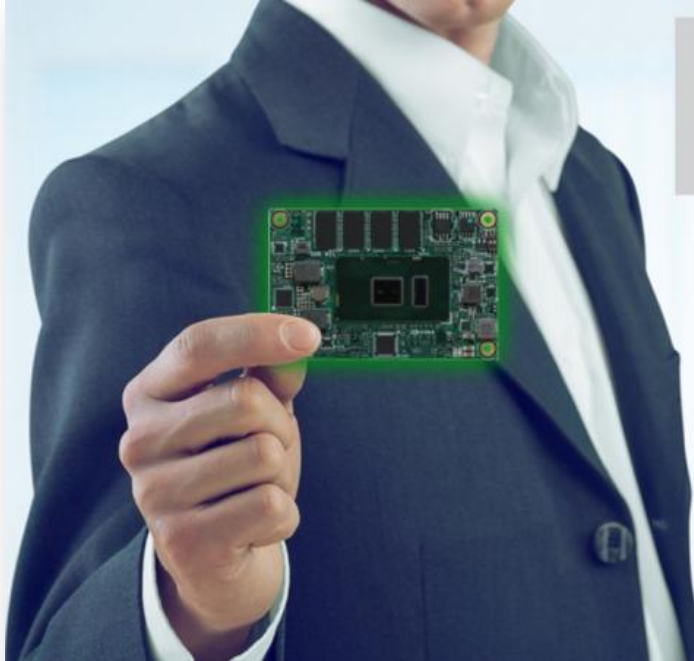
COM-APL



- Intel[®] Apollo Lake SoC Processors
- 2x SODIMM DDR3L 1866 up to 16GB, non-ECC
- Intel I210 Gigabit Ethernet
- VGA, 18/24-bit 2ch LVDS/eDP, DDI up to 2
- High Definition Audio Interface
- SATA Gen3 x 4
- USB2.0 x 8, (include USB 2.0/3.0 X 2)
- PCI-Express: 3 devices max
- 12V DC input

Estimated MP: March 2017
DVT Sample: Oct 2016 (A0)

NANOCOM-SKU



- Intel[®] Core™ iX-6xxxU series SOC Onboard
- 4GB DDR4 memory , Up to 8GB
- Gigabit Ethernet x 1
- 18/24-bit Single-Channel LVDS LCDs/eDP, DDIx1
- High Definition Audio Interface
- SATA x 2
- USB3.0 x2, USB2.0 x8
- PCI-Express [x1] x 3
- GPIO x8, SMBus, I2C, LPC



Estimated MP: Q4 2016



IPC

IPC Products Roadmap Summary

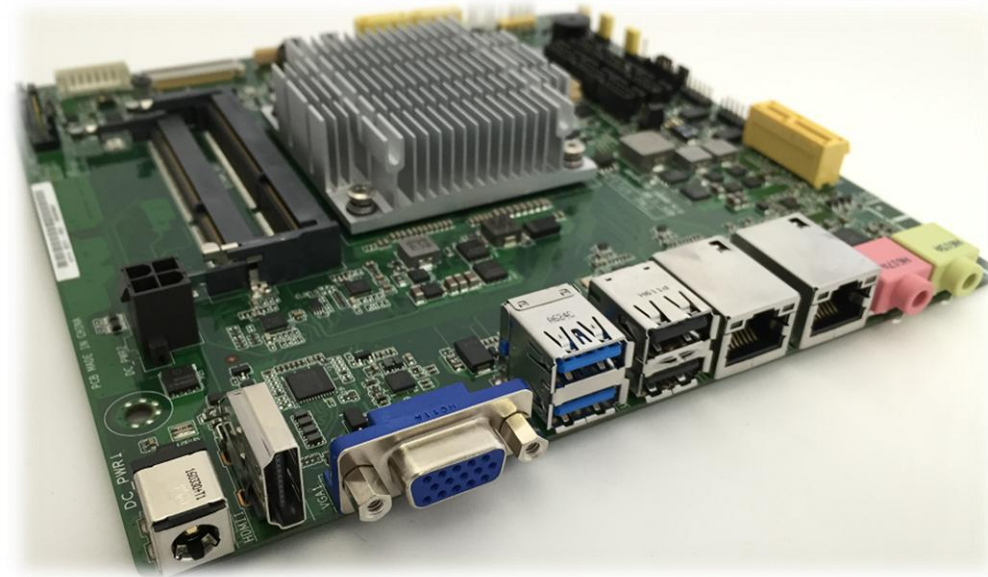
- **Board LEVEL**
 - EMB-APL1 in EVT
 - EMB-Q170A/Q170C launched.
 - IMBM-H81B launched.
 - IMBM-B150A change to IMBM-H110A.
 - NITX-SKL1

Product Highlights

IPC mini-ITX product comparison

	EMB-H110B	EMB-Q170A	EMB-Q170B	EMB-Q170C
Chipset	H110	Q170		
Expansion	1 x PCIe[x1], 1 x Full size Mini Card 1 x Half size Mini Card 2 x SATAIII	1 x PCIe [x16] 1 x M.2 (M-key) 2 x SATAIII	1 x PCIe[x4] 1 x M.2 M-Key 1 x M.2 E-Key 4 x SATAIII	1 x PCIe[x8] 1 x M.2 E-Key 6 x SATAIII
Graphics	LVDS, eDP 2 x HDMI/DP Combo	DP, VGA , 2 x DP	LVDS(eDP) 2 x DP	VGA 2 x HDMI
Serial port	1 x RS-232, 1 x RS-232 supports 5V/12V/RI		1 x RS-232	N/A
USB	4 x USB 3.0, 6 x USB 2.0			6 x USB 3.0
Power Requirement	12V DC	ATX	12V DC	ATX

EMB-APL1



- Intel[®] Apollo Lake SoC Processors
- 2 x SO-DIMM, max. 16GB , DDR3L 1333/1600/1867
- 1 x VGA. 1 x HDMI, 1 x eDP(colay with LVDS)
- SATA 6.0 Gb/s x 2
- USB 3.0 x 2, USB 2.0 x 5
- 1 x PCIe[x1], 1 x M.2 E key (2230), 1 x M.2 M Key (2242)
- 12-24V DC
- Low Profile



EMB-APL1 (eDP & LVDS Design)

Embedded DisplayPort (default)

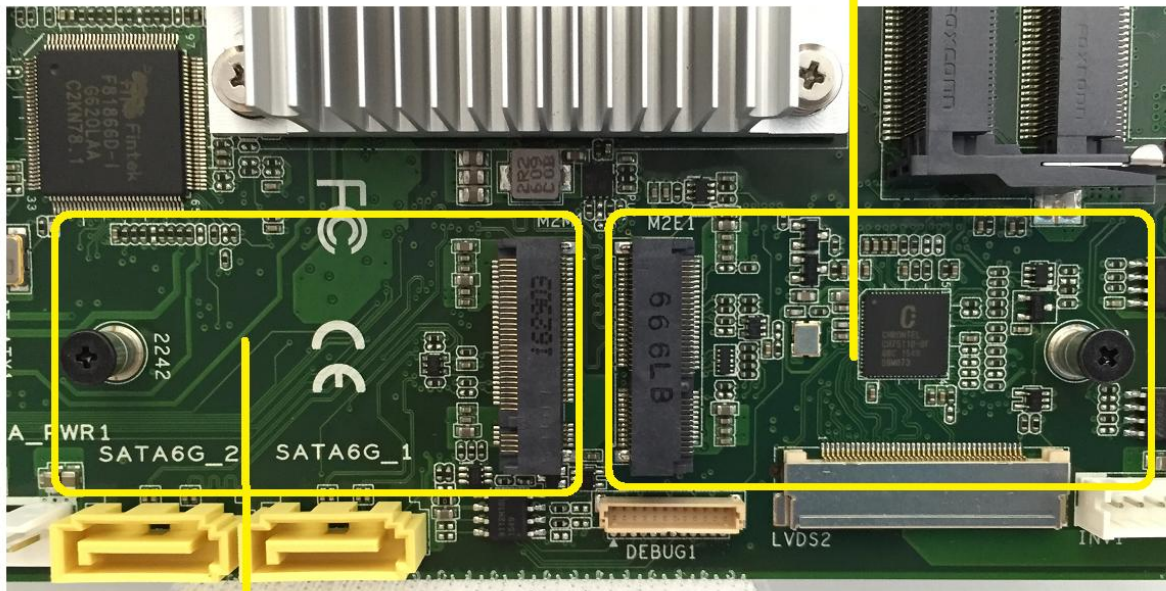


LVDS (Optional)



EMB-APL1 (M.2 Design)

2230 E-Key



2242 M-Key



Off-the-Shelf product (Bare system)

Part Number	Chassis	CPU card
ACS-1U01-BSW1	ACS-1U01	EMB-BSW1
ACS-1U01-H110B	ACS-1U01	EMB-H110
ACS-1U01-APL1	ACS-1U01	EMB-APL1



NANO-002



- Intel[®] 6th gen. 14nm Skylake ULT, BGA CPU, 15W TDP.
i7-6600U 2C/4T GT2 2.6/3.4 GHz 4M, (vPro)/
i5-6300U 2C/4T GT2 2.4/3.0 GHz 3M, (vPro)/
i3-6100U 2C/4T GT2 2.3 GHz 3M/
Celeron 3955U 2C/2T GT1 (f) 2.0 GHz 2M

- DDR4 SODIMM x 2, Up to 16 GB
- Support two HDMI (HDMI 1.4 up to 4096x2160@24Hz)
- 1 x M.2 2280 M-Key slot (PCIex4+mSATA), default mSATA

- 1 x M.2 2230 E-Key slot (PCIe+USB), default PCIe
- 1 x DC Power (DC: 12V~19V, wide rage:12V-5%~19V+10%)

- Available in both fan and fanless versions

Fan version operating temperature 0°C ~ 50°C

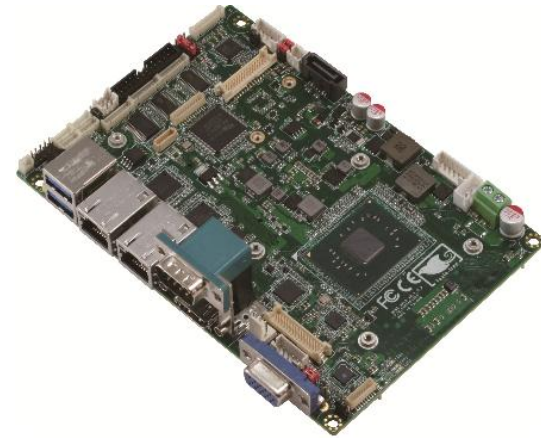
Fanless version operating temperature 0°C ~ 40°C

A quick recap about AAЕON Apollo Lake Portfolio

Line Up for Upcoming



EMB-APL1



GENE-APL5



COM-APLC6



PICO-APL1

Still to come in pipe line

AQ7-APL (Q7)

NanoCOM-APL (COM express mini type 10)

GENE-APL6 (3.5" for transportation)

GENE-APL7 (3.5" for smart banking)

PFM-APL (PC/104)

PICO-APL2 (PICO-ITX)

EMB-APLX (miniITX with diversified range)

NITX-APL (NanoITX)

NANO-003 (Fanless mini PC)

