

# Computer on Modules

Most Robust, Best Support

COM-HPC  
COM Express  
SMARC  
Qseven  
ETX

## Table of Content

Why Adlink.....	3
Global Carrier Design Service.....	4
Core Values.....	5
Always Keeping Your Innovations Secured.....	5
ARM SystemReady.....	6
Extreme Rugged.....	7
Open-source Prototyping.....	8
Form Factor Overview.....	10
COM-HPC.....	12
COM Express.....	16
Type 6 Basic Size.....	16
Type 6 Compact Size.....	20
Type 7 Basic Size.....	26
Type 10 Mini Size.....	30
SMARC.....	34
ETX.....	40
Qseven.....	42

# Why Adlink

## Innovation Support at Your Fingertips

*Always pioneering  
to **empower you with the latest,**  
**cutting-edge technologies***

As a major contributor to open-source standardization, such as PICMG and SGET, ADLINK is always one step ahead to provide you with the latest technologies, including x86, ARM, sensors, middleware, virtualization, artificial intelligence & IoT integration, wireless, 5G, and more.

Committed to accomplishing your innovations, turning concepts into products, ADLINK helps to reduce your time to market and total costs of ownership significantly by offering:

- Utilization of off-the-shelf hardware and software components and enabling connection to all relevant vertical ecosystems
- Hardware modularization and OS abstraction allowing application code reusability
- The best, localized R&D resource support in your language across the globe
- Carrier board design and manufacturing services with redundant production sites
- Regional Advanced SI (signal integrating) labs for convenient, instant on-site validation and certification



# Global Carrier Design Service

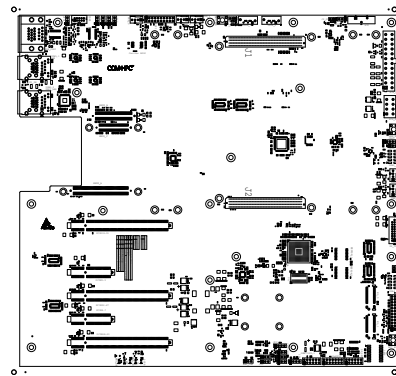
## Don't want to spend time and resources on developing your own carrier boards?

No problem! With ADLINK's global carrier board design service, we can take care of this job for you. Outsourcing a carrier board design to us is fast and cost-effective compared to a full custom solution. We will help you get your product to market in a minimum amount of time and for a fraction of the cost of a full design. Our local R&D teams in Germany and the US are ready to serve you in your own time zone and in your own language.



## How we can support you when designing your own carrier board?

Of course, if you decide to design your own carrier boards, we will support you where possible, this starting with the initial design phase and extending to prototype sample testing.



### Carrier Design Phase

#### *Get Our Carrier Reference Schematics!*

We provide schematics, layout and mechanical files to our customers for all COM form factors, giving you a head start and providing a reference platform to test your carrier against later.

#### *Schematic Review Service*

We are ready to help you review your schematics before going to the layout phase.

#### *Pre or Post Layout Simulation*

If you're unsure about any high speed signaling and routing lengths in your design, we can support pre layout simulation that will inform you about optimal placement or post layout simulation that will provide you with a high level of confidence that your design will function as intended.

### Carrier Prototype Verification

#### *BIOS Modification Service*

#### *Signal Integrity Verification*

At our headquarters in Taipei our SI lab is available to help customers with module / carrier signal quality verification. We invite your carrier board engineer to take his board and visit us.

Based on SI reports he can directly talk to the module designer how any possible issues can be resolved.

#### *Power Sequence Verification*

Even the most advanced LAB testing of your module/ carrier combination can never really cover how end users are going to operate the systems in the field. Especially unforeseen power on and power off operation can lead to hanging systems that in the worst case no recoverable. ADLINK provides a power test procedure called "Monkey Testing" that covers testing of any possible power sequence in the field. If still any mismatches between carrier and modules are found, we can simple update the module by firmware at OS time because it's power sequence is MCU controlled.

# Core Values

## Always Keeping Your Innovations Secured

*Securing each piece of information,  
data transmission, and everything in between*



Driven to safeguard client products and data free of cyberattacks and mitigate vulnerabilities, ADLINK has always been at the forefront of the latest security technologies and best-practice infrastructures, for hardware and software alike.

How? ADLINK does so by actively collaborating with a spate of security partners to accomplish its ever-evolving, all-around security mechanisms. These security attributes include, but are not limited to, the following.

arm	FOUNDRIES	Exset Labs
<ul style="list-style-type: none"> <li>■ SystemReady compliance</li> <li>■ Parsec security certification</li> <li>■ PSA certification</li> </ul>	<ul style="list-style-type: none"> <li>■ Linux microPlatform</li> <li>■ Secure for life</li> <li>■ Deployment, maintenance, OTA</li> </ul>	<ul style="list-style-type: none"> <li>■ Security pentesting</li> <li>■ Code hardening</li> <li>■ Compliance reports</li> </ul>

### *Safekeeping with round-the-clock system monitoring and error logging*

With decades of endeavor in administering foolproof security and assurance measures, ADLINK is well aware of the necessity of a developer's application or product to be easily monitored and managed, especially remotely, for timely responses and immediate actions whenever needed.

In this regard, ADLINK is backed by partnerships with the likes of SEMA and Allxon and continues to add to its growing list of partnerships in bringing full-scale remote management and error logging functions, including:

- Varied means of control across different system levels, both in-band and out-of-band
- Real-time monitoring of CPU/GPU performance, memory usage, user access, power consumption, temperature, etc.
- Remote control and updating of the system's varying components, interfaces, and firmware
- Collecting and retrieving system / error logs for event analysis and troubleshooting

## ARM SystemReady

*Certified, ensuring generic OSs  
to 'just work' right off the shelf*

# arm SystemReady

With uncompromising efforts in delivering a seamless development experience, ADLINK has been an active participant in the Arm SystemReady compliance certification program since its launch in 2020.

By proactively contributing to and meeting Arm SystemReady standards, ADLINK ensures that generic off-the-shelf operating systems 'just work' – enabling generic operating systems, and

subsequent layers of software, to work out of the box on Arm-based hardware.

ADLINK eliminates the need for custom-engineered firmware, thus significantly reducing both the cost and time to market for Arm-based hardware, including infrastructure edge and embedded IoT systems.

### Arm SystemReady IR for embedded devices

Find ADLINK products with the Arm SystemReady IR band stamp, which ensures Arm-based embedded devices supported by mainline Linux/BSD suiting both custom and prebuilt operating system images.



- For embedded Linux ecosystem
- Mainline Linux support for SoC
- Suiting custom (Yocto, OpenWRT, buildroot) and prebuilt (Debian, Fedora, SUSE, Ubuntu) system images

### Arm SystemReady SR for servers & workstations

Find ADLINK products with the Arm SystemReady SR band stamp, which ensures Arm-based servers or workstations to offer seamless interoperability with standard operation systems, hypervisors, and software, i.e. Windows, VMware, Linux, and BSD.



- For Windows, VMware, Linux, and BSD ecosystem
- Supporting old OSs to run on new hardware and vice versa
- Suiting generic off-the-shelf OSs

## Extreme Rugged



Our Extreme Rugged boards are designed for harsh environments from the ground up. To support the extremes of shock, vibration, humidity and temperature, care is given to component selection, circuit design, PCB layout and materials, thermal solutions, enclosure design, and manufacturing process. Robust test methods, including Highly Accelerated Life Testing (HALT), ensure optimal product design phases and meet stringent requirements such as -40°C to +85°C operating temperature range, MIL-STD, shock & vibration, and long-term reliability.

# Open-source Prototyping

## I-Pi

*The 1-stop solution to **prototyping**  
your edge, IoT **innovations**  
rapidly and conveniently*

Explicitly for open-source developing, ADLINK has established its I-Pi wiki, a website and 1-stop service for any software developer, novice or professional, to transform their embedded ideas into real-life applications.

From designing to prototyping and evaluating, visit <https://www.ipi.wiki/> now to get started with the development kit of your choice delivered right to your doorsteps.



Readily-accessible [online help](#) and [technical support forums](#) are also provided on I-Pi wiki just 1 click away.

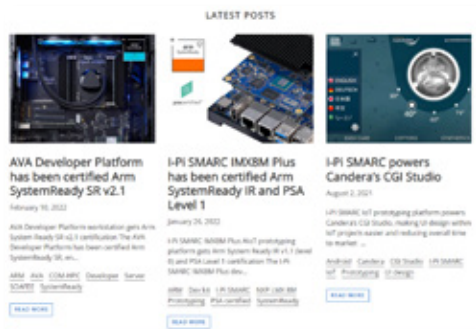
Development kits currently available include I-Pi SMARC RB5, I-Pi SMARC IMX8M Plus, Ampere Altra Developer Platform, and more.



Browse for industrial development delivered right to your doorstep



Readily accessible online help (DOCS+) and forums for on-the-spot tech support



Stay posted with I-Pi blogs for the latest technology trends



Subscribe to the [I-Pi YouTube channel](#) to embrace embedded computing of the future

## Starter Kits

*Simply **lower costs** and  
**accelerate your development processes***

As a worldwide leader in Computer-on-Modules, ADLINK understands the developers' needs for affordable and comprehensive development kits.

ADLINK offers an extensive collection of Starter Kits, including for COM-HPC, COM Express, and SMARC, in aiding engineers and system integrators to reduce their products' time to market and accelerate project schedules.

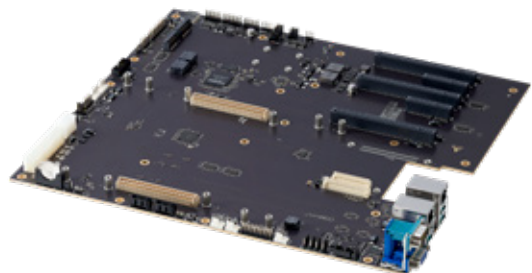


## Reference Carrier Boards

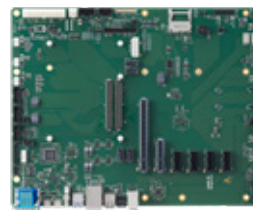
*Instantaneous **evaluating module capabilities**  
**for application prospects***

In addition to starter kits, ADLINK also offers a wide variety of Reference Carrier Boards.

Using a reference carrier board, developers can emulate the functionalities of their desired end products against the selected COMs for software development and hardware verifications instantly.



COM-HPS Server Base



Express Base6 R3.1



I-Pi SMARC Plus carrier board

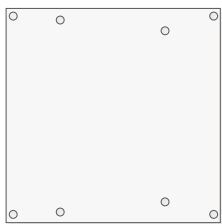
# Form Factor Overview

COM+HPC™

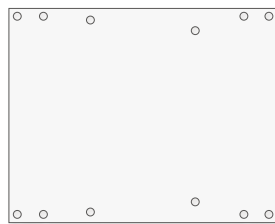
COM   
Express



## Server Type

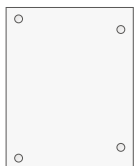


**Size D**  
(160 x 160mm)

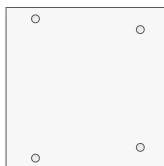


**Size E**  
(200 x 160mm)

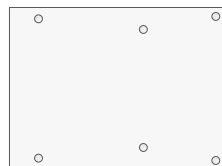
## Client Type



**Size A**  
(95 x 120mm)



**Size B**  
(120 x 120mm)



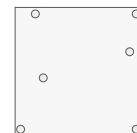
**Size C**  
(160 x 120mm)

COM-HPC is the new PICMG standard for high-performance Computer-on-Modules. It aims to drive the newest breed of embedded edge servers with limitless scalability for today and tomorrow.

COM-HPC supports up to 64 general-purpose PCIe Gen4 or Gen5 lanes, eight 25GbE ports, and a maximum of four USB 4 ports. The COM-HPC specification defines 5 different module sizes, with the larger Size D and E (Server Type) serving next-gen headless edge servers and accommodating up to 8 DIMMs. In contrast, the smaller Size A, B, and C (Client Type) targets visual-oriented client platforms utilizing SO-DIMMs, or soldered onboard memory, and supporting up to 4 video displays.



**Type 6 Basic**  
(125 x 95mm)



**Type 6 Compact**  
(95 x 95mm)



**Type 7 Basic**  
(125 x 95mm)

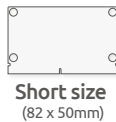


**Type 10 Mini**  
(84 x 55mm)

COM Express, defined by PICMG, is the most widely adopted COM standard and is based on serial interfaces including PCI Express, SATA, USB, LVDS/eDP, and DDI. It allows designers and system integrators to utilize the latest technologies with straight off-the-shelf modules of varied sizes for their edge applications. ADLINK has heavily invested in the development and maintenance of the PICMG® COM Express® specification since its creation.

## Revision 3.1

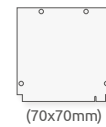
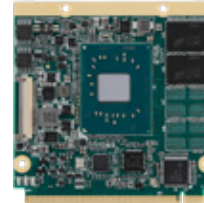
As a chair of the PICMG subcommittee, ADLINK has helped to define the COM Express COM.0 Revision 3.1. This revision upgrades the Type 6 and 7 definitions with several new interface support, such as USB 4, PCIe Gen4 on the Type 6 and 10G CEI-mode Ethernet on the Type 7.



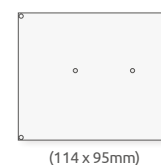
ADLINK has been a pioneer in the development of the SMARC specification — a business-card-sized Computer-on-Module targeting ultra-low power ARM- and x86-based embedded applications. SMARC's 314-pin edge connector not only provides access to commonly found low-level interfaces, such as I2C, I2S, UART, CAN, SPI, and GPIO, but also fully supports more complex I/O including LVDS, HDMI, DP, eDP, GbE, USB 3.x, PCIe, and SATA. There's no question why SMARC is the fastest growing product line in the embedded COM market today.

#### Revision 2.1

With Revision 2.1, SMARC establishes itself as the very first open specification of AI on Module (AIOM). By adding support for up to 4 MIPI CSI camera inputs and 4 GbE Ethernet ports by multiplexing SerDes, it is now readily compatible with NPU-integrated SoCs and can utilize up to 4 GigE Vision cameras for various video-based and AI-vision applications.



Qseven® is a versatile, small Computer-on-Module standard. With its 230-pin edge connector, it mainly focuses on traditional low-power x86 Intel Atom® designs. Since Qseven is not able to support all modern interfaces and has only partial coverage for ARM features, there has been an eminent, accelerated migration of low-power COM projects from Qseven to SMARC.



ETX®, one of the oldest Computer-on-Module specifications, supports legacy interfaces such as ISA bus, Parallel ATA (IDE), and PS/2 keyboard/mouse. ADLINK is highly committed to this product line and is one of the only vendors that offers customers a migration path for ETX even beyond 2025.

# COM-HPC<sup>®</sup>

## COM-HPC

COM-HPC is the new PICMG standard introduced by PICMG to complement COM Express in response to the ever-evolving digital transformation. Providing standards for 2 module types – Server Type and Client Type – COM-HPC offers substantially higher data bandwidths for delivering superior I/O performance while featuring high-performance computing and high-speed transmission with limitless scalability.



### Server Type Pin Definition

Aimed for next-gen headless edge servers, COM-HPC Server Type features up to 64 general-purpose PCIe Gen4 or Gen5 lanes, eight 25GbE ports, and can accommodate up to 8 DIMM slots. Additionally, it provides the IPMB function for convenient out-of-band monitoring and management. COM-HPC Server Type is suitable for both ARM and x86 architectures.

J1	J2
Power	48x PCIe
16x PCIe 1x PCIe_BMC	
4x ETH_KR (max. 25G) 1x ETH_LED_I2C	
8x USB 2.0	
2x USB 3.x (upgrade)	
2x USB 4/3.x (upgrade)	
USB 4 sideband	
2x SATA	
1x NBASE-T (max. 10G)	
eSPI	
12x GPIO / BOOT_SPI / GPP_SPI / 2x I2X / SMB / 2x URAT	4x ETH_KR (max. 25G)
	RSVD

### Client Type Pin Definition

Targeting visual-oriented applications, such as medical imaging, gaming, and testing measurement, COM-HPC Client Type provides system integrators with up to 4 USB4 and 4 video displays, plus dual Ethernet, all compacted in a modest size utilizing SO-DIMMs or soldered onboard memory.

J1	J2
Power	DDI 3
8x USB 2.0	2x USB 4/3.x upgrade
2x USB 4/3.x upgrade	32x PCIe
Audio I2S/Soundwire	
DDI 1	
DDI 2	
eDP/DSI	
IPMB & PCIe	
eSPI	NBASE-T (max.10G) 1
2x SATA	2x MIPI-CSI
16x PCIe	2x ETH_KR (max.25G)
	PCIe Target
NBASE-T (max.10G) 0	RSVD

# COM +HPC<sup>®</sup>

## Applications

Rugged Communication Devices



Robotic Surgery



Unmanned Aerial Vehicles



Task Consolidation



# Server Type

## COM-HPC Ampere Altra



New

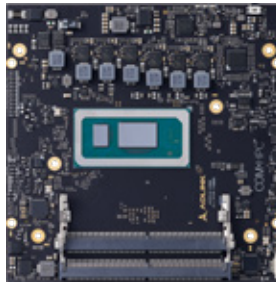
## COM-HPC-sIDH



Preliminary

SoC	Ampere Altra Q80-28 (80C) Q64-26 (64C) Q32-17 (32C)	Intel® Xeon® D-2700 D-2796TE (20C) D-2775TE (16C) D-2752TER (12C) D-2733NT (8C) D-2712T (4C) (formerly "Ice Lake-D")
Memory	768 GB DDR4 at 3200/2666 MT/s	512 GB DDR4 at 3200/2666 MT/s
BIOS Type	TianoCore EDK II	AMI Aptio V
Ethernet KR	Up to 4x 10GBASE-KR (TBC)	Up to 8x 10GBASE-KR (25G, 40G, 100G, TBC)
NBASE-T Ethernet	Intel® i210 GbE	Intel® i225 Up to 2.5GbE
Remote Management	Dedicated interfaces PCIe_BMC IPMB (via MMC) (opt.)	Dedicated interfaces PCIe_BMC IPMB (via MMC) (opt.)
PCI Express	64 PCI Express Lanes : 3x PCI Express x16 Gen4 (x16, x8, x4) 2x PCI Express x8 Gen4 (x8, x4, x2)	48 PCI Express Lanes: 2x PCI Express x16 Gen4 (x16, x8, x4) 2x PCI Express x8 Gen3 (x8, x4, x2)
USB	4x USB 3.0/2.0	4x USB 3.0/2.0
Serial ATA	-	2x at 6Gb/s
TPM	Yes (TPM 2.0)	Yes (TPM 2.0)
Management Bus	2x I2C, SMBus	2x I2C, SMBus
Embedded Features	EAPI/SEMA, Debug/JTAG	EAPI/SEMA, Debug/JTAG
Power Supply	12 V / 5Vsb ±5% (ATX) 12V ±5% (AT)	12 V / 5Vsb ±5% (ATX) 12V ±5% (AT)
Operating Temperature	Standard: 0°C to +60°C	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (selected SKUs)
OS Support	Windows PE, VMware ESXi-Arm Fling v1.8, Fedora Server 35, Ubuntu Server 20.04.3, FreeBSD 13.0-RELEASE, CentOS stream 9, Debian 11.2	Windows® 10 IoT Enterprise LTSC 64-bit, Windows Server 20H1 64-bit Yocto Linux 64-bit, Ubuntu 64-bit (TBC) V xWorks 64-bit (TBC)
Form Factor & Compatibility	PICMG COM-HPC: Rev 1.0 Server Type size E: 200 x 160 mm	PICMG COM-HPC: Rev 1.0 Server Type size D: 160 x 160 mm

## COM-HPC-cADP



### Preliminary

<b>CPU</b>	12th Gen Intel® Core™ Core™ i7-12800HE (14C) Core™ i5-12600HE (12C) Core™ i3-12300HE (8C) (formerly "Alder Lake-P")
<b>Chipset</b>	-
<b>Memory</b>	64 GB DDR5 at 4800 MT/s
<b>BIOS Type</b>	AMI UEFI
<b>Graphics Outputs</b>	eDP 1.4 (or MIPI-DSI) 2x DDI (DP/HDMI) 2x DP (one through USB4) 4 independent displays 4K at DP/eDP
<b>Audio</b>	1x Had or 1x I2S 2x Soundwire (TBC)
<b>Camera</b>	2x MIPI-CSI 4lanes (TBC)
<b>LAN</b>	Intel® i225V/IT 2.5GbE (TSN @ IT)
<b>USB</b>	2x USB4/3.x/2.0 2x USB 3.x/2.0 4x USB 2.0
<b>Serial ATA</b>	-
<b>PCI Express</b>	24 PCI Express Lanes : 1x PCI Express x8 Gen4 2x PCI Express x4 Gen4 2x PCI Express x4 Gen3 (x4, x2, x1)
<b>TPM</b>	Yes (TPM 2.0)
<b>Management Bus</b>	2x I2C, SMBus
<b>Embedded Features</b>	EAP/SEMA Debug/JTAG
<b>Power Supply</b>	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS Support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit (TBC)
<b>Form Factor &amp; Compatibility</b>	PICMG COM-HPC: Rev 1.0 Client Type size B: 120 x 120mm

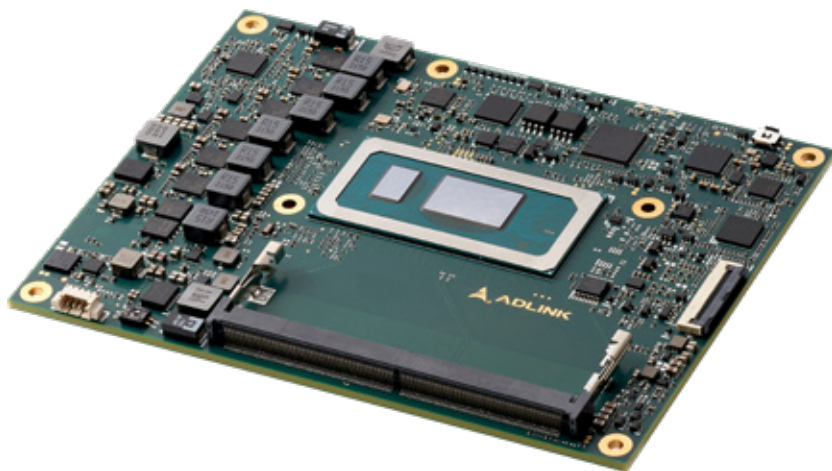
# COM Express

## COM Express

### Type 6 Basic Size

#### *Transforming your everyday edge computing*

COM Express Type 6 Basic size is the most popular and widely used form factor on the market. With two COM Express connectors and pinouts closely similar to the common x86 based silicon, the Type 6 Basic size yields up to 75 watts, making it well-fitted for various embedded computing applications, including medical, gaming, test & measurement, industrial automation, and more. Topping off, its latest revision – R3.1 – has also added support for several advanced interfaces, such as USB 4 and PCIe Gen4.



### Pin Definition Type 6 Basic Size Modules

A-B	C-D
8x USB 2.0	4x USB 3.0
LVDS / eDP	3x DDI
4x SATA	
8x USB 2.0	
Gigabit Ethernet	
LPC / eSPI	
GPIO / SDIO / SERIAL / CAN / SPI / I2C / HDA	
PCIe x24	
Power	

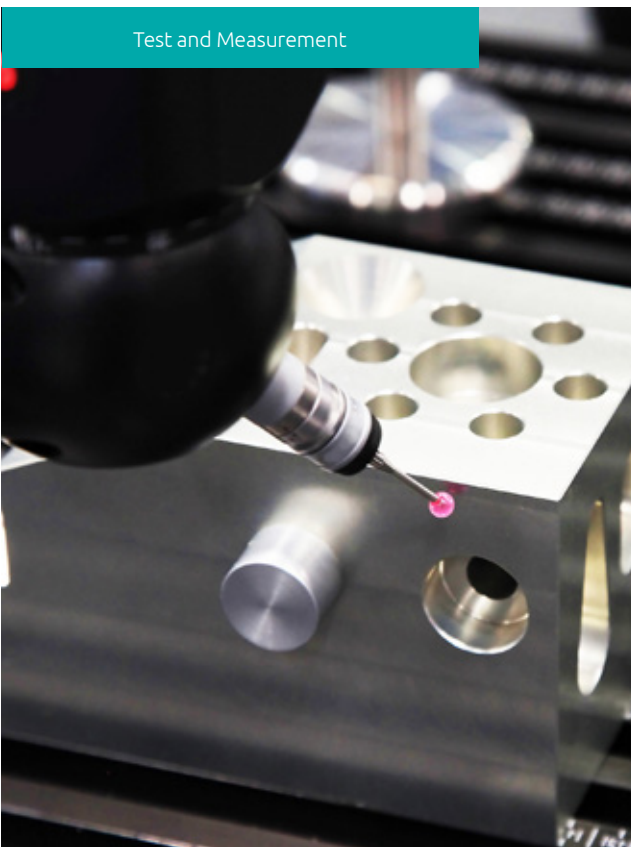
# COM Express

## Applications

Medical



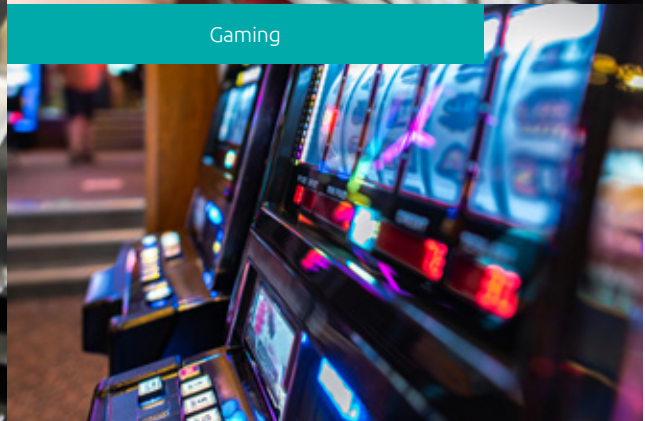
Test and Measurement



Data Communication

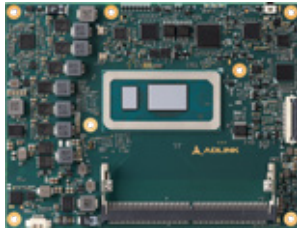


Gaming



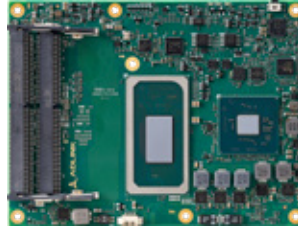
## Type 6 Basic Size

## Express-ADP



Preliminary

## Express-TL



New

## Express-CFR



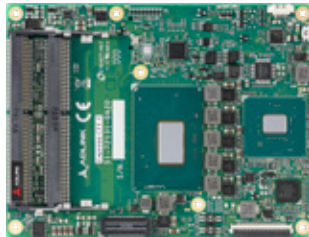
<b>CPU</b>	12th Gen Intel® Core™ i7-12800HE(14C) i5-12600HE(12C) i3-12300HE(8C) (formerly "Alder Lake-P")	11th Gen Intel® Core™ Intel® Xeon® W/Celeron® 6000 W-11865MRE(8C)/W-11865MLE(8C)/ W-11555MRE(6C)/W-11555MLE(6C)/ W-11155MRE(4C)/W-11155MLE(4C)/ i7-11850HE(8C)/i5-11500HE(6C)/ i3-11100HE(4C)/ 6600HE(2C) (formerly "Tiger Lake-H")	Intel® Xeon® W-11865MRE(8C/16T)/ W-11865MLE(8C/16T)/ W-11555MRE(6C/12T)/ W-11555MLE(6C/12T)/ W-11155MRE(4C/8T)/W-11155MLE(4C/8T)/Intel® Core™ i7-11850HE(8C/16T)/ i5-11500HE(6C/12T)/i3-11100HE(4C/8T)/ Celeron® 6600HE(2C/2T)
<b>Chipset</b>	-	RM590E QM580E/HM570E	CM246 (ECC) QM370/HM370 (non-ECC)
<b>Memory</b>	64 GB DDR5 at 4800MT/s	128 GB DDR4 at 3200/2666 MT/s	96 GB DDR4 at 2400/2133 MT/s
<b>BIOS Type</b>	AMI UEFI	AMI Aptio V	AMI Aptio V
<b>Graphics Outputs</b>	LVDS (or eDP 1.4) 3x DDI (DP/HDMI or VGA) 2xUSB4/THB4 4 independent displays 4K at DP/eDP	LVDS (or eDP 1.4) 3x DDI (DP/HDMI or VGA) 4 independent displays 8K at DP/eDP	LVDS (or eDP 1.4) 3x DDI (DP/HDMI or VGA)
<b>Graphics Features</b>	DX 12, OpenGL 4.6, Vulkan 1.2, Mesa 3D, OneVPL, HDCP 2.3	DX 12, OpenGL 4.5, ES 2.0, OpenCL 2.1	DX 12, OpenGL 4.5 and ES 2.0, OpenCL 2.1 H.265(HEVC) 10-bit codec / VP9 10-bit decodes
<b>LAN</b>	Intel® i225V/IT 2.5GbE (TSN @ IT)	Intel® i225V/IT 2.5GbE (TSN @ IT)	Intel® i219LM/V
<b>USB</b>	4x USB 3.2/2.0, 4x USB 2.0	4x USB 3.2/2.0, 4x USB 2.0	4x USB 3.0/2.0, 4x USB 2.0
<b>Serial ATA</b>	2x at 6Gb/s	4x at 6Gb/s	4x at 6Gb/s
<b>PCI Express</b>	PCI Express x16 Gen4 (or 2x8 or 1x8 plus 2x4) 5x PCI Express x1 Gen3	PCI Express x16 Gen4 (or 2x8 or 1x8 plus 2x4) 8x PCI Express x1 Gen3	PCI Express x16 Gen3 (or 2x8 or 1x8 plus 2x4) 8x PCI Express x1 Gen3
<b>Audio</b>	Integrated on SoC	ALC886 (carrier board)	ALC886 (carrier board)
<b>TPM</b>	Yes (TPM 2.0)	Yes (TPM 2.0)	Yes (TPM 2.0)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS Support</b>	Windows® 10 IoT Enterprise, Yocto Linux 64-bit, Ubuntu 64-bit (TBC), VxWork 64-bit (TBC)	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit (TBC)	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0, Type 6 Basic size: 95 x 125 mm	PICMG COM.0 R3.0, Type 6 Basic size: 95 x 125 mm	PICMG COM.0 R3.0, Type 6 Basic size: 95 x 125 mm

## Notes:

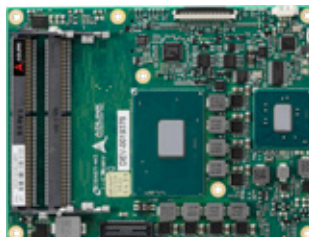
- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

## Type 6 Basic Size

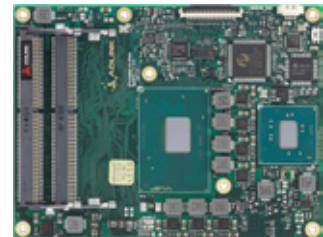
## Express-CF/CFE



## Express-KL/KLE



## Express-SL/SLE



<b>CPU</b>	8th Gen Intel® Xeon® E-2176M (6C) Intel® Core™ i7-8850H (6C) i5-8400H, i3-8100H (4C) (formerly "Coffee Lake-H")	7th Gen Intel® Xeon® E3-1505M/ E3-1505L Intel® Core™ i7-7820EQ, i5-7440EQ/7442EQ, i3-7100E/7102E (formerly "Kaby Lake-H")	6th Gen Intel® Xeon® E3-1515M (GT4e), E3-1505M/1505L, Intel® Core™ i7-6820EQ/6822EQ, i5-6440EQ/6442EQ, i3-6100E/6102E, Intel® Celeron® G3900E/3902E (formerly "SkyLake")
<b>Chipset</b>	CM246 (ECC) QM370/HM370 (non-ECC)	CM238 (ECC) QM175/HM175 (non-ECC)	CM236 (ECC) QM170/HM170 (non-ECC)
<b>Memory</b>	96 GB DDR4 at 2400/2133 MT/s (ECC for Express-CFE)	32 GB DDR4 at 2133/1867 MT/s (ECC for Express-KLE)	32 GB DDR4 at 2133/1867 MT/s (ECC for Express-SLE)
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V	AMI Aptio V
<b>Graphics Outputs</b>	LVDS (or eDP 1.4) 3x DDI (DP/HDMI or VGA)	LVDS (or eDP 1.4) 3x DDI (DP/HDMI or VGA)	LVDS (or eDP 1.3) 3x DDI (DP/HDMI or VGA)
<b>Graphics Features</b>	DX 12, OpenGL 4.5 and ES 2.0, OpenCL 2.1 H.265(HEVC) 10-bit codec / VP9 10-bit decode	DX 12, OpenGL 4.4 and ES 2.0, OpenCL 2.1 H.265(HEVC) 10-bit codec / VP9 10-bit decode	DX 12, OpenGL 4.4 and ES 2.0, OpenCL 2.1 H.265(HEVC) & VP8 8-bit codec
<b>LAN</b>	Intel® i219LM/V	Intel® i219LM/V	Intel® i219LM/V
<b>USB</b>	4x USB 3.0/2.0, 4x USB 2.0	4x USB 3.0/2.0, 4x USB 2.0	4x USB 3.0/2.0, 4x USB 2.0
<b>Serial ATA</b>	4x at 6Gb/s	4x at 6Gb/s	4x at 6Gb/s
<b>PCI Express</b>	PCI Express x16 Gen3 (or 2x8 or 1x8 plus 2x4) 8x PCI Express x1 Gen3	PCI Express x16 Gen3 (or 2x8 or 1x8 plus 2x4) 8x PCI Express x1 Gen3	PCI Express x16 Gen3 (or 2x8 or 1x8 plus 2x4) 8x PCI Express x1 Gen3
<b>Audio</b>	ALC886 (carrier board)	ALC886 (carrier board)	ALC886 (carrier board)
<b>TPM</b>	Yes (TPM 2.0)	Yes (TPM 2.0)	Yes (TPM 1.2)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS Support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit	Windows® 10/8.1 64-bit, Windows® 7 32/64-bit, WES 7 32/64-bit, Yocto Linux 64-bit, VxWork 64-bit
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0, Type 6 Basic size: 95 x 125 mm	PICMG COM.0 R2.1, Type 6 Basic size: 95 x 125 mm	PICMG COM.0 R2.1, Type 6 Basic size: 95 x 125 mm

## Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

# COM Express

## COM Express

### Type 6 Compact Size

#### *Significantly lowered power envelopes*

COM Express Type 6 Compact size, shorter in length than the Basic size, is ideally suited for single-chip x86 SoCs, and features proficient performance at significantly lowered power envelopes of 5 to 30 watts. COM Express Type 6 Compact size targets mid- to entry-level applications such as transportation, robotics, edge servers, industrial control, and HMI in a spate of industries.



### Pin Definition Type 6 Compact Size Modules

A-B	C-D
8x USB 2.0	4x USB 3.0   

# COM Express

## Applications

Industrial Automation



Robotics



Transportation



### Starter Kit order process

- Select a COM Express module, memory and thermal solution
- Contact an ADLINK sales representative in your region
- Get the specific part number for your starter kit

Type 6 Compact Size

## cExpress-TL



Preliminary

## cExpress-AR



Preliminary

<b>SoC</b>	11th Gen Intel® Core™ i7-1185G7E/i5-1145G7E/i3-1115G4E Intel® Celeron® 6305E (formerly "Tiger Lake-UP3") Additional IBECC SKUs for Core™ i7/i5/i3	AMD Ryzen™ Embedded V2748/V2546/ V2718/V2516 APU
<b>Memory</b>	64 GB DDR4 IBECC at 3200/2666 MT/s	64 GB DDR4 at 3200/2666 MT/s
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>Bootloader</b>	-	-
<b>Graphics Outputs</b>	LVDS (or eDP1.4) 3x DDI (DP/HDMI or VGA) 4 independent displays 8K at DP/eDP	LVDS (or eDP1.3) 3x DDI (DP/HDMI or VGA)
<b>Graphics Features</b>	DX 12, OpenGL 4.5 and ES 2.0, OpenCL 2.1 H.265(HEVC) 10-bit codec, VP9 10-bit decode	DX 12, OpenGL 4.6 and ES 3.0, OpenCL 2.1 H.265(HEVC) 10-bit codec, VP9 10-bit decode
<b>LAN</b>	Intel® i225V/IT 2.5GbE (TSN @ IT)	Intel® i225V/IT 2.5GbE
<b>USB</b>	4x USB 3.2/2.0, 4x USB 2.0	4x USB 3.2/2.0, 4x USB 2.0
<b>Serial ATA</b>	2x at 6Gb/s	2x at 6Gb/s
<b>PCI Express</b>	1x PCIe x4 Gen4 at PEG 4x PCIe x1 Gen3 (PCIe switch by project)	1x PCIe x8 Gen2 at PEG 6x PCIe x1 Gen3
<b>eMMC (opt.)</b>	-	-
<b>SD</b>	-	-
<b>Audio</b>	ALC886 (carrier board)	ALC886 (carrier board)
<b>TPM (opt.)</b>	Yes (TPM 2.0)	Yes (TPM 2.0)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	8.5-20V / 5Vsb ±5% (ATX), 8.5-20V (AT)	8.5-20V / 5Vsb ±5% (ATX), 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit (TBC)	Windows® 10 64-bit, Yocto Linux 64-bit,
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0 Type 6 Compact size: 95 x 95 mm	PICMG COM.0 R3.0 Type 6 Compact size: 95 x 95 mm

### Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

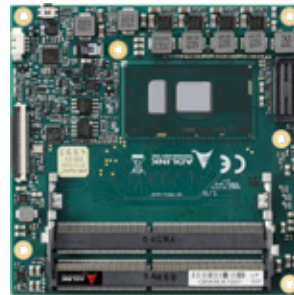
# COM Express

Type 6 Compact Size

## cExpress-WL



## cExpress-KL



<b>SoC</b>	8th Gen Intel® Core™ i7-8665UE/i5-8365UE/i3-8145UE Intel® Celeron® 4305UE (formerly "Whiskey Lake-U")	7th Gen Intel® Core™ i7-7600U/i5-7300U/i3-7100U Intel® Celeron® 3965U (formerly "Kaby Lake-U")
<b>Memory</b>	64 GB DDR4 at 2133/1867 MT/s	32 GB DDR4 at 2133/1867 MT/s
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>Bootloader</b>	Slim Bootloader	-
<b>Graphics Outputs</b>	LVDS (or eDP1.4) 2x DDI (DP/HDMI or VGA)	LVDS (or eDP1.4) 2x DDI (DP/HDMI or VGA)
<b>Graphics Features</b>	DX 12, OpenGL 4.5 and ES 2.0, OpenCL 2.1 H.265(HEVC) 10-bit codec, VP9 10-bit decode	DX 12, OpenGL 4.4 and ES 2.0, OpenCL 2.1 H.265(HEVC) 10-bit codec, VP9 10-bit decode
<b>LAN</b>	Intel® i219LM/V	Intel® i219LM/V
<b>USB</b>	4x USB 3.0/2.0, 4x USB 2.0	4x USB 3.0/2.0, 4x USB 2.0
<b>Serial ATA</b>	3x at 6Gb/s	3x at 6Gb/s
<b>PCI Express</b>	1x PCIe x1 Gen3 at PEG 8x PCIe x1 Gen3	5x PCIe x1 Gen3 (3965U supports Gen2) (6 PCIe x1 w/o GbE, opt.)
<b>eMMC (opt.)</b>	16-64 GB (by project)	-
<b>SD</b>	Yes	-
<b>Audio</b>	ALC886 (carrier board)	ALC886 (carrier board)
<b>TPM (opt.)</b>	Yes (TPM 2.0)	Yes (TPM 2.0)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	5-20V / 5Vsb ±5% (ATX), 5-20V (AT)	5-20V / 5Vsb ±5% (ATX), 5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0 Type 6 Compact size: 95 x 95 mm	PICMG COM.0 R2.1, Type 6 Compact size: 95 x 95 mm

### Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

Type 6 Compact Size

## cExpress-SL



## cExpress-EL



Preliminary

<b>SoC</b>	6th Gen Intel® Core™ i7-6600U/i5-6300U/i3-6100U Intel® Celeron® 3955U (formerly "Sky lake")	Intel Atom® x6000E x6425E/x6413E/x6211E/x6200FE and x6425RE/x6414RE/x6412RE (formerly "Elkhart Lake") Additional Pentium® and Celeron® SKUs
<b>Memory</b>	32 GB DDR4 at 2133/1867 MHz	32 GB DDR4 IBEC at 3200/2666 MT/s
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>Bootloader</b>	-	-
<b>Graphics Outputs</b>	LVDS (or eDP 1.3) 2x DDI (DP/HDMI)	LVDS (oreDP1.4) 2x DDI (DP/HDMI or VGA)
<b>Graphics Features</b>	DX 12, OpenGL 4.4 and ES 2.0, OpenCL 2.1 H.265(HEVC) 8-bit codec, VP8 8-bit codec	DX12, OpenGL4.5, ES3.2, OpenCL 2.0 H.265 (HEVC) 8-bit codec, VP9 8-bit decode
<b>LAN</b>	Intel® i219LM/V	MaxLinear® GPY 2.5GbE (TSN @ GPY215)
<b>USB</b>	4x USB 3.0, 4x USB 2.0	2x USB 3.2/2.0, 6x USB 2.0 (USB 3 hub by project)
<b>Serial ATA</b>	3x at 6Gb/s (i7/i5/i3) 2x at 6Gb/s (3955U)	2x at 6Gb/s
<b>PCI Express</b>	5 PCIe x1 Gen3 (3955U supports Gen2) (6 PCIe x1 w/o GbE, opt.)	6x PCIe x1 Gen3
<b>eMMC (opt.)</b>	-	16-64 GB (by project)
<b>SD</b>	-	Yes
<b>Audio</b>	ALC886 (carrier board)	ALC886 (carrier board)
<b>TPM (opt.)</b>	Yes (TPM 1.2)	Yes (TPM 2.0)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/ JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	5-20V / 5Vsb ±5% (ATX), 5-20V (AT)	8.5-20V / 5Vsb ±5% (ATX), 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS support</b>	Windows® 10/8.1 64-bit, Windows® 7 32/64-bit, WES 7 32/64-bit, Yocto Linux 64-bit, VxWorks 64-bit	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit (TBC)
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R2.1, Type 6 Compact size: 95 x 95 mm	PICMG COM.0 R3.0, Type 6 Compact size: 95 x 95 mm

### Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

Type 6 Compact Size

## cExpress-AL



## cExpress-BT



<b>SoC</b>	Intel Atom® E3900 Intel Atom® x7-E3950/x5-E3940/x5-E3930 (formerly "Apollo Lake") Additional Pentium® and Celeron® SKUs	Intel Atom® E3845/3827/ 3826/3825/3815/3805 Intel® Pentium® N2930, Intel® Celeron® J1900 (formerly "Bay Trail")
<b>Memory</b>	16 GB DDR3L at 1867/1600 MT/s	8 GB DDR3L at 1333/1066 MHz
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>Bootloader</b>	Coreboot	Coreboot
<b>Graphics Outputs</b>	LVDS (oreDP1.4) 2x DDI (DP/HDMI or VGA)	2x DDI (DP/HDMI or LVDS), VGA
<b>Graphics Features</b>	DX12, OpenGL4.3, ES3.0, OpenCL 2.0, H.265 (HEVC) 8-bit codec, VP9 8-bit decode	DirectX 11, OpenGL 3.2, ES 2.0, OpenCL 1.1
<b>LAN</b>	Intel® i210/i211 (IEEE1588)	Intel® i210/i211
<b>USB</b>	3x USB 3.0/2.0, 5x USB 2.0 (USB OTG at 0, OS depend)	1x USB 3.0, 6x USB 2.0
<b>Serial ATA</b>	2x at 6Gb/s	2x SATA 3Gb/s
<b>PCI Express</b>	3x PCIe x1 Gen2 (PCIe switch by project)	3 PCIe x1 (Gen2) (4 PCIe x1 without GbE, opt.)
<b>eMMC (opt.)</b>	8-32 GB (by project)	8/16/32 GB
<b>SD</b>	Yes	Yes (mini SD slot on module)
<b>Audio</b>	ALC886 (carrier board)	ALC886 (carrier board)
<b>TPM (opt.)</b>	Yes (TPM 2.0)	ALC886 (carrier board)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/ JTAG
<b>Power Supply</b>	4.75-20V / 5Vsb ±5% (ATX), 4.75-20V (AT)	5-20V / 5Vsb ±5% (ATX), 5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit	Win 7/8, Linux, WES 7, WE8 Std., VxWorks, QNX
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0, Type 6 Compact size: 95 x 95 mm	PICMG COM.0 R2.1, Type 6 Compact size: 95 x 95 mm

### Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

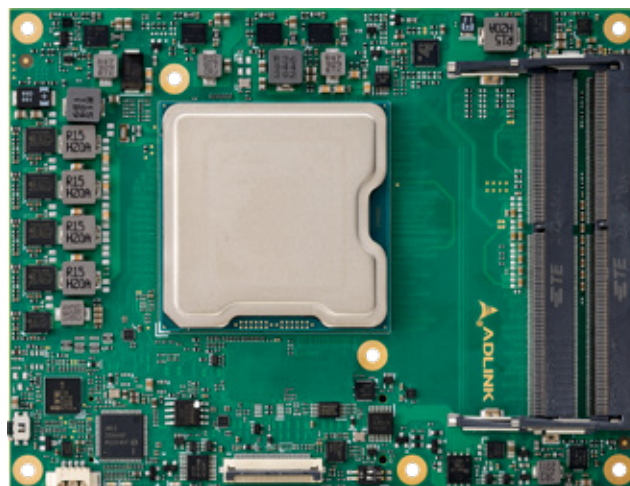
# COM Express

## COM Express

### Type 7 Basic Size

#### *Serving servers with extended operating temperatures*

A fundamental innovation in COM interfaces, COM Express Type 7 Basic size, designed for intermediate- to high-performance headless edge servers, offers up to 32 PCIe lanes and four 10GbE ports with an extended temperature tolerance. As of late, its suitability for a wide range of rugged and embedded industrial applications has been widened further with Revision 3.1, which adds a second PCIe clock for PCIe Gen4. The range of applications for Type 7 modules is very broad, including general-purpose rugged embedded computers, mission-critical servers, SDN appliances, signal processing & data acquisition appliances, network test equipment, satellite gateways, inflight entertainment systems, and more.



### Pin Definition for Type 7 Basic Size Modules

A-B	C-D
4x USB 2.0	4x USB 3.0
2x SATA	3x DDI KR
Gigabit Ethernet	
NC-SI	
LPC / eSPI	
GPIO / SDIO / SERIAL / CAN / SPI / I2C / HDA	PCIe x32
	Power

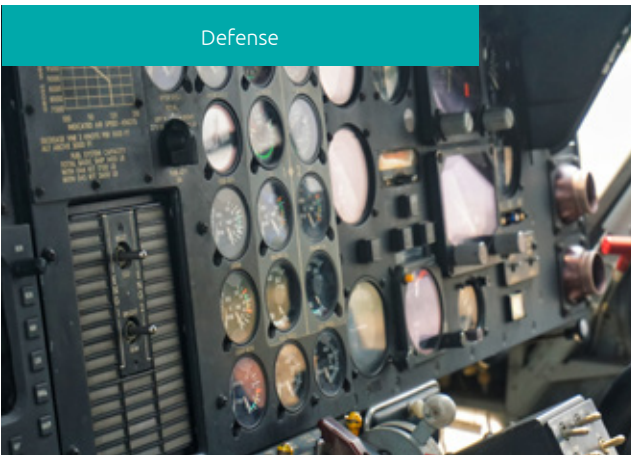
# COM Express

## Applications

Satellite Gateway



Defense



Data Communication



The Type 7 Starter Kit Plus consists of a COM Express® Type 7 module with ATX size Type 7 reference carrier board that offers one PCIExpress x16 slot with proprietary pinout for a 10GbE adapter card that convert a 10GBASE-KR to 10GbE Optical Fiber or 10GbE Copper signal, one PCIExpress x16 slot, two PCIExpress x8 slots, Serial ATA, USB 3.0/2.0, GbE and Super I/O. In addition, an IPMI board management controller (miniBMC) located on the carrier board connects to the COM Express Type 7 module by NC-SI interface to support out-of-band management features. All necessary cables are included.

Type 7 Basic Size

## Express-ID7



Preliminary

## Express-BD74



<b>SoC</b>	Intel® Xeon® D-1700 D-1746TER (10C)/D-1735TR (8C)/D-1732TE (8C)/D-1715TER (4C)/D-1712TR (4C) (formerly "Ice Lake-D")	Intel® Xeon® D D-1559/D-1539/D-1577/D-1548 (formerly "Broadwell-DE") Other SKUs by project
<b>Memory</b>	128 GB DDR4 at 3200/2666 MT/s (ECC / non-ECC)	128 GB DDR4 at 2400/2133 MT/s
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>LAN</b>	4x 10GBASE-KR Intel® i210/i211 (GbE, IEEE1588, NC-SI)	2x 10GBASE-KR Intel® i210/i211 (GbE, IEEE1588, NC-SI)
<b>USB</b>	4x USB 3.x/2.0	4x USB 3.0/2.0
<b>Serial ATA</b>	2x at 6Gb/s	2x at 6Gb/s
<b>PCI Express</b>	PCI Express x16 Gen4 (or 2 x8 or 4 x4) PCI Express x8 Gen3 (x8, x4, x2) PCI Express x8 Gen3 (x8, x4, x2)	PCI Express x16 Gen3 (or 2 x8 or 4 x4) PCI Express x8 Gen3 (x8, x4, x2) PCI Express x8 Gen2 (x8, x4, x2), w/o GbE
<b>eMMC (opt.)</b>	-	
<b>TPM</b>	Yes (TPM 2.0)	Yes (TPM 2.0)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	12 V / 5Vsb ±5% (ATX) 12 V (AT)	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS Support</b>	Windows® Server 64-bit Yocto Linux 64-bit	Windows® Server 2012 64-bit, Yocto Linux 64-bit
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0, Type 7 Basic size: 95 x 125 mm	PICMG COM.0 R3.0, Type 7 Basic size: 95 x 125 mm

### Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

## Express-BD7



## Express-DN7



<b>SoC</b>	Intel® Xeon® D D-1559/D-1539/D-1519/D-1577/D-1548/D-1527 Pentium® D-1508 (formerly "Broadwell-DE")	Intel® Atom® C3000 C3808/C3708/C3508/C3308/C3958/C3858/ C3758/C3558/C3538/C3338 (formerly "Denverton-NS")
<b>Memory</b>	64 GB DDR4 at 2400/2133 MT/s (ECC for Express-KLE)	96 GB DDR4 at 2400/2133 MT/s (ECC for Express-SLE)
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>LAN</b>	2x 10GBASE-KR Intel® i210/i211 (GbE, IEEE1588, NC-SI)	4x 10GBASE-KR (max. 20G) Intel® i210/i211 (GbE, IEEE1588, NC-SI)
<b>USB</b>	4x USB 3.0/2.0	2x USB 3.0/2.0, 2x USB 2.0
<b>Serial ATA</b>	2x at 6Gb/s	2x at 6Gb/s
<b>PCI Express</b>	PCI Express x16 Gen3 (or 2 x8 or 4 x4) PCI Express x8 Gen3 (x8, x4, x2) PCI Express x8 Gen2 (x8, x4, x2), w/o GbE	PCI Express x8 Gen3 (or 2x8 or 1x8 plus 2x4) PCI Express x8 Gen3 (x8, x4, x2), w/o GbE
<b>eMMC (opt.)</b>		8-32 GB (by project)
<b>TPM</b>	Yes (TPM 2.0)	Yes (TPM 2.0) (opt.)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)	8.5-20 V / 5Vsb ±5% (ATX) 8.5-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS Support</b>	Windows® Server 2012 64-bit, Yocto Linux 64-bit	Windows® Server 2016/2012 64-bit, Yocto Linux 64-bit
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0, Type 7 Basic size: 95 x 125 mm	PICMG COM.0 R3.0, Type 7 Basic size: 95 x 125 mm

### Notes:

- TPM support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

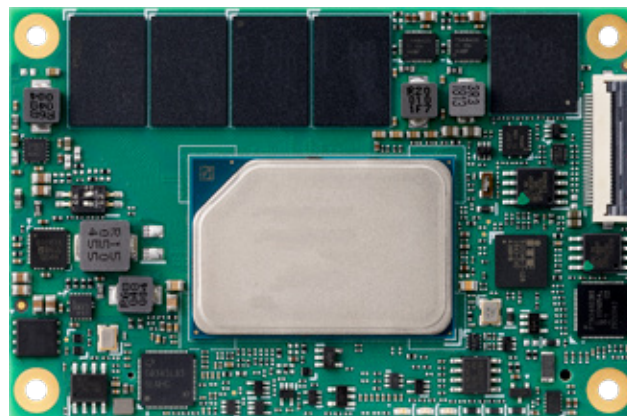
# COM Express

## COM Express

### Type 10 Mini Size

#### *Ultra-low power with soldered onboard memory*

COM Express Type 10 Mini size features power envelopes of TDP 12W and lower and soldered onboard memory, yet still offering graphics display and optimized I/O capabilities needed for various technologically-advanced mobile solutions, such as handheld devices and controllers for industrial, medical, and transportation applications.



### Pin Definition for Type 10 Mini Size Modules

A-B
8x USB 2.0 v2x USB 3.0
DDI
LVDS / eDP
4x SATA
Gigabit Ethernet
LPC / eSPI
GPIO / SDIO / SERIAL / CAN / SPI / I2C / HDA
PCIe x4
Power

# COM Express

## Applications

In-Vehicle / In-Flight Entertainment



Panel Control



The nanoX Starter Kit Plus consists of a COM Express® Type 10 reference carrier board that provides two PCIe Mini Card slots, 2 RJ-45 LAN ports, 2x USB 3.0, 2x USB 2.0, 1x USB client, 2x DB-9 COM, 1x SD card socket, and Mic/Line-in/Line-out. ADLINK also provides additional development tools including a verified 10.1" LVDS panel, smart battery, power supply, thermal solution and cabling accessories.

# COM Express

Type 10 Mini Size

## nanoX-EL



Preliminary

<b>SoC</b>	Intel Atom® x6000 x6425E/x6413E/x6211E/x6200FE and x6425RE/x6414RE/x6412RE (formerly "Elkhart Lake") Additional Pentium® and Celeron® SKUs
<b>Memory (soldered)</b>	16 GB LPDDR4 IBECC at 4267/3200 MT/s
<b>BIOS Type</b>	AMI Aptio V
<b>Bootloader</b>	-
<b>Graphics Outputs</b>	LVDS (or eDP1.4) 1x DDI (DP/HDMI)
<b>Graphics Features</b>	DX12, OpenGL4.5, ES3.2, OpenCL 2.0
<b>LAN</b>	MaxLinear® GPY 2.5GbE (TSN @ GPY215)
<b>USB</b>	2x USB 3.2/2.0, 6x USB 2.0
<b>Serial ATA</b>	2x at 6Gb/s
<b>PCI Express</b>	4x PCIe x1 Gen3 (x4, x2, x1)
<b>eMMC (opt.)</b>	16-64GB (by project)
<b>SD (opt.)</b>	Yes
<b>Audio</b>	ALC262 (carrier board)
<b>TPM (opt.)</b>	Yes (TPM 2.0)
<b>Management Bus</b>	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	4.75-20V / 5Vsb ±5% (ATX), 4.75-20V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit (TBC)
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0 Type 10 Mini size: 84 x 55 mm

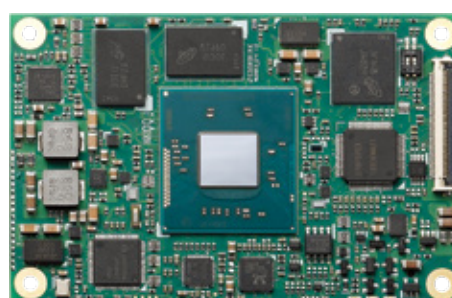
### Notes:

- TPM, eMMC support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.

### nanoX-AL



### nanoX-BT



<b>SoC</b>	Intel Atom® x7-E3950/x5-E3940/x5-E3930 (formerly "Apollo Lake") Additional Pentium® and Celeron® SKUs	Intel Atom® E3845/E3827/E3826/E3825/E3815/E3805 Intel Celeron® N2930/J1900 (formerly "Bay Trail")
<b>Memory (soldered)</b>	8 GB DDR3L at 1867/1600 MT/s	4 GB DDR3L at 1333 MT/s
<b>BIOS Type</b>	AMI Aptio V	AMI Aptio V
<b>Bootloader</b>	Coreboot	Coreboot
<b>Graphics Outputs</b>	LVDS (or eDP1.4) 1x DDI (DP/HDMI)	LVDS (oreDP1.2) 1x DDI (DP/HDMI)
<b>Graphics Features</b>	DX 11, OpenGL 4.3 and ES 3.0, OpenCL 2.0	DX 11, OpenGL 3.2 and ES 2.0, OpenCL 1.1
<b>LAN</b>	Intel® i210/i211 (IEEE 1588)	Intel® i210/i211 (IEEE 1588)
<b>USB</b>	2x USB 3.0/2.0, 6x USB 2.0	1x USB 3.0/2.0, 3x USB 2.0
<b>Serial ATA</b>	2x at 6Gb/s	2x at 3Gb/s
<b>PCI Express</b>	3x PCIe x1 Gen2 (x2, x1) (others by project)	3x PCIe x1 Gen2 (4x PCIe x1, w/o GbE, opt.)
<b>eMMC (opt.)</b>	8-32 GB (by project)	8-32 GB (by project)
<b>SD (opt.)</b>	Yes	Yes
<b>Audio</b>	ALC262 (carrier board)	ALC262 (carrier board)
<b>TPM (opt.)</b>	Yes (TPM 2.0)	Yes (TPM 1.2)
<b>Management Bus</b>	I2C, SMBus	I2C, SMBus
<b>Embedded Features</b>	EAPI/SEMA, Backup BIOS, Debug/JTAG	EAPI/SEMA, Backup BIOS, Debug/JTAG
<b>Power Supply</b>	4.75-20V / 5Vsb ±5% (ATX), 4.75-20V (AT)	5-14V / 5Vsb ±5% (ATX), 5-14V (AT)
<b>Operating Temperature</b>	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)	Standard: 0°C to +60°C Extreme Rugged: -40°C to +85°C (standard 12V input only)
<b>OS support</b>	Windows® 10 64-bit, Yocto Linux 64-bit, VxWork 64-bit	Windows® 7/8, Yocto Linux, WES 7, WES 8 Std., VxWorks (all 32/64-bit)
<b>Form Factor &amp; Compatibility</b>	PICMG COM.0 R3.0 Type 10 Mini size: 84 x 55 mm	PICMG COM.0 R2.1 Type 10 Mini size: 84 x 55 mm

#### Notes:

- TPM, eMMC support by BOM option
- Optional -40°C to +85°C support: Standard product with 100% ETT screening available for selected CPU SKUs and std. 12V power supply only
- All specifications are subject to change without further notice.



## SMARC

### Covering ARM / x86 ecosystems

Short for Smart Mobility ARChitecture, the SMARC form factor is the only standard natively built for both ARM- and x86-based SoCs, allowing it to leverage the wide-ranging smart phone and tablet computer ecosystems. With 314-pins on a high-speed MXM3 connector, SMARC delivers a combination of high-performance computing, low power envelopes typically under 6W and no more than 15W, low cost, and the ability to withstand extreme environmental conditions, making it the ideal building blocks for portable and stationary embedded systems.



### AIoM (AI on Module)



With the latest Revision 2.1, SMARC has positioned itself as the ideal standard for scalable, low-power, silicon-independent AIoM solutions in the industrial embedded market. Over the revision, SMARC adds the support for up to 4 MIPI CSI camera inputs specifically for SoCs with integrated NPUs (Neural Processing Units) used for video-based AI solutions, such as robotic vehicles and autonomous driving. Additionally, it also allows multiplexing SerDes signals over two PCIe x1 interfaces for a total of four GbE Ethernet ports to support up to 4 GigE Vision cameras for AI vision applications.

### Pin Definition for SMARC

2x LVDS / DSI / eDP
HDMI / DP++
DP++
2x MIPI CSI
HDA / I2S
1x SATA
2x GbE
2x USB 3.0/2.0 (1x OTG) 4x USB 2.0 (1x OTG)
4x PCIe
SDIO / SPI / eSPI / 5x I2C 4x UART / 2x CAN / 12x GPIO
Power

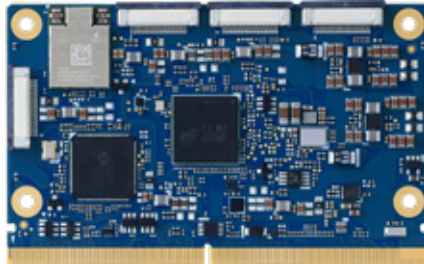


## I-Pi SMARC Development Kits

ADLINK offers various out-of-the-box-ready development kits for developing, referencing, and prototyping your tailored, SMARC-driven applications. Visit <https://www.ipi.wiki/> for more details and one-click purchase and shipping.

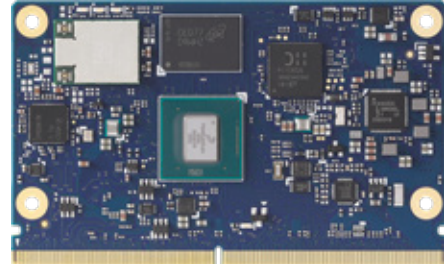


## LEC-RB5



Preliminary

## LEC-IMX8MP

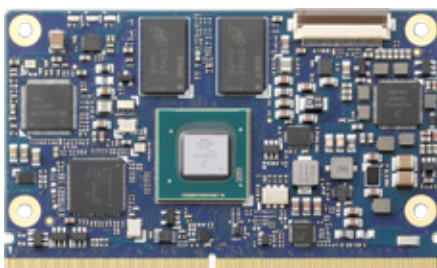


<b>CPU</b>	Qualcomm® QRB5165 SoC Qualcomm® Kryo™ 585 Octa-core CPU 8x Cortex-A77 cores	NXP i.MX 8M Plus Quad, QuadLite 4x Cortex-A53 cores, 1x M7 core
<b>Memory/Storage</b>	Up to 8 GB LPDDR4L at 4266 MT/s UFS: 64/128/256GB	Up to 8 GB LPDDR4 at 4266 MT/s eMMC: 32/64GB
<b>Cache</b>	128KB / 256KB / 512KB	L2: 512KB ECC
<b>Boot Loader</b>	U-Boot	U-Boot
<b>Graphics Outputs</b>	1x HDMI 1x MIPI-DSI 4 lanes	1x HDMI 2x LVDS 1x MIPI-DSI 4 lanes
<b>Camera</b>	5x MIPI-CSI 4 lanes 1x MIPI-CSI 2 lanes	1x MIPI-CSI 4 lanes 1x MIPI-CSI 2 lanes
<b>LAN</b>	Up to 2x GbE	2x GbE (LAN0 with TSN)
<b>USB</b>	2x USB 3.0, 4x USB 2.0	2x USB 3.0, 4x USB 2.0 (one shared with USB OTG on port 0)
<b>Extension ports</b>	3x UART 2x SPI 14x GPIO 1x SDIO	4x UART 2x SPI 14x GPIO 1x SDIO
<b>Audio</b>	1x I2S	1x I2S
<b>PCI Express</b>	2x PCIe x2 Gen3	2x PCIe x1 Gen 2
<b>SEMA Support</b>	Yes	Yes
<b>Power Supply</b>	5.0 V - 5.25 V DC ±5%	5.0 V - 5.25 V DC ±5%
<b>Operating Temperature</b>	0°C to +60°C -20°C to +85°C (opt.)	0°C to +60°C -40°C to +85°C (opt.)
<b>OS Support</b>	Linux, Ubuntu	Linux, Android
<b>Form Factor &amp; Compatibility</b>	SMARC short size, 82 x 50 mm, SMARC specification v2.1.1	SMARC short size, 82 x 50 mm, SMARC specification v2.1.1

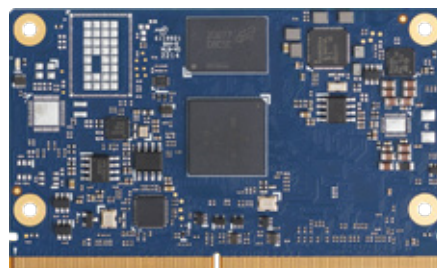
### Notes:

- All specifications are subject to change without further notice.

## LEC-IMX8M



## LEC-IMX8MM

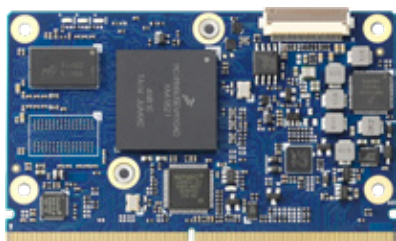


<b>CPU</b>	NXP i.MX 8M Quad, QuadLite, Dual, Up to 4x Cortex-A53 cores, 1x M4 core	NXP i.MX 8M Mini, 4x Cortex-A53 cores, 1x M4 core
<b>Memory/Storage</b>	Up to 4 GB DDR3L at 1600 MHz eMMC: 32/64GB	Up to 4 GB DDR4 at 4266 MT/s eMMC: 32/64/128GB
<b>Cache</b>	L2: 1MB	L2: 512KB
<b>Boot Loader</b>	U-Boot	U-Boot
<b>Graphics Outputs</b>	1x HDMI 1x MIPI-DSI, 4-lane (or LVDS)	1x HDMI (via bridge) 1x MIPI-DSI, 4-lane (or LVDS)
<b>Camera</b>	1x MIPI-CSI 4 lanes 1x MIPI-CSI 2 lanes	1x MIPI-CSI 4 lanes
<b>LAN</b>	Up to 2x GbE	1x GbE
<b>USB</b>	2x USB 3.0 3x USB 2.0 (one shared with USB OTG on port 0)	5x USB 2.0 (one shared with USB OTG on port 0)
<b>Extension ports</b>	3x UART 2x eCSPI 12x GPIO 1x SDIO	4x UART 3x SPI 14x GPIO 1x SDIO
<b>Audio</b>	1x I2S	1x I2S
<b>PCI Express</b>	Up to 2x PCIe Gen2 (one shared with GbE)	1x PCIe Gen2
<b>SEMA Support</b>	Yes	Yes
<b>Power Supply</b>	5.0 V - 5.25 V DC $\pm 5\%$	5.0 V - 5.25 V DC $\pm 5\%$
<b>Operating Temperature</b>	0°C to +60°C -40°C to +85°C (opt.)	0°C to +60°C -40°C to +85°C (opt.)
<b>OS Support</b>	Linux, Android	Linux, Android
<b>Form Factor &amp; Compatibility</b>	SMARC short size, 82 x 50 mm, SMARC specification v2.0	SMARC short size, 82 x 50 mm, SMARC specification v2.0

### Notes:

- All specifications are subject to change without further notice.

## LEC-IMX6R2



## LEC-EL



Preliminary

<b>CPU</b>	NXP i.MX6 Quad, Dual, DualLite and Solo, up to 4x Cortex-A9 cores	Intel Atom® X6425E Intel Atom® X6413 Intel Atom® X6211E Intel Atom® X6200FE (formerly "Elkhart Lake")
<b>Memory/Storage</b>	Up to 4 GB DDR3L at 1066 MHz eMMC: 32/64GB	Up to 16 GB LPDDR4 at 4266 MT/s eMMC: 32/64/128GB
<b>Cache</b>	L2: 1 MB	1.5 MB system L2 cache 4MB LLC
<b>Boot Loader</b>	U-Boot	AMI UEFI BIOS
<b>Graphics Outputs</b>	1x HDMI 1x LVDS	Dual channel LVDS 18/24-bit) HDMI/DP++, DP++
<b>Camera</b>	-	-
<b>LAN</b>	1x GbE 1x 10/100Mbps LAN	Dual 10/100/1000/ 2.5 Gbit Ethernet with TSN
<b>USB</b>	5x USB 2.0 (one shared with USB OTG on port 0)	2x USB 3.0 host 6x USB 2.0 host
<b>Extension ports</b>	1x SATA 3Gb/s (Quad and Dual only) 4x UART 2x SPI 12x GPIO 1x SDIO	1x SATA 6Gb/s 4x UART 2x SPI 14x GPIO 1x SDIO
<b>Audio</b>	1x I2S	1x I2S, 1x HDA
<b>PCI Express</b>	1x PCIe x1 Gen 2	4x PCIe x1 Gen3
<b>SEMA Support</b>	Yes	Yes
<b>Power Supply</b>	5.0 V - 5.25 V DC ±5%	5.0 V - 5.25 V DC ±5%
<b>Operating Temperature</b>	0°C to +60°C -40°C to +85°C (opt.)	0°C to +60°C -40°C to +85°C (opt.)
<b>OS Support</b>	Linux, Android, WEC7, QNX	Windows® 10 IoT Core, 64 bit Yocto Linux, 64 bit
<b>Form Factor &amp; Compatibility</b>	SMARC short size, 82 x 50 mm, SMARC specification v2.0	SMARC short size, 82 x 50 mm, SMARC specification v2.1

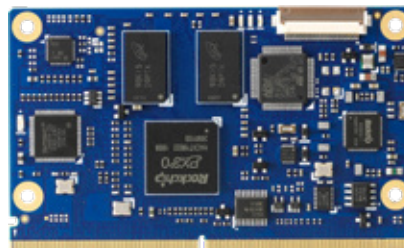
### Notes:

- All specifications are subject to change without further notice.

## LEC-AL



## LEC-PX30



<b>CPU</b>	Intel Atom® E3900 Series, Intel® Pentium® N4200, Intel® Celeron® N3350 (Formerly "Apollo Lake")	Rockchip PX30 Quad-core 4x Cortex-A35 cores
<b>Memory/Storage</b>	Up to 8 GB DDR3L at 1867 MHz eMMC: 32/64GB	Up to 4 GB DDR3L at 1066MHz eMMC: 32/64GB
<b>Cache</b>	L2: 2 MB	L2: 256KB
<b>Boot Loader</b>	AMI UEFI BIOS	U-Boot
<b>Graphics Outputs</b>	Dual channel LVDS (18/24-bit) HDMI/DP++, DP++ 2x MIPI CSI camera	LVDS (or MIPI-DSI, 4-lane)
<b>Camera</b>	-	-
<b>LAN</b>	Intel® i210IT MAC/PHY 1x GbE IEEE 1588	Up to 2x 10/100Mbps
<b>USB</b>	1x USB 3.0 OTG 1x USB 3.0 host 1x USB 2.0 OTG 1x USB 2.0 host	3x USB 2.0 (one shared with USB OTG on port 0)
<b>Extension ports</b>	1x SATA 6Gb/s 4x UART 2x SPI 12x GPIO 1x SDIO	2x UART 2x SPI 12x GPIO 1x SDIO
<b>Audio</b>	1x HDA	1x I2S
<b>PCI Express</b>	4x PCIe x1 Gen2	-
<b>SEMA Support</b>	Yes	Yes
<b>Power Supply</b>	5.0 V - 5.25 V DC ±5%	3.0 V - 5.25 V DC ±5%
<b>Operating Temperature</b>	0°C to +60°C -40°C to +85°C (opt.)	0°C to +60°C -20°C to +85°C (opt.)
<b>OS Support</b>	Windows® 10 IoT Enterprise, Windows® 10 IoT Core, Yocto Linux	Linux, Android
<b>Form Factor &amp; Compatibility</b>	SMARC short size, 82 x 50 mm, SMARC specification v2.0	SMARC short size, 82 x 50 mm, SMARC specification v2.1

### Notes:

- All specifications are subject to change without further notice.

# ETX®

## ETX

### Legacy beyond 2025

ETX® is one of the earliest successful computer-on-module form factors. Today it is still widely used in applications such as industrial automation, transportation and medium and low level medical appliances. While high-end Intel® Core™ applications have mostly migrated to COM Express, ETX® is still prominent in the lower power segment, mostly notably using Intel® Atom® SoCs. Specifically, customers who have heavily invested in ISA and PCI controllers or peripheral technologies still pose great demand for ETX® through the years. To this extent, ADLINK is providing long-term support for ETX® well beyond 2025.



### Pin Definition for ETX

X1	X2
4x USB 2.0/1.1	8/16-bit ISA
32-bit PCI-bus	
HD Audio	
X1	X2
Analog VGA	2x PATA
Dual LVDS	2x SATA
PS2 MS/KB 2x UART, LPT1	I2c / SMBus
	10/100 Mbps Ethernet

## ETX-BT



<b>SoC</b>	Intel Atom® E3800 series Celeron® N2930/J1900 (formerly "Bay Trail")
<b>Memory</b>	Up to 8GB DDR3L at 1333/1066MHz
<b>Cache</b>	L2: 512 kB to 2MB
<b>BIOS Type</b>	AMI Aptio EFI
<b>TPM (opt.)</b>	Atmel AT97SC3204
<b>Graphics Features</b>	LVDS, DisplayPort, VGA Decode: H.264, MPEG2, MVC, VC-1, WMV9 and VP8 Encode: H.264, MPEG2 and MVC DirectX 11, OCL 1.1, OGL ES Halt/2.0/1.1, OGL 3.2
<b>LAN</b>	Intel® i211 MAC/PHY, supporting 10/100 Mbps (GbE via onboard connector)
<b>USB</b>	4x USB 2.0
<b>PATA (IDE)</b>	2x
<b>SATA</b>	2x SATA 3Gb/s
<b>Audio</b>	Integrated on E3800 SoC, Realtek ALC 262
<b>SEMA Support</b>	Yes
<b>Power Supply</b>	5V±5% / 5Vsb ±5% (ATX) 5V±5% (AT)
<b>Operating Temperature</b>	0°C to +60°C -40°C to +85°C (opt.)
<b>OS Support</b>	Windows 7/8 Linux (WES7, WE8 Std., WEC7; Linux, VxWorks)
<b>Form Factor &amp; Compatibility</b>	ETX 3.02 Size: 95 x 114 mm

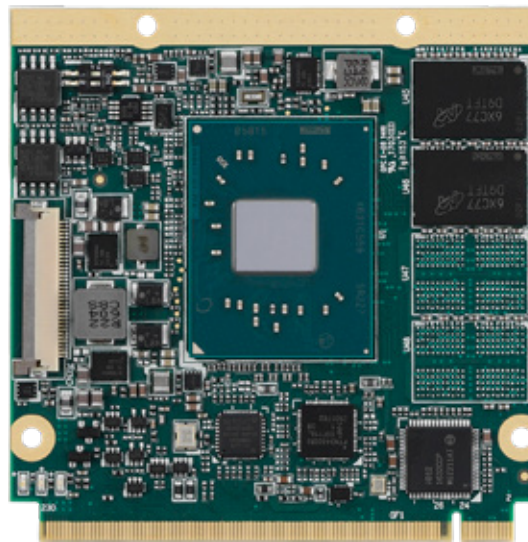
### Notes:

- All specifications are subject to change without further notice.



## Qseven

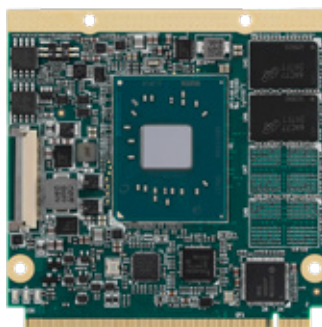
Qseven® is an off-the-shelf, multi-vendor, computer-on-module that integrates all the core components of a typical PC packed in a slim design, to be mounted onto an application-specific carrier board. Its single ruggedized 230-pin MXM2 connector offers all the I/O interfaces necessary for mobile / ultra-mobile embedded applications, such as graphics, sound, mass storage, and networking, at power envelopes usually between 6 and 12 watts. Since its pinouts are mostly x86 x86-oriented, Qseven® is commonly built around "Atom level" x86 silicon.



### Pin Definition for Q7

2x LVDS / DSI / eDP
HDMI / DP++
2x MIPI CSI
HDA / I2S
2x SATA
GbE
2x USB 3.0/2.0 (1x OTG) 4x USB 2.0 (1x OTG)
4x PCIe
SDIO / SPI / LPC or GPIO 5x I2C / 2x UART or CAN
Power

## Q7-AL



<b>SoC</b>	Intel Atom® E3900 Series, Pentium® N4200 or Celeron® N3350 (Formerly "Apollo Lake")
<b>Memory</b>	Up to 8 GB LPDDR4 at 2400 MHz
<b>Cache</b>	L2: 2 MB
<b>BIOS Type</b>	AMI UEFI BIOS
<b>Integrated Graphics</b>	9th Gen Intel® graphics core architecture with up to 18 execution units, supports three independent displays, 4k video (up to 4096 x 2160 @60fps)
<b>Graphics Features</b>	DirectX 12, OpenGL 4.2, OpenCL
<b>Camera</b>	2x MIPI CSI 2L/4L
<b>LAN</b>	Intel® i210IT MAC/PHY, 1x GbE, IEEE 1588
<b>USB</b>	2x USB 3.0 6x USB 2.0
<b>Serial ATA</b>	2x SATA 6Gb/s to carrier or 1x SATA 6Gb/s to carrier and 1x onboard SATA SSD
<b>PCI Express</b>	3x PCIe x1
<b>eMMC (opt.)</b>	Onboard eMMC 5.0 (4-64 GB)
<b>Audio</b>	HDA
<b>SEMA</b>	Yes
<b>Power Supply</b>	Module Input Voltage: 5.0V Power Pins: 12 pins, 6A at 5V Typical IO Voltage: 3.3V
<b>Operating Temperature</b>	0°C to 60°C -40°C to 85°C
<b>OS Support</b>	Windows 10 IOT Enterprise, Windows 10 IOT Core, Yocto Linux
<b>Form Factor &amp; Compatibility</b>	Qseven 2.1, Size: 70 x 70 mm

### Notes:

- All specifications are subject to change without further notice.

## Head Office

### ADLINK Technology, Inc.

No. 66, Huaya 1st Rd., Guishan District  
Taoyuan City 333411, Taiwan  
333411桃園市龜山區華亞一路66號  
Tel: +886-3-216-5088  
Fax: +886-3-328-5706  
Email: service@adlinktech.com

f in t [www.adlinktech.com](http://www.adlinktech.com)

## Worldwide Office

### Ampro ADLINK Technology, Inc.

6450 Via Del Oro, San Jose, CA 95119, USA  
Tel: +1-408-360-0200  
Toll Free: +1-800-966-5200  
Fax: +1-408-360-0222  
Email: info@adlinktech.com

### ADLINK Technology Korea Ltd.

경기도 용인시 수지구 신수로 767 A동 1503호  
(동천동, 분당수지유타워) (우) 16827  
A-1503, U-TOWER, 767 Sinsu-ro, Sujik-gu, Yongin-si,  
Gyeonggi-do, Republic of Korea, 16827  
Toll Free: +82-80-800-0585  
Tel: +82-31-786-0585  
Fax: +82-31-786-0583  
Email: korea@adlinktech.com

### ADLINK Technology GmbH

Hans-Thoma-Strasse 11, D-68163  
Mannheim, Germany  
Tel: +49 621 43214-0 Fax: +49 621 43214-30  
(Deggendorf) Ulrichsbergerstrasse 17, 94469  
Deggendorf, Germany  
Tel: +49 (0) 991 290 94-10 Tel: +49 (0) 991 290 94-29  
Email: emea@adlinktech.com

### ADLINK Technology Singapore Pte, Ltd.

1008 Toa Payoh North, 07-17/18  
Singapore 318996  
Tel: +65-6844-2261  
Fax: +65-6844-2263  
Email: singapore@adlinktech.com

### ADLINK Technology (China) Co., Ltd.

上海市浦东新区张江高科技园区芳春路300号 (201203)  
300 Fang Chun Rd., Zhangjiang Hi-Tech Park  
Pudong New Area, Shanghai, 201203 China  
Tel: +86-21-5132-8988  
Fax: +86-21-5192-3588  
Email: market@adlinktech.com

### ADLINK Technology, Inc. (French Liaison Office)

Bâtiment Thalès – Parc des Algorithmes,  
Route de l' Orme des Merisiers,  
91190 SAINT AUBIN, France  
Tel: +33(0) 1 60 12 35 66  
Fax: +33(0) 1 60 12 35 66  
Email: france@adlinktech.com

### ADLINK Technology Singapore Pte. Ltd. (Indian Liaison Office)

1008 Toa Payoh North, 07-17/18 Singapore  
318996Tel: +65-6844-2261  
Fax: +65-6844-2263  
Email: singapore@adlinktech.com

### ADLINK Technology Beijing

北京市海淀区上地东路1号盈创动力大厦E座801室(100085)  
Rm. 801, Power Creative E, No. 1 Shang Di East Rd.  
Beijing, 100085 China  
Tel: +86-10-5885-8666  
Fax: +86-10-5885-8626  
Email: market@adlinktech.com

### ADLINK Technology, Inc. (UK Liaison Office)

First Floor West Exeter House, Chichester Fields  
Business Park Tangmere, West Sussex,  
PO20 2FU, United Kingdom  
Tel: +44-1243-859677  
Email: UK@adlinktech.com

### ADLINK Technology Japan Corporation

〒101-0045 東京都千代田区神田鍛冶町3-7-4  
KDX神田駅前ビル4F  
KDX Kanda Ekimae Bldg. 4F, 3-7-4 Kanda Kajicho,  
Chiyoda-ku, Tokyo 101-0045, Japan  
Tel: +81-3-5209-6001  
Fax: +81-3-5209-6013  
Email: japan@adlinktech.com

### ADLINK Technology Shenzhen

深圳市南山区科技园南区高新南七道数字技术园  
A1栋2楼C区 (518057)  
2F, C Block, Bldg. A1, Cyber-Tech Zone, Gao Xin Ave. Sec. 7  
High-Tech Industrial Park S., Shenzhen, 518054 China  
Tel: +86-755-2643-4858  
Fax: +86-755-2644-6353  
Email: market@adlinktech.com

### ADLINK Technology, Inc. (Israel Liaison Office)

SPACES OXYGEN, 62 Medinat, Ha-yehudim st  
4673300, Herzliya, Israel, P.O.Box – 12960  
Tel: +972-54-632-5251  
Fax: +972-77-208-0230  
Email: israel@adlinktech.com