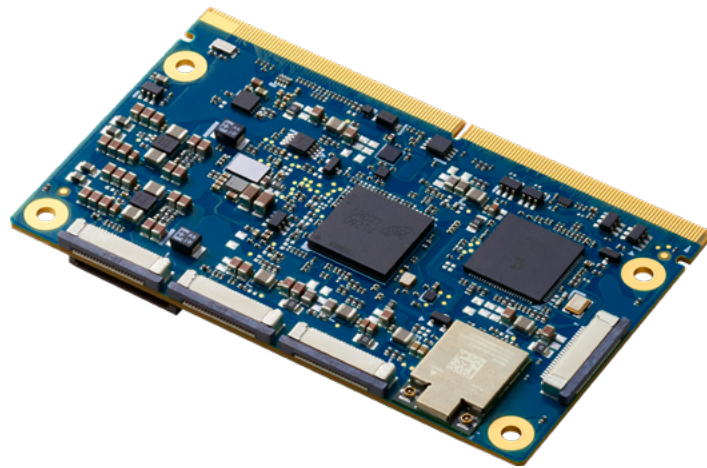




## SMARC

### 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

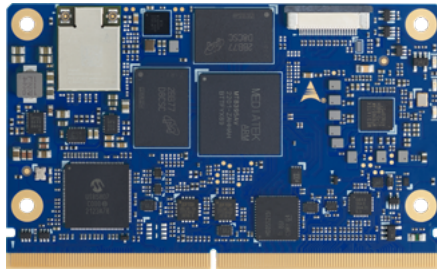


## I-Pi SMARC Development Kits

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.

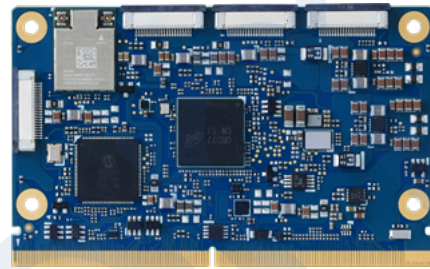


### LEC-MTK-1200



**New**

### LEC-RB5

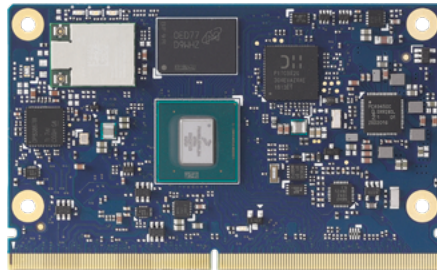


<b>CPU</b>	MediaTek® Genio 1200 Octa-core CPU 4x Cortex-A78 4x Cortex-A55	Qualcomm® QRB5165 SoC Qualcomm® Kryo™ 585 Octa-core CPU 8x Cortex-A77 cores
<b>Memory/Storage</b>	Up to 8 GB LPDDR4X UFS: 64/128/256GB	Up to 8 GB LPDDR4L at 4266 MT/s UFS: 64/128/256GB
<b>Cache</b>	L2: 256KB per core	128KB / 256KB / 512KB
<b>Boot Loader</b>	U-Boot	U-Boot
<b>Graphics Outputs</b>	1x HDMI 1x LVDS 2x MIPI-DSI 4 lanes	1x HDMI 1x MIPI-DSI 4 lanes
<b>Camera</b>	3x MIPI-CSI 4 lanes	5x MIPI-CSI 4 lanes 1x MIPI-CSI 2 lanes
<b>LAN</b>	Up to 2x GbE	Up to 2x GbE
<b>USB</b>	2x USB 3.0, 4x USB 2.0	2x USB 3.0, 4x USB 2.0
<b>Extension ports</b>	4x UART 2x SPI 14x GPIO 1x SDIO	3x UART 2x SPI 14x GPIO 1x SDIO
<b>Audio</b>	1x I <sup>2</sup> S	1x I <sup>2</sup> S
<b>PCI Express</b>	1x PCIe x2 Gen3	2x PCIe x2 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 -20°C to 85°C (opt.)	0°C to 60°C -20°C to 85°C (opt.)
<b>OS Support</b>	Linux, Ubuntu	Linux, Ubuntu
<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

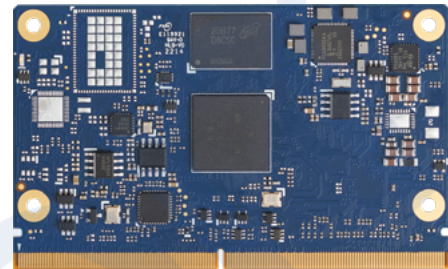
**Notes:**

- All specifications are subject to change without further notice.

### LEC-IMX8MP



### LEC-IMX8MM

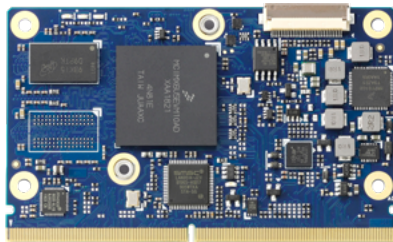


<b>CPU</b>	NXP i.MX 8M Plus Quad, QuadLite 4x Cortex-A53 cores, 1x M7 core	NXP i.MX 8M Mini, 4x Cortex-A53 cores, 1x M4 core
<b>Memory/Storage</b>	Up to 8 GB LPDDR4 at 4266 MT/s eMMC: 32/64GB	Up to 4 GB DDR4 at 4266 MT/s eMMC: 32/64/128GB
<b>Cache</b>	L2: 512KB ECC	L2: 512KB
<b>Boot Loader</b>	U-Boot	U-Boot
<b>Graphics Outputs</b>	1x HDMI 2x LVDS 1x MIPI-DSI 4 lanes	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>	2x GbE (LAN0 with TSN)	1x GbE
<b>USB</b>	2x USB 3.0, 4x 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>	4x UART 2x SPI 14x GPIO 1x SDIO	4x UART 3x SPI 14x GPIO 1x SDIO
<b>Audio</b>	1x I <sup>2</sup> S	1x I <sup>2</sup> S
<b>PCI Express</b>	2x PCIe x1 Gen 2	1x PCIe Gen2
<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	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 v2.0

**Notes:**

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### LEC-IMX6R2



### LEC-EL



New

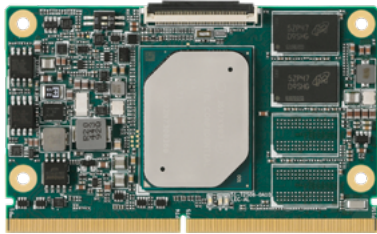
<b>CPU</b>	NXP i.MX6 Quad, Dual, DualLite and Solo, up to 4x Cortex-A9 cores	Intel Atom® X6425E Intel Atom® X6413 Intel Atom® X6211E Intel Atom® X6200FE (formerly "Elkhart Lake")
<b>Memory/Storage</b>	Up to 4 GB DDR3L at 1066 MHz eMMC: 32/64GB	Up to 16 GB LPDDR4 at 4266 MT/s eMMC: 32/64/128GB
<b>Cache</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 I <sup>2</sup> S	1x I <sup>2</sup> S, 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:**

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### 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 I <sup>2</sup> S
<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 -40°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.