



Your Vision, Our Solutions



Product Catalog ➤ 2023



## Product Catalog ➤ 2023

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# ABOUT VARISCITE

For the past 20 years Variscite has taken a leading market position in the design and manufacture of System on Modules (SoM). The company is recognized as a trusted provider of development and production services for a variety of embedded platforms, with turn-key manufacturing services that transform clients' visions into successful products.

Variscite takes a complete solution approach from customized product development to hardware and software design and manufacture.

Throughout the product life cycle expertise, innovation and a commitment to excellence are the values that pave our roadmap and convey the methodology behind every Variscite decision.

Variscite high performance, low cost flexible solutions have been successfully applied throughout a wide variety of industries ranging from medical, agriculture, automation, control systems and multimedia to name just a few.



“

Using the Variscite System on Module we have dramatically sped up our development process.

Variscite SoM is a quality product we can rely on that has undoubtedly contributed to the success of our products.

**Ken Austin, Austin Design**

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# VARISCITE SERVICES

## Services that complete the puzzle



Variscite provides design, development and manufacturing services for a variety of embedded platforms, supported by numerous operating systems. Variscite customers stay ahead of the pack and eliminate time-

consuming processes, by leveraging Variscite's rich experience in embedded solution development. Variscite engineering experts escort your product from conception, to delivery and beyond.

### Software Design Services

Variscite embedded software experts have significant experience in Board Support Package (BSP) development for various real-time and embedded operating systems, focusing on NXP's i.MX SoC. Variscite engineers create BSPs and implement device drivers for standard and custom development boards. The company's custom board support packages enable customers to rapidly deploy an operating system and fully utilize the features of the underlying hardware platform. BSPs are configured to support the desired peripherals, operating system features, file systems, and memory types. The Variscite team brings extensive knowledge of the various operating systems including Linux (multiple distributions) and Android.

### Board Design Services

Variscite provides development and consulting services on a variety of embedded platforms with the support of various operating systems.

#### Variscite board design services include:

- Analog design
- Digital design
- Power design
- Simulation
- Board bring up, testing and validation

# VARISCITE SOLUTIONS

**Your vision our solutions**



**Variscite fully integrated systems provide the critical components to optimize your product design, development and manufacture.**

**Variscite expert-developed complete solutions deliver core technology capabilities for a broad range of applications.**

## Medical



Life saving and health-impacting equipment demands a development and manufacturing life cycle that ensures absolute reliability and uncompromising quality.

Variscite appreciates that while meeting exacting regulatory standards, development cost and time savings are also more critical than ever to justify economies of scale and demonstrate financial and operational benefits.

## Agriculture



Variscite solutions for agriculture meet the demands of extreme weather conditions, as well as provide safe, effective and environmentally-friendly cutting edge technologies.

From breeding, biotechnology, nanotechnologies to ensuring food safety throughout the supply chain, Variscite helps achieve maximum production capabilities, whilst still satisfying worldwide legislations.

## Automotive



Variscite solutions for the automotive industry accommodate extreme temperatures of -40 to 85 degrees Celsius, as well as sustain intensive vibration and shock testing procedures.

Full integration with the car network is achieved via full CAN bus connectivity. Incorporating full fleet management systems, Variscite designs comprise navigation capabilities, cellular communication, GPS navigation and more.

## Control Systems



Variscite solutions for control systems offer advanced scalable technologies with CAN bus connectivity, allowing integration with all system components.

Multi-operational systems with broad connectivity are engineered to meet exacting specifications and combine function with reliability, whether sustaining extreme temperatures, supporting router or multi-image technologies or software to combat cyber risks.

## Multimedia



Sophisticated features make Variscite tailored solutions ideal for use with video and audio multimedia solutions including surveillance, security, Set-Top boxes, DVRs, home automation and video streaming.

Variscite devices have HD video playback and capture capabilities, as well as full integration with camera sensors. Variscite solutions reflect the latest features regarding computing power and functionality, ensuring you always have the technical advantage.

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We approached Variscite with a very complex application that had to meet strict FDA requirements and a tight manufacturing deadline. We wanted the latest CPU model and chipset technology within a customized embedded development solution.

Variscite met the challenge with their VAR-SOM-OM37 System on Module which provided everything we needed and more.

**Tzachi Geva, Oridion Medical**

”

# VARISCITE PRODUCTS

Your product starts here



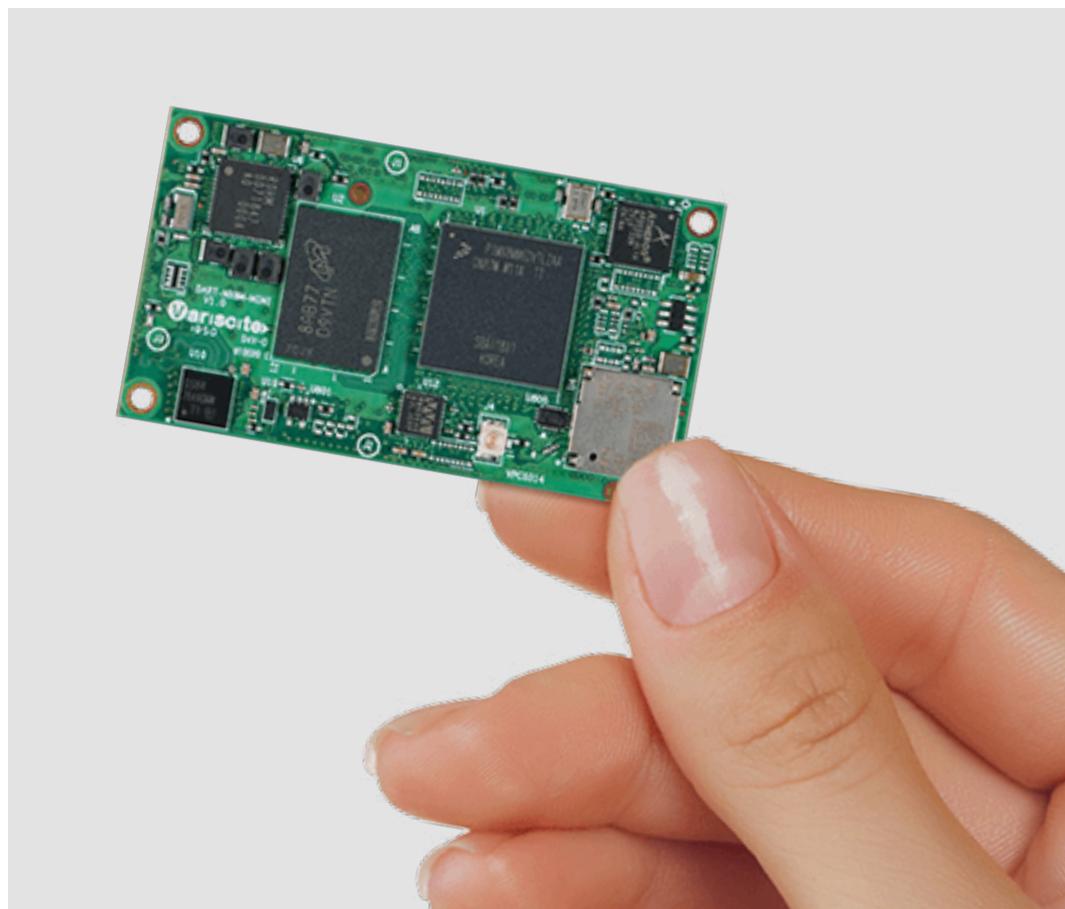
At Variscite your product vision becomes an affordable and immediate reality with our custom-engineered System on Modules, Single Board Computers and Evaluation Kits. Variscite's quality System on Modules serve as building blocks for your product, easily integrating into any embedded platform.

With an extensive range of possible interfaces and communication protocols, Variscite System on Modules are ready to run any embedded operating system such as Linux and Android. Despite flexible design, Variscite still delivers off-the-shelf advantages including fast time-to-market, cost savings and proven software support.

# SYSTEM ON MODULES

## Advantages of using Variscite System on Modules (SoM)

- **Faster time-to-market** by integrating complete computing solutions to streamline the design, development and manufacturing cycle
- **Reduced risk** by incorporating proven solutions designed by experts and applied in numerous applications worldwide
- **Time and resource savings** with off-the-shelf System on Modules. Variscite solutions apply quality materials in the most efficient and cost-effective manner, helping your products stay on target and within budget.
- **Cutting edge technology** with sophisticated hardware and software features so you stay ahead of the competition with the most relevant market offerings
- **Complete and flexible solutions** to suit any architecture and meet any safety regulations or market demands your product faces
- **Manufacturing support** with extensive QA procedures, tailored configurations and long-term part availability
- **Easy upgrade/downgrade path** with measurable savings in cost, time-to-market and reduced manufacturing risks.



# VARISCITE PIN2PIN SYSTEM ON MODULE FAMILIES

## Two highly scalable product families based on NXP processors

The VAR-SOM and DART Pin2Pin product families offer Variscite's customers significant long-term advantages:

- **Scalability:** Your end product can be easily scaled to a higher or lower performance platform at all stages while keeping the same carrier board design for the different platforms.
- **Optimized cost/performance:** With a full span of performance, feature-set, and cost, you can easily optimize your end product cost/performance by adjusting the platform to your actual needs.
- **Ease of development and integration:** Develop a single custom carrier board to support different pin-compatible SoM solutions, reduce development time, cost, and risk.
- **Lifetime extension:** Upgrade your products with a newer solution with an extended lifetime availability..

### VAR-SOM Pin2Pin Family

An extensive product family supporting a wide range of solutions from low-power and cost-sensitive entry point System on Modules, up to impressive power and multimedia performance solutions.

**Mechanical specifications:** 68mm width, based on 200pin SO-DIMM edge connector.

\*\* The Pin2Pin compatibility depends on pinmux options; please verify the detailed pinout table in the related SoM to confirm compatibility is maintained in your specific design.



**VAR-SOM-MX8M-PLUS**  
NXP i.MX8M Plus  
4x 1.8GHz Cortex-A53



**VAR-SOM-MX8M-MINI**  
NXP i.MX8M Mini  
4x 1.8GHz Cortex-A53



**VAR-SOM-AM62**  
TI AM625x  
4x 1.4GHz Cortex-A53



**VAR-SOM-MX93**  
NXP i.MX 93  
2x 1.7GHz Cortex-A53



**VAR-SOM-MX8M-NANO**  
NXP i.MX8M Nano  
4x 1.5GHz Cortex-A53



**VAR-SOM-MX8**  
NXP i.MX8 2x 1.8GHz Cortex-A72 + 4x 1.2GHz Cortex-A53



**VAR-SOM-MX8**  
NXP i.MX8  
4x 1.2GHz Cortex-A35



**VAR-SOM-MX6**  
NXP i.MX6  
4x 1.2GHz Cortex-A9



**VAR-SOM-SOLO/DUAL**  
NXP i.MX6  
2x 1GHz Cortex-A9



**VAR-SOM-6UL**  
NXP i.MX6 UL/ULL/ULZ  
900MHz Cortex-A7

### DART Pin2Pin Family

Packed in a tiny 55 x 30mm package, the DART product family provides a range of costs/performance solutions, all in a small form factor.

**Mechanical specifications:** 55 x 30mm, based on three 90 pins board-to-board connectors.

\*\* The Pin2Pin compatibility depends on pinmux options; please verify the detailed pinout table in the related SoM to confirm compatibility is maintained in your specific design.



**DART-MX8M-PLUS**  
NXP i.MX8M Plus  
4x 1.8GHz Cortex-A53



**DART-MX8M-MINI**  
NXP i.MX8M Mini  
4x 1.8GHz Cortex-A53



**DART-MX8M**  
NXP i.MX8M  
4x 1.5GHz Cortex-A53

	VAR-SOM-MX93	VAR-SOM-AM62
<b>CPU</b>		
<b>CPU Name</b>	NXP i.MX93	Texas Instruments AM62x
<b>CPU Type</b>	Cortex™-A55	Cortex™-A53
<b>CPU Cores</b>	2 Cores	4 Cores
<b>CPU Clock (Max)</b>	Up to 1.7GHz	Up to 1.4GHz
<b>Real-time co-processor</b>	250MHz Cortex-M33	400MHz Cortex-M4F and 333 MHz PRU (Programmable Realtime Unit)
<b>Integer performance (DMIPS)</b>	Up to 9,010	Up to 12,880
<b>Pin Compatible</b>		
<b>Pin2Pin Family</b>	VAR-SOM Pin2Pin Family	VAR-SOM Pin2Pin Family
<b>Memory</b>		
<b>RAM</b>	512MB – 2GB LPDDR4	512MB – 2GB DDR4
<b>Flash</b>	8 – 128 GB	8 – 128 GB
<b>Multimedia</b>		
<b>GPU</b>	2D pixel acceleration engine (PxP)	Imagination AXE-1-16M
<b>Video Acceleration</b>	-	-
<b>AI/ML</b>	Neural processing unit (NPU) up to 0.5 TOPS	-
<b>Camera Interfaces</b>	MIPI-CSI2, ISI (Parallel)	MIPI-CSI2
<b>HDMI in</b>	-	-
<b>Display</b>		
<b>HDMI</b>	-	-
<b>RGB</b>	1366x768p60 or 1280x800p60	-
<b>DSI</b>	MIPI-DSI 1920x1200 24-bit	-
<b>LVDS</b>	1366x768p60 or 1280x800p60	Dual 1920x1080 24-bit
<b>Touch controller</b>	Resistive, Capacitive	Resistive, Capacitive
<b>Other</b>	-	-
<b>Audio</b>		
<b>Headphone driver</b>	Yes	Yes
<b>Microphone</b>	Digital, Analog (stereo)	Digital, Analog (stereo)
<b>Digital audio</b>	3 x I2S(SAI), S/PDIF, RX TX, PDM 4CH	3 x I2S(McASP)
<b>Line In/Out</b>	Yes	Yes
<b>Networking</b>		
<b>Ethernet</b>	2x 10/100/1000 Mbps	2x 10/100/1000 Mbps
<b>Wi-Fi</b>	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
<b>Bluetooth</b>	BT/BLE5.2	BT/BLE5.2
<b>Connectivity</b>		
<b>SD / MMC</b>	x1	x1
<b>USB Host / Device</b>	USB2.0: 2x OTG	USB2.0: 2x OTG
<b>UART</b>	x4, up to 5 Mbps	x9, up to 3.6 Mbps
<b>I2C</b>	x5	x5
<b>SPI</b>	x3	x5
<b>RTC</b>	On carrier	On carrier
<b>PCI-Express</b>	-	-
<b>S-ATA</b>	-	-
<b>CAN Bus</b>	x2	x3
<b>Extrenal Bus</b>	-	-
<b>OS Support</b>		
<b>Operation system</b>	Linux, FreeRTOS	Linux, Android, FreeRTOS
<b>Mechanical Specs.</b>		
<b>Dimensions (WxL)</b>	67.8 x 33mm	67.8 x 33mm
<b>Connector type</b>	SO-DIMM200 edge connector Belongs to VAR-SOM Pin2Pin family	SO-DIMM200 edge connector Belongs to VAR-SOM Pin2Pin family
<b>Electronic Specs.</b>		
<b>Supply voltage</b>	3.3V or 3.4-5V	3.3V
<b>Digital I/O voltage</b>	3.3V/1.8V	3.3V
<b>Temperature Grades</b>		
<b>Commercial temperature</b>	0 to 70°C	0 to 85°C
<b>Extended temperature</b>	-25 to 85°C	0 to 85°C
<b>Industrial temperature</b>	-40 to 85°C	-40 to 85°C

	DART-MX8M-PLUS	DART-MX8M-MINI	DART-MX8M
<b>CPU</b>			
<b>CPU Name</b>	NXP i.MX 8M Plus	NXP i.MX 8M Mini	NXP i.MX 8M
<b>CPU Type</b>	Cortex™-A53	Cortex™-A53	Cortex™-A53
<b>CPU Cores</b>	4 Cores	4 Cores	4 Cores
<b>CPU Clock (Max)</b>	Up to 1.8GHz	Up to 1.8GHz	Up to 1.5GHz
<b>Real-time co-processor</b>	800MHz Cortex™-M7	400MHz Cortex™-M4	266MHz Cortex™-M4
<b>Integer performance (DMIPS)</b>	Up to 16,560	Up to 16,560	Up to 13,800
<b>Pin Compatible</b>			
<b>Pin2Pin Family</b>	DART Pin2Pin Family	DART Pin2Pin Family	DART Pin2Pin Family
<b>Memory</b>			
<b>RAM</b>	1 – 8 GB LPDDR4	1 – 4 GB LPDDR4	1 – 4 GB LPDDR4
<b>Flash</b>	8-128 GB eMMC	8 – 128 GB eMMC	4 – 128 GB eMMC
<b>Multimedia</b>			
<b>GPU</b>	GC7000UL/GC520L	Vivante GC328/GC Nano	Vivante GC7000Lite
<b>Video Acceleration</b>	1080p60 HEVC H.265/ H.264/ VP9/ VP8 Decoder, 1080p60 H.265/H.264 Encoder	1080p60 HEVC H.265/H.264/VP9/ VP8 Decode, 1080p60 H.264/VP8 Encode	4K H.265/H.264/VP9 Decode plus HDR
<b>AI/ML</b>	Neural processing unit (NPU) up to 2.3 TOPS	-	-
<b>Camera Interfaces</b>	2x MIPI-CSI2	MIPI-CSI	2x MIPI-CSI
<b>HDMI in</b>	-	-	-
<b>Display</b>			
<b>HDMI</b>	V2.0a up to 2Kp60	-	V2.0a up to 4Kp60
<b>RGB</b>	-	-	-
<b>DSI</b>	MIPI-DSI 1920×1080 24-bit	MIPI-DSI 1920×1080 24-bit	MIPI-DSI 1920×1080 24-bit
<b>LVDS</b>	Dual 1920x1080 24-bit	Dual 1920x1080 24-bit	Dual 1920x1080 24-bit
<b>Touch controller</b>	Resistive, Capacitive	Resistive, Capacitive	Resistive, Capacitive
<b>Other</b>	-	-	eDP1.4/DP1.3 up to 4Kp60
<b>Audio</b>			
<b>Headphone driver</b>	Yes	Yes	Yes
<b>Microphone</b>	Digital, Analog (stereo)	Digital, Analog (stereo)	Digital, Analog (stereo)
<b>Digital audio</b>	5 x I2S(SAI), S/PDIF, PDM 8CH	5 x I2S(SAI), S/PDIF, PDM	5 x I2S(SAI), S/PDIF
<b>Line In/Out</b>	Yes	Yes	Yes
<b>Networking</b>			
<b>Ethernet</b>	2x 10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
<b>Wi-Fi</b>	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n	Certified dual-band 802.11 ac/a/b/g/n	Certified dual-band 802.11 ac/a/b/g/n
<b>Bluetooth</b>	BT/BLE5.2	BT/BLE5.2	BT/BLE5.2
<b>Connectivity</b>			
<b>SD / MMC</b>	x1	x1	x1
<b>USB Host / Device</b>	USB 3.0/2.0 2x OTG	USB2.0: 2x OTG	USB 3.0/2.0: 2x OTG
<b>UART</b>	x4, up to 5 Mbps	x4, up to 4 Mbps	x4, up to 4 Mbps
<b>I2C</b>	x5	x3	x3
<b>SPI</b>	x3	x3	x3
<b>RTC</b>	On carrier	On carrier	On carrier
<b>PCI-Express</b>	Gen 3.0	Gen 2.0	2x Gen 2.0
<b>S-ATA</b>	-	-	-
<b>CAN Bus</b>	x2	-	-
<b>OS Support</b>			
<b>Operation system</b>	Linux, Android, FreeRTOS	Linux, Android, FreeRTOS	Linux, Android, FreeRTOS
<b>Mechanical Specs.</b>			
<b>Dimensions (WxL)</b>	55.0 x 30.0 mm	55.0 x 30.0 mm	55.0 x 30.0 mm
<b>Connector type</b>	3 x 90 pin board-to-board connectors. Belongs to DART Pin2Pin family	3 x 90 pin board-to-board connectors. Belongs to DART Pin2Pin family	3 x 90 pin board-to-board connectors. Belongs to DART Pin2Pin family
<b>Electronic Specs.</b>			
<b>Supply voltage</b>	3.4V – 5V	3.5V – 5V	3.4V – 4.5V
<b>Digital I/O voltage</b>	3.3V/1.8V	3.3 V/1.8V	3.3 V/1.8V
<b>Temperature Grades</b>			
<b>Commercial temperature</b>	0 to 70°C	0 to 70°C	0 to 70°C
<b>Extended temperature</b>	-25 to 85°C	-25 to 85°C	-25 to 85°C
<b>Industrial temperature</b>	-40 to 85°C	-40 to 85°C	-40 to 85°C

	VAR-SOM-MX8M-PLUS	VAR-SOM-MX8M-MINI	VAR-SOM-MX8M-NANO
<b>CPU</b>			
<b>CPU Name</b>	NXP i.MX 8M Plus	NXP i.MX 8M Mini	NXP i.MX 8M Nano
<b>CPU Type</b>	Cortex™-A53	Cortex™-A53	Cortex™-A53
<b>CPU Cores</b>	4 Cores	4 Cores	1-4 Cores
<b>CPU Clock (Max)</b>	Up to 1.8GHz	Up to 1.8GHz	Up to 1.5GHz
<b>Real-time co-processor</b>	800MHz Cortex™-M7	400MHz Cortex™-M4	650MHz Cortex™-M7
<b>Integer performance (DMIPS)</b>	Up to 16,560	Up to 16,560	Up to 13,800
<b>Pin Compatible</b>			
<b>Pin2Pin Family</b>	VAR-SOM Pin2Pin Family	VAR-SOM Pin2Pin Family	VAR-SOM Pin2Pin Family
<b>Memory</b>			
<b>RAM</b>	1 – 8 GB LPDDR4	1 – 4 GB DDR4	512MB – 2GB DDR4
<b>Flash</b>	8 – 128 GB	8 – 128 GB	Up to 512 MB NAND / 128 GB eMMC
<b>Multimedia</b>			
<b>GPU</b>	GC7000UL/GC520L	Vivante GC328/GC Nano	Vivante GC7000UL
<b>Video Acceleration</b>	1080p60 HEVC H.265/ H.264/ VP9/ VP8 Decoder, 1080p60 H.265/H.264 Encoder	1080p60 HEVC H.265/H.264/VP9/ VP8 Decode, 1080p60 H.264/VP8 Encode	-
<b>AI/ML</b>	Neural processing unit (NPU) up to 2.3 TOPS	-	-
<b>Camera Interfaces</b>	2x MIPI CSI2	MIPI-CSI2	MIPI-CSI2
<b>HDMI in</b>	-	-	-
<b>Display</b>			
<b>HDMI</b>	V2.0a up to 2Kp60	-	-
<b>RGB</b>	-	-	-
<b>DSI</b>	MIPI-DSI 1920×1080 24-bit	MIPI-DSI 1920×1080 24-bit	MIPI-DSI 1920×1080 24-bit
<b>LVDS</b>	Dual Flatlink 1920x1080 24-bit	Dual Flatlink 1920x1080 24-bit	Dual Flatlink 1920x1080 24-bit
<b>Touch controller</b>	Resistive, Capacitive	Resistive, Capacitive	Resistive, Capacitive
<b>Other</b>	-	-	-
<b>Audio</b>			
<b>Headphone driver</b>	Yes	Yes	Yes
<b>Microphone</b>	Digital, Analog (stereo)	Digital, Analog (stereo)	Digital, Analog (stereo)
<b>Digital audio</b>	5 x I2S(SAI), S/PDIF, PDM 8CH	5 x I2S(SAI), S/PDIF, PDM 4CH	5 x I2S(SAI), S/PDIF, PDM 8CH
<b>Line In/Out</b>	Yes	Yes	Yes
<b>Networking</b>			
<b>Ethernet</b>	2x 10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
<b>Wi-Fi</b>	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n	Certified dual-band 802.11 ac/a/b/g/n	Certified dual-band 802.11 ac/a/b/g/n
<b>Bluetooth</b>	BT/BLE5.2	BT/BLE5.2	BT/BLE5.2
<b>Connectivity</b>			
<b>SD / MMC</b>	x1	x1	x1
<b>USB Host / Device</b>	USB 3.0/2.0: 2x OTG	USB2.0: 2x OTG	USB2.0: 1x OTG
<b>UART</b>	x4, up to 5 Mbps	x4, up to 4 Mbps	x4, up to 4 Mbps
<b>I2C</b>	x5	x3	x4
<b>SPI</b>	x3	x3	x3
<b>RTC</b>	On carrier	On carrier	On carrier
<b>PCI-Express</b>	Gen 3.0	Gen 2.0	-
<b>S-ATA</b>	-	-	-
<b>CAN Bus</b>	x2	x1	x1
<b>OS Support</b>			
<b>Operation system</b>	Linux, Android, FreeRTOS	Linux, Android, FreeRTOS	Linux, Android, FreeRTOS
<b>Mechanical Specs.</b>			
<b>Dimensions (WxL)</b>	67.8 x 33.0 mm	67.8 x 33.0 mm	67.8 x 33.0 mm
<b>Connector type</b>	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family
<b>Electronic Specs.</b>			
<b>Supply voltage</b>	3.3 V	3.3 V	3.3 V
<b>Digital I/O voltage</b>	3.3 V	3.3 V	3.3 V
<b>Temperature Grades</b>			
<b>Commercial temperature</b>	0 to 70°C	0 to 70°C	0 to 70°C
<b>Extended temperature</b>	-25 to 85°C	0 to 85°C	0 to 85°C
<b>Industrial temperature</b>	-40 to 85°C	-40 to 85°C	-40 to 85°C

	VAR-SOM-MX7	VAR-SOM-6UL	DART-6UL
<b>CPU</b>			
<b>CPU Name</b>	NXP i.MX7	NXP i.MX6 UltraLite / i.MX6 ULL / i.MX 6ULZ	NXP i.MX6 UltraLite / i.MX 6ULL / i.MX 6ULZ
<b>CPU Type</b>	Cortex™-A7	Cortex™-A7	Cortex™-A7
<b>CPU Cores</b>	2 Cores	1 Core	1 Core
<b>CPU Clock (Max)</b>	1GHz	900MHz	900MHz
<b>Real-time co-processor</b>	200MHz Cortex™-M4	-	-
<b>Integer performance (DMIPS)</b>	Up to 3,800	Up to 1,710	Up to 1,710
<b>Pin Compatible</b>			
<b>Pin2Pin Family</b>	-	VAR-SOM Pin2Pin Family	-
<b>Memory</b>			
<b>RAM</b>	256 – 2048 MB DDR3L	128 – 1024 MB DDR3L	128 – 1024 MB DDR3L
<b>Flash</b>	Up to 512 MB NAND / 128 GB eMMC	Up to 512 MB NAND / 128 GB eMMC	Up to 512 MB NAND / 128 GB eMMC
<b>Multimedia</b>			
<b>GPU</b>	2D pixel acceleration engine (PxP)	2D pixel acceleration engine (PxP)	2D pixel acceleration engine (PxP)
<b>Video Acceleration</b>	-	-	-
<b>AI/ML</b>	-	-	-
<b>Camera Interfaces</b>	1x CSI, 1x CPI	1x CPI	1x CPI
<b>HDMI in</b>	-	24bit	-
<b>Display</b>			
<b>HDMI</b>	-	-	-
<b>RGB</b>	1920x1080 24-bit	1366 x 768 24-bit	1366x768 24-bit
<b>DSI</b>	1400x1050 24-bit	-	-
<b>LVDS</b>	-	1366 x 768 18-bit	-
<b>Touch controller</b>	Resistive, Capacitive	Resistive, Capacitive	Resistive, Capacitive
<b>Other</b>	EPDC	-	-
<b>Audio</b>			
<b>Headphone driver</b>	Yes	Yes	Yes
<b>Microphone</b>	Analog	Analog	Analog
<b>Digital audio</b>	SAI/MQS(AUDMUX)	SSI(AUDMUX), S/PDIF	SSI(AUDMUX), S/PDIF
<b>Line In/Out</b>	Yes	Yes	Yes
<b>Networking</b>			
<b>Ethernet</b>	2x 10/100/1000 Mbps	2x 10/100 Mbps	2x 10/100 Mbps
<b>Wi-Fi</b>	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
<b>Bluetooth</b>	BT/BLE5.2	BT/BLE5.2	BT/BLE5.2
<b>Connectivity</b>			
<b>SD / MMC</b>	x1	x1	x1
<b>USB Host / Device</b>	USB 2.0: 1x Host, 1x OTG	USB 2.0: 1x Host, 1x OTG	USB 2.0: 1x Host, 1x OTG
<b>UART</b>	x7, up to 4 Mbps	x8, up to 5 Mbps	x8, up to 5 Mbps
<b>I2C</b>	x4	x4	x4
<b>SPI</b>	x4	x4	x4
<b>RTC</b>	On carrier	On carrier	On carrier
<b>PCI-Express</b>	Gen 2.0	-	-
<b>S-ATA</b>	-	-	-
<b>CAN Bus</b>	x2	x2	x2
<b>OS Support</b>			
<b>Operation system</b>	Linux	Linux	Linux
<b>Mechanical Specs.</b>			
<b>Dimensions (WxL)</b>	67.8 x 38.6 mm	67.6 x 33.0 mm	50.0 x 25.0 mm
<b>Connector type</b>	204 pin SO-DIMM connector	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family	2x 90pin board-to-board connectors
<b>Electronic Specs.</b>			
<b>Supply voltage</b>	3.3 V	3.3 V	3.3 V
<b>Digital I/O voltage</b>	3.3 V	3.3 V	3.3 V
<b>Temperature Grades</b>			
<b>Commercial temperature</b>	0 to 70°C	0 to 70°C	0 to 70°C
<b>Extended temperature</b>	-	-	-
<b>Industrial temperature</b>	-20 to 85°C	-40 to 85°C	-40 to 85°C

	SPEAR-MX8	VAR-SOM-MX8	VAR-SOM-MX8X
<b>CPU</b>			
<b>CPU Name</b>	NXP i.MX 8QuadMax / 8QuadPlus	NXP i.MX 8QuadMax / 8QuadPlus	NXP i.MX 8QuadXPlus / 8DualXPlus / 8DualX
<b>CPU Type</b>	2x Cortex™-A72 + 4x Cortex™-A53	2x Cortex™-A72 + 4x Cortex™-A53	4x Cortex™-A35
<b>CPU Cores</b>	5-6 Cores	5-6 Cores	2-4 Cores
<b>CPU Clock (Max)</b>	1.6GHz Cortex™-A72, 1.2GHz Cortex™-A53	1.6GHz Cortex™-A72, 1.2GHz Cortex™-A53	1.2GHz Cortex™-A35
<b>Real-time co-processor</b>	2x 266MHz Cortex™-M4F	2x 266MHz Cortex™-M4F	264MHz Cortex™-M4F
<b>Integer performance (DMIPS)</b>	Up to 28,650	Up to 28,650	Up to 8,540
<b>Pin Compatible</b>			
<b>Pin2Pin Family</b>	-	VAR-SOM Pin2Pin Family	VAR-SOM Pin2Pin Family
<b>Memory</b>			
<b>RAM</b>	2 – 8 GB LPDDR4	2 – 8 GB LPDDR4	1 – 4 GB LPDDR4
<b>Flash</b>	4 – 128 GB eMMC	4 – 128 GB eMMC	4 – 128 GB eMMC
<b>Multimedia</b>			
<b>GPU</b>	Vivante GC7000VX	Vivante GC7000VX	Vivante GC7000Lite
<b>Video Acceleration</b>	4K H.265/H.264 Decode, 1080p60 h.264 Encode	4K H.265/H.264 Decode, 1080p60 H.264 Encode	Up to 4Kp30 H.265* or 4Kp30 H.264 Decode; 1080p30 H.264 Encode
<b>Camera Interfaces</b>	2x MIPI-CSI2	2x MIPI-CSI2	1x MIPI-CSI2, 1x parallel CSI
<b>HDMI in</b>	1x HDMI 1.4	-	-
<b>Display</b>			
<b>HDMI</b>	V2.0a up to 4Kp60	V2.0a up to 4Kp60	-
<b>RGB</b>	-	-	24-bit parallel LCD up to 720p60
<b>DSI</b>	MIPI-DSI 1920×1080 24-bit	MIPI-DSI 1920×1080 24-bit	MIPI-DSI 1920x1200 24-bit
<b>LVDS</b>	Dual 1920×1080 24-bit	Dual 1920×1080 24-bit	Dual 1920×1080 24-bit
<b>Touch controller</b>	Resistive, Capacitive	Resistive, Capacitive	Resistive, Capacitive
<b>Other</b>	eDP1.4/DP1.3 up to 4Kp60	eDP1.4/DP1.3 up to 4Kp60	-
<b>Audio</b>			
<b>Headphone driver</b>	Yes	Yes	Yes
<b>Microphone</b>	Digital, Analog (stereo)	Digital, Analog (stereo)	Digital, Analog (stereo)
<b>Digital audio</b>	I2S(SAI), S/PDIF	I2S(SAI)	ESAI, 4x I2S(SAI), S/PDIF
<b>Line In/Out</b>	Yes	Yes	Yes
<b>Networking</b>			
<b>Ethernet</b>	10/100/1000 Mbps + 10/100/1000 RGMII	10/100/1000 Mbps + 10/100/1000 RGMII	10/100/1000 Mbps + 10/100/1000 RGMII
<b>Wi-Fi</b>	Certified dual-band 802.11 ac/a/b/g/n	Certified dual-band 802.11 ac/a/b/g/n	Certified dual-band 802.11 ac/a/b/g/n
<b>Bluetooth</b>	BT/BLE5.2	BT/BLE5.2	BT/BLE5.2
<b>Connectivity</b>			
<b>SD / MMC</b>	x1	x1	x1
<b>USB Host / Device</b>	USB 3.0: 1x OTG, USB 2.0: 1x OTG, 1x Host plus HSIC port	USB 3.0/2.0: 1x OTG, USB 2.0: 1x Host	USB 3.0/2.0: 1x OTG, USB 2.0: 1x Host/Device
<b>UART</b>	x5, up to 4 Mbps	x5, up to 4 Mbps	x6, up to 4 Mbps
<b>I2C</b>	x4	x4	x6
<b>SPI</b>	x4	x4	x4
<b>RTC</b>	On carrier	On carrier	On carrier
<b>PCI-Express</b>	2x Gen 3.0	Gen 3.0	Gen 3.0
<b>S-ATA</b>	S-ATA 3		-
<b>CAN Bus</b>	x3	x2	x3
<b>OS Support</b>			
<b>Operation system</b>	Linux, Android, FreeRTOS	Linux, Android, FreeRTOS	Linux, Android, FreeRTOS
<b>Mechanical Specs.</b>			
<b>Dimensions (WxL)</b>	68.0 x 55.0 mm	67.6 x 51.6 mm	67.6 x 51.6 mm
<b>Connector type</b>	4 x 90pin board-to-board connectors	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family
<b>Electronic Specs.</b>			
<b>Supply voltage</b>	3.4V-4.5V	3.3 V	3.3 V
<b>Digital I/O voltage</b>	3.3 V	3.3 V	3.3 V
<b>Temperature Grades</b>			
<b>Commercial temperature</b>	-	-	-
<b>Extended temperature</b>	-25 to 85°C	-25 to 85°C	-25 to 85°C
<b>Industrial temperature</b>	-40 to 85°C	-40 to 85°C	-40 to 85°C

	VAR-SOM-MX6	VAR-SOM-SOLO/DUAL
<b>CPU</b>		
<b>CPU Name</b>	NXP i.MX6	NXP i.MX6
<b>CPU Type</b>	Cortex™-A9 MPCore™	Cortex™-A9 MPCore™
<b>CPU Cores</b>	1-4 Cores	1-2 Cores
<b>CPU Clock (Max)</b>	1.2GHz	1GHz
<b>Real-time co-processor</b>	-	-
<b>Integer performance (DMIPS)</b>	Up to 12,000	Up to 5,000
<b>Pin Compatible</b>		
<b>Pin2Pin Family</b>	VAR-SOM Pin2Pin Family	VAR-SOM Pin2Pin Family
<b>Memory</b>		
<b>RAM</b>	256 – 4096 MB DDR3	256 – 1024 MB DDR3
<b>Flash</b>	Up to 512 MB NAND / 128 GB eMMC	Up to 512 MB NAND / 128 GB eMMC
<b>Multimedia</b>		
<b>GPU</b>	Vivante™ GC2000	Vivante™ GC880+GC320
<b>Video Acceleration</b>	1080p60 H.264 Decode, 1080p30 H.264 Encode	1080p30 H.264 Decode 1080p30 H.264 Encode
<b>Camera Interfaces</b>	1x CSI, 1x CPI	1x CSI, 1x CPI
<b>HDMI in</b>	-	-
<b>Display</b>		
<b>HDMI</b>	V1.4 1920x1080	V1.4 1920x1080
<b>RGB</b>	-	-
<b>DSI</b>	1280x720 24-bit	1280x720 24-bit
<b>LVDS</b>	Dual 1920x1200 24-bit	Dual 1366x768 24-bit
<b>Touch controller</b>	Resistive, Capacitive	Resistive, Capacitive
<b>Other</b>	-	-
<b>Audio</b>		
<b>Headphone driver</b>	Yes	Yes
<b>Microphone</b>	Digital	Digital
<b>Digital audio</b>	S/PDIF	S/PDIF
<b>Line In/Out</b>	Yes	Yes
<b>Networking</b>		
<b>Ethernet</b>	10/100/1000 Mbps	10/100/1000 Mbps
<b>Wi-Fi</b>	Wi-Fi 802.11 b/g/n or Wi-Fi 802.11 a/b/g/n with MIMO	Wi-Fi 802.11 b/g/n or Wi-Fi 802.11 a/b/g/n with MIMO
<b>Bluetooth</b>	BT/BLE5.1 + CSA2 support	BT/BLE5.1 + CSA2 support
<b>Connectivity</b>		
<b>SD / MMC</b>	x1	x1
<b>USB Host / Device</b>	USB 2.0: 1x Host, 1x OTG	USB 2.0: 1x Host, 1x OTG
<b>UART</b>	x5, up to 5 Mbps	x5, up to 5 Mbps
<b>I2C</b>	x3	x3
<b>SPI</b>	x3	x3
<b>RTC</b>	On carrier	On carrier
<b>PCI-Express</b>	Gen 2.0	Gen 2.0
<b>S-ATA</b>	SATA 2	-
<b>CAN Bus</b>	x2	x2
<b>Extrenal Bus</b>	EIM	-
<b>OS Support</b>		
<b>Operation system</b>	Linux, Android	Linux, Android
<b>Mechanical Specs.</b>		
<b>Dimensions (WxL)</b>	67.8 x 51.5 mm	67.8 x 33.0 mm
<b>Connector type</b>	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family	SO-DIMM200 edge connector. Belongs to VAR-SOM Pin2Pin family
<b>Electronic Specs.</b>		
<b>Supply voltage</b>	3.3 V	3.3 V
<b>Digital I/O voltage</b>	3.3 V	3.3 V
<b>Temperature Grades</b>		
<b>Commercial temperature</b>	0 to 70°C	0 to 70°C
<b>Extended temperature</b>	-20 to 70°C	-20 to 70°C
<b>Industrial temperature</b>	-40 to 85°C	-40 to 85°C

# VAR-SOM-MX93



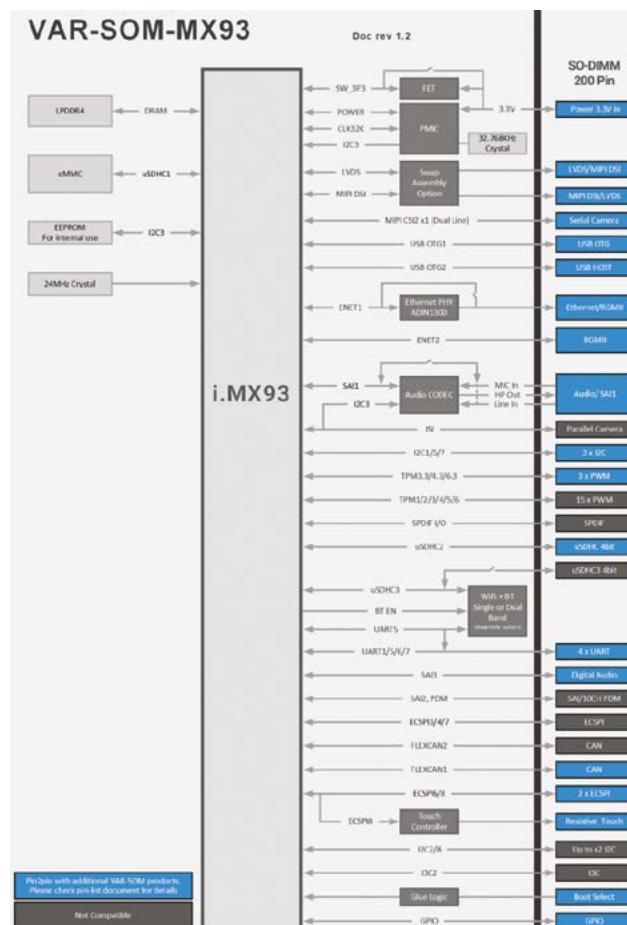
**Energy-efficient SoM with integrated Machine Learning capabilities**

The VAR-SOM-MX93 System on Module runs on a 1.7GHz Dual Cortex™-A55 NXP iMX93 processor and 250MHz Cortex-M33 real-time processor. It offers a dedicated NPU 0.5 TOPS, built-in security features and energy flex architecture. The Som is pin compatible with the VAR-SOM Pin2Pin family. It provides audio in/out, camera inputs, certified dual-band Wi-Fi, BT/BLE, 2x USB, and several display outputs along with a dual CAN bus, dual GbE, and industrial temperature grade.

## Key features include:

- Size: 67.8 x 33mm
- AI/ML acceleration 0.5 TOPS
- 2x 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- 2x USB2.0, 2x GbE
- 2D pixel acceleration engine (PxP)
- Up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

<b>Core</b>	
<b>Feature</b>	<b>Details</b>
Processor	NXP i.MX93
Processor core	Dual Cortex™-A53
MPU speed (MHz)	250
MIPS	Up to 9,010
2D/3D graphic accelerator	2D pixel acceleration engine (PxP)
Video acceleration (encoding/decoding)	-
RAM	Up to 2GB LPDDR4
Storage	Up to 128GB eMMC
<b>Peripherals</b>	
<b>Feature</b>	<b>Details</b>
Display controller resolution	-
Display interfaces	LVDS, DSI, Parallel RGB
SD/MMC	1
USB 2.0/3.0 Host	-
USB 2.0/3.0 OTG	2
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	BT/BLE5.2
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	3 x I2S(SAI), S/PDIF, RX TX, PDM 4CH
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	MIPI-CSI2, ISI (Parallel)
PCI-E	-
Serial UART ports	4
Other interfaces	SD/MMC, UART, I2C, SPI, PWM, GPIO, JTAG, timers, ADC
<b>OS Support</b>	
<b>Feature</b>	<b>Details</b>
Linux	Supported
Android	-
FreeRTOS	Supported
<b>Mechanical &amp; Electronic Specifications</b>	
<b>Feature</b>	<b>Details</b>
Supply voltage single	3.3V or 3.4-5V
Digital I/O voltage	3.3V/1.8V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 33mm

# VAR-SOM-AM62



**Cost-effective SoM with high-performance CPU and reduced power consumption**

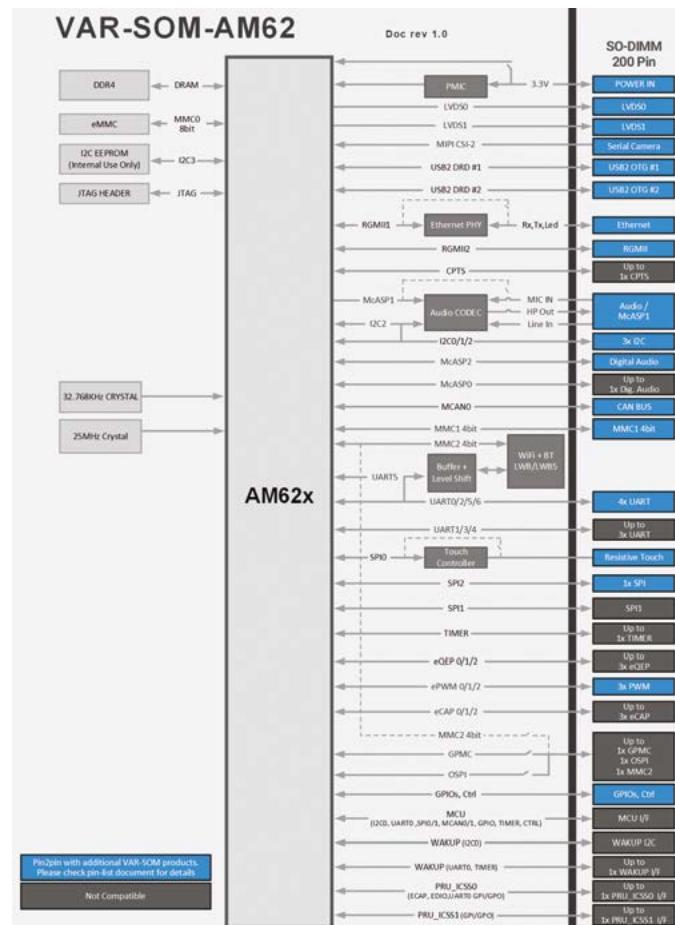
Powered by 1.4GHz Quad Cortex™-A53 TI AM625x with 400MHz Cortex-M4F and 333MHz PRU real-time co-processors, the SoM provides an ideal solution for industrial embedded products and power-sensitive edge devices.

This platform offers wide connectivity options: certified single or dual-band WiFi, BT/BLE5.2, 3x CAN Bus, dual GbE, audio, camera in and dual USB.

### Key features include:

- Size: 67.8 x 33mm
- 400MHz Cortex-M4F and 333MHz PRU
- 2x 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- 2x USB2.0, 2x GbE
- Imagination AXE-1-16M
- Up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	Texas Instruments AM62x
Processor core	Up to Quad Cortex™-A53
MPU speed (MHz)	400
MIPS	Up to 12,880
2D/3D graphic accelerator	Imagination AXE-1-16M
Video acceleration (encoding/decoding)	-
RAM	Up to 4GB DDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	-
Display interfaces	Dual LVDS display
SD/MMC	1
USB 2.0/3.0 Host	-
USB 2.0/3.0 OTG	2
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	Certified single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	BT/BLE 5.2
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	3 x I2S(McASP)
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	MIPI CSI2
PCI-E	-
Serial UART ports	9
Other interfaces	SD/MMC, UART, I2C, SPI, eQSPI, ePWM, GPIO, JTAG, eCAP, CAN-FD

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 33.0 mm

# VAR-SOM-MX8M-PLUS



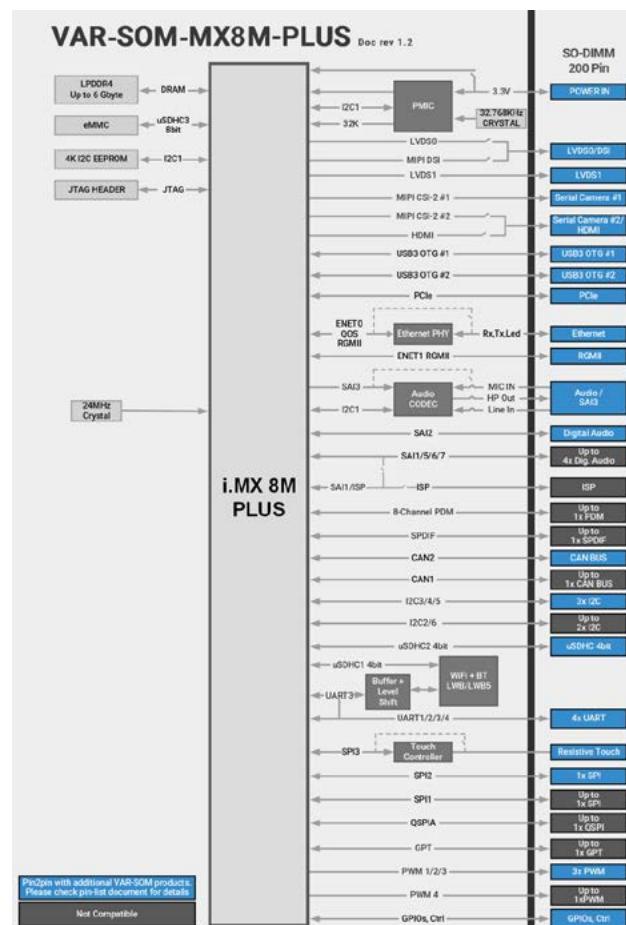
The new generation of  
System on Module with  
dedicated AI/ML capabilities

The VAR-SOM-MX8M-PLUS System on Module is based on a 1.8GHz Quad Cortex™-A53 NXP's iMX8M Plus processor with 800MHz Cortex™-M7 Real-time co-processor. A new generation of processors that combine integrated Artificial Intelligence (AI) / Machine Learning (ML) capabilities with advanced multimedia features. The SoM includes a dedicated Neural Processing Unit (NPU), an intelligent vision system based on an Image Signal Processor (ISP) and dual camera inputs, as well as advanced multimedia and connectivity features.

## Key features include:

- Size: 67.8 x 33.0mm
- 1080p H265/H264 encode/decode, AI/ML acceleration, HD 2D/3D GPU
- 2x 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- AI/ML NPU acceleration 2.3 TOPS
- GC7000UL/ GC520L
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX8M Plus
Processor core	Quad-core Cortex™-A53
Real-time co-processor	800MHz Cortex-M7
MIPS	Up to 16,560
2D/3D graphic accelerator	GC7000UL/ GC520L
Video acceleration (encoding/decoding)	1080p60 H.265/ H.264/ VP9/ VP8 Decoder, 1080p60 H.265/ H.264 Encoder
RAM	Up to 8GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	Up to 4K
Display interfaces	Dual LVDS display, HDMI, DSI
SD/MMC	1
USB 2.0/3.0 Host	-
USB 2.0/3.0 OTG	2
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	5 x I2S(SAI), S/PDIF RX TX, PDM 8CH
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	2x MIPI CSI2
PCI-E	Gen 3.0
Serial UART ports	4
Other interfaces	SD/MMC, UART, I2C, SPI, QSPI, PWM, GPIO, JTAG, timers

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 33.0 mm

# DART-MX8M-PLUS



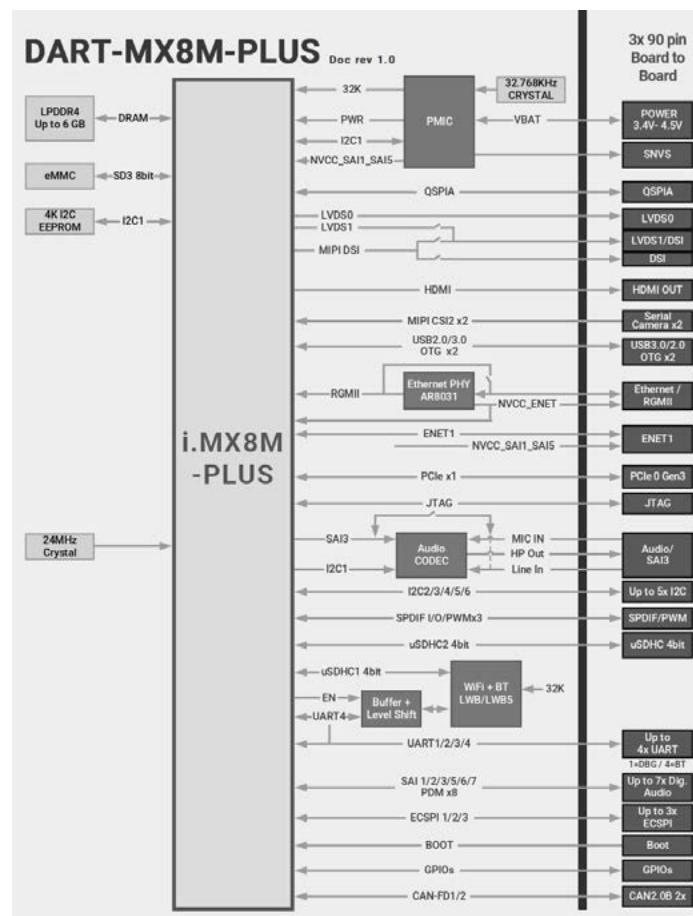
The future of smart embedded systems with AI/ML capabilities

The DART-MX8M-PLUS is based on a 1.8GHz Quad Cortex™-A53 NXP i.MX 8M Plus processor with 800MHz Cortex™-M7 Real-time co-processor. This is the first i.MX processor with an Artificial Intelligence and Machine Learning accelerators, featuring an integrated Neural Processing Unit (NPU) and an intelligent vision processing system based on Image Signal Processor (ISP) and camera interfaces. The SoM includes advanced multimedia features ,such as: H.265/264 HD video encode and decode engines, advanced 2D/3D graphic acceleration, HDMI, LVDS, MIPI-DSI display, 2x CAN-FD, and dual cameras inputs.

## Key features include:

- Size: 55.0 x 30.0mm
- 1080p H265/H264 encode/decode, AI/ML acceleration, HD 2D/3D GPU
- 2x 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- GC7000UL/ GC520L
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- DART Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX8M Plus
Processor core	Quad-core Cortex™-A53
Real-time co-processor	800MHz Cortex™-M7
MIPS	Up to 16,560
2D/3D graphic accelerator	GC7000UL/ GC520L
Video acceleration (encoding/decoding)	1080p60 H.265 / H.264 VP9 / VP8 Decode, 1080p60 H.265 / H.264 Encode
RAM	Up to 8GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	Up to 4K
Display interfaces	Dual LVDS display, HDMI, DSI
SD/MMC	1
USB 2.0 Host	-
USB 3.0/2.0 OTG	2
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, Line-in
Microphone	Digital, Analog (stereo)
Digital audio	5 x I2S(SAI), S/PDIF RX TX, PDM 8CH
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	2x MIPI CSI2
S-ATA	-
PCI-E	Gen 3.0
Serial UART ports	4
Other interfaces	I2C, QSPI/SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.4V- 5V
Digital I/O voltage	3.3V/1.8V
SoM Interface	3 x 90pin board to board connectors
Dimensions (W x L)	55.0 x 30.0 mm

# VAR-SOM-MX8M-MINI



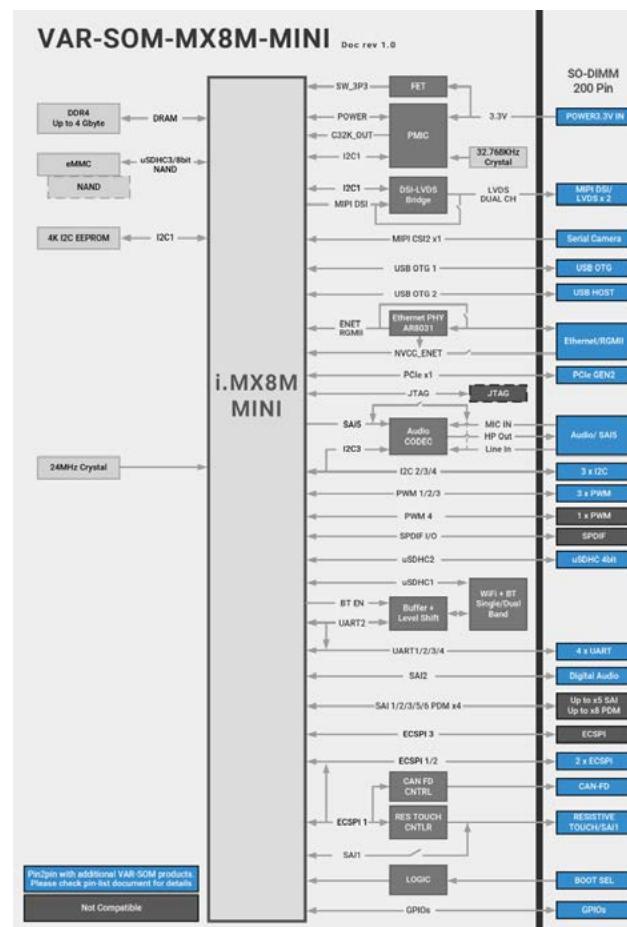
**Low-power and cost-optimized solution with ultimate scalability**

The VAR-SOM-MX8M-MINI Based on NXP's i.MX 8M Mini with up to 1.8GHz Quad-core ARM Cortex-A53 plus 400MHz Cortex-M4 real-time processor and up to 4 GB DDR4. The VAR-SOM-MX8M-MINI offers a low-power and cost-optimized solution with ultimate scalability options to suit a wide range of applications and cost requirements. This popular platform supports a variety of interfaces including certified single band 802.11b/g/n as well as dual-band 802.11ac/a/b/g/n option, 4.2 BT/BLE, Gigabit Ethernet, CAN bus, dual USB2.0 and LVDS. Additionally, the SoM provides an integrated HW engines supporting 1080p video encoding/decoding, 2D and 3D GPU, HQ audio all in a full industrial range of -40 to 85°C.

## Key features include:

- Size: 67.8 x 33.0mm
- 1080p60 encode, decode and display, HQ audio, HD GPU
- 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- Vivante GC320/GC Nano
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX8M Mini
Processor core	Quad-core Cortex™-A53
Real-time co-processor	400MHz Cortex™-M4
MIPS	Up to 16,560
2D/3D graphic accelerator	Vivante GC328/GC Nano
Video acceleration (encoding/decoding)	1080p60 H.265/H.264/VP9 Decode, 1080p60 H.264/VP8 Encode
RAM	Up to 4GB DDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	24bits LVDS, HDMI: 1080p
Display interfaces	DSI, dual LVDS
SD/MMC	1
USB 2.0/3.0 Host	-
USB 2.0 OTG	2
Ethernet	10/100/1000 Mbps
Wi-Fi	Single band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	5 x I2S(SAI), S/PDIF, PDM 4CH
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	MIPPI-CSI2
PCI-E	Gen 2.0
Serial UART ports	4
Other interfaces	CAN Bus, I2C, QSPI, SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 33.0 mm

# DART-MX8M-MINI



## Cost-optimized System on Module

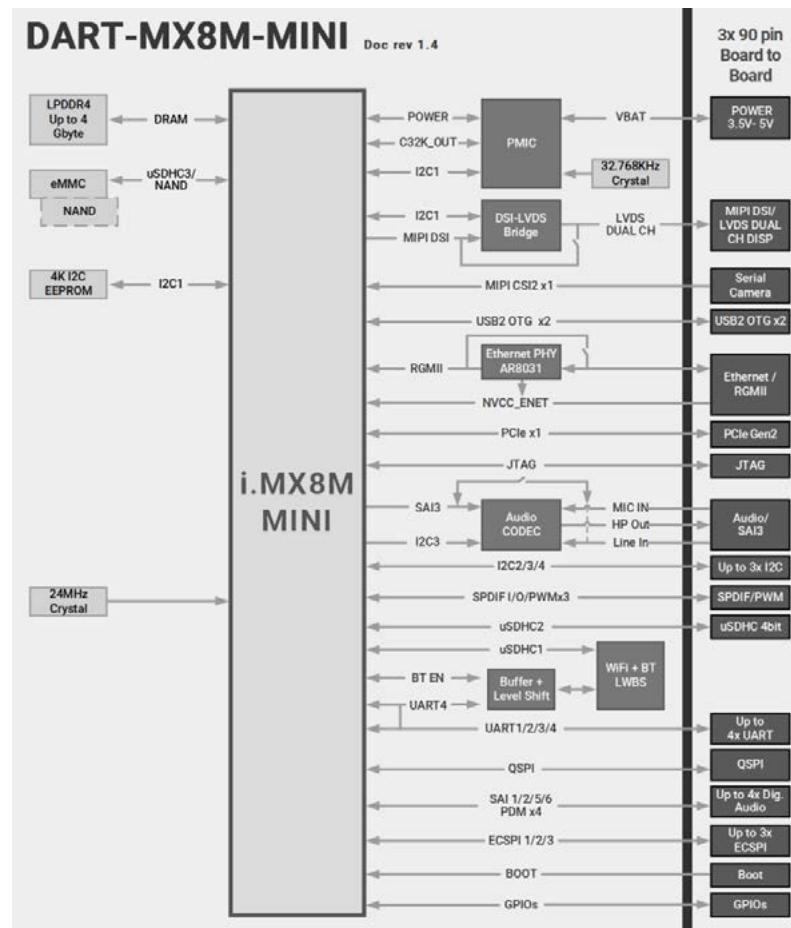
The DART-MX8M-MINI, 55 x 30mm, System on Module powered by NXP's i.MX8M Mini with up to 1.8GHz Quad-core ARM Cortex-A53 plus 400MHz Cortex-M4 real-time processor.

Leveraging advanced low power silicon process technology to provide optimized power consumption while maintaining a high-performance bar. The SoM offers integrated 1080p video encode and decode acceleration support, 2D and 3D graphics, HQ audio and a wide range of connectivity options such as certified Wi-Fi/BT, Ethernet and USB.

### Key features include:

- Size: 55.0 x 30.0mm
- 1080p60 encode, decode and display, HQ audio, HD GPU
- 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- Vivante GC320/GC Nano
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- DART Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX8M Mini
Processor core	Quad-core Cortex™-A53
Real-time co-processor	400MHz Cortex™-M4
MIPS	Up to 16,560
2D/3D graphic accelerator	Vivante GC328/GC Nano
Video acceleration (encoding/decoding)	1080p60 H.265/H.264/VP9 Decode, 1080p60 H.264/VP8 Encode
RAM	1 – 4 GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	24 bit LVDS, HDMI: 1080p
Display interfaces	DSI, LVDS
SD/MMC	1
USB 2.0 Host	-
USB 2.0 OTG	2
Ethernet	10/100/1000 Mbps
Wi-Fi	802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, Line-in
Microphone	Digital, Analog (stereo)
Digital audio	5 x I2S(SAI), S/PDIF, PDM
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	MIPI-CSI2
S-ATA	-
PCI-E	Gen 2.0
Serial UART ports	4
Other interfaces	I2C, QSPI, SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.5 – 5 V
Digital I/O voltage	3.3V/1.8V
SoM Interface	3 x 90pin board to board connectors
Dimensions (W x L)	55.0 x 30.0 mm

# VAR-SOM-MX8M-NANO



## Cost-optimized System on Module

The VAR-SOM-MX8M-NANO is a cost-optimized System on Module based on NXP's i.MX 8M Nano, 1.5GHz Quad-core Cortex-A53 plus 650MHz Cortex-M7.

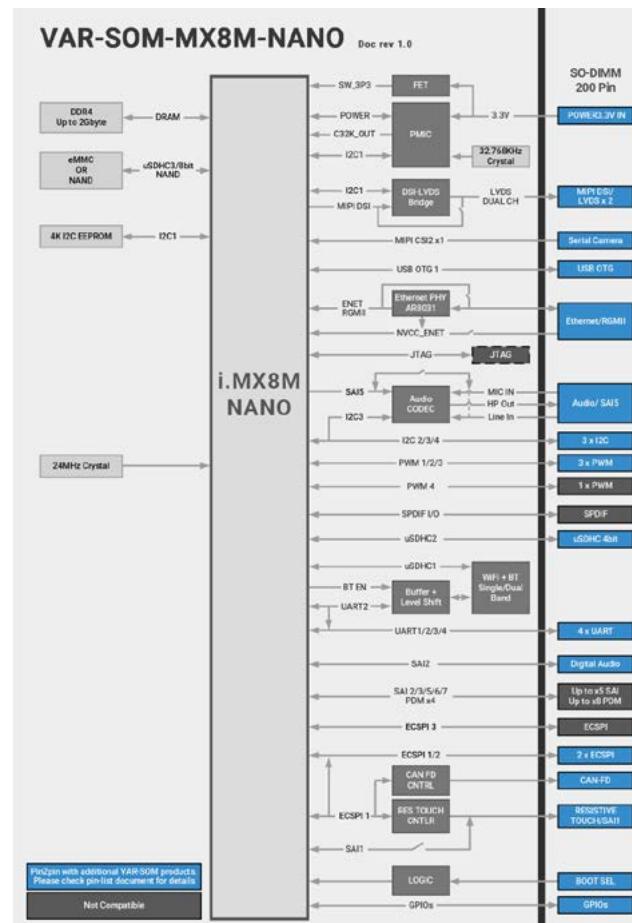
The SoM offers an ideal solution for cost-sensitive designs that require power-efficiency and high-performance graphics as well as for general-purpose applications.

This popular platform supports a variety of interfaces including certified single-band 802.11b/g/n as well as dual-band 802.11ac/a/b/g/n option, 4.2 BT/BLE, Gigabit Ethernet, CAN/CAN-FD, USB2.0 and LVDS.

### Key features include:

- Size: 67.8 x 33.0mm
- 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- GC7000Lite High Performance 2D/3D GPU
- 2GB RAM, 512MB NAND, 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

<b>Core</b>	
<b>Feature</b>	<b>Details</b>
Processor	NXP i.MX8M Nano
Processor core	Quad-core Cortex™-A53
Real-time co-processor	650MHz Cortex™-M7
MIPS	Up to 13,800
2D/3D graphic accelerator	Vivante GC7000UL
Video acceleration (encoding/decoding)	-
RAM	512MB – 2GB DDR4
Storage	Up to 128GB eMMC
<b>Peripherals</b>	
<b>Feature</b>	<b>Details</b>
Display controller resolution	24bits LVDS HDMI: 1080p
Display interfaces	DSI, dual Flatlink LVDS
SD/MMC	1
USB 2.0/3.0 Host	-
USB 2.0 OTG	1
Ethernet	10/100/1000 Mbps
Wi-Fi	Single band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	5 x I2S(SAI), S/PDIF, PDM 8CH
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	MIPi-CSI2
Serial UART ports	4
Other interfaces	CAN/CAN-FD, I2C, SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers
<b>OS Support</b>	
<b>Feature</b>	<b>Details</b>
Linux	Supported
Android	Supported
FreeRTOS	Supported
<b>Mechanical &amp; Electronic Specifications</b>	
	<b>Details</b>
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 33.0 mm

# VAR-SOM-MX8X



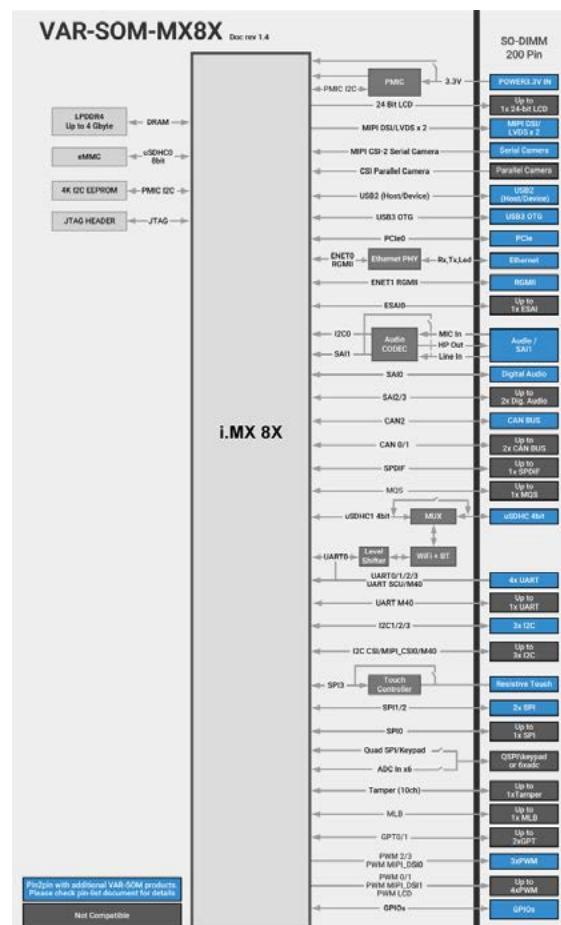
**Maximized safety and reliability  
in a power-optimized design**

The VAR-SOM-MX8X supports NXP's i.MX 8X Quad 1.2GHz Cortex™-A35 processor plus Cortex-M4F realtime co-processor and offers built-in safety features, highly integrated multimedia support and efficient power/performance architecture. This highly integrated SoM is designed to support a wide range of high-reliability, power-efficient applications, from industrial automation & control to defense, medical, telematics, building control, failover displays/HMI and robotics. The SoM multimedia features and interfaces options include Vivante GC7000Lite GPU for 2D and 3D graphics acceleration, 4K H.265 Decode, 1080p H.264 Encode/Decode, Camera Interfaces, DSI / LVDS, Parallel LCD, dual GbE, certified Wi-Fi/BT, CAN/CAN-FD, USB3 and serial interfaces.

## Key features include:

- Size: 67.6 x 51.6mm
- 4 x 1.2GHz ARM Cortex™-A35
- 4K H.265 Decode, 1080p H.264 Encode/Decode
- 2x 10/100/1000 Mbps
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- GC7000Lite high performance GPU
- up to 4GB LPDDR4 memory, up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX 8X
Processor core	Quad Cortex™-A35
Real-time co-processor	266MHz Cortex™-M4F
MIPS	Up to 8,540
2D/3D graphic accelerator	Vivante GC7000Lite
Video acceleration (encoding/decoding)	Up to 4Kp30 H.265* or 4Kp30 H.264 Decode; 1080p30 H.264 Encode
RAM	1 – 4GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	24bits parallel RGB / 24bits LVDS, up to WUXGA (1920 x1200)
Display interfaces	DSI, dual LVDS display
SD/MMC	1
USB 2.0 Host	1
USB 2.0/3.0 OTG	1
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	ESAI, 4x I2S(SAI), S/PDIF
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	1x MIPI-CSI2, 1x parallel CSI 8/10-bit
S-ATA	-
PCI-E	Gen 3.0
Serial UART ports	6
Other interfaces	I2C, SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers, keypad, QSPI

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.6 x 51.6 mm

# VAR-SOM-MX8



**Advanced processing power  
and high-end multimedia**

The VAR-SOM-MX8 Based on NXP i.MX 8QuadMax, Dual 1.6GHz ARM Cortex-A72, Quad 1.2GHz Cortex-A53 and 2x 266MHz real-time Cortex-M4F co-processor.

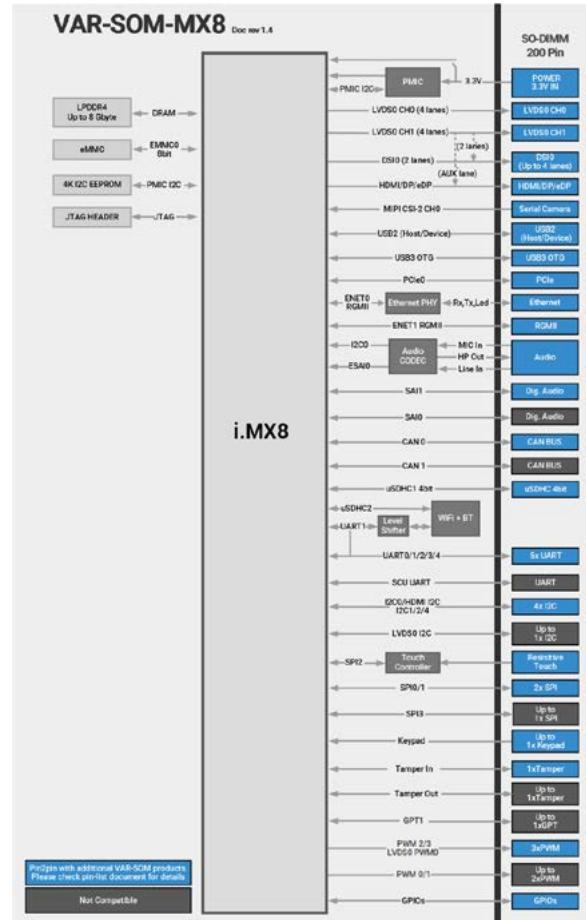
An impressive multimedia performance spec encompasses UltraHD 4K video and display support, high-quality audio, a high performance 2D/3D graphics acceleration and camera inputs.

The SoM includes a variety of interfaces and connectivity options: Certified dual-band Wi-Fi 802.11ac/a/b/g/n, BT/BLE, dual GbE, dual USB3, PCIe, CAN FD, SPI and UART.

## Key features include:

- Size: 67.6 x 51.6mm
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- Vivante GC7000VX high performance GPU
- 10/100/1000 Mbps + 10/100/1000 RGMII
- DSI, dual LVDS display, HDMI / DP / eDP
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX 8QuadMax
Processor core	2x Cortex™-A72 + 4x Cortex™-A53
Real-time co-processor	2x 266MHz Cortex™-M4F
MIPS	Up to 28,650
2D/3D graphic accelerator	Vivante GC7000VX
Video acceleration (encoding/decoding)	4K H.265/H.264 Decode, 1080p60 H.264 Encode
RAM	2 – 8 GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	Up to 4K
Display interfaces	DSI, dual LVDS display, HDMI / DP / eDP
SD/MMC	1
USB 2.0/ Host	1
USB 2.0/3.0 OTG	1
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	I2S(SAI)
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On Carrier
Camera interface	2x MIPI CSI2
PCI-E	Gen 3.0
Serial UART ports	5
Other interfaces	CAN, I2C, SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.6 x 51.6 mm

# SPEAR-MX8



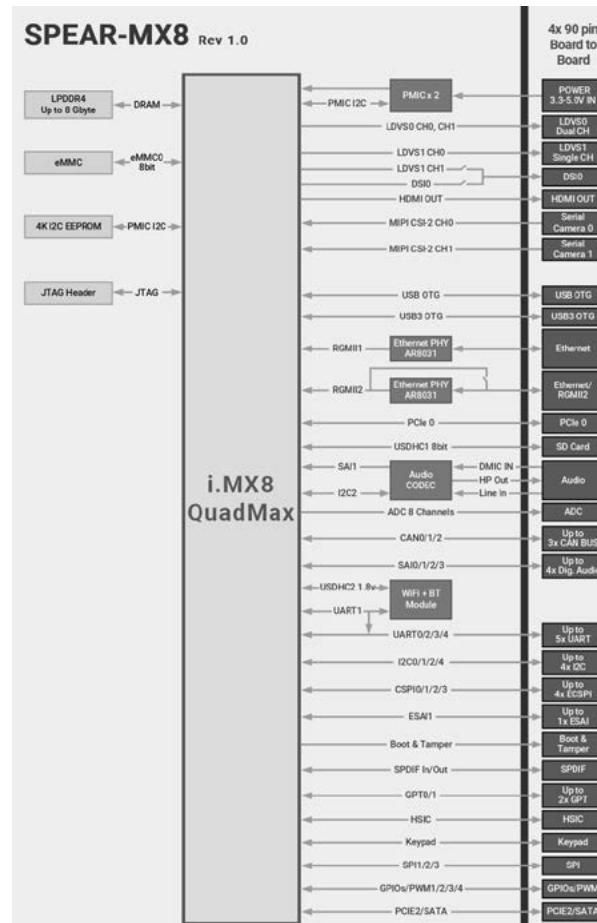
## The SPEAR-MX8 Challenges the market's Multimedia Performance

The SPEAR-MX8, a highly scalable SoM, based on i.MX 8QuadMax Dual 1.6GHz Cortex-A72, Quad 1.2GHz Cortex-A53 and 2x 266MHz Real-time Cortex-M4F co-processor. The SoM carries an impressive multimedia performance spec encompasses UltraHD 4K video and display support, high-quality audio, a high performance 2D/3D graphics acceleration and camera/HDMI inputs. An ideal solution for embedded products requiring advanced performance processing, high-end graphic, UltraHD video capabilities and a variety of highspeed interfaces and connectivity options.

### Key features include:

- Vivante GC7000VX high performance GPU
- 4K video decode, FHD video encode
- UltraHD 4K Display: HDMI 2.0, LVDS, DSI, eDP
- 2 x Gigabit Ethernet
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- HDMI in, dual CSI, Audio in/out
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX 8QuadMax / 8QuadPlus
Processor core	up to 2x Cortex™-A72 + 4x Cortex™-A53
Real-time co-processor	2x 266MHz Cortex™-M4F
MIPS	Up to 28,650
2D/3D graphic accelerator	Vivante GC7000VX
Video acceleration (encoding/decoding)	4K H.265/H.264 Decode, 1080p60 h.264 Encode
RAM	Up to 8GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	Up to 4K
Display interfaces	eDP/DP, HDMI, MIPI-DSI, LVDS
SD/MMC	1
USB 2.0/3.0 Host	1 plus HSIC port
USB 2.0/3.0 OTG	2
Ethernet	2x 10/100/1000 Mbps
Wi-Fi	802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in
Microphone	Digital, Analog (stereo)
Digital audio	I2S(SAI), S/PDIF
Touch screen controller	4 wire resistive touch panel
RTC	On Carrier
Camera interface	2x MIPI-CSI2
HDMI in	1x HDMI 1.4
S-ATA	S-ATA 3
PCI-E	2x Gen 3.0
Serial UART ports	5
Other interfaces	4 x I2C, 4 x SPI, GPIOs, JTAG

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.4 – 4.5 V
Digital I/O voltage	3.3 V
SoM Interface	4 x 90pin board to board connectors
Dimensions (W x L)	68.0 x 55.0 mm

# DART-MX8M



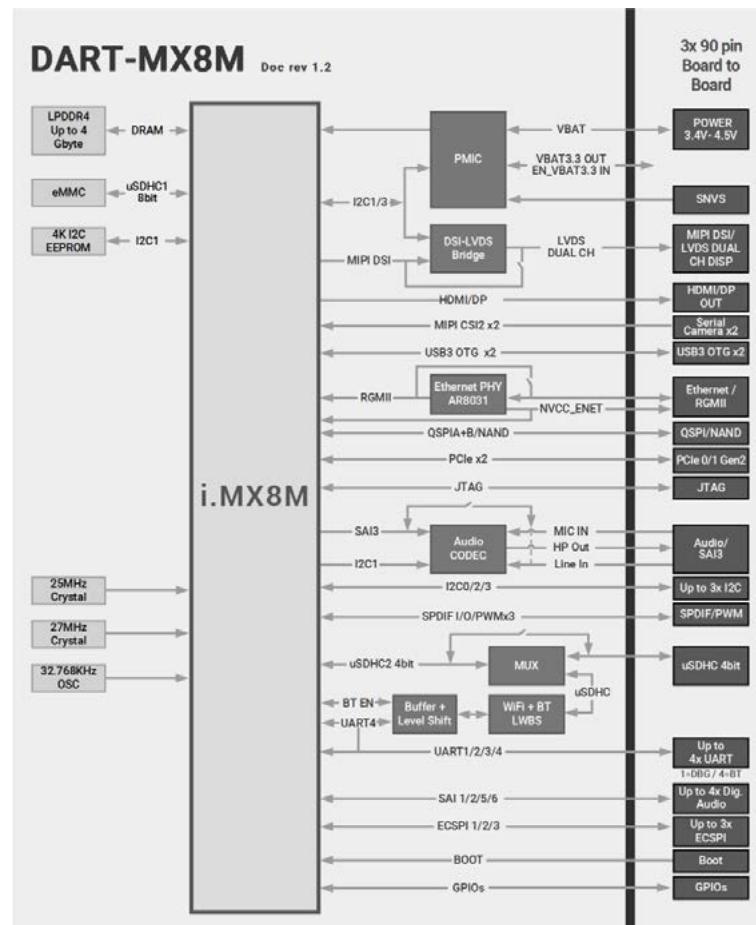
**Miniature SoM with ultra-multimedia performance**

The DART-MX8M, measuring only 55 x 30 mm, is based on NXP i.MX8M family and carries Quad 1.5GHz ARM Cortex-A53 plus 266MHz Cortex-M4. The SoM offers an ideal solution for embedded systems that require high-end multimedia applications in a small form factor, as well as portable and battery operated products, and provides a variety of interfaces and connectivity options alongside high multimedia performance spec including 4K video HEVC/H265/H264/VP9 decode with HDR, high-quality audio, 4K display support and 2D/3D graphics acceleration.

**Key features include:**

- Size: 55.0 x 30.0mm
- UltraHD 4K Display: HDMI 2.0, LVDS, DSI, eDP
- 4K video decode with HDR and HQ audio in/out
- Gigabit Ethernet and USB3
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- Vivante GC7000Lite 2D/3D accelerator
- up to 128GB eMMC
- -40 to 85°C Industrial temperature range
- DART Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX8M
Processor core	Dual/Quad-core Cortex™-A53
Real-time co-processor	266MHz Cortex™-M4
MIPS	Up to 13,800
2D/3D graphic accelerator	Vivante GC7000Lite
Video acceleration (encoding/decoding)	Up to 4K HEVC/H265, H264, VP9 Decode plus HDR
RAM	Up to 4GB LPDDR4
Storage	Up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	Up to 4K
Display interfaces	eDP/DP, HDMI, MIPI-DSI, LVDS
SD/MMC	1
USB 2.0/3.0 Host	-
USB 2.0/3.0 OTG	2
Ethernet	10/100/1000 Mbps
Wi-Fi	802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, Line-in
Microphone	Digital, Analog (stereo)
Digital audio	I2S(SAI), S/PDIF
Touch screen controller	4 wire resistive touch panel
RTC	On Carrier
Camera interface	2x MIPI-CSI
S-ATA	-
PCI-E	2x Gen 2.0
Serial UART ports	4
Other interfaces	3 x I2C, 3 x SPI, GPIOs, JTAG

### OS Support

Feature	Details
Linux	Supported
Android	Supported
FreeRTOS	Supported

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.4 – 4.5 V
Digital I/O voltage	3.3 V/1.8V
SoM Interface	3 x 90pin board to board connectors
Dimensions (W x L)	55.0 x 30.0 mm

# VAR-SOM-6UL



**Low power, optimized cost**

The VAR-SOM-6UL is highly flexible System-on-Module (SoM) based on NXP i.MX 6UltraLite / i.MX 6ULL / i.MX 6ULZ ARM Cortex-A7 processor, up to 900MHz CPU Clock.

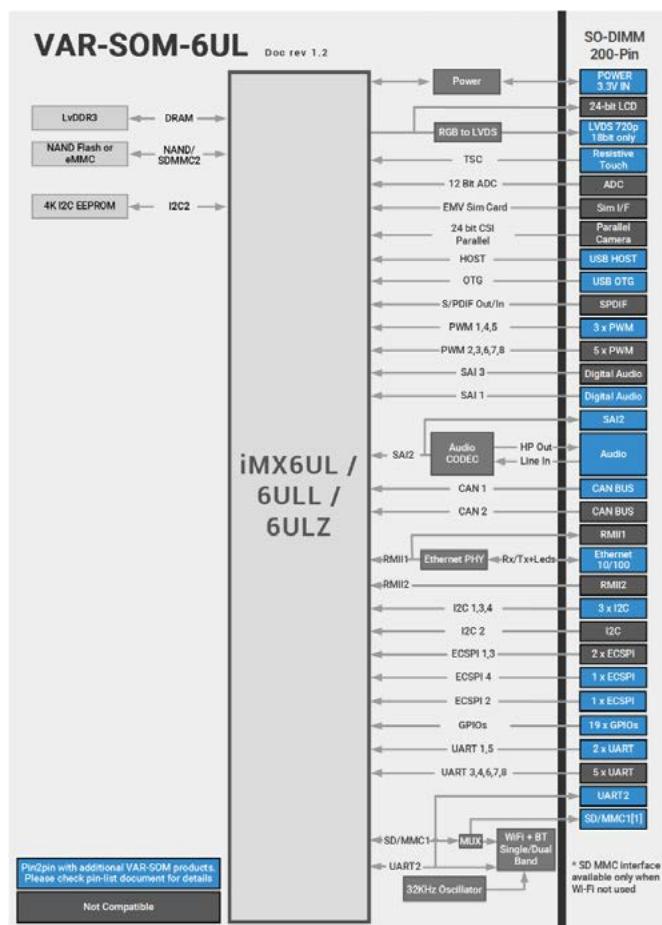
The VAR-SOM-6UL provides a variety of interfaces and connectivity options including certified single-band 802.11b/g/n or dual-band Wi-Fi 802.11ac/a/b/g/n, Bluetooth/BLE, dual Ethernet, dual USB, audio, camera in, parallel RGB and LVDS display with touch panel and serial interfaces.

The system supports industrial temperature grades -40 to 85°C and long longevity commitment targeting embedded products in various industrial segments and applications.

## Key features include:

- Size: 67.6 x 33.0mm
- Up to 512MB DDR3L, 512MB NAND / 128GB eMMC
- 2D pixel acceleration engine (PxP)
- 2x 10/100Mbps Ethernet
- Built-in Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- Integrated security features
- -40 to 85°C Industrial temperature range
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX6 UltraLite / i.MX 6ULL / i.MX 6ULZ
Processor core	Single-core ARM Cortex-A7
Real-time co-processor	900MHz
MIPS	Up to 1,710
2D/3D graphic accelerator	2D pixel acceleration engine (PxP)
Video acceleration (encoding/decoding)	-
RAM	128 – 512 MB DDR3L (OPT:1024MB)
Storage	Up to 512MB NAND or 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	24bits parallel RGB / 18bits LVDS up to WXGA (1366 x 768)
Display interfaces	RGB
SD/MMC	1
USB 2.0 Host	1
USB 2.0 OTG	1
Ethernet	10/1000 Mbps + 10/100/1000 RGMII
Wi-Fi	single-band 802.11 b/g/n or dual-band 802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-in, ESDI
Microphone	Analog (Stereo)
Digital audio	SSI(AUDMUX), S/PDIF
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	On carrier
Camera interface	Parallel input
S-ATA	-
PCI-E	-
Serial UART ports	8
Other interfaces	Dual CAN, I2C, SPI, PWM, JTAG, UART, SD/MMC

### OS Support

Feature	Details
Linux	Supported
Android	-

### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage 1.8 V	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.6 x 33.0 mm

# DART-6UL



**Optimizing Power,  
Size and Cost**

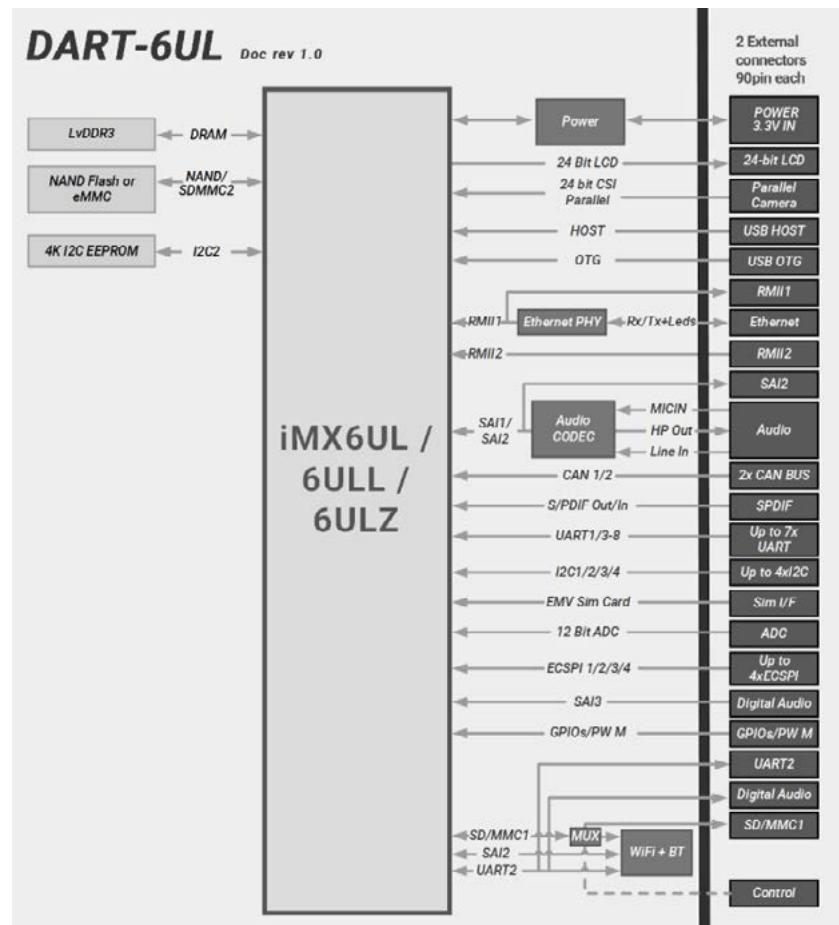
The DART-6UL, measuring only 55 x 25mm, is a highly flexible System-on-Module (SoM) based on NXP's i.MX 6UltraLite / 6ULL family and carries up to 900MHz ARM Cortex-A7 processor.

A versatile platform, the DART-6UL provides a variety of interfaces and connectivity options – all packaged at an optimized power, size and cost. This superior price / performance offering is ideal for fast emerging applications such as Internet-of-Things (IoT), as well as other portable and battery operated embedded systems.

**Key features include:**

- NXP i.MX 6UltraLite / 6ULL up to 900MHz ARM Cortex-A7 with optional security features
- Up to 512MB DDR3L and 512MB NAND / 128GB eMMC
- Certified Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- Dual 10/100Mbps Ethernet
- Dual USB
- Small size: 55 x 25mm
- Low power consumption

## Block Diagram



## Specifications

<b>Core</b>	
<b>Feature</b>	<b>Details</b>
Processor	NXP i.MX6 UltraLite / i.MX 6ULL / i.MX 6ULZ
Processor core	Single-core ARM Cortex-A7
Real-time co-processor	900MHz
MIPS	Up to 1,320
2D/3D graphic accelerator	PxP 2D Pixel acceleration engine
Video acceleration (encoding/decoding)	Software decode/encode
RAM	128 - 512MB DDR3L
Storage	Up to 512MB SLC NAND or 128GB eMMC
<b>Peripherals</b>	
<b>Feature</b>	<b>Details</b>
Display controller resolution	LCD: WXGA (1366 x 768), 24-bit
Display interfaces	RGB (no ULZ)
SD/MMC	1
USB 2.0 host	1
USB OTG	1
Ethernet	2 x 10/100Mbps (no ULZ)
Wi-Fi	802.11 ac/a/b/g/n (no ULZ)
Bluetooth	5.2 / BLE
Audio	Headphone out, line-In, ESDI
Microphone	Analog (Stereo)
Digital audio	SSI(AUDMUX)/S/PDIF
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	on Carrier
Camera interface	Parallel (no ULZ)
Local bus	-
S-ATA	-
PCI-E	-
Serial UART ports	7
Other interfaces	Dual CAN, I2C, SPI, PWM, JTAG, ADC
<b>OS Support</b>	
<b>Feature</b>	<b>Details</b>
Linux	Supported
Android	-
<b>Mechanical &amp; Electronic Specifications</b>	
<b>Feature</b>	<b>Details</b>
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	2 x 90pin board-to-board
Dimensions (W x L)	50.0 x 25.0 mm

# VAR-SOM-MX7



**Advanced application processor  
with realtime co-processor**

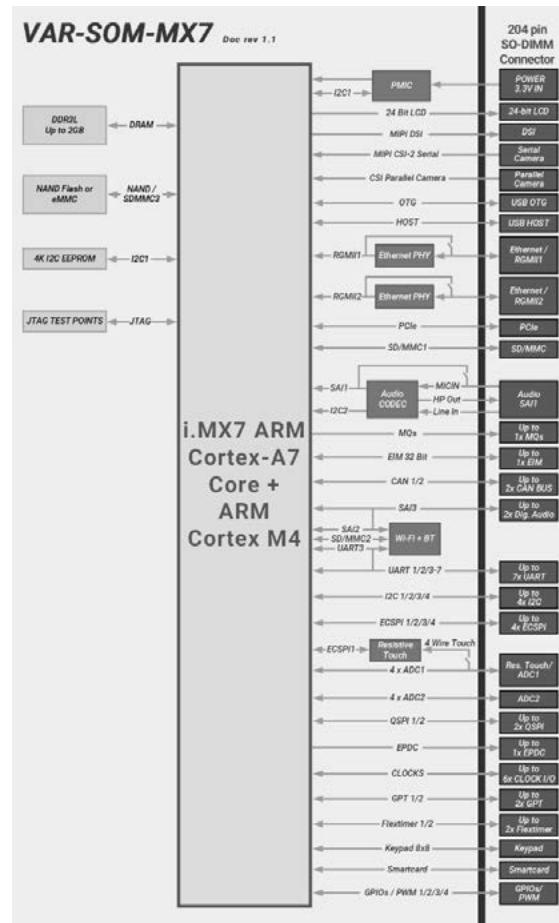
A highly flexible System-on-Module based on NXP's i.MX 7 family and carries a dual 1GHz ARM Cortex-A7 processor alongside real-time 200MHz ARM Cortex-M4 co-processor.

A versatile platform, the VAR-SOM-MX7 provides a variety of interfaces and connectivity options – all packaged at an optimized power, size and cost. The VAR-SOM-MX7 is ideal for products and applications requiring real-time low-power processing combined with high performance application processor for optimizing performance and power consumption.

### Key features include:

- NXP i.MX 7 dual 1.0GHz Cortex-A7
- Real-time 200MHz Cortex-M4 co-processor
- Dual Gigabit Ethernet
- Certified Wi-Fi 802.11 ac/a/b/g/n + BT5.2/BLE
- PCI-Express 2.0, USB
- Camera inputs

## Block Diagram



## Specifications

<b>Core</b>	
<b>Feature</b>	<b>Details</b>
Processor	NXP i.MX 7
Processor core	Dual Cortex-A7
Real-time coprocessor	200MHz Cortex-M4
MIPS	Up to 3,800
2D/3D graphic accelerator	PxP pixel acceleration
Video acceleration (encoding/decoding)	-
RAM	Up to 2048MB DDR3L
Storage	Up to 512MB SLC NAND or 128GB eMMC
<b>Peripherals</b>	
<b>Feature</b>	<b>Details</b>
Display controller resolution	24bits parallel RGB, HDMI: 1080p
Display interfaces	RGB, MIPI-DSI, EPD
SD/MMC	1
USB 2.0 host	1
USB OTG	1
Ethernet	2x10/100/1000 Mbps
Wi-Fi	802.11 ac/a/b/g/n
Bluetooth	5.2 / BLE
Audio	Headphone out, line-In
Microphone	Analog
Digital audio	SAI/MQS
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	on Carrier
Camera interface	MIPI-CSI2 / Parallel
Local bus	32-bit parallel
S-ATA	-
PCI-E	PCIe 2.0 x 1
Serial UART ports	up to 7
Other interfaces	Dual CAN, I2C, SPI, PWM, JTAG, keypad
<b>OS Support</b>	
<b>Feature</b>	<b>Details</b>
Linux	Supported
Android	-
<b>Mechanical &amp; Electronic Specifications</b>	
	<b>Details</b>
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 204 PIN
Dimensions (W x L)	67.8 x 36.8 mm

# VAR-SOM-MX6



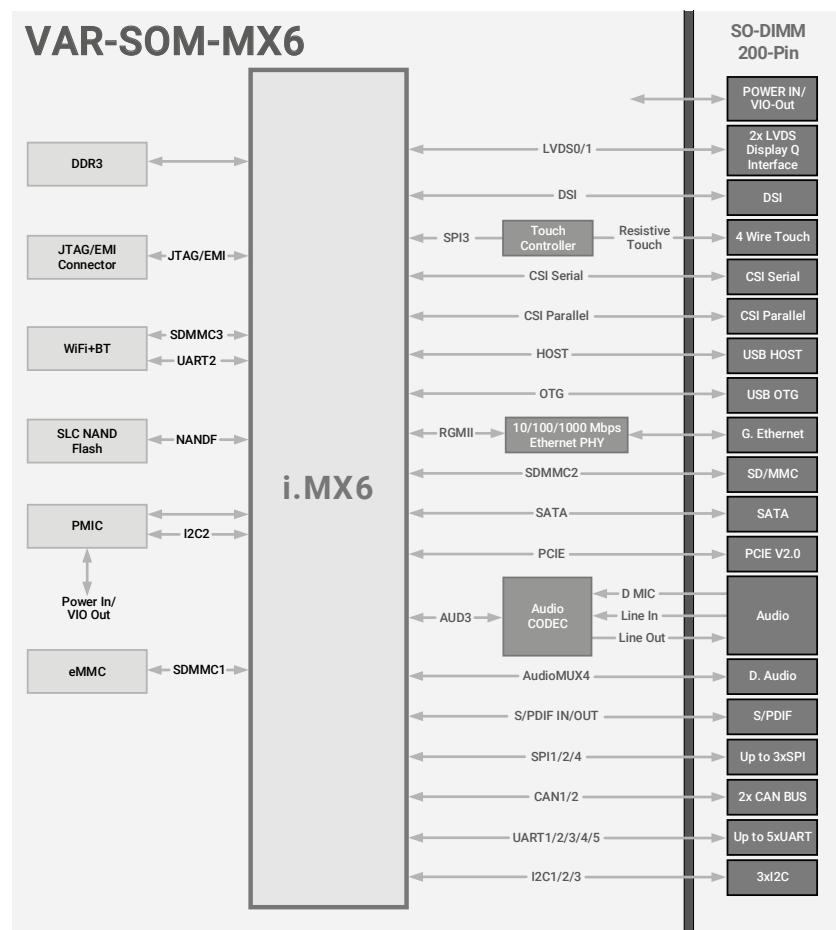
**Design without boundaries**

Supporting the NXP i.MX 6 1.2GHz QuadPlus/Quad/Dual/DualLite/Solo Cortex-A9 processor, the impressive scalability of the VAR-SOM-MX6 satisfies the needs of the most demanding future application requirements. The VAR-SOM-MX6 removes the need for lengthy and costly redesign to support different market options. The four CPU assembly options can accommodate broader connectivity, faster processing power, enhanced algorithms or improved graphics and video performance to name a few.

**Key features include:**

- Full HD 1080p video encoding/decoding capability
- Vivante GPU providing 2D/3D acceleration (note: in QuadPlus 50% enhanced performance)
- Gigabit Ethernet
- Built-in Wi-Fi 802.11 a/b/g/n with MIMO + BT5.1/BLE
- PCI-Express 2.0, S-ATA 3.0
- up to 128GB eMMC
- VAR-SOM Pin2Pin family

## Block Diagram



## Specifications

<b>Core</b>	
<b>Feature</b>	<b>Details</b>
Processor	NXP i.MX 6
Processor core	QuadPlus/Quad/Dual/DualLite/Solo-core ARM Cortex-A9
MPU speed (MHz)	1,200
MIPS	Up to 12,000
2D/3D graphic accelerator	Vivante 2D/3D (note: in QuadPlus 50% enhancement)
Video acceleration (encoding/decoding)	1080p60 Decode, 1080p30 Encode
RAM	Up to 2048 MB DDR3 1066 MHz
Storage	Up to 1024 MB SLC NAND up to 128GB eMMC
<b>Peripherals</b>	
<b>Feature</b>	<b>Details</b>
Display controller resolution	<b>LCD:</b> WUXGA(1920 x 1200), <b>HDMI:</b> 1080p
Display interfaces	2 x LVDS, HDMI 1.4, MIPI-DSI
SD/MMC	2
USB 2.0 host	1
USB OTG	1
Ethernet	10/100/1000 Mbps
Wi-Fi	802.11 a/b/g/n with optional MIMO
Bluetooth	5.1 / BLE
Audio	Headphone out, line-In
Microphone	Digital (Stereo)
Digital audio	SSI(AUDMUX, /S/PDIF)
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	on Carrier
Camera interface	MIPI CSI-2/ 2x Parallel
Local bus	EIM Up to 133Mhz Clock
S-ATA	+
PCI-E	PCIe 2.0 x 1
Serial UART ports	5
Other interfaces	Dual CAN, I2C, SPI, PWM, JTAG, keypad
<b>OS Support</b>	
<b>Feature</b>	<b>Details</b>
Linux	Supported
Android	Supported
<b>Mechanical &amp; Electronic Specifications</b>	
	<b>Details</b>
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 51.7 mm

# VAR-SOM-SOLO/DUAL



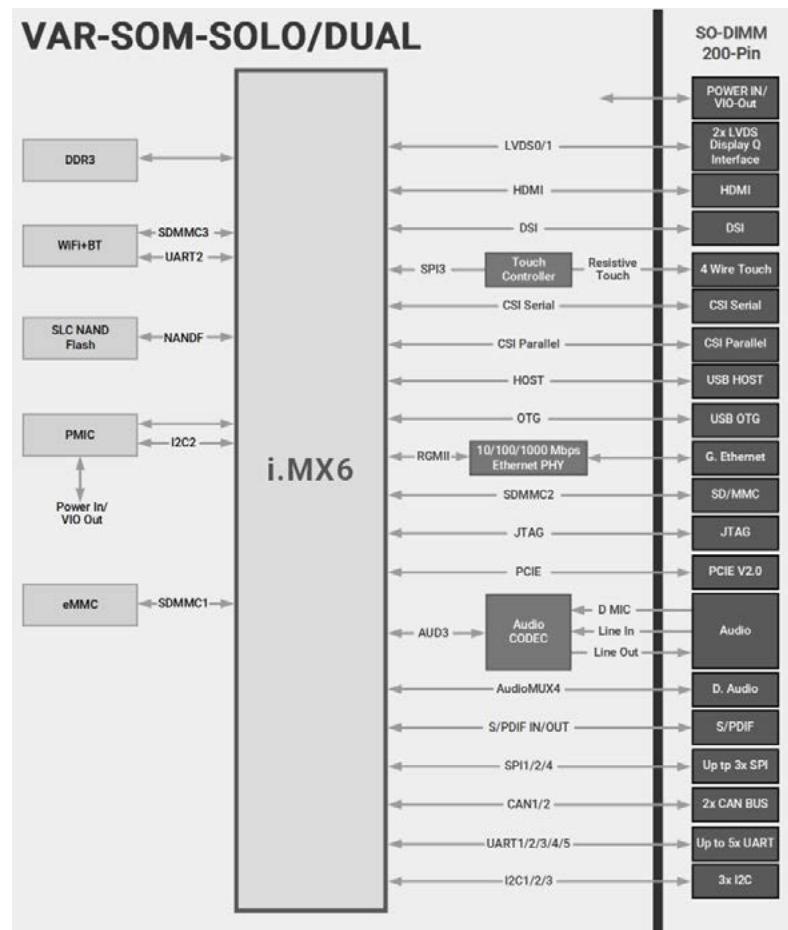
**Enhance your product,  
reduce your costs**

Staying on-trend with the market's shift towards a cost-effective highly integrated off-the-shelf solution, the VAR-SOM-SOLO/DUAL with its i.MX6 1.0GHz single and dual lite Cortex-A9 levels the playing ground for a broad spectrum of embedded products. Bringing all the benefits of the successful VAR-SOM-MX6, the VAR-SOM-SOLO carries much smaller dimensions and a slim lined price-point.

### Key features include:

- NXP i.MX6 1.0GHz single and dual lite Cortex-A9
- Full HD 1080p video encoding/decoding capability
- Vivante GPU providing 2D/3D acceleration
- Gigabit Ethernet
- Built-in Wi-Fi 802.11 a/b/g/n with MIMO + BT5.1/BLE
- PCI-Express 2.0, USB
- up to 128GB eMMC
- VAR-SOM Pin2Pin family

### Block Diagram



## Specifications

### Core

Feature	Details
Processor	NXP i.MX 6
Processor core	Single and Dual lite core ARM Cortex-A9
MPU speed (MHz)	1,000
MIPS	Up to 5,000
2D/3D graphic accelerator	Vivante 2D/3D acceleration
Video acceleration (encoding/decoding)	1080p30 decode, 1080p30 encode
RAM	1024 MB DDR3 1066 MHz
Storage	512 MB SLC NAND up to 128GB eMMC

### Peripherals

Feature	Details
Display controller resolution	24 bit LVDS, HDMI: 1080P
Display interfaces	2 x LVDS, HDMI 1.4, MIPI-DSI
SD/MMC	1
USB 2.0 host	1
USB OTG	1
Ethernet	10/100/1000 Mbps
Wi-Fi	802.11 a/b/g/n with optional MIMO
Bluetooth	5.1 / BLE
Audio	Headphone out, line-In
Microphone	Digital (Stereo)
Digital audio	SSI(AUDMUX)/SPDIF
Touch screen controller	Supporting 4-wire resistive touch panels
RTC	on Carrier
Camera interface	MIPI-CSI2 / Parallel
Local bus	-
S-ATA	-
PCI-E	PCIe 2.0 x 1
Serial UART ports	5
Other interfaces	Dual CAN, I2C, SPI, PWM, JTAG, keypad

### OS Support

Feature	Details
Linux	Supported
Android	Supported

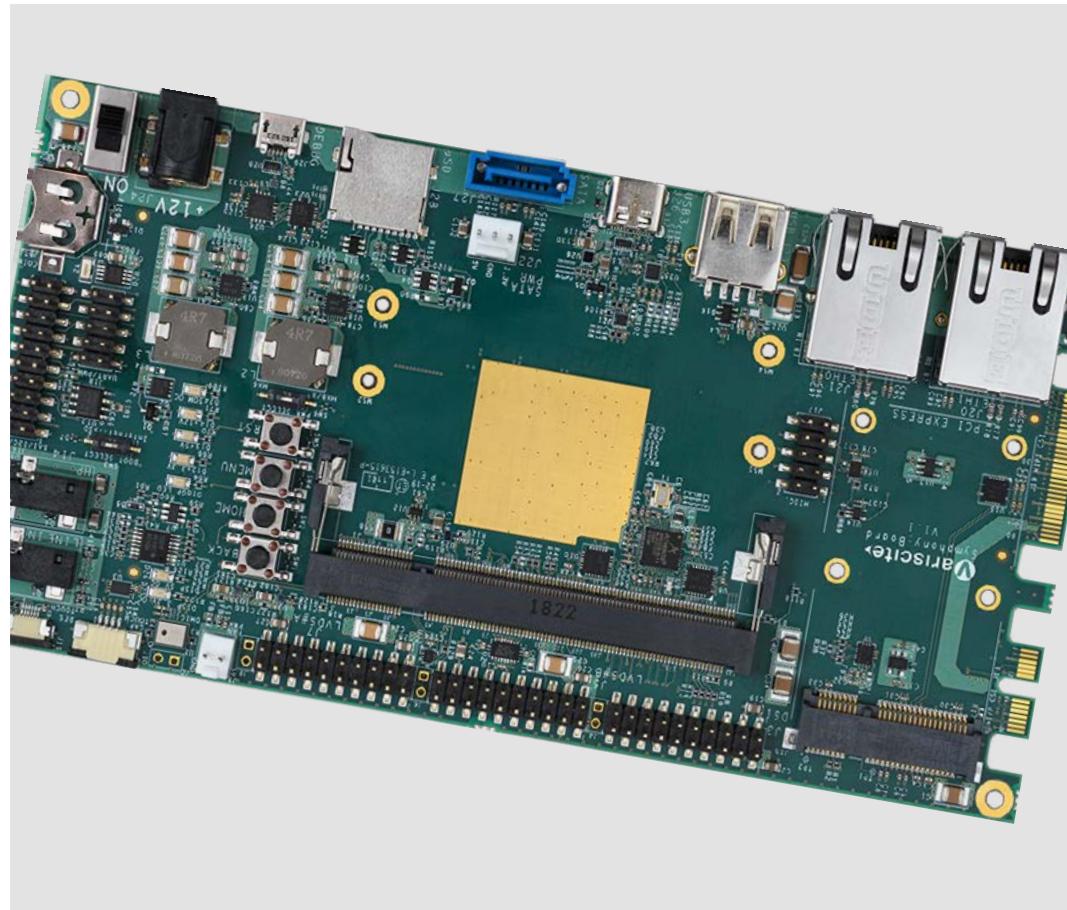
### Mechanical & Electronic Specifications

	Details
Supply voltage single	3.3 V
Digital I/O voltage	3.3 V
SoM Interface	SO-DIMM 200 PIN
Dimensions (W x L)	67.8 x 33.0 mm

# SINGLE BOARD COMPUTERS

## Advantages of using Variscite Single Board Computers

- **Serving** as both a complete development kit and an end-product
- **Advanced features** and broad connectivity options, allow full customization according to the price/performance targets of the client's product
- **Convenience** for embedded system manufacturers, whilst incorporating the latest in computing trends
- **Speeding up** time-to-market by jump starting product development for simple or more complex applications



# Symphony-Board



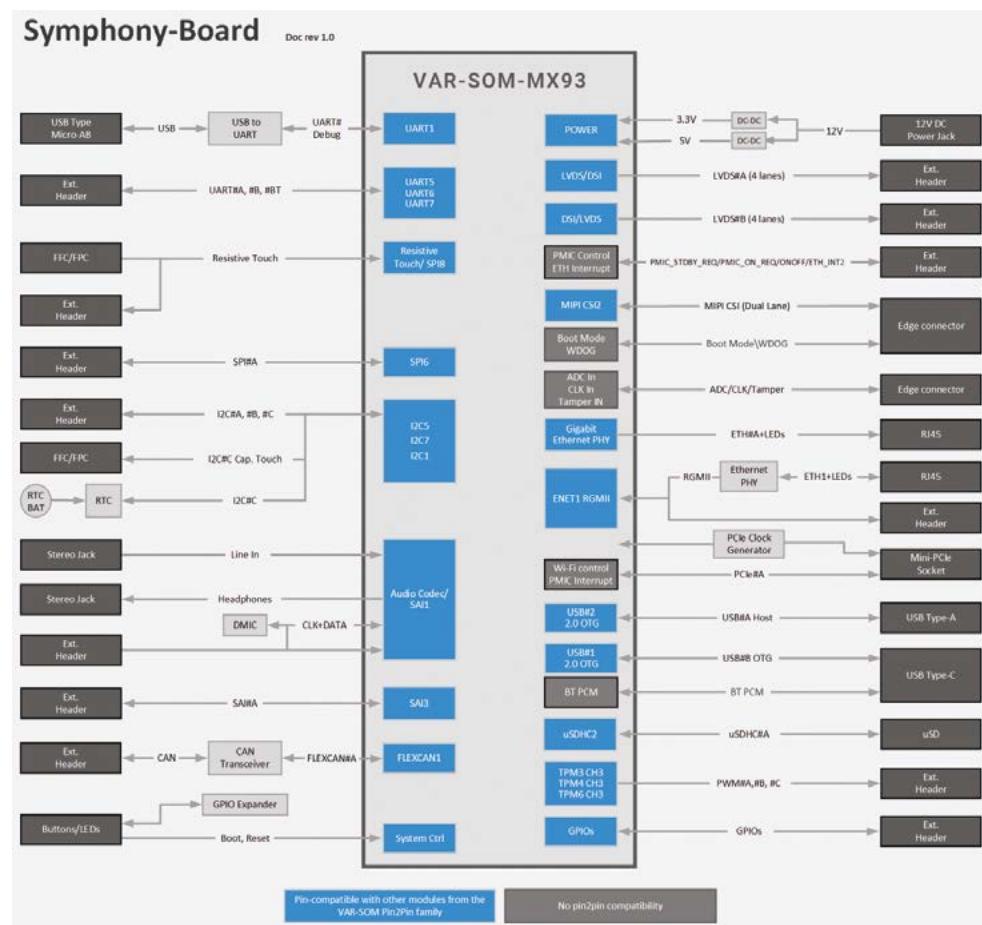
**Symphony-Board** - Supporting the VAR-SOM-MX93, VAR-SOM-AM62, VAR-SOM-MX8, VAR-SOM-MX8X, VAR-SOM-MX8M-MINI, VAR-SOM-MX8M-PLUS, VAR-SOM-MX8M-NANO, VAR-SOM-MX6 or VAR-SOM-6UL.

The Symphony-Board ensures a scalable and simplified development and reference board.

## Features:

- 2x PCI-Express 2.0
- Displays: DSI, LVDS display, HDMI, DisplayPort
- Audio: Headphone, Line-in, Digital mic
- Touch panel interface
- 10/100/1000Mbps Ethernet RJ45
- 5x USB 3.0/2.0 ports
- SD/SDIO/MMC card socket
- 2x MIPI CSI serial
- SPI, SPDIF, GPIO
- UART, I2C
- 5V DC input

## Block Diagram



## Specifications

Feature	Details
SoM interface	SO-DIMM200 Supporting the VAR-SOM-MX93, VAR-SOM-AM62, VAR-SOM-MX8, VAR-SOM-MX8X, VAR-SOM-MX8M-MINI, VAR-SOM-MX8M-PLUS, VAR-SOM-MX8M-NANO or VAR-SOM-MX6
Display	2x 18-bit LVDS Interface supporting Variscite's 7" TFT capacitive touch LCD
	HDMI 2.0a
	Display Port 1.3/ eDP 1.4
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC)
	Capacitive touch panel (6-pin FFC/FPC)
PCI-Express	mini PCIe connector
RTC backup battery	Yes
Audio	3.5mm Headphones jack
	3.5mm Line in jack
Digital Audio	Header SPDIF Out
	SAI1, SAI2 & SAI3 Out
USB	USB3.0/2.0 OTG Type C connector
	USB2.0 Host Type A connector
Ethernet	10/100/1000 Mbps; RJ45 connector
SD/MMC	SD card socket
RS232	USB-SERIAL bridge, Micro USB type AB
	FTDI Header (Debug)
	Header
Expansion Connectors	CAN Bus
	QSPI
	SD/MMC interface
	SPI, 12C, UART, RS232
	GPIOs
	SPDIF, SAI
	JTAG
	PWM
	Digital microphone
	Serial interface – Dual MIPI CSI x4 lanes each.
Power	5V DC input, 2.5 mm DC jack
Dimensions	15 cm x 9 cm x 2.9 cm

# Concerto-board



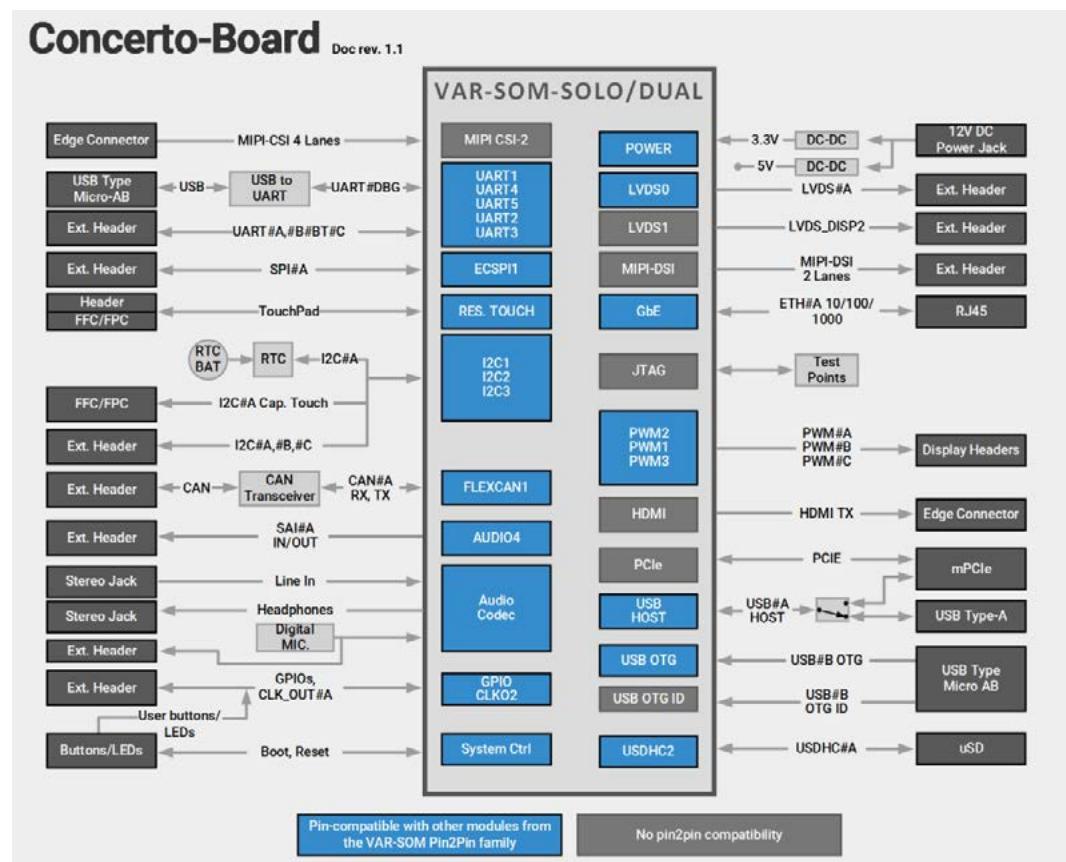
**Concerto-Board** - Supporting VAR-SOM-6UL or VAR-SOM-SOLO/DUAL.

The Concerto-Board ensures a scalable and simplified development and reference board to achieve a short time-to-market for customer's designs and end-products.

## Features:

- 2x PCI-Express 2.0
- Displays: DSI, LVDS display, HDMI, DisplayPort
- Audio: Headphone, Line-in, Digital mic
- Touch panel interface
- 1x 10/100 + 1x 10/100/1000 Mbps, RJ45
- 5x USB 3.0/2.0 ports
- SD/SDIO/MMC card socket
- 2x MIPI CSI serial
- SPI, SPDIF, GPIO
- UART, I2C
- 12V DC input

## Block Diagram



## Specifications

Feature	Details
SoM interface	SO-DIMM200 Supporting VAR-SOM-6UL or VAR-SOM-SOLO/DUAL
Display	18 bit LVDS Interface supporting Variscite's 7" TFT capacitive touch LCD
	HDMI 2.0a
	Display Port 1.3
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC)
	Capacitive touch panel (6-pin FFC/FPC)
PCI-Express	mini-PCIe connector x2
RTC backup battery	CR1225 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector
	Line-in, 3.5 mm connector
Digital Audio	Header SPDIF Out
	SAI1, SAI2 & SAI5 Out
USB	USB2.0 OTG Type AB connector
	USB2.0 Host Type A connector
Ethernet	1x 10/100 + 1x 10/100/1000 Mbps, RJ45
SD/MMC	SD card socket
RS232	USB-SERIAL bridge, Micro USB type AB
	FTDI Header (Debug)
	Header
Expansion Connectors	CAN Bus
	QSPI
	SD/MMC interface
	SPI, 12C, UART, RS232
	GPIOs
	SPDIF, SAI
	JTAG
	PWM
	Digital microphone
	Serial interface – Dual MIPI CSI x4 lanes each.
Power	12V DC input, 2.5 mm DC jack
Dimensions	16.99 cm x 8.96 cm x 1.6 cm

# VAR-DT8MCustomBoard



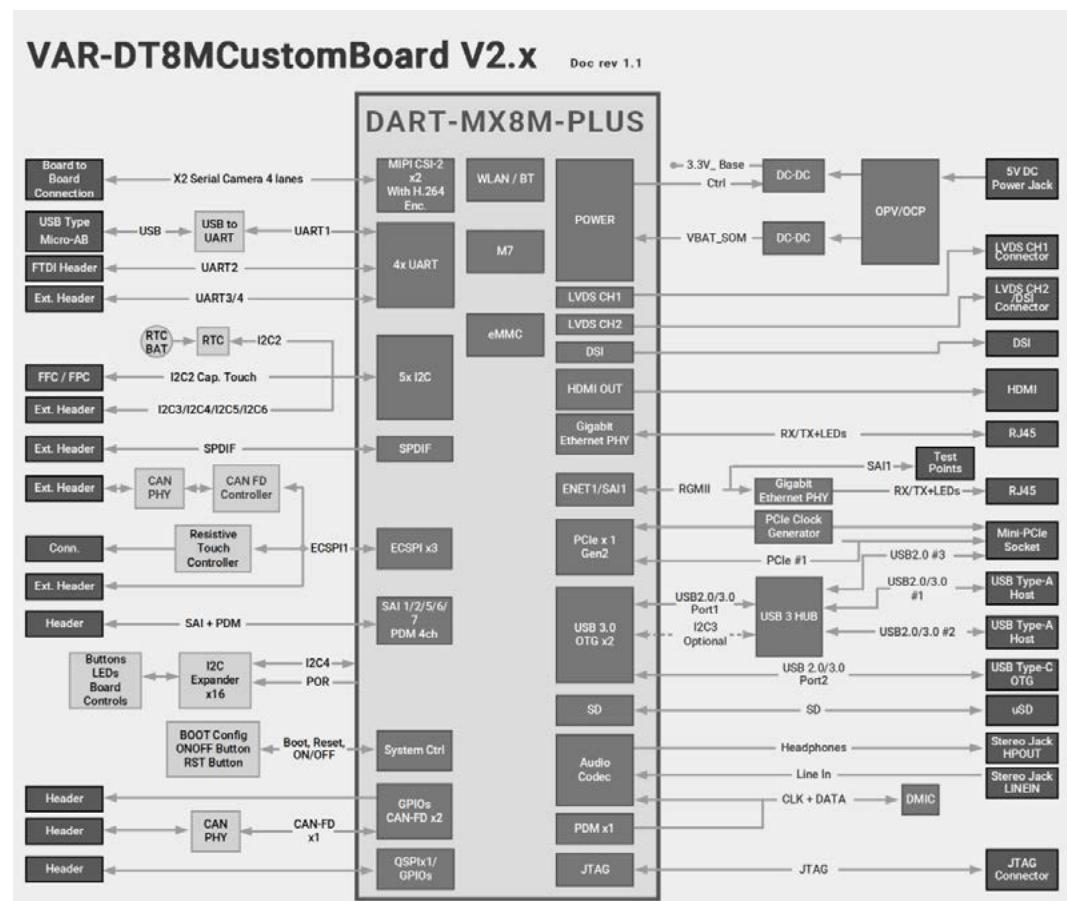
**VAR-DT8MCustomBoard** - Supporting DART-MX8M, DART-MX8M-MINI or DART-MX8M-PLUS

The VAR-DT8MCustomBoard completes an attractive full reference kit, which can be used for customers' evaluation, development and end-product mass production.

## Features:

- 2x PCI-Express 2.0
- Displays: DSI, LVDS display, HDMI, DisplayPort
- Audio: Headphone, Line-in, Digital mic
- Touch panel interface
- 10/100/1000Mbps Ethernet RJ45
- 5x USB 3.0/2.0 ports
- SD/SDIO/MMC card socket
- 2x MIPI CSI serial
- SPI, SPDIF, GPIO
- UART, I2C
- 5V DC input

## Block Diagram



## Specifications

Feature	Details
SoM interface	3x 90pin board to board connectors Supporting the DART-MX8M, DART-MX8M-MINI, DART-MX8M-PLUS
Display	18 bit LVDS Interface supporting Variscite's 7" TFT capacitive touch LCD HDMI 2.0a Display Port 1.3
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC) Capacitive touch panel (6-pin FFC/FPC)
PCI-Express	mini PCIe connector x2
RTC backup battery	CR1225 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector Line-in, 3.5 mm connector
Digital Audio	Header SPDIF Out SAI1, SAI2 & SAI5 Out
USB	USB3.0 OTG Type C connector USB3.0 Host Type A connector x 2
Ethernet	10/100/1000 Mbps; RJ45 connector
SD/MMC	SD card socket
RS232	USB-SERIAL bridge, Micro USB type AB FTDI Header (Debug) Header
Expansion Connectors	Local Bus Interface QSPI SD/MMC interface SPI, 12C, UART, RS232 GPIOs SPDIF, SAI JTAG PWM Digital microphone Serial interface – Dual MIPI CSI x4 lanes each.
Power	5V DC input, 2.5 mm DC jack
Dimensions	15 x 9 cm

# VAR-SP8CustomBoard



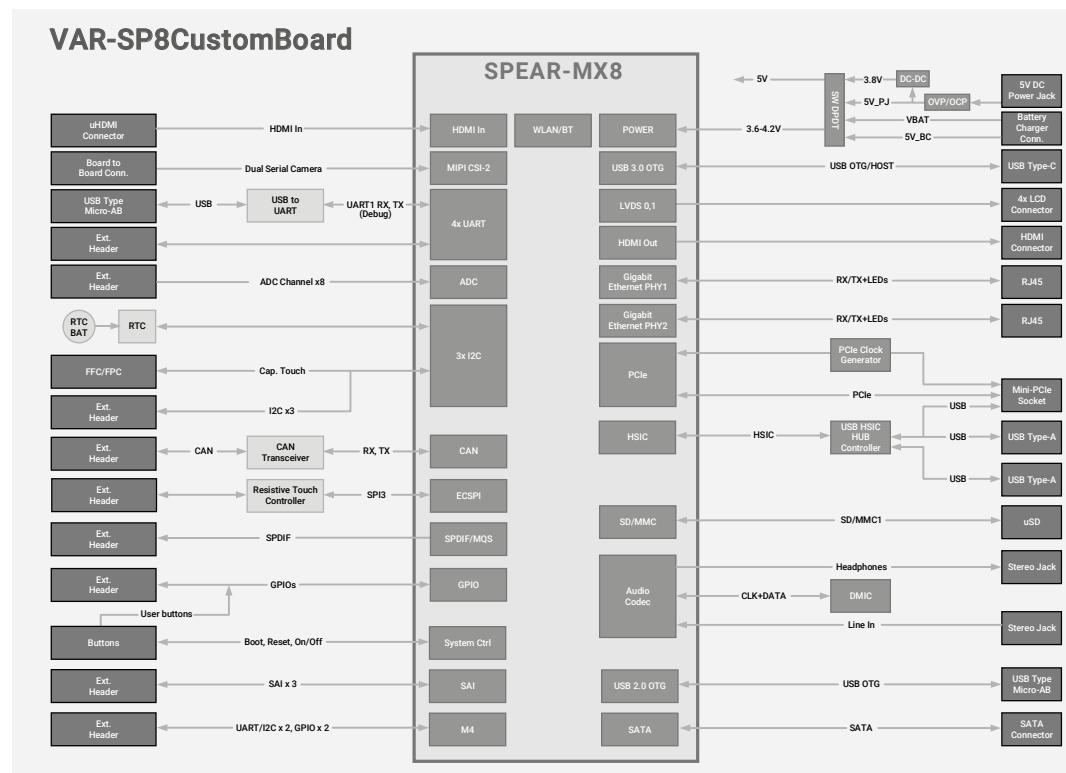
## VAR-SP8CustomBoard - Supporting SPEAR-MX8

The VAR-DVK-SP8 allows full performance and capability evaluation, serving as an evaluation, development and production platform for hardware and software teams.

### Features:

- 2x PCI-Express 2.0
- Displays: DSI, Dual LVDS display, HDMI, DisplayPort
- Audio: Headphone, Line-in, Digital mic
- Touch panel interface
- Dual 10/100/1000Mbps Ethernet RJ45
- 4x USB 3.0/2.0 ports
- SD/SDIO/MMC card socket
- 2x MIPI CSI serial
- SPI, SPDIF, GPIO
- UART, I2C
- 5V DC input

## Block Diagram



## Specifications

Feature	Details
SoM interface	4x 90pin board to board connectors
Display	24 bit Dual LVDS Interface supporting Variscite's 7" TFT capacitive touch LCD
	HDMI 2.0a
	Display Port 1.3
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC) Capacitive touch panel (6-pin FFC/FPC)
PCI-Express	mini PCIe connector
RTC backup battery	CR1225 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector Line-in, 3.5 mm connector
Digital Audio	Header SPDIF Out 3x SAI
USB	USB3.0 OTG Type C connector USB2.0 Host Type A connector x 2
Ethernet	2x 10/100/1000 Mbps; RJ45 connector
SD/MMC	SD card socket
RS232	USB-SERIAL bridge, Micro USB type AB FTDI Header (Debug)
HDMI in	1x Micro HDMI
S-ATA	S-ATA
Expansion Connectors	CAN Bus SD/MMC interface SPI, 12C, UART, RS485 GPIOs SPDIF, SAI JTAG PWM Digital microphone Serial interface – Dual MIPI CSI x4 lanes each.
Power	5V DC input, 2.5 mm DC jack
Dimensions	12 x 17cm

# VAR-6ULC Custom Board



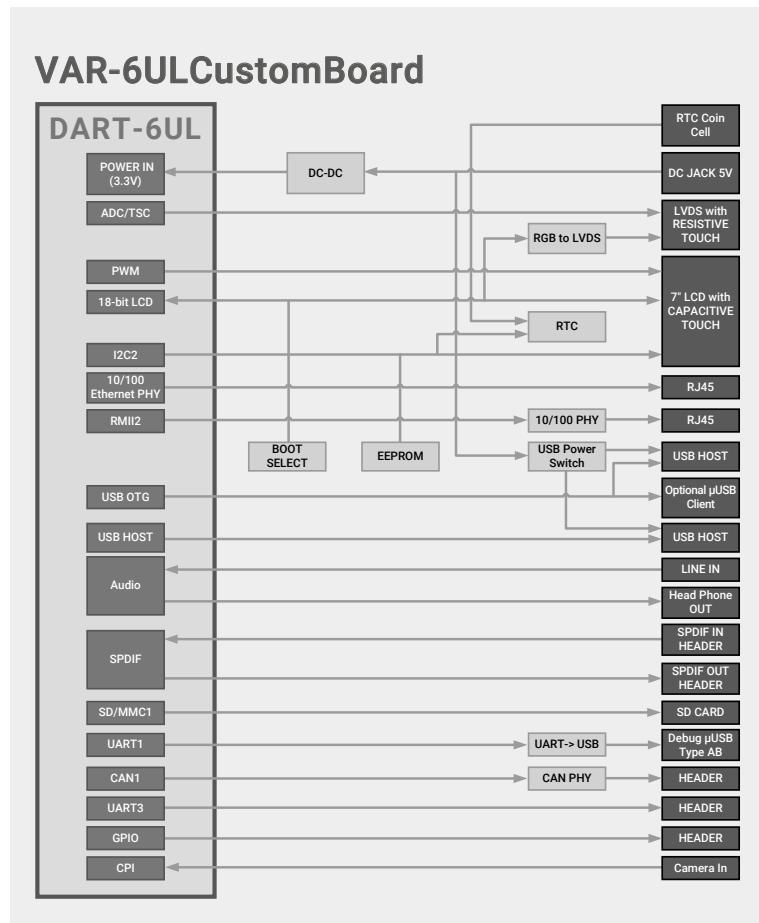
**VAR-6ULCustomBoard** - Supporting DART-6UL

The VAR-6ULCustomBoard ensures a scalable and simplified development and reference board to achieve a short time-to-market for customer's designs and end-products.

## Features:

- Display RGB, LVDS
  - Capacitive and resistive touch panel
  - Audio: Line in, headphone
  - Dual 10/100Mbps Ethernet RJ-45
  - uSD Card
  - UART, RS232, PWM, SPI, I2C, CAN bus
  - USB: Host, OTG
  - RTC backup battery
  - 5V DC input

## Block Diagram



## Specifications

Feature	Details
SoM interface	2 x 90pins board-to-board supporting the DART-6UL
Display	3-pair 18-bit LVDS header 24-bit RGB
Touch panel	4-wire resistive touch panel Capacitive touch panel (6-pin FFC/FPC)
Camera input	Parallel Camera (header)
RTC backup battery	CR1125 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector Line-in, 3.5 mm connector digital audio (header)
USB	1 x USB 2.0 host; USB type-A connector 1 x USB OTG; USB-mini AB connector
Ethernet	2 x 10/100 Mbps; RJ-45 connector
SD/MMC	uSD card socket
Debug	Micro USB JTAG (header)
Additional Expansion Connectors	SPI, I2C CAN Bus UART, RS232 Digital audio PWM/ADC
Power	5 V DC input, 2.5 mm DC jack
Dimensions	7 x 10 cm

# VAR-MX7CustomBoard



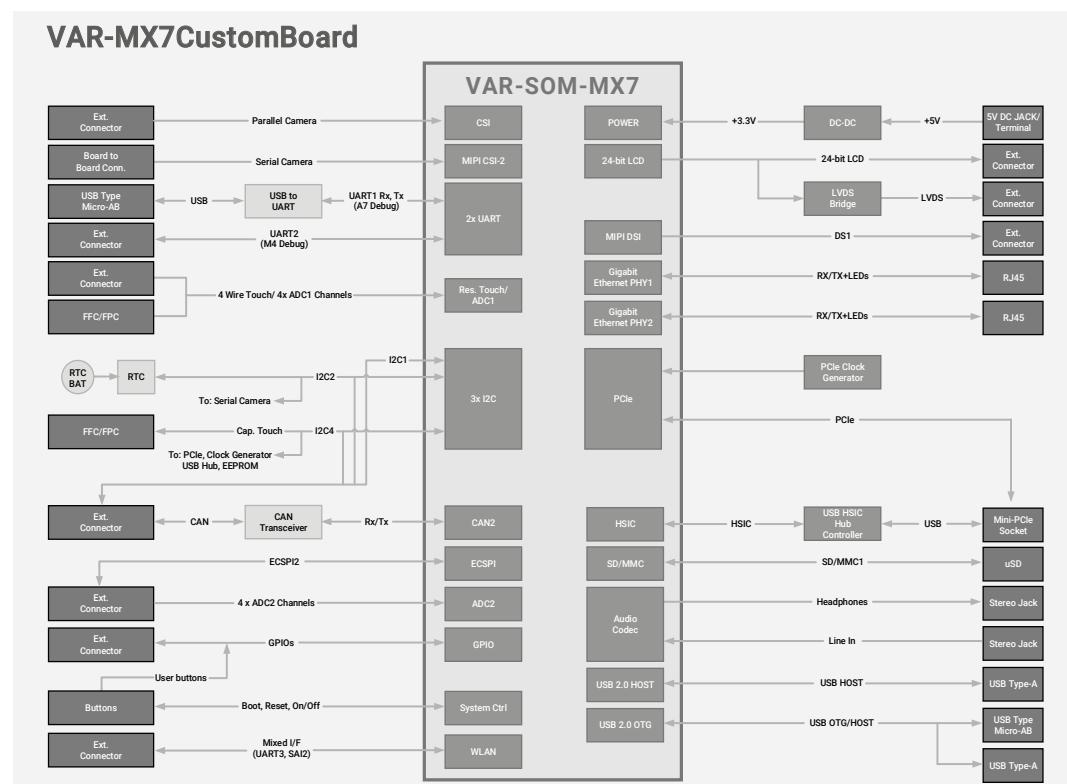
## VAR-MX7CustomBoard - Supporting VAR-SOM-MX7

The VAR-MX7CustomBoard ensures scalable and simplified development to achieve a short-time to market for current innovations. Moreover, it can be used as a carrier board for mass production of customers' end-products.

### Features:

- Display: LVDS, RGB, DSI
- Capacitive and resistive touch panel
- Serial/parallel camera input
- Audio: Line in, SAI/MQS, headphone out
- PCIe
- uSD Card
- CAN, UART, RS232, PWM
- USB: Host, OTG
- Dual GbE RJ-45 connector
- 5V DC input

## Block Diagram



## Specifications

Feature	Details
SoM interface	SODIMM 204 supporting the VAR-SOM-MX7
Display	3-pair 18-bit LVDS header 24-bit RGB DSI
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC) Capacitive touch panel (6-pin FFC/FPC)
Camera input	Serial Camera (MIPI CSI) Parallel Camera (header)
RTC backup battery	CR1125 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector Line-in, 3.5 mm connector SAI/MQS
USB	1 x USB 2.0 host; USB type-A connector 1 x USB OTG; USB-mini AB connector
Ethernet	Dual 10/100/1000 Mbps; RJ-45 connector
SD/MMC	uSD card socket
Debug	Micro USB JTAG (header)
Additional Expansion Connectors	SPI, I2C CAN Bus UART, RS232 MQS audio PWM, ADC
Power	5 V DC input, 2.5 mm DC jack
Dimensions	8.7 x 14.8 cm

# VAR-MX6CustomBoard



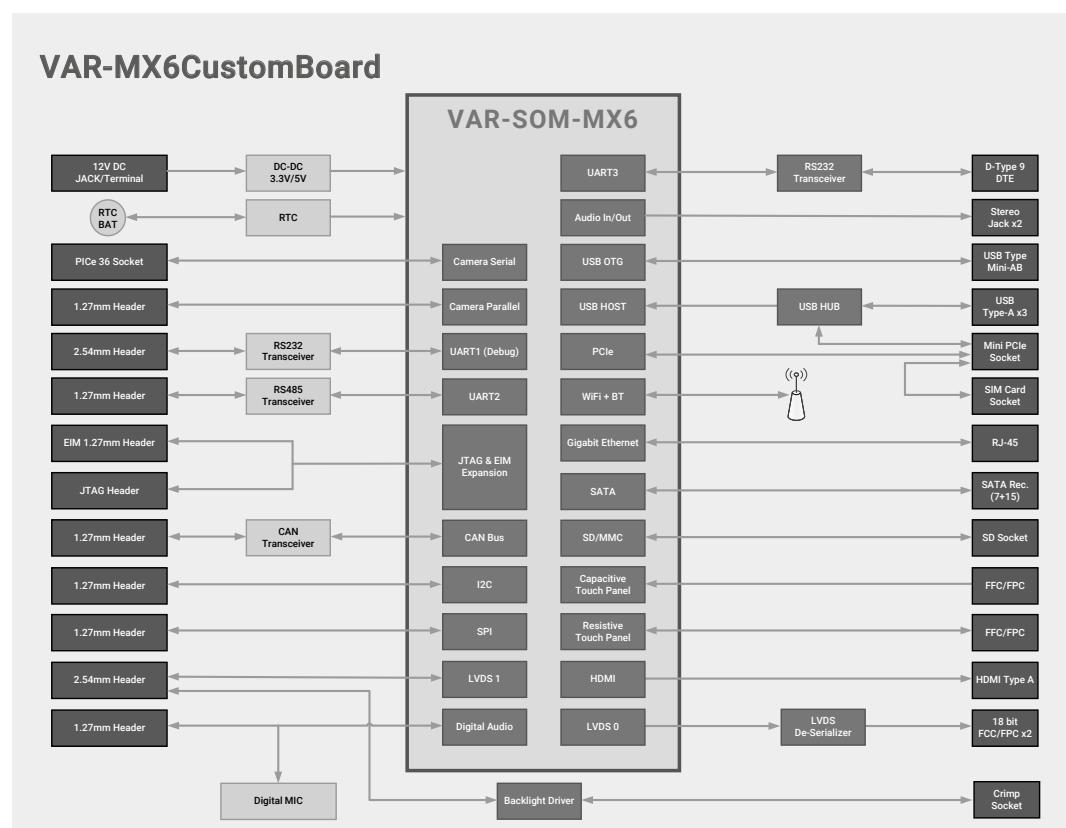
## VAR-MX6CustomBoard - Supporting VAR-SOM-MX6

The VAR-MX6CustomBoard not only ensures scalable and simplified development to achieve a short-time to market for current innovations, but also accommodates potential R&D directions and marketing opportunities.

### Features:

- PCI-Express 2.0
- S-ATA II
- Displays: 18-bit RGB interface, HDMI
- Audio: Headphone out, digital microphone
- Touch panel interface
- 10/100/1000 Mbps Ethernet; RJ-45 connector
- Dual CAN Bus
- SD Card
- Camera interface
- USB 2.0: Host, OTG
- JTAG
- GPMC
- 7.5V -14V DC Input

## Block Diagram



## Specifications

Feature	Details
SoM interface	SODIMM 200 supporting the VAR-SOM-MX6
Display	18-bit RGB parallel display interface (2 x 40-pin FFC/FPC connector for 7" LCD)
	4-pair 24-bit LVDS header
	HDMI 1.4
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC)
	Capacitive touch panel, (10-pin FFC/FPC)
S-ATA	7 + 15, female connector
PCI-Express	mini PCIe connector
SIM Card	Supporting mini PCIe modem
RTC backup battery	CR1125 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector
	Line-in, 3.5 mm connector
Digital Audio Header	SPDIF In/Out
	SSI(AUDMUX)
USB	3 x USB 2.0 host; USB type-A connector
	1 x USB OTG; USB-mini AB connector
Ethernet	10/100/1000 Mbps; RJ-45 connector
SD/MMC	SD card socket
RS232	DB-9 male (DTE)
	IDC 10 header (Debug)
Expansion Connectors	Local Bus Interface
	Backlight driver
	SD/MMC interface
	SPI, 12C, UART
	CAN Bus
	RS-485
	JTAG
	Parallel camera interface
	Serial camera (fits to VAR-EXT-CB402 sensor board)
Power	7.5 V to 14 V DC input, 2.5 mm DC jack
Dimensions	12 x 10.5 cm

# VAR-SOLOCustomBoard



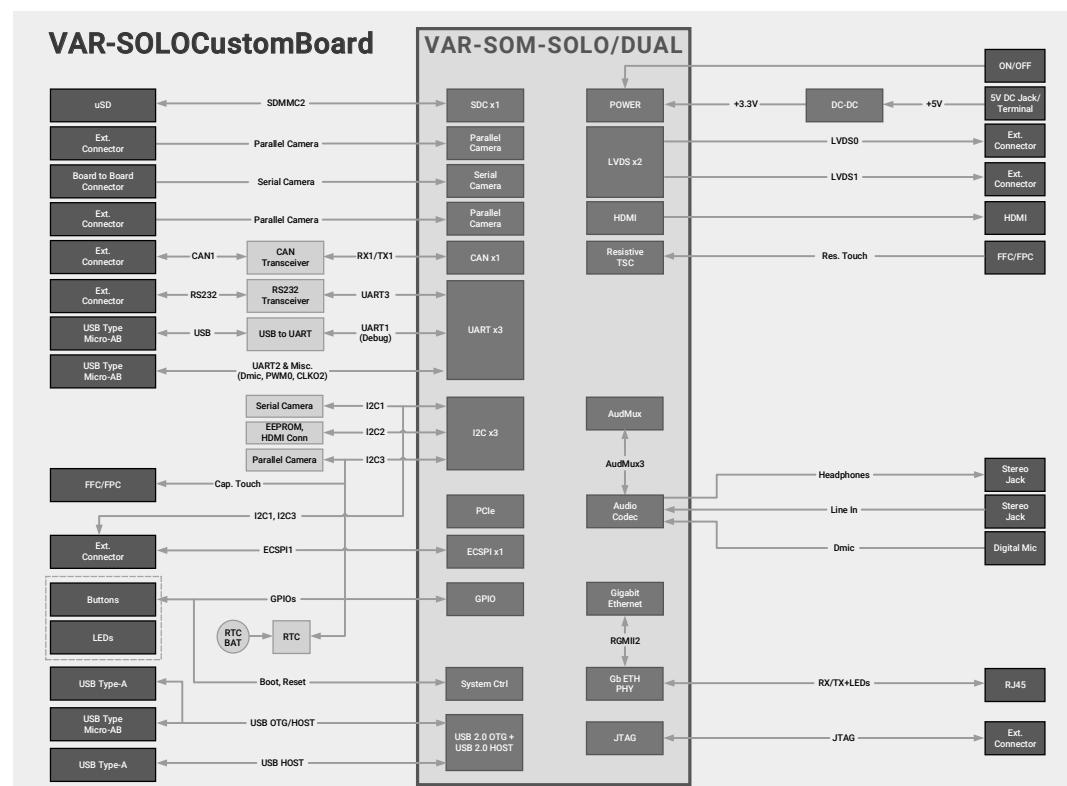
## VAR-SOLOCustomBoard - Supporting VAR-SOM-SOLO/DUAL

The VAR-SOLOCustomBoard ensures scalable and simplified development to achieve a short-time to market for current innovations. Moreover, it can be used as a carrier board for mass production of customers' end-products.

### Features:

- Display: Dual LVDS, HDMI 1.4
- Capacitive and resistive touch panel
- Serial/parallel camera input
- Audio: Line in, digital microphone, headphone out
- Dual CAN Bus
- uSD Card
- UART, RS232, PWM
- USB: Host, OTG
- 10/100/1000 Mbps Ethernet; RJ-45 connector
- 5V DC input

## Block Diagram



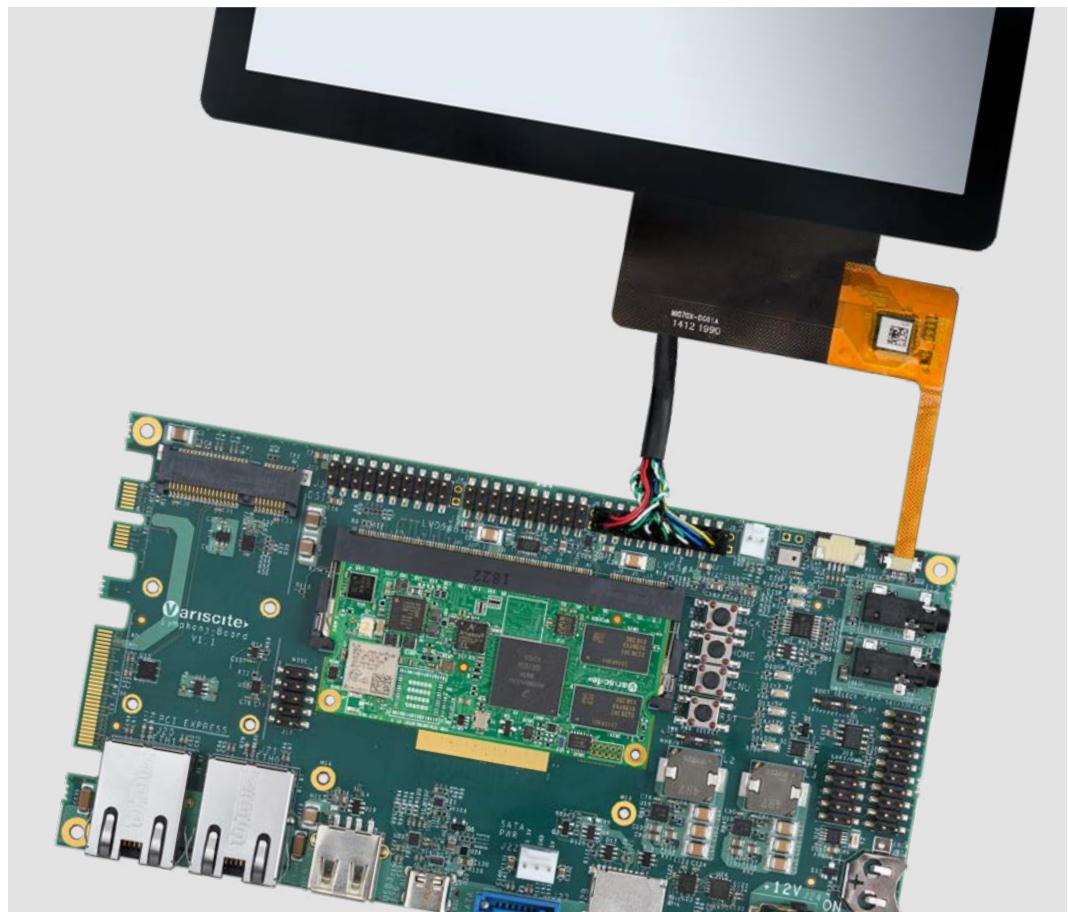
## Specifications

Feature	Details
SoM interface	SODIMM 200 supporting the VAR-SOM-SOLO/DUAL
Display	3-pair 18-bit LVDS header
	4-pair 24-bit LVDS header
	HDMI 1.4
Touch panel	4-wire resistive touch panel (4-pin FFC/FPC)
	Capacitive touch panel (6-pin FFC/FPC)
Camera input	Serial Camera (MIPI CSI)
	Parallel Camera (header)
RTC backup battery	CR1125 coin battery socket
Audio	Headphone-out jack, 3.5 mm connector
	Line-in, 3.5 mm connector
	Digital microphone
USB	1 x USB 2.0 host; USB type-A connector
	1 x USB OTG; USB-mini AB connector
Ethernet	10/100/1000 Mbps; RJ-45 connector
SD/MMC	uSD card socket
Debug	Micro USB
	JTAG (header)
Additional Expansion Connectors	SPI, I2C
	CAN Bus
	UART, RS232
	Digital microphone
	PWM
Power	5 V DC input, 2.5 mm DC jack
Dimensions	8.7 x 11.7 cm

# EVALUATION KITS

## Complementing the Variscite System on Module range

- **Combines** System on Module and CustomBoard technology
- **Allows** you to fully evaluate Variscite System on Module performance and capabilities
- **Serves** as a development platform for both your hardware and software teams





## VAR-DVK-MX93

### Supporting the VAR-SOM-MX93

- Symphony-Board populated with the VAR-SOM-MX93
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-AM62

### Supporting the VAR-SOM-AM62

- Symphony-Board populated with the VAR-SOM-AM62
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX8M-PLUS

### Supporting the VAR-SOM-MX8M-PLUS

- Symphony-Board populated with VAR-SOM-MX8M-PLUS
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-DT8M-PLUS

### Supporting the DART-MX8M-PLUS

- VAR-DT8MCustomBoard populated with DART-MX8M-PLUS
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX8M-MINI

### Supporting the VAR-SOM-MX8M-MINI

- Symphony-Board populated with the VAR-SOM-MX8M-MINI
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-DT8M-MINI

### Supporting the DART-MX8M-MINI

- VAR-DT8MCustomBoard populated with the DART-MX8M-MINI
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX8M-NANO

### Supporting the VAR-SOM-MX8M-NANO

- Symphony-Board populated with the VAR-SOM-MX8M-NANO
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX8X

### Supporting the VAR-SOM-MX8X

- Symphony-Board populated with the VAR-SOM-MX8X
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX8

### Supporting the VAR-SOM-MX8

- Symphony-Board populated with VAR-SOM-MX8
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-SP8

### Supporting the SPEAR-MX8

- VAR-SP8CustomBoard populated with the SPEAR-MX8
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-DT8M

### Supporting the DART-MX8M

- VAR-DT8MCustomBoard populated with the DART-MX8M
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-6UL

### Supporting the DART-6UL

- VAR-6ULCustomBoard populated with the DART-6UL
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX7

### Supporting VAR-SOM-MX7

- VAR-MX7CustomBoard populated with VAR-SOM-MX7
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-MX6

### Supporting the VAR-SOM-MX6

- VAR-MX6CustomBoard populated with VAR-SOM-MX6
- Two display options:
  - 7" LCD + resistive touch panel;
  - 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package



## VAR-DVK-SOLO/DUAL

### Supporting VAR-SOM-SOLO/DUAL

- VAR-SOLOCustomBoard populated with VAR-SOM-SOLO/DUAL
- 7" LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package

# ACCESSORIES



## Camera Moduls

Camera Boards allow developers to leverage Variscite modules' advanced multimedia features.



## Displays

Variscite offers several displays and extension boards to allow our customers to easily connect a variety of display options and touch panels to our evaluation kits.



## Power Supplies

Variscite's power supplies supporting EU / AC compatibility.



## Antennas

2.4 GHz / 5.5 GHz Dipole 2 dBi antenna with U.FL adaptor for reverse polarity SMA.



## Heat Plates

Variscite's heat plates allow regulation of the device's temperature at optimal levels. The kit includes a heat plate, thermal pad, screws and nuts.





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