

AMC

Era of Micro Computing



ADVANCED
MICRO
COMPUTING

AMC SOLUTIONS GUIDE

WHAT IS AMC

AMC stands for Advanced Micro Computing. It is an ecosystem designed for creating a simplified yet flexible embedded solution world. The system is built upon 45*45 mm LGA OSM/OSM-like modules, which come with built-in DRAM, eMMC, and PMIC. These modules are fully compatible with both Intel/ ARM architectures and can be converted into the form factors of SMARC, Qseven, PC/104, or COM-mini easily. The AMC architecture is an Omni SiP, which means it can support any Embedded Appliance.

The market development for AMC solutions has two direction. The 1st one is appliance markets of which OSML can be embedded into a small system to check, control and communicate with other IoT things to be the basis of the smart home and smart city. The 2nd one is to replace existing embedded systems. Once the demand of product upgrade occurs, the AMC solutions can help the engineers to finish the job within three months, which is 7 months faster than the traditional design.

With the advantages of cost, omni functions, reliability and flexibility, the system design of AMC type fits various kinds of customer demand. Being the expert of embedded systems, MiTwell provides full range of products including the OSML modules, converters for embedded modules, OSML carrier, and the system boards to form an AMC product family. It is an advanced design concept.

THE GOAL

Going Green

AMC is designed to reduce the development time of systems and limit the changes required, making upgrades more straightforward. By using modular and scalable components, AMC can have a significant impact on the environment.

Shortened Development Time

AMC utilizes pre-existing OSM/OSM-like modules, which reduces the amount of time and resources required for product development. This feature allows for more efficient and cost-effective development and production, ultimately reducing waste generated during the product lifecycle.

Reduced Use of Components

The size constraints of OSM/OSM-like modules limit the use of parts and components in the design.

Low Power Consumption

As AMC is designed for small form factors, it requires a careful balance among functionality, power efficiency and cost performance. This leads to trade-offs and the removal of non-essential components, resulting in lower power consumption.

Reduced Chance of Errors

Another key feature of AMC is its easy upgradability, which limits the chance of errors and minimizes waste generated during the upgrade process. By simply changing the OSM modules, less development work is required, reducing the need for redesigns and ultimately minimizing waste.

Enhance ES Sustainability

The Advanced Micro Computing (AMC) ecosystem is a game-changer for sustainable development and use. AMC is designed to be modular, scalable, energy-efficient and with longevity, making it a responsible choice for companies looking for sustainable development while achieving their computing goals.

Modularity and Scalability

AMC consists of multiple choices of modules, converters, and carriers, which can create diverse combinations as different systems. This allows companies to choose the exact features they need, reduce waste and save resources.

Energy Efficiency

OSM modules are built to be compatible with both Intel and ARM architectures, which means that they can be optimized for power consumption. This translates to lower energy consumption and a reduced environmental footprint.

Longevity

OSM limits the use of materials, simplifies material preparation and reduces the chance of dealing with component discontinuance. This feature is particularly beneficial for applications requiring longevity support. Furthermore, AMC's modular design allows for the easy replacement, upgrade, or repurposing of individual components, which extends the lifespan of the product and reduces the amount of electronic waste generated.

THE BENEFIT

Flexibility of AMC

All the AMC transforming comes from the computing core, OSM-L, which is not only an Omini-SiP but also a micro-system that can be built with RISC or CISC processor to meet the demand of various kinds of embedded applications. In the past, a CISC processor needs a lot of chips and circuit to form a system, it is not easy to put them into a size at 45x45mm space. But recently MiTwell had break out the limitation, we successfully to put the Intel Atom processor into the OSM-L and make it as the core of all embedded solutions.

The idea of Advanced Micro Computing (AMC) is to create a new, future proof and versatile types small-size, low-cost embedded system based on Open Standard Modules™(OSM) core with below key parts.

1. Besides, the OSM chips is tiny enough to be embedded into several kinds of appliance in our smart life.
2. Industrial module standard converter board, such as Qseven, SMARC, COM-E, PC/104, cPCI, VPX, that be transformed for the specific converter board after the system feasibility study.
3. Well-developed carriers for industrial system board(mini-IEX, 3.5" ESB, NUK...), all built with different OSM modules.
4. Pre-defined system board or complete system with OSM spec and interface can form a ready solution soon.

ECO System of AMC

The intention of Advanced Micro Computing (AMC) is to create a new, future proof, versatile types, compact size and low-cost embedded system. Following OSM core standard, AMC brings huge benefits to the customers and industry which build a completed ECO system to the field. Equipped with OSM-L as its computing core, AMC is different from the traditional embedded system with below fabrics.

1. Compact and fixed size
→ easy to build on targeted appliance
2. Pin to pin compatible
→ easy to upgrade the computing core
3. Well defined I/O interface
→ easy to expand the I/O functions
4. Low power consumption
→ to ensure the system stability
5. Lower thermal
→ to ensure the system reliability

Giving the above characteristics, AMC allows embedded systems to be flexible to config, quick to upgrade, easy to maintain and sustain.

System Application of AMC

There are four ways to build an embedded solution for various customer demands.

1. Build the control board with an OSM chip soldered inside and apply it to several kinds of appliances for smart life or defense solutions.
2. Adopt an industrial module standard converter board, such as Qseven, SMARC, COM-E, PC/104, cPCI, VPX, to transform the OSM as customer's target module.
3. Use well-developed carriers for industrial system boards (mini-IEX, 3.5" ESB, NUK...) to build the Industrial computing boards. It saves a lot of development time and simultaneously keeps the benefits of product maintenance and sustainability.
4. Pre-define the system board or complete system with an OSM interface to form a ready solution quickly.

Here comes the use case of AI Accelerator – MWA7
Gen. 1 - Build the system with a specific 100 x 100mm NUC.
Gen. 2 - Change the NUC to SMARC module + carrier board.
Gen. 3 - Adopt OSM as the computing core.

Result : The power consumption is reduced. The system becomes more stable and reliable. And, the system generation change only happens in the OSM, not the whole system. It saves time and expense while keep the flexibility for upgrade and maintenance.

Module



Apollo Lake



Elkhart Lake



i.MX 8M Plus



AM3354

Converter



OSM to Qseven

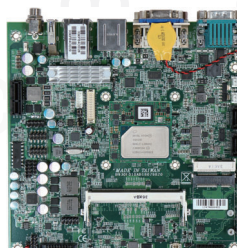


OSM to SMARC



OSM to COMe Mini

Carrier



Mini-ITX Evaluation Kit



3.5" Embedded Board

System



MWA7



ATIS-C000



Intel® Apollo Lake family processor OSM module

MIES-MOL100

- Intel® Apollo Lake family processor
- Up to on board 4GB memory and 64GB storage
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor (45mm x 45mm)

45 x 45



General		Video	
CPU	Intel® Apollo Lake family processor	Graphics	Intel® HD Graphics 500
Memory	On board LPDDR4 2GB/4GB (Option) eMCP	Environmental	
Mass Storage	On board 32GB/64GB (Option) eMCP	Storage Temperature	-40°C ~ 85°C
Power Input	Standard Input: 5V DC	Operating Temperature	0°C ~ 70°C for N series -40°C ~ 85°C for E series
OS	Windows® 10 IoT Enterprise/ Linux	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface		Mechanical	
Audio	I2S interface	Form Factor	OSM size L
PCI Express	1x PCI Express x4 Gen2 2x PCI Express x1 Gen2	Dimension	45mm (L) x 45mm (W)
USB	4x USB2.0 (1 port with dual role)/ 2x USB3.0	Optional Accessories	
Display	1x eDP (4 lane)/1x DDI (DP/HDMI, BOM select)	Converter Board	MW provides Convert Board for OSM-L to other standard modules, including SMARC, Qseven, COMe Mini and PCIe/104
SATA	1x SATA3.0		
Camera	1x CSI		
Legacy I/O	8x GPIO (1 for camera interface), 1x I2S, 2x I2C, 3x UART (2x RTS/CTS), 2x SPI (1x FSPI), 1x SDIO, 2x ADC, 4x PWM, 1x JTAG		

Intel® Elkhart Lake family processor OSM module

MIES-MOL200

- Intel® Elkhart Lake family processor
- Up to on board 4GB memory and 64GB storage
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor (45mm x 45mm)

45 x 45



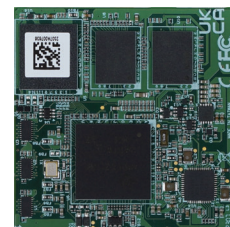
General		Video	
CPU	Intel® Elkhart Lake family processor	Graphics	Intel® UHD Graphics
Memory	On board LPDDR4x 2GB/4GB (Option) eMCP	Environmental	
Mass Storage	On board 32GB/64GB (Option) eMCP	Storage Temperature	-40°C ~ 85°C
Power Input	Standard Input: 5V DC	Operating Temperature	0°C ~ 70°C for N, J series -40°C ~ 85°C for X series
OS	Windows® 10 IoT Enterprise/Linux	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface		Mechanical	
Audio	I2S interface	Form Factor	OSM size L
PCI Express	1x PCI Express x4 Gen3 2x PCI Express x1 Gen3	Dimension	45mm (L) x 45mm (W)
USB	4x USB2.0 (1port with dual role)/2x USB3.1	Optional Accessories	
Display	1x eDP (4 lane)/1xDDI (DP/HDMI, BOM select)	Converter Board	MW provides Convert Board for OSM-L to other standard modules, including SMARC, Qseven, COMe Mini and PCIe/104
SATA	2x SATA3.0		
Ethernet	3x GbE LAN (2x RGMII/1xSGMII)		
Legacy I/O	9x GPIO, 2x I2C, 4x UART (2x RTS/CTS), 3x SPI (1x FSPI), 1x CAN Bus, 1x SDIO, 2x ADC, 2x I2S, 4x PWM, 1x JTAG		

TI Sitara AM3354 family processor OSM module

MIES-MOLAM3354

- TI AM3354 family processor
- Up to on board 1GB memory and 32GB storage
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor (45mm x 45mm)

45 x 45



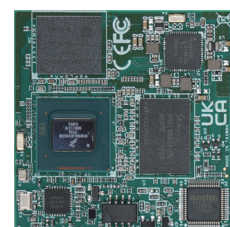
General		Environmental	
CPU	TI Sitara AM3354 family processor	Storage Temperature	-40°C ~ 85°C
Memory	On board 1GB DDR3	Operating Temperature	-40°C ~ 85°C
Mass Storage	Support 32GB eMMC	Relative Humidity	5 %~ 95 % (non-condensing)
Power Input	Standard Input: 5V DC	Mechanical	
OS	Linux		
Basic I/O Interface		Optional Accessories	
Audio	1x I2S		
USB	2x USB2.0	Form Factor	OSM size L
Display	1x 18bit LCD (RGB)	Dimension	45mm (L) x 45mm (W)
Ethernet	2x GbE LAN (2x RGMII)	Converter Board	
Legacy I/O	23x GPIO, 2x I2C/1x I2S, 3x UART (1 for console), 1x SPI, 1x CAN Bus, 1x SDIO, 2x PWM, 2x ADC, 1x JTAG		
Video		MW provides Convert Board for OSM-L to other standard modules, including SMARC, Qseven, COMe Mini and PCIe/104	
Graphics	Integrated in CPU		

NXP i.MX8M Plus family processor OSM module

MIES-MOLM8P

- NXP i.MX8M Plus family processor
- Up to on board 8GB memory and 64GB storage
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor (45mm x 45mm)

45 x 45



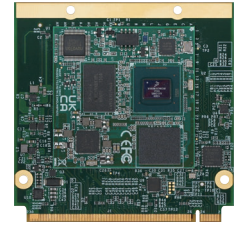
General		Video	
CPU	NXP i.MX8M Plus family processor	Graphics	Integrated in CPU
Memory	On board LPDDR4 2GB (option 4GB/8GB)	Environmental	
Mass Storage	On board 16GB eMMC (option 32GB/64GB)	Storage Temperature	-40°C ~ 85°C
Power Input	Standard Input: 5V DC	Operating Temperature	-40°C ~ 85°C
OS	Linux	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface		Mechanical	
Audio	I2S interface	Form Factor	OSM size L
PCI Express	1x PCI Express x1 Gen3	Dimension	45mm (L) x 45mm (W)
USB	4x USB2.0 (1 port with dual role)/ 1x USB3.0	Optional Accessories	
Display	1x dual LVDS, 1x HDMI, 1x MIPI DSI	Converter Board	
Camera	1x CSI		
Ethernet	2x GbE LAN (2x RGMII)	MW provides Convert Board for OSM-L to other standard modules, including SMARC, Qseven, COMe Mini and PCIe/104	
Legacy I/O	8x GPIO, 2x I2C, 4x UART (2x RTS/CTS), 2x SPI, 2x CAN Bus, 2x SDIO, 2x ADC, 1x I2S, 4x PWM, 1x JTAG		

The first OSM to QSeven converter board

MIES-MOL-CQ7

- The first OSM to QSeven converter board
- OSM LGA to QSeven 230 pins edge fingers
- Legacy I/O and high-speed interface implemented
- Low power consumption

70 x 70



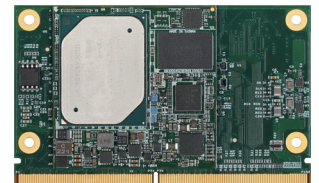
General		Environmental	
OSM Standard v1.1	Support OSM size L CPU module	Storage Temperature	-40°C ~ 85°C
QSeven Standard v2.1	Support QSeven 230 pin edge fingers	Operating Temperature	0°C ~ 70°C for Consumer grade OSM module -40°C ~ 85°C for Industrial grade OSM module
Power Input	Standard Input : +5 VDC ±5%	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface			
Display	1x HDMI, 1x eDP, 2x LVDS (18/24 bit)	Mechanical	
USB	2x USB 2.0, 1x USB 3.0	Form Factor	OSM to Qseven
Ethernet	1x RGMII Interface	Dimension	70mm (L) x 70mm (W)
		Optional Accessories	
GPIO	8x GPIO to edge finger	Module Board	Intel® Elkhart lake OSM size L module Intel® Apollo lake OSM size L module NXP i.MX8M plus OSM size L module TI AM3354 OSM size L module (note: IO function may be limited depends on different CPU module)
I2C	1x I2C to edge finger		
UART	3x UART to edge finger, 1x UART for console port		
CAN Bus	1x CAN Bus to edge finger		
Expansion	1x SDIO to edge finger, 1x SPI to edge finger, 4x PCIe x1 to edge finger, 2x SATA to edge finger		

The first OSM to SMARC converter board

MIES-MOL-CSMARC

- The first OSM to SMARC converter board
- OSM LGA to SMARC 314 pins edge fingers
- Legacy I/O and high-speed interface implemented
- Low power consumption

82 x 50

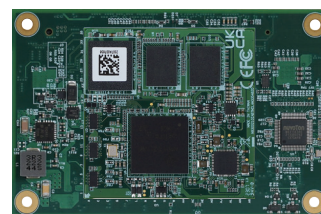


General		Environmental	
OSM Standard v1.1	Support OSM size L CPU module	Storage Temperature	-40℃ ~ 85℃
QSeven Standard v2.1	Support SMARC 314 pin edge fingers	Operating Temperature	0℃ ~ 70℃ for Consumer grade OSM module -40℃ ~ 85℃ for Industrial grade OSM module
Power Input	Standard Input : +5 VDC ±5%	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface			
Display	1x eDP	Mechanical	
USB	2x USB 2.0, 1x USB 3.0	Form Factor	OSM to SMARC
Storage	On board 32GB eMMC (option for 64GB/128GB)	Dimension	82mm (L) x 50mm (W)
Ethernet	1x GbE LAN (INTEL I225)	Optional Accessories	
GPIO	8x GPIO to edge finger, 4x GPIO share to MIPI CSI	Module Board	Intel® Elkhart lake OSM size L module Intel® Apollo lake OSM size L module NXP i.MX8M plus OSM size L module TI AM3354 OSM size L module (note: IO function may be limited depends on different CPU module)
I2C	2x I2C to edge finger		
UART	4x UART to edge finger		
Expansion	2x SPI to edge finger, 1x PCIe x4 to edge finger, 1x SATA to edge finger, 1x MIPI CSI (4 lane)		

The first OSM to COM Express converter board

MIES-MOL-CCOMET10

- The first OSM to COM Express Type10 converter board
- OSM LGA to COM Express Type 10, 220 pins A,B connector-
- Legacy Legacy I/O and high-speed interface implemented
- Low power consumption



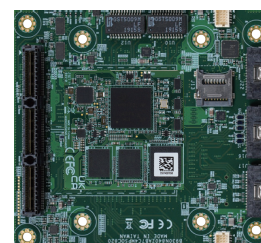
84 x 55

General		Environmental	
OSM Standard v1.1	Support OSM size L CPU module	Storage Temperature	-40°C ~ 85°C
PICMG COM.0 R3.0	Support COM Express Type 10, 220 pins A,B connector	Operating Temperature	0°C ~ 60°C for Consumer grade OSM module -40°C ~ 85°C for Industrial grade OSM module
Power Input	Standard Input: VCC_12V ±10%, VCC_5V_STBY ±5%	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface		Mechanical	
Display	1x eDP colay with LVDS	Form Factor	OSM to COM Express Type 10
USB	5x USB 2.0, 2x USB 3.0	Dimension	84mm (L) x 55mm (W)
Storage	2x SATA to Row A/B connector 1x SDIO to Row A/B connector	Optional Accessories	
Ethernet	1x 2.5GbE LAN (INTEL I226)	Module Board	Intel® Elkhart lake OSM size L module Intel® Apollo lake OSM size L module NXP i.MX8M plus OSM size L module TI AM3354 OSM size L module (note: IO function may be limited depends on different CPU module)
GPIO	1x SDIO (option with 8x GPIO)		
I2C	1x I2C to Row A/B connector		
UART	2x UART (UART B option with CAN Bus)		
Expansion	1x SPI, 1x PCIe x4, 1x LPC, 1x CAN Bus (option with UART)		

The first OSM to PCIe/104 converter board

MIES-MOL-C104

- Support OSM-L module with LGA contacts
- Support PCIe/104 Type2 specification
- Legacy I/O and high-speed interface implemented
- On board monitor and debug testing points design



96 x 90

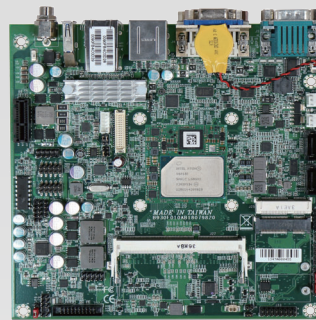
General		Environmental	
CPU	Intel® Elkhart Lake family processor in OSM L module	Storage Temperature	-40°C ~ 85°C
Memory	On Board LPDDR4 2GB/4GB (Option)	Operating Temperature	0°C ~ 70°C for N series -40°C ~ 85°C for X series
Mass Storage	1x m.2 2242 B-Key (PCIe x1/SATA3.0)		
Power Input	Standard Input: +5V VDC ±5%	Relative Humidity	5 %~ 95 % (non-condensing)
OS	Windows® 10 IoT Enterprise/Linux		
Basic I/O Interface		Mechanical	
USB	2x USB2.0 by header	Form Factor	OSM to PCIe/104
Display	1x mini DP++	Dimension	96mm (L) x 90mm (W)
Expansion	1x PCIe/104 Type2 Connector, 2x USB2.0, 2x USB3.0, 1x SMB, 2x PCIe x1, 1x PCIe x4, 1x SATA3.0, 1x LPC, 1x RTC, VCC3, VCC5, VCC12, 5VSB	Optional Accessories	
		Module Board	Intel® Elkhart lake OSM size L module (note: IO function may be limited depends on different CPU module)
Video			
Graphics	Intel® UHD Graphics		

The OSM evaluation board supporting both RISC & CISC

MIES-CMITX-SY

- The first X86 and ARM OSM evaluation board
- OSM LGA to MiniITX carrier board
- Legacy I/O and high-speed interface implement
- Rich I/O supported
- Development software support

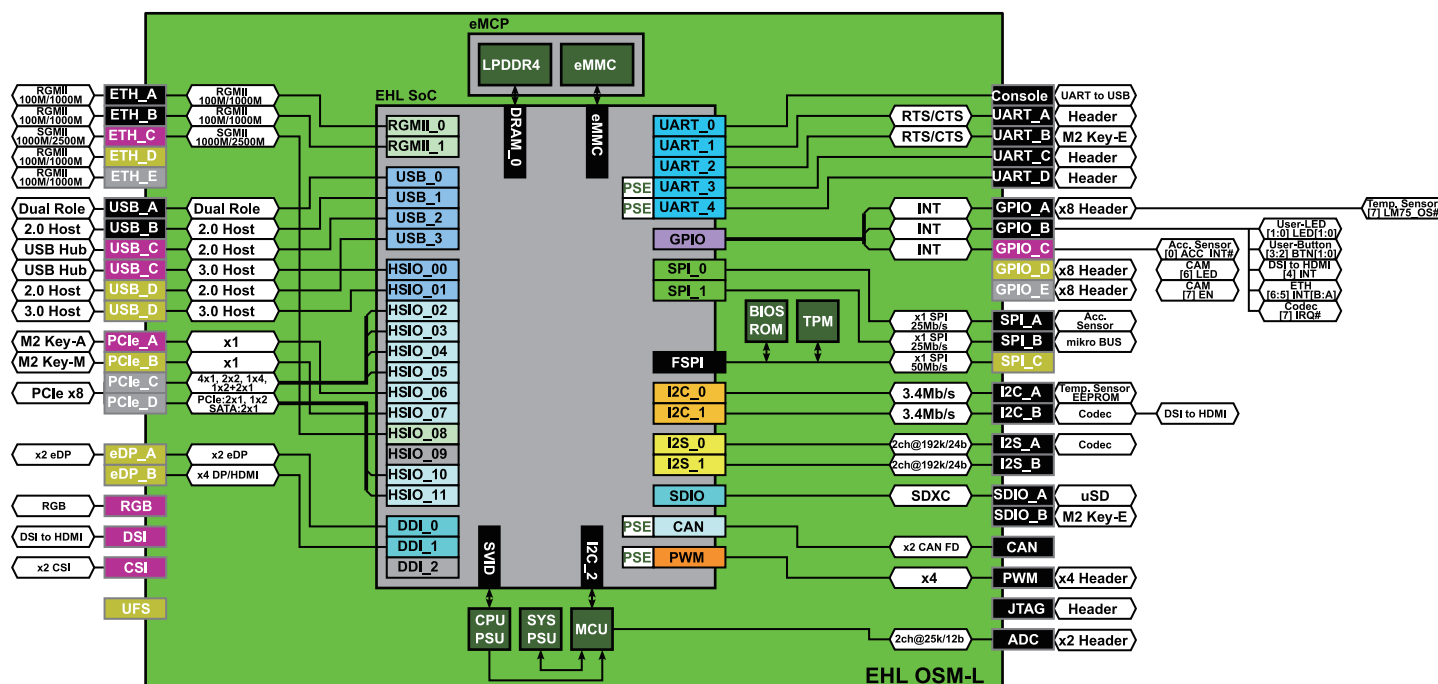
170 x 170



Specifications ▼

General		Environmental	
OSM Standard v1.1	Support OSM CPU module	Storage Temperature	-40°C ~ 85°C
Power Input	Standard Input : +24 VDC ±5%	Operating Temperature	0°C ~ 60°C
Basic I/O Interface		Relative Humidity	5 %~ 95 % (non-condensing)
Display	2x eDP to display expansion board (DP/HDMI/LVDS), 1x RGB to pin header, 1x LVDS, 1x HDMI	Mechanical	
USB	1x USB 2.0 with OTG, 2x USB 3.0	Form Factor	OSM to MiniITX
Storage	1x M.2, 1x eMMC, 1x MicroSD connector	Dimension	170mm (L) x 170mm (W)
Ethernet	4x GbE LAN (RGMII), 1x SFP (SGMII)	Optional Accessories	
GPIO	5x GPIO group (8 bit per group)	Module Board	Intel® Elkhart lake OSM size L module Intel® Apollo lake OSM size L module NXP i.MX8M plus OSM size L module TI AM3354 OSM size L module (note: IO function may be limited depends on different CPU module)
I2C	1x I2C		
UART	1x UART to USB (console), 2x UART to header		
PCIe	1x PCIe x1 to M.2 key-A, 1x PCIe1x to M.2 key-M, 1x PCIe x8 connector		
Expansion	1x SPI to Acc sensor, 1x mikro Bus with SPI and UART, 2x CAN Bus to header, 1x PWM to header, 1x JTAG to header, 1x ADC to header		

Function Block Diagram ▼

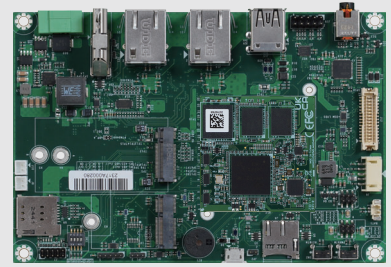


The first OSM to 3.5" carrier board 3.5"

MIES-MOL-CEVC

- Intel® Apollo Lake family, Intel® Elkhart Lake family, NXP i.MX8M Plus family and TI Sitara AM3354 family
- LPDDR4 2GB/4GB (option) eMCP/Storage: 32G/64G(option) eMCP
- Support Audio, 2x Giga LAN, HDMI, eDP, LVDS
- Support multi I/O: 8x Digital I/O, 2x I2C(touch and light sensor), 2x RS232/422/485
- Support expansion like M.2 B key 3042/3052 with Nano SIM, micro SD

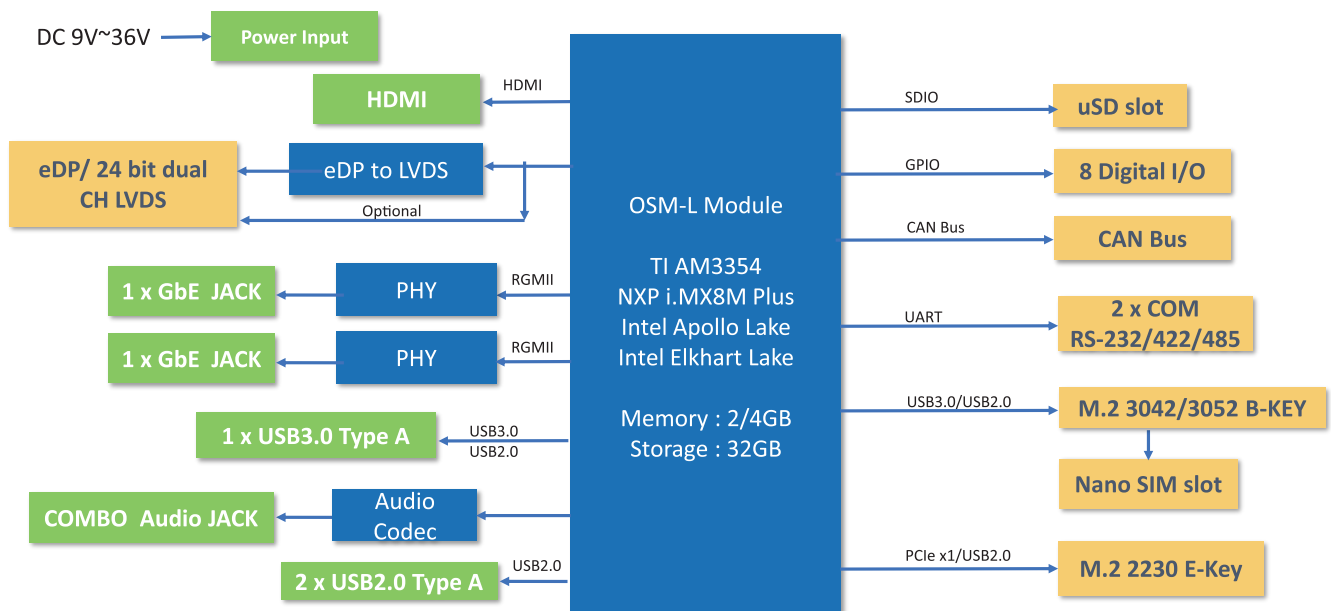
146 x 102



Specifications ▼

General		CAN Bus	1/2 (based on OSM L module)
CPU	Intel® Elkhart Lake family processor NXP i.MX8M Plus family processor	Buzzer	1
		Video	
Memory	Intel® Elkhart Lake: 2GB/4GB (option) eMCP NXP i.MX8M Plus: 2GB/4GB/8GB (option)	Graphics	Integrated in CPU
Mass Storage	Intel® Elkhart Lake: 32GB/64GB(option) eMCP NXP i.MX8M Plus: eMMC 16GB/32GB/64GB (option)	Environmental	
		Storage Temperature	-40°C ~ 85°C
		Operating Temperature	-40°C ~ 85°C
Power Input	Standard Input: 9-36VDC	Relative Humidity	5 %~ 95 % (non-condensing)
OS	Linux		
Basic I/O Interface		Mechanical	
Audio	Line out, Mic in	Form Factor	OSM size L
USB	1x USB3.0 type A, 3x USB2.0 type A	Dimension	45mm (L) x 45mm (W)
Display	1x HDMI, 1x 2-ch 24bit LVDS	Optional Accessories	
Ethernet	2x GbE LAN	Module Board	Intel® Elkhart lake OSM size L module NXP i.MX8M plus OSM size L module (note: IO function may be limited depends on different CPU module)
Digital I/O	4 pin input, 4 pin output		
I2C	1x 12C header		
Front Panel	1x PWR button, 1x Reset button		
COM	2x RS232/422/485		
Expansion	1x M.2 B key 2242/3042/3052 with SIM, USB2.0/3.0 (option with USB 3.0 Type A)		

Function Block Diagram ▼



The first Intel OSM module design in tiny system

MWA7

- Adapt x86 OSM L module
- Support 1x USB2.0 typeA, 2x USB 3.0 type C, 2x Ethernet and 1x DP port
- Intel Industry real-time networking supported (optional)
- Tiny system size in 75mm x 75mm x 30mm
- Advanced Micro Computing design to fit any kind of industry market

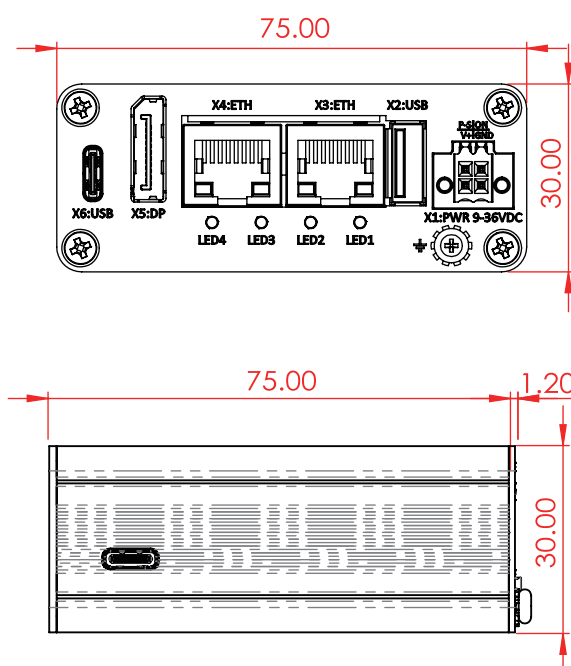
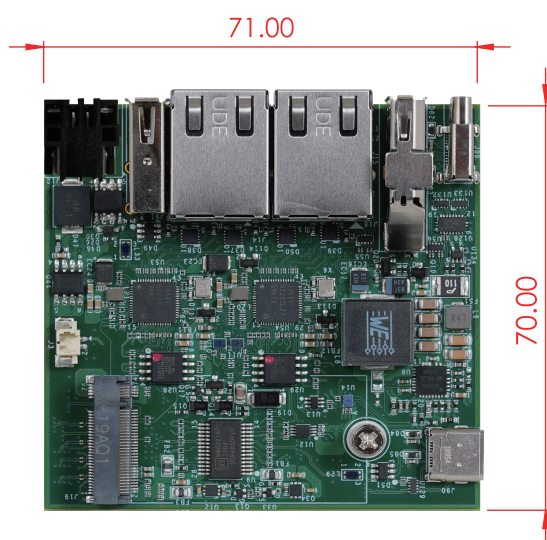


75 x 75 x 30

Specifications ▼

General		Environmental	
CPU	Intel® Apollo Lake and Intel® Elkhart Lake family processor in OSM L module	Storage Temperature	-40°C ~ 85°C
Memory	LPDDR4 2GB/4GB (option) eMCP in OSM L module	Operating Temperature	-20°C~ 40° with airflow
Mass Storage	32GB/64GB (option) eMCP in OSM L module	Relative Humidity	5 %~ 95 % (non-condensing)
Power Input	Standard: 9-36 VDC	Vibration	1G with DIN-Rail (EN 60068-2-6)
OS	Windows® 10 IoT Enterprise/Linux	Shock	15g with 11ms impulse length, 18 shocks DIN-Rail (EN 60068-2-27)
Basic I/O Interface		Mechanical	
Power Connector	2x 2 pin Terminal Block	IP Protection	IP30
Ethernet	2x 2.5 GbE LAN (Intel® I226)	Dimension	75mm (L) x 75mm (W) x 30mm (H)
USB	2x USB3.0 type C, 1x USB2.0 type A	Net Weight	0.25KG
Display	1x DP	Optional Accessories	
Expansion	1x M.2 M key 2242 PCIe x4	Power Adaptor	4 pin Connector, 60W, 24V/2.5A
LED	4 system LEDs	Mounting Kit	DIN-Rail mount/Wall mount
EMC standard		Video Adaptor	DP to VGA/DP to DVI
Certificate	CE/FCC		

Dimension ▼



Advanced Tiny Industrial System with SMARC module

ATIS-S1301

- SMARC® Module with Intel Atom® E3900 Series, Pentium™ N4200 or Celeron™ N3350 Processor
- 4GB onboard LPDDR4 memory, optional up to 8GB
- 32GB onboard eMMC 5.0 storage, optional up to 256GB
- 2x Gigabit PoE + PSE ports, 1x 2.5G LAN port, 2x USB 2.0, 2x USB 3.0, 1x HDMI 1.4, 1x RS-232 port, 6x DI, 6x DO, 1x M.2 Key M SATA
- Compact System Size in 116mm x 150mm x 52mm

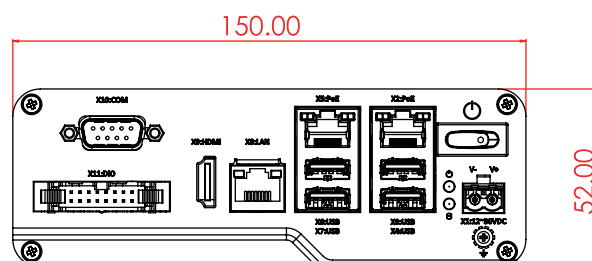
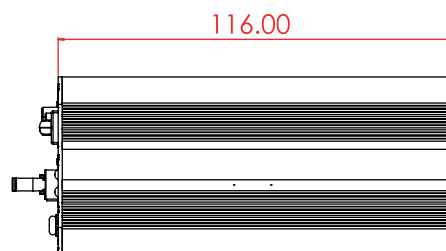
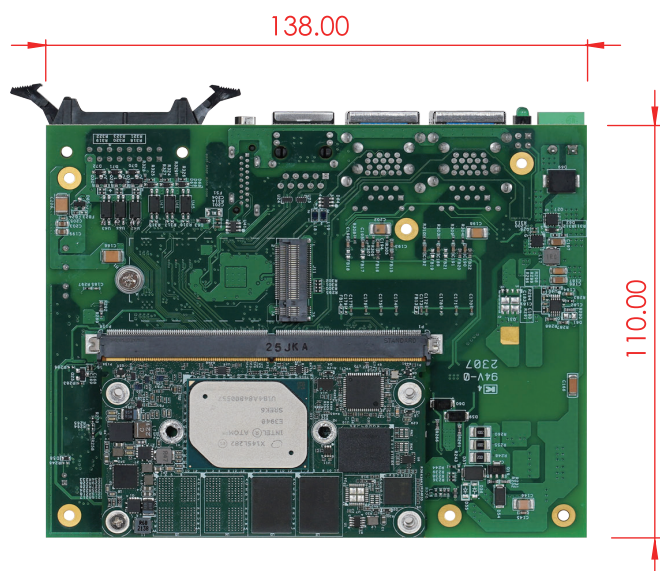


116 x 150 x 52

Specifications ▼

General		EMC standard	
CPU	Dual or quad-core Intel Atom® E3900 Series or Pentium® N4200 or Celeron® N3350 Processor SoC	Certificate	CE (EN55035, EN55032), FCC class B
Memory	On board LPDDR4 up to 8GB, 2133 MT/s	Environmental	
Mass Storage	eMMC 5.0 onboard flash 32GB, optional up to 256 GB, 1x M.2 M key 2242 SATA Storage	Storage Temperature	-25°C ~ 85°C
Power Input	Standard: 12-30 VDC	Operating Temperature	-20°C~ 50° @ 5~85% RH
OS	Windows® 10 IoT Enterprise LTSC 21H2 (64bit) Linux Yocto Warrior v2.7.1 (kernel 4.14)	Relative Humidity	5 %~ 95 % (non-condensing)
Basic I/O Interface		Vibration	1G with DIN-Rail (EN 60068-2-6)
Power Connector	1x 2 pin Terminal Block	Shock	15g with 11ms impulse length, 18 shocks DIN-Rail (EN 60068-2-27)
Ethernet Port	2x 10/100/1000 Mbps (Intel® i210) with PoE+ PSE 1x 2.5GbE (Intel® i226)	Mechanical	
PoE Capability	In compliant with IEEE 802.3at PSE, 15W per port	Dimension	116mm (L) x 150mm (W) x 52mm (H)
USB	2x USB3.0, 2x USB2.0	Net Weight	1KG
Display	1x HDMI 1.4 up to 4096 x 2160 @ 30Hz	Optional Accessories	
Isolation DIO	6x DI, 6x DO (24V)	Power Adaptor	2 pin Connector, 60W, 24V/2.5A
Serial Port	1x RS232 with DB9 connector	Mounting Kit	DIN-Rail kit Wall mount kit
Expansion	1x M.2 M key 2242 SATA		

Dimension ▼





AMC stands for **Advanced Micro Computing**. It is an ecosystem designed for creating a simplified yet flexible embedded solution world.

The definition of AMC is a micro-system with limitation in a chip to make it reliable, simple & affordable.

The AMC system is built upon 45*45 mm LGA OSM/OSM-like modules, and is equipped with built-in DRAM, eMMC, and PMIC.

With the **advantages of cost, omni functions, reliability and flexibility**, the system design of AMC type fits various kinds of customer demand.

Being the expert of embedded systems, MiTwell provides full range of products including the OSML modules, converters for embedded modules, OSML carrier, and the system boards to form an AMC product family.



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