OSM

Era of Micro Computing

OPEN STANDARD MODULE

OSM CISC SOLUTIONS GUIDE

OPEN STANDARD MODULE ™

The idea of all Open Standard Modules™ is to create a new, future proof and versatile standard for small-size, low-cost embedded computer modules, combining the following key characteristics:

- Completely machine processible during soldering, assembly and testing
- Different possible packages for direct PCB soldering without connector
- Pre-defined soft- and hardware interfaces
- Open-Source in soft- and hardware

The Open Standard Module™ specification allows developing, producing and distributing embedded modules for the most popular MCU32, ARM and x86 architectures. For a growing number of IoT applications this standard helps to combine the advantages of modular embedded computing with increasing requirements regarding costs, space and interfaces.

Features of OSML Modules

The size of OSM-L module is 45x45mm and it is set with well defined pin position and the following features.

Compact and fixed Size

Pin to pin compatible

Low power consumption

Lower thermal

MOSM-M104

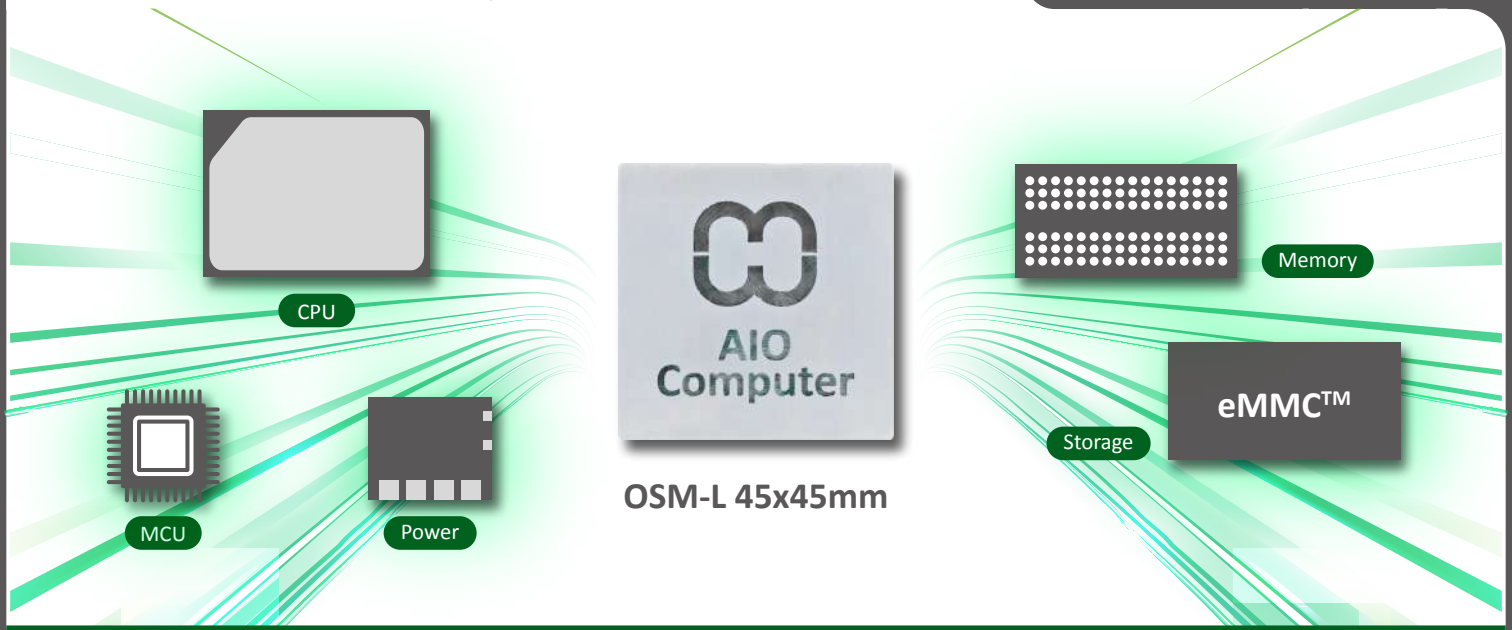
MOSM-M102

Versatile Embedded Interfaces

OSM Size-L
Bottom side

Interface	Size-0	Size-S	Size-M	Size-L	
LVDS	0	0	0	1	Video Interfaces
Display Port	0	0	2	2	
RGB	0	1	1	1	
CSI	0	1	1	1	
DSI	0	1	1	1	
PCIe x 1	0	1	2	2	High-speed Interfaces
PCIe x 4	0	0	0	2	
Ethernet	1	2	3	5	
USB	2	3	4	4	
GPIO	16	24	32	40	Low-speed Interfaces

All-in-one Computer



OSM-L 45x45mm

From small to tiny as SoC
Industrial standard (SGeT OSM-L)
CISC & RISC computing supported

Intel® Amston Lake family processor OSM module

MOSM-M105

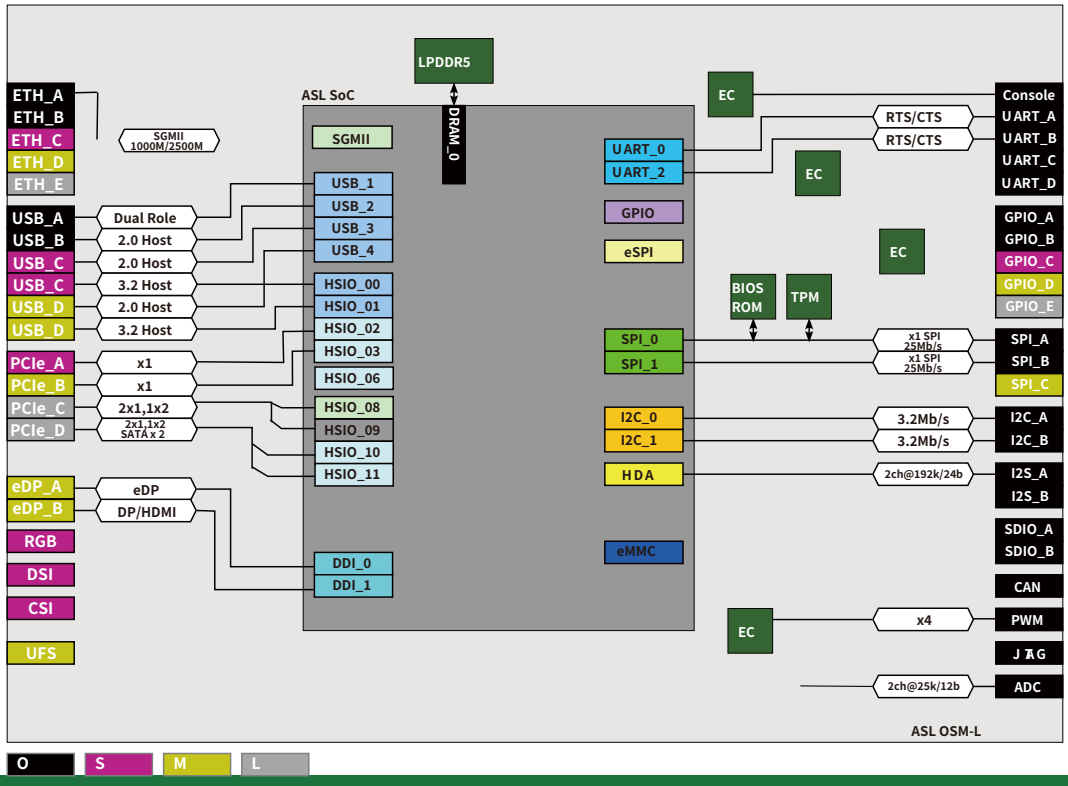
- Intel® Amston Lake family processor
- Up to on board 8GB memory
- X86 software and hardware eco-system supported
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor module(45 x 45 mm)
- FTGA grid array with 662 contacts

Specifications ▾

General	
CPU	Intel® x7000RE dual core to 8 cores, up to 3.6GHz
Memory	8GB onboard LPDDR5, 4800MT/s
Storage	N/A
Power Input	5V DC
OS	Windows10
Mechanical	
Form Factor	SGeT OSM Specification v1.1 OSM size L 662 pins
Dimension	45 (L) x 45 (W) mm
Mechanical and Environmental	
Operating Temperature	(-)40°C to +85°C
Humidity	5-95% RH, non-condensing

Basic I/O Interface	
Audio	1 x HDA
PCI Express	2 x PCIe x1 , 1 x PCIe x2, x2 PCIEx1(swap SATA)
USB	4x USB2.0 2x USB3.2
Display	1x DP++/HDMI 1x eDPx4
Video	N/A
Camera	N/A
Ethernet	1xSGMII
Legacy I/O	17x GPIO, 2x I2C, 4x UART(2xRTS/CTS) 2x SPI, 1x eMMC, 2x ADC, 4x PWM, 1x eSPI

Function Block Diagram ▾



Intel® Alder Lake-N family processor OSM module

MOSM-M104

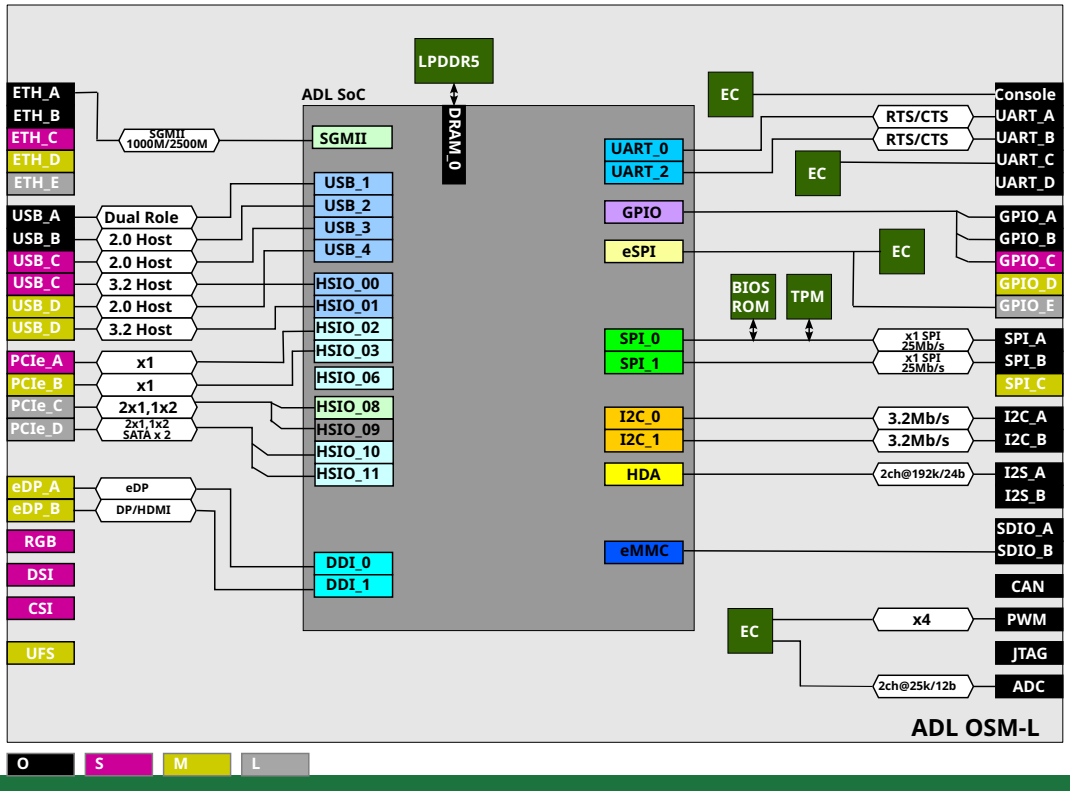
- Intel® Alder Lake-N family processor
- Up to on board 8GB memory
- X86 software and hardware eco-system supported
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor module(45 x 45 mm)
- FTGA grid array with 662 contacts

Specifications ▾

General	
CPU	Intel® x7211E dual core, up to 3.2GHz
Memory	8GB onboard LPDDR5, 4800MT/s
Storage	N/A
Power Input	5V DC
OS	Windows10
Mechanical	
Form Factor	SGeT OSM Specification v1.1 OSM size L 662 pins
Dimension	45 (L) x 45 (W) mm
Mechanical and Environmental	
Operating Temperature	(-)20°C to +85°C
Humidity	5-95% RH, non-condensing

Basic I/O Interface	
Audio	1 x HDA
PCI Express	2 x PCIe x1 , 1 x PCIe x2, x2 PCIEx1(swap SATA)
USB	4x USB2.0 2x USB3.2
Display	1x DP++/HDMI 1x eDPx4
Video	N/A
Camera	N/A
Ethernet	1xSGMII
Legacy I/O	17x GPIO, 2x I2C, 4x UART(2xRTS/CTS) 2x SPI, 1x eMMC, 2x ADC, 4x PWM, 1x eSPI

Function Block Diagram ▾



Intel® Elkhart Lake family processor OSM module

MOSM-M102

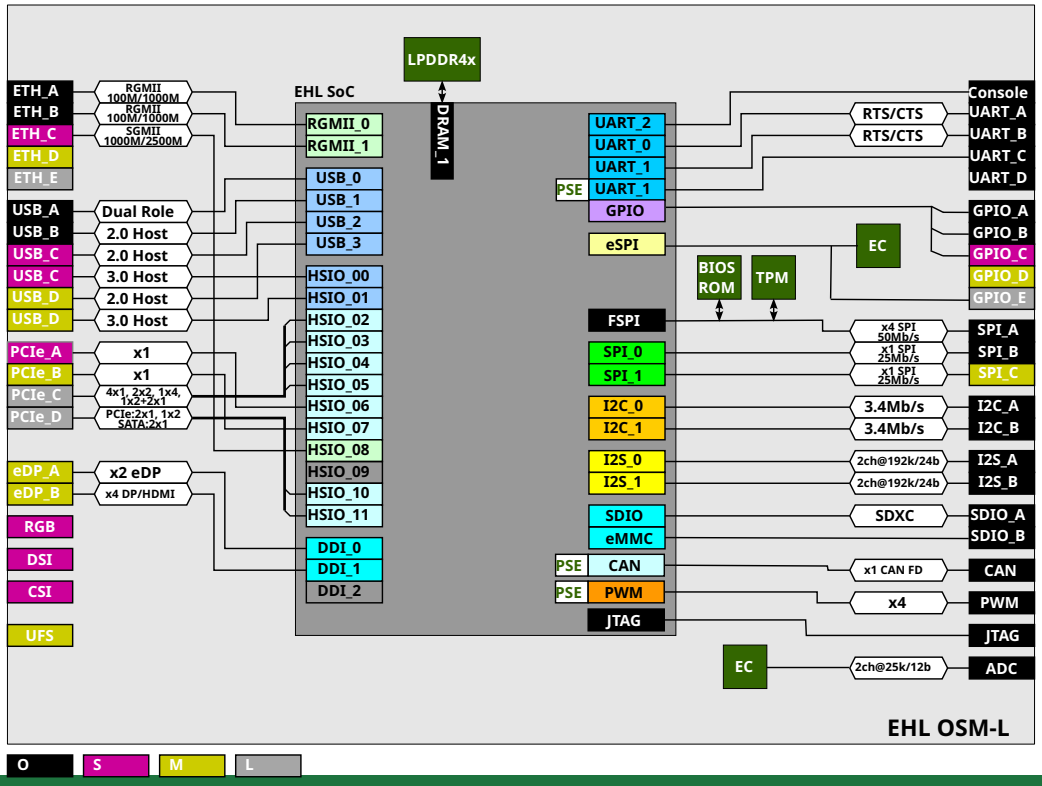
- Intel® Elkhart Lake family processor
- Up to on board 8GB memory
- X86 software and hardware eco-system supported
- Legacy I/O and high-speed interface implemented
- OSM size-L form factor module(45 x 45 mm)
- FTGA grid array with 662 contacts

Specifications ▾

General	
CPU	Intel® x6413E 4Core 1.5GHz
Memory	8GB onboard LPDDR4x, 3200MT/s
Storage	N/A
Power Input	5C DC
OS	Windows10
Mechanical	
Form Factor	SGeT OSM Specification v1.1 OSM size L 662 pins
Dimension	45 (L) x 45 (W) mm
Mechanical and Environmental	
Operating Temperature	(-)20°C to +85°C
Humidity	5-95% RH, non-condensing

Basic I/O Interface	
Audio	2x I2S
PCI Express	2 x PCIe x1 , 1 x PCIe x4, x2 PCIEx1(swap SATA)
USB	4x USB2.0 2x USB3.2
Display	1x DP++/HDMI 1x eDPx2
Video	N/A
Camera	N/A
Ethernet	2x RGMII 1x SGMII
Legacy I/O	12x GPIO, 2x I2C, 4x UART(2xRTS/CTS) 2x SPI, 1x eMMC, 2x ADC, 4x PWM, 1x CAN, 1x JTAG, 1x SD card, 1x eSPI

Function Block Diagram ▾



MiTwell

Advanced MiT Solutions Provider

㈱連基　〒110-0003 東京都台東区根岸2丁目20-10
お問い合わせ:info@cnct.world Phone: 03-5842-1785

Simply the Trust

Headquarters

4F., No. 55, Ln 6, Chenglin Rd., Tucheng Dist., New Taipei City 23677, Taiwan
TEL: +886-2-7705-8788　FAX: +886 2 7731-5888
E-mail: info@we-link.com.tw　https://www.we-link.com.tw

Advanced MiT Solutions Provider

Headquarters

No.55, Ln. 6, Chenglin Rd., Tucheng Dist., New Taipei City 236, Taiwan
TEL: +886 2 7705-8788　FAX: +886 2 7731-5888
E-mail: info@mitwell.com.tw　https://www.mitwell.com.tw