

## MSC SM2-MB-EP1

### SMARC™ 2.0 Carrier Board



170 x 170 mm



2 W



0 +70



## Description

The new SMARC™ 2.0 embedded platform MSC SM2-MB-EP1 offers a variety of interfaces commonly used in embedded applications such as Gigabit Ethernet, SATA, USB 3.0, USB 2.0 Host, USB 2.0 Client, RS232, CAN, SPI, I2C as well as LVDS/eDP, DisplayPort and HDMI display interface and regulated backlight supply.

In addition a PCI Express x4 slot, a mini PCI Express slot and one SD Card socket are supported to extend the functionality of the carrier board. To complete the feature set HD or I2S Audio and a MIPI CSI-2 camera interface are offered.

The SMARC™ module slot of the EP1 platform is placed on the top side of the carrier board, which comes in the Mini-ITX form factor allowing easy integration into standard Mini-ITX enclosures.

## Highlights

- SMARC™ 2.0 carrier board for full size and short size modules
- HDMI and DisplayPort connectors
- LVDS and eDP connectors
- Regulated backlight supply
- Two Gigabit Ethernet ports
- PCI Express x4 slot
- Mini PCI Express Card slot
- One SATA connector
- Two USB 3.0 host ports
- Two USB 2.0 host ports
- One USB 2.0 OTG port
- RS232 on DB9 connector
- CAN on DB9 connector
- SPI, eSPI, SMBus, I2C and GPIO
- HD or I2S audio interface
- MIPI CSI-2 camera interface
- SD Card socket
- Fan connector
- CMOS battery
- ATX Power Connector or single 12V/24V power jack
- Mini-ITX Form Factor (170 x 170 mm)

## Technical Data - MSC SM2-MB-EP1

<b>Technology</b>	Carrier
<b>Formfactor</b>	Mini-ITX
<b>Flash</b>	SD Card Socket
<b>Storage Interfaces</b>	1x SATA-II (3Gbps) connector, separate floppy type power connector
<b>USB</b>	2x USB 3.0 host port 2x USB 2.0 host port 1x USB 2.0 OTG port (MicroUSB) 1x USB 2.0 on Mini PCI Express slot
<b>Serial Interfaces</b>	1x RS232 (UART0) on DB9 connector with 2-wire hand shake 1x RS232 (UART1) on pin header w/o hand shake
<b>Bus Interfaces</b>	PCI Express lanes from module can be connect to either 1x PCI Express x4 Gen.2 slot or 1x Mini PCI Express x1 Card slot  1x CAN 2.0B on DB9 connector 1x CAN 2.0B on pin header  1x eSPI connector  SPI, SMBus, I2C, and GPIO on pin header
<b>Display Interfaces</b>	DisplayPort connector  HDMI connector  40-pin eDP connector  LVDS on Jili30 connector with EEPROM for display data and backlight connector  MIPI CSI-2 camera interface on 15pin FFC connector
<b>Network Interface</b>	2x 10/100/1000BASE-T Ethernet on RJ45 connector, with two integrated status LED's
<b>Audio Interface</b>	HD or I2S Audio codec, routed to three audio jacks
<b>Miscellaneous</b>	4-pin fan connector, PWM controlled by module  Socket for CR2032 type RTC battery (3V)  Serial EEPROM for board data Serial EEPROM for LVDS display data SPI Boot Flash, socket  Power and Reset button Configuration switches/jumper
<b>Feature Highlights</b>	SMARC™ 2.0 carrier board for full and short size modules  Support of listed carrier board features and interfaces depends on used module

<b>Power Requirement</b>	Standard 20pin ATX power connector plus additional 4pin ATX 12V connector, power jack for alternative single voltage supply (12V/24V)
<b>Environment</b>	Temperature Range: 0°C ... +60°C operating -20°C ... +85°C storage  Humidity: 5 ... 90% (operating, non condensing) 5 ... 90% (storage, non-condensing)
<b>Dimensions</b>	170 x 170 mm
<b>Certificates</b>	UL / CE

## Order Reference - MSC SM2-MB-EP1

Order Number	Description	Reference	Cat
68488	SMARC 2.0 Embedded Platform with PCI Express x4 slot, GbE, SATA, USB 3.0, USB 2.0, USB 2.0 OTG, RS232, CAN, SPI, eSPI, SMBus, I2C and GPIO interface, LVDS/eDP, DisplayPort and HDMI display interface, regulated backlight supply, HD/I2S audio interface, MIPI CSI-2 camera interface, mini PCI Express card slot, SD card slot, fan connector, CMOS battery, Mini-ITX form factor (170 x 170 mm), ATX power connector and single 12V/24V power jack, commercial temperature range 0..+70°C	MSC SM2-MB-EP1-001 PCBFTX	PV

Accessories

Order Number	Description	Reference
<b>10.1" Displaykit</b>		
78879	Displaykit suitable for all COM Carrier Boards and all COM Starterkits. Comprises 10.1" WXGA LCD with PCAP Touch Sensor and Touch Controller. Includes all cables required to connect to COM Carrier Boards (LVDS, B/L & Touch).	MSC DIS-AM1280800-101-KIT SETPAC
<b>12.1" Displaykit</b>		
78880	Displaykit suitable for all COM Carrier Boards and all COM Starterkits. Comprises 12.1" WXGA LCD with PCAP Touch Sensor and Touch Controller. Includes all cables required to connect to COM Carrier Boards (LVDS, B/L & Touch)	MSC DIS-AM1280800-121-KIT SETPAC
<b>5.0" Displaykit</b>		
81871	Displaykit suitable for all COM Carrier Boards and all COM Starterkits. Comprises 5.0" WVGA LCD with PCAP Touch Sensor and Touch Controller. Includes all cables required to connect to COM Carrier Boards (LVDS, B/L & Touch)	MSC DIS-AM800480-050-KIT SETPAC
<b>7" Displaykit</b>		
78911	Displaykit suitable for all COM Carrier Boards and all COM Starterkits. Comprises 7.0" WVGA LCD with PCAP Touch Sensor and Touch Controller. Includes all cables required to connect to COM Carrier Boards (LVDS, B/L & Touch)	MSC DIS-AM800480-070-KIT SETPAC

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