# SMARC

**TRIA**
AN AVNET COMPANY

# TRIA SM2-MB-EP2

SMARC™ 2.2 Carrier Board

244 x 305 mm

⚡ 5 W
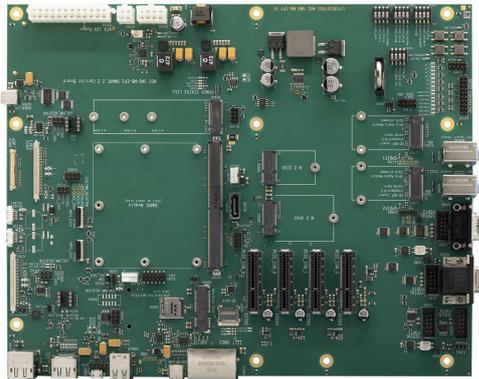
🌡 0°C...+60°C

**SMARC** module

## Highlights

- SMARC™ 2.2 carrier board for full size and short size modules
- HDMI and 2x DisplayPort connectors
- 2x LVDS JILI30 connectors & eDP connectors
- Two Gigabit Ethernet ports
- 4x PCI Express x1 Gen 3 slots
- 1x Mini PCI Express x1 Card slot and 2x M.2 slots
- One SATA-III connector or M.2 slot
- Full USB 2.0 / 3.0 support
- Different USB Connectors: Type A, Type C, MicroUSB, Serial Debug)
- Full Legacy Interface support
    - CAN, SPI, eSPI, SMBus, I2C and GPIO
- HD or I2S audio interface
- 2x MIPI CSI-2 camera interface
- SD Card socket
- Fan connector
- CMOS battery
- ATX Power Connector or single power jack with wideragne power input (8-24V)
- ATX Form Factor (244 x 305 mm)

# SMARC

# Technical Data

| Technology | Carrier |
|---|---|
| **Formfactor** | ATX |
| **Flash** | SD Card Socket |
| **Storage Interfaces** | • 1x SATA-III (6Gbps) connector, separate floppy type power connector <br>     • or 1x M.2 Key M (2242) SATA only (supports also 2260 and 2280) |
| **USB** | • 1x USB 3.0 host port <br> • 2x USB 2.0 host port <br> • 1x USB 3.0 Client/OTG port (Typ C) <br> • 1x USB 2.0 Client/OTG port (MicroUSB) <br> • 1x USB 2.0 on Mini PCI Express slot <br> • 1x USB 2.0 Debug port (Typ C) (Serial Port on USB) |
| **UART Interfaces** | • 1x RS232 (UART0) on DB9 connector with 2-wire hand shake (optional serial to USB conversion for debug interface on USB) <br> • 1x RS232 (UART2) on pin header w/o hand shake <br>   also usable for RS-422 and RS-485, TTL or LVTTL and capable for Highspeed upto 5Mbit/s <br> • 1x RS232 (LVTTL - UART1) on pin header w/o hand shake <br> • 1x RS232 (LVTTL - UART3) on pin header w/o hand shake |
| **PCIe Interfaces** | • PCI Express lanes from module can be connect to either <br>   4x PCI Express x1 Gen 3 slot or <br>     • 1x Mini PCI Express x1 Card slot with µSIM Slot <br>     • 1x M.2 Key B (3042) w/ nano SIM socket for LTE/5G cards with µSIM Slot <br>     • 1x M.2 Key E (2230) for WiFi cards <br>     • PCIe Port D can be used as SERDES Interface (Ethernet) |
| **Bus Interfaces** | • 1x CAN 2.0B on DB9 connector <br> • 1x CAN 2.0B on pin header <br> • 1x eSPI (QSPI/SPI1) on pin header <br> • 1x SPI0 on pin header (compliant to dediprog) <br> • SMBus, I2C, and GPIO on pin header |
| **Display Interfaces** | • 2x DisplayPort connector <br> • HDMI connector <br> • 40-pin eDP connector <br> • 2x single channel LVDS on 2x Jili30 connector with EEPROM for display data and 2x backlight connector. <br>   Note: All display and backlight signals are available on the Jili30 connector to allow an easy one cable display connection. |
| **Camera Interfaces** | 2x MIPI CSI-2 camera interface on two SMARC compliant 22 pin FFC connectors |
| **Network Interface** | 2x 10/100/1000BASE-T Ethernet on RJ45 connector, with two integrated status LED's |
| **Audio Interface** | HDA and I2S Audio codec, routed to three audio jacks for each codec <br> Note: Audio codec is placed on universalaudio adapter board |
| **Miscellaneous** | 4-pin fan connector, PWM controlled by module <br> Socket for CR2032 type RTC battery (3V) <br> Serial EEPROM for board data <br> Serial EEPROM for LVDS display data <br> SPI Boot Flash, socket <br> Power and Reset button <br> Configuration switches/jumper |
| **Feature Highlights** | SMARC™ 2.2 carrier board for full and short size modules <br> Support of listed carrier board features and interfaces depends on used module |
| **Power Supply** | ATX or DC-Input Jack with wide range power input of 8-24V |

# SMARC

| Environment | Temperature Range:<br>0°C ... +60°C operating<br>-20°C ... +85°C storage<br><br>Humidity:<br>5 ... 90% (operating, non condensing)<br>5 ... 90% (storage, non-condensing) |
|---|---|
| **Dimensions** | 244 x 305 mm |
| **Certificates** | UL / CE |

Technical Data for TRIA SM2-MB-EP2

# SMARC

## Order Reference

| Order No. | Description | Reference | Status* |
|---|---|---|---|
| 115161 | SMARC 2.2 Evaluation Carrier Board, Full size ATX,with 4x PCI Express x1 slots, 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, HD/ I2S audio interface, MIPI CSI-2 camera interface, mini PCI Express and m.2 card slots, SD card slot, fan connector, CMOS battery, ATX form factor (244 x 305 mm), ATX power connector and single 8-24V power jack, commercial temperature range 0..+60°C | MSC SM2-MB-EP2 ES1 PCBES | PV |

Ordering Information for TRIA SM2-MB-EP2

*PV = Preferred variant; OR = on Request (in OEM quantities only)

# SMARC

## Accessories

### Display Kits

| Order No. | Description | Reference |
|---|---|---|
| 78879 | Displaykit suitable for all COM Carrier Boards and all COM Starterkits. Comprises 10.1" 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-AM1280800-101-KIT BRDFTX |

10.1" Display kit

| Order No. | Description | Reference |
|---|---|---|
| 78880 | Displaykit suitable for all COM Carrier Boards and all COM Starterkits. Comprises 12.1" 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-AM1280800-121-KIT BRDFTX |

12.1" Display kit

| Order No. | Description | Reference |
|---|---|---|
| 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 BRDFTX |

5.0" Display kit

| Order No. | Description | Reference |
|---|---|---|
| 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 BRDFTX |

7" Display kit