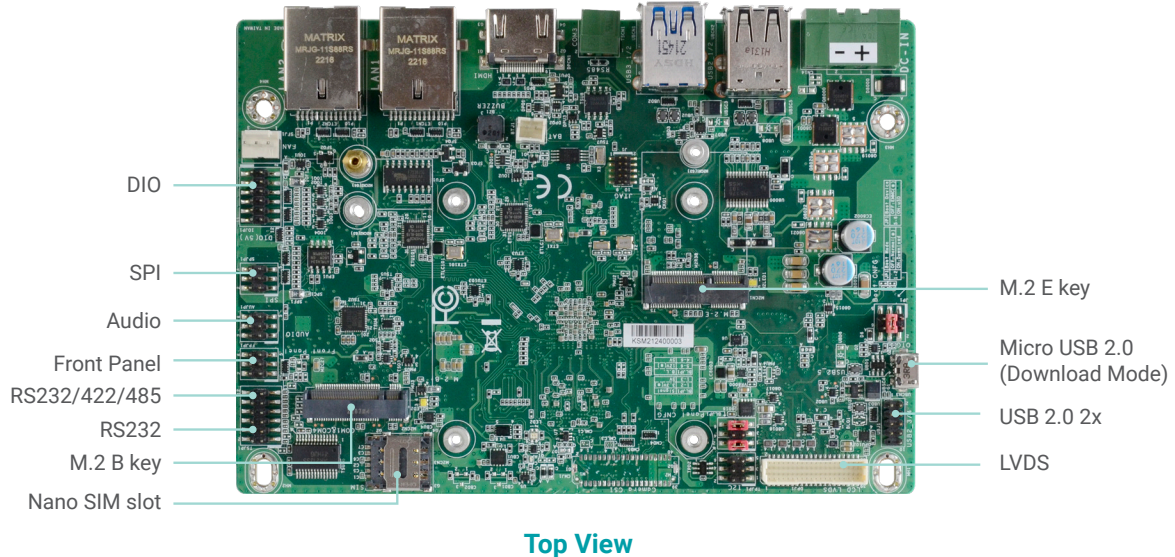
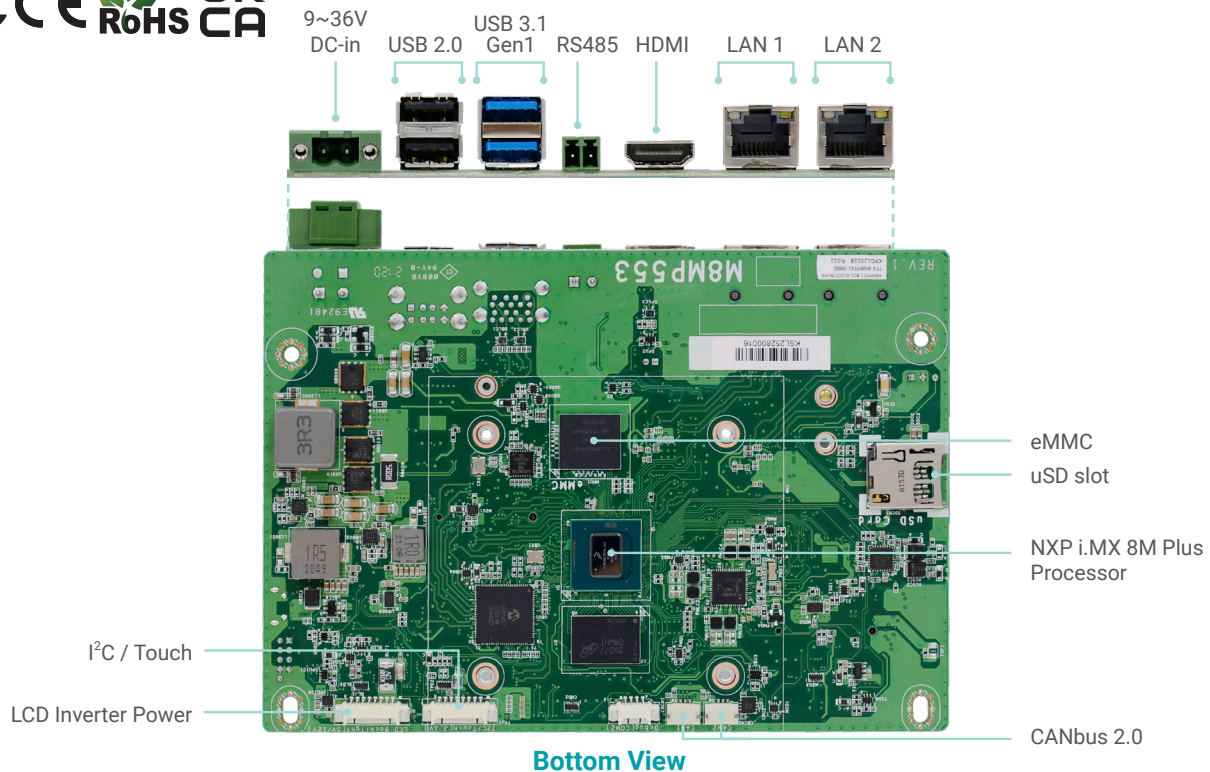


# M8MP553

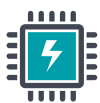
ARM



NXP® i.MX 8M Plus Series  
3.5" SBC



## KEY FEATURES



### NXP i.MX8M plus

30% performance enhancement



### Wide Voltage

Support 9~36VDC



### 2 GbE LAN

For automation application



### CAN bus

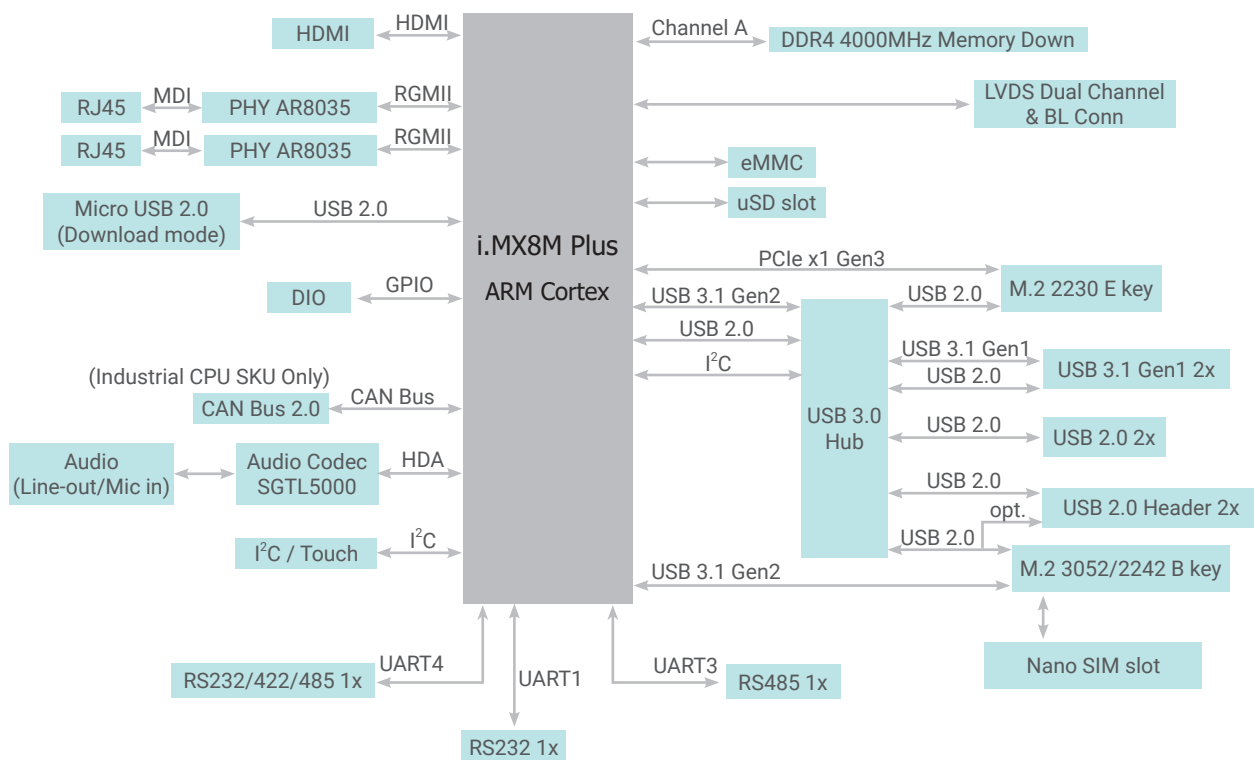
For automation equipments integration



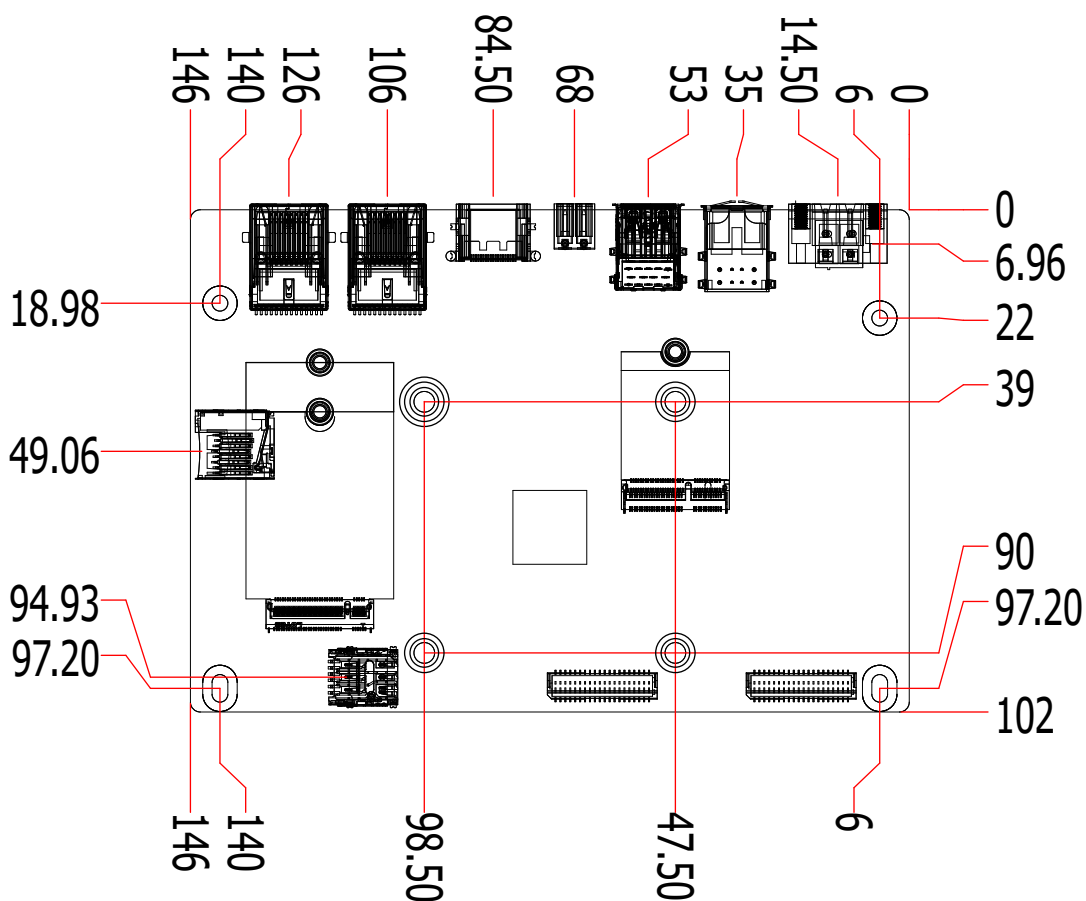
### 2 M.2 Expansions

1 M.2 E key 2230  
1 M.2 B key 3052/2242

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

|                              |                   |                                                                                                                                                                                               |                                        |
|------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| SYSTEM                       | Processor         | i.MX 8M plus applications processors<br>MIMX8ML6CVNKZAB (Industrial), Quad 1.6GHz, VPU/ISP/CAN FD, -40~105°C<br>MIMX8ML3CVNKZAB (Industrial), Dual 1.6GHz, VPU/ML/ISP/CAN FD, -40~105°C       |                                        |
|                              | Memory            | 2GB/4GB/8GB LPDDR4 Memory Down                                                                                                                                                                |                                        |
| GRAPHICS                     | Controller        | GC7000UL                                                                                                                                                                                      |                                        |
|                              | Feature           | HW Decode: 1080p60 H.265,H.264, VP9, VP8<br>HW Endcode: 1080p60 H.265,H.264                                                                                                                   |                                        |
|                              | Display           | 1 x HDMI                                                                                                                                                                                      | HDMI: resolution up to 1920x1080@60Hz  |
|                              |                   | 1 x LVDS                                                                                                                                                                                      | LVDS: resolution up to 1920x1200 @60Hz |
| EXPENSION                    | Dual Display      | LVDS + HDMI                                                                                                                                                                                   | Android:support single output          |
|                              | Interface         | 1 x M.2 B key 3052/2242 (USB 3.1 Gen2/USB 2.0)<br>1 x M.2 E key 2230 (PCIe x1/USB 2.0)<br>1 x Nano SIM slot                                                                                   |                                        |
| AUDIO                        | Audio Codec       | Audio codec SGTL5000                                                                                                                                                                          |                                        |
| ETHERNET                     | Phy               | AR8035                                                                                                                                                                                        |                                        |
| REAR I/O                     | Ethernet          | 2 x GbE (RJ-45)                                                                                                                                                                               |                                        |
|                              | Serial            | 1 x RS485 (2-wire)                                                                                                                                                                            |                                        |
|                              | USB               | 2 x USB 3.1 Gen1<br>2 x USB 2.0                                                                                                                                                               |                                        |
|                              | Display           | 1 x HDMI                                                                                                                                                                                      |                                        |
| INTERNAL I/O                 | Serial            | 1 x RS232<br>1 x RS232/422/485 (2.0mm pitch)                                                                                                                                                  |                                        |
|                              | USB               | 2 x USB 2.0 (2.00mm pitch, the 2nd USB is shared with M.2 B Key (default)<br>1 x Micro USB 2.0 (Download Mode)                                                                                |                                        |
|                              | Display           | 1 x LVDS LCD Panel connector<br>1 x LCD/Inverter Power                                                                                                                                        |                                        |
|                              | Audio             | 1 x Audio (Line-out/Mic-in)                                                                                                                                                                   |                                        |
|                              | SD                | 1 x uSD card                                                                                                                                                                                  |                                        |
|                              | DIO               | 1 x 8-bit DIO                                                                                                                                                                                 |                                        |
|                              | I <sup>2</sup> C  | 1 x I <sup>2</sup> C / Touch                                                                                                                                                                  |                                        |
|                              | CANBus            | 2 x CAN bus 2.0b on Industrial CPU sku                                                                                                                                                        |                                        |
| STORAGE                      | eMMC              | 1 x eMMC 5.1 with default 16GB (up to 64GB)                                                                                                                                                   |                                        |
| WATCHDOG TIMER               | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds                                                                                                                                 |                                        |
| POWER                        | Type              | Wide Range 9~36VDC<br><b>Note1: Support 9V~24VDC in -30~80°C operating temperature.</b><br><b>Note2: Support 36VDC within 70°C operating temperature.</b>                                     |                                        |
|                              | Connector         | 2-pole terminal block (default)<br>Co-lay 4-pin vertical power connector                                                                                                                      |                                        |
|                              | Consumption       | Typical: i.MX 8M Plus Quad, 12V, 3.6Watt<br>Max.: i.MX 8M Plus Quad, 12V, 5.28Watt                                                                                                            |                                        |
|                              | RTC Battery       | CR2032 Coin Cell                                                                                                                                                                              |                                        |
| OS SUPPORT                   | Microsoft/Linux   | Linux Yocto 5.0 (default)<br>Debian 12 (upon request)<br>Android 10 (upon request)                                                                                                            |                                        |
| ENVIRONMENT                  | Temperature       | Operating: -30 to 80 °C                                                                                                                                                                       | Storage: -40 to 85°C                   |
|                              | Humidity          | Operating: 5 to 90% RH                                                                                                                                                                        | Storage: 5 to 90% RH                   |
|                              | MTBF              | i.MX 8M Plus Quad: 632,710 hrs @ 25°C; 386,370 hrs @ 45°C ; 252,204 hrs @ 60°C; 138,544 hrs @ 80°C<br>Calculation model: Telcordia Issue 4<br>Environment: GB, GC – Ground Benign, Controlled |                                        |
| MECHANISM                    | Dimensions        | 3.5" SBC Form Factor                                                                                                                                                                          | 146mm (5.75") x 102mm (4.02")          |
|                              | Height            | PCB: 1.6mm                                                                                                                                                                                    |                                        |
|                              |                   | Top Side: 15mm                                                                                                                                                                                |                                        |
|                              |                   | Bottom Side: 4mm                                                                                                                                                                              |                                        |
| STANDARDS AND CERTIFICATIONS | Certifications    | CE, FCC, RoHS, UKCA                                                                                                                                                                           |                                        |

## ORDERING INFORMATION

| Model Name        | P/N              | Processor | Memory | eMMC  | GbE | RS-232 | RS-232/422/485 | USB 3.1 Gen1 | USB 2.0 | Power   | Thermal | Temp.       |
|-------------------|------------------|-----------|--------|-------|-----|--------|----------------|--------------|---------|---------|---------|-------------|
| M8MP553-ECC-41QDI | 770-8MP5532-200G | Quad core | 4 GB   | 16 GB | 2   | 1      | 1              | 2            | 4       | 9~36VDC | Fanless | -30 to 80°C |
| M8MP553-ECC-21DLI | 770-8MP5532-300G | Dual core | 2 GB   | 16 GB | 2   | 1      | 1              | 2            | 4       | 9~36VDC | Fanless | -30 to 80°C |
| M8MP553-ECC-81QDI | 770-8MP5532-400G | Quad core | 8 GB   | 16 GB | 2   | 1      | 1              | 2            | 4       | 9~36VDC | Fanless | -30 to 80°C |

## PACKING LIST

|                                   |                 |
|-----------------------------------|-----------------|
| 1 M8MP553 board                   |                 |
| 1 Terminal block for RS485 (COM3) | 342-361021-000G |
| 1 Heatsink (Height: 21mm)         | A71-008168-000G |

## OPTIONAL ITEMS

|                                          |                 |
|------------------------------------------|-----------------|
| 2 pole terminal to DC jack cable         | A81-004013-000G |
| Power adapter (60W, 12V, DC Jack)        | 671-106012-000G |
| USB 2.0 cable (Length: 200mm)            | A81-001032-016G |
| COM port cable (Length: 250mm, COM1/4)   | A81-009595-016G |
| Audio (Length: 300mm)                    | A81-022031-016G |
| Heat spreader (Height: 11mm)             | A71-808351-000G |
| Debug console with cable (Length: 500mm) | 770-IMX8M1-000G |