SP2-IMX8 SBC

NXP® ARM processor-based
2.5" SBC Embedded Motherboard





Features

- High-performance NXP i.MX8M Plus processor
- Multiple display interfaces: LVDS/MIPI-DSI and HDMI
- Multiple OS Support: Linux, Windows, and Android
- Flexible 12V to 24V DC power input support
- 32GB onboard eMMC with expandable Micro SD storage
- Modular edge I/O expansion capability
- Easy system control with dedicated function buttons
- Rich audio support including speaker, mic-in, line-out, and buzzer
- TSN-enabled 1GbE LAN for deterministic networking

Ordering Information

91-A1033-000E	SP2-IMX8-Q, 2GB, 32GB, 12V, CT1
91-A1033-100E	SP2-IMX8-Q, 2GB, 32GB, 12V, CT2
91-A1033-200E	SP2-IMX8-Q, 4GB, 32GB, 12 – 24V, WT1

Software Support

- **Linux Yocto** (Default)
- **Android 13** (Requires 4GB memory or above)
- **Windows 10** (Requires 8GB memory or above)

Optional Accessories

- **Adapter:** 12V 60W power adapter
- **I/O Cables:** Power/Reset, I2C, DI/O, speaker, MIC in/Line out, COM port, and USB cables
- **Wireless Kit:** Wi-Fi module

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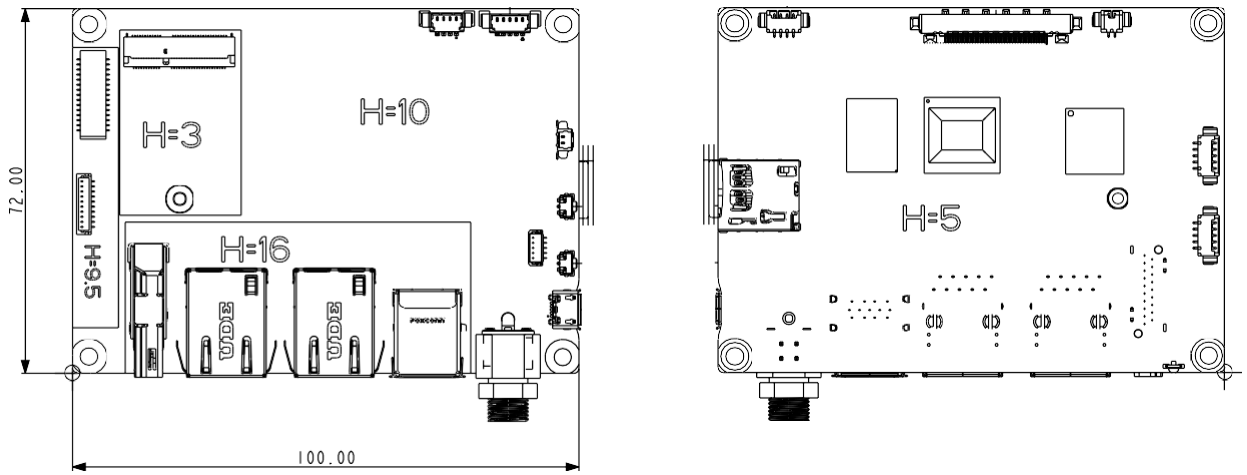
Specifications

Model Name	SP2-IMX8-SBC
Core System	
Processor	NXP i.MX 8M Plus, ARM A53, 64-Bit, 1.8GHz, 4 Core, NXP i.MX 8M Plus, ARM A53, 64-Bit, 1.6GHz, 4 Core
Memory	2GB (default) / 4GB & 8GB (optional)
Storage	32GB eMMC 5.1
External I/O	
Ethernet	1x GbE port, RJ45 connector, 1G TSN, support wake on LAN, default 1x GbE port, RJ45 connector, support wake on LAN, optional
USB Port	1x USB 3.2 Gen1 (5Gbps), Type A, (default) or 1x USB 3.2 Gen1 (5Gbps), and 1x USB 2.0, Type A (optional), 1x USB 2.0 Micro B OTG (default)
I^2C	2x for I^2C client, wafer
Audio (optional)	1x for 2x stereo speaker (2 watts), 1x Mic-in (Mono) and Line-out (Stereo), 1x buzzer
CAN	1x CAN Bus, wafer
M.2	1x M.2 2230 A/E key for Wi-Fi/Bluetooth
Expansion I/O	1x USB 3.2 Gen1 (5Gbps), 1x I^2C, 1x SPI, 4GPI & 4GPO
Power	
Power Input	12V (default) or 12-24V (optional)
Power Connector	1x 2.5 Φ DC Jack (default) or 4-pin power connector (optional)
Backup Battery	1x RTC battery
Environmental	
Operating Temperature	0°C – 70°C / -40°C – 80°C
Storage Temperature	-40°C – 85°C
Humidity	Up to 90%
Vibration	OP 1.87 Grms, 5-500Hz, (Refer to IEC60068-2-64) X, Y, Z axes, 60 min/axis
Shock	OP 30G peak acceleration (Half-Sine), Pulse Duration: 11ms (Refer to IEC60068-2-27), ±X, ±Y, ±Z, 3 shocks/axes
ESD	Air: ±15kV, Contact: ±8kV
EMC/Safety Compliance	CE/FCC class B EN 55032:2015 + A11:2020; EN 55035:2017 + A11:2020; BS EN 55032:2015 + A11:2020; BS EN 55035:2017 + A11:2020; AS/NZS CISPR 32:2015 + A1:2020 EN 60601-1-2:2015 + A1:2021; IEC 60601-1-2:2014 + A1:2020 BS EN 60601-1-2:2015 + A1:2021 EN IEC 61000-3-2:2019+A1:2021 BS EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A1:2019+A2:2021 BS EN 61000-3-3:2013+A1:2019+A2:2021 EN IEC 61000-6-4:2019 ; EN IEC 61000-6-2:2019 BS EN IEC 61000-6-4:2019 ; BS EN IEC 61000-6-2:2019 EN 50121-3-2:2016+A1:2019 BS EN 50121-3-2:2016+A1:2019 EN 55011:2016+A11:2020 (Group1, class B) BS EN 55011:2016+A11:2020 IEC/EN 60601-1 IEC/EN 62368-1 2nd
Software	
Operating System	Linux Yocto Kirkstone LTS (5.15) (default), Android 13 (Requires 4GB memory or above), Windows 10 (Requires 8GB memory or above)

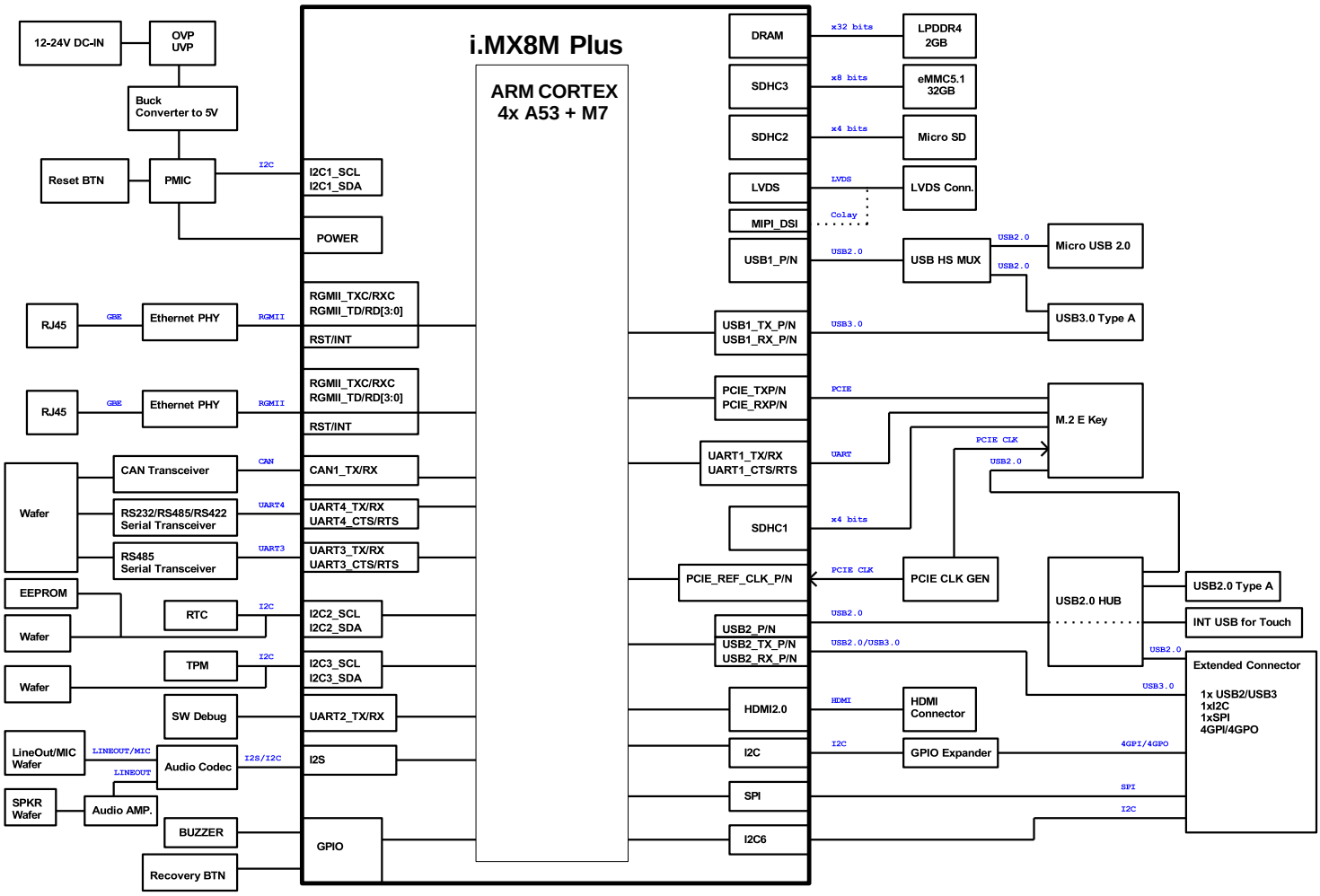
Model Comparison

SBC	91-A1003-00XX SP2-IMX8-Q, 2GB, 32GB 12V, CT1, 0°C – 60°C		91-A1003-20XX SP2-IMX8-Q, 2GB, 32GB 12V-24V, CT1, -40°C – 80°C	Remark
LPDDR4	2GB	2GB	4GB	
eMMC	32GB	32GB	32GB	
DC Input	12V	12V	12 - 24V	
Power Button	1	1	1	Support by cable: 30-22074-0000-A0
Function Button	1	1	1	Button on board or expand by cable: 30-22074-0000-A0
Reset Button	1	1	1	Button on board or expand by cable: 30-22074-0000-A0
Audio (Speakers/Mic-In/Lint out)			Yes	Speaker cable: 23-51635-0020 Mic-In/Line-out: 30-22087-0000-A0
Buzzer	1	1	1	Buzzer cable: 23-52111-0A00
Edge I/O			1	Edge I/O cable: 30-22088-0000-A0
HDMI		1	1	
LAN Port	1	1	2	
CAN		1	1	3x DB9: 30-22075-0000-A0 All-in-One DB9: 30-22108-0000-A0
RS232/422/485		1	1	
RS485	1	1	1	
Micro SD	1	1	1	
TPM			1	
USB I/O Type A	USB 3.0 x1	USB 2.0 + USB 3.0	USB 2.0 + USB 3.0	
USB I/O Type B for OTG	1	1	1	OTG cable: 30-01633-1000-A0
M.2 2230 Slot	1	1	1	
Rear Cover (VESA)				Optional

Mechanism Diagram



Block Diagram



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