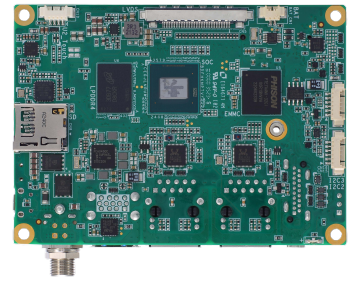
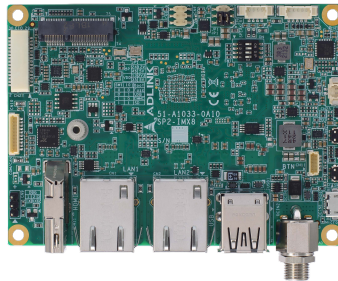


# SP2-IMX8 SBC

NXP® ARM processor-based  
 2.5" SBC Embedded Motherboard



## Features

- NXP i.MX8M Plus high-performance processor
- LVDS/MIPI-DSI, HDMI graphic output interfaces
- 12V DC in or 12-24V DC in
- 32GB eMMC and external Micro SD slot for storage expansion
- Expansible I/O design from edge I/O
- Physical Power, Reset, Function and Recovery button
- Support Speaker, Mic-in, Line-out and buzzer
- Support 1GbE LAN TSN

## Software Support

- Linux Yocto (Default)
- Android 13 (Planning)
- Windows 10 (By demand)

## 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

## Ordering Information

Part Number	Description
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

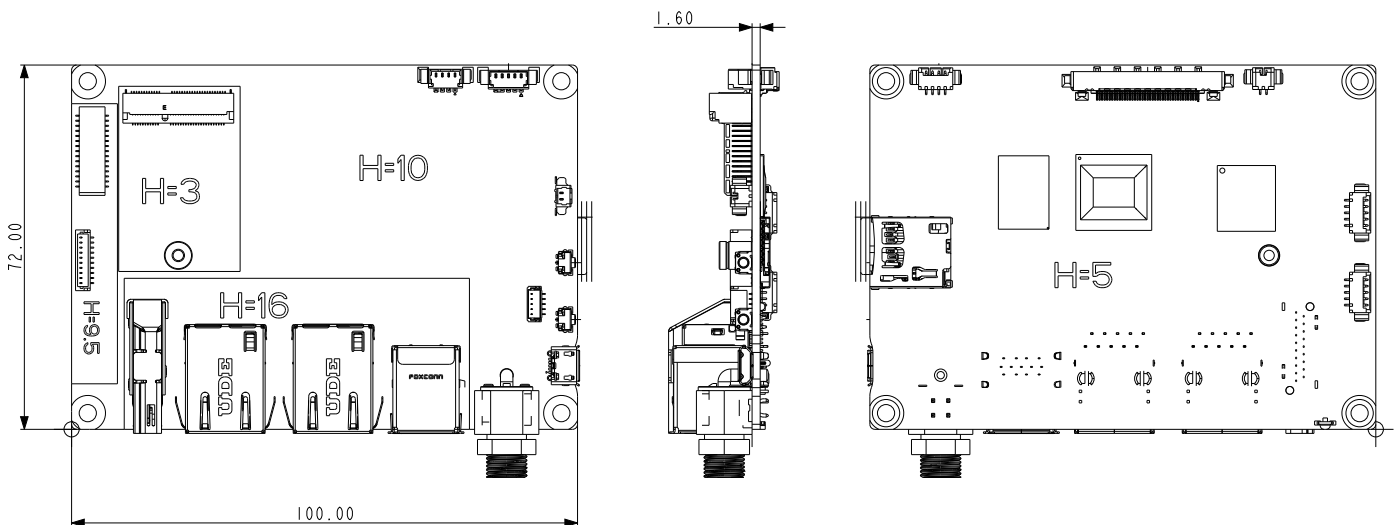
## Specifications

Model	SP2-IMX8 SBC
<b>System</b>	
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	2 GB (Default) / 4 GB & 8 GB (Optional)
Storage	32GB eMMC 5.1
<b>External I/O</b>	
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)
Display Port	1x HDMI 2.0a, up to 3840x2160p30 for display, 1920x1080p60 for Video (Optional)
Buttons	1x Reset button, 1x Function/Recovery button, 1x wafer to support power button
<b>Internal I/O with Wire-to-Board Connectors</b>	
Display Port	1x LVDS: dual channel-24bit for max. 1080P or 1x MIPI-DSI
Serial Port	1x RS485, with auto flow control (default) 1x RS-232/422/485 programmable, auto flow (Optional)
I2C	2x for I2C 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 2230 A/E key for WiFi/Bluetooth
Expansion IO	1x USB 3.2 Gen1 (5Gbps), 1x I2C, 1x SPI, 4GPI&4GPO
<b>Power</b>	
Power Input	12V (default) or 12-24V (optional)
Power Connector	1x 2.5 $\Phi$ DC Jack (default) or 4-pin power connector (optional)
Backup Battery	1x RTC battery
<b>Environmental</b>	
Operating Temperature	0-70°C / -40-80°C
Storage Temperature	-40 - 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), $\pm X$ , $\pm Y$ , $\pm Z$ , 3 shocks/axes
ESD	Air: $\pm 15$ kV, Contact: $\pm 8$ kV
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
<b>Software</b>	
Operating System	Yocto Kirkstone LTS (5.15), by default Android 13, optional Windows 10, by demand

## Specifications

SBC	91-A1033-00XX	91-A1033-10XX	91-A1033-20XX	Remark
	SP2-IMX8-Q, 2GB, 32GB, 12V, CT1, 0~60°C	SP2-IMX8-Q, 2GB, 32GB, 12V, CT2, 0~60°C	SP2-IMX8-Q, 4GB, 32GB, 12-24V, -45 ~ 80°C	
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/Line out)			Yes	Speaker cable: 23-51635-0020 MIC-in/Line-out: 30-22087-0000-A0
Buzzer	1	1	1	Buzzer cable: 23-51635-0020
Edge I/O			1	Edge I/O cable: 30-22088-0000-A0
HDMI		1	1	
LAN port	1	1	2	
CAN		1	1	
RS232/422/485		1	1	3x DB9: 30-22075-0000-A0 all in one DB9: 30-22108-0000-A0
RS485	1	1	1	
Micro SD	1	1	1	
TPM			1	
USB I/O Type A	USB 3.0x1	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

## Dimensions



# Block Diagram

