

Arm Series solutions

Product Guide



TO emBEdded OR NOT TO emBEdded

The Processors



i.MX 8M Mini features a powerful quad-core Arm® Cortex®-A53 CPU, capable of operating at speeds up to 1.6 GHz, alongside a 400 MHz Cortex®-M4 core for low-power tasks. The DRAMcontroller supports 32-bit and 16-bit LPDDR4, DDR4, and DDR3L memory configurations. The processors offer a wide array of audio interfaces, including I2S, AC97, TDM, and S/PDIF. For display and camera functionality, they include support for MIPI-DSI and MIPI-CSI interfaces. Additionally, they provide various peripheral connections such as USB, PCIe, and Ethernet.

Code Name	NXP i.MX 8M MINI	
Core	4x Cortex-A53 cores 1.6 GHz	4x Cortex-A53 cores 1.8 GHz
IO	MIPI DSI(4-lane)/MIPI CSI(4-lane)/5xSAI/2xUSB2.0 OTG/1xPCIe 2.0/ 1xGbE MAC/4xUART/4xI2C/3xECSPi/4xPWM/SPDIF	
GPU	GCNanoUltra for 3D engine/ GC320 for 2D engine	
VPU	Decoder: 1080p60 VP9 Profile 0, 2(10-bit) / HEVC/H.265 / AVC/H.264 / VP8 Encoder: 1080p60 AVC/H.264 / VP8	
RAM/LPDDR4	2GB/4GB	
eMMC	16/64GB SLC / MLC	
OS support	Yocto Linux , Ubuntu Linux, Android	
Working Temp.	Up to -40~+85°C	Up to -0~+70°C



i.MX 8M Plus CPU is a highly versatile and powerful SoC (System on Chip) designed for advanced embedded applications. It features a quad-core ARM Cortex-A53 CPU and a dedicated Neural Processing Unit (NPU) for AI acceleration, making it ideal for machine learning tasks. The i.MX8M Plus supports 1080p video decoding, 3D graphics with a Vivante GPU, and offers robust connectivity options including Gigabit Ethernet, PCIe, USB 3.0, and dual CAN FD interfaces. With its integrated image signal processor and advanced security features, the i.MX8M Plus is well-suited for applications in industrial, smart home, and IoT markets.

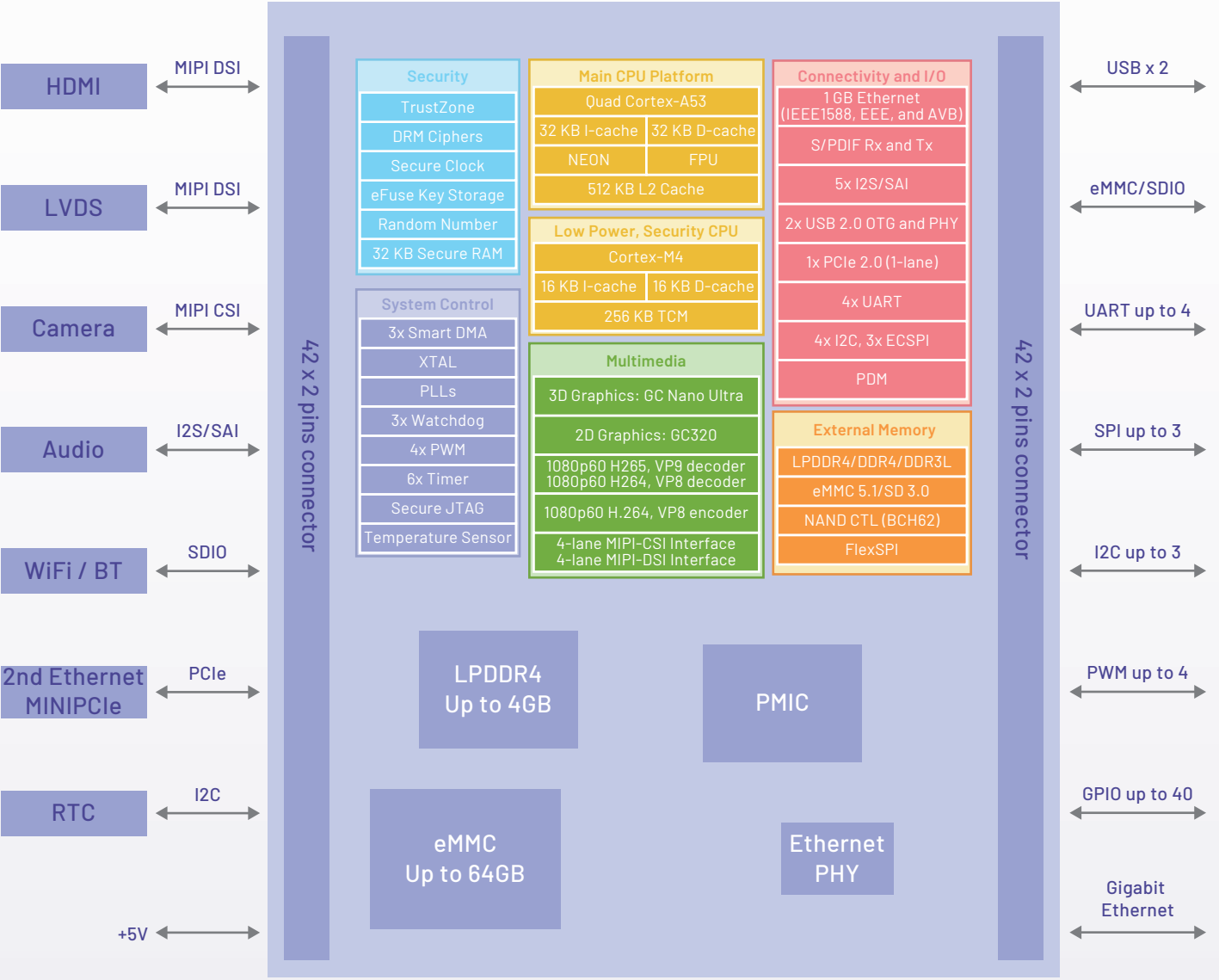
Code Name	NXP i.MX 8M PLUS	
Core	4x Cortex-A53 cores 1.6 GHz	4x Cortex-A53 cores 1.8 GHz
IO	HDMI/LVDS/MIPI DSI(4-lane)/2xMIPI CSI(4-lane)/18xI2S TDM/SPDIF/8ch PDM MIC/4xPWM 2xUSB 3.0 with PHY/1xPCIe Gen3/2xGbE MAC/4xUART/6xI2C/3xSPI/3xCAN/SDIO	
NPU	2.3 TOP/s	
GPU	GC7000UL for 3D engine / GC520L for 2D engine	
VPU	Decoder: 1080p60 VP9 Profile 0, 2(10-bit) / HEVC/H.265 / AVC/H.264 Encoder: 1080p60 AVC/H.264 HEVC/H.265	
RAM/LPDDR4	From 4/8GB	
eMMC	From 128GB MLC	
OS support	Yocto Linux , Ubuntu Linux, Android	

NX8MM Series

NX8MM series is ICOP's new series based on i.MX8M MINI ARM based solutions.

We provides the products such as:

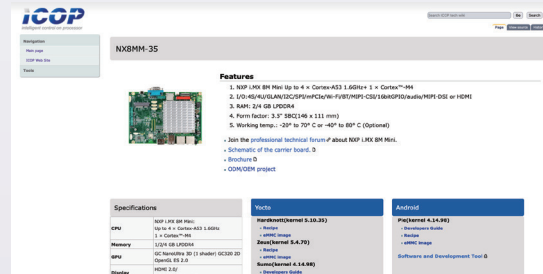
1. System on Module - NX8MM-D168
2. 3.5" Development board - NX8MM-35
3. BOX PC - EBOX-IMX8MM
4. 9" Panel PC - PN8M-090T
5. 5. 7-15" Openframe - VOX series



ICOP Wiki

ICOP's wiki site and one-stop service offer comprehensive support including detailed recipes, demo images, and patches for Yocto Linux, Android, and other platforms.

(<https://wiki.icop.com.tw>)



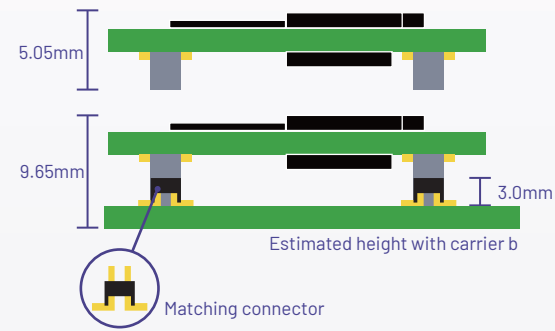
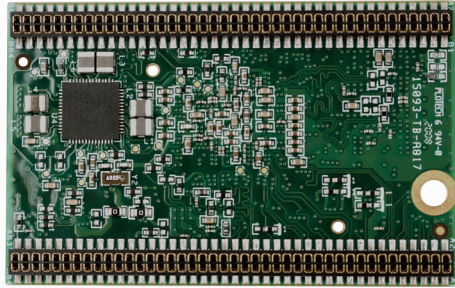
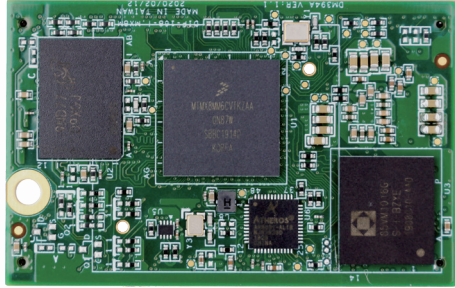
NX8MM-D168 Sytem On Module

CPU	NXP i.MX8M Mini Quad, 4 x Cortex-A53 1.6GHz/1.8GHz
GPU	GCNanoUltra for 3D acceleration GC320 for 2D acceleration
VPU	Decode: 1080p60, H.265, H.264 Encode: 1080p60, H.264
Co-CPU	Cortex-M4
RAM	Onboard LPDDR4 2GB/4GB
Storage	Onboard eMMC 16/64GB MLC
Display	MIPI-DSI, 4 data lanes, up to 1920x1080 60Hz
Camera	MIPI-CSI, 4 data lanes
Ethernet	Gigabit Ethernet x 1
Audio	Up to 3 x I2S/SAI, S/PDIF input/output
PCIe	Gen 2.1 PCIe x 1
USB	USB 2.0 x 2
UART	Up to 4 x UART
eMMC/SDIO	Up to 2 x eMMC/SD/SDIO
SPI	Up to 3 x SPI
I2C	Up to 3 x I2C
PWM	Up to 4 x PWM
GPIO	Up to 40 x GPIO
Operating Temp.	-20° to +70° C/ 0° to 70° C/ -40° to 85° C
Relative humidity	10% to 90%
Dimensions	55mm x 35mm
Weight	8 g
Connector	168 pins. 2 x 2 x 42, pitch 1.27mm, Female
Power input	+5V
OS Support	Yocto Linux, Ubuntu Linux, Android

NX8MP-SMARC

Coming soon in 2025

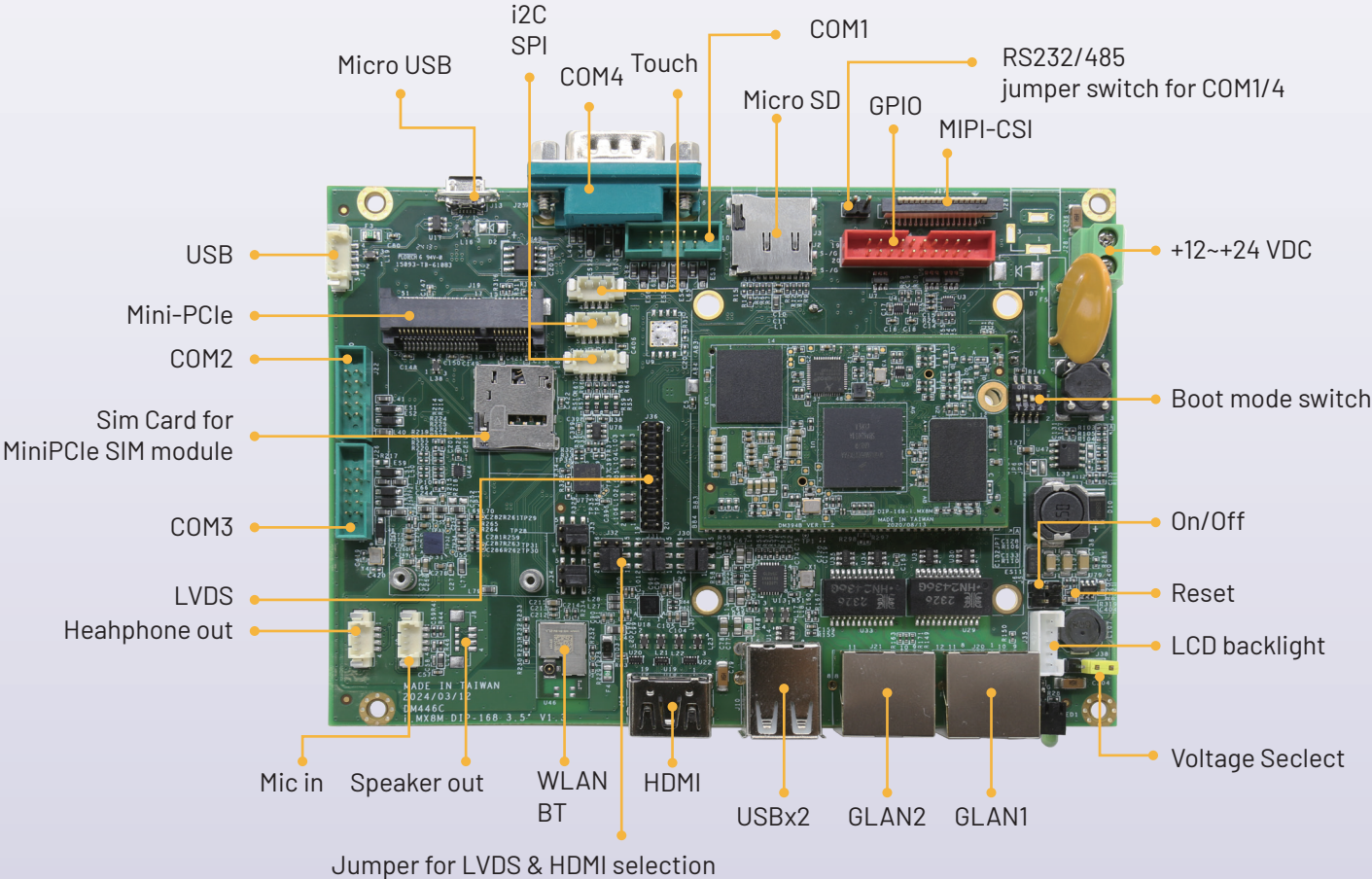
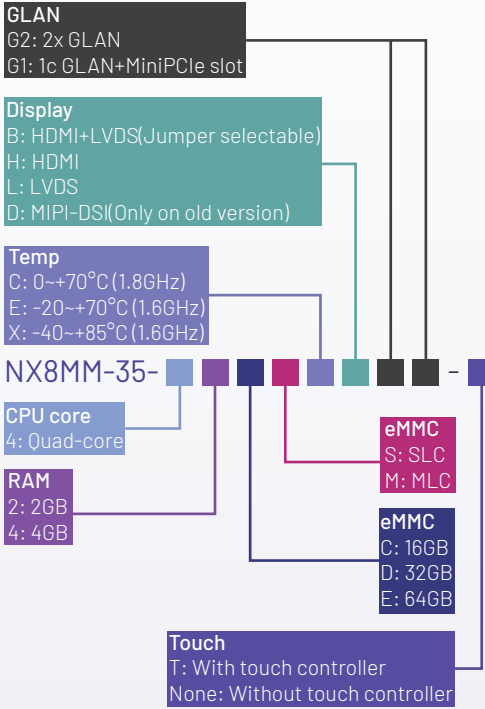
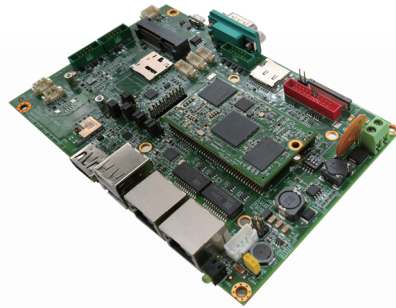
P/N	NX8MP-SMARC
Form Factor	SMARC 2.1
CPU	NXP i.MX8M PLUS Quad, 4 x Cortex-A53 1.6GHz
NPU	2.3 TOP/s
DRAM	4/8GB LPDDR4 onboard
Storage	Onboard eMMC 16-128GB (MLC)
IO	HDMI/LVDS /2MIPI-CSI/2GLAN/PCIe/USB3.0x2/USB2.0x3/2I2S/ SPI/2CAN/4UART/5I2C/14GPIO/WIFI&BT/TPM/SDIO



Unit : mm				
NX8MM-D168-	4	2	C	S E
				C: 0~70°C(1.8GHz) E: -20~70°C(1.6GHz) X: -40~85°C(1.6GHz)
			eMMC	
			S: SLC	
			M: MLC	
			eMMC	
			B: 8GB	
			C: 16GB	
			E: 64GB	
			DRAM	
			2: 2GB	
			4: 4GB	
			CPU	
			4: Quad Core	

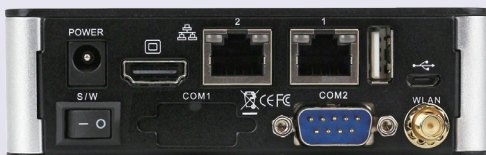
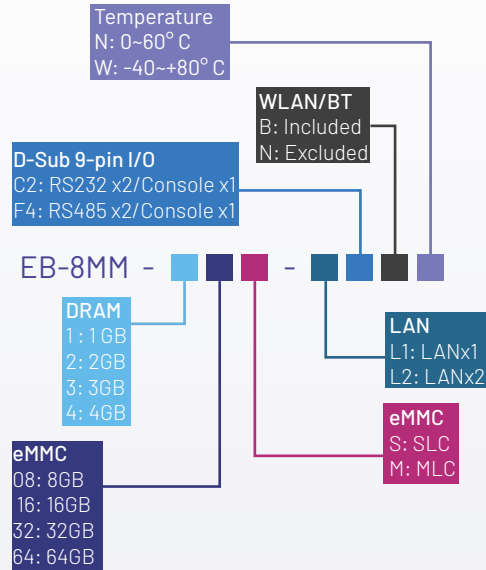
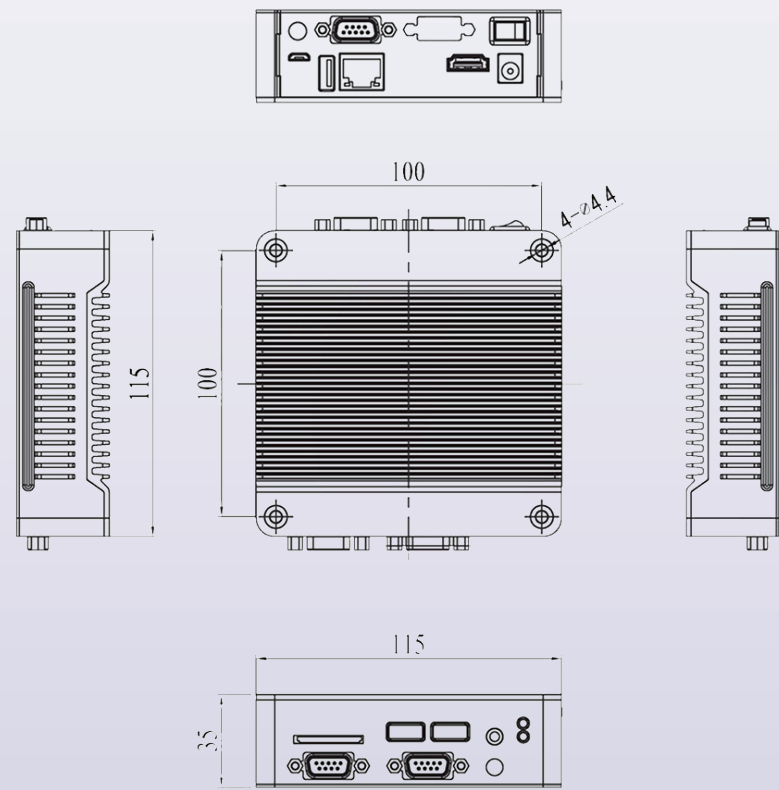
NX8MM-35 Single Board Computer

CPU	NXP i.MX8M Mini Quad, 4 x Cortex-A53 1.6GHz / 1.8GHz	
RAM	2/4GB LPDDR4 Onboard	
	HDMI: Maximum resolution up to 1920 x 1080 @ 60Hz	
	LVDS: 24-bit resolution up to 1920 x 1080 @ 60Hz	
LAN	GbEx2 / GbE x1(Optional with MiniPCle)	
Disk Support	On board eMMC 16-64GB (MLC) & Micro SD card	
I/O Interface	USB (ver. 2.0)x4	MiniPCle x1(Optional)
	(1 Micro USB for OTG)	Wi-Fi&Bluetooth
	Up to COM x4	MIPI-CSI x1
	(RS232/485 x2 / RS232 x1 / TX/RX x1)	15-bit GPIO x1
	i2c x1	HD Audio
	SPI x1 (Chosen between COM)	
Power	DC Terminal +12~24V / DC Jack +5V (Optional)	
Operating Temp.	-0°C to +70°C (1.8GHz CPU)	
	-20°C to +70°C (1.6GHz CPU)	
	-40°C to +80°C (Optional)(1.6GHz CPU)	
Dimension	146 x 111 mm	
Weight	170g	
O/S Support	Yocto Linux / Android	

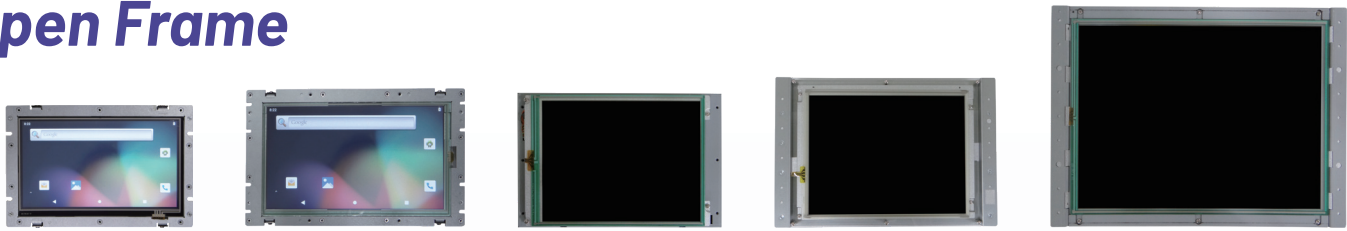


EBOX-IMX8MMINI BOX PC

Processor	NXP i.MX8M Mini Quad-core 1.6 GHz ARM Cortex-A53 processor	
Memory	1GB to 4GB LPDDR4 onboard	
Storage	eMMC	8GB to 64GB MLC/SLC onboard
	SD Card	Micro SD Slot x1
Display	HDMI 1.3 (MAX.1920 × 1080 pixels)	
USB	USB 2.0 x3 (Front x2 + Rear x1)	
Micro USB	Micro USB x1 (Software update use only)	
HD Audio	Mic-in & Line-out (WM8960)	
Ethernet	RJ45 x2 (Intel I210 GbE x1/CPU GbE x1)	
WiFi/BT	WiFi 802.11b/g/n + BT 4.1 Combo 2.4G (Broadcom 43438)	
COM	D-Sub 9-pin up to RS-232 x2/RS-485 x2 / Console x1	
mPCle	Full-size MiniPCle x1	
Power Requirement	DC +12V to +36V input	
Dimension	115 x 115 x 35 mm	
Mounting	VESA 100 x 100 mm/DIN Rail Support (Optional)	
Net Weight	700g	
Operating Temp.	0 ~ 60° C /-40 to +80° C (Optional)	
Certifications	FCC, CE, UKCA, VCCI	
OS Support	Yocto Linux, Android	



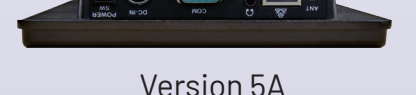
Open Frame



Model Name	VOX-070-TS-N8M	VOX-090-TS-N8M	VOX-084-TS-N8M	VOX-104-TS-N8M	VOX-150-TS-N8M
Display Size	7" WSVGA	9" WSVGA	8.4" SVGA	10.4" SVGA	15" SVGA
Max. Resolution	1024 x 600		800 x 600		1024 x 768
Luminance(cd/m ²)	500	300	350	600	400
Touch Screen	Analog Resistive				
CPU	NXP i.MX8M Mini Quad, 4 x Cortex-A53 1.6GHz				
System Memory	2GB / 4GB LPDDR4				
Storage	16 ~ 64 GB MLC / Micro SD Card				
Expansion IO	S/2U/GLAN/Audio/MiniPCle		4U/3S/2GLAN/Audio/MiniPCle/I2C/SPI/15-bit GPIO		
Power Requirement	+12 ~ +24VDC / +12V~+36VDC				
Operating Temp.	0 ~ +50°C / -20 ~ +60°C				

PN8M-090T Panel PC

Display	9" WSVGA TFT-LCD
Resolution (Pixel)	1024 x 600
Brightness	300 cd/m ²
Touch Screen	Analog Resistive (Standard) / Projected Capacitive Touch Panel (Option)
Processor	NXP i.MX8M Mini, Quad-core 1.6GHz Cortex-A53 processor
System RAM	2GB / 4GB LPDDR4 Memory onboard
Internal Drives	16GB / 64GB eMMC onboard & Micro SD Slot
Expansion	MiniPCle Slot with Micro SIM Card Holder
Wireless Support	WLAN & Bluetooth (Optional)
Ethernet	Integrated 10/100/1000Mbps Ethernet
Audio	WM8962 Stereo, Line-out
IO	RS232/485 x1 (COM1) / USB2.0 x2
Power Requirement	Single Voltage +5VDC (Version: 5A) / Multi-Voltage +8~+35VDC (Version: 8A)
Operating Temp.	0°C to +60°C / -20°C to +70°C (Optional)
Storage Temp.	-30°C to + 80°C
Operating Humidity	0% ~ 90% Relative Humidity, Non-Condensing
Dimension	236.6 x 146 x 35(W x H x D) mm
OS Support	Yocto Linux (Default) & Android (Optional)
Certificate	CE, FCC, VCCI, Shock, Vibration, IP65 (Front Panel)



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