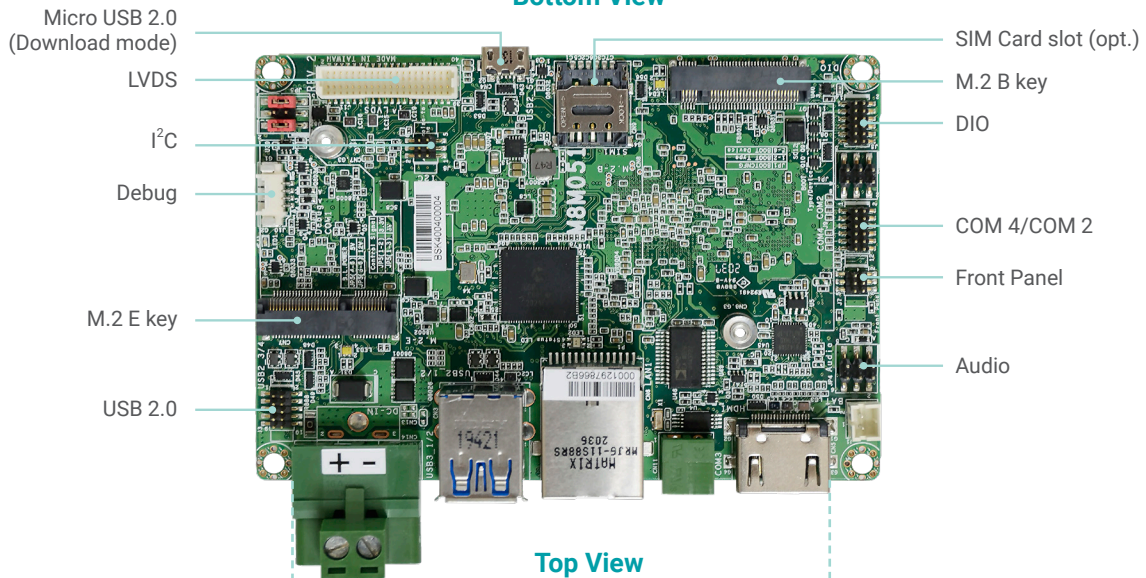
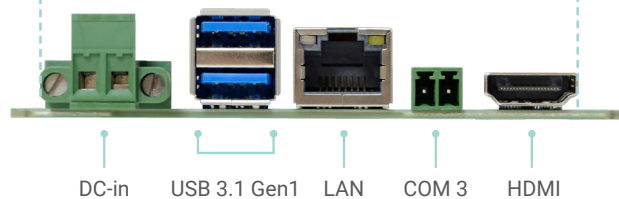


### Bottom View



### Top View



## KEY FEATURES



### LPDDR4

1 LPDDR4 3200MHz memory down



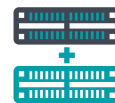
### 4K High Resolution

Supports 4K/2K resolution



### 2 Display

1 HDMI, 1 LVDS



### Multiple Expansion

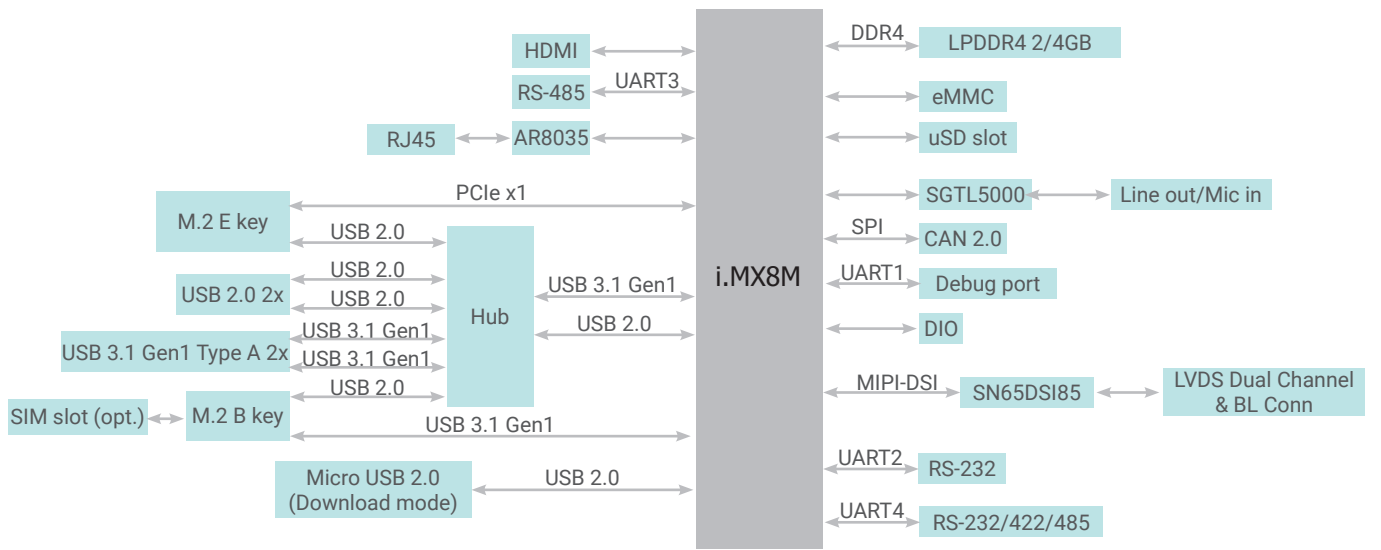
1 M.2 B Key, 1 M.2 E Key



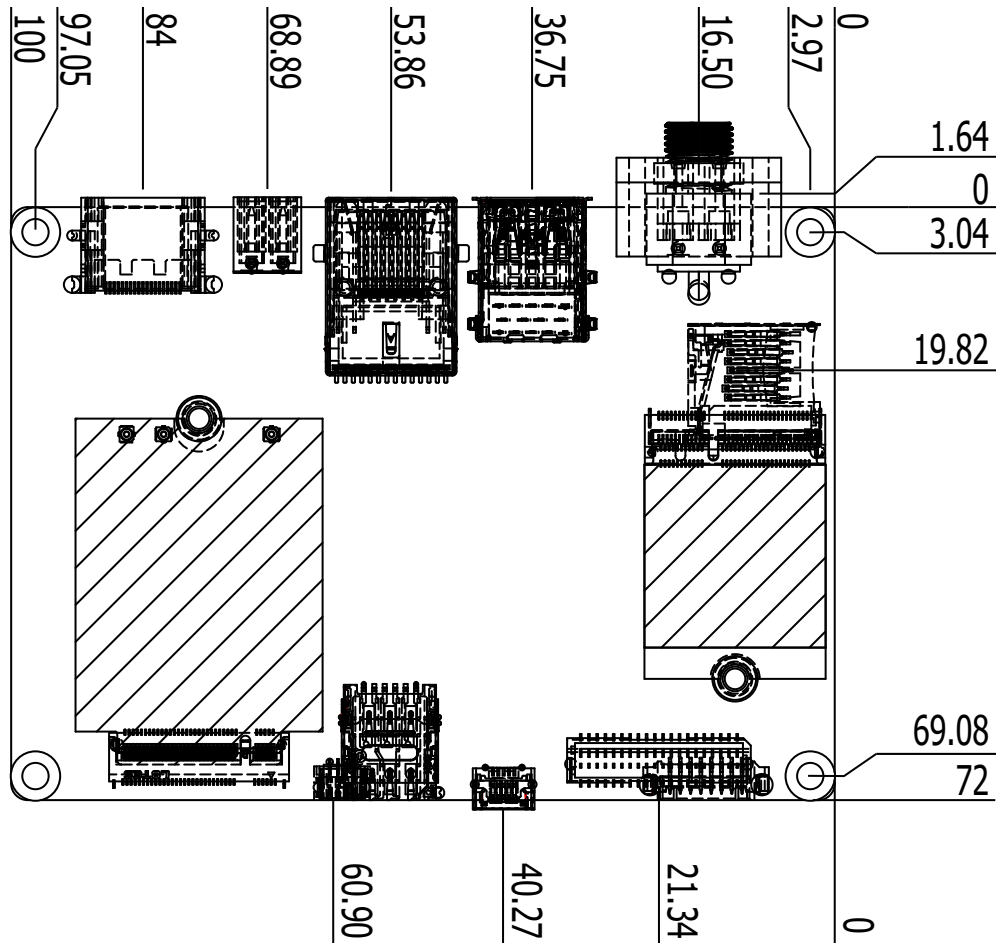
### Rich I/O

1 Intel GbE, 3 COM, 2 USB 3.1 Gen1, 3 USB 2.0

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

System	Processor	i.MX 8M applications processors NXP i.MX 8M Quad Cortex-A53, 1.5GHz (Commercial) NXP i.MX 8M Dual Cortex-A53, 1.5GHz (Commercial) NXP i.MX 8M Quad Cortex-A53, 1.3GHz (Industrial) NXP i.MX 8M Dual Cortex-A53, 1.3GHz (Industrial)	
	Memory	2GB/4GB Memory Down Single Channel LPDDR4 up to 3200 MHz	
Graphics	Controller	GC7000 Lite	
	Feature	OpenVG 1.1, OGL ES 3.1, Vulkan, OCL 1.2 FP VPU Decode: 4Kp60 HEVC H.265, VP9, 4Kp60 H.264	
	Display	1 x HDMI (default)	HDMI: resolution up to 4096x2160 @60Hz
		1 x LVDS	LVDS: resolution up to 1920x1080 @60Hz
Single Display	HDMI or LVDS		
Expansion	Interface	1 x M.2 B key 3042/2242 (USB 3.1 Gen1)	Nano SIM slot support (available upon request)
		1 x M.2 E key 2230 (PCIe x1/USB 2.0)	
Audio	Audio Codec	SGTL5000	
Ethernet	Controller	1 x AR8035 Ethernet (10/100/1000Mbps)	
Rear I/O	Ethernet	1 x GbE (RJ-45)	
	Serial	1 x RS485	
	USB	2 x USB 3.1 Gen1	
		1 x Micro USB 2.0 (Download mode)	
Display	1 x HDMI		
Internal I/O	Serial	1 x RS232	
		1 x RS-232/422/485 (2 x 6 pin header, 1.27mm pitch)	
	USB	2 x USB 2.0 (1.27mm pitch)	
	Display	1 x LVDS LCD Panel Connector	
		1 x Backlight Power	
	Audio	1 x Audio (Line-out/Mic-in, 2.00mm pitch)	
	eMMC	Support eMMC 5.1 16GB on board (default) Support up to 64GB (opt.)	
	SD	1 x Micro SD Slot	
	DIO	1 x 8-bit DIO (2 x 6 header, 1.27mm pitch)	
	I <sup>2</sup> C	1 x I <sup>2</sup> C (1.27mm pitch)	
CANBus	1 x CANBus 2.0		
Watchdog Timer	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
Power	Type	Single 12V +/-10% DC	
	Connector	2-poles Terminal Block (default) DC Jack (available upon request)	
	Consumption	Typical: Quad:12V @ 0.2A (2.4Watt) Max.: Quad:12V @ 0.38A (4.56Watt)	
	RTC Battery	CR2032 Coin Cell	
OS Support	OS Support	Yocto 2.5 on eMMC (default)	
		Android 9.0 (option)	
Environment	Temperature	Operating: -5 to 65°C; -30 to 80 °C	
		Storage: -40 to 85°C	
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH	
MTBF	i.MX 8MQuad: 1,311,832 hrs @ 25°C; 637,427 hrs @ 45°C; 374,475 hrs @ 60°C; 189,510 hrs @ 80°C Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled		
Mechanism	Dimensions	2.5" SBC Form Factor 100mm (3.94") x 72mm (2.83")	
	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-485	RS-232	RS-232/422/485	USB 3.1 Gen1	USB 2.0	Power	Thermal	Temp.
M8M051-BCC-41QDC	770-M8M0511-000G	Quad core	4 GB	16 GB	1	1	1	1	2	3	12VDC	Fanless	-5 to 65°C
M8M051-BCC-21DLC	770-M8M0511-100G	Dual core	2 GB	16 GB	1	1	1	1	2	3	12VDC	Fanless	-5 to 65°C
M8M051-ECC-41QDI	770-M8M0511-200G	Quad core	4 GB	16 GB	1	1	1	1	2	3	12VDC	Fanless	-30 to 80°C
M8M051-ECC-21DLI	770-M8M0511-300G	Dual core	2 GB	16 GB	1	1	1	1	2	3	12VDC	Fanless	-30 to 80°C

## PACKING LIST

1 M8M051 board	
1 Terminal block for RS485 (COM3)	342-361021-000G
1 Heat spreader (Height: 11mm)	A71-808334-000G

## OPTIONAL ITEMS

2 pole terminal to DC jack cable	A81-004013-000G
Power adapter (60W, 12V, DC Jack)	671-106012-000G
Heat sink (Height: 19.4mm)	A71-008150-000G
USB 2.0 cable (Length: 200mm)	A81-001084-016G
Audio cable (Length: 300mm)	A81-022031-016G
COM port cable (Length: 250mm, COM2/4 port)	A81-015088-016G
Debug console with cable (Length: 500mm)	770-IMX8M1-000G