

NOVAsom M-line is a family of **SBCs** specifically developed for High end multimedia markets that require heavy **Full HD** movies or multiple **4k UHD**, that need to be managed with high fluidity without compromise in performance.

Thanks to the different architectures it's possible to chose between various OS like Linux, Android or Windows 10 and IoT.

Examples of applications are: **Digital Signage, Infotainment, multimedia and advertising.**



		SBC-M7 & M7+ Boards	SBC-M8 Boards	SBC-M11 Boards
	Processor	CPU	Rockchip RK3328	Qualcomm Snapdragon 410E
	Graphic	GRAPHICS ENGINE	Mali-450MP4	ADRENO
	Memory	RAM memory DDR3	Up to 2 GB	1 or 2 GB
		eMMC flash memory	Up to 256 GB	8 or 16 GB in bundle with ram
		μSD slot	Y	Y
	Power	Power supply	12v (6.5 - 18Vcc protected) * 5V via USB (only M7+)	12v (6.5 - 18Vcc protected redundant)
		Power Consumption Active [W]	2.5	6
		UPS Manager	Y (battery not included)	Y (battery not included)
		PoE	N	Y + Relaunch
	Multimedia	HDMI full size connector	Y	Y
		* Additional FFC connector (only M7+)	Y	Y
		LVDS	External adapter	n.a.
		Display Port DP 1.2 or eDPI.3	n.a.	n.a.
		PCAP on Connector (Dedicated I2C Channel)	1	1
		Display MIPI-DSI	n.a.	Y
		Camera MIPI-CSI PHY 1.1 (¹)	n.a.	Y
		Camera MIPI-CSI PHY 1.2	n.a.	Y
	I/O	Camera parallel	Y	n.a.
		Audio	Y - Analog line out	Y - High Def Audio 5
		On Board reconfigurable GPIO (¹)	22 @3.3V	26 @3.3V
		On board protected GPIO	n.a.	Y
	USB	USB port Host/Device on TYPE - A	1xUSB 3.0 + 1xUSB 2.0	3xUSB 3.0 + 2xUSB 2.0
		USB 2.0 OTG on micro for debug	Y	N
		USB 3.0 and 2.0 OTG repeated on strip	*Y (only M7+)	N
		USB 2.0 on strip	N	Y-2
	Communication	I2C	2 on strip @ 3.3 V (²)	2 on strip @ 3.3 (²)
		SPI	1 on strip @ 3.3 V (²)	2 on strip @ 3.3 (²)
		On board SATA	n.a.	Y
		RS485	* Y on connector (only M7+)	N
		Console RS232	Y-TTL	Y
		mPCIe slot	n.a.	Y
		PCIe full size	n.a.	Y
	Networking	RJ 45 Ethernet connector on board	Y - 100 Mb	Y - Gb
		WIFI and BT	WIFI 802.11 a/b/g/n with PCB antenna	WIFI 802.11 a/b/g/n with PCB antenna
		GPS	N	Y
	Generic	Additional user led	Y - 1	Y -5
		RTC with external rechargeable battery	Y	Y
		User reset push-button	Y	Y
	Dimension	Mechanical size	85 x 56 mm (¹)	85 x 56 mm (¹)
		Form factor	Credit Card	Mini ITX
	Temperature	Operating temperature	0- +70 °C / -20 ÷ +85 °C	-30 ÷ +60 °C
	Operating System	Distributions supported	Android, Linux, Yocto, Ubuntu, Debian, Raspbian (²)	Android 5.1/6, Linux based on Debian 8.0/Ubuntu 14, Windows 10 IoT Core (²)

NOTE: for more information please refer to Hardware User Manual.

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	SBC Board code	SBC-M7/M7+ Boards				
		SBC-M7A/ SBC-M7+A	SBC-M7B/ SBC-M7+B	SBC-M7C/ SBC-M7+C	SBC-M7D/ SBC-M7+D	SBC-M7FT/ SBC-M7+FT
 Processor	CPU	Rockchip RK3328	Rockchip RK3328	Rockchip RK3328	Rockchip RK3328	Rockchip RK3328
 Graphic	GRAPHICS ENGINE	Mali-450MP4	Mali-450MP4	Mali-450MP4	Mali-450MP4	Mali-450MP4
 Memory	RAM memory DDR3	Y – 1 GB@32bit	Y – 1 GB@32bit	Y – 1 GB@32bit	Y – 2 GB@32bit	Y – 2 GB@32bit
	eMMC flash memory	N	N	N	N	16 GB
	µSD slot (card not included)	Y	Y	Y	Y	Y
 Power	Power supply	* 5V via USB (only M7+)	* 5V via USB (only M7+)	12v (6.5 - 18Vcc protected) * 5V via USB (only M7+)	12v (6.5 - 18Vcc protected) * 5V via USB (only M7+)	12v (6.5 - 18Vcc protected)
	Power Consumption [W]	2.5	2.5	2.5	2.5	2.5
	UPS MANAGER	Y - battery not included	Y - battery not included	Y - battery not included	Y - battery not included	Y - battery not included
 Multimedia	HDMI full size connector	Y – 4k * Additional FFC connector (only M7+)	Y – 4k * Additional FFC connector (only M7+)	Y – 4k * Additional FFC connector (only M7+)	Y – 4k * Additional FFC connector (only M7+)	Y – 4k * Additional FFC connector (only M7+)
	LVDS	n.a.	n.a.	n.a.	n.a.	n.a.
	Display Port DP 1.2 OR eDP 1.3	n.a.	n.a.	n.a.	n.a.	n.a.
	PCAP on Connector (Dedicated I2C Channel)	1	1	1	1	1
	Display MIPI-DSI	n.a.	n.a.	n.a.	n.a.	n.a.
	Camera MIPI-CSI PHY 1.1 (¹)	n.a.	n.a.	n.a.	n.a.	n.a.
	Camera MIPI-CSI PHY 1.2	n.a.	n.a.	n.a.	n.a.	n.a.
	Camera parallel	Y	Y	Y	Y	Y
 I/O	Audio	Y – Analog line out	Y – Analog line out	Y – Analog line out	Y – Analog line out	Y – Analog line out
	On Board reconfigurable GPIO (¹)	22 @3,3V	22 @3,3V	22 @3,3V	22 @3,3V	22 @3,3V
	OnBoard Protected GPIO	n.a.	n.a.	n.a.	n.a.	n.a.
 USB	USB port Host/Device on TYPE - A	1xUSB 3.0 + 1xUSB 2.0	1xUSB 3.0 + 1xUSB 2.0	1xUSB 3.0 + 1xUSB 2.0	1xUSB 3.0 + 1xUSB 2.0	1xUSB 3.0 + 1xUSB 2.0
	USB 2.0 OTG on micro for debug	Y	Y	Y	Y	Y
	USB 3.0 and 2.0 OTG repeated on strip	* Y (only M7+)	* Y (only M7+)	* Y (only M7+)	* Y (only M7+)	* Y (only M7+)
	USB 2.0 on strip	N	N	N	N	N
 Communication	I2C	2 on strip @ 3.3 V (²)	2 on strip @ 3.3 V (²)	2 on strip @ 3.3 V (²)	2 on strip @ 3.3 V (²)	2 on strip @ 3.3 V (²)
	SPI	1 on strip @ 3.3 V (²)	1 on strip @ 3.3 V (²)	1 on strip @ 3.3 V (²)	1 on strip @ 3.3 V (²)	1 on strip @ 3.3 V (²)
	On board SATA	n.a.	n.a.	n.a.	n.a.	n.a.
	RS485	N	N	N	N	* Y on connector (only M7+)
	Console RS232	Y-TTL	Y-TTL	Y-TTL	Y-TTL	Y-TTL
	mPCIe slot	n.a.	n.a.	n.a.	n.a.	n.a.
	PCIe full size	n.a.	n.a.	n.a.	n.a.	n.a.
 Networking	RJ 45 Ethernet	1 x 100 Mb/s	1 x 100 Mb/s	1 x 100 Mb/s	1 x 100 Mb/s	1 x 100 Mb/s
	WIFI and BT	N	WIFI 802.11 a/b/g/n with PCB antenna	WIFI 802.11 a/b/g/n with PCB antenna	WIFI 802.11 a/b/g/n with PCB antenna	WIFI 802.11 a/b/g/n with PCB antenna
	GPS	N	N	N	N	N
 Generic	Additional user led	Y-1	Y-1	Y-1	Y-1	Y-1
	RTC with external rechargeable battery	Y	Y	Y	Y	Y
	User reset push-button	Y	Y	Y	Y	Y
 Dimension	Mechanical size	85 x 56 mm (¹)	85 x 56 mm (¹)	85 x 56 mm (¹)	85 x 56 mm (¹)	85 x 56 mm (¹)
	Form factor	Credit Card	Credit Card	Credit Card	Credit Card	Credit Card
 Temperature	Operating temperature (ext.temp. range includes conformal coating)	0- ÷ 70 °C / -20 ÷ +85 °C	0- ÷ 70 °C / -20 ÷ +85 °C	0- ÷ 70 °C / -20 ÷ +85 °C	0- ÷ 70 °C / -20 ÷ +85 °C	0- ÷ 70 °C / -20 ÷ +85 °C
 Operating System	Distributions supported	Android, Linux, Yocto, Ubuntu, Debian, Raspbian (³)	Android, Linux, Yocto, Ubuntu, Debian, Raspbian (³)	Android, Linux, Yocto, Ubuntu, Debian, Raspbian (³)	Android, Linux, Yocto, Ubuntu, Debian, Raspbian (³)	Android, Linux, Yocto, Ubuntu, Debian, Raspbian (³)



(¹) RASPMOOD : form factor , mechanical holes , expansion pin on strip , connector kind and position same of famous Pi Family

(²) Strip NOT mounted (2.54), to leave customer free for any choice

(³) Detailed info on SW and SW versions are in the Software menu of www.novasomindustries.com/

* This means only on M7 Plus

NOTE: OPTIONS are related to the Tailor Made solutions. You choose the CPU than the options you need and you have your Tailor Made board.



	SBC Board code	SBC-M8 Boards		SBC-M11 Boards
		SBC-M8A	SBC-M8FT	SBC-M11FT
Processor	CPU	Qualcomm Snapdragon 410E	Qualcomm Snapdragon 410E	Intel Apollo Lake N42
Graphic	GRAPHICS ENGINE	ADRENO 405	ADRENO 405	Intel HD 405 / 505
Memory	RAM memory DDR3	Y – 1 GB@16bit	Y – 1 GB@16bit	SODIMM x2 slot up to 8GB @64bit
	eMMC flash memory	8 GB	8 GB	16 GB
	µSD slot (card not included)	Y	Y	Y
Power	Power supply	12v (6.5 - 18Vcc protected)	12v (6.5 - 18Vcc protected)	12v (6.5 - 18Vcc protected redundant)
	Power Consumption [W]	6	6	10-15W
	UPS MANAGER	Y - battery not included	Y - battery not included	Y - battery not included
	PoE	N	N	Y + Relaunch
Multimedia	HDMI full size connector	n.a.	Y	Y – 4k
	LVDS	n.a.	n.a.	LVDS 2ch@1920x1080
	Display Port DP 1.2 OR eDP 1.3	n.a.	n.a.	Y - 4k with audio
	PCAP on Connector (Dedicated I2C Channel)	1	1	1
	Display MIPI-DSI	1ch 1920x1080 (x4 lane) 1920x1080 @ 60 Hz	1ch 1920x1080 (x4 lane) 1920x1080 @ 60 Hz	1 ch 1920x1080 @ 60 Hz (x4 lane) OR 1 ch 2560x1600 @ 60 Hz (2x4 lane)
	Camera MIPI-CSI PHY 1.1 ⁽¹⁾	2 ch 1920x1080 (x4 lane)	2 ch 1920x1080 (x4 lane)	1 ch 1920x1080 (x4 lane) OR 1 ch @4k (2x4 lane)
	Camera MIPI-CSI PHY 1.2	n.a.	n.a.	1 ch 1920x1080 (x4 lane) OR 1 ch @4k (2x4 lane)
	Camera parallel	n.a.	n.a.	n.a.
I/O	Audio	Y - PCM on strip @ 1.8 V ⁽²⁾	Y - PCM on strip @ 1.8 V ⁽²⁾	High Definition Audio 5+1 Spdif
	On Board reconfigurable GPIO ⁽¹⁾	22 @1.8V	22 @1.8V	26 @3.3V
	OnBoard Protected GPIO	n.a.	n.a.	2 O.C. out up to 30V, 2 in up to 30V
USB	USB 2.0 port Host/Device on TYPE - A	N	1 USB	3X USB 3.0; 2 x USB2.0
	USB 2.0 OTG on micro for debug	Y	Y	N
	USB 3.0 and 2.0 OTG repeated on strip	N	N	N
	USB 2.0 on strip	N	N	Y – 2
Communication	I2C	2 on strip @ 3.3 V ⁽²⁾	2 on strip @ 3.3 V ⁽²⁾	2 on strip @ 3.3V ⁽²⁾
	SPI	2 on strip @ 3.3 V ⁽²⁾	2 on strip @ 3.3 V ⁽²⁾	1 on strip @ 3.3V ⁽²⁾
	On board SATA	n.a.	n.a.	Y - 2 x SATA III
	RS485	N	N	N
	Console RS232	Y	Y	Y
	mPCIe slot	n.a.	n.a.	3 (2 full + 1 only usb and sim)
	PCIe full size	n.a.	n.a.	1 (full 2 lane)
Networking	RJ 45 Ethernet	N	1 x Gb/s	2 x Gb/s with dual MAC address
	WIFI and BT	N	WIFI 802.11 a/b/g/n with PCB antenna	WIFI 802.11 a/b/g/n with PCB antenna
	GPS	N	N	On mPCIe slot or USB
Generic	Additional user led	Y - 5	Y - 5	Y – 5
	RTC with external rechargeable battery	N	Y	Y
	User reset push-button	Y	Y	Y
Dimension	Mechanical size	85 x 56 mm ⁽¹⁾	85 x 56 mm ⁽¹⁾	170 x 170 mm
	Form factor	Credit Card	Credit Card	Mini ITX
Temperature	Operating temperature (ext.temp. range includes conformal coating)	-30 ÷ +60 °C	-30 ÷ +60 °C	-20 ÷ +70 °C / -40 ÷ +85 °C
Operating System	Distributions supported	Android 5.1/6, Linux based on Debian 8.0/Ubuntu 14, Windows 10 IoT Core ⁽³⁾	Android 5.1/6, Linux based on Debian 8.0/Ubuntu 14, Windows 10 IoT Core ⁽³⁾	Windows 10, Linux ⁽³⁾

⁽¹⁾ RASPMOOD : form factor , mechanical holes , expansion pin on strip , connector kind and position same of famous Pi Family

⁽²⁾ Strip NOT mounted (2.54), to leave customer free for any choice

⁽³⁾ Detailed info on SW and SW versions are in the Software menu of www.novasomindustries.com/

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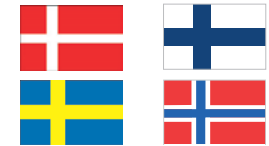
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