

Technical Info



NOVAsom U-line is a family of SBCs specifically developed for IoT and smart devices markets, requiring ultra-low power, WIFI and BT, complex battery management, while maintaining our industrial high quality level, such as the vending, domotics and other handheld applications.

NOVAsom U is a small credit card sized board or less. It has everything necessary to guarantee an **immediate bootstrap**, driving of a **display**, connecting via WIFI, BT and **Ethernet** or USB, plus it has two strips for possible expansion such as **GPIO** or **I2C** or **SPI** and a **resistive touch screen controller**.

			SBC-U1 Boards	SBC-U5 Boards
	Processor	CPU	ESP32	I.MX6ULL
		PERFOMANCE MIPS (COREMARK)	480	954
o°	Graphics	GRAPHICS ENGINE	N	PIX
	Memory	RAM memory DDR3	384K	Up to 1 GB
• •		FLASH	4MB	QSPI Flash up to 1 GB
		μSD slot (op to 32GB), SD card NOT included	Y	Y
Ē		Power supply inversion polarity protected	5 V	5 V or 6.5÷18Vcc (⁴)
	Power	Battery Powered and Battery Charger	Y	Y
		POE Power Consumption [W]	N 0.0 weekinge0.75m ethy	Pluggable External Module
(TT		RGB direct display on FPC 40 pin	0.9 working;0.75m stby N	1.5W working; 50µ standby 1ch 1366x768
••••• [7]	Multimedia	IR Input on connector 6 pin picoblade	N	Y
_		Audio	N	Ŷ
制	I/O	On Board GPIO @ 3,3 V on strip	Up to 15 (¹)	Up to 25 (¹)
Ŷ	USB	USB port Host/Device on TYPE – A	N	1+1
	Communication	Console RS 232 3 pin Pico Blade conn.	N	1
		I2C @ 3,3 V	1	2
120		SPI	1	1
		CAN cell RS232	N N	1 (on strip) (³)
		R5252 R5485		Y Y
			N	
		Second USB (²) RJ45 Ethernet connector on board/Ext	N N	Y Y
	Networking	WiFi-BT (BGN – 4.0 EDR) with external		
1		antenna	Y	Y (connector UFL)
	Generic	Additional nr. 2 user led	Y	Y
		RTC - external battery connector	Y (same battery of power)	Y (battery not included)
		A/D	2 ch 12bit Protected to 40V, 0-3.3V range	2 ch 12 bit
0		D/A	2 ch 10bit Protected to 40V; 0–3.3V range, configurable as GPIO	Ν
		Protected IN	2 - Vmax 30V	N
		I/O Connector	2x12p 2.54	1x40p 2.54
		Open Collector Out	2 Vmax 30V, 200mA gnd ref	N
Ĵ	Operating temperature	Temperature	(-40 / +85)°C	(-40 / +85)°C
⊾	Dimension	Mechanical size	37.5 x 31 mm	85 x 56 mm Raspmood (⁵)
6	Operating System	Distributions supported	FreeRTOS	Linux kernel 4.1.15, Yocto

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





Cortex





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	SBC Board code	SBC-U1A	SBC-U5A	SBC-U5C
Processor	CPU	ESP32 @240 MHz	I.MX6ULL @900 MHz	I.MX6ULL @900 MHz
	PERFOMANCE MIPS (COREMARK)	480	954	954
Graphics	GRAPHICS ENGINE	Ν	PIX	PIX
Memory	RAM memory DDR3	384k	512MB	512MB
			N	N
		Y	Y	Y
Power	Power supply (inversion polarity protected)	5 V	5 V	6.5-18 V (⁴)
	Battery Powered and Battery Charger	Y	Ν	Y
	Power Consumption working/stdby [W]	0.9 / 0.75m	1.5 / 50µ	1.5 / 50µ
	POE Slave	Ν	Pluggable external module (3)	Pluggable external module (3)
Multimedia	RGB direct display on FPC 40 pin	N	1ch 1366x768	1ch 1366x768
	IR Input on connector 6 pin picoblade	Ν	Ν	N
I/O	Audio	Ν	Y - PCM & SPDIF on strip	Y - jack 3.5mm + pre (+ PCM & SPDIF on strip)
	On Board GPIO @ 3,3 V on strip	Up to 15 (¹)	Up to 25 (¹)	Up to 25 (¹)
USB	USB port Host / Device on TYPE - A	Ν	1 + 1 (²)	1 +1(²)
Communication	Console RS 232 3 pin Pico Blade Connector	Ν	1	1
	I2C @ 3,3 V	1	2	2
	SPI	1	1	1
	CAN cell	Ν	1 (on strip) (³)	1 (on strip) (³)
	RS232	Ν	Y	Y
	RS485	N	Ν	Y
	Second USB	N	Y (²)	Y (²)
Networking	RJ 45 Ethernet connector on board/Ext	Ν	2 X 100MBPS/100MBPS (1 st - on board RJ Connector with LEDs; 2 nd - external module required)	2 X 100MBPS/100MBPS (1 [#] - on board RJ Connector with LEDs; 2 ^{#d} - external module required)
	WiFi – BT (BGN - 4.0 EDR)	Y	N / N	Y/N
Generic	Additional nr. 2 user led	Y	Y	Y
	RTC – external battery	Y (same battery of power)	Y (battery not included)	Y (battery not included)
	A/D	2 ch 12bit Protected to 40V , 0–3.3V range	2 ch 12 bit	2 ch 12 bit
	D/A	2 ch 10bit Protected to 40V; 0–3.3V range, configurable as GPIO	Ν	N
	Protected IN	2 Vmax 40V	Ν	N
	I/O Connector	2x12p 2.54	1x40p 2.54	1x40p 2.54
	Open Collector OUT	2 Vmax 30V, 200mA gnd ref	Ν	N
Operating temperature	Temperature	(-40/+85) °C	(-20/+70) °C	
Dimension	Form factor	37.5x31mm	86x54mm (⁵)	
Operating System	Distributions supported	FreeRTOS	Linux kernel 4.1.15, Yocto	
	Graphics Memory Power Multimedia VO USB Communication Networking Generic Generic	Processor CPU PERFOMANCE MIPS (COREMARK) Graphics GRAPHICS ENGINE Memory RAM memory DDR3 FLASH QSPI µSD slot (op to 32GB); SD not included Power Battery Powered and Battery Charger Power Consumption working/stdby [W] POE Slave Multimedia RGB direct display on FPC 40 pin IR Input on connector 6 pin picoblade Audio On Board GPIO @ 3,3 V on strip USB USB port Host / Device on TYPE - A Console RS 232 3 pin Pico Blade Connector I2C @ 3,3 V SPI CAN cell RS232 RS485 Second USB Networking QiFi = BT (BGN - 4.0 EDR) Additional nr. 2 user led RTC - external battery A/D D/A Protected IN I/O Connector Open Collector OUT Open collector OUT	Processor CPU ESP32 @240 MHz Graphics GRAPHICS ENGINE N Memory RAM memory DDR3 384k FLASH GSPI 4MB 4MB pDist (op to 32GB); SD not included Y Power supply (inversion polarity protected) 5 V Power Consumption working/stdby [W] 0.9 / 0.75m POW RGB direct display on FPC 40 pin N Multimedia RGB direct display on FPC 40 pin N IR Input on connector 6 pin picoblade N N //O Battery Charger N N //O ROB direct display on FPC 40 pin N N //O ROB direct display on SU on strip Up to 15 (¹) N //O Do Board GPIO @ 3.3 V on strip Up to 15 (¹) N //O ROB direct display on FPC 40 pin N N //O ROB direct display on TYPE - A N N //O Robarde RS2 32 3 in Pico Blade N N Communication RY RS485 N N	Processor CPU ESP32 @240 MHz I.MX8ULL @900 MHz Graphics GRAPHICS ENSINE N PK Memory RAM memory DDR3 384k 512MB Memory RAM memory DDR3 384k 512MB PLASH GSPI 4MB N N Power supply (inversion polarity protected) 5 V 5 V 5 V Power consumption working/stably (M) 0.9 / 0.75m 1.5 / 50µ POE Slave N Multimedia RGB direct display on FPC 40 pin N V N N VO Audio N V - PCM & SPDIF on strip Up to 15 (') Up to 25 (') USB USB port Host / Device on TYPE - A N 1 + 1 (*) Console R5 232 3 pin Pico Blade N 1 + 1 (*) Communication CArd cell N 1 1 (on strip) (*) R5435 N N Retworking R J 45 Ethernet connector on board/Ett N Y N Y N Retworking R J 45 Ethernet connector on board/Ett N Y N/N<

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(1) If not used by other peripheral, 3.3V

(²) Available additional USB on strip
 (³) Strip NOT mounted (2.54), to leave customer free for any choice

(4) Please refer to specific Application Note.

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

Ver 03.Aug. 2020. This document may have errors and omissions.