Jetson Nano Fanless Aluminum Waterproof (IP67) Enclosure Datasheet



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Jetson Nano:

Note: Refer to Nvidia Jetson Nano documentation for details

GPIO Peripheral Cards (HATs):

GPIO expansion cards (HATs) can be accommodated using the 40 Pin GPIO extension flex cable.

Where a peripheral card (HAT) is required, a standard Raspberry Pi Hat hole pattern is provided on the mounting plate. The hole pattern coincides with the SSD mounting hole pattern so only one of these options can be included.

If this option is selected, a 40 Pin GPIO extender flex cable is included that connects to the Jetson Nano 40 Pin (J41) header and presents a male 40 Pin Header Connector for insertion into a standard Raspberry Pi Hat. Standoffs are also provided for mounting the peripheral card.

Alternatively, 3/4 width Raspberry Pi HATs will fit directly onto the Jetson Nano J41 header. 2 x 12mm high, M2.5 standoffs are provided for mounting the peripheral card. The maximum peripheral card width that will fit directly onto Nano (J41) is 45mm including header and mounting holes area of the peripheral card.



Power over Ethernet:

Part Number	POE-JN-5V20W		
Compliance	802.3af / 802.3at	CE, FCC, UL	
Input Voltage	44 to 57 volts	Typ: 490 mA	Max: 650mA
Output Voltage	5.2 volts +- 2%	Typ: 4 amps, 20W	Max: 5amps, 25W
Isolation	1500 Volts		

SSD and USB3 Adaptor (with UASP Support):

250GB	Crucial : CT250MX500SSD1	MX500 Series	Actual R/W Performance for SSD
500GB	Crucial : CT500MX500SSD1	3D Nand	over USB3 (UASP) :
1000GB	Crucial : CT1000MX500SSD1	Read 500MB/s	Read 273MB/s (Test: "hdparm")
2000GB	Crucial : CT2000MX500SSD1	Write 500MB/s	Write 170MB/s (Test: "dd")

Note1: SSD Option requires mounting kit and includes the USB3 UASP Adaptor

Note2: Crucial MX series was found to be the best SSD option based on performance benchmarks and power consumption.

Note3: Comparison testing using NVMe SSD did not change R/W performance compared to the Crucial MX series SSD (The limiting factor is USB3 bandwidth and not the SSD speed).



Interface Panel Connectors:

Connector	Туре	Connector Rating	Notes
RJ45	Circular, with Dustcap	Waterproof Connector	Waterproof cable
			connection
Switch	Circular, Illuminated	Waterproof Switch	Default = Power
			Can connect as Reset
DC Power	Circular, with Dustcap	Waterproof Connector	Waterproof cable
			connection
USB3 single	Circular, with Dustcap	Waterproof Connector	Waterproof cable
			connection
HDMI single	Circular, with Dustcap	Waterproof Connector	Waterproof cable
			connection
HDMI + USB3	Circular, with Dustcap	Waterproof Connector	Non-Waterproof cable
			connection
USB3 + USB3	Circular, with Dustcap	Waterproof Connector	Non-Waterproof cable
			connection
RS232	Circular, with Dustcap	Waterproof Connector	Waterproof cable
			connection
RS232 Optional	DB9 Connector	Non-waterproof	Standard DB9, RS232
GPIO	Circular, with Dustcap	Waterproof Connector	Specify number of pins



Example of non-waterproof DB9 RS232 port





Example of Waterproof DC, USB3, RJ45 and switch

Sapphire Glass Window for internal camera:



25mm x 1mm Anti Reflective Coating, both sides, Sapphire, Optical Glass Window



Camera Mount for internal camera:

Brackets available for CUNANO and RPi V2 (other cameras supported by request)

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WiFi M.2 Module:

Note: Refer to Intel datasheet for Intel® Dual Band Wireless-AC 8265 Desktop Kit

https://www.intel.com/content/dam/www/public/us/en/documents/product-briefs/wireless-ac-8265-desktop-kit-brief.pdf



LTE + GPS WWAN:

Note1: Refer to Sierra Wireless datasheet for AirPrime EM74xx Global LTE + GPS Modules

Note2: Both LTE and GPS Antennas are available via dual SMA connectors.

Note3: Combined LTE and GPS antennas with 2m RF extension cables are supplied with WWAN option. Alternative antenna combinations are available on request.

Datasheet Link:

<u>https://www.sierrawireless.com/-</u> /media/iot/pdf/datasheets/sierrawireless_airprime_em_series_datasheet.pdf

Certification and Compliance

The Jetson Nano Fanless Waterproof Aluminum Enclosure uses all pre-certified components and is therefore EMC compliant. Compliance is formalized using the Self Certification Technical Construction Folder to support a "Self Declared" Declaration of Conformance.

	Jetson	WiFi	WWAN	PoE	Camera	UART /	SSD	SSD
	Nano				Module	RS232		Adaptor
UL	Y	Y	Y	Y	Y	Y	Y	Y
IEC	Y	Y	Y	Y	Y	Y	Y	Y
ACMA, RSM	Y	Y	Y	Y	Y	Y	Y	Y
VCCI, MIC	Y	Y	Y	Y	Y	Y	Y	Y
EC	Y	Y	Y	Y	Y	Y	Y	Y
FCC	Y	Y	Y	Y	Y	Y	Y	Y
RRA	Y	Y	Y	Y	Y	Y	Y	Y
BSMI, NCC	Y	Y	Y	Y	Y	Y	Y	Y
CTick	Y	Y	Y	Y	Y	Y	Y	Y

The compliance status for each of the components used are specified in Table 1.

Table 1. Compliance applicable for components used in the standard design

Standard Enclosure:

The Standard enclosure conforms to all of the above standards. Changes to the standard design are permissible provided that any changes or additions utilize pre-certified components. Plastic connectors are used in the standard enclosure and the body, front and rear panels do not provide any electrical conductivity for EMC shielding.

EMC Enclosure:

The EMC enclosure conforms to all of the above standards with additional EMC Susceptibility and EMC Immunity that may be required for sensitive environments. Changes to the standard design are permissible provided that any changes or additions utilize pre-certified components. Metal shielded connectors are required in the EMC enclosure to ensure complete electromagnetic encapsulation and protection. The body, front and rear panels provide effective electrical conductivity for EMC shielding.

EMC Testing and Certification:

The Standard and EMC enclosures have not been formally certified for any of the standards in Table 1. The assumption is made that if all components are pre-certified, then the combination of those components will be compliant.

Since each combination of options together with customizations will differ for each specific application we do not warrant or guarantee compliance with any of the standards specified in Table 1.

We offer a complete EMC Compliance Test House service for customers requiring a formal Declaration of Conformance.

Mechanical Specifications





Mechanical Details

W	Н	D (Body length)	L (Overall length)	※ Thermal resistance rate (°C/W)
156.3	87	175	204	2.2

Ref. #	Part name	Pcs	Material	Color / Finish
1	Flanged side plate	2	Die-cast aluminium	Metallic gray · Black / Powder coated
2	Body frame	1	Aluminium extrusion	Silver · Black / Anodized
3	Gasket	2	Silicone	Black
4	Screw	8	Stainless steel	Unfinished

Thermal Characteristics

Storage Temperature Range	Min: -40 C	Max: +105 C
Operational Temperature	Min: -0 C	Max: +70 C

Note: Operational Temperature limited by Jetson Nano Dev Kit module operational temperature range at maximum continuous power







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