

[ODROID-N2](#)

ODROID-N2

N2 PCB revision history

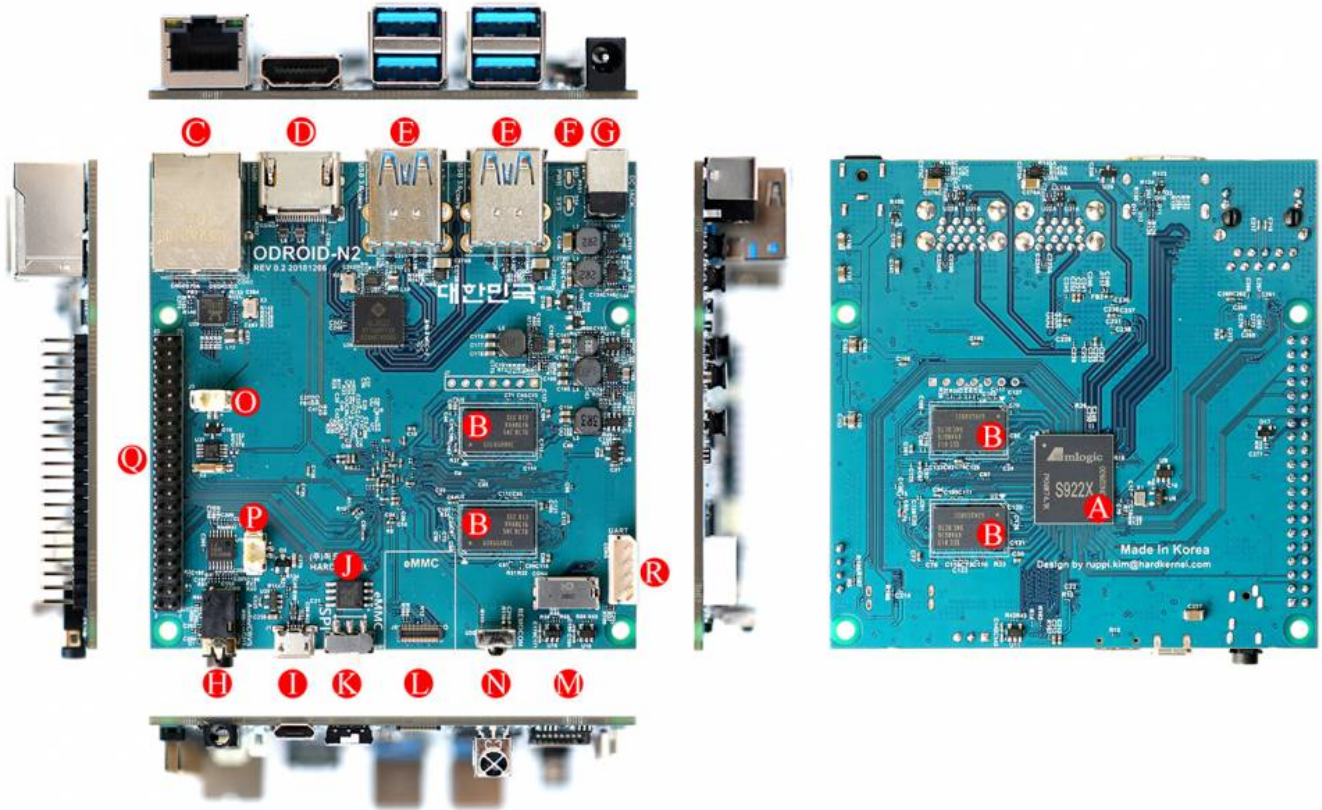
LOT	PCB Revision	Description
1901	rev0.3 20190117	Sample
1903	rev0.4 20190307	1st Mass Production

Schematics, Drawings and S922X datasheet

- * [N2 Schematics & PCB Mechanical drawings \(DXF CAD format\)](#)
- * [Amlogic S922X Data Sheet](#)
- * [N2 Board 3D model by user @hominoid](#)
- * [ODROID-N2 Heatsink \(STL format\)](#)
- *

ODROID-N2 Fritzing part(Breadboard view)

Board Layout



A	S922X CPU	J	1 x SPI Flash 8MiB
B	4 x DDR4 RAM	K	1 x SPI Boot Select Switch
C	1 x RJ45 Ethernet Port (10/100/1000)	L	1 x eMMC Module Socket
D	1 x HDMI 2.0	M	1 x Micro SD Slot
E	4 x USB 3.0	N	1 x IR Receiver
F	2 x System LED Indicators	O	1 x RTC Backup Battery Connector (2-pin)
G	1 x DC Power Jack	P	1 x Active Cooling Fan Connector (2-pin)
H	1 x AV Out (Stereo Audio with Composite video)	Q	40 x GPIO Pins
I	1 x Micro USB2.0 OTG	R	1 x UART for System Console

Specifications

Form Factor	Board Dimensions: 90mm x 90mm x 17mm Heatsink Dimensions: 100mm x 91mm x 25mm Weight: 190g including heatsink
Processor	Amlogic S922X Processor (12nm) Quad-core Cortex-A73(1.8Ghz) and Dual-core Cortex-A53(1.9Ghz) ARMv8-A architecture with Neon and Crypto extensions Mali-G52 GPU with 6 x Execution Engines (846Mhz)
Memory	DDR4 4GiB or 2GiB with 32-bit bus width Data rate: 2640 MT/s (PC4-21333 grade) 1.2Volt low power design
Storage	1 x eMMC connector (8G, 16G, 32G, 64G and 128G are available) 1 x microSD slot (DS/HS modes up to UHS-I SDR104)

Networking	<p>1 x GbE LAN ports (RJ45, supports 10/100/1000 Mbps)</p> <ul style="list-style-type: none"> - Realtek RTL8211F (Ethernet transceiver) - LED indicators (Green: 100mbps, Amber: 1000mbps connection) <p>Optional WiFi USB adapters</p>
Video	<p>1 x HDMI 2.0 (up to 4K@60Hz with HDR, CEC, EDID)</p> <p>1 x Composite video (3.5mm jack)</p>
Audio	<p>1 x Stereo Audio line-out (3.5mm jack)</p> <p>1 x HDMI digital output</p> <p>1 x Optional SPDIF optical output</p>
External I/O	<p>4 x USB 3.0 Host ports (shares one single root hub)</p> <p>1 x USB 2.0 OTG port for Host or Device mode. (No power input)</p> <p>1 x Debug serial console (UART)</p> <p>1 x Peripheral Expansion Header (40-pin, 2.54mm pitch)</p> <ul style="list-style-type: none"> - 2 x DC 5V, 2 x DC 3.3V, 1 x DC 1.8V, 8 x GND - 1 x SPI - 1 x UART - 2 x I2C - 25 x GPIO (Max) - 2 x ADC input (10bit, 1.8V Max) - All 3.3V I/O signal level except for ADC input at max 1.8Volt.
Other features	<p>On board RTC(Real Time Clock) IC to keep date and time</p> <p>8MiB SPI Flash for future BIOS implementation</p> <p>IR receiver for remote controller</p> <p>Built with a large passive heatsink</p> <p>System LEDS Indicators:</p> <ul style="list-style-type: none"> - Red (PWR) - Solid light when DC power is connected - Blue (ALIVE) - Flashing like heartbeat while Kernel is running. <p>Active Cooling Fan Connector (5V 2-pin)</p> <ul style="list-style-type: none"> - Optional 60x60mm Active Cooling Fan - Connector (2-pin, 1.25mm pitch)
Power	<p>1 x DC jack : outer (negative) diameter 5.5mm, inner(positive) diameter 2.1mm</p> <p>DC 7.5V ~ 18V (up to 25W)</p> <ul style="list-style-type: none"> - DC 12V/2A power adaptor is recommended <p>Power consumption:</p> <ul style="list-style-type: none"> - IDLE : ≈ 1.9W (Performance governor) - CPU Stress : ≈ 5.5W - Power-off : ≈ 0.2W

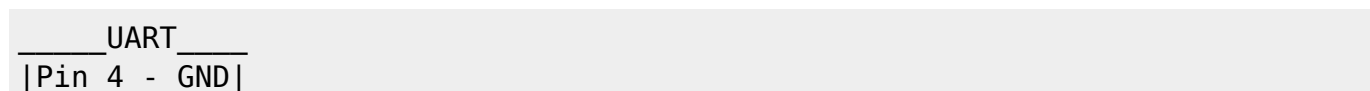
We suggest only powering the ODROID-N2 with a good quality 12V/2A PSU

Connectors

Expansion Connectors (J2)

[Expansion Connector Description](#)

UART Console Connector



```
|Pin 3 - RXD|  
|Pin 2 - TXD|  
|Pin 1 - VCC|  
|_____||
```

CON5
3.3V LVTTL

Regulatory Compliance Documents

- *[ODROID-N2 KC Certification](#)
- *[ODROID-N2 CE Certification](#)
- *[ODROID-N2 FCC Certification](#)
- *[ODROID-N2 RoHS Certification](#)

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