

[ODROID-C4](#)

ODROID-C4

C4 PCB revision history

| LOT | PCB Revision | Description |
|------|-----------------|---------------------|
| 1911 | rev0.4 20191129 | Sample |
| 2001 | rev1.0 20200129 | 1st mass production |

Schematics, Drawings and S905X3 datasheet

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C4 Schematics

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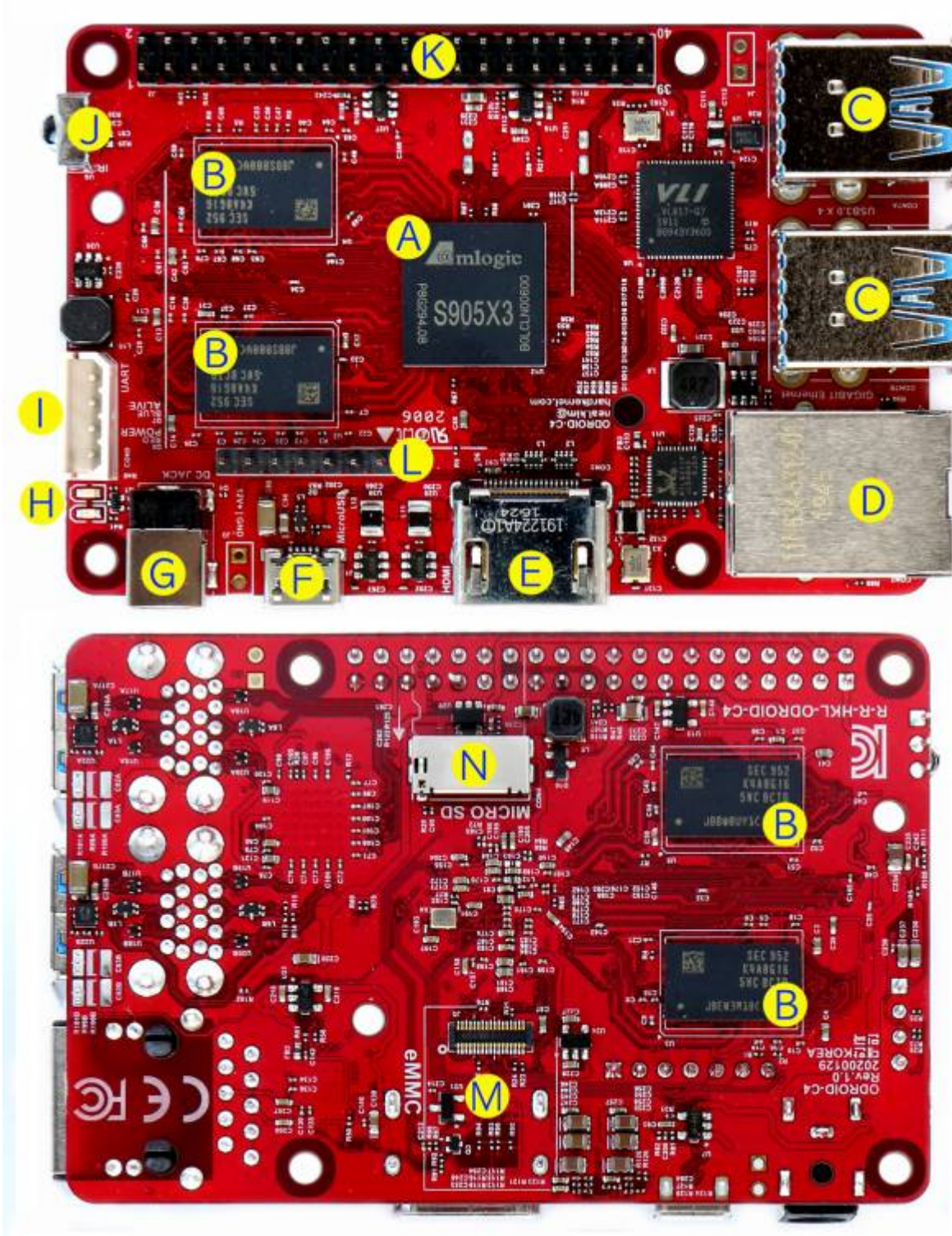
PCB Mechanical drawings (DXF CAD format)

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PCB Mechanical drawings (PDF format)

* [Amlogic S905X3 Data Sheet](#)* [Official Case: 3D CAD STEP/IGS files](#)* [ODROID-C4 Fritzing part](#)

Board Layout



| | | | |
|----------|--------------------------------------------------------------------|----------|-----------------------------|
| A | CPU (Amlogic S905X3) | H | 2 x System LED indicators |
| B | DDR4 memory (2GiB or 4GiB) | I | 1 x UART for system console |
| C | 4 x USB 3.0 host ports | J | 1 x IR receiver |
| D | 1 x RJ45 Ethernet port (10/100/1000) | K | 40 x GPIO pins |
| E | 1 x HDMI 2.0 | L | 7 x GPIO pins |
| F | 1 x Micro USB 2.0 port (OTG) | M | 1 x eMMC module socket |
| G | 1 x DC power jack (Outer diameter : 5.5mm, inner diameter : 2.1mm) | N | 1 x Micro SD slot |

Specifications

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|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Form Factor | Board Dimensions: 85mm x 56mm x 1.0mm Heatsink Dimensions: 40mm x 32mm x 10mm Weight: 59g including heatsink |
| Processor | Amlogic S905X3 Processor L1 instruction cache: 32 KB, 4-way set associative (128 sets), 64 byte lines, shared by 1 processor L1 data cache: 32 KB, 4-way set associative (128 sets), 64 byte lines, shared by 1 processor L3 data cache: 512KB , 16-way set associative (512 sets), 64 byte lines, shared by 4 processors Quad-Core Cortex-A55 (2.0xxGHz) ARMv8-A architecture with Neon and Crypto extensions Mali-G31 MP2 GPU with 4 x Execution Engines (650Mhz) |
| Memory | DDR4 4GiB with 32-bit bus width Data rate: 2640 MT/s (PC4-21333 grade) 1.2Volt low power design |
| Storage | 1x Micro SD slot (DS/HS mode up to UHS-I SDR104) |
| Networking | 1 x GbE LAN ports (RJ45, supports 10/100/1000 Mbps) - Realtek RTL8211F (Ethernet transceiver) - LED indicators * Green LED: Flashing by data traffics at 100Mbps connection * Amber LED: Flashing by data traffics at 1000Mbps connection Optional WiFi USB adapters |
| Video | 1 x HDMI 2.0 (up to 4K@60Hz with HDR, CEC, EDID) |
| Audio | 1 x HDMI digital output 1 x Optional SPDIF optical output |
| External I/O | 4 x USB 3.0 Host ports (shares one single root hub) 1 x USB 2.0 OTG port for Host or Device mode. (No power input) 1 x Debug serial console (UART) 1 x Peripheral Expansion Header (40-pin, 2.54mm pitch) 2x DC 5V, 2x DC 3.3V, 1x DC 1.8V, 8x GND 1x SPI 1x UART 2x I2C 6x PWM 2x ADC input (12bit, 1.8V Max) 25x GPIO (Max) 1x Audio Expansion Header (7-pin, 2.54mm pitch) 1x DC 5V 1x SPDIF out 1x I2S - All 3.3V I/O signal level except for ADC input at max 1.8Volt. |
| Other features | IR receiver for remote controller System LEDS Indicators: - Red (PWR) – Solid light when DC power is connected - Blue (ALIVE) – Flashing like heartbeat while Kernel is running. |

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|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power | 1 x DC jack : outer (negative) diameter 5.5mm, inner (positive) diameter 2.1mm DC input : 5.5V ~ 15.5V - DC 12V/2A power adapter is recommended Power consumption: - IDLE : ≈ 1.8W - CPU Stress : ≈ 3.64W (Performance governor) - Power-off : ≈ 0.14W |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

We recommend powering the ODROID-N2/C4 with a good quality 12V/2A power adapter. However, using a good quality 15V/4A power adapter is also OK if you already have one handy. Note that 15V/4V is not necessary for the N2, N2+ and C4, 12V/2A is plenty enough. On the other hand 15V/4A is required for the HC4 and the H2 series because these boards may power mechanical hard drives.

Connectors

Expansion Connectors (J2)

[Expansion Connector Description](#)

UART Console Connector

| UART |
|-------------|
| Pin 4 - GND |
| Pin 3 - RXD |
| Pin 2 - TXD |
| Pin 1 - VCC |
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| CON5 |
| 3.3V LVTTL |

Regulatory Compliance Documents

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ODROID-C4 KC Certification

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ODROID-C4 CE Certification

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ODROID-C4 FCC Certification

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Last update: **2020/10/21 06:58**

