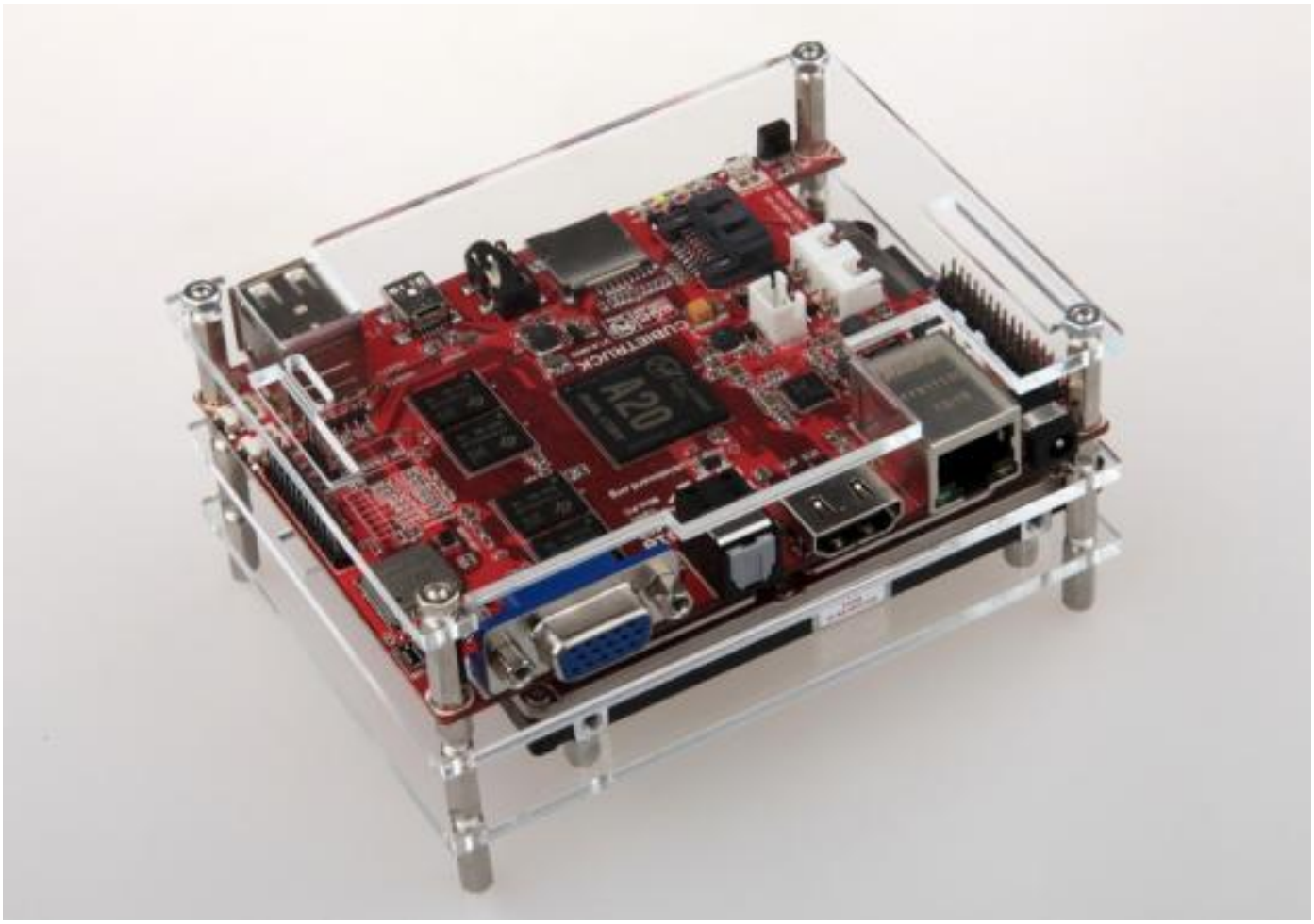
# Cubietruck (Cubieboard3)

While cubieboard1/2 very suitable for student, software/hardware hackers, cubietruck (cubieboard3) is suitable for us to make real product.



Cubietruck is the 3rd board of Cubieteam, so we also name it Cubieboard3. It's a new PCB model adopted with Allwinner A20 main chip,just like Cubieboard2. But it is enhanced with some features, such as 2GB memory, VGA display interface on-board, 1000M NIC, WIFI + BT on-board, support Li-battery and RTC,SPDIF audio interface.

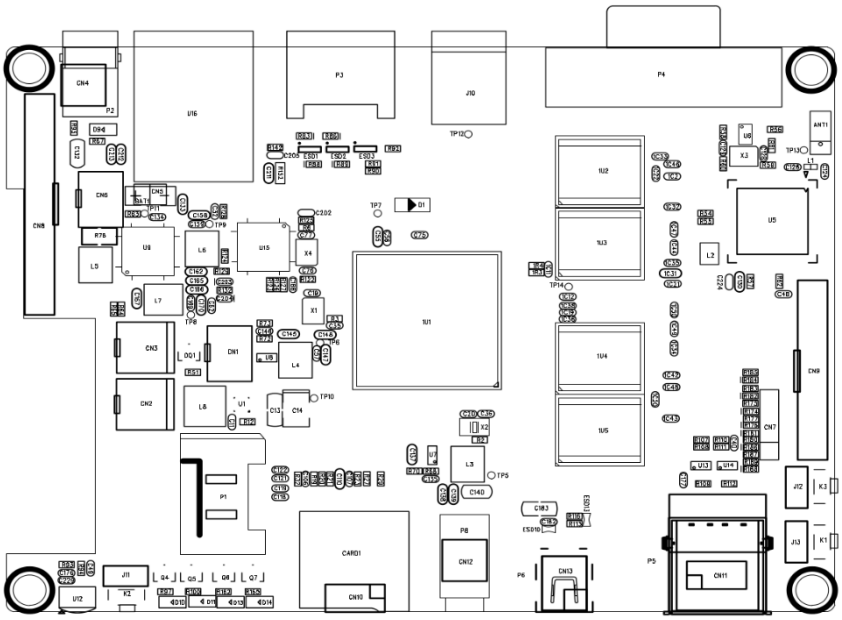
## Hardware Specs

1. AllWinnerTech SOC A20 ARM® Cortex™-A7 Dual-Core ARM® Mali400 MP2 Complies with OpenGL ES 2.0/1.1
2. 1GB/2GB DDR3@480MHz
3. HDMI&VGA 1080P display output on-board
4. 10M/100M/1G Ethernet
5. WIFI + BT wireless connection with antenna on-board
6. SATA 2.0 interface support 2.5’ HDD (for 3.5’ HDD, only need another 12V power input)
7. Storage solution NAND + MicroSD or TSD+ MicroSD or 2* MicroSD
8. 2 x USB HOST 1 x OTG 1 x SPDIF 1 x IR 4 x LEDs 1 Headphone 3 x Keys
9. Power DC5V @ 2.5A with HDD support Li-battery & RTC
10. 54 extended pins including I2S, I2C, SPI, CVBS, LRADC x2,UART, PS2, PWMx2, TS/CSI, IRDA, LINEIN&FMIN&MICIN, TVINx4 with 2.0 pitch connectors
11. PCB size 11cm *8cm*1.4mm very suitable for installing a 2.5’ HDD

# Expansion Ports

## A20-cubietruck GPIO Pin

| CN8 | | | |
|---|---|---|---|
| PIN | DEF | PIN | DEF |
| 30 | LRADC1 | 29 | VCC-5V |
| 28 | LRADC0 | 27 | CVBS |
| 26 | LINEINR | 25 | PB19 |
| 24 | LINEINL | 23 | PB18 |
| 22 | IR-RX | 21 | PB2 |
| 20 | IR-TX | 19 | PI3 |
| 18 | PI15 | 17 | PI21 |
| 16 | PI14 | 15 | PI20 |
| 14 | GND | 13 | GND |
| 12 | SPI0-MISO | 11 | SPI0-CLK |
| 10 | SPI0-MOSI | 9 | SPI0-CS |
| 8 | PC22 | 7 | PC20 |
| 6 | PC21 | 5 | PC19 |
| 4 | RESET# | 3 | AVCC |
| 2 | VCC-3V | 1 | GND |



| CN9 | | | |
|---|---|---|---|
| PIN | DEF | PIN | DEF |
| 1 | VCC-3V | 2 | VCC-3V |
| 3 | PG0 | 4 | PG3 |
| 5 | PG2 | 6 | PG1 |
| 7 | PG4 | 8 | PG5 |
| 9 | PG6 | 10 | PG7 |
| 11 | PG8 | 12 | PG9 |
| 13 | PG10 | 14 | PG11 |
| 15 | GND | 16 | GND |
| 17 | XP | 18 | TVIN0 |
| 19 | XN | 20 | TVIN1 |
| 21 | YP | 22 | TVIN2 |
| 23 | YN | 24 | TVIN3 |

| **CN8 (Near Ethernet connector)** | | | |
|---|---|---|---|
| **2x15 Header** | | | |
| 30 | LRADC1 | 29 | VCC-5V |
| 28 | LRADC0 | 27 | CVBS |
| 26 | LINEIN-R | 25 | PB19(TWI1-SDA) |
| 24 | LINEIN-L | 23 | PB18(TWI1-SCK) |
| 22 | PB4 (IR0-RX) | 21 | PB2 (PWM0) |
| 20 | PB3 (IR0-TX)) | 19 | PI3 (PWM1) |
| 18 | PI15 (PS2SDA1/EINT27) | 17 | PI21 (FMIN-R/PS2SDA0/UART7-RX/HSDA) |
| 16 | PI14 (PS2SCLK1/EINT26) | 15 | PI20 (FMIN-L/PS2SCLK0/UART7-TX/HSCL) |
| 14 | GND | 13 | GND |
| 12 | PB17 (SPI2-MISO/JTAG_DI0) | 11 | PB15(SPI2-CLK/JTAG_CK0) |
| 10 | PB16 (SPI2-MOSI/JTAG_DO0) | 9 | PB14 (SPI2-CS0/JTAG_MS0) |
| 8 | PC22 (SPI2-MISO/EINT15) | 7 | PC20 (SPI2-CLK/EINT13) |

| | | | |
|---|---|---|---|
| 6 | PC21 (SPI2-MOSI/EINT14) | 5 | PC19 (SPI2-CS0/EINT12) |
| 4 | RESET# | 3 | AVCC |
| 2 | 3.3V | 1 | GND |
| **CN9 (Near USB Ports)** | | | |
| **CSI1/TS/TP/TVIN** | | | |
| 1 | 3.3V | 2 | 3.3V |
| 3 | PG0 (TS1_CLK/CSI1-PCLK) | 4 | PG3 (TS1_ERR/CSI1-VSYNC) |
| 5 | PG2 (TS1_SYNC/CSI1-HSYNC) | 6 | PG1 (TS1_DVLD/CSI1-MCLK) |
| 7 | PG4 (TS1_D0/CSI1-D0) | 8 | PG5 (TS1_D1/CSI1-D1) |
| 9 | PG6 (TS1_D2/CSI1-D2/UART3-TX) | 10 | PG7 (TS1_D3/CSI1-D3/UART3-RX) |
| 11 | PG8 (TS1_D4/CSI1-D4/UART3-RTS) | 12 | PG9 (TS1_D5/CSI1-D5/UART3-CTS) |
| 13 | PG10 (TS1_D6/CSI1-D6/UART4-TX) | 14 | PG11 (TS1_D7/CSI1-D7/UART4-RX) |
| 15 | GND | 16 | GND |
| **Analog** | | | |
| 17 | XP-I2SDO1 | 18 | TVIN0-I2SMCLK |
| 19 | XN-I2SDO2 | 20 | TVIN1-BTPCMCLK |
| 21 | YP-I2SDO3 | 22 | TVIN2-BTPCMSYNC |
| 23 | XN-BTPCMIN | 24 | TVIN3-BTPCMOUT |