

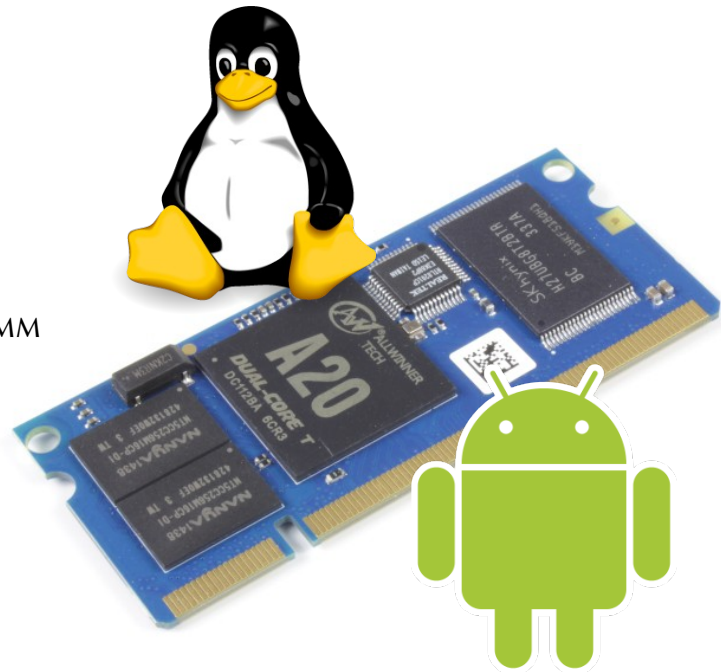
Allwinner A20 SoC Compute Module

- Cost efficient, high performance, reliable
- + Easy design-in at low risk
 - + Cost saving by short development cycles
 - + Development board and starter kit available

Combining the power and software-ease of community proven embedded boards like:

- + BananaPi, Cubie, OlinuXino and PCDUINO3

Your own PCB design must simply 5V-power the A20 SODIMM and can get connected by just wiring an Ethernet socket.



Features

ARM Dual Cortex-A7 processor with 1GHz:

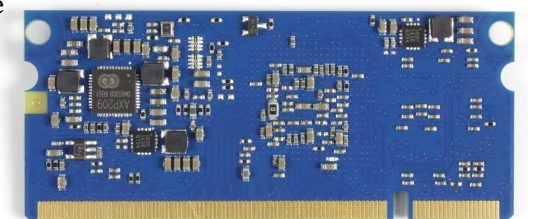
- 32kB Data Cache, 32kB Instruction Cache

On-Board memory:

- 1GB DDR3 RAM
- 4GB NAND

Available interfaces:

- 1x 10/100MBit Ethernet PHY (RTL8201CP)
- 2x USB 2.0 High Speed Host (480 Mbit)
- 6x UART + 1x DBG-UART
- 1x CAN Bus Controller
- 2x SPI
- 2x I²C (TWI)
- 1x Analog audio input/output and I2S compliant audio Interface
- 2x High Speed Memory Card Hosts (MCI)
- 2x PS2 compliant keyboard and mouse Interface
- 1x SATA Host Controller with eSATA support
- 1x JTAG
- LVDS up to 1920x1080@60fps, HDMI output
- CMOS Sensor Interface (CSI)



Access to all available GPIOs!

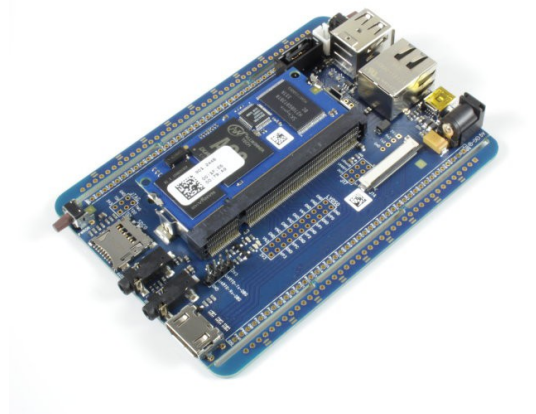
Only one 3.8V to 6.3V power supply required (USB power for instance)

All Voltages Generated On-Board with Power Management Unit

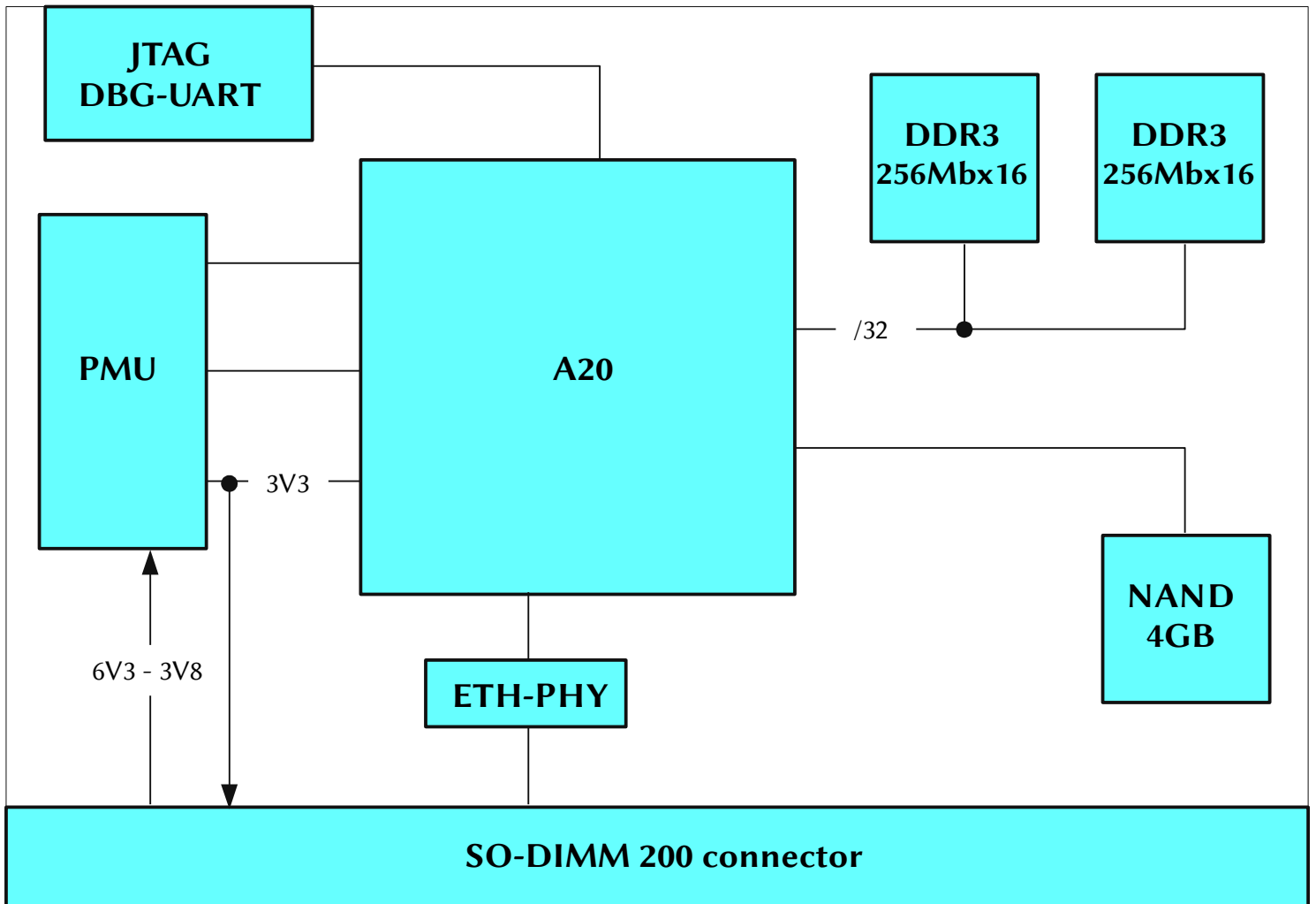
Power consumption max. 2W

Dimensions:

- 67.6 x 29 x 5mm
- Operating Temperature: 0°C to +70°C
- Storage Temperature: -20°C to +70°C



Block diagramm



The ICnova A20 SODIMM Module incorporates the following features:

- High processor speed at low power consumption
- High bandwidth 1GByte DDR3 RAM on a dedicated memory bus
- Large capacity Flash (4GByte NAND) on a dedicated memory bus
- one ethernet PHY by REALTEK (RTL8201CP)

Achieving high data rate communication using 100Mbit Ethernet or 480Mbit USB2.0 is easily possible as well as controlling TFT or LCD displays or accessing periphery via SPI, I2C, UART, and many others.

Nearly all signals of the A20 are available at the pins on the SODIMM module. The memory interface is not provided in order to assure signal integrity.

A detailed description of the pins can be found on the following pages.

Pinout

| ICnova A20 SODIMM200 | | | | | | | | | |
|----------------------|---------------|---------|----------|------------|-----------|-------------------|-----------|--------|------------|
| Pin | Name | V-Level | I/O Line | MUX2 | MUX3 | MUX4 | MUX5 | MUX6 | MUX7 |
| 1 | PWM0 | 3.3V | PB2 | PWM0 | | | | | |
| 2 | JTAG_TDO | 3.3V | PB16 | SPI2_MOSI | JTAG_DO0 | | | | |
| 3 | PWM1 | 3.3V | PI3 | PWM1 | TWI4_SDA | | | | |
| 4 | JTAG_TDI | 3.3V | PB17 | SPI2_MISO | JTAG_DI0 | | | | |
| 5 | GND | 0V | | | | ground | | | |
| 6 | JTAG_TMS | 3.3V | PB14 | SPI2_CS0 | JTAG_MS0 | | | | |
| 7 | PH14 | 3.3V | PH14 | LCD1_D14 | ETXD3 | KP_IN4 | SMC_VPPEN | EINT14 | CSI1_D14 |
| 8 | JTAG_TCK | 3.3V | PB15 | SPI2_CLK | JTAG_CK0 | | | | |
| 9 | PH15 | 3.3V | PH15 | LCD1_D15 | ETXD2 | KP_IN5 | SMC_VPPPP | EINT15 | CSI1_D15 |
| 10 | GND | 0V | | | | ground | | | |
| 11 | PH16 | 3.3V | PH16 | LCD1_D16 | ETXD1 | KP_IN6 | | EINT16 | CSI1_D16 |
| 12 | PH0/UART3-TX | 3.3V | PH0 | LCD1_D00 | | UART3_TX | | EINT0 | CSI1_D0 |
| 13 | PH17 | 3.3V | PH17 | LCD1_D17 | ETXD0 | KP_IN7 | SMC_VCCEN | EINT17 | CSI1_D17 |
| 14 | PH1/UART3-RX | 3.3V | PH1 | LCD1_D01 | | UART3_RX | | EINT1 | CSI1_D1 |
| 15 | PH18 | 3.3V | PH18 | LCD1_D18 | ERXCK | KP_OUT0 | SMC_SCK | EINT18 | CSI1_D18 |
| 16 | PH2/UART3-RTS | 3.3V | PH2 | LCD1_D02 | | UART3_RTS | | EINT2 | CSI1_D2 |
| 17 | PH19 | 3.3V | PH19 | LCD1_D19 | ERXERR | KP_OUT1 | SMC_SDA | EINT19 | CSI1_D19 |
| 18 | PH3/UART3-CTS | 3.3V | PH3 | LCD1_D03 | | UART3_CTS | | EINT3 | CSI1_D3 |
| 19 | PH20 | 3.3V | PH20 | LCD1_D20 | ERXDV | CAN_TX | | EINT20 | CSI1_D20 |
| 20 | PH4/UART4-TX | 3.3V | PH4 | LCD1_D04 | | UART4_TX | | EINT4 | CSI1_D4 |
| 21 | PH21 | 3.3V | PH21 | LCD1_D21 | EMDC | CAN_RX | | EINT21 | CSI1_D21 |
| 22 | PH5/UART4-RX | 3.3V | PH5 | LCD1_D05 | | UART4_RX | | EINT5 | CSI1_D5 |
| 23 | GND | 0V | | | | ground | | | |
| 24 | PH6/UART5-TX | 3.3V | PH6 | LCD1_D06 | | UART5_TX | MS_BS | EINT6 | CSI1_D6 |
| 25 | PH22 | 3.3V | PH22 | LCD1_D22 | EMDIO | KP_OUT2 | SDC1_CMD | | CSI1_D22 |
| 26 | PH7/UART5-RX | 3.3V | PH7 | LCD1_D07 | | UART5_RX | MS_CLK | EINT7 | CSI1_D7 |
| 27 | PH23 | 3.3V | PH23 | LCD1_D23 | ETEN | KP_OUT3 | SDC1_CLK | | CSI1_D23 |
| 28 | PH8 | 3.3V | PH8 | LCD1_D08 | ERXD3 | KP_IN0 | MS_D0 | EINT8 | CSI1_D8 |
| 29 | PH24 | 3.3V | PH24 | LCD1_CLK | ETXCK | KP_OUT4 | SDC1_D0 | | CSI1_PCLK |
| 30 | PH9 | 3.3V | PH9 | LCD1_D09 | ERXD2 | KP_IN1 | MS_D1 | EINT9 | CSI1_D9 |
| 31 | PH25 | 3.3V | PH25 | LCD1_DE | ECRS | KP_OUT5 | SDC1_D1 | | CSI1_FIELD |
| 32 | PH10 | 3.3V | PH10 | LCD1_D10 | ERXD1 | KP_IN2 | MS_D2 | EINT10 | CSI1_D10 |
| 33 | PH26 | 3.3V | PH26 | LCD1_HSYNC | ECOL | KP_OUT6 | SDC1_D2 | | CSI1_HSYNC |
| 34 | PH11 | 3.3V | PH11 | LCD1_D11 | ERXD0 | KP_IN3 | MS_D3 | EINT11 | CSI1_D11 |
| 35 | PH27 | 3.3V | PH27 | LCD1_VSYNC | ETXERR | KP_OUT7 | SDC1_D3 | | CSI1_VSYNC |
| 36 | PH12 | 3.3V | PH12 | LCD1_D12 | | PS2_SCK1 | | EINT12 | CSI1_D12 |
| 37 | GND | 0V | | | | ground | | | |
| 38 | PH13 | 3.3V | PH13 | LCD1_D13 | | PS2_SDA1 | SMC_RST | EINT13 | CSI1_D13 |
| 39 | VBUSEN# | 3.3V | | | | vbus enable input | | | |
| 40 | GND | 0V | | | | ground | | | |
| 41 | GND | 0V | | | | ground | | | |
| 42 | GND | 0V | | | | ground | | | |
| 43 | I2S-MCLK | 3.3V | PB5 | I2S_MCLK | AC97_MCLK | | | | |
| 44 | UART0-TX-DBG | 3.3V | PB22 | UART0_TX | IR1_TX | | | | |
| 45 | I2S-BCLK | 3.3V | PB6 | I2S_BCLK | AC97_BCLK | | | | |
| 46 | UART0-RX-DBG | 3.3V | PB23 | UART0_RX | IR1_RX | | | | |
| 47 | I2S-LRCK | 3.3V | PB7 | I2S_LRCK | AC97_SYNC | | | | |
| 48 | TWI1-SCK | 3.3V | PB18 | TWI1_SCK | | | | | |
| 49 | I2S-DO0 | 3.3V | PB8 | I2S_DO0 | AC97_DO | | | | |

Pinout

| ICnova A20 SODIMM200 | | | | | | | | | |
|----------------------|-----------|---------|----------|----------|-----------|------------|--------|------------|------|
| Pin | Name | V-Level | I/O Line | MUX2 | MUX3 | MUX4 | MUX5 | MUX6 | MUX7 |
| 50 | TWI1-SDA | 3.3V | PB19 | TWI1_SDA | | | | | |
| 51 | I2S-DO1 | 3.3V | PB9 | I2S_DO1 | | | | | |
| 52 | TWI2-SCK | 3.3V | PB20 | TWI2_SCK | | | | | |
| 53 | I2S-DO2 | 3.3V | PB10 | I2S_DO2 | | | | | |
| 54 | TWI2-SDA | 3.3V | PB21 | TWI2_SDA | | | | | |
| 55 | I2S-DO3 | 3.3V | PB11 | I2S_DO3 | | | | | |
| 56 | GND | 0V | | | | | ground | | |
| 57 | I2S-DI | 3.3V | PB12 | I2S_DI | AC97_DI | SPDIF_DI | | | |
| 58 | LVDS1-VN3 | 3.3V | PD19 | LCD0_D19 | LVDS1_VN3 | | | | |
| 59 | SPI2-CS1 | 3.3V | PB13 | SPI2_CS1 | | SPDIF_DO | | | |
| 60 | LVDS1-VP3 | 3.3V | PD18 | LCD0_D18 | LVDS1_VP3 | | | | |
| 61 | GND | 0V | | | | | ground | | |
| 62 | GND | 0V | | | | | ground | | |
| 63 | LVDS0-VP3 | 3.3V | PD8 | LCD0_D8 | LVDS0_VP3 | | | | |
| 64 | LVDS1-VNC | 3.3V | PD17 | LCD0_D17 | LVDS1_VNC | | | | |
| 65 | LVDS0-VN3 | 3.3V | PD9 | LCD0_D9 | LVDS0_VN3 | | | | |
| 66 | LVDS1-VPC | 3.3V | PD16 | LCD0_D16 | LVDS1_VPC | | | | |
| 67 | GND | 0V | | | | | ground | | |
| 68 | GND | 0V | | | | | ground | | |
| 69 | LVDS0-VPC | 3.3V | PD6 | LCD0_D6 | LVDS0_VPC | | | | |
| 70 | LVDS1-VN2 | 3.3V | PD15 | LCD0_D15 | LVDS1_VN2 | | | | |
| 71 | LVDS0-VNC | 3.3V | PD7 | LCD0_D7 | LVDS0_VNC | | | | |
| 72 | LVDS1-VP2 | 3.3V | PD14 | LCD0_D14 | LVDS1_VP2 | | | | |
| 73 | GND | 0V | | | | | ground | | |
| 74 | GND | 0V | | | | | ground | | |
| 75 | LVDS0-VP2 | 3.3V | PD4 | LCD0_D4 | LVDS0_VP2 | | | | |
| 76 | LVDS1-VN1 | 3.3V | PD13 | LCD0_D13 | LVDS1_VN1 | | | | |
| 77 | LVDS0-VN2 | 3.3V | PD5 | LCD0_D5 | LVDS0_VN2 | | | | |
| 78 | LVDS1-VP1 | 3.3V | PD12 | LCD0_D12 | LVDS1_VP1 | | | | |
| 79 | GND | 0V | | | | | ground | | |
| 80 | GND | 0V | | | | | ground | | |
| 81 | LVDS0-VP1 | 3.3V | PD2 | LCD0_D2 | LVDS0_VP1 | | | | |
| 82 | LVDS1-VN0 | 3.3V | PD11 | LCD0_D11 | LVDS1_VN0 | | | | |
| 83 | LVDS0-VN1 | 3.3V | PD3 | LCD0_D3 | LVDS0_VN1 | | | | |
| 84 | LVDS1-VP0 | 3.3V | PD10 | LCD0_D10 | LVDS1_VP0 | | | | |
| 85 | GND | 0V | | | | | ground | | |
| 86 | GND | 0V | | | | | ground | | |
| 87 | LVDS0-VP0 | 3.3V | PD0 | LCD0_D0 | LVDS0_VP0 | | | | |
| 88 | HPL | 3.3V | HPL | | | | | | |
| 89 | LVDS0-VN0 | 3.3V | PD1 | LCD0_D1 | LVDS0_VN0 | | | | |
| 90 | HPR | 3.3V | HPR | | | | | | |
| 91 | GND | 0V | | | | | ground | | |
| 92 | HPCOM | 3.3V | HPCOM | | | | | | |
| 93 | IR-TX | 3.3V | PB3 | IR0_TX | | SPDIF_MCLK | | STANDBYWFI | |
| 94 | HPCOMFB | 3.3V | HPCOMFB | | | | | | |
| 95 | IR-RX | 3.3V | PB4 | IR0_RX | | | | | |
| 96 | FMINL | 3.3V | FMINL | | | | | | |
| 97 | LRADC1 | 3.3V | LRADC1 | | | | | | |
| 98 | FMINR | 3.3V | FMINR | | | | | | |
| 99 | LRADC0 | 3.3V | LRADC0 | | | | | | |

Pinout

| ICnova A20 SODIMM200 | | | | | | | | | | |
|----------------------|--------------------|---------|----------|--------------------------|-----------|----------|--------|------|------|--|
| Pin | Name | V-Level | I/O Line | MUX2 | MUX3 | MUX4 | MUX5 | MUX6 | MUX7 | |
| 100 | LINEINL | 3.3V | LINEINL | line left channel input | | | | | | |
| 101 | TP-X2 | 3.3V | TPX2 | adc input | | | | | | |
| 102 | LINEINR | 3.3V | LINEINR | line right channel input | | | | | | |
| 103 | TP-Y2 | 3.3V | TPY2 | adc input | | | | | | |
| 104 | GND | 0V | | ground | | | | | | |
| 105 | TP-X1 | 3.3V | TPX1 | adc input | | | | | | |
| 106 | SATA-RXP | 3.3V | SATA-RXP | sata positive receive | | | | | | |
| 107 | TP-Y1 | 3.3V | TPY1 | adc input | | | | | | |
| 108 | SATA-RXN | 3.3V | SATA-RXM | sata negative receive | | | | | | |
| 109 | GND | 0V | | ground | | | | | | |
| 110 | GND | 0V | | ground | | | | | | |
| 111 | HTX-CP | 3.3V | HTXCP | hdmi clock positive | | | | | | |
| 112 | SATA-TXP | 3.3V | SATA-TXP | sata positive transmit | | | | | | |
| 113 | HTX-CN | 3.3V | HTXCN | hdmi clock negative | | | | | | |
| 114 | SATA-TXN | 3.3V | SATA-TXM | sata negative transmit | | | | | | |
| 115 | GND | 0V | | ground | | | | | | |
| 116 | GND | 0V | | ground | | | | | | |
| 117 | HTX-0P | 3.3V | HTX0P | hdmi data0 positive | | | | | | |
| 118 | USB-DP2 | 3.3V | DP2 | usb dp signal | | | | | | |
| 119 | HTX-0N | 3.3V | HTX0N | hdmi data0 negative | | | | | | |
| 120 | USB-DM2 | 3.3V | DM2 | usb dm signal | | | | | | |
| 121 | GND | 0V | | ground | | | | | | |
| 122 | GND | 0V | | ground | | | | | | |
| 123 | HTX-1P | 3.3V | HTX1P | hdmi data1 positive | | | | | | |
| 124 | USB-DP1 | 3.3V | DP1 | usb dp signal | | | | | | |
| 125 | HTX-1N | 3.3V | HTX1N | hdmi data1 negative | | | | | | |
| 126 | USB-DM1 | 3.3V | DM1 | usb dm signal | | | | | | |
| 127 | GND | 0V | | ground | | | | | | |
| 128 | GND | 0V | | ground | | | | | | |
| 129 | HTX-2P | 3.3V | HTX2P | hdmi data2 positive | | | | | | |
| 130 | USB-DP0 | 3.3V | DP0 | usb dp signal | | | | | | |
| 131 | HTX-2N | 3.3V | HTX2N | hdmi data2 negative | | | | | | |
| 132 | USB-DM0 | 3.3V | DM0 | usb dm signal | | | | | | |
| 133 | GND | 0V | | ground | | | | | | |
| 134 | GND | 0V | | ground | | | | | | |
| 135 | HSCL | 3.3V | HSCL | hdmi ddc clock | | | | | | |
| 136 | SD0-CLK | 3.3V | PF2 | SDC0_CLK | | UART0_TX | | | | |
| 137 | HSDA | 3.3V | HSDA | hdmi ddc data | | | | | | |
| 138 | SD0-CMD | 3.3V | PF3 | SDC0_CMD | | JTAG_DO1 | | | | |
| 139 | HHPD | 3.3V | HHPD | hdmi hot plug detection | | | | | | |
| 140 | SD0-D0 | 3.3V | PF1 | SDC0_D0 | | JTAG_DI1 | | | | |
| 141 | HCEC | 3.3V | HCEC | hdmi cec | | | | | | |
| 142 | SD0-D1 | 3.3V | PF0 | SDC0_D1 | | JTAG_MS1 | | | | |
| 143 | GND | 0V | | ground | | | | | | |
| 144 | SD0-D3 | 3.3V | PF4 | SDC0_D3 | | UART0_RX | | | | |
| 145 | SPI0-CS1 | 3.3V | PI14 | SPI0_CS1 | PS2_SCK1 | TCLKIN0 | EINT26 | | | |
| 146 | SD0-D2 | 3.3V | PF5 | SDC0_D2 | | JTAG_CK1 | | | | |
| 147 | SPI1-CS1 | 3.3V | PI15 | SPI1_CS1 | PS2_SDA1 | TCLKIN1 | EINT27 | | | |
| 148 | GND | 0V | | ground | | | | | | |
| 149 | SPI1-CS0/UART2-RTS | 3.3V | PI16 | SPI1_CS0 | UART2_RTS | | EINT28 | | | |

Pinout

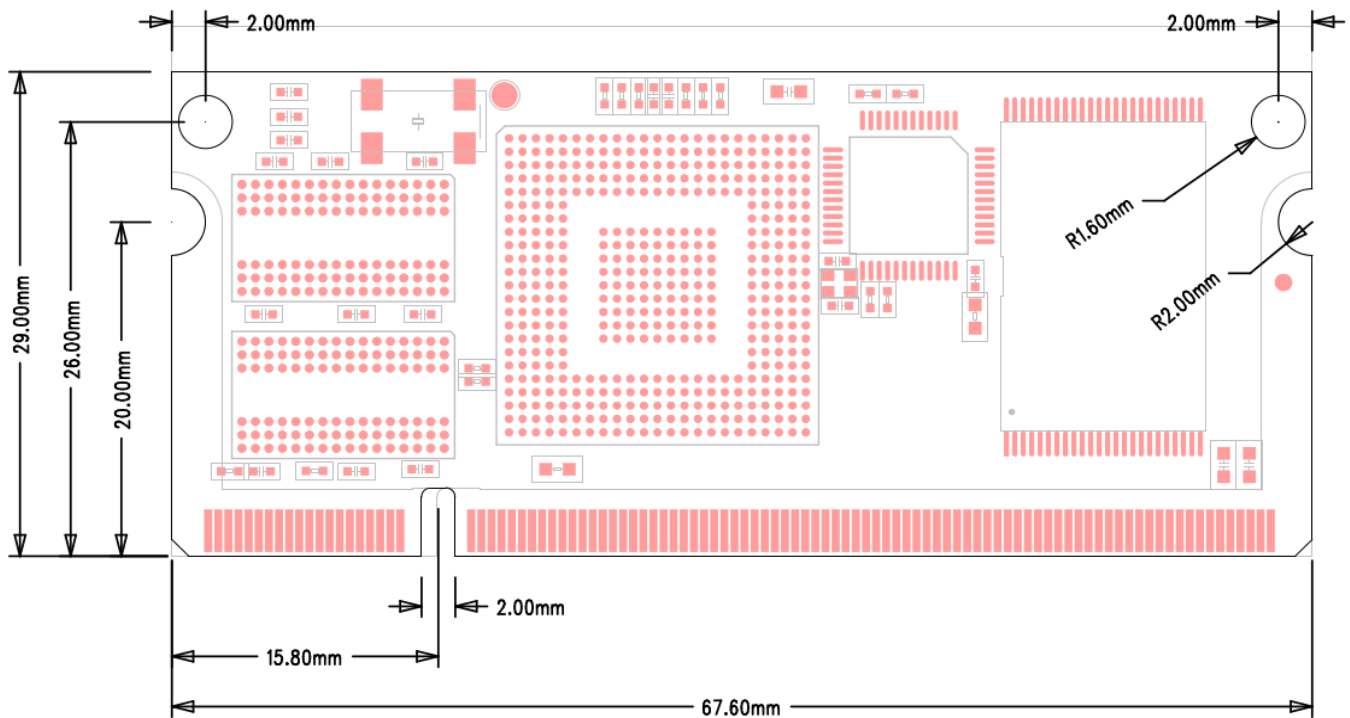
| ICnova A20 SODIMM200 | | | | | | | | | |
|----------------------|--------------------|---------|----------|-----------|------------|----------------------------|----------|------|------|
| Pin | Name | V-Level | I/O Line | MUX2 | MUX3 | MUX4 | MUX5 | MUX6 | MUX7 |
| 150 | SD3-CLK | 3.3V | PI5 | SDC3_CLK | | | | | |
| 151 | SPI1-CLK/UART2-CTS | 3.3V | PI17 | SPI1_CLK | UART2_CTS | | EINT29 | | |
| 152 | SD3-CMD | 3.3V | PI4 | SDC3_CMD | | | | | |
| 153 | SPI1-MOSI/UART2-TX | 3.3V | PI18 | SPI1_MOSI | UART2_TX | | | | |
| 154 | SD3-D0 | 3.3V | PI6 | SDC3_D0 | | | | | |
| 155 | SPI1-MISO/UART2-RX | 3.3V | PI19 | SPI1_MISO | UART2_RX | | | | |
| 156 | SD3-D1 | 3.3V | PI7 | SDC3_D1 | | | | | |
| 157 | GND | 0V | | | | ground | | | |
| 158 | SD3-D2 | 3.3V | PI8 | SDC3_D2 | | | | | |
| 159 | SPI0-CS0/UART5-TX | 3.3V | PI10 | SPI0_CS0 | UART5_TX | | EINT22 | | |
| 160 | SD3-D3 | 3.3V | PI9 | SDC3_D3 | | | | | |
| 161 | SPI0-CLK/UART5-RX | 3.3V | PI11 | SPI0_CLK | UART5_RX | | EINT23 | | |
| 162 | GND | 0V | | | | ground | | | |
| 163 | SPI0-MOSI/UART6-TX | 3.3V | PI12 | SPI0_MOSI | UART6_TX | CLK_OUT_A | EINT24 | | |
| 164 | CSI1-PCLK | 3.3V | PG0 | TS1_CLK | CSI1_PCLK | SDC1_CMD | | | |
| 165 | SPI0-MISO/UART6-RX | 3.3V | PI13 | SPI0_MISO | UART6_RX | CLK_OUT_B | EINT25 | | |
| 166 | CSI1-MCLK | 3.3V | PG1 | TS1_ERR | CSI1_MLCK | SDC1_CLK | | | |
| 167 | UART7-TX | 3.3V | PI20 | PS2_SCK0 | UART7_TX | HSCL | | | |
| 168 | CSI1-HSYNC | 3.3V | PG2 | TS1_SYNC | CSI1_HSYNC | SDC1_D0 | | | |
| 169 | UART7-RX | 3.3V | PI21 | PS2_SDA0 | UART7_RX | HSDA | | | |
| 170 | CSI1-VSYNC | 3.3V | PG3 | TS1_DVLD | CSI1_VSYNC | SDC1_D1 | | | |
| 171 | ETH-PWFBOUT | 3.3V | | | | ethernet PWFBOUT | | | |
| 172 | CSI1-D0 | 3.3V | PG4 | TS1_D0 | CSI1_D0 | SDC1_D2 | CSI0_D8 | | |
| 173 | ETH-LINKLED-GR | 3.3V | | | | ethernet LED0 (link) | | | |
| 174 | CSI1-D1 | 3.3V | PG5 | TS1_D1 | CSI1_D1 | SDC1_D3 | CSI0_D9 | | |
| 175 | ETH-100LED-YE | 3.3V | | | | ethernet LED3 (speed) | | | |
| 176 | CSI1-D2 | 3.3V | PG6 | TS1_D2 | CSI1_D2 | UART3_TX | CSI0_D10 | | |
| 177 | GND | 0V | | | | ground | | | |
| 178 | CSI1-D3 | 3.3V | PG7 | TS1_D3 | CSI1_D3 | UART3_RX | CSI0_D11 | | |
| 179 | ETH-RD- | 3.3V | | | | ethernet TPRX- | | | |
| 180 | CSI1-D4 | 3.3V | PG8 | TS1_D4 | CSI1_D4 | UART3_RTS | CSI0_D12 | | |
| 181 | ETH-RD+ | 3.3V | | | | ethernet TPRX+ | | | |
| 182 | CSI1-D5 | 3.3V | PG9 | TS1_D5 | CSI1_D5 | UART3_CTS | CSI0_D13 | | |
| 183 | GND | 0V | | | | ground | | | |
| 184 | CSI1-D6 | 3.3V | PG10 | TS1_D6 | CSI1_D6 | UART4_TX | CSI0_D14 | | |
| 185 | ETH-TD- | 3.3V | | | | ethernet TPTX- | | | |
| 186 | CSI1-D7 | 3.3V | PG11 | TS1_D7 | CSI1_D7 | UART4_RX | CSI0_D15 | | |
| 187 | ETH-TD+ | 3.3V | | | | ethernet TPTX+ | | | |
| 188 | CSI1-IO-2V8 | 2.8V | | | | power output | | | |
| 189 | GND | 0V | | | | ground | | | |
| 190 | GND | 0V | | | | ground | | | |
| 191 | VCC-3V3(OUT) | 3.3V | | | | power output | | | |
| 192 | BAT | 3V | | | | backup battery* | | | |
| 193 | GND | 0V | | | | ground | | | |
| 194 | BAT | 3V | | | | backup battery* | | | |
| 195 | DC5V(IN) | 5V | | | | power supply input | | | |
| 196 | PWRON | 3.3V | | | | power on/off key input | | | |
| 197 | DC5V(IN) | 5V | | | | power supply input | | | |
| 198 | RESET-BTN | 3.3V | | | | power output on/off switch | | | |
| 199 | OTG-VBUS(IN) | 3.3V | | | | usb VBUS input | | | |
| 200 | UBOOT-SEL# | 0V | BOOTSEL | | | boot mode select | | | |

* Recommended backup battery: Rechargeable Li-Ion-Battery (nominal voltage 3.7V)
 An integrated Li-Ion-Charging-Circuitry will charge this battery from power input (Pin 195/197).
 Max. charging voltage: 4.2V

Schematic symbol for A20

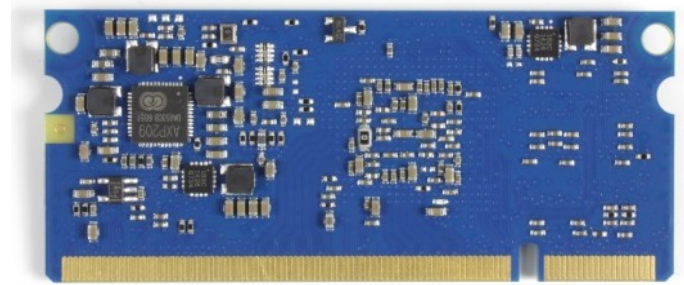
| | | | |
|---------------------------|--------------------|---------------|-----|
| 1 | PWM0 | JTAG_TDO | 2 |
| 3 | PWM1 | JTAG_TDI | 4 |
| 5 | GND | JTAG_TMS | 6 |
| 7 | PH14 | JTAG_TCK | 8 |
| 9 | PH15 | GND | 10 |
| 11 | PH16 | PH0/UART3-TX | 12 |
| 13 | PH17 | PH1/UART3-RX | 14 |
| 15 | PH18 | PH2/UART3-RTS | 16 |
| 17 | PH19 | PH3/UART3-CTS | 18 |
| 19 | PH20 | PH4/UART4-TX | 20 |
| 21 | PH21 | PH5/UART4-RX | 22 |
| 23 | GND | PH6/UART5-TX | 24 |
| 25 | PH22 | PH7/UART5-RX | 26 |
| 27 | PH23 | PH8 | 28 |
| 29 | PH24 | PH9 | 30 |
| 31 | PH25 | PH10 | 32 |
| 33 | PH26 | PH11 | 34 |
| 35 | PH27 | PH12 | 36 |
| 37 | GND | PH13 | 38 |
| 39 | VBUSEN# | GND | 40 |
| ICnova A20 SODIMM - SoMPI | | | |
| 41 | GND | GND | 42 |
| 43 | I2S-MCLK | UART0-TX-DBG | 44 |
| 45 | I2S-BCLK | UART0-RX-DBG | 46 |
| 47 | I2S-LRCK | TWI1-SCK | 48 |
| 49 | I2S-DO0 | TWI1-SDA | 50 |
| 51 | I2S-DO1 | TWI2-SCK | 52 |
| 53 | I2S-DO2 | TWI2-SDA | 54 |
| 55 | I2S-DO3 | GND | 56 |
| 57 | I2S-DI | LVDS1-VN3 | 58 |
| 59 | SPI2-CS1 | LVDS1-VP3 | 60 |
| 61 | GND | GND | 62 |
| 63 | LVDS0-VP3 | LVDS1-VNC | 64 |
| 65 | LVDS0-VN3 | LVDS1-VPC | 66 |
| 67 | GND | GND | 68 |
| 69 | LVDS0-VPC | LVDS1-VN2 | 70 |
| 71 | LVDS0-VNC | LVDS1-VP2 | 72 |
| 73 | GND | GND | 74 |
| 75 | LVDS0-VP2 | LVDS1-VN1 | 76 |
| 77 | LVDS0-VN2 | LVDS1-VP1 | 78 |
| 79 | GND | GND | 80 |
| 81 | LVDS0-VP1 | LVDS1-VN0 | 82 |
| 83 | LVDS0-VN1 | LVDS1-VP0 | 84 |
| 85 | GND | GND | 86 |
| 87 | LVDS0-VP0 | HPL | 88 |
| 89 | LVDS0-VN0 | HPR | 90 |
| 91 | GND | HPCOM | 92 |
| 93 | IR-TX | HPCOMFB | 94 |
| 95 | IR-RX | FMINL | 96 |
| 97 | LRADC1 | FMINR | 98 |
| 99 | LRADC0 | LINEINL | 100 |
| 101 | TP-X2 | LINEINR | 102 |
| 103 | TP-Y2 | GND | 104 |
| 105 | TP-X1 | SATA-RXP | 106 |
| 107 | TP-Y1 | SATA-RXN | 108 |
| 109 | GND | GND | 110 |
| 111 | HTX-CP | SATA-TXP | 112 |
| 113 | HTX-CN | SATA-TXN | 114 |
| 115 | GND | GND | 116 |
| 117 | HTX-0P | USB-DP2 | 118 |
| 119 | HTX-0N | USB-DM2 | 120 |
| 121 | GND | GND | 122 |
| 123 | HTX-1P | USB-DP1 | 124 |
| 125 | HTX-1N | USB-DM1 | 126 |
| 127 | GND | GND | 128 |
| 129 | HTX-2P | USB-DP0 | 130 |
| 131 | HTX-2N | USB-DM0 | 132 |
| 133 | GND | GND | 134 |
| 135 | HSCL | SD0-CLK | 136 |
| 137 | HSDA | SD0-CMD | 138 |
| 139 | HHPD | SD0-D0 | 140 |
| 141 | HCEC | SD0-D1 | 142 |
| 143 | GND | SD0-D3 | 144 |
| 145 | SPI0-CS1 | SD0-D2 | 146 |
| 147 | SPI1-CS1 | GND | 148 |
| 149 | SPI1-CS0/UART2-RTS | SD3-CLK | 150 |
| 151 | SPI1-CLK/UART2-CTS | SD3-CMD | 152 |
| 153 | SPI1-MOSI/UART2-TX | SD3-D0 | 154 |
| 155 | SPI1-MISO/UART2-RX | SD3-D1 | 156 |
| 157 | GND | SD3-D2 | 158 |
| 159 | SPI0-CS0/UART5-TX | SD3-D3 | 160 |
| 161 | SPI0-CLK/UART5-RX | GND | 162 |
| 163 | SPI0-MOSI/UART6-TX | CSI1-PCLK | 164 |
| 165 | SPI0-MISO/UART6-RX | CSI1-MCLK | 166 |
| 167 | UART7-TX | CSI1-HSYNC | 168 |
| 169 | UART7-RX | CSI1-VSYNC | 170 |
| 171 | ETH-PWFBOUT | CSI1-D0 | 172 |
| 173 | ETH-LINKLED-GR | CSI1-D1 | 174 |
| 175 | ETH-100LED-YE | CSI1-D2 | 176 |
| 177 | GND | CSI1-D3 | 178 |
| 179 | ETH-RD- | CSI1-D4 | 180 |
| 181 | ETH-RD+ | CSI1-D5 | 182 |
| 183 | GND | CSI1-D6 | 184 |
| 185 | ETH-TD- | CSI1-D7 | 186 |
| 187 | ETH-TD+ | CSI1-IO-2V8 | 188 |
| 189 | GND | GND | 190 |
| 191 | VCC-3V3(OUT) | BAT | 192 |
| 193 | GND | BAT | 194 |
| 195 | DC5V(IN) | PWRON | 196 |
| 197 | DC5V(IN) | RESET-BTN | 198 |
| 199 | OTG-VBUS(IN) | UBOOT-SEL# | 200 |

Mechanical dimension



Pin1

Pin199



Pin200

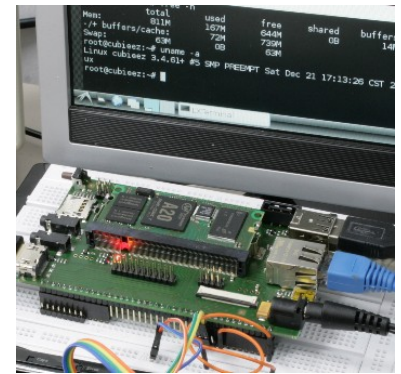
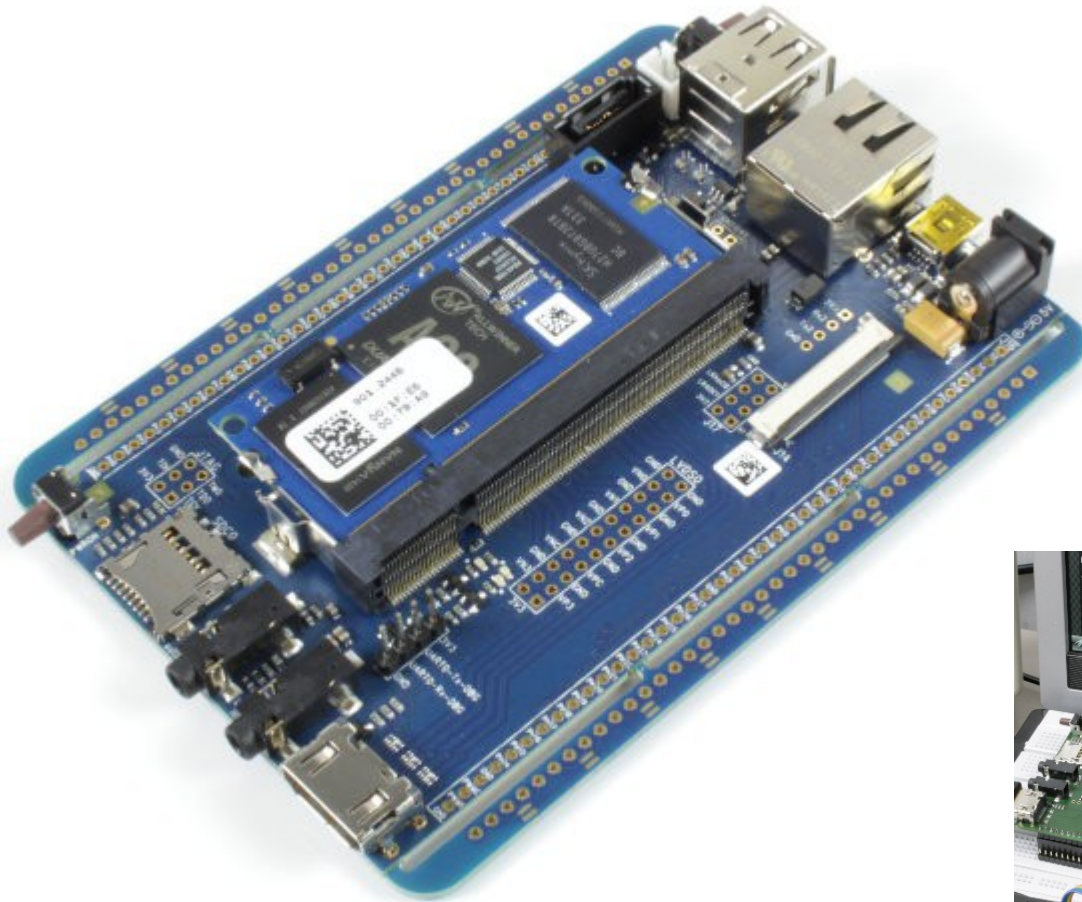
Pin2

The ICnova A20 SODIMM module fits in a regular SO-DIMM 200 2.5V socket.
We recommend the following part:

| Manufacturer | Part number | Height | Total height | Board to board space |
|-----------------|-------------|--------|--------------|----------------------|
| TE Connectivity | 1612618-1 | 9.2 mm | 10.5 mm | 7 mm |

Application

The ADB4006 is designed as evaluation board for the A20 module. Also a starter kit consisting of the ADB4006 and a A20 module with full compatibility to cubieboard OS-images is available.



We also offer:

- Hardware design of base boards optimized for your application
- Prototype and mass production using our in-house production lines
- Assembly options, adapted to your requirements, of our standard products
- Linux driver development and adaption



Contact

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Change history:

| Version | Date | Changes | Editor |
|---------|------------|-------------------------------------|-----------|
| A | 26.11.2014 | First Version | Schmidt |
| A01 | 25.02.2015 | Minor changes, pictures | J.Träger |
| A02 | 26.02.2018 | Update temperature range | L.Kormann |
| A03 | 14.03.2018 | Update SODIMM socket recommendation | L.Kormann |
| A04 | 22.03.2018 | Update backup battery information | L.Kormann |