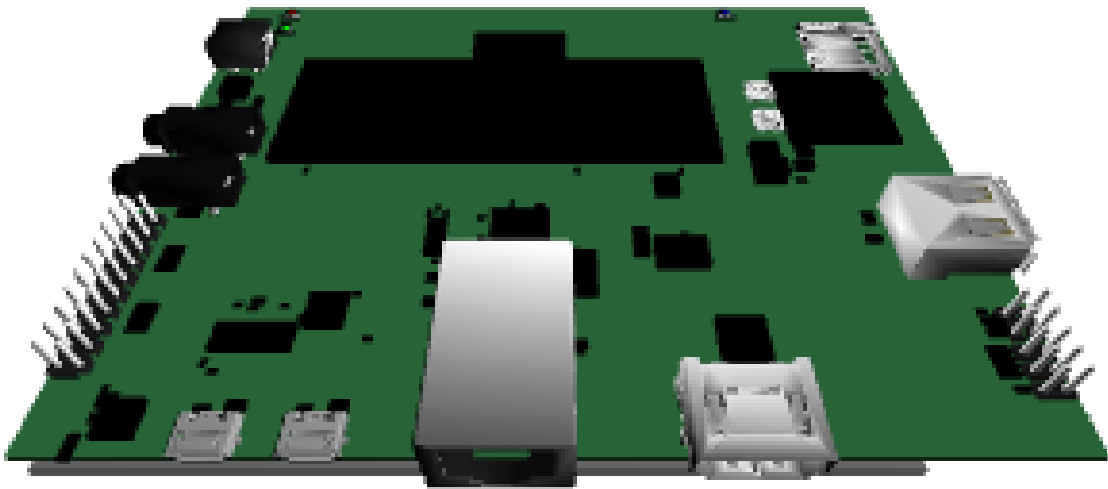


Toradex Colibri Development Board



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Board Description

Toradex Colibri (iMX6) development board which includes HDMI, 4.3" resistive touch screen, ethernet, USB Host, USB OTG, audio in/out, bootable uSD card, real-time clock and GPIO inputs and outputs.

Board Dimensions

12.35cm x 9.0cm



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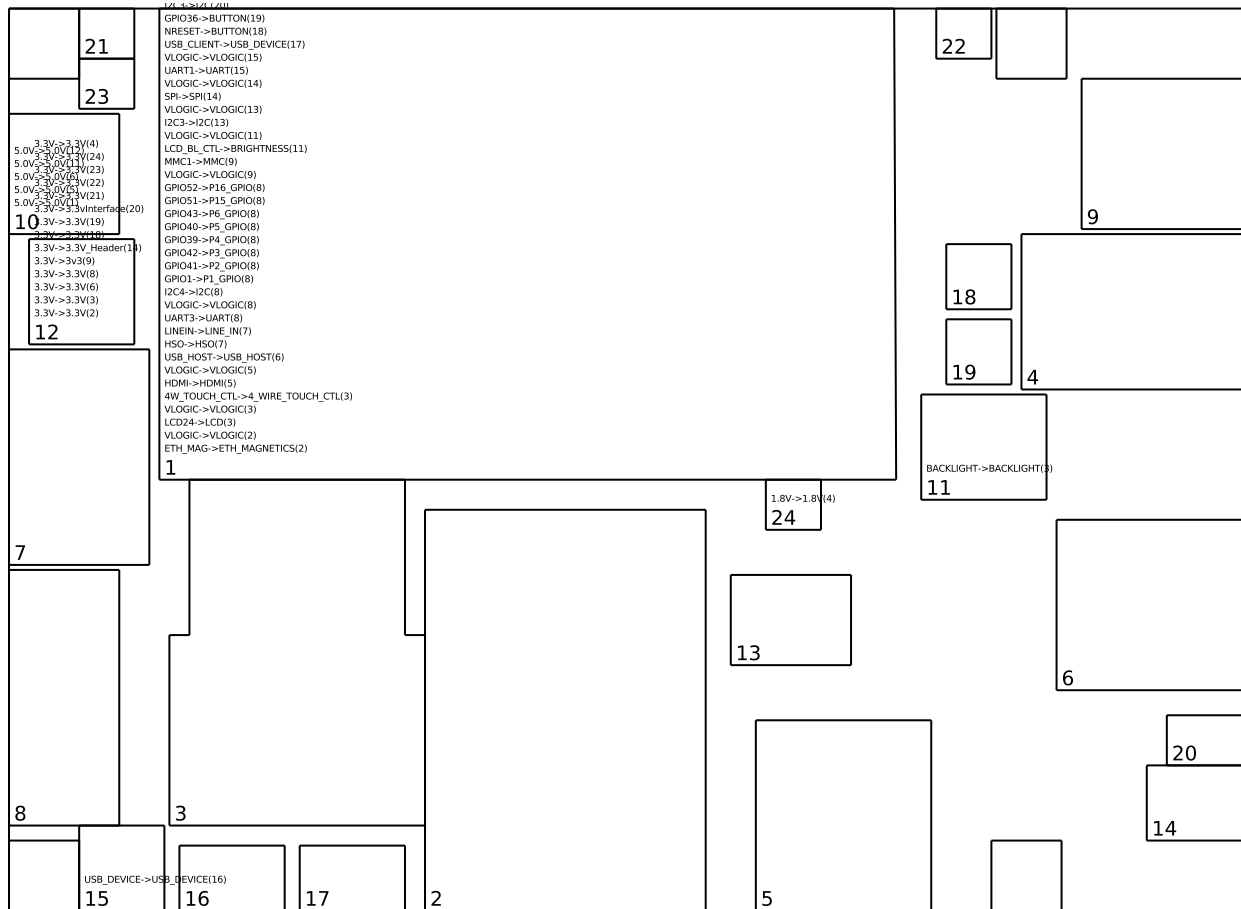
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1 Modules on Board



1.1 COM Connectors

- 5.0V from Barrel Connector (5V 3A) (10)

The Colibri connectors provide the following outputs:

- MMC2 to TI WiLink8 (4)
- MMC1 to microSD (9)
- USB_CLIENT to Micro-B Jack (17)
- LCD24 to 4.3" Flip-Side Connector For Newhaven Resistive Touchscreen (3)
- UART2_4W to TI WiLink8 (4)
- GPIO43 to 20-Pin Male Header (8)
- GPIO42 to 20-Pin Male Header (8)
- GPIO41 to 20-Pin Male Header (8)



- GPIO40 to 20-Pin Male Header (8)
- 4W_TOUCH_CTL to 4.3" Flip-Side Connector For Newhaven Resistive Touchscreen (3)
- USB_HOST to Standard-A Jack (6)
- LINEIN to Dual Audio (in / out) (7)
- HSO to Dual Audio (in / out) (7)
- UART1 to USB-UART (15)
- SPI to SPI Header (14)
- UART3 to 20-Pin Male Header (8)
- ADC2 to 20-Pin Male Header (8)
- LCD_BL_CTL to Backlight Controller (11)
- NRESET to Tactile Switch (18)
- GPIO35 to Blue LED (22)
- GPIO91 to SPI Header (14)
- GPIO93 to 4.3" Flip-Side Connector For Newhaven Resistive Touchscreen (3)
- ADC0 to 20-Pin Male Header (8)
- HDMI to Native HDMI receptacle (5)
- SYS_EN to Green LED (23), 1.8V/0.6A Regulator (24)
- GPIO51 to 20-Pin Male Header (8)
- GPIO52 to 20-Pin Male Header (8)
- GPIO39 to 20-Pin Male Header (8)
- VLOGIC to 10/100BASE-T (2), 4.3" Flip-Side Connector For Newhaven Resistive Touchscreen (3), Native HDMI receptacle (5), 20-Pin Male Header (8), microSD (9), Backlight Controller (11), Real Time Clock (13), SPI Header (14), USB-UART (15), I2C Header (20), TI WiLink8 (4)
- I2C4 to 20-Pin Male Header (8)
- GPIO36 to Tactile Switch (19)
- GPIO1 to 20-Pin Male Header (8)
- GPIO34 to Red LED (21)
- I2C3 to Real Time Clock (13), I2C Header (20)
- GPIO89 to TI WiLink8 (4)
- GPIO88 to TI WiLink8 (4)
- ETH_MAG to 10/100BASE-T (2)
- GPIO82 to 20-Pin Male Header (8)
- GPIO81 to 20-Pin Male Header (8)
- GPIO87 to TI WiLink8 (4)



1.2 Network

1.2.1 10/100BASE-T (v8) (2)

This design offers a 10/100 Base-T Ethernet connection for . can be connected to a local area network (LAN) at 10/100 Mbps using this connection.

1.2.2 TI WiLink8 (v14) (4)

The TI Wilink8 module includes BT4.1 and 802.11(a/b/g/n) signals on one antenna. 802.11 traffic passes through the SDIO port, which is connected to the the Toradex - Colibri SO-DIMM-200 (1). BT traffic passes through the 4-wire UART channel, which is connected to the the Toradex - Colibri SO-DIMM-200 (1).

The module can be powered down using . The wireless is enabled using GPIO Toradex - Colibri SO-DIMM-200 (1) with IRQ on GPIO Toradex - Colibri SO-DIMM-200 (1) and the BT is enabled using GPIO Toradex - Colibri SO-DIMM-200 (1).

To function, the clock on the Toradex - Colibri SO-DIMM-200 (1) must be run at 32.768kHz which is provided by a dedicated crystal.

1.3 LCD Display

1.3.1 4.3" Flip-Side Connector For Newhaven Resistive Touchscreen (v7) (3)

A 4.3 inch resistive LCD connector, mounted on the flipside, that connects to Toradex - Colibri SO-DIMM-200 (1)

1.4 Monitors

1.4.1 Native HDMI receptacle (v8) (5)

The HDMI connector provides HDMI video and audio signals to an external display and speakers.

This displays high definition video for HDMI on Toradex - Colibri SO-DIMM-200 (1).

1.5 USB

1.5.1 Standard-A Jack (v8) (6)

A standard A USB host port that allows you to connect USB devices to the board. This port is connected to Toradex - Colibri SO-DIMM-200 (1).

1.5.2 Micro-B Jack (v8) (16)

A USB micro-B port allows your design to connect as a USB device to a USB host.

This module is connected to USB-UART (15).



1.5.3 Micro-B Jack (v8) (17)

A USB micro-B port allows your design to connect as a USB device to a USB host.

This module is connected to Toradex - Colibri SO-DIMM-200 (1).

1.6 Audio

1.6.1 Dual Audio (in / out) (v9) (7)

These two standard 3-position 3.5mm audio jacks offer stereo line input and stereo audio output. They are connected to Toradex - Colibri SO-DIMM-200 (1).

1.7 Headers

1.7.1 20-Pin Male Header (v9) (8)

A header offering up to 20 pins for various GPIO or PWM signals of your choice.

To output signals at a custom voltage, a zero ohm resistor can be depopulated and an external reference provided.

This module has the following connections:

- ADC0 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO43 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO82 from Toradex - Colibri SO-DIMM-200 (1)
- UART3 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO40 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO39 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO81 from Toradex - Colibri SO-DIMM-200 (1)
- 3.3V from 3.3V/1.5A Regulator (12)
- GPIO42 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO52 from Toradex - Colibri SO-DIMM-200 (1)
- VLOGIC from Toradex - Colibri SO-DIMM-200 (1)
- GPIO41 from Toradex - Colibri SO-DIMM-200 (1)
- I2C4 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO51 from Toradex - Colibri SO-DIMM-200 (1)
- ADC2 from Toradex - Colibri SO-DIMM-200 (1)
- GPIO1 from Toradex - Colibri SO-DIMM-200 (1)



1.7.2 SPI Header (v11) (14)

This header breaks out the SPI SPI bus on Toradex - Colibri SO-DIMM-200 (1).

1.7.3 I2C Header (v11) (20)

This header breaks out the I2C3 I2C bus on Toradex - Colibri SO-DIMM-200 (1).

1.8 Memory

1.8.1 microSD (v5) (9)

A Micro SD card slot provides memory to no module .

1.9 Power Connectors

1.9.1 Barrel Connector (5V 3A) (v6) (10)

This power jack is compatible with Gumstix 5V/3.5A DC power adapter using a 4.0mm x 1.7mm barrel connector. It provides more current than a standard 5V DC power supply, suitable for use with multi-processor designs.

This power jack provides 5V to the following modules:

- Toradex - Colibri SO-DIMM-200 (1)
- Native HDMI receptacle (5)
- Standard-A Jack (6)
- Backlight Controller (11)
- 3.3V/1.5A Regulator (12)

1.10 Power

There is a backlight controller.

1.10.1 3.3V/1.5A Regulator (v8) (12)

This DC to DC step down regulator provides a 3.3V DC output at 1.5A needed by certain components on this board. It is capable of accepting an input voltage between 3.1 to 16V DC. Currently, its input is 5V from Barrel Connector (5V 3A) (10).

The following modules are powered by this regulator:

- 3.3V to 10/100BASE-T (2), 4.3" Flip-Side Connector For Newhaven Resistive Touchscreen (3), Standard-A Jack (6), 20-Pin Male Header (8), microSD (9), SPI Header (14), Tactile Switch (18), Tactile Switch (19), I2C Header (20), Red LED (21), Blue LED (22), Green LED (23), 1.8V/0.6A Regulator (24), TI WiLink8 (4)



1.10.2 Real Time Clock (v8) (13)

This real-time clock backup is powered by a coin cell battery.

This module is connected to I2C3 on Toradex - Colibri SO-DIMM-200 (1).

1.10.3 1.8V/0.6A Regulator (v6) (24)

This DC-DC regulator has an integrated inductor and tiny footprint. It provides power to modules that need a 1.8V input.

- 3.3V from 3.3V/1.5A Regulator (12)
- SYS_EN from Toradex - Colibri SO-DIMM-200 (1)

The following modules receive 1.8V DC from this regulator:

- TI WiLink8 (4)

1.11 Connectivity

1.11.1 USB-UART (v14) (15)

Also known as an FTDI, this USB to UART converter allows a USB connection to the board to behave as a virtual RS232 serial connection. It offers direct and complete access to the system from a development machine.

This USB to UART converter connects a host machine connected to Toradex - Colibri SO-DIMM-200 (1) on its UART bus.

1.12 Mechanical

1.12.1 Mounting Hole (3.5mm)

A #0 3.5mm mounting hole for securing the board with screws.

1.12.2 Mounting Hole (3.5mm)

A #0 3.5mm mounting hole for securing the board with screws.

1.12.3 Mounting Hole (3.5mm)

A #0 3.5mm mounting hole for securing the board with screws.

1.12.4 Mounting Hole (3.5mm)

A #0 3.5mm mounting hole for securing the board with screws.



1.13 IO

1.13.1 Tactile Switch (v8) (18)

This 4.9 sq. mm light touch switch provides a user input for the signal NRESET on Toradex - Colibri SO-DIMM-200 (1).

1.13.2 Tactile Switch (v8) (19)

This 4.9 sq. mm light touch switch provides a user input for the signal GPIO36 on Toradex - Colibri SO-DIMM-200 (1).

1.13.3 Red LED (v10) (21)

This 1608 standard size red LED provides an indicator for the signal GPIO34 on Toradex - Colibri SO-DIMM-200 (1).

1.13.4 Blue LED (v13) (22)

This 1608 standard size blue LED provides an indicator for the signal GPIO35 on Toradex - Colibri SO-DIMM-200 (1).

1.13.5 Green LED (v12) (23)

This 1608 standard size green LED provides an indicator for the signal SYS.EN on Toradex - Colibri SO-DIMM-200 (1).



2 Module Connections Graph

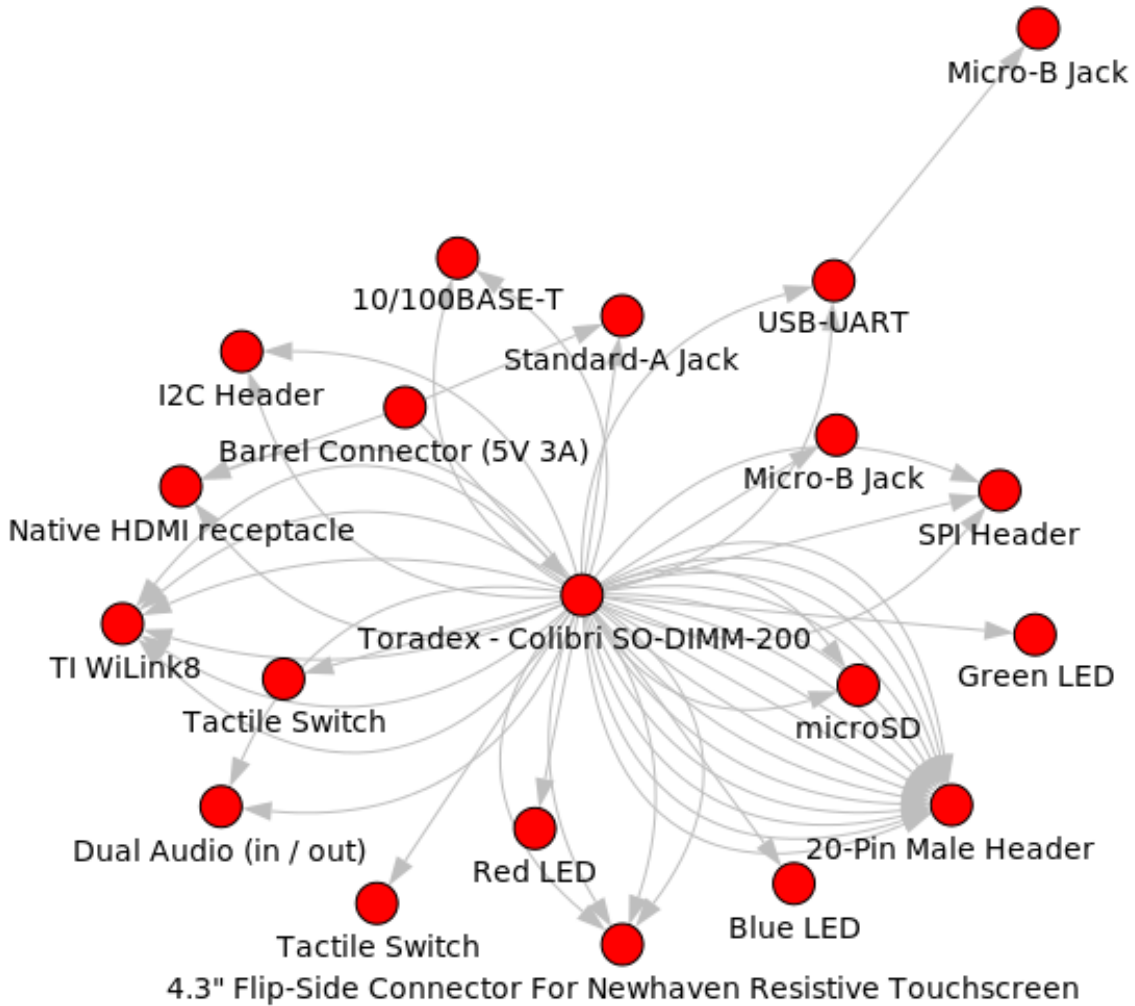


Figure 1: excludes power modules



3 Module Power Graph

