

Pepper DVI



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Board Description

A Tobi like board based on AM3354.

Board Dimensions

11.21cm x 6.0cm



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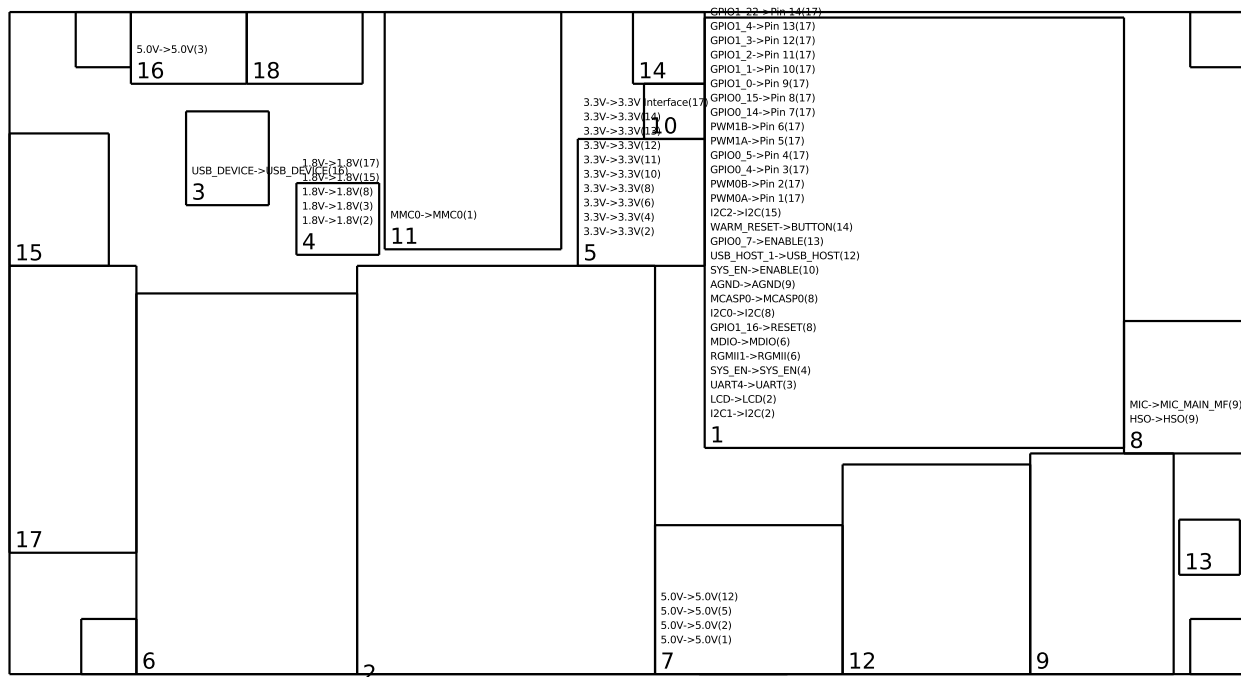
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1 Modules on Board



1.1 Processors

1.1.1 TI Sitara AM3354 (v17) (1)

TI's AM3354 microprocessors, based on the ARM Cortex-A8. Includes 512MB of DDR2 RAM and built-in power management provided by TPS65217B.

Requires:

- 5.0V from Barrel Connector (5V 3A) (7)
- MMC0 from Boot MicroSD Card Slot for AM3354 (11)

Provides:

- PWM1B to 20-Pin Male Header (17)
- GPIO0_4 to 20-Pin Male Header (17)
- GPIO0_7 to Red LED (13)
- PWM1A to 20-Pin Male Header (17)
- GPIO1_1 to 20-Pin Male Header (17)
- USB_DEVICE_0 to Micro-B Jack (18)
- GPIO1_24 to 20-Pin Male Header (17)
- GPIO1_23 to 20-Pin Male Header (17)



- GPIO1_22 to 20-Pin Male Header (17)
- RGMII1 to Gigabit Ethernet (6)
- GPIO1_16 to Audio Codec (8)
- MDIO to Gigabit Ethernet (6)
- GPIO1_2 to 20-Pin Male Header (17)
- MCASP0 to Audio Codec (8)
- UART4 to USB-UART (3)
- AGND to Stereo Headset Jack (9)
- GPIO0_5 to 20-Pin Male Header (17)
- PWM0A to 20-Pin Male Header (17)
- SYS_EN to 1.8V/0.15A LDO (4), Green LED (10)
- PWM0B to 20-Pin Male Header (17)
- GPIO0_15 to 20-Pin Male Header (17)
- GPIO0_14 to 20-Pin Male Header (17)
- I2C0 to Audio Codec (8)
- I2C1 to DVI HDMI (2)
- I2C2 to Real Time Clock (15)
- USB_HOST_1 to Standard-A Jack (12)
- GPIO1_0 to 20-Pin Male Header (17)
- WARM_RESET to Tactile Switch (14)
- LCD to DVI HDMI (2)
- GPIO1_3 to 20-Pin Male Header (17)
- GPIO1_4 to 20-Pin Male Header (17)

1.2 Monitors

1.2.1 DVI HDMI (v6) (2)

Provide HDMI high definition video connection for TI Sitara AM3354 (1)

1.3 Connectivity

1.3.1 USB-UART (v11) (3)

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 TI Sitara AM3354 (1) on its UART bus.



1.4 Power

1.4.1 1.8V/0.15A LDO (v3) (4)

This efficient and precise low-voltage CMOS regulator is optimized for ultra-low noise applications, with an initial accuracy better than 1

- 3.3V from 3.3V/1.5A Regulator (5)
- SYS_EN from TI Sitara AM3354 (1)

The following modules receive 1.8V DC from this regulator:

- DVI HDMI (2), USB-UART (3), Audio Codec (8), Real Time Clock (15), 20-Pin Male Header (17)

1.4.2 3.3V/1.5A Regulator (v5) (5)

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 17V DC. Currently, its input is 5V from Barrel Connector (5V 3A) (7).

The following modules are powered by this regulator:

- 3.3V to DVI HDMI (2), 1.8V/0.15A LDO (4), Gigabit Ethernet (6), Audio Codec (8), Green LED (10), Boot MicroSD Card Slot for AM3354 (11), Standard-A Jack (12), Red LED (13), Tactile Switch (14), 20-Pin Male Header (17)

1.4.3 Real Time Clock (v4) (15)

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

This module is connected to I2C2 on TI Sitara AM3354 (1).

1.5 Network

1.5.1 Gigabit Ethernet (v5) (6)

This 10/100/1000 Base-T connector offers gigabit Ethernet over twisted pair for networking functionality.

This networking interface is connected to TI Sitara AM3354 (1).

1.6 Power Connectors

1.6.1 Barrel Connector (5V 3A) (v4) (7)

This power jack is compatible with Gumstix 5V/3.5A DC power adapter for RoboVero-like or Stagecoach-like systems. 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:



- TI Sitara AM3354 (1)
- DVI HDMI (2)
- 3.3V/1.5A Regulator (5)
- Standard-A Jack (12)

1.7 Audio

1.7.1 Audio Codec (v5) (8)

A low-power stereo audio codec with stereo headphone amplifier, as well as multiple inputs and outputs programmable in single-ended or fully differential configurations.

For more information, visit <http://www.ti.com/product/tlv320aic3106>.

This module provides the following output buses:

- MIC to Stereo Headset Jack (9)
- HSO to Stereo Headset Jack (9)

1.7.2 Stereo Headset Jack (v4) (9)

This compact four-position 3.5 mm jack offers a headset connection for mono microphone in and stereo output. It is connected to the audio signals on Audio Codec (8).

1.8 Mechanical

1.8.1 Mounting Hole (2.2mm)

A #0 mounting hole for securing the board with mounting pins.

1.8.2 Mounting Hole (2.2mm)

A #0 mounting hole for securing the board with mounting pins.

1.8.3 Mounting Hole (2.2mm)

A #0 mounting hole for securing the board with mounting pins.

1.8.4 Mounting Hole (2.2mm)

A #0 mounting hole for securing the board with mounting pins.



1.9 IO

1.9.1 Green LED (v6) (10)

This 1608 standard size green LED provides an indicator for the signal SYS_EN on TI Sitara AM3354 (1).

1.9.2 Red LED (v5) (13)

This 1608 standard size red LED provides an indicator for the signal GPIO0_7 on TI Sitara AM3354 (1).

1.9.3 Tactile Switch (v7) (14)

This 4.9 sq. mm light touch switch provides a user input for the signal WARM_RESET on TI Sitara AM3354 (1).

1.10 Memory

1.10.1 Boot MicroSD Card Slot for AM3354 (v4) (11)

A Micro SD card slot provides boot memory to .

1.11 USB

1.11.1 Standard-A Jack (v5) (12)

A standard A USB host port that allows you to connect USB devices to the board. This port is connected to TI Sitara AM3354 (1).

1.11.2 Micro-B Jack (v5) (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 (3).

1.11.3 Micro-B Jack (v5) (18)

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

This module is connected to TI Sitara AM3354 (1).



1.12 Headers

1.12.1 20-Pin Male Header (v2) (17)

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:

- GPIO1_3 from TI Sitara AM3354 (1)
- GPIO1_4 from TI Sitara AM3354 (1)
- GPIO1_1 from TI Sitara AM3354 (1)
- GPIO1_2 from TI Sitara AM3354 (1)
- GPIO1_24 from TI Sitara AM3354 (1)
- GPIO1_22 from TI Sitara AM3354 (1)
- 3.3V from 3.3V/1.5A Regulator (5)
- GPIO1_23 from TI Sitara AM3354 (1)
- GPIO0_15 from TI Sitara AM3354 (1)
- GPIO1_0 from TI Sitara AM3354 (1)
- 1.8V from 1.8V/0.15A LDO (4)
- PWM0A from TI Sitara AM3354 (1)
- PWM0B from TI Sitara AM3354 (1)
- GPIO0_4 from TI Sitara AM3354 (1)
- GPIO0_5 from TI Sitara AM3354 (1)
- PWM1A from TI Sitara AM3354 (1)
- PWM1B from TI Sitara AM3354 (1)
- GPIO0_14 from TI Sitara AM3354 (1)



2 Module Connections Graph

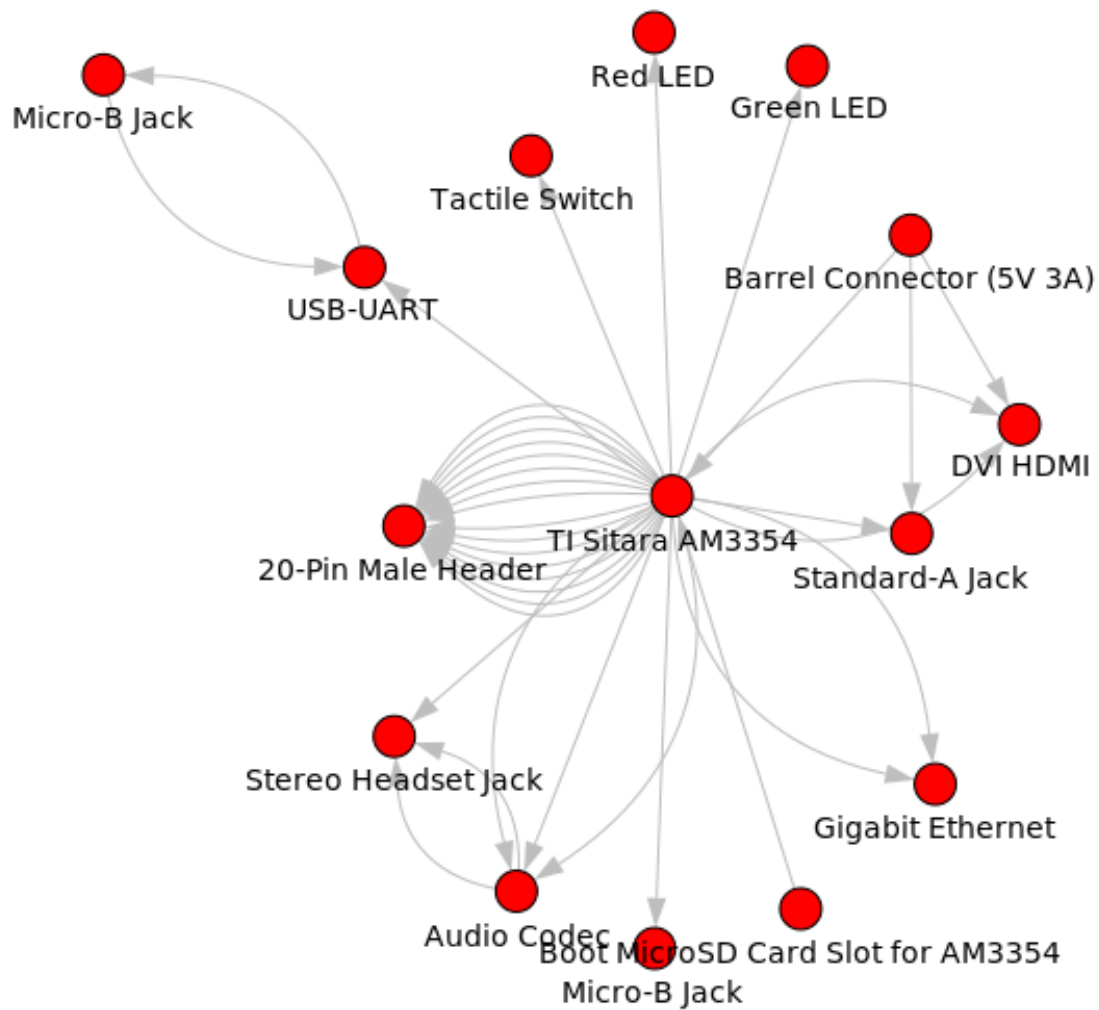
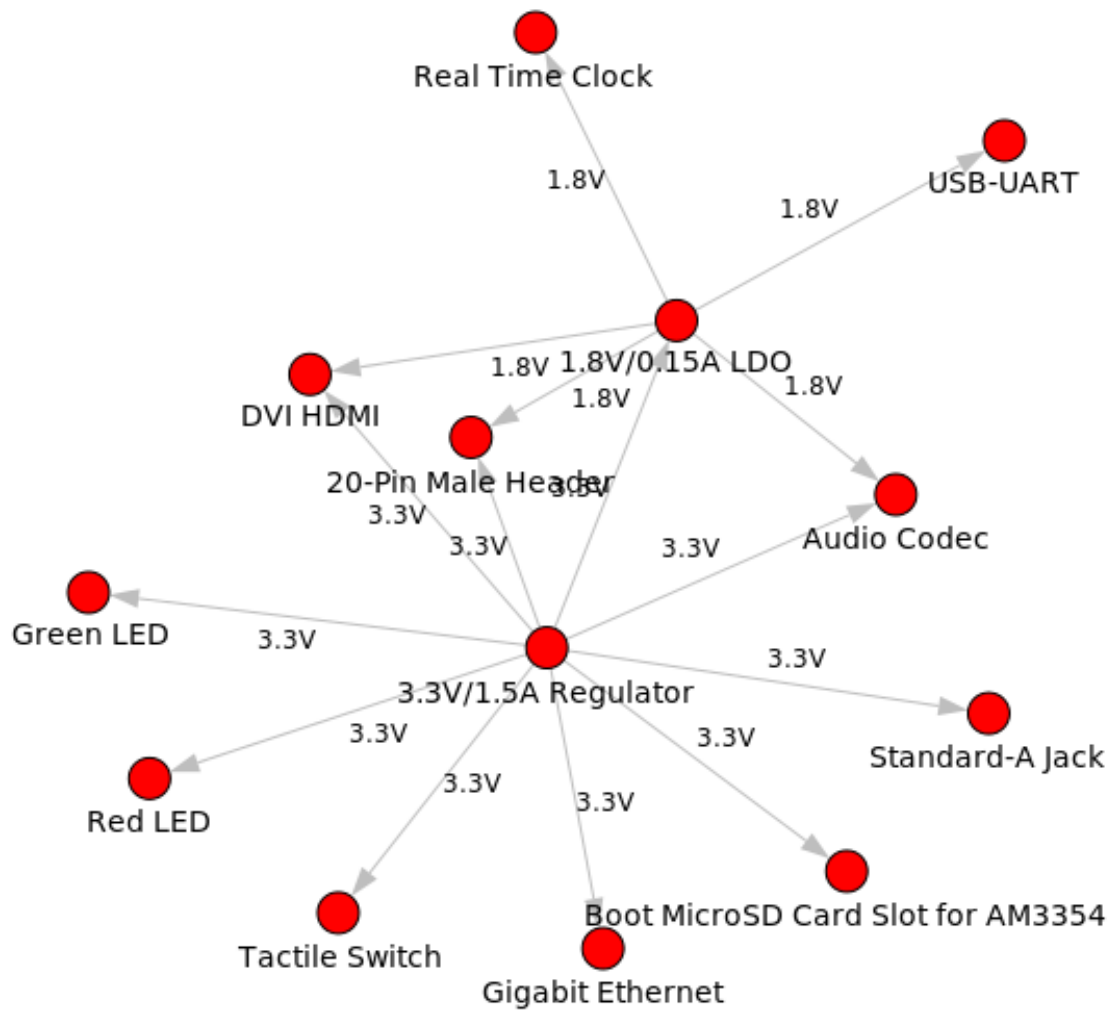


Figure 1: excludes power modules



3 Module Power Graph



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