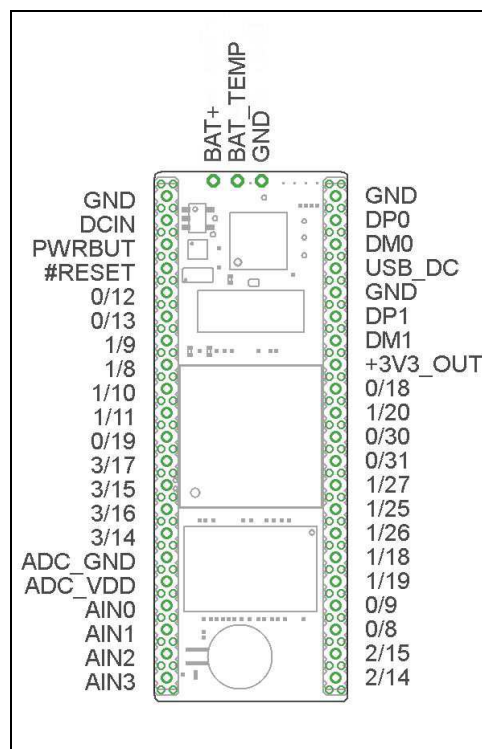


## CAK 2.01

- AM3358, RISC, ARM 32-bit, 1 GHz
- Fast RAM memory 512 MB DDR
- microSD slot for SDHC upto 64 GByte
- On board RTC with battery backup
- Low Power, only USB power for 1 GHz run
- Small dimensions 56 x 20 mm
- Expand connector for external modules
- Single cell Li+ battery connector with charging support
- Basic 2.54 mm pins for direct breadboard insertion
- Expand connector with rest CPU i/o
- On-board indicator LEDs for status check
- Wide OS support such as Linux, Windows, etc.



## 1.0 CAK Specification

This part provide basic features and description of module. Some specific informations about electrical characteristics/power consumptions of peripherals such as I/O, Analog, CPU HW modules, etc.. can be found in manufacturer data sheets.

### 1.1 Processor

Module uses AM3358 processor in the 15x15 package running on 1Ghz.

### 1.2 Memory

Current used is single x16 bit DDR2 memory 512MB running at 400MHz. Second is 32KB EEPROM connected on I2C0 it holds the board information and user data. This information includes device specific information. Memory can be used by SW applications if desired.

### 1.3 Power Management

For powering module there is used manufacturer recommended TPS65127C power management device that offer separate LDO for system powerings. Single cell 3.7V Li-Ion battery with temperature input

### 1.4 RTC Module with Battery Backup

Board is equipped with M41T62 single chip RTC with battery backup. Device is connected on system I2C1. Device bus address is 0x68. Small coin cell is designed for shorter backup of time.

### 1.5 MicroSD Connector

The board is equipped with a single microSD connector to act as the primary boot source for the board. A 4GB pre loaded micro SD can be supplied with board. The connector supports micro SDHC cards upto 64 GByte.

### 1.6 Power Sources

Module can be powered from host USB port on a PC or from 5VDC power input. 5VDC power supply pins are located on 2.54 connector. In case of powering from USB host (500mA) there is fully covered 1Ghz CPU run with all features enabled.

### 1.7 Reset Input

When #RESET pin is tied to GND and released, it causes a reset of the board including all peripherals and add-on boards.

## 1.8 JTAG Port

For direct debug and program load there are pins for connection JTAG programmers.

## 1.9 Indicators

There are four user controllable LEDs on the board and one power LED directly tied to LDO 3.3V output.

## 2.0 Operating Systems

Module has been tested with few operating systems running on AM335x devices. There are some pre-build OS images for SD cards provided for testing module.

## 3.0 Module testing

This part provide basic informations for first time usage and external devices connection.

### 3.1 Preparing SD CARD image

You can simply download any img file that supports AM335x and make bootable SD CARD using any raw image writer. Incase of using Linux OS there is possibility to create customized features by compiling kernel. For more informations about how to create SD card image follow OS maintenance guidances.

### 3.2 BOOT Order setup

Primary set is boot from SDCARD (MMC0) interface. In Fig. 1 is shown boot preset rezistors population on bottom side of the board. Boot order can be set by configuration described in AM335x manual.

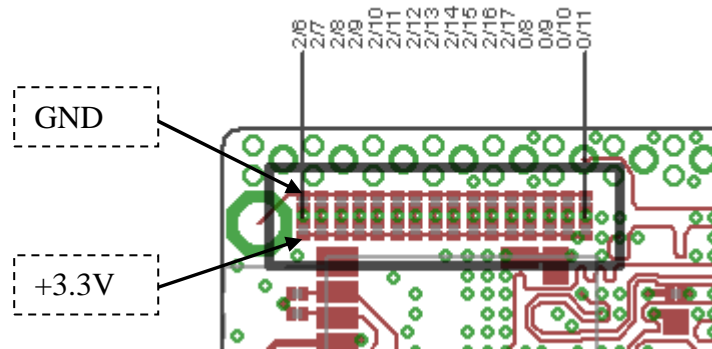


Fig. 1

### 3.3 USB0 Debug Connection

There are several options for module connection with PC for debug. In case of using most OS basic debug is done via UART0 (RX, TX), Ethernet, Wifi or USB. Most simple is using USB this allows module to be connected either on Windows or Linux OS. For proper function there must be OS support and RNDIS driver available on host computer. Picture below show simplest connection for module testing. In this case there is applied power to board, established TCP connection for SSH, internet, folders sharing, etc..

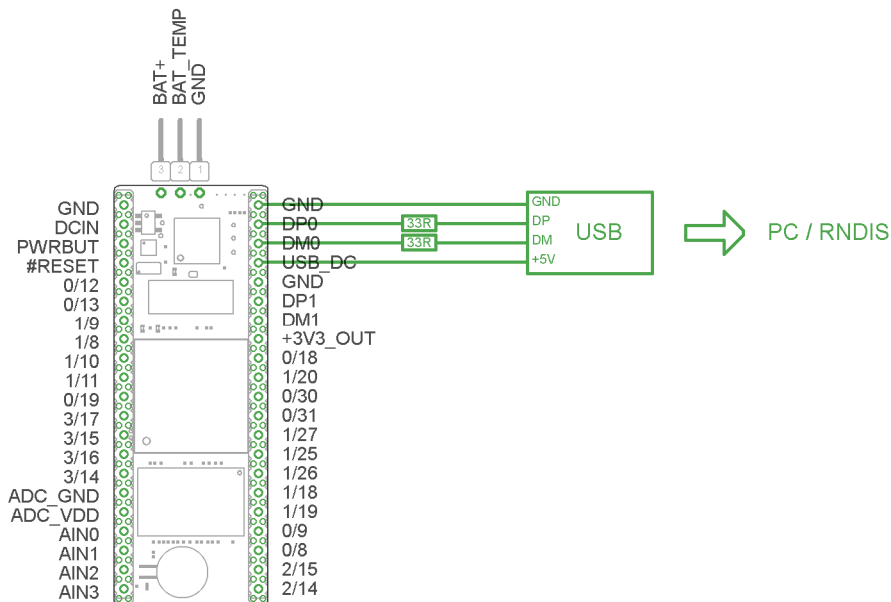


Fig. 2

### **3.4 USB1 Port**

On the board there are DM and DP pins for full LS/FS/HS Host support that connects to USB1 on the processor incase of running OS supports this. It is possible to connect variety of USB devices such as Wifi modules, Bluetooth dongles, memory disks, cameras, etc.. Some devices require USB specific +5V which must be externally provided.

## 6.0 Pinouts

Module has three accessible I/O ports. Pins labels in Fig. 3 match AM3358 port and pin numbering. For example 0/0 represents port 0 and its pin number 0. Every operating system makes its own pinout configurations.

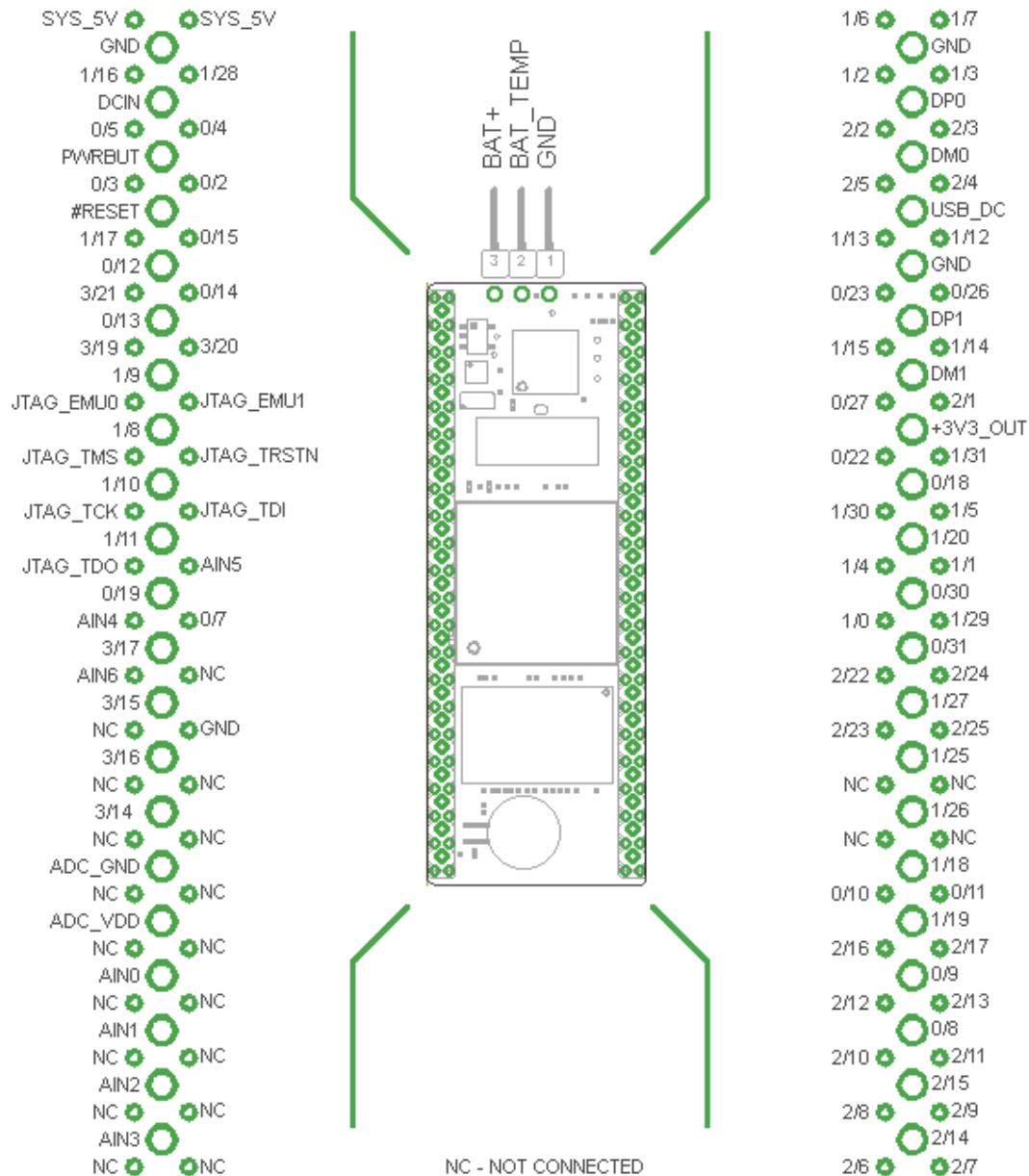


Fig. 3



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