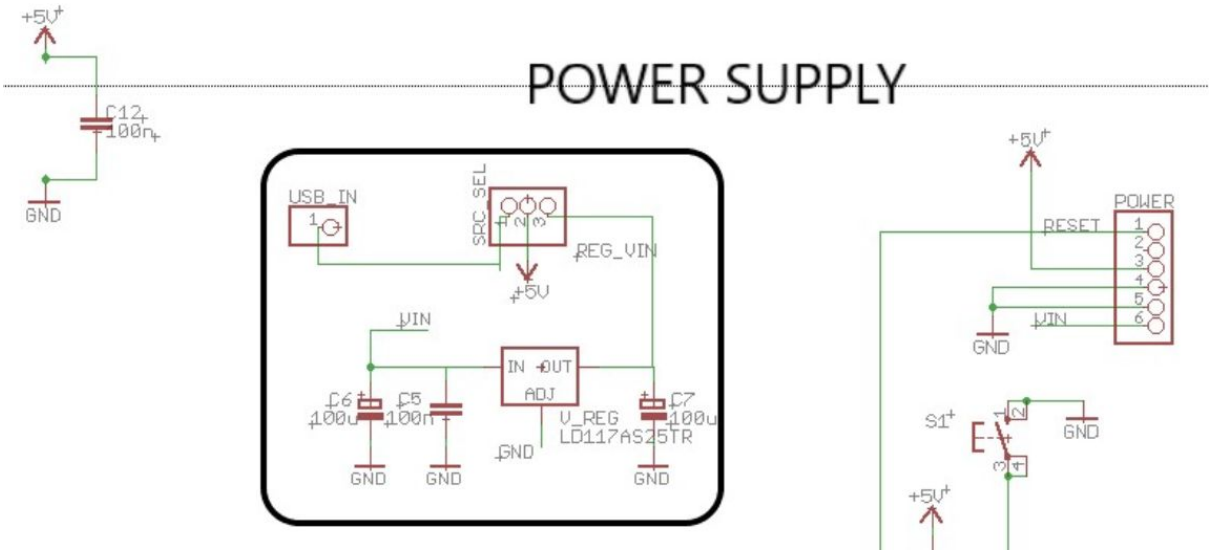
P_P- Peripheral & P_P - Central

1. **Powering Up**



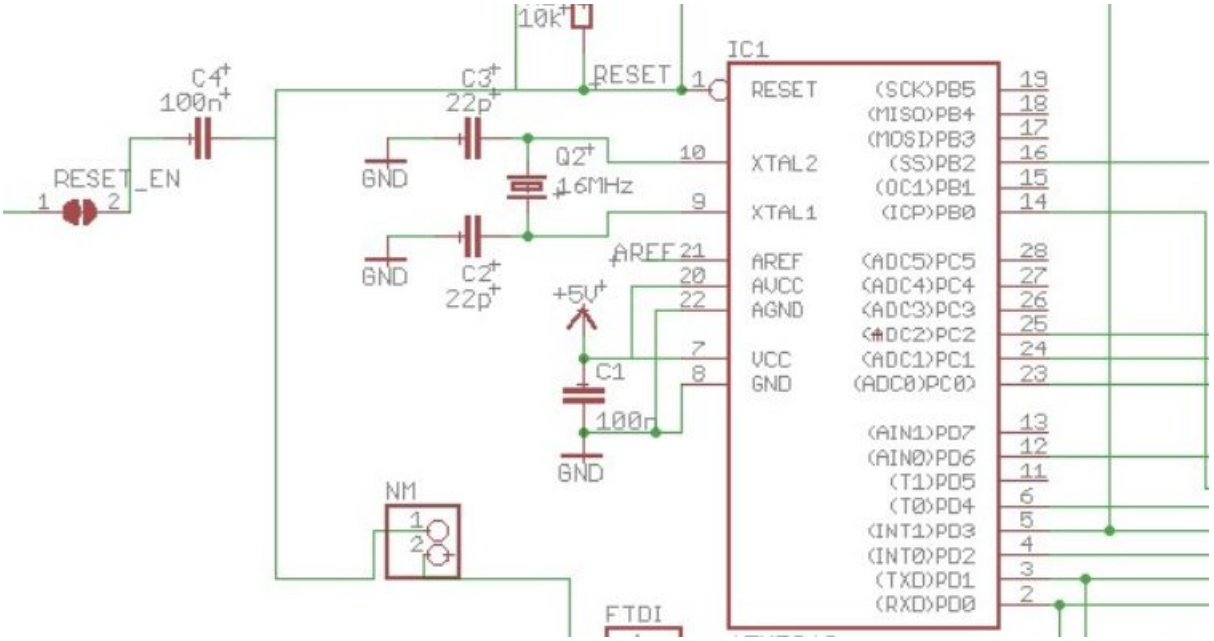
In the Figure above, the 6X1 pin-head on the right corner is the Power Section of the board. V-In and +5V pins can be found here.

The Board has a dual channel powering mechanism.

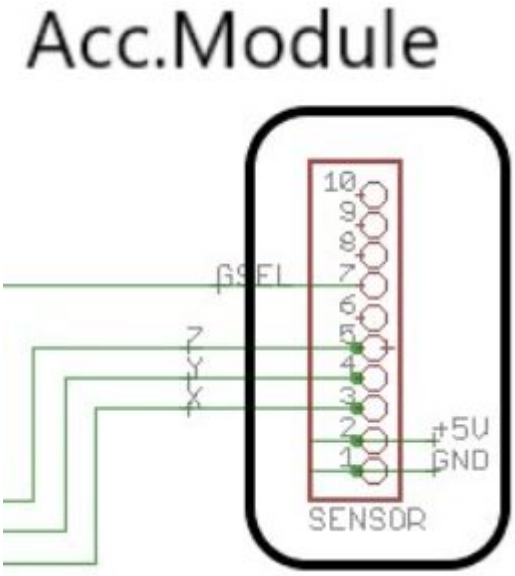
- Using the *USB_VCC :* If you plan to use your peripheral attached with a FTDI module which is capable of harnessing the USB_VCC then all you need to do is plug in the USB_VCC directly into any of the +5V pins on the board to power it up.
- Using *External Power Supply* : The board can also be powered externally by a **10V DC** supply. The Input can be given to the **V-IN** pin in power section of the board and the Regulated 5V output **(REG_VIN) has to be connected to +5V pin manually with a jumper.**
  For regulating the voltage, the board houses a LD1117 LDO voltage regulator at its heart.

Checking the power supply:
Power up the board using any one of the two sources as described above. If everything is correct, A RED LED will start glowing. This indicates that the Power unit of the Board is working fine.

2. Atmega 328P Pins at your Disposal



The Board houses a **16MHz** crystal oscillator. With an appropriate prescaling factor(We have used a factor of 4). At this prescaling factor, *a max sampling frequency of around 320 KHz can be attained using the board.*

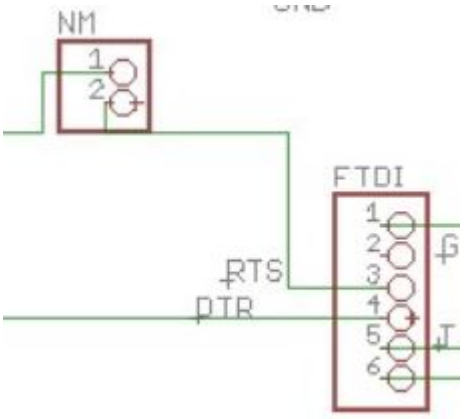


The figure shows the Accelerometer of the board. This can be used to interface the board with a MMA7361 Triple - Axis accelerometer. **(Its a P_P-Peripheral ONLY feature)**

For detailed pin layout please refer to the Peripheral2.sch file.

CAUTION: It hasn't been shown in the figure or the Schematic but the updated version of the board also comprises pins for ***Self-test, sleep and Sensitivity select****. It should be clear from the labelling of the pins on the board.*

FTDI Interfacing:

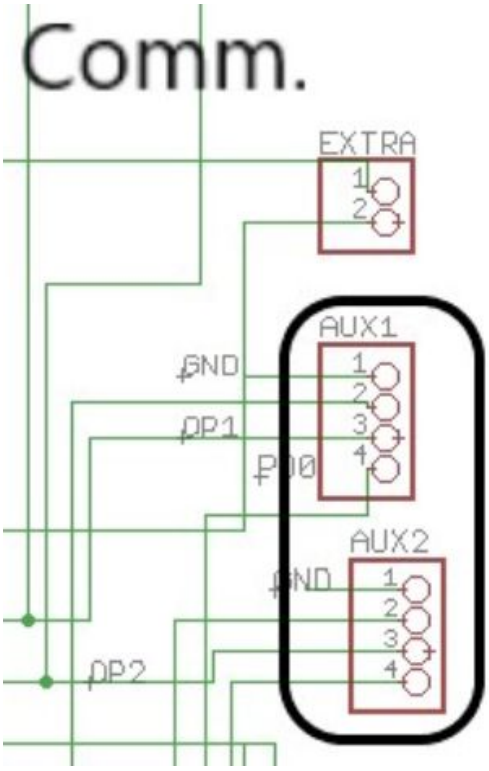


The figure shows the Pin head which can be used for interfacing the FTDI module.

ATTENTION: The NM pinhead has to be left unconnected!

Communication Pins:

- **P_P-Central**

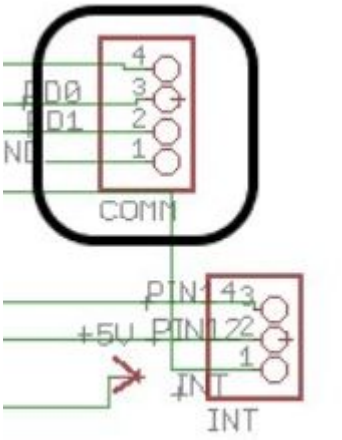


The figure shows the Communication front of the central microprocessor.
The EXTRA titled pinhead lets the user the freedom to use 1 analog and 1 digital pin by his own will(Unassigned pins)

AUX1 and AUX2 respectively is used for communicating with the auxiliary microprocessors. Each comprises of a GND pin, RX-TX pins and one digital pin.

OP1 - Atmega PIN 12 (dig.)
OP2 - Atmega PIN 6 (dig.)

- **P_P- Peripheral:**



The figure shows the pinhead for communication with the central microprocessor.
The COMM. pinhead is used for communication. The INT. pinhead houses 3 extra digital pins if required. (atmega pin 4,12,14).

The COMM. Pinhead comprises of RX,TX pins, 1 Dig. Pin (Pin 5 of ATMEGA), and GND. pin

Switches:

Both the boards have two switches each. One of them is used for resetting the microcontroller and the other is used for giving a high pulse at one of the digital pins of the atmega.