



# Guide to Use GST PCB

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# What makes the GST PCB?

Solar Input  
Voltage  
- **Up to 18V**

Solar input

100mm

SMA connector

SMA connector

Battery Holder

BCR

3.3V DC/DC

Battery size to be used:  
18650 Lithium Ion  
**Nominal Voltage = 3.7V**

RTC

LoRa module

MCU

Flash memory

Analog Ports

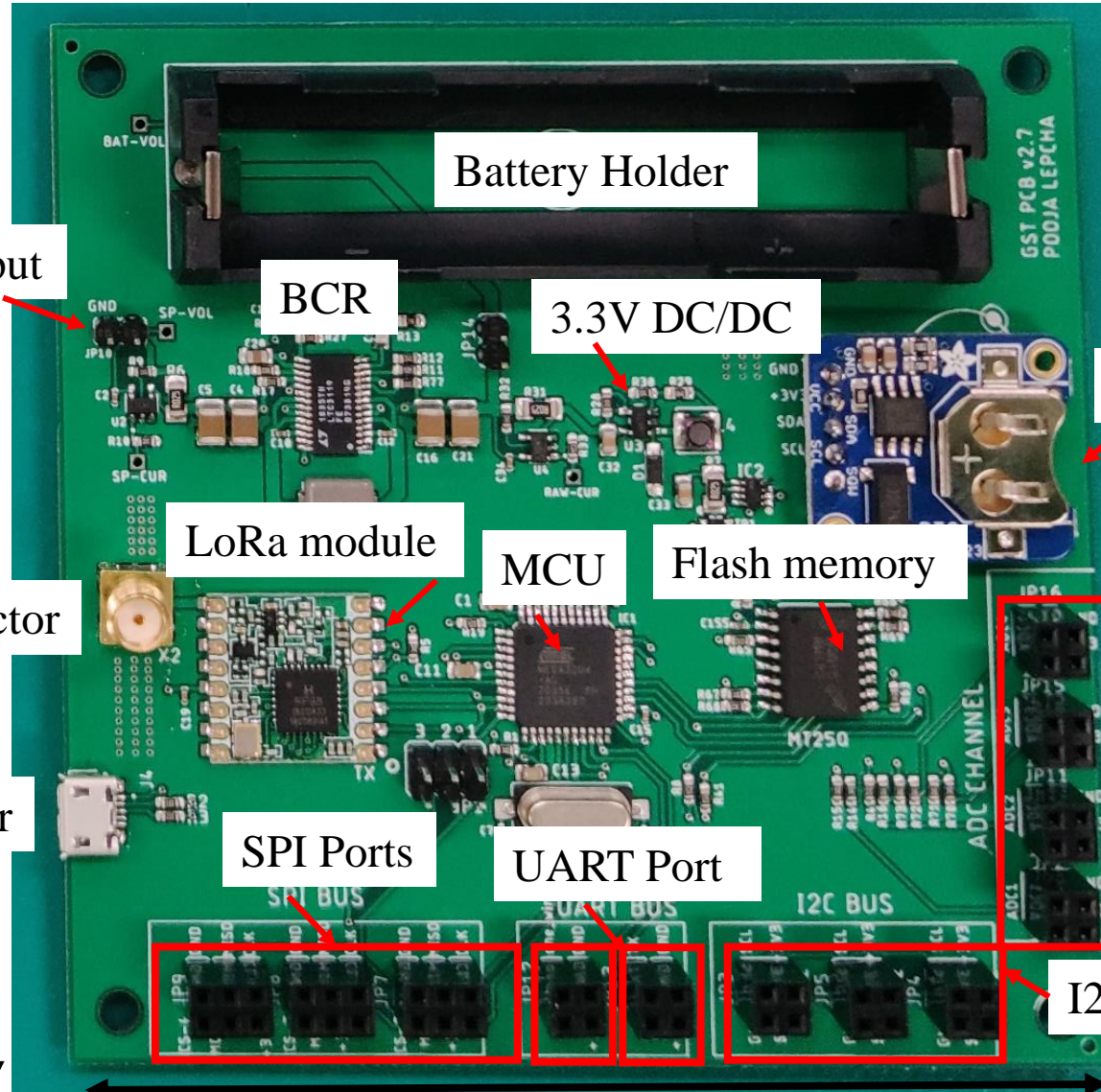
SPI Ports

UART Port

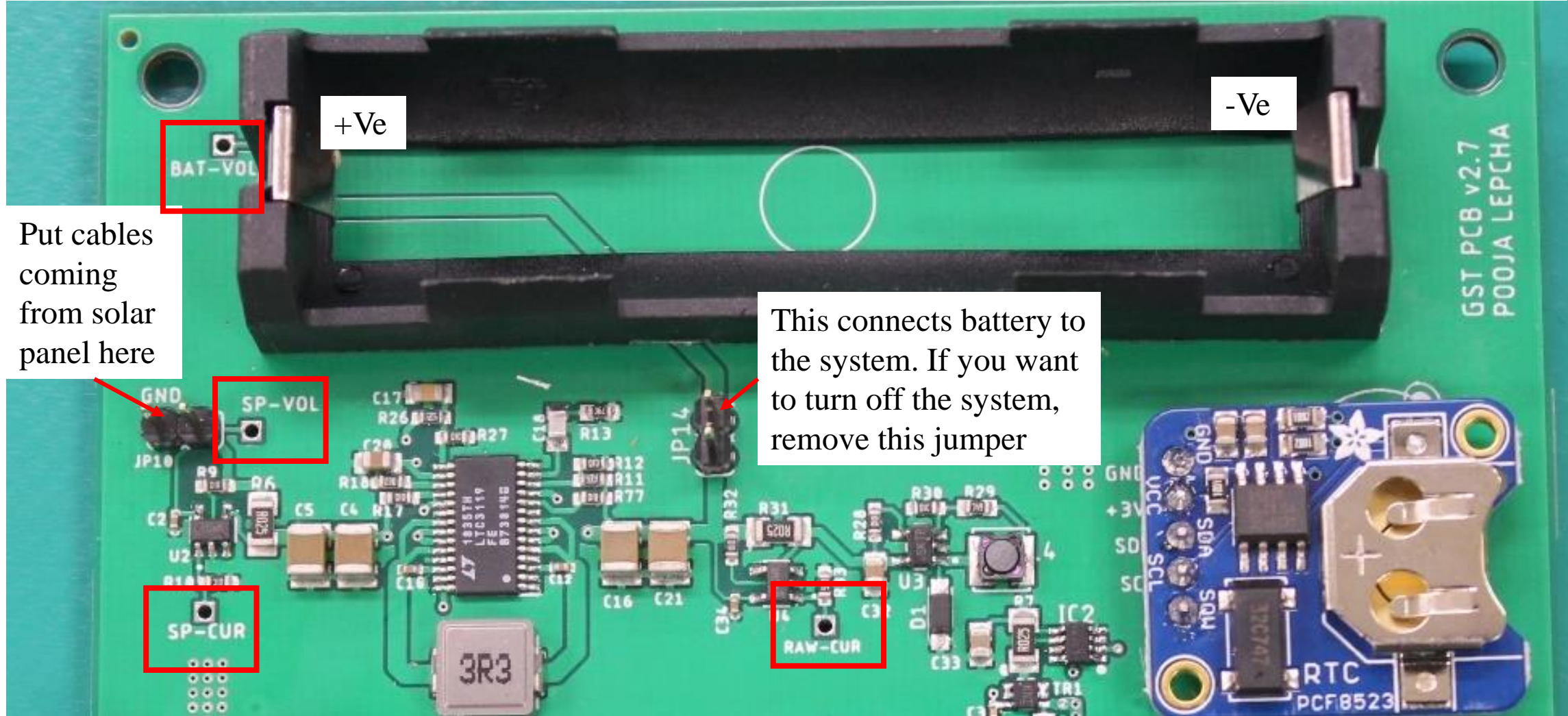
Nominal power  
consumption ~  
**35mA**

I2C Ports

100mm



# Lets look deeper...



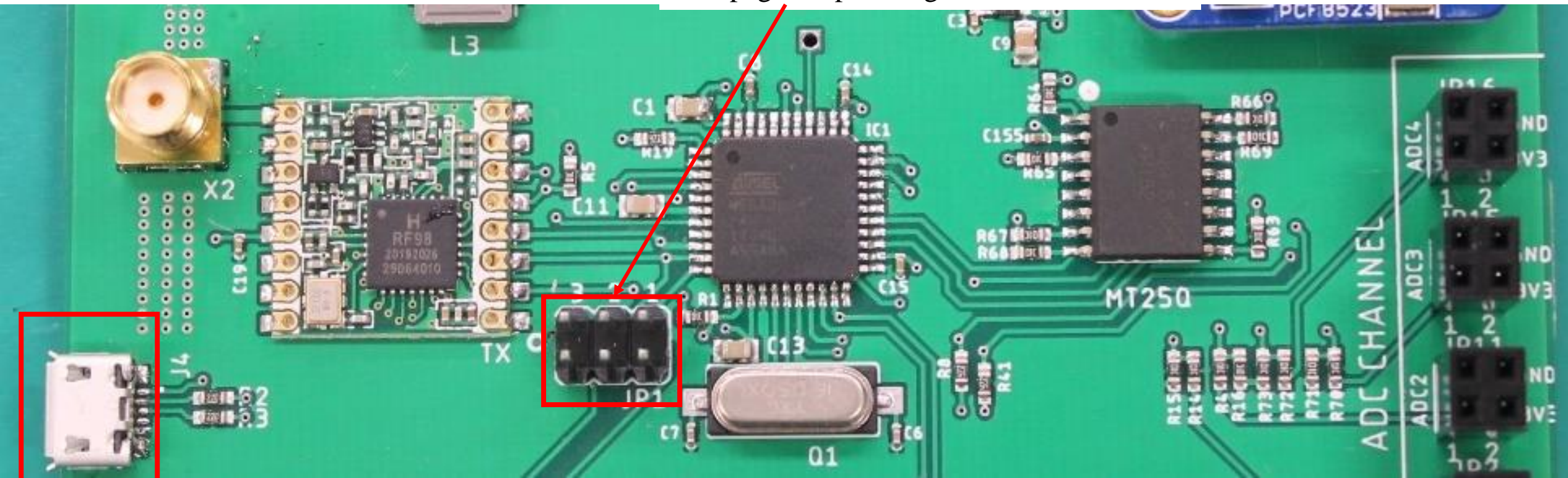
The red marked points are places you can measure the analog voltage



# Lets look deeper...



These are boot loading pins for Atmega, the bootloader is already uploaded. Check next page for pin assignment



You can program the atmega directly from here.

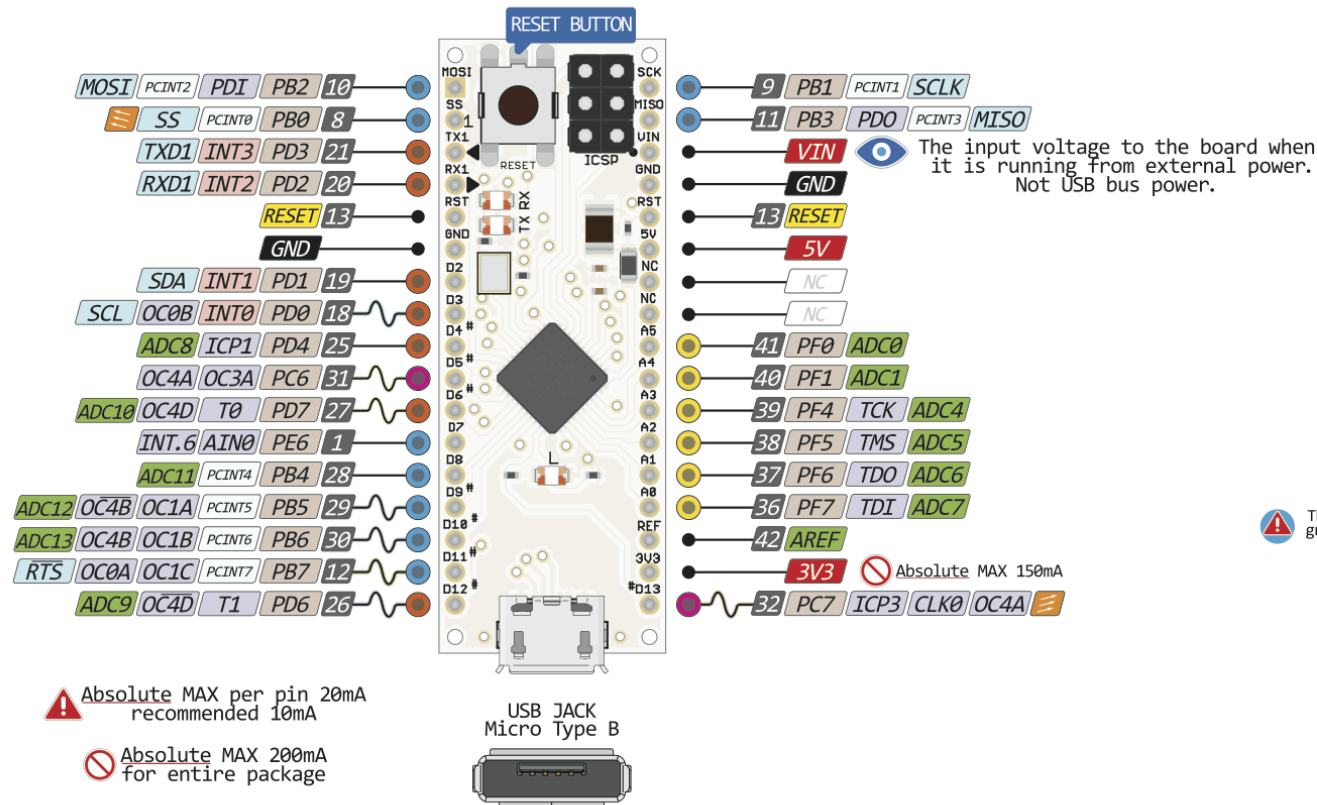
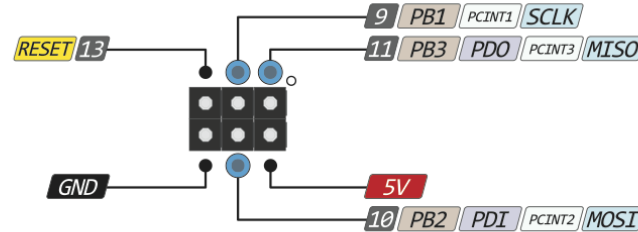
# Boot loaded Pin Assignment



## MICRO PINOUT

### PWM TYPE

- 10bit
- 8/16bit
- HS
- 16bit
- 8bit

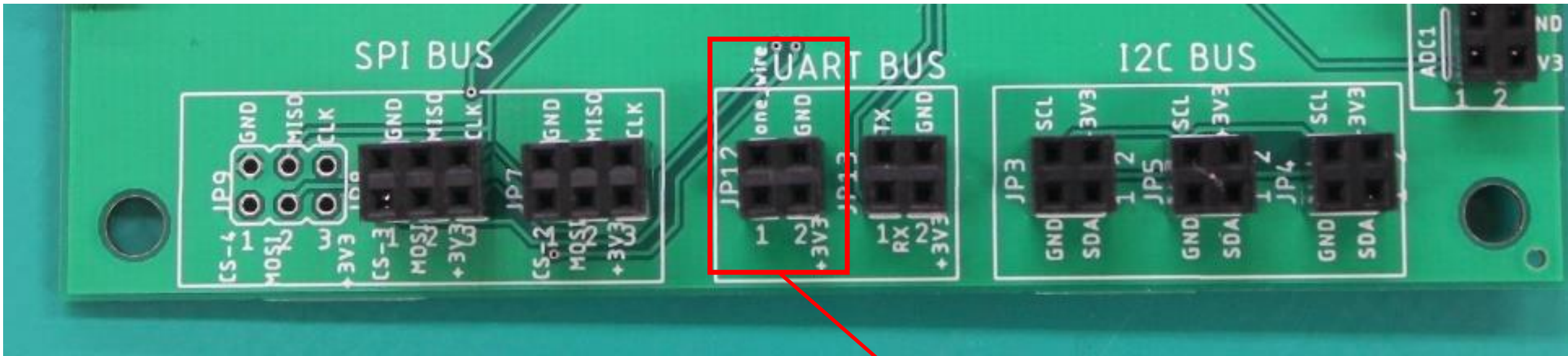


- Power
- GND
- Serial Pin
- Analog Pin
- Control
- INT
- Physical Pin
- Port Pin
- Pin function
- Interrupt Pin
- PWM Pin
- Port Power

The power sum for each pin's group should not exceed 100mA

Please use this pin assignment for the Atmega. It follows the Arduino Micro Pin assignment

# Lets look deeper...



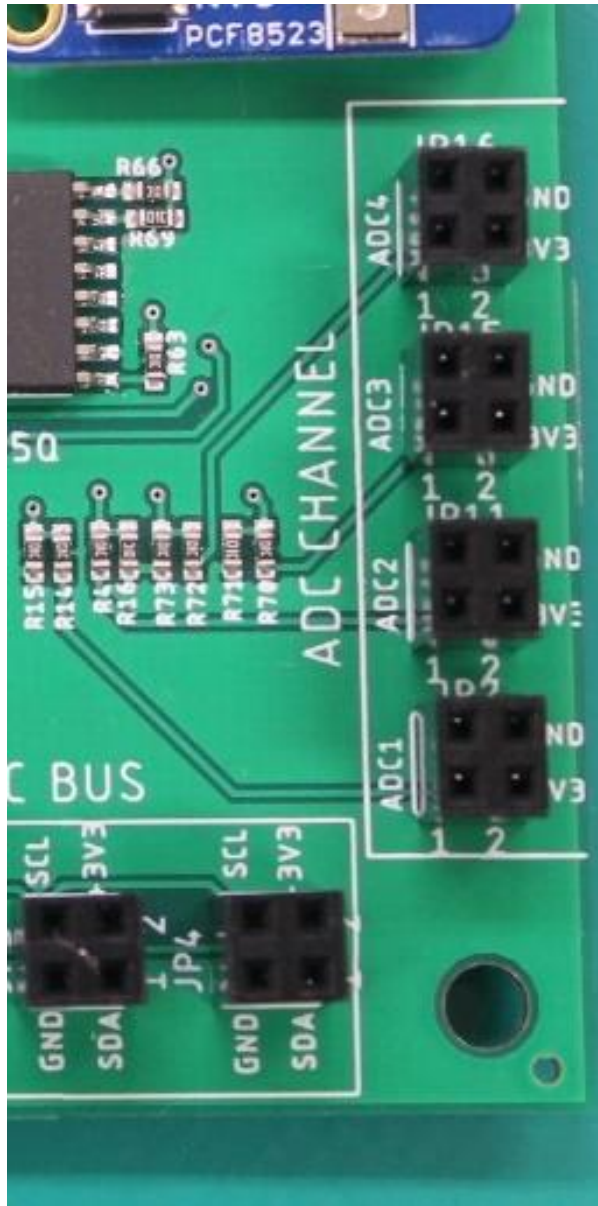
Please check the silk print for the pin assignment.

This one is not UART pin. It is for connecting one wire temperature sensor (DS18B20). The circuit for getting the data has already been implemented.

<https://create.arduino.cc/projecthub/TheGadgetBoy/ds18b20-digital-temperature-sensor-and-arduino-9cc806>



# Lets look deeper...



Pin 1 of every ADC port is fed to the atmega for taking analog measurements. There is a voltage divider for every ADC channel. Make sure to multiply the voltage by 2

You can even connect using jumpers the analog readings from current and voltage measurements from the third page to these ports to measure solar panel voltage, battery voltage, solar panel current and raw current