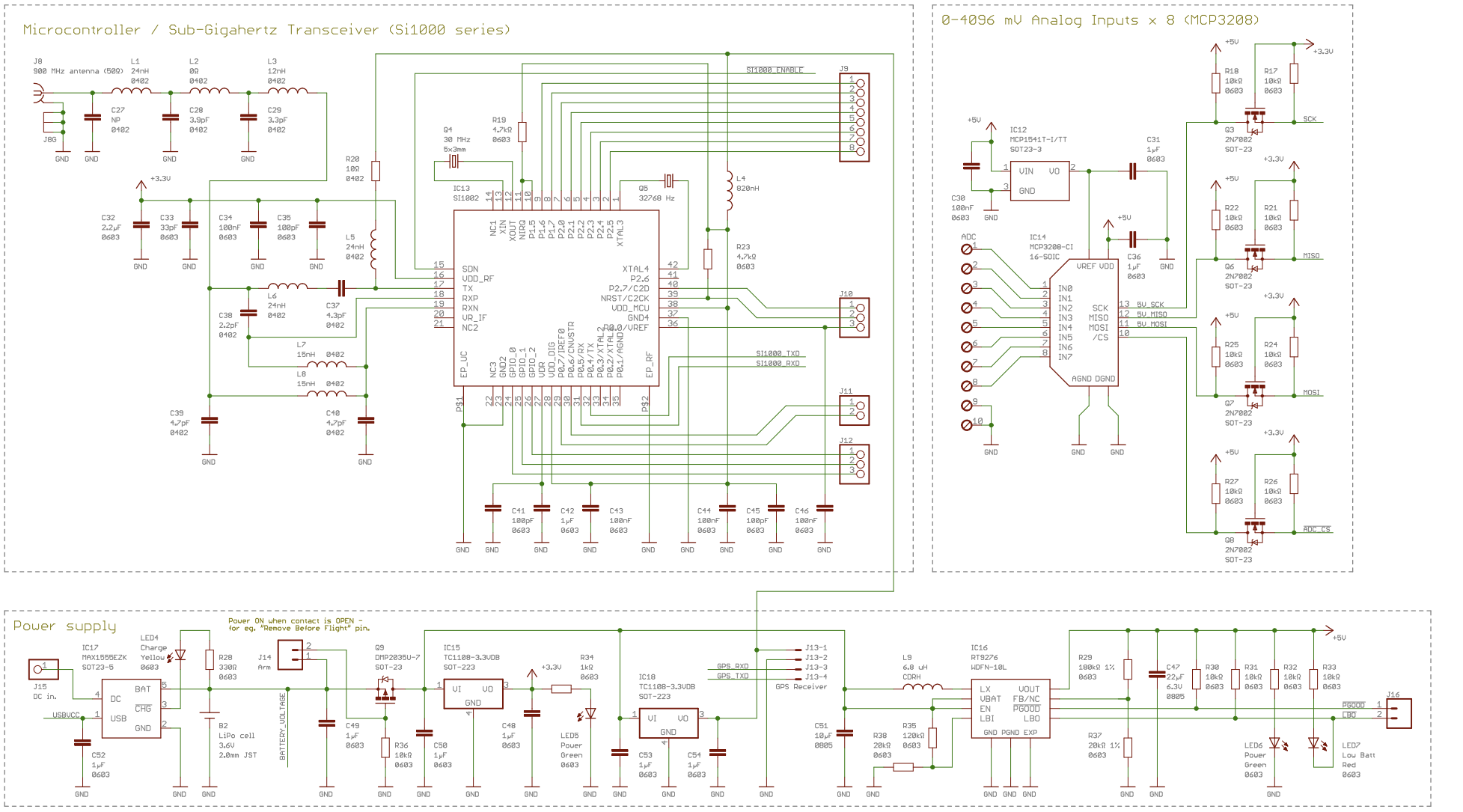
Microcontroller / Sub-Gigahertz Transceiver (Si1000 series)
0-4096 mV Analog Inputs x 8 (MCP3208)
Power supply
Power ON when contact is OPEN - for eg. "Remove Before Flight" pin.
TITLE: SSRPGenericTelemetryModule
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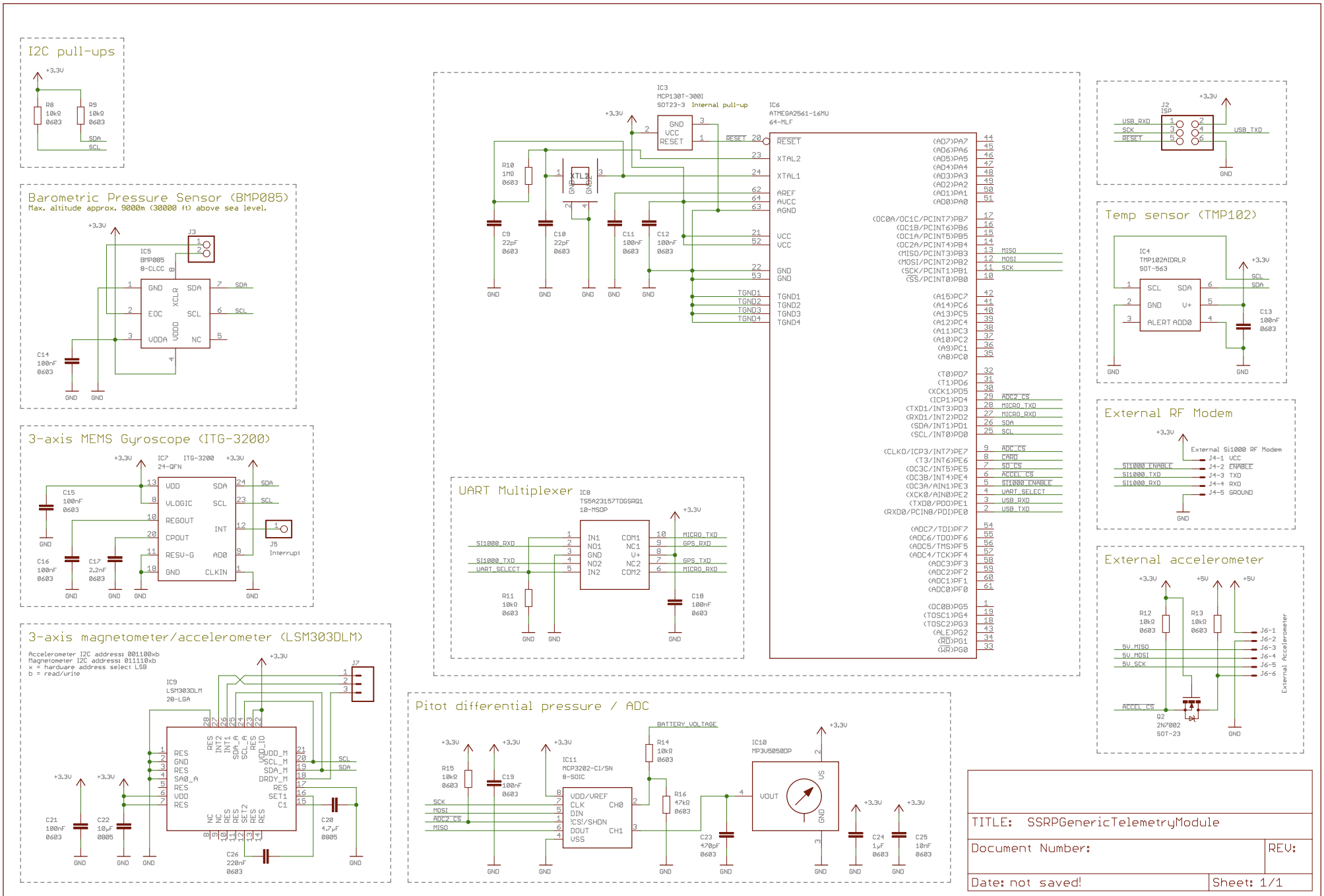

I2C pull-ups
+3.3V
R8 10kΩ 0603
R9 10kΩ 0603
SDA
SCL
Barometric Pressure Sensor (BMP085)
Max. altitude approx. 9000m (30000 ft) above sea level.
IC5 BMP085 8-CLCC
J3
C14 100nF 0603
3-axis MEMS Gyroscope (ITG-3200)
IC7 ITG-3200 24-QFN
C15 100nF 0603
C16 100nF 0603
C17 2.2nF 0603
J5 Interrupt
3-axis magnetometer/accelerometer (LSM303DLM)
Accelerometer I2C address: 001100xb
Magnetometer I2C address: 011110xb
x = hardware address select LSB
b = read/write
IC9 LSM303DLM 28-LGA
J7
C21 100nF 0603
C22 10µF 0805
C20 4.7µF 0805
C26 220nF 0603
IC3 MCP130T-300I SOT23-3 Internal pull-up
IC6 ATMEGA2561-16MU 64-MLF
R10 1MΩ 0603
XTL2
C9 22pF 0603
C10 22pF 0603
C11 100nF 0603
C12 100nF 0603
UART Multiplexer
IC8 TS5A23157TDGSRQ1 10-MSOP
SI1000_RXD
SI1000_TXD
UART_SELECT
R11 10kΩ 0603
C18 100nF 0603
Pitot differential pressure / ADC
BATTERY_VOLTAGE
IC11 MCP3202-CI/SN 8-SOIC
R14 10kΩ 0603
R15 10kΩ 0603
R16 47kΩ 0603
C19 100nF 0603
C23 470pF 0603
IC10 MP3V5050DP
C24 1µF 0603
C25 10nF 0603
J2 ISP
USB_RXD
USB_TXD
Temp sensor (TMP102)
IC4 TMP102AIDRLR SOT-563
C13 100nF 0603
External RF Modem
External Si1000 RF Modem
J4-1 VCC
J4-2 ENABLE
J4-3 TXD
J4-4 RXD
J4-5 GROUND
External accelerometer
R12 10kΩ 0603
R13 10kΩ 0603
5V_MISO
5V_MOSI
5V_SCK
ACCEL_CS
Q2 2N7002 SOT-23
External Accelerometer
TITLE: SSRPGenericTelemetryModule
Document Number:
REV:
Date: not saved!
Sheet: 1/1

To do:

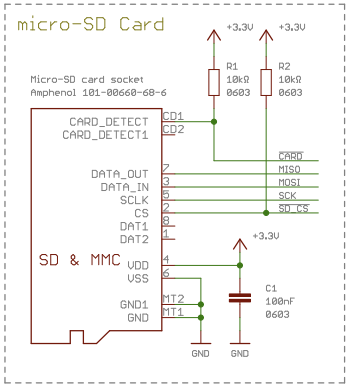
Document all I2C addresses and check collisions

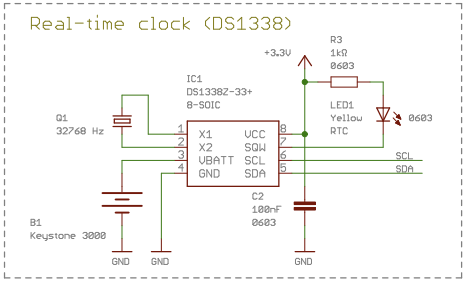
High-range accelerometer choice - AD22282 or MMA2301

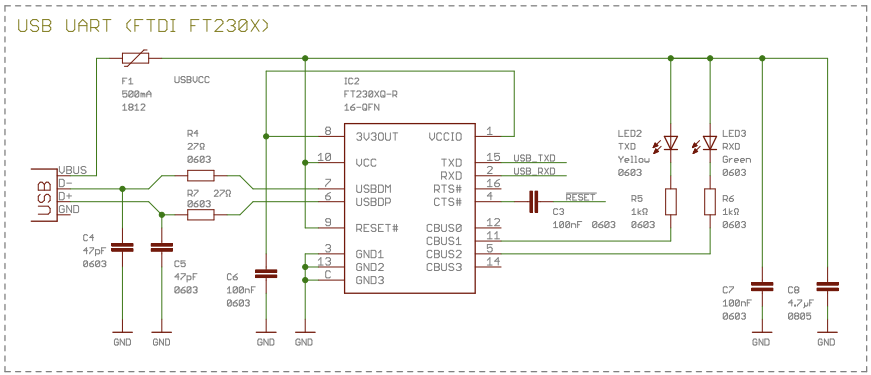
Document current budget for all ICs

Breakout spare AVR pins

ITG-3200 supply current = 6.5 mA.
DS1338 supply current = 200 µA max.
LSM303DLM supply current = 360 µA
Maximum current draw for AT45DB011D = 25 mA







General-purpose Rocket/Aircraft/Vehicle Telemetry Payload

Luke Weston, 2013

http://github.com/lukeweston/SSRPGenericTelemetryModule

open hardware

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