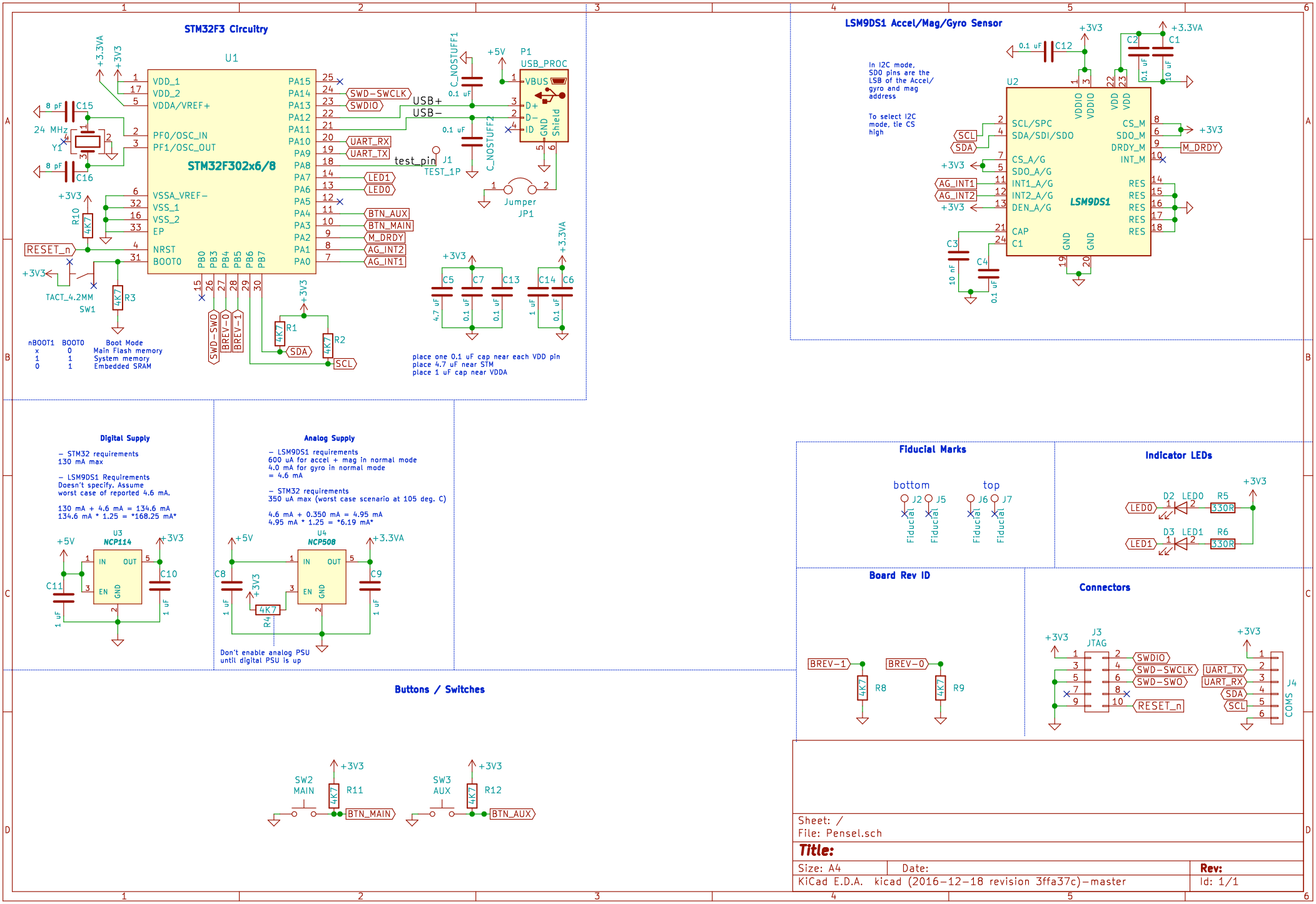
STM32F3 Circuitry
U1
STM32F302x6/8
VDD_1
VDD_2
VDDA/VREF+
PF0/OSC_IN
PF1/OSC_OUT
VSSA_VREF−
VSS_1
VSS_2
EP
NRST
BOOT0
PA15
PA14
PA13
PA12
PA11
PA10
PA9
PA8
PA7
PA6
PA5
PA4
PA3
PA2
PA1
PA0
PB0
PB3
PB4
PB5
PB6
PB7
SWD−SWCLK
SWDIO
UART_RX
UART_TX
LED1
LED0
BTN_AUX
BTN_MAIN
M_DRDY
AG_INT2
AG_INT1
USB+
USB−
P1
USB_PROC
VBUS
D+
D−
ID
GND
Shield
C_NOSTUFF1
C_NOSTUFF2
test_pin
J1
TEST_1P
Jumper
JP1
+5V
+3.3VA
+3V3
C15
C16
8 pF
24 MHz
Y1
R10
4K7
RESET_n
TACT_4.2MM
SW1
R3
SWD−SWO
BREV−0
BREV−1
R1
R2
SDA
SCL
C5
C7
C13
C14
C6
4.7 uF
0.1 uF
1 uF
nBOOT1 BOOT0 Boot Mode
x 0 Main Flash memory
1 1 System memory
0 1 Embedded SRAM
place one 0.1 uF cap near each VDD pin
place 4.7 uF near STM
place 1 uF cap near VDDA
LSM9DS1 Accel/Mag/Gyro Sensor
U2
LSM9DS1
SCL/SPC
SDA/SDI/SDO
CS_A/G
SDO_A/G
INT1_A/G
INT2_A/G
DEN_A/G
CAP
C1
VDDIO
VDD
GND
CS_M
SDO_M
DRDY_M
INT_M
RES
AG_INT1
AG_INT2
M_DRDY
C12
C2
C1
C3
C4
10 nF
In I2C mode, SDO pins are the LSB of the Accel/ gyro and mag address
To select I2C mode, tie CS high
Digital Supply
− STM32 requirements
130 mA max
− LSM9DS1 Requirements
Doesn't specify. Assume
worst case of reported 4.6 mA.
130 mA + 4.6 mA = 134.6 mA
134.6 mA * 1.25 = *168.25 mA*
U3
NCP114
IN
OUT
EN
GND
C11
C10
Analog Supply
− LSM9DS1 requirements
600 uA for accel + mag in normal mode
4.0 mA for gyro in normal mode
= 4.6 mA
− STM32 requirements
350 uA max (worst case scenario at 105 deg. C)
4.6 mA + 0.350 mA = 4.95 mA
4.95 mA * 1.25 = *6.19 mA*
U4
NCP508
C8
C9
R4
4K7
Don't enable analog PSU
until digital PSU is up
Fiducial Marks
bottom
top
J2
J5
J6
J7
Fiducial
Indicator LEDs
D2
LED0
R5
330R
D3
LED1
R6
Board Rev ID
BREV−1
BREV−0
R8
R9
Connectors
J3
JTAG
SWDIO
SWD−SWCLK
SWD−SWO
RESET_n
J4
COMS
UART_TX
UART_RX
SDA
SCL
Buttons / Switches
SW2
MAIN
R11
BTN_MAIN
SW3
AUX
R12
BTN_AUX
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Size: A4
Date:
Rev:
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