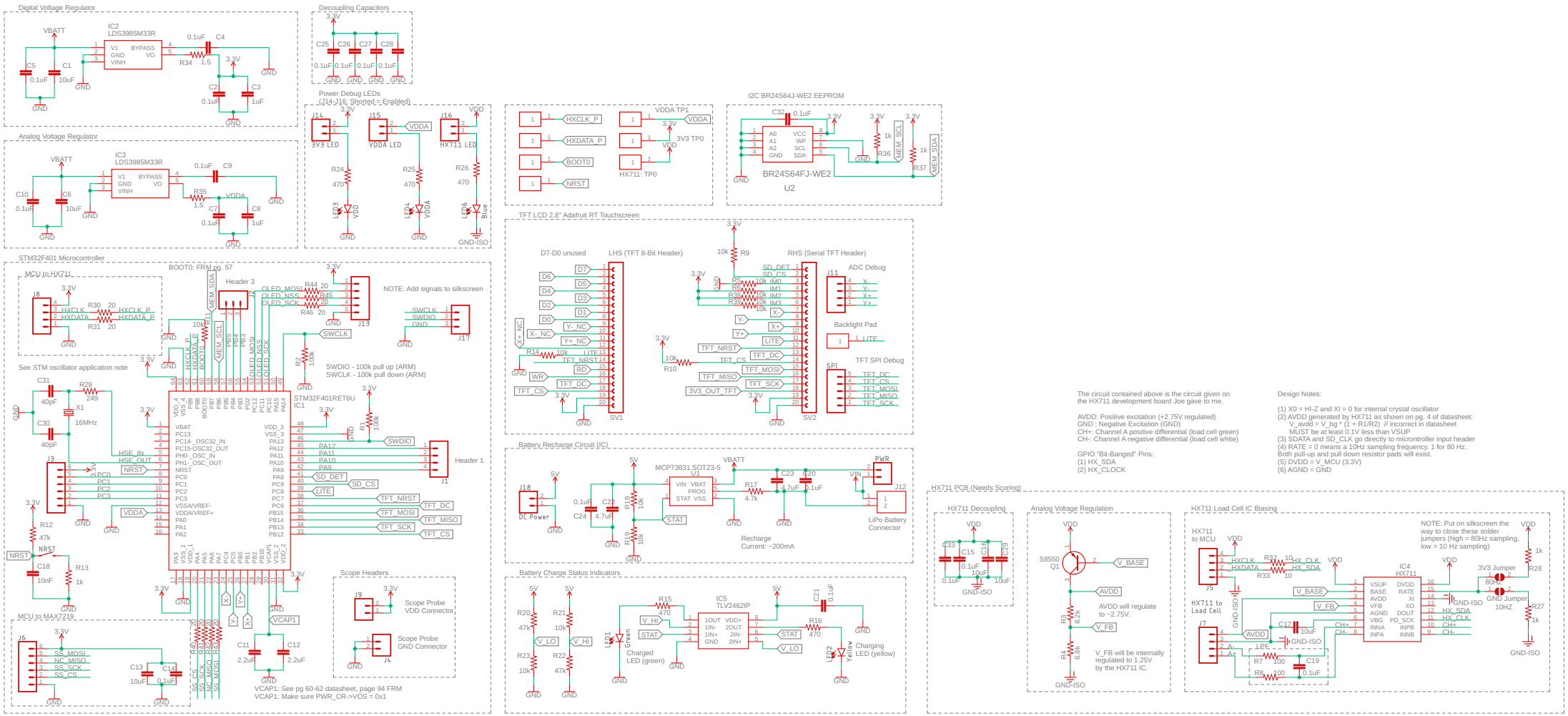
Digital Voltage Regulator
IC2 LDS3985M33R
Analog Voltage Regulator
IC3 LDS3985M33R
Decoupling Capacitors
Power Debug LEDs (J14-J16: Shorted = Enabled)
3V3 LED
VDDA LED
HX711 LED
HXCLK_P
HXDATA_P
BOOT0
NRST
VDDA TP1
3V3 TP0
HX711: TP0
I2C BR24S64J-WE2 EEPROM
BR24S64FJ-WE2
U2
TFT LCD 2.8" Adafruit RT Touchscreen
D7-D0 unused
LHS (TFT 8-Bit Header)
RHS (Serial TFT Header)
ADC Debug
Backlight Pad
TFT SPI Debug
SV1
SV2
STM32F401 Microcontroller
MCU to HX711
BOOT0: FRM pg. 57
Header 3
NOTE: Add signals to silkscreen
See STM oscillator application note
STM32F401RET6U
IC1
SWDIO - 100k pull up (ARM)
SWCLK - 100k pull down (ARM)
Header 1
Scope Headers
Scope Probe VDD Connector
Scope Probe GND Connector
MCU to MAX7219
VCAP1: See pg 60-62 datasheet, page 94 FRM
VCAP1: Make sure PWR_CR->VOS = 0x1
Battery Recharge Circuit (IC)
MCP73831 SOT23-5
DC Power
LiPo Battery Connector
Recharge Current: ~200mA
Battery Charge Status Indicators
IC5 TLV2462IP
Charged LED (green)
Charging LED (yellow)
The circuit contained above is the circuit given on the HX711 development board Joe gave to me.
AVDD: Positive excitation (+2.75V regulated)
GND : Negative Excitation (GND)
CH+: Channel A positive differential (load cell green)
CH-: Channel A negative differential (load cell white)
GPIO "Bit-Banged" Pins:
(1) HX_SDA
(2) HX_CLOCK
Design Notes:
(1) X0 = HI-Z and XI = 0 for internal crystal oscillator
(2) AVDD generated by HX711 as shown on pg. 4 of datasheet:
V_avdd = V_bg * (1 + R1/R2) // incorrect in datasheet
MUST be at least 0.1V less than VSUP
(3) SDATA and SD_CLK go directly to microntroller input header
(4) RATE = 0 means a 10Hz sampling frequency. 1 for 80 Hz.
Both pull-up and pull down resistor pads will exist.
(5) DVDD = V_MCU (3.3V)
(6) AGND = GND
HX711 PCB (Needs Scoring)
HX711 Decoupling
Analog Voltage Regulation
HX711 Load Cell IC Biasing
AVDD will regulate to ~2.75V.
V_FB will be internally regulated to 1.25V by the HX711 IC.
NOTE: Put on silkscreen the way to close these solder jumpers (high = 80Hz sampling, low = 10 Hz sampling)
HX711 to MCU
HX711 to Load Cell
3V3 Jumper
GND Jumper
IC4 HX711