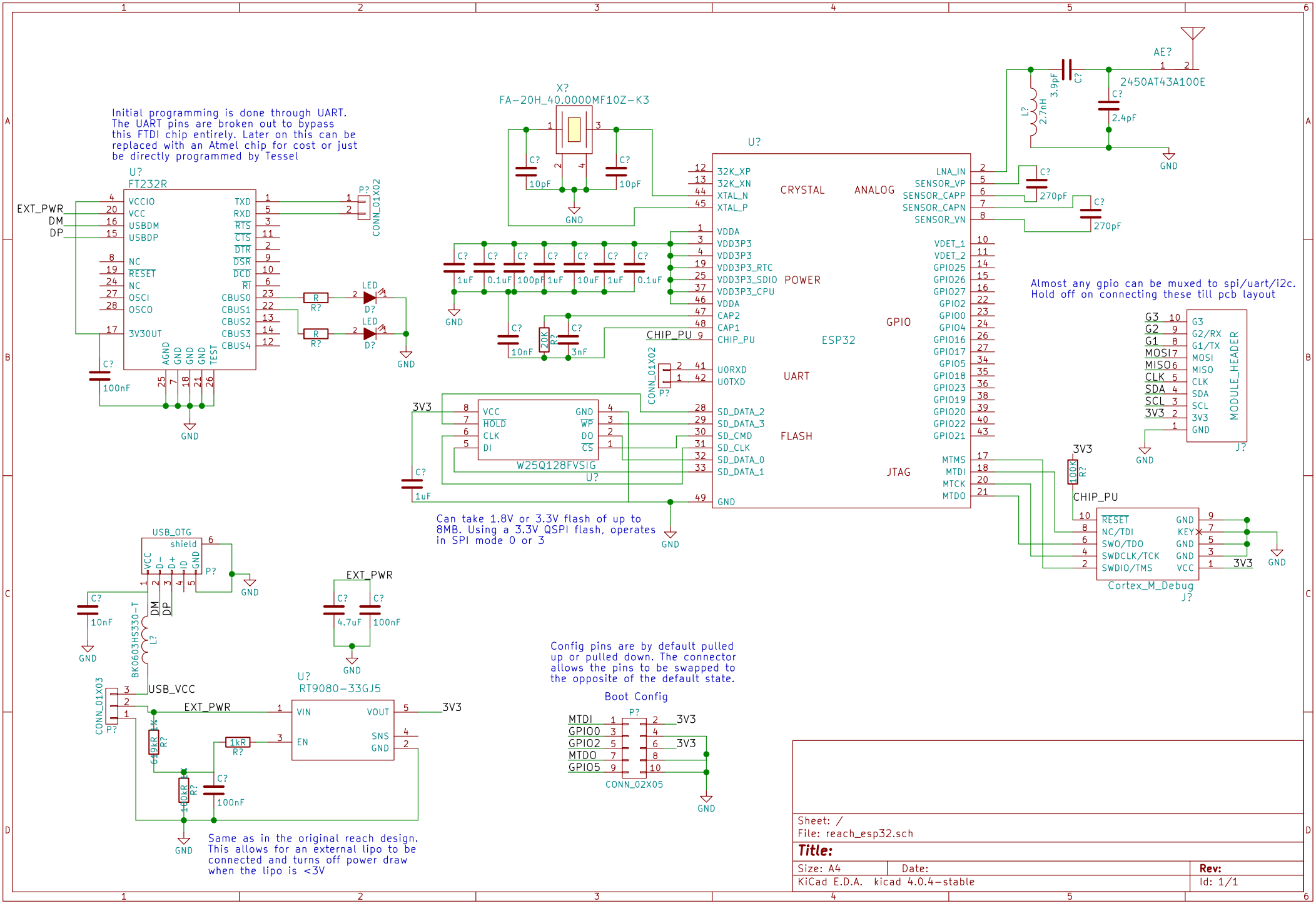
Initial programming is done through UART.
The UART pins are broken out to bypass
this FTDI chip entirely. Later on this can be
replaced with an Atmel chip for cost or just
be directly programmed by Tessel
U?
FT232R
EXT_PWR
DM
DP
VCCIO
VCC
USBDM
USBDP
NC
RESET
NC
OSCI
OSCO
3V30UT
TXD
RXD
RTS
CTS
DTR
DSR
DCD
RI
CBUS0
CBUS1
CBUS2
CBUS3
CBUS4
AGND
GND
TEST
P?
CONN_01X02
LED
D?
R?
100nF
X?
FA-20H_40.0000MF10Z-K3
10pF
1uF
0.1uF
100pF
10uF
10nF
20K
3nF
CHIP_PU
U0RXD
U0TXD
32K_XP
32K_XN
XTAL_N
XTAL_P
VDDA
VDD3P3
VDD3P3_RTC
VDD3P3_SDIO
VDD3P3_CPU
CAP2
CAP1
SD_DATA_2
SD_DATA_3
SD_CMD
SD_CLK
SD_DATA_0
SD_DATA_1
CRYSTAL
POWER
UART
FLASH
ESP32
3V3
VCC
HOLD
CLK
DI
GND
WP
DO
CS
W25Q128FVSIG
Can take 1.8V or 3.3V flash of up to
8MB. Using a 3.3V QSPI flash, operates
in SPI mode 0 or 3
LNA_IN
SENSOR_VP
SENSOR_CAPP
SENSOR_CAPN
SENSOR_VN
ANALOG
VDET_1
VDET_2
GPIO25
GPIO26
GPIO27
GPIO2
GPIO0
GPIO4
GPIO16
GPIO17
GPIO5
GPIO18
GPIO23
GPIO19
GPIO20
GPIO22
GPIO21
GPIO
MTMS
MTDI
MTCK
MTDO
JTAG
AE?
2450AT43A100E
2.4pF
3.9pF
2.7nH
L?
270pF
Almost any gpio can be muxed to spi/uart/i2c.
Hold off on connecting these till pcb layout
G3
G2
G1
MOSI
MISO
CLK
SDA
SCL
3V3
G2/RX
G1/TX
MODULE_HEADER
J?
100K
CHIP_PU
RESET
NC/TDI
SWO/TDO
SWDCLK/TCK
SWDIO/TMS
KEY
Cortex_M_Debug
J?
USB_OTG
shield
VCC
D-
D+
ID
BK0603HS330-T
10nF
4.7uF
100nF
USB_VCC
CONN_01X03
U?
RT9080-33GJ5
VIN
VOUT
EN
SNS
1kR
64.9kR
140kR
Same as in the original reach design.
This allows for an external lipo to be
connected and turns off power draw
when the lipo is <3V
Config pins are by default pulled
up or pulled down. The connector
allows the pins to be swapped to
the opposite of the default state.
Boot Config
MTDI
GPIO0
GPIO2
MTDO
GPIO5
CONN_02X05
Sheet: /
File: reach_esp32.sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 4.0.4-stable
Id: 1/1