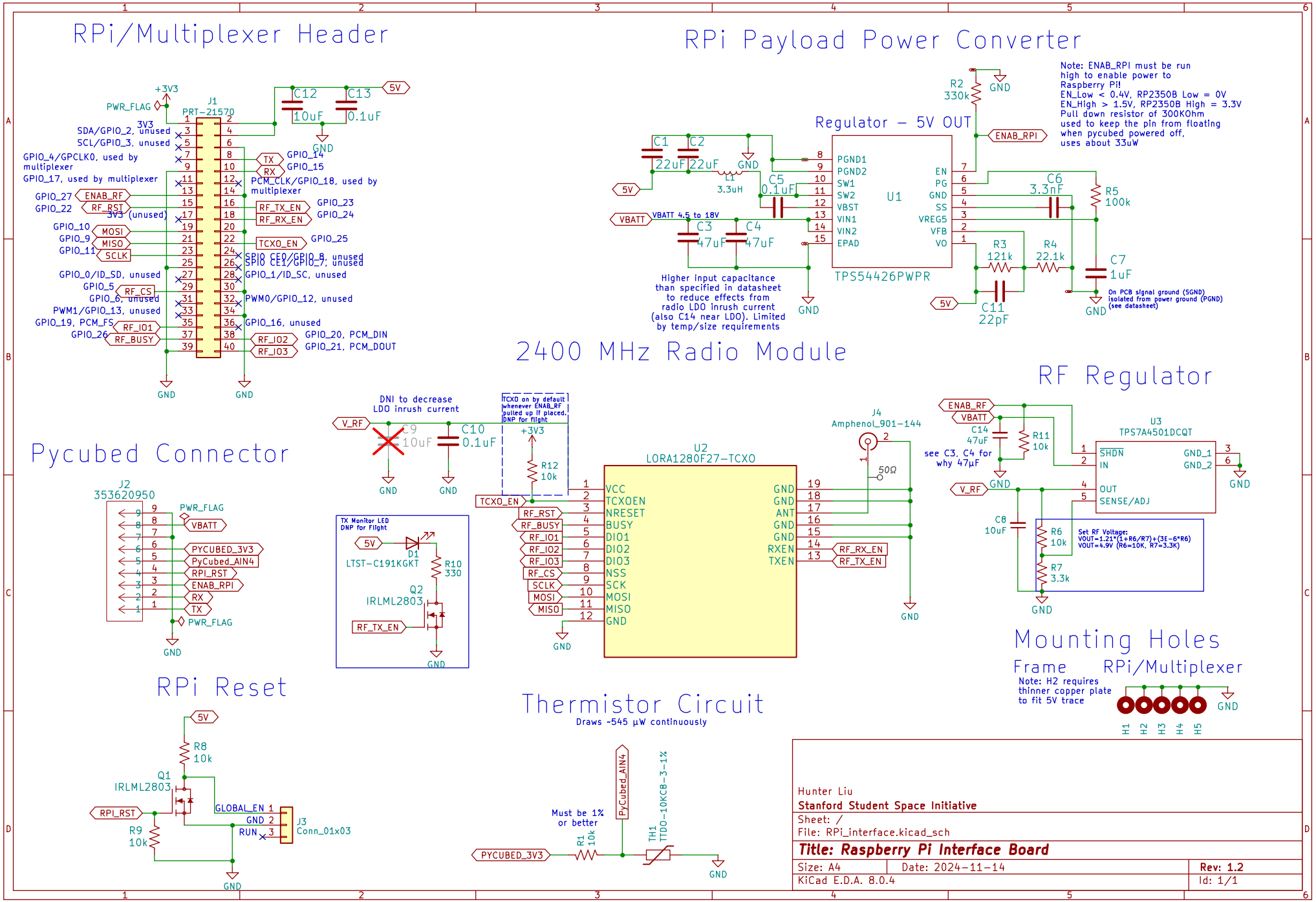
RPi/Multiplexer Header
RPi Payload Power Converter
2400 MHz Radio Module
RF Regulator
Pycubed Connector
RPi Reset
Thermistor Circuit
Mounting Holes
Frame
RPi/Multiplexer
Regulator – 5V OUT
TPS54426PWPR
LORA1280F27-TCXO
TPS7A4501DCQT
Note: ENAB_RPI must be run high to enable power to Raspberry Pi!
EN_Low < 0.4V, RP2350B Low = 0V
EN_High > 1.5V, RP2350B High = 3.3V
Pull down resistor of 300KOhm used to keep the pin from floating when pycubed powered off, uses about 33uW
Higher input capacitance than specified in datasheet to reduce effects from radio LDO inrush current (also C14 near LDO). Limited by temp/size requirements
DNI to decrease LDO inrush current
TCXO on by default whenever ENAB_RF pulled up if placed. DNP for flight
TX Monitor LED DNP for Flight
see C3, C4 for why 47µF
Set RF Voltage: VOUT=1.21*(1+R6/R7)+(3E-6*R6) VOUT=4.9V (R6=10K, R7=3.3K)
Note: H2 requires thinner copper plate to fit 5V trace
Must be 1% or better
Draws ~545 µW continuously
Hunter Liu
Stanford Student Space Initiative
Sheet: /
File: RPi_interface.kicad_sch
Title: Raspberry Pi Interface Board
Size: A4
Date: 2024-11-14
Rev: 1.2
KiCad E.D.A. 8.0.4
Id: 1/1