Processor

SI5351 Clock

J109 Connections
A: 1-2   1-5W Variable RF Out CW Tx
B: Open 1-5W Fixed by U105 and R2/R1

+7V V_ext

D107
MBRD10100CT

PWR_FLAG

C109
10uF

U103
TPS22810DBVT

VIN   VOUT
QOD   EN/UVLO
CT   GND

FET_DRIVER_ENABLE

V_ext

C113
10uF

U105
TO-220 ADJ Reg.

D113

VI   ADJ

R2   C114
10uF

C111
47uF low ESR

D114   R1

V = 1.25(1 + R2/R1)

L101:
9T (24 cm) #24 Bifilar FT-50A-43

C112
470nF

L101

RF_Raw

Q103
IRF610

GND
W103

HF Final Amplifier

C102   +3V3 +3V3   C103

470nF   14 20   470nF

C101
100nF

X101
Vdd

NC   OUT

GND

SIT1566AC TCO

P101
ISP/PDI

+3V3

C106   VDD

470nF

C105   C107   VDD
100nF   XA
        X102   XB
        25 MHz SCL
Vcc   OUT   SDA
GND   NC

100nF

U102
SI5351

VDD
XA
XB
SCL
SDA

CLK0
CLK1
GND
VDDO
CLK2

CLK1

VDD

C108
470nF

TP101
I2C1

VDD

R107 10k   VDD
R108 10k

I2C pull-ups can be provided by uC
port pin pull-ups on SCL and SDA.

U101

PF6/RESET
PF0/XTAL32k1
PF1/XTAL32k2

UPDI

AVR128DA28

PA1   FET_DRIVER_ENABLE
PA2   V3V3_PWR_ENABLE
PA3   Power_enable
PA4/TxD0   Paddle_Dit
PA5/RxD0   Paddle Dah
PA6   Straightkey
PA7   B/B_PS_Enable

PC0/TxD1
PC1/RxD1
PC2/SDA
PC3/SCL

PD0/AIN0   Vbat
PD1   Power_Good
PD2
PD3
PD4
PD5
PD6/DAC   Frequency Up
PD7   Frequency Down

PA0/EXTCLK   Fan_Contr

GND GND

W102 T3
GND

W101 T2
GND

CLK1

U104
LM5134

In   PVdd Out
InB   GND   Pilot

FET Driver

22uF C110

GND T4

D105   R106 47k

D108   D109

Paddle_Dit

J107
DB9 Female

Paddle Dah

Straightkey

D106

Frequency Up

Frequency Down

V+_Charging

Revised for serial compatibility
Starting with Rev 2.0

D111   D110   D112

J102
Frequency Up
Frequency Down

BSS138W-7-F

On/Off
J101

R101 105k   Q102
Power_enable

D101
1N914WT

+VSW

Q101
BSS84W-7-F

+BATT

R102 162k

Vbat

R103 12.4k

D102
1N914WT

R104 1k

C104
100nF

J103

SW101

RED
D103

J104

GREEN
D104

J106

R105 220

J105
Paddle_Dit
Paddle Dah
Straightkey

RF Configurations
A: External 5-10.5V = 1-5W Variable RF Out CW Tx
B: Fixed 1-5W RF Out CW set by U105
C: 20mW Fixed RF Out CW Tx (Q103 replaced by 47 ohm resistor)

Power Source Configurations
1. External 5-12.5V
2. Internal LiIon Battery (3.2-4.2V)

PWR_FLAG
GND

Sheet: /
File: SignalSlinger.kicad_sch
Title: SignalSlinger
Size: A4   Date: 2023-12-10   Rev: 2.2
KiCad E.D.A. kicad (6.0.4-0)   Id: 1/4

External Power Source
5V - 12.5V

J201
D202
F201 1.1A
L201
V_ext
PWR_FLAG
C204 470nF
C205 10uF
GND
GND
D205
D204
+BATT
PWR_FLAG

B/B_PS_Enable

C207 10uF
R205 105k
C208 100nF
GND
GND
GND
R201 105k
GND

L202 1uH

U203
TPS63060

1 L1
2 VIN
3 EN
6 VAUX
4 PS/SYNC
L2 10
VOUT 9
FB 8
PG 5
GND 7
PGND 11
GNGND

+7V

R202 1M
R203 80.6k
GND
GND
C211 10pF
R204 1M
+3V3
C212 1uF
GND
C213 22uF
GND
C214 22uF
GND
C215 22uF
GND

Power_Good

V+_Charging
+3V3
D203
D201 BAT54C
V_ext
+VSW
C206 10uF
VDD

C201 10uF
U201
PWR_FLAG
C203 10uF
U202
C210 10uF

5 VOUT   VIN
4 BP
3 ON/OFF GND 2
LP2985-3.3

C202 10nF

V3V3_PWR_ENABLE

1 VIN   VOUT 5
3 ON/OFF BP 4
GND 2
LP2985-3.3

C209 10nF

OPTIONAL AUX CONTROL

V_ext
JP201
V-ext disable
External Fan Power
J203
C216 10uF
U204
TPS22810DBVT

1 VIN   VOUT 6
QOD   EN/UVLO
GND   CT
Fan_Contr
Controlled Power
J204

RF Configurations
A: External 5-10.5V = 1-5W Variable RF Out CW Tx
B: Fixed 1-5W RF Out CW set by LT1086-ADJ
C: 20mW Fixed RF Out CW Tx (Q103 replaced by 47 ohm resistor)

Power Source Configurations
1. External 5-12.5V
2. Internal LiIon Battery (3.2-4.2V)

PWR_FLAG
+BATT
BT201
LiIon Cell
1
2
3
4
MOD201
AdaFruit Charger
V+_Charging

Sheet: /Power Supply/
File: PowerSupply.kicad_sch

Title: SignalSlinger
Size: A4   Date: 2023-12-10   Rev: 2.2
KiCad E.D.A. kicad (6.0.4-0)   Id: 2/4

80m LPF
6th order Chebychev
3.9MHz 3dB cut-off
w/ node at 10.7MHz

W301   W302   C304   W303
GND   GND   91pF   GND

T5   T6   L302   T7

C301   L301   1   J301

RF_Raw   2.7uH   2.7uH   2   To Antenna

470nF   C302   C303   C305

1100pF   1800pF   1100pF

L301 & L302:
20T (46 cm) #24 T60-2

40m LPF
6th order Chebychev
8MHz 3dB cut-off
w/ node at 21.5 MHz

L301 & L302 = 1.3uH
C302 & C305 = 470pF
C303 = 820pF
C304 = 43pF

Core Product

Chassis Box
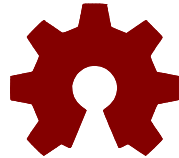
PCB Screws
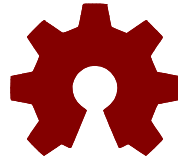
Pin Header (Straight)
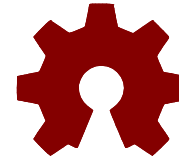
Pin Header Shorting Jumpers
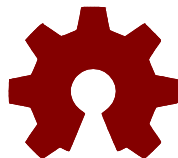
LED Light Pipes
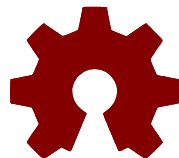
Magnet Wire for RF Inductors
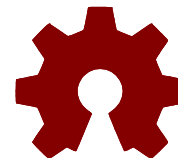
PCB_AND_ASSEMBLY

FTDI Support
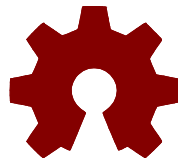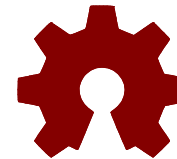
FTDI Cable
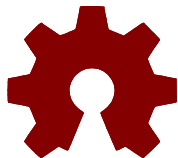
9POS Backshell
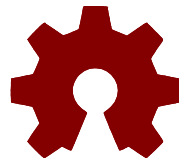
9-Pin D Male
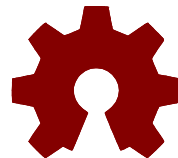
6-pin Angled Header
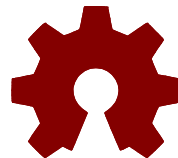
FTDI Adapter PCB

Internal Battery Support
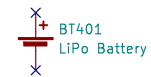
BT401
LiPo Battery

LiPo Charger Module