RX_path

File: RX_path_sch.kicad_sch
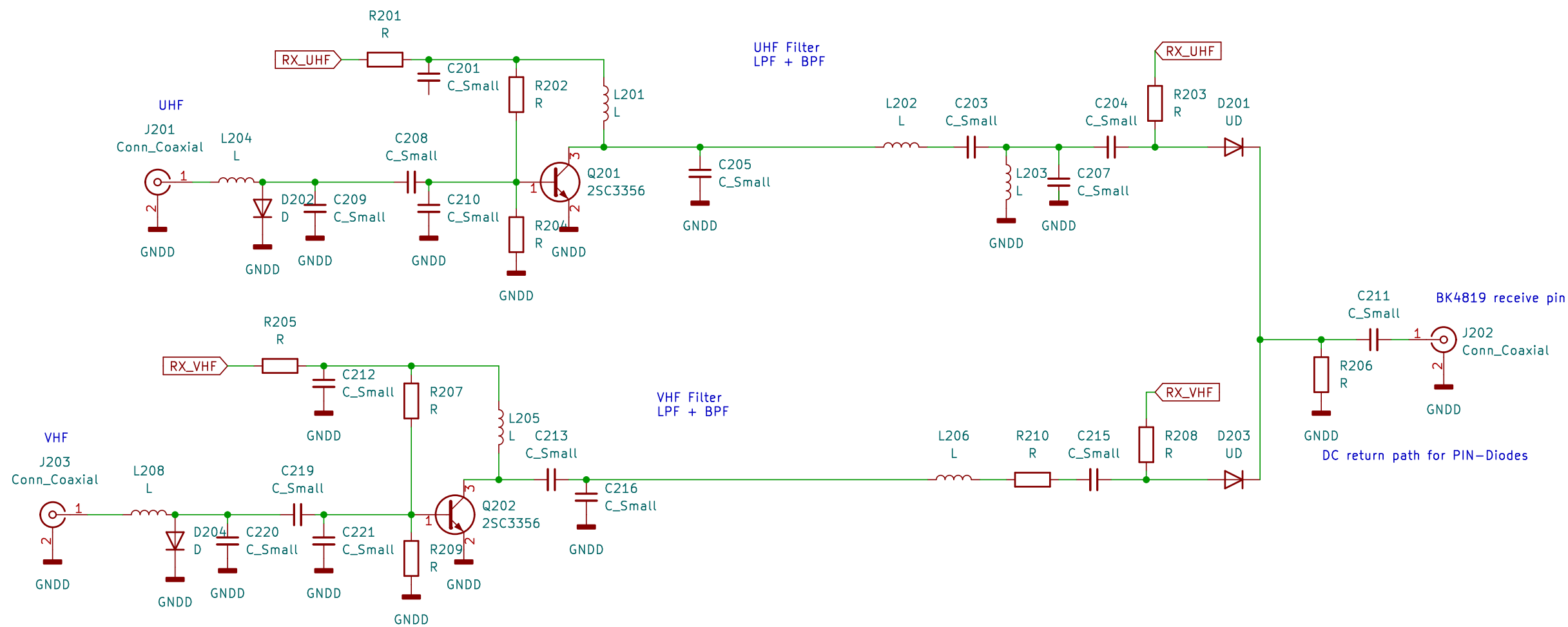
TX_chain

File: TX_chain_sch.kicad_sch

Use separate subsheets for separate functional blocks and add them here.
Annotate them with unique numbers with the "100x sheet number" option.
RX_path has 200 series.
TX_chain has 300 series.

Proposed Quansheng UV-5K receive preamps, filters and switching.
Original reversed schematic by ToMUD.
Redrawn by ftg.
Yet to be verified.

UHF Filter
LPF + BPF

R201
R
RX_UHF
C201
C_Small
R202
R
L201
L

UHF
J201
Conn_Coaxial
L204
L
C208
C_Small
C210
C_Small
Q201
2SC3356
D202
D
C209
C_Small
R204
R
GNDD

L202
L
C203
C_Small
C204
C_Small
RX_UHF
R203
R
D201
UD
C205
C_Small
L203
L
C207
C_Small
GNDD

BK4819 receive pin
C211
C_Small
J202
Conn_Coaxial
R206
R
GNDD

DC return path for PIN-Diodes

VHF Filter
LPF + BPF

R205
R
RX_VHF
C212
C_Small
R207
R
L205
L
C213
C_Small

VHF
J203
Conn_Coaxial
L208
L
C219
C_Small
C221
C_Small
Q202
2SC3356
D204
D
C220
C_Small
R209
R
C216
C_Small
GNDD

L206
L
R210
R
C215
C_Small
RX_VHF
R208
R
D203
UD

GNDD

Drawn and reverse engineered by ftg.
With component values measured by Tomek.

C4_1_Pin4
C4_2_pin4

C301
C_Small

C305
C_Small

C302
C_Small

GNDD

R301
R

R302
R

PA Predriver Q2 Bias

VIA_201

VIA_214

GNDD

C303
C_Small

C304
C_Small

C306
C_Small

GNDD

R303
R

VIA_213

C308
C_Small

GNDD

R305
R

R304
R

GNDD

C307
C_Small

VIA_212

VBAT

GNDD

I don't fully understand this PIN-diode circuit here.
It looks like it shorts out one inductor on demand.
Possibly for bandswitching.
Can be verified by VIA_11 voltage vs. band.

UHF RX + PIN-diode steering?

VIA_207

C310
C_Small

GNDD

C311
C_Small

C313
C_Small

L301
Ferritebead

C309
C_Small

Q301
DTC114E

VIA_211

C312
C_Small

Q1 PA Final Bias

The "24" transistors could be Rohm DTC114EUA from their DTC114E series.
They are "Digital Transistors" with built in biasing resistors.
NPN BJT that can be used essentially as inverters.

UHF low pass

R306
R

D301
UD

D302
UD

GNDD

L303
RFC

L302

D303
UD

GNDD

C315
C_Small

C314
C_Small

GNDD

VIA_202

R307
0R

C316
C_Small

L306
3t

L304
L

L305
L

C318
C_Small

GNDD

Q2
2SK3078

Could be inductor

D304
UD

C322
C_Small

L314
L

R310
0R

GNDD

C324
C_Small

R308
R

Q302
DTC114E

C320
C_Small

C321
C_Small

C319
C_Small

C326
C_Small

C317
C_Small

Suspected 800 - 900 MHz trap

C323
C_Small

BK4819_TX

R309
R

Q1
2SC3356

GNDD

L308
L

L313
L

GNDD

C328
C_Small

VBAT

VIA_208

GNDD

L307
6t

C325
C_Small

L309
4t

L310
4t

L311
3t

C331
C_Small

D305
TY

D306
TY

L312
L

C327
C_Small

L316
L

C333
C_Small

GNDD

R312
0R

C337
C_Small

GNDD

R311
R

L317
38nH

GNDD

3rd harmonic trap?

L319
microstrip

L320
microstrip

D307
TY

C332
C_Small

C329
C_Small

C330
C_Small

GNDD

VIA_203

L318
RFC

L315
2T

J301
ANT

GNDD

Q3
RD02LUS2

L321
13.2nH

C336
C_Small

C335
C_Small

L322
L

GNDD

VIA_210

Common kathode for TX PIN-diodes?

C334
C_Small

C338
68pF

GNDD

C339
C_Small

GNDD

VHF low pass

C340
15pF

C341
C_Small

C342
C_Small

C343
C_Small

D308
TY

D310
TY

L323
L

VIA_204

L324
8.4nH

C344
100nF

D311
TY

L325
4t

L326
5t

L327
6t

D309
UD

GNDD

C345
C_Small

GNDD

C346
C_Small

C347
C_Small

R313
R

D312
UD

GNDD

GNDD

GNDD

VIA_205

VHF RX?

VHF RX?

R314
100R

L328
100nH

VIA_209

C348
470pF

L329
L

VIA_206

VHF TX PIN-diode steering

GNDD