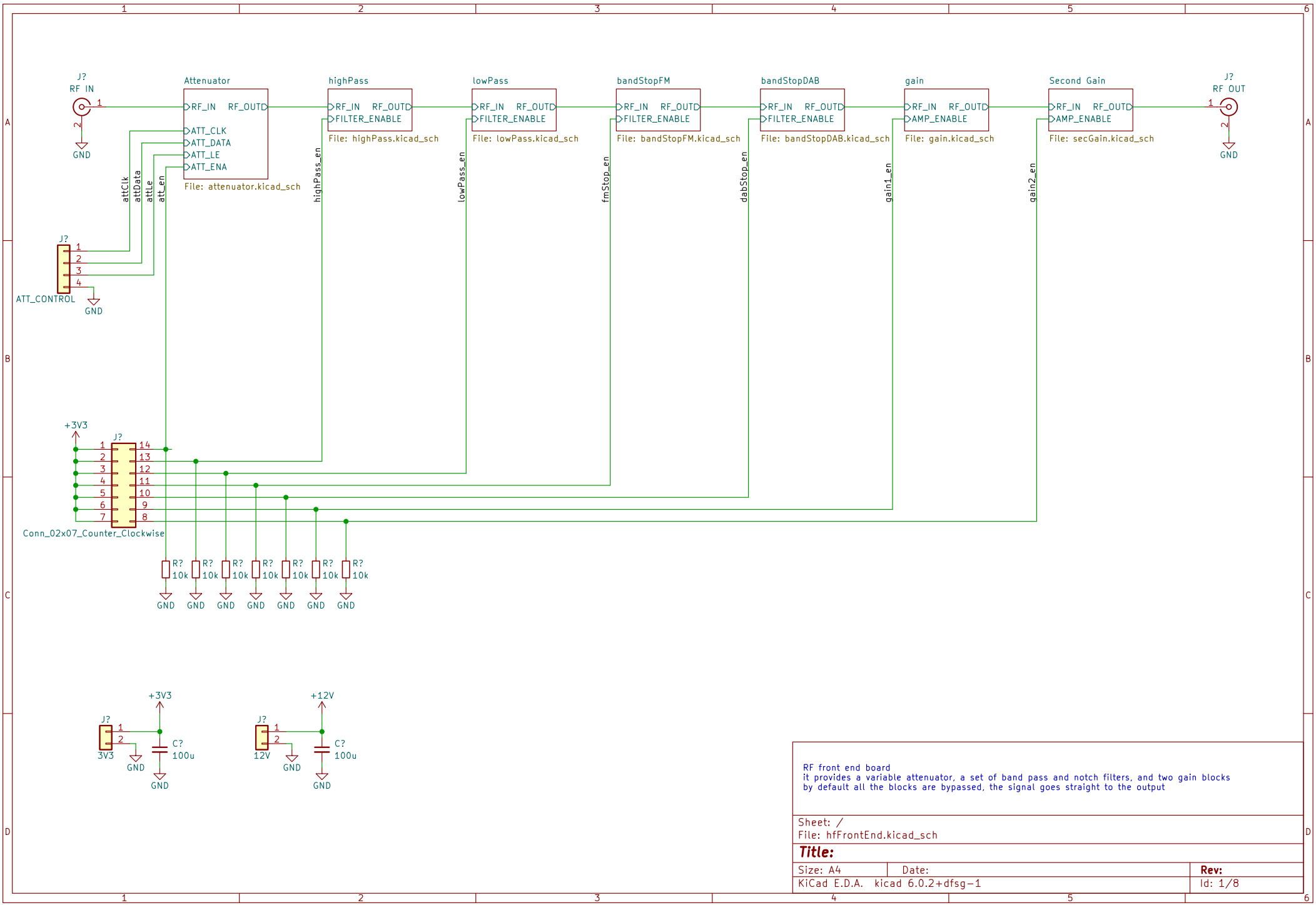
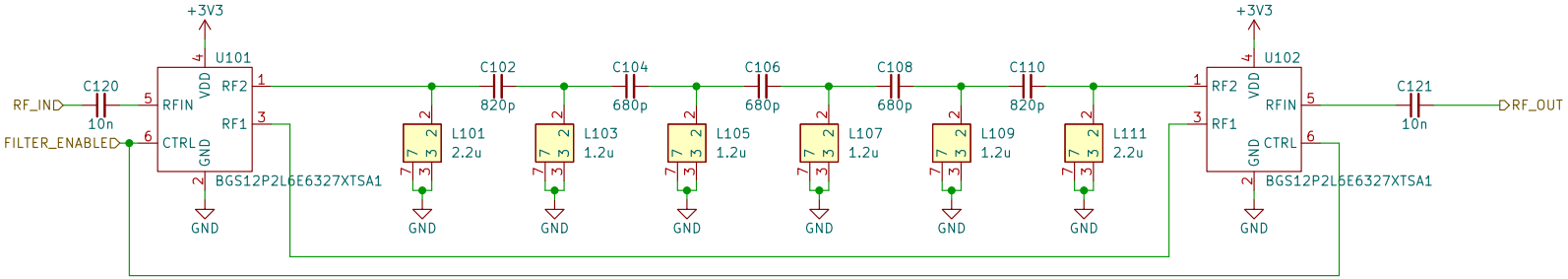

J?
RF IN
1
2
GND
Attenuator
RF_IN
RF_OUT
ATT_CLK
ATT_DATA
ATT_LE
ATT_ENA
File: attenuator.kicad_sch
highPass
RF_IN
RF_OUT
FILTER_ENABLE
File: highPass.kicad_sch
lowPass
RF_IN
RF_OUT
FILTER_ENABLE
File: lowPass.kicad_sch
bandStopFM
RF_IN
RF_OUT
FILTER_ENABLE
File: bandStopFM.kicad_sch
bandStopDAB
RF_IN
RF_OUT
FILTER_ENABLE
File: bandStopDAB.kicad_sch
gain
RF_IN
RF_OUT
AMP_ENABLE
File: gain.kicad_sch
Second Gain
RF_IN
RF_OUT
AMP_ENABLE
File: secGain.kicad_sch
J?
RF OUT
1
2
GND
attClk
attData
attLe
att_en
highPass_en
lowPass_en
fmStop_en
dabStop_en
gain1_en
gain2_en
J?
1
2
3
4
ATT_CONTROL
GND
+3V3
J?
1
2
3
4
5
6
7
14
13
12
11
10
9
8
Conn_02x07_Counter_Clockwise
R?
10k
GND
+3V3
J?
1
2
3V3
GND
C?
100u
GND
+12V
J?
1
2
12V
GND
C?
100u
GND
RF front end board
it provides a variable attenuator, a set of band pass and notch filters, and two gain blocks
by default all the blocks are bypassed, the signal goes straight to the output
Sheet: /
File: hfFrontEnd.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad 6.0.2+dfsg-1
Id: 1/8

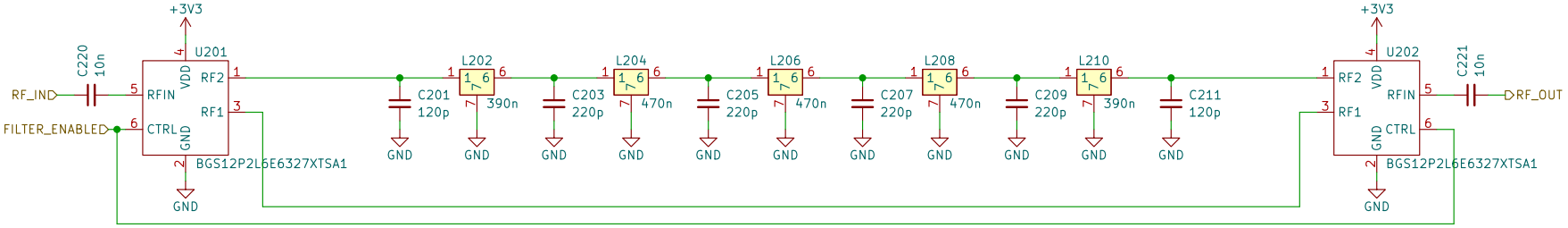



High pass filter
This is used to remove AM interferrence from broadcast stations
Fbw = [ 2.8Mhz ... ... ]

Sheet: /highPass/
File: highPass.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 2/8 |

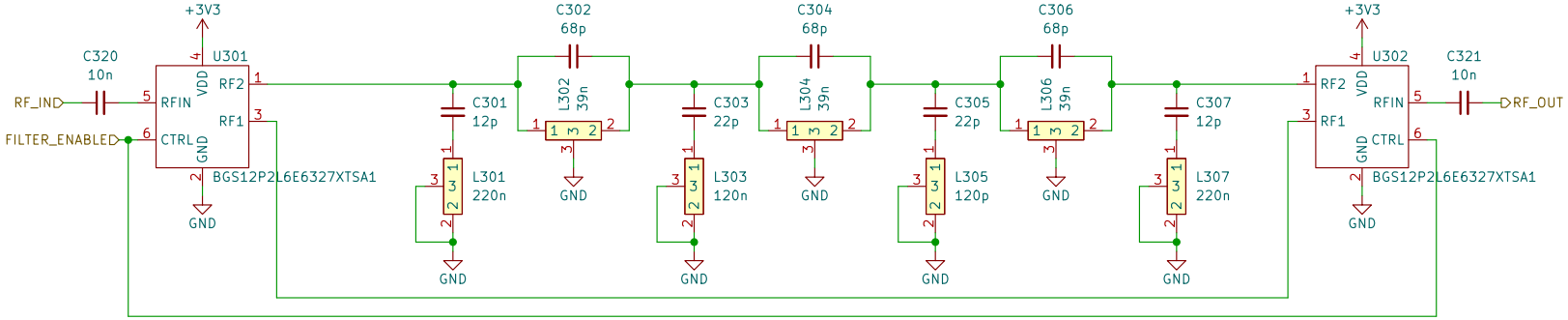



LOW pass filter
This filter is used to remove interferrence outside the HF band
Fbw = [ ... ... 30Mhz]
It can be used together with the high pass filter to reduce the spectrum to [ 2.8Mhz ... 30MHz ]

Sheet: /lowPass/
File: lowPass.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 3/8 |

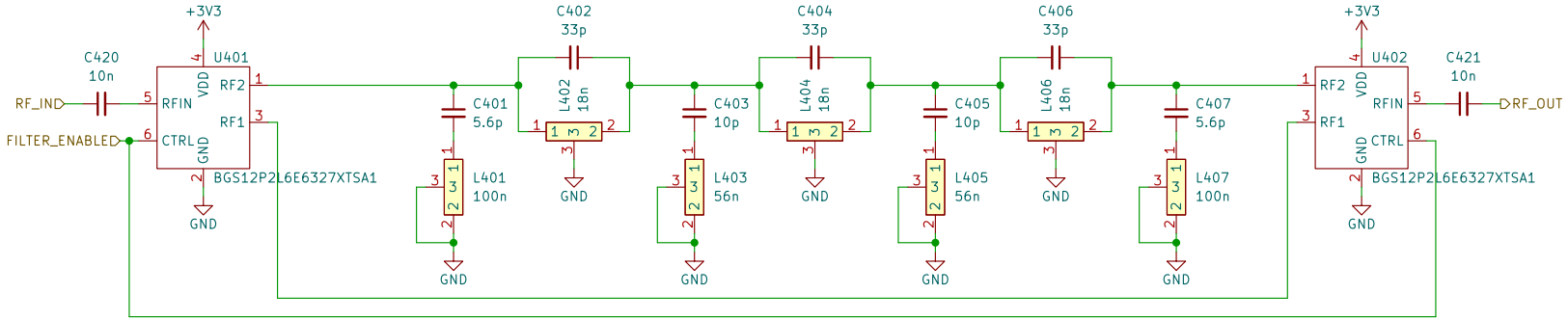



FM notch filter
Use this to reduce FM broadcast band interferrence.
It can be used to improve aircraft band reception, or NOAA / METEOR
Fbw = [ 83MHz ... 114MHz ]

Sheet: /bandStopFM/
File: bandStopFM.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 4/8 |

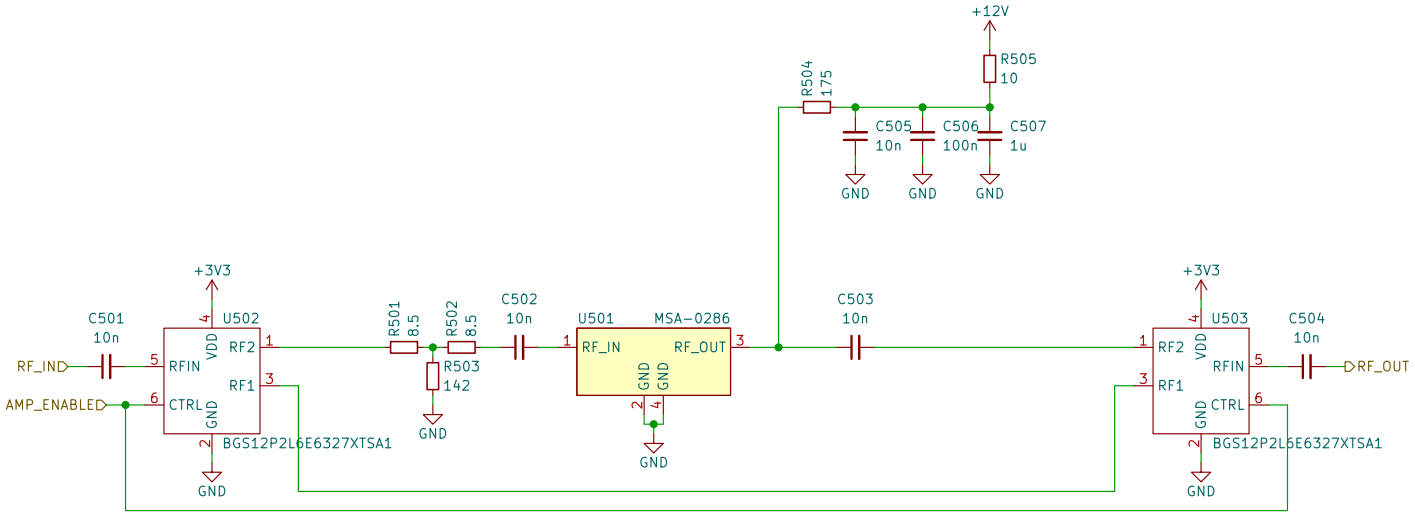



DAB notch filter
This will reduce interferrence from the digital audio broadcast band
Fbw = [ 174Mhz ... 240MHhz ]

Sheet: /bandStopDAB/
File: bandStopDAB.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 5/8 |

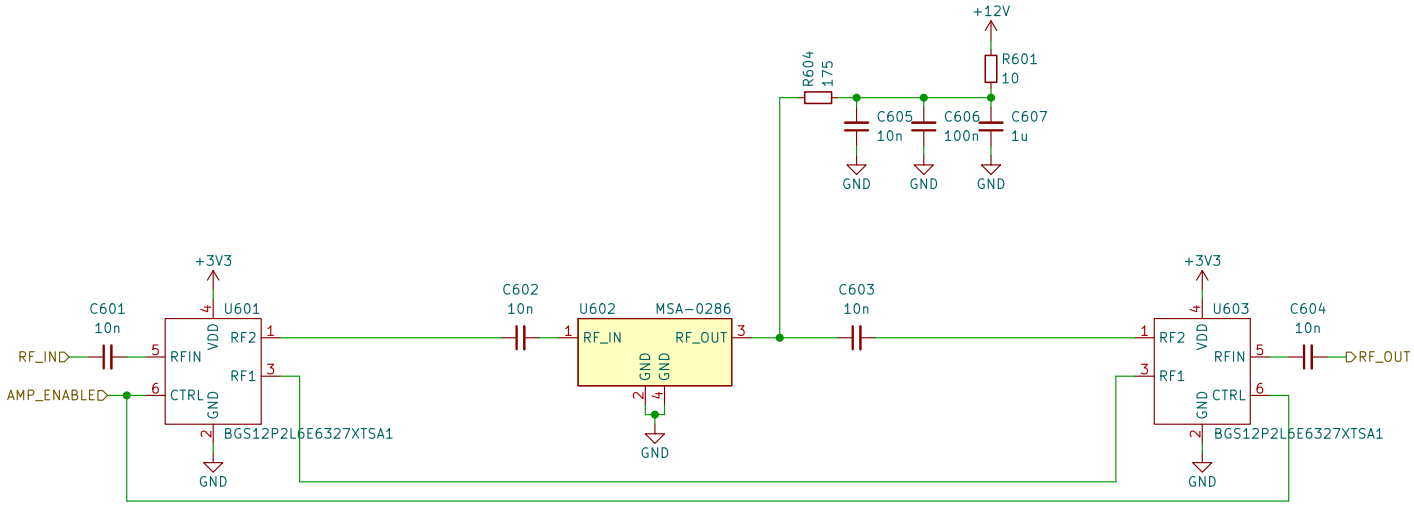



BIAS: 5V 40mA
R504=(12-5)/0.040
R504=175
Gloss=20lg[(2*R504+50)/(2*R504)]
Gloss=1.15db (because there's no RF choke following R504)
GAIN=(-3+12-1.15)
GAIN=7.85db

Sheet: /gain/
File: gain.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 6/8 |

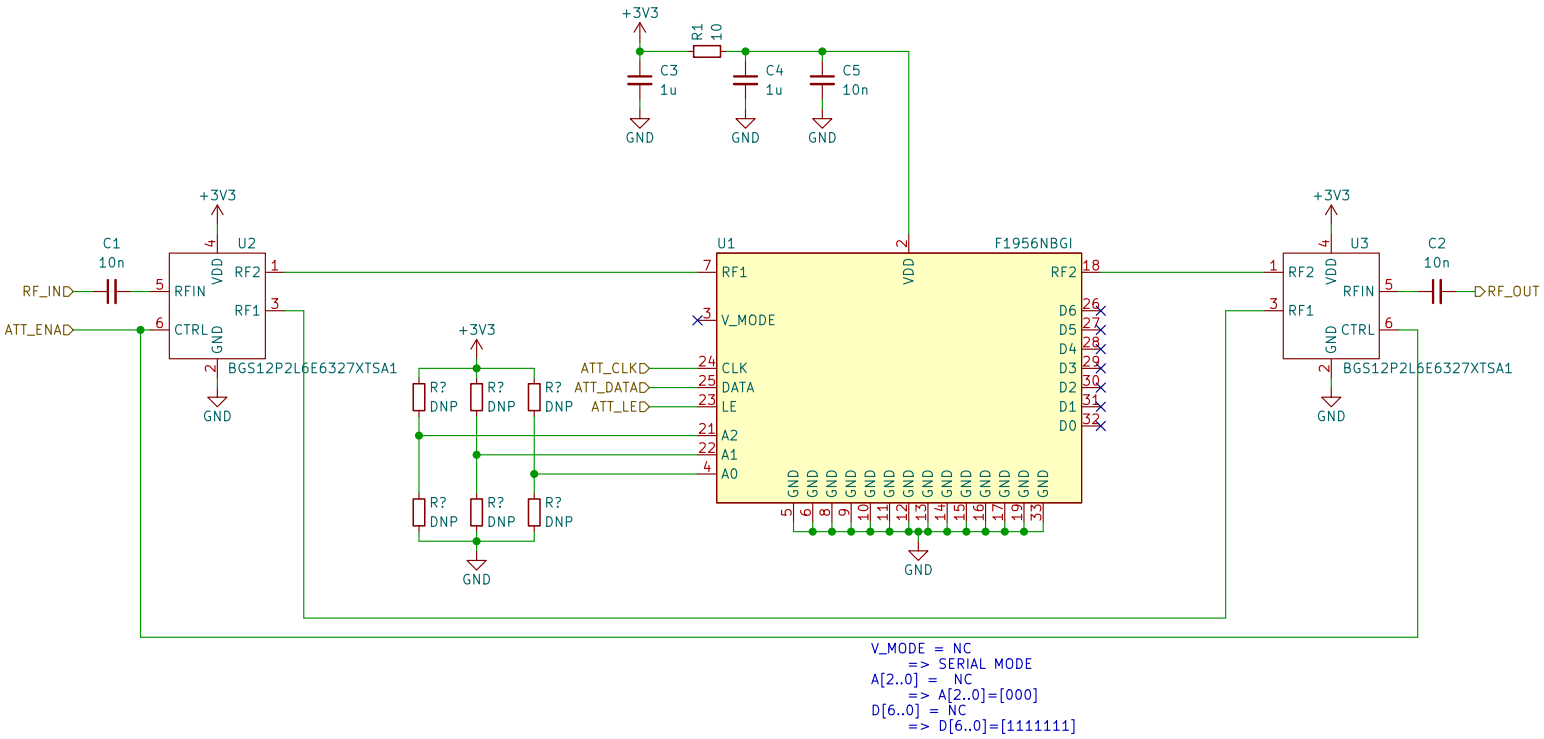



BIAS: 5V 40mA
R504=(12-5)/0.040
R504=175
Gloss=20lg[(2*R504+50)/(2*R504)]
Gloss=1.15db (because there's no rf choke after R604)
GAIN=(12-1.15)
GAIN=10.85db

Sheet: /Second Gain/
File: secGain.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 7/8 |




Variable attenuator block
31.75dB Range, 0.25dB steps
by default attenuation is set to MAX

Sheet: /Attenuator/
File: attenuator.kicad_sch

**Title:**

| Size: A4 | Date: | **Rev:** |
|---|---|---|
| KiCad E.D.A. kicad 6.0.2+dfsg-1 | | Id: 8/8 |