

You see, from low to high you have round about 31 Hz difference. One oct higher it is 62 Hz , and two oct higher it is 124 Hz and this you can hear.

Also playing only with the six resonancies in tune is impossible.

To get the old SMR4 Filterboards in range, i often replace parts. But this doesn't work 100 %.

The new SMR4 Plus filter had now an additional 50 Kohm pot.

This allows you to move the complete log curve up and down , but without changing the linearity !

And this is important. Without changing the LINEARITY !

The adjustment :

On TuBika switch off all oscillators, set the filter ADSR to 0, set the Filter LFO to 0. Set Reso to maximum = 64.

Set the first Voicecard ON, Voicecard 2...6 OFF.

*** Use our free filter calibrator tool or a frequency measure instrument.

Then play on your keyboard a note , C4 for example and adjust the cutoff on TuBika to 100 Hz. You should hear now the resonance sweep with a frequency 100 Hz.

First , adjust with the 20 Kohm V/OCT pot now the filter 1 linearity.

Note C4 = 100 Hz, C5 = 200 Hz and C6 = 400 Hz.

** note , it can be , that while adjustment C4 moves from 100 Hz to 110 or 90 Hz

** adjust it again with the cutoff parameter so that you have on C4 100 Hz.

If Voicecard 1 is now in range, take this as a REFERENCE for the other voicecards. Don't move the cutoff now.

Second, switch Voicecard 1 off and set Voicecard 2 to on.

Press Note C4 again and adjust the linearity on Voicecard 2 (double frequency pro oct) but without moving the Cutoff on TuBika !!!!

You will see , there is a little difference in the frequency between the two cards. If now Voicecard 2 is in range, repeat the procedure with Voicecard 3,4,5,6. Don't move the cutoff !!!

If now all Voicecards adjust fine in the V/OCT linearity we will now decrease the frequency difference with the 50 Kohm offset pot.

First, switch on Voicecard 1, all others OFF.

C4 basic frequency is 100 HZ, Ok .(if not , move the cutoff a little bit so that the basic frequency is 100 Hz)

Second, switch off Voicecard 1, 3, 4, 5, 6 , switch on voicecard 2.

Adjust with the 50 Kohm pot now the basic frequency from Voicecard 2 in this way , that both frequencies VC 1 and VC2 in C4 have the same value. 100Hz (+/- 1 Hz). Don't touch the cutoff on TuBika.

Third, repeat this procedure with Voicecard 3,4,5,6.

** OFF VC 1,2,4,5,6, on 3 and so on.

Let TuBika warm up 1 hour and control all settings again.

Congrats , now you have a fine adjusted TuBika.

Than there is one thing more , what happens with the SMD Transistor BC 857BS ?

If you look in the schematics , you will see , that the BC 857BS is parallel to both 2N3906 .

Why ?

The log circuit is temperatur sensitive. Specially if we use two separate transistors for this. A better solution is 2 transistors on one chip.

But this parts is so small > realy hard to solder . So , this is an option not a must do.

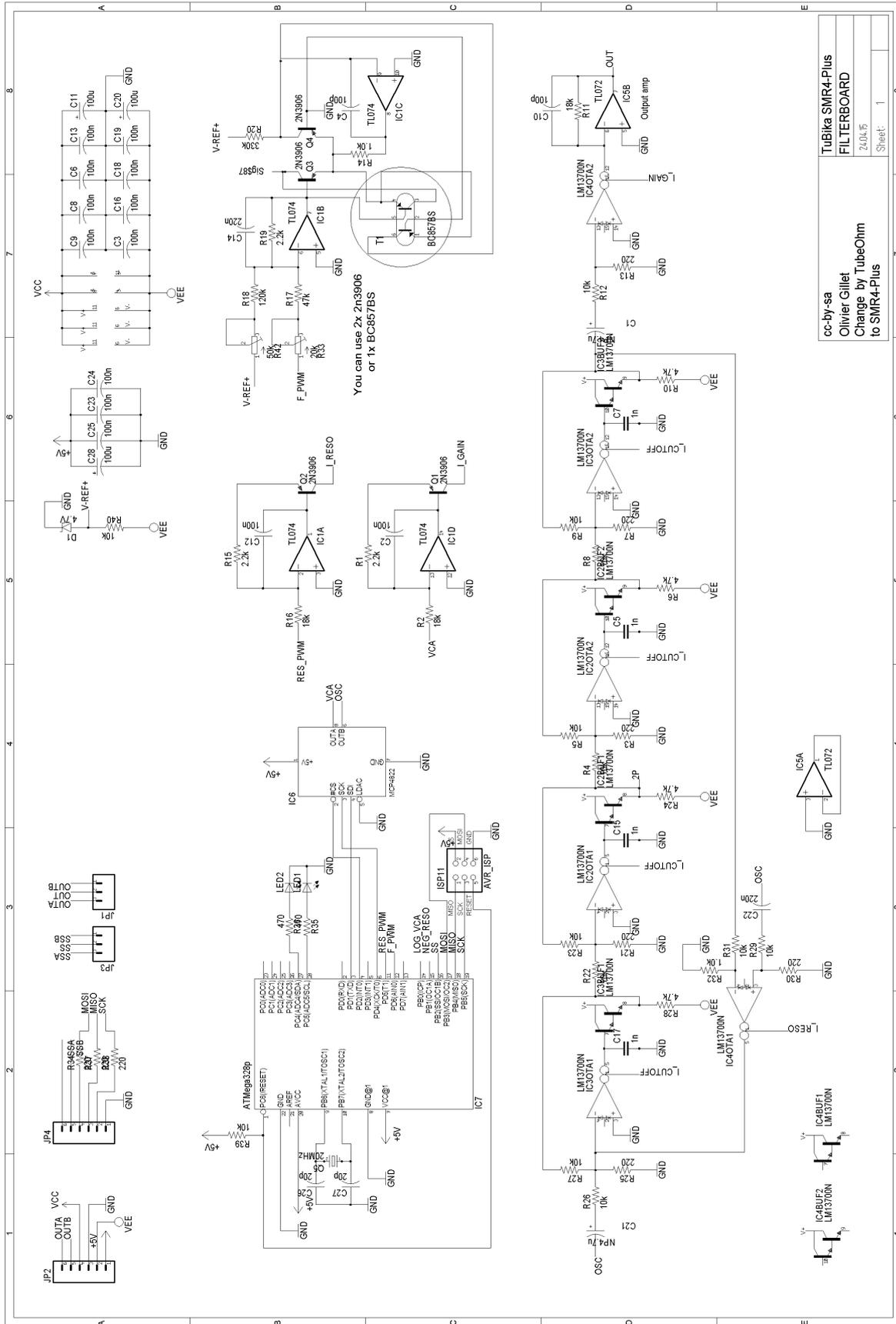
If you want , you can use the BC 857BS or the two 2N3906 , BUT not the BC857BS AND the two 2N3906 together !!!!

I recommend you to use only the two 2N3906.

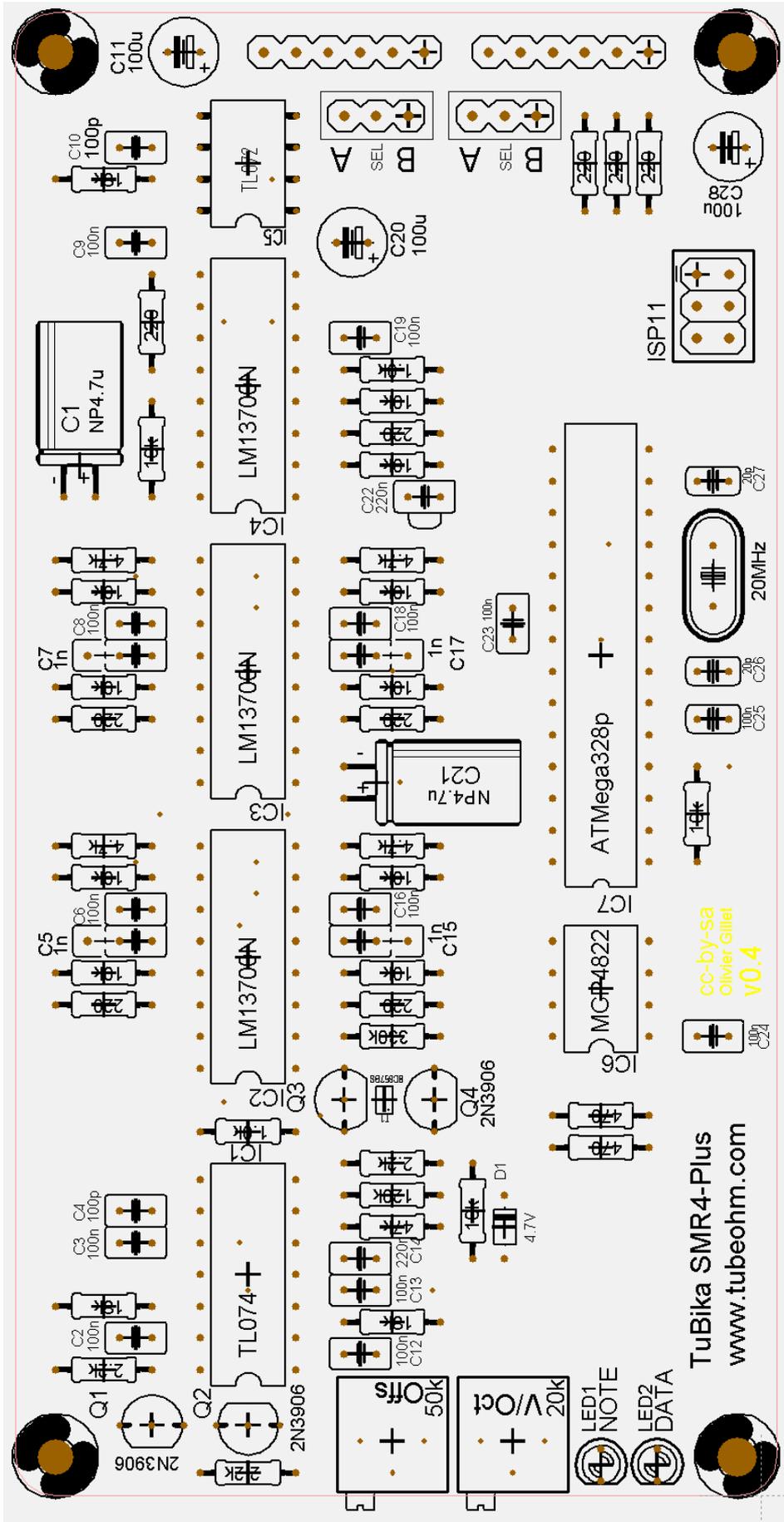
TubeOhm 24.04.2015

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Schematics SMR4-Plus



Layout



TuBika SMR4-Plus
www.tubeohm.com

cc-by-sa
Olivier Gillet
v0.4

ISP11

100p
C28

220
220
220

100u
C11

LED1
NOTE

LED2
DATA

4.7V
D1

2N3906
Q4

100p
C16

100p
C15

NP4.7u
C21

1n
C17

100n
C18

100n
C19

100n
C20

220n
C22

20MHz

100p
C25

100p
C26

100p
C27

100u
C28

220
220
220

100p
C10

100n
C8

NP4.7u
C1

100n
C7

100n
C6

100n
C5

100n
C4

100n
C3

2N3906
Q1

2N3906
Q2

2N3906
Q3

2N3906
Q4

TL074
Q11

LM1370
Q12

LM1370
Q13

LM1370
Q14

TL072
Q15

100u
C11

100n
C8

NP4.7u
C1

100n
C7

100n
C6

100n
C5

100n
C4

100n
C3

2N3906
Q1

2N3906
Q2

2N3906
Q3

2N3906
Q4

TL074
Q11

LM1370
Q12

LM1370
Q13

LM1370
Q14

TL072
Q15

100u
C11

100n
C8

NP4.7u
C1

100n
C7

100n
C6

100n
C5

100n
C4

100n
C3

2N3906
Q1

2N3906
Q2

2N3906
Q3

2N3906
Q4

TL074
Q11

LM1370
Q12

LM1370
Q13

LM1370
Q14

TL072
Q15

Schematics and PCB CC BY SA Olivier Gillet.
Changings by TubeOhm