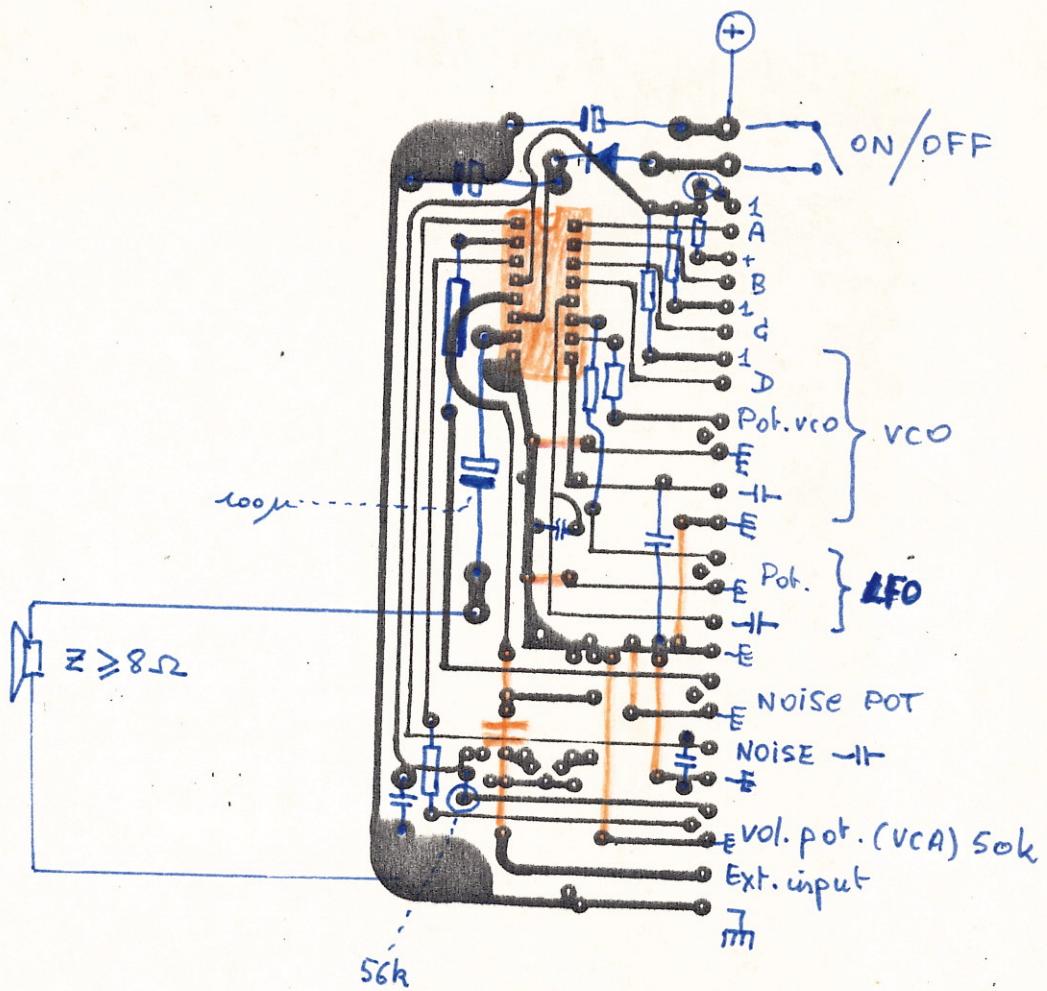


Synthelog  
Mini VI-modul

51.01

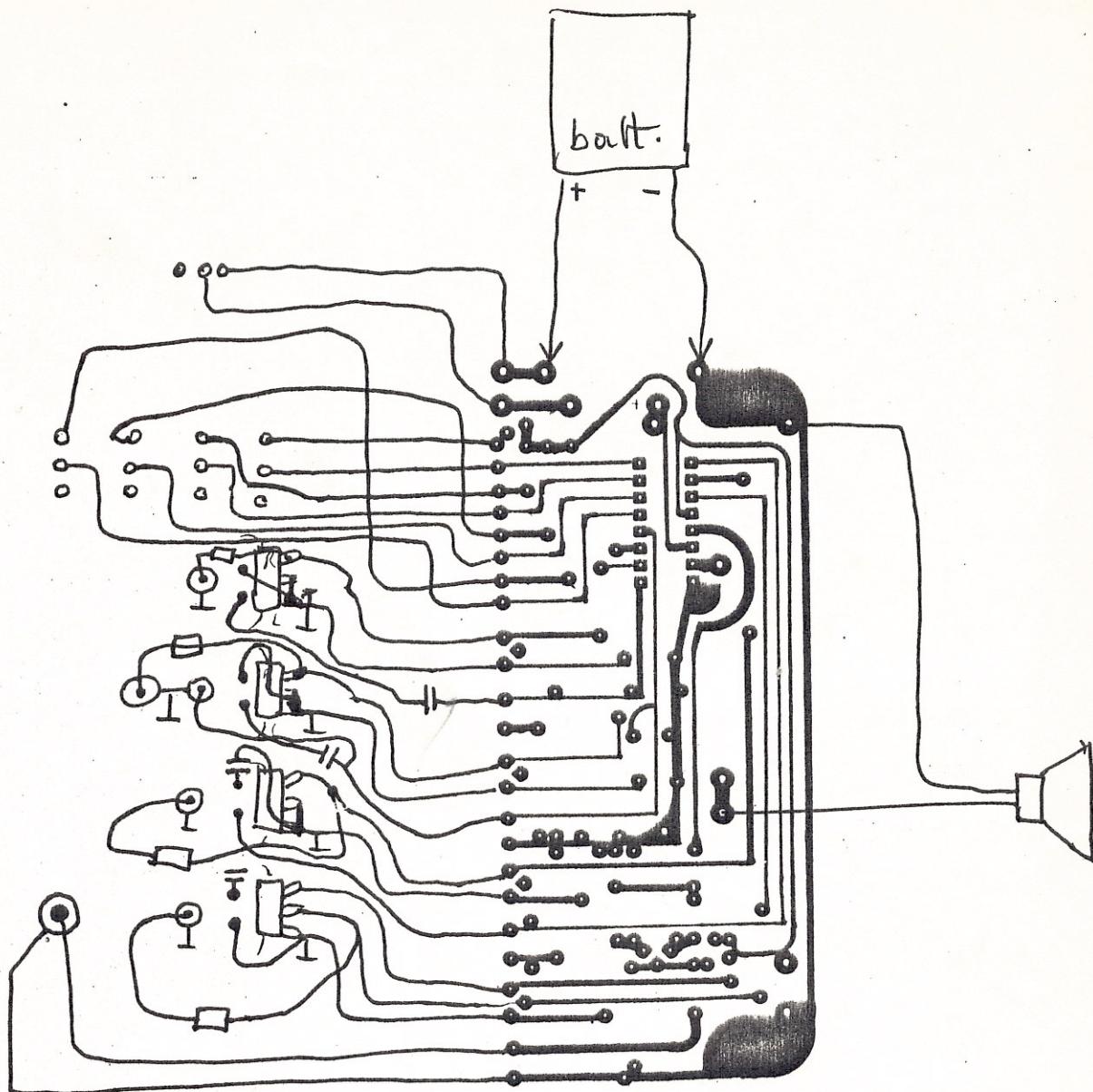
# Synthelog VI bestukking



Prijs bestukking  
onderstellen zijde.

IV golen  
glubom-i

48.50

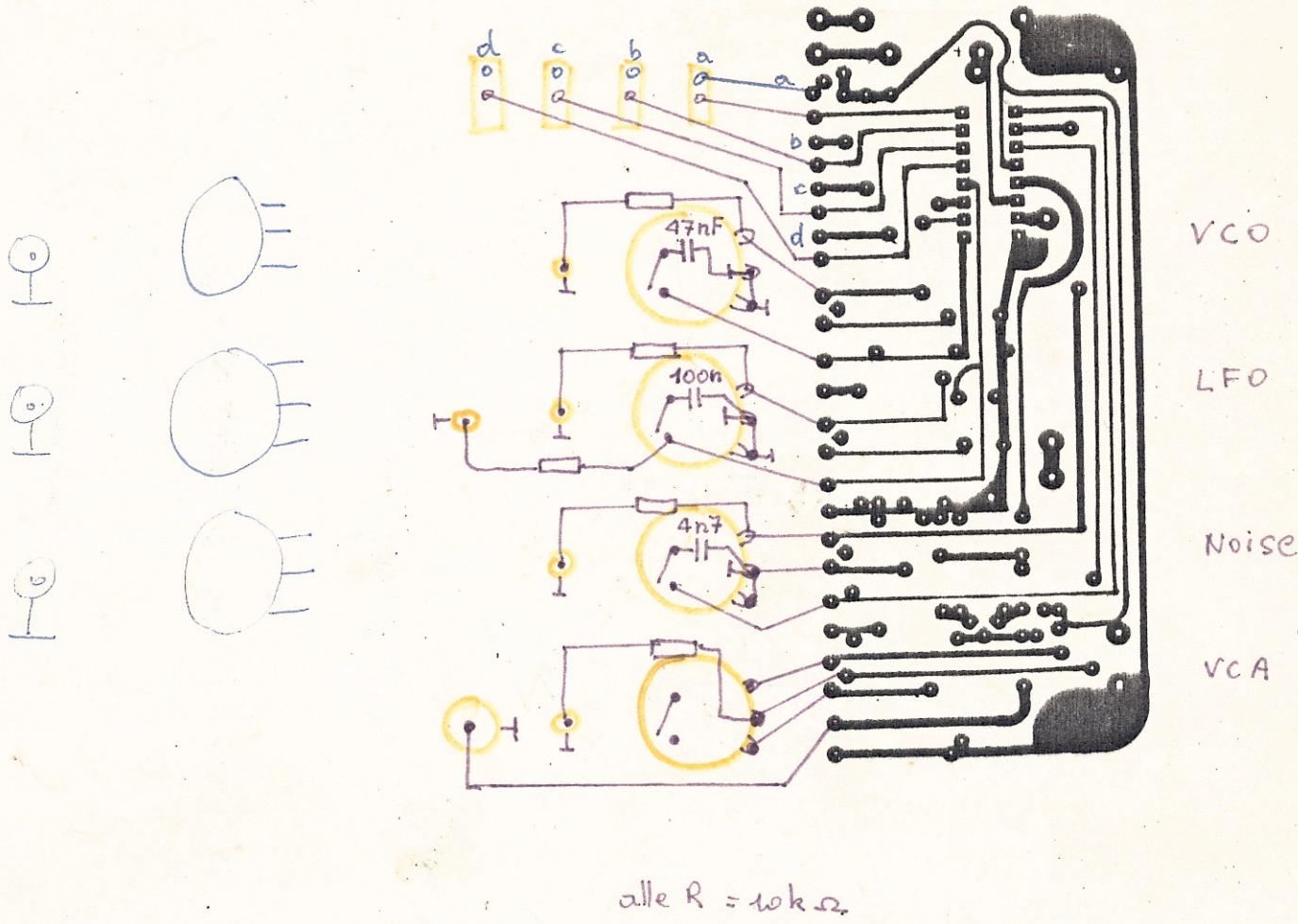


binnen aanzicht. (opengevouwen)

# Synthelog VI mini-module

02.84

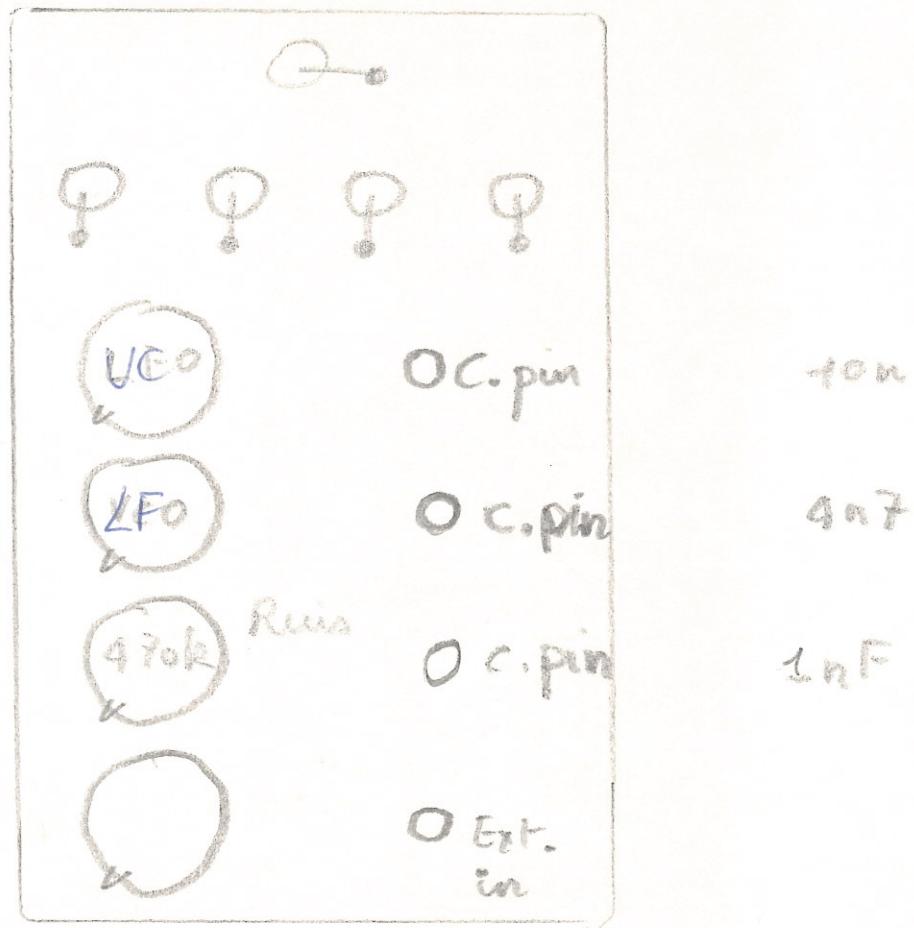
# Kableringsplan

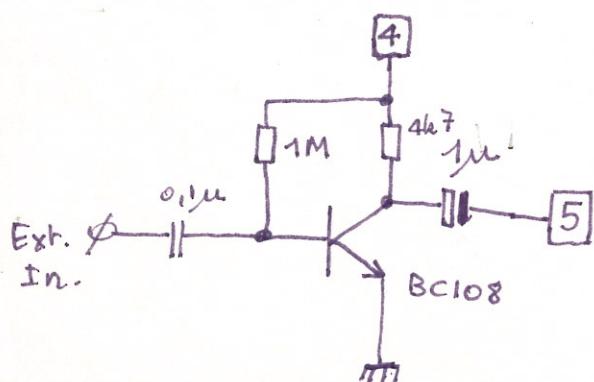
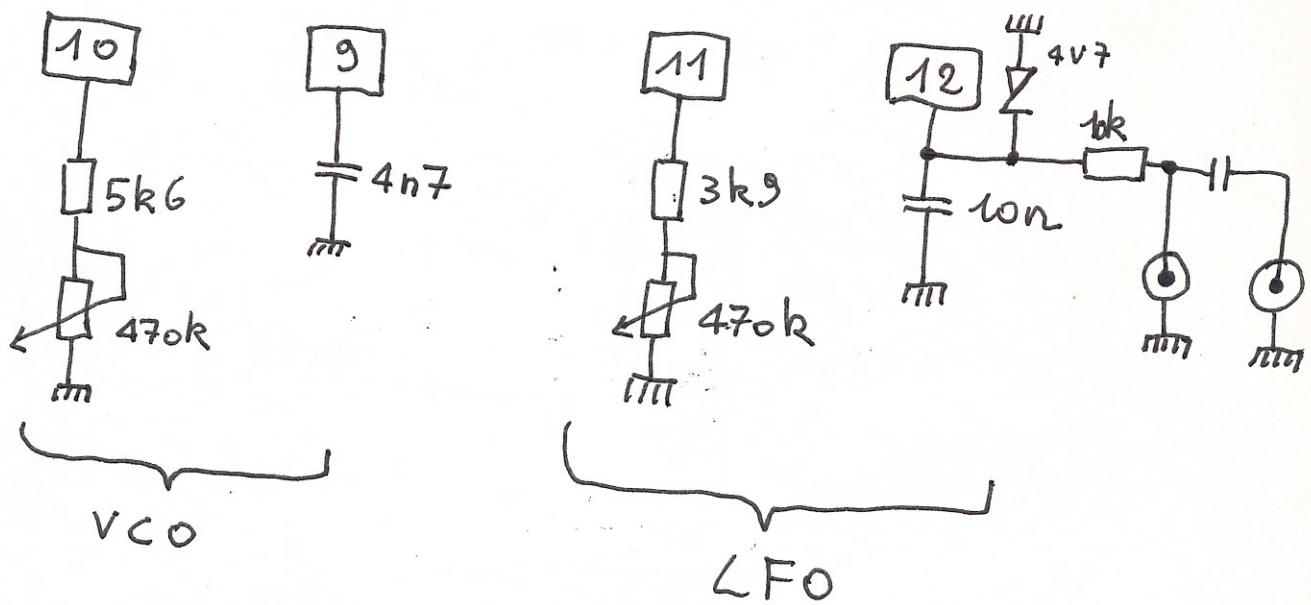
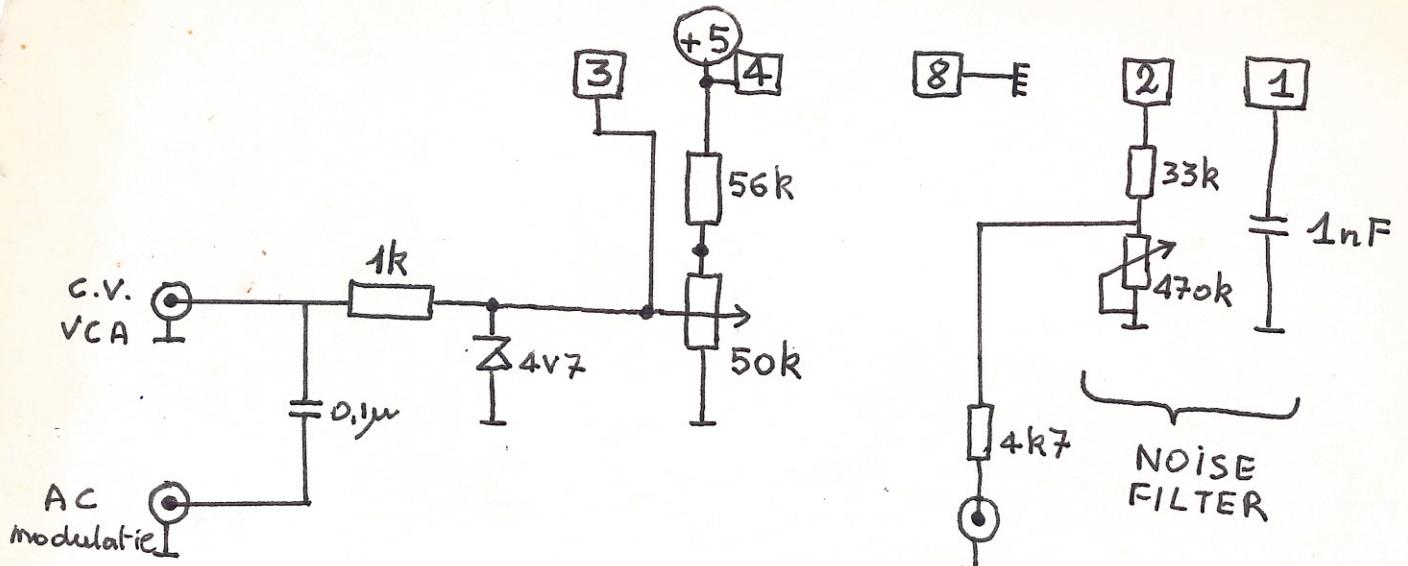


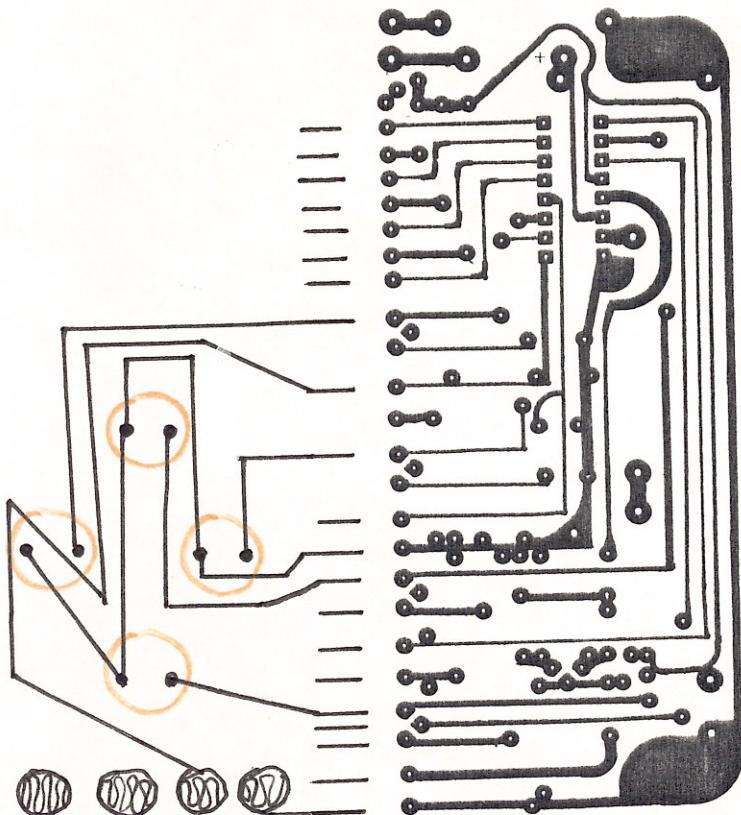
helog VI  
i-module

02

3 pot. 470k



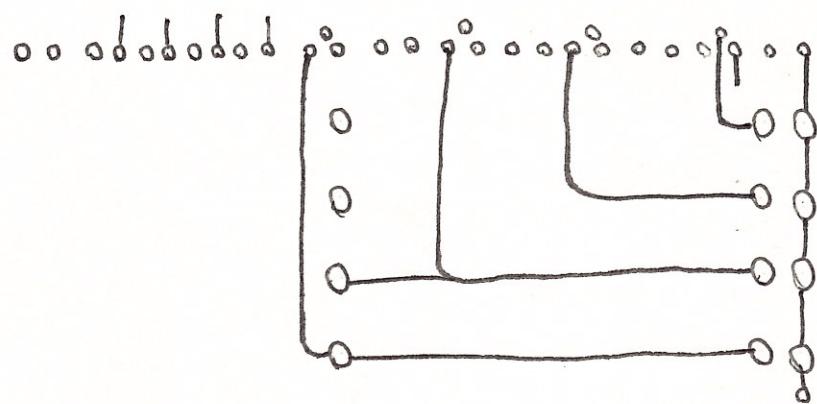




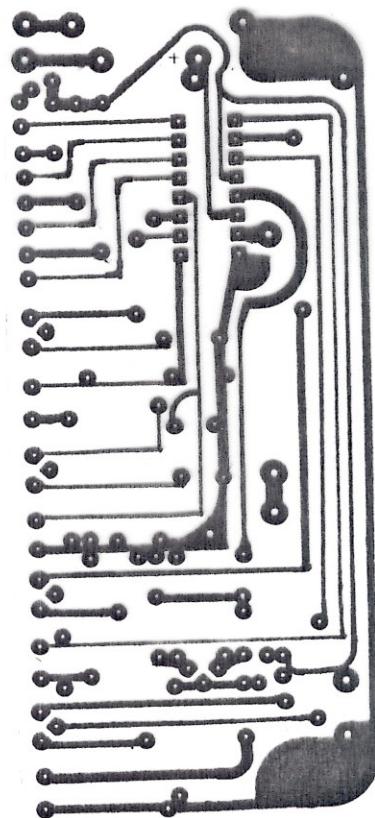
Synthelog VI  
mini-module

02.84

Schiff polnisch

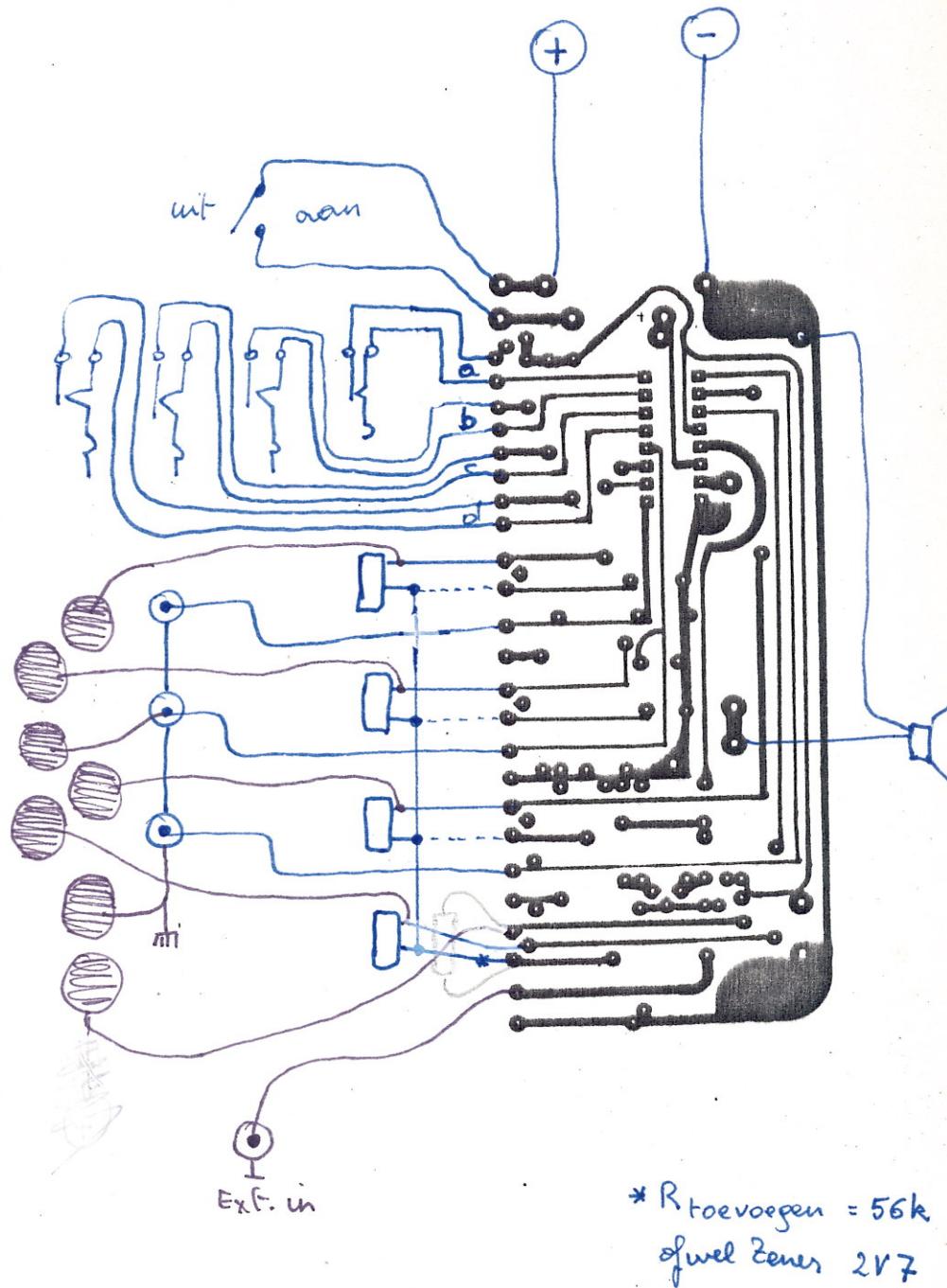


251



helog VI  
i-module

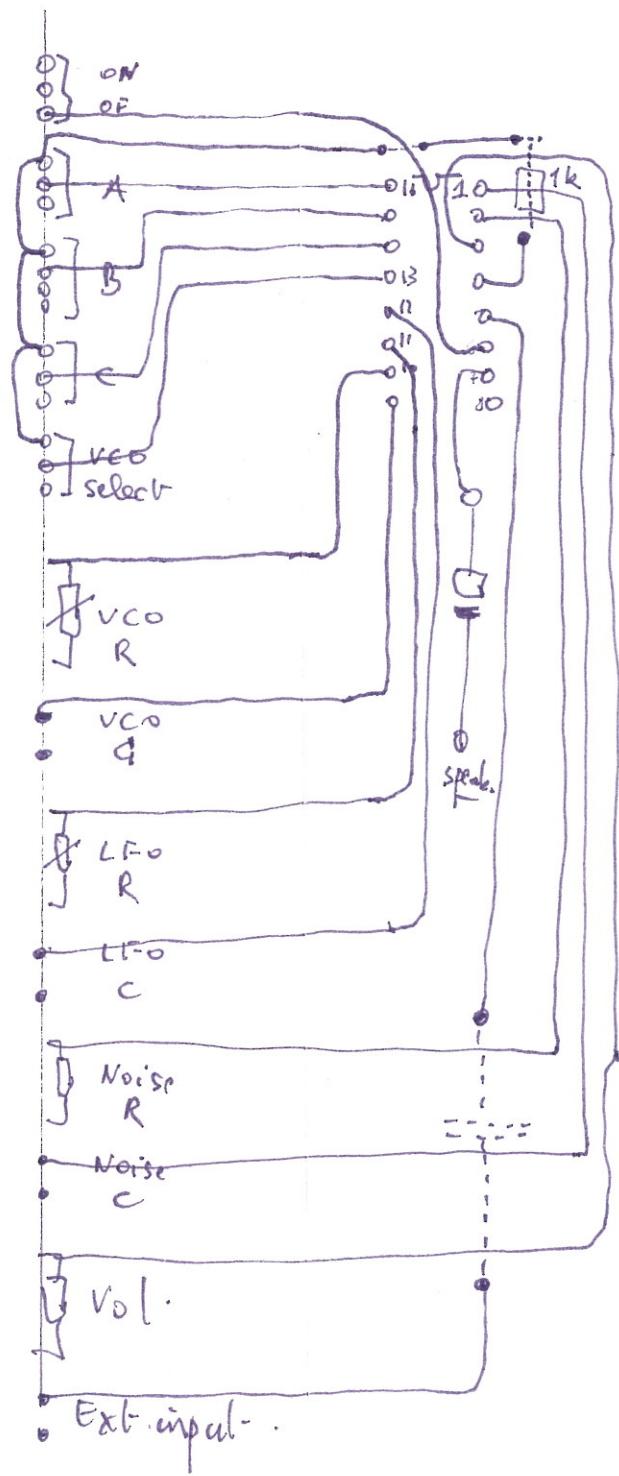
02.84

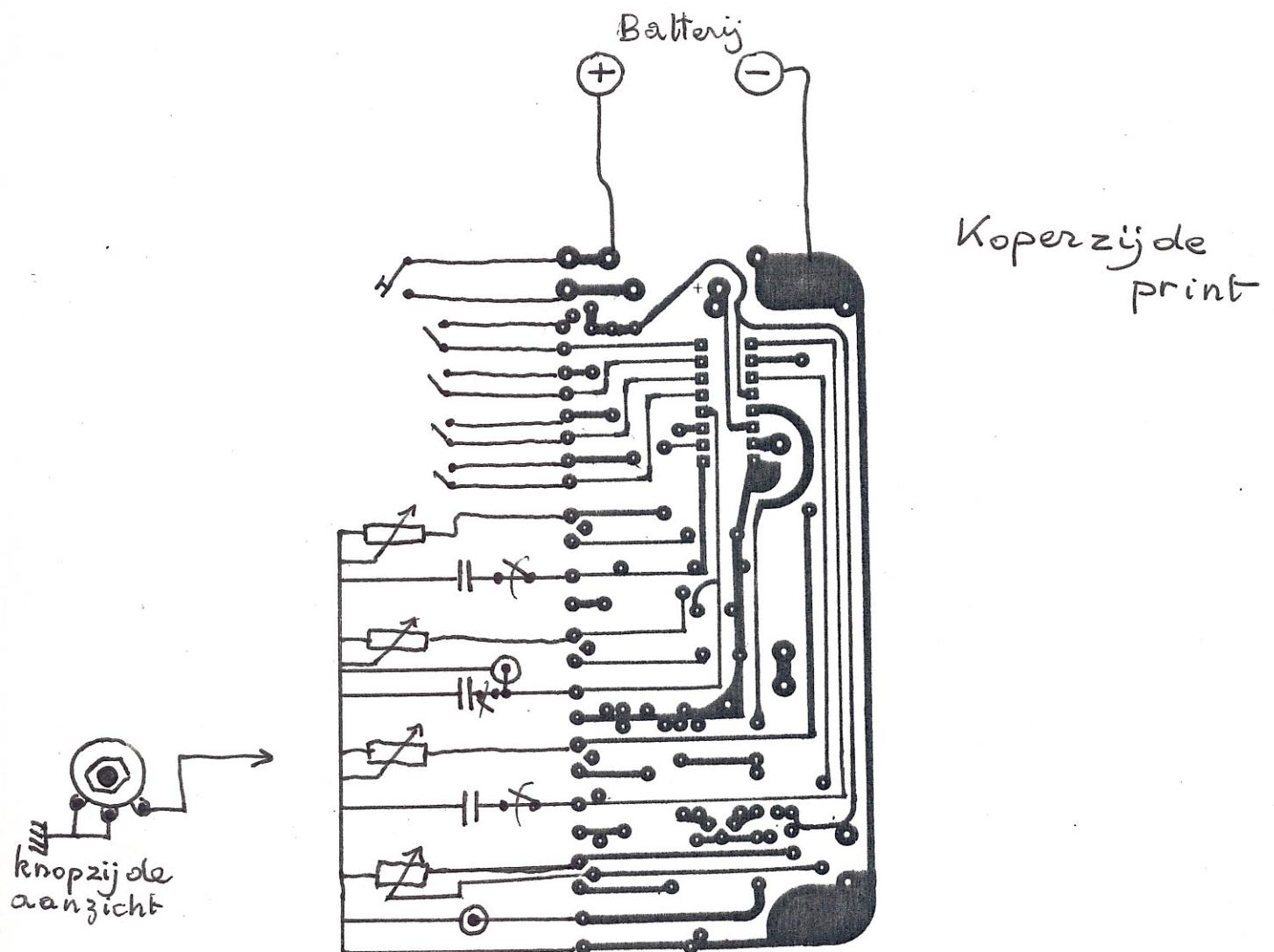


\* R toevoegen = 56k  
ofwel Zener 2V7

LDR &  
voelvlak  
versie

helog VI  
i-module





# Synthelog VI mini-module

02.84

negat. +5-vastheit  
 logische niveaus  
 mixer.

$0 = \text{Ext. (pin 12)}$

$1 = \text{Int. (SUF)}$

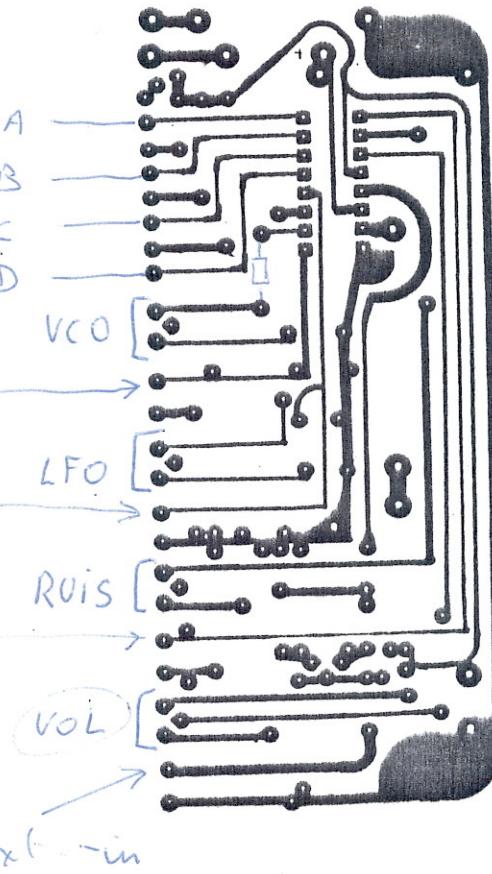
LFO, VCO      LFO, VCO

1	0	0
0	1	0
0	1	0

VCO-G

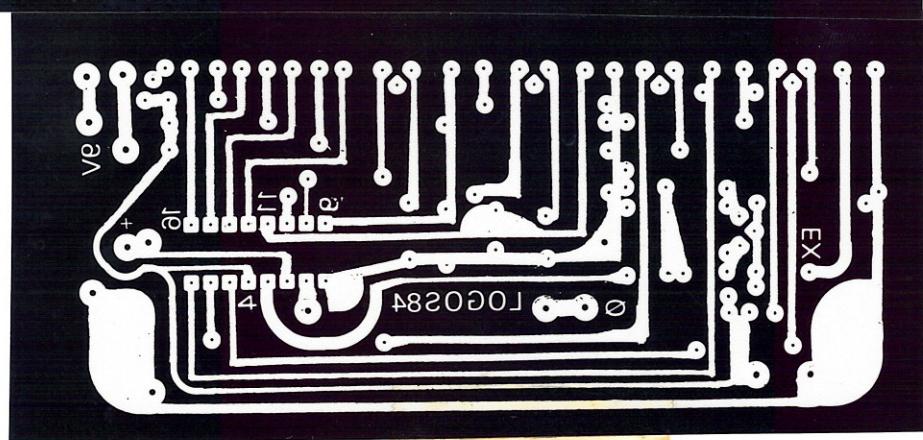
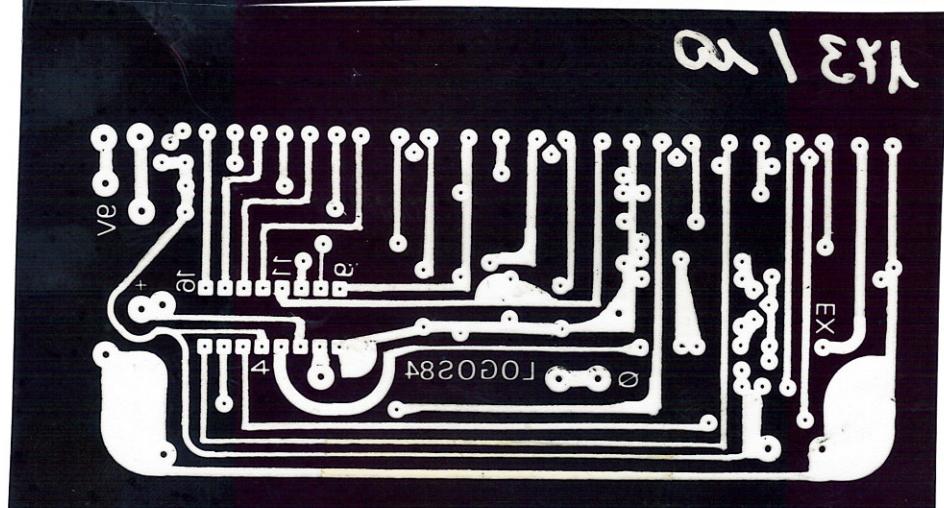
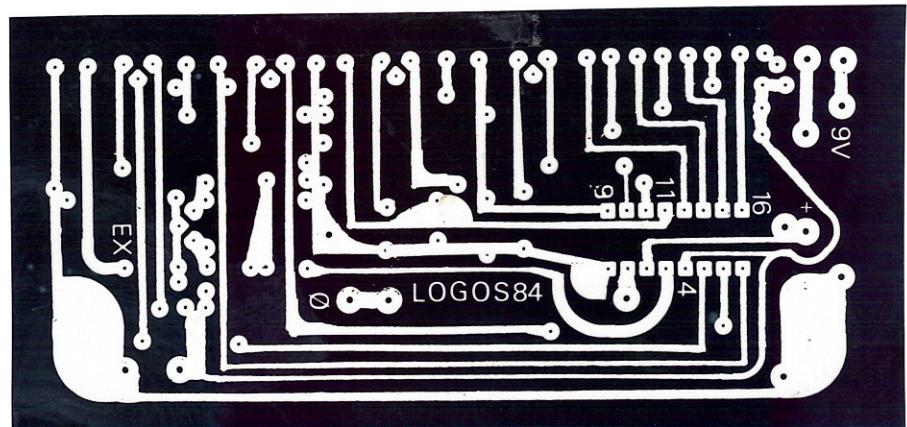
LFO-G

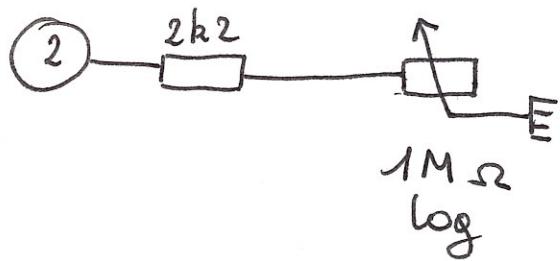
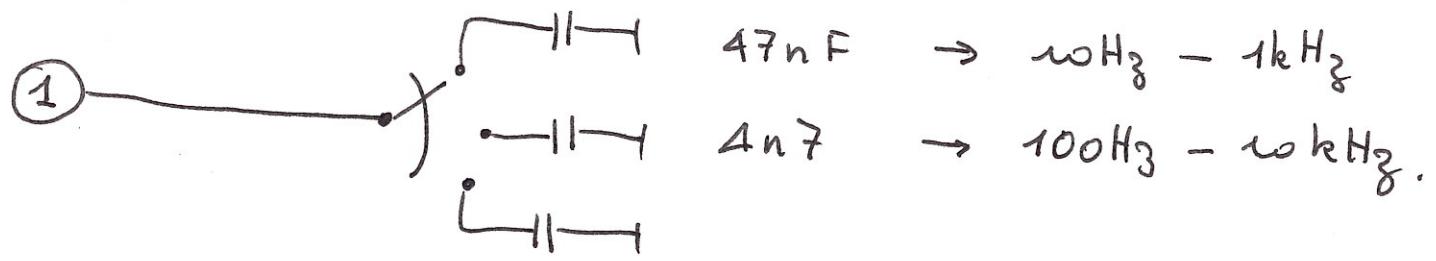
RVis-G



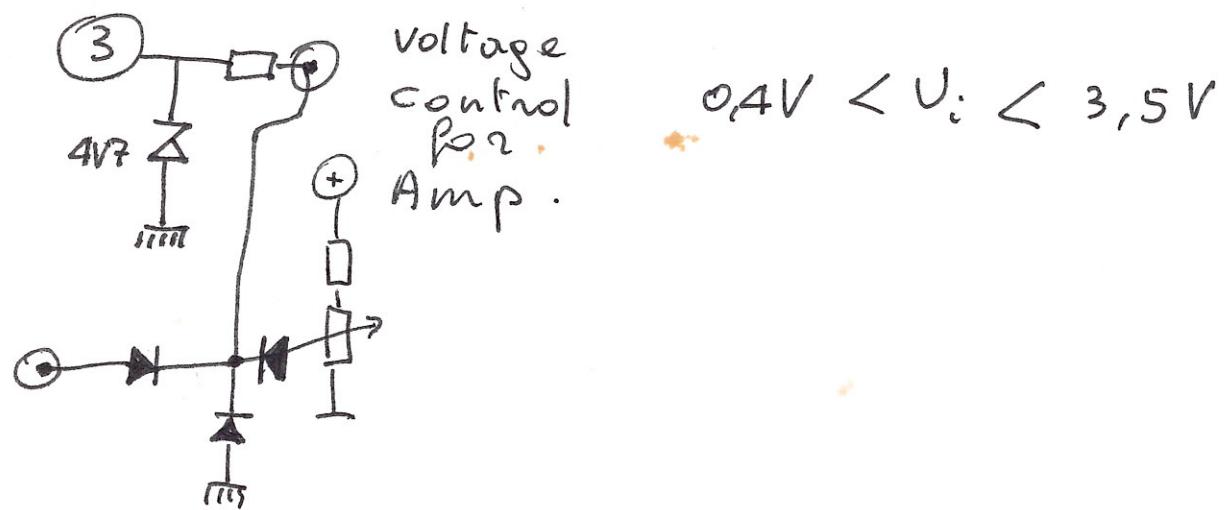
heilog VI

i-module





Filter.



$$V_002 \quad 20\text{Hz} < f < 1\text{kHz}$$

$$\rightarrow 0 < R < 470\text{k}\Omega$$

$$200\text{Hz} < f < 10\text{kHz}.$$

$$\rightarrow C = 47\text{nF}$$

$$C = 4,7\text{n}$$

Potmeter :  $470\text{k}\Omega$  log.

$$I_{\text{limit}} : 250\mu\text{A}$$

$$U = I \cdot R$$

$$\rightarrow R_{\min} = \frac{8}{250 \cdot 10^{-6}} = 0,02 \cdot 10^6 = 20\text{k}\Omega$$

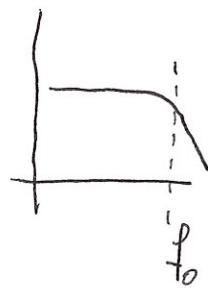
$$= \frac{2,75}{250 \cdot 10^{-6}} = 0,011 \cdot 10^6 = \underline{\underline{11\text{k}\Omega}}$$

waarvan  $9\text{k}\Omega$   
uitbreng

$\rightarrow$  Serie weerstand  
nauwzakelijk ca  $2\text{k}\Omega$ .

Noise :

$$f_{\text{off}} = \frac{0,43}{(9k_\Omega + R) G}$$



voor  $f_{20\text{Hz}}$  :

$$20 = \frac{0,43}{(479.000) G}$$

& stel  ~~$R = 0$~~

$$R_{\text{max}} = 470k_\Omega$$

$$0,43 = 20 \times 479.000 G$$

$$G = \frac{0,43}{9,6 \cdot 10^6}$$

$$= \frac{0,43}{9,6} \cdot 10^{-6}$$

$$= 0,04 \cdot 10^{-6}$$

$$\approx 47 \text{nF}$$

$\Rightarrow f$  bij  $R_{\text{min}} = 0 \Omega$

$$f_{\infty} = \frac{0,43}{9000 \cdot 47 \cdot 10^{-6}} = \frac{0,43}{9,47 \cdot 10^{-6}}$$

$$= \frac{0,43}{423} \cdot 10^6 = 0,001 \cdot 10^6 = \underbrace{1.000 \text{ Hz}}_{\text{}}$$

## Berekeningsresultaten:

Noise filter :  $839 \text{ Hz} < f_o < 10 \text{ kHz}$ .

bij  $C = 1 \text{nF}$

& potm =  $470 \text{k}$

& serie R =  $33 \text{k}$

SLF :  $1361 \text{ Hz} < f_o < 5 \text{ kHz}$

bij  $C = 10 \text{nF}$

& potm. =  $470 \text{k}$

& serie R =  $3 \text{k}\Omega$

bij potmeter  $220 \text{k}$ :  $f_{\min} = 283 \text{ Hz}$ .

$100 \text{k} \rightarrow f_{\min} = 584 \text{ Hz}$ .

VCO : (Eq. 3)

Case 1  $708 \text{ Hz} < f_o < 16 \text{ kHz}$

bij  $C = 4,7 \text{nF}$

& potm =  $470 \text{k}$

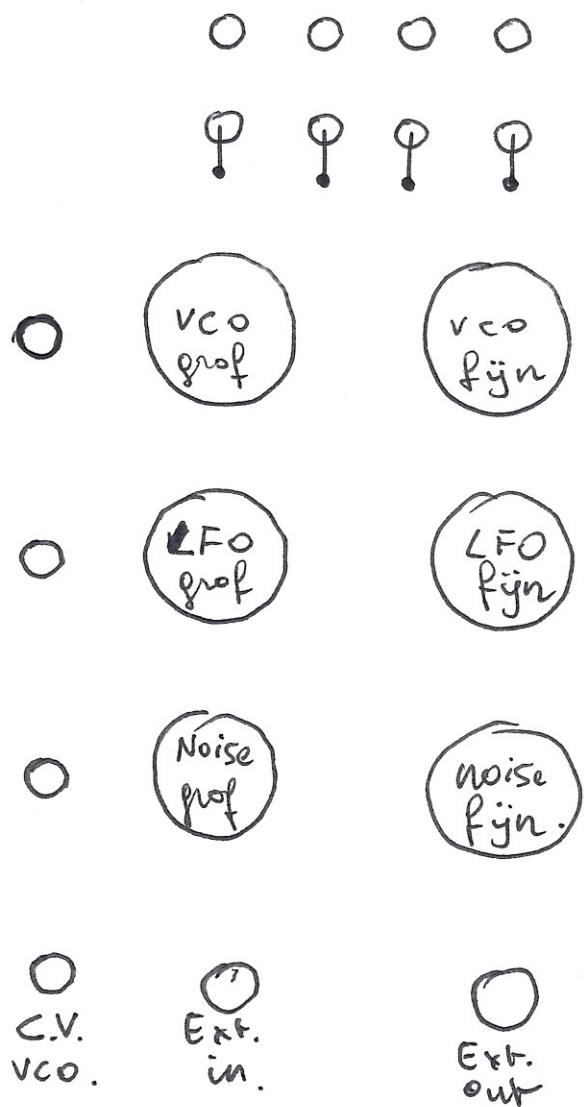
& serie R =  $5 \text{k}\Omega$

bij potm.  $220 \text{k}$   $f_{\min} = 1464 \text{ Hz}$ .

$\Rightarrow$  Eq. 2  $f_{\max} = 8,7 \text{ kHz}$  &  $f_{\min} = 263 \text{ Hz}$   
met gwassi 10:1

Frontplate:

A. professionele uitvoering



SLF - Berekening

$$f = \frac{0,66}{(9k + R_{\text{sonde}}) \cdot C}$$

stel  $R_{\text{sonde}} = 3 \text{ k}\Omega$

$C = 10 \text{ nF}$

$$\rightarrow f_{\text{max.}} = \frac{0,66}{12,9 \cdot 10^3 \cdot 10^{-8}} = \frac{0,66}{12,9} \cdot 10^5 = 5 \text{ kHz.}$$

stel  $R_{\text{pot}} = 470 \text{ k}$ .

$$f_{\text{min.}} = \frac{0,66}{483 \cdot 10^3 \cdot 10^{-8}} = \frac{0,66}{483} \cdot 10^5 = 136 \text{ Hz.}$$

bij pot = 220 k

$$f_{\text{min.}} = \frac{0,66}{233 \dots} = \frac{0,66}{233} \cdot 10^5 = 283 \text{ Hz}$$

look

$$\frac{0,66}{113} \cdot 10^5 = 584 \text{ Hz.}$$

VCO - berek.

$$f_{\max} = \frac{1.45}{14,6 \cdot 10^3 \cdot 4,7 \cdot 10^{-9} \cdot 0,9}$$

$$R_{\text{seri}} = \underline{5 \text{ k}\Omega}$$

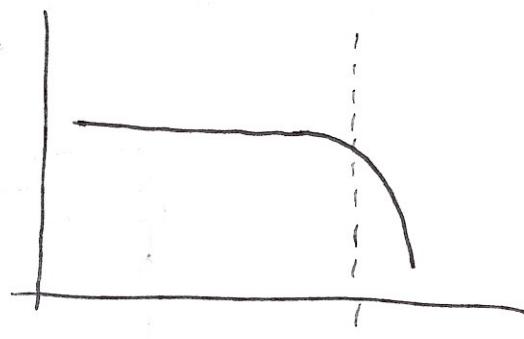
$$= \frac{1,45}{61,7} \cdot 10^6 = 16 \text{ kHz}.$$

→ potm. 170 k →

$$\frac{1,45}{484 \cdot 4,7 \cdot 0,9} = \underline{708 \text{ Hz}}.$$

$$\underline{220 \text{ k}} \quad \frac{1,45}{234 \cdot 4,7 \cdot 0,9} = 1,464 \text{ kHz}.$$

$$\frac{0,6}{14,6 \cdot 4,7} \quad \frac{0,6}{485 \cdot 4,7}$$



$$f_0 = \frac{0,43}{(9k\omega + R) C}$$

$$= \frac{0,4}{(500k) \cdot 10^{-9}}$$

stiel 500k =  $R_{max}$

$1nF = C_{min}$

$$= \frac{0,4}{5 \cdot 10^5 \cdot 10^{-9}}$$

$$= \frac{0,4}{5 \cdot 10^{-4}}$$

$$= \frac{4}{5} \cdot 10^3 = 0,8 \cdot 10^3 = 800 \text{ Hz}.$$

stiel potm. =  $1k\omega$  (continuum)

$$\frac{0,4}{10^4 \cdot 10^{-9}} \quad \frac{0,4}{10^{-5}} = 0,4 \cdot 10^5 = 40.000 \text{ Hz}.$$

$$f_0 \sim \frac{1}{R}$$

St-el R<sub>serie</sub> = 1kΩ

$$\rightarrow f_0 = \frac{0,43}{10k \cdot G}$$

st-el G = 1nF

$$= \frac{0,43}{10^4 \cdot 10^{-9}} = 0,43 \cdot 10^5 = 43 \text{ kHz}.$$

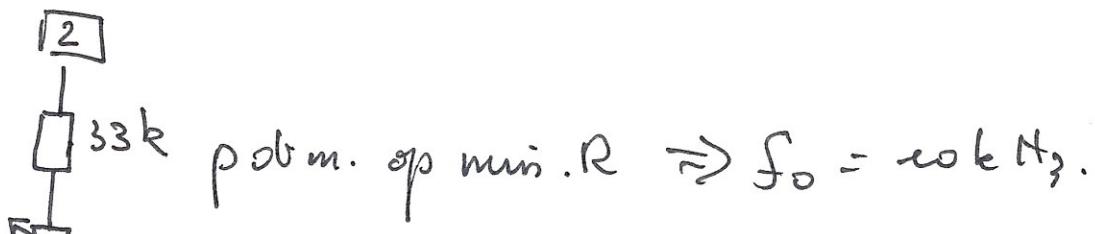
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St-el. R<sub>serie</sub> = 12kΩ

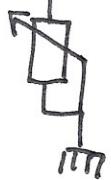
$$\rightarrow f_0 = \frac{0,43}{19 \cdot 10^3 \cdot 10^{-9}} = \frac{0,43}{19} \cdot 10^6 = 22,6 \text{ kHz}$$

St-el R<sub>serie</sub> = 33kΩ

$$f_0 = \frac{0,43}{42 \cdot 10^3 \cdot 10^{-9}} = \frac{0,43}{42} \cdot 10^6 = \underline{\underline{10 \text{ kHz}}}.$$



$$\text{pobm. op min. R} \Rightarrow f_0 = 10 \text{ kHz}.$$



stål pobm = 100k

$$f_0 = \frac{0,43}{142 \cdot 10^3 \cdot 10^{-9}} = \frac{0,43}{142} \cdot 10^6 = 3 \text{ kHz.}$$

stål pobm = 220k

$$f_0 = \frac{0,43}{262 \cdot 10^3 \cdot 10^{-6}} = \frac{0,43}{262} \cdot 10^6 = 1,6 \text{ kHz.}$$

stål pobm = 470k

$$f_0 = \frac{0,43}{512 \cdot 10^3 \cdot 10^{-6}} = \frac{0,43}{512} \cdot 10^6 = 839 \text{ Hz.}$$

als  $\frac{f_{\min}}{f_{\max}} = \frac{1}{\omega}$  olen

bij potmeter rook moet  $R_{\text{series}} = ?$

---

$$f_0 \max = 20.000 \text{ Hz} = \frac{0,43}{R \cdot \omega^{-9}}$$

$$0,43 = 2 \cdot 10^4 \cdot 10^{-9} \cdot R \\ = 2 \cdot 10^{-5} R$$

$$R = \frac{0,43}{2 \cdot 10^{-5}} = 0,22 \cdot 10^5 \\ = 2200 \Omega \\ = 22 \text{ k}\Omega$$

$$\Rightarrow \text{Potm. } \underline{\underline{13k}} + 1nF \Rightarrow f_{\max} 20.000 \text{ Hz.}$$

$$f_{\min} = 2 \cdot 10^3.$$

