SEMNAL	f_{MIN}	f_{MAX}	v_{MIN}	v_{MAX}
EMG	DC	10 000	$100\ 10^{-6}$	$5 \cdot 10^{-3}$

$$v_{OUT} = 0.5\ V$$

$$v_{IN} \in [v_{MIN} \dots v_{MAX}]$$

$$A = A_{Ai} \cdot A_{PGA} \begin{cases} A_{MIN} \\ A_{MAX} \end{cases}$$

A_{Ai} - ct

$$A_{PGA} \in [A_{PGA\,MIN} \dots A_{PGA\,MAX}]$$

$$A_{MAX} = \frac{500 \cdot 10^{-3}}{100 \cdot 10^{-6}} = 5000 \ (74\,dB)$$

$$A_{MIN} = \frac{500 \cdot 10^{-3}}{5 \cdot 10^{-3}} = 100 \ (40\,dB)$$

$A_{MAX} = A_{Ai} \cdot A_{PGA\ MAX}$

$A_{MIN} = A_{Ai} \cdot A_{PGA\ MIN}$

SE ALEGE $A_{Ai} \Rightarrow A_{PGA\ MAX}$ și $A_{PGA\ MIN}$

DE EXEMPLU

$A_{Ai} = 40\ dB \Rightarrow A_{PGA\ MAX} = 34\ dB$

$A_{PGA\ MIN} = 0\ dB$

$A_{Ai} = 60\ dB \Rightarrow A_{PGA\ MAX} = 14\ dB$

$A_{PGA\ MIN} = -20\ dB$

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OBSERVAȚIE

$A_{Ai} = 60\ dB \quad (1000)$

$U_{OUT\ Ai\ MAX} = U_{IN\ FTJ\ MAX} = 5V\ !!!!$

$U_{IN\ FTJ\ MAX} << U_{ALIM}$

3.3V

$A_{PGA} \in [0 \dots 35\ dB]$ 10 TREPTE

PASUL 3 dB

0dB 3dB 6dB 9dB 12dB 36dB

NR TREPTE > NR TREPTE SPECIFICAȚII

PASUL 4 dB

0dB 4dB 8dB 12dB 16dB 36dB

NR TREPTE = NR TREPTE SPECIFICAȚII

- - - - - - - - - - - - -

PASUL 5 dB

0dB 5dB 10dB 15dB 35dB

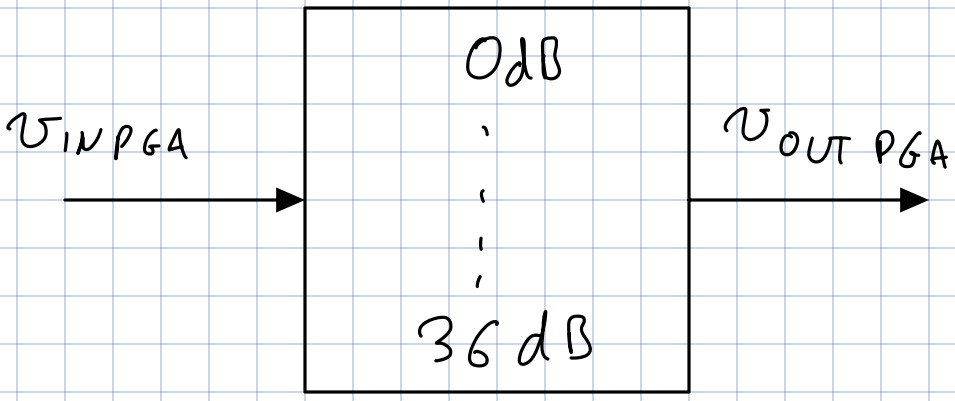
NR TREPTE < NR TREPTE SPECIFICAȚII

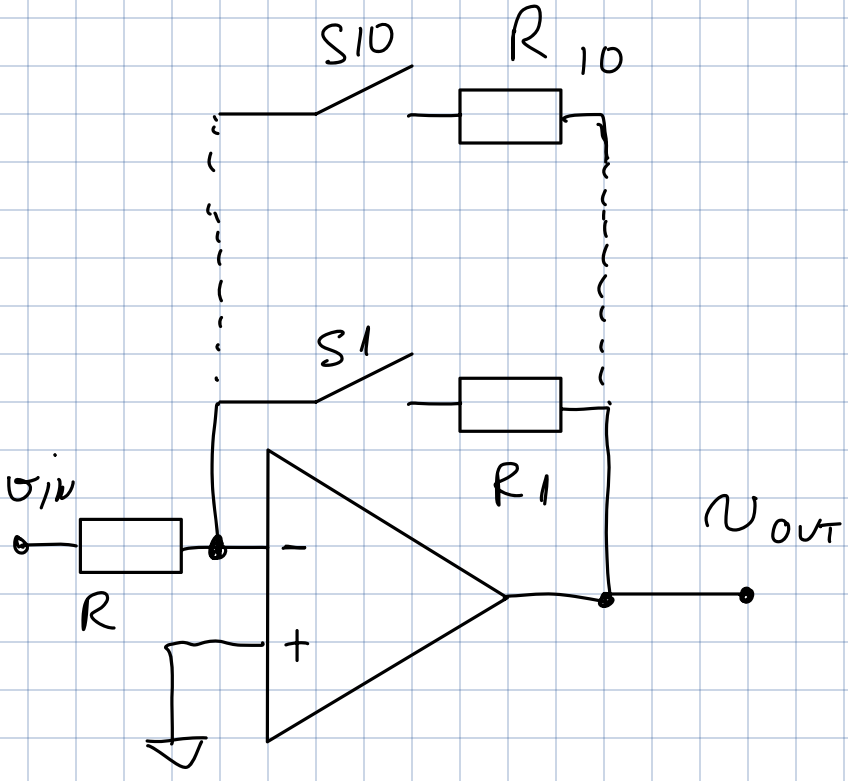
0dB 4dB 8dB 12dB 16dB 20dB 24dB 28dB

32dB 36dB

$A_{PGA\ MAX}$ = A_i

10 TREPTE



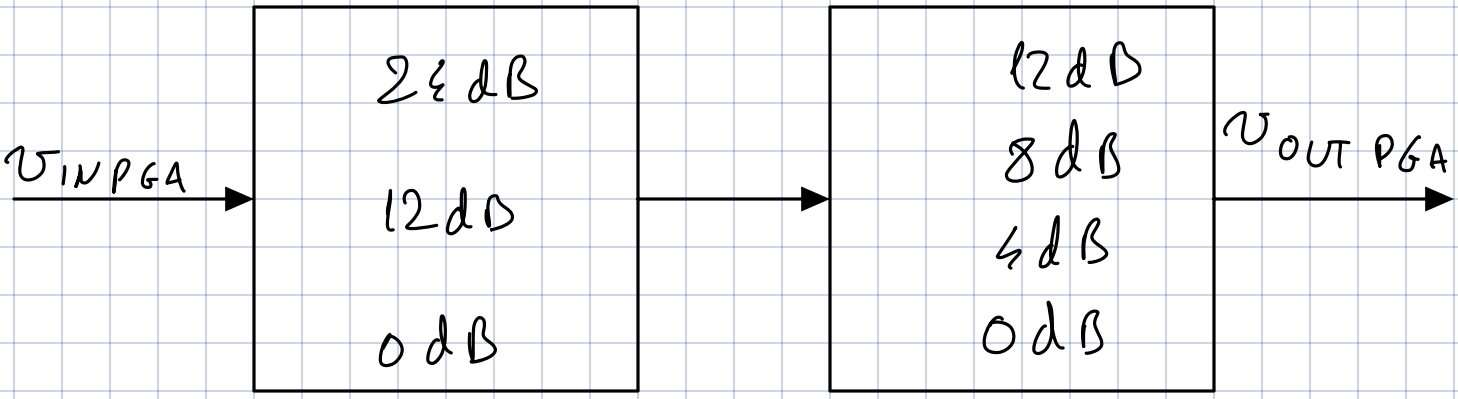


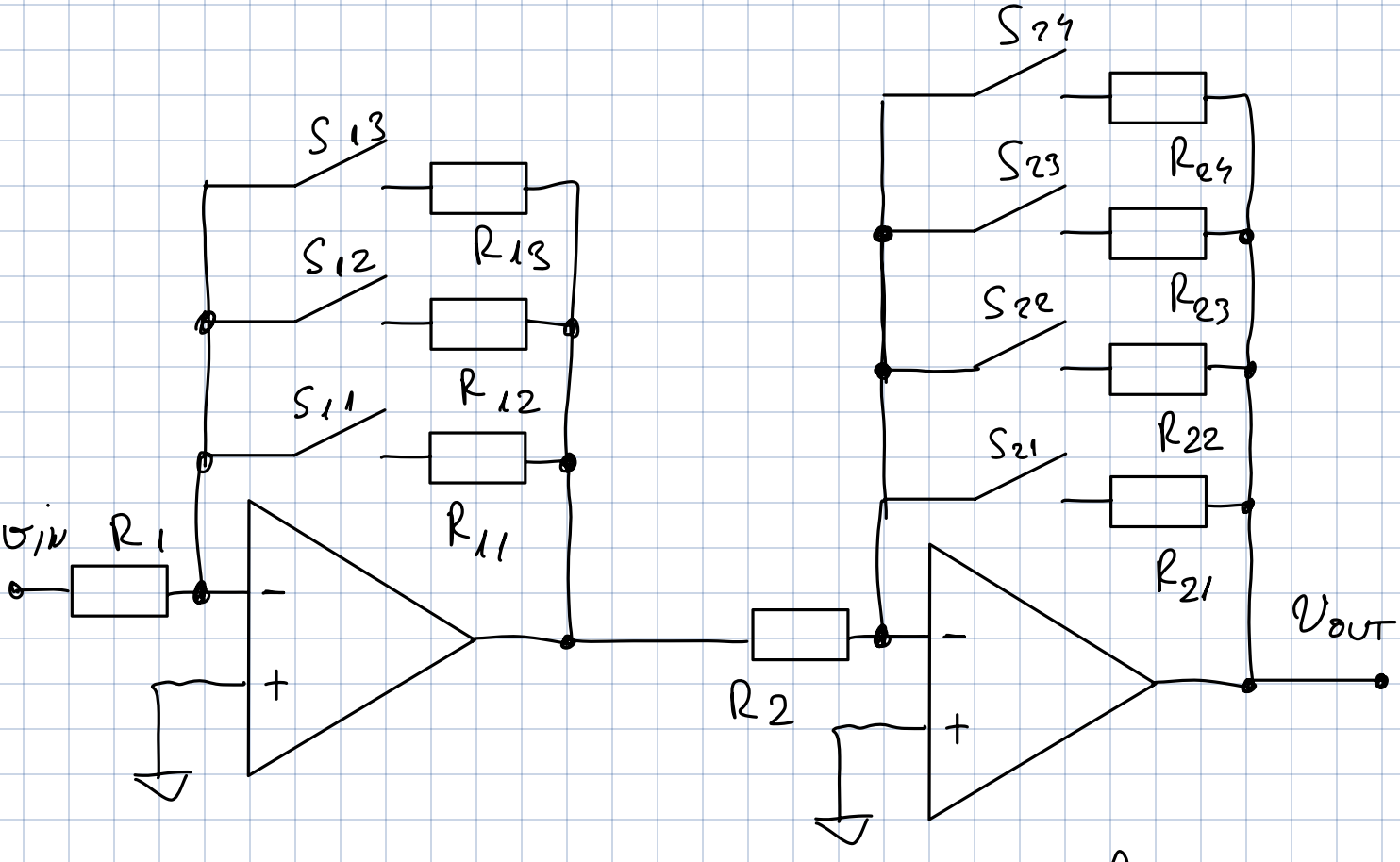
$$A_{1,7} = \frac{R_{1-10}}{R}$$

$A_1 = 0\,dB = 1$

⋮

$A_{10} = 36\,dB = 63$





$$A_{1,2,3} = \frac{R_{11-13}}{R_1}$$

$$\frac{R_{11}}{R_1} = 0\,dB = 1$$

$$\frac{R_{13}}{R_1} = 24\,dB = 15.85$$

$$A_{4,5,6,7} = \frac{R_{21-24}}{R_2}$$

$$\frac{R_{12}}{R_2} = 0\,dB = 1$$

$$\frac{R_{24}}{R_2} = 12\,dB = 3.98$$

	0 dB	12dB	24dB	0 dB	4dB	8dB	12dB
AMPL.	S11	S12	S13	S21	S22	S23	S24
0dB	ON	X	X	ON	X	X	X
4dB	ON	X	X	X	ON	X	X
8dB	ON	X	X	X	X	ON	X
12dB	ON	X	X	X	X	X	ON
16dB	X	ON	X	X	ON	X	X
20dB	X	ON	X	X	X	ON	X
24dB	X	ON	X	X	X	X	ON
28dB	X	X	ON	X	ON	X	X
32dB	X	X	ON	X	X	ON	X
36dB	X	X	ON	X	X		ON