

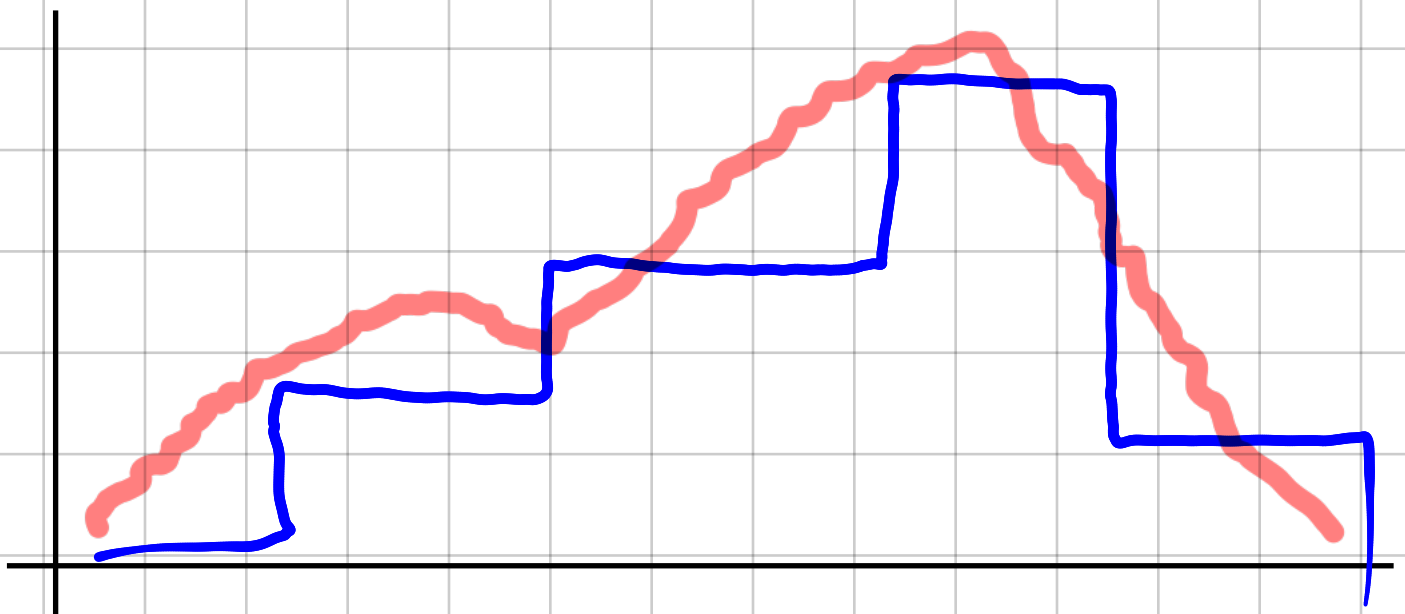
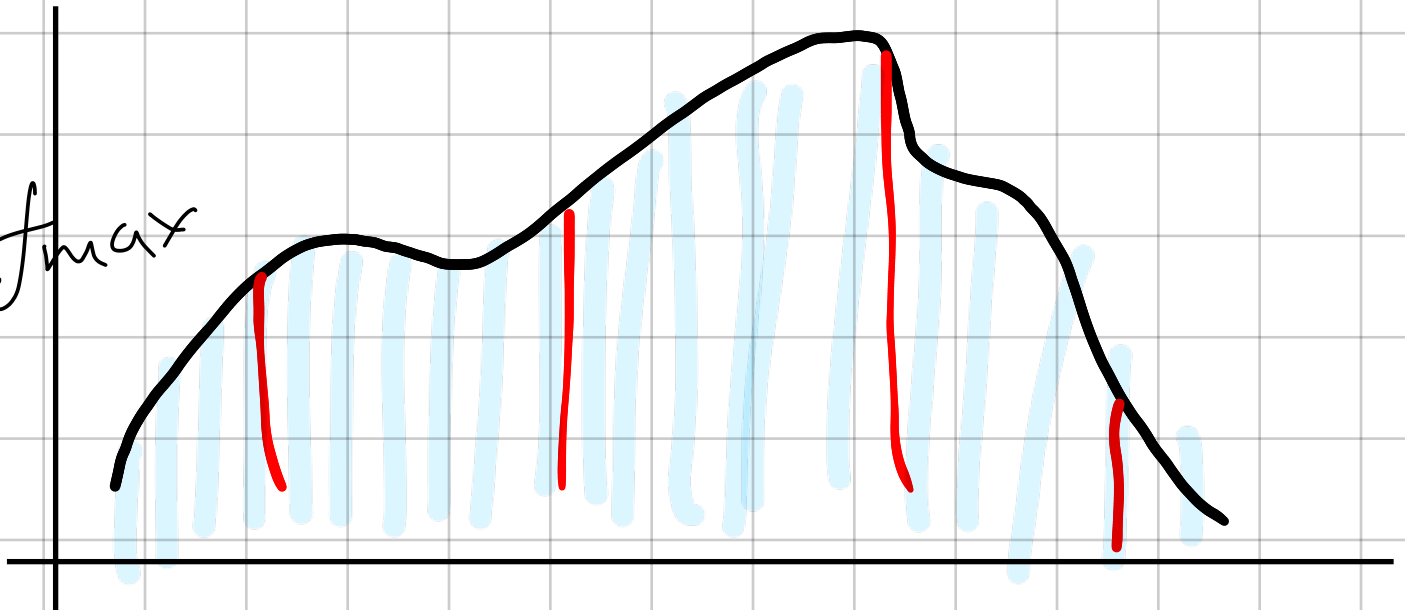
13 SEPTEMBER 2012

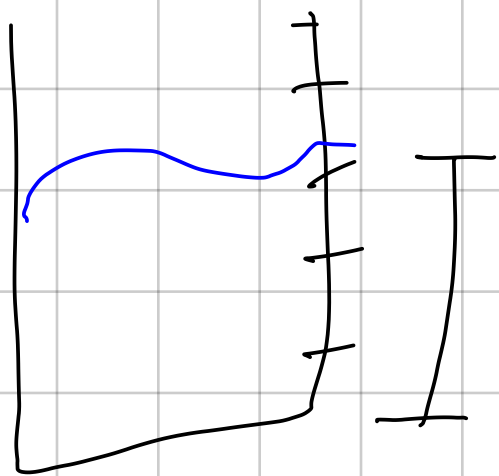
ADC \rightarrow Analogue to digital converter

DAC \rightarrow Digital to analogue converter

Nyquist

$f_{\text{sample}} > 2f_{\text{max}}$

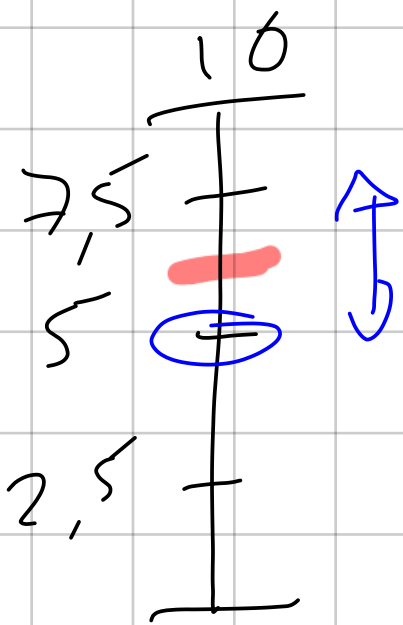




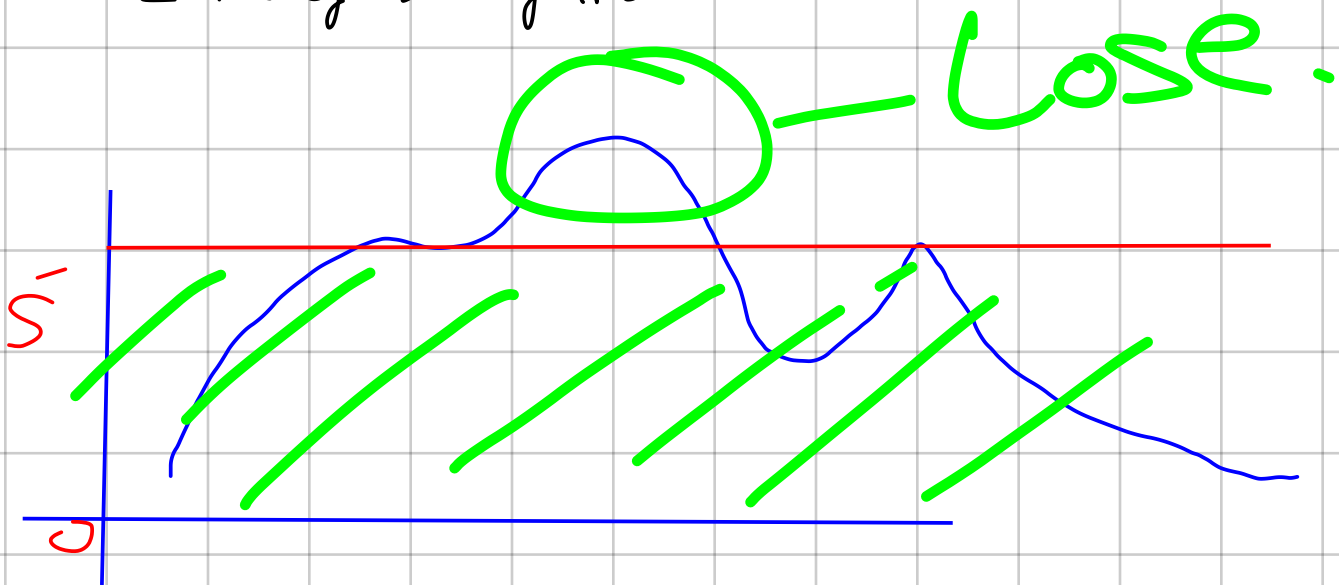
$I = \frac{1}{2}$ value -

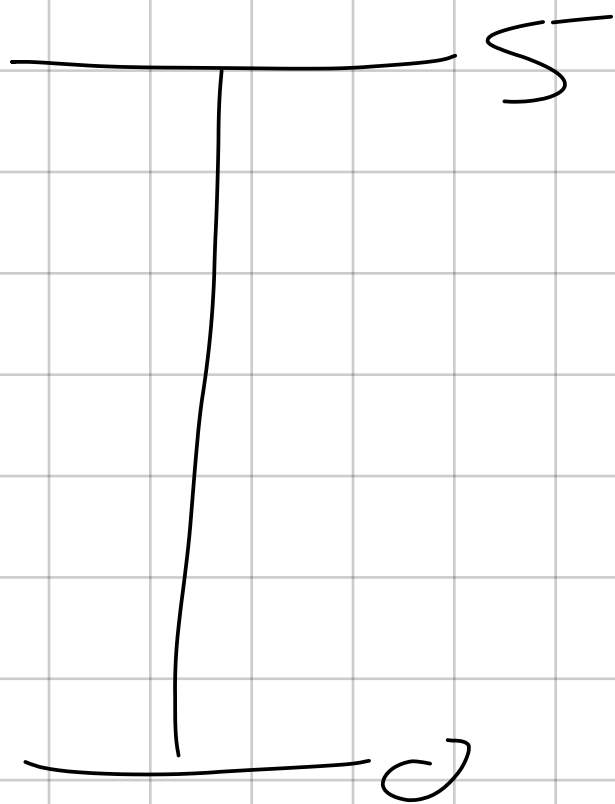
10 bits \Rightarrow 1024

QE $\rightarrow \frac{1}{2 \times 1024} = 0,05\%$



1. Voltage ref. 10V or 5V.
2. No of bits of ADC





2 bits

0	0	-	0	-	0
0	1	-	1,25	-	1,66
1	0	-	2,5	-	3,33
1	1	-	3,75	-	4,9999

$$\frac{5}{2^2} = \frac{5}{4} = 1,25$$

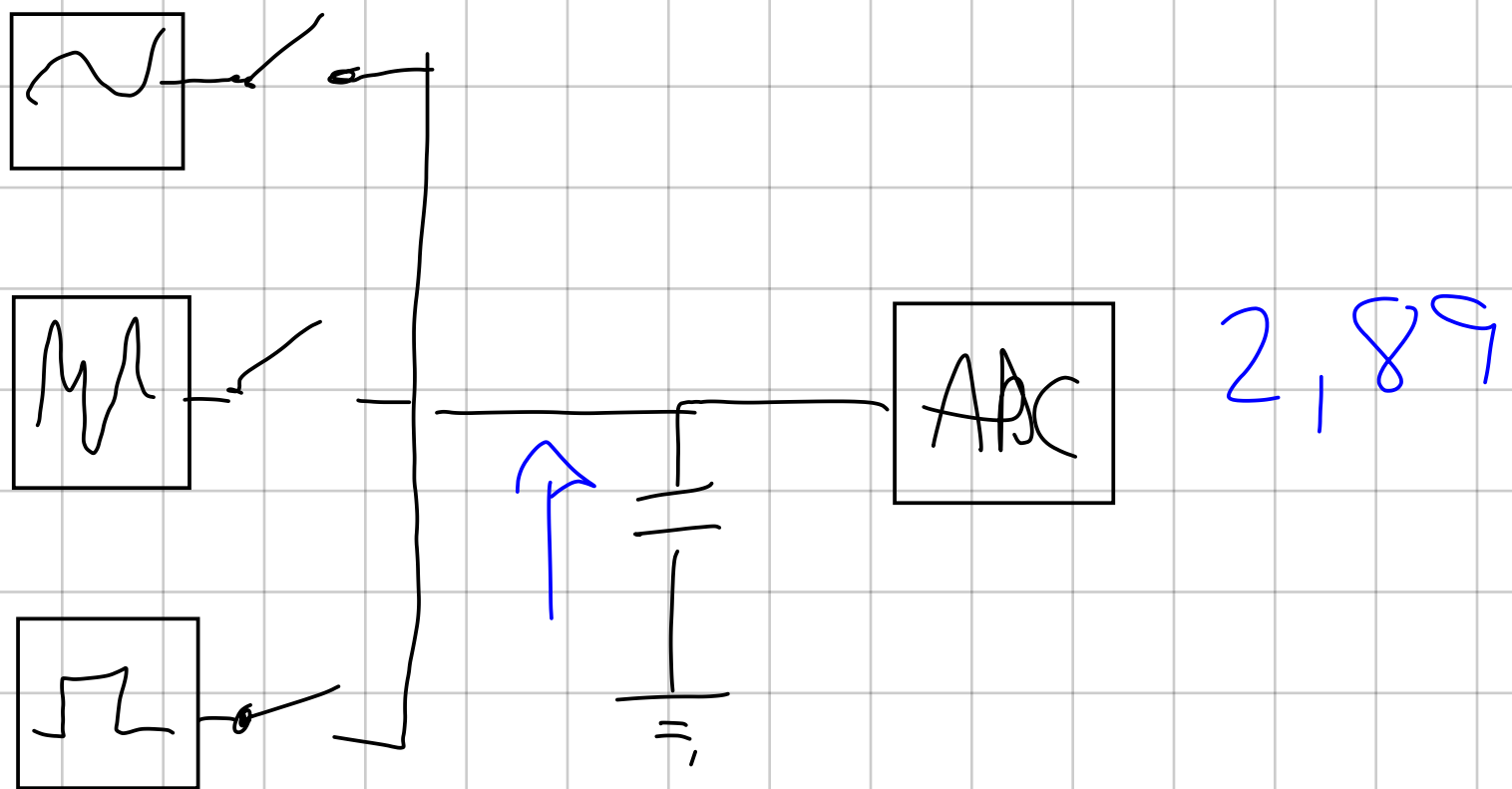
$$\frac{5}{3} = 1,666$$



Resolution $\rightarrow V_{ref} / (2^n - 1)$

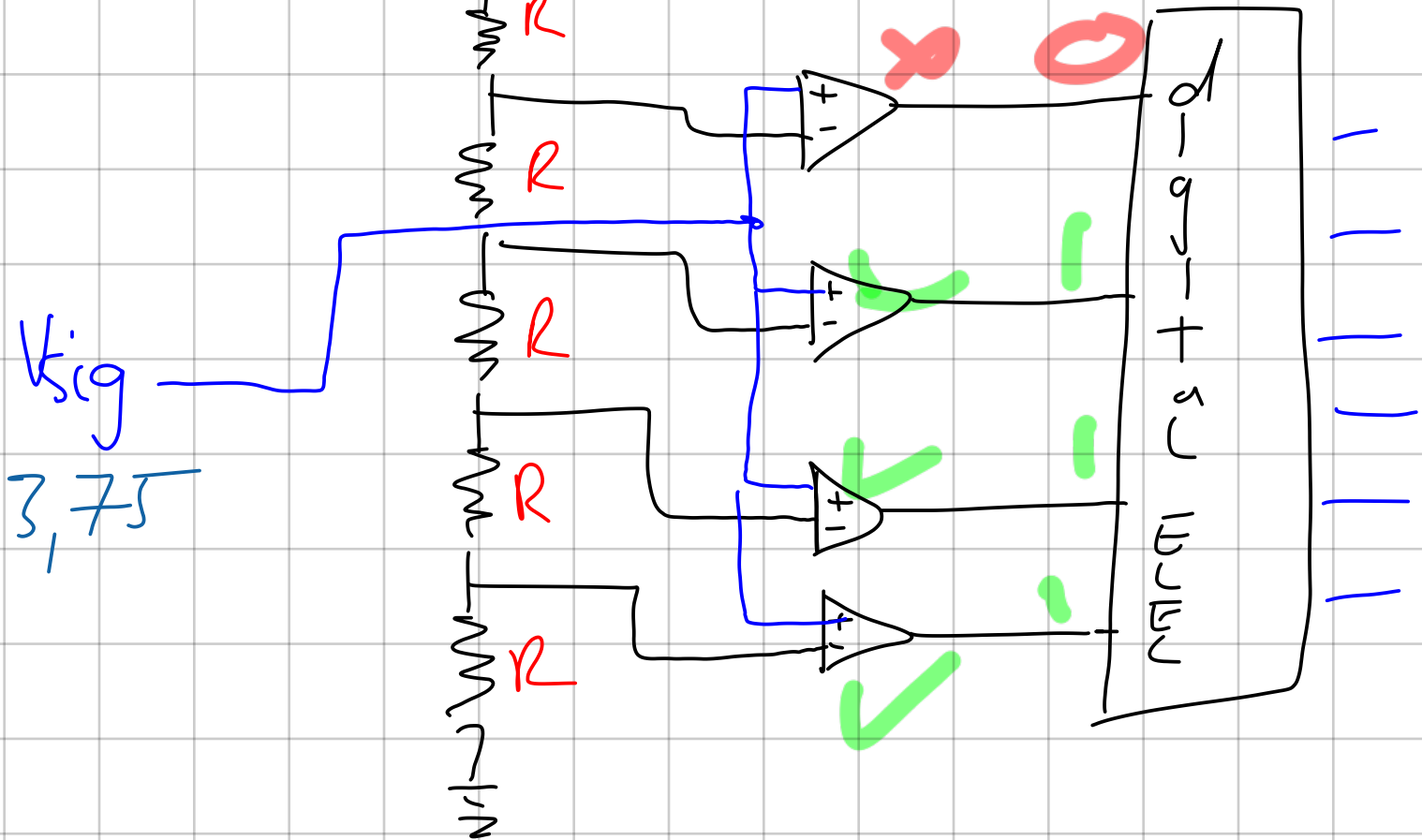
2^n - states

$2^n - 1$ - steps.



flash or parallel encoding

$$V_{ref} = 5V$$



Successive approximation

