

ECE 615 CHOS Mixed-Signal

BOISE STATE
UNIVERSITY

-73 dB
2244

Lecture 22

NOV. 8,

2010

25

$$V_{\text{RMS}} = \sqrt{25 \cdot (2204)^2}$$
$$= 5 \cdot 2244$$

$$V_{\text{RMS}} = 1.12 \mu\text{V}$$

-80 dB → 1004 V

$10^{-3} \rightarrow -60 \text{ dB}$

$$V_{\text{RMS}} \approx \sqrt{250} \cdot 1004$$
$$= 1.58 \mu\text{V}$$

11

$$V_{\text{oe}} = \sqrt{12 \cdot (10\text{mV})^2}$$

$$= \sqrt{12} \cdot 10\text{mV} = \underline{\underline{34.6\text{mV}}}$$

$$K = 8$$

$$f_s = 100\text{kHz}$$

$$V_{\text{OD}} = 1\text{V}$$

$$B = \frac{f_s}{2K}$$

$$B = 6.25\text{kHz}$$

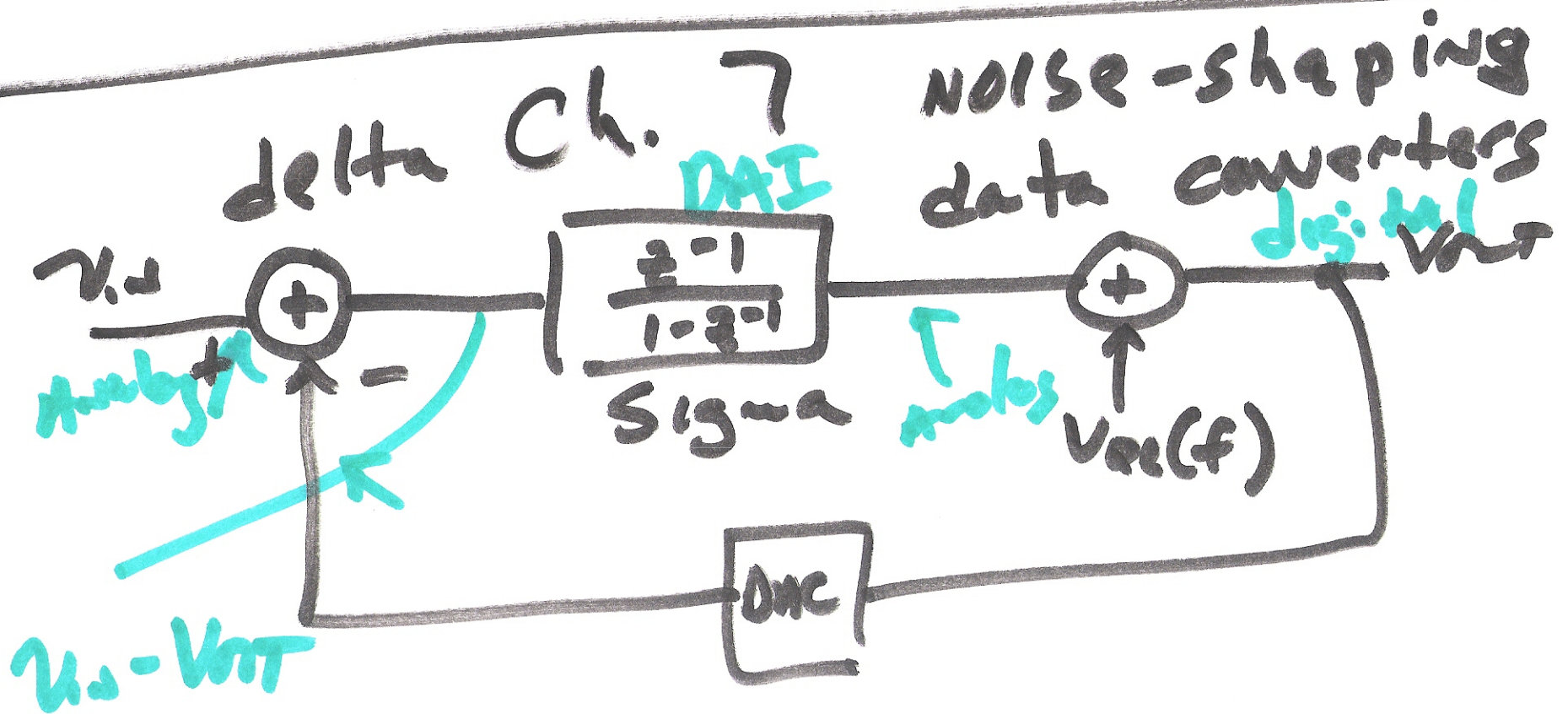
$$\text{SNR} = 20 \log \frac{34.6\text{mV}}{34.6\text{mV}}$$

$$= 20\text{dB}$$

2)

$$t_{\text{jitter}} = 20 \text{ ps}$$

$$P_{\text{AVG, jitter}} = \frac{[\]^2}{K}$$



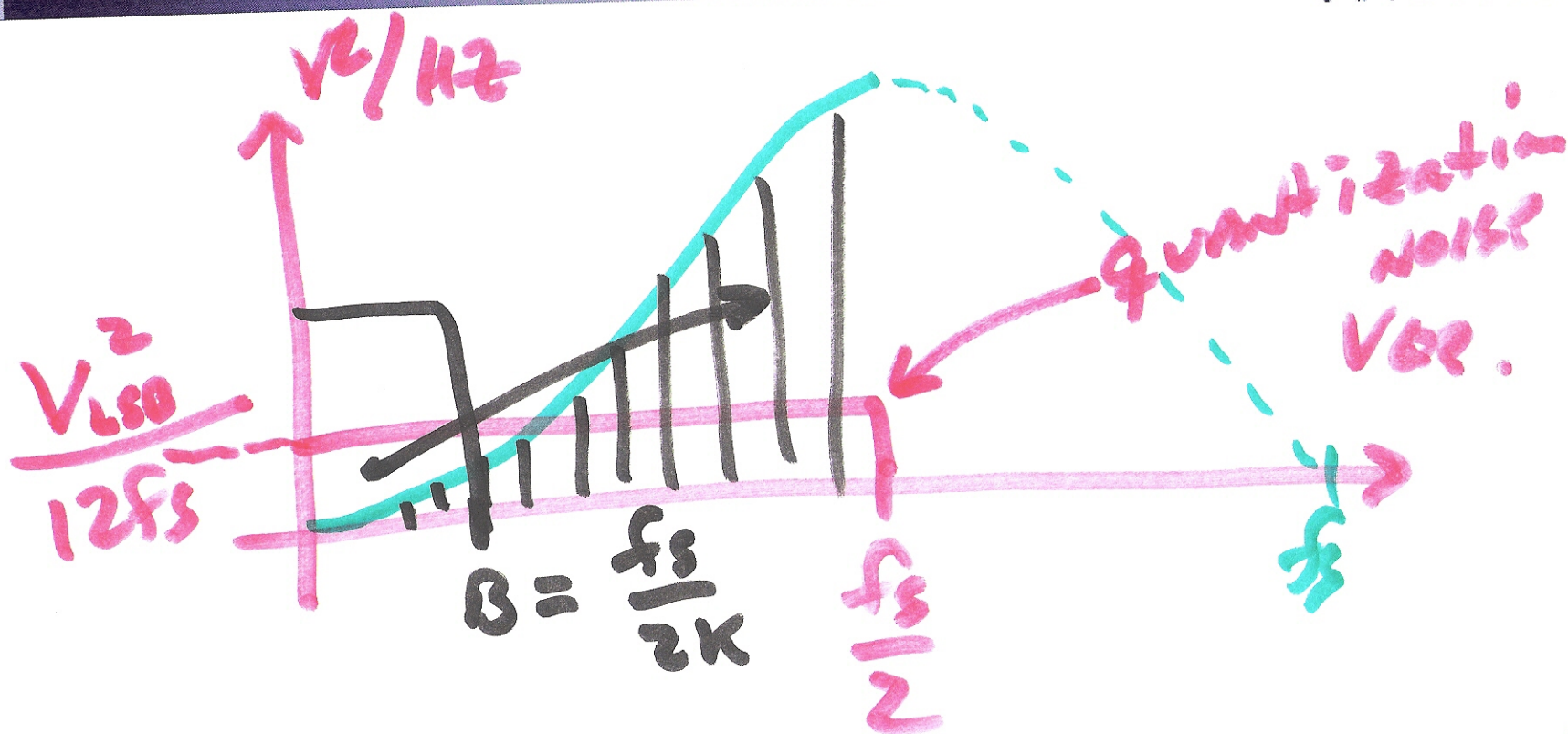
3)

$$(V_{in} - V_{out}) \cdot \frac{z^{-1}}{1 - z^{-1}} + V_{ae} = V_{out}$$

$$V_{in} \cdot z^{-1} - \cancel{V_{out} z^{-1}} + V_{ae} (1 - z^{-1}) = \cancel{V_{out} (1 - z^{-1})}$$

$$V_{out} = V_{in} \cdot \underbrace{z^{-1}}_{\text{STF delay}} + V_{ae} \underbrace{(1 - z^{-1})}_{\text{NTF high pass}}$$

4)



modulation noise $\frac{V_{ae} \cdot (1 - z^{-1})}{z = e^{j2\pi \frac{f}{fs}}}$

5)