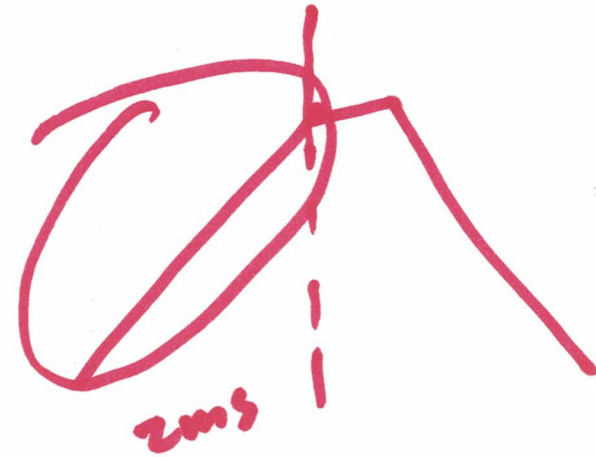
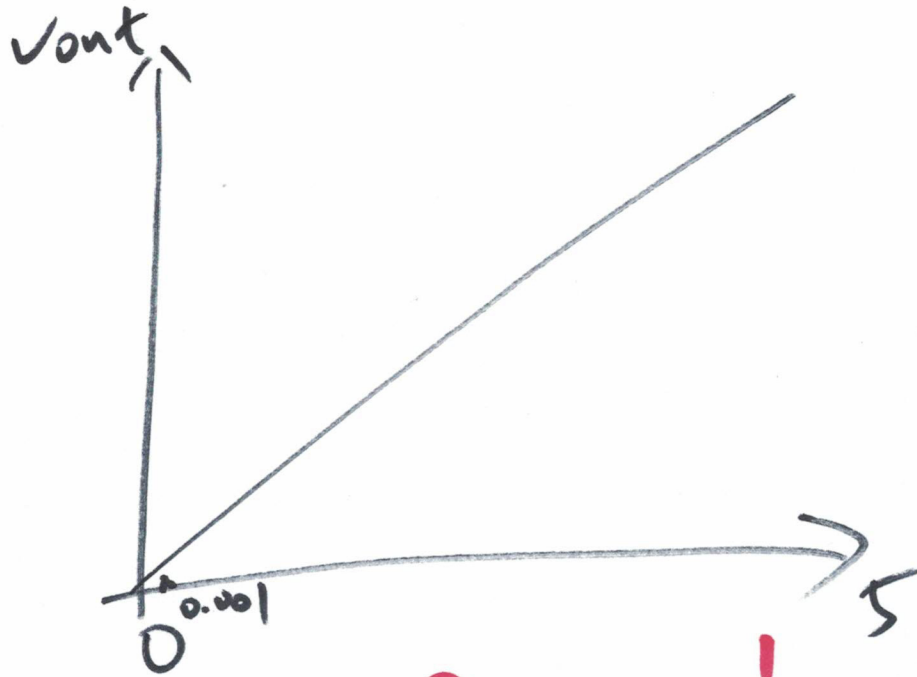


DC sweep
transient analysis
AC analysis

.dc V1 0 5 0.001
.tran 0 1 .0001



Pulse (starting voltage end voltage delay rising time
falling time ton period)
2m 1m 6m

①

Digital Input

000
001
010
011
100
101
110
111

Voltage Output

0V
0.625V
1.5625V
2V
2.5V
3.125V
3.4375V
4.375V

DNL: Differential Non-linearity
INL: Integral Non-linearity

Ideal Output

0V
0.625V
1.25V
1.875V
2.5V
3.125V
3.75V
4.375V

$$\frac{5}{2} = 2.5$$

$$= 0.625V$$

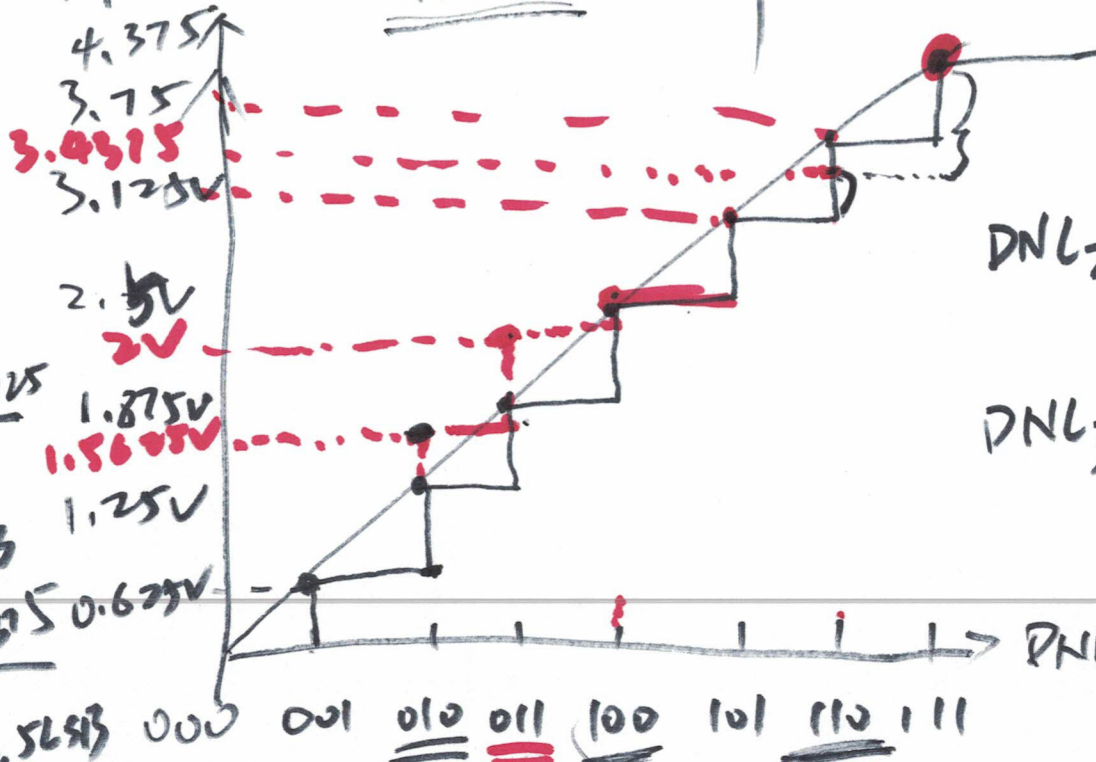
$$= 1LSB$$

$$DNL_6 = \frac{3.4375 - 3.125}{0.625} - 1LSB$$

$$= -0.5LSB$$

$$DNL_7 = \frac{4.375 - 3.4375}{0.625} - 1LSB$$

$$= 0.5LSB$$



$$DNL_2 = \frac{1.5625 - 0.625}{0.625} - 1LSB$$

$$= 0.5LSB$$

$$DNL_3 = \frac{2 - 1.5625}{0.625} - 1LSB$$

$$= -0.3LSB$$

$$DNL_4 = \frac{2.5 - 2}{0.625} - 1LSB$$

$$= -0.5LSB$$

$$\frac{1V}{2^8}$$

$$= \frac{1V}{256}$$

$$= 0.39 \text{ mV}$$

$$0.5 - 0.7 \text{ mV}$$

$$0.1 \text{ LSB} - 0.5 \text{ LSB}$$