Calculation of Z-measurement:

assumption:

$0 \leq ADC_1 \leq 4096$ idle state: 4096

$0 \leq ADC_2 \leq 4096$ idle state: 0

annotation: $12\,bit = 2^{12} = 4096$

$$Z_1 \propto ADC_1$$
$$Z_2 \propto ADC_2$$

$$Z_1 = 4096 - R_t + R_X$$
$$Z_2 = R_X$$

linear equations:

$$4096 - R_t + R_X = ADC_1$$
$$R_X = ADC_2$$

subtract

$$4096 - R_t = ADC_1 + ADC_2$$

$$R_t = 4096 - ADC_1 - ADC_2$$