Data Conversion Chain — 20-02-2017
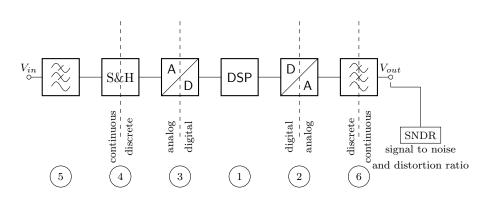

Figure 1: A typical signal chain

(1) DSP

The equivalent ouput voltage can be expressed with 1. It's maximum can be described with 2

$$V_{eq} = V_{ref}\left(\sum_{i=1}^{N} b_i 2^{-i}\right) \tag{1}$$

$$V_{eq} = V_{ref}\left(1 - 2^{-N}\right) \tag{2}$$

This is a representation in UINT. In most realworld impelemntations INT using 2's complement is required. Sometimes if there is peak currents, Gray-Code is to be used to minimize peak currents!

The quantizer-error is defined with equation **??**.

(2) D/A

(3) A/D

(4) S&H

(5)(6) LP