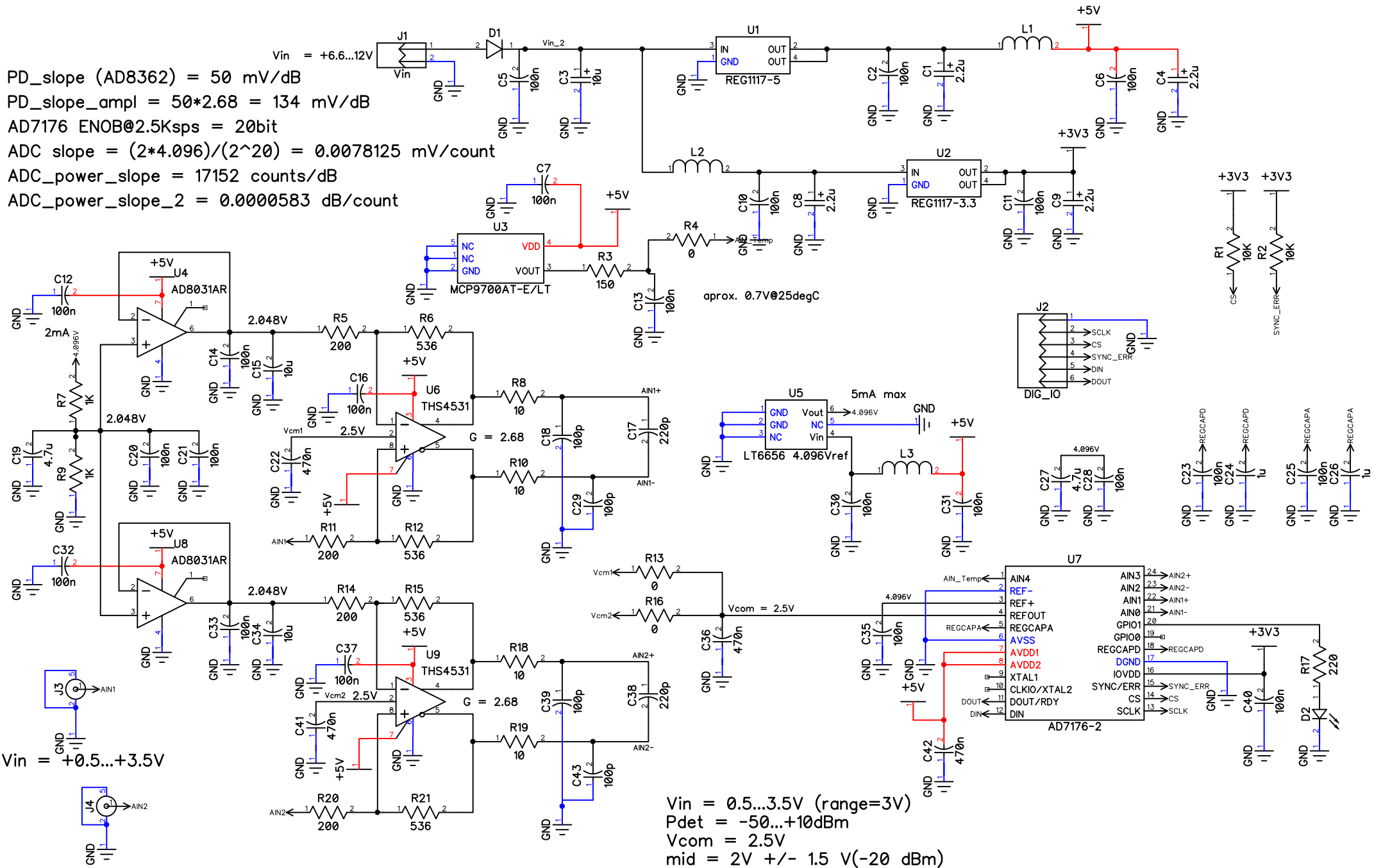


$PD_{slope} (AD8362) = 50 \text{ mV/dB}$
 $PD_{slope_ampl} = 50 * 2.68 = 134 \text{ mV/dB}$
 $AD7176 \text{ ENOB}@2.5\text{Ksps} = 20\text{bit}$
 $ADC \text{ slope} = (2 * 4.096) / (2^{20}) = 0.0078125 \text{ mV/count}$
 $ADC_power_slope = 17152 \text{ counts/dB}$
 $ADC_power_slope_2 = 0.0000583 \text{ dB/count}$



$V_{in} = +0.5...+3.5V$

AD8031 driving very large cap. loads:
http://www.planetanalog.com/author.asp?section_id=3138&doc_id=563001

$V_{in} = 0.5...3.5V \text{ (range=3V)}$
 $P_{det} = -50...+10\text{dBm}$
 $V_{com} = 2.5V$
 $mid = 2V \pm 1.5V (-20 \text{ dBm})$
 $ADC \text{ p-p diff. input range} = V_{ref} * 2 = 2 * 4.096 = 8.129V_{pp}$
 $Diff \text{ gain req.} = 8.129 / 3 = 2.73$
 $Diff \text{ gain} = 536 / 200 = 2.68$
 $Z_{in} = R_{g1} / (1 - G / (2 * (1 + G))) = 314.5 \text{ ohm}$
 *<http://www.ti.com/lit/an/slyt119/slyt119.pdf>