

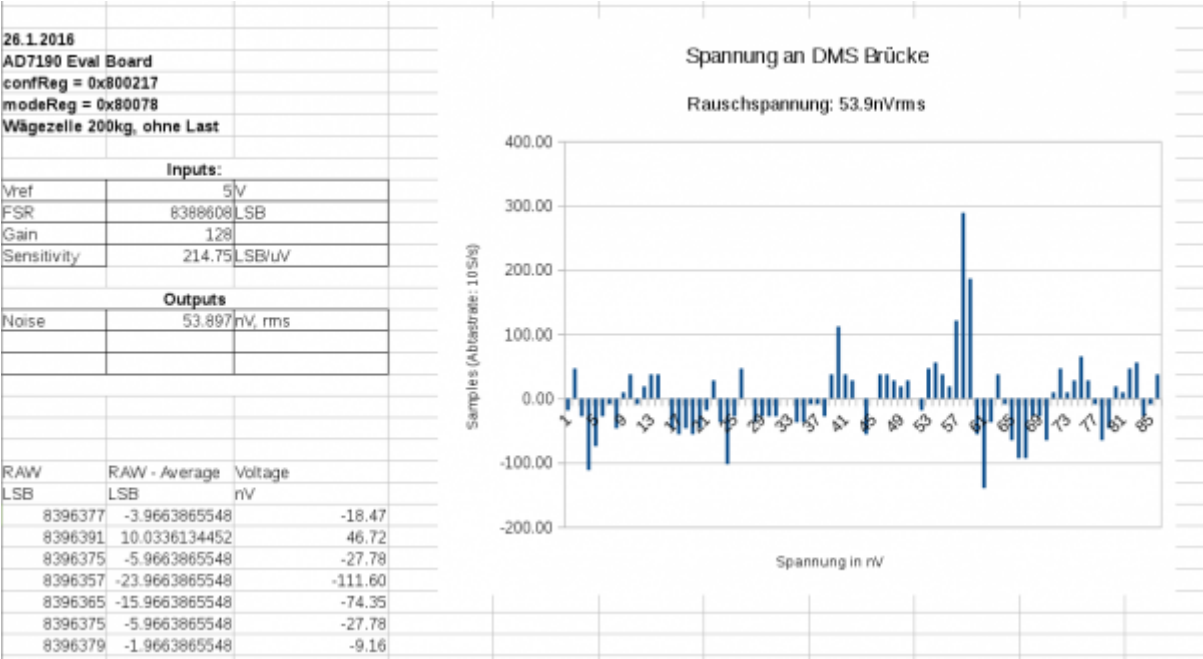
The ultra low noise 24-bit ADC: AD7190

see also Quad Delta-Sigma Board
Or that external article: [on mbed.org](#)

Test measurements on a strain gauge load cell

The laodcell was connected with a 6-wire configuration to the evaluation board of the AD7190. The samplerate was set to 10 S/s, chopping enabled (continuous offset and gain correction). The analog 5V supply was powered from the RIGOL DP832, which has a very low noise level.

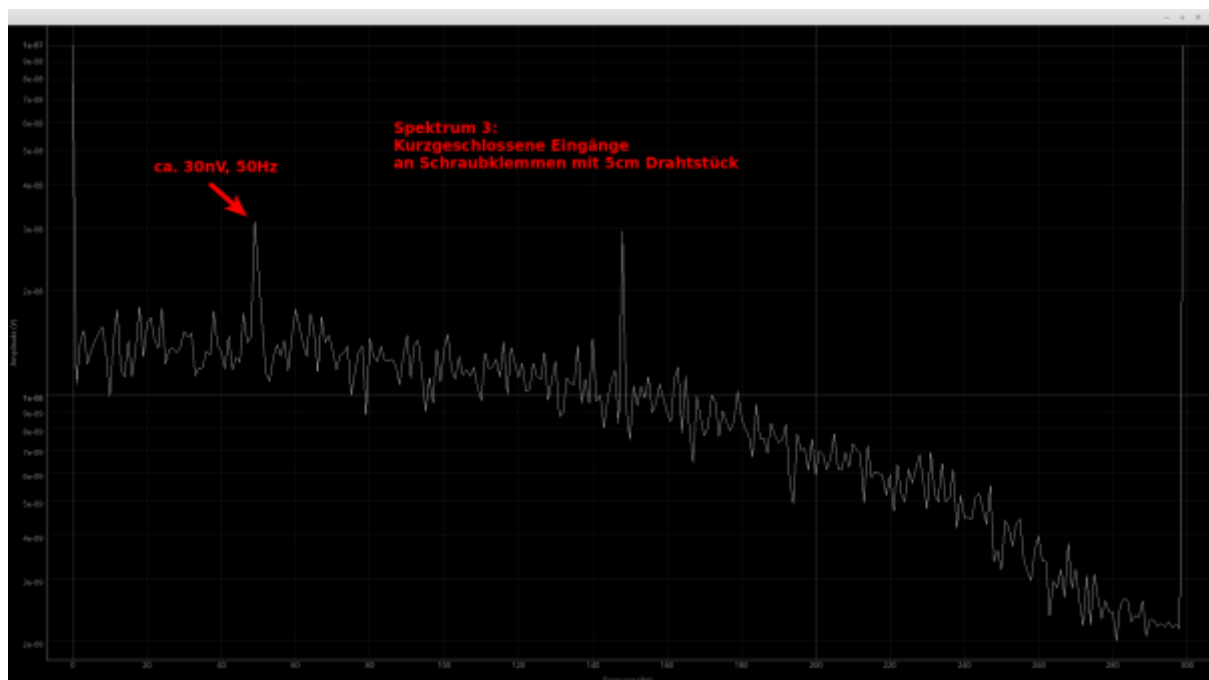
We measured an astonishing low noise level of about 50nV(rms).



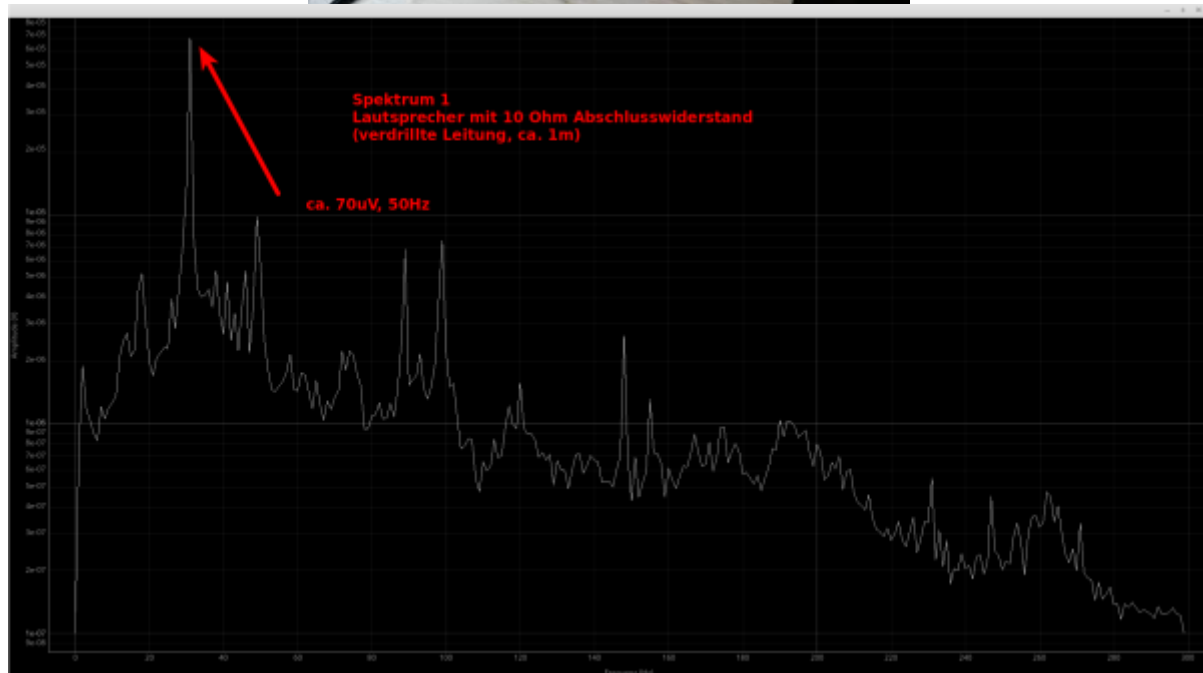


Spectrum at 600 S/s

Noise level with shorted inputs

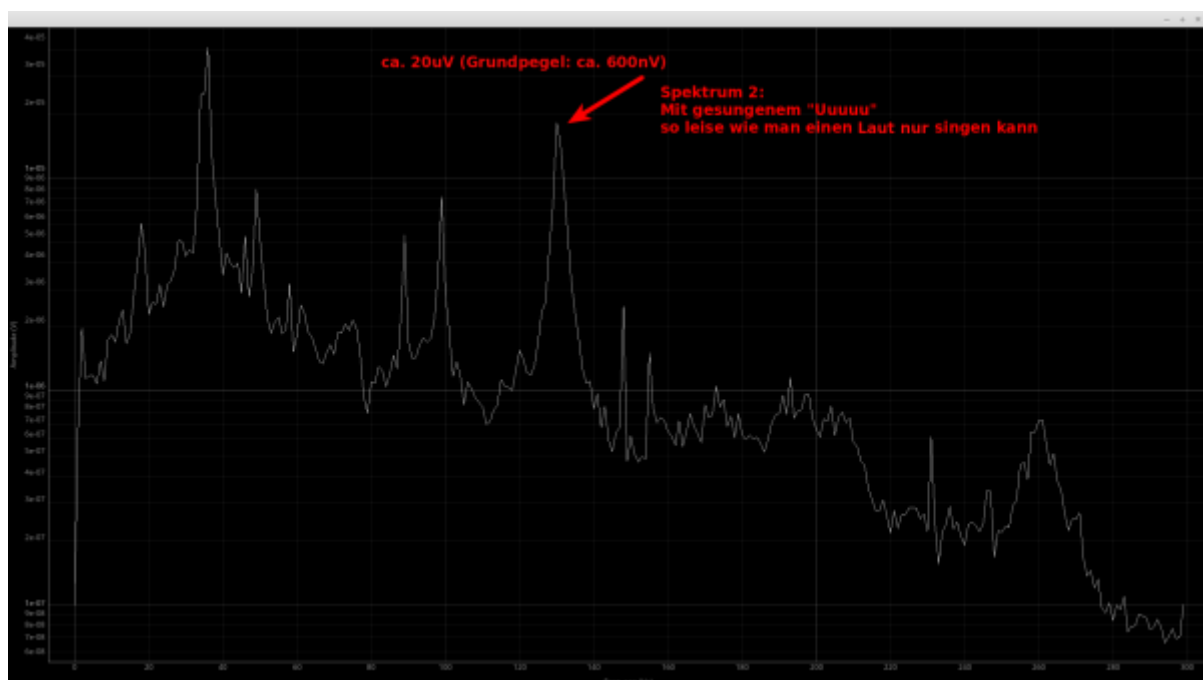


Spectrum with connected loud speaker



Spectrum when singing a "Uuuuu..."

Here we evaluated the possibility to use a loudspeaker as a low-frequency microphone. Due to lack of shielding of electromagnetic fields, the coil picks up a huge amount of signals, which are not related to acoustic sound waves.



Arduino Firmware for Arduino DUE

[ad7190_bridge.zip](#)

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