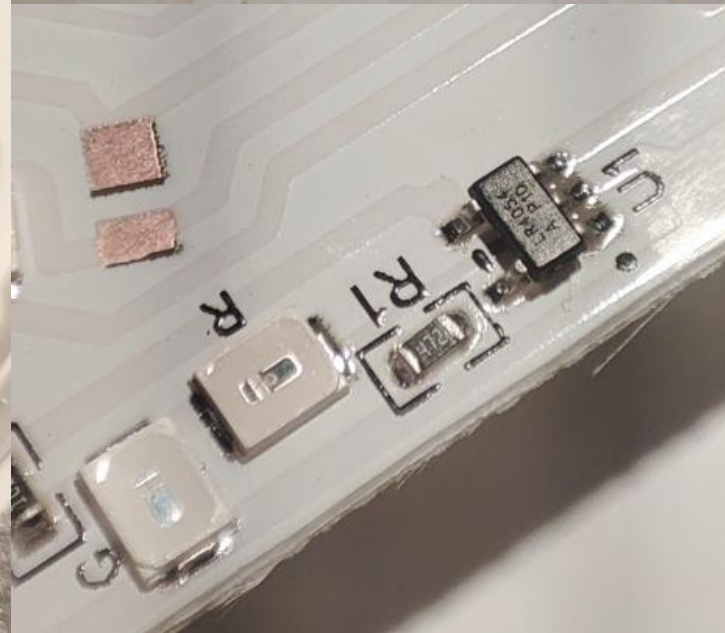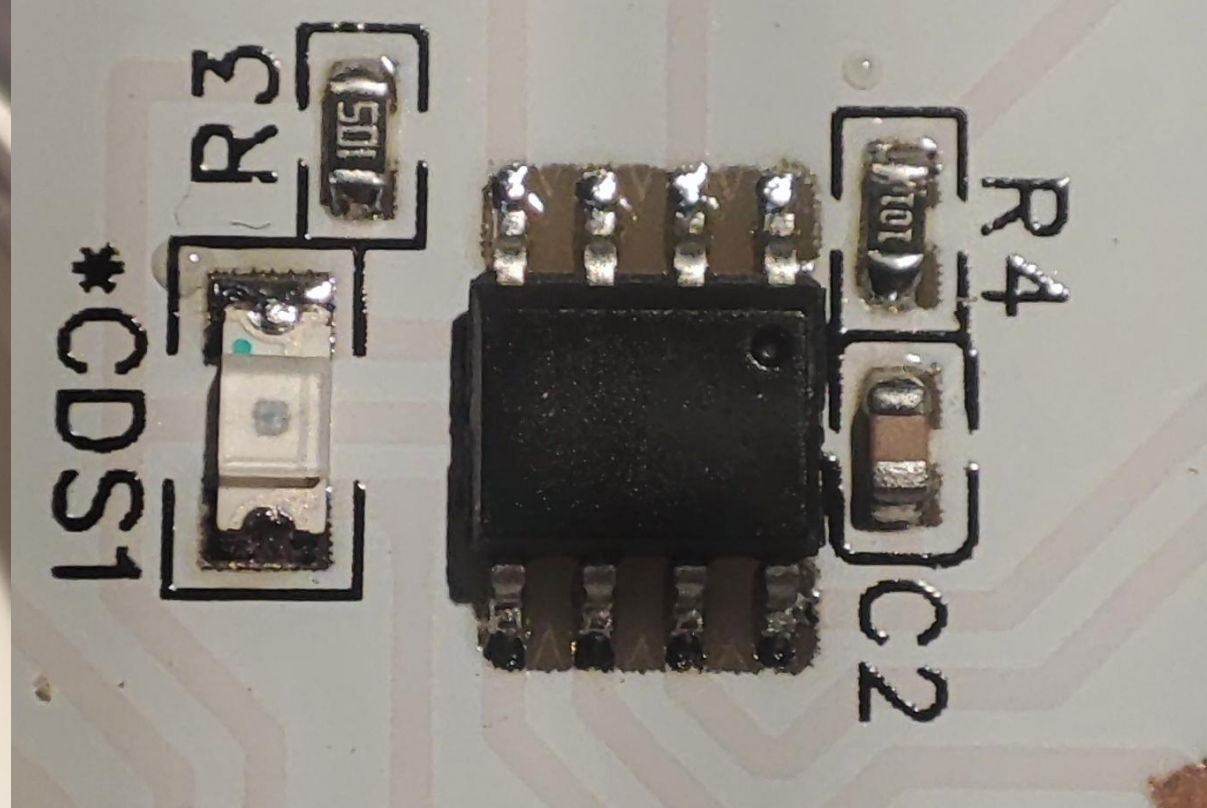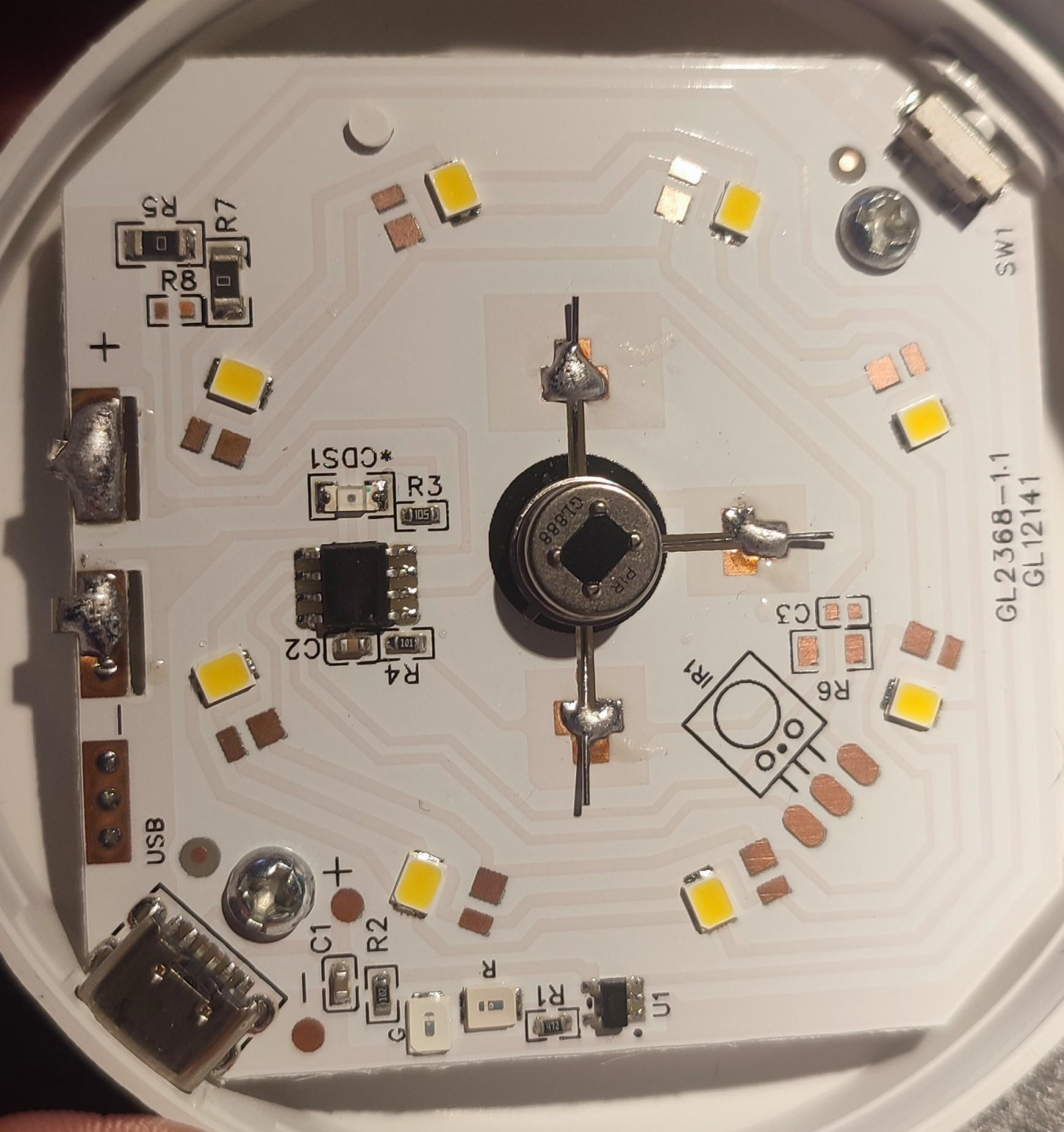# Motion Sensor Lamp

TSB 2025-3-25
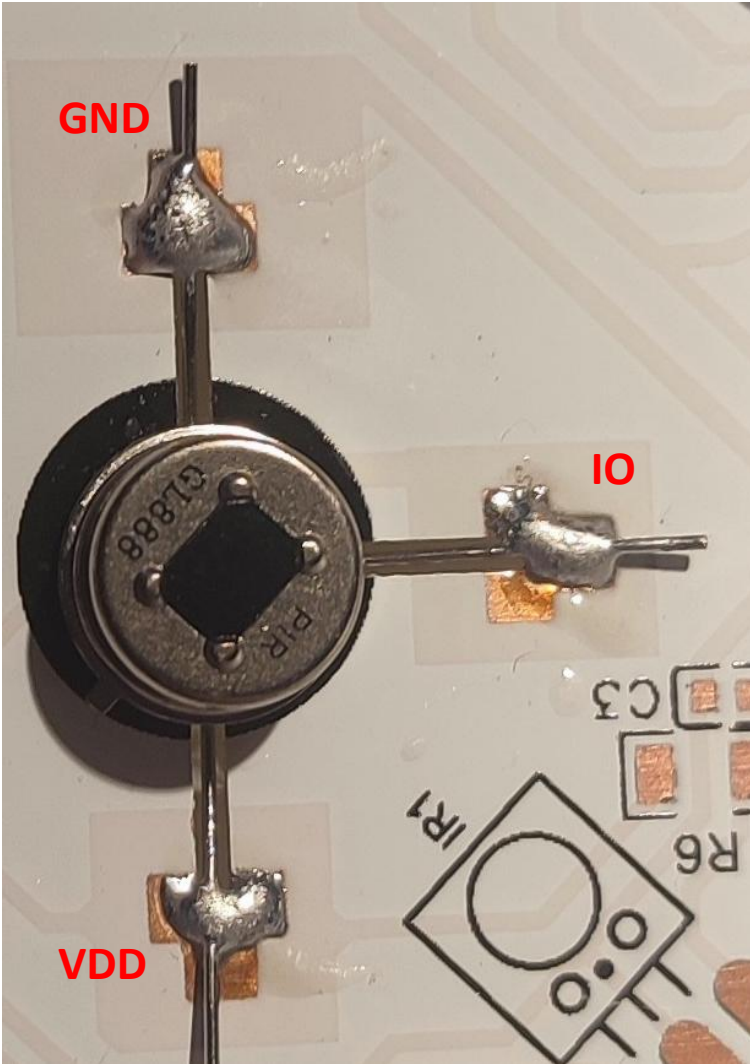
Sensor Light

- 8 pin MCU
- Li-Ion charger LR4045
- Phototransistor
- GL888 PIR Sensor

Pin Mapping

Left board labels:
- R4
- RC-Filter for MCU supply
- C2
- VDD
- GND?
- PIR IO
- IR-Receiver (unused)
- Phototransistor
- LED2 - unused
- Pushbutton
- LED1 (Cathode)
- Sense
- GND
- R5
- R3
- VBAT
- *CDS1

Right board labels:
- GND
- IO
- VDD
- IR1
- C3
- R6
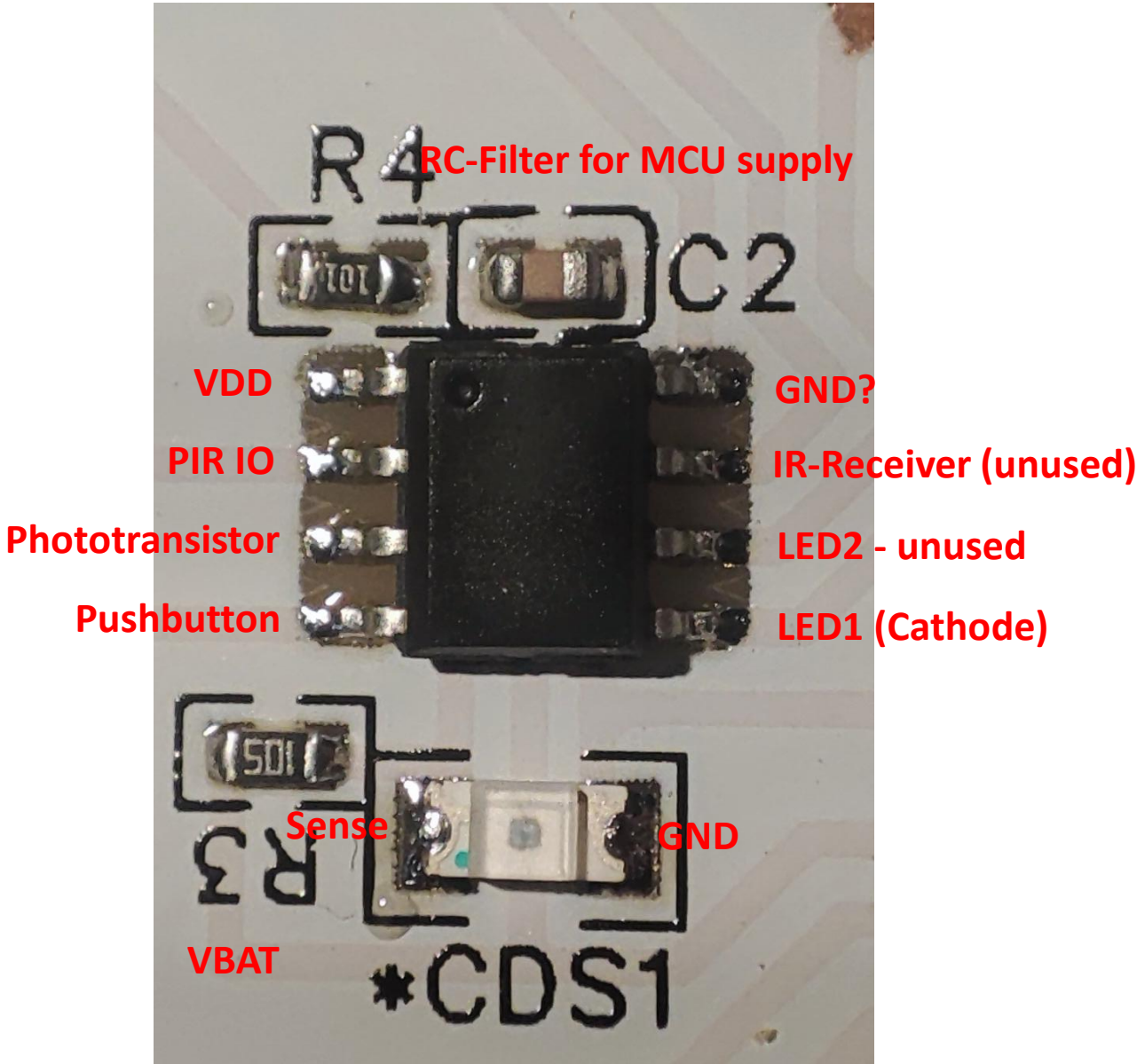
LED driving
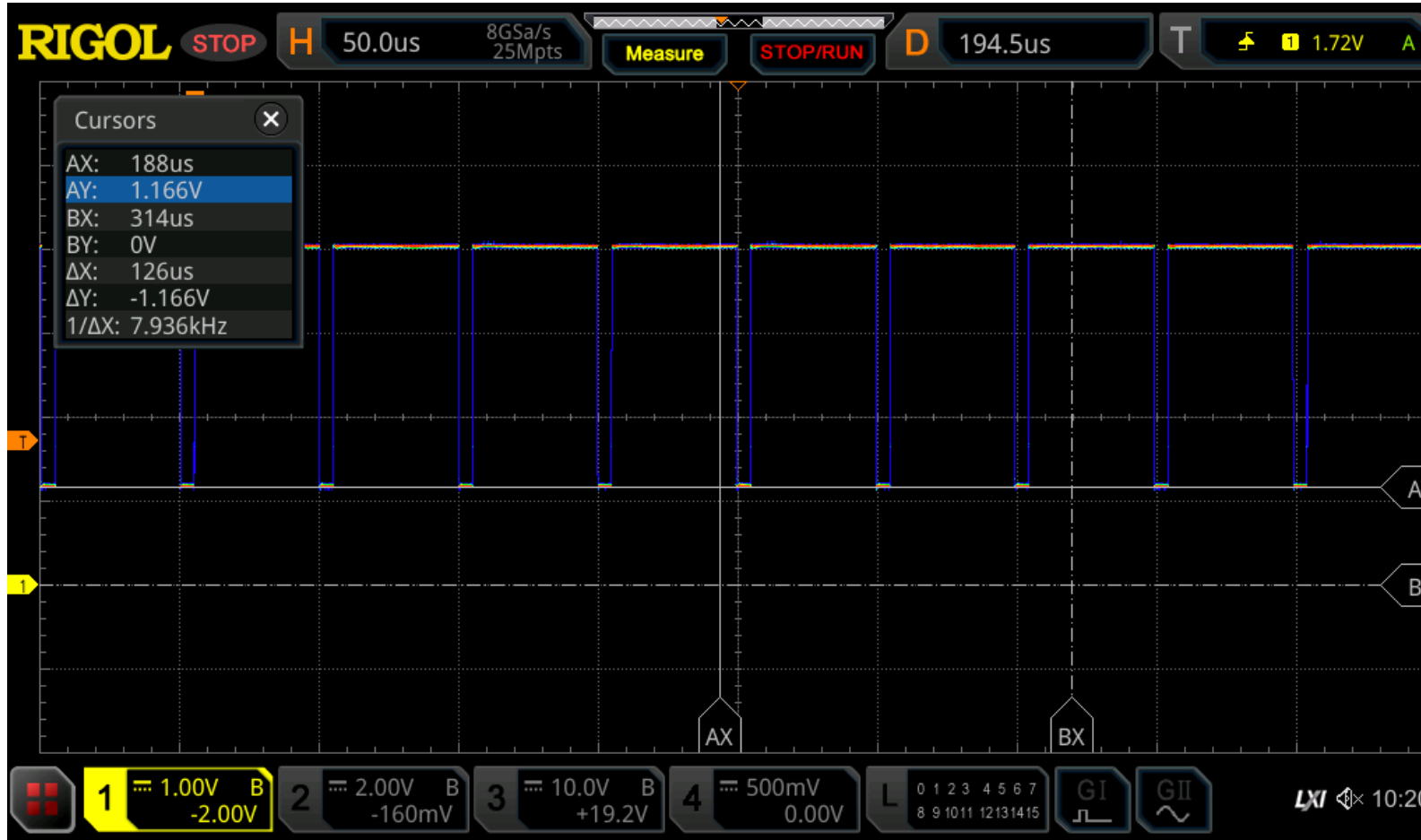
Current limit	Voltage
10	2,66
20	2,73
30	2,8x

- LEDs are directly driven by the MCU in PWM mode, 50µs cycle, 5µs on -> 20kHz PWM, 10% duty cycle
- Voltage drop across MCU driver: 1.18V
- Voltage drop over LEDs: 2.88V
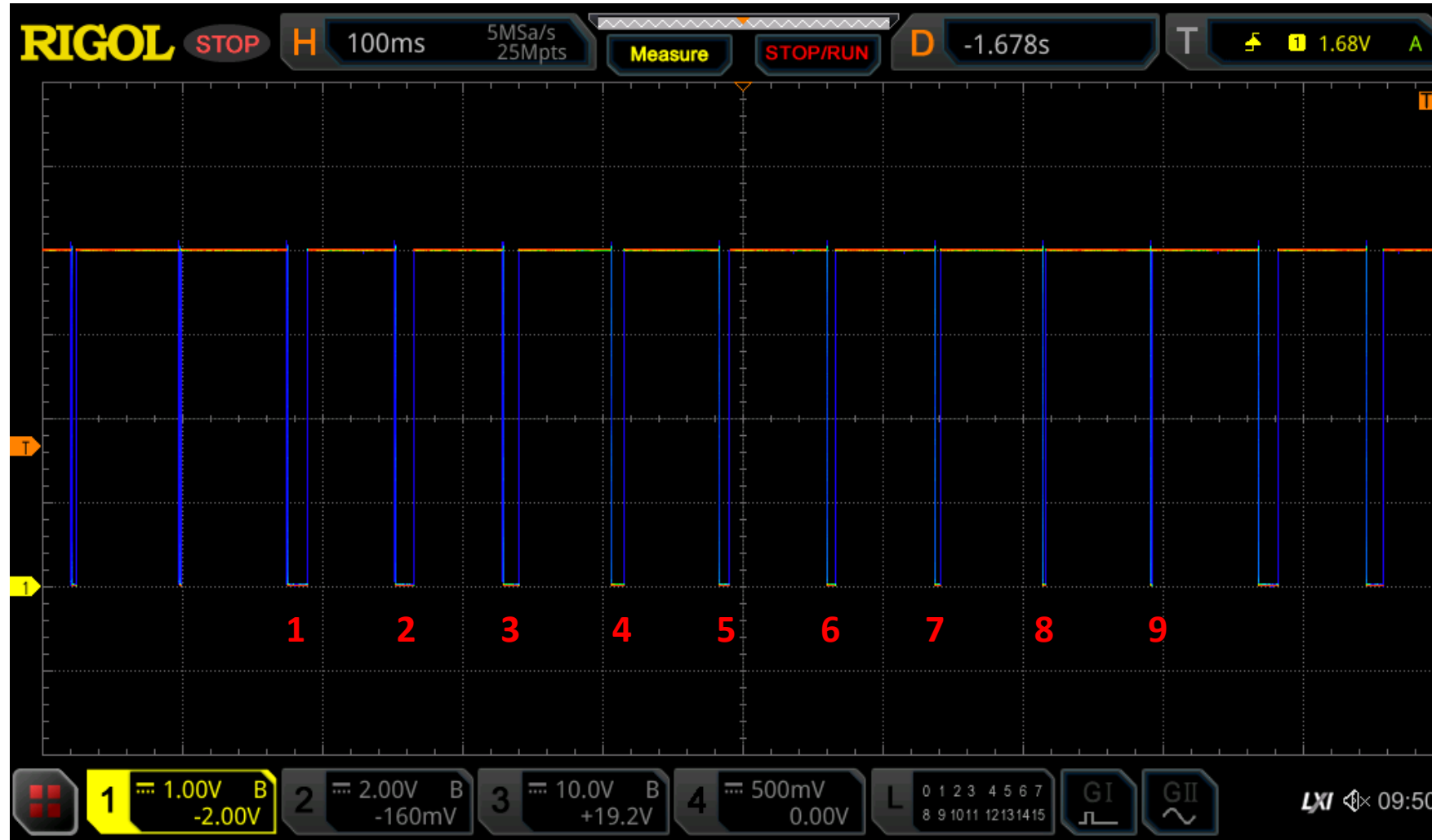- LEDs seem to be driven at ~30-40mA -> GPIO is directly driving as current sink.

PIR

- Device Markings found
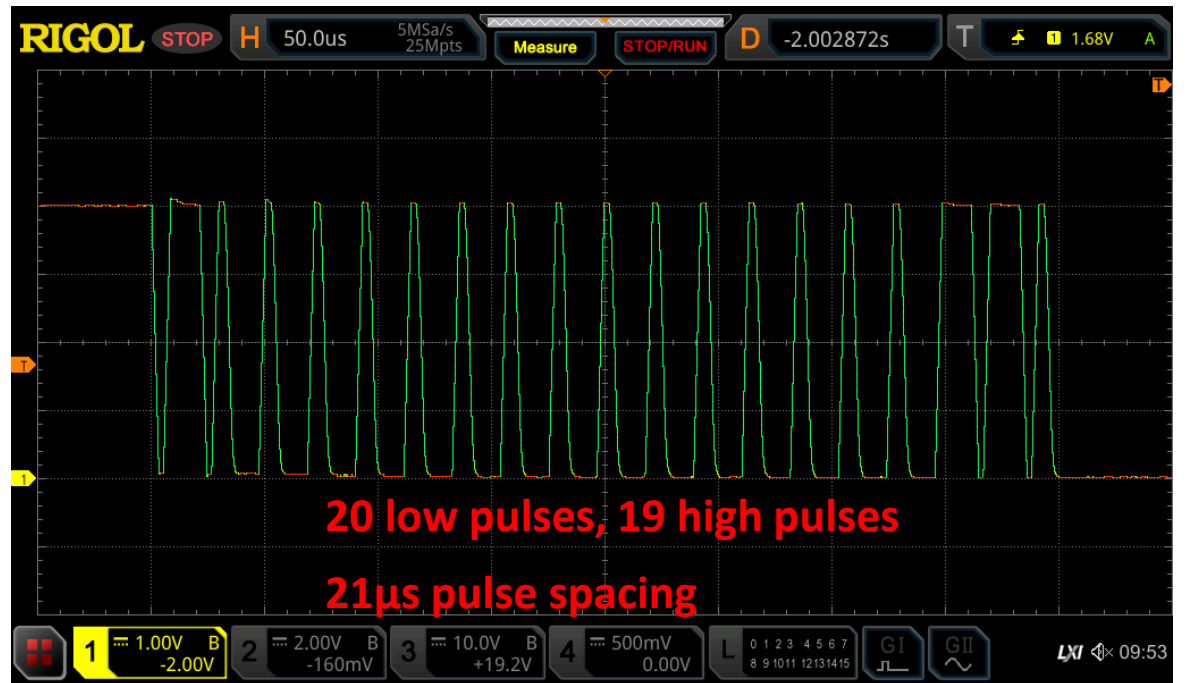 - GL888 -> This seems to be a sensor with digital interface
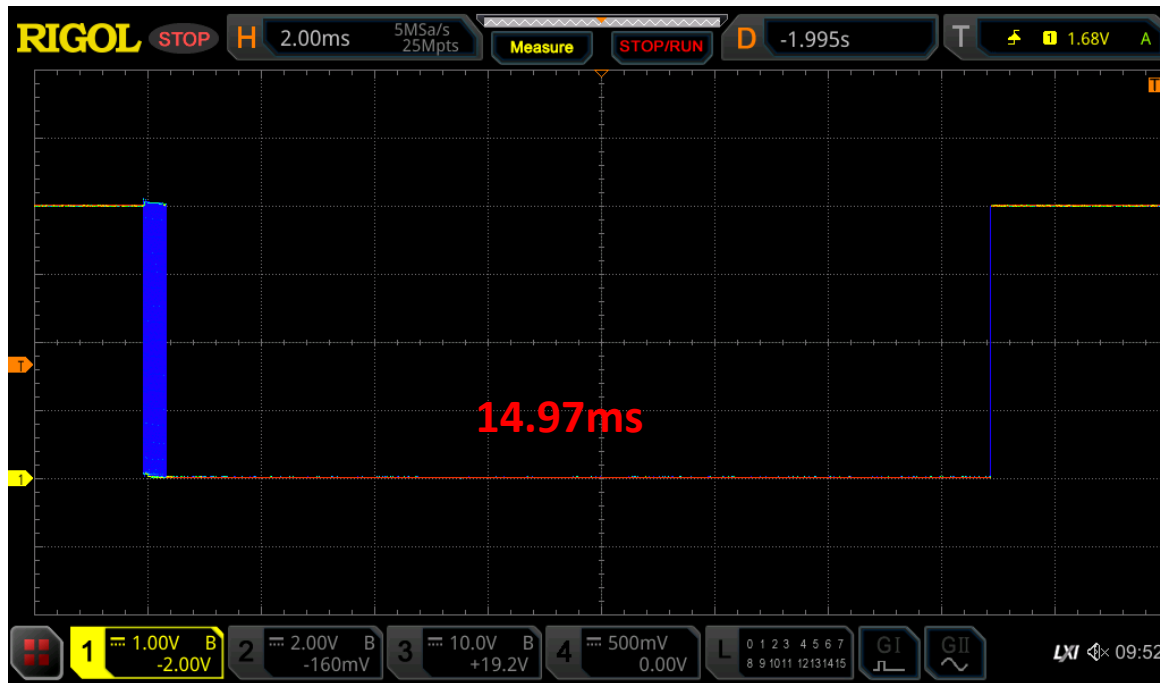
GL888 PIR output pin
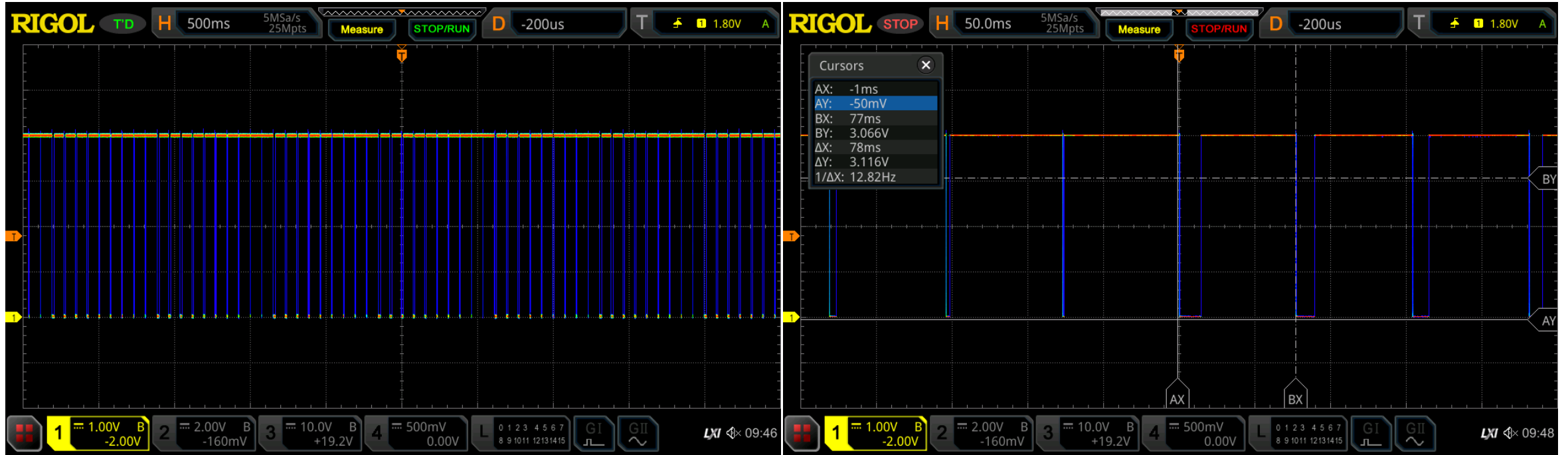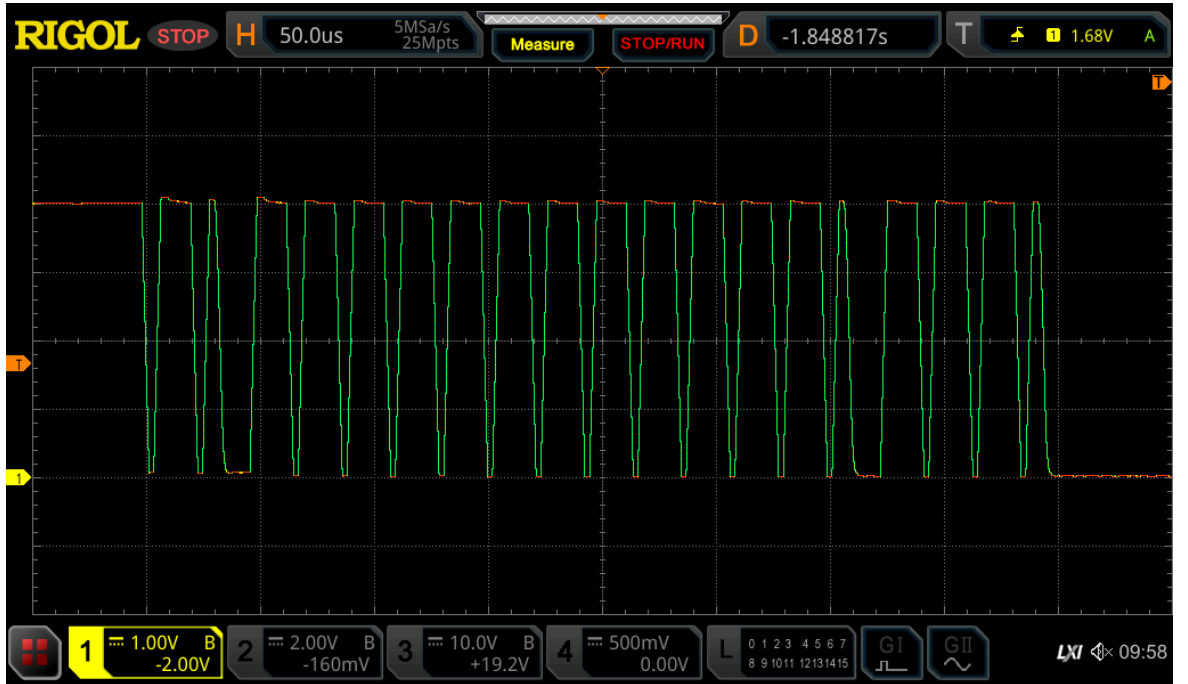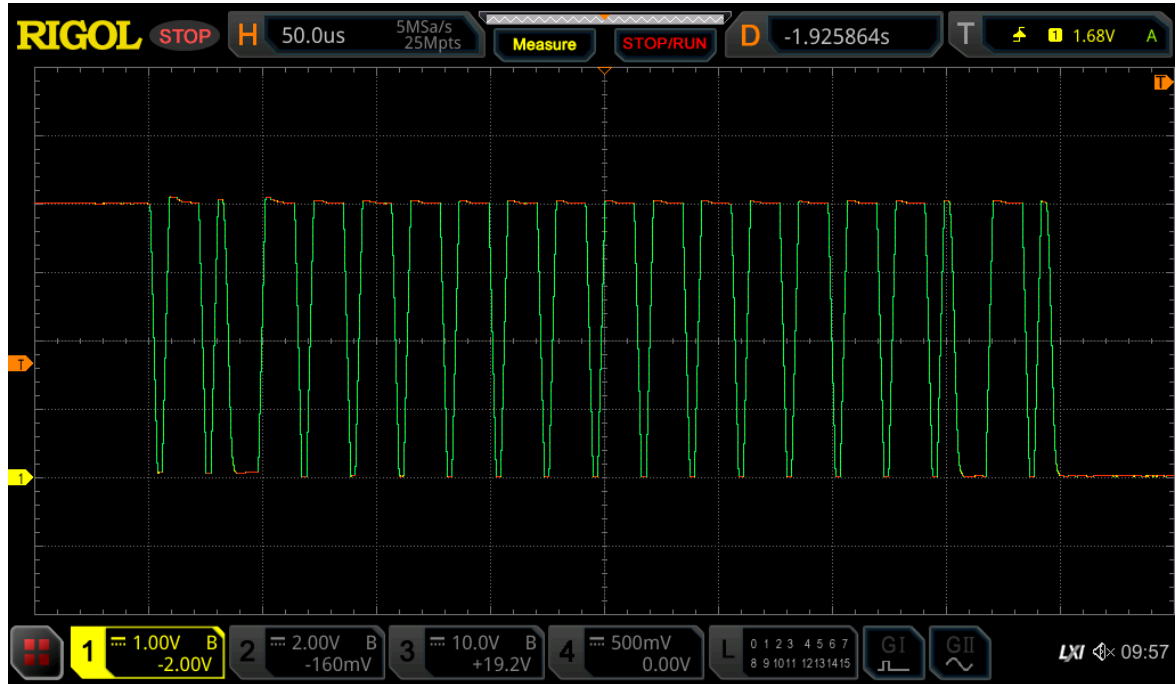

- Digital interace
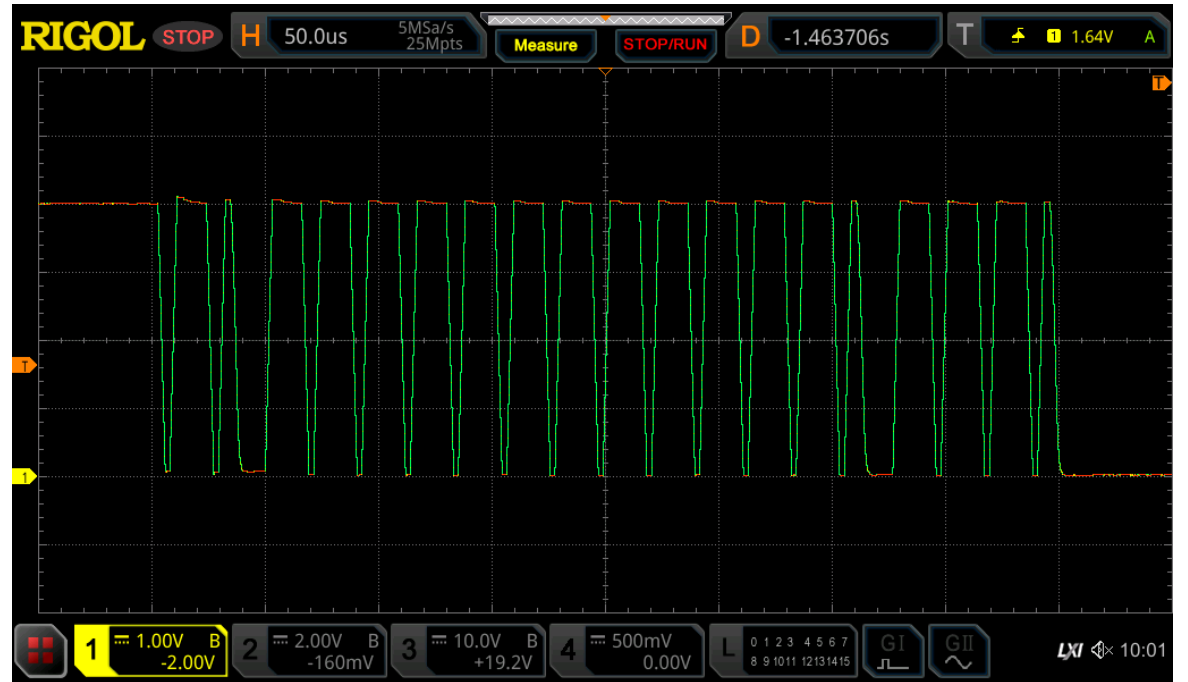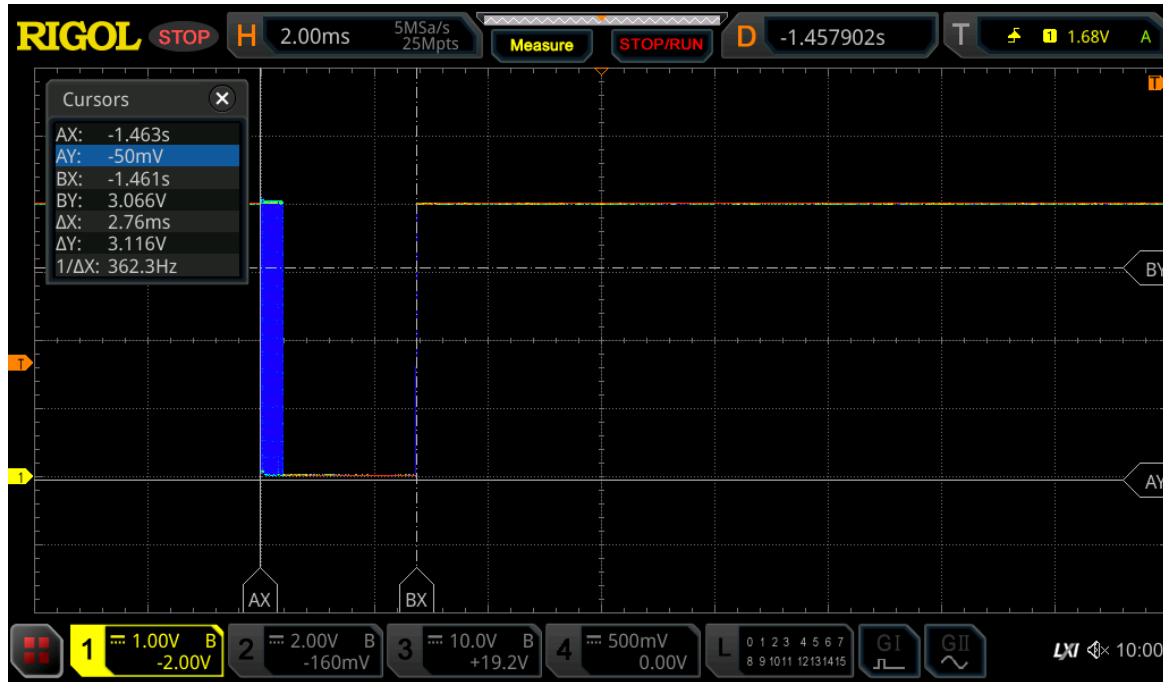
- Pulses seem to repeat in groups of 8 or 9

First pulse

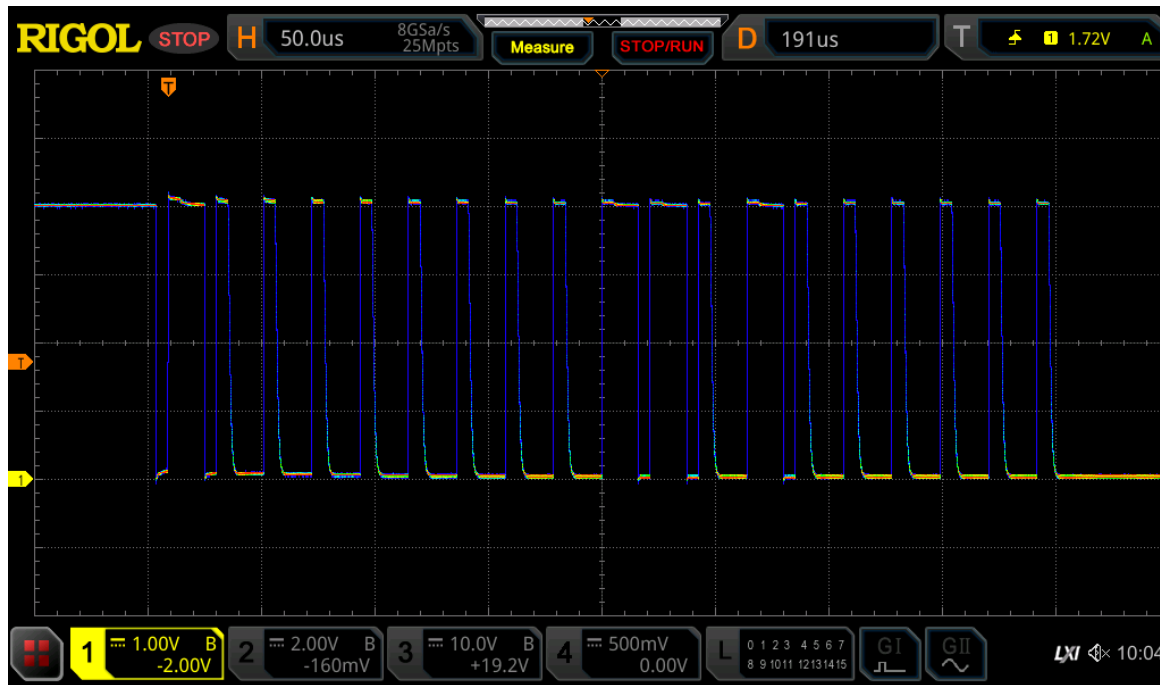- Each pulse is a telegram

Second and Third pulse

- cfc

8th pulse (short one)

- The long pulse duration may be unrelated to the telegram?
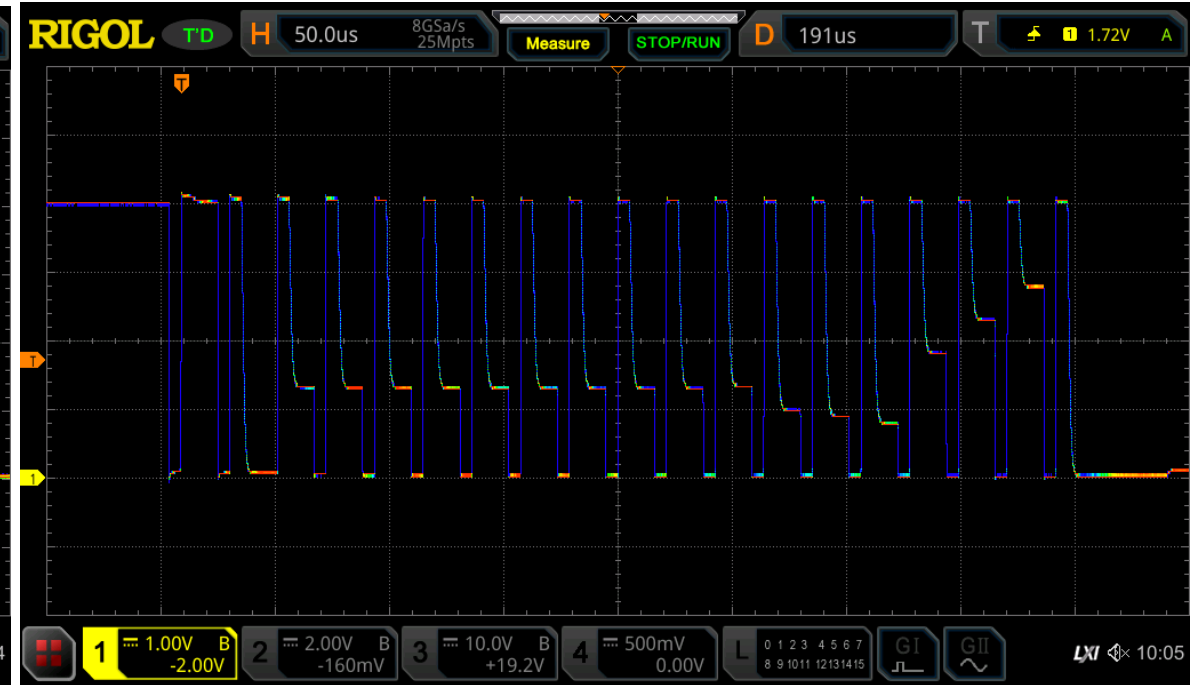
Detailed view of telegram

Note how short pulses have a slow falling
Edge and long ones dont.

Are long pulses gated by MCU and short
pulses are pulled down by sensor?

Total pulse spacing 21µS
Short pulse 5µs + 2.5µs fall tgime (5-7.5µs)
Long pulse 16 µs

Averaged
first two and last pulses are constant
2 start + 16bit paylod + 1 stop?

Rightmost bits change more often,
MSB first on the left?