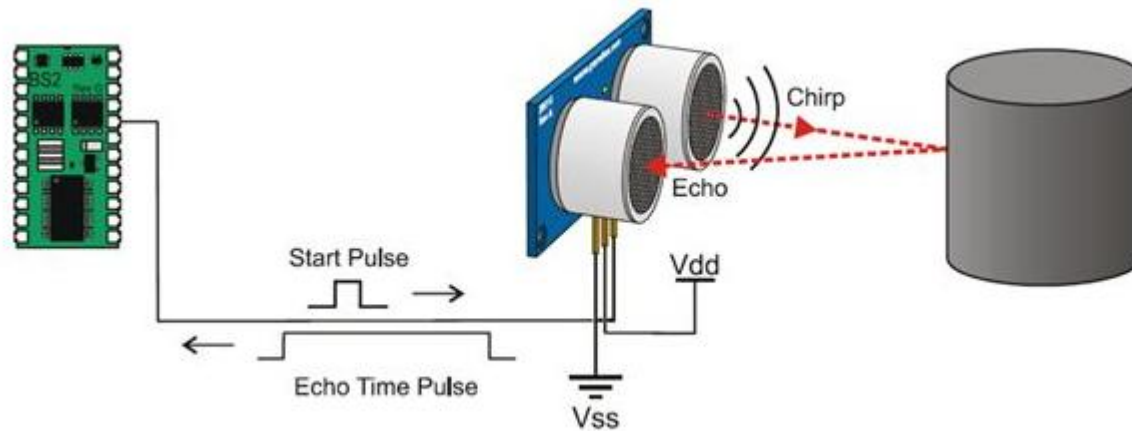


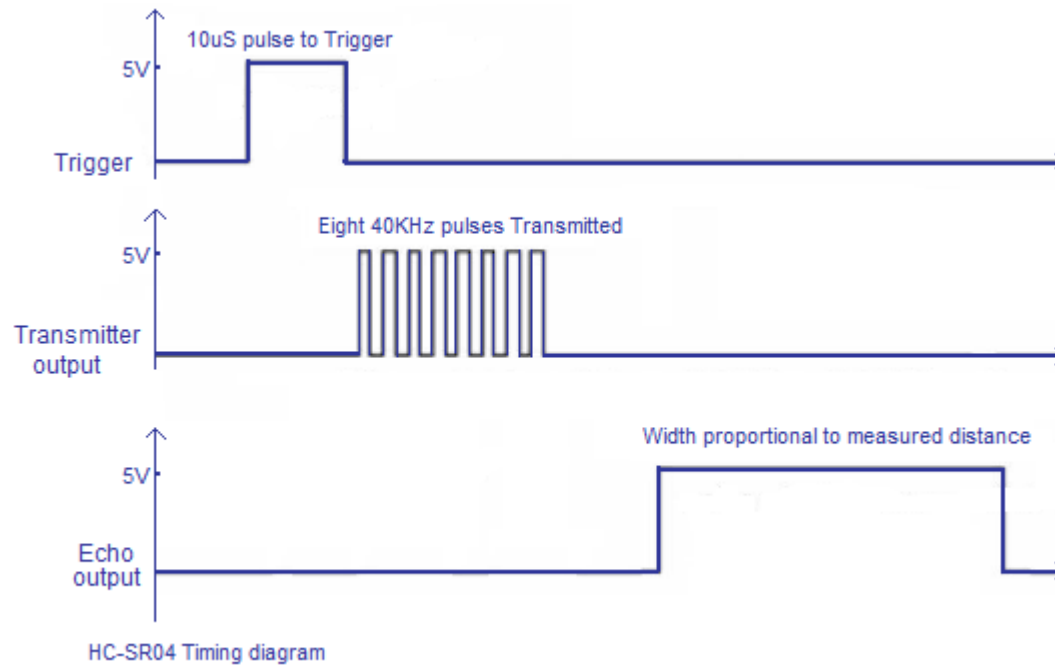
Ultrasonic distance sensor HC-SR04



Sloboda Šimon, Šlígl Jan

Theoretical background

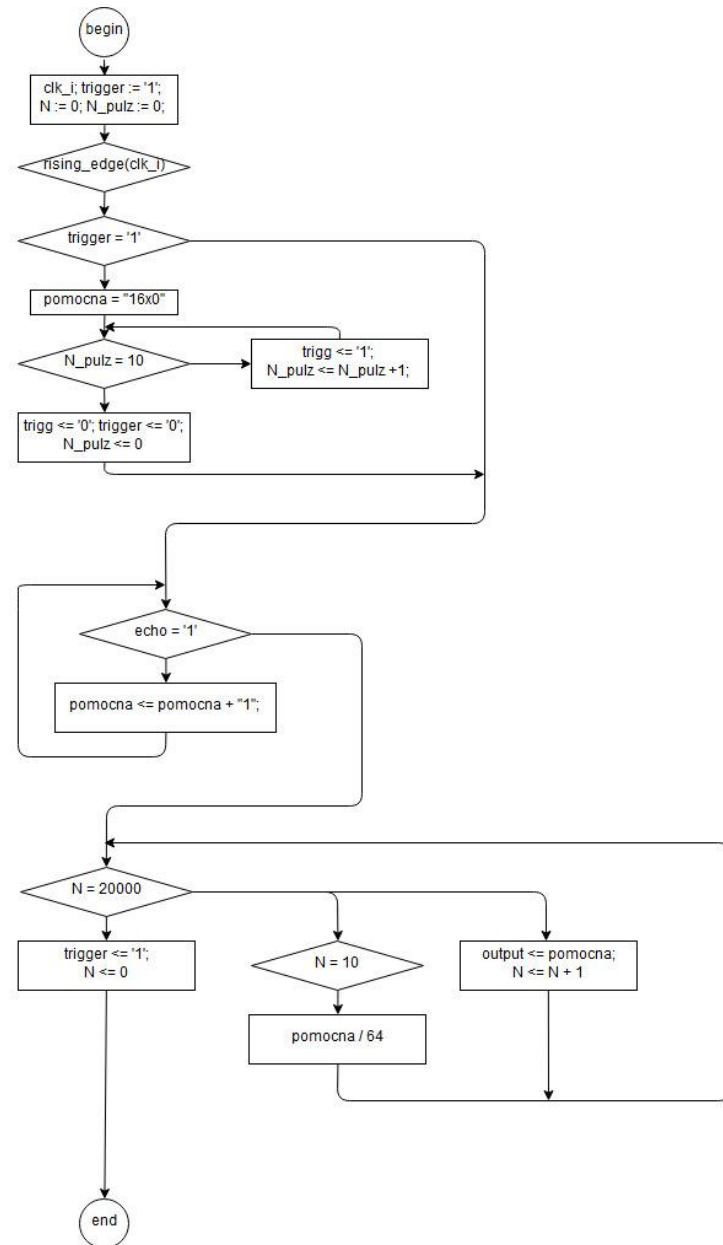
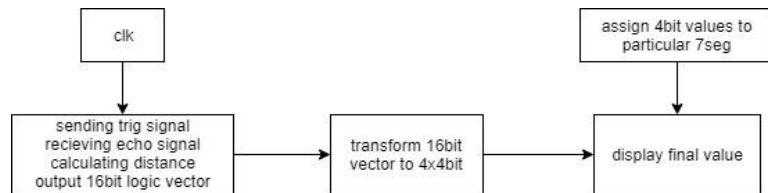




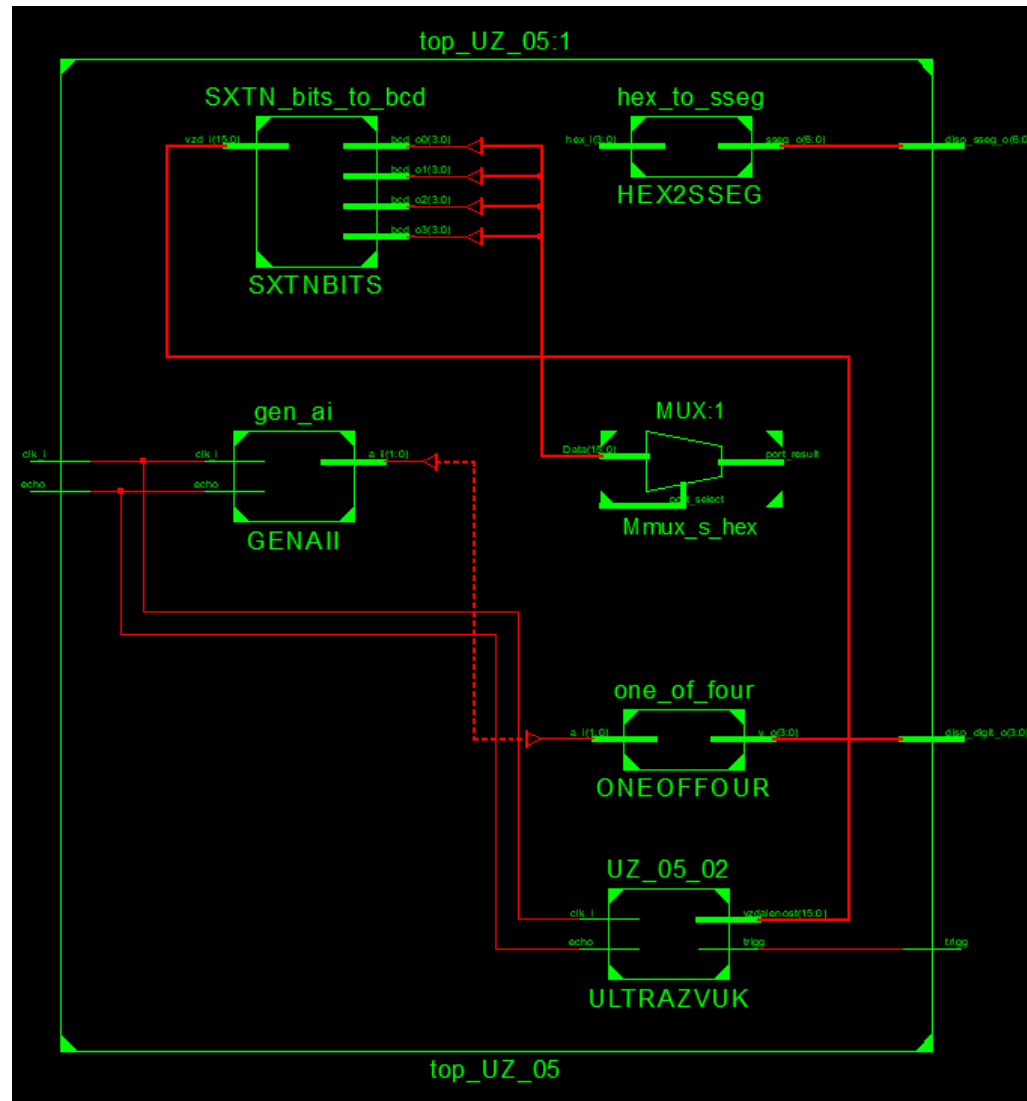
$$distance[cm] = \frac{time[\mu s]}{58.2}$$

$$\frac{1}{340[m/s]} \cdot 2 \rightarrow 58.2[\mu s/cm]$$

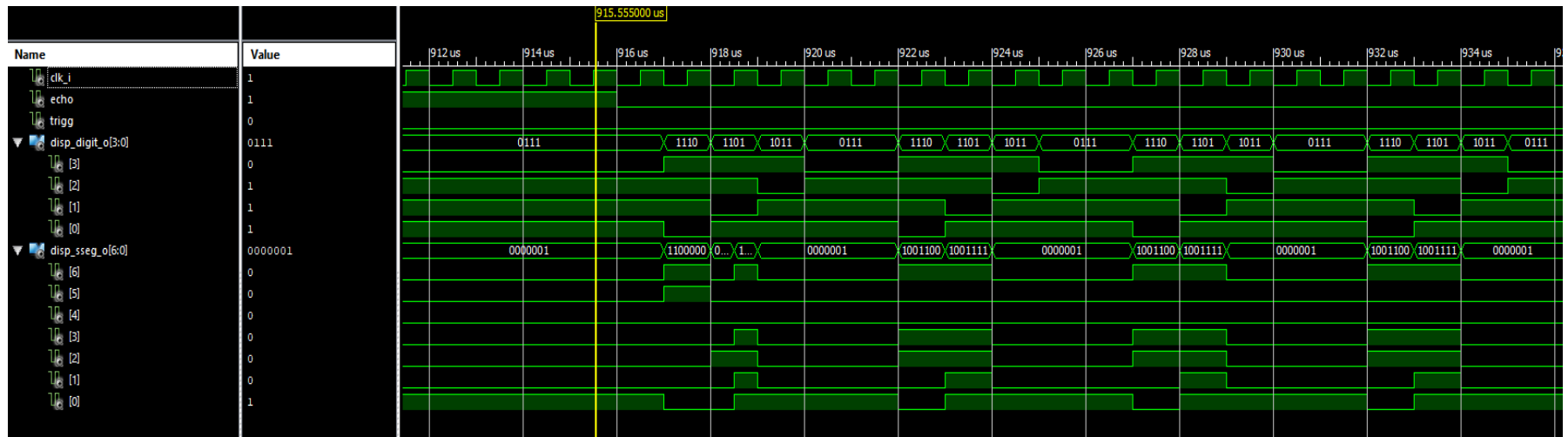
Realisation



RTL schematic



Simulation



Simulating whole program for echo pulse of width 896 μ s.
Which means approximately 14 cm as demonstrated by
the „*disp_sseg_o*“ values (corresponds to 7-segment display).

Execution

- <https://youtu.be/zrTZuX57ycl>