

Connecting the Blocks

The image shows the following configuration of blocks and connections:

HC_SR04 Block

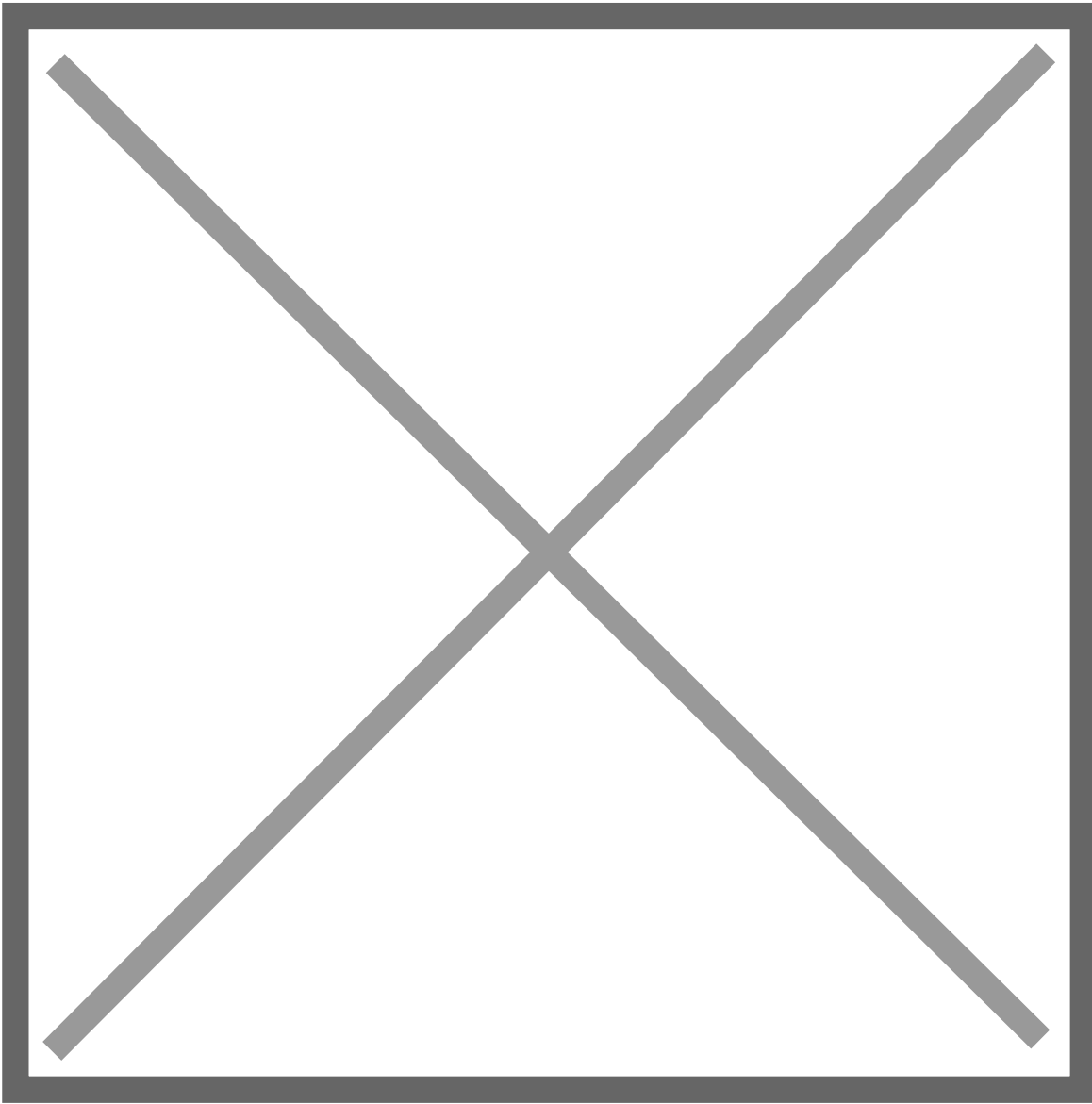
- Inputs:
 - clock: Connected to the system clock signal (Input Pin clk).
- Outputs:
 - echo: Connected to the input pin e1 and to the inverter.
 - trigger: Connected to output pin e0 (physically triggers the HC-SR04 sensor).
 - distance[15:0]: Distance measurement output, sent to uart_tx_16_bit_dec_trigger.

inverterC Block

- Input (A): Receives the echo signal from the HC_SR04.
- Output (Z): Connects to the inTrigger input of the uart_tx_16_bit_dec_trigger. The inverter ensures that UART transmission occurs after the Echo pulse ends.

uart_tx_16_bit_dec_trigger Block

- Inputs:
 - clk: Connected to the system clock (same as HC_SR04).
 - inData[15:0]: Connected to the distance output of the HC_SR04.
 - separator: Receives a constant value of 1.
 - inTrigger: Connected to the inverter output.
- Outputs:
 - uartTxPin: UART data output, connected to the uartTx pin.
 - txDone: Transmission completion signal, connected to LED led0 to indicate when data has been sent.



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