~~TOP.VHD~~

ARTY A7 BOARD

TOP.VHD

PCB PARKPILOT

Diagram × sound_logic.vhd × pwm.vhd ×

Designer Assistance available. Run Connection Automation

Default View

CLK100MHZ

BTNC

RST

TRIG_OUT 2 BITS (RED/GREEN)

ECHOS: echo_R_i, echo_M_i, echo_L_i

TRIGGERS: TRIGGER_L_0, TRIGGER_M_0, TRIGGER_R_0

TO SENSORS

PCB

TO_LEDS

TO_AMPLIFIER

SPEAKER_0

S_DISTANCE_L

S_DISTANCE_M

S_DISTANCE_R

S_LED_L_STATE

S_LED_M_STATE

S_LED_R_STATE

S_SOUND_STATE

S_SOUND_DATA

S_PWM_SOUND_PWM

sensor_driver_0 (LEFT)

clk, rst, echo_i → RTL → trigger_o, distance_o[7:0]

sensor_driver_v1_0

sensor_driver_1 (MID)

clk, rst, echo_i → RTL → trigger_o, distance_o[7:0]

sensor_driver_v1_0

sensor_driver_2 (RIGHT)

clk, rst, echo_i → RTL → trigger_o, distance_o[7:0]

sensor_driver_v1_0

control_unit_0

clk, left_i[7:0], mid_i[7:0], right_i[7:0] → RTL → led_L_o[2:0], led_M_o[2:0], led_R_o[2:0], sound_o[2:0]

control_unit_v1_0

led_driver_0

clk, reset, state_L[2:0], state_M[2:0], state_R[2:0] → RTL

LEFT: LED_L0_o[2:0], LED_L1_o[2:0], LED_L2_o[2:0], LED_L3_o[2:0]

MID: LED_M0_o[2:0], LED_M1_o[2:0], LED_M2_o[2:0], LED_M3_o[2:0]

RIGHT: LED_R0_o[2:0], LED_R1_o[2:0], LED_R2_o[2:0], LED_R3_o[2:0]

led_driver_v1_0

sound_player_0

clk, rst → RTL → data_out[7:0]

sound_player_v1_0

pwm_0

clk, duty[7:0] → RTL → output

pwm_v1_0

sound_logic_0

clk, state[2:0], sound_in → RTL → on_state, sound_out

sound_logic_v1_0