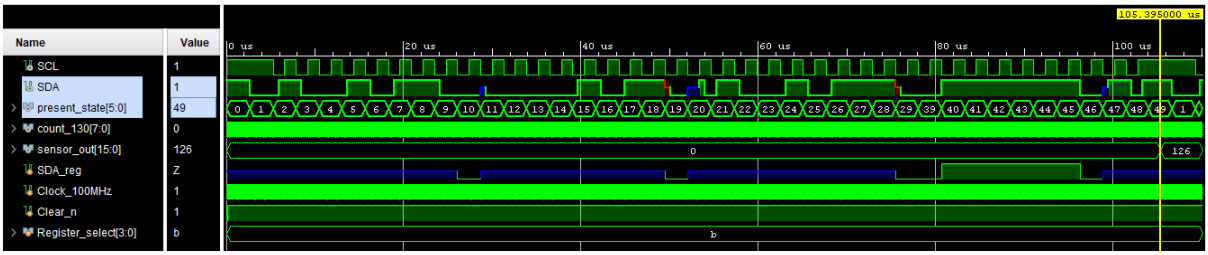
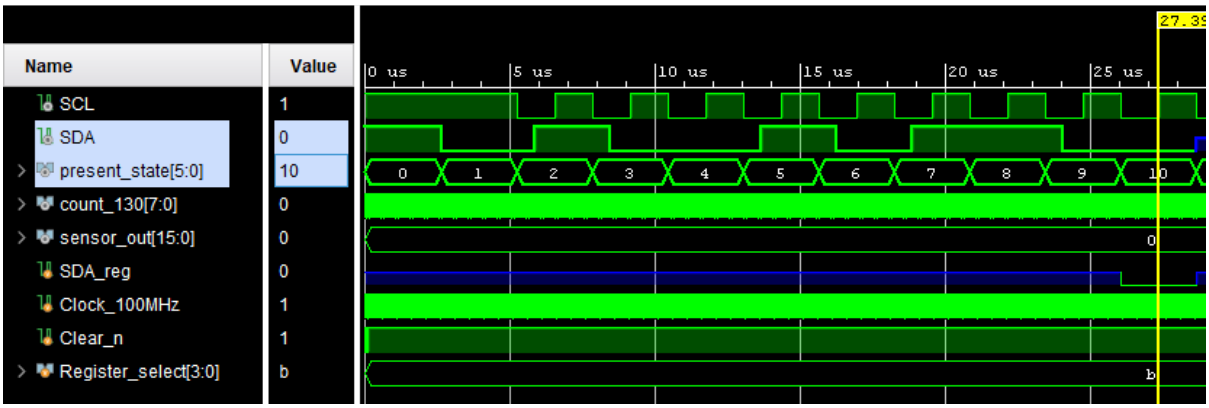
1. Simulation

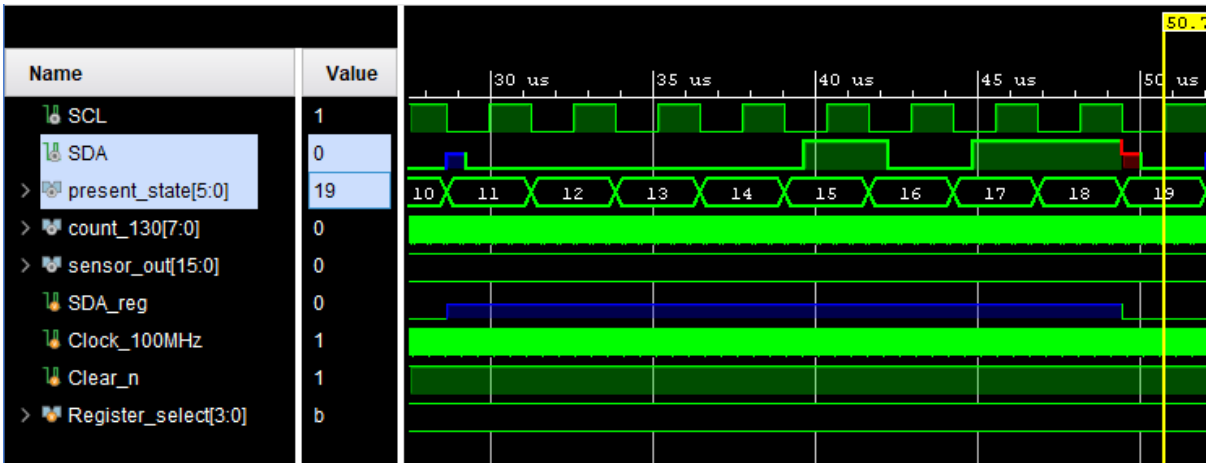
1.1. Full Simulation



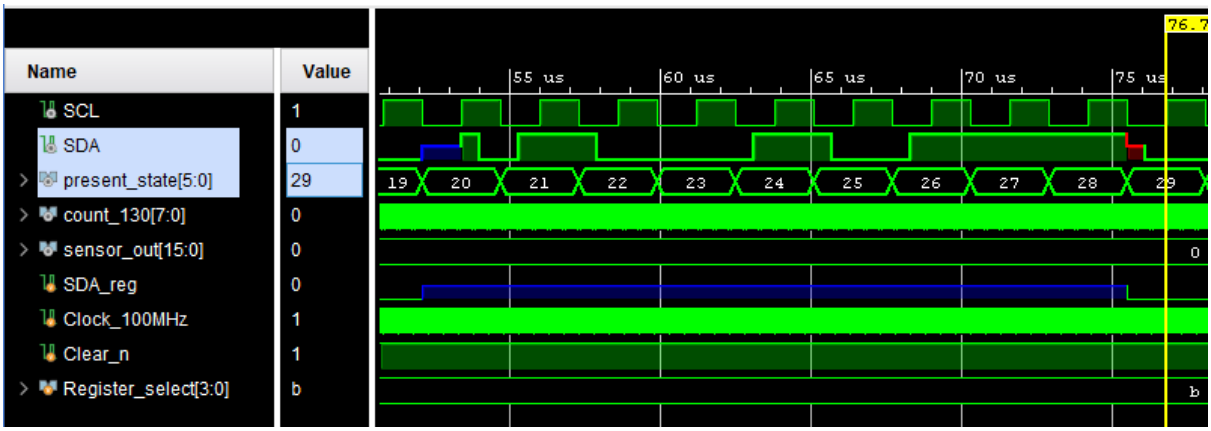
1.2. Serial Bus Address(SBA) for Write



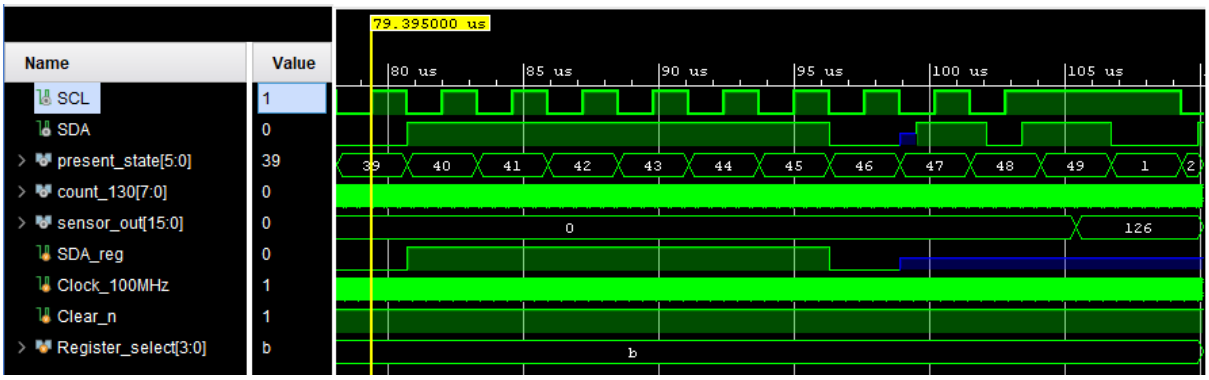
1.3. Address Pointer Register(APR)



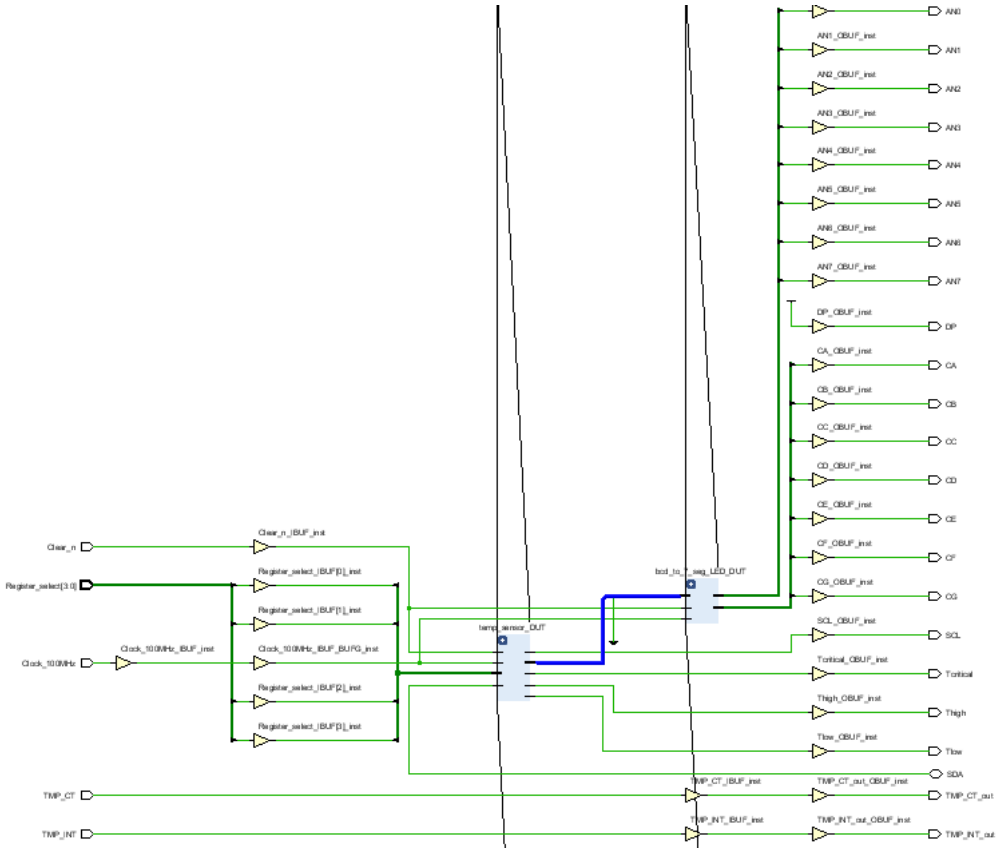
1.4. Serial Bus Address(SBA) for Read



1.5. Data [7:0]

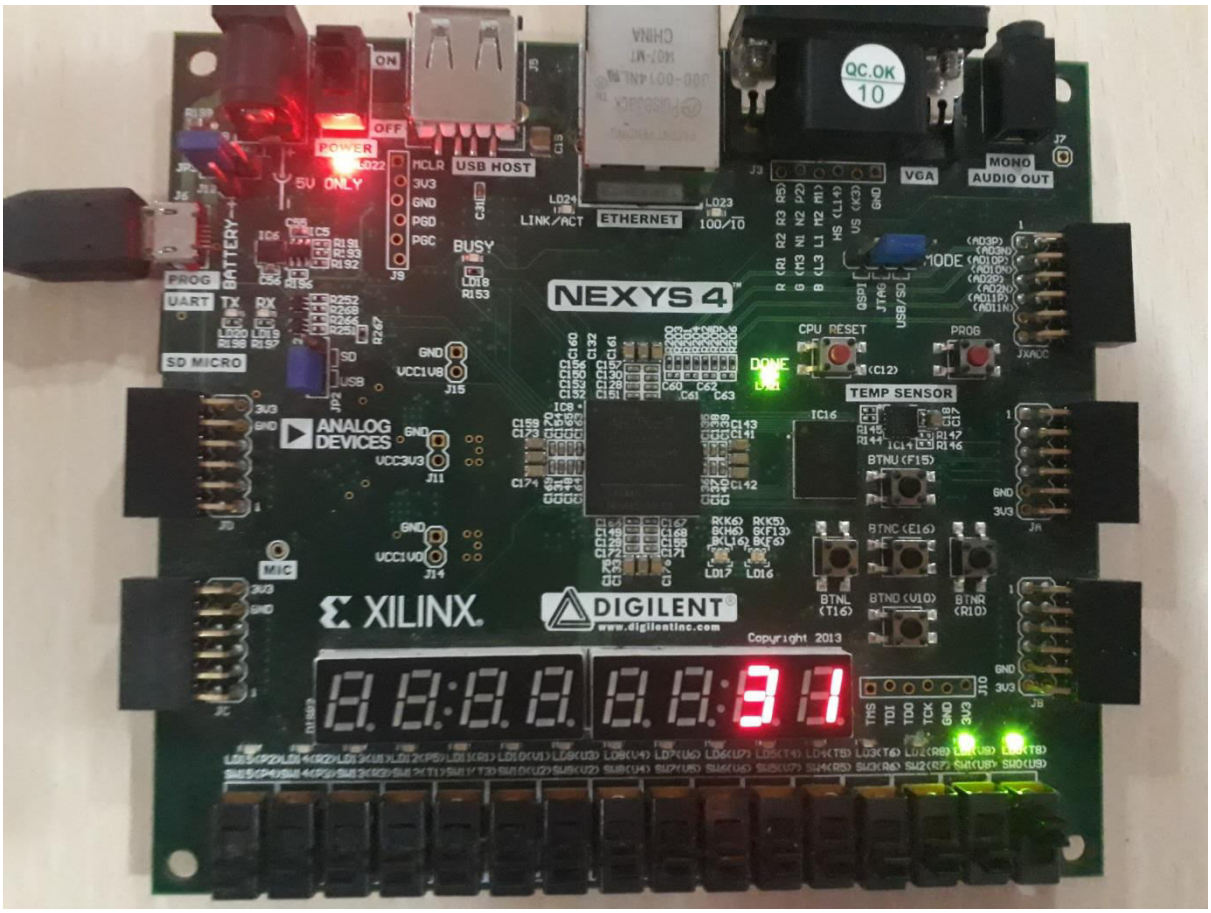


2.Synthesis

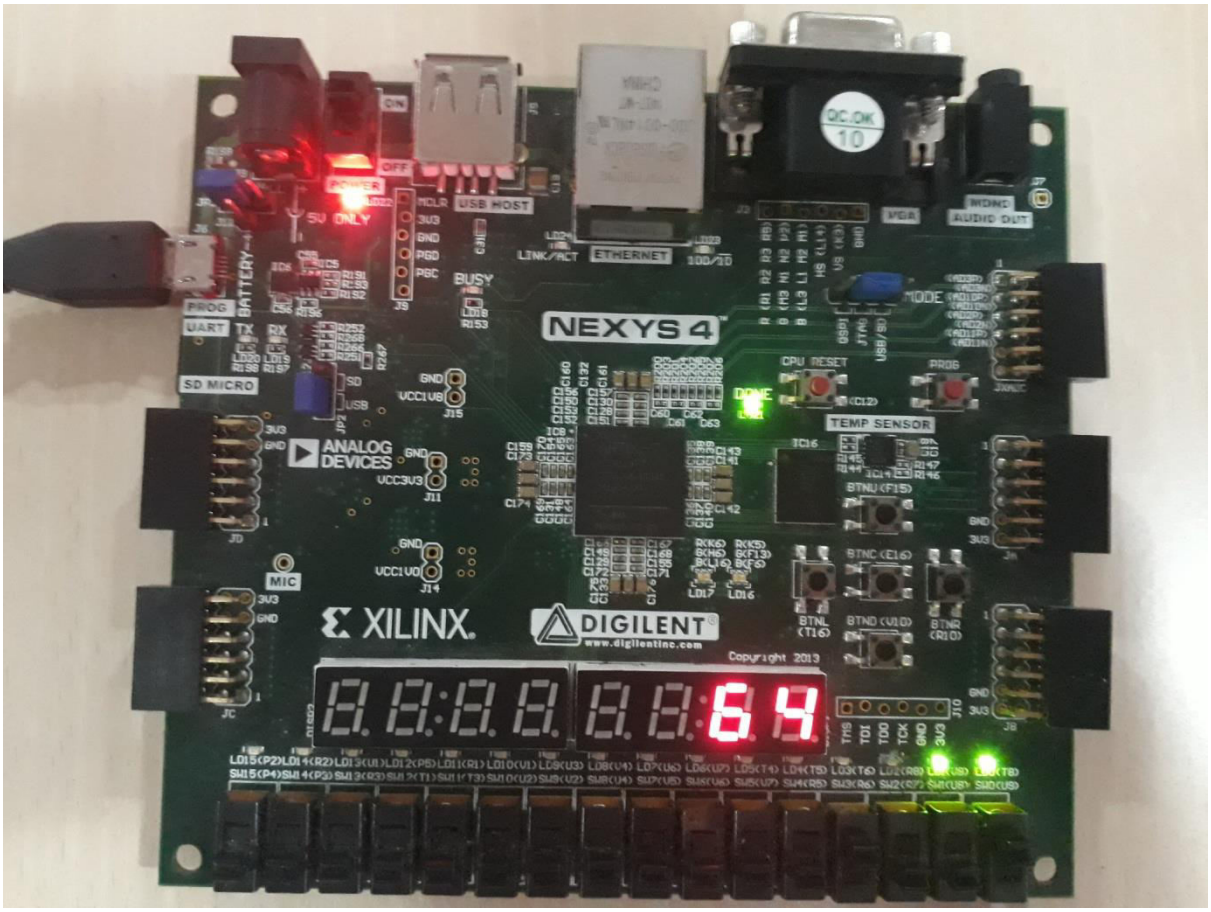

AN0
AN1_OBUF_inst
AN1
AN2_OBUF_inst
AN2
AN3_OBUF_inst
AN3
AN4_OBUF_inst
AN4
AN5_OBUF_inst
AN5
AN6_OBUF_inst
AN6
AN7_OBUF_inst
AN7
DP_OBUF_inst
DP
CA_OBUF_inst
CA
CB_OBUF_inst
CB
CC_OBUF_inst
CC
CD_OBUF_inst
CD
CE_OBUF_inst
CE
CF_OBUF_inst
CF
CG_OBUF_inst
CG
SCL_OBUF_inst
SCL
Tcritical_OBUF_inst
Tcritical
Thigh_OBUF_inst
Thigh
Tlow_OBUF_inst
Tlow
SDA
TMP_CT_OBUF_inst
TMP_CT_out
TMP_INT_OBUF_inst
TMP_INT_out
Clear_n
Clear_n_IBUF_inst
Register_select[3:0]
Register_select_IBUF[0]_inst
Register_select_IBUF[1]_inst
Register_select_IBUF[2]_inst
Register_select_IBUF[3]_inst
Clock_100MHz
Clock_100MHz_IBUF_inst
Clock_100MHz_IBUF_BUFG_inst
temp_sensor_DUT
bcd_to_7_seg_LED_DUT
TMP_CT
TMP_CT_IBUF_inst
TMP_INT
TMP_INT_IBUF_inst

3. Implementation

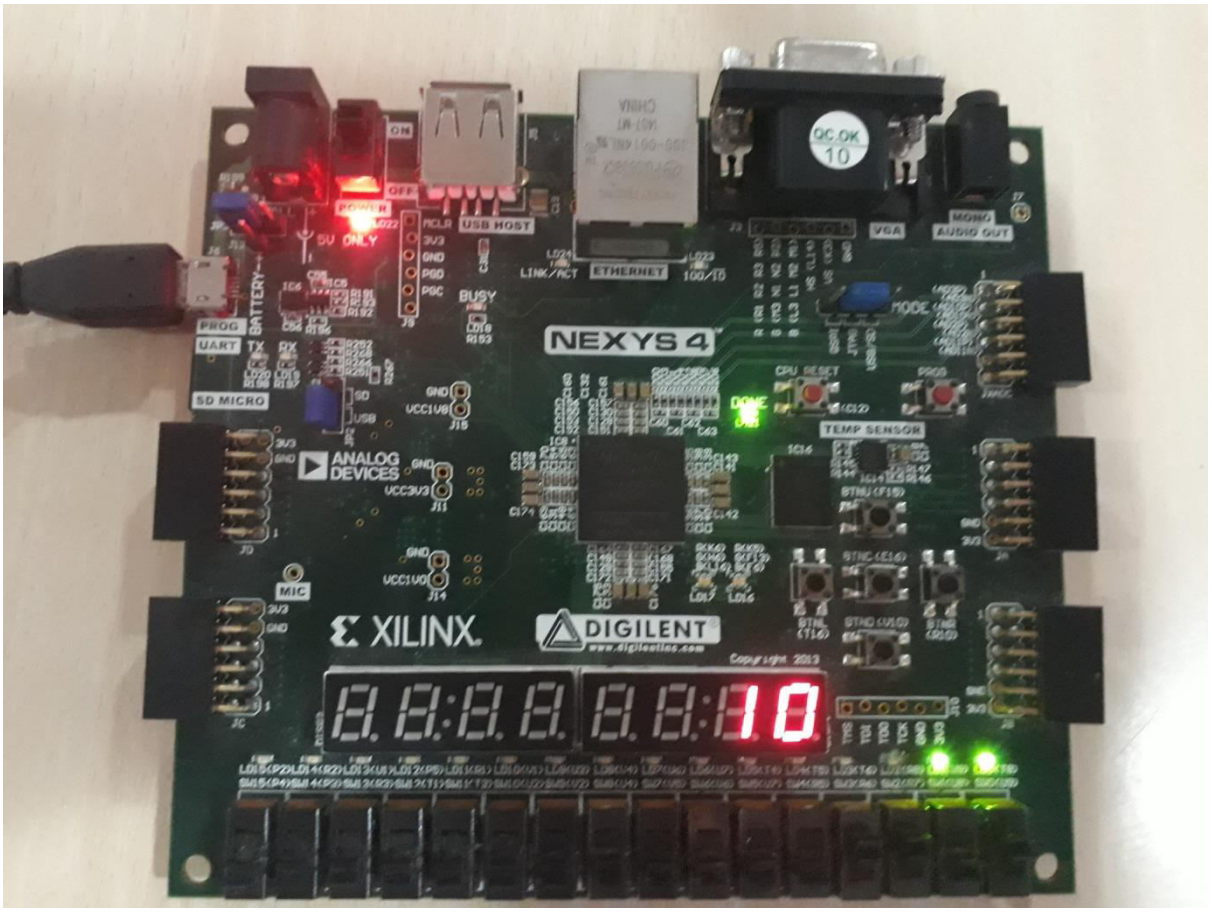
3.1. Register_select = 4’b0000 (Temperature MSB)



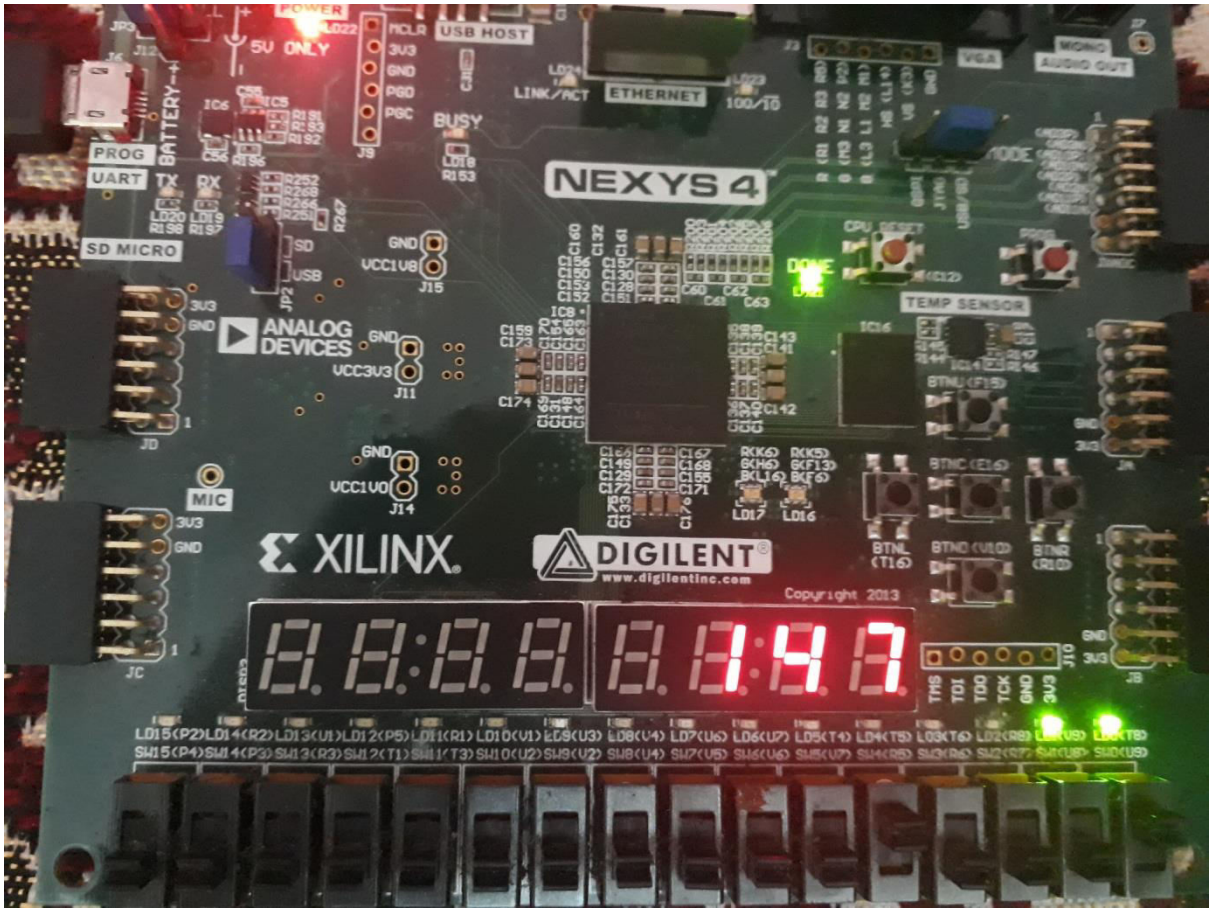
3.2. Register_select = 4’b0100 (T_{high} MSB)



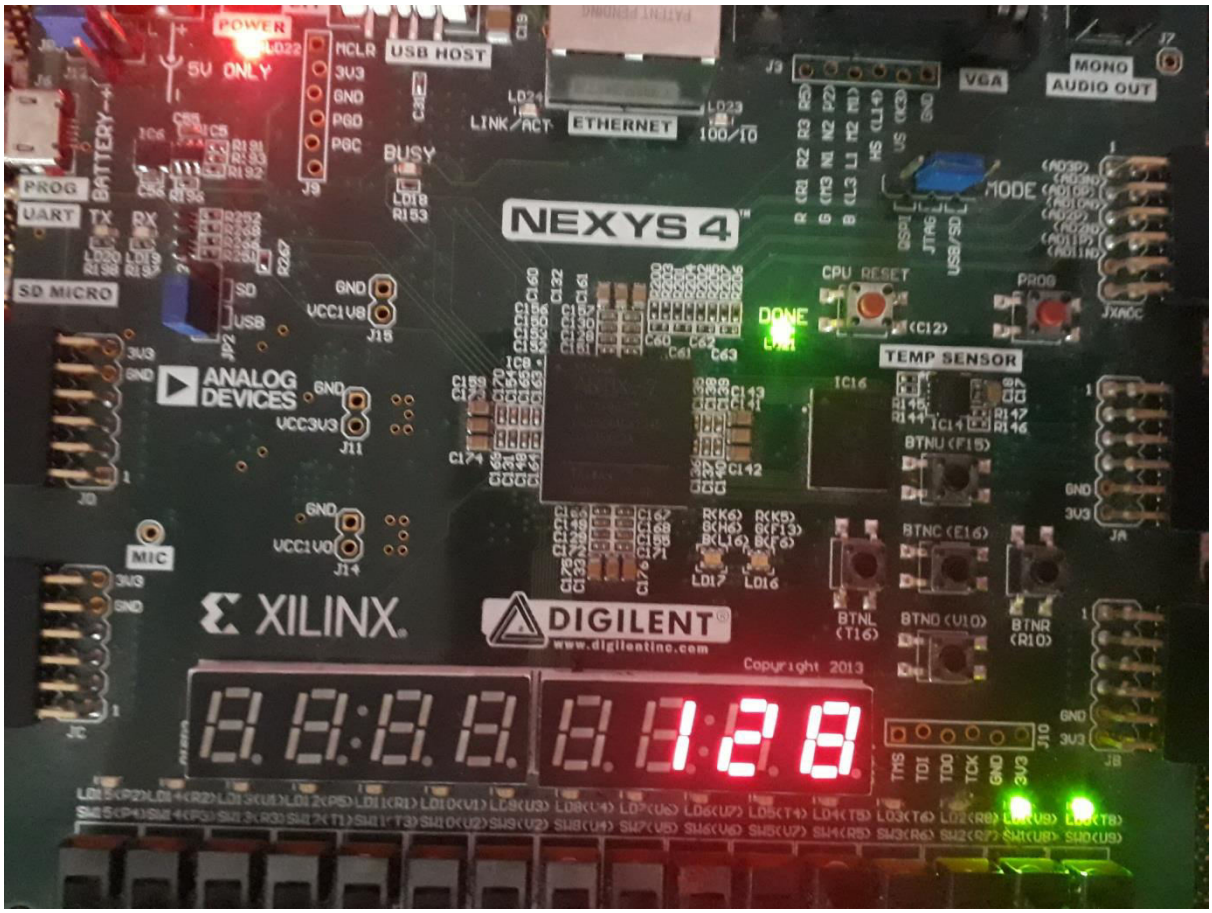
3.3. Register_select = 4’b0110 (T_{low} MSB)



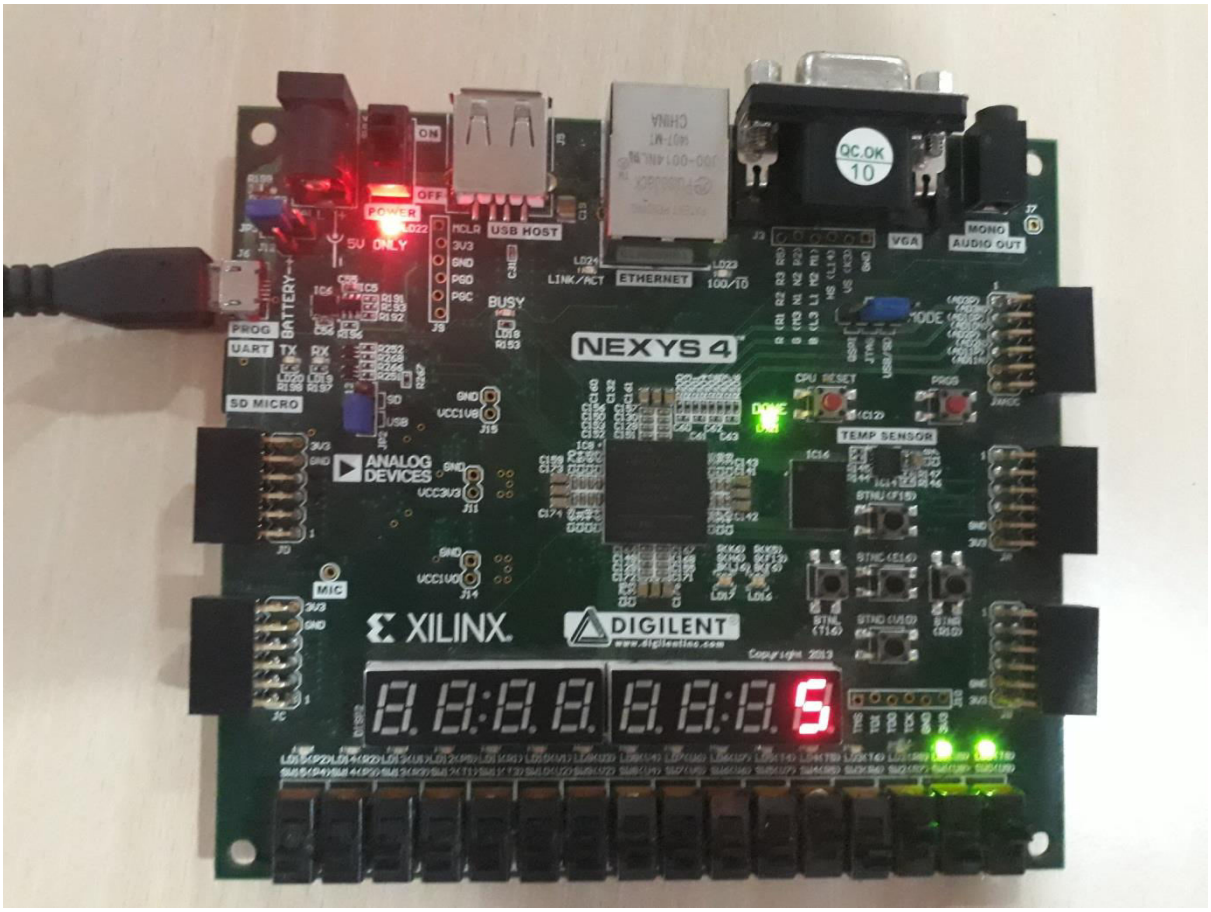
3.4. Register_select = 4’b1000 (T_{crit} MSB)



3.5. Register_select = 4’b1001 (T_{crit} LSB)



3.6. Register_select = 4’b1010 (T_{hyst})



3.7. Register_select = 4’b1011 (ID)

$203_{(10)} = CB_{(16)}$