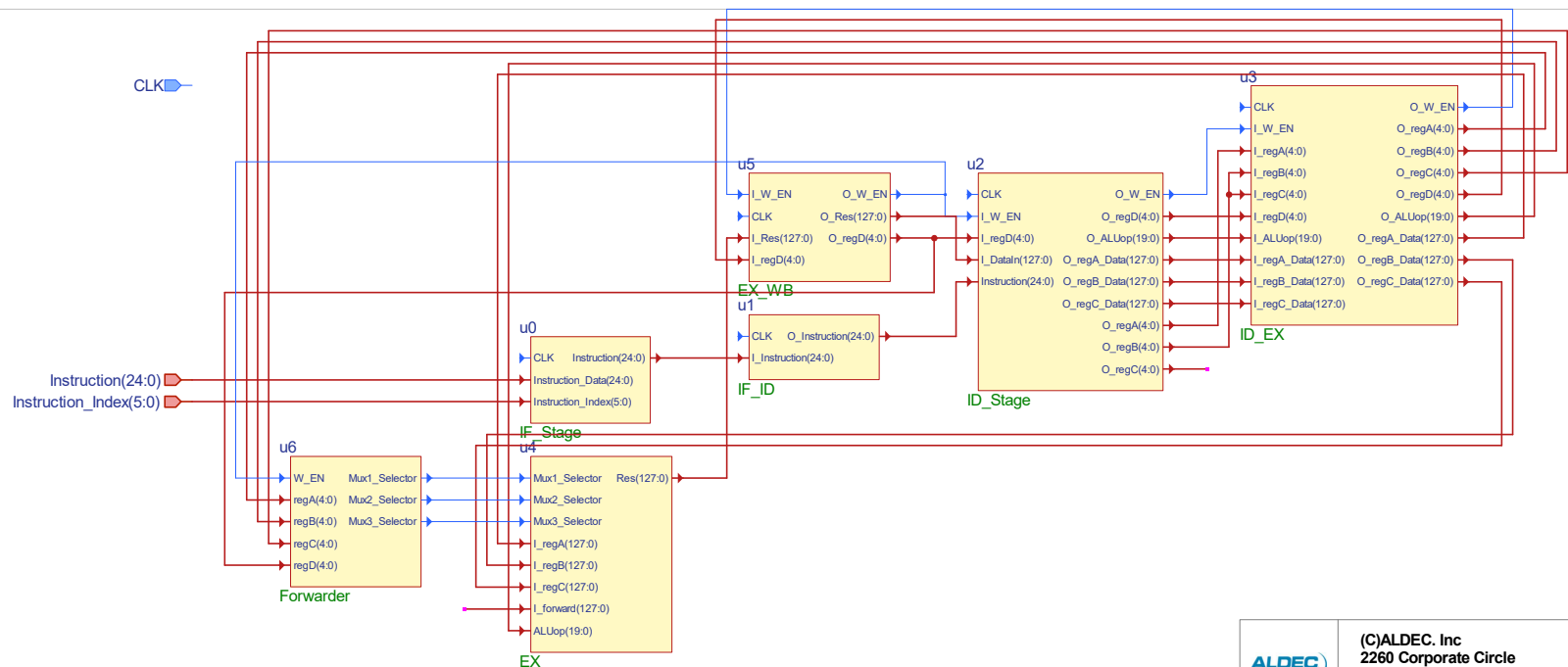# 4-Stage Pipelined Multimedia Unit

CLK
esign Unit Header

library ieee;
use ieee.std_logic_1164 .all;
use ieee.NUMERIC_STD....

CLK

u3
- CLK
- I_W_EN
- I_regA(4:0)
- I_regB(4:0)
- I_regC(4:0)
- I_regD(4:0)
- I_ALUop(19:0)
- I_regA_Data(127:0)
- I_regB_Data(127:0)
- I_regC_Data(127:0)
- O_W_EN
- O_regA(4:0)
- O_regB(4:0)
- O_regC(4:0)
- O_regD(4:0)
- O_ALUop(19:0)
- O_regA_Data(127:0)
- O_regB_Data(127:0)
- O_regC_Data(127:0)

ID_EX

u5
- I_W_EN
- CLK
- I_Res(127:0)
- I_regD(4:0)
- O_W_EN
- O_Res(127:0)
- O_regD(4:0)

EX_WB

u2
- CLK
- I_W_EN
- I_regD(4:0)
- I_DataIn(127:0)
- Instruction(24:0)
- O_W_EN
- O_regD(4:0)
- O_ALUop(19:0)
- O_regA_Data(127:0)
- O_regB_Data(127:0)
- O_regC_Data(127:0)
- O_regA(4:0)
- O_regB(4:0)
- O_regC(4:0)

ID_Stage

u1
- CLK
- I_Instruction(24:0)
- O_Instruction(24:0)

IF_ID

u0
- CLK
- Instruction_Data(24:0)
- Instruction_Index(5:0)
- Instruction(24:0)

IF_Stage

Instruction(24:0)
Instruction_Index(5:0)

u6
- W_EN
- regA(4:0)
- regB(4:0)
- regC(4:0)
- regD(4:0)
- Mux1_Selector
- Mux2_Selector
- Mux3_Selector

Forwarder

u4
- Mux1_Selector
- Mux2_Selector
- Mux3_Selector
- I_regA(127:0)
- I_regB(127:0)
- I_regC(127:0)
- I_forward(127:0)
- ALUop(19:0)
- Res(127:0)

EX

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Created:	5/3/2020
Title:	No Title
Revision:	1.0
Page:	1 / 1