University of Tehran

Electrical and Computer Engineering Department

ECE (8101) 342

Object Oriented Modeling of Electronic Circuits – Spring 1404

Homework 5: Embedded Processor ISS, RTL and Channel interfacing
Due Date: Shahrivar, 15 1404

Processor ISS
An AI Edge System
C++ ML Modeling
Using a BFM Accelerator
RTL and Channel Signaling

This homework is based on the SAYAC AI Edge System presented in the last three lectures o\f the class. You will make certain changes to the existing hardware and run the simulations.

1. In the BFM model of the complete system make changes to the DMA so that it can be configured for various burst values. Run a simple program to exercise this change. The program you run includes SAYAC ISS that is made available to you. Extend the simple code presented in class for testing your changes to the DMA.
2. In the abstract model of the complete system that uses the SystemC channels, make changes to the DMA so that it can be configured for various burst values. Run a simple program to exercise this change. The program you run includes SAYAC ISS that is made available to you. Extend the simple code presented in class for testing your changes to the DMA.
3. The assembly code for activating the MM Accelerator is made available to you. Using the modified DMA activate this circuit for a given set of data run the multiplication. Show waveforms to illustrate the DMA burst function.