MiCAP-Pro User Guide

1 Introduction :

MiCAP-Pro is a high speed custom reconfiguration controller used for DCS designed for the Zynq-SoC platform. The repository contains the following directories:

- hw: In this directory, it contains all the necessary hardware code of the MiCAP-Pro.
- sw: In this directory, it contains all the necessary software drivers of the MiCAP-Pro.

2 Hardware integration:

The MiCAP-Pro can be used as a *pcore* along with the AXI-DMA engine. It can be imported in any XPS project of the DCS. The hardware source code is located at:

"*/hw/axi_stream_generator_v1_00_a/*".

The user can copy this folder into the user's pcores directory of the XPS project. Next, press the re-scan button in IP catalog of the XPS. The "*axi_stream_generator_v1_00_a*" should be visible under USER tab of the IP catalog. The user can now use as an user IP and instantiate the MiCAP-Pro core for the DCS.

The connections between the AXI-DMA engine and the stream generator is shown in Figure 1.

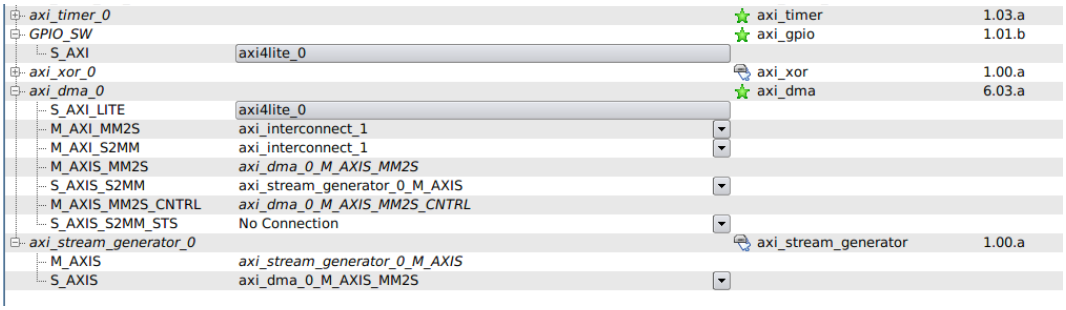

Figure 1: Connections between Stream generator and AXI-DMA engine

The user should also instantiate a GPIO core and make the connections as shown in Figure 2

3 Software integration:

Once the bitstream is generated (as guided in the TLUT tool flow), copy all the files present in the directory "/sw" to the swReconfiguration directory of the XPS project. The user can make use of the function "micap_reconfigure ( );" to execute the micro-reconfiguration. An example test code is shown in "testReconfiguration.c".

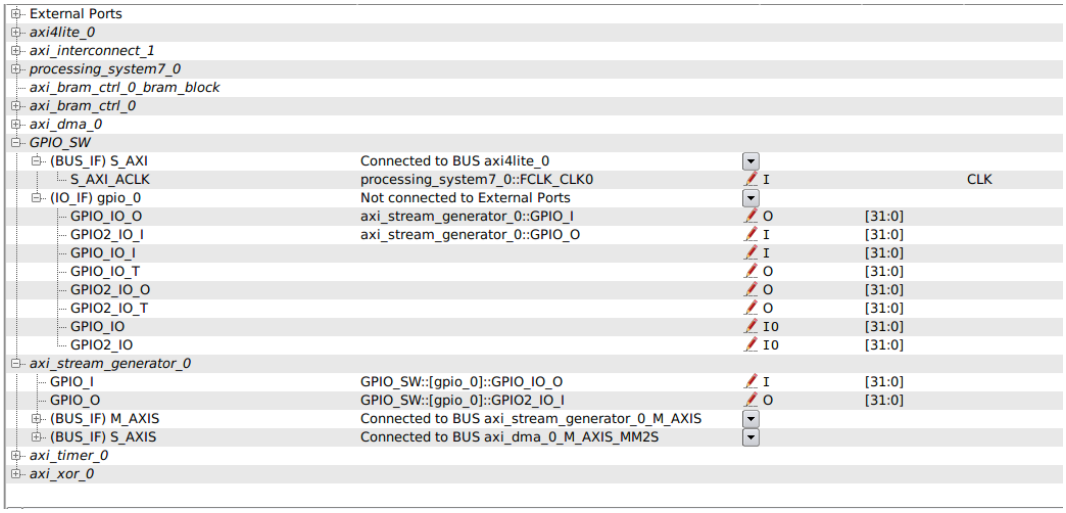

Figure 2: Connections between Stream generator and GPIO