GT Readout Platform: Commonality with other readouts

GT Readout Platform

This page is intended to find common features of the GT Readout Platform with other readouts to allow for code reuse.

One example is the **epix-hr-leap-common** repository which provides the **Core** firmware module, which can found here: https://github.com/slaclab/epix-hr-leap-common/tree/ePixUHR-100kHz.

Clocks

The ePixHR250M 2x2 Camera is also using the LEAP transceiver for the optical links and the GT Readout Platform was based on the clocking structure that was used there with a SI5345B jitter attenuator and a LMK61E2 programmable clock. The table below tries to compare the two projects to highlight any commonality and differences between them:

- Both projects have a 371.428571 MHz clock for the GTY
- Both projects have a 156.25 MHz clock with a SI53340 clock buffer with 2x outputs going to the GTY and 1 output to the SI5345B
  - GT Readout has another output to a secondary SI5345B
  - ePixHR250M has test pads for the remaining output
- Both projects have a SI5345B driven from a LMK61E2, a 48 MHz crystal or a clock output from the FPGA. A clock feedback loop is also used
  - GT Readout has:
    - 3x outputs going to the GTY
    - 2x outputs going to the FPGA logic
  - ePixHR250M has:
    - 2x outputs going to the GTY
    - 1x output going to the FPGA logic
    - 1x output going to a SI53340 clock buffer

GT Readout Platform	ePixHR250M