

# 4 Port SAS Recorder IP Core

### INTRODUCTION

The SAS Recorder IP Core provides a ready-to-use solution for high-speed data recording applications. Simple interface guarantees fast time-to-market solutions.

### FEATURES

The SAS Recorder IP Core includes the following features:

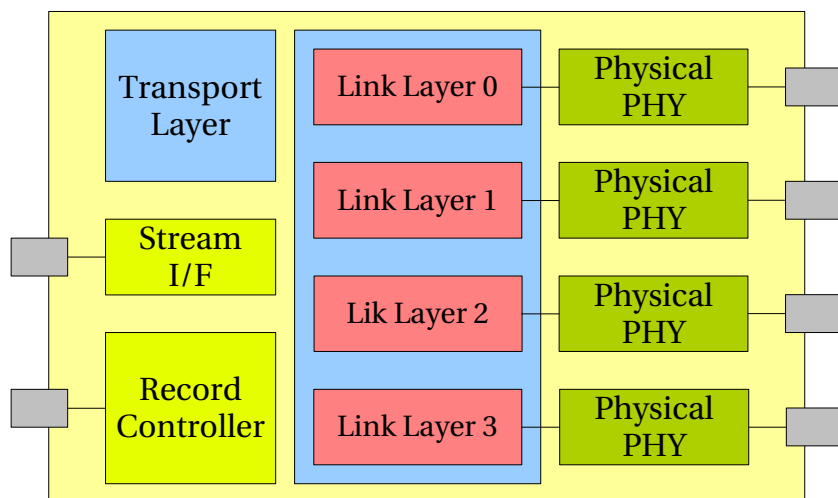
- *High Speed Data Recording*
- *Up to 4 Ports*
- *SAS 1.5, 3.0, 6.0 and 12.0 Gbps support*
- *High Data Bandwidth*
- *Hardware managed command sequencing*
- *Full SAS interface*
- *AXI style streaming data interface*
- *Xilinx Transceiver based PHY*

### ARCHITECTURE

Utilizing our SAS IP Core, the recorder can be configured to use 1-4 ports, depending on your needs. This allows for a flexible solution that can be matched to any need. The recorder can be used for one-off recordings, or for continuous recording with automatic wrap-around.

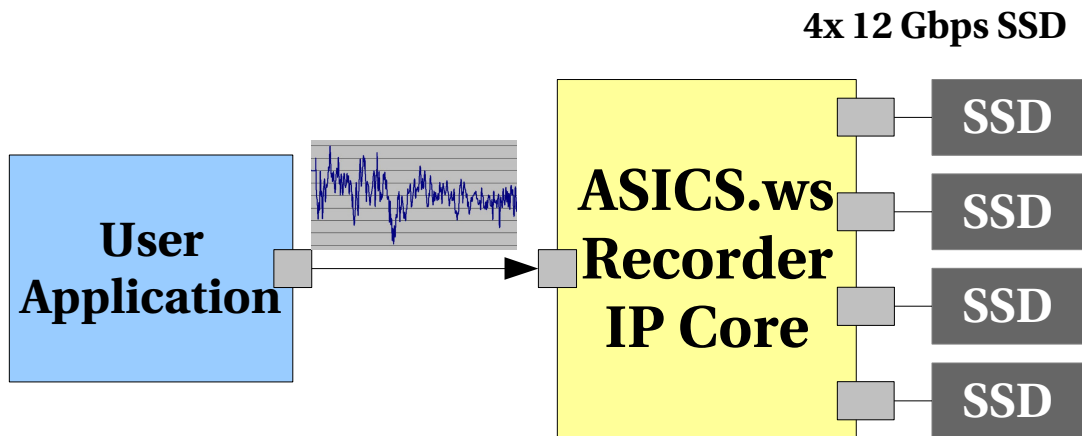
Theoretical max bandwidth is 1.2 GBytes/sec per port, or 4.8 GBytes/sec total. Of course actual performance depends on the capabilities of the attached drives.

We include a FPGA-based PHY, or the IP Core can interface to a standard SAS PHY from a 3<sup>rd</sup> party. The FPGA-based PHY is targeted for Xilinx series 7 devices, with GTX and GTH transceivers. Our PHY includes all functions required to bring up the link all the way to 12G.



We have successfully tested this IP Core with the following SAS SSDs:

- HGST 200GB SAS-12G SSD
- Seagate 200GB SAS-12G SSD
- Toshiba 200GB SAS-12G SSD
- Micron 100GB SAS-6G SSD
- Talos (OCZ) 200GB SAS-6G SSD



### SIZE AND SPEED

Sample Synthesis results for SAS Recorder IP Core. The goal was smallest and fastest implementation.

<i>Technology</i>	<i>Gate Count</i>	<i>Fmax</i>
Xilinx Virtex 7 GTX/GTH	26K LUTs, 64 BRAMs	>175 MHz

These synthesis results are provided for reference only. Shown is a typical implementation with two ports.