REDUCING IMPLEMENTATION COST
OF DIGITAL VIDEO INTERFACES IN
BROADCAST APPLICATIONS

SERIAL DIGITAL INTERFACE (SDI) REFERENCE DESIGNS

⟩ Broadcast Industry Demands

- Reduce cost-per-channel for standard video interfaces

- Support multiple channels with least number of devices

- Maintain highest quality of jitter performance

⟩ The Xilinx Solution

- Complete reference designs for serial digital video applications

- Single-chip, low power interface for SD, HD and 3G-SDI standards

- Integrated high-speed SelectIO and MGTs with industry-leading signal integrity

- Quickly implement and future-proof triple-rate SDI designs

- Reduce cost and power by reducing the need for external ASSPs

Complete Triple Rate SDI Solution

Xilinx SDI references designs support the full range of broadcast video connectivity standards, including SD-SDI, HD-SDI, DVB-ASI, Dual Link HD-SDI and 3G-SDI interfaces. Triple rate SDI can be implemented using a single multi-gigabit transceiver (MGT) with dynamic switching between SD, HD and 3G-SDI standards for transmit or receive and automatic standard detection without reprogramming the FPGA. Designs include non-trivial conversion between Dual Link HD-SDI and 3G-SDI and between levels A and B of the 3G-SDI standard, as well as pass-through designs for all the SDI data rates. Xilinx also offers complementary designs supporting triple rate SDI audio embedding/de-embedding and audio sample rate conversion.

Reduce Cost-per-Channel for HD and SD Video Connectivity

Triple rate SDI on Xilinx FPGAs addresses the growing requirement for high-bandwidth transmission between video applications in the front-end, studio, or editing suite. With Xilinx's LDVS SelectIO™ and serial transceivers in single-chip programmable implementation, product developers across the broadcast video chain can reduce material costs, especially for multi-channel systems.

Broadcast Connectivity Targeted Design Platform

Xilinx SDI references designs are an integral part of the Xilinx Broadcast Connectivity Targeted Design Platform that brings overall lower system cost and high performance, lower power serial connectivity to broadcast video, audio, and network applications. The platform integrates all the hardware and software elements needed to quickly build systems and fully characterize and verify performance, including the latest generation Virtex®-6 and Spartan®-6 FPGAs, intellectual property (IP) blocks, design environments, and reference designs, along with a base set of digital audio/video development boards and industry-standard FPGA Mezzanine Card (FMC) daughter boards.

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XILINX SDI REFERENCE DESIGNS

FUNCTIONS	STANDARDS SUPPORTED	FORMATS
SD-SDI	SMPTE 259M, SMPTE 344M	PAL, NTSC
HD-SDI	SMPTE 292M, SMPTE 274M, SMPTE 296M, SMPTE 260M, SMPTE 295M	All standard HD-SDI compatible formats
Dual Link HD-SDI	SMPTE 372M, SMPTE 274M	All 1080-line video formats compatible with SMPTE 372M
3G-SDI	SMPTE 424M, SMPTE 425M	All video formats compatible level A and B of SMPTE 425M
DVB-ASI	EN 50083-9	

Hardware Platforms

CTXIL406/Xilinx ML571

Cook Technologies CTXIL206

Xilinx ML605*

Xilinx SP605*

*Requires Broadcast Connectivity FMC Daughter Card

XILINX SDI REFERENCE DESIGNS

FUNCTION	VIRTEX-6	VIRTEX-5	SPARTAN-6	SPARTAN-3
SDI Tx		●		●
SDI Rx		●		●
HD-SDI Tx		●		
HD-SDI Rx		●		
Dual Link HD-SDI Tx		●		
Dual Link HD-SDI Rx		●		
3G-SDI Level A & B Tx		●		
3G-SDI Level A & B Rx		●		
Triple-rate SD/HD/3G-SDI Tx	●	●	●	
Triple-rate SD/HD/3G-SDI Rx	●	●	●	
DVB-ASI Tx		●		●
DVB-ASI Rx		●		●

Take the NEXT STEP

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