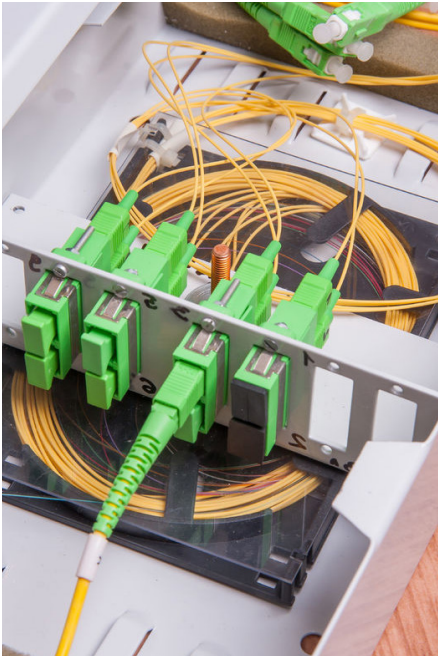


High Speed Duplex Laser Communications Design Note #113

8b/10b Multi-Channel Video Encoding



High speed laser communications make multi-channel video signal routing easy.

High Speed Laser Communications

The use of light for communications is as old as fire and smoke signals. Applied to 1300nm laser light over single mode fiber and we have something really powerful. Multi-gigabit laser communications, driven by Field Programmable Gate Arrays (FPGAs) makes high bandwidth data communications possible. Orchid has designed a series of laser communications relay devices which permit the duplex transmission of high definition video signals over fiber optic light pipes. These highly reliable communications links find application in broadcast video, medical, security, avionics, and telecommunications products.

Multi-channel HD-SDI Video Over Light

HD-SDI video requires 1.5 to 3.5 gigabits of bandwidth per video channel. The conventional transmission of multiple channels over coaxial cable can be physically heavy, prone to interference, and difficult to cable. Laser communications makes the multiplexing of multiple channels both secure and light weight. Couple that with the added benefit of 8b/10b data encoding and the digital link has an extra measure of reliability as well.

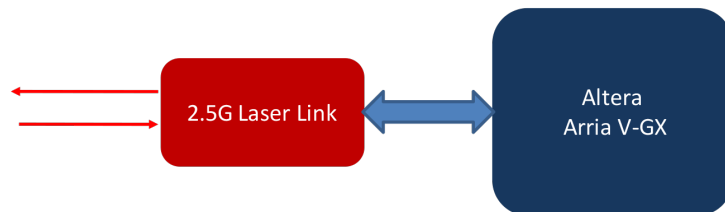
FPGA Transceiver Technology

Multiple high speed transceiver lanes available in today's low and medium cost FPGA devices make this technology available in even the most cost sensitive applications. Verilog HDL firmware from Orchid performs synchronizer, multiplexer, de-multiplexer, data security, and link quality functions.



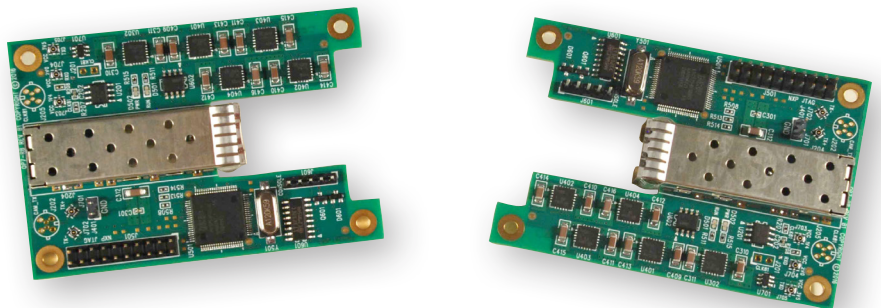
"Orchid's assistance with our communications network was invaluable."

- Network Comms Manager



Orchid Technologies: Laser Communications

The development of custom electronic products for our OEM clients is Orchid's entire business. The design of laser communication systems with rapid design cycles, demanding technical requirements, and unforgiving schedules sets us apart. Call Orchid Technologies today!



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