UHD SDI RX

UHD SDI RX is an SDI(Serial digital Interface) receiver IP. This IP is compliant with applicable SMPTE standards and supports HD-SDI, 3G-SDI Level-A, 3G-SDI Level-B, 6G-SDI type1 and type2, 12G-SDI type1 and type2 with dynamic switching capability.

Supported Standards

- SMPTE ST 292-1 (HD-SDI)
- SMPTE ST 424 (3G-SDI)
- SMPTE ST 425 (3G Level-A/B)
- SMPTE ST 2081-1 (6G-SDI)
- SMPTE ST 2082-1 (12G-SDI)
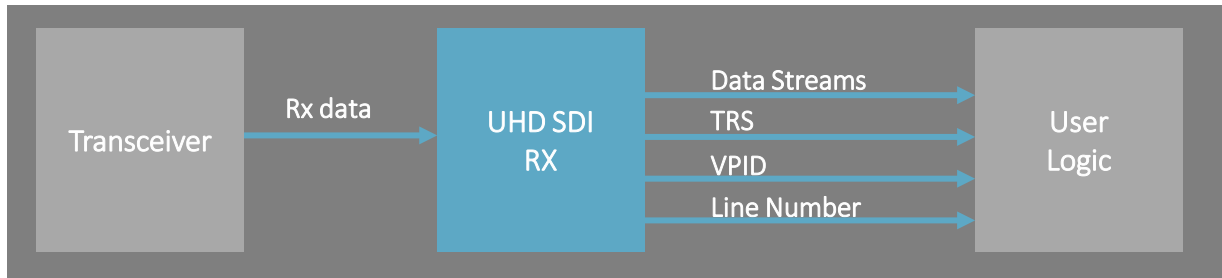- SMPTE ST 352 (Payload Identification Codes)

Features

- Descrambling and NRZI decoding
- Extraction of Line Number(LN)
- Extraction of timing reference signals(TRS)
- CRC checker
- Extraction of Video Payload Identification (VPID)
- Removal of Sync-bit from timing reference words in 12G-SDI and 6G-SDI
- Dynamic switching between different SDI modes(12G-SDI, 6G-SDI, 3G/HD-SDI)

Overview

The UHD SDI RX IP decodes SMPTE compliant SDI data received via the transceiver, extracting synchronization signals (TRS), line numbers, and VPID.
The number of output data streams switches to 8 (12G-SDI), 4 (6G-SDI), or 2 (3G/HD-SDI) depending on the SDI transmission rate. Additionally, this IP automatically detects the mapping of 3G-SDI Level-A and Level-B, as well as 12G/6G-SDI Type 1 and Type 2.

Resource Utilization

SDI Standard	FFs	SRLs	ADDs	LUTs	COMB4s	RAMs	DSPs	Fmax [MHz]
12G-SDI	3966	32	164	10222	0	0	0	198
6G-SDI	1992	16	91	3386	0	0	0	212
3G(HD)-SDI	991	8	53	1150	0	0	0	186

* Synthesis result of Efinity 2024.2 (Ti375N1156).

Support

CIS has a dedicated FPGA and software design team comprising 15 seasoned engineers specializing in high speed interface, image processing and embedded software design & development. Please feel free to contact us on whatever project you have in mind.

Contact

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