

NS2521/NS2531 Dual-Port HD Video Receiver

Introduction

NS2521 and NS2531 are dual-port SD and HD video receivers supporting Advanced Video Transport (AVT) technology with visually lossless digital video compression. They also support uncompressed video transmission and are compatible with SMPTE SD-SDI, HD-SDI and HDcctv 1.0 standards. NS2521 supports two ports, each up to HD 720p60, HD 1080i60 or HD 1080p30. NS2531 also supports 1080p50/60 with compression but only at one-port configuration.

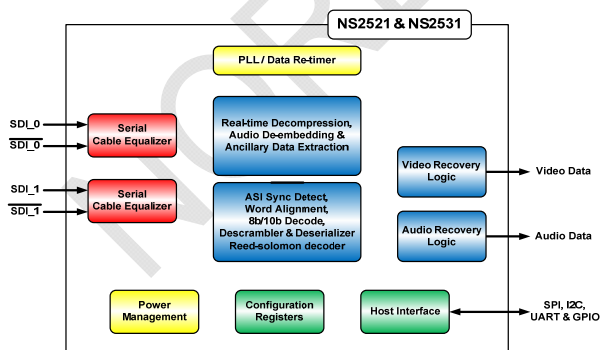
NS2521 and NS2531 can also support transferring two 720p24/25/30 decoded video streams over one 8-bit pixel bus, allowing HI3520D, HI3521 or HI3531 DVR video encoder chips to support 4, 8 or 16 720p24/25/30 ports respectively.

NS2521 and NS2531 employ Norelsys' advanced video compression and serial data adaptation technologies. It can extend the reach of HD video over 500 meters on 75-3 coaxial cable.

Norelsys' advanced digital video compression technologies achieve better video quality at less than half of the data rate required by SMPTE VC-2 LD. The chips also include Norelsys' serial data adaptation engine which automatically adjusts data equalization, transfer rate and compression ratio based on cable quality and cable length. A programmable Reed-Solomon decoder block is implemented for increased reliability.

NS2521 and NS2531 implement advanced features such as Camera to DVR audio and DVR to Camera control channel over the same cable.

Block Diagram



Applications

- HD DVR with Advanced Video Transport (AVT) technology
- SD-SDI, HD-SDI and HDcctv 1.0 DVR

Features

- Serial data rate: 1.485Gbps, 270Mbps, 135Mbps, 67.5Mbps, 33.75Mbps.
- Supported video formats without compression:
 - Two ports, each port can be SD 525i/625i, HD 720p 24/25/30/50/60, HD 1080i 50/60, HD 1080p 24/25/30
 - Compatible with SMPTE SD-SDI, HD-SDI and HDcctv 1.0 standards.
- Supported video formats with compression:
 - Two ports, each port can be SD 525i and 625i, HD 720p 24/25/30/50/60, HD 1080i 25/30/50/60, HD 1080p 15/24/25/30
 - One port, HD 1080p 50/60 (NS2531)
- Supported cable types:
 - Single-ended 75-3/75-5/75-7 coaxial cable
 - CAT6/CAT5/CAT5e Ethernet cable
 - Twisted pair cable such as telephone cable
- Supported pixel interface formats:
 - BT.656, BT.1120, CEA-861, MIPI CPI
 - 8-bit or 16-bit, up to 148.5MHz SDR
 - RGB 4:4:4 (uncompressed video) or YCbCr 4:2:2
- Support time-multiplexing two 720p24/25/30 decoded video streams over one 8-bit pixel bus.
- Support Camera to DVR audio with SPDIF or I2S interface.
- Support DVR to Camera communication channel over the same cable.
- Norelsys' advanced low-delay video compression technologies.
- Norelsys' advanced serial data adaptation engine.
- Programmable Reed-Solomon decoder.
- Ancillary (ANC) data detection and extraction.
- Support IEC 13818-1 compliant transport streams over the Asynchronous Serial Interface (ASI).
- Automatic detection of SD/HD, uncompressed or compressed video format.
- Support SPI / I2C / UART interface and Multi-GPIOs for external host command and control.
- 1.2V core and 1.8/2.7/3.3V selectable I/O power supply.
- HBM ± 8 KV on serial pins. No ESD devices required.
- QFN68 8x8 package.

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