NS5731/NS5735 4Kx2K Video Receivers

Introduction

NS5731/NS5735 are 4Kx2K video receivers supporting Advanced Video Transport (AVT) technology with visually lossless digital video compression. Furthermore, the AVT technology supports configurable compression ratio based on cable quality and cable length to obtain the best image quality.

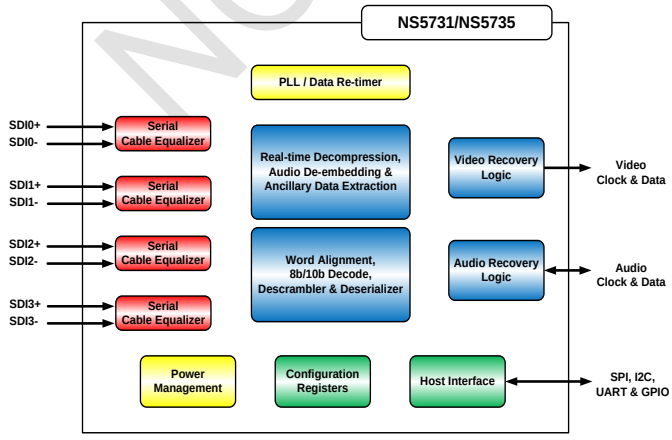
NS5731/NS5735 can extend the reach of 4Kx2K video over 100 meters. The chips support both single-ended coaxial cable and twisted pair cable.

NS5731 supports up to 4Kx2K@30Hz, 2560x1440@60Hz and 1080P@144Hz, NS5735 supports up to 4Kx2K@60Hz, 2560x1440@144Hz and 1080P@240Hz.

NS5731/NS5735 include a flexible 24-bit video data interface capable of transmitting various video formats compatible with CEA-861 and VESA Specification. They can also support four SPDIF inputs for 8-channel LPCM or compressed audio stream, and four I2S inputs for 8-channel LPCM up to 192 KHz audio sampling rate.

NS5731/NS5735 also support reverse audio and control data transmission, and integrates a reverse direction signal receiving circuit, which makes it capable to transmit video, audio and control signals in forward direction (downstream) while receiving reverse (upstream) audio and control signals transferred on the same cable simultaneously.

Block Diagram



Features

- NS5731 supports video formats up to 4Kx2K@30Hz, 2560x1440@60Hz and 1080P@144Hz. NS5735 supports video formats up to 4Kx2K@60Hz, 2560x1440@144Hz and 1080P@240Hz.
- Integrated adaptive equalizers, support up to four pairs of differential lines or four coaxial cables, support transmission rate up to 1.5Gbps for each pair of differential line or each coaxial cable.
- Support programmable Reed-Solomon forward error correction for compressed video.
- Flexible 24-bit video data interface with arbitrary bit-mapping capability to support 24-bit CEA-861 interface with separate syncs and 16-bit BT-1120 interface with embedded syncs.
- Support RGB, YUV 4:4:4, YUV 4:2:2 and YUV 4:2:0 pixel formats. Support progressive or interlaced video.
- NS5731 only supports single data rate transfer mode (up to 340MHz SDR). NS5735 supports single data rate or double data rate transfer mode (up to 340MHz DDR).
- Adjustable output delay for intra-bus de-skewing.
- Four audio output signals configurable as either SPDIF or I2S.
- Support four SPDIF outputs for 8-channel LPCM or compressed audio stream (Dolby Digital, DTS, AAC), and four I2S outputs for 8-channel LPCM up to 192 KHz audio sampling rate.
- Support HDMI Audio Return Channel (ARC) to deliver a single IEC 60958-1 stream from Sink to Source with up to 48KHz sample rate.
- Support bi-directional transfer of GPIO, UART, IR, I2C signaling with remote end.
- Integrated on-chip 8051 micro-controller to manage other peripheral interfaces such as I2C, UART
- Provided in 88-pin QFN package.

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