

# NS5301/NS5305 HDMI Transmitter with ARC, CEC and IR

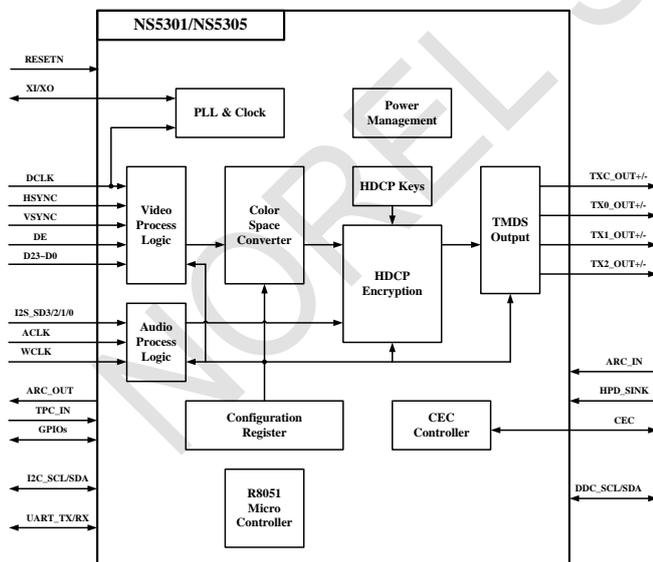
## Introduction

NS5301/NS5305 are HDMI (High-Definition Multimedia Interface) transmitters compatible with HDMI v2.2/HDMI v1.4/DVI v1.0 and HDCP v1.4 specifications. NS5301 supports video formats up to 4Kx2K 30Hz. NS5305 supports video formats up to 4Kx2K 60Hz. NS5301/NS5305 contain HDCP encryption engine and support secure content transmission with HDCP keys loaded from external SPI Flash.

NS5301/NS5305 include a flexible 24-bit video data interface compatible with CEA-861 using separate sync signals or BT1120 using embedded sync. NS5301/NS5305 support 4 audio input signals configurable as either SPDIF or I2S. NS5301/NS5305 supports multi-channel Dolby Digital, DTS, AAC and 8-channel PCM formats with up to 192KHz sample rate.

NS5301/NS5305 also support HDMI ARC/CEC features and two-way passthrough of GPIO, UART, IR, and PS2 signaling.

## Block Diagram



## Features

- Compatible with HDMI Specification 2.2, HDMI Specification 1.4 and DVI Specification 1.0.

- NS5301 supports video formats up to 4Kx2K 30Hz. NS5305 supports video formats up to 4Kx2K 60Hz.
- Integrated HDCP encryption engine which is compatible with HDCP Specification 1.4 for secure content transmission. HDCP keys are loaded from external SPI Flash.
- Flexible 24-bit video data interface with arbitrary bit-mapping capability.
- Support 24-bit CEA-861 interface with separate syncs and 16-bit BT-1120 interface with embedded syncs.
- Programmable single data rate (SDR) or double data rate (DDR). NS5301 supports up to 340MHz SDR or 170MHz DDR, NS5305 supports up to 340MHz DDR.
- Capable of Data Enable (DE) regeneration.
- Integrated Color Space Converter (CSC) capable of converting among RGB 4:4:4, YUV 4:4:4 and YUV 4:2:2 pixel formats.
- Adjustable input delay for intra-bus de-skewing.
- Supports x2 pixel repetition to increase the available bandwidth for audio transmission.
- 4 audio input signals configurable as either SPDIF or I2S.
- Supports multi-channel Dolby Digital, DTS, AAC and 8-channel PCM formats with up to 192KHz sample rate.
- Support HDMI DDC port.
- 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 Consumer Electronics Control (CEC).
- Support bi-directional transfer of GPIO, UART, IR, I2C, ARC and CEC signaling with remote end.
- Support two PS2 ports which can be mapped to remote PS2 ports for connecting PS2 mouse and keyboard at remote end.
- Support I2C and UART Tx/Rx ports.
- Provided in 88-pin QFN package.

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