

LT9611GX --- Product Brief

Dual-Port MIPI DPHY/CPHY to HDMI2.1 Converter

1. Features

● Dual-Port MIPI® DSI/CSI Receiver

- Compliant with D-PHY2.1 & DSI-2 1.0 & CSI-2 2.0
 - 2-port, 1 clock lane and 1/2/3/4 configurable data lanes per port
 - up to 2.5Gbps per data lane
- Compliant with C-PHY1.2 & DSI-2 1.0 & CSI-2 2.0
 - 2.5Gbps per data trio
 - Total 6 configurable data trios
 - ✧ 1-port 1/2/3-trio
 - ✧ 2-port 1/2/3-trio
 - ✧ 3-port 1/2-trio
 - ✧ 4-port 1-trio
- Support up to 8K@30Hz YUV422 8bit for CSI D-PHY 8lanes mode
- Support up to 4K@120Hz
- Support up to 8K@60Hz DSC pass-through
- DSI Support 16/20/24-bit YCbCr4:2:2, 16/18/24/30/36-bit RGB
- CSI Support RGB888/666/565, YUV422 8/10bit, YUV420 8bit(legacy)
- Support side by side 3D

● HDMI2.1 Transmitter

- Data rate up to 12Gbps
- Support HDCP 1.4/2.2/2.3
- Support HDCP repeater
- Support RGB 8/10/12 bpc, YCbCr4:4:4/ YCbCr4:2:2/ YCbCr4:2:0 /8/10/12 bpc
- Support up to 8K@30Hz RGB/YCbCr4:4:4/ YCbCr4:2:2 8bpc or YCbCr4:2:0 12 bpc
- Support up to 4K@120Hz RGB/YCbCr4:4:4/ YCbCr4:2:2 8bpc or YCbCr4:2:0 12 bpc
- Support up to 8K@60Hz DSC pass-through
- Support static HDR10

- Support FEC
- Support CEC

● Digital Audio Input

- I2S interface supports up to 8-channel audio, with sample rates of 32~192 KHz and sample sizes of 16~24 bits
- SPDIF interface supports PCM, Dolby digital, DTS digital audio at up to 192KHz frame rate
- Compliant with IEC60958 or IEC61937

● Miscellaneous

- CSC: RGB <-> YUV444 <-> YUV422<-> YUV420
- Hactive up to 10K
- Integrated 100/400KHz I2C slave
- External oscillator 25MHz, +/-50ppm
- Integrated microprocessor
- Embedded SPI flash for firmware and HDCP keys
- Firmware update through SPI or I2C or USB interface
- Power supply: 3.3V, 1.8V and 1.1V

2. General Description

LT9611GX is a high performance Dual-Port MIPI DPHY/CPHY to HDMI2.1 converter.

For MIPI DPHY input, LT9611GX can be configured as 2 Ports and 1/2/4 lanes per port. Up to 12dB equalization makes it suitable for long distance application and the maximum data rate is 2.5Gbps.

For MIPI CPHY input, LT9611GX has 6 data trios up to 2.5Gbps per trio, it can be configured as 1/2/3/4 ports. The maximum equalization is 12dB.

For HDMI2.1 output, LT9611GX can be configured as 3/4 lanes. The maximum bandwidth is up to 48Gbps. It allow for the highest resolutions of 8K@30Hz or 8K@60Hz with compression data.

Two digital audio input interfaces are available, I2S or SPDIF. The I2S interface supports 8-ch LPCM and the SPDIF interface supports 2-ch LPCM or compressed

audio, both at maximum 192 KHz sample rate.

The device is capable of automatic operation which is enabled by an integrated microprocessor that uses an embedded SPI flash for firmware storage. System control is also available through the configuration I2C slave interface.

3. Applications

- Notebook
- PC
- Video conference
- In-Vehicle Infotainment
- Display monitor

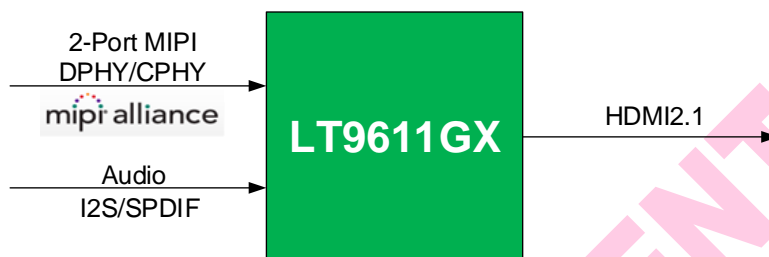


Figure 3.1 Application Diagram

4. Ordering Information

Table 4.1 Ordering Information

Product Name	Part Number	Product Status	Package	Bonding Wire	Grade	Operating Temperature Range	Stack Die Option	Packing Method	MPQ
LT9611GX	LT9611GX_U1Q04CED	Preview	QFN76 (9*9)Saw	Cu	E	TBD	D	Tray	2600pcs

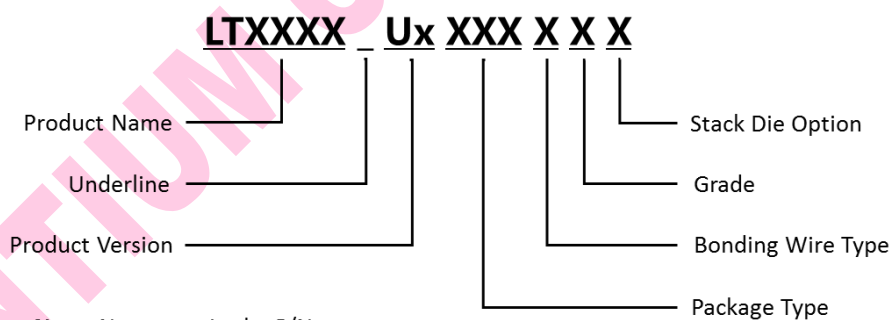


Figure 4.1 Part Number Naming Rules

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