LT6911GXC --- Product Brief

HDMI2.1 to Quad-port MIPI/LVDS with Audio

1. Features

- **HDMI2.1 Receiver**
  - Compliant with HDMI2.1, HDMI2.0b, HDMI1.4 and DVI1.0
  - Data rate up to 8Gbps
  - Support HDCP 1.4/2.3
  - 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
  - Support VRR
  - Integrated EDID shadow (max 512-byte)
  - Support ARC
- **Four-Port MIPI® DSI/CSI Transmitter**
  - Compliant with D-PHY1.2 & DSI 1.3 & CSI-2 1.3 ； 1 clock lane, and 1/2/3/4 configurable data lanes, and 8 configurable data lanes only for CSI；2.5Gbps per data lane
  - Compliant with C-PHY1.0 & DSI-2 1.0 & CSI-2 2.0； 1/2/3 configurable data lanes；5.7Gbps per data lane
  - Support 1/2/4 configurable ports and only 1 port for CSI D-PHY 8-lane mode
  - Support up to 8K@30Hz YUV422 8bit for CSI D-PHY 8-lane mode
  - Support up to 4K@120Hz
  - Support up to 8K@60Hz DSC pass-through
  - Support overlap mode
  - DSI Support 16/20/24-bit YCbCr4:2:2, 16/18/24/30-bit RGB
  - CSI Support RGB888/666/565, YUV422 8/10bit, YUV420 8bit(legacy)
  - Support side by side 3D
- **Four-Port LVDS Transmitter**
  - Compatible with VESA and JEIDA standard
  - Support 1/2/4 configurable ports
  - 1 Clock lane and 3/4/5 configurable data lanes per port
  - Data rate up to 1.2Gbps per data lane
  - Support up to 8K@30Hz YCbCr422 8bit
  - Support up to 4K@120Hz YCbCr422 8bit
  - Support up to 4K@60Hz
  - Support side by side 3D
  - Programmable transmitter swing
  - Support SSC
- **Video Process**
  - Gamma adjustment
  - Zoom scaling up and down(4K max)
  - Support font-based and bit-map OSD
- **Digital Audio Output**
  - 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 LPCM, Dolby digital, DTS digital audio at up to 192KHz frame rate
  - Compliant with IEC60958 or IEC61937
- **DSC Encoder**
  - Compliant with DSC 1.2a
  - Support up to hactive 4096
  - Support up to pixel clock 1.2GHz
  - Support 1/2/4 slices
  - Support color space RGB, YCbCr4:4:4, YCbCr4:2:2, and YCbCr4:2:0
  - Support color depth 8bit and 10bit

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- Support bpp precision 1 bit
- Support only constant refresh rate

- **Miscellaneous**
  - CSC: RGB <-> YCbCr444 <-> YCbCr422<-> YCbCr420
  - Integrated 100/400KHz I2C slave
  - Integrated microprocessor
  - External oscillator 25MHz, +/-50ppm
  - Embedded SPI flash for firmware and HDCP keys
  - Firmware update through SPI or I2C or USB interface
  - Power supply: 3.3V and1.1V

2. General Description

The LT6911GXC is a high performance HDMI2.1 to MIPI or LVDS chip for VR/Display application.

HDCP RX as the upstream of HDCP repeater, can cooperate with HDCP TX of other chips to realize the repeater function.

For HDMI2.1 input, LT6911GXC can be configured as 3/4 lanes. Adaptive equalization makes it suitable for long cable application and the maximum bandwidth up to 32Gbps.

For MIPI output, LT6911GXC features configurable single-port or dual-port or quad-port MIPI®DSI/CSI with 1 high-speed clock lane and 1~4 high-speed data lanes operating at maximum 2.5Gbps/lane with D-PHY, which can support a total bandwidth of up to 40Gbps for four port. Also support 5.7Gbps/lane with C-PHY, which can support a total bandwidth of up to 68.4Gbps for four port.

For LVDS output, LT6911GXC can be configured as single, dual or quad-port LVDS with 1 high-speed clock lane, and 3~5 high-speed data lanes, operating at maximum 1.2Gbps per lane, which can support a total bandwidth of up to 24Gbps. LT6911GXC supports flexible video data mapping path for 2D and 3D applications.

Two digital audio output interfaces are available I2S and 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

- Mobile system
- Display
- VR
- Video conferencing

Figure 3.1 Application Diagram

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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
LT6911GXC	LT6911GXC_U3B00AED	MP	BGA169 (9*9)	Au	E	−40°C to +85°C	D	Tray	2600pcs
	LT6911GXC_U3B04AED								

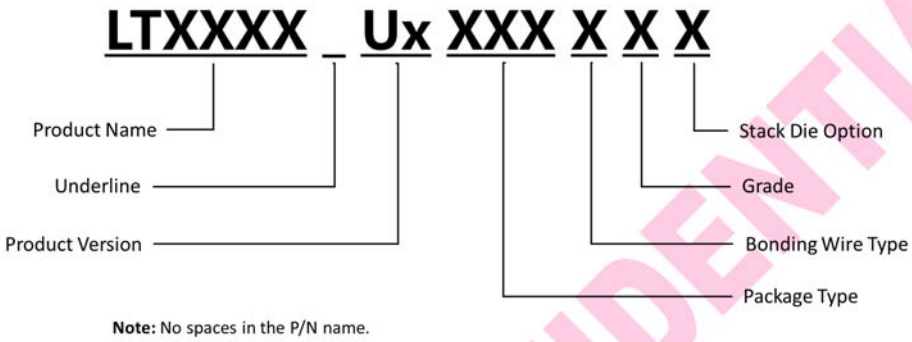

Figure 4.1 Part Number Naming Rules

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