

LT6911GX --- Product Brief

HDMI2.1 to Quad-port MIPI DSI/CSI 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 8k@30Hz, 8k@60Hz with compression data or YUV 4:2:0
- Support HDR10 and HDR12
- Support FEC
- Support CEC
- Integrated EDID shadow (max 512-byte)

● Four-Port MIPI® DSI/CSI Transmitter

- Compliant with D-PHY1.2 & DSI 1.3 & CSI-2 1.3 ; 1 clock lane, and 12/3/4 configurable data lanes; 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 port
- Support 4K@120Hz, 8k@60Hz with compression data or YUV 4:2:0
- Support overlap mode
- DSI Support 16/20/24-bit YCbCr4:2:2, 24/30/36-bit RGB, 12-bit YCbCr4:2:0, compressed pixel stream
- CSI Support RGB888/666, YUV422 8/10bit, YUV420 8bit(legacy)
- Video stream copy mode for each port
- Support channel swap and polarity inversion
- Support port swap

● Digital Audio Output

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

● Miscellaneous

- VESA DSC v1.2a (v1.1 compatible) decode and encode
- Zoom scaling up and down
- Vertical blanking interval expansion
- CSC: RGB <-> YUV444 <-> YUV422<-> YUV420
- Integrated 100/400KHz I2C slave
- Integrated microprocessor
- External oscillator 25MHz, +/-100ppm
- Embedded SPI flash for firmware and HDCP keys
- Embedded SDRAM
- Firmware update through SPI or I2C interface
- Power supply: 3.3V for I/O and 1.1V for core

2. Description

The LT6911GX is a high performance HDMI2.1 to MIPI 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, LT6911GX can be configured as 3/4 lane. Adaptive equalization makes it suitable for long cable application and the maximum bandwidth is up to 32Gbps.

For MIPI output, LT6911GX 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 2.5Gb/s/lane with D-PHY, which can support a total bandwidth of up to 40Gbps for four port. Also support 5.7Gb/s/lane with C-PHY, which can

support a total bandwidth of up to 68.4Gbps for four port.

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.

LT6911GX is fabricated in advanced CMOS process and implemented in 9mmx9mm BGA169 package.

3. Applications

- VR
- Display

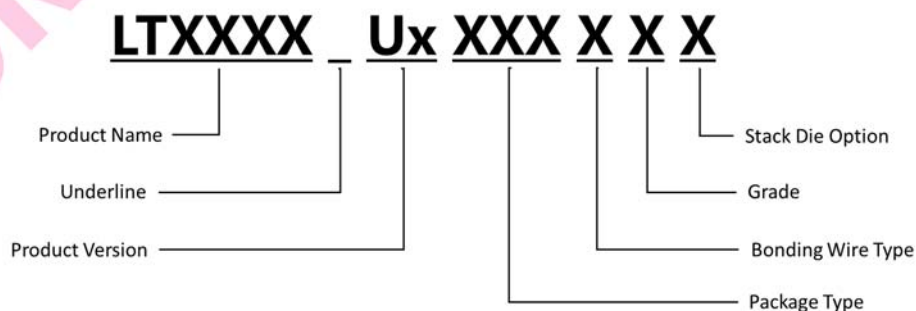


Figure 3.1 Application Diagram

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 |
|--------------|-------------------|----------------|--------------|--------------|----------|-----------------------------|------------------|----------------|
| LT6911GX | LT6911GX_U1B00AEI | Preview | BGA169 (9*9) | Au | Consumer | TBD | I | Tray |



Note: No spaces in the P/N name.

Figure 4.1 Part Number Naming Rules

Copyright © 2019-2020 Lontium Semiconductor Corporation, All rights reserved.

Lontium Semiconductor Proprietary & Confidential

This document and the information it contains belong to Lontium Semiconductor. Any review, use, dissemination, distribution or copying of this document or its information outside the scope of a signed agreement with Lontium is strictly prohibited.

LONTIUM DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THOSE OF NONINFRINGEMENT, MERCHANTABILITY, TITLE AND FITNESS FOR A PARTICULAR PURPOSE. CUSTOMERS EXPRESSLY ASSUME THEIR OWN RISK IN RELYING ON THIS DOCUMENT.

LONTIUM PRODUCTS ARE NOT DESIGNED OR INTENDED FOR USE IN LIFE SUPPORT APPLIANCES, DEVICES OR SYSTEMS WHERE A MALFUNCTION OF A LONTIUM DEVICE COULD RESULT IN A PERSONAL INJURY OR LOSS OF LIFE.

Lontium assumes no responsibility for any errors in this document, and makes no commitment to update the information contained herein. Lontium reserves the right to change or discontinue this document and the products it describes at any time, without notice. Other than as set forth in a separate, signed, written agreement, Lontium grants the user of this document no right, title or interest in the document, the information it contains or the intellectual property in embodies.

Trademarks

Lontium™ 龙迅™ and ClearEdge™ is a registered trademark of Lontium Semiconductor. All other brand names, product names, trademarks, and registered trademarks contained herein are the property of their respective owners.

Visit our corporate web page at: www.lontiumsemi.com

Technical support: support@lontium.com

Sales: sales@lontium.com