

# LT6711GXE --- Product Brief

## HD-DVI2.1 to DP1.4a with Type-C

### 1. Features

#### ● HD-DVI2.1 Receiver

- Compliant with HD-DVI2.1, HD-DVI2.0b, HD-DVI1.4 and DVI1.0
- Data rate up to 10Gbps
- 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 10bpc or YCbCr4:2:0 12 bpc
- Support up to 4K@144Hz RGB/YCbCr4:4:4/ YCbCr4:2:2 8bpc or YCbCr4:2:0 12 bpc
- Support up to 8K@60Hz DSC pass-through
- Support HDR10
- Support FEC
- Support CES (Consumer Electronics Service)
- Support Adaptive-Sync
- Integrated EDID shadow (max 512-byte)
- Support ARL (Audio Return Lane)
- Support eARL (Enhanced Audio Return Lane)

#### ● DP1.4a/eDP1.5 Transmitter

- Compliant with DisplayPort specification 1.4a for 1.62Gbps, 2.7Gbps, 5.4Gbps, 8.1Gbps
- Compliant Embedded DisplayPort specification version 1.5
- Support DisplayPort 1/2/4 lanes
- Support HDCP 1.3/2.3
- Support HDCP repeater
- Support RGB 6/8/10/12 bpc, YCbCr4:4:4/YCbCr4:2:2/ YCbCr4:2:0 8/10/12 bpc
- Support up to 8K@30Hz RGB 6bpc, YCbCr4:2:2 10 bpc or YCbCr4:2:0 12 bpc
- Support up to 4K@144Hz RGB 6bpc, YCbCr4:2:2 10 bpc or YCbCr4:2:0 12 bpc

- Support up to 8K@60Hz DSC pass-through
- Support HDR10
- Support FEC
- Support Adaptive-Sync
- Support ASSR for eDP
- Support Horizontal Blanking Expansion
- Support SSC

#### ● USB Type-C

- Compliant with VESA DisplayPort alt mode on USB Type-C standard 1.0
- DP alt mode only support pin assignment C and E
- Compliant with USB power delivery specification 3.0
- Compliant with USB Type-C cable and connector specification 1.3
- Built-in dual CC logic and PD controller for charger and normal communication
- Data roles supported: DFP
- Power Roles Supported: source, sink and DRP
- Support USB Billboard

#### ● Digital Audio Input or 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 Decoder

- Compliant with DSC 1.2a
- Support up to hactive 7680
- Support up to pixel clock 1.44GHz
- 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
- Support bpp precision 1/16 bit
- Support dynamic refresh rate

● **DSC Encoder**

- Compliant with DSC 1.2a
- Support up to hactive 7680
- Support up to pixel clock 1.44GHz
- Support 1/2/4/8 slices
- Support color space RGB, YCbCr4:4:4, YCbCr4:2:2, and YCbCr4:2:0
- Support color depth 8bit and 10bit
- Support bpp precision 1/16 bit
- Support dynamic refresh rate

● **Miscellaneous**

- CSC: RGB <-> YCbCr4:4:4 <-> YCbCr4:2:2<-> YCbCr4:2:0
- 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 and 1.1V

## 2. General Description

LT6711GXE is HD-DVI2.1 to DP1.4a converter with PD controller.

For HD-DVI2.1 input, LT6711GXE can be configured as 3/4 lanes. Adaptive equalization makes it suitable for long cable application and the maximum bandwidth is up to 40Gbps. It supports the highest resolutions of 8K@30Hz, 4K@144Hz or 8K@60Hz with compression data (pass-through).

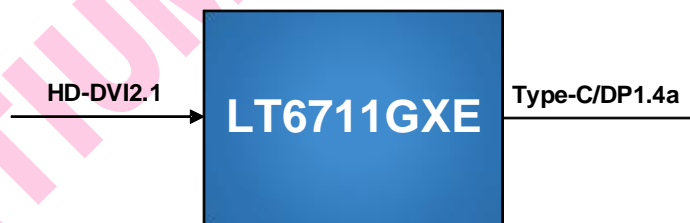
For DP1.4a output, it consists of 4 data lanes, supporting 1.62Gbps, 2.7Gbps, 5.4Gbps and 8.1Gbps link rate. The build-in optional SSC function reduces EMI effect.

In order to be adaptable to the latest USB Type-C system, LT6711GXE integrates CC logic and PD controller to relieve mobile system design complexity and BOM cost.

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 systems
- VR/AR
- Dongles
- Digital video cameras and Digital still cameras
- Cellular handsets, PAD/Tablets



**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
LT6711GXE	LT6711GXE_U2Q02CED	Preview	QFN88 (10*10)Saw	Cu	E	-40°C to +85°C	D	Tray	1680pcs

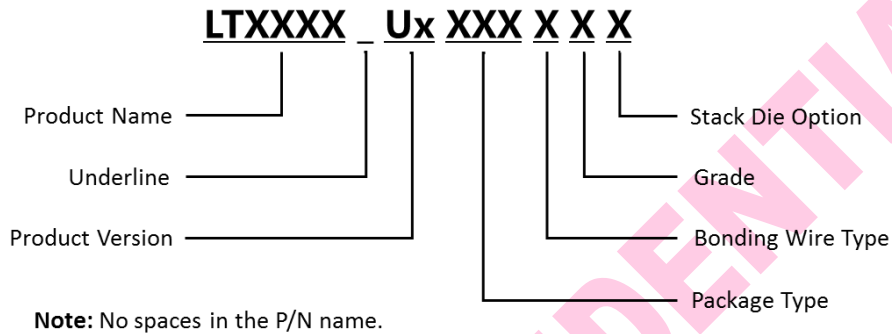


Figure 4.1 Part Number Naming Rules

Copyright © 2023-2024 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 it 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](http://www.lontiumsemi.com)

Technical support: [support@lontium.com](mailto:support@lontium.com)

Sales: [sales@lontium.com](mailto:sales@lontium.com)