

LT8711UXE2 --- Product Brief

Type-C/DP to HDMI2.0 Converter with USB3.1 Gen1 Switch and Audio

1. Features

● USB Type-C

- Compliant with VESA DisplayPort alt mode on USB Type-C standard 1.0
- Compliant with USB power delivery specification 3.0
- Compliant with USB Type-C cable and connector specification 1.3
- Built-in dual CC controllers for charger and normal communication
- Support DFP, UFP and DRP data roles
- Support source and sink power roles
- Bi-directional USB3.1 Gen1 SS differential signal passive switch with insertion loss less than 4dB

● DP1.4 Receiver

- Compliant with DisplayPort specification 1.4 for 1.62Gbps, 2.7Gbps, 5.4Gbps, 8.1Gbps
- Compliant Embedded DisplayPort specification version 1.4b
- Support DisplayPort 1/2/4 lanes
- Support SSC
- Support HDCP 1.3/2.3
- Support HDCP repeater
- Support 8K@30Hz YCbCr 420 only
- Support HBE
- Support HDR10 and Dolby Vision
- Support ASSR for eDP
- Support adaptive EQ

● HDMI2.0 Transmitter

- Compliant with HDMI2.0b, HDMI1.4 and DVI1.0
- Data rate up to 6Gbps
- Support HDCP 1.4/2.3
- Support HDCP repeater
- Support 8K@30Hz YCbCr 420 only

- Support HDR10 and Dolby Vision
- Support CEC
- Programmable transmitter swing and pre-emphasis

● Digital Audio Input/Output

- I2S interface supporting 8-channel audio output, with sample rates of 32~192 KHz and sample sizes of 16~24 bits
- I2S interface supporting 2-channel audio input
- SPDIF interface supporting PCM, dolby digital, DTS digital audio at up to 192KHz frame rate
- IEC60958 or IEC61937 compatible

● Miscellaneous

- CSC: RGB <-> YUV444 <-> YUV422<-> YUV420
- Integrated 100/400KHz I2C slave
- External oscillator 27MHz, +/-50ppm
- Integrated microprocessor
- Embedded SPI flash for firmware and HDCP keys
- Firmware update through SPI/I2C/BB interface
- Power supply: 3.3V for I/O and 1.25V for core

2. General Description

The LT8711UXE2 is a high performance Type-C/DP1.4 to HDMI2.0 converter, designed to connect a USB Type-C source or a DP1.4 source to an HDMI2.0 sink. The LT8711UXE2 integrates a DP1.4 compliant receiver, and an HDMI2.0 compliant transmitter. Also, two CC controllers are included for CC communication to implement DP Alt Mode and power delivery function, one for upstream Type-C port and another for downstream port.

The DP interface comprises 4 main lanes, AUX channel, and HPD signal. The receiver supports maximum 8.1Gbps data rate per lane. The DP receiver incorporates HDCP 1.3/2.3 content protection scheme with embedded

key for secure transmission of digital audio-video content. The HDMI interface includes 4 TMDS clock/data pairs, DDC, and HPD signal. The HDMI transmitter is capable of supporting up to 6Gpbs data rate, quite adequate for handling video resolutions up to UHD 4k 60Hz formats. The HDMI transmitter incorporates HDCP engines which support both HDCP1.4/2.3. With the inclusion of HDCP, the LT8711UXE2 allows secure transmission of protected content. Embedded key is available that provides the highest level of HDCP key security.

Besides digital video output interface, the LT8711UXE2 also provides digital audio output interfaces: I2S and SPDIF. The audio stream is extracted and recovered from

DP data stream, and then routed to digital audio outputs or HDMI output. The device supports 8-channel LPCM or compressed audio at maximum 192kHz 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 use of a dedicated configuration I2C slave interface.

3. Applications

- Docking station
- Dongle

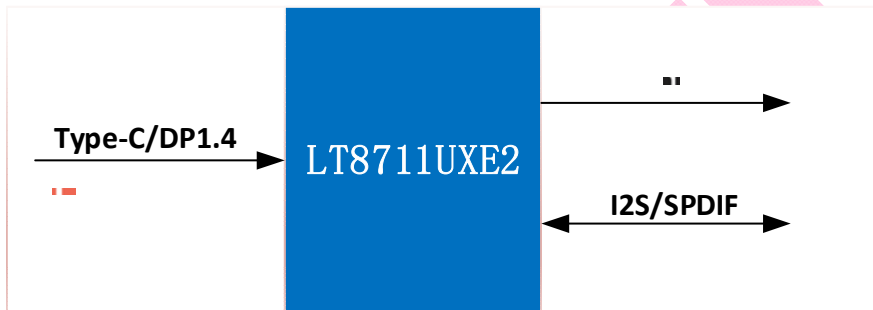
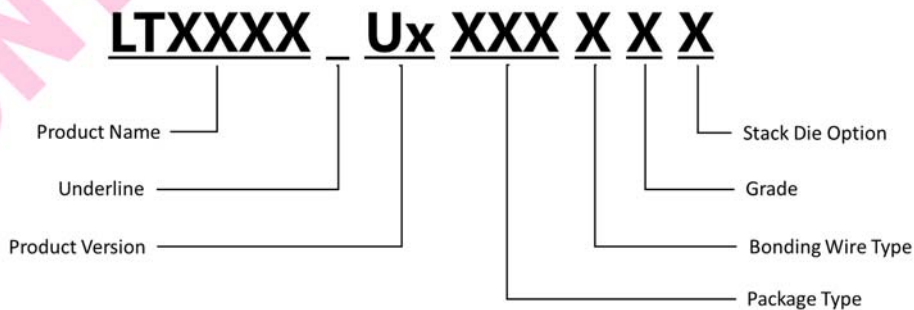


Figure 3.1 Application Diagram

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
LT8711UXE2	LT8711UXE2_U1Q02CED	Preview	QFN88 (10*10)Saw	Cu	E	-40°C~85°C	D	Tray	1680pcs



Note: No spaces in the P/N name.

Figure 4.1 Part Number Naming Rules

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