LT8711UXE1 --- Product Brief

Type-C/DP to HD-DVI2.0 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
- **DP1.2 Receiver**
  - Compliant with DisplayPort specification 1.2 for 1.62Gbps, 2.7Gbps, 5.4Gbps
  - Compliant Embedded DisplayPort specification version 1.4
  - Support DisplayPort 1/2/4 lanes
  - Support SSC
  - Support HDCP1.3/2.3
  - Support 4K@60Hz
  - Support HDR10
  - Support ASSR for eDP
  - Support adaptive EQ
- **HD-DVI2.0 Transmitter**
  - Compliant with HD-DVI2.0b, HD-DVI1.4 and DVI1.0
  - Data rate up to 6Gbps
  - Support HDCP1.4/2.3
  - Support HDCP repeater
  - Support 4K@60Hz
  - Support HDR10
  - Support ARL (Audio Return Lane) RX
  - Support CES (Consumer Electronics Service)
  - 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 1.2V for core

2. General Description

The LT8711UXE1 is a high performance Type-C/DP1.2 to HD-DVI2.0 converter, designed to connect a USB Type-C source or a DP1.2 source to an HD-DVI2.0 sink. The LT8711UXE1 integrates a DP1.2 compliant receiver, and an HD-DVI2.0 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 5.4Gbps data rate per lane. The DP receiver incorporates HDCP1.3/2.3 content protection scheme with embedded key for secure transmission of digital audio-video content.

The HD-DVI interface includes 4 TMDS clock/data pairs, DDC, and HPD signal. The HD-DVI transmitter is capable of supporting up to 6Gpbs data rate, quite adequate for handling video resolutions up to UHD 4k 60Hz formats. The HD-DVI transmitter incorporates HDCP engines which support HDCP1.4/2.3. With the inclusion of HDCP, the LT8711UXE1 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 LT8711UXE1 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 HD-DVI 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

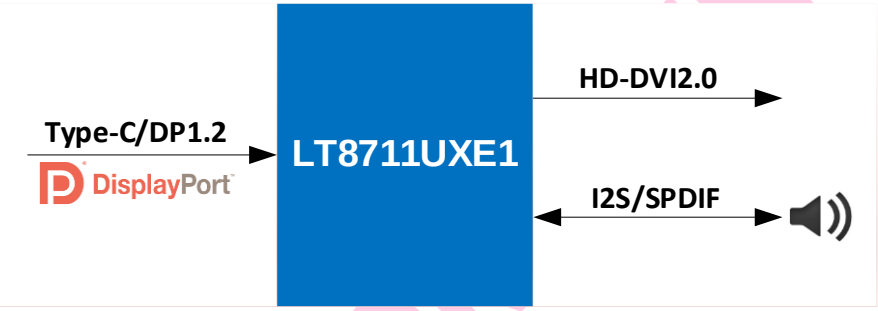

Figure 3.1 Application Diagram

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
LT8711UXE1	LT8711UXE1_U2Q02CED	MP	QFN88 (10*10)Saw	Cu	E	-40℃~85℃	D	Tray	1680pcs

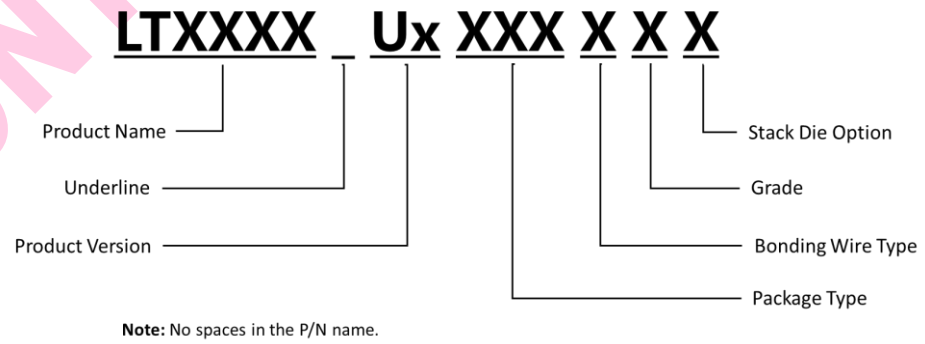

Figure 4.1 Part Number Naming Rules

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