

# LT8711HE --- Product Brief

## Type-C/DP1.2 to HDMI2.0 Converter

### Features

#### ● USB Type-C

- Compliant with VESA DisplayPort Alt Mode on USB Type-C standard V1.0
- Compliant with USB Power Delivery specification R2.0, V1.0
- Compliant with USB Type-C Cable and Connector specification R1.2
- Compliant with HDMI 1.4b Alt Mode on USB Type-C specification V1.0
- Compliant with DP Alt Mode 1.0, PD 2.0, Type-C 1.2, HDMI1.4b Alt Mode 1.0
- Built-in dual CC controllers for charger and normal communication
- 3 data roles supported: DFP, UFP and DRP
- 2 power roles supported: source and sink

#### ● DP1.2 Receiver

- Compliant with VESA DP1.2 and Embedded DisplayPort (eDP) v1.4
- No HDCP decryption
- 1/2/4 configurable data lanes
- 1.62/2.7/5.4Gbps per data lane
- Support SSC
- 1Mbps AUX channel
- Receiver PHY is HDMI signal compatible
- Adaptive or programmable receiver equalization
- Support lane swap(arbitrarily) and polarity inversion(independent)
- Support 4k@60Hz
- Support eDP Authentication: Alternative Scramble Seed Reset and Alternative Framing
- Fast and full Link Training for Embedded DisplayPort system

#### ● HDMI2.0 Transmitter

- Compliant with HDMI2.0, HDMI1.4 and DVI1.0
- Data rate up to 6Gbps
- Support 4k@60Hz
- Support TMDS scrambling for EMI/RFI reduction
- Support SCDC
- Support channel swap(arbitrarily) and polarity inversion(independent)
- Programmable transmitter swing and pre-emphasis
- Downstream receiver sensing
- 5V tolerance DDC/HPD I/Os

#### ● Miscellaneous

- DP receiver to HDMI transmitter bypass to support HDMI Alt Mode
- Support Swift Charge
- USB billboard module and USB2.0 switch integrated
- Internal or external oscillator
- Integrated microprocessor
- Embedded SPI flash for firmware
- GPIOs for VBUS/VCONN/AUX and other system controls
- Integrated 100/400kHz I2C slave
- Firmware update through SPI, I2C, AUX or USB interface
- Low power consumption
- Power supply: 3.3V for I/O and 1.2V for core
- Embedded 5V to 3.3V LDO
- ESD 4kV HBM
- Temperature range: -40°C ~ +85°C
- Package : 7.5mmx7.5mm QFN64

### Description

The LT8711HE is a high performance Type-C/DP1.2 to HDMI2.0 converter, designed to connect a USB Type-C source or a DP1.2 source to an HDMI2.0 sink.

The LT8711HE integrates a DP1.2 compliant receiver, and an HDMI2.0 compliant transmitter. Also, two CC

controllers are included for CC communication to for upstream Type-C port and another for downstream port. The device is capable of automatic operation which is enabled by an integrated microprocessor that uses a embedded SPI flash for firmware storage. System control is also available through the use of a dedicated configuration I2C slave interface.

LT8711HE also support EDID buffer, DP/eDP input

implement DP Alt Mode and power delivery function, one detection and determine to enter into power saving mode automatically. When the receiver of LT8711HE locks the input signal, the MCU can read the recovered timing parameters by the MSA registers to match the ASSR. The DPCD registers are accessible via system I2C when debugging the full link training. Once the fast link training used, system time will save at least 400ms.

## Applications

- Docking Station
- Dongle

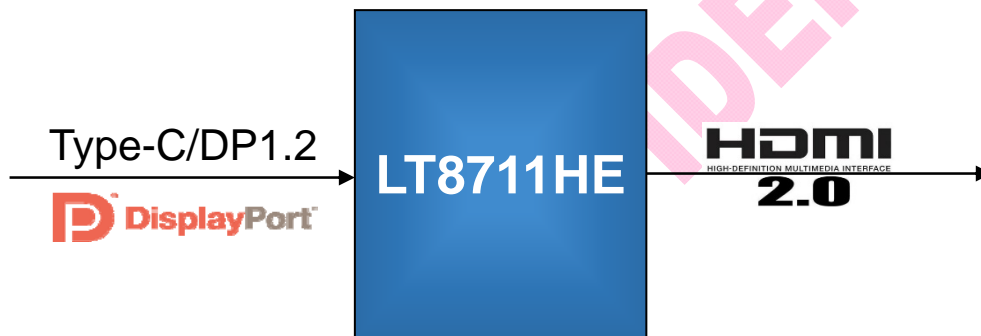


Figure 1. Application Diagram

## Ordering Information

Part Number	Operating Temperature Range	Package	Packing Method
LT8711HE	-40°C to+85°C	QFN64 (7.5*7.5)	Tray

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