LT6711GXE --- Product Brief

HDMI2.1 to DP1.4a with Type-C

1. Features

- **HDMI2.1 Receiver**
  - Compliant with HDMI2.1, HDMI2.0b, HDMI1.4 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 RGB10bpc
  - Support up to 4K@144Hz RGB8bpc
  - Support up to 8K@60Hz DSC pass-through
  - Support HDR10
  - Support FEC
  - Support CEC
  - Support VRR
  - Integrated EDID shadow (max 512-byte)
  - Support ARC
  - Support EARC
  - Support lane swap and PN swap
- **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
  - Support lane swap and PN swap
- **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
  - TDM output 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 HDMI2.1 to DP1.4a converter with PD controller.

For HDMI2.1 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	MP	QFN88 (10*10)Saw	Cu	E	-40℃ to +85℃	D	Tray	1680pcs

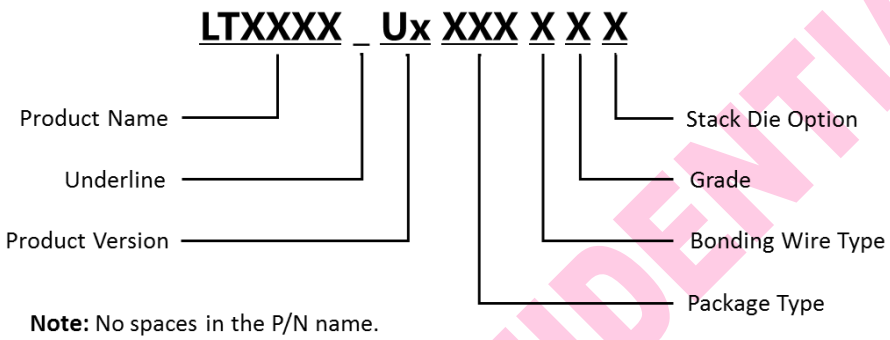

Figure 4.1 Part Number Naming Rules

Visit our corporate web page at: www.lontiumsemi.com
Technical support: support@lontium.com
Sales: sales@lontium.com