

# LT9711 --- Product Brief

## Dual-Port MIPI/LVDS to DP1.2 with Type-C

### 1. Features

#### ● MIPI Receiver

- Compliant with D-PHY v1.2, DSI v1.3, CSI-2 v1.3 and DCS v1.02.00 for MIPI
- 1~2 Configurable Port
- 1 Clock Lane and 1~4 Configurable Data Lanes
- 80Mb/s~2Gb/s per Data Lane for MIPI receiver
- Internal Rterm Calibration with Less than 5% Error
- Programmable Equalization
- Burst Mode and Non-Burst Mode Supported
- Dual Port Odd-Even Mode and Left-Right Mode Supported
- Support up to 24-bit RGB and YUV Data Format

#### ● LVDS Receiver

- Compliant with VESA and JEIDA LVDS Specification
- 1~2 Configurable Port
- 1 Clock Lane and 3 or 4 Data Lanes
- Maximum 1.2Gb/s per Data Lane
- Internal Rterm Calibration with Less than 5% Error
- Programmable Equalization
- Dual Port Odd-Even Mode and Left-Right Mode Supported
- Support 18-bit RGB and 24-bit RGB Data Format

#### ● DP1.2 Transmitter

- Compliant to VESA DP1.2 Standard
- Support Four Lanes with 1.62Gbps (RBR), 2.7Gbps (HBR) or 5.4Gbps (HBR2) Data Rate
- Support Resolution up to 4Kx2K@60Hz
- Support HDCP1.3 Encryption
- Support 8/10/12-bit Deep Color
- Support Hot-Plug Detect
- Optional SSC 0.5% Down-Spreading Output
- Configurable and Power-on-Calibrated Output Swing for Optimized EMI
- Internal Rterm Calibration with Less than 5% Error

- Support Backlight Control & MCCS over AUX for eDP
- Support ASSR for eDP
- Build-in Pattern Generation

#### ● USB Type-C

- Compatible with USB Type-C R1.2, DP Alt Mode V1.0 and USB PD R3.0
- 2 Data Roles Supported: DFP and UFP
- 3 Power Roles Supported: SRC, SNK and DRP
- USB PD-PHY (Tx/Rx) and BMC Encoding/Decoding
- USB PD Protocol Control by Software
- USB Full-Featured, Orientation and Role Detection
- 3-level Current Ability Advertise (Host Mode) or Detection (Device Mode) for Type-C Power: USB Default, 1.5A@5V, 3A@5V
- Support FR\_Swap
- SBU Data Path Control for DP Alt Mode
- Support Standby Mode for Low-Power Operating

#### ● USB Type-C Charging Port

- Compatible with USB Type-C R1.2 and USB PD R3.0
- Only SNK Mode is Supported
- Dead Battery Supported When No Power Supplied

#### ● Miscellaneous

- Support SPDIF and 8-CH I2S Audio Input
- Support DSC v1.2 Bypass Transmission
- Support OSD display with 8K Programmable Dot Matrix and Attribute Table
- 1.2V/1.8V/3.3V Supply Power
- External 27MHz Crystal Reference Clock

### 2. General Description

The Lontium LT9711 is a Dual-Port MIPI/LVDS to DP1.2 converter with internal Type-C Alternate Mode switch and PD controller.

The MIPI DSI/CSI input features configurable single-port or

dual-port with 1 clock lane, and 1~4 data lanes operating at maximum 2Gbps/lane, which can support a total bandwidth up to 16Gbps. LT9711 supports both burst mode and non-burst mode DSI video data transferring.

For DP1.2 output, it consists of 4 data lanes, supporting RBR (1.62Gbps), HBR (2.7Gbps) and HBR2 (5.4Gbps) link speeds. The build-in optional SSC function reduces EMI effect on EMI-concerned system application.

In order to be adaptable to the USB Type-C ecosystem, LT9711 integrates CC logic and PD management unit to relieve mobile system design complexity and BOM cost. The

switch function is compliant with VESA DP Alternate Mode on USB Type-C Standard.

The LT9711 is fabricated in advanced CMOS process and implemented in a small outline 9x 9mm QFN76 package.

This package is RoHS compliant.

### 3. Applications

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

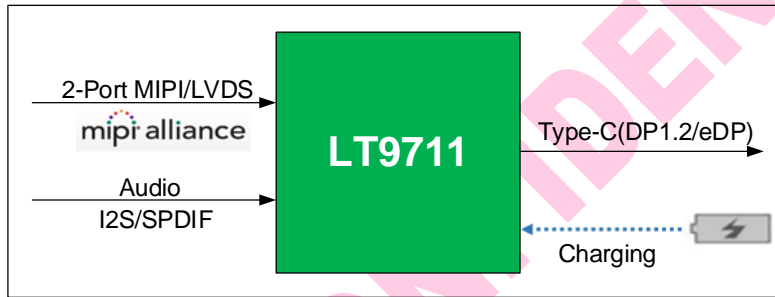


Figure 3.1 Application Diagrams

## 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
LT9711	LT9711	MP	QFN76(9*9)Saw	Cu	E	-40°C to +85°C	D	Tray	2600pcs
	LT9711_U4Q04CAD	Preview	QFN76(9*9)Saw	Cu	A	-40°C to +105°C	D	Tray	2600pcs

**Note:** LT9711\_U4Q04CAD is an automotive grade device which is qualified by AEC-Q100 Grade 2 testing.

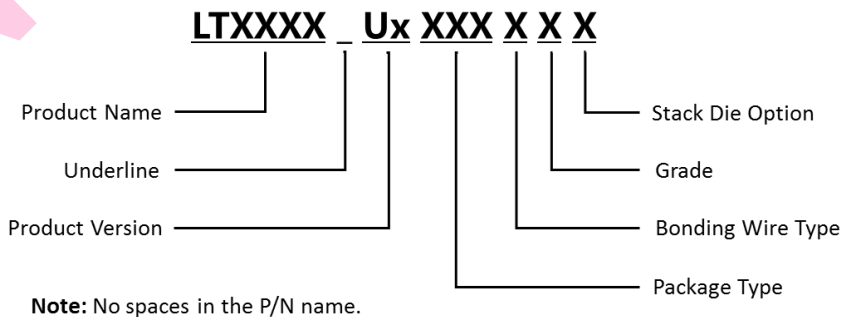


Figure 4.1 Part Number Naming Rules

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