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
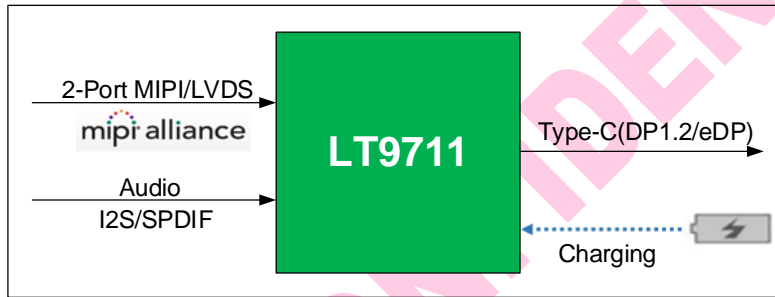
Figure 3.1 Application Diagrams

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

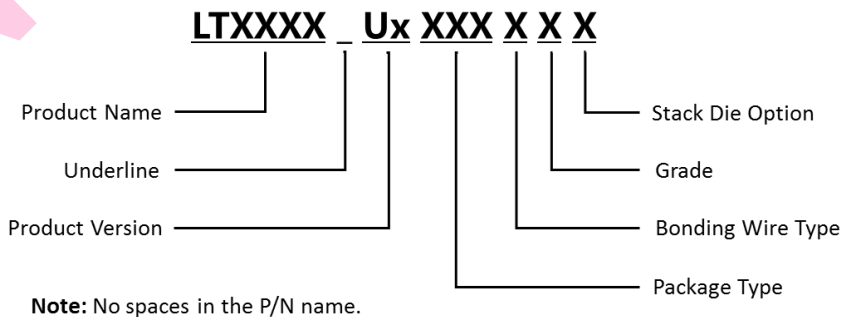**Note**: LT9711_U4Q04CAD is an automotive grade device which is qualified by AEC-Q100 Grade 2 testing.

LTXXXX _ Ux XXX X X X

Product Name
Underline
Product Version

Stack Die Option
Grade
Bonding Wire Type
Package Type

Note: No spaces in the P/N name.

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