

# LT7911UXD --- Product Brief

## DP1.4a/Type-C to Dual-port MIPI with Audio

### 1. Features

#### ● DP1.4a/eDP1.4b Receiver

- Compliant with DisplayPort specification 1.4a for 1.62Gbps, 2.7Gbps, 5.4Gbps and 8.1Gbps
- Compliant with Embedded DisplayPort specification version 1.4b
- Support SSC
- Support DisplayPort 1/2/4 lanes
- Support FEC
- Support ASSR for eDP
- Support HDCP 1.3/2.3
- Support HDCP repeater
- Support SST/MST mode
- 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 Adaptive-Sync
- Support Horizontal Blanking Expansion
- Support lane swap and PN swap

#### ● Type-C

- Compliant with VESA DisplayPort Alt Mode on USB Type-C Standard 1.0b
- DP Alt Mode support pin assignment C, D 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: UFP
- Power roles supported: source, sink and DRP

- Support USB Billboard

#### ● Dual-Port MIPI® CSI Transmitter

- Compliant with D-PHY1.2 & CSI-2 1.3; 1 clock lane, and 1/2/3/4 configurable data lanes; 2.5Gbps per data lane
- Support 1/2 configurable ports
- Support only 1 port for CSI D-PHY 8-lane mode
- Support up to 8K@30Hz YUV422 8bit for CSI D-PHY 8-lane mode
- Support up to 4K@60Hz RGB 10bit
- Support up to 8K@60Hz DSC pass-through
- Support overlap mode
- CSI Support RGB888/666/565, YUV422 8/10bit, YUV420 8bit(legacy)
- Support side by side 3D
- D-PHY support port swap, lane swap and PN swap

#### ● 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

● **Miscellaneous**

- CSC: RGB <-> YCbCr444 <-> YCbCr422<-> YCbCr420
- Integrated 100/400KHz I2C slave
- Integrated microprocessor
- External oscillator 25MHz, +/-50ppm
- Embedded SPI flash for firmware and HDCP keys
- Firmware update through I2C or USB interface
- Power supply: 3.3V and 1.1V

## 2. General Description

LT7911UXD is a high performance DP1.4a to MIPI chip for automotive and video capture application.

HDCP RX as the upstream of HDCP repeater, can cooperate with HDCP TX of other chips to realize the repeater function.

The Type-C/DP1.4a input support data rate up to 8.1Gbps which provides sufficient bandwidth for 4K@120Hz, 8K@30Hz or 8K@60Hz with compression data (pass-through).

For MIPI output, LT7911UXD features configurable single-port or dual-port MIPI@CSI with 1 high-speed clock lane and 1~4 high-speed data lanes operating at maximum 2.5Gbps/lane with D-PHY, which can support a total bandwidth of up to 20Gbps for dual port.

LT7911UXD supports flexible video data mapping path for 2D and 3D applications.

Two digital audio interfaces are available I2S/TDM and SPDIF. The I2S/TDM interface supports 8-ch LPCM and the SPDIF interface supports 2-ch LPCM or compressed audio, both at maximum 192 KHz 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 configuration I2C slave interface.

## 3. Applications

- Automotive
- Video capture



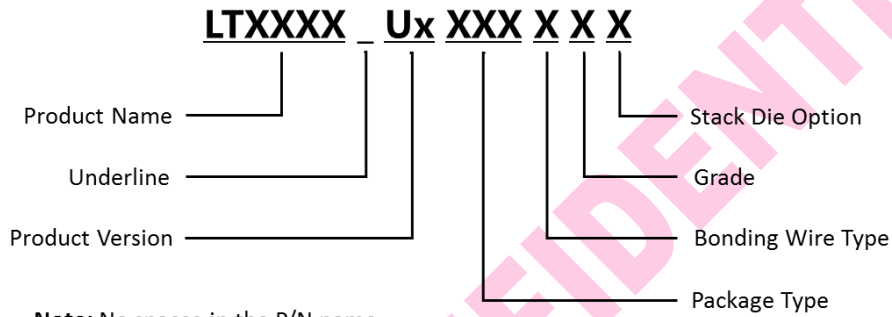
**Figure 3.1 Application Diagram**

## 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
LT7911UXD	LT7911UXD_U2Q02CED	Preview	QFN88 (10*10) Saw	Cu	E	-40°C to +85°C	D	Tray	1680pcs
	LT7911UXD_U2Q02AAD	Preview	QFN88 (10*10) Saw	Au	A	-40°C to +105°C	D	Tray	1680pcs

Note: LT7911UXD\_U2Q02AAD is an automotive grade device which is qualified by AEC-Q100 Grade 2 testing.



Note: No spaces in the P/N name.

Figure 4.1 Part Number Naming Rules

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