

LT2911R-D --- Product Brief

MIPI/TTL/2-Port LVDS to MIPI/TTL/2-Port LVDS Converter with Frame Rate Conversion and Rotation

1. Features

● MIPI Transmitter

- Compliant with DCS1.02, D-PHY1.2 ,DSI1.2 and CSI-2 1.00
- 1 Clock Lane and 1~4 Configurable Data Lanes
- Two Port Simultaneous Display Supported
- Up to 1.8Gb/s per Data Lane
- Resolution up to 2160x1080 60Hz or 1920x1200 60Hz
- Pixel clock up to 154MHz
- Data Lane and Polarity Swapping
- Both Non-Burst and Burst Video Mode Supported
- Support RGB666, Loosely RGB666, RGB888, RGB565, 16-bit YCbCr4:2:2, 24-bit YCbCr 4:2:2 Video Format

● Dual-Port LVDS Transmitter

- Compatible with VESA and JEIDA standard
- 1~2 Configurable Port
- Two Port Simultaneous Display Supported
- Resolution up to 2160x1080 60Hz or 1920x1200 60Hz
- Pixel clock up to 154MHz
- Support DE Mode
- Data Port , Data Lane and Polarity Swapping
- Programmable Pre-emphasis
- Support output SSC(30KHz±5%)

● TTL Output

- Support 24-bit RGB and BT656/BT1120
- Both DDR and SDR Sampling supported
- Support both 1.8V and 3.3V Voltage Output
- Resolution up to 2160x1080 60Hz or 1920x1200 60Hz
- Pixel clock up to 154MHz

● MIPI Receiver

- Compliant with DCS1.02, D-PHY1.2 ,DSI1.2 and CSI-2 1.00
- 1 Clock Lane and 1~4 Configurable Data Lanes

- Two Port Input switchable
- Up to 1.8Gb/s per Data Lane
- Resolution up to 2160x1080 60Hz or 1920x1200 60Hz
- Pixel clock up to 154MHz
- Data Lane and Polarity Swapping
- Both Non-Burst and Burst Video Mode Supported
- Support RGB666, Loosely RGB666, RGB888, RGB565, 16-bit YCbCr4:2:2, 24-bit YCbCr 4:2:2 Video Format

● Dual-Port LVDS Receiver

- Compatible with VESA and JEIDA standard
- 1~2 Configurable Port
- Resolution up to 2160x1080 60Hz or 1920x1200 60Hz
- Pixel clock up to 154MHz
- Support DE Mode
- Data Port , Data Lane and Polarity Swapping
- Internal Rterm Calibration with Less than 5% Error
- Programmable Equalization
- Support input Dessc(30KHz±5%)

● TTL Input

- Support 24-bit RGB and BT656/BT1120
- Both DDR and SDR Sampling supported
- Support both 1.8V and 3.3V Input Voltage
- Support SYNC Mode and DE Mode
- Resolution up to 2160x1080 60Hz or 1920x1200 60Hz
- Pixel clock up to 154MHz

● Miscellaneous

- 1.5V, 1.8V and 3.3V Power Supply
- 90 and 270 Degree Video Rotation
- X2 or /2 Frame Rate Conversion
- Alternative Input and Output configuration for LVDS/TTL/MIPI
- Support 100KHz and 400KHz I2C Slave
- External 25MHz ±200ppm Crystal Reference Clock is Preferred

2. General Description

The Lontium LT2911R-D is a high performance convertor which interconvertible between MIPI DSI/CSI-2/Dual-Port LVDS and TTL, LT2911R-D do not support 24bit TTL to 24bit TTL because there's not enough Pins. The LT2911R-D deserializes input MIPI/LVDS/TTL video data, decodes packets, rotates video, changes frame rate and converts the formatted video data stream to MIPI/LVDS/TTL transmitter output between AP and mobile display panel or camera.

The LT2911R-D is fabricated in advanced CMOS process

and implemented in 9mm x 9mm QFN76 package. This package is RoHS compliant and specified to operate from -40°C to +85°C.

3. Applications

- Mobile systems
- Cellular handsets
- Digital video cameras
- Digital still cameras
- Tablet PC, Notebook PC
- Car Display and Camera System

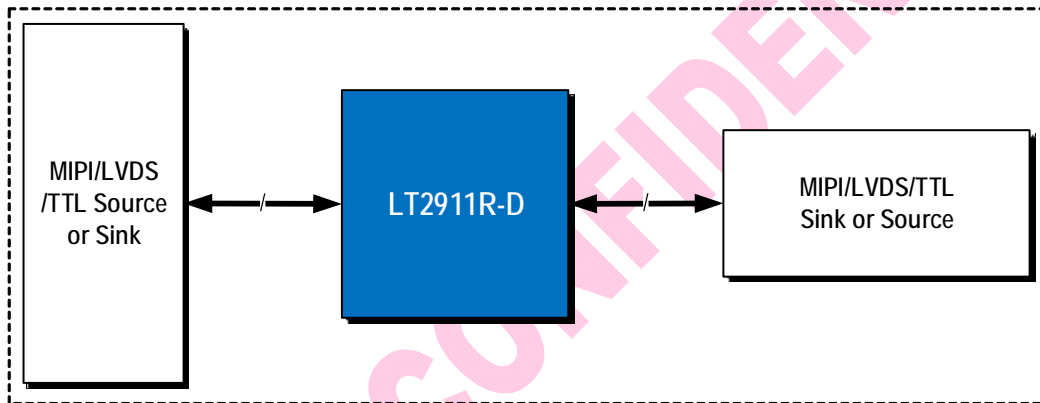


Figure 3.1 LT2911R-D Typical Application Diagram

4. Ordering Information

Table 4.1 Ordering Information

Part Number	Product Version	Product Status	Operating Temperature Range	Package	Packing Method	MPQ
LT2911R-D	U2	NRND	-40°C to +85°C	QFN76 (9*9)	Tray	2600pcs
LT2911R-D	U4	NRND	-40°C to +85°C	QFN76 (9*9)	Tray	2600pcs
LT2911R-D_U5	U5	NRND	-40°C to +85°C	QFN76 (9*9)	Tray	2600pcs
LT2911R-D_U6	U6	MP	-40°C to +85°C	QFN76 (9*9)	Tray	2600pcs

NRND: Not Recommended for New Designs.
MP: Mass Production.

Table 4.2 IC Version Information

Product Version	Information	Note
U2	<ol style="list-style-type: none"> 1. If the MIPI source does not have “eotp packet”, LT2911R-D’s MIPI Receiver do not work well. Any other conversions between MIPI DSI/CSI-2/Dual-Port LVDS and TTL are OK; 2. MIPI Port-B input do not work well in non-continuous clock mode. 	
U4	<ol style="list-style-type: none"> 1. MIPI Receiver solved the issue which MIPI source does not have “eotp packet”; 2. MIPI Port-B input do not work well in non-continuous clock mode. 	
U5	<ol style="list-style-type: none"> 1. Add TTL output dclk phase adjust function, this does not apply to LVDS with SSC and MIPI input; 2. Solved MIPI Port-B input non-continuous clock issue. 	
U6	<ol style="list-style-type: none"> 1. Optimize for working abnormal due to temperature variation; 2. Limit the maximum pixel clock frequency to 154MHz; 3. Update 1.8V power supply range. 	

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