# LT6911UXE --- Product Brief

# HD-DVI2.0 to Dual-Port MIPI DSI/CSI with Audio

## 1. Features

- **HD-DVI2.0 Receiver**
  - Compliant with HD-DVI2.0b, HD-DVI1.4 and DVI1.0
  - Compliant with HDCP2.3 and HDCP1.4
  - Data rate up to 6Gbps
  - Adaptive receiver equalization
  - AC-couple capable
  - Support 4k@60Hz
  - Supported deep color: 8/10/12 bpc
  - Support CES (Consumer Electronics Service)
  - HDR support
  - Support TMDS descrambling for EMI/RFI reduction
  - Support ACDC (Auxiliary and Control Data Channel)
  - 5V tolerance DDC/HPD I/Os
  - Integrated EDID shadow

- **Single/Dual-Port MIPI DSI/CSI Transmitter**
  - Compliant with DCS1.1, D-PHY1.2 & DSI1.3 & CSI-2 1.3
  - 1/2 configurable ports
  - 1 clock lane and 1/2/3/4 configurable data lanes per port
  - 80Mbps~2.5Gbps per data lane
  - Programmable transmitter swing and pre-emphasis
  - Support lane swap(arbitrarily) and polarity inversion(independent)
  - 3D support: two ports simultaneously transmitting side by side alternative pixels
  - DSI support both burst mode and non-burst mode
  - DSI support 16/20/24-bit YCbCr4:2:2, 24/30-bit RGB, 12-bit YCbCr4:2:0, CSI support RGB888/666, YUV422 8/10-bit
  - Maximum 64 pixels overlap for each half
  - Video stream copy mode for each port

- **Digital Audio Output**
  - I2S interface supporting 8-channel audio, with sample rates of 32~192 kHz and sample sizes of 16~24 bits
  - SPDIF interface supporting PCM, Dolby Digital, DTS digital audio at up to 192kHz frame rate
  - IEC60958 or IEC61937 compatible

- **Miscellaneous**
  - CSC: RGB <-> YUV444 <-> YUV422
  - External oscillator 24MHz
  - Integrated microprocessor
  - Embedded SPI flash for firmware and HDCP keys
  - GPIOs for system controls
  - Integrated 100/400kHz I2C slave
  - Firmware update through I2C interface
  - Power supply: 3.3V for I/O and 1.2V for core
  - Pin compatible with LT6911UXC

## 2. General Description

The LT6911UXE is a high performance HD-DVI2.0 to MIPI DSI/CSI converter for VR, Smart phone, Display applications.

The HD-DVI2.0 input supports data rate up to 6Gbps which provides sufficient bandwidth for 4k@60Hz video. Also HDCP2.3 is supported for data decryption.

For MIPI DSI/CSI output, LT6911UXE features configurable single-port or dual-port MIPI DSI/CSI with 1 high-speed clock lane, and 1~4 high-speed data lanes operating at maximum 2.5Gbps/lane, which can support a total bandwidth of up to 20Gbps. LT6911UXE supports burst mode DSI video data transferring, also supports flexible video data mapping path. Two digital audio output interfaces are available, I2S and SPDIF. The I2S interface supports 8-ch LPCM and the SPDIF interface supports 2-ch LPCM or compressed audio, both at maximum 192kHz 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

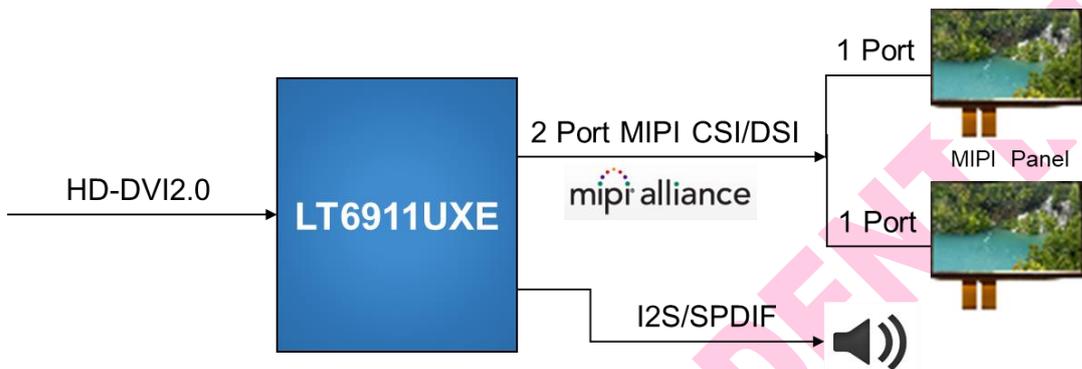interface.

# 3. Applications

- Mobile system
- Display
- VR



**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 |
|---|---|---|---|---|---|---|---|---|---|
| LT6911UXE | LT6911UXE_U2Q07CED | Preview | QFN64 (7.5*7.5) Saw | Cu | E | −40°C to +85°C | D | Tray | 2600pcs |
| MP:    Mass Production. | | | | | | | | | |



**Note:** No spaces in the P/N name.
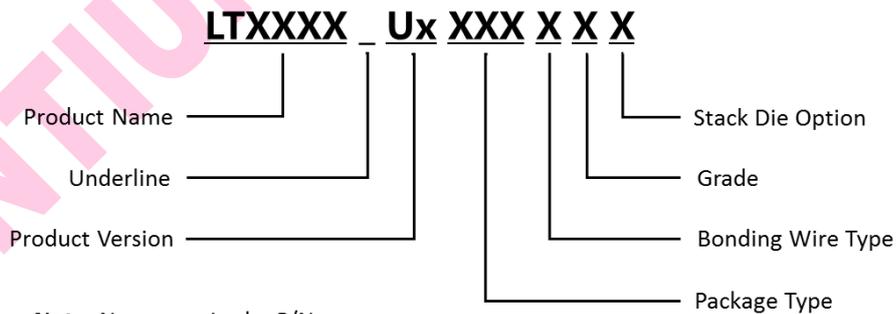
**Figure 4.1    Part Number Naming Rules**

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