

# LT8642UXE --- Product Brief

## HDMI2.0 4-In 2-Out Matrix Switch

### 1. Features

#### ● HDMI2.0 Receiver

- Compliant with HDMI2.0b, HDMI1.4 and DV11.0
- Compliant with HDCP2.3, HDCP2.2 and HDCP1.4
- Data rate up to 6Gbps
- Support up to 4Kx2K@60Hz
- Adaptive receiver equalization
- Support polarity inversion
- Support 3D and HDR(only for bypass mode)
- Support 8/10/12-bit color depth
- Support TMDS descrambling for EMI/RFI reduction
- Support SCDC and CEC2.0
- Support ARC RX/TX
- Integrated 256-byte EDID shadow
- 5V tolerance DDC/HPD I/Os

#### ● HDMI2.0 Transmitter

- Compliant with HDMI2.0b, HDMI1.4 and DV11.0
- Compliant with HDCP2.3, HDCP2.2 and HDCP1.4
- Data rate up to 6Gbps
- Support up to 4Kx2K@60Hz
- Programmable transmitter swing and pre-emphasis
- Support channel swap
- Support 3D and HDR(only for bypass mode)
- Support 8/10/12-bit color depth
- Support TMDS scrambling for EMI/RFI reduction
- Support SCDC and CEC2.0
- 5V tolerance DDC/HPD I/Os

#### ● Digital Audio Output/Input

- I2S interface supports 8-channel audio output and 2-channel audio input, with sample rates of 32~192 kHz and sample sizes of 16~24 bits
- SPDIF interface supports LPCM, Dolby Digital, DTS digital audio input and output up to 192kHz frame rate
- IEC60958 or IEC61937 compatible

#### ● Miscellaneous

- Internal Rterm calibration
- CSC: RGB <-> YUV444 <-> YUV422<-> YUV420
- Scaler: 4Kx2K@60/50/30Hz to 1080P@60/50/30Hz (3840x2160 to 1920x1080 or 4096x2160 to 2048x1080)
- Support horizontally split one stream to two stream(3840x1080@60Hz to 1920x1080@60Hz and 1920x1080@60Hz)
- Support horizontally combine two synchronous stream to one stream(1920x1080@60Hz and 1920x1080@60Hz to 3840x1080@60Hz)
- External crystal supports 25MHz(+/-100ppm)
- Integrated microprocessor
- Integrated SPI master for embedded SPI flash
- Embedded SPI flash for firmware and HDCP keys
- Integrated 100/400kHz I2C slave for debug and firmware update
- 1.2V core power supply & 3.3V I/O power supply

### 2. General Description

The LT8642UXE HDMI2.0/1.4 switch features a 4:2 switch compliant with HDMI2.0/1.4 specification, max 6Gbps high speed data rate, adaptive equalization RX input and pre-emphasized TX output to support long cable application.

LT8642UXE HDMI2.0/1.4 switch automatically detects the cable loss, and adaptively optimize the equalization setting. It supports RX termination resistor calibration to further improve signal integrity.

### 3. Applications

- Front panel buffer for advanced television (HDTV) sets
- Standalone switch
- Multiple input displays
- Projectors
- A/V receivers

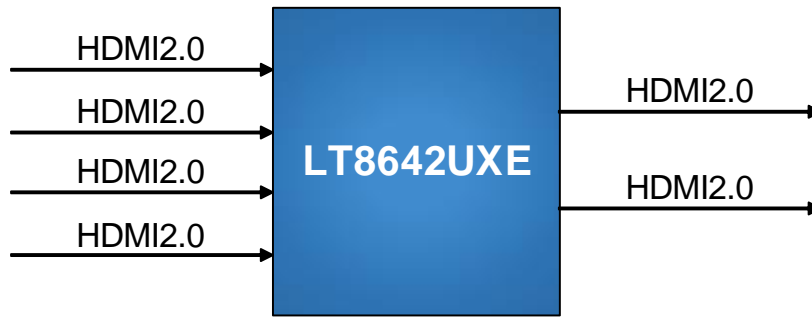
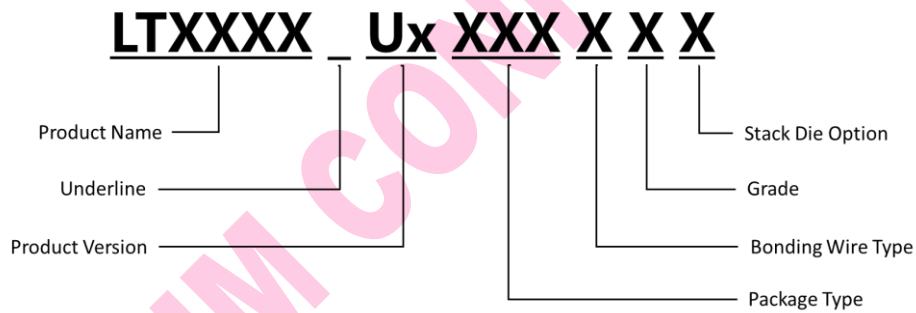


Figure 3.1 Application Diagram

## 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
LT8642UXE	LT8642UXE_U2Q00CED	MP	QFN128 (14*14)Saw	Cu	E	-40°C to +85°C	D	Tray	1190pcs



Note: No spaces in the P/N name.

Figure 4.1 Part Number Naming Rules

Copyright © 2021-2024 Lontium Semiconductor Corporation, All rights reserved.

### **Lontium Semiconductor Proprietary & Confidential**

This document and the information it contains belong to Lontium Semiconductor. Any review, use, dissemination, distribution or copying of this document or its information outside the scope of a signed agreement with Lontium is strictly prohibited.

LONTIUM DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THOSE OF NONINFRINGEMENT, MERCHANTABILITY, TITLE AND FITNESS FOR A PARTICULAR PURPOSE. CUSTOMERS EXPRESSLY ASSUME THEIR OWN RISK IN RELYING ON THIS DOCUMENT.

LONTIUM PRODUCTS ARE NOT DESIGNED OR INTENDED FOR USE IN LIFE SUPPORT APPLIANCES, DEVICES OR SYSTEMS WHERE A MALFUNCTION OF A LONTIUM DEVICE COULD RESULT IN A PERSONAL INJURY OR LOSS OF LIFE.

Lontium assumes no responsibility for any errors in this document, and makes no commitment to update the information contained herein. Lontium reserves the right to change or discontinue this document and the products it describes at any time, without notice. Other than as set forth in a separate, signed, written agreement, Lontium grants the user of this document no right, title or interest in the document, the information it contains or the intellectual property it embodies.

### **Trademarks**

Lontium™ 龙迅™ and ClearEdge™ is a registered trademark of Lontium Semiconductor. All other brand names, product names, trademarks, and registered trademarks contained herein are the property of their respective owners.

Visit our corporate web page at: [www.lontiumsemi.com](http://www.lontiumsemi.com)

Technical support: [support@lontium.com](mailto:support@lontium.com)

Sales: [sales@lontium.com](mailto:sales@lontium.com)