

# LT8641UXE --- Product Brief

## HDMI2.0 4-In 1-Out 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 4Kx2K@60Hz
  - Adaptive receiver equalization
  - Support data channel swap(arbitrarily) and polarity inversion(independent)
  - AC and DC couple capable
  - Support 3D and HDR
  - Support 8/10/12-bit color depth
  - Support TMDS descrambling for EMI/RFI reduction
  - Support SCDC and CEC2.0
  - Support ARC
  - Integrated EDID shadow
  - 5V tolerance DDC/HPD I/Os
- **HDMI2.0 Transmitter**
  - Compliant with HDMI2.0b, HDMI1.4 and DV11.0
  - Compliant with HDCP2.2 and HDCP1.4
  - Data rate up to 6Gbps
  - Support 4Kx2K@60Hz
  - Programmable transmitter swing and pre-emphasis
  - Support channel swap(arbitrarily) and polarity inversion(independent)
  - DC couple capable
  - Downstream receiver sensing
  - Support 3D and HDR
  - Support 8/10/12-bit color depth
  - Support TMDS scrambling for EMI/RFI reduction
  - Support SCDC and CEC2.0
- Support ARC
- 5V tolerance DDC/HPD I/Os
- **Digital Audio Output**
  - Up to four 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**
  - Internal rterm calibration
  - External crystal supports 25MHz
  - Integrated microprocessor
  - Integrated SPI master
  - 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
  - -40°C to +125°C ambient operating temperature range
  - 128-pin 12x12mm QFN package

### 2. General Description

The LT8641UXE HDMI2.0/1.4 Switch features a 4:1 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. LT8641UXE 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.

LT8641UXE support DDC/SCDC compliant to HDMI2.0/1.4 specification. This package is QFN128 12mmx12mm. It

operates from  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ .

### 3. Applications

- Front panel buffer for advanced television (HDTV) sets
- Standalone switcher
- Multiple input displays
- Projectors
- AV receivers

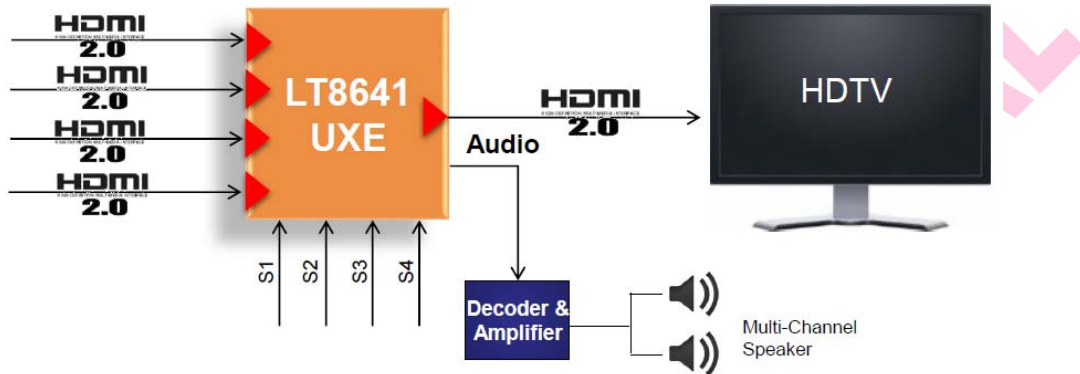


Figure 3.1 Application Diagram

### 4. Ordering Information

Table 4.1 Ordering Information

Part Number	Operating Temperature Range	Package	Packing Method
LT8641UXE	$-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	QFN128 (12*12)	Tray

**Copyright © 2019 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)**