

# LT8642UX --- Product Brief

## HD-DVI2.0 4-In 2-Out Matrix Switch

### 1. Features

#### ● HD-DVI2.0 Receiver

- Compliant with HD-DVI2.0b, HD-DVI1.4 and DVI1.0
- Compliant with HDCP2.3, HDCP2.2 and HDCP1.4
- Data rate up to 6Gbps
- Support up to 4Kx2K@60Hz
- Adaptive receiver equalization
- AC and DC couple capable
- Support 3D and HDR
- Support 8/10/12-bit color depth
- Support TMDS descrambling for EMI/RFI reduction
- Support ACDC (Auxiliary and Control Data Channel) and CES (Consumer Electronics Service)2.0
- Support ARL (Audio Return Lane)
- Integrated EDID shadow
- 5V tolerance DDC/HPD I/Os

#### ● HD-DVI2.0 Transmitter

- Compliant with HD-DVI2.0b, HD-DVI1.4 and DVI1.0
- 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(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 ACDC (Auxiliary and Control Data Channel) and CES (Consumer Electronics Service)2.0
- Support ARL (Audio Return Lane)

- 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 term calibration
- External crystal supports 25MHz
- 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
- -40°C to +85°C ambient operating temperature range
- 128-pin 14x14mm QFN package

### 2. General Description

The LT8642UX HD-DVI2.0/1.4 Switch features a 4:2 switch compliant with HD-DVI2.0/1.4 specification, max 6Gbps high speed data rate, adaptive equalization RX input and pre-emphasized TX output to support long cable application. LT8642UX HD-DVI2.0/1.4 Switch automatically detects the cable loss, and adaptively optimize the equalization setting. It supports RX termination resistor calibration to further improve signal integrity.

LT8642UX support DDC/ACDC (Auxiliary and Control Data Channel) compliant to HD-DVI2.0/1.4 specification. This package is QFN128 14mmx14mm. It operates from -40°C to +85°C.

### 3. Applications

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

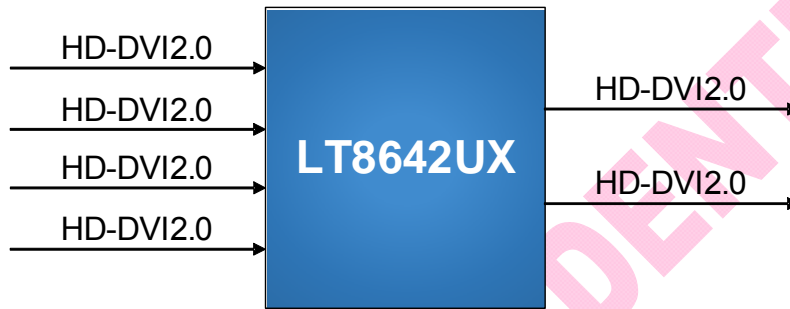


Figure 3.1 Application Diagram

### 4. Ordering Information

Table 4.1 Ordering Information

Part Number	Product Status	Operating Temperature Range	Package	Packing Method	MPQ
LT8642UX_U3	MP	-40°C to +85°C	QFN128 (14*14)	Tray	1190pcs
MP: Mass Production.					



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