

LT8641SXE --- Product Brief

4:1 HD-DVI1.4/2.0 Switch with Digital Audio Output

1. Features

- Compliant with HD-DVI1.4/2.0 and HDCP1.4
- HD-DVI input resolution support up to 4Kx2K@30Hz and 4Kx2K @60Hz YCbCr 4:2:0 format
- HD-DVI output resolution support up to 4Kx2K@30Hz and 4Kx2K @60Hz YCbCr 4:2:0 format
- Support 8 channel I2S audio outputs or both 6-channel I2S and SPDIF
- Supports 3D format
- Supports CES (Consumer Electronics Service)
- Supports one channel ARL (Audio Return Lane) function on HD-DVI link
- 14mmx14mm 100-pin TQFP package

2. General Description

The LT8641SXE is a Transition Minimized Differential Signaling (TMDS) switch that enables the connection of multiple HD-DVI source devices to high-definition television (HDTV). Based on the HD-DVI 1.4 specification, LT8641SXE is an advanced TMDS switch that delivers a cost-effective method for manufacturers to add additional HD-DVI ports to their HDTV. Multiple HD-DVI ports allow consumers to connect variety HD-DVI-enabled sources to their HDTV. It supports HDCP 1.4 specifications, and Audio Return Channel function.

The LT8641SXE is a four-to-one (4:1) switch ideally suited for use in the back panel of HDTV and A/V receivers, allowing consumers to connect multiple HD-DVI-enabled devices such as high-definition DVD players, set top boxes and game consoles. The LT8641SXE switch selects a single HD-DVI or

Digital Visual Interface (DVI) signal from the four receiver ports and generates HD-DVI/DVI audio/video output, as well as DDC/HPD switching, in full compliance with the HD-DVI and DVI specifications. The LT8641SXE also acts as a HD-DVI receiver. It extracts the digital audio information from the HD-DVI packet, and recovers digital audio to I2S/SPDIF interface. So it can be applied to the multi-channel audio amplifier for best audio effect. This feature can enable an external HD-DVI switching box acts as a home entertainment box that can output up to 8-channel high quality audio signal for the best audio effect.

To improve the performance in the case of long distance transmission, pre-emphasized driver is integrated into the chip. This pre-distortion technique compensates the transmission loss. The chip provides a Clock Data Recovery (CDR) path to enhance the performance. This path uses Re-Sample and Re-Drive architecture which re-samples data at the receiver side and re-drive data at the transmitter side. It will not pass through noise from inputs to output and hence provides reliable transmission.

The chip also employs an advanced on-die-termination calibrating circuitry. The input termination is able to be automatically adjusted. The integrated HPD switch as well as DDC switch lower the cost of system manufacture, and simplify the routing on the system board.

3. Applications

- Embedded TV Switch
- External HD-DVI Switch
- Digital Audio Amplifier
- Etc.

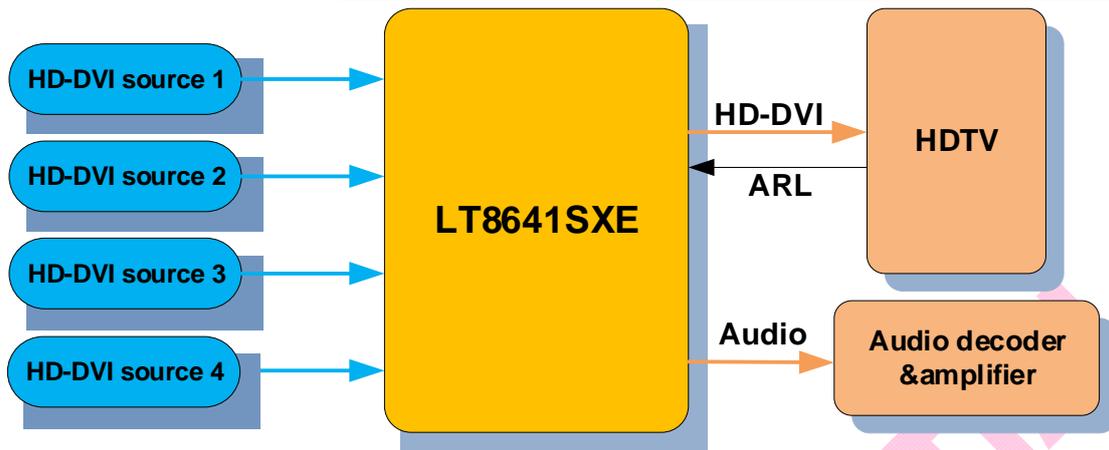


Figure 3.1 Application Diagram

4. Ordering Information

Table 4.1 Ordering Information

| Part Number | Operating Temperature Range | Package | Packing Method |
|-------------|-----------------------------|----------------|----------------|
| LT8641SXE | -40°C to +85°C | TQFP100(14*14) | Tray |

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