

LT86121TX --- Product Brief

HDMI1.4 Repeater with DSC Encoder

Features

● HDMI1.4 Receiver

- Compliant with HDMI1.4 and DVI1.0
- Compliant with HDCP1.4
- Data rate up to 3Gbps
- Adaptive receiver equalization
- AC-couple capable
- Support channel swap(arbitrarily) and polarity inversion(independent)
- Support 4k@30Hz
- Supported 3D video
- 5V tolerance DDC/HPD I/Os
- Integrated EDID shadow

● HDMI1.4 Transmitter

- Compliant with HDMI1.4 and DVI1.0
- No HDCP encryption
- Data rate up to 3Gbps
- On-die back termination
- Programmable transmitter swing and pre-emphasis
- Support channel swap(arbitrarily) and polarity inversion(independent)
- Support 4k@30Hz
- Supported 3D video
- 5V tolerance DDC/HPD I/Os
- 2/3 data channels option(3ch-to-2ch, paired with LT86121RX)
- Integrated DSC encoder(paired with LT86121RX)
- FEC support(paired with LT86121RX)

● Digital Audio Output

- I2S interface supporting 2-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

- Integrated USB HS/FS/LS repeater(paired with LT86121RX)
- CSC: RGB <-> YCbCr4:4:4 <-> YCbCr4:2:2
- Integrated CEC Controller
- External oscillator
- Integrated microprocessor

Description

The LT86121TX is a high performance HDMI1.4 repeater designed for long cable application. It should be paired with LT86121RX for longest cable reach. In paired mode, several unique features can be enabled to reduce bandwidth requirement and optimize performance.

Both the HDMI1.4 input and output support data rate up to 3Gbps which provides sufficient bandwidth for 4k@30Hz video. Also HDCP1.4 is supported for data decryption.

In paired mode, YCbCr4:1:1 conversion and DSC encoder can be used to reduce data rate and hence bandwidth requirement. Furthermore, FEC can be activated to correct data error and help to enhance system error tolerance level. These unique techniques together will significantly extend transmission distance. 3ch-to-2ch conversion eliminates the necessary of 3 differential data pairs as required by HDMI specification. But data rate will increase by 50%. In applications of low and middle bandwidth, 2 data pairs are enough for data transmission.

Integrated USB repeater supports high speed, full speed and low speed modes. It is suitable for USB signal extension. User defined packet is also supported which provides a path for sideband data communication.

Two digital audio output interfaces are available, I2S

and SPDIF. The I2S interface supports 2-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.

Applications

- Active Cables
- Surveillance
- KVM Extension

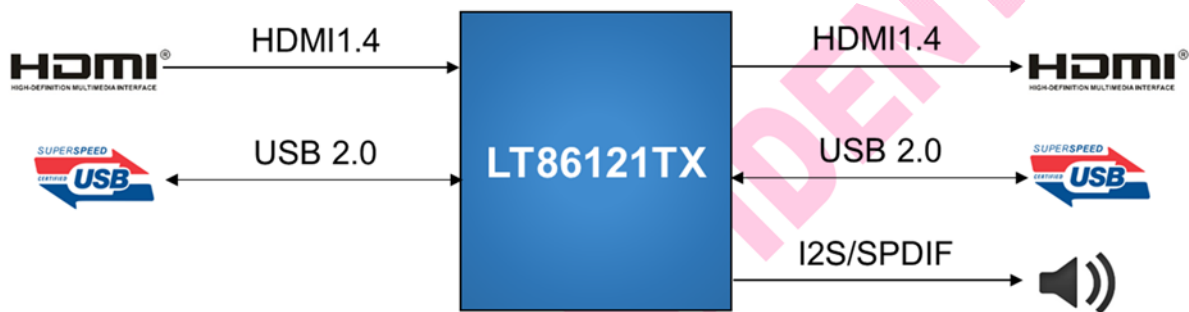


Figure1. Application Diagram

Ordering Information

Part Number	Operating Temperature Range	Package	Packing Method
LT86121TX	-40°C to +85°C	QFN76 (9*9)	Tray

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