

LT86121RXE --- Product Brief

HDMI2.0 Repeater with DSC Decoder

1. Features

● HDMI2.0 Receiver

- Compliant with HDMI2.0b, HDMI1.4 and DVI1.0
- No HDCP2.2 decryption
- Data rate up to 6Gbps
- Adaptive receiver equalization
- Support 4k@60Hz
- Supported 3D formats:
 - DSC disabled: all 3D formats
 - DSC enabled: frame packing(progressive/interlaced), side-by-side(half/full), top-and-bottom, field alternative
- Supported video formats:
 - DSC/CSC disabled: all video formats
 - DSC/CSC enabled: 24-bit RGB/YCbCr4:4:4, 16/20/24-bit YCbCr4:2:2, 8-bit YCbCr4:2:0
- Integrated EDID shadow
- Integrated DSC decoder (paired with LT86121TXE)
- FEC support (paired with LT86121TXE)

● HDMI2.0 Transmitter

- Compliant with HDMI2.0b, HDMI1.4 and DVI1.0
- Compliant with HDCP2.2 and HDCP1.4
- Data rate up to 6Gbps
- On-die back termination
- Programmable transmitter swing and pre-emphasis
- Support 4k@60Hz
- Supported 3D formats:
 - DSC disabled: all 3D formats
 - DSC enabled: frame packing(progressive/interlaced), side-by-side(half/full), top-and-bottom, field alternative
- Supported video formats:
 - DSC/CSC disabled: all video formats
 - DSC/CSC enabled: 24-bit RGB/YCbCr4:4:4, 16/20/24-bit YCbCr4:2:2, 8-bit YCbCr4:2:0

● Digital Audio Input/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 LT86121TXE)
- CSC: RGB <-> YCbCr4:4:4 <-> YCbCr4:2:2, support 8-bit only
- Integrated CEC controller (no command parsing)
- External oscillator
- Integrated microprocessor
- Embedded SPI flash for firmware and HDCP keys
- GPIOs for system controls
- Integrated 100/400kHz I2C slave
- Firmware update through SPI or I2C interface

2. General Description

The LT86121RXE is a high performance HDMI2.0 repeater designed for long cable application. It should be paired with LT86121TXE for longest cable reach. In paired mode, several unique features can be enabled to reduce bandwidth requirement and optimize performance.

Both the HDMI2.0 input and output support data rate up to 6Gbps which provides sufficient bandwidth for 4k@60Hz video. Also, HDCP2.2 is supported for data encryption.

In paired mode, YCbCr4:1:1 conversion and DSC decoder 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.

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.

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.

3. Applications

- Active Cables
- Surveillance
- KVM Extension

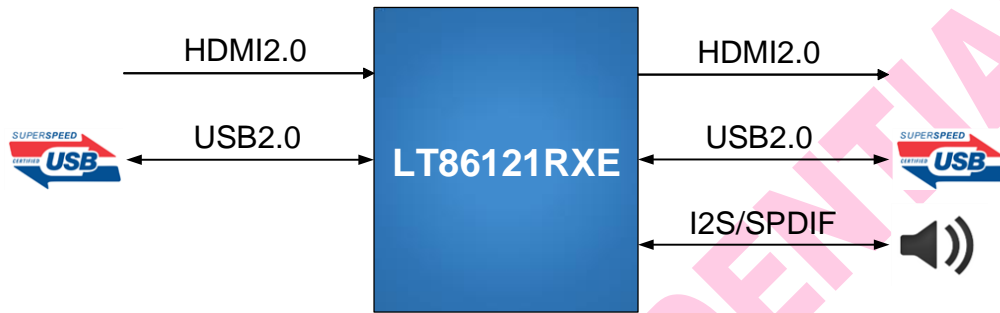


Figure 3.1 Application Diagram

4. Ordering Information

Table 4.1 Ordering Information

Part Number	Product Version	Product Status	Operating Temperature Range	Package	Packing Method	MPQ
LT86121RXE	U4	MP	-40°C to +85°C	QFN76 (9*9)	Tray	2600pcs
MP: Mass Production.						

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