LT86101HC --- Product Brief

HDMI-to-Type-C Converter

1. Features

- Compliant to HDMI1.4b, Type-C r1.2, USB PD2.0 and HDMI1.4b Alt Mode v1.0 Standards
- Support Hot-Plug Detect for HDMI Input Interface
- Support DDC and CEC
- Support Only AC Coupled HDMI Input Interface
- Programmable Input Equalization
- Programmable Output Swing and De-emphasis
- USB Full-Featured, Orientation and Role Detection
- 2 Power Roles Supported: Source and Sink
- 2 Data Roles Supported: DFP and DRP
- 3-level Current Ability Advertise for Type-C Power:
- USB Default, 1.5A@5V, 3A@5V
- Internal MCU and Flash for Online Firmware Upgrade
- Support External I2C Debug
- 1.8V/3.3V Power Supply
- Packaged in 5mmx5mm QFN40

2. General Description

LT86101HC is a TMDS signal re-driver with HDMI1.4b interfaced input and Type-C interfaced output. TMDS signal quality is deeply-optimized and enhanced by performing cable and board trace loss compensation.

The input receiver of LT86101HC features a multi-level programmable linear equalizer, supporting up to 25dB loss compensation due to the Inter-Symbol Interference (ISI). The output transmitter re-drives the received signal with multi-level programmable output swing and maximum 6dB de-emphasis. In coordination with DDC channel, a build-in frequency detector monitors clock channel and automatically adjust input equalization and output swing.

Type-C operating is controlled by CC detect, CC logic and PD management unit. A high performance passive differential switch compliant with HDMI1.4b Alternate Mode is also integrated to realize clock and data channel exchange according to Type-C interface insert orientation. This relieves BOM cost and mobile system design complexity.

LT86101HC internally integrates an 8-bit OCM and SPI flash memory (stacked die) to configure and run program. Online software upgrade is also supported.

The LT86101HC is fabricated in advanced CMOS process and implemented in a small outline 5mmx5mm QFN40 package. This package is RoHS compliant and specified to operate from -40°C to +85°C.

3. Applications

- Smartphone, Tablet and Other Mobile Devices
- VR/AR Eco-System and Home Entertainment
- PC, Notebook, All-in-Ones Computer and Docking

4. Ordering Information

Table 4.1.1   Ordering Information

Part No.	Operating Temp. Range	Package	Packing
LT86101HC	-40℃ to +85℃	QFN40 (5*5)	Tray
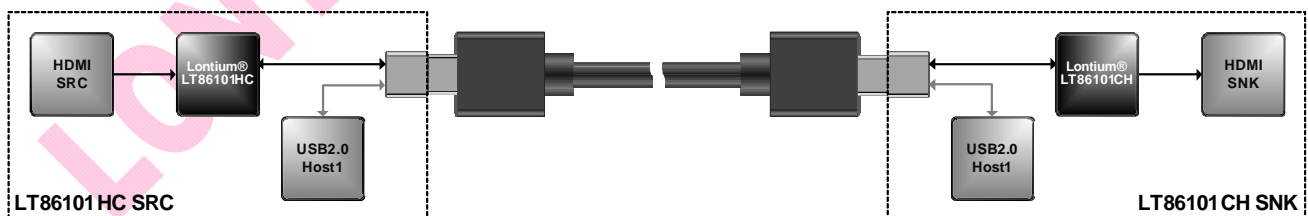
Figure 1. LT86101CH / LT86101HC Typical Application Diagram

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