LT8718 --- Product Brief

TTL to DP with Type-C

Features

- **TTL Input**
  - Support up to 24-bit RGB/YUV and BT656/BT1120 Input
  - Support SDR and DDR Data Sampling
  - Support Resolution up to 4Kx2K@30Hz for RGB
  - Support Resolution up to 4Kx2K@60Hz for YUV420

- **DP1.2 Transmitter**
  - Compliant to VESA DP1.2 Standard
  - Support Two Lanes with 1.62Gbps (RBR), 2.7Gbps (HBR) or 5.4Gbps (HBR2) Data Rate
  - Data Lane and Polarity Swapping
  - Support HDCP1.3 Encryption
  - Support up to 24-bit RGB/YUV Data Format
  - Support Resolution up to 4Kx2K@30Hz for RGB
  - Support Resolution up to 4Kx2K@60Hz for YUV420
  - Build-in Pattern Generation
  - Support Hot-Plug Detect
  - Support Backlight Control for Screen Application
  - Optional SSC 0.5% Down-Spreading Output
  - Configurable and Power-on-Calibrated Output Swing for Optimized EMI
  - Internal Rterm Calibration with Less than 5% Error

- **USB Type-C**
  - Compatible with USB3.1 Gen1, USB Type-C R1.0, DP Alt Mode V1.0 and USB PD R2.0
  - 3 Data Roles Supported: DFP, UFP and DRP
  - 2 Power Roles Supported: Source and Sink
  - USB PD-PHY (Tx/Rx) and BMC Encoding/Decoding
  - USB PD Protocol Control by Software
  - Bi-directional Differential Passive Switch for USB3.1 Gen1 SS signal with less than 2.5-dB Insertion Loss, Controlled by Internal or External CC logic module

- USB Full-Featured, Orientation and Role Detection
- 3-level Current Ability Advertise (Host Mode) or Detection (Device Mode) for Type-C Power: USB Default, 1.5A@5V, 3A@5V
- SBU Data Path Control for DP Alt Mode
- OCP Control for External VBUS Power Switch
- Dead Battery Supports (Sink Mode) When No Power Applied

- **Audio Input**
  - Support SPDIF and up to 8-CH I2S Audio Input

- **Miscellaneous**
  - 1.8V/3.3V Dual Supply Power
  - External 25MHz Crystal Reference Clock
  - Temperature Range: -40°C to +85°C
  - Packaged in 10mm x 10mm QFN88

Description

The Lontium LT8718 is TTL to DP converter with internal Type-C Alternate Mode switch and PD controller.

The input supports both normal 24-bit RGB/YUV and BT656/BT1120 mode under SDR or DDR sampling. The maximum resolution is up to 4Kx2K@30Hz for RGB input and 4Kx2K@60Hz for YUV420 input.

In order to be adaptable to the latest USB Type-C ecosystem, LT8718 integrates a high performance bi-directional passive differential switch controlled by CC logic and PD management unit to relieve mobile system design complexity and BOM cost. The switch function is compliant with VESA DP Alternate Mode on USB Type-C Standard.

The LT8718 is fabricated in advanced CMOS process and implemented in a small outline 10mmx10mm QFN88 (LT8718-Q88). This package is RoHS compliant and specified to operate from -40°C to +85°C.

Applications

- Mobile systems
- Cellular handsets
- Digital video cameras

- Digital still cameras
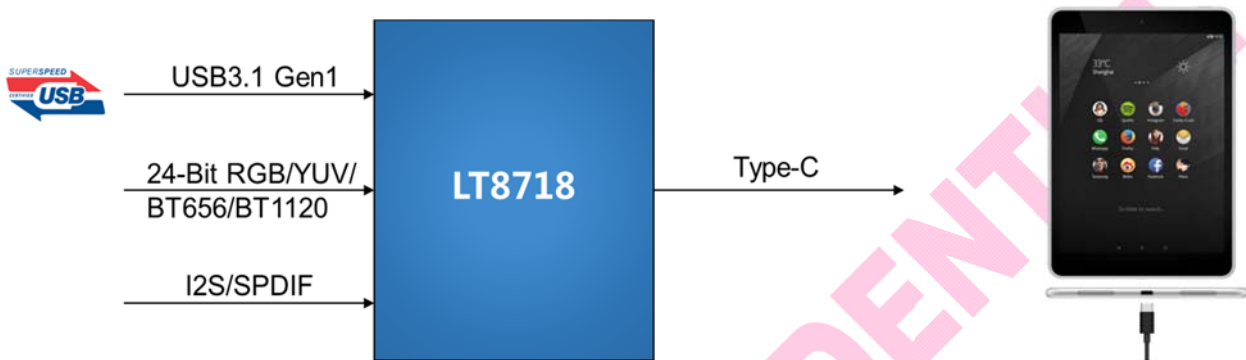- Tablet PC, Notebook PC
- Car Display and Camera System

Figure 1. Application Diagrams

Ordering Information

Part Number	Operating Temperature Range	Package	Packing Method
LT8718-Q88	−40°C to +85°C	QFN88 (10*10)	Tray

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