LT8668EX --- Product Brief

LCD Controller

Features

- Direct interface to DVI 1.0 and HDMI V1.4 receiver
- Compliance with DVI up to 1.65Gbps and HDMI V1.4 up to 3.0Gbps
- Support Dual-Mode DP on the same pins with HDMI
- Multiple pixel formats: RGB 6/8/10/12 bit per component (bpc); YCbCr 422/444 8/10/12 bpc
- High input sensitivity, with differential input level down to 80mV
- Receiver side equalization up to 12 dB
- Auto Loss of Signal detection
- High jitter tolerance up to 0.7UI
- HDCP decryption
- On-chip VGA/HDMI EDID
- Support resolution up to 4Kx2K@30Hz
- Quad channels LVDS outputs, Support 18/24/48-bit LCD panels
- RGB888/RGB666/RGB565 output
- Programmable digital PWM for backlight control
- Fully programmable scalar ratios and independent horizontal/vertical scaling
- Programmable hue, brightness, saturation and contrast adjustment
- Support Gamma correction and dithering
- Embedded OSD
- Integrated microcontroller for system level management
- Support ISP programming
- External IIC UART and SPI interface
- Support   I2S/SPDIF audio input and output
- Audio left and right channel audio PWM outputs
- Extensive power management for power savings
- Support total 16 GPIOs
- Integrated pattern generation
- Integrated nor-flash(option)

Description

The LT8668EX is Lontium's second generation LCD controller that supports both VGA interface and the HDMI interface based on ClearEdge™ Technology, compliant with the HDMI 1.4(High Definition Multimedia Interface) specification. It can support Dual-Mode DP with HDMI interface. For backward compatibility, this LCD controller also includes a high performance analog interface to work with traditional VGA/YPbPr interface. With quad-LVDS ports it can support quad-LVDS ports monitor with 4Kx2K resolution. And dual-LVDS ports or single-LVDS port for other resolution. For total solution of LCD controller, LT8668EX integrates main functions including position adjustment, programmable scalar, video processor (hue, saturation, brightness and contrast adjustment), OSD, gamma correction, PWM, MCU, total 16 GPIOs and nor-flash(option). For easy implementation of a multi-media system, LT8668EX has high quality digital audio input and output interface that support 2-channel audio and SPDIF audio format. LT8668EX integrates 4M bits nor-flash inside, and also you can use external nor-flash by SPI interface for compatibility.

Applications

- HD LCD computer Monitors
- HD LCD Monitors for medical and other applications
- Multi-Media process and display control
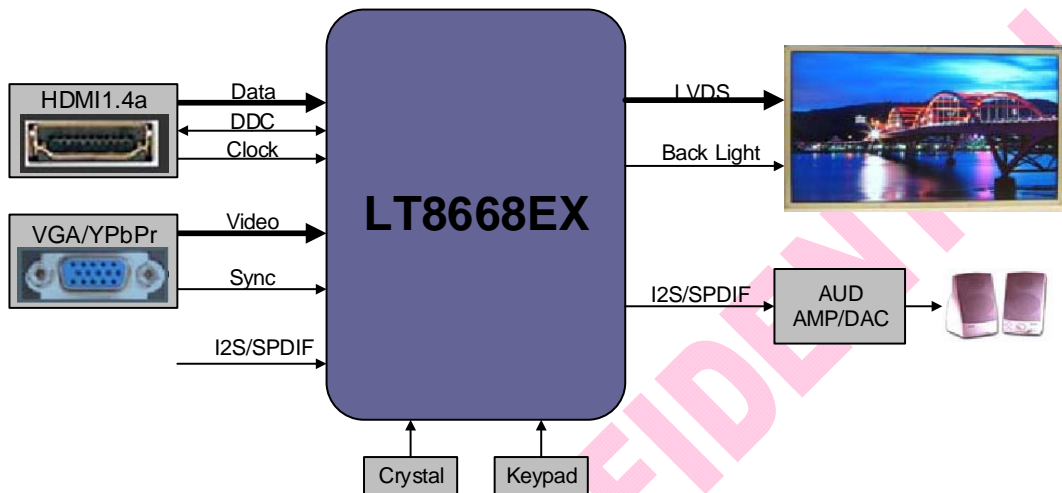- HDMI/VGA to LVDS/TTL Interface convertion

Figure 1.   Application Diagram

Ordering Information

Part Number	Operating Temperature Range	Package	Packing Method
LT8668EX	−10° C to +70° C	LQFP128	Tape and Reel

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