# AVERLOGIC
Your Video Solution Partner

AL362

4K UHD Video Processor for Quad View, Multiple Display and TV Wall

AL362 Advantages

- AL362 is a fully programmable HD video converter and image processor.
- Supports 64-bit 4-port Inputs and 2-port outputs with different video contents.
- Supports varieties of SD, HD video input combinations, such as dual 24-bit, quad 16-bit, quad 8-bit for video convert to designate video windows/switching plus alpha blending output with OSD.
- Supports digital RGB/YUV raw data, BT.656, BT.1120 input or 4x clock multiplexing data timing at maximum 150Mhz clock rate.
- Configurable Flexi-Port supports odd/even pixel and Double-Data-Rate (DDR) bus interface for industrial video ASIC, such as HDMI transmitter/receiver, solutions (no glue-logic required) in high resolution video design, such as UltraHD 4K2K applications.
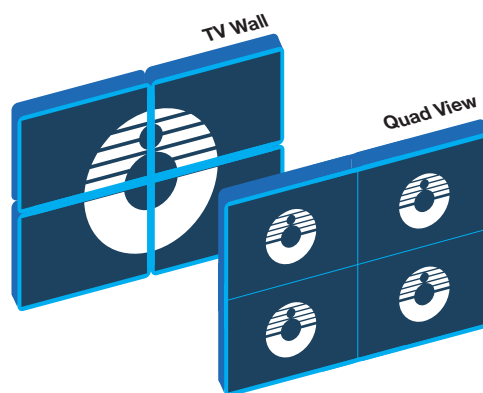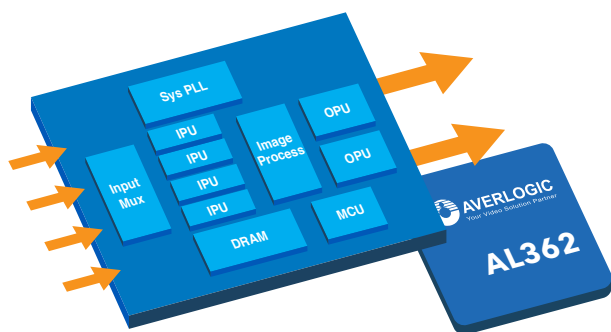
- Supports window composition of multiple input videos, such as PiP, PoP and quad display with up/down scale, for maximum 4K2K input/output resolution.
- Allows cropping/splitting input video as sub-window for multi-display outputs.
- Robust I/O and inter-connection features, easy for modules or stacking designs, such as PC104 or rack-mount system, by cascading multiple chips.
- Video processing engine supports varieties of video manipulations, such as de- interlacing, timing base conversion, cropping, image freeze.
- Supports character (font), icon-based and 8-bit Bitmap OSD overlay.
- Embedded 8051 MCU and setup chip configuration via i2c bus.
- Supports SPI for firmware download.
- Cost effective, low power (1.8V core & 1.8V-3.3V I/O) in 249-pin Lead Free (PBF) LFBGA package, small foot-print design principle.

Applications

- Multiple sources and formats Video processing for PiP, PoP, Quad view and conversion up to 4K2K resolution.
- Video cropping/splitting to multiple display output for TV wall and digital signage display.
- Left-right video merge or video split for 3D/Virtual Reality (VR)/ Augmented Reality (AR) video converge.
- Multi-view display for automotive street view surveillance monitor.
- Features low-power portable or handheld display device.
- Extendable video input/output and performance module design for industrial PC104 or rack- mount card applications.
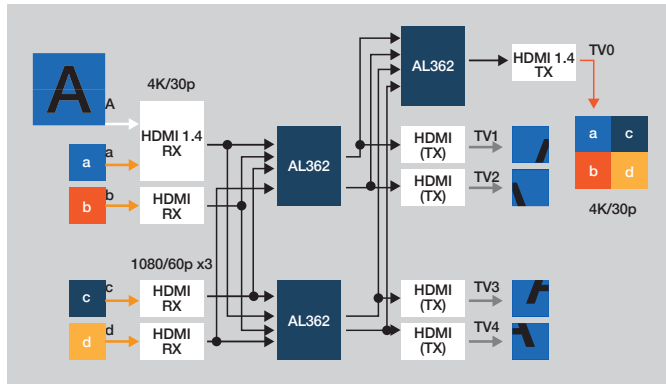
AL362 Multi-Window 4K Output and Multi-Channel Display

The block diagram illustrates a possible way to support four FHD video and with one alternative UHD video input driving one UHD/30p display in quad window display and four FHD quarter images of a 4K video input.
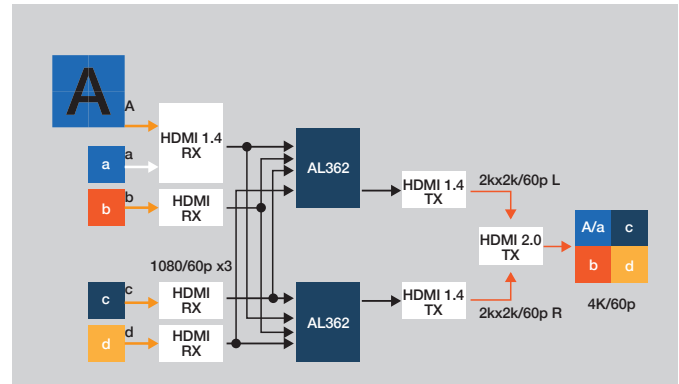
AL362 Quad Window 4K/60p Output Display

The block diagram illustrates a possible way to support four FHD video and with one alternative UHD video input driving one UHD/60p in quad window display.

Specifications

Video Input

- 64-bit flexible input data bus.
- Dual 24-bit RGB/YUV (444).
- Quad 16-bit BT.1120 (422).
- Quad 8-bit BT.656 D1, WD1 (422).
- 8-bit BT.656 x4CLK Multiplexing D1, WD1 (422).
- 24-bit RGB/YUV (444) odd/even dual pixels for such as 4K2K applications.
- Supports 24-bit RGB/YUV (444) image input for OSD bitmap overlay.
- Supports data clock rate up to 150Mhz or DDR (Double Data Rate) sample rising and falling edges.

Video Output

- Dual 24-bit RGB/YUV (444).
- Dual 16-bit BT.1120 (422).
- Dual 8-bit BT.656 D1, WD1 (422).
- 24-bit RGB/YUV (444) odd/even dual pixels for such as 4K2K applications.
- Supports data clock rate up to 150Mhx and 300Mhz single cycle for 4K2K output.

Video Processing and Scaling

- Supports window composition/overlaying, such as 2x2 quad split-window, 3x3 spilt-window, PiP, POP, and quad display with up/down scale, for maximum 4K2K I/O resolution.
- Video processing engine supports varieties of video manipulating operations, such as de-interlacing, timing base conversion, cropping, rotation, mirroring, image freeze.
- Supports image enhancement controls.

OSD

- Supports character (font), Icon-Based and 2-layer 8-bit bitmap OSD overlay.
- Supports 24-bit bitmap OSD direct download via video input port.

MCU & Flash Interfaces

- Supports embedded 8051 MCU and setup chip configuration via i2c bus.
- Embedded serial flash memory provides storage for boot up program. External SPI download is possible.

Miscellaneous

- 1.8V core logic & 1.8V - 3.3V I/O.
- Embedded Low Power DDR-SDRAM and 8051MCU.
- Small-size package LFBGA-249 12x12 mm.

Contact Details