

## Data sheet for Video Wall Player

### Functional Description

The Video wall player enable displaying video on several HDTV arranged like tiles. The large display screen in formed by installing HDTV on grid. The incoming video is split and scaled to match the resolution of video grid and then displayed onto individual HDTV screen. The video synchronization is maintained to display high quality video on each HDTV.

The video wall player core is implemented on low cost FPGA such as Xilinx Spartan6.

### Features:

- Input Video Format : CVBS, S-video, DVI
- Output Video Format: YPbPr, DVI
- Input resolution: 480i/p, 576i/p, 720p
- Output resolution: 480p, 576p, 720p, 1080p
- Slide show of *still* images from SD card or USB drive
- Configurable Video Wall sizes: 2x1, 1x2, 2x2, 4x4
- RS-232 based configuration and control.

### Block Diagram:

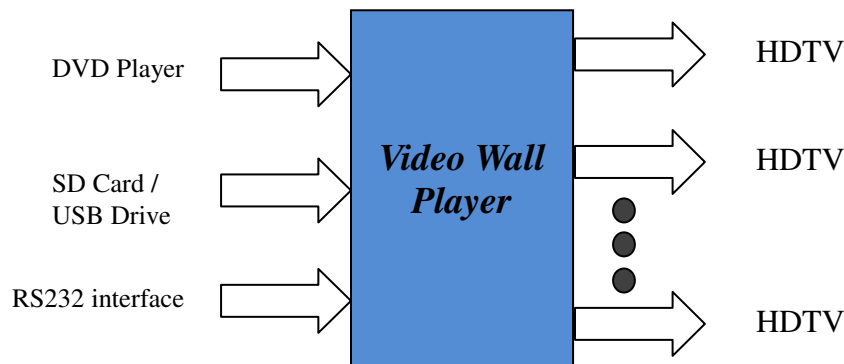


Figure 1: Block Diagram

### Architectural Diagram:

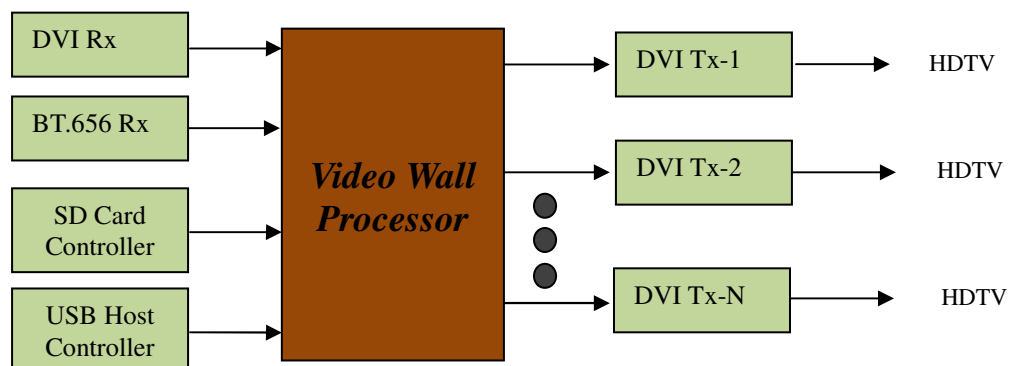


Figure 2: Video Wall Player Architecture Diagram

**Description:**

1. The Video wall player accepts video images from DVD player (CVBS, S-video), SD card or USB drive and displays it on Video wall.
2. The motion adaptive de-interlacing and scaling algorithm are applied for CVBS and S-video interlaced video formats.
3. The input image is split and scaled to match the resolution of Video wall.
4. The scaled image is displayed on individual HDTV using digital video interface standard such as DVI / HDMI or Analog standard YPbPr for high video quality.

5. Run slide show of *still* images from SD card or USB drive.
6. Configurable bazel compensation
7. HDCP encrypted HDMI/DVI video source is not supported
8. Uses external SDRAM as video frame buffer

**Verification:**

The Video Wall player has been verified with following approaches:

- Exhaustive Functional/Timing simulation.
- Connecting multiple HDMI / DVI compliant input/output devices

**Deliverables:**

- Verilog RTL source code
- Test benches
- Synthesis and Simulation scripts
- Detailed user documentation, including RTL source code documentation

**Reference Application:**

- Digital signage to drive four HDTV screen by single DVD player or SD Card

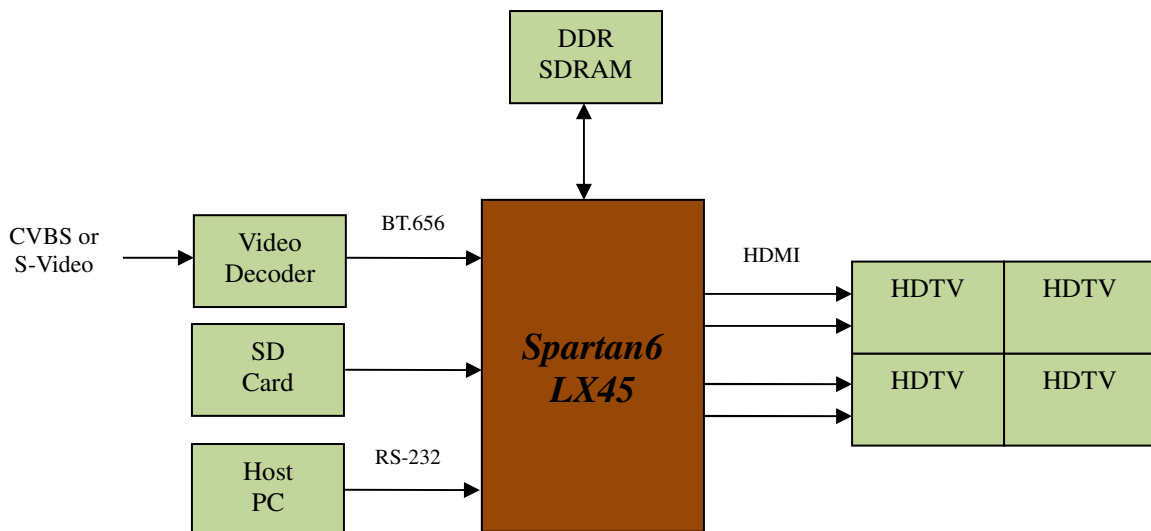


Figure 3: 2x2 Video Wall using Spartan6 device