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HMV260

Multi-Screen Controller

OSEE TECHNOLOGY CO., LTD.



Overview

OSEE' s HMV260 Video Wall Processor is a high performance video processing workstation with pure hardware architecture for spectacular video wall displaying, it can be employed in fields including education and research, government announcement, information publishing, exhibition and show, controlling and commanding center, security monitoring, etc.

Advanced image processing technologies such as high definition video signal collecting, real time and high resolution digital image processing ,and advanced three-dimensional digital filtering are integrated in HMV260. Moreover, it also employs large-capacity, high-speed FPGA and CrossPoint switch to ensure the real-time processing of all input signal and the consistency of the data, leading to no image delay, discretization, frame loss, which guarantee excellent video displaying.

HMV260 is compatible with a wide variety of input signal formats, including, CVBS, YPbPr, VGA, DVI, Dual-link DVI, HDMI, SDI, twisted pair signal, optical signal, etc. The output signal of HMV260 supports DVI-I, twisted pair signal, and optical signal. For DVI-I signal, RGB analog signal and DVI digital signal can be transmitted concurrently, which means that when video signals displayed on a video-wall, it can also be backup and transmitted to another group of displays simultaneously. The resolution of a single output channel can reaches up to 1920*1200@60Hz. Besides, customers can also upload and display ultra-high resolution static background images with HMV260. Additionally, ultra-high resolution dynamic background image is also supported with the extra graphic workstation to achieve perfect displaying, which is very significant to the combination of multi-groups of large screens displaying system.

HMV260 features excellent image quality, 32bit/pixel color sampling depth and some useful functions including TCP/IP control, dynamic adjustment of the window size, frame and title adding and so on, which make HMV260 the best choice for middle and large scale LCD, LED and DLP video wall display.



Features

RRTA Technology	HMV260 employs RRTA (Resolution Real-time Total Adaptation) technology in order to support customized resolutions for different groups of screens, in other words the resolution for each group of screens can be configured separately in the software, so it offers flexibility and convenience for daily application and management.	Cross-screen Displaying	Each signal can be displayed in the cross-screen state, which means adjacent screens can jointly display the content of a single signal to form the whole graphics as a "window".
Roaming Freely	Customers can zoom the windows and drag them to everywhere on one or more screens.	16 Images Splitting	Each output can be split into 16 images for CVBS signal. Different cards are available to meet different solutions, the best image and the lowest cost can be guaranteed at the same time.
Image Zoom	The image in each window can be scaled freely; the height and width of image can be zoomed in or zoomed out in group or dependently. The unique video compensation processing algorithm guarantees the image without any loss.	Picture in Picture	A window can be overlaid upon any other windows forming the "picture in picture". Moreover, the overlaid window can be displayed across the screen.
Graphic Cropping	The graphics of all input video signals can be freely cropped to remove the black edge. Moreover, customer can zoom in and out any section of the video graphics after cropping. The upscaling process ensures the zoomed section to be displayed without loss.	Four Windows per Screen	OSEE' s processor supports maximum four windows in a single screen that allows users to view more video signals with limited screens. The layout of the windows can be configured separately, which offers flexibility and convenience.

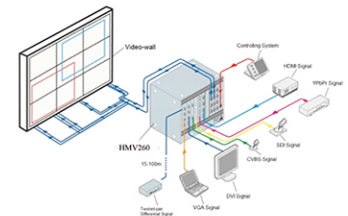
<p>FPGA Architecture</p>	<p>The pure hardware FPGA architecture with self-developed core algorithm provides OSEE' s processor with excellent image processing performance. Abandoning embedded operation system, HMV260 avoids crashes, collisions, blue screen, and viruses which commonly suffered by software architecture. It is highly stable to ensure uninterrupted operation of 365x24.</p>	<p>Flexible Plugging Card Structure</p>	<p>The main modules including input card, output card, switch card, control card, cooling fan, and power supply are all designed as plugging structure with the main-board which make it very flexible and convenient for customer. It is unnecessary to disassemble the whole device when replacing any modules.</p>
<p>CrossPoint Switch</p>	<p>OSEE' s processor employs crosspoint switch technology, which offers high speed switching and transmission. Comparing to the “bus” switching architecture that all the signals need to share the bandwidth of bus for transmission, crosspoint switch assigns each signal a unique channel to avoid collision, delay, and instability, which contributes to real-time displaying for all video signals. The display speed can achieve 60 FPS.</p>	<p>Various Models Available</p>	<p>There are various models and chassis available for HMV260, each model has different maximum input and output to meet different requirements from 4 to 144 spliced screen display.</p>
<p>High-performance Professional Chip</p>	<p>HMV260 adopts the unique TN Series high performance video processing chip, which processes the HD video signal real-time in full frame rate and without distortion. The current 40nm T4 series chip can meet the requirement of 144 spliced screens display easily.</p>	<p>Input Signal Preview</p>	<p>All input signals can be previewed in the UI of software before being displayed on the screens. It enables the operator to detect the input status and display signals correctly.</p>

Specifications

Input	DVI	VGA	Output	HD-SDI
	Dual-link DVI	HDMI		DVI-I digital signal output
	HD-SDI	CVBS		Twisted-pair Video Transmission Technology
	Twisted-pair Video Transmission Technology	YPbPr		

System Connection

OSEE's HMV260 processor is the core equipment in the multi-screen system. HMV260 supports VGA, DVI, SDI, HDMI, CVBS, YPbPr and twisted pair from various video equipments. It is compatible with a lot of signals ranging from low-res monitoring analog video to HD-res digital signal. Different chassis are available to meet different requirements. The software can also control extra traditional matrix switchers when they are cascade (RS232) to the processor, so the larger scale system can be reestablished. HMV260 can manage and control the system via software control platform, and it can be cascade to manage the matrix from the main companies.



System Diagram of HMV260

Extended Function

<p>Ultra-high Dynamic HD Input</p>	<p>OSEE' s updated “Plus HD Spliced Device” can achieve 8K×8K and even higher resolution. Based o this high-end platform, and make the best of the advantages of the spliced screen group pixel, the video can be displayed more clearly and more amazingly, which distinguished HMV260 from other products.</p>	<p>Seamless and Real-time Switching</p>	<p>The HD signal processing mechanism of HMV260 guarantees the seamless and real-time switching for single signal or multiple signals switching, there is no black field problems. The switching interval is only several frames that humans could not spot it.</p>
<p>Frequency Doubling and Upscaling Function</p>	<p>The frequency doubling and upscaling function can achieve perfect enhanced echo for the low resolution and low frame rate signal. After the processing as stated in the title, all the signals with different resolutions can be output in the same resolution, which improved the overall image quality greatly.</p>	<p>Redundant Power Supply</p>	<p>HMV260 can be configured with dual power supply based on demand. For circumstances if the power source is not stable, the redundant power supply is highly suggested to connect to different power source or self-built UPS. In the condition of stable power source, the device will works on load balancing for each power supply. Once a fault occurs to one of the power source, the redundant power supply will start running automatically to ensure un-interruptible operation.</p>
<p>Hot-Plugging Design</p>	<p>It supports the ‘hot-plugging’ for input and output cards which mean that customer can plug and pull out the input or output card when the workstation is in process of working.</p>	<p>EDID Management</p>	<p>HMV260 supports read, modify and user-defined of EDID (Extended Display Identification Data), which greatly improved the compatibility of the spliced screen that the output signals can be applied to both usual and unusual occasions.</p>

**Scenes Saving,
Loading, and
Displaying in
Loop**

Any configuring arrangement of video signal displayed on screen wall can be saved as "scenes". Up to 32 scenes can be saved or loaded in HMV260. Customer also can set the scenes to be loaded and displayed in loop.

**Administrative
Authority
Classification**

The HMV260 controlling software allows users to manage and control the processor via PC. Different user has different authority level, some are allowed to operate and some are restricted to operate.

**Character
Superimposition**

HMV260 processor supports character superimposition to each input signal channel for users to identify the signal source. Users can also customize the font, size, position, and color of the superimposed character.

**Ultra-high
Resolution
Background
Image**

HMV260 stores multiple ultra-high resolution static 'pixel-to-pixel' background images which can be uploaded, displayed, and switched through the software. With extra graphic workstation, the displaying of ultra-high resolution dynamic background-image also can be achieved to meet specific and professional

Applications



Broadcast Industry



Military Industry



Traffic Industry



Electricity Industry



Audio-visual Industry



Mineral Industry



Water Conservancy Industry



Public Security

OSEE TECHNOLOGY CO., LTD.

Add: No.22 Building, No.68 Zone, Beiqing Road, Haidian District, Beijing 100094 China
Tel: +8610 6243 4168-8017 Fax: +8610 6243 4169
E-mail: sales@osee-dig.com

OSEE AMERICAS LTD.

Add: 43218 Christy St Fremont, CA 94538
Tel: +1 510 996 4499 E-mail: info@oseeamericas.com
Toll Free: 866 625 6106 Online Mall: www.oseedirect.com