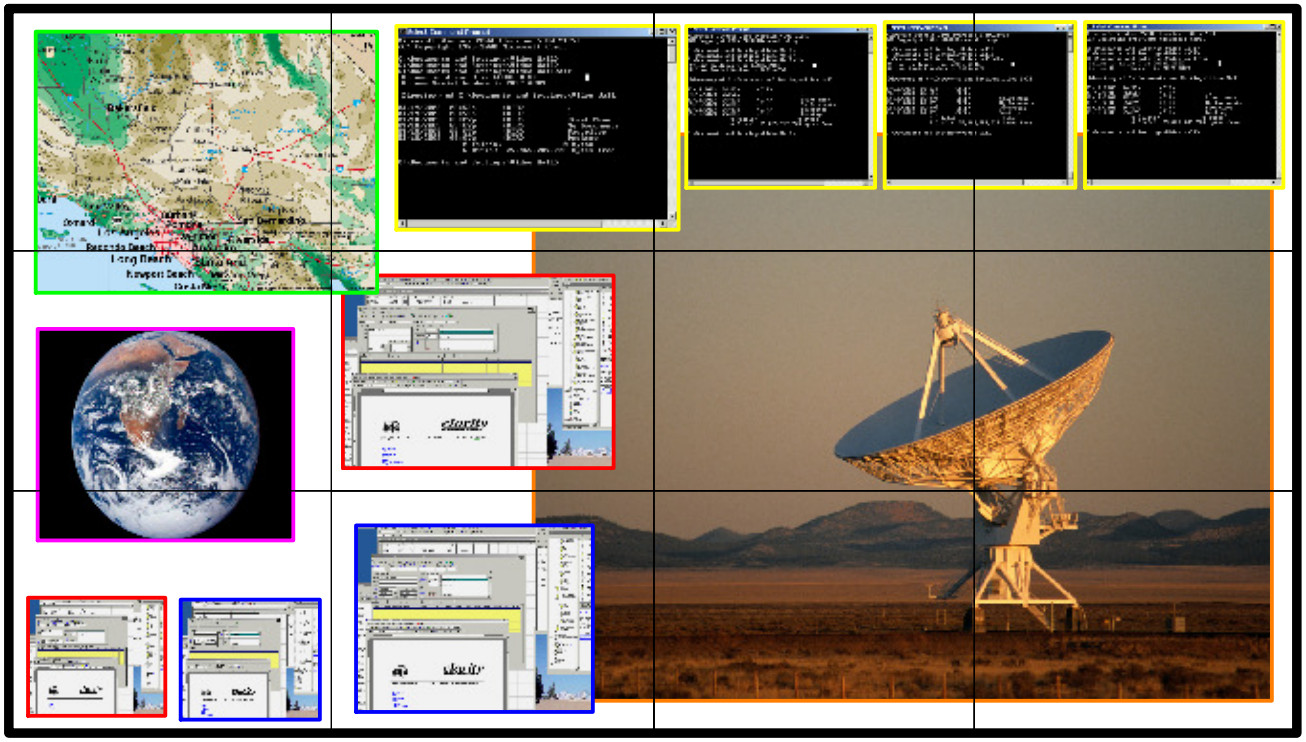
VP-2000A SERIES
VIDEO PROCESSORS



The VP-2000A line of video processors from Pixell are Windows 7 64 bit based multi input and multi-output image control devices that allows inputting of Component HD, Composite/S-Video, IP Camera MPEG decoding and Computer RGB/DVI/HDMI signals to be sized and placed on large venue video walls and multi display screens.

These processors are intended for use in command and control environments, military applications, power plants, boardroom, network operations centers, security operations centers, video conferencing, and multimedia presentations. They are "Card Cage" type expandable systems that are built to order depending on the number and type of required inputs and outputs for a particular installation. Systems range from 1 to 24 chassis depending on number of slots needed for a particular configuration. All systems built to order.

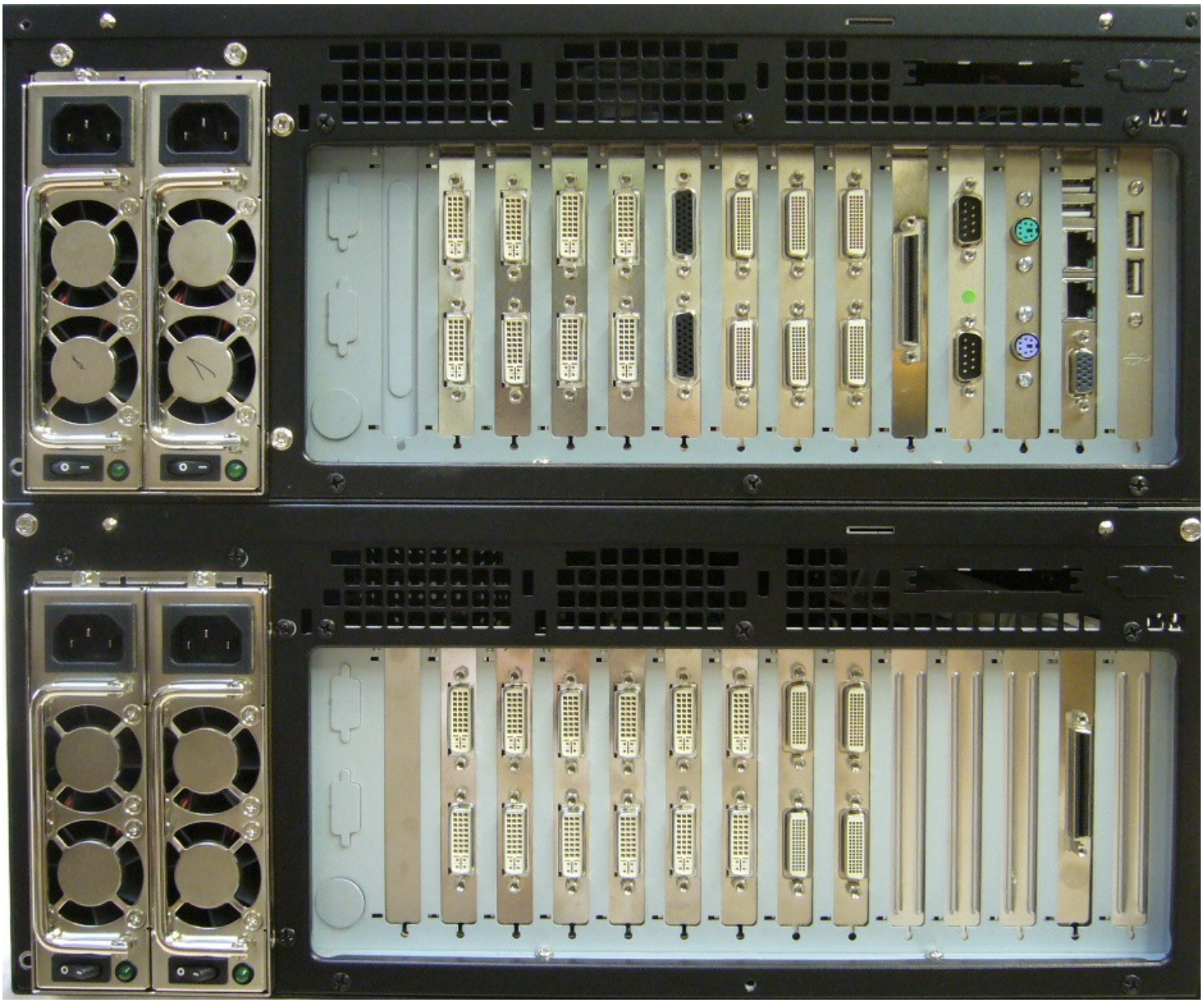
Technical Specifications:			
	VP-2000A		
OUTPUTS:	4 to 36 RGBHV Analog or Digital DVI + RGBHV Control output		
Horizontal rate	15kHz to 90kHz		
Vertical refresh	37Hz to 85Hz (see below)		
Max Resolution Analog Per Output	640x480 to 2048x1536 @ 60Hz , 32 Bit Custom resolutions available upon request.		
Max Resolution Digital Per Output	640x480 to 1920x1200 @ 60Hz, 32 Bit Custom resolutions available upon request.		
Pixel Clock	Up to 300Mhz analog, 165Mhz digital		
Video levels	0.7 to 1.0 V peak to peak, white positive		
Sync levels	1V to 5V (separate sync)		
Sync type	RGBHV separate H and V sync or DVI-D		
Misc	75 Ohm impedance, 32MB SDRAM per output, S3 Delta Chrome chip per out		
Connectors	HD15 pin Female for RGBHV or DVI-D for digital		
Control monitor	HD-15 Analog output up to 1920x1200 for control monitor		
Composite SD/ S-Video Inputs:	**VP-2000A**		
Max Number	Up to 128 (Unlimited windows per output)		
Growth Increments	4 or 8 inputs per input card		
Video Formats	NTSC/PAL/SECAM on Composite or S-Video (Y/C) signal		
Input Levels	1 volt P-P		
Scaling	Smooth scaling from icon size to full screen including		
Connectors	BNC Female or Male		
Component HD YPrPb	**VP-2000A**		
Max Number	64 component HD		
Growth Increments	2 component per card		
Signal type HD	YPrPb analog 720p/1080i/1080P		
Connector	DVI-I, with adaptor to 3 RCA		

	Frame Rate	30 to 60 FPS		
	RGB/DVI/HDMI Analog or Digital Computer Inputs:	**VP-2000A**		
	Max Number	Up to 64		
	Signal Format	640x480 to 2048x1536 analog, 640x1920x1200 digital		
	Sync type	RGBHV analog (5 wire), RGBS (4 wire), RGsB (3 wire) or Digital Single link, TMDS		
	Frame Rate	30-60 Frames Per Second (depending on # and size of windows open and color depth)		
	Input Connector	DVI-I analog or digital		
	Scaling	Smooth scaling from icon size to full screen including PIP		
	Growth Increments	2 inputs per card		
	Pixel Formats	RGB: 555, 565 or 888, YUV 4:2:2: UYVY, YUY2, YVYU (24/32 bit)		
	Max sample rate	340 Mhz clock per second		
	Max Throughput	480Mb/S sustained		
	IP Camera Decoding	**VP-2000A**		
	Max Number Cameras accessible	Unlimited		
	Max Number of concurrent cameras being decoded	Up to 128, each 8 cameras have a dedicated processor and 4RU chassis for decoding.		
	Max Resolution	Up to D5 (1920x1080p)		
	Max Frame Rate	Adjustable up to 30 FPS		
	Supported Protocols	RTSP		
	Internal CODEC	VLC		
	Supported Cameras	All major manufactures that use open codec RTSP standards (Contact Pixell for specific models)		
	Compression	H.263, H.264, MJPEG		
	OTHER:	**VP-2000A**		
	Software	Windows 7 64 bit		

		Wall Control: Allows creation and manipulation of windows for NTSC/PAL and RGB/DVI hardware signals connected to be re-displayed. (Runs on the processor or remote machine) (Optional) Wall Monitor: Allows interrogation and display of system vital signs such as internal temperatures, power supply voltages, etc. Alarms can be set with audible and email notifications.	
	CPU/Misc	Intel Core 2 Duo 2.xGhz/3+MB cache. 4GB main memory/1066Mhz , single removable 250GB SATA (raid 1/5 optional), 2ea 100 Base T Ethernet NIC's, 2 RS-232 serial, 4 USB, audio, PS/2 Keyboard, Mouse. HD-15 analog VGA output for control monitor. (Monitor supplied by others)	
	Redundant Power Supplies (optional) VP-2000A-R	90-264 VAC, 47-63 Hz Auto switching Output 400 Watts Dual Redundant Hot Swap. Agency Approvals: UL 1950 QQGQ2, QQGQ8, TUV Rhineland (EN 60950, EC950 mod) CB Certification	
	VP-2000A Quiet Version Power Supplies	90-264 VAC, 47-63 Hz Output 400+ Watts (non redundant) Agency Approvals: UL 1950 QQGQ2, QQGQ8, TUV Rhineland (EN 60950, EC950 mod) CB Certification Agency Approvals: UL 1950 QQGQ2, QQGQ8, TUV Rhineland (EN 60950, EC950	
	Operating	0 degrees C to 50 degrees C	
	Humidity	5 to 90 % non-condensing	
	Cooling	Forced air, filtered inlet front of unit, exhaust rear. (Filter accessible from front of unit)	
	Size	4 RU, 19" wide, 7"high, 19.75" deep + 1.25" removable handles in front (add for cable bends rear)	
	Weight	45-65 lbs depending on configuration	
	Expansion	Additional 4RU expansion chassis can be daisy chained.	

Some features shown and listed in this document are optional. Not all inputs or outputs can be installed in a given chassis. Contact Pixell for legal configurations and quotations, all units built to order. Specifications subject to change without notice.

Rear of VP-2000A (main chassis on top, expansion on bottom)



System Concepts:

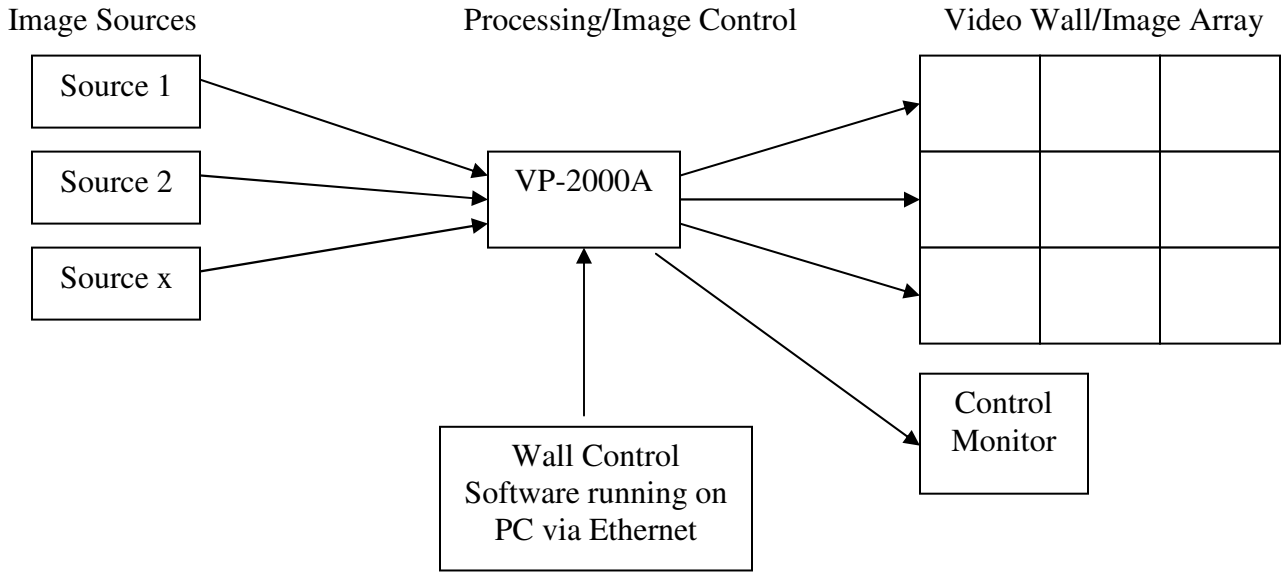
The VP-2000A series processors are designed to accept and aggregate multiple video signals, manipulate the size and placement of each image and re-display them on multiple large-scale displays such as a video wall or array of projectors or monitors.

Since the VP processor is running the Windows 7/64 operating system, application software (i.e. Internet Explorer etc) can run locally and concurrently with windows showing external video source information while allowing window overlapping and user determined Z-order layouts.

Image and window control is accomplished with Pixell's Wall Control client and server software running on the processor itself. Wall Control client user interface typically is shown on the supported control monitor output which is separate from the main array outputs. Wall Control client can be configured to show what images are on the main array or wire frame representation as below.

Wall Control client can also be installed on multiple customer owned network connected Windows 2000/XP/Vista/7 computers and interact with the processor remotely and concurrently.

Below is a conceptual overview of image flow and control modules:



Wall Control User Interface

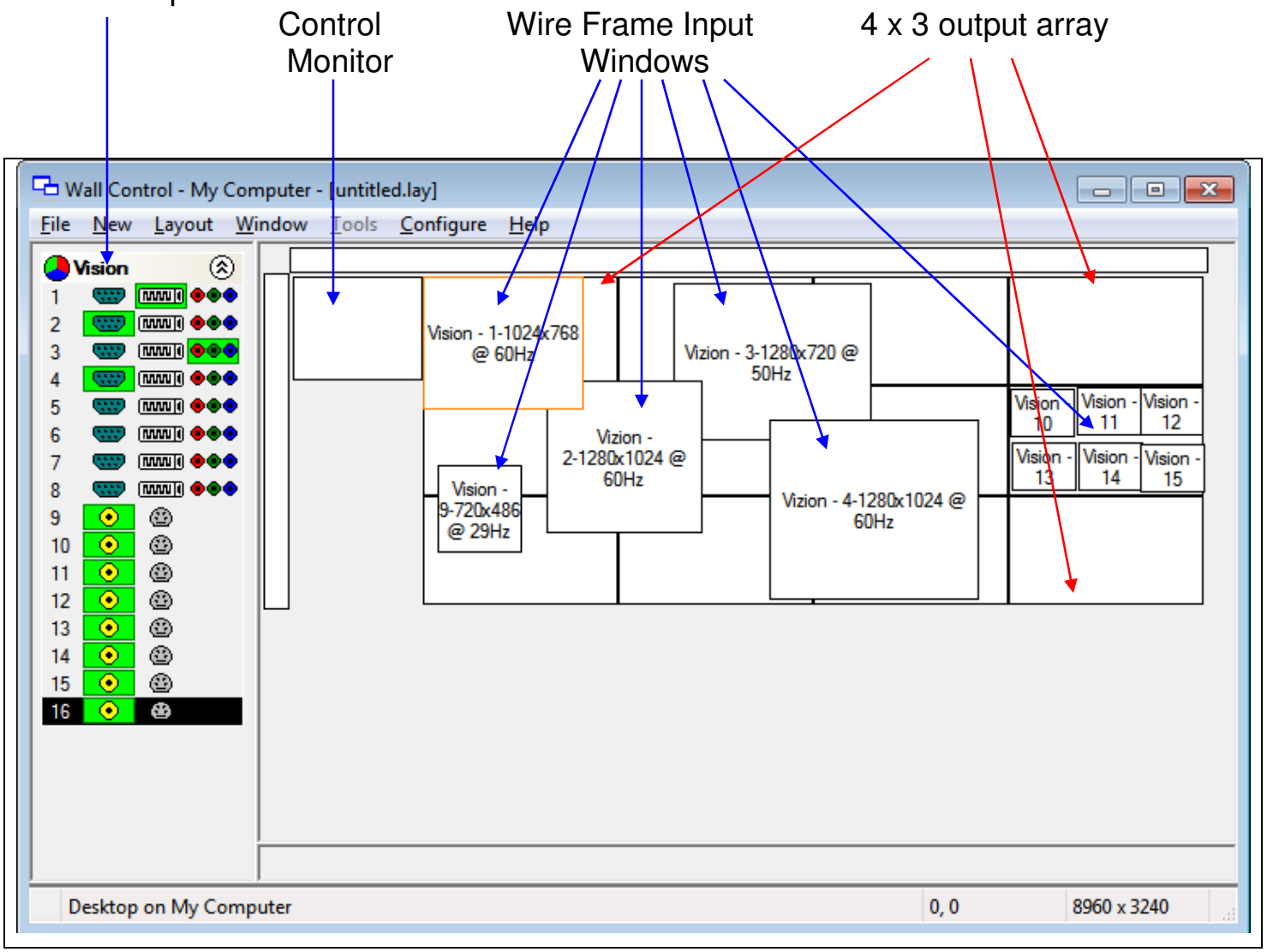
Wall Control's function is to manage what inputs are shown where and in what size on the output array. In addition it can manage applications software running on the processor like browser windows, etc.

Once a particular configuration of windows has been generated by corner dragging and or numeric size and location entry, it can be saved as a "layout" file that later can be recalled with a single mouse click or external command to the processor. (AMX, Creston, Etc) Multiple layouts can be generated and saved allowing operators to toggle between them for common scenarios. (The example below is untitled.lay)

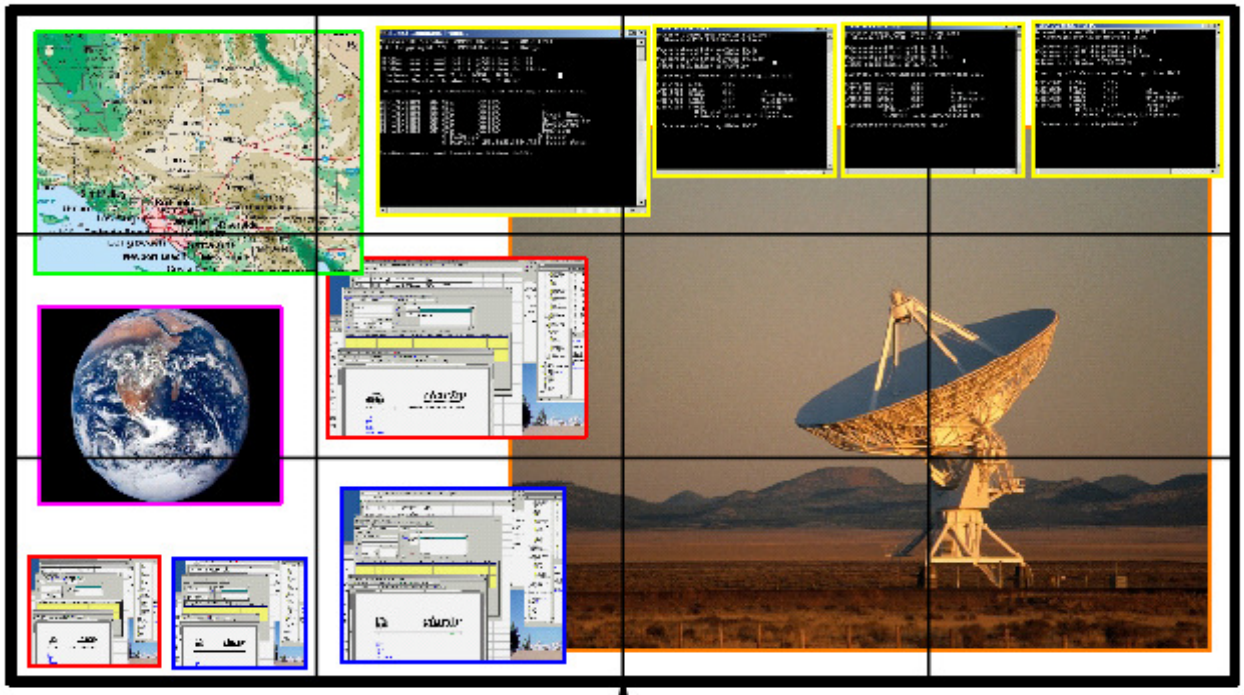
Below is a screen shot of the Wall Control user interface driving a 4 wide x 3 high array of displays + control monitor. On the left side are 16 external hardware inputs available in this example configuration. (1 - 8 are VGA/DVI/HDMI/YPrPb and 9 - 16 composite / S-Video) The green box

around the graphic for each input indicates a signal is present and what type it is. The wire frames showing the input number and signal type (Number and kind of inputs and output array will vary depending on hardware installed) To open a window, operator double clicks on desired input and a window wire frame appears on the output array. Then the size and position of window can be corner dragged or numerically defined. Once the window complement is complete, a snap shot can be taken and saved with a name, these are referred to as layouts. Later the same layout can be recalled with a single mouse click or call from external system. An unlimited number of layouts can be created and saved.

Available Inputs



VIDEO / DISPLAY WALL LOGIC DIAGRAM



RGBHV Analog or DVI Digital Output

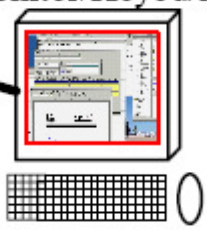
VCR/DVD

S-Video SD
Composite

VP Series Processor

Wall Control Server
RGB Import Server
Windows XP

Processor Control
Monitor/Keybd/mouse



Camera/Satellite

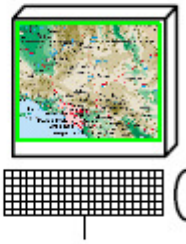
Component HD YPrPb

RGB/DVI Monitor Signal

RGB Import software input via Ethernet

Computer

Computer Running:
RGB Import Wall Control



Computer Running:
RGB Import Wall Control

Customer Servers Running
RGB Import Client

Server
Server
Server
Server

Ethernet