ELECTROSONIC

# Vector™

## The high performance image control processor


Mix to the Max

VECTOR™ is a high-quality image-control processor that allows users to display the most stunning images ever seen on a big screen.

A typical Vector system consists of source equipment, a Vector processor, display devices and, optionally, a controlling computer running C-THROUGH™ or CT-COMMANDER™ software.

Large images of breathtaking quality and impressive effects allow our clients to use Vector's image control technology in multiple applications, including broadcast television studios, information displays, leisure attractions, special events, retail stores and control rooms. Vector is designed for fixed installations or the rental environment, and has become the new world standard for image control.


The Vector range consists of a modular card cage that holds a mixture of input and output cards allowing support for up to eight inputs and thirty-six outputs. For larger systems a maximum of eight card cages can be connected together.

Highly sophisticated image re-sizing technology frees image windows from physical screen boundaries and produces high-quality pictures without blocky pixels, irrespective of the attached display device. Set-up is easy using the front panel, CT-COMMANDER or C-THROUGH control software. External equipment, such as time-base correctors, line doublers, scan converters and decoders, are not required.

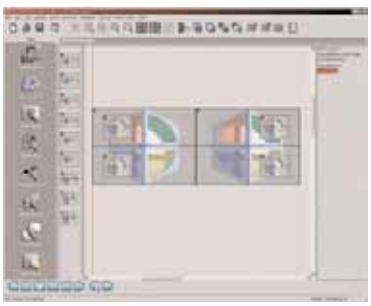
For applications where a real time interactive display system is required, CT-COMMANDER is used, combining automated control of serial devices and source switching. For creative programmed shows, C-THROUGH provides show control and access to a library of pre-programmed effects.

The applications for image processing have become increasingly diverse; and this applies to every element of the whole image delivery system - display, processing, sources and control. The choice of displays available to the user has expanded greatly to include Plasma, LED, LCD, DLP as well as the more traditional CRT based devices. The range of options is further increased by an ever-widening choice of resolutions and aspect ratios.

This trend is repeated in the variety of source types that must also be catered for. There is now a wide range of data formats, both graphics and video, in regular use. High Definition video is now used all over the world wherever the highest quality video images are required. Add to this the opportunity to deliver the images in a digital format, and clearly there are many options.

The Vector range offers total flexibility in the choice of display, allowing the user to mix different display types together; and also allows complete freedom of choice in the number and type of sources that can be managed.

With its choice of processing cards, VECTOR offers many options to users. A wide variety of source types may be processed, from standard resolution analog or SDI video to high resolution analog and DVI graphics. Single or multiple sources may be simultaneously displayed on a single large screen or a tiled array, using projectors, cubes, plasma displays or LED panels.

## Vector Output Card Summary

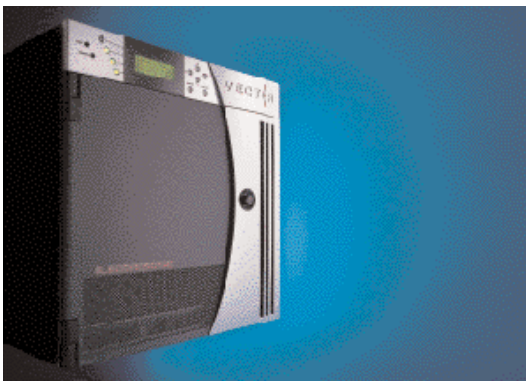
| | | | Supported Output Resolutions | | | | | | | | | | | I/O Card Type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ES Part Number | Number of Outputs | Video | | VGA (640 x 480) | WVGA (852 x 480) | SVGA (800 x 600) | WSVGA (1024 x576) | XGA (1024 x 768) | WXGA[1] (1280 x 768) | WXGA[2] (1365 x 768) | SXGA (1280x 1024) | UXGA (1600x 1200) | ES Part Number | Connector type |
| | | | Standard definition | ATSC | | | | | | | | | | | |
| Analog (RGB) | ES5958 | 4/2 Note 3 | ✔ (I/P/SD/LD) Note 1 | | ✔ | ✔ | ✔ | | ✔ Note 3 | | | | | • ES5958 / CS | • 9 Pin D type socket (4 off) |
| | | | | | | | | | | | | | | • ES5958 / CV | • 15 Pin Hi density D Type (4 off) |
| | ES5956 | 2/1 Note 2 | | ✔ Note 2 | ✔ | ✔ | ✔ | ✔ | ✔ | Note 4 | Note 4 | ✔ | ✔ Note 2 | • ES5956 / CS | • 9 Pin D type socket (4 off) |
| | | | | | | | | | | | | | | • ES5956 / CV | • 15 Pin Hi density D Type (4 off) |
| | | | | | | | | | | | | | | • ES5953 / C2 | • 9 Pin D type socket (8 off) |
| Digital DVI | ES5958 | 4/2 Note 3 | N/A | N/A | ✔ | | ✔ | | ✔ Note 3 | | | | | • ES5958 / CD | • DVI - D (female, 1 per channel) |
| | Refresh Rate | | 50/59.94/60/100/120Hz | | 50/59.94/60Hz | | | | | | | | | | |
| | Sync Format (Analog) | | ES5958/CV & /CS | | Separate H & V / Composite @ 1.0v P-P into 75ohms / TTL into 2K2 ohms selectable on connector card | | | | | | | | | | |
| | | | | | Sync on Green @ 0.3v P-P into 75 ohms | | | | | | | | | | |
| | | | ES5956/CV & /CS | | Separate H & V / Composite @ 1.0v P-P into 75ohms / TTL into 2K2 ohms selectable on connector card | | | | | | | | | | |
| | | | | | Sync on Green @ 0.3v P-P into 75 ohms | | | | | | | | | | |
| | | | ES5953/C2 | | Separate H & V / Composite @ 1.0v P-P into 75ohms / Sync on Green @ 0.3v P-P into 75 ohms | | | | | | | | | | |
| | RGB signal level | | ES5958 & 5956 all Variants | | 0.7v P-P into 75 ohms | | | | | | | | | | |

Note 1: I = Interlace, P = Progressive, SD = Scan Doubled, LD = Line doubled
Note 2: ES5956 runs in single screen mode for UXGA and 1080i resolutions.
Note 3: ES5958 runs in twin screen mode for XGA resolutions.
Note 4: Contact your local Electrosonic office for information on these modes.

## Vector Input Card Summary

| | Graphics Capability | | | | | | | | | | I/O Card Type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ES Part Number | Number of Inputs | VGA (640 x 480) | WVGA (852 x 480) | SVGA (800 x 600) | WSVGA (1024 x576) | XGA (1024 x 768) | WXGA (1365 x 768) | SXGA (1280x 1024) | UXGA (1600x 1200) | ES Part Number | Connector Type |
| Analog (RGB) | ES5959 | 2 | ✔ | ✔ | ✔ | | | | | | ES5959 / C | • 75 ohm BNC (female, 5 per channel) |
| | ES5961 | 1 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ES5961 / CA | • 75 ohm BNC (5 off, female) |
| Digital DVI | ES5957 | 2 | ✔ | | ✔ | | | | | | ES5957 / C | • DVI - D (female, 1 per channel) |
| | ES5961 | 1 | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ES5961 / CD | • DVI - D (female, 1 off) |

| | Video Capability | | | | | | | | I/O Card Type | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ES Part Number | Number of Inputs | Composite | S-Video | YUV / RGB | ATSC 480p | ATSC 720p | ATSC 1080i | ES Part Number | Connector Type |
| Analog | ES5959 | 2 | ✔ | ✔ | ✔ | | | | ES5959 / C | • 75 ohm BNC (female, 5 per channel) |
| | ES5961 | 1 | | | ✔ | ✔ | ✔ | ✔ | ES5961 / CA | • 75 ohm BNC (5 off, female) |
| Digital SDI | ES5957 | 2 | | | ✔ (SMPTE 259M 270 & 360Mb/S) | | | | ES5957 / C | • 75 ohm BNC (female, 1 per channel) |
| | ES5961 | 1 | | | ✔ (SMPTE 259M-C 270Mb/S) | | ✔ (SMPTE 292M) | | ES5961 / CD | • 75 ohm BNC (female, 1 per channel) |



### Vector Card Cages

- There is a choice of either a 5U or 10U rack mounting card cage.
- Both cages are fully compatible with the entire Vector card range and both may be controlled using C-through software.
- A system manager card is supplied as standard leaving up to 5 (5U cage) or 13 (10U cage) slots remaining for input and output cards.

## Specification

### Inputs

All inputs have full auto detect capability.
Each input channel is completely independent and may process any of the supported source types.
Each source may be displayed on any output, either as a single, as a magnification or as a minification of the original (one minification per source).

### Synchronization

Source update rates are synchronized to one of 50Hz, 59.94Hz or 60Hz rates.
All sources are frame synchronized to one of
- Selected video source
- Internal sync
- External video sync input or another Vector system.

### Outputs

Each output may display between 2, 4 or 9, independent source windows, depending on the output mode. Both standard and high resolution may be mixed in a single card frame.
- Up to 9 output cards per card cage.
- Up to 8 card cages per system.

### Control

**On-board:**
Front panel LCD user interface
Internal show store
Internal image store
8 contact closure show start inputs

**External:**
CT-Commander (Windows 2K/XP)
C-through 2 for Windows (Windows 98/NT/2K)
(refer to user manual for details on time code support for these operating systems).
RS232 control from touch panels and other controllers

### Physical

**10U Card cage:**
431mm (W) x 440mm (D) x 10U (H)
17" (W) x 18.1" (D) x 10U (H)
17Kg (37lbs)
13 usable card slots

**5U Card cage:**
431mm (W) x 440mm (D) x 5U (H)
17" (W) x 18.1" (D) x 5U (H)
11Kg (25lbs)
5 usable card slots

### Power

**Voltage:** 90 - 264V AC @ 50 - 60Hz
**Connector:** 3 Pin IEC
**Consumption:** 10U Cage - 1kW maximum.
5U Cage - 0.6kW maximum.

### Conformance

Designed for UL 1950 and CE Marking

### Order codes

**Main components:**
ES5950 (5U) card cage (including system manager)
ES5951 (10U) card cage (including system manager)
ES5956 2 channel High Resolution output card
ES5957 Dual digital input card
ES5958 4/2 channel video/XGA output card
ES5959 2 channel video/SVGA input card
ES5961 Single Channel High Resolution, digital/analog input card

**Spares:**
ES5951/F Replacement cooling fan
ES5951/P Replacement power supply
ES5951/M User Guide
ES5951/C1 1 slot blanking plate
ES5951/C3 3 slot blanking plate
ES5952 System manager card
ES5952/C Connector card for ES5952
ES5959/C Connector card for ES5959
ES5956/CS & CV Connector card for ES5953 & 5956
(9 way D type connectors, switchable video and TTL Syncs)
ES5958/CS Analog (9 pin) output connector card for ES5958
ES5958/CV Analog (15 pin) output connector card for ES5958
ES5958/CD Digital (DVI) output connector card for ES5958
ES5961 CD Digital input connector card for ES5961
ES5961/CA Analog input connector card for ES5961

**Accessories:**
ES5960 Cross-over RJ45 cable
ES5965 9 pin to 6 pin adaptor
ES5953/C2 Duplicate output connector card


ELECTROSONIC

**Minneapolis**
10320 Bren Road East, Minnetonka, MN 55343
Tel: +1.952.931.7500 Fax: +1.952.938.9311
E-mail: information@electrosonic.com

**Los Angeles**
3320 North San Fernando Blvd., Burbank, CA 91504
Tel: +1.818.566.3045 Fax: +1.818.566.4923
E-mail: information@electrosonic.com

**New York**
11 H Princess Road, Lawrenceville, New Jersey 08648
Tel: +1.609.219.9494 Fax: +1.609.219.1538
E-mail: information@electrosonic.com

**Orlando**
4525 Vineland Road, Suite 209, Orlando, FL 32811
Tel: +1.407.839.1154 Fax: +1.407.839.2055
E-mail: information@electrosonic.com

**London**
Hawley Mill, Hawley Road, Dartford, Kent DA2 7SY
Tel: +44.1322.222211 Fax: +44.1322.282282
E-mail: information@electrosonic-uk.com

**Düsseldorf**
Kronprinzenstrasse 132, D-40217, Düsseldorf
Tel: +49.2832.799646 Fax: +49.2832.799646
E-mail: information@electrosonic-uk.com

**Hong Kong**
702 Lyndhurst Tower,
1 Lyndhurst Terrace, Central, Hong Kong
Tel: +852.2525.1828 Fax: +852.2877.5811
E-mail: infoasia@electrosonic-uk.com

**Web site: www.electrosonic.com**