

# *Brick Videowall Processor*

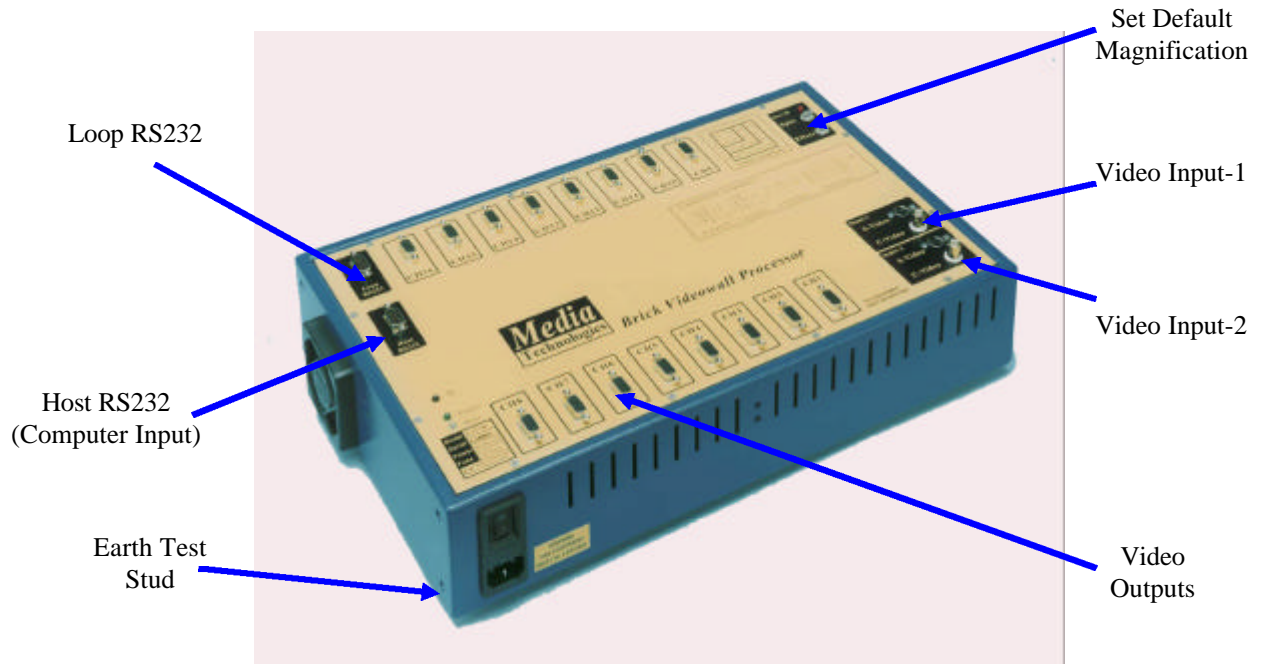
## *User Guide*

***Media***

**Technologies**

## **QUICK START**

The processor defaults to Composite Video input (BNC connector) on Input-1, and RGB output in 3x3 or 4x4 magnification unless otherwise specified when shipped. Video is output on the 9-pin 'D' output connectors. The connectors are shown below.



The default magnification can be changed using the 'Split' switch. Split=0 is invalid, Split=1 selects full frame video on each monitor. Split=2, selects 2x2, Split=3 selects 3x3, Etc. Connect your monitors according to the mapping shown below.

CH 1	CH 2	CH 3	CH 4
CH 5	CH 6	CH 7	CH 8
CH 9	CH 10	CH 11	CH 12
CH 13	CH 14	CH 15	CH 16

To configure a 2x2 processor, connect the four monitors in the array to CH1, CH2, CH5, CH6 as shown above. To configure a 3x3 processor, connect the nine monitors in the array to CH1, CH2, CH3, CH5, CH6, CH7, CH9, CH10, CH11 as shown above.

To configure a 4x4 processor, connect all sixteen monitors in the array as shown above. If you are configuring a larger array using multiple processors, see the special instructions at the end of this user guide.

**IMPORTANT : The switch labelled 'Effect' must be set to zero for correct operation.**

Connect power - 110V or 240V, the processor doesn't care, fire up your video sources and RGB monitors and you should see a high quality magnified picture on your monitors.

**If your monitors are Composite Video, you will need to install and run the software to change the default video output and video input settings - see below.**

## **INSTALLING CONTROL SOFTWARE**

To install the software invoke Windows Explorer and double click on the file called 'INSTALL.BAT' which creates the following directories:

```
C:\BRICK
  EXE
  EXAMPLES
  FIRMWARE
  MANUAL
```

Alternatively, you can use Windows Explorer to copy all the directories across to the target drive.

To run the software, create a link on your Windows desktop by right clicking on the desktop and selecting 'new shortcut'.

The program is c:\BRICK\EXE\BRICK.EXE

We suggest selecting the standard windows icon that looks like a blue window frame. Then after the shortcut is created you can optionally change to our icon by right clicking on the short cut, select 'program', select 'change icon', select 'browse' and then click on file c:\BRICK\EXE\MT.ico

The windows default settings should be Ok for running the software in full screen mode and it has been tested to run under Windows<sup>TM</sup> 95, 98 and ME.

The software uses COM1: as the default port for the Videowall hardware. If you wish to use COM2: you will need to access the 'CONFIGURE/SERIAL PORT' menu in the videowall program.

**IMPORTANT: This software will NOT work properly if any other program is using the selected COM port.**

A selection of sample videowall effects sequences are provided in directory c:\BRICK\EXAMPLES which should be automatically selected when you first run the software.

Select 'SEQUENCES' to see the examples we have provided. If you get a message like 'No sequences defined' use the 'PROJECT' menu to browse the directory structure - you need to select the file 'WALL.EFX' in the 'EXAMPLES' directory.

You can use the 'PROJECT' menu to create your own projects - create another directory, e.g. c:\BRICK\MYSTUFF using Windows Explorer and copy all the files in c:\BRICK\EXAMPLES across to this new directory. Then use the 'PROJECT' menu to browse the directory structure and select the file 'WALL.EFX' in the new 'MYSTUFF' directory. You can then create your own sequence buttons and delete any example ones you do not want to tidy up the pages.

## **VIDEO INPUTS**

The processor has two video input channels - 'Input-1' and 'Input-2' which are internally synchronised to enable wipes between different sources.

Each video channel has selectable Composite Video and S-Video inputs. The Composite Video inputs are on standard BNC connectors, the S-Video inputs are on standard consumer S-Video connectors

The processor defaults to Composite Video input on Input-1 on power-up unless the default has been changed using the software.

The connector pin configurations are detailed below and are inscribed on the processor front panel for convenience.

### ***Using the two video input channels***

Normally the processor will only display 'Digitiser-1' - Composite Video or S-Video input depending on default configuration. 'Digitiser-2' is normally only visible on the monitor array if video levels are being changed using the VIDEO menu, or if a Wipe has been executed - see the example software buttons for typical use of the two video channels.

### ***Changing video input settings***

To change the video input settings, click on VIDEO, click on INPUT and a bank of sliders and buttons will be visible. If the Brick processor is connected to the PC COM port, the current values will be pre-set on the sliders. Change the video levels and video type (Composite Video, S-Video) and video system (PAL, NTSC, SECAM) using the buttons and sliders.

Select SAVE IN FLASH to configure the processor to use these values as power-up defaults.

### ***Multiple Processor Arrays***

If you have a multiple processor configuration, you will need to select the Unit-ID to send video input and output commands to the target processor. Click on CONTROLS, click on UNIT-ID and select the target processor address (0-15). Don't forget to do this each time you want to address a different processor.

If you have purchased a multiple processor array configuration, you will notice that example sequence scripts have lines containing the text 'Unit 0', 'Unit 1', etc. The sequence compiler switches the target processor address automatically for all following command lines until another 'Unit X' command is detected.

## **VIDEO OUTPUTS**

The video outputs can be configured for RGB mode or Composite Video mode using the software. The video output connector is dual mode. RGB and Composite Video modes can not be selected simultaneously. All video output connectors are identical.

### ***Changing video output settings***

To select RGB or Composite Video output mode, click on VIDEO, click on OUTPUT and select the system required.

Interlaced or non-interlaced modes can be selected under the VIDEO menu. Normally, interlaced modes give best display resolution and noise performance, but select non-interlaced mode if graphics or other material with a lot of horizontal features are apparent, to reduce flicker.

Select SAVE IN FLASH to configure the processor to use these values as power-up defaults.

## **COMPUTER CONTROL**

The processor is controlled using RS232 commands, typically from a PC or any other RS232 capable control device such as Crestron™ or AMX™ systems.

The RS232 settings are as follows and for simplicity cannot be changed.

<b>Baud Rate</b>	<b>: 19,200</b>
<b>Bits per Character</b>	<b>: 8</b>
<b>Parity</b>	<b>: None</b>
<b>Stop Bits</b>	<b>: 1</b>

A command protocol is implemented, details of which can be found in the Advanced User Guide supplied on the software diskette.

The processor can also accept single character commands mapped to complex sequences which can be pre-loaded in the processor Flash memory. This enables live shows to be run using the PC keyboard and a simple terminal program (like that supplied with Windows) to initiate fast real-time effects changes. This mode has proved very popular with some of our technical AV customers.

For more detailed technical information, see the user manual (Manual.PDF) supplied on the software diskette, or on our web site.

## **IMPORTANT NOTE**

The PC software will NOT work properly if any windows program is running which uses the COM port required by our software. Close down all programs which may be causing the COM port to be busy.

A common mistake is to open more than one instance of our software under Windows.

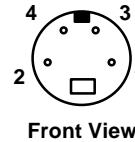
**Ensure only ONE instance of our software is running at one time.**

## **RS232 CONNECTOR PIN CONFIGURATIONS**

The processor is controlled via the Host RS232 connector. The connector is a standard 9-pin 'D' connector with a one-one pin mapping to the standard IBM PC COM port connectors - only 3 wires are required for correct operation. The Loop RS232 connector is only required when other RS232 devices, typically stacked Brick processors need to be controlled from a single PC COM port. The Loop RS232 connector is a standard 9-pin 'D' connector with a 1-1 pin mapping relative to THE Host RS232 connector, to enable units to be daisy chained (Loop RS232 <-> Host RS232, etc.).

### ***S-Video input connector pin configuration [ 4-pin Mini DIN ]***

Pin	Signal	Type
1	'Y' Screen / GND	-
2	'C' Screen / GND	-
3	'Y' input	Input
4	'C' input	Input



### ***Video output connector pin configuration [ 9-pin Female 'D' ]***

Pin	Signal	Type
1	Red	Output
2	Green	Output
3	Blue	Output
4	Dual Function - i) Composite Video ii) RGB : Negative Composite Sync	Output
5 - 9	GND	-

### ***Host RS232 connector pin configuration [ 9-pin Male 'D' ]***

Pin	Signal	Type
1	Not used	
2	Host-TX	Output
3	Host-RX	Input
4	Not used	
5	GND	-
6 - 9	Not used	

The connecting cable for the IBM-compatible PC (supplied) requires only Pin-2 to Pin-2, Pin-3 to Pin-3 and Pin-5 to Pin-5 connected. Both cable connectors are Female 9-pin 'D'.

### ***Loop RS232 connector pin configuration [ 9-pin Male 'D' ]***

The loop cable requires only Pin-2 to Pin-2, Pin-3 to Pin-3 and Pin-5 to Pin-5 connected. Both cable connectors are Female 9-pin 'D'.

Pin	Signal	Type
1	Not used	
2	Host-RX	Input
3	Host-TX	Output
4	Not used	
5	GND	-
6 - 9	Not used	

## **SPECIAL INSTRUCTIONS FOR LARGER ARRAY SIZES**

If you have purchased several processors to assemble a videowall array larger than 4x4, connect the processors as described below.

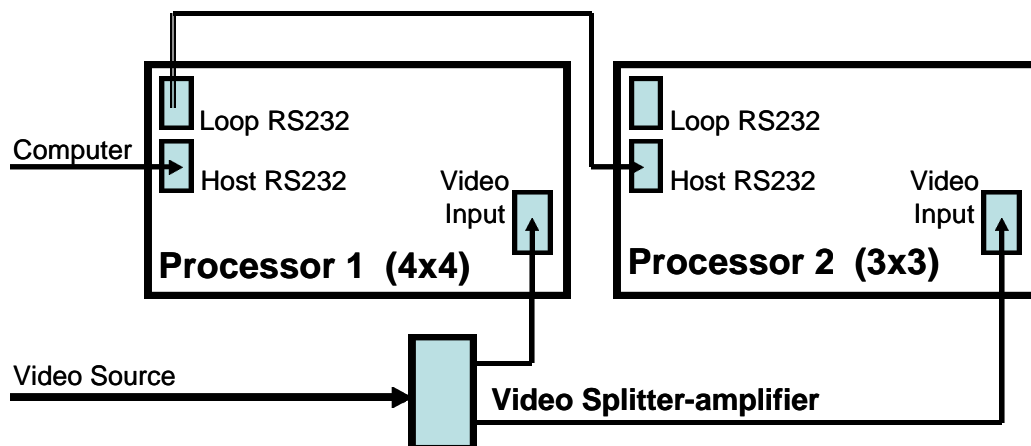
### **5x5 Array**

A 5x5 array is configured using a 4x4 processor (Processor-1) plus a 3x3 processor (Processor-2). Connect the monitors in the array as shown in the table below.

Processor 1 CH 1	Processor 1 CH 2	Processor 1 CH 3	Processor 1 CH 4	Processor 2 CH 1
Processor 1 CH 5	Processor 1 CH 6	Processor 1 CH 7	Processor 1 CH 8	Processor 2 CH 2
Processor 1 CH 9	Processor 1 CH 10	Processor 1 CH 11	Processor 1 CH 12	Processor 2 CH 3
Processor 1 CH 13	Processor 1 CH 14	Processor 1 CH 15	Processor 1 CH 16	Processor 2 CH 5
Processor 2 CH 6	Processor 2 CH 7	Processor 2 CH 9	Processor 2 CH 10	Processor 2 CH 11

You must connect the video input source(s) to BOTH processors - this requires a 2-way video splitter-amplifier (not supplied) as shown below.

The processors are controlled using a daisy chain loop RS232 cable (supplied). Connect the processors as follows.



### **Connecting 4x4 and 3x3 Processors for a 5x5 array**

The 4x4 processor is configured at the factory to respond to commands addressed to Unit-0. The 3x3 processor is configured at the factory to respond to commands addressed to Unit-1.

See example sequences provided on the software disk.



## **EARTH SAFETY TESTING**

This unit **MUST** be earthed via the mains inlet connector for safe operation. The unit should be checked for chassis earth continuity before installation, and periodically. An earth stud is provided for electrical safety checking as shown in the diagram on Page 1.

**IMPORTANT** : Do **NOT** attempt to check electrical safety using any of the connectors or other screws or the unit will be damaged and the warranty voided.

## **SPECIFICATION**

The following technical details are subject to change without notice.

Contact us for the latest specification.

<b>Enclosure</b>	Welded Steel, 430mm x 265mm x 85mm Suitable for standard 19" rack installation - shelf mounting
<b>Video Inputs</b>	2 Sources with internal video timing synchronisation
<b>Video Input Format</b>	Standard Video - 50/60Hz field rate, 15,625Hz line rate Composite Video, PAL,NTSC,SECAM, 1V p-p / 75Ω S-Video, 0.7V p-p / 75Ω
<b>Video Conversion</b>	27 MHz sampling [ YUV 4:2:2 ] Software control of video levels - Brightness, Contrast, Saturation, Hue.
<b>Video Outputs</b>	Software selected type: RGB + Composite Sync, 0.7V p-p /75Ω Composite Video - Software selected 1V p-p / 75Ω PAL, NTSC, SECAM
<b>Display Resolution</b>	720 x 576 Interlaced. No motion artifacts
<b>Number of Monitors</b>	16 monitors - CRTs, Cubes, Projectors or Flat panels. Units can be stacked to support up to 64 monitors.
<b>Effects Sequence Control</b>	MS-DOS software package (runs under Windows™). Download sequences for stand-alone operation. Sequences selected using panel switch or optional infra-red handset.
<b>Power</b>	100 VAC to 240 VAC, 47Hz or 440Hz /50W Max.
<b>Weight</b>	7 kg
<b>Environment</b>	Temperature range 5° - 30° (Integral Fan)
<b>Effects Library</b>	Magnify 1 – 8 Switch Video Inputs Colour wash - select different colours on different monitors Freeze Strobe Text and Graphics Overlays - download your logo bitmap, etc. Wipes between Video and Wash Wipes between video sources Zoom to small image Bounce small image Minify image Pixel intensity effects - 'solarise', 'negative' and 'dazzle' Set large pixels - 'pixellate'  Other effects in development - see <a href="http://www.mediat.co.uk">www.mediat.co.uk</a>

**For further information on our products, please contact us:**

Media Technologies  
361 Mill Road  
Colchester  
Essex, CO4 5GG  
United Kingdom

Telephone : +44 7885 256665

Facsimile : +44 1 206 752451

Email : sales@mediat.co.uk

Internet : <http://www.mediat.co.uk>

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