



Brick-2 Videowall Processor

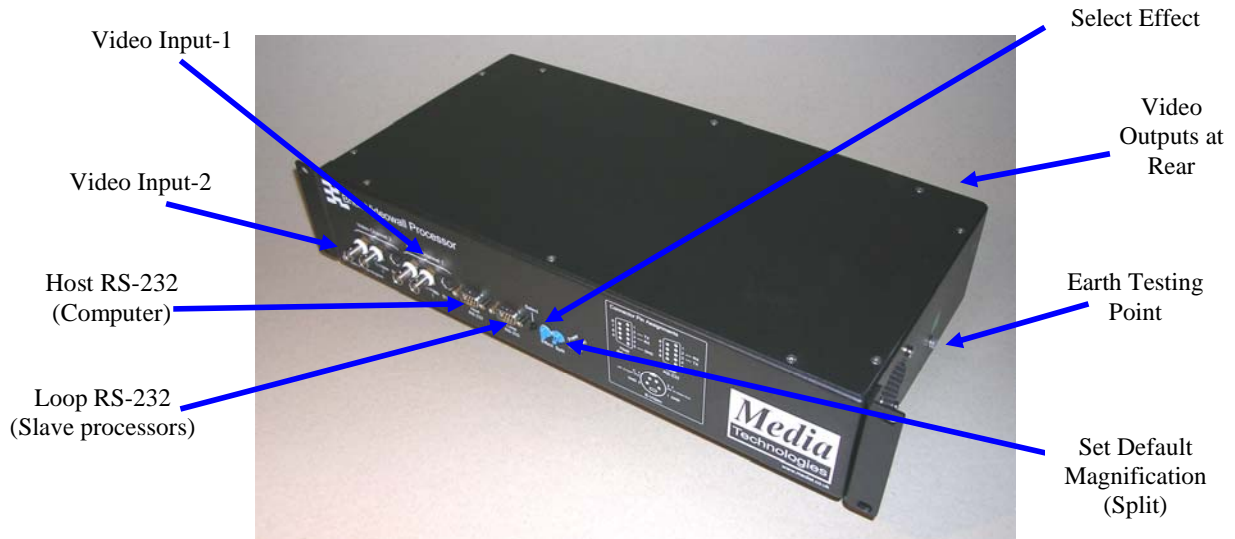
Quick Start Guide

Media
Technologies

QUICK START

Video inputs and control connectors are located at the front of the unit.

Video is output on the RCA/Phono connectors at the rear of the unit. The default input is Video Channel-1 (C-Video-1), and Composite-video output.



IMPORTANT : Ensure the 'Effect' switch is set to zero on power-up.

The default magnification is set using the 'Split' switch. 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, also detailed on processor rear panel.

CH 1	CH 2	CH 3	CH 4	CH 17
CH 5	CH 6	CH 7	CH 8	CH 18
CH 9	CH 10	CH 11	CH 12	CH 19
CH 13	CH 14	CH 15	CH 16	CH 20
CH 21	CH 22	CH 23	CH 24	CH 25

To configure a 2x2 magnification, connect the four monitors in the array to CH1, CH2, CH5, CH6 as shown above. To configure a 3x3 magnification, connect the nine monitors in the array to CH1, CH2, CH3, CH5, CH6, CH7, CH9, CH10, CH11 as shown above. Similarly for 4x4 and 5x5 arrays.

Connect power, switch on the unit and your video source and monitors and you should see a high quality magnified picture on the array of monitors.

The PC software needs to be installed to change the video input and output settings.

INSTALLING CONTROL SOFTWARE

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

```
C:\BRICK2
    EXE
    EXAMPLES
    FIRMWARE
    MANUAL
```

You can also use Windows™ Explorer to copy all the directories across to the target drive.

The current version of our control software is MS-DOS based and has been tested to run under the following versions of Windows™: 95, 98, ME, XP and 2000. It has also been tested on the Macintosh using MS-DOS emulation. Future software versions will be Windows™ based.

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

The executable program is C:\BRICK2\EXE\BRICK2.EXE

The windows default settings should be Ok for running the software.

Choose any Windows™ icon. After the shortcut is created you can optionally change to the Media Technologies icon by right clicking on the short cut, select program, select change icon, select browse and click on our icon file C:\BRICK2\EXE\MT.ICO

Be careful not to run more than one instance of the software or the serial communications will not work. Close any multiple instances of the software.

A selection of sample effects sequences are provided in C:\BRICK2\EXAMPLES which should be automatically selected when you first run the software.

On running the software, a graphical screen will appear with menus accessed using the mouse and left clicking on the buttons as follows.

Select 'SEQUENCES' to see the examples we have provided. If you get the message 'No sequences defined' use the 'PROJECT' menu to browse the directory structure. You need to click on the file C:\BRICK2\EXAMPLES\WALL.EFX

The software uses PC port COM1: as the default. If you wish to use COM2: you will need to access the 'CONFIGURE/SERIAL PORT' menu in the software and select COM2:

This selection will be automatically saved ready for next time the software is used.

You can use the 'PROJECT' menu to create your own projects - create another directory, for example C:\BRICK2\MYSTUFF using Windows Explorer and copy all the files in C:\BRICK2\EXAMPLES across to this new directory, then using the software, create your own buttons, deleting the examples you do not want.

VIDEO INPUTS

The processor has two independent video input channels - 'Video Channel-1' and 'Video Channel-2' which are internally synchronised to enable glitch free switching and real-time wipes between different sources.

Each video channel has two Composite-video inputs plus one S-video input. The Composite-video inputs are standard BNC connectors, the S-video inputs are standard mini-DIN connectors

On power-up the processor defaults to Video Channel-1 / C-Video-1 unless the default has been changed using the control software.

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

Using the two video input channels

Normally the processor will only display Video Channel-1 depending on effects configuration.

Video Channel-2 is normally only visible on the monitor array if video levels are being changed using the VIDEO/INPUT menu, or if a wipe effect has been executed, or if individual monitors have been sent an effect to select Video Channel-2.

See the example software buttons for typical use of the two video input 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.

To enable automatic switching between NTSC, PAL, SECAM select AUTO from the video system set of buttons. When a valid signal is present on input channel 1, the NTSC, PAL or SECAM button will be highlighted as appropriate.

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

Both 50Hz and 60Hz variants of PAL, NTSC and SECAM are supported. If you require a variant not currently supported, contact us and we will endeavour to provide you with a software update.

VIDEO OUTPUTS

Composite-video is output on the RCA/Phono connectors on the rear panel, and S-video is output on the mini-DIN connectors on the rear panel.

IMPORTANT NOTE

S-video and Composite-video can NOT be output simultaneously as they share a common video amplifier internal to the unit.

It is possible to configure two independently buffered composite-video outputs via the s-video connector. Both will display the same video image. Consult us if you want to use this feature.

Changing video output settings

To select S-video or Composite-video output mode, click on VIDEO, click on OUTPUT and select the system required. Composite-video and S-video cannot be used simultaneously and all processor outputs are set to the same mode.

PAL, NTSC and SECAM output modes can be selected independently of the input. Or linked to the input using “Link to input” button.

The output will always be the same frame rate (50Hz or 60Hz) as the input.

Colour bars can be selected.

Pixel smoothing can be selected (select filter OFF, Horizontal, Vertical, Horizontal + Vertical).

The processor is shipped with video outputs set to non-interlace mode as the default on power-up to reduce flicker in big picture mode. Interlaced modes provide best display resolution and noise performance in single image mode, but interlace mode is unlikely to be acceptable in big picture mode.

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

ALIGNING THE VIDEOWALL IMAGE

Different types of videowall display monitors will require different processor alignment settings to fit the image on the array. Your processor will have been shipped with a rough default alignment which will require adjustment using the control software supplied on the software CD.

Important information on aligning videowalls using 16:3 plasma and LCD monitors can be found in “technote_using_plasma.pdf” supplied on the software CD.

Consult “technote_using_plasma.pdf” and decide which mode you will run your monitors (e.g. Letterbox or Full Screen Mode for 16:9 monitors). Install the software as described previously and connect the PC to the processor using the RS-232 cable supplied.

If you have a multiple-processor configuration to implement a large array, go to Page 8 instructions for larger arrays.

Click on CONFIGURE click ALIGNMENT and select the required split (e.g. X = 4, Y = 4).

There are three alignment adjustments: Column, Row and Monitor (this is a fine adjustment).

To adjust the horizontal position of a column of monitors, click on the rectangle above the column which highlights the column to be adjusted. Adjust left and right using the horizontal slider control.

To adjust the vertical position of a row of monitors, click on the rectangle to the left of the row which highlights the row to be adjusted. Adjust up and down using the horizontal slider control.

To adjust the fine position of an individual monitor, click on an individual monitor and adjust the image position using the horizontal and vertical sliders.

IMPORTANT NOTE: The image will temporarily lose synchronisation if individual monitor alignment is adjusted too far horizontally. Restore synchronisation by moving the slider back into range. This issue will be fixed in future updates.

When you have finished aligning the image, select “Save in Flash” to ensure the processor registers these values on power-up.

Repeat this procedure for each split (e.g. 2x2, 3x3) you wish to use. Each split configuration has independent storage in flash. Exception is individual monitor alignment which is fixed independent of the split.

You can adjust vertical and horizontal split values independently, for example an anamorphic 6x4 split can be adjusted by selecting X-split = 6 and Y-split = 4.

A test pattern can be displayed, but this feature is currently only suitable for square 4:3 arrays. Future updates will support test patterns for 16:9 array formats.

COMPUTER CONTROL

The processor is configured using RS-232 commands, typically from a PC or any other RS-232 capable control device such as Crestron™ or AMX™ systems.

RS-232 control is not required for basic operation as sequences can be downloaded to processor flash memory to enable the processor to execute effects on its own.

Downloaded effects are selected using the “Effect” switch on the processor front panel.

The RS-232 settings are as follows and for simplicity should not be changed.

Baud Rate	: 19200
Bits per Character	: 8
Parity	: None
Stop Bits	: 1

For advanced users who want to control the processor at the hardware level, a complex RS-232 command protocol is implemented, details of which can be found in the Advanced User Guide supplied on the software diskette.

The simple applications, the processor can also accept single ASCII character RS-232 commands mapped to complex sequences which can be downloaded to the processor Flash memory. This enables live shows to be run using the PC keyboard and a simple terminal program (e.g. Hyperterm) to initiate fast real-time effects changes.

The single ASCII character RS-232 command mode has proved very popular with Audio-Visual technician customers.

More details in the Advanced User Guide supplied in directory C:\BRICK2\MANUAL.

SPECIAL INSTRUCTIONS FOR LARGER ARRAY SIZES

The processor can configure different array formats “on the fly” using mapping commands downloaded to the processor. If you have purchased several processors to assemble a large videowall array, connect the processors as described in the file “technote_array_formats.pdf” supplied on the software CD.

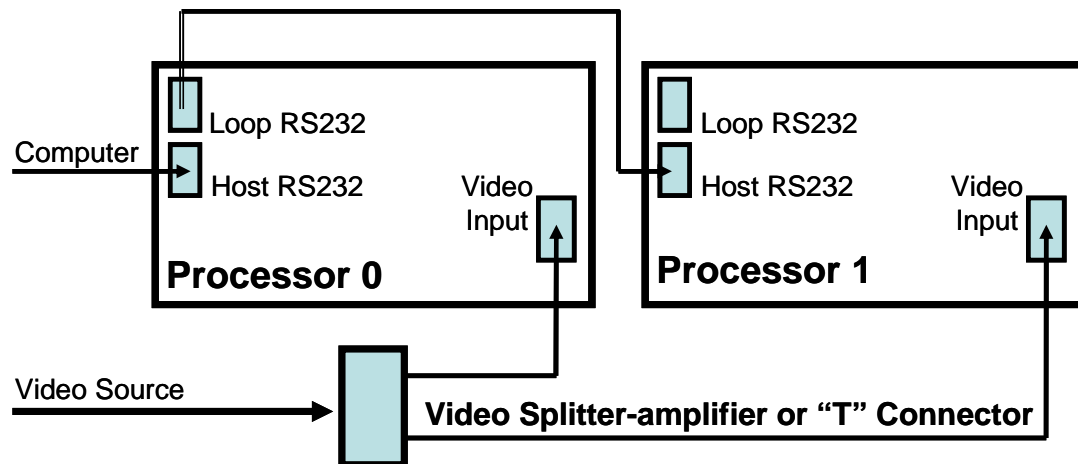
Example : 6x5 Array

An example 6x5 array can be configured using two 4x4 processors (Processor-0 and Processor-1). Connect the monitors in the array as shown in the table below.

Processor 0 CH 1	Processor 0 CH 2	Processor 0 CH 3	Processor 1 CH 1	Processor 1 CH 2	Processor 1 CH 3
Processor 0 CH 4	Processor 0 CH 5	Processor 0 CH 6	Processor 1 CH 4	Processor 1 CH 5	Processor 1 CH 6
Processor 0 CH 7	Processor 0 CH 8	Processor 0 CH 9	Processor 1 CH 7	Processor 1 CH 8	Processor 1 CH 9
Processor 0 CH 10	Processor 0 CH 11	Processor 0 CH 12	Processor 1 CH 10	Processor 1 CH 11	Processor 1 CH 12
Processor 0 CH 13	Processor 0 CH 14	Processor 0 CH 15	Processor 1 CH 13	Processor 1 CH 14	Processor 1 CH 15

You must connect the video input source(s) to BOTH processors - this requires a 2-way video splitter-amplifier (not supplied) as shown below. Alternatively a passive “T” connector can be used. This will result in slightly reduced video quality.

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



Connecting Multiple Processors for larger arrays

When supplied as a pair of processors, one processor is configured at the factory to respond to commands addressed to Unit-0. The other processor is configured at the factory to respond to commands addressed to Unit-1.

ALIGNING THE VIDEOWALL IMAGE

Consult “technote_using_plasma.pdf” and decide which mode you will run your monitors (e.g. Letterbox or Full Screen Mode for 16:9 monitors). Each processor must be aligned individually using the Unit ID button to select each processor in turn. Typically, Unit ID = 0, and Unit ID = 1 for a dual processor setup.

You system will have been shipped with a default array mapping for each processor controlled by a mapping file resident in processor memory and in the PC software directory. If these files do not exist, for example if you have purchased the processors separately, consult the Advanced User Guide for further instructions, including how to set the Unit ID for each processor.

Click Unit ID and select the processor to align. Click CONFIGURE click ALIGNMENT and select the required split (e.g. X = 4, Y = 4).

There are three alignment adjustments: Column, Row and Monitor (this is a fine adjustment).

To adjust the horizontal position of a column of monitors, click on the rectangle above the column which highlights the column to be adjusted. Adjust left and right using the horizontal slider control.

To adjust the vertical position of a row of monitors, click on the rectangle to the left of the row which highlights the row to be adjusted. Adjust up and down using the horizontal slider control.

To adjust the fine position of an individual monitor, click on an individual monitor and adjust the image position using the horizontal and vertical sliders.

IMPORTANT NOTE: The image will temporarily lose synchronisation if individual monitor alignment is adjusted too far horizontally. Restore synchronisation by moving the slider back into range. This issue will be fixed in future updates.

When you have finished aligning the image, select “Save in Flash” to ensure the processor registers these values on power-up.

Repeat this procedure for each processor and each split (e.g. 2x2, 3x3) you wish to use. Each split configuration has independent storage in flash. Exception is individual monitor alignment which is fixed independent of the split.

You can adjust vertical and horizontal split values independently, for example an anamorphic 6x4 split can be adjusted by selecting X-split = 6 and Y-split = 4.

Additional information on connecting multiple processors can be found in “technote_daisychain.pdf” supplied on the software CD.

Some example sequences for larger arrays are provided on the software CD.

PROCESSOR CONNECTOR PIN CONFIGURATIONS

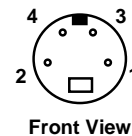
The processor is controlled via the “Host” RS-232 connector. The connector is a standard 9-pin 'D' connector with a one-one pin mapping to the standard IBM PC COM port connectors. Only 3 wires are required for correct operation.

The Loop RS-232 connector is used to daisy-chain multiple Brick processors to support large videowall arrays, it can also be used to enable the processor to control other RS-232 devices in stand-alone (no PC) applications.

The Loop RS-232 connector is a standard 9-pin 'D' connector with a crossover pin mapping relative to Host RS-232 connector, to enable multiple RS-232 devices to be daisy chained (Loop RS-232 to Host RS-232 to Loop RS-232, etc.) using identical cable to the host RS-232 cable supplied with the processor.

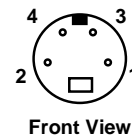
S-video Input connector pin configuration [4-pin Mini-DIN]

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



S-video Output connector pin configuration [4-pin Mini-DIN]

Pin	Signal	Type
1	'Y' Screen / GND	-
2	'C' Screen / GND	-
3	'Y' video signal	Output
4	'C' video signal	Output



Host RS-232 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	

Loop RS-232 connector pin configuration [9-pin Male 'D']

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

EARTH SAFETY TESTING

This unit **MUST** be earthed via the mains inlet connector for safe operation.

An earth stud is provided for electrical safety testing as indicated in the diagram on Page 2 of this guide.

As with any electrical equipment, the unit should be checked for chassis earth continuity before installation, and periodically.

IMPORTANT

Do NOT attempt to check electrical safety using any of the video or control connectors or screws or the unit will be damaged and the warranty voided.

END.

Specification and contact information follows.

SPECIFICATION

The following technical details are subject to change without notice. Please contact us to help you specify the system which best meets your videowall needs at sales@mediat.co.uk.

Enclosure	19-inch 2U rack mounting or free standing (detachable brackets). Welded steel, matt black paint with fingerprint resistant lacquer finish. Size: 430 mm x 250 mm x 88 mm.
Videowall Array Formats	Basic processor supports up to 16 monitors. Expansion to 25 monitors using internal module. Up to 256 LCD panels, Plasma panels, Projectors, Cubes. Consumer TV Monitors with A/V inputs. Square, rectangular and pyramid monitor arrays supported.
Video Inputs	Software selected: 4 Composite-video inputs + 2 S-video inputs. PAL, NTSC, SECAM, 50/60 Hz field rate, 15.625 kHz line rate. Software control of video input functions. Brightness, Contrast, Saturation, Hue with storage in processor flash memory.
Video Conversion	2 independent video input processors with internal synchronisation. CCIR601 sampling @ 27 MHz.
Display Resolution	720 x 576/480 interlaced and repeat field modes.
Video Outputs	Composite-video: RCA/Phono Connector, 1V p-p /75 Ohm. Software selectable PAL or NTSC. S-video: Mini-DIN Connector, 1V p-p /75 Ohm. Software programmable horizontal and vertical monitor offsets.
Effects	Magnifications 1 to 16 with no motion artifacts. 2D Pixel interpolation for ultra-smooth magnified image. Display text and graphics messages including your logo. Freeze modes including variable rate strobe. Colour washes with 64k different colours on each videowall monitor. Wipe between 2 video input channels. Wipe between colour wash and video. Interlace and repeat-field display modes. Bouncing images. Solarised, negative, dazzle pixel intensity effects. Wash colour cycling – 64k different colours on each videowall monitor. Effects continuously under development with free upgrades via our website.
Effects Control	Control software included with processor. Download your effects sequences for stand-alone operation. Optionally trigger downloaded sequences using simple RS-232 terminal. Multiple processors controlled using RS-232 daisy-chain.
Electronics	All electronics mounted on single circuit board, upgradeable to 25 channel.
Power	Internal 40W, auto-switching 100VAC to 240VAC, 0.315A, 50/60 Hz.
Environment	Integral low noise fan. Storage: -40° to +158°F (-40° to +70°C) / 10% to 80%, non-condensing. Operating: +41 to +95°F (+5 to +35°C) / 10% to 80%, non-condensing.
Weight	Product weight: 5 kg (11 pounds). Shipping weight: 7 kg (15 pounds).
Warranty	Warranty: 2-years parts and labour.

For further information on our products, please contact us.

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