

# Litile34<sup>™</sup> OPERATION MANUAL



# Seamless Tiled Panel Wall Solution for Large Area Digital Signage Display

(1st Edition 3/25/2009)

All information is subject to change without notice.

Approved by	Checked by	Prepared by
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# **RECORD OF REVISION**

Version and Date	Page	Old Description	New Description	Remark
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# IMPORTANT INFORMATION

#### EMC conformance

All Litile34 equipment and accessories are designed to the best industry standards for use in the recreational marine environment. The design and manufacture of Litile34 equipment and accessories conform to the appropriate ElectroMagnetic Compatibility (EMC) standards, but correct installation is required to ensure that performance is not compromised.

### Waste Electrical and Electronic Equipment Directive



The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some of Litile34's products, we support its policy and ask you to be aware of how to dispose of this product.

The crossed out wheelie bin symbol, illustrated above, and found on our products signifies that this product should not be disposed of in general waste or landfill. Please contact your local dealer, national distributor or Technical Services for information on product disposal.

#### Restriction of the use of certain Hazardous Substances



This product uses components that comply with the requirements of the Restriction of the use of certain Hazardous Substances (RoHS) Directive 2002/95/ EC.

#### Warranty

To register your new Litile34 product, please go to:

http://www.signage.litemax.com/

It is important that you complete the owner information to receive full warranty benefits, including notification of software updates if they are required.

# SAFETY WARNING

Installation should only be carried out by suitably qualified personnel in accordance with local wiring regulations.

The display must be earthed.

Only suitably qualified personnel to open and work inside the display modules including changing backlight.

Disconnect from mains supply by removing the mains cable before opening the back panels. The appliance connector is used as the disconnect device.

The display front surface should be cleaned with a lint free cloth lightly dampened with Iso Propyl Alcohol. Do not use other solvents to clean.

Steel toe cap safety footwear should be worn when lifting or handling the units. Appropriate lifting equipment should be used. Modules should not be lifted by one person.

The equipment must be installed securely and bolted to the ground to avoid toppling. Each module must be bolted to each of its neighbouring modules and if necessary securely attached to a fixing point above the display to avoid toppling. A structural engineer should be consulted prior to installation if there is any doubt about the structural integrity of the surface on which the display is to be built.

The modules should be stacked no higher than 4-high without additional structural support. Seek advice from a suitable qualified structural engineer.

This equipment complies with IEC60950-1:2002 Information Technology Equipment. Safety. General Requirements.

# Packing List

Before installation, please ensure the following items have been shipped:

- #1 1 x Litile34 module Display
- #2 1 x MDU Controller
- #3 1 x Power Adapter (12V 5A 60W output) for MDU Controller
- #4 1 x CAT7 D-SUB 9P signal cable (6000 mm)
- #5 1 x DVI-D Cable (3000 mm)
- #6 1 x TVone C2-2000 Series Video Scaler Package including
  - 1 x C2-2200 Video Scaler
  - 1 x Power Adapter (12V 3.3A output) for video scaler
  - 1 x Power Cord (1830 mm)
  - 1 x C2-2000 Series Video Processor Operation Manual

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.



# Ordering Information

#### Model Number Description

SLD3416-SNN-A01 34" Seamless Sunlight Viewable Tiled Panel Wall Display (Litile34), Video Wall Controller (MDU + TVone C2-2200 Video Scaler Package)

# **Optional Accessories**

xxxxxxxxx CAT7 D-SUB 9P signal cable (6000 mm) 840612051101 Adapter 12V 5A 60W for MDU Controller 810618301010 Power Cable USA Type 810618301090 Power Cable Europe Type 810618301030 Power Cable Japan Type

### 1.0 Siting the Litile34 modular display

#### About Litile34<sup>™</sup> Seamless Tiled Panel Wall Solution

The Litile34 modules are intended to operate in sheltered indoor environments. They should not be used out of doors or where they could get wet. The modules remain visible in high ambient light conditions; however it is best to avoid siting the display where sunlight could fall directly on the front of the display screen.

Care should be taken to provide adequate ventilation or airconditioning for cooling. This equipment is designed for safe operation at ambient temperatures between 5°C and +25°C. For optimum performance, the ambient temperature should be maintained between 10°C and 20°C.

The rear should not be obstructed. The modules should be a minimum of 1m from any wall. Rear access is required for servicing purposes.

Refer to the Installation Instructions for details of how to move and install the modules.

This handbook contains important information on the installation, operation and maintenance of the Litile34 Sunlight Viewable Seamless Tiled Panel Wall Solution range which is intended for use in the recreational digital signage market and covers all models.

# 2.0 Litile34 System Diagram

Your Litile34 Sunlight Viewable Seamless Tiled Panel Wall Solution's system diagram shown as below:

### Litile34 System Block Diagram



# 3.0 Connecting Power To The Litile34 Display

It is important that your new display is installed and operated in accordance with the instructions provided in this handbook. Failure to do so could result in poor product performance and may invalidate your warranty.

The power cable should be connected to the power input socket on the back of the display. There is a power switch on the back of each module for switching the units on and off.



It is important to make sure that the controller is switched on BEFORE the modules to ensure the correct boot-up sequence for the modules.

The Modules are powered by 220 to 240V, 50-60 Hz AC single phase mains. An earth connection is essential (through the mains plug supplied). For installations requiring more power than available from a single ring main, a three phase supply should be prepared. Please contact Litemax for further detail if this is required. In-line delay relays (default 5 seconds per Litile34 module) are recommended if powering up automatically, to sequence the start of the modules and avoid power surges and tripping of circuit breakers.

Remarks: Please be noted that you need another independent power source cable input per each 4 Litile34 daisy chain loop.

Daisy Chain in-line delay smart board



Normal setting



5 seconds delay setting



10 seconds delay setting



15 seconds delay setting



### 20 seconds delay setting



### 4.0 Setting up the Video Wall Controller

The video wall controller consists of video scalers (currently TVOne C2-2200) and Litemax MDU controllers. Each scaler and MDU pair can drive up to six Litile34 modules in a number of different configurations. The modules are connected to the MDU controllers via a CAT7 cable with 9-pin D-type connectors as supplied.

Four Video Wall Controllers (TVone Scaler and MDU Controller) sets. Each set will drive up to 6 Litile34 modules



### Video Wall Controller Control and Features (Front View)

U	p Store	Menu	Freeze Zoom Pan
Previous Disp — 0 Exit	Select Right	C2-2200 Video Scaler	
Do	wn	RGB, DVI, YC/CV1,YC/CV2,YC	CV2YUV Standby/On

#### Video Wall Controller Connectors (Back View)



Option DC 12V IP PC/HD-DVI-D (Inputs) PC/HD-DVI-I (Ouputs)

Video Wall Controller Cable Connection



- 1. 12V DC input power for MDU
- DVI-I source/cable input from TVone scaler (#6)
  6 x CAT7 D-SUB type 9P cable to Litile34 modules

- 12V DC input power for TVone scaler
  DVI-D input source from media player or PC
- 6. DVI-I output source to MDU

### 5.0 Displaying an image

A suitable image source should be plugged into the scaler unit input (either DVI, VGA or composite) and if more than one scaler is being used (for larger displays), the same image should be applied to each scaler via a suitable distribution amplifier (optional extra). Audio should be directed through a separate Amplifier and speaker system (not included).

Depending on the layout of the modules, (there are 5 options to choose from:  $2x^2$ ,  $3x^2$ ,  $2x^3$ ,  $1x^6$ ,  $5x^1$ ), the output resolution on the scaler must be set to match this format (You can refer to the TVone C2-2000 series video processor operation manual as supplied for detail). Also, the MDU mode setting must be set accordingly.

The default scaler settings should automatically fit the whole input image onto the output window. If however, this controller set is required to drive only a small section of the overall screen, the zoom and pan settings can be adjusted to focus on only the required section of the whole picture for the modules being driven by that particular controller set.

Conversely, if the overall screen is smaller than the output resolution of the MDU, then the shrink settings can be used to squeeze the picture onto the modules being driven.

For unusual shaped screens, bespoke content is recommended and output from a computer as a part of a larger standard resolution format. Any areas of the output image that are not covered by a module will not be visible.

### 6.0 Settings for Scaler and MDU controller

The MDU unit has 6 nine-pin D-SUB type outputs on the rear of the unit. The output from these connectors is fixed depending on the format of display being driven. Below are details of which output drives which module in the various formats. A number can be allocated to the outputs on the rear of the MDU unit as follows:



When viewing the display from the REAR, connect the MDU outputs to the modules as follows (the convention is that output '1' from the MDU is ALWAYS the bottom-right module (when viewed from the rear of the screen) and then 2,3,4,5,6 follow, first along the ROWS, and then for the next COLUMN above.

Mode	Mode0			1						Мо	de5	
MDU	TVone	4	1	3							6	
Graphics Mode	Resolution		<b>`</b>	1								5
0	107		-	I								5
2	111	Мос	Mode2									4
3	108	5 4 3					2	2 1			3	
4	109											-
5	110	Мо	Mode3 Mode4								2	
*Rear view of cor from Modules to	6	5	5	4		6		5			1	
	3	}	2	1		4		3				
						_	2		1			

On the front of the MDU is a push button, which can scroll graphics mode through modes 0-7 and an on/off switch In order to set up the MDU and the TVOne C2-2200 for each of the above module configurations, the following settings must be selected:

MDU Graphics Mode	Litile34 Module Configuration	Tvone Output Resolution Setting	TVone Output Resolution
0	VGA (2 x 2)	107	820 x 610 60Hz
1	Void	Void	Void
2	5 x 1	111	2046 x 306 60Hz
3	3 x 2	108	1226 x 610 60Hz
4	2 x 3	109	820 x 914 60Hz
5	1 x 6	110	412 x 1826 60Hz
6	Void	Void	Void
7	Void	Void	Void

For example: We choose Mode 5 (1x6) as the display style

1. Please adjust the TVone "Output res." to [110] and you will see the following screen



2. Please make sure you connect the CAT7 D-Sub 9P cable to the Litile34 modules as



2. Zoom the image (H/V) as you want in the "Adjust windows" of the sub menu group.

1	ONE	
CORIO 2 Powered	Adjust windows Zoom H/VE2503100 C2-2200 Video Scaler	.533:1
	Graphics Mode 5 1 × 6_	

On the front of the TVOne C2-2200 box, there is an LCD screen and a 'joystick' to allow various parameters to be adjusted. Follow the on screen menus to adjust the output resolution setting.



12V DC power supplies are supplied with the units. These are required to power both the MDU and the TVOne C2-2200.

If using a VGA input to the TVOne and more than one set of controllers is being used, each TVOne box should be driven with the same VGA source via a multi-way VGA distribution amplifier.

#### Setting the TVOne C2-2200:

Normally, the settings on the C2-2200 will result in the whole VGA image being displayed on a 3x2 (mode 3) module display. In order to adjust this so that (for example) only the left half or right half of the image is displayed (i.e. for use as half of a 4x3 module display), the settings will need to be adjusted by using the buttons and multi-directional switch on the front of the unit.

At any time during this procedure, pressing and holding in the push button in the centre of the multi-directional switch will SAVE the settings to memory so that they remain even after a power down cycle.



In order to adjust the settings to show the right or left half of the VGA source image, use the push buttons and multi directional buttons to change the H/V zoom % in the zoom menu to stretch the picture to twice it's original width and then adjust the H/V zoom pan% to pan across to the left or right half as required.

2.58m 1520 pix	5	105"	115"	130"	149"	170"	192"	216"	240"	
2.06m 1216 pix	4	86"	98"	115"	136"	159"	182"	207"	232"	
1.55m 912 pix	3	67"	82"	102"	25	149"	174"	200"	226"	
1.03m 608 pix	2	49"	68	912	116"	142"	168"	195"	222"	
0.52m 304 pix	1	34"	58	84	111"	138"	165*	2"	219"	
Size Resolution	Λ				2					] 。
	- 5	ize	0.69m	1.38m 2	2.07m 2.	77m :	3.46m 4	.15m	4.84m	5.53m
FHD:	F	esolution	408 pix	816 pix	1224 pix 1	032 pix	2040 pix 2	448 pix	2856 pix	3264 pix
Ta50x	1080									

When you operate the "Joystick" down to the "MENU" direction, you will enter the "Sub menu" group name setting screen. There will have the following menu group name:

#Sub menu... System: Controls global system parameters for the system unit.

When you operate the "Joystick" to the left direction, you may scroll down to select and modify (press the push button in the centre of the multi-directional joystick switch) the following menu group accordingly.

#Adjust Resolutions: Controls unit's input/output resolution table. (hidden by default - only visible when "Advanced menus" are switched as [ON]) WARNING: Adjust this function with care. DO NOT ADJUST THESE ITEMS UNLESS YOU'RE CERTAIN YOU KNOW WHAT YOU'RE DOING! THE ONLY METHOD TO UNDO CERTAIN CHANGES IS TO UPDATE THE FIRMWARE.

TRY USING THE AUTOSET, SHRINK, SHRINK POS, TL & BR ADJUSTMENTS FIRST

#Adjust Ethernet: Controls IP addresses and network parameters #Adjust Button: Allows CC-300 buttons to be programmed to match the unit #Adjust Sources: Controls signal source input parameters #Adjust Windows: Controls characteristics of the PIP windows #Adjust Outputs: Controls output parameters #Advanced menus: [ON] / [OFF] #Adjust Present: [Load] / [Store] / [Erase]

You may also refer to the TVone C2-2000 series video processor operation manual for detail information as supplied.

## 7.0 Troubleshooting

A general guide to troubleshooting is to consider the system as separate elements, such as: - Power distribution within the Litile34 modules

- Power distribution within the Litile34 module
  Video Scaler / MDU controller settings
- Cabling (CAT 7 cables from MDU to modules)
- Computer system (display settings, operating system)

#### No Image

If the fluorescent lamps are not powered on it may still be possible to see a faint image on the display. A complete lack of image is most likely to be caused by incorrect connection, lack of power, failure to provide a signal or incorrect MDU / Scaler settings

#### Scramble Screen

This occurs when the MDU setting and the output resolution setting on the scaler do not match. Refer to settings table to match the MDU and scaler settings required.

#### Power Cord

Due to the high power consumption needed for the system, please make sure to use the original power cord as supplied to prevent the overheat issue.

#### Image Position

If the image does not appear in the correct position on the screen, the settings on the scaler unit will need to be adjusted.

#### Image Appearance

If a single litile34 shows blank or coloured vertical lines, failed sections, flickering or flashing display, this can indicate a damaged cable or LCD panel. Contact Customer Support at Litemax for assistance.

#### LiTile34

In case of physical damage to the Litile34 requiring replacement, please contact customer support at Litemax.

### 8.0 Maintenance and Services

The display should be serviced at least annually. This should include a lamp change and careful cleaning of the inside of the modules. Please contact Litemax Customer Support for further details.

#### **Optical Fiber**

Fragile parts, especially in the corner. Always protected by the side panel.

#### Cleaning

The display should be cleaned with a dampened cloth. Do not use solvents to clean.

#### **Replacing Fan Filters**

If the display is used in an environment with high levels of dust, the fan filters may start to become blocked, reducing the efficiency of the fans. They should be replaced on a regular and frequent basis.

#### **Customer Support**

If any additional information is required, please contact Litemax Customer Support at the following:-

service@litemax.com

http://www.signage.litemax.com/