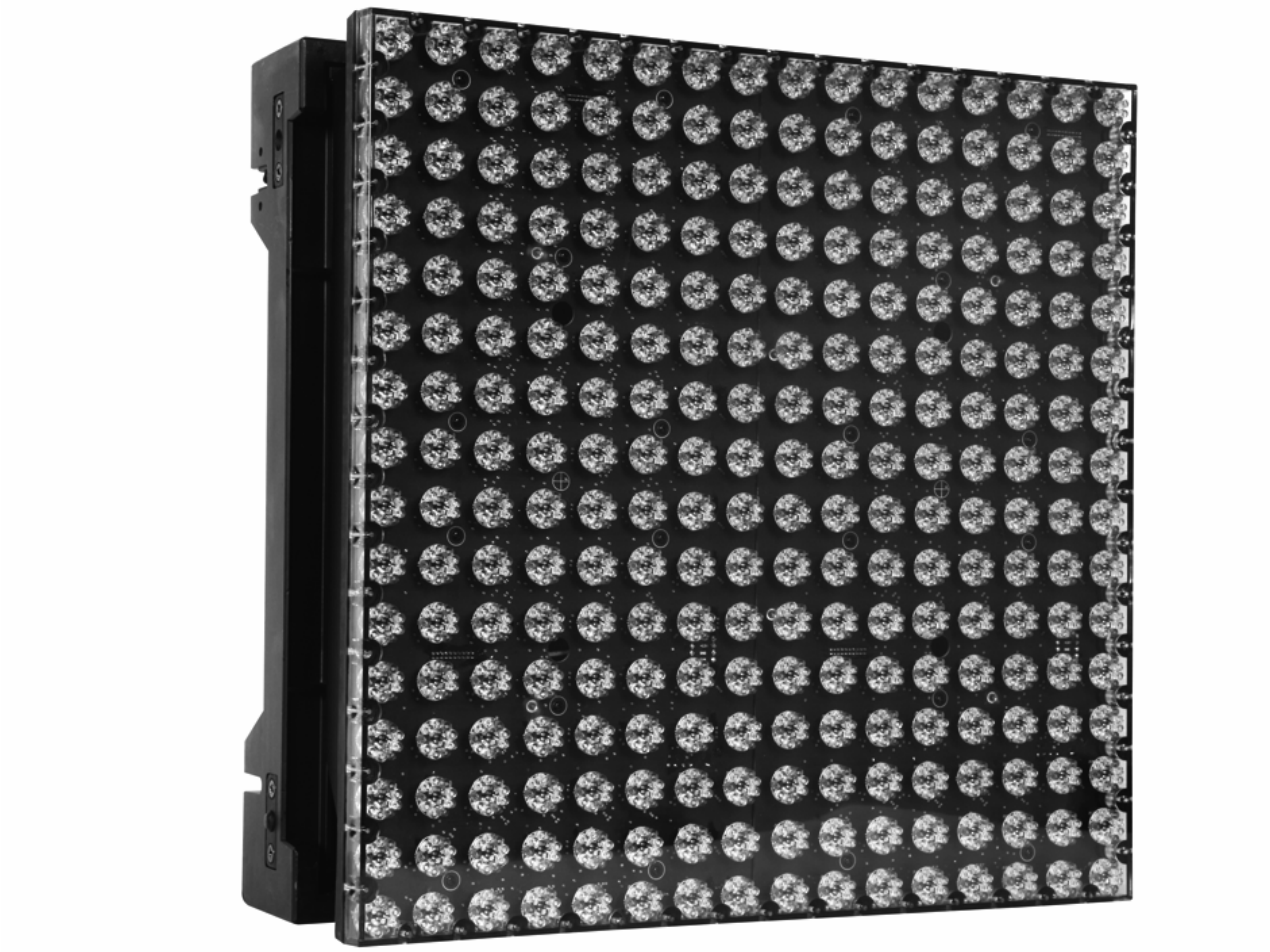
HQ POWER™

VDPLAT2

ANIMATED RGB LED TILE



USER MANUAL

CE

1 INTRODUCTION

1.1 PRODUCT INTRODUCTION

The LED SCREEN is a system that is suitable for a wide range of indoor and outdoor applications such as architectural lighting , stage lighting, advertising & information boards, etc. The system is controlled using the simple and quick to learn LEDstudio software allowing the user to display many different formats of pictures, videos, text and graphics.

On receiving this product, please carefully check that there has been no damage caused in transportation and that the following parts are enclosed:

LEDstudio SOFTWARE

TRANSMITTER CARD（ref.no. T6A）	1pc
DVI SIGNAL CABLE	1pc
RS232 SIGNAL CABLE	1pc
LEDstudio CD-ROM	1pc
USER MANUAL	1pc
NET CABLE	1pc
SIGNAL CABLE	8pcs
LED R16-HUB (RECEIVER)	1pc
LED R16-HUB EXTERNAL POWER SUPPLY	1pc

LED SCREEN PANEL (per square meter)

LED MATRIX PANEL	4pcs
POWER CABLE	4pcs
SIGNAL CABLE	4pcs
MOUNTING SYSTEM	4pcs

* - For a LED MATRIX screen where the Width (W) <96 columns of pixels and the Height (H)<256 rows of pixels. If a larger resolution is required, then extra RECEIVERS and connecting wires will be required. Please review section 2.1 in order to understand the requirements for your application. Please consult with your supplier before assembling your installation.

1.2 SYSTEM REQUIREMENTS

Operating System
Windows XP/XP2

Hardware
CPU: >200MHz
Internal Memory:32M
Display: Standard VGA256 Display(or better)
Display Card: ATI display card (note that the NVIDIA display card is not compatible)

1.3 HOW TO USE THIS USER MANUAL

Carefully read the introduction, paying special attention to the SAFETY WARNING.
Read Section 2 describing how to design a system and how the hardware should be installed.
Follow the instructions in Section 3 explaining settings for INTERFACE CARDS.
Section 4 describes how to install and operate the LEDstudio software

PLEASE READ ALL OF THIS USER MANUAL CAREFULLY BEFORE STARTING INSTALLATION AND OPERATION

1.4 SETUP: QUICK REFERENCE

1- Install the LED SCREEN panels according to the instructions in Section 2.
2- Connect all cables as described in Section 2.3 and 3.4
3-Install the TRANSMITTER CARD in the PC and connect the TRANSMITTER CARD and DISPLAY CARD as shown in Section 3.3
4 -Set the DISPLAY CARD settings as described in Section 3.6
5 -Set the RECEIVER CARD settings as shown in Section 3.5
6 -Install the LEDstudio software, refer to Section 4
7 -Verify that the HARDWARE SETUP settings in LEDstudio are correct by checking with Section 4.3
8 -Test system setup using the tools in the <TEST> menu of the LEDstudio software.

1.5 SAFETY WARNING

IMPORTANT

ALWAYS READ THE USER MANUAL BEFORE OPERATION. PLEASE CONFIRM THAT THE POWER SUPPLY STATED ON THE EXTERNAL POWER SUPPLY UNITS IS THE SAME AS THE SUPPLIED MAINS POWER IN YOUR AREA.

This product must be installed by a qualified professional.
Always operate the equipment as described in the user manual.
A minimum distance of 0.5m must be maintained between the equipment and any combustible surface.
The receiver and power supply units must be placed in a well ventilated area.
Always make sure that the equipment is installed securely.
Keep this equipment away from any form of water or moisture.
DO NOT stand close to the equipment and stare directly into the LED clusters.
Always disconnect the power before attempting any maintenance.
Always make sure that the supporting structure is firmly secured.
The earth wire must always be connected to the ground.
Do not touch the product or power cables if your hands are wet.

⚠ ATTENTION ⚠

This product left the place of manufacture in perfect condition. In order for safe operation and to maintain this condition, the user must always follow the instructions and safety warnings described in this user manual.

Avoid shaking or strong impacts to any part of the equipment.
Make sure that the all parts of the equipment are kept clean and free of dust.
Always make sure that the power connections are connected correct and secure.
If there is any malfunction of the equipment, contact your distributor immediately.
When transferring the product, it is advisable to use the original packaging that the unit left the factory in.

1.6 FEATURES

LEDstudio

Intelligent Tracker - Use the mouse to select and lock area of LED MATRIX.
User Friendly - Software allows the user to operate all functions from the operating windows of the LEDstudio software.
Multimedia - The software allows the user to display a wide range of different picture, animation, video, text and other graphic formats (including BMP / JPG / GIF / PCX / MPG / MPEG / MPV / MPA / AVI / VCD / SWF / RM / RA / RMJ / ASF. . .).

SYSTEM CARDS AND CONNECTIONS

Direct DVI Input - Multi-media card is not necessary
Single Net Cable - Transmitting full color 768×512
Overload Capability - Transmitter (768×512) Receiver (96×256)
Universal Compatibility - Transmitters are universal with all receivers
Multi-application Card - Control Card is compatible with software programs or external software programs
Long-Range Transmission - High-speed data transmission allows the user to control the LED MATRIX from distances of over 100m. (Factory tested at 130m)

LED SCREEN

Color Contrast & Dimming - Independent control of Red, Blue and Green LEDs
Wide Application Range - Suitable for a wide range of indoor large/small architectural, stage lighting, advertisement & information board applications, etc)
Bright LED cluster - Each LED cluster contains 3 red, 3 blue & 3 green LEDs giving out a high light output at each pixel.

1.7 SPECIFICATIONS

LED PANEL

Voltage	AC…220~240V,50/60Hz AC…100~120V,50/60Hz
Rated Power	192W
Output/LED	0.08W
LED/Unit	2304PCS
IP	65
Dimensions	500X500X100MM
Weight	7.1Kg/13.2Kg

SIGNAL CARDS

Gray Scale	Red/Green/Blue 256 grade(8 BIT)
Colors	256×256×256 = 16M
Supports Display	640×480\800×600\1024×768
Supports Display Card	DVI Connector Display Card
Interface Cards (1 set)	Data Collection Card 1pc,Display Driver Card 2pcs
Range	768X512
Dimmer	Hardware 16 grade,Software 256 grade
Frequency	16Mhz、12Mhz、8Mhz、6Mhz(Adjustable)
Sweeping Frequency	>90HZ
Scan mode	16 rows/area
Output Port	2x50
Signal Cable	5-core Net Cable
Maximum Signal Transmission Distance	High Speed>100m(no breaks)
Common Power	+5V

2 LED MATRIX (HARDWARE)

2.1 LIMITATIONS

VERTICAL:

Min.	1 panel = 16 rows of LED clusters = 16 vertical pixels
Max. (1 RECEIVER)	16 panels= 256 rows of LED clusters = 256 vertical pixels
Max. (Multiple RECEIVER)	32 panels=512 rows of LED clusters = 512 vertical pixels

HORIZONTAL :

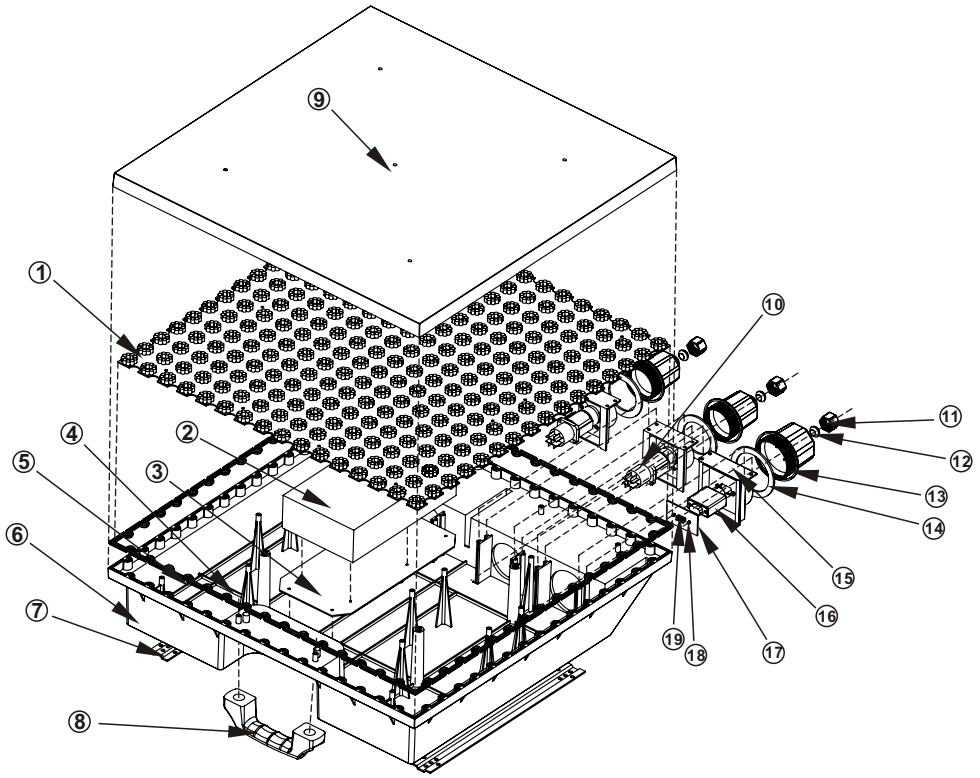
Min.	1 panel = 16 columns of LED clusters = 16 horizontal pixels
Max. (1 RECEIVER)	6 panels= 96 columns of LED clusters = 96 horizontal pixels
Max. (Multiple RECEIVER)	48 panels=768 rows of LED clusters = 768 vertical pixels

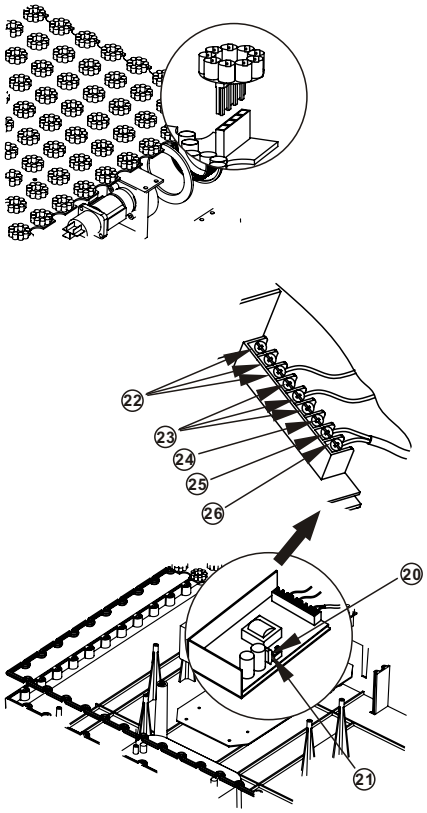
RESOLUTION:

Min.	16 × 16
Max. (1 RECEIVER)	96×128
Max. (Multiple RECEIVER)	768 × 512

2.2 LED SCREEN & MOUNTING SYSTEM

2.2-1 LED SCREEN COMPONENTS

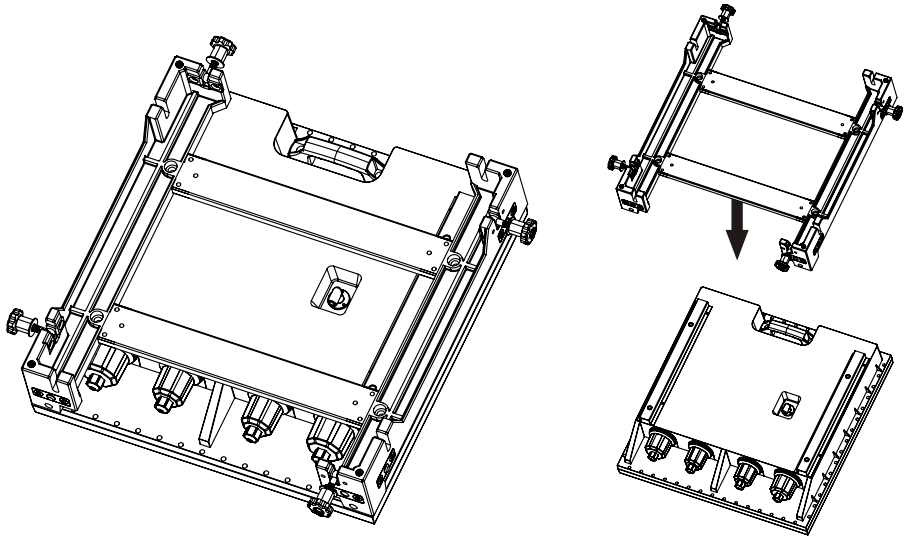




NO.	ITEM
1	PCB
2	Power supply
3	Power supply mounting plate
4	Mounting support B
5	Rubber seal
6	Plastic casing
7	Mounting support A
8	Handle
9	Display cover
10	Power connector
11	Cable watertight locking nut
12	Rubber seal
13	Watertight locking nut
14	Rubber seal
15	Watertight locking thread
16	Signal connector
17	PCB
18	Alan bolt
19	Signal connector
20	Mains power connection
21	Mains power connection
22	DC +12V
23	COM
24	GND
25	Neutral
26	Live

2.2-2 MOUNTING SYSTEM TO LED SCREEN CONNECTION

Each LED SCREEN panel is mounted to the MOUNTING SYSTEM using 4 x M10 Hexagon Bolts. Please note that these bolts only need to be removed when an LED PANEL needs to be moved or serviced when the MOUNTING SYSTEM is locked to other units (and it is not possible to unlock the MOUNTING SYSTEM).



M10 Hexagon Bolf

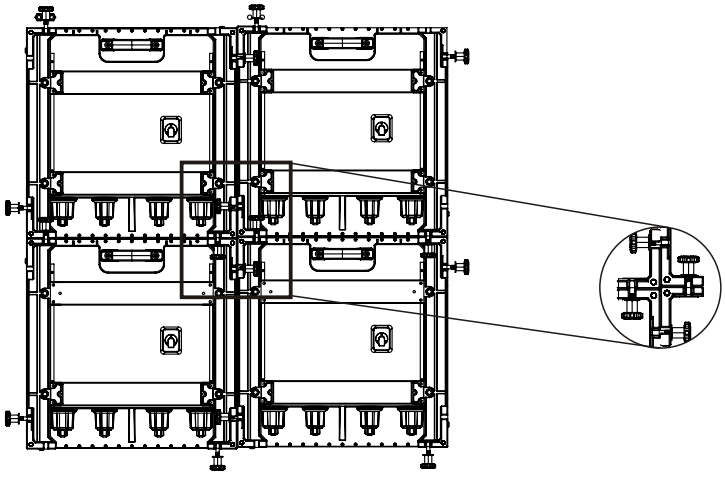
2.2-3 MOUNTING SYSTEM CONNECTIONS

Each LED PANEL can be locked to any other LED PANEL using the interlocking connectors at the rear of the panel.

ALWAYS POSITION THE PANELS USING THE POSITION GUIDES.
INTER-LOCK THE LED PANELS TOGETHER USING THE THUMB-BOLTS.

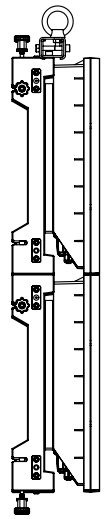
⚠ IMPORTANT ⚠

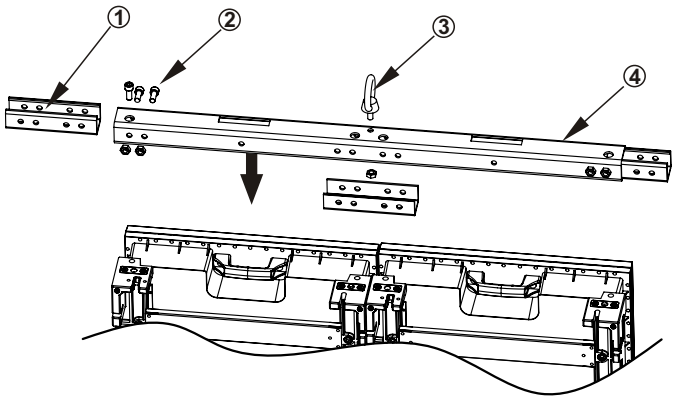
ALWAYS CHECK THAT THE THUMB-BOLTS ARE FASTENED TIGHT USING A SPANNER.



2.2-4 FLYING BRACKET

Each flying bracket is of length 1m and can be inter-connected to other flying brackets using the joint attachment to create longer lengths. The flying bracket is attached to the top row of LED PANELS using the bolts provided. When using the flying bracket, it is important to follow the below safety warnings:





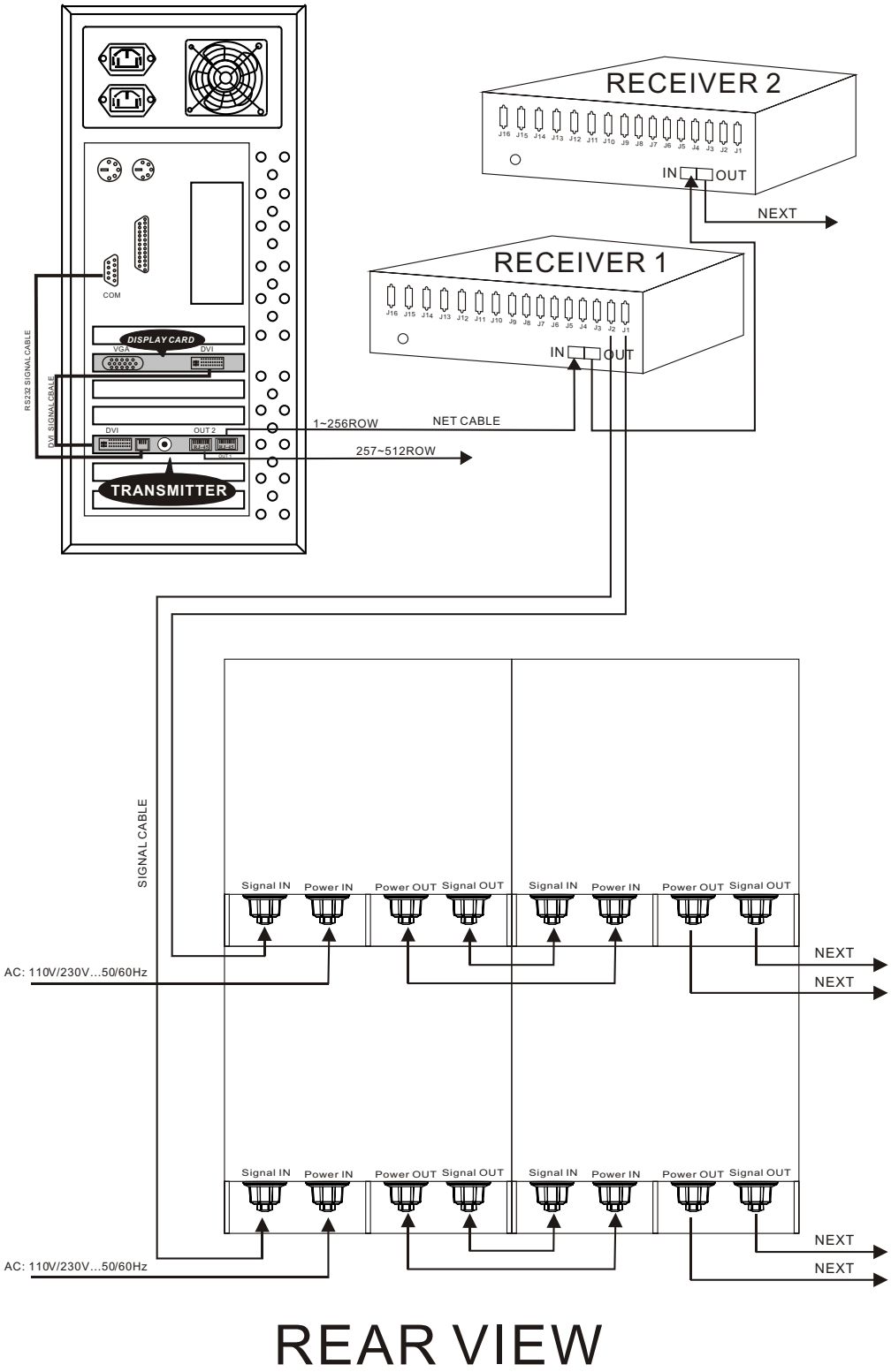
NO.	ITEM
1	Joint attachment
2	M10 hexagon bolt
3	Hanging eye
4	Flying bracket

⚠ SAFETY WARNING!! ⚠

Always ensure that the JOINT ATTACHMENT and the FLYING BRACKET are securely fastened.
Always check that the FLYING BRACKET & JOINT ATTACHMENT are securely fastened to the LED PANEL MOUNTING SYSTEM
When hanging the FLYING BRACKET it is important that the correct number of hanging points are used.
Always use safety cords as a secondary attachment system.
Safety cords should be inserted between the plastic casing and the aluminium frame so that in the event of an attachment failure of the main mounting system, the secondary safety cord will support the weight of the fixture.
For any screen that is more than 3 meters in height: At least 2 hanging points per FLYING BRACKET must be used.
This hanging system should not be used for screens that are more than 6 meters in height.
Large led screens that are in excess of 6m in height should use an additional mounting structure.

2.2-5 SIGNAL & POWER CONNECTIONS

When using many panels together, ensure that the panels are stacked tightly together, with the distance between panels being the same as the distance between LED clusters in every direction.



REAR VIEW

2.3 RECEIVER to PANEL connections

Each RECEIVER has 16 output ports (J1-J16) with one output ports controlling one LED Panel. The number of output ports used is determined by the height (H) of the LED MATRIX screen (see section 3.4 for further details on connection of RECEIVER output ports).

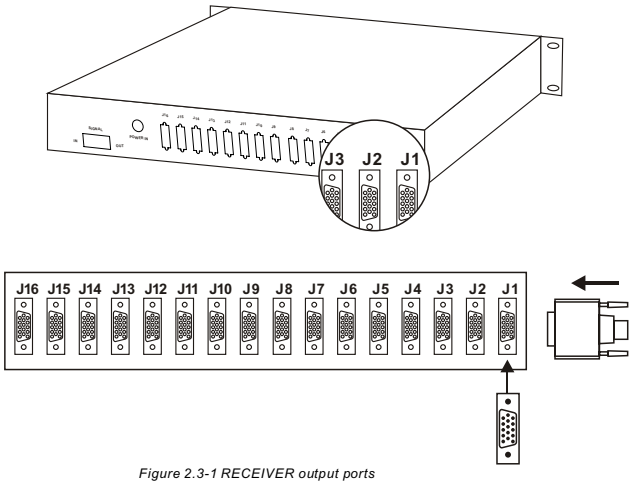


Figure 2.3-1 RECEIVER output ports

EXAMPLE:

If the application requires a vertical height of 2m, then this will require connection to the RECEIVER as follows:

J1- upper panel
J2- second panel
J3- third panel
J3- lower panel

2.4 SETUP CHECKING

Check that connection from the LED CLUSTERS to the DRIVERS are correct

Check that the POWER SUPPLY units are correctly connected and that the power load has not been exceeded(220V-upto 16 panels in series / 120V-upto 8 panels in series)

Confirm that that POWER SUPPLY units stated voltage is the same as your local area

Check that all connecting wires with the PC are correct and secure

Connect the power and confirm that the LED on each DRIVER is red. If the LED is not red please check the DRIVER and replace with a new one.

Start the i.TOP LEDSTUDIO software, if the LED MATRIX is not detected the software will hint to the user that the "LED MATRIX" is not found. Please check all connecting cables and hardware.

Select <Grid Test> from the Control Panel. Select <Color Change 3 color>. If the LED MATRIX screen changes from one color to the other with a grid of diagonals then all connecting cables are connected correctly.

3 SYSTEM CARD SETTINGS

3.1 TRANSMITTER CARD

The TRANSMITTER CARD is installed in the PC and acts as an interface between the PC hardware & software and the LED MATRIX screen hardware.

Fig.3.1-1 TRANSMITTER CARD

The PIN definitions of the DVI Port must correspond to the PIN definitions of the Display Card. The DVI cable provided must be used to connect the DVI Port to the Display Card.

OUT 1 & OUT 2 PORTS

OUT 1 & OUT 2 are 8P Double-Net Card Ports. OUT 1 is connected to the RECEIVER using the Net Cable. Each port is capable of transmitting 256 rows of information. At OUT 1 the data value ranges from row 1 to row 256. At OUT 2 the data value ranges from row 257 to row 512.

AUX PORT

This port is a standard 6P telephone connection port. Connect the provided cable with the RS232 port. This port allows control of the r variable, gray scale, LED MATRIX active area, LED MATRIX lock & LED MATRIX range.

POWER SUPPLY

Power Supply port is a 5V power supply connection for when Transmitter Card is operating external of the PC.

3.2 SYSTEM CARDS INSTALLATION

Insert the Transmitter Card in the relevant available PCI slot in the PC.

Connect the TRANSMITTER CARD and the DISPLAY CARD together using the DVI cable provided.

Connect the serial port (OUT 1) to the RECEIVER card using the net cable.

Connect the TRANSMITTER AUX Port and the PC COM Port using the cable provided.

Check that all connections are secure.

Calculate the correct positions for the RECEIVER switches.

Turn on the computer and test the system

NOTE:

If the PC automatically reboots or turns off, please remove the DVI cable from the TRANSMITTER and try again. After the Windows desktop has loaded reconnect the DVI cable.

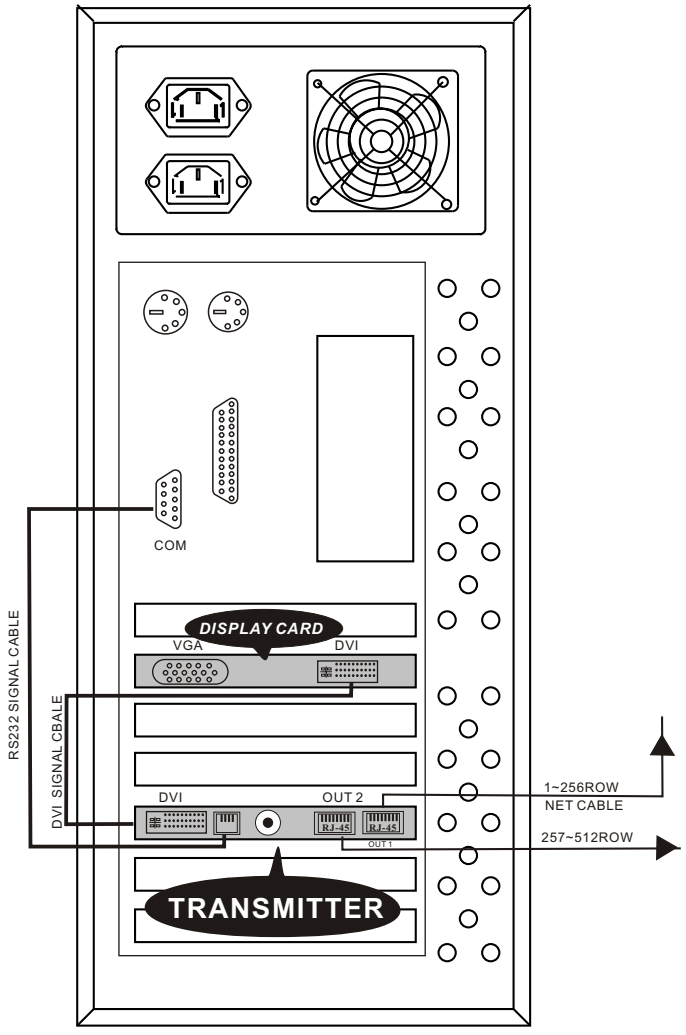


Figure 3.2-1 DISPLAY CARD & TRANSMITTER CARD installation

3.3 RECEIVER OUTPUT CONNECTIONS

When installing the RECEIVER it is necessary to calculate the number of RECEIVER output ports required. This is calculated on the vertical height of the LED MATRIX screen in number of rows (H). Figure 3.4-1 shows the RECEIVER output ports J1-J16

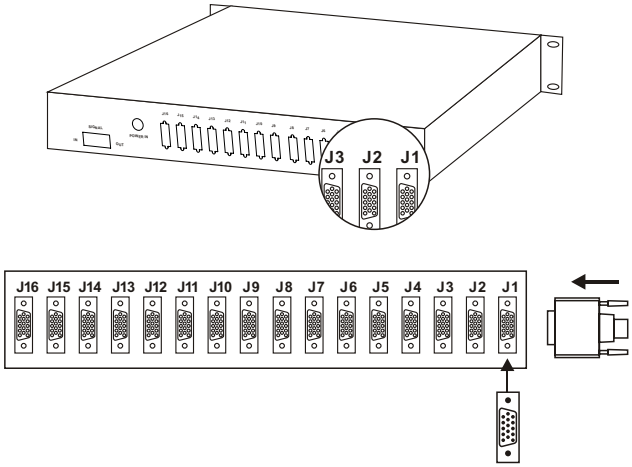


Figure 3.3-1 RECEIVER output ports

In order to calculate the number of RECEIVER output ports required, please refer to the table below (Fig.3.4-2). H refers to the number or rows (vertical pixels) of the LED MATRIX screen.

Number of Pixel Rows (H)	*Number of Panels (Vertical)*	*Receiver Output Connections*
16	1	J1
32	2	J1-J2
48	3	J1-J3
64	4	J1-J4
80	5	J1-J5
96	6	J1-J6
112	7	J1-J7
128	8	J1-J8
144	9	J1-J9
160	10	J1-J10
176	11	J1-J11
192	12	J1-J12
208	13	J1-J13
224	14	J1-J14
240	15	J1-J15
256	16	J1-J16

Figure 3.3-2 RECEIVER Output Connections

EXAMPLE:

An LED MATRIX screen of height 6m would consist of " 12 x 16 " rows = " 192 " rows. Therefore the RECEIVER output ports J1 to J12 must be connected to the LED MATRIX screen.

3.4 RECEIVER SETTINGS

When installing the RECEIVER it is necessary to calculate the position settings for the RECEIVER JP1 & JP2 switches.

3.4-1 JP1 SWITCH SETTINGS

The JP1 SWITCH settings are determined by the horizontal width of the LED MATRIX screen in number of columns (W).

The diagram below shows the default settings for the JP1 SWITCHES. The black square represents the position of the switch. (i.e. switches 1,9,10 & 12 are OFF and switch 2 is ON).

Switches 3,4,5,6,7,8 & 11 are used to set the horizontal width (W) of the screen.

RECEIVER 1

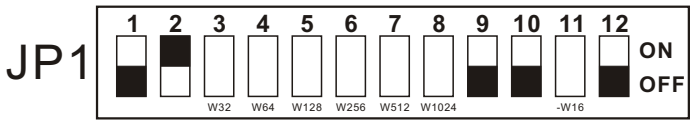


Figure 3.5-1 RECEIVER JP1 & JP2 switch positions

JP1 switches correspond to the following values.

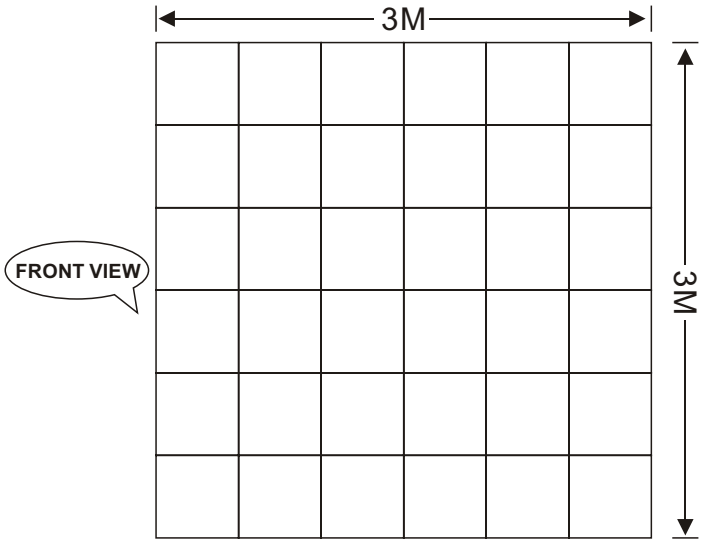
3 = +W32 4 = +W64 5 = +W128 6 = +W256 7 = +W512 8 = +W1024 11 = −W16

To calculate the correct switch settings please refer to the table below. Note that when all switches are in the default position and switches 3,4,5,6,7,8 & 11 are off then there is a value of 32.

Number of Pixel Columns (W)	Number of Panels (Horizontal)	JP1 Switch Settings 1 2 3 4 5 6 7 8 9 10 11 12
16	1	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 0 0 0 0 0 0 0 1 0
32	2	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 0 0 0 0 0 0 0 0 0
48	3	1 2 3 4 5 6 7 8 9 10 11 12 0 1 1 0 0 0 0 0 0 0 1 0
64	4	1 2 3 4 5 6 7 8 9 10 11 12 0 1 1 0 0 0 0 0 0 0 0 0
80	5	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 1 0 0 0 0 0 0 1 0
96	6	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 1 0 0 0 0 0 0 0 0

Figure 3.5-2 RECEIVER switch settings

EXAMPLE:



An LED MATRIX screen of width 3m would consist of `6 x 16` columns = `96` pixel columns.

Therefore as the default value of JP1 is 32.

To calculate the correct position of JP1 we perform the following equation:

Number of Pixel Columns (W) - 32 = JP1 switch settings
96 - 32 = 64

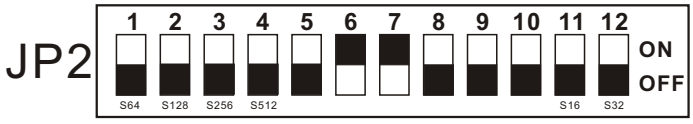
Referring to the table 3.5-2, the JP1 switches should be as follows:

1	2	3	4	5	6	7	8	9	10	11	12
0	1	0	1	0	0	0	0	0	0	0	0

3.4-2 JP2 SWITCH SETTINGS

The JP2 SWITCH settings are determined by the horizontal position of the LED MATRIX screen (S).

The diagram below shows the default settings for the JP2 SWITCHES. The black square represents the position of the switch. (i.e. switches 1,2,3,4,5,8,9,10,9,10 & 12 are OFF and switches 6 & 7 are ON).



Switches 1,2,3,4,11 & 12 are used to set the horizontal position 3,4,5,6,7,8 & 11 are used to set the horizontal Start position of the screen (S).

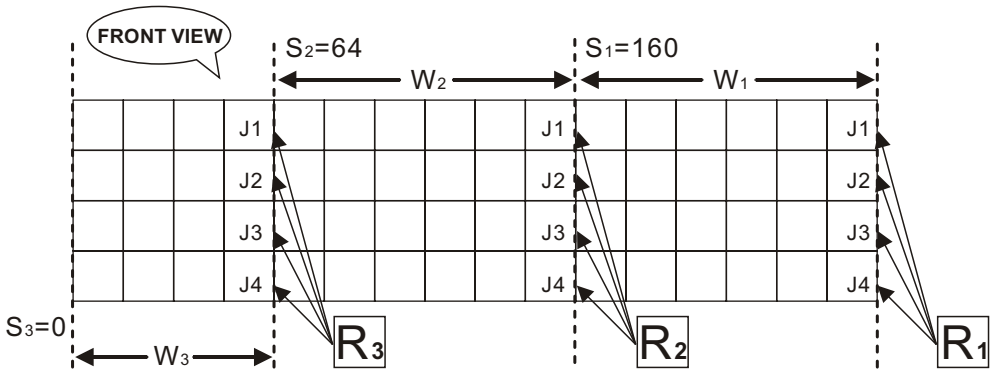
Refer to the table on the next page for the switch positions for JP2

Receiver Start Position (S)	JP2 Switch Settings											
	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	1	1	0	0	0	0	0
16	0	0	0	0	0	1	1	0	0	0	1	0
32	0	0	0	0	0	1	1	0	0	0	0	1
48	0	0	0	0	0	1	1	0	0	0	1	1
64	1	0	0	0	0	1	1	0	0	0	0	0
80	1	0	0	0	0	1	1	0	0	0	1	0
96	1	0	0	0	0	1	1	0	0	0	0	1
112	1	0	0	0	0	1	1	0	0	0	1	1
128	0	1	0	0	0	1	1	0	0	0	0	0
144	0	1	0	0	0	1	1	0	0	0	1	0
160	0	1	0	0	0	1	1	0	0	0	0	1
176	0	1	0	0	0	1	1	0	0	0	1	1
192	1	1	0	0	0	1	1	0	0	0	0	0
208	1	1	0	0	0	1	1	0	0	0	1	0
224	1	1	0	0	0	1	1	0	0	0	0	1
240	1	1	0	0	0	1	1	0	0	0	1	1
256	0	0	1	0	0	1	1	0	0	0	0	0
272	0	0	1	0	0	1	1	0	0	0	1	0
288	0	0	1	0	0	1	1	0	0	0	0	1
304	0	0	1	0	0	1	1	0	0	0	1	1
320	1	0	1	0	0	1	1	0	0	0	0	0
336	1	0	1	0	0	1	1	0	0	0	1	0
352	1	0	1	0	0	1	1	0	0	0	0	1
368	1	0	1	0	0	1	1	0	0	0	1	1
384	0	1	1	0	0	1	1	0	0	0	0	0
400	0	1	1	0	0	1	1	0	0	0	1	0
416	0	1	1	0	0	1	1	0	0	0	0	1
432	0	1	1	0	0	1	1	0	0	0	1	1
448	1	1	1	0	0	1	1	0	0	0	0	0
464	1	1	1	0	0	1	1	0	0	0	1	0
480	1	1	1	0	0	1	1	0	0	0	0	1
496	1	1	1	0	0	1	1	0	0	0	1	1

EXAMPLE:

An LED MATRIX screen of width 8m requires the use of 3 RECEIVERS (LED R16-HUB) as 1 RECEIVER can power up to 3 meters in width.

In this example we have used Receiver 1 (R1) to power 3 meters of the screen, Receiver 2 (R2) to power 3 meters and Receiver 3 (R3) to power 2 meters of the LED screen.



RECEIVER 1 (R_1): OUTPUT CONNECTIONS = J1, J2, J3 & J4

	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S1 = 160		1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 0 0 1 1 0 0 0 0 1
W1 = 96	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 1 0 0 0 0 0 0 0 0	

RECEIVER 2 (R_2): OUTPUT CONNECTIONS = J1, J2, J3 & J4

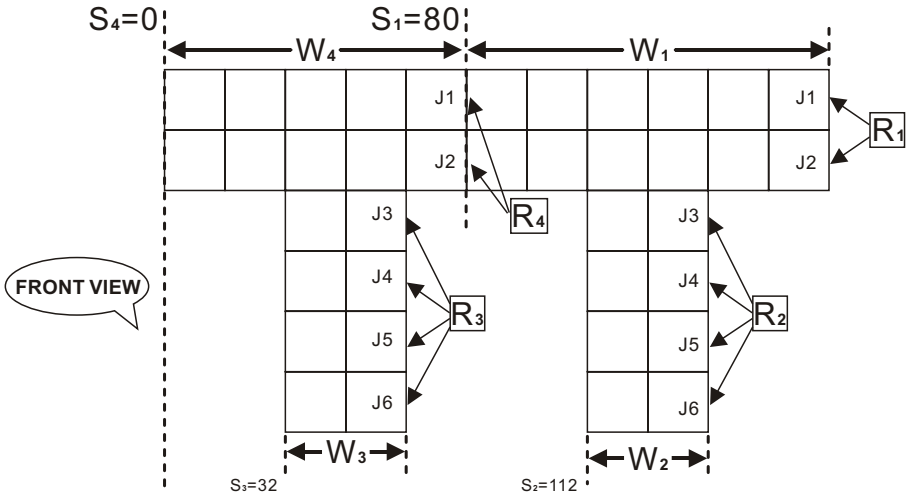
	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S2 = 64		1 2 3 4 5 6 7 8 9 10 11 12 1 0 0 0 0 1 1 0 0 0 0 0
W2 = 96	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 1 0 0 0 0 0 0 0 0	

RECEIVER 3 (R_3): OUTPUT CONNECTIONS = J1, J2, J3 & J4

	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S3 = 0		1 2 3 4 5 6 7 8 9 10 11 12 0 0 0 0 0 1 1 0 0 0 0 0
W3 = 64	1 2 3 4 5 6 7 8 9 10 11 12 0 1 1 0 0 0 0 0 0 0 0 0	

3.4-3 SPECIAL APPLICATIONS

When the LED screen is constructed in a way that is not a normal rectangle or square, it is necessary to use more RECEIVERS to power the LED screen and to act as independent addresses for each part of the LED screen. The diagram below shows a screen comprised of four main components, where R1, R2, R3 & R4 represent RECEIVERS.



RECEIVER 1 (R_1): OUTPUT CONNECTIONS = J1 & J2

	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S1 = 80		1 2 3 4 5 6 7 8 9 10 11 12 1 0 0 0 0 1 1 0 0 0 1 0
W1 = 96	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 1 0 0 0 0 0 0 0 0	

RECEIVER 2 (R_2): OUTPUT CONNECTIONS = J3, J4, J5 & J6

	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S2 = 112		1 2 3 4 5 6 7 8 9 10 11 12 1 0 0 0 0 1 1 0 0 0 1 1
W2 = 32	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 0 0 0 0 0 0 0 0 0	

RECEIVER 3 (R_3): OUTPUT CONNECTIONS = J3, J4, J5 & J6

	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S3 = 32		1 2 3 4 5 6 7 8 9 10 11 12 0 0 0 0 0 1 1 0 0 0 0 1
W3 = 32	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 0 0 0 0 0 0 0 0 0	

RECEIVER 4 (R_4): OUTPUT CONNECTIONS = J1 & J2

	JP1 SWITCH SETTINGS	JP2 SWITCH SETTINGS
S4 = 0		1 2 3 4 5 6 7 8 9 10 11 12 0 0 0 0 0 1 1 0 0 0 0 0
W4 = 80	1 2 3 4 5 6 7 8 9 10 11 12 0 1 0 1 0 0 0 0 0 0 1 0	

3.5 ATI DISPLAY CARD SETTINGS

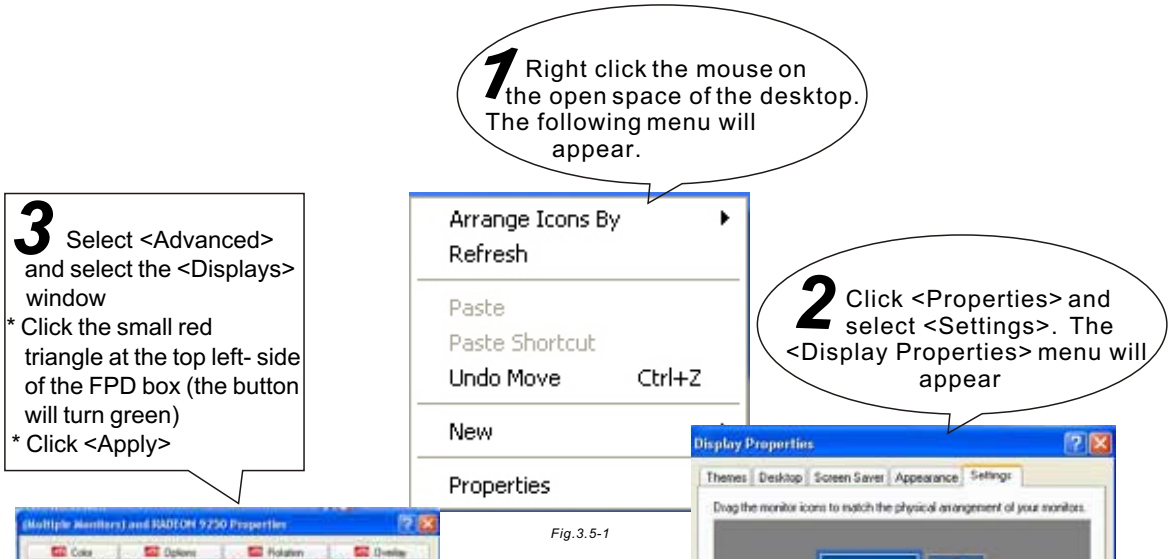


Fig.3.5-1

Figure 3.5-2

Figure 3.5-3

NOTE:

In the event that the ATI display settings have reverted back to the settings of the operating system and there is no setting to open the <FPD> option, it is necessary to reinstall the ATI software.

To check that the ATI software has been correctly installed, when the <Display> menu is opened, the options should show the ATI logo as in the screen shots above.

3.6 SYSTEM CHECKING

STEP 1:

Check that the green LED on the TRANSMITTER card is flashing. If the green LED is flashing, please move to step 3. If the green LED is not flashing, please restart your computer and check the status of the green LED during the start up of your PC. If the green LED is flashing please move to step 2. If the problem is not solved check that the DVI cable is connected properly as there is likely an error at the TRANSMITTER CARD, DISPLAY CARD or at the DVI cable. Please eradicate possible areas of error and repeat step 1.

STEP 2:

Please follow out the instructions in Section 3 to verify all settings and/or re-install and then once again verify the settings. Please repeat this step until the green LED is flashing. If the green LED is still not flashing, please check and repeat step 1.

STEP 3:

Check that the green LED on the RECIEVER and the green LED on the TRANSMITTER CARD are flashing in step. If the two are in step, please move onto step 5. If the red LED (power supply) is on please move to step 4. If the red LED is not on, please check the status of the yellow LED (Power Supply Protection). If the yellow LED is not lit, please check that the Power Supply is connected correctly and that there is power supplied from the mains. If the yellow LED is lit, please check that the voltage is 5V. Disconnect the power, and check that all the connections in the RECEIVER are correctly connected. If the problem is still not eradicated, replace the RECEIVER and repeat step 3.

STEP 4:

Check that the net cable is corrected correctly and that the length does not exceed that recommended in this user manual. If the problem is not solved, please replace the RECEIVER and then repeat step 3.

STEP 5:

Check the LED to the Screen POWER SUPPLY is lit. If not lit, please repeat step 4. Disconnect the power, and check that all the connections in the RECEIVER are correctly connected.

STEP 6:

Check that the RECEIVER switch settings are correct. Please see section 3.5 for further explanation.

3.7 MAKING ADDITIONAL NET CABLE

NOTE:

Standard NET CABLE cannot be used to replace the NET CABLE required to transmit the information for the LED MATRIX system.

Please follow the following instructions in order to create extra NET CABLE.

Bear back the outer casing of the wire by around 30mm
The wires should now be colored as follows:

1- white & orange
2- orange
3- white & green
4- green
5- blue
6- white & blue
7- white & brown
8- brown

Twist the following pairs together so that only the plastic is touching (the metal wires must not touch) 1&2, 3&4, 5&6, 7&8
Insert each wire into an RJ45 connector with the white & orange wire connected to PIN 1, the orange wire connected to the second PIN, etc.
Both ends of the NET WIRE are connected in this way.

4 LEDstudio (SOFTWARE)

4.1 INSTALLATION

LEDstudio is compatible with most modern PCs. Please see the requirements below before installing the software into your PC.

Operating System

Windows XP/XP2

Hardware

CPU: >200MHz
Internal Memory: 32M
Display: Standard VGA256 Display(or better)
Display Card: ATI display card (note that the NVIDIA display card is not compatible)

Insert the CD-ROM

Select the required version of the software for installation LEDStudioD.exe (demo version) or LEDStudio.exe（Standard Version）

The LEDstudio installation wizard will start

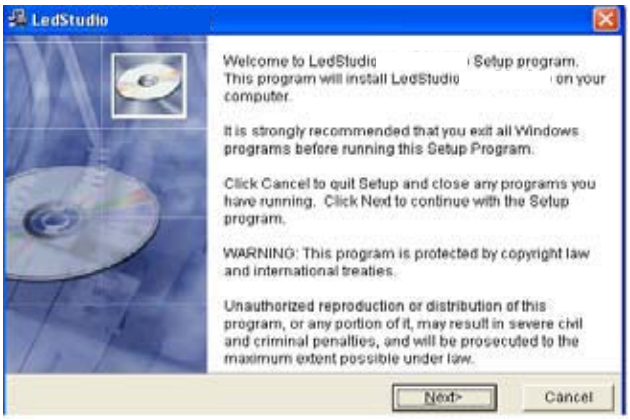


Figure 4.1-1 Installation wizard

Proceed installing according to the prompts. Note: This software is protected by a serial number. The correct serial number must be input in order to continue installing the software. The current serial number for this product is 36121080.

After completing the steps in the installation wizard, the LEDstudio software will appear in the <Start-Programs>. Select <LEDstudio> to start.

There will also be a new short-cut icon created on the DESKTOP <Shortcut to LEDstudio>. Double click on this icon to start the software.

Figure 4.1-2

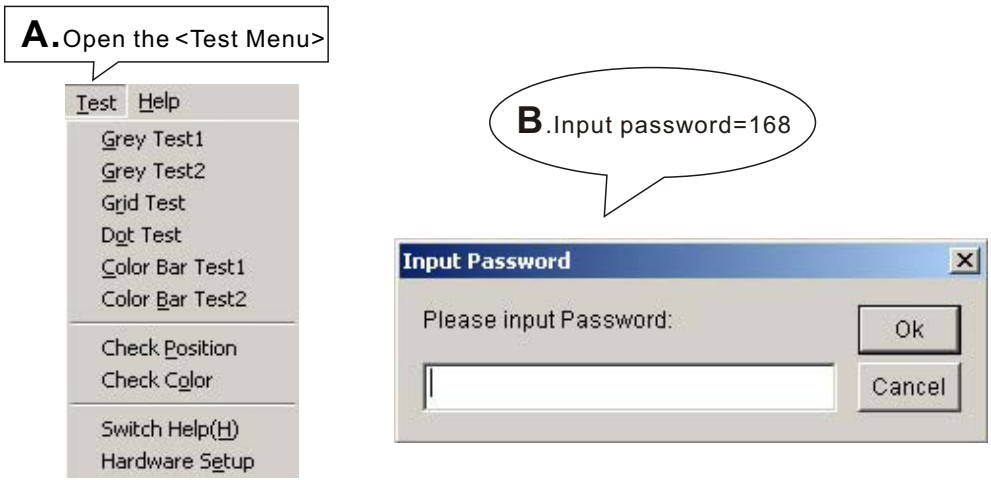
4.2 UNINSTALL

The LEDstudio software also includes a complete program removal function. This allows the user to easily delete all LEDSTUDIO files, shortcuts & programs. The user may delete all the relevant files by selecting <ADD/DELETE> from the <CONTROL PANEL>Select <Automatic> in order to remove all relevant files.

Figure 4.2 Uninstall LEDstudio

4.3 GETTING STARTED

Hardware Setup after installing the software please check that your Hardware is setup with the default settings as shown below. Please follow the steps in order to check that your default settings are correct.



Check that the default settings for all three windows are as below. Please note that it is important that the system is set as 16 rows/zone in <System Setup>.

Once the LEDMATRIX hardware and interface cards are set up as described in sections 2 & 3. The LED MATRIX screen will now automatically display the area at the top-left corner of the <DESKTOP DISPLAY> on the PC MONITOR. The size of the area displayed will correspond directly to the resolution of the LED MATRIX screen. If the LED MATRIX screen's resolution is 256 x 128 (i.e 256 columns x 128 rows of LED CLUSTERS then the top-left 256 x 128 pixels of the <DESKTOP DISPLAY> will be seen on the LED MATRIX by starting theLED studio software it is possible to select a different area of the <DESKTOP DISPLAY> to be displayed by the LED MATRIX screen.

Starting the LEdstudio software will allow the user to create, save and play programs designed to be automatically displayed in the defined area. This allows for simple display and editing of any file imported into the LEDstudio software.

4.4 MAIN OPERATION CONTROL PANEL & DISPLAY SCREEN

The main operation of this software is comprised of 2 operation windows: <Display window> and <Control Panel>.

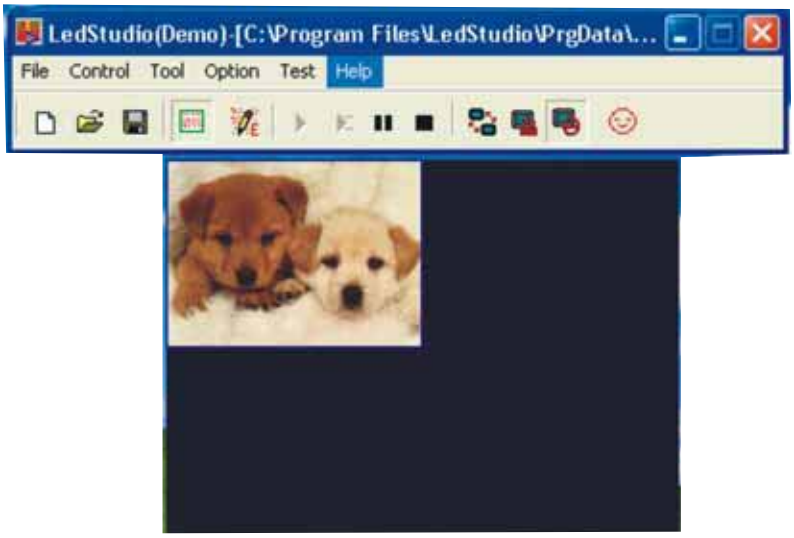


Figure 4.4 Display Window & Control Panel

4.4-1 DISPLAY WINDOW

Display window shows the images that will be displayed on the LED MATRIX screen. The user can view all images whether it be text, pattern, photo, animations..etc. The images displayed in the Display window will be in-step with the images displayed on the LED MATRIX screen. More than one window may be opened at any time with each window displaying different images in-step with the LED MATRIX screen.

4.4-2 CONTROL PANEL

The user can control all of the functions of the LEDstudio software from the <Control Panel>. The main function menus in the <Control Panel> are <File>, <Control>, <Tool>, <Option>, <Test> & <Help>.

4.5 FILE MENU

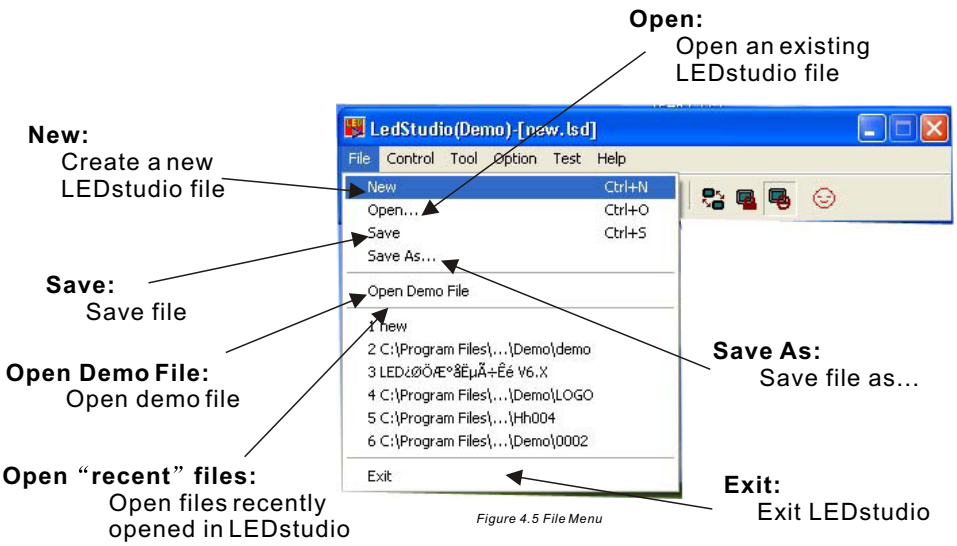


Figure 4.5 File Menu

4.6 CONTROL MENU

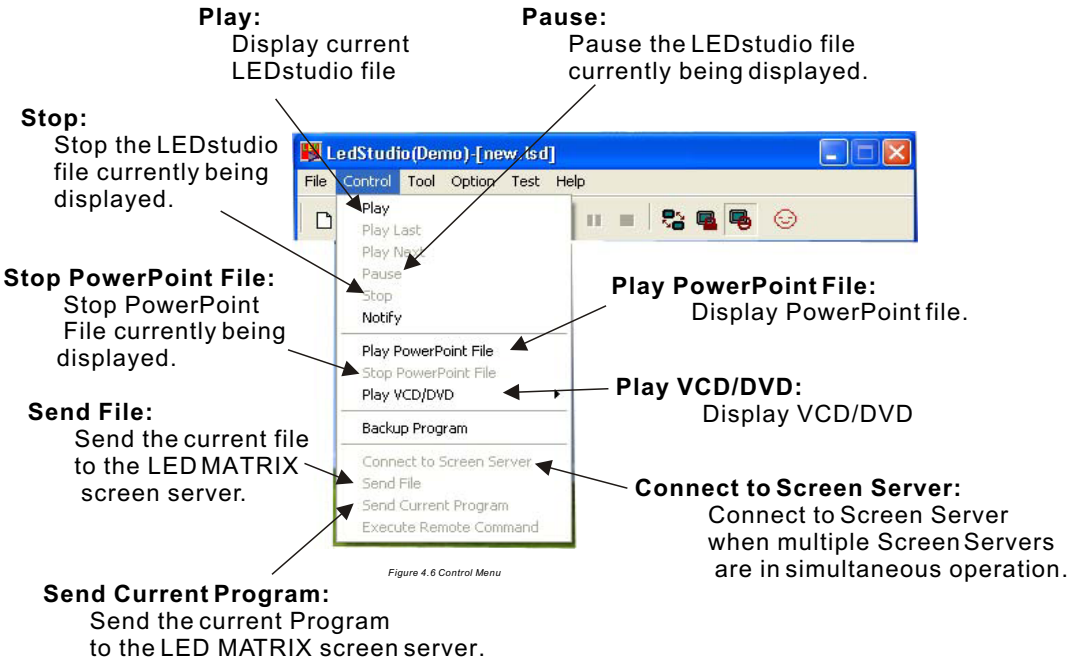


Figure 4.6 Control Menu

4.7 TOOL MENU

Direct access to <MS Word>, <MS Excel>, <Paint>, <Notepad> & <Calc>

Please note that when opening <MS Word> and <Paint> from the <Tool> menu, the page size created in <MS Word> or <Paint> will automatically be the same as the preset screen area (factory setting).

<MS Excel> and <Notepad> do not have this function.

<Calc> - Calculator is simply to allow the user to carry out simple calculations.

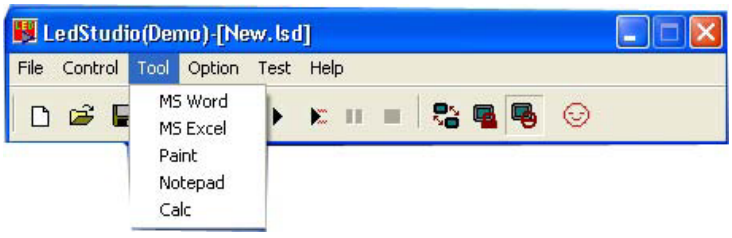


Figure 4.7 Tool Menu

4.8 OPTION MENU

Restore to Default:
reset to factory settings

Screen Area:
Move the Display Window to a new location. Please note that when displaying the

Screen Brightness/Contrast/Color:
set the brightness, contrast & color (see figure 4.8-2)

Figure 4.8-2 LED Screen Brightness/Contrast/Color

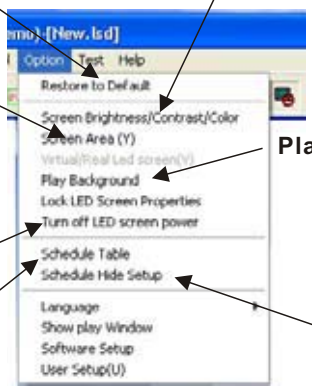


Figure 4.8-1 Option Menu

Play Background:
Select to show the <Display Window> on the second monitor. For normal use this function is not required.

Turn OFF/ON LED screen power:
Remote ON/OFF of LED screen

Schedule Table:
Schedule commands to be performed in the software

Schedule Hide Setup:
Schedule the hide/show of the Display Window. (see figure 4.8-3)

Figure 4.8-3 Scheduled Hide Setup

Lock/Unlock LED Screen Properties:
Lock the current display programs and settings to the LED MATRIX screen so that further editing can be carried out without affecting the current program on the LED MATRIX screen. Unlock to apply updated version.

Show/Hide Play Window:
Hide the Play window (please note: in order to display to <desktop>)

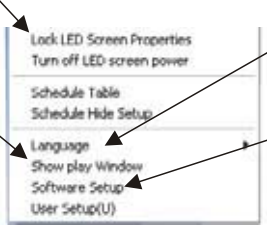


Figure 4.8-4 Option Menu

Language:
Select the operating langauge

Software Settings:
Set software options (Note: Password = 888. Please note that only options in the PLAY WINDOW can be changed, options in other windows must be left the same as the current default.) (see figure 4.8-4)

Figure 4.8-4 Scheduled Hide Setup

4.9 TEST MENU

Grey Test:
Perform screen grey scale test

Grid Test:
Perform screen accuracy test on display.

Dot Test:
Perform screen high frequency test

Color Bar Test:
Perform screen color-layer test

Check Position:
Check coor dinates of screen position

Check Color:
Check value of screen color

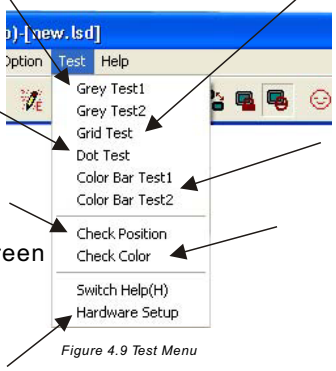
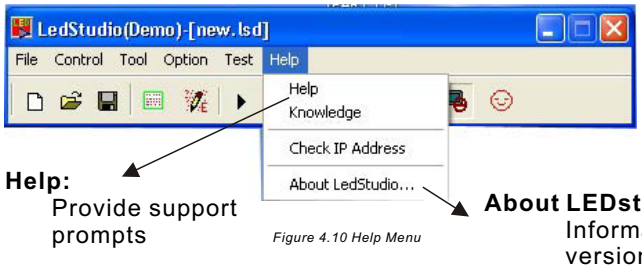


Figure 4.9 Test Menu

Hardware Setup:
Open Hardware Setup window to carry out hardware setting operations <this should only be carried out at the place of manufacture>

4.10 HELP MENU



Help:
Provide support prompts

Figure 4.10 Help Menu

About LEDstudio:
Information about current version of LEDstudio

4.11 CREATE A NEW PROGRAM

Select <New> from the <File> menu to create a new file or simply click the new file icon <>

The <Screen 1> window will appear (Figure 4.11-1)

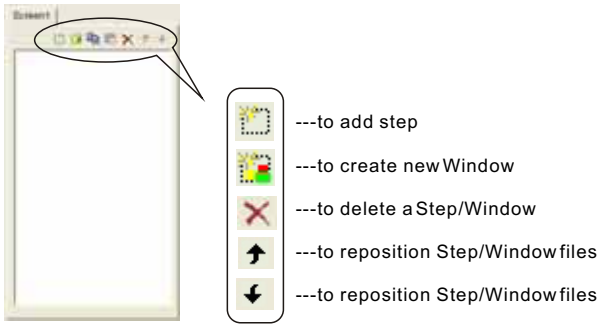


Figure 4.11-1 Screen1

Add step using the add step icon <> The following window will appear (Fig.4.11-2)

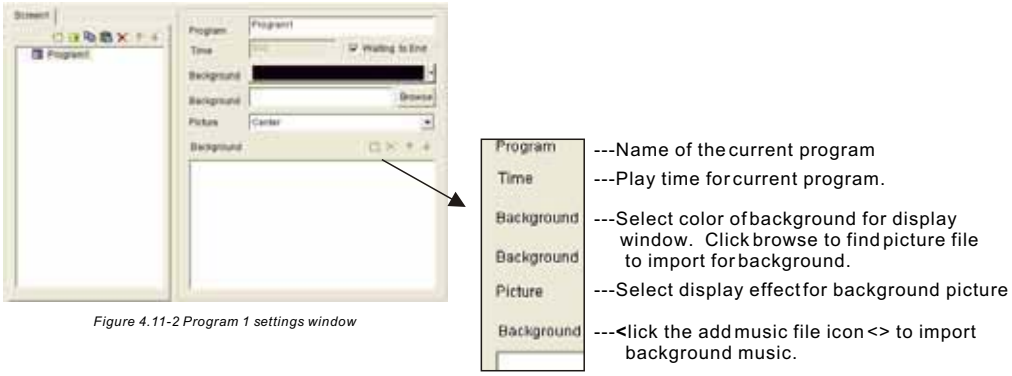


Figure 4.11-2 Program 1 settings window

After the New Program has been created and the time, background and background music settings have been designed for the application. The user may now begin to create display windows. All display windows opened in the same program will open at the same time and play for the same length of time as the program. If the file size of the file played in the display window is large, it is recommended that the user should create less display windows.

Click the New Window icon < >.

Select new display window format by clicking on the corresponding icon. Please note that a new window can only be created once there is a New Program created or an existing Program opened.

Please refer to the following sections for further explanation on how to create and edit display windows.

4.12 DISPLAY TEXT

Text can be displayed in four different display window formats: <Text window>, <Single Line Text Window>, <Static Text Window> & <File Window>

4.12-1 DISPLAYING TEXT IN TEXT WINDOW

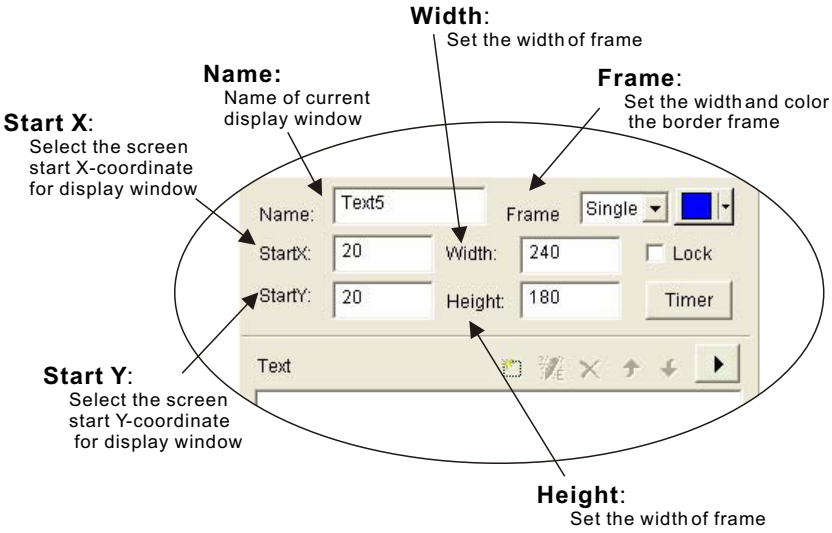
This function is most suitable for simple text such as short welcome notes, notices, names...etc.

Click the Create New Window button < > and select <Text Window>.

Figure 4.12-1 New Window

The following window will appear.

Figure 4.12-2 Text Window



To insert/edit text click the Add Text icon < > (The following window Will appear)

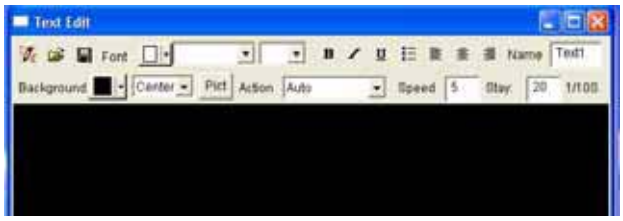


Figure 4.12-3 Text Edit

Text may be directly input or copied into the <Text Edit> window. In this window all text formatting operations may be performed such as change font, color, background, paragraph format, reveal speed, reveal action, pause time…etc.
Close the Text Edit window in order to return to the Text Window. All text and formatting operations will be stored and a Text file will be created.

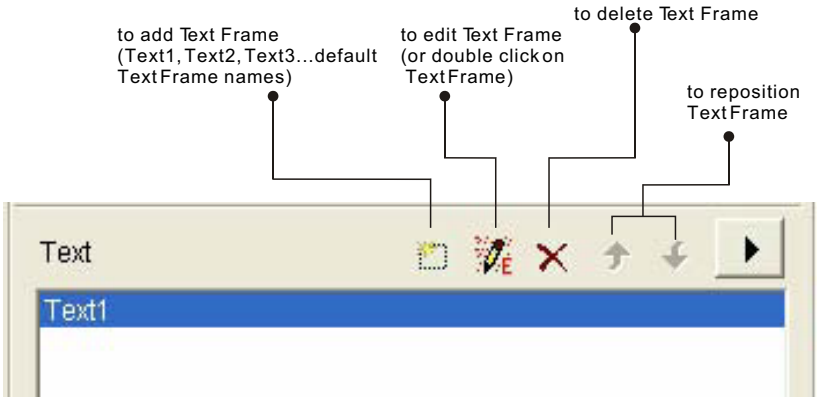


Figure 4.12-4 Text 1

4.12-2 SINGLE LINE TEXT WINDOW

Text may be directly input into this window and all simple text formatting, font selection, colors, reveal actions, etc. may be directly performed in this window.

Click the Create New Window button <> and select <Text Window>.

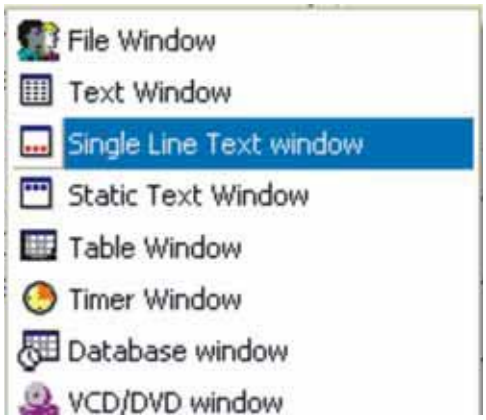


Figure 4.12-5 New Window

The following window will appear

Figure 4.12-6 Single Text Window settings

Directly input text into the text box and perform the required format and effect operations. (Note that for scrolling, please select left/right in the action box)

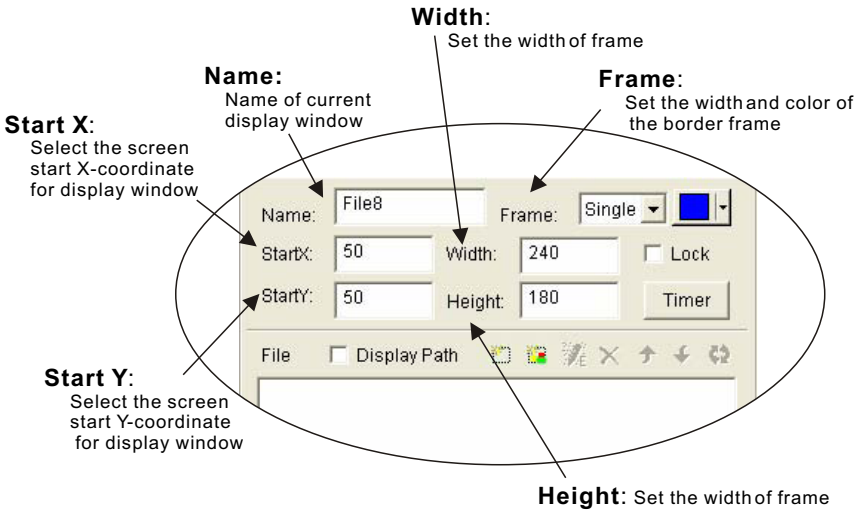
4.12-3 DISPLAYING TEXT IN FILE WINDOW

Click the Create New Window button <> and select <File Window>

Figure 4.12-7 New Window

The following window will appear.

Figure 4.12-8 File Window settings



Click the Add File icon < >

Figure 4.12-9

Select file to be opened and then perform the required format and effect operations.

4.12-4 DISPLAYING TEXT IN STATIC TEXT WINDOW

Click the Create New Window button <> and select <Static Text Window>

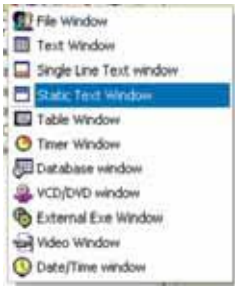


Figure 4.12-10 New Window

The following window will appear.

Figure 4.12-11 Static Text window settings

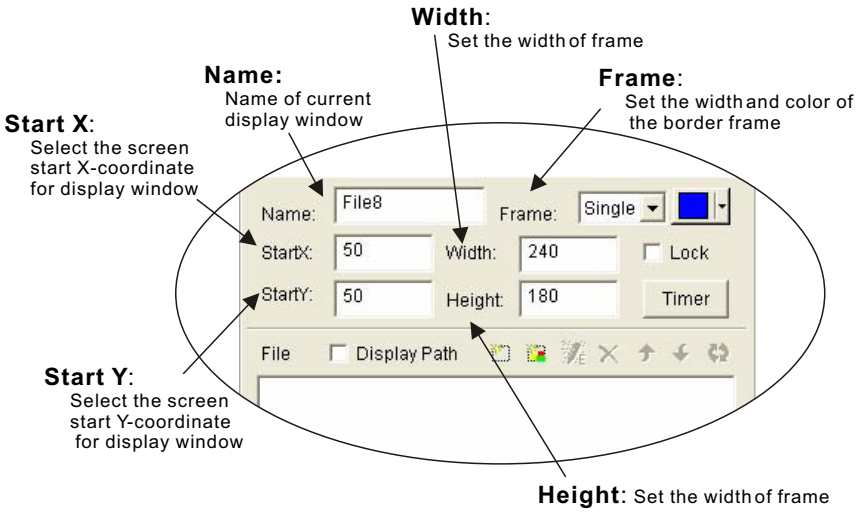
Input text directly into the Text box.
Perform the desired format and action operations

4.13 DISPLAYING PICTURE FILES

Click the Create New Window button <> and select "File Window".

Figure 4.13-1 New Window

Figure 4.13-2 File Window settings



Click the Add File icon <>

Figure 4.13-3 Open File window

Select file to be opened.
After the Picture File is selected, effects operations can be performed using the tools shown in figure (4.13-4)

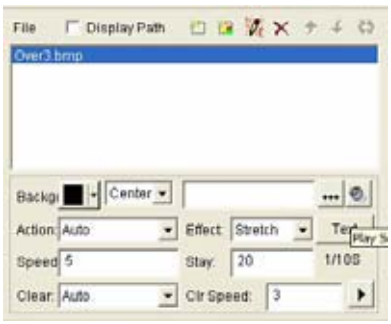


Figure 4.13-4 Picture File action and format window

To insert Background click the browse icon. Select the Picture File to import as the background and click open.
To insert Music click the sound icon. Select the Sound File to insert and click open.
To insert Text click the Text box button. The following window will appear.

Figure 4.13-5 Picture/Text

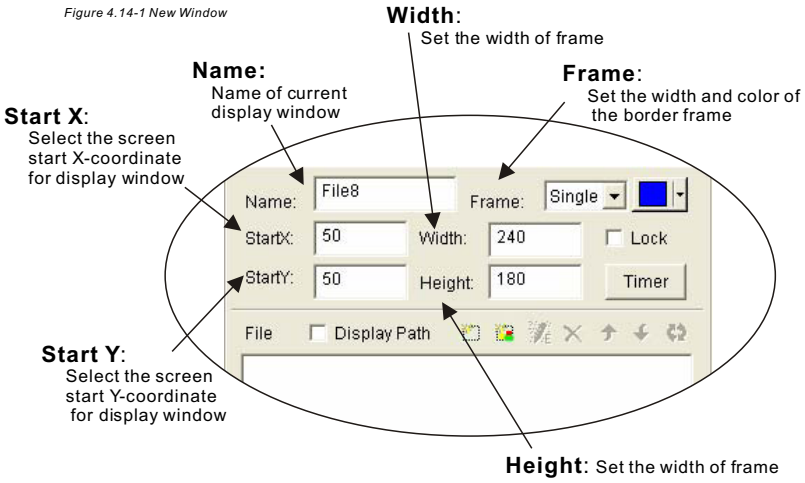
Click the <Add> button to open the Text Edit window.
Input text into the Text Edit window.
Perform required formatting, font and other text effect actions.
Closing the Text Edit will automatically store all actions to the Picture/Text window and will automatically be displayed when the program is played.

4.14 DISPLAYING ANIMATIONS

Click the Create New Window button <> and select "File Window".

Figure 4.14-1 New Window

Figure 4.14-2 File Window settings



Click the Add File icon <>
Select file to be opened.
After the Flash File is selected, effects operations can be performed using the tools shown in figure (4.14-3)

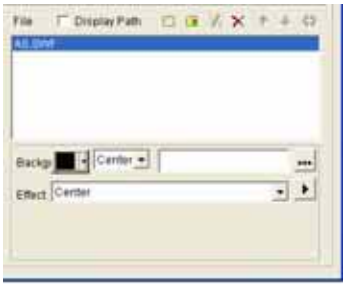


Figure 4.14-3 Animationfile actions window

4.15 DISPLAYING A TABLE

There are two methods of displaying a table in the LEDstudio software. The user may either use the LEDstudio software directly to create a table in *Table Window* or by importing an existing table from Word or Excel (please see section 4.12 for more explanation).

Click the Create New Window button <> and select "Table Window".

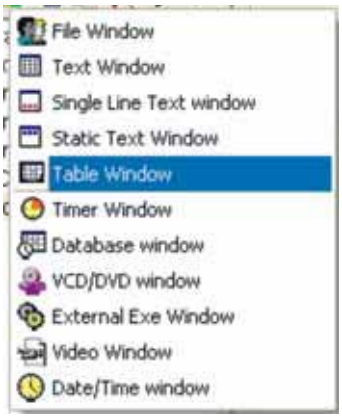
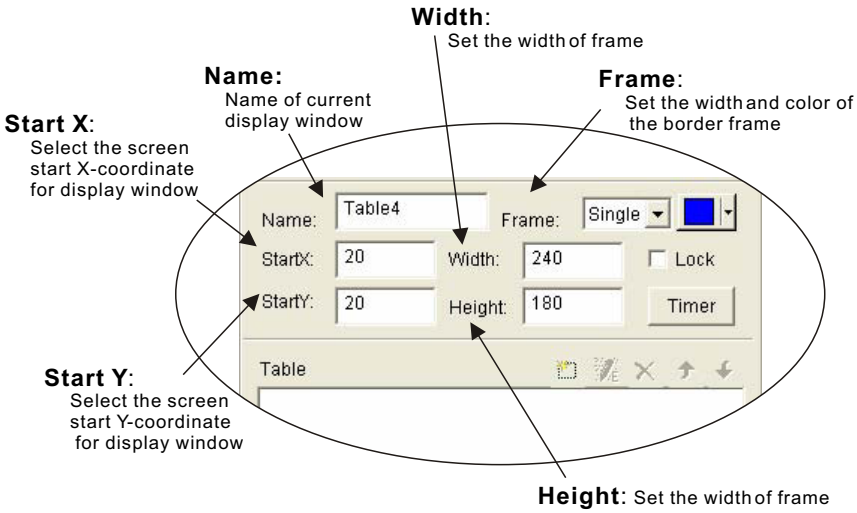


Figure 4.15-1 New Window

The following window will appear.

Figure 4.15-2 File Window settings



4.15-1 ADD TABLE

Click the Add Table icon <>

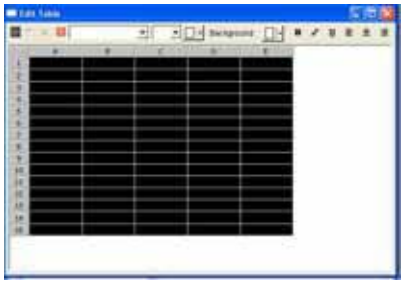


Figure 4.15-3 Edit Table

- --to set Table properties

- --to add row/column

--- to delete row/column

--- to join/split selected rows & columns

4.15-2 TABLE PROPERTIES

Click the <> button in order to set the Table properties. The user may perform the required actions by setting the values in the diagram below.

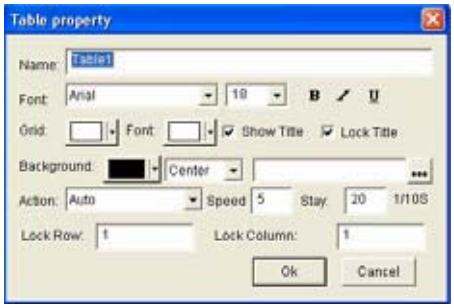


Figure 4.15-4 Table property

4.15-3 ADD TABLE

Click the <> button in order to add row/column to the Table. The user may increase the number of rows and columns by setting the values in the diagram below.

Figure 4.15-5 Add Table

4.15-4 DELETE TABLE

Click the <> button to delete the last row/column.

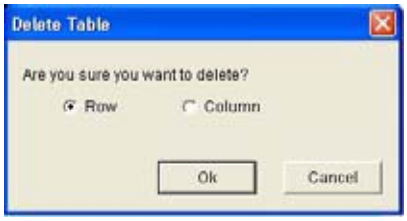


Figure 4.15-6 Delete Table

4.15-5 JOIN/SPLIT

Click the <> button in order to join/split the currently selected rows & columns.

Figure 4.14-7 shows the selected area being joined to make one box.

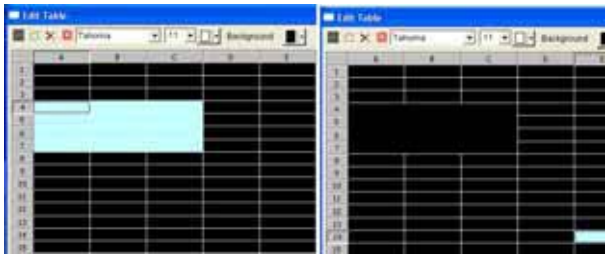


Figure 4.15-7 Join Table

Figure 4.154-8 shows the selected box being split back into its original rows and columns.

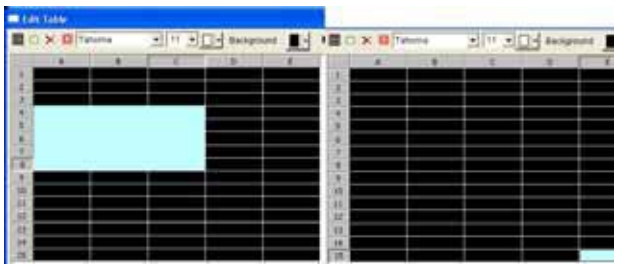


Figure 4.15-8 Split Table

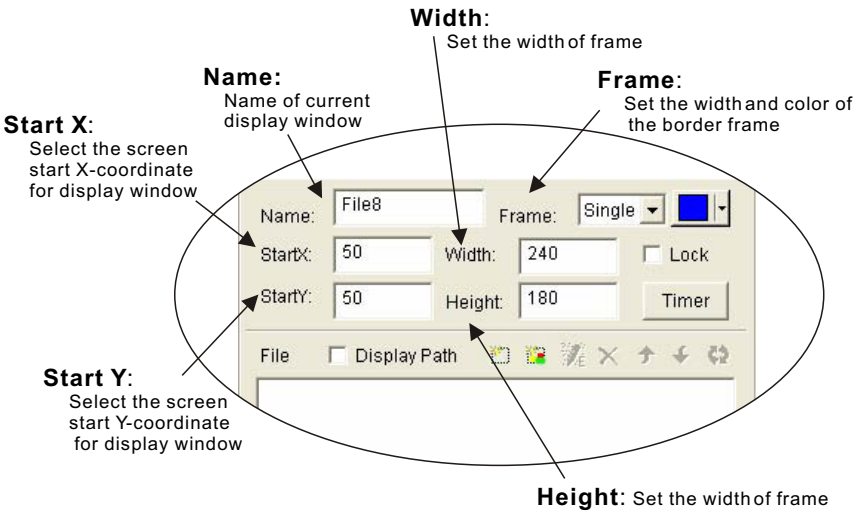
4.16 DISPLAYING A WEB PAGE URL

Click the Create New Window button <> and select “File Window”.

Figure 4.16-1 New Window

The following window will appear.

Figure 4.16-2 File Window settings



Click the <> button in this window and the following Web Page URL window will appear.

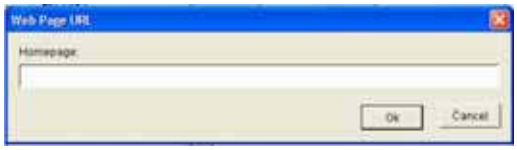


Figure 4.16-3 Homepage

Input the desired Web Homepage and click Ok. (Example: www.163.com)
The screen will now return to the File Window. Here the settings can be adjusted to the file window and different effects actions may be performed.

Figure 4.16-4 Homepage window settings

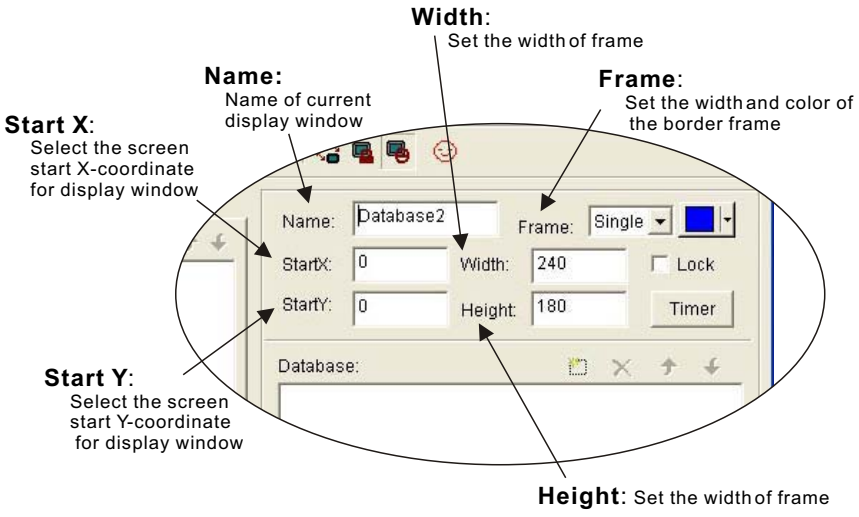
4.17 DATABASE WINDOW

Click the Create New Window button <> in Screen 1 and select <Database Window>.

Figure 4.17-1 New Window

The following window will appear.

Figure 4.17-2 File Window settings



Select Database by clicking the Select Database icon <>. The following window will appear.

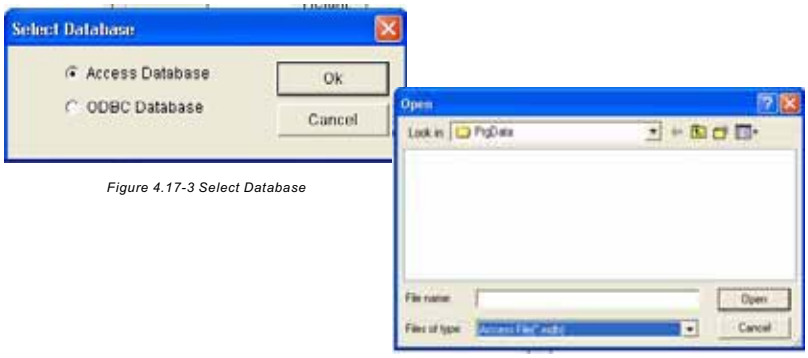


Figure 4.17-3 Select Database

Figure 4.17-4 OpenAccess File

Select the required database files and perform the desired format and action operations.

4.18 DISPLAYING DATE/TIME

Click the Create New Window button <> in Screen 1 and select <Date/Time Window>.

Figure 4.18-1 New Window

The following window will appear.

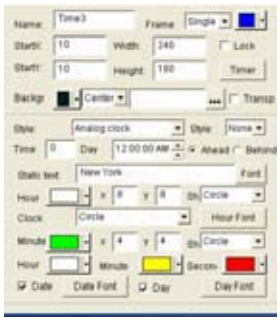
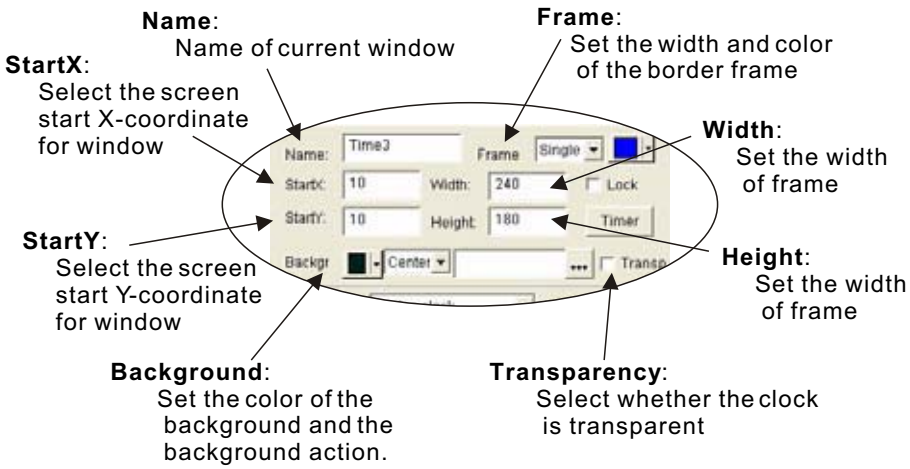


Figure 4.18-2 Clock settings



4.18-1 ANALOG CLOCK

Selecting this style of clock will bring up the following screen. Here the user may adjust the settings as in the diagram below in order to perform the desired actions.

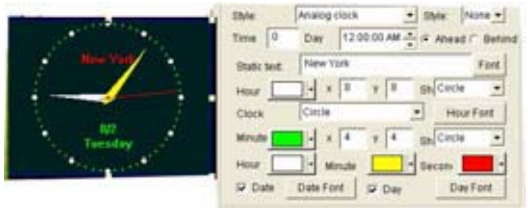


Figure 4.18-3 Analogclock settings

4.18-2 DIGITAL CLOCK

Selecting the digital clock will bring up the following screen. The user may adjust settings as in the diagram below in order to create the desired Time & Date display.

Figure 4.18-4 Digital clocksettings

4.19 DISPLAYING EXTERNAL EXE FILES

Click the Create New Window button <> in Screen 1 and select <External Exe Window>.

Figure 4.19-1

The following window will appear.

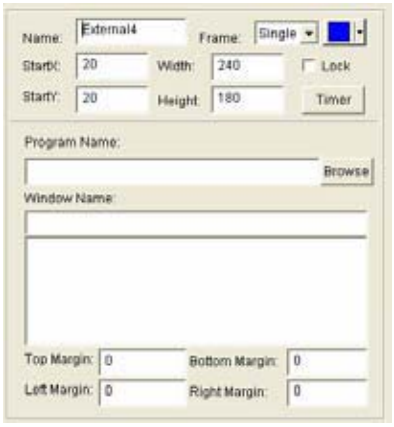
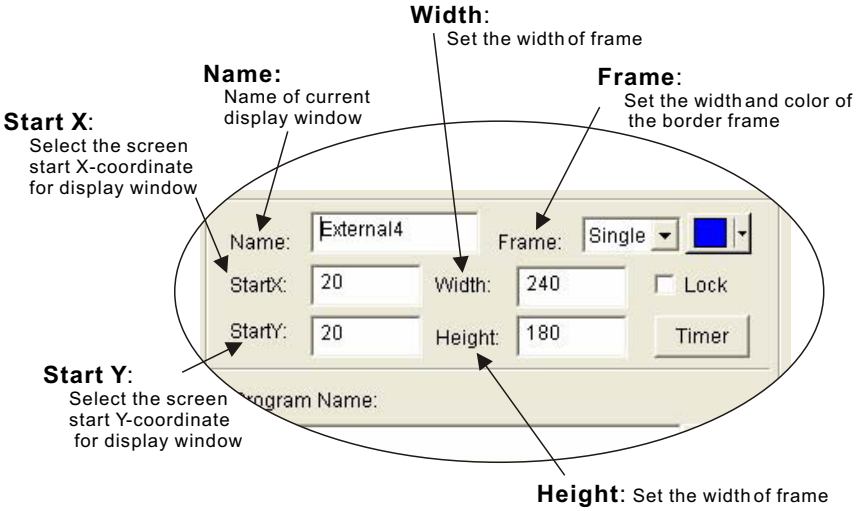


Figure 4.19-2



Click the <Browse> button in this window to open the <Open> window. Select an external (.exe) file to open. From the Open window any .exe file may be opened and displayed. In this example the Calculator is opened. (Please note that it is possible that some windows may not be displayed on the screen.）

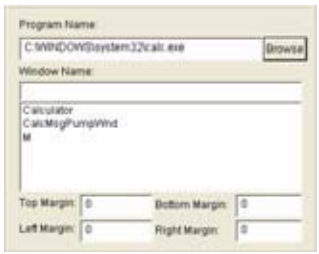


Figure 4.19-3 External File window settings

Figure 4.19-4 Calculater

4.20 DISPLAYING TIMER

The Timer Window allows the user to display a timer counting to or from a certain time and date.
Click the Create New Window button <> in Screen 1 and select <Timer Window>.

Figure 4.20-1 New Window

The following window will appear.

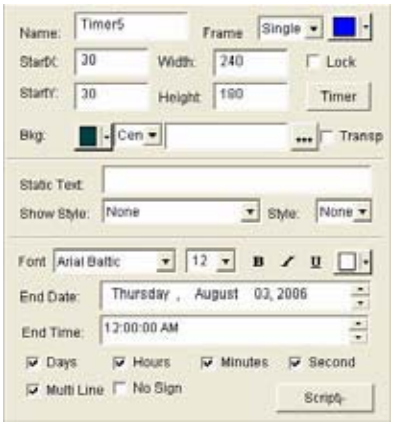
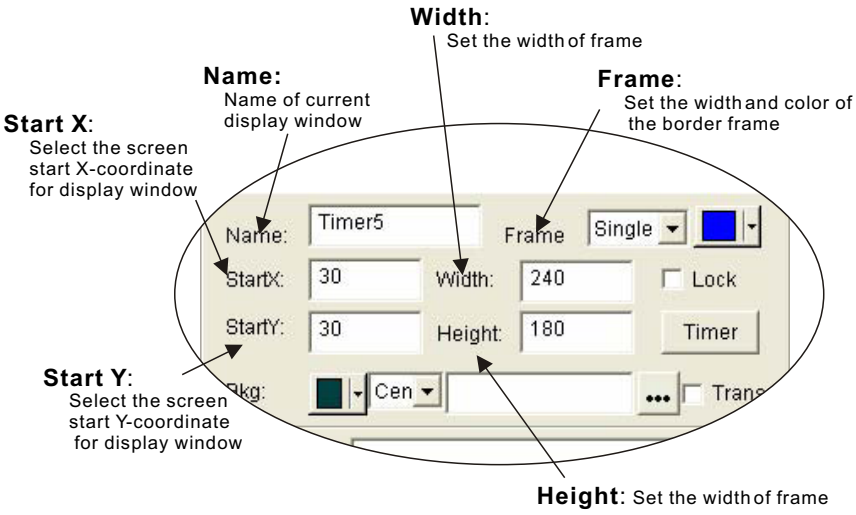


Figure 4.20-2 Timer windowsettings



4.21 DISPLAYING VCD/DVD

VCV/DVD can be played directly from the Control Panel or from the VCV/DVD window.

4.21-1 PLAYING VCD/DVD DIRECTLY FROM THE CONTROL PANEL

Insert a VCD/DVD in the VCD/DVD reader drive. Select the file by clicking on <Play VCD/DVD> from the Control Menu.

Figure 4.21-1 Play VCD/DVD

4.21-2 DISPLAYING VCD/DVD IN VCD/DVD WINDOW

Click the Create New Window button < > and select "VCD/DVD Window". See figure 4.21-2

Figure 4.21-2 New Window

The VCD/DVD window will appear.

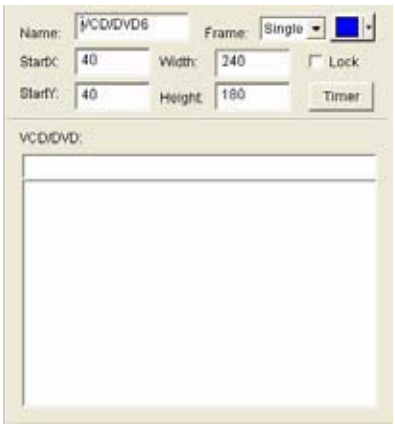


Figure 4.21-3 Timer windowsettings

Select the VCD/DVD by clicking once on the <VCD/DVD> File name as it appears in the VCD/DVD window.

4.22 DISPLAYING VIDEO

NOTE:

A TV/VIDEO card must be installed in the computer in order to display this format of file.

Click the Create New Window button <> and select <Video Window>. See figure 4.21-1

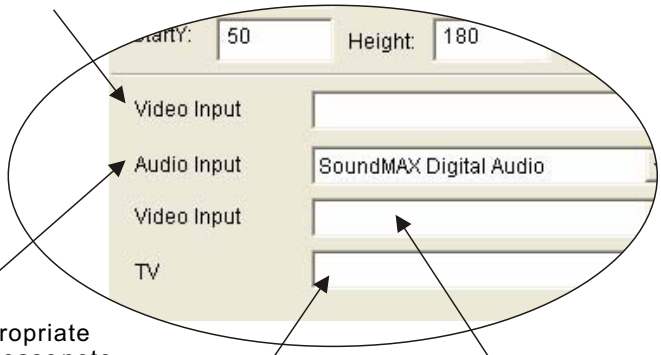
Figure 4.21-1 New Window

The following window will appear.

Figure 4.22-2 Video Window Settings

Video Input:

Select the appropriate Video card (please note that selection is of those video cards already installed in the computer)



Audio Input:

Select the appropriate Sound card (please note that Video/TV card may require a Sound Card in order to have sound output)

Video Input:

Select the Video source (Note: most Video/TV cards have 3 signal inputs cable TV, Video & S-Video)

TV:

Select the TV channel (Note: some TV cards cannot be used To select TV channel)

4.23 DISPLAYING POWERPOINT

Select <Play PowerPoint File> from the Control Menu. See figure 4.23-1

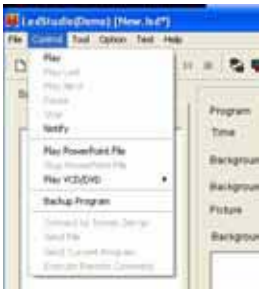


Figure 4.23-1 Play PowerPoint File

Select the desired PowerPoint file by browsing in the <Open> menu.
Click <Open> will import the PowerPoint file to the LED MATRIX screen. (Note: If the user wishes to control the order of programs, the user should use the Schedule Command Table see section 4.24)

In order to stop the PowerPoint file, click on the control menu and then select <Stop PowerPoint File>.

4.24 SCHEDULED COMMAND

Open <Schedule Table> from the <Option> menu.

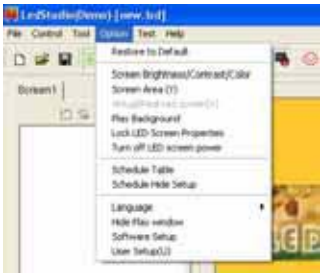


Figure 4.24-1 Open Schedule Table

The following <Scheduled Command Table> will appear.

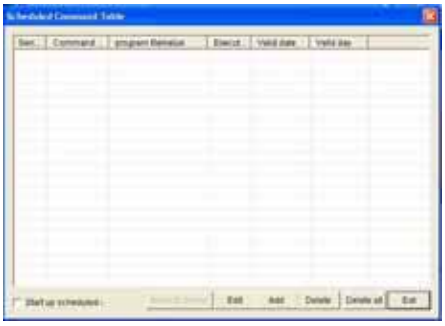


Figure 4.24-2 Schedule Command Table

Open the <Scheduled Command> by clicking the <ADD> button (See above figure 4.24-2)
The following table will appear.

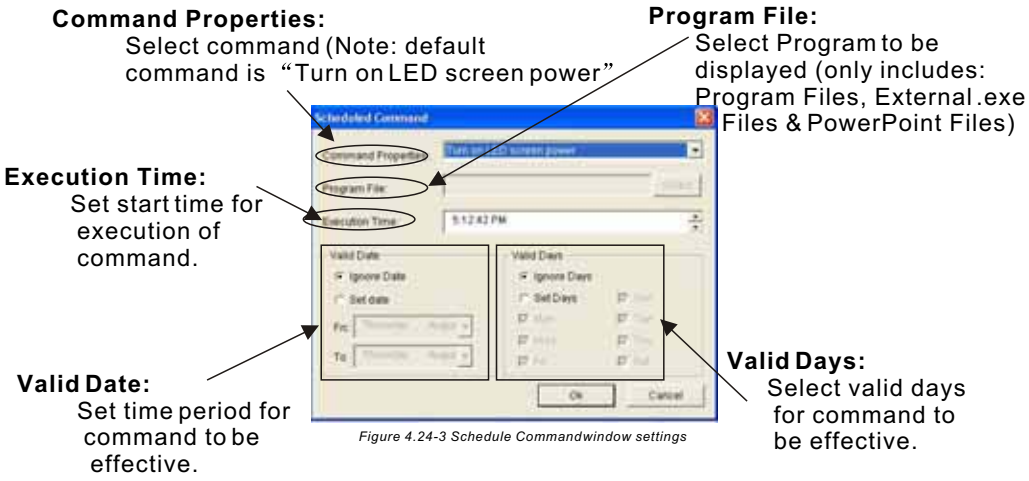


Figure 4.24-3 Schedule Commandwindow settings

Click <Ok> and the following Window will appear showing the Scheduled Command Table.

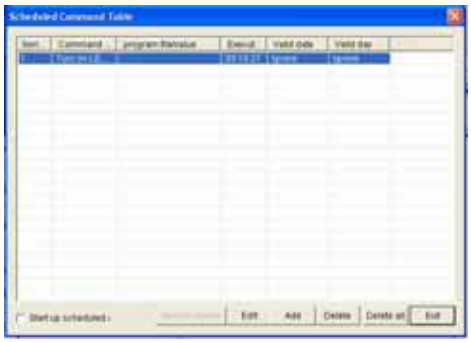


Figure 4.24-4 Schedule CommandTable

4.24-1 EDIT SCHEDULED COMMANDS

Select the desired command to edit and then click the <Edit> button.

4.24-2 DELETE SCHEDULED COMMANDS

Select the desired command to delete and click the <Delete> button.
To delete all commands click the <All Delete> button.

4.24-3 START UP SCHEDULE

Click the <Start up schedule> button in order to put the Scheduled Command Table into operation.

Figure 4.24-5 Start upschedule

4.24-4 EXIT

Click <Exit> in order to store settings and return to control panel.

4.25 DESKTOPDISPLAY

NOTE:

This mode can only berealized using Windows98/XPoperating systems.)
In the open area of the desktop click the right mouse button. The following window will appear.

Figure 4.25-1 Propertiesmenu

Click the <Properties> button.
Click the <Settings> button to bring up the following screen.

Figure 4.25-2 Display Properties

Select <Monitor 2> by clicking on the Monitor 2 icon <>
Select the <Extend my Windows desktop onto this monitor>
Click <Apply>

4.25-1 CANCEL DESKTOP DISPLAY

Click the <Properties> button.
Click the <Settings> button to bring up the following screen.

Figure 4.25-2 Display Properties

Select <Monitor 2> by clicking on the Monitor 2 icon <>
Deselect the <Extend my Windows desktop onto this monitor>
Click <Apply>
Reopen the <Properties Window>
Click the <Settings> button
Select <Monitor 1>
Select <Advanced> and select the <Displays> window (Fig.4.25-3)

Figure 4.25-3 Plug and Play Monitor and RADEON ....Properties

Click the small red triangle at the top left-side of the FPD box (the button will turn green)
Click <Apply>

4.26 TROUBLE SHOOTING

4.26-1 DURING STARTUP MCI SYSTEM ERROR

Microsoft Media Player has not been installed. Please install from the CD-ROM the file Mpsetup2K.exe (using WIN2k/XP/me) or Mpsetup98.exe (using win98)

4.26-2 DURING STARTUP LED SCREEN NOT FOUND OR COMMUNICATION ERROR?

There is a connection problem between the PC and the LED MATRIX screen. Please check all connections and that the connecting cables are not damaged in any way.

4.26-3 DURING STARTUP PC AUTOMATICALLY TURNS OFF

Computer. After the Windows Desktop has loaded reconnect the DVI cable.

4.26-4 DURING PLAY NO DISPLAY WINDOW

Check the size of the display window. If the width or the height are 0, then no display window will be seen.

5 MAINTENANCE AND WARRANTY

5.1 MAINTENANCE AND CLEANING

The equipment must be kept clean at all times. Dust, dirt and smoke residues must not be allowed to buildup on or within the equipment.
Regular cleaning will guarantee that the light output of the equipment is not diminished.
Do not use organic solvents such as alcohol to clean the equipment.
If there are any parts of this equipment that need replacing. Always switch off the mains power before carrying out any repairs.
Please follow the steps described in this user manual to locate the malfunction.
Please contact your supplier for details instructions on how to carry out maintenance.
In the event that any protective shield is cracked or damaged, it should be replaced immediately.
If the external flexible cable or cord of this luminaire is damaged, it shall be replaced by a special cord or cord exclusively available from the manufacturer or his service agent.

5.2 WARRANTY

This equipment left the factory in an excellent condition, all functions were operating correctly and the equipment was well packed in it's protective packaging. It is important that the user operates this equipment by following this user manual carefully.
Any damage that is caused as a result of not following this user manual will not be covered by the product warranty and the distributor cannot accept and responsibility.
The manufacturer reserves the right to make amendments to this user manual at any time.