A revolutionary multi PDP

Infinitely expandable multi PDP

Multi-PDP

User's Manual

Thank you for purchasing our Multi-PDP.
Please read through this user's manual for safety before installing this product.
This product is manufactured for Multi Plasma display model only.

Features of Multi-PDP

- ▶ Enjoy a wide flat screen with high brightness and high quality.
- ▶ Install and move anywhere thanks to its thin shape.
- ▶ Enjoy your favorite programs with various split-screen features simultaneously presenting several programs.

Thank you for purchasing our Multi-PDP monitor.

This manual describes how to use the product and notes in use.
Please read the manual carefully before using it.
After reading this manual, please retain for future reference along with the original purchase receipt.
If you have any questions or a problem occurs, please contact either the company you purchased this product from or an authorized service center.

※Pausing static picture for around 3 hours may cause an afterimage effect.

Warning If you fail to comply with the regulations for safety and proper use, fire or injury may be caused.

Notice to users

Class A digital device

It is a device designed for business purpose with a safety certificate for electromagnetic interference, which user should be mindful of.

Supplied Accessories

User's Manual

Multi-Screen Control System(MSCS)

Guide Pin(4pcs)

PC Cable

Power Cable

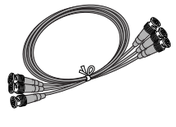
RS232 Cable

Optional Accessories

CVBS Cable (Length 1.2m & 5m)

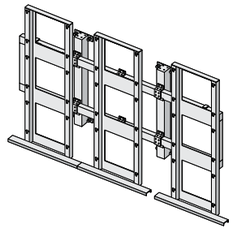
S-Video Cable (Length 1.2m & 5m)

Component Cable (Length 1.2m & 5m)

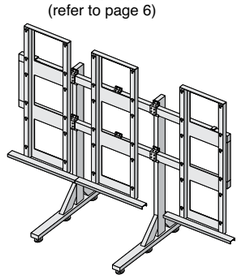


DVI-D Cable (Length 1.2m & 5m)

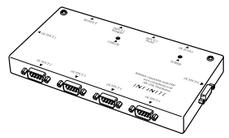
Wall mounting Unit (refer to page 7)



Stand Unit (refer to page 6)



RS-232C Distributor (Recommended for4 x 4 or more units.)

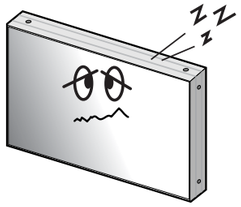


1 Input, 6 Output

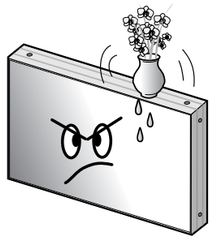
Contents

1. Safety Precautions

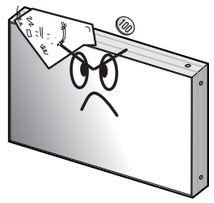
- If it operates abnormally, stop using it immediately.



- Do not place any liquid-containing container on it. If the inside is wet, it may cause electric shock or fire.

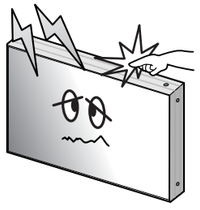


- Do not put any foreign material into the product. It may cause a failure or shorten the life span.

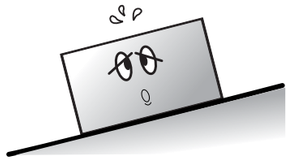


- Please refer to a specialized construction company for installing stand or wall mount unit. Otherwise, damage or injury may be caused.

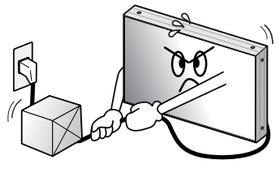
- Do not touch the device when lightning strikes.



- Do not install in an unstable location It may cause injury.

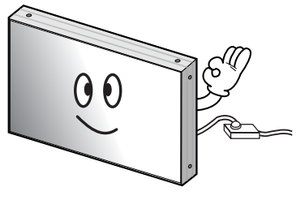


- Avoid any action to damage the power code or power plug. It may cause fire or electric shock.

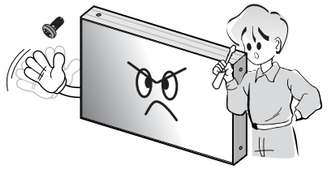


- Do not pull out the power plug with a wet hand. It may cause electric shock.

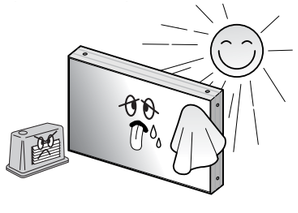
- Do not exceed ratings of AC outlet or extension cords. It may cause failure.



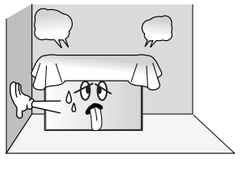
- Do not alter (or disassemble) the product. It may cause electric shock since high voltage is flowing inside.



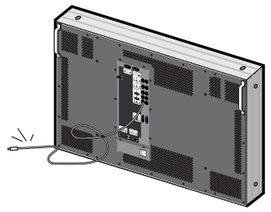
- Do not install the product where it may be exposed to direct sunlight or near any heating device. It may shorten the product's life span or cause failure.



- Make sure the product is not covered with any object. If the venting hole is blocked, the inside temperature may rise to cause overheating resulting in fire.

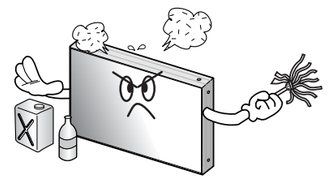


- Do not pull out or hang down the connection cable. It may damage the cord to cause fire or electric shock.

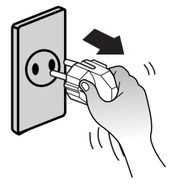


- Do not lean against the product or keep it leaned. It may cause injury or failure.

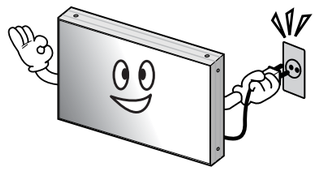
- Do not put it at any place with much humidity, dust, oil, smoke or steam. It may cause failure.



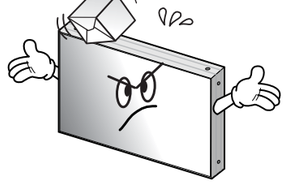
- Pull out the power plug by holding the plug. Otherwise, it may damage the power cord to cause fire or electric shock.



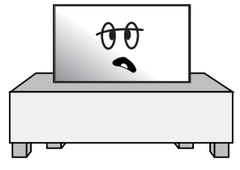
- If you do not want to use the product for a long time, keep the power plug unplugged to save electricity.
- The socket-outlet should be installed near the equipment and be easily accessible.



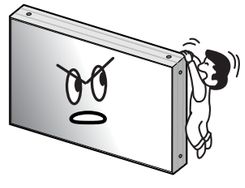
- Do not put any heavy object on it. It may cause failure.



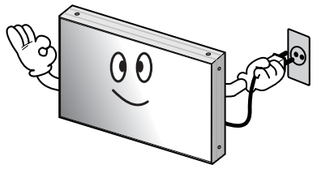
- Install the product on safe and flat surface.



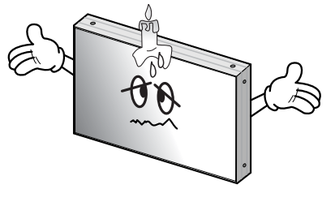
- Do not ride or step on the product It may cause breakage when fallen down.



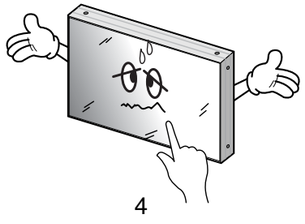
- When moving it, disconnect the connecting cable. Otherwise, it may damage the cable to cause fire or electric shock.



- Do not put candles on the product. If the liquid flows inside the product. It may cause electric shock or fire.

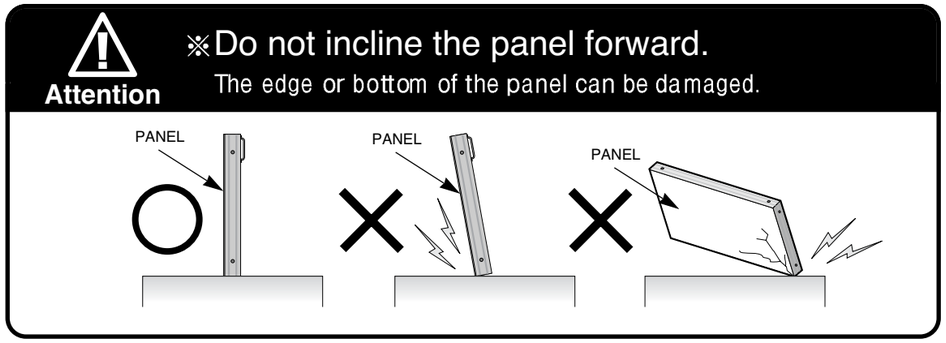


- Do not touch product's front surface with hand. Otherwise, the image quality can be lowered.



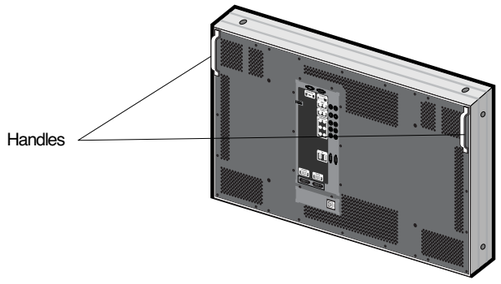
2. HOW TO INSTALL

- The set can be installed in diverse ways such as on a wall, or stand etc.
- Install this set only at a location where adequate ventilation is available.

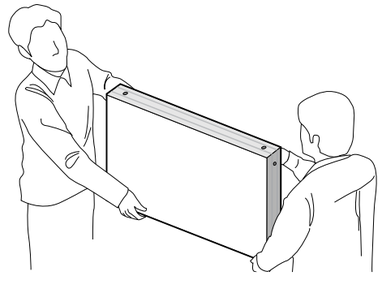


How to move Multi-PDP

1. 2 people hold each handle on product's back side

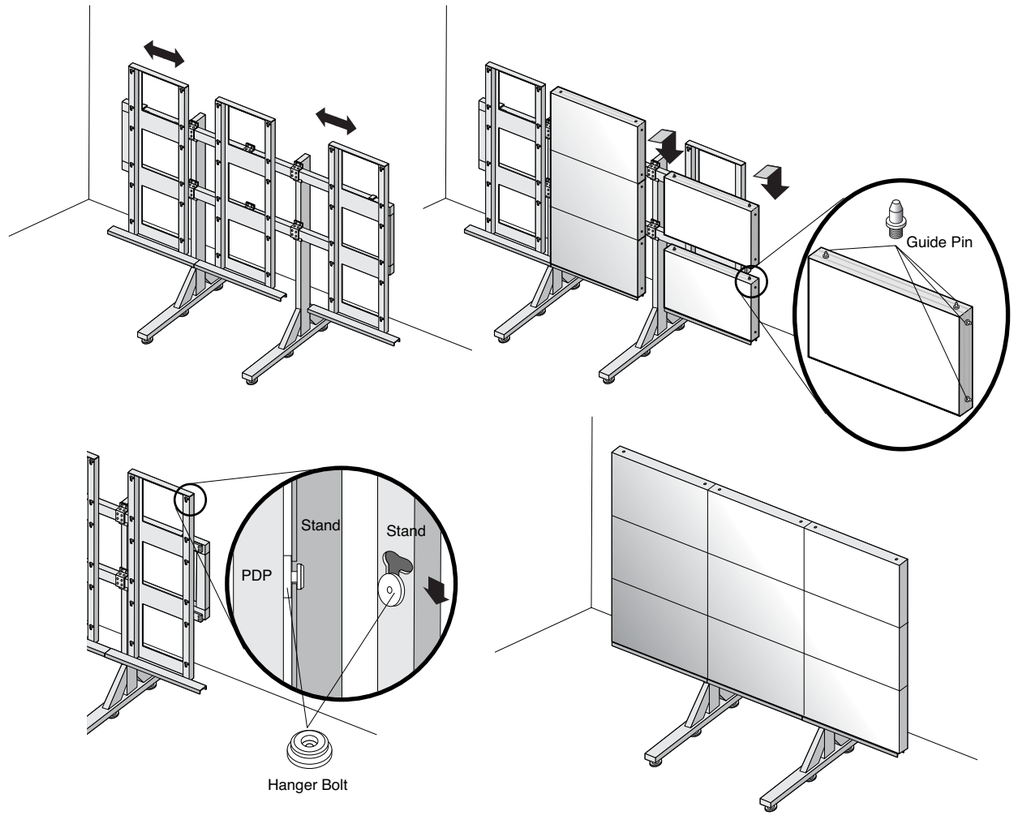


2. 2 people transfer the product with holding the handle and the front part at the same time.

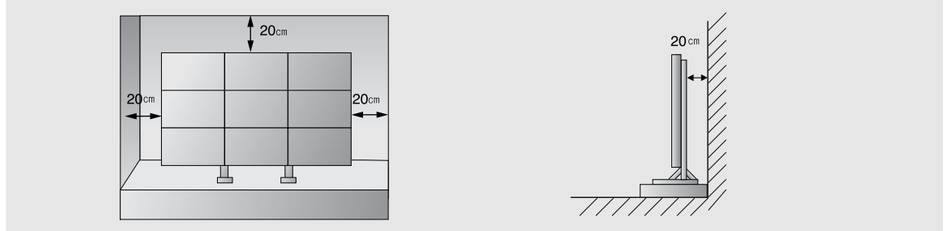


Stand Unit (Option)

- The set can be installed as shown below. (For further information, refer to the optional 'Stand Installation and Setup Guide'.)

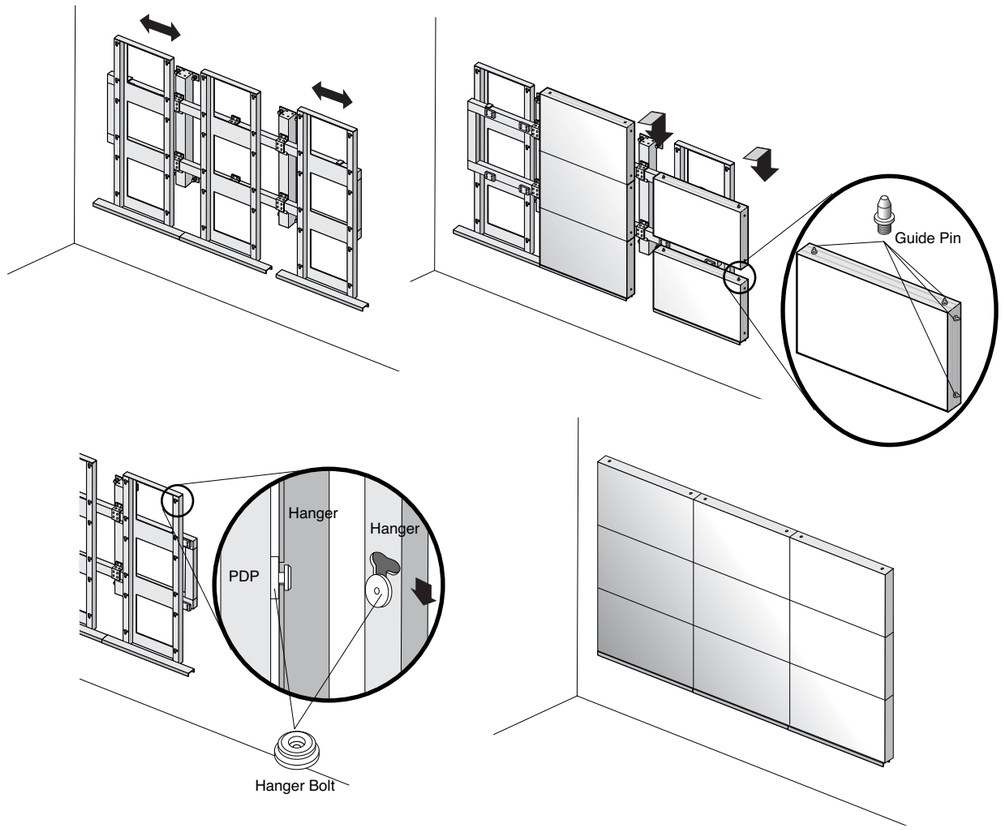


Install on a Stand
Pedestal mount allowing minimum clearance for adequate ventilation.

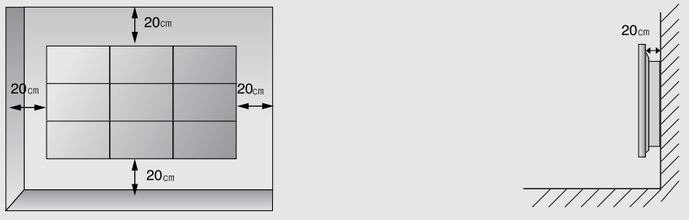


Wall Mounting Unit (Option)

• The set can be installed on the wall as shown below.
(For further information, refer to the optional 'Wall Mounting Bracket Installation and Setup Guide'.)



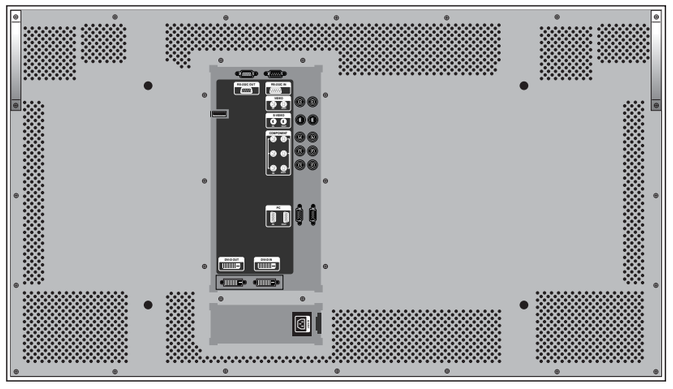
Mount on the wall
Wall mount allowing minimum clearance for adequate ventilation.



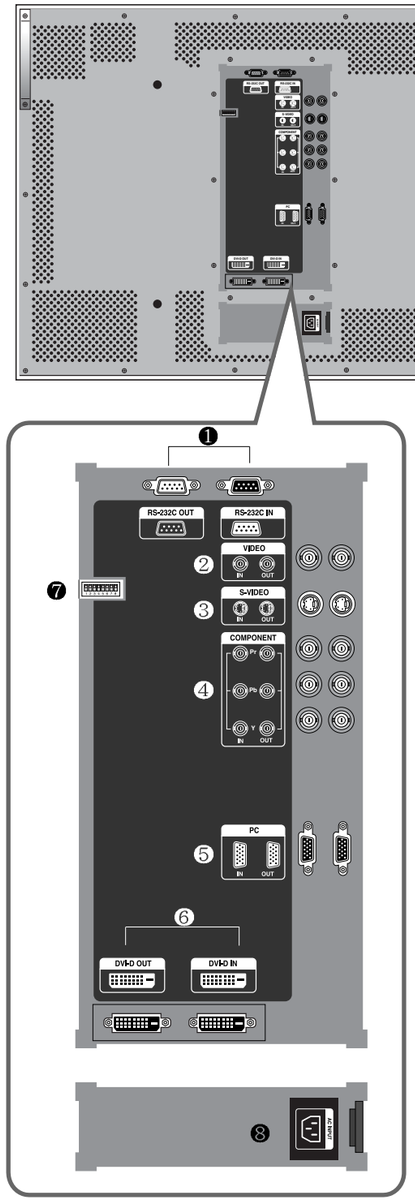
3. Guidance for Users

Front view

Back view



Input/Output Terminals



1. RS-232C
Multi-PDP Control, Firmware Upgrade, 9pin D-sub

2.Video
Composite Signal
NTSC, PAL, SECAM

3.S-Video
S-Video Signal
NTSC, PAL, SECAM, 4pin Mini Din

4.Component
DVD Signal
DTV - YPbPr Signal

5. PC
Computer RGB Analog Signal, D-sub 15pin

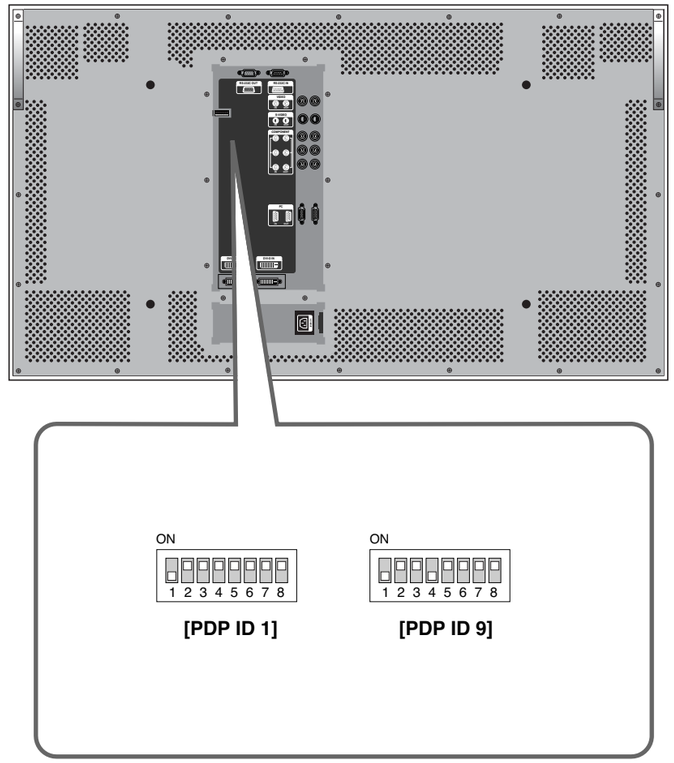
6. DVI-D
TMDS Signal

7. ID Switch
Set ID Switch

8. AC Input
AC 100V ~240V, 50/60Hz

Set ID Switch Setting

• Example of switch
- This is Dyadic System. In case of PDP set ID 1 and ID 9, set the ID switch as shown in the below figure

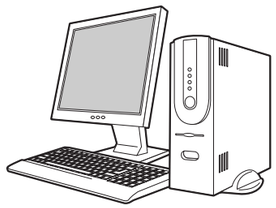


4. How to Connect Cables

4.1. Connection of one set multi-PDP

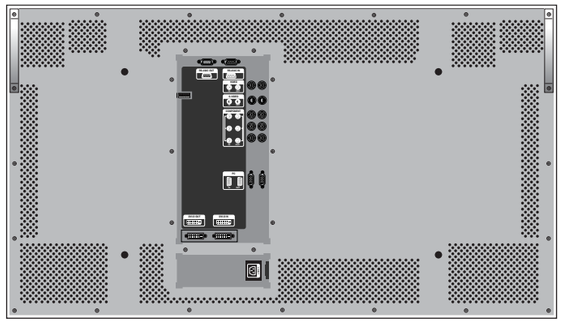
PC & DVI Connection

- MSCS (Multi-Screen Control System) that we supply and RS-232C of PDP monitor can control all functions of Multi-PDP, such as On/Off and screen control.
- To control Multi-PDP through PC, the Identity number of each Multi-PDP must be unique.
- RS-232C of each Multi-PDP and PC should be connected.



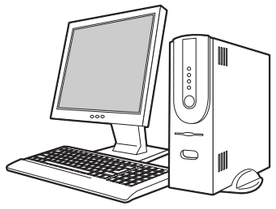
PC (MSCS) to control Multi-PDP

RS-232C



[PDP ID 1]

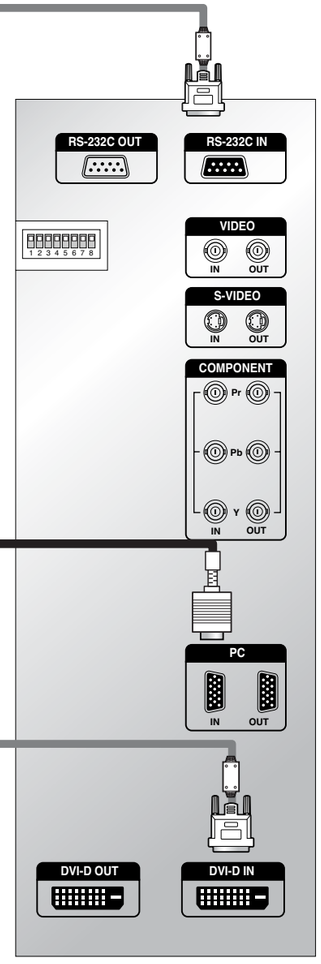
- ID switch must be set as ID 1 for one set use.



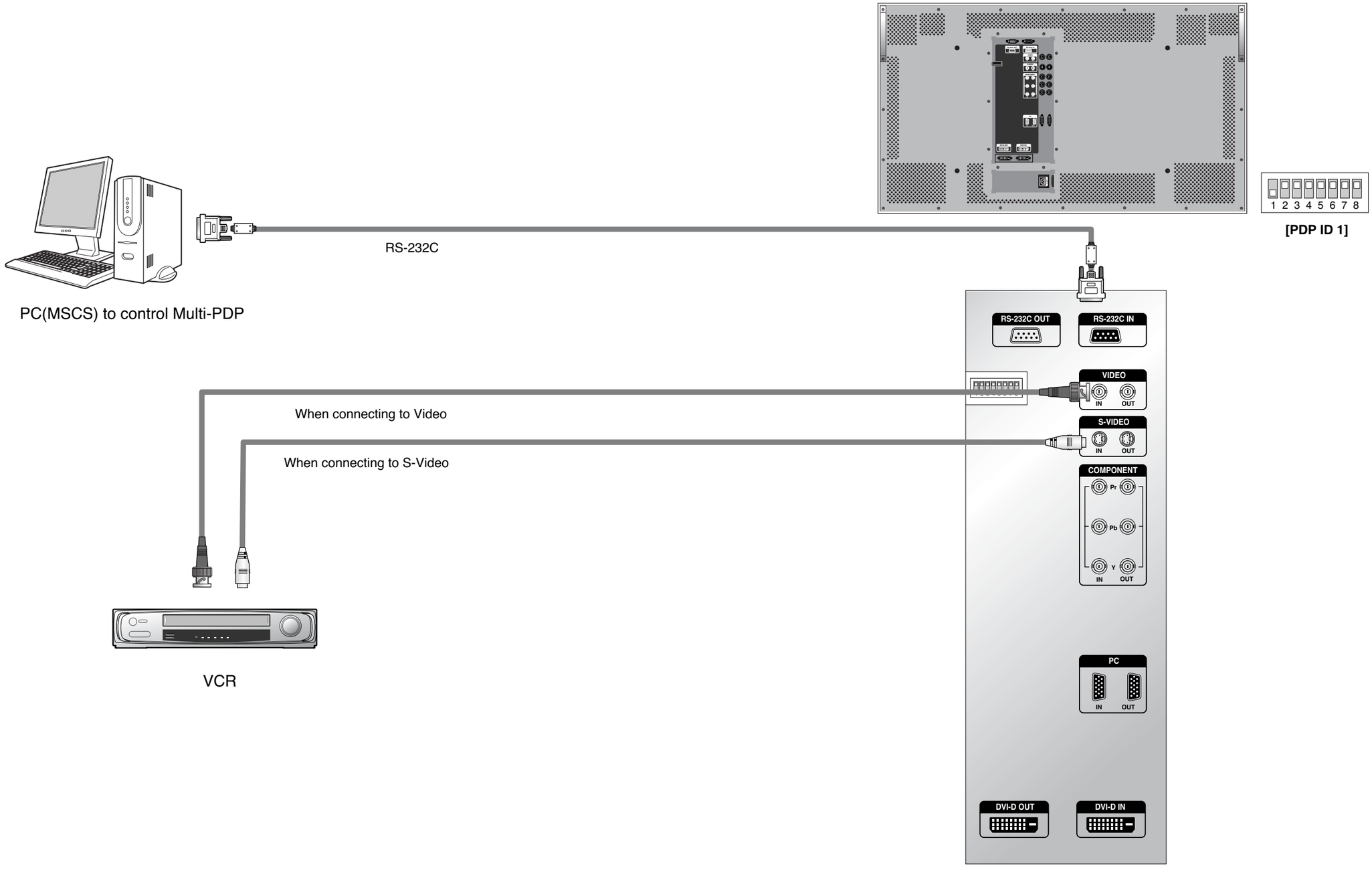
PC

When connecting to PC-ANALOG

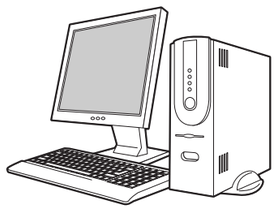
When connecting to DVI



VCR Connection

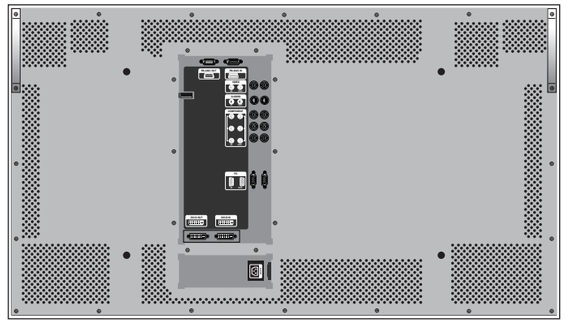


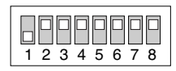
DVD & DTV Connection



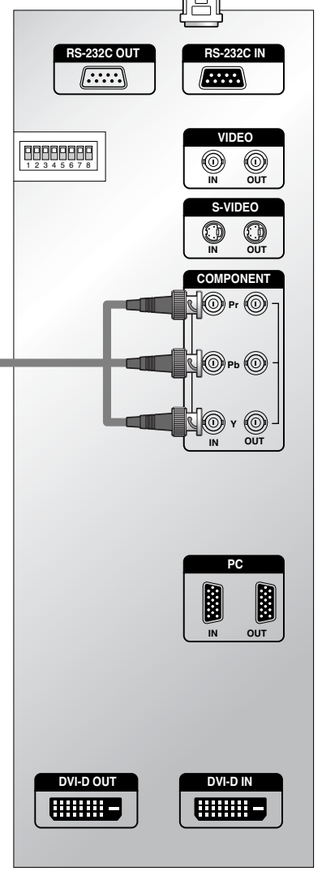
PC(MSCS) to control Multi-PDP

RS-232C

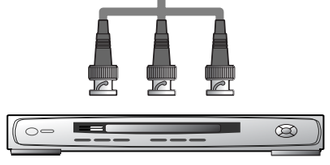




[PDP ID 1]



When connecting to Component



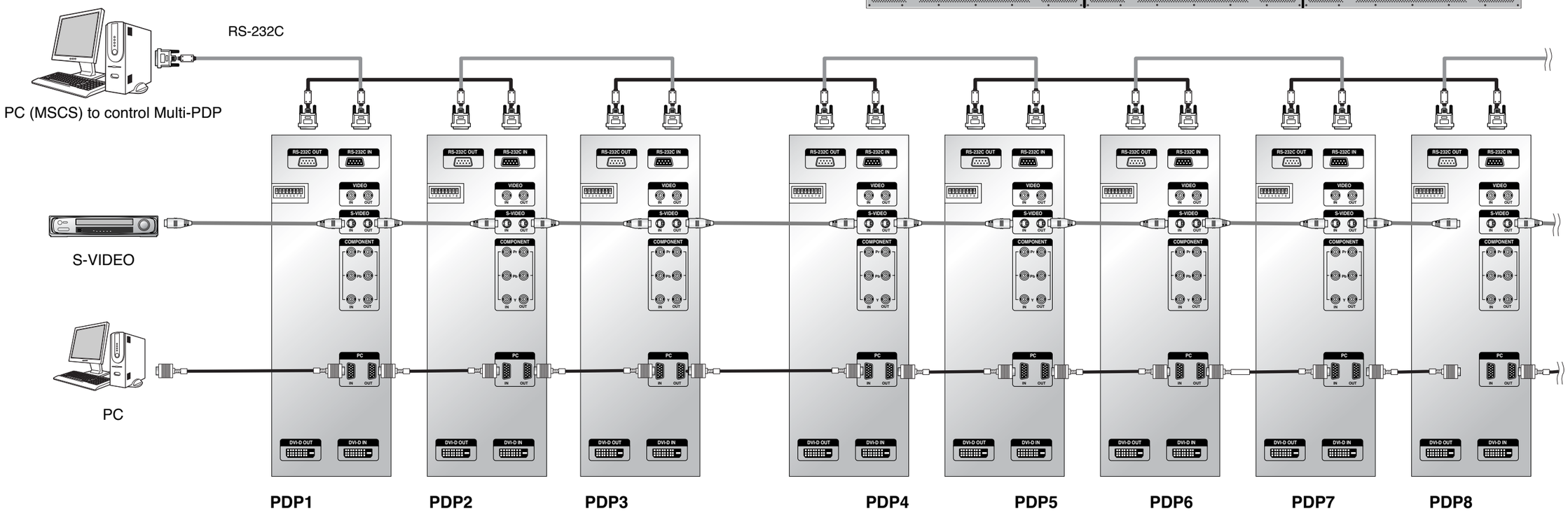
DVD & DTV

- **Component Input ports**
  You can get better image quality by connecting DVD player to component input ports as below.

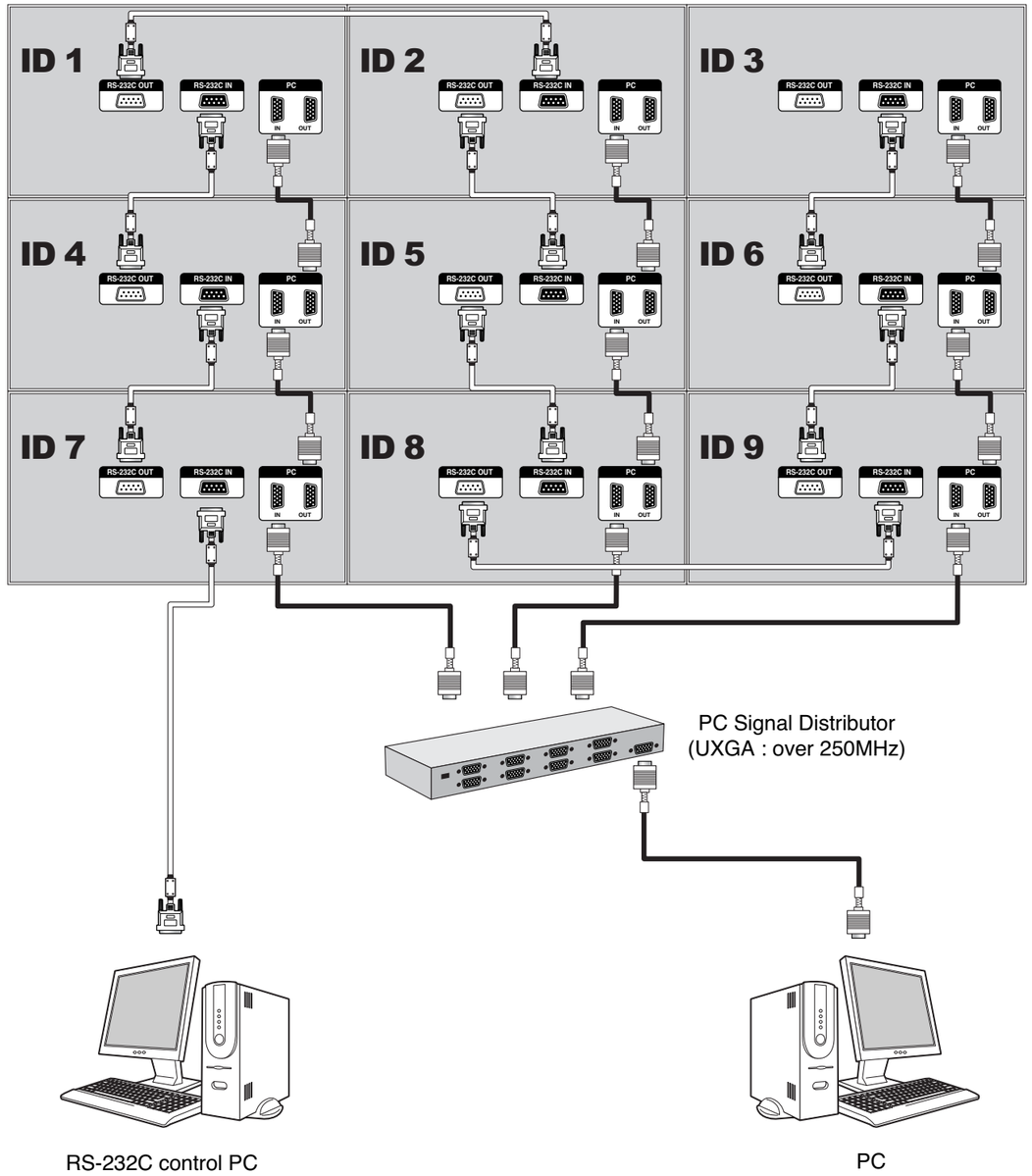
Component ports of the set	Y	Pb	Pr
Video output ports of DVD player	Y Y Y	Pb B-Y Cb	Pr R-Y Cr

4.2. Connection of M x N Multi-PDP

- When connecting a number of Multi-PDP through Daisy Chain(Link), surrounding noise may come out to lower the image quality.
- In case of lower image quality, it is advisable to use a distributor that can provide resolution over UXGA (1600*1200 @ 60Hz).



4.3. Connection of 3 x 3 Multi-PDP

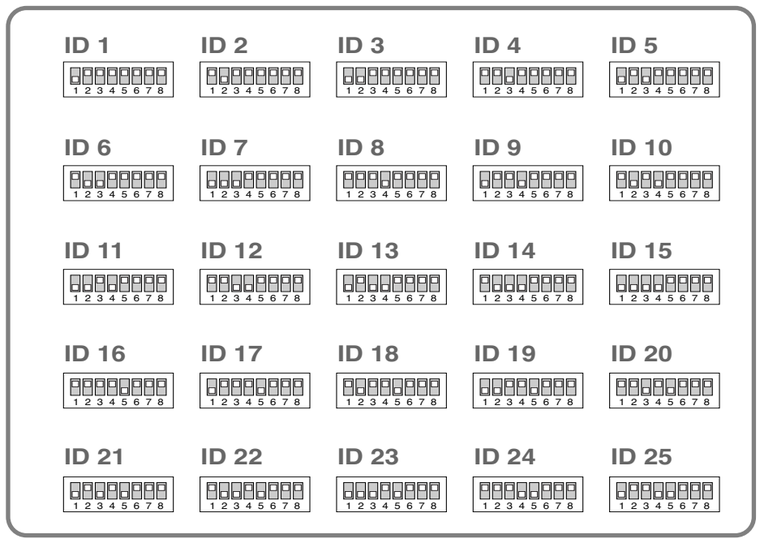


4.4. Setting ID of M x N Multi-PDP

- Identity number (ID) indicates the location of each Multi-PDP.
- When you look at the Multi-PDP screens in front of Multi-PDP.

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

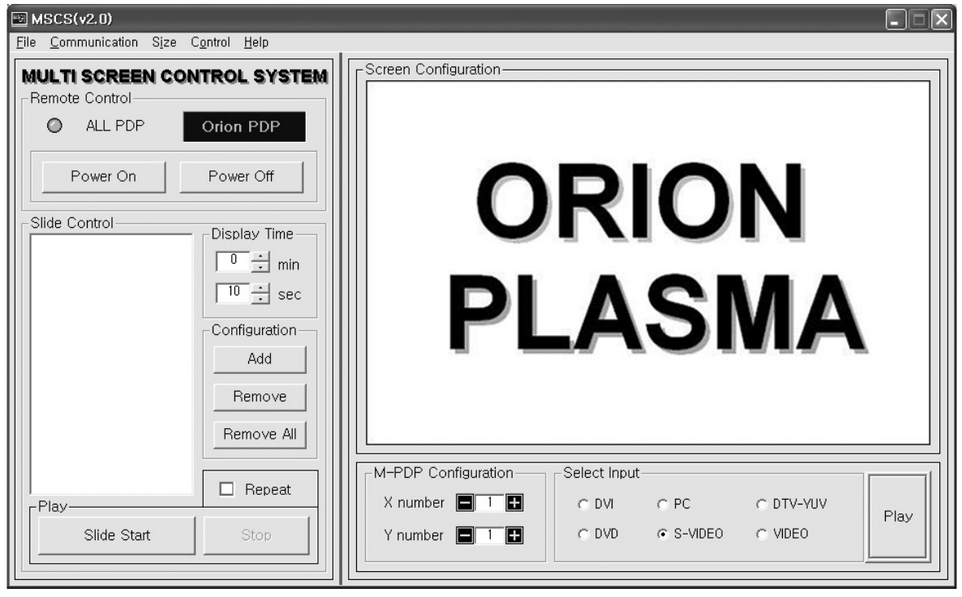
Recommended ID of M x N screens



5. Setting and operation of MSCS

- MSCS is an application program needed to control MPDP.
- Activate MSCS setup file. Directory is created in C:/ MSCS(v.2.0) and shortcut is made on the monitor.
- Activate MSCS(v2.0) exe file
  Main image of MSCS is as shown below.

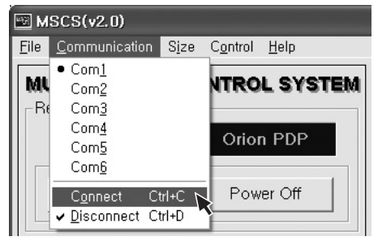
- System Requirements : Window® 2000 or Window® XP



Main Image of MSCS (Multi Screen Control system)

5.1. Setting 'Com Port'

- Com Port connects and disconnects between PC and MPDP.
- Connect MPDP to PC Com Port via RS-232C cable.



Communication Setting

- Go to MSCS Menu –> Communication and set Com Port. Click 'Connect' using mouse or press 'Ctrl+C' using keyboard.
- In order to disconnect communication, click 'Disconnect' using mouse or press 'Ctrl+D' using keyboard.

5.2 “Last design/New design” setting

- When Com Port is successfully connected, pop-up window for “Last design/New design” appears.

Last/New Design Set

- Click “Open Last Design” to go to latest design before closing.
- Click “Open New Design” to prepare new configuration.

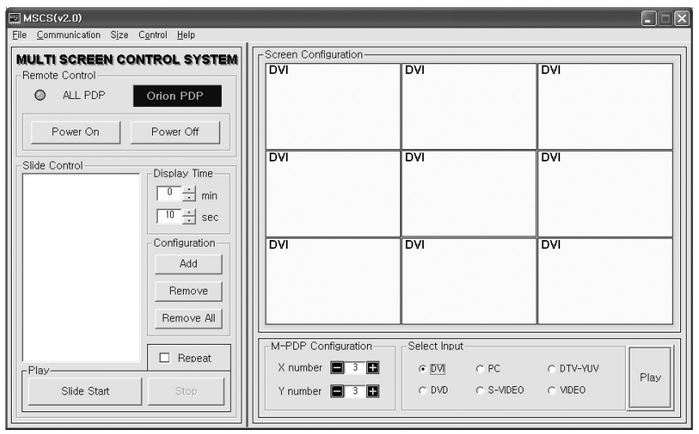
5.3 Setting 'Multi-Screen' Configuration

Screen Configuration Setting

1 Select a desirable X number and Y number
-X number represents the number of MPDP columns and Y number represents the number of MPDP rows.
-The range of X.Y number is from 1 to 5

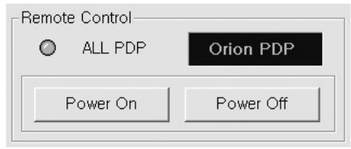
2 Select one out of 6 input sources such as DVI, PC, DTV, DVD, S-VIDEO and VIDEO.

3 Press “play” button
-Desired configuration is set up in “Screen Configuration” after selecting input source in “Select Input” and setting X number and Y number are completed.



5.4 Remote Control

-Check “ALL PDP” to send data to all connected MPDP regardless of ID.

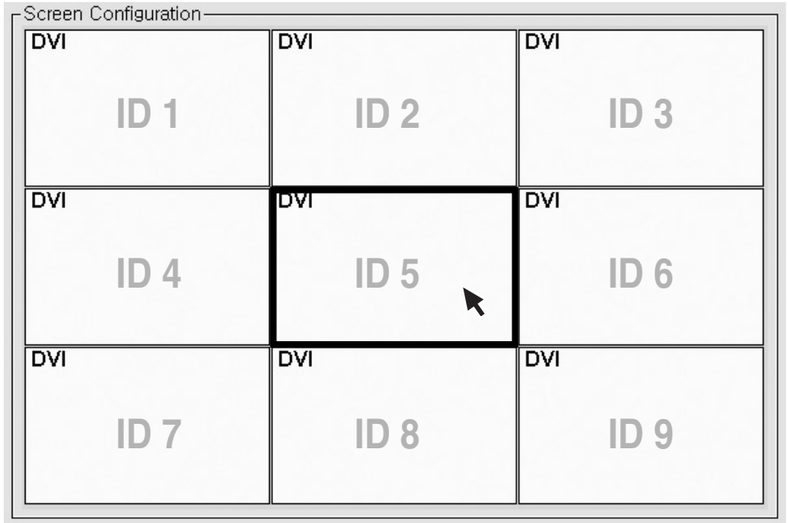


PDP Control - Power On/Off

-In order to control power of specific MPDP, use “Power On/Off” button after selecting the specific MPDP.

5.5 ID Setting

• ID of MSCS is set automatically.



Example of PDP ID Setting
(Input signal is DVI, Configuration is 3 by 3)

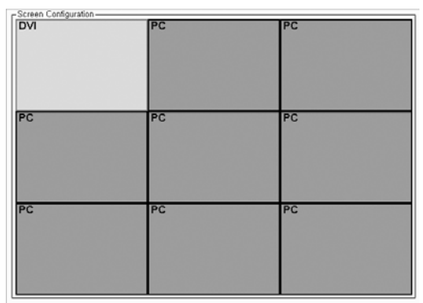
• In order to transmit data to chosen MPDP, ID of Screen Configuration must be selected.
• Select ID using right button of mouse. Selected ID is displayed with red square box.

5.6 Configuration of various modes

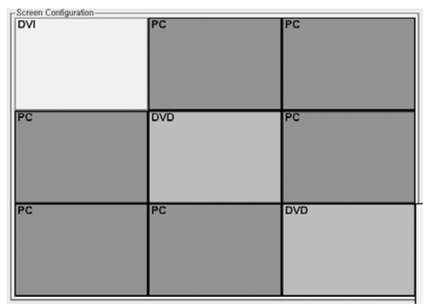
• You can configure various input sources as you want.

1 Select a desirable input Source in “Select Input”
Ex) Select “DVI” in “Select Input”

2 Click desirable screen with left button of mouse then the screen would be converted into DVI.



3 You can configure other screens in the same way.
-Selected screen would be converted into DVD.

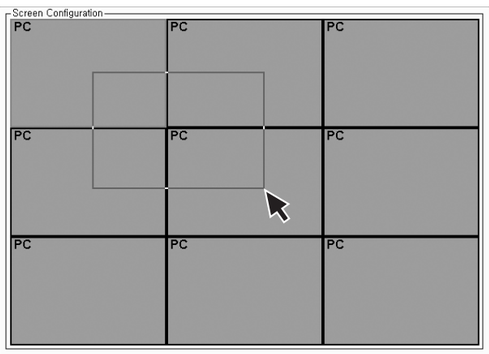


5.7 Setting multi screens at a time

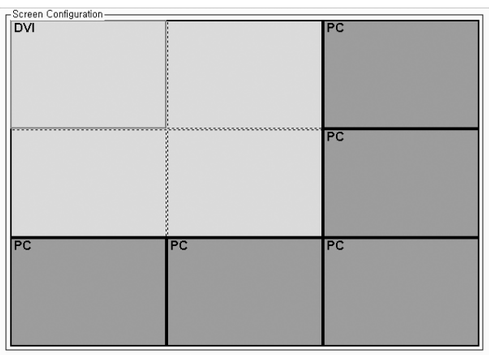
• You can select multi screens at a time as you want.

1 Select a desirable input source in “Select Input”
-Select “DVI” in “Select Input”.

2 Select screens with left button of mouse and drag from the first screen.



3 Selected screens would be converted into DVI.

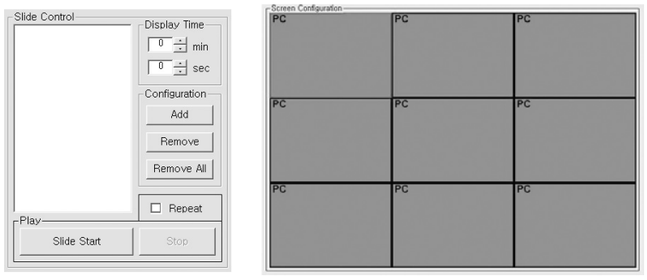


• Click 'Play' button on the main image of MSCS or scroll using mouse to return to initial image.

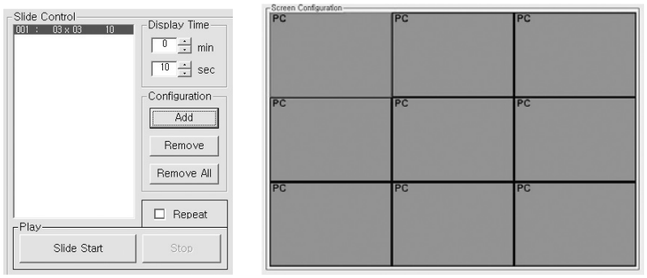
5.8 Slide Control

• MPDP configuration that users set is displaying repeatedly.

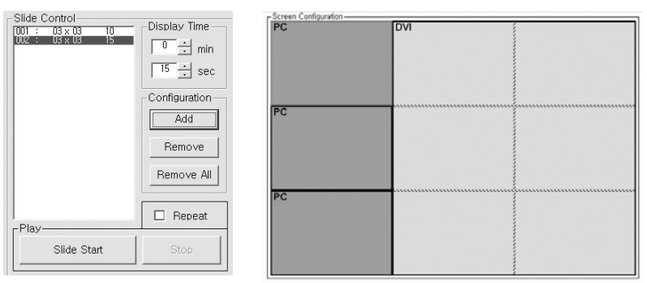
1 Make a desirable configuration in “Screen Configurations”



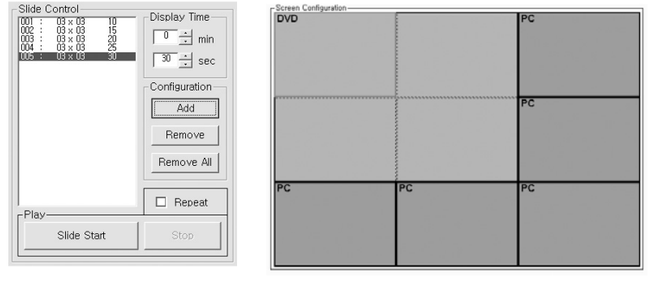
2 Set “Display Time” in “Slide Control”
-Click “Add” button to save configuration.
-The range of “Display Time” is from 10 seconds to 1 hour.



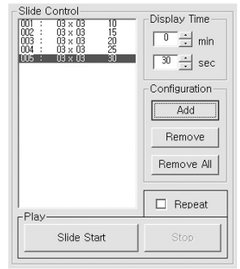
3 Save diverse screen configurations in the same way.



4 Click “Slide Start” to display saved screen configurations.
-Saved screen configurations are displaying for preset time.



5 Check “Repeat” to display saved configuration repeatedly.

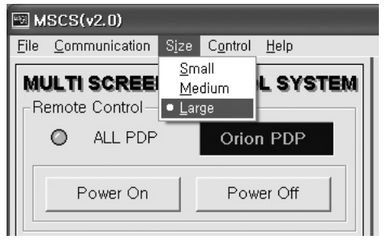


6 Click “Stop” button to end “Slide Control”

※ To view the slide form, click ‘List Box’ of saved slide.
※ To transmit saved slide protocol command, double click ‘List Box’ of saved slide.

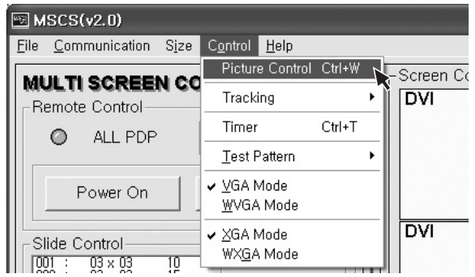
5.9 MSCS Size Control

- The dialog size of MSCS can be set in three levels of small, medium and large as indicated below.



5.10 Picture Control

- Register values related to display of MPDP can be changed.
- Click “Picture Control” of “Control” menu bar or enter “Ctrl+W” in order to run “Picture Control” window.

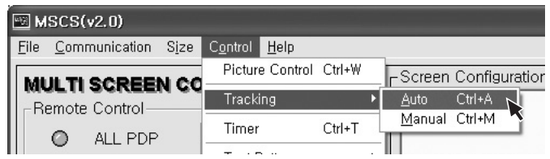


Picture Control

- In order to control display values, input values directly in “Edit Box” and press Enter key. Or click -/+ button using mouse.
- Check “All PDP” to transmit command data to all connected MPDPs regardless of ID.
- Click “Reset” button to initialize the values.
- Click “Exit” button or press “Ctrl+X” using keyboard to close “Picture Control” window.

5.11 Auto Tracking

• Alignment adjustment is available when input source is PC.



• Go to “Control” in menu bar –> “Tracking” –> “Auto” in order to run “Tracking Auto” window.

Tracking Manual Window

• In case alignment doesn't work through “Tracking Auto” command, users can tune finely through “Tracking Manual”. Go to “Control” of menu bar –> “Tracking” –> “Manual” or press “Ctrl+M” using keyboard.

• “Tracking Manual” window enables users to set Frequency, Phase, LineStart and PixelStart.

• When “Tracking Manual” window is on display, users cannot display “Picture Control” window.

• Even when “Tracking Manual” window is on display, setting “ID” is available by clicking right button of mouse.
(Refer to “5.5 PDP ID Setting”.)

• Detail adjustment steps are as follows.

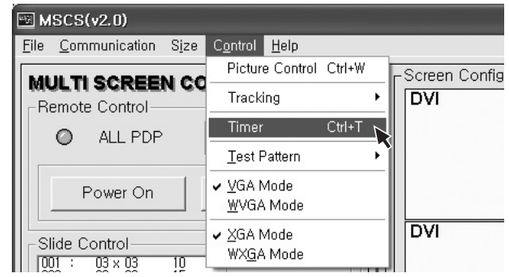
1) Tune “Phase” until the vertical lines are clearly adjusted..
2) Tune “LineStart” to adjust vertical alignment. “PixelStart” for horizontal alignment.
3) Adjust “Frequency” if alignment is still wrong.
If you adjust “Frequency”, repeat step 1) and 2) to fit alignment.
- The range of Frequency, LineStart, PixelStart you can adjust is from -50 to 50
- The range of Phase you can adjust is from 0 to 31.

• Check “All PDP” button to transmit tracking command data to all connected MPDPs regardless of ID.

• Click “ Exit” button or press “Ctrl+X” using keyboard to close “Tracking Manual” window.

5.12 Setting “Time On/Off”

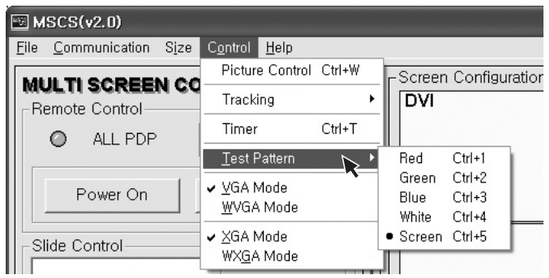
• MPDP turns on and off through designated time schedule set by users.
• In order to activate timer window, go to Control menu bar –> Timer or enter “Ctrl+T” using keyboard.



Timer

• Follow as described below to control “On Time” or “Off Time”.
  I Set hour and minute in “On Time”.
  II Check “Once” for only one time running and check “Daily” for daily running of “On Time” function.
• Follow “On Time” to control “Off Time” function.
• “Timer On/Off” function lasts even though the “Timer” window is closed.
• Users can not set same time in “On Time” and “Off Time”.

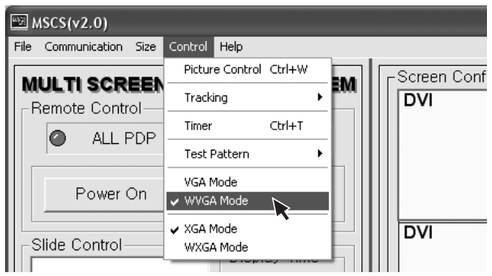
5.13 Test Pattern



Test Pattern

- In order to display “Test Pattern”, go to “Test Pattern” in Control menu.
  Click Red, Green, Blue, White or use Ctrl+1, Ctrl+2, Ctrl+3, Ctrl+4.
  To exit from Test Pattern, click “Screen” in Test Pattern of Control menu or enter “Ctrl+5” using keyboard.

5.14 WVGA Mode



WVGA Mode

- Click WVGA Mode for the PC resolution of 853x480 60Hz.

5.15 WXGA Mode

WXGA Mode

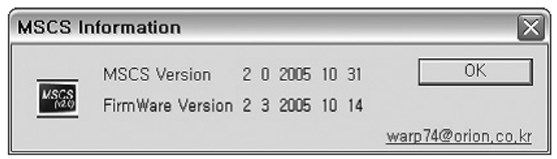
- Click WXGA Mode for the PC resolution of 1280x768,60Hz or 1366x768, 60Hz

5.16 Orion PDP Home Page logon and Version information

• In order to move to Orion PDP's website, go to “Help” of menu bar –> ”Orion PDP Home Page”.

Orion PDP Home Page Logon

• Go to “Help” of menu bar –> ”About” to check MSCS & MPDP Firmware version.



Checking MSCS & MPDP Firmware Version

6. MSCS Protocol

1. Protocol Form

1.1. Type 1 – Individual Command

Command	PDP ID	Sub Command	End
4byte	2byte	4byte	1byte

EX) 6;4=01526>

- 6;4= : Send Command[COMMAND]
- 01 : Set 1 [PDP ID]
- 526> : Power On[SUB COMMAND]

1.2. Type 2 – Multi Scale Command

Command	PDP ID	Sub Command	M (Width)	N (Height)	P (Position)	S (Source)	End
4byte	2byte	4byte	4byte	4byte	4byte	4byte	1byte

EX) 6;4=014=7303030170

- 6;4= : Send Command [Command]
- 01 : Set 1 [PDP ID]
- 4=73 : Multi Scale Command [Sub Command]
- 0303 : Set Configulation (3 x 3) [M (Width), N(Height)]
- 01 : Picture Position (first picture) [P(Position)]
- 70 : DVI Input [S (Source)]

1.3. Type 3 – Adjustment Command

Command	PDP ID	Sub Command	Data	End
4byte	2byte	4byte	Adjustment Value	1byte

EX) 6;4=0147610>

- 6;4= : Send Command
- 01 : Set 1
- 4761 : Adjust Graphic Mode Brightness
- 0> : Change brightness value 14

1.4. Type 4 – Get Data Command

Send To PDP

Command	PDP ID	Sub Command	End
4byte	2byte	4byte	1byte

EX) 6;4=015241

- 6;4= : Send Command
- 01 : Set 1
- 5241 : Get tracking-manual data

Receive From PDP

Command	PDP ID	Sub Command	Data	End
4byte	2byte	4byte	Variable	1byte

EX) 6;4>015241000:0511

- 6;4> : Receive Command
- 01 : Set 1
- 5241 : Get tracking-manual data
- 00 : Frequency value 0
- 0: : Phase value 10
- 05 : Line start value 5
- 11 : Pixel start value 17

2. Protocol Value

2.1. Command

1) Send To PDP

Send To PDP (Send Data)	ASCII	6 ;		4 =	
	Hex	0x36	0x3B	0x34	0x3D

2) Receive From PDP

Receive From PDP (Response Data)	ASCII	6 ;		4 >	
	Hex	0x36	0x3B	0x34	0x3E

2.2. PDP ID

PDP ID : 1 **01**	PDP ID : 2 **02**	PDP ID : 3 **03**	PDP ID : 4 **04**	PDP ID : 5 **05**
PDP ID : 6 **06**	PDP ID : 7 **07**	PDP ID : 8 **08**	PDP ID : 9 **09**	PDP ID : 10 **0:**
PDP ID : 11 **0;**	PDP ID : 12 **0<**	PDP ID : 13 **0=**	PDP ID : 14 **0>**	PDP ID : 15 **0?**
PDP ID : 16 **10**	PDP ID : 17 **11**	PDP ID : 18 **12**	PDP ID : 19 **13**	PDP ID : 20 **14**
PDP ID : 21 **15**	PDP ID : 22 **16**	PDP ID : 23 **17**	PDP ID : 24 **18**	PDP ID : 25 **19**

2.3. Sub Command

2.3.1. Individual Set Command

1) Power Command

Power On	ASCII	5 2		6 >	
	Hex	0x35	0x32	0x36	0x3E
Power Off	ASCII	5 2		6 6	
	Hex	0x35	0x32	0x36	0x36

2) Reset Command

Picture Control Reset Graphic(DVI, PC, DTV)	ASCII	5 2		6 <	
	Hex	0x35	0x32	0x36	0x3C

3) Auto Tracking Command

Tracking Auto	ASCII	5 2		6 1	
	Hex	0x35	0x32	0x36	0x31

4) Test Pattern Command

Test Pattern Red	ASCII	5 2		7 2	
	Hex	0x35	0x32	0x37	0x32
Test Pattern Green	ASCII	5 2		6 7	
	Hex	0x35	0x32	0x36	0x37
Test Pattern Blue	ASCII	5 2		6 2	
	Hex	0x35	0x32	0x36	0x32
Test Pattern White	ASCII	5 2		7 7	
	Hex	0x35	0x32	0x37	0x37
Test Pattern Screen	ASCII	5 2		4 2	
	Hex	0x35	0x32	0x34	0x32
Test Pattern VPC On	ASCII	5 2		4 3	
	Hex	0x35	0x32	0x34	0x33
Test Pattern VPC Off	ASCII	5 2		6 3	
	Hex	0x35	0x32	0x36	0x33
Test Pattern MDIN In On	ASCII	5 2		3 6	
	Hex	0x35	0x32	0x33	0x36
Test Pattern MDIN In Off	ASCII	5 2		3 7	
	Hex	0x35	0x32	0x33	0x37
Test Pattern MDIN Out On	ASCII	5 2		3 8	
	Hex	0x35	0x32	0x33	0x38
Test Pattern MDIN Out Off	ASCII	5 2		3 9	
	Hex	0x35	0x32	0x33	0x39

5) Mode Command

VGA Mode	ASCII	5 2		3 1	
	Hex	0x35	0x32	0x33	0x31
WVGA Mode	ASCII	5 2		3 2	
	Hex	0x35	0x32	0x33	0x32
XGA Mode	ASCII	5 2		3 3	
	Hex	0x35	0x32	0x33	0x33
WXGA Mode	ASCII	5 2		3 4	
	Hex	0x35	0x32	0x33	0x34

6) Factory Mode Command

Always Power On Enable	ASCII	5 2		6 ?	
	Hex	0x35	0x32	0x36	0x3F
Always Power On Disable	ASCII	5 2		7 5	
	Hex	0x35	0x32	0x37	0x35

2.3.2. Multi Scale Command

1) Sub Command

Multi Scale	ASCII	4 =		7 3	
	Hex	0x34	0x3D	0x37	0x33

2) Send Data : Multi Scal Data -> Source

DVI	ASCII	6 9	
	Hex	0x36	0x39
PC	ASCII	7 0	
	Hex	0x37	0x30
DTV	ASCII	7 4	
	Hex	0x37	0x34
DVD	ASCII	6 4	
	Hex	0x36	0x34
S-VIDEO	ASCII	7 3	
	Hex	0x37	0x33
VIDEO	ASCII	7 6	
	Hex	0x37	0x36

2.3.3. Adjustment Command

1) Picture Control Graphic User Mode Command

User Mode Graphic - Brightness	**ASCII**	4 7		6 1	
	Hex	0x34	0x37	0x36	0x31
User Mode Graphic - Contrast	**ASCII**	4 7		6 2	
	Hex	0x34	0x37	0x36	0x32
User Mode Graphic - Sharpness	**ASCII**	4 7		6 3	
	Hex	0x34	0x37	0x36	0x33
User Mode Graphic - Saturation	**ASCII**	4 7		6 4	
	Hex	0x34	0x37	0x36	0x34
User Mode Graphic - Hue	**ASCII**	4 7		6 5	
	Hex	0x34	0x37	0x36	0x35

2) Picture Control Graphic White Balance Command

White Balance Graphic - Gain R	**ASCII**	4 7		6 6	
	Hex	0x34	0x37	0x36	0x36
White Balance Graphic - Gain G	**ASCII**	4 7		6 7	
	Hex	0x34	0x37	0x36	0x37
White Balance Graphic - Gain B	**ASCII**	4 7		6 8	
	Hex	0x34	0x37	0x36	0x38
White Balance Graphic - Gamma R	**ASCII**	4 7		6 9	
	Hex	0x34	0x37	0x36	0x39
White Balance Graphic - Gamma G	**ASCII**	4 7		6 :	
	Hex	0x34	0x37	0x36	0x3A
White Balance Graphic - Gamma B	**ASCII**	4 7		6 ;	
	Hex	0x34	0x37	0x36	0x3B
White Balance Graphic - Csc R	**ASCII**	4 7		6 <	
	Hex	0x34	0x37	0x36	0x3C
White Balance Graphic - Csc G	**ASCII**	4 7		6 =	
	Hex	0x34	0x37	0x36	0x3D
White Balance Graphic - Csc B	**ASCII**	4 7		6 >	
	Hex	0x34	0x37	0x36	0x3E
White Balance Graphic - Bias	**ASCII**	4 7		6 ?	
	Hex	0x34	0x37	0x36	0x3F

3) Picture Control Graphic RGB-YUV Data Command

Graphic Data Gain R	**ASCII**	4 7		7 0	
	Hex	0x34	0x37	0x37	0x30
Graphic Data Gain G	**ASCII**	4 7		q(0x71)	
	Hex	0x34	0x37	0x37	0x31
Graphic Data Gain B	**ASCII**	4 7		7 2	
	Hex	0x34	0x37	0x37	0x32
Graphic Data Offset R	**ASCII**	4 7		7 3	
	Hex	0x34	0x37	0x37	0x33
Graphic Data Offset G	**ASCII**	4 7		7 4	
	Hex	0x34	0x37	0x37	0x34
Graphic Data Offset B	**ASCII**	4 7		7 5	
	Hex	0x34	0x37	0x37	0x35

4) Picture Control Video User Mode Command

User Mode Video - Brightness	**ASCII**	5 6		6 1	
	Hex	0x35	0x36	0x36	0x31
User Mode Video - Contrast	**ASCII**	5 6		6 2	
	Hex	0x35	0x36	0x36	0x32
User Mode Video - Sharpness	**ASCII**	5 6		6 3	
	Hex	0x35	0x36	0x36	0x33
User Mode Video - Saturation	**ASCII**	5 6		6 4	
	Hex	0x35	0x36	0x36	0x34
User Mode Video - Hue	**ASCII**	5 6		6 5	
	Hex	0x35	0x36	0x36	0x35

5) Picture Control Video White Balance Command

White Balance Video - Gain R	**ASCII**	5 6		6 6	
	Hex	0x35	0x36	0x36	0x36
White Balance Video - Gain G	**ASCII**	5 6		6 7	
	Hex	0x35	0x36	0x36	0x37
White Balance Video - Gain B	**ASCII**	5 6		6 8	
	Hex	0x35	0x36	0x36	0x38
White Balance Video - Gamma R	**ASCII**	5 6		6 9	
	Hex	0x35	0x36	0x36	0x39
White Balance Video - Gamma G	**ASCII**	5 6		6 :	
	Hex	0x35	0x36	0x36	0x3A
White Balance Video - Gamma B	**ASCII**	5 6		6 ;	
	Hex	0x35	0x36	0x36	0x3B
White Balance Video - Csc R	**ASCII**	5 6		6 <	
	Hex	0x35	0x36	0x36	0x3C
White Balance Video - Csc G	**ASCII**	5 6		6 =	
	Hex	0x35	0x36	0x36	0x3D
White Balance Video - Csc B	**ASCII**	5 6		6 >	
	Hex	0x35	0x36	0x36	0x3E
White Balance Video - Bias	**ASCII**	5 6		6 ?	
	Hex	0x35	0x36	0x36	0x3F

6) Picture Control Video Component & Composite Data Command

Video Data Component Cr	**ASCII**	5 6		7 0	
	Hex	0x35	0x36	0x37	0x30
Video Data Component Cb	**ASCII**	5 6		7 1	
	Hex	0x35	0x36	0x37	0x31
Video Data Component Tint	**ASCII**	5 6		7 2	
	Hex	0x35	0x36	0x37	0x32
Video Data Component Brightness	**ASCII**	5 6		7 3	
	Hex	0x35	0x36	0x37	0x33
Video Data Component Contrast	**ASCII**	5 6		7 4	
	Hex	0x35	0x36	0x37	0x34
Video DataLuma Brightness	**ASCII**	5 6		7 5	
	Hex	0x35	0x36	0x37	0x35
Video DataLuma Contrast	**ASCII**	5 6		7 6	
	Hex	0x35	0x36	0x37	0x36
Video DataLuma Saturation	**ASCII**	5 6		7 7	
	Hex	0x35	0x36	0x37	0x37

7) Auto Tracking Command

Tracking Manual Frequency	**ASCII**	5 2		4 6	
	Hex	0x35	0x32	0x34	0x36
Tracking Manual Phase	**ASCII**	5 2		5 0	
	Hex	0x35	0x32	0x35	0x30
Tracking Manual Line Start	**ASCII**	5 2		4 <	
	Hex	0x35	0x32	0x34	0x3C
Tracking Manual Pixel Start	**ASCII**	5 2		5 8	
	Hex	0x35	0x32	0x35	0x38

8) Adjustment Value : Picture Control Graphic & Video Data

Graphic Data, Video Data	**ASCII**	0x36	
	Hex	High Value	Low Value

2.3.4. Get Data Command

1) Get Data Tracking Manual
Send TO PDP

Get Data Tracking Manual	**ASCII**	5 2		4 1	
	Hex	0x35	0x32	0x34	0x31

Receive Data : Tracking Manual Data

Receive Data : 8byte	Data[0]	Frequency High Value
	Data[1]	Frequency Low Value
	Data[2]	Phase High Value
	Data[3]	Phase Low Value
	Data[4]	Line Start High Value
	Data[5]	Line Start Low Value
	Data[6]	Pixel Start High Value
	Data[7]	Pixel Start Low Value

2) Get Data User Control
Send TO PDP

Get Data Tracking Manual	**ASCII**	5 2		4 1	
	Hex	0x35	0x32	0x34	0x31

Receive Data : Picture Control User Mode Data

Receive Data : 10byte	Data[0]	Brightness High Value
	Data[1]	Brightness Low Value
	Data[2]	Contrast High Value
	Data[3]	Contrast Low Value
	Data[4]	Sharpness High Value
	Data[5]	Sharpness Low Value
	Data[6]	Saturation High Value
	Data[7]	Saturation Low Value
	Data[8]	Hue High Value
	Data[9]	Hue Low Value

3) Get Data White Balance Data
Send TO PDP

Get Data White Balance Data	**ASCII**	4 7		5 7	
	Hex	0x34	0x37	0x35	0x37

Receive Data : Picture Control White Balance Data

Receive Data : 20byte	Data[0]	Gain R High Value
	Data[1]	Gain R Low Value
	Data[2]	Gain G High Value
	Data[3]	Gain G Low Value
	Data[4]	Gain B High Value
	Data[5]	Gain B Low Value
	Data[6]	Gamma R High Value
	Data[7]	Gamma R Low Value
	Data[8]	Gamma G High Value
	Data[9]	Gamma G Low Value
	Data[10]	Gamma B High Value
	Data[11]	Gamma B Low Value
	Data[12]	Csc R High Value
	Data[13]	Csc R Low Value
	Data[14]	Csc G High Value
	Data[15]	Csc G Low Value
	Data[16]	Csc B High Value
	Data[17]	Csc B Low Value
	Data[18]	Bias High Value
	Data[19]	Bias Low Value

4) Get Data Total Data
Send To PDP

Get Data Total Data	**ASCII**	47		54	
	Hex	0x34	0x37	0x35	0x34

Receive Data : Total Data (Total 58 byte)

Receive Data : 58byte (User Data:10byte)	Data[0]	Brightness High Value
	Data[1]	Brightness Low Value
	Data[2]	Contrast High Value
	Data[3]	Contrast Low Value
	Data[4]	Sharpness High Value
	Data[5]	Sharpness Low Value
	Data[6]	Saturation High Value
	Data[7]	Saturation Low Value
	Data[8]	Hue High Value
	Data[9]	Hue Low Value
Receive Data : 58byte (White Balance Data:30byte)	Data[10]	Gain R High Value
	Data[11]	Gain R Low Value
	Data[12]	Gain G High Value
	Data[13]	Gain G Low Value
	Data[14]	Gain B High Value
	Data[15]	Gain B Low Value
	Data[16]	Gamma R High Value
	Data[17]	Gamma R Low Value
	Data[18]	Gamma G High Value
	Data[19]	Gamma G Low Value
	Data[20]	Gamma B High Value
	Data[21]	Gamma B Low Value
	Data[22]	Csc R High Value
	Data[23]	Csc R Low Value
	Data[24]	Csc G High Value
	Data[25]	Csc G Low Value
	Data[26]	Csc B High Value
	Data[27]	Csc B Low Value
	Data[28]	Bias High Value
	Data[29]	Bias Low Value
Receive Data : 58byte (RGB-YUV Data : 12byte)	Data[30]	Gain R High Value
	Data[31]	Gain R Low Value
	Data[32]	Gain G High Value
	Data[33]	Gain G Low Value
	Data[34]	Gain B High Value
	Data[35]	Gain B Low Value
	Data[36]	Offset R High Value
	Data[37]	Offset R Low Value
	Data[38]	Offset G High Value
	Data[39]	Offset G Low Value
	Data[40]	Offset B High Value
	Data[41]	Offset B Low Value
Receive Data : 58byte (Component Data : 10byte) &(Composite Data : 6byte)	Data[42]	Component Cr High Value
	Data[43]	Component Cr Low Value
	Data[44]	Component Cb High Value
	Data[45]	Component Cb Low Value
	Data[46]	Component Tint High Value
	Data[47]	Component Tint Low Value
	Data[48]	Component Brightness High Value
	Data[49]	Component Brightness Low Value
	Data[50]	Component Contrast High Value
	Data[51]	Component Contrast Low Value
	Data[52]	Luma Brightness High Value
	Data[53]	Luma Brightness Low Value
	Data[54]	Luma Contrast High Value
	Data[55]	Luma Contrast Low Value
	Data[56]	Luma Color High Value
	Data[57]	Luma Color Low Value

5) Get Data Firm Ware Version Data
Send TO PDP

Get Data Firm Ware Data	ASCII	5 2		4 =	
	Hex	0x35	0x32	0x35	0x3D

Receive Data : Firm Ware Version Data

Receive Data : 12byte		
	Data[0]	Major High Value
	Data[1]	Major Low Value
	Data[2]	Minor High Value
	Data[3]	Minor Low Value
	Data[4]	Year[3] Value
	Data[5]	Year[2] Value
	Data[6]	Year[1] Value
	Data[7]	Year[0] Value
	Data[8]	Month High Value
	Data[9]	Monty Low Value
	Data[10]	Day High Value

2.4. End

End(1byte)

End	Enter
Hex	0x0D

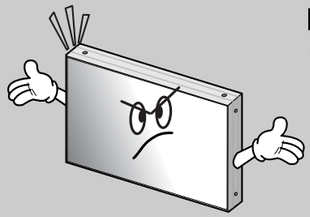
※ Attachment : ASCII to HEX Conversion Table

ASCII	HEX	ASCII	HEX	ASCII	HEX	ASCII	HEX	ASCII	HEX	ASCII	HEX	ASCII	HEX
Esc	1B	,	2C	;	3B	J	4A	Y	59	h	68	w	77
CR	0D	-	2D	<	3C	K	4B	Z	5A	i	69	x	78
LF	0A	.	2E	=	3D	L	4C	[	5B	j	6A	y	79
Space	20	/	2F	>	3E	M	4D	\	5C	k	6B	z	7A
!	21	0	30	?	3F	N	4E	]	5D	l	6C	{	7B
“	22	1	31	@	40	O	4F	^	5E	m	6D	l	7C
#	23	2	32	A	41	P	50	-	5F	n	6E	}	7D
$	24	3	33	B	42	Q	51	`	60	o	6F	~	7E
%	25	4	34	C	43	R	52	a	61	p	70	DEL	7F
&	26	5	35	D	44	S	53	b	62	q	71		
'	27	6	36	E	45	T	54	c	63	r	72		
(	28	7	37	F	46	U	55	d	64	s	73		
)	29	8	38	G	47	V	56	e	65	t	74		
*	2A	9	39	H	48	W	57	f	66	u	75		
+	2B	:	3A	I	49	X	58	g	67	v	76		

7. Other tips

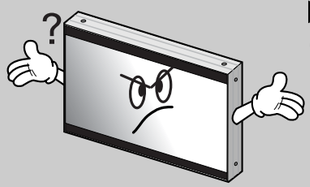
7.1 Before calling for service

Before calling for any repair, check the following and then refer to a near A/S center.



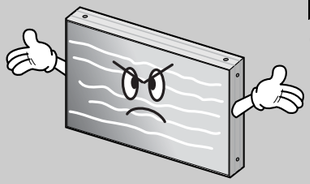
▶“Tick” sound from the main body.

- If there is no problem with the screen or sound, the “tick” sound is likely to result from the cabinet lightly shrinking with the change of room temperature. The sound does not affect product’s performance.



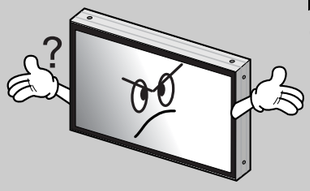
▶No image at upper and lower part of the screen.

- As for a screen which is over 16:9 in width (such as cinema-sized one), no image may be displayed at upper and bottom part of the screen.



▶Speckles or white lines on the screen

- Check whether the problem is caused by vehicle, streetcar, high-voltage cable or neon sign, which emitting interference wave or electromagnetic induction. Avoid any interfering object.

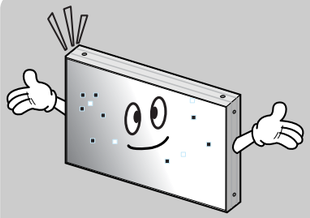


▶Screen size can be changed.

- The screen size may be fitted to the first dark scene depending on contents.

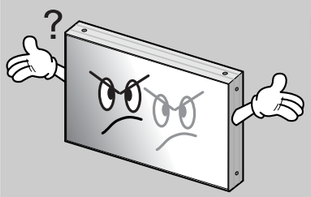
7.2 About Plasma display panel

The followings are phenomena caused by characteristics of the plasma display panel.
Since it is not a fault, you may continue to use the product.



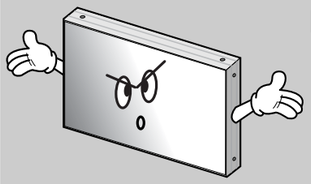
▶Black or twinkling spots on the screen

- Although the plasma display panel is manufactured with high-precision technology, there may exist black or twinkling spots on the screen. Since it is not a fault, you may continue to use the product.



▶Afterimage

- When you keep static image still for around 3 hours, an afterimage may occur. In this case, the afterimage can be slowly removed when operating the screen with full white test pattern.(refer to page 33)



▶Noise from the inside

- When you turn on the product slight buzzing sound may be heard from the rear of display panel. Since it is not a fault, you may continue to use the product.

8. Resolution of PC video signal

8.1 DVD/DTV

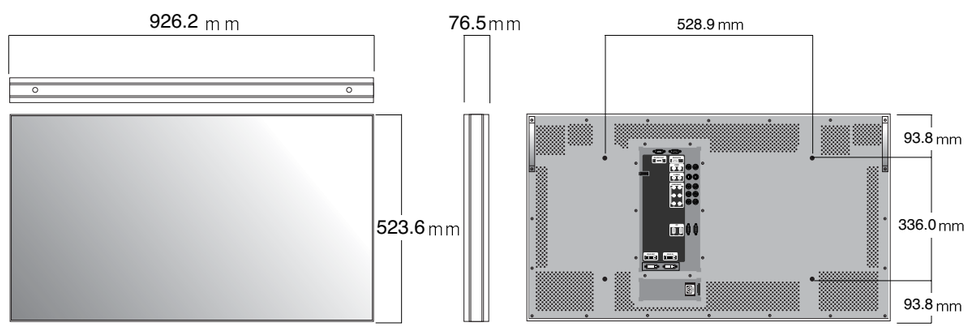
	Resolution	Aspect Ratio
480i	720 x 480	16:9
480p	720 x 480	16:9
576i	720 x 576	16:9
720p	1280 x 720	16:9
1080i	1920 x 1080	16:9

8.2 PC & DVI

Resolution	V-Freq. (Hz)	H-Freq. (KHz)	Remarks
640x350	85	37.86	
640 x 480	60	31.47	
	72	37.86	
	75	37.50	
	85	43.27	
800 x 600	56	35.16	
	60	37.88	
	72	48.08	
	75	46.88	
	85	53.67	
853 x 480	60	31.50	
1024 x 768	60	48.36	
	70	56.48	
	75	60.03	
	85	68.68	
1152 x 864	75	67.50	
1280 x 960	60	60.00	
1280 x 1024	60	63.98	
1280 x 768	60	47.69	
1366 x 768	60	47.69	
1600 x 1200	60	75.00	

9. Specifications

Power supply		100 ~ 240V AC. 50/60Hz	
Power consumption			
	Max	400W	
Plasma display panel		42inch, 16:9 aspect ratio	
	Contrast ratio	3,000 :1 (Dark room)	
	Brightness	1,000 cd/m² (w/o Film)	
Front filter		Low reflection coating film	
Number of pixels		853W X 480H Pixels	
Seam gap (In case of multi formation)		5mm	
Environmental condition			
	Temperature	0°C~ 35°C	
	Humidity	20% ~ 70%	
Signal			
	Video signal	NTSC, PAL, SECAM,	
	PC signal	VGA, SVGA, WVGA, XGA, SXGA, WXGA, UXGA	
	Frequency	Horizontal Frequency 15.5 ~75kHz Vertical Frequency 50~ 85Hz	
Connectors		Input	Output
	Video	CVBS : BNC S-Video : DIN 4pin	Same as left side
	Component	Y, Pb, Pr : BNC	
	PC	PC RGB : D-Sub 15pin	
	DVI	TMDS : DVI-D 24pin	
	Serial	RS-232C D-sub 9pin(female)	RS-232C D-sub 9pin (male)
External dimension		926.2mm[W] X 523.6mm[H] X76.5mm[D]	



Weight	27 kg

memo

memo

memo