



**Transparent OLED**

# **User Manual**

**TEB550BTS**

# Important Safety Instructions

1.  To reduce the risk of fire or electric shock, do not expose this appliance to rain or other forms of moisture.
2.  Indoor Use Only
3. Display must not be exposed to liquids via dripping or splashing. Please do not place liquid –filled items such as vases near the display.
4. Use only a properly grounded plug and receptacle.
5. CAUTION – These instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any service other than that contained in the operating instructions unless you are qualified to do so.
6. Do not use a damaged or loose plug.
7. This may cause electrical shock or fire.
8. Operate the display only from a power source (i.e. voltage) indicated in the product specification.
9. Otherwise the product can be damaged, fire can occur or you may be electrocuted. If you are not sure what type of power supply you have, consult a certified electrician.
10. In the presence of thunder and lightning, never touch the power cord and signal cable because it can be very dangerous.
  - It can cause electric shock.
11. Do not connect several extension cords, electrical appliances or electrical heaters to a single outlet. Use a power strip with a grounding terminal designed for exclusive use with the computer.
  - A fire can break out due to overheating.
12. Do not touch the power plug with wet hands. Additionally, if the cord pin is wet or covered with dust, dry the power plug completely or wipe dust off before plugging in the cord.
  - You may be electrocuted due to excess moisture.
13. Insert the power plug firmly so it cannot come loose.
  - A loose connection can cause fire.
14. When disconnecting the display from an electrical outlet, the plug must be pulled out from the socket. Do not remove power cord from outlet by pulling from the cord. Pull from the plug head.
15. Hold the plug when pulling out the power cable. Do not pull the plug out by the wire. Do not bend the power cord with excessive force or put heavy objects on the power cord.
  - The power line can be damaged, which may cause electric shock or fire.
16. Do not insert metal or other conductive materials into the product openings. Additionally, do not touch the power cable right after plugging into the wall input terminal.
  - You may be electrocuted.
17. The appliance coupler is used as the disconnect device.
18. Please make sure the device is installed near the wall outlet to which it is connected and that the outlet is easily accessible.
19. Do not unplug the power cord while the product is in use.
  - Electrical shock can damage the product.
20. As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.
21. Do not remove ground prong from three-pronged plugs. If your outlet will not accept three-pronged plugs, consult an electrician for replacement.
22. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions
23. This is a Class A digital device

## CAUTION

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

# Instructions

## Thank You for Purchasing

This manual describes how to use the product and provides safety guidelines and best practices. Please read the manual carefully before installing or using the product. After reading this manual, please retain for future reference. If you have any questions or a problem occurs, please contact either the company you purchased this product from or an authorized service center.

- ✓ Displaying static images for an extended period of time may cause a “burn-in” effect.
- ✓ “Burn-in” effect and the faults in brightness and picture elements caused by extended display of static images are not subject to warranty coverage.

## Accessories



Remote Control



Batteries (AAA x 2)



Quick Manual

## Remote Controller



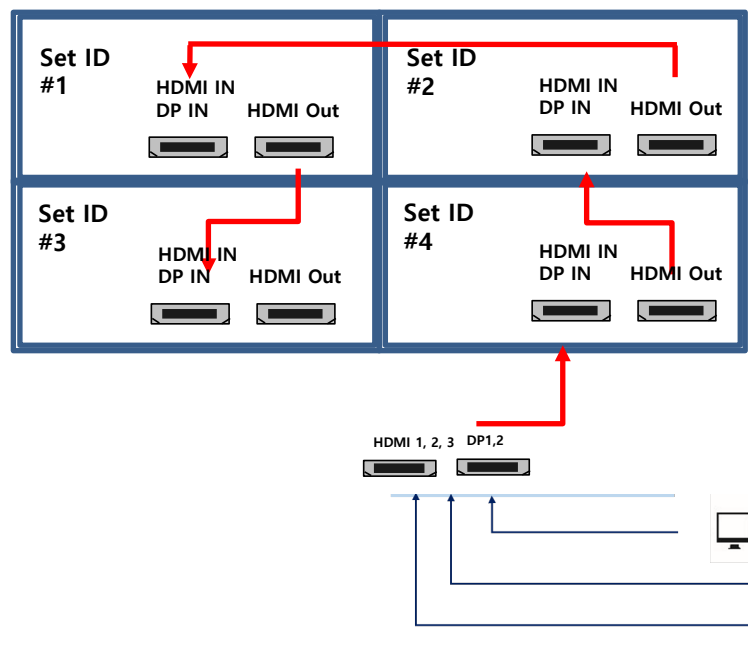
- 1. SOURCE : Select Input Source
- 2. POWER : Turns the OLED Display On and Off
- 3. UP : Control the UP cursor in the menu
- 4. LEFT : Control the LEFT cursor in the menu
- 5. RIGHT : Control the RIGHT cursor in the menu
- 6. ENTER : Control the ENTER cursor in the menu
- 7. DOWN : Control the DOWN cursor in the menu
- 8. MENU : Displays the main On-Screen menu
- 9. EXIT : Exit the On-Screen menu

No	KEY NAME	DATA
K01	SOURCE	ACH
K02		80H
K03		8DH
K04	VOL-	8FH
K05	ENTER	8CH
K06	VOL+	90H
K07		8EH
K08	MENU	95H
K09	EXIT	96H

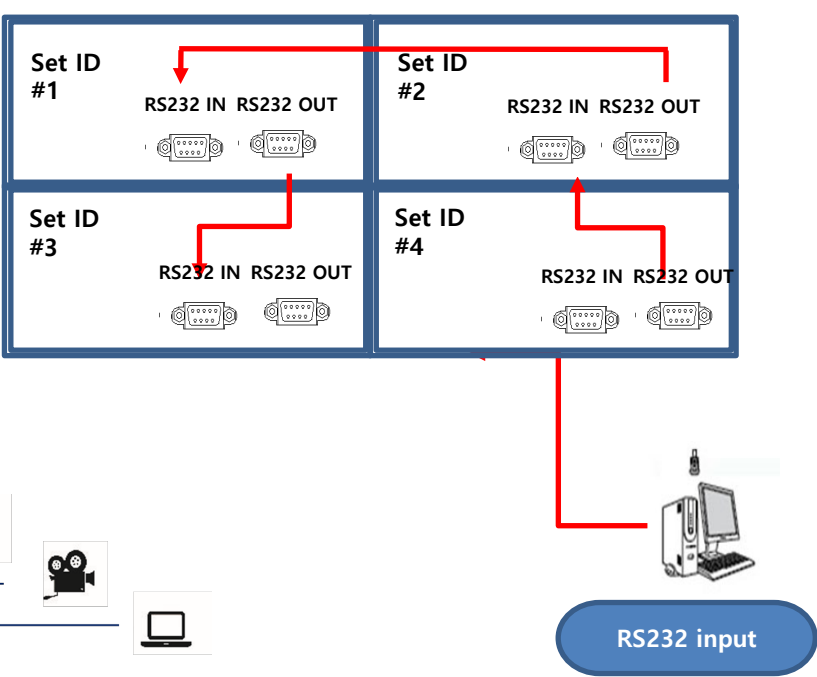
# Cabling Set up

## Daisy-Chaining Monitors

Daisy-Chain Connection for Video Walls

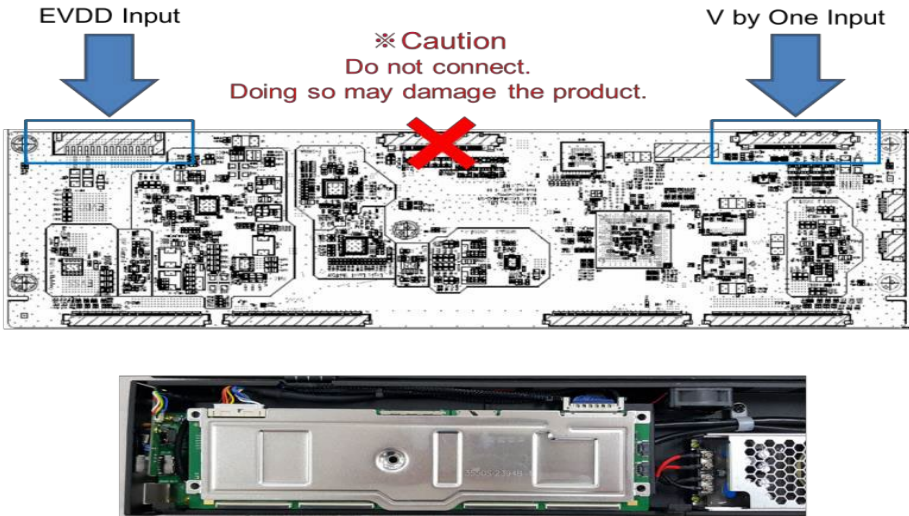


Connecting RS-232 Cables: Daisy-Chain Connection



## AD Board + T-Con Board

OLED Control board

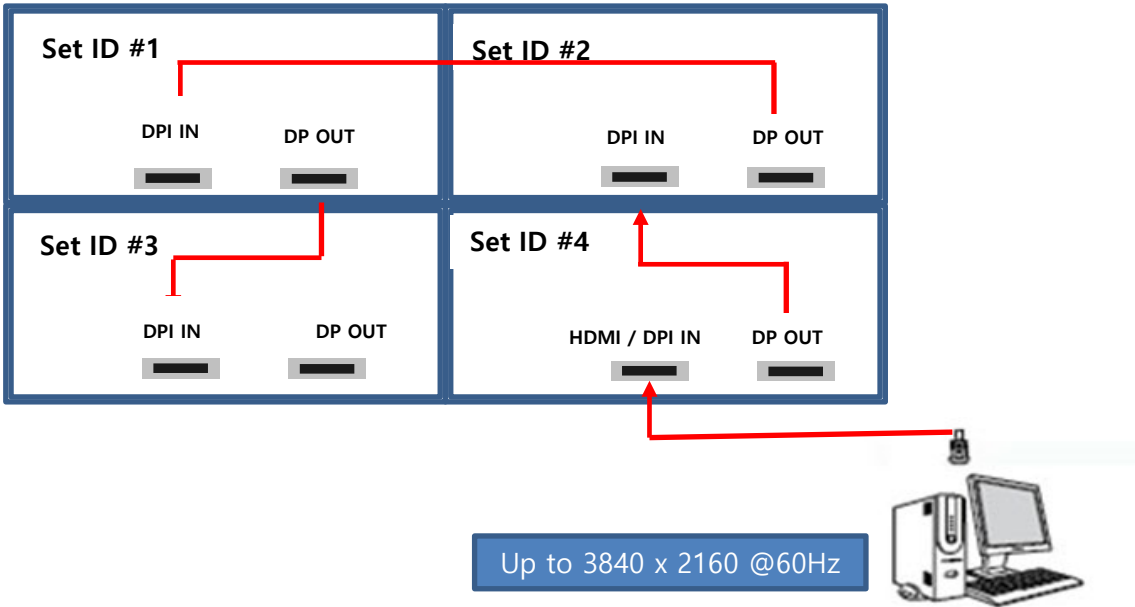


## Connect Video Cables

1. After mounting display, insert any cables used for Power, inputs or outputs into the set.
2. Prior to insertion of the next set into neighboring mount, insert cables from the outputs of the first set into the inputs of the second set.
3. Insert any cables which are to be connected to the third set into the outputs of the second set. Connect these cables into the inputs of the third set.
4. Repeat steps 1-3 for fourth set, if necessary.

- Supports HDMI 4K x 2K input – HDMI, DP
- Supports the daisy chain mode of 4K2K resolution. (HDMI & DP input)
- Recommended HDMI Cable Types
  - High-Speed HDMI®/TM Cable
  - High-Speed HDMI®/TM Cable with Ethernet
- Some installation sites have a high level of Electric Noise which may appear onscreen, especially with HDMI.
- Digital noise may appear due to poor quality HDMI cabling. If the video signal needs be delivered from a distance, electric noise must be accounted for. If the signal cable between the product and your PC is too long, make sure to use the Booster or optical cable.
- HDMI and DisplayPort are HDCP-compliant.
  - HDCP 2.2 Compliant      HDMI 2.0 Compliant
- **Signal-looping specifications (Only HDMI input / DP port doesn't support daisy-chain function)**

Input Resolution	SPEC	Remarks
3840x2160@60Hz	Supports up to 16 units	
3840x2160@30Hz	Supports up to 25 units	
1920x1080@60Hz	Supports up to 25 units	



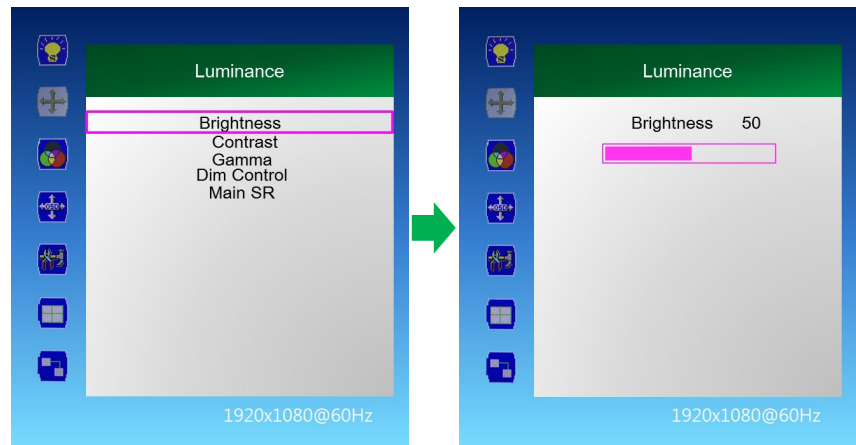
# MENU OVERVIEW

Most menus consist of three levels to set up the options, but some require greater depth for the variety of settings. If you press the **MENU** button, up to the third level of the menu system will appear on the monitor screen. The fourth level can be displayed by pressing the **OK** button

- To show and remove the Menu:  
Press the **MENU** button on the Remote Control to display the menu. A second press of the **MENU** button or a press of the **EXIT** button will take you back to monitor viewing.
- To go to the next level:  
Press **OK** (or **Right arrow** button) on the Remote Control.
- To go back to the previous level:  
Press **MENU** (or Left arrow button) on the Remote Control.
- To go to the next menu:  
Press **Down arrow** button on the Remote Control.
- To go to the previous menu:  
Press **Up arrow** button on the Remote Control

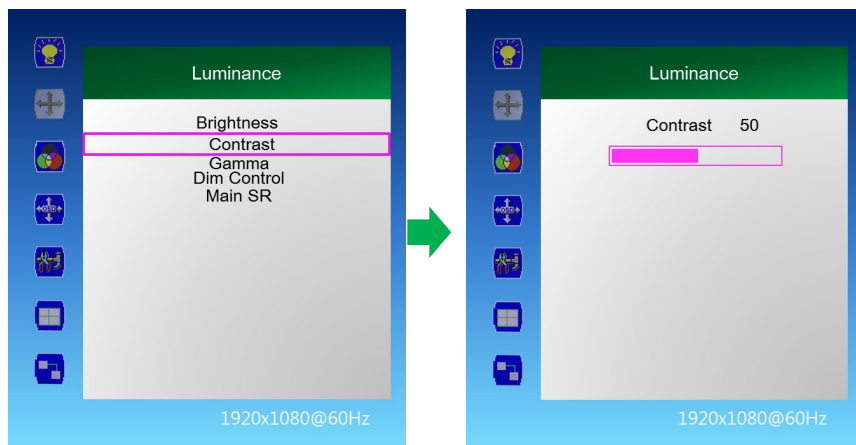
## Luminance > Brightness

1. Press the [MENU] button.
2. Press the [Enter] button to move to the "Luminance" menu.
3. Press the [Enter] button to move to "Brightness", and then press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
5. Press the [EXIT] button to exit the OSD menu.

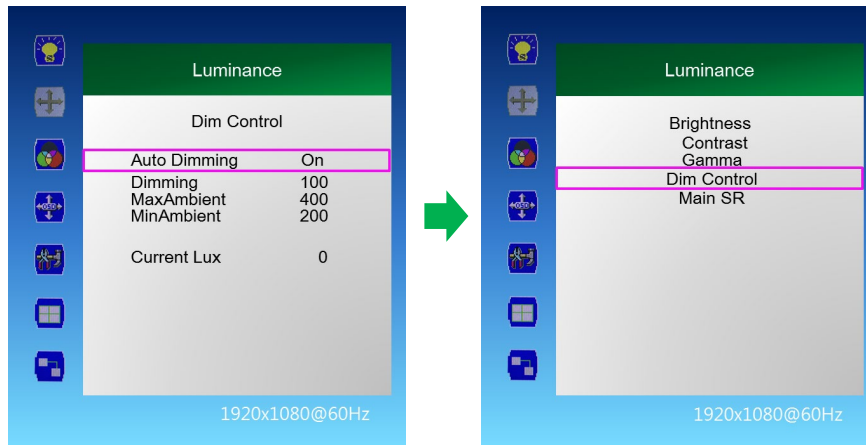


## Luminance > Contrast

1. Press the [MENU] button.
2. Press the [Enter] button to move to the "Luminance" menu.
3. Press the ▲ / ▼ button to move to "Contrast" and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
5. Press the [EXIT] button to exit the OSD menu.



## Luminance > Dim Control



1. Press the [MENU] button.
2. Press the [Enter] button to move to "Dim Control" and press the [Enter] button.
3. Dim Control Setting: On - Off
  - 3-1 Press ▲ / ▼ button to go to "Auto Dimming".
  - 3-2 Press ◀ / ▶ button to adjust to desired setting value and press [Enter] button.
    - On: automatically adjusts the Dim level according to the measured value of the LUX sensor.
    - Off: AUTO Dimming operation Off
4. Monitor displays the current dimming value  
"Dimming": Display the current dimming value of the monitor (can be adjusted when Auto Dimming Off)
5. Maximum ambient brightness setting
  - 5-1 Press ▲ / ▼ button to move to "MaxAmbient"
  - 5-2 Press ◀ / ▶ button to adjust to desired setting value and press [Enter] button.
6. Minimum ambient brightness setting
  - 6-1 Press ▲ / ▼ button to move to "MinAmbient".
  - 6-2 Press ◀ / ▶ button to adjust to desired setting value and press [Enter] button.
7. Lux sensor measurement display  
"Current Lux": Displays the measured brightness of the LUX sensor.
8. Press the [EXIT] button to exit the OSD menu.

Ex) Auto Dimming Setting: On Setting

Max Ambient : 400 settings

Min Ambient : 100

Current Lux 100 or less : Minimum Brightness,

Current Lux 400 or higher: Maximum Brightness

Current Lux 300 : Display brightness proportional to the ratio between 100 and 400

## Luminance > Main SR ( Sharpness )

1. Press the [MENU] button.
2. Press the [Enter] button to move to the "Luminance" menu.
3. Press the ▲ / ▼ button to move to "Main SR" and press the [Enter] button.
4. Press the ▲ / ▼ buttons to select the desired setting, then press the [Enter] button.



## Color

1. Press the [MENU] button.
2. Press the ▼ / ▲ button to move to the "Color" menu.
3. Press the [Enter] button to move to "Color Temperature", and then press the [Enter] button.
4. Press the ▲ / ▼ button to select the desired screen mode and then press the [Enter] button.  
5000K, 6500K, 7500K, 8200K, 9300K, 11500K, sRGB, User Define
- 4-1 When "User Define" mode is selected, Red, Green, Blue can be adjusted to the desired setting value.
- 4-2 Press ◀ / ▶ button to adjust to the desired setting value and press [Enter] button.
5. Press the [EXIT] button to exit the OSD menu.

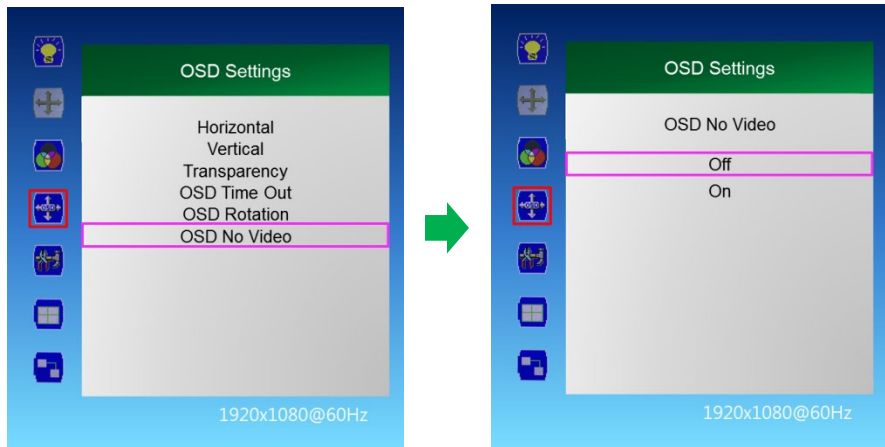




## No Video Message

The “No Video” message, which appears by default when no video input signal is detected, can be turned on or off according to user preference.

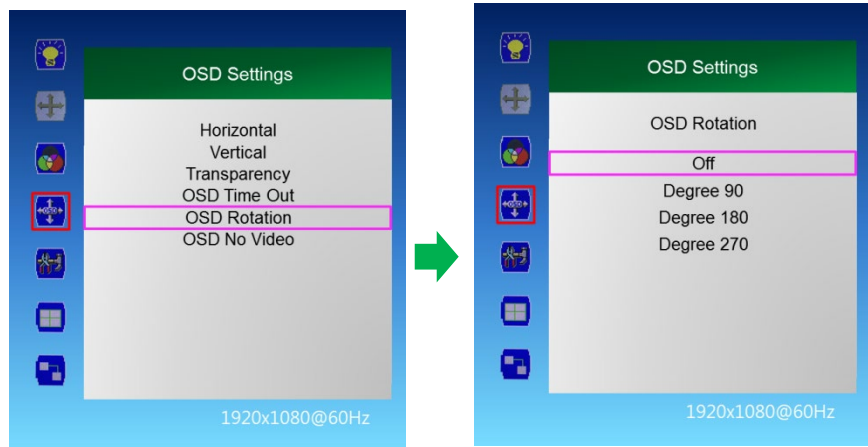
1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "OSD Settings" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to the “ OSD No Video” menu and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.



## Power On (“Splash Screen”) Logo Rotation

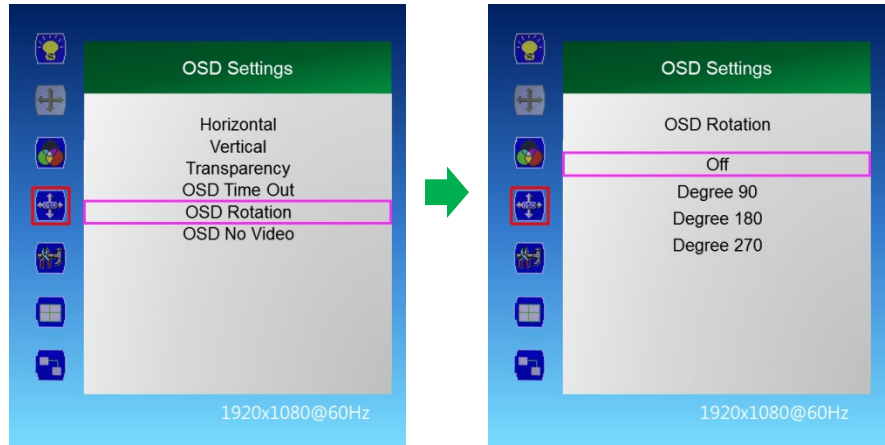
The VIEW logo, which appears upon powering displays on, can be rotated from within the OSD menu. If the display(s) is in portrait orientation, the logo may be rotated 90 or 270 degrees. If the display(s) is inverted in landscape orientation, the logo may be rotated 180 degrees:

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "OSD Settings" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to the “ OSD Roatation” menu and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.



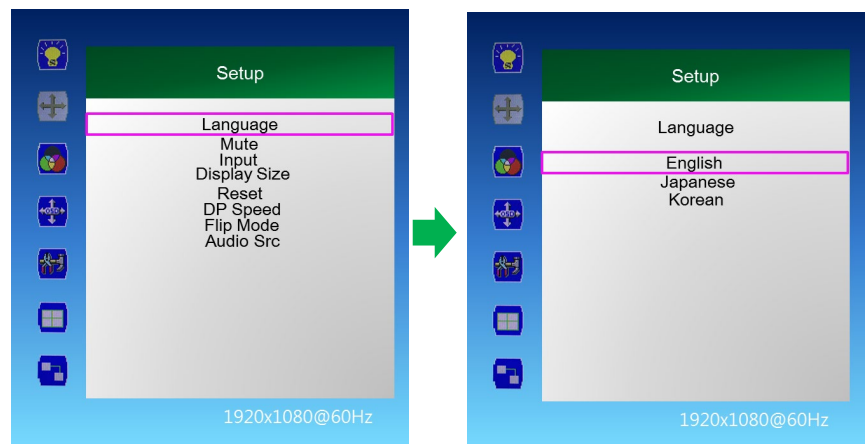
## OSD Settings

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "OSD Settings" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to the desired menu and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  - Horizontal: Adjust the position of the OSD menu screen to the left and right.
  - Vertical: Adjusts the position of the OSD menu screen up and down.
  - Transparency: OSD menu screen transparency adjustment.
  - OSD Time Out: OSD menu screen hold time.
  - OSD Rotation
  - OSD No Video
5. Press the [EXIT] button to exit the OSD menu



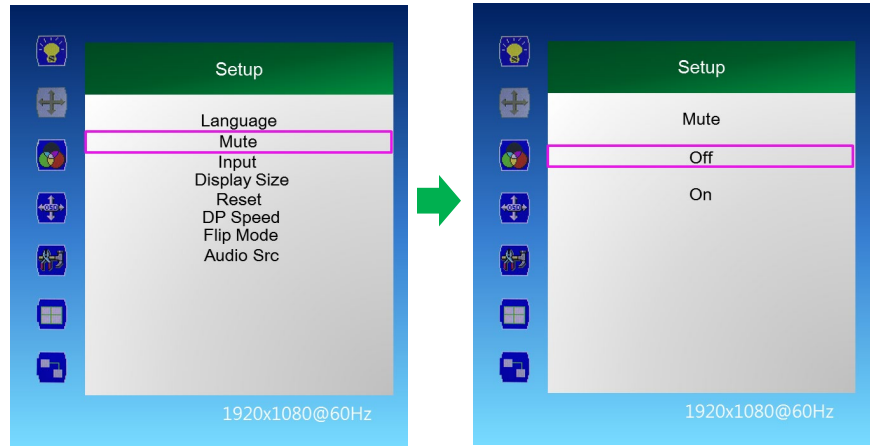
## Setup > Language

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Setup" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Language" and press the [Enter] button.
4. Press the ▼ / ▲ button to select the desired language.
5. Press the [EXIT] button to exit the OSD menu.



## Setup > Mute

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Setup" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Mute" and press the [Enter] button.
4. Press the ▲ / ▼ buttons to select the desired setting, then press the [Enter] button.  
Off, On
5. Press the [EXIT] button to exit the OSD menu.



## Setup > Input

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Setup" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Input" and press the [Enter] button.
4. Press the ▲ / ▼ button to select the desired input signal and press the [Enter] button.  
HDMI 1, HDMI 2, HDMI 3, DP 1, DP 2
5. Press the [EXIT] button to exit the OSD menu.



## Setup > Display Size

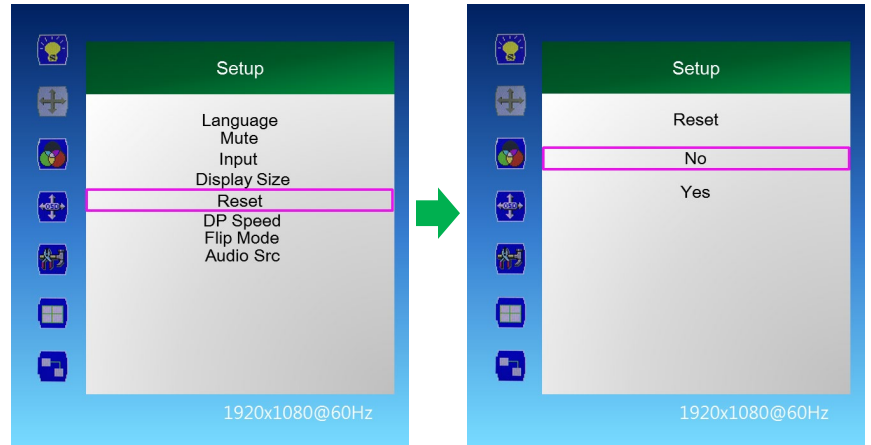
1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Setup" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Display Size" and press the [Enter] button.
4. Press the ▲ / ▼ button to select the desired screen size and then press the [Enter] button.  
Smart Screen, Smart Fit, 4: 3, Smart 4: 3, 1: 1, Smart View
5. Press the [EXIT] button to exit the OSD menu.



**\*NOTE:** In order to rotate the image 180 degrees, select "Flip Mode"

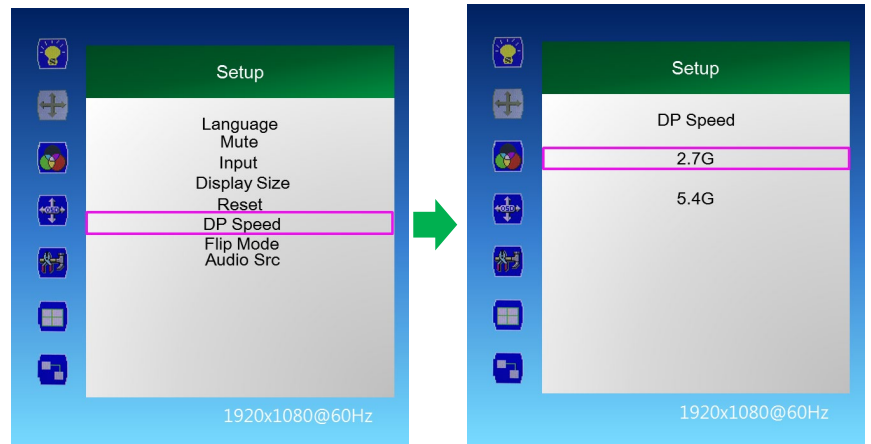
## Setup > Reset

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Setup" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Reset" and press the [Enter] button.
4. Press the ▲ / ▼ buttons to select the desired setting, then press the [Enter] button. No, Yes
5. Press the [EXIT] button to exit the OSD menu



## Setup > DP Speed

1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Setup" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "DP Speed" and press the [Enter] button.
  4. Press the ▲ / ▼ buttons to select the desired setting, then press the [Enter] button. 2.7G, 5.4G
  5. Press the [EXIT] button to exit the OSD menu.
- ※ Caution: When using video wall, DP Speed should be set to 2.7G.



# OLED Compensation

## Off RS

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Compensation" and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
5. Press the ▲ / ▼ button to move to "Off-RS" and press the [Enter] button.

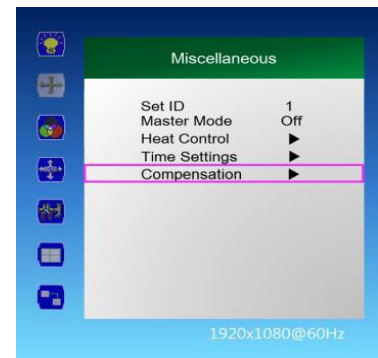
When Off-RS function is executed, it operates as follows.

Step 1. Screen goes off.

Step 2. BLUE LED blinks for about 70 seconds ~ 160 seconds. Step 3. Power is turned off.

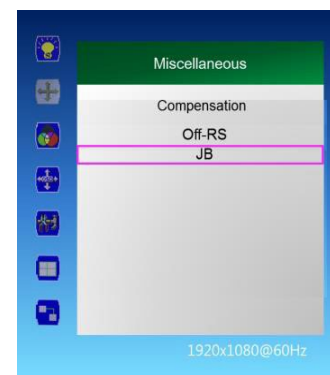
Run the "Off-RS" function once a day or turn off soft power.

"Off-RS" function is executed automatically when the soft power is off.



## JB

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Compensation" and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
5. Press the ▲ / ▼ button to move to "JB" and press the [Enter] button.

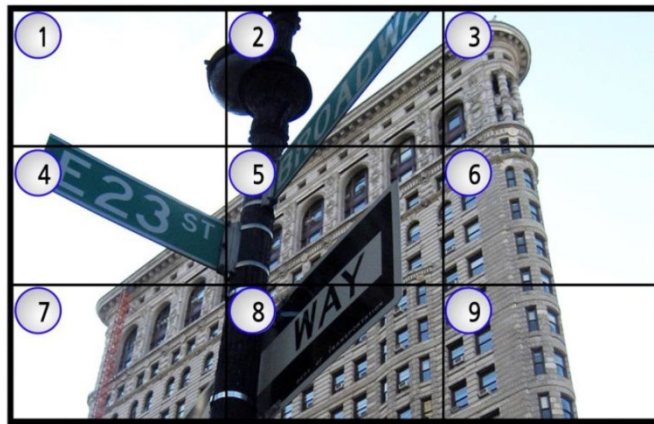
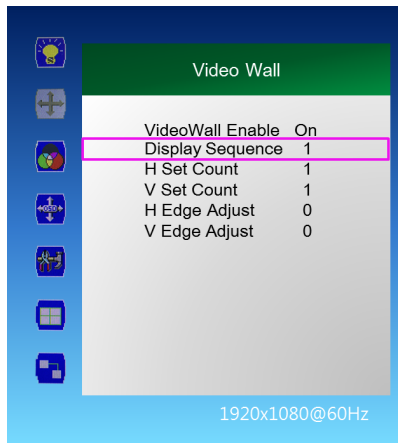


\* After running for a period of time, the screen is displayed.

\* Recommended to run once a day.

# Multi-vision (Optional) Videowall Daisy-chain Function

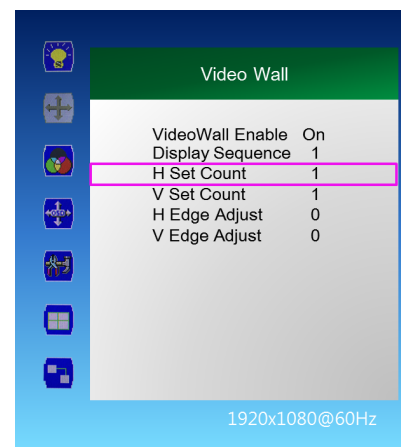
## Display Sequence



1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Video Wall" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "Display Sequence" and press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  5. Press the [EXIT] button to exit the OSD menu.
- Display Sequence: Display setting of multi vision (1 ~ 100)

## H Set Count

1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Video Wall" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "H Set Count", and then press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  5. Press the [EXIT] button to exit the OSD menu.
- H Set Count (Horizontal Set Count): Set horizontal size of multi vision (1 ~ 10)



ex) In the following figure, H Set Count: 3



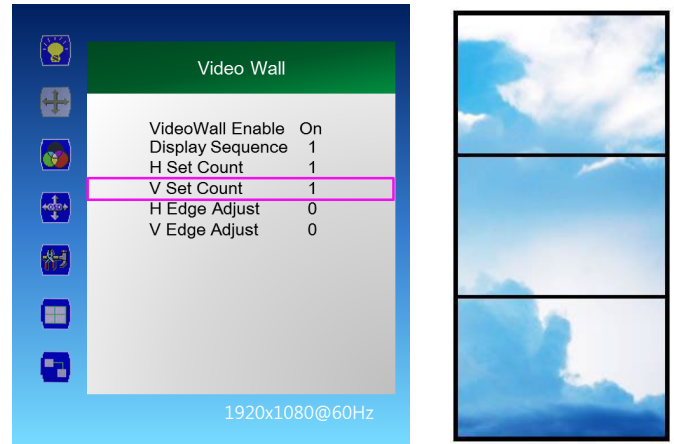


## Multi-vision (Optional) Videowall Daisy-chain Function

### V Set Count

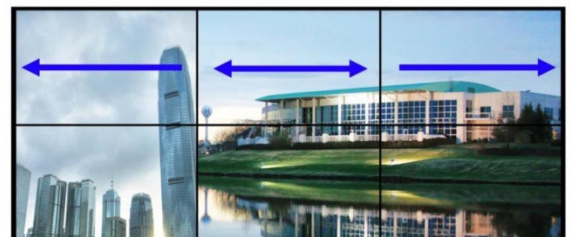
1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Video Wall" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "V Set Count" and press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  5. Press the [EXIT] button to exit the OSD menu.
- V Set Count (Vertical Set Count): Vertical size setting of Multi Vision (1 ~ 10)

ex) In the right figure, V Set Count: 3



### H edge Adjust

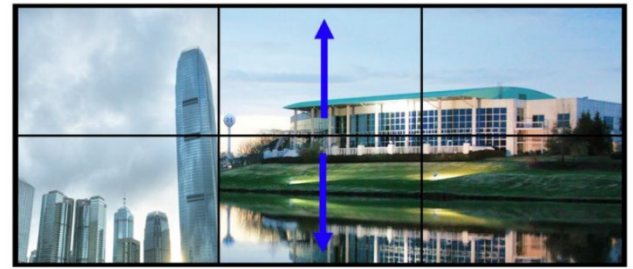
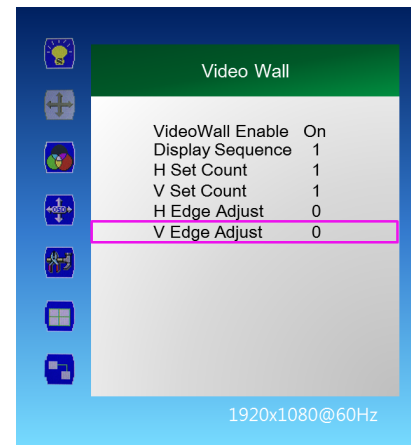
1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Video Wall" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "H Edge Adjust", and then press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  5. Press the [EXIT] button to exit the OSD menu.
- H Edge Adj (Horizontal Edge Adjust): Horizontal Gap setting of multivision (0 ~ 70)



## Multi-vision (Optional) Videowall Daisy-chain Function

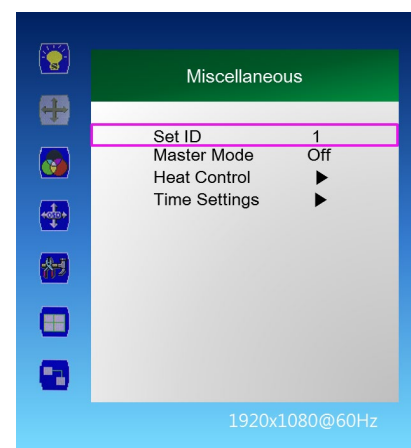
### V edge Adjust

1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Video Wall" menu and press the [Enter] button.
  3. Press the ▼ / ▲ button to move to "V Edge Adjust", and then press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  5. Press the [EXIT] button to exit the OSD menu.
- V Edge Adj (Vertical Edge Adjust): Multi Vision vertical Gap setting (0 ~ 70)



### Miscellaneous > Set ID

1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "Set ID" and press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  5. Press the [EXIT] button to exit the OSD menu.
- Set ID: Set control ID of the product (1 ~ 100)

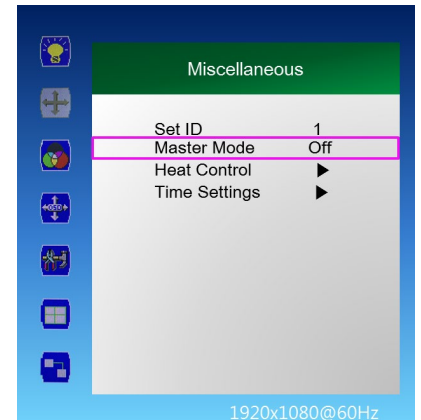




## Multi-vision (Optional) Videowall Daisy-chain Function

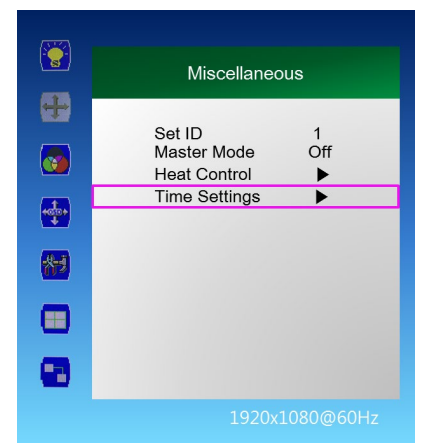
### Miscellaneous > Master Mode

1. Press the [MENU] button.
  2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
  3. Press the ▲ / ▼ button to move to "Master Mode" and press the [Enter] button.
  4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
    - 4-1. On: The rear monitor except the master set is used for remote control lock. Automatically adjusts the brightness of the rear monitor according to the Dimming value of Master Set.  
Master Set Power On / Off, rear monitor Power On / Off
    - 4-2. Off: Disable Master Mode ⇒ Monitor can be individually controlled
  5. Press the [EXIT] button to exit the OSD menu.
- ※ Note: The Master Set must be set as the starting point monitor of RS232C Daisy Chain.



### Miscellaneous > Time Setting

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Time Settings" and press the [Enter] button.
4. Current Time Setting: "Current Time" "Hour - Minute - Second"
  - 4-1. Press the ▲ / ▼ button to move to "00: 00: 00" in "Current Time" and press the [Enter] button.
  - 4-2. Press the ▲ / ▼ button to adjust the value and press the [Enter] button.
5. On Time Setting: "On Time" "Hour - Minute - Second"
  - 5-1. Press the ▲ / ▼ button to move to "One Time" and press the ◀ / ▶ button to adjust to the desired setting value. On, Off
  - 5-2. Press the ▲ / ▼ button to move to "00: 00: 00" and press the ◀ / ▶ button to adjust to the desired setting value.
6. Off time setting: "Off Time" "hour - minute - second"
  - 6-1. Press the ▲ / ▼ button to move to "Off Time" and press the ◀ / ▶ button to adjust to the desired setting value. On, Off
  - 6-2. Press the ▲ / ▼ button to move to "00: 00: 00" and press the ◀ / ▶ button to adjust to the desired setting value.
7. Press the [EXIT] button to exit the OSD menu.



# Multi-vision (Optional) Videowall Daisy-chain Function

## Miscellaneous > Master Mode

"Master Mode" allows users to control an entire video wall via a single remote controller. The "Master" display is the display where the RS-232 daisy-chain begins, whether it is Set ID #1 or another Set ID number. Pointing the remote controller at the IR receiver of the master display will allow the user to control all displays in the video wall at once. This cannot be used to communicate with individual displays – in Master Mode, the remote controller communicates with all displays simultaneously.

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Master Mode" and press the [Enter] button.
4. Press the ◀ / ▶ button to adjust the value and press the [Enter] button.
  - 4-1. On: The rear monitor except the master set is used for remote control lock. Automatically adjusts the brightness of the rear monitor according to the Dimming value of Master Set.

Master Set Power On / Off, rear monitor Power On / Off

- 4-2. Off: Disable Master Mode ⇒ Monitor can be individually controlled

5. Press the [EXIT] button to exit the OSD menu.

※ Note: The Master Set must be set as the starting point monitor of RS232C Daisy Chain.



## Miscellaneous > Time Setting

1. Press the [MENU] button.
2. Press the ▲ / ▼ button to move to the "Miscellaneous" menu and press the [Enter] button.
3. Press the ▲ / ▼ button to move to "Time Settings" and press the [Enter] button.
4. Current Time Setting: "Current Time" "Hour - Minute - Second"
  - 4-1. Press the ▲ / ▼ button to move to "00: 00: 00" in "Current Time" and press the [Enter] button.
  - 4-2. Press the ▲ / ▼ button to adjust the value and press the [Enter] button.
5. On Time Setting: "On Time" "Hour - Minute - Second"
  - 5-1. Press the ▲ / ▼ button to move to "One Time" and press the ◀ / ▶ button to adjust to the desired setting value. On, Off
  - 5-2. Press the ▲ / ▼ button to move to "00: 00: 00" and press the ◀ / ▶ button to adjust to the desired setting value.
6. Off time setting: "Off Time" "hour - minute - second"
  - 6-1. Press the ▲ / ▼ button to move to "Off Time" and press the ◀ / ▶ button to adjust to the desired setting value. On, Off
  - 6-2. Press the ▲ / ▼ button to move to "00: 00: 00" and press the ◀ / ▶ button to adjust to the desired setting value.
7. Press the [EXIT] button to exit the OSD menu.



# SICP Wall control program

## ◆ SICP (Serial Interface Communication Protocol)

This document defines all the command and messages exchanged between the Master (a PC or the other controller) and the Slave (the displays).

It also describes the ways to send or read the commands or the messages.

### 1. Protocol definition

SICP stands for “Serial Interface Communication Protocol”.

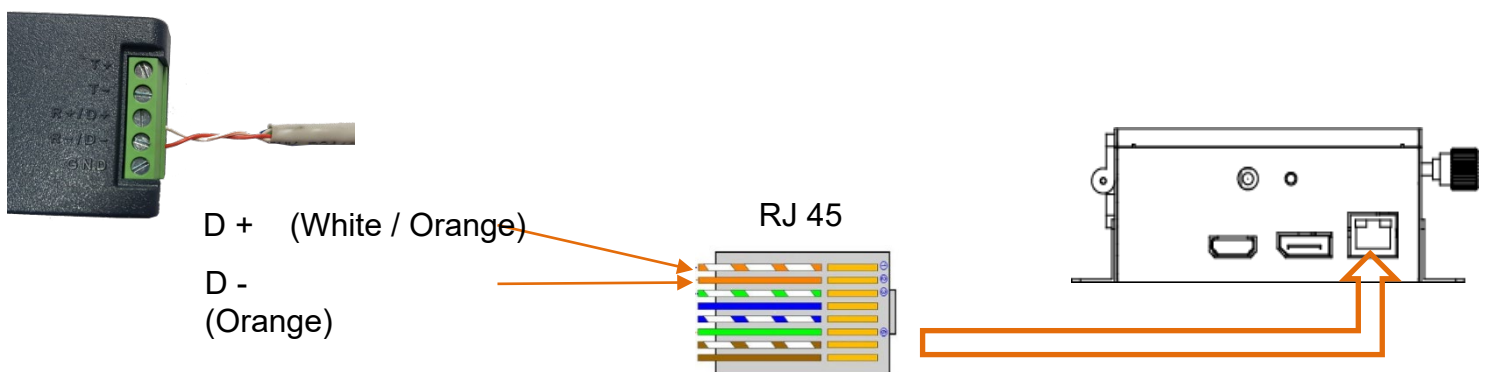
The protocol is specifically designed to allow data communication in half duplex multi-point environments, but it can also be used for half duplex point-to-point RS-485 communication.

### 2. Communication characteristics

A half duplex communication is implemented starting from the concept of a master-slave structure, where the display is the slave.

The first action is always taken by the master, which can be either a PC or any controlling device (acting as server) interfaced to the monitor. After sending a command or a request in the appropriate format the master receives from the slave an acknowledgement, which tells the transmitter whether the command is not valid (or not executable, anyway) or it is accepted. In case of a request, the requested information is sent back and it becomes the acknowledgement by itself.

### 3. How to connect a external equipment



### 4. Hardware Protocol

Baud rate : 9600 bps

Data bits : 8 bit

Parity bits : None

Stop bits : 1 bit

Handshake : None

# SICP program

## Introduction

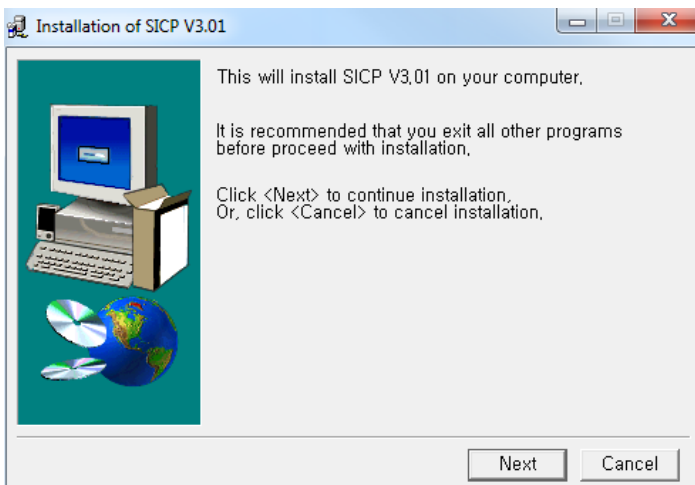
This manual booklet describes how to manage and utilize the product (Video Wall set) through remote control via RS232 protocol. This will introduce SICP V5.0 (Software that enables you to control the Video Wall via serial) and various applications will be possible with this software. As per different way of customizing, the functions and specifications of each product may vary.

**Notice:** Please extract VBRunTimesR7.zip and install the program on VISTA, WIN7/8/10 before installing SICP.

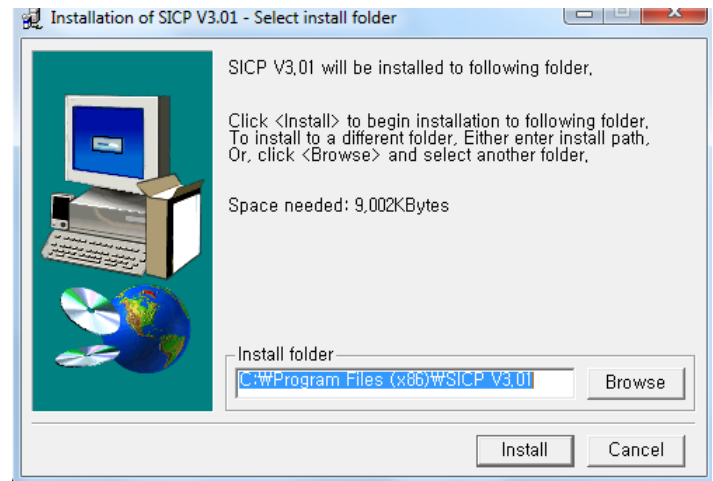
## Installing SICP V5.0

Run the file named **"SICP 5.0 Set up US.exe"** and follow the instruction below.

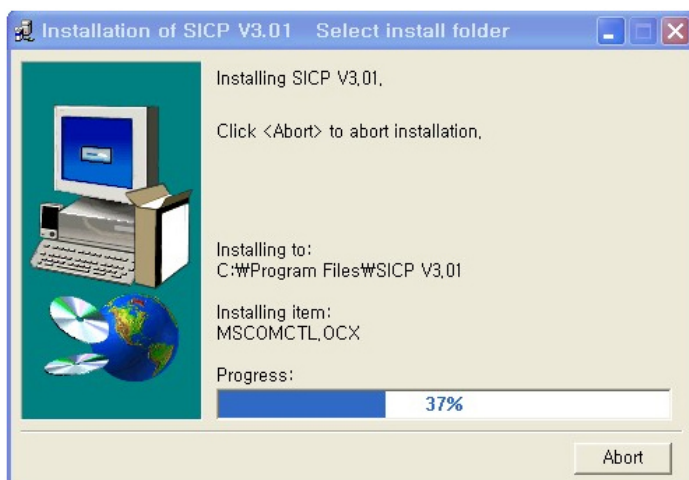
If you have SICP program installed previously, delete the previous one and re-install the new one.



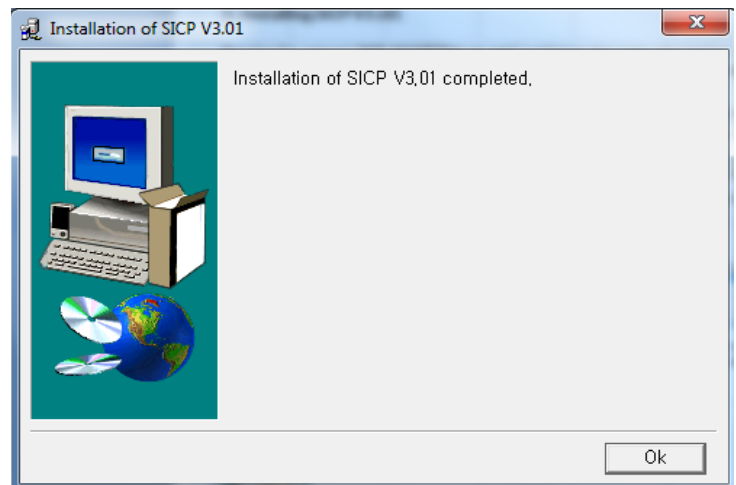
Press "Next"



Select the folder in which you wish to save the file.  
Press "Install" after selecting the desired folder.



Wait until the installation is complete.

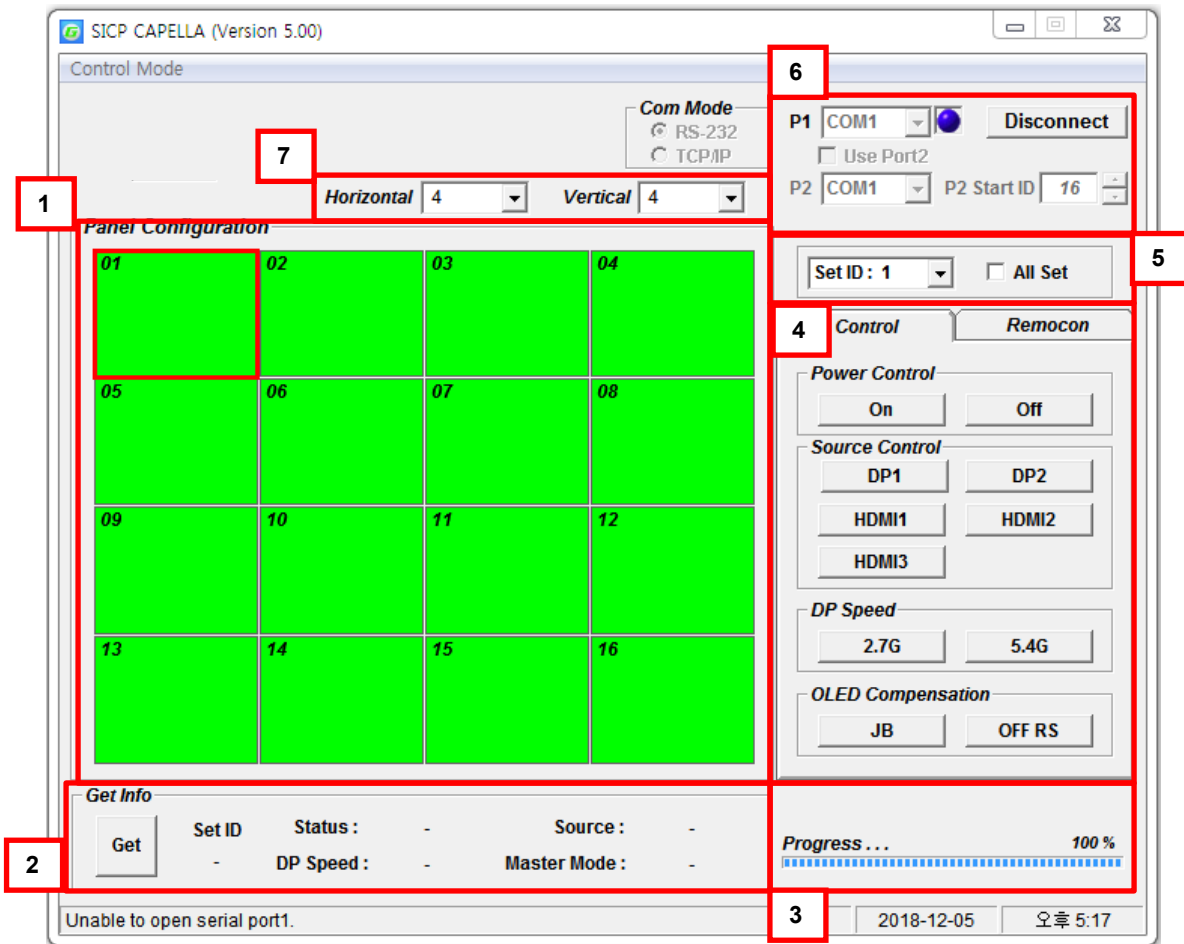


Once installation is complete, go to "Start" Menu -> Programs -> SICP V4.01 to run the program

# SICP program

## Running SICP V5.01 and Structure

Go to “Start” Menu -> Programs -> SICP V5.0 to run the program.



1. Panel Configuration : Indicates the information such as display configuration, source, Set ID and sequence number.
2. Get info: Indicates the status of multi-vision.
3. Progress Bar : Shows the status of RS232 communication
4. Control Button : Set of control buttons
5. Set ID : Shows the Set ID you can control
6. Communication : Select the Port connected to the PC.
7. Horizontal & Vertical : Shows the type of display you can select.

# SICP program

## Connect & Disconnect

- Users can connect RS-232 input and control from your PC using an RS232 Cable.
- Select the Port into which PC is connected (refer to ③ in the image on previous page) and click “connect” button.

If connected properly, the indicator in box ④ will turn BLUE (from RED). If not connected properly, one of the following messages will appear:

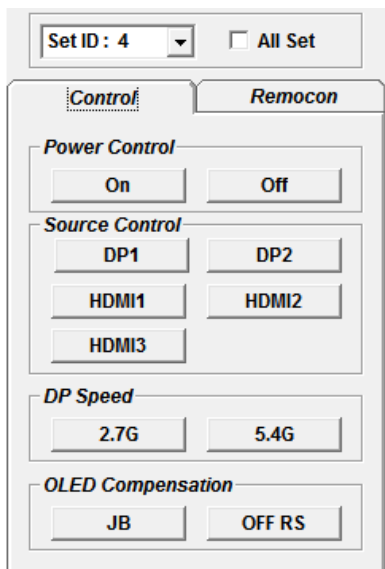
\*“Unable to open serial port”: The port may not be available on your PC, or another program may be running under this port.

\*“Cannot connect with Easy DID System”: RS232 Cable may not be connected properly or Set ID may be incorrect. Re-check on Set ID.

## Multi-vision Control

Users can control each display separately. First, select the display you wish to control by selecting Set ID. You may click on it (Refer to box ④ in the image on the previous page) or select it from the drag-down menu (Refer to ⑤ in the image on the previous page). Users may conduct the following functions on the selected set:

### 1) Basic Control



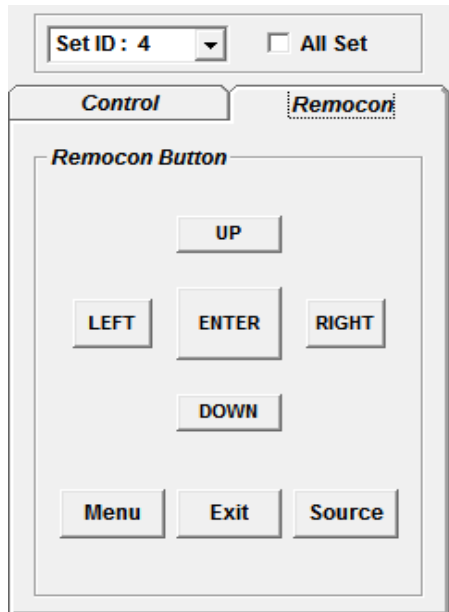
- Select “Control” Tab as shown to the left

**Power Control:** Powers the Set On/Off

**Source Control:** Selects Source

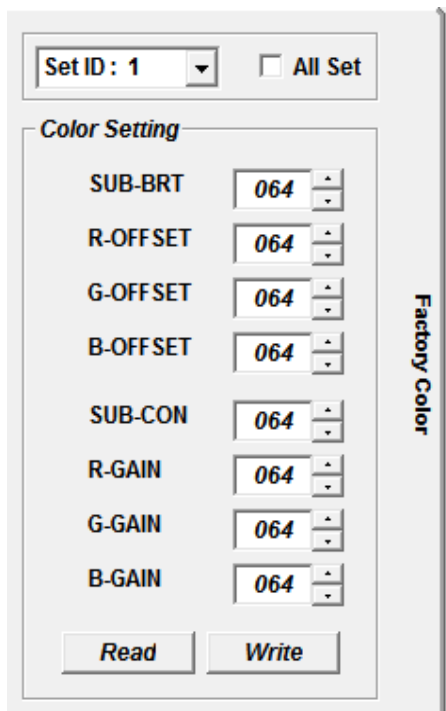
# SICP program

## 2) Virtual Remocon (Remote Controller)



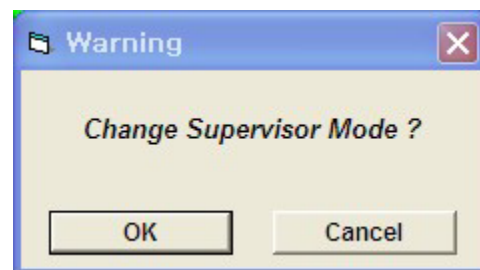
- Select the “Remocon” Tab as shown to the left.
- This virtual remote controller controls sets (displays) via RS-232 in the same manner that a physical remote controller would.

## 3) Color Setting



- Users may access the “Color Setting” mode only after entering Supervisor Mode. In order to enter Supervisor mode, go to “Control Mode” in the toolbar (top) and select “Setting Mode”

- Hot key: Ctrl+F2.



- Click “OK”
- Adjust color values (0~255). The color will be optimized during production & Quality Assurance. Adjusting color values is not recommended without prior consultation with GPO US.



# SICP program

## 4) Edge Setting

Set ID: 1 ☐ All Set

**Video Wall Function**

D-Sequence: 1 SET

H-SetCount: 1 SET

V-SetCount: 1 SET

H-Edge Adj: 30 SET

V-Edge Adj: 40 SET

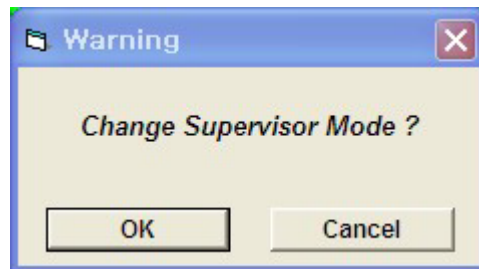
Read Write

**Master Mode**

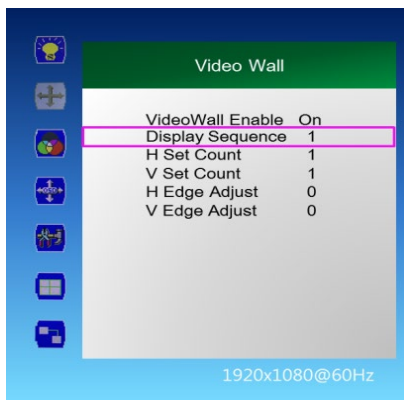
ON OFF

- Users can access "Edge Setting" only if after entering Supervisor Mode. In order to enter Supervisor mode, go to "Control Mode" in the tool bar (top) and select "Setting Mode"

- Hot key: Ctrl+F3.



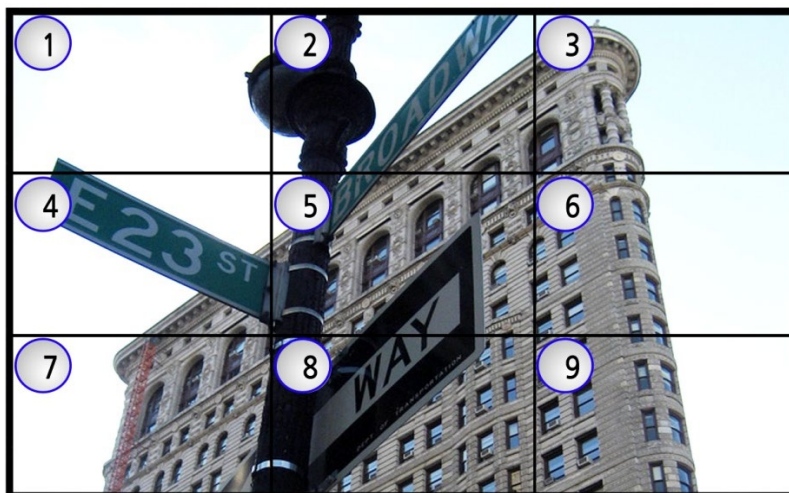
- Click "OK"
- Commands are writable only (not readable).



<OSD Menu>

### < Others >

- **Display Sequence:** position of display within context of the array (example below)



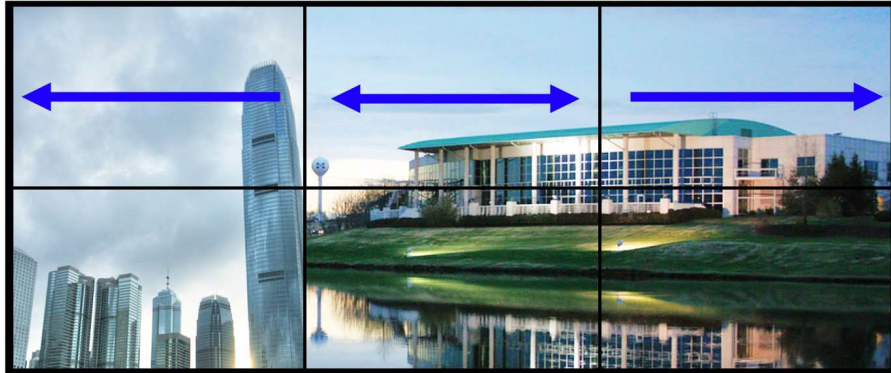


# SICP program

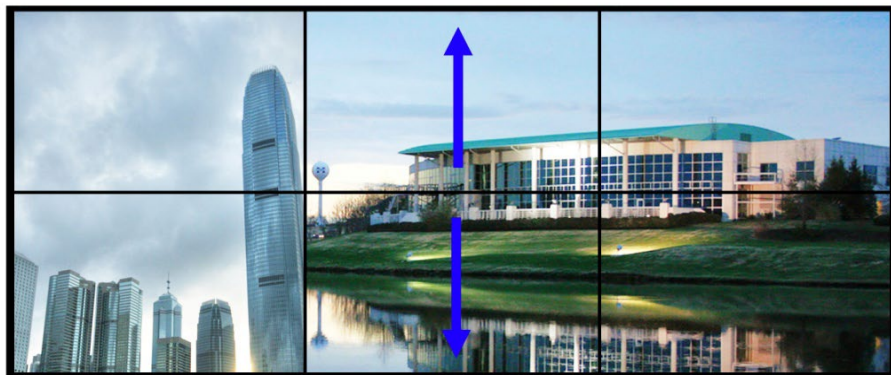
- H-Set Count (Horizontal Set Count): Number of displays in array horizontally (counting left-to-right)  
E.g. Diagram of array on previous page shows H-Set Count of "3"

V-Set Count (Vertical Set Count): : Number of displays in array vertically (counting top-to-bottom)  
E.g. Diagram of array on previous page shows V-Set Count of "3"

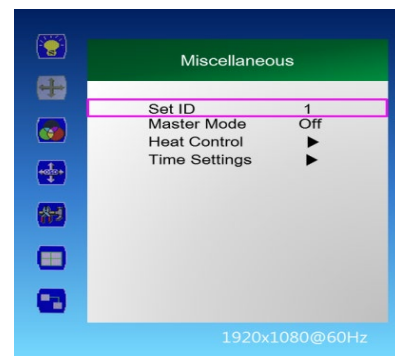
- H-Edge Adj (Horizontal Edge Adjust): Set the horizontal gap between displays in Video Wall (value range: 0~200)



- V-Edge Adj (Vertical Edge Adjust): Set the vertical gap of displays in Video Wall (0~200)



Set ID Setting (Set ID Adjust) : Set the Set ID of Multi Vision (1~100)



# Serial Command Protocol

## Transmission Formats

This is the format that the computer will send to the display to execute commands.

The format for this command transmission is as follows (total 13 byte):

ex) <STX>001PWRWOFF0<ETX> ( Set ID : 1 , Power Off Send )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	P	W	R	W	O	F	F	0	0x0d
Hex	ASCII (capital letter)											Hex

- STX : Start of Text ( 0x0f )
- ID1 ~ ID3 : Set ID ( 001~100 )
- CM1 ~ CM3 : Command ( PWR, MIN, MUT,RML,KPL..... )
- R/W : Read/Write Only use "Read"(R) or "Write" (W) as set forth in this document
- DA1 ~ DA3 : Data ( Values )
- IND : Index
- ETX : End of Text ( 0x0d )

## OK Acknowledgement

An acknowledgement will be sent by the display to the computer to verify that the command has been successfully received and executed. This format for this acknowledgement is as follows:

ex) <STX>001PWR#OFF#<ETX> ( Set ID : 1 , Power Off Acknowledgement )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	P	W	R	#	O	F	F	#	0x0d
Hex	ASCII (capital letter)											Hex

## Error Acknowledgement

The Error Values will be sent by the display to the computer to verify that the command has been successfully received and executed.

This format for this Error Values is as follows:

ex) <STX>001PWRERROR<ETX> ( Set ID : 1 , Power Off Error )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	0	0	1	P	W	R	E	R	R	O	R	0x0d
Hex	ASCII (capital letter)											Hex

# Serial Command Protocol

## How to choose display ID number

### ◆ Read Set ID Number

\* Attention : “Read Set ID” Function requires serial connection to only one display (1 pc : 1 display)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	F	F	F	S	I	D	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : “FFF” ( Set ID )

- DA1 ~ DA3 : “000” ( Don’t care )

Ex) <STX>FFFSIDR0000<ETX> ( Read Set ID )

Acknowledgement => <STX>001SID#001#<ETX> ( Set ID : 1 )

### ◆ Write Set ID Number

\* Attention : Write Set ID Function requires serial connection to only one display (1 pc : 1 display)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f	F	F	F	S	I	D	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : “FFF” ( Set ID )

- DA1 ~ DA3 : “001” ( Set ID Number )

Ex) <STX>FFFSIDW0010<ETX> ( Write Set ID : 1 )

Acknowledgement => <STX>001SID#001#<ETX>

## Command List

### ◆ Power On/Off (PWR)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				P	W	R	W				0	0x0d
Hex	ASCII (capital letter)											Hex

-ID1 ~ ID3 : Set ID (“001” ~ “100”)

-DA1 ~ DA3 : “-ON” : Power On / “OFF” : Power Off

Ex) <STX>001PWRW0FF0<ETX> ( Power Off )

Acknowledgement => <STX>001PWR#OFF#<ETX>

Note: Do not substitute “R” for “W” in the “R/W” column in order to read display power state..

# Serial Command Protocol

## ◆ Set Virtual Remote Control (RMT)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				R	M	T	W	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ( 001~100 )
- DA1 ~ DA3 : "MEN" (Menu)  
 "SOU" (Source)  
 "LEF" (Left)  
 "RIG" (Right)  
 "ENT" (Enter & PC Auto Adjust)  
 "-UP" (Up)  
 "DOW" (Down)  
 "EXI" (Exit)
- IND : "0" ( don't care )

Ex) <STX>001RMTWSOU0<ETX> ( Remote Source Button)

Acknowledge => <STX>001RMT#SOU#<ETX>

## ◆ Set Source Change (MIN)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				M	I	N	W					0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ( 001~100 )
- DA1 ~ DA3 : "HD1" : HDMI1, "HD2" : HDMI2, "HD3" : HDMI3 , "DP1" : DP1, "DP2" : DP2
- IND : "0" ( don't care )

Ex) <STX>001MINWHD10<ETX> (Source HDMI1 )

Acknowledge => <STX>001MIN#HD1#<ETX>

## ◆ Get Source State (MIS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				R	M	T	R				0	0x0d
Hex	ASCII (capital letter)										Hex	

- ID1 ~ ID3 : Set ID ( 001~100 )
  - DA1 ~ DA3 : "000" ( don't care )
  - IND : "0" ( don't care )
- Ex) <STX>001MISR0000<ETX> ( ID: 001 , Get Source Status )
- Acknowledge => <STX>001MIS#COM#<ETX>
- DA1 ~ DA3 : "HD1" : HDMI1, "HD2" : HDMI2, "HD3" : HDMI3 , "DP1" : DP1, "DP2" : DP2

# Serial Command Protocol

## ◆ Set Volume Adjust (VOL)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>O</b>	<b>L</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ~ "100"
- IND : "0" ( don't care )

Ex) <STX>001VOLW1000<ETX> ( ID:001, Volume 100 )  
 Acknowledge => <STX>001VOL#100#<ETX>

## ◆ Get Volume State (VOS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>O</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001VOSR0000<ETX> ( ID:001, Get Volume )  
 Acknowledge => <STX>001VOS#050#<ETX>

- DA1 ~ DA3 : Volume Value

## ◆ Set Volume Mute (MUT)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>M</b>	<b>U</b>	<b>T</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : Mute On, "OFF" : Mute Off
- IND : "0" ( don't care )

Ex) <STX>001MUTW-ON0<ETX> ( ID:001, Mute On )  
 Acknowledge => <STX>001MUT#-ON#<ETX>

## ◆ Get Volume Mute (MUS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>M</b>	<b>U</b>	<b>T</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001MUTR0000<ETX> ( ID:001, Mute On )  
 Acknowledge => <STX>001MUT#-ON#<ETX>

- DA1 ~ DA3 : "-ON" : Mute On, "OFF" : Mute Off

# Serial Command Protocol

## ◆ Get Current Temperature (TPS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>P</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001TPSR0000<ETX> ( ID:001, Read Current Temperature )  
 Acknowledge => <STX>001TPS#050#<ETX>

- DA1 ~ DA3 : Temperature Value

## ◆ Set Fan Control (FAN)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>F</b>	<b>A</b>	<b>N</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "AUT" : Auto, "-ON" : Fan On, "OFF" : Fan Off
- IND : "0" ( don't care )

Ex) <STX>001FANWAWT0<ETX> ( ID:001, Fan Control Auto )  
 Acknowledge => <STX>001FAN#AUT#<ETX>

## ◆ Get Fan Control (FAS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>F</b>	<b>A</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001FASR0000<ETX> ( ID:001, Read Fan Control )  
 Acknowledge => <STX>001FAS#AUT#<ETX>

- DA1 ~ DA3 : "AUT" : Auto, "-ON" : Fan On, "OFF" : Fan Off

## ◆ Set Active Temperature (TAT) - Fan Control ( Auto )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>A</b>	<b>T</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : Temperature Value ("000" ~ "100" )
- IND : "0" ( don't care )

Ex) <STX>001TATW0500<ETX> ( ID:001, Active Temperature 50 )  
 Acknowledge => <STX>001TAT#050#<ETX>

# Serial Command Protocol

## ◆ Get Active Temperature (TAS) – Fan Control ( Auto )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>A</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001TASR0000<ETX> ( ID:001, Read Active Temperature )  
 Acknowledge => <STX>001TAS#050#<ETX>

- DA1 ~ DA3 : Temperature Value

## ◆ Set Hysteresis Temperature (THY) - Fan Control ( Auto )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>H</b>	<b>Y</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : Hysteresis Value ( "000" ~ "100" )
- IND : "0" ( don't care )

Ex) <STX>001THYW0030<ETX> ( ID:001, Hysteresis Temperature 3 )  
 Acknowledge => <STX>001THY#003#<ETX>

## ◆ Get Hysteresis Temperature (THS) – Fan Control ( Auto )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>H</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001TASR0000<ETX> ( ID:001, Read Hysteresis Temperature )  
 Acknowledge => <STX>001TAS#003#<ETX>

- DA1 ~ DA3 : Hysteresis Temperature Value

## ◆ Set Shutdown Temperature (TSD)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>S</b>	<b>D</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : Shutdown Temperature Value ( "**070**" ~ "**100**" )
- IND : "0" ( don't care )

Ex) <STX>001TSDW0800<ETX> ( ID:001, Shutdown Temperature 80 )  
 Acknowledge => <STX>001TSD#080#<ETX>

# Serial Command Protocol

## ◆ Get Shutdown Temperature (TSS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>T</b>	<b>S</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001TSSR0000<ETX> ( ID:001, Read Shutdown Temperature )  
 Acknowledge => <STX>001TSS#080#<ETX>

- DA1 ~ DA3 : Shutdown Temperature Value

## ◆ Set Dimming Setting (DIM)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>D</b>	<b>I</b>	<b>M</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ~ "100"
- IND : "0" ( don't care )

Ex) <STX>001DIMW1000<ETX> ( ID:001, Dimming 100 )  
 Acknowledge => <STX>001DIM#100#<ETX>

## ◆ Get Dimming Setting (DIS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>D</b>	<b>I</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001DISR0000<ETX> ( ID:001, Read Dimming )  
 Acknowledge => <STX>001DIS#100#<ETX>

## ◆ Set Auto Dimming Control (ADC)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>A</b>	<b>D</b>	<b>C</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : Auto Dimming On  
 "OFF" : Auto Dimming Off
- IND : "0" ( don't care )

Ex) <STX>001ADCW-ON0<ETX> ( ID:001, Auto Dimming On )  
 Acknowledge => <STX>001ADC#-ON#<ETX>



# Serial Command Protocol

## ◆ Get Auto Dimming Control (ADS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>A</b>	<b>D</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001ADSR0000<ETX> ( ID:001, Read Auto Dimming Control )  
 Acknowledge => <STX>001ADS#AUT#<ETX>

- DA1 ~ DA3 : "-ON" : Auto Dimming On  
 "OFF" : Auto Dimming Off

## ◆ Set Max Ambient Setting (AMA) – Auto Dimming ( On )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>A</b>	<b>M</b>	<b>A</b>	W					0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ IND : "0000" ~ "3000"

Ex) <STX>001AMAW0700<ETX> ( ID:001, Max Ambient 700 )  
 Acknowledge => <STX>001AMA#0700<ETX>

## ◆ Get Max Ambient Setting (AMS) – Auto Dimming ( On )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>A</b>	<b>M</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001AMSR0000<ETX> ( ID:001, Read Max Ambient )  
 Acknowledge => <STX>001AMS#0700<ETX>

## ◆ Set Min Ambient Setting (ANA) – Auto Dimming ( On )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>A</b>	<b>N</b>	<b>A</b>	W					0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ IND : "0000" ~ "3000"

Ex) <STX>001ANAW0200<ETX> ( ID:001, Min Ambient 200 )  
 Acknowledge => <STX>001ANA#0200<ETX>

# Serial Command Protocol

## ◆ Get Min Ambient Setting (ANS) – Auto Dimming ( On )

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>A</b>	<b>N</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001ANSR0000<ETX> ( ID:001, Read Min Ambient )  
 Acknowledge => <STX>001ANS#0200<ETX>

## ◆ Get Current Lux (LUX)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>L</b>	<b>U</b>	<b>X</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001LUXR0000<ETX> ( ID:001, Read Current Lux )  
 Acknowledge => <STX>001LUX#0650<ETX> ( 650 Lux )

## ◆ Set Current Time Setting (CTM)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>C</b>	<b>T</b>	<b>M</b>	W					0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 : "00~17" (Hour)
- DA2 : "00~3B" (Minute)
- DA3 : "00~3B" (Second)
- IND : "0" : Mode Time (Hour , Minute , Second)

Ex) <STX>001CTMW<0A><0C><0C>0<ETX> ( ID:001, 10Hour/12Minute/12Second )  
 – Mode Time  
 Acknowledge => <STX>001CTM#<0A><0C><0C>0<ETX>

## ◆ Get Current Time Setting (CTS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>C</b>	<b>T</b>	<b>S</b>	R	0	0	0		0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" : Mode Time (Hour , Minute , Second)

Ex) <STX>001CTSR0000<ETX> ( ID:001, Get Current Time ) – Mode Time  
 Acknowledge => <STX>001CTS#<05><0F><1E>0<ETX> ( 05 : 15 : 30 )

# Serial Command Protocol

- DA1 : "00~17" (Hour)
- DA2 : "00~3B"(Minute)
- DA3 : "00~3B"(Second)
- IND : "0" : Mode Time (Hour , Minute , Second)

## ◆ Set Off Time Active (FTA)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>F</b>	<b>T</b>	<b>A</b>	W				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : On  
"OFF" : Off
- IND : "0" ( don't care )

Ex) <STX>001FTAW-ON0<ETX> ( ID:001, Fan Control Auto )  
 Acknowledge => <STX>001FTA#-ON#ETX>

## ◆ Get Off Time Active (FTA)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>F</b>	<b>T</b>	<b>A</b>	R				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : On  
"OFF" : Off
- IND : "0" ( don't care )

Ex) <STX>001FTAR-ON0<ETX> ( ID:001, Fan Control Auto )  
 Acknowledge => <STX>001FTA#-ON#ETX>

## ◆ Set Off Time Setting (FTM)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>F</b>	<b>T</b>	<b>M</b>	W				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 : "00~17" (Hour)
- DA2 : "00~3B"(Minute)
- DA3 : "00~3B"(Sec)
- IND : "0" ( don't care )

Ex) <STX>001FTMW<12><1E><01>0<ETX> ( ID:001, 18 : 30 : 01 )  
 Acknowledge => <STX>001FTM#<12><1E><01>#<ETX>

# Serial Command Protocol

## ◆ Get Off Time State (FTS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>F</b>	<b>T</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)							Hex			Hex	

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" ( don't care )

Ex) <STX>001FTSR0000<ETX> ( ID:001, Get Off Time )  
 Acknowledge => <STX>001FTS#<12><1E><01>#<ETX> ( 18 : 30 : 01 )

- DA1 : "00~17" (Hour)
- DA2 : "00~3B"(Minute)
- DA3 : "00~3B"(Sec)

## ◆ Set On Time Active (NTA)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>N</b>	<b>T</b>	<b>A</b>	W				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : On, "OFF" : Off
- IND : "0" ( don't care )

Ex) <STX>001NTAW-ON0<ETX> ( ID:001, Fan Control Auto )  
 Acknowledge => <STX>001NTA#-ON#ETX>

## ◆ Get On Time Active (NTA)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>N</b>	<b>T</b>	<b>A</b>	R				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : On, "OFF" : Off
- IND : "0" ( don't care )

Ex) <STX>001NTAR-ON0<ETX> ( ID:001, Fan Control Auto )  
 Acknowledge => <STX>001NTA#-ON#ETX>

## ◆ Set On Time Setting (NTM)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>N</b>	<b>T</b>	<b>M</b>	W				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 : "00~17" (Hour)
- DA2 : "00~3B"(Minute)
- DA3 : "00~3B"(Sec)
- IND : "0" : Mode Time (Hour , Minute , Second)

Ex) <STX>001NTMW<0C><1E><02>**0**<ETX> ( ID:001, 12 : 30 : 02 )  
 Acknowledge => <STX>001NTM#<0C><1E><02>**0**<ETX>

# Serial Command Protocol

## ◆ Get On Time State (NTS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>N</b>	<b>T</b>	<b>S</b>	<b>R</b>				0	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care )
- IND : "0" : Mode Time (Hour , Minute , Second)

Ex) <STX>001NTSR000<ETX> ( ID:001, Get On Time ) – Mode Time  
 Acknowledge => <STX>001NTS#<0C><1E><02><0><ETX> (12 : 30 : 02)

- DA1 : "00~17" (Hour)
- DA2 : "00~3B"(Minute)
- DA3 : "00~3B" (Sec)
- IND : "0" : Mode Time (Hour , Minute , Second)

## ◆ Video Wall Enable (VDW)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>D</b>	<b>W</b>	<b>W</b>				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "-ON" : On, "OFF" : Off
- IND : "0" ( don't care )

Ex) <STX>001VDWW0000<ETX> ( ID:001, Video Wall Enable On )  
 Acknowledge => <STX>001VDW#-ON#<ETX>

## ◆ Get Video Wall Enable (VDW)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>D</b>	<b>W</b>	<b>R</b>				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "000" ( don't care ), - IND : "0" ( don't care )

Ex) <STX>001VDWR0000<ETX> ( ID:001, Get Video Wall Enable )  
 Acknowledge => <STX>001VDW#-ON#<ETX>

## ◆ Horizontal Set Count (HSC)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>H</b>	<b>S</b>	<b>C</b>	<b>W</b>				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001HSCW0100<ETX> ( H-Set Count 10 )  
 Acknowledge => <STX>001HSC#010#<ETX>

# Serial Command Protocol

## ◆ Vertical Set Count (VSC)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>S</b>	<b>C</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "010"

Ex) <STX>001VSCW0100<ETX> ( V-Set Count 10 )

Acknowledge => <STX>001VSC#010#<ETX>

## ◆ Set Display Sequence (SDS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>S</b>	<b>D</b>	<b>S</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "100"

Ex) <STX>001SDSW0010<ETX> ( Display Sequence 1 )

Acknowledge => <STX>001SDS#001#<ETX>

## ◆ Get Display Sequence (SDR)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>S</b>	<b>D</b>	<b>S</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "001" ~ "100"

Ex) <STX>001SDSR0010<ETX> ( Display Sequence 1 )

Acknowledge => <STX>001SDS#001#<ETX>

## ◆ Horizontal Edge Adjust (HEG)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>H</b>	<b>E</b>	<b>G</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "000" ~ "200"

Ex) <STX>001HEGW0300<ETX> ( H-Edge Adjust 30 )

Acknowledge => <STX>001HEG#030#<ETX>

## ◆ Vertical Edge Adjust (VEG)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>E</b>	<b>G</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")

- DA1 ~ DA3 : "000" ~ "200"

Ex) <STX>001VEGW0400<ETX> ( V-Edge Adjust 40 )

Acknowledge => <STX>001VEG#040#<ETX>

# Serial Command Protocol

## ◆ Set DP Speed (DPS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>D</b>	<b>P</b>	<b>S</b>	W				0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
  - DA1 ~ DA3 : "027" : 2.7G, "054" : 5.4G
  - IND : "0" ( don't care )
- Ex) <STX>001DPSW0270<ETX> ( ID:001, DP Speed 2.7G )  
 Acknowledge => <STX>001DPS#027#<ETX>

## ◆ Get DP Speed (DPS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>D</b>	<b>P</b>	<b>S</b>	R	0	0	0	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "100")
  - DA1 ~ DA3 : "000" ( don't care )
  - IND : "0" ( don't care )
- Ex) <STX>001DPSR0000<ETX> ( ID:001, DP Speed 2.7G )  
 Acknowledge => <STX>001DPS#027#<ETX>
- DA1 ~ DA3 : "027" : 2.7G, "054" : 5.4G

## ◆JB Compensation Start (VJB)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>V</b>	<b>J</b>	<b>B</b>	W	S	T	R	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "099")
  - DA1 ~ DA3 : "STR" : Start
- Ex) <STX>001VJBWSTRO<ETX> ( ID:001, JB Compensation Start )  
 Acknowledge => <STX>001VJB#STR#<ETX>

## ◆ OFF-RS Compensation Start (ORS)

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3	IND	ETX
0x0f				<b>O</b>	<b>R</b>	<b>S</b>	W	S	T	R	0	0x0d
Hex	ASCII (capital letter)											Hex

- ID1 ~ ID3 : Set ID ("001" ~ "099")
  - DA1 ~ DA3 : "STR" : Start
- Ex) <STX>001ORSWSTRO<ETX> ( ID:001, OFF-RS Compensation Start )  
 Acknowledge => <STX>001ORS#STR#<ETX>