LED Display installation Manual

IWB Series

LH009IWBMES

LH006IWBMES (Under development)

Ver. 1.2

Revision History

Version	Date (Y/M/D)	Description
1.0	2022/07/08	New Release
1.1	2022/07/27	Update Preparation for Cabinet Installation (Open Box, Removal of COVER-CORNER, Fix screw on top of cabinet)
1.2	2022/09/07	Update max length of optical cable
1.3	2022/09/29	Update for P0.63
1.4	2022/11/30	Update for Extended Bezel model (6. FRAME BEZEL Components, 7. Frame Bezel installation)
1.5	2022/12/02	Added contents to remove left and right screws (P.72)

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Dehumidification guidance – during installation

- **When moist gets into LED package because of high humidity, 'Line defect' can be caused by electrical short inside of LED Package.**
- **For keeping the best quality of products during installation, please refer to the below cautions.**

- If the condition meets one of the below cases at least, dehumidification MUST be processed. Do not play any contents on the screen before dehumidification finishes.
  - Case when vacuum packaging is already unsealed before unpacking products.
  - Case when environment condition is worse than Samsung working condition (0°C~40°C/10~80%RH).
  - Case when it elapses longer than 7 days after unpacking them, even though the environment condition satisfies Samsung working condition (0°C~40°C/10~80%RH).
  - Case when production date on the label elapses more than 6 months, even though vacuum packaging is sealed.
  - Case when volatile chemicals such as oil paint, solvent are used in same place of installation.

  (You can refer to Product Information and Precautions for Installation part in detail.)
- If the screen needs dehumidification on installation, MUST follow the directions of next page.

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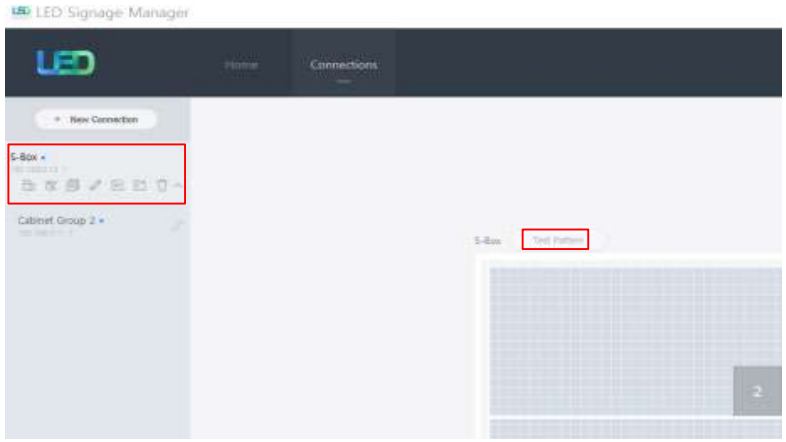
Dehumidification guidance – during installation

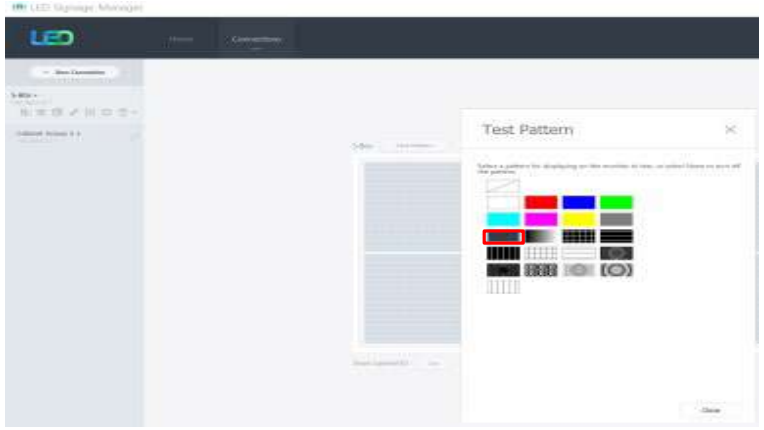
- **How to install the screen in the case that dehumidification is necessary**

※ Before finishing the directions explained in next pages, never play other contents or use them.
※ If the installation site has higher humidity, it is highly recommended to use dehumidifier.
(If A/C turned off after working hour, it may make humidity higher and cause line defects.)
※ Chilled air from A/C should never touch LED surface directly.
※ If thermo-hygrometer is equipped on the site while the screen is installed, it is useful to analyze the cause of line defects.

1. Play a specific pattern of LSM program without any cabinets.
(This pattern should be used. If other pattern is used, it can cause line defects.)



① Select S-Box and Test Pattern



② Set darker gray pattern among various patterns.

2. Inspect cabinets with darker solid patterns(W/R/G/B) and turn off cabinets.
(It should take less than 30 seconds to show each solid patter and you can refer to 'Process of Screen check' category in detail.)

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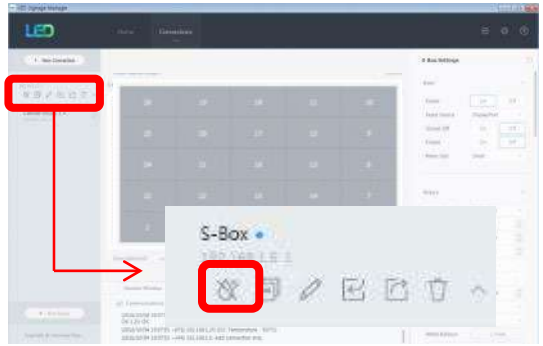
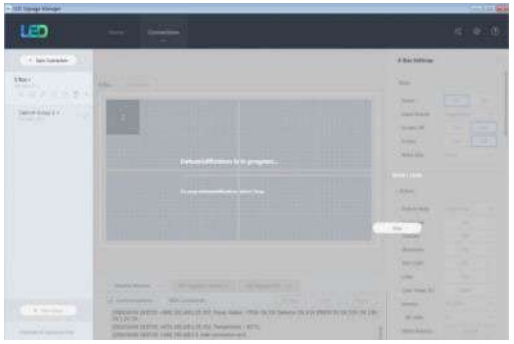
Dehumidification guidance – during installation

- **How to install the screen in the case that dehumidification is necessary.**

3. While installing cabinets, **S-Box should play only this pattern.**
   - Check S-Box shows the pattern through monitor connected to S-Box service port.
   - After installing each cabinet, check whether the pattern is shown in it.
   - OCM cable connection can be checked through this.
   - Before turning off S-Box, turn off the cabinets, first.
   - After being sure S-Box plays this pattern, turn on the cabinets.
4. After completing installation of cabinets, start 24hr dehumidification process.





5. After finishing 24hr dehumidification process, do edge correction and module calibration.

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Dehumidification guidance – during operation

- **Electrical short in package is possible to happen during products are working.**
- **For keeping quality of products during installation, please refer below cautions.**
  - If one of below case meet during operation, MUST do dehumidification process.
    - Case when environment condition is exceed operation condition
      (Indoor temperature 40 degrees, humidity 80%).
    - Case when products are not operated more than 10 days, even though environment condition is under operation condition.
  - When environment condition is exceed operation condition, products are out of warranty. Please check environment condition.
  - Even products are operating, if the installed place have extra construction such as interior modification, MUST do dehumidification following installation condition.
  - It is possible to happen dew condensation on surface of products, even though working on operating condition. When happening dew condensation, MUST operate after cleaning the dew condensation & dehumidification.

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Dew condensation due to overcooling

- **Even though meet with Samsung recommended operation condition, dew condensation is possible to happen when surface of products is colder than environment temperature or hot & humid air blow to cooled surface of products.**
  (cf : Principle of happening dew on surface of glass which have ice)

- **Case when dew condensation is happen on products, it is possible to be the root of defect. In this case, it is possible to be out of warranty.**

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Prevention of condensation by Air Conditioner

- **Do not let cold wind hit the screen directly.**

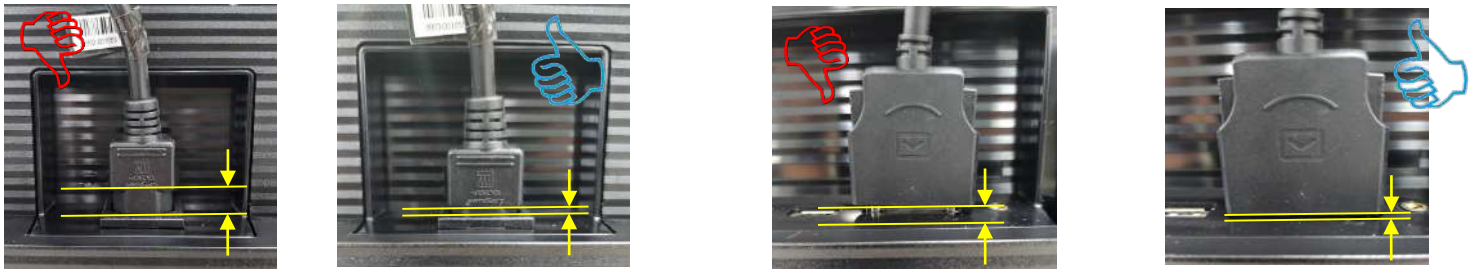
  - If cold wind from the screen surface A/C directly touches, condensation may form depending on the ambient humidity and the temperature of the screen.

  - If the A/C and the screen are close, install a wind shield as shown in the figure below to prevent condensation.

IMPORTANT

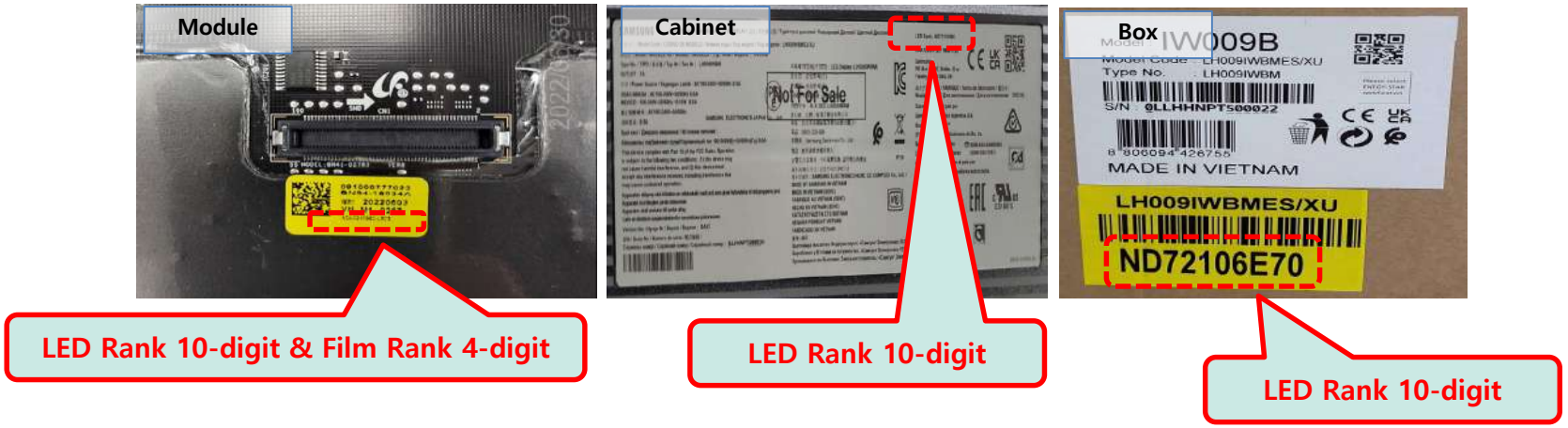
Mandatory conformation guide before installation

- Power cable and OCM cable must be firmly inserted.



- **When installing the cabinet (IWB), do not use the cabinet with different LED rank and film rank.**
- **Each cabinet has its own LED/Film Rank information It must be installed as a set of the same rank.**

※ Module : LED Rank, Film Rank
Cabinet : LED Rank
Box : LED Rank



Contents

1. Product Information and Installation Precautions

◆ Product Specification

- This manual is an installation manual for IWB and can be applied to the following models

Model	Product appearance and information
IWB series	
Remark	IWB Series : CoB Type / 120Hz Refresh Rate SNOW-AAE(S-Box) : IWA P0.84/P1.26/P1.68, IWB P0.63/P0.94 SNOW-ACE(M-Box) : IWA P0.84 / IWB P0.63(TBD) B2C Only

1. Product Information and Installation Precautions

◆ Product Specification (IWB)

	Spec		IWB	
			P0.63	P0.94
Cabinets	Size (mm)	H	1209.4	
		V	680.3	
	해상도	H	1920	1280
		V	1080	720
	Module Quantity		8 X 6, 48EA	
	Weight (Cabinet & All package)		- kg(TBD) - kg(TBD)	22.1 kg (Only cabinet) 30.4 kg (All package)
	Power Consumtion (W)		277 W (Max)	264 W (Max)
	Maximum Connection Quantity	110V	3	
		220V	5	
	Brightness (nit)	Max	B2C : 250 / B2B : 350	600
		Peak	1600	1200
Screen	4K		2x2, 4EA	3x3, 9EA
	8K		4x4, 16EA	6x6, 36EA

Product Main Specifications

◆ 모델 사양 (IWB)

		IWB P0.63 55”	IWB P0.945 55”	Remark
Basic	Pitch	0.63mm	0.945mm	
	LED Bin	Floating Bin	Floating Bin	
	Resolution	1920 X 1080	1280 x 720	
	LED Type	COB (Chip On Board) 183x94x60	COB (Chip On Board) 183x94x60	
	Dimensions (W x D x H)	1209.4 x 680.3 x 59.9mm	1209.4 x 680.3 x 59.9mm	
Picture quality	Brightness	B2C : 250nit (Peak 1600nit) B2B : 350nit (Peak 1600nit)	B2B : 600nit (Peak 1200nit)	
	Contrast ratio	17,000 : 1(TBD)	12,000:1	
	Bit Depth	**TBD**	**16bit**	
	Refresh rate	TBD	3840	
	Calibration	**Current Cal / D.Gamma (static, peak) / Pixel, Stamp Cal (High gradation, low gradation) / / Calibration mode**		
LED Module	Module PCB Size	151.2x113.4mm (8-Layer)	151.2x113.4mm (8-Layer)	
	Resolution	240x180	160x120	
	D-IC	C hipOne ICND2230	ChipOne ICND2230	
Power	Input Power	100~240 VAC, 50/60 Hz	100~240 VAC, 50/60 Hz	
	Power Consumption	TBD (W/set)	264 (W/set)	
Operating	Working temperature	0℃~+40℃/10~80%RH	0℃~+40℃/10~80%RH	
	IP Rating	IP20	IP20	
Certification	Safety	60950-1	60950-1	
	EMC	Class B	Class B	

1. Product Information and Installation Precautions

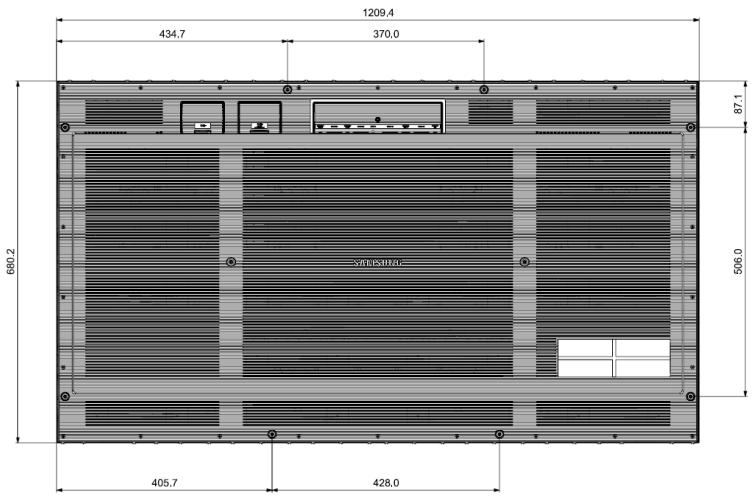
◆ **FRAME KIT and BEZEL KIT Composition**

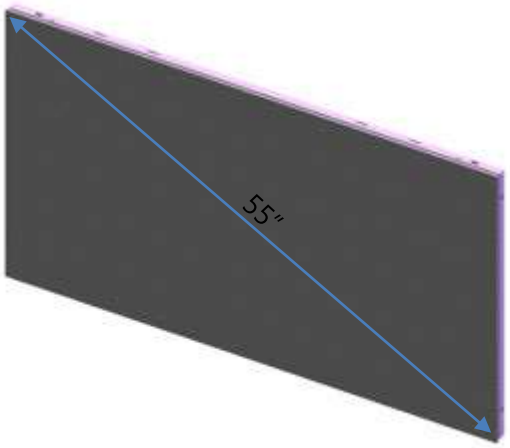
Type	Division	Frame Kit	Installation configuration	Remark
FRAME KIT	**Full kit**	VG-LFB11SWB	**1*1** (1 Set)	
		VG-LFB22SWB	**2*2** (4 Set)	
		VG-LFB33SWB	**3*3** (9 Set)	
INSTALLATION TOOL KIT	**Full kit**	CY-WJBPBP		
BEZEL KIT	**Full kit**	VG-LFB11SDB	**1*1** (1 Set)	
		VG-LFB22SDB	**2*2** (4 Set)	
		VG-LFB33SDB	**3*3** (9 Set)	

1. Product Information and Installation Precautions

◆ Cabinet Product information

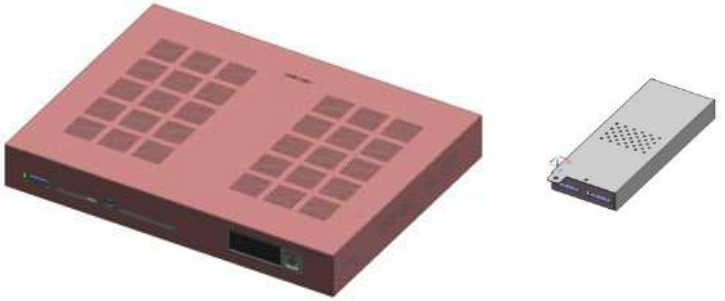
- Model : LH009IWBMES/xx (P0.94)
  LH006IWBMES/xx (P0.63)





◆ S-Box Product information

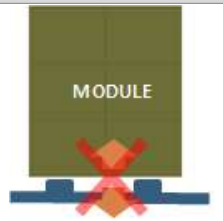
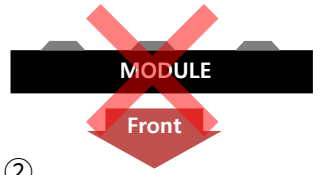
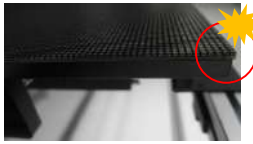
- Model : SBB-SNOWAAE/xx



<S-Box / IG >

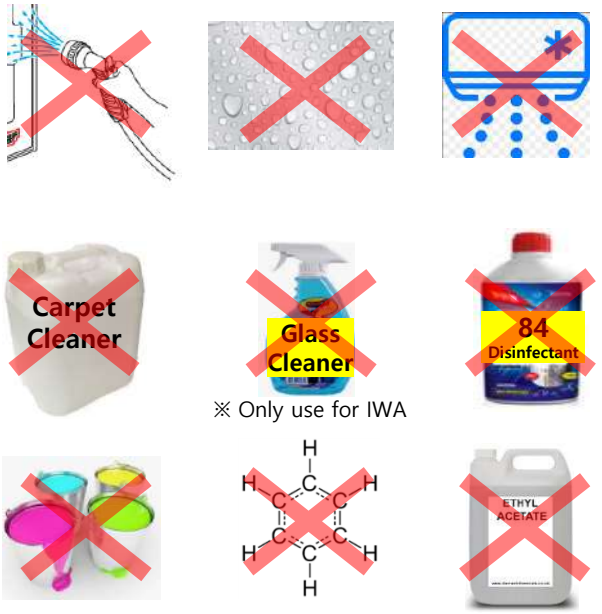
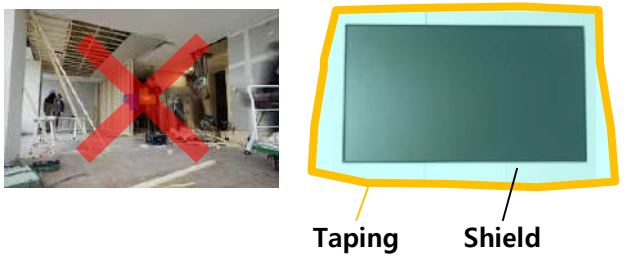
1. Product Information and Installation Precautions

◆ Precautions for Installation (LED Damage)

Cautions	Image
[Beware of Outside Impact, Fall] ① Beware not to cause any impact on the LED screen or drop the product on the floor after the protection gets taken off for installation. ② Beware not to put the LED side headed downwards to the floor after the protection gets taken off for installation. ③ Beware not to have the corner area of LED module be damaged due to the contact with the outside. ④ Beware not to put more than 12 layers.	 ①  ②  ③ ④ 
[Beware of LED Damage due to Static Electricity] ▶ Beware not to touch LED screen with bare hands without putting gloves on.	 
[Beware of LED & Film Damage due to Metallic Substances] ▶ Beware not to have metallic substances pulled in to the surface due to the magnetic force on the front side of the LED. ▶ If any metallic substances get drawn in on the surface, please disassemble the module and then remove the pollutants by using a magnet.	

1. Product Information and Installation Precautions

◆ Precautions for Installation (LED Damage)

Cautions	Image
[Beware of liquid damage to the LED] If water or various chemicals come into contact with the LED, the inside of the LED can be damaged. ① Do not let water, dew, air conditioner condensate, sprayer, sweat, saliva, etc. come into direct contact with the product. - Be careful with handling so that sweat does not come into contact with the product. (※ Maintain an appropriate temperature to prevent sweating) - Be careful not to get saliva on the product, and it is recommended to wear a mask. ② Do not let the following substances come into direct contact with the product, and even if the vapor is exposed to the product, should be minimized. - Detergent or disinfectant: carpet cleaning detergent, glass cleaner, 84 disinfectant, etc. (※ When cleaning the floor or wall with detergent or water, it is recommended to install a screen so that it does not come into contact with the product) - Various chemical substances: paint, mosquito repellent, thinner, benzene, toluene, solvent, surfactant, halogen (chlorine, bromine) and substances containing this component ③ What to do if liquid comes in contact with the product - If water gets on, turn off the product immediately, dry it enough for at least one day, and then turn on the dehumidification mode. Run to remove moisture inside the LED. (※ Refer to P74, "Dehumidification mode using LSM") - If any liquid other than water gets on it, remove it with alcohol and then run the dehumidification mode.	
[Precautions related to construction] ① In the case of installation at a construction site, the product must be installed after construction and cleaning are completed. ② If construction is unavoidable in the space where the product is installed, take the following measures. - The entire product can be sealed and protected so that the product is not exposed to dust and various liquids. Install a shielding film so that it is possible. - Operate video or 100 gray scale white for more than 2 hours every day. - After completing the construction, remove dust, various liquids and vapors sufficiently, and then remove the shielding film, Run dehumidification mode.	

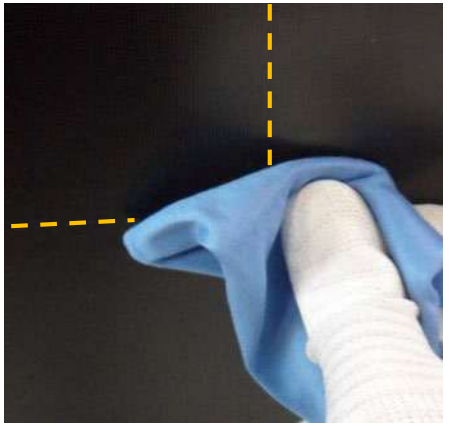
1. Product Information and Installation Precautions

◇ Caution for cleaning screen

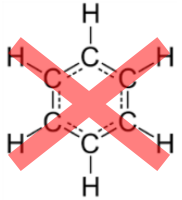
- It is recommended to wipe with a soft cleaning cloth provided with the product. If there is a contamination area that is not removed well, a small amount of glass detergent of the surfactant component is sprayed on the cleaning cloth provided. (However, do not spray the glass detergent directly on the screen)

- Hard stuff on screen surface can damage LED chip and film during cleaning.
  Clear screen surface before cleaning

★Caution★



- Watch out for damage when cleaning gap between Half-Cabinets
- Watch out for damage when cleaning gap between Modules
- Do not insert any cleaning tool or spay cleaner directly into the gap



- Do not wipe the LED surface with hard materials such as paper towels, brushes comb or brush, acrylic or steel.
- Do not use chemicals such as wax, benzene, thinner, mosquito repellent, air freshener, lubricant, and detergent in products

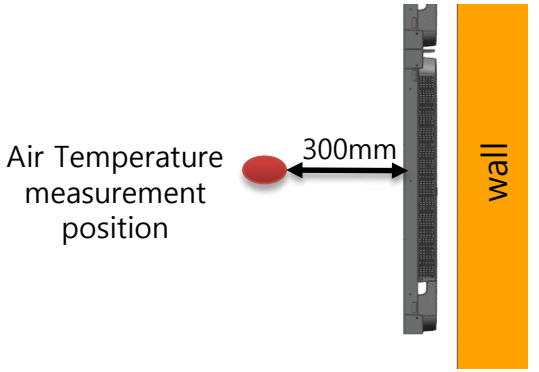
1. Product Information and Installation Precautions

※ Written under 'Full white, (back light 35)' standard
Written under 'Video, (back light 50)' standard

◆ A guide for radiant heat

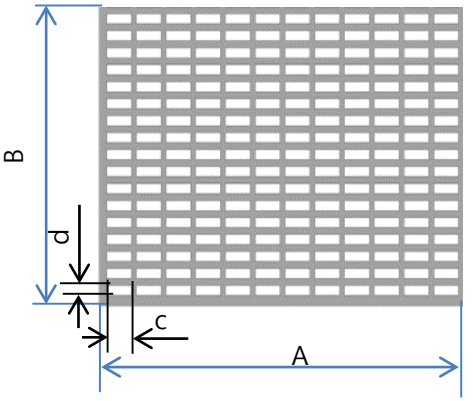
➢ Installation Condition

- Standard for using SAMSUNG FRAME KIT
- In principle, solar window direct radiation condition installation is avoided.
- Room temperature is recommended to be less than 25 ℃.
- Effect of Cold / Hot Wind on Air Conditioning System
  - · If the cold or hot air is the same air conditioning system, be careful not to affect the product ,
- Air temperature measurement position
  - · Measure 300mm separated from the center of the product



➢ Air vent Aperture ratio

- Use the mesh type air vent.
- If Aperture ratio is not 100%, Separation Distance = $\frac{\text{Minimum Separation Distance}}{\text{Aperture ratio}(\%) \ / \ 100}$
- Aperture ratio (%) = $\frac{(c \ X \ d) X \ No. \ of \ vent \ hole}{A \ X \ B}$



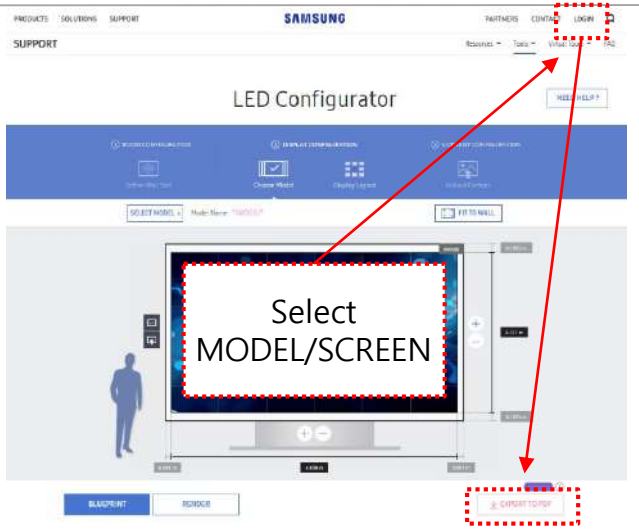
1. Product Information and Installation Precautions

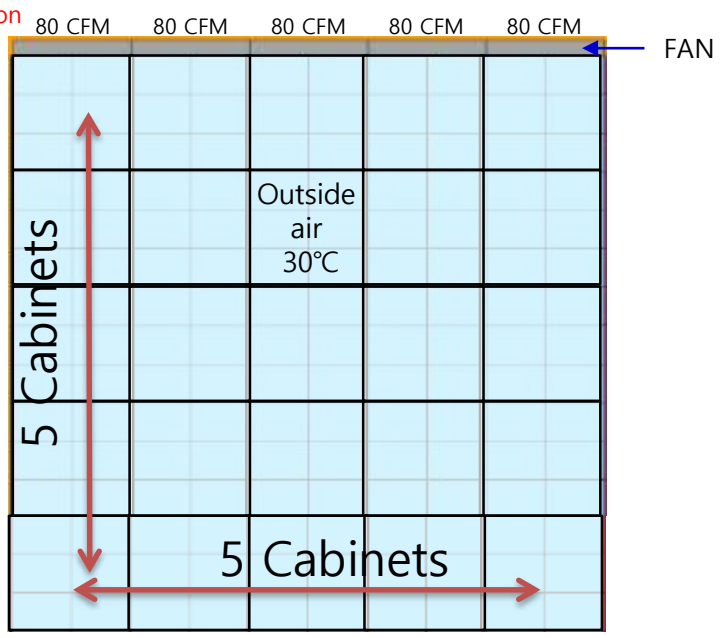
- Flow calculation and FAN selection example
  - Select model and screen configuration from the following site https://displaysolutions.samsung.com/support/tools/led-configurator
  - PDF download after login
  - If the flow rate is indicated, it is necessary to install a fan and air conditioner.

※ FAN flow is not MAX but actual flow, so sufficient margin is required

- Ebm papst : http://www.ebmpapst.com
  - Example size : 60*60*32
  - Example flow : MAX 48.3 CFM Installation quantity: 3ea per row
- delta-fan : http://www.delta-fan.com ※ Fan margin required for pressure drop/flow reduction
  - Example size : 60*60*38
  - Example flow : MAX 54.5 CFM Installation quantity: 3ea per row

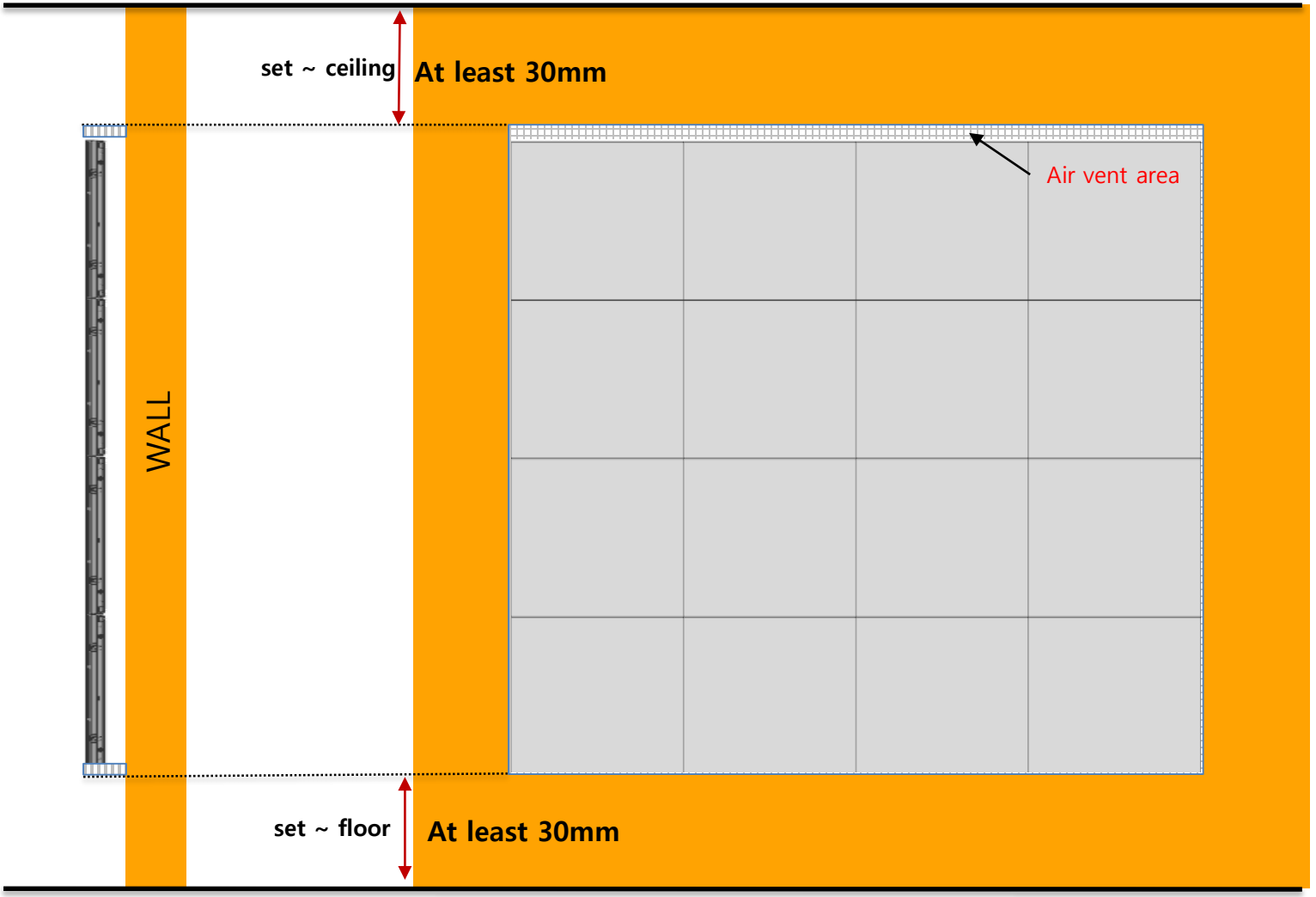
※ Fan margin required for pressure drop/flow reduction





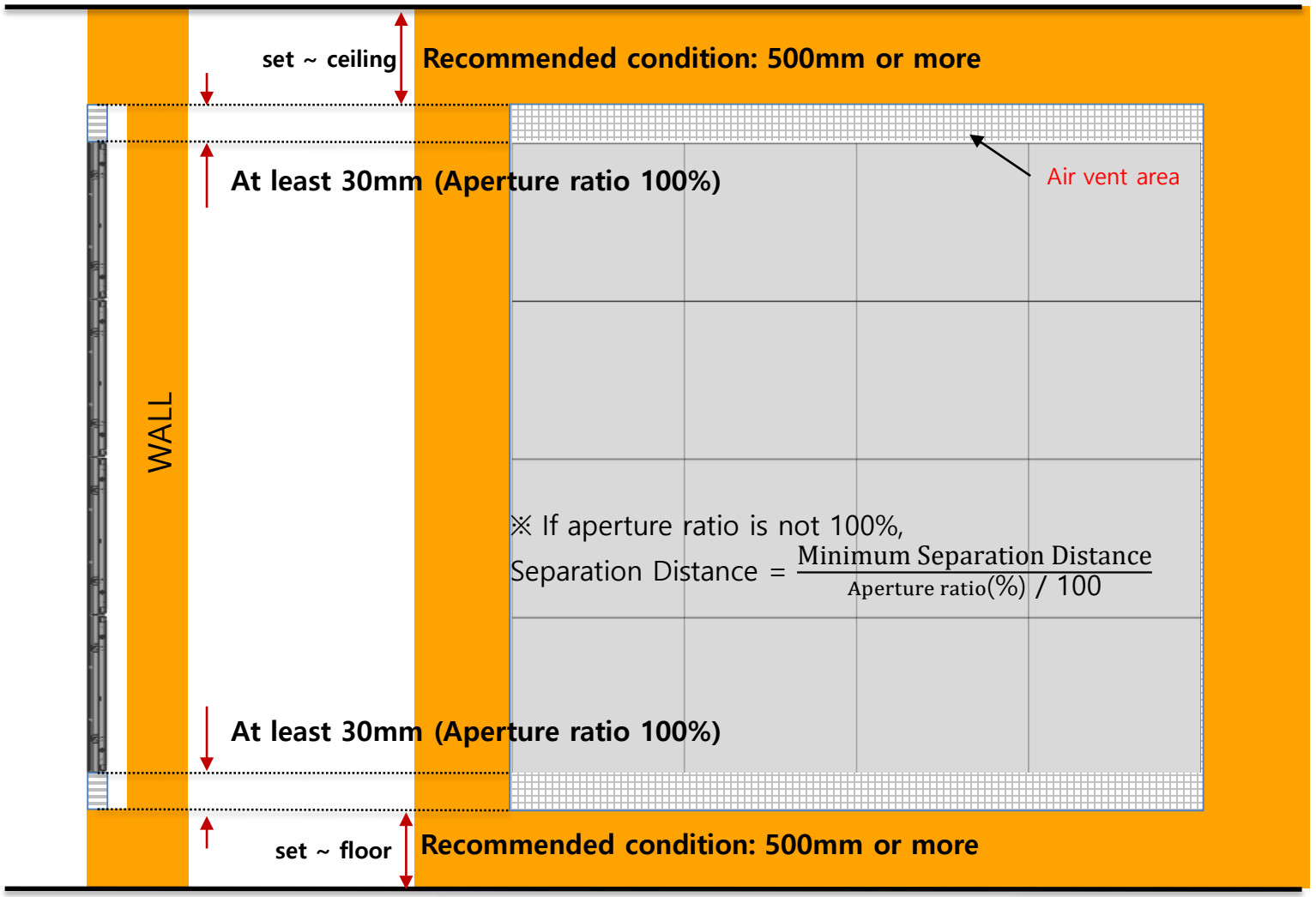
1. Product Information and Installation Precautions

- Vertical wall installation (if fan is not applied)



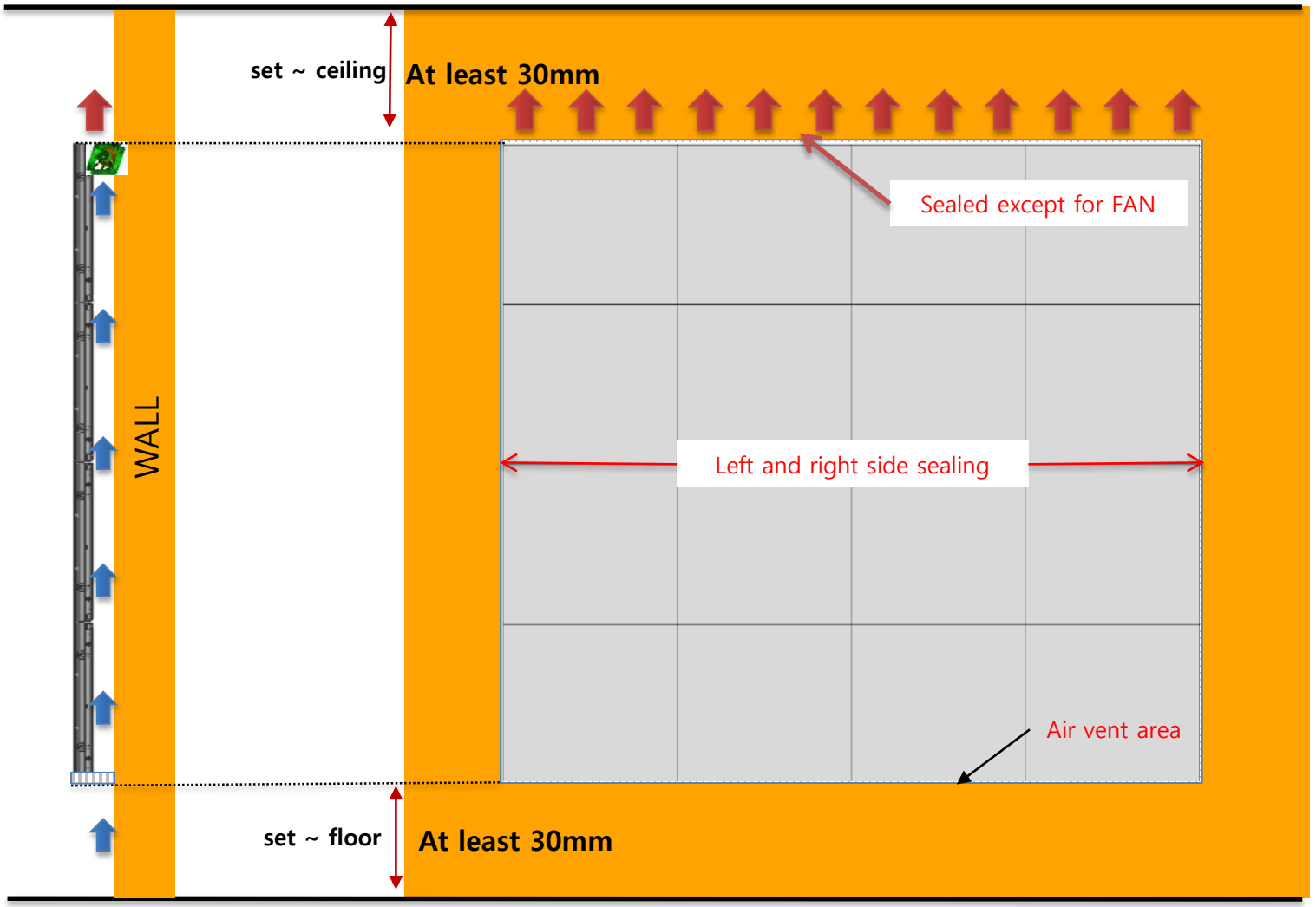
1. Product Information and Installation Precautions

- Recessed installation (if fan is not applied)



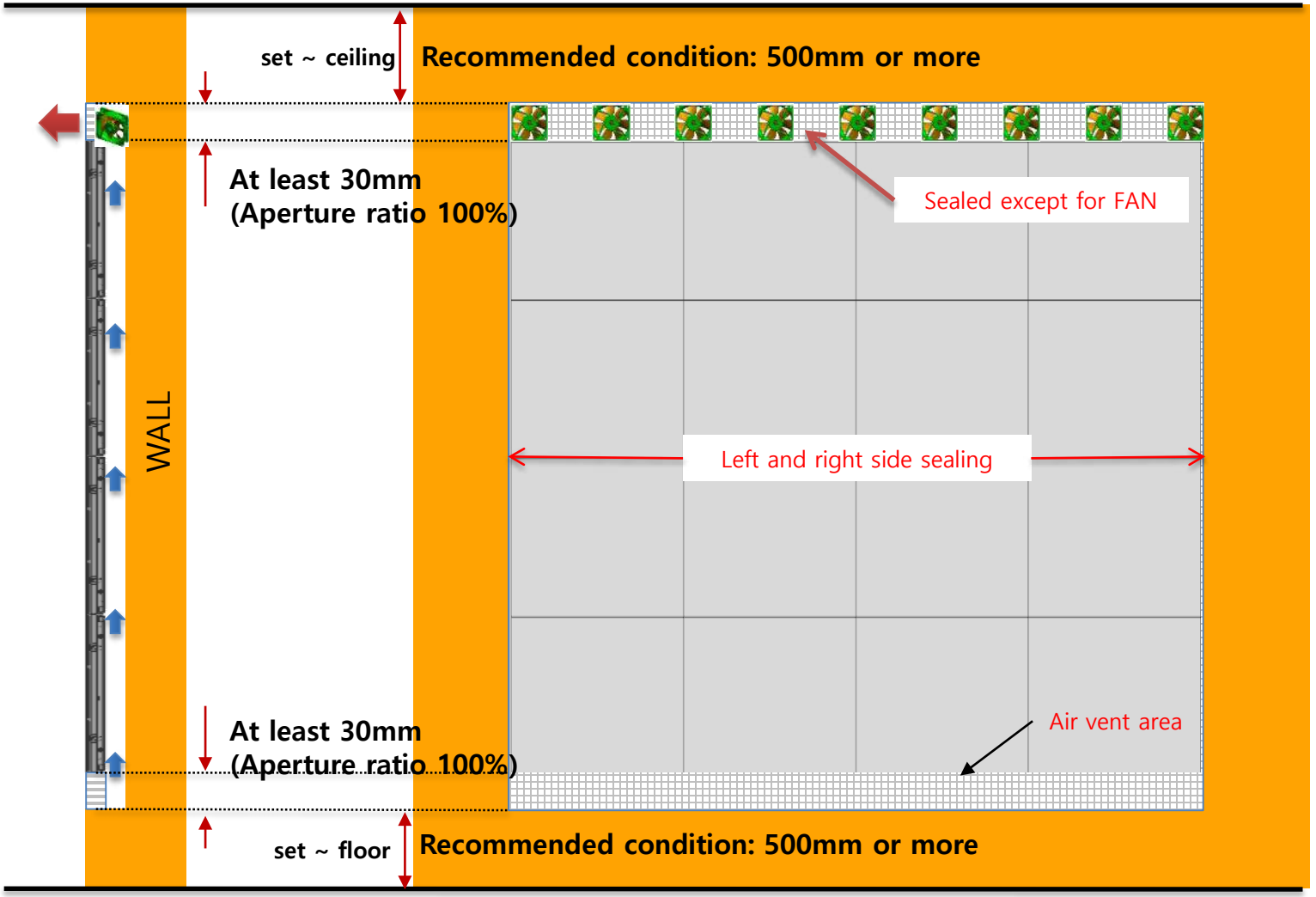
1. Product Information and Installation Precautions

- Vertical wall installation (when fan is applied)



1. Product Information and Installation Precautions

- Recessed installation (when fan is applied)



1. Product Information and Installation Precautions

- Notes on Recessed installation

➢ 150mm left and right space required for serviceability. (Fig.1)

➢ Due to the characteristics of the product, the fixing screw is placed inside, so it is necessary to secure a field of view of about 150mm. (Fig.2)

* Same as the heat dissipation specification, a space of at least 30mm above and below is required.

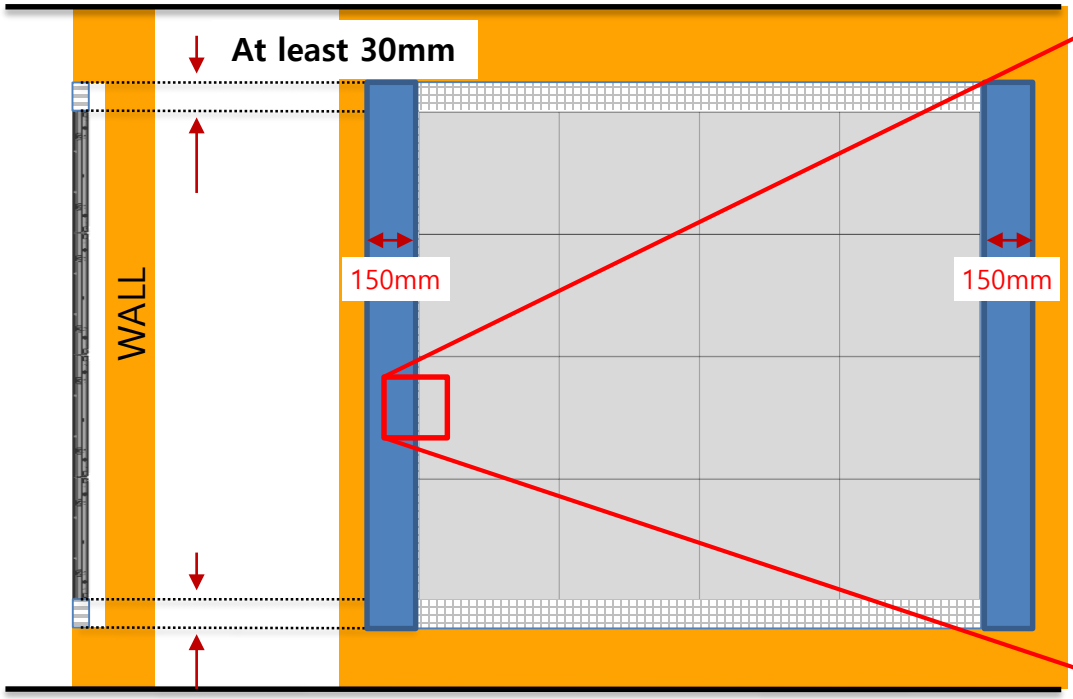


Fig.1 Secure 150mm of left and right space for serviceability

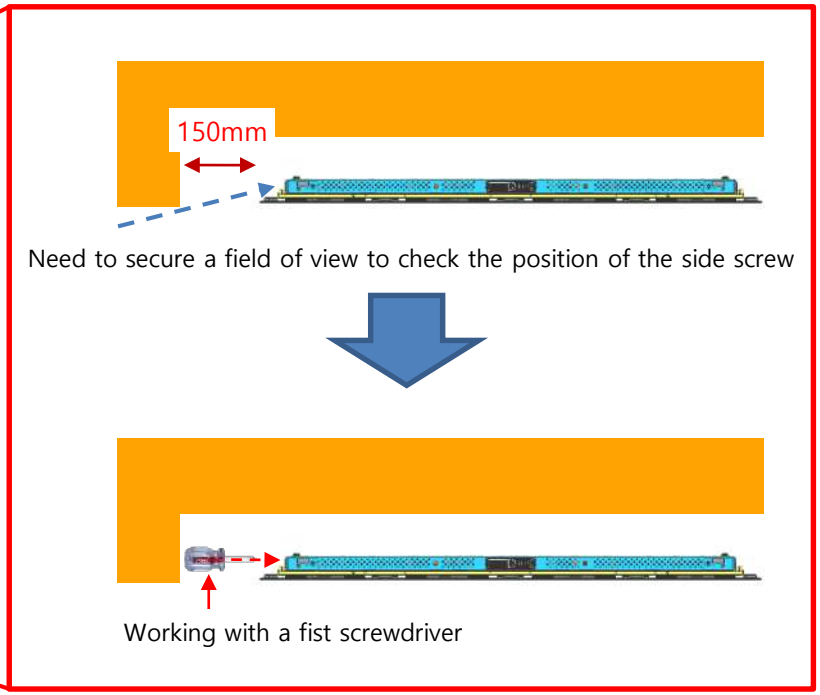
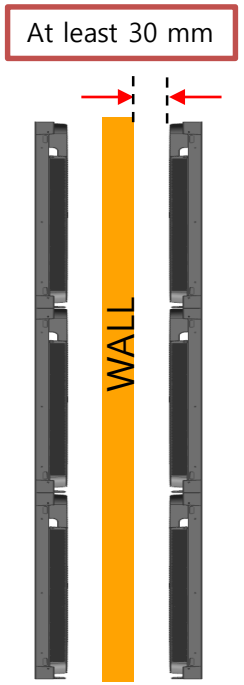


Fig.2 work guide

1. Product Information and Installation Precautions

- Duplex installation
  - If the flow rate is indicated on the flow calculation site, it is necessary to install a fan and air conditioner.
  - Minimum separation distance from wall 30mm or more (Aperture ratio 100%)
  - If Aperture ratio is not 100%, Separation Distance = $\frac{\text{Minimum Separation Distance}}{\text{Aperture ratio}(\%) / 100}$



1. Product Information and Installation Precautions

◆ Ready to install

- The preparations included in the Frame Kit are on the Frame kit installation page.

Electric driver

※ Recommended standard

(+) driver (#2)

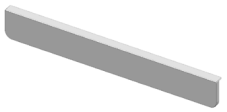
Laser Level

- Supplied in the accessory kit.**(CY-WJBPBP)**

※ When purchasing the product as an optional item, it must be purchased together.

x2

A/S-VACUUM HANDLE
(BN81-23387A)



x2

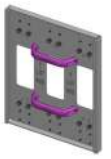
EDGE PROTECTION
(BN81-23396A)

x2

GAP TOOL
(BN81-23397A)

x2

HANDLE
(BN96-53937A)



x2

EXTENSION GUIDE JIG
(BN81-23398A)

x24

SCREW
(6001-002621)

x30

SCREW
(6001-002685)

x30

SCREW
(BN81-21525A)

x2

HEX WRENCH
(2mm)

x1

HEX WRENCH
(6mm)

x24

BOLT
(BN61-13143A)

x30

SCREW
(BN81-23420A)

x20

SCREW
(BN81-23420A)

x4

LATEX GLOVES
(4EA)

1. Product Information and Installation Precautions

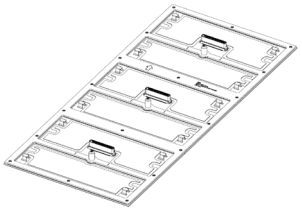
◆ Cabinet Accessories List

Easy Setup Guide

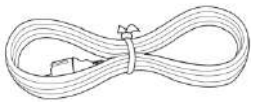
LABEL – WARRANTY
(It is not provided in some areas)

REGULATORY GUIDE

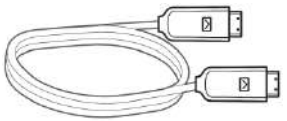
LEAFLET - WEEE



Spare Module * 2EA

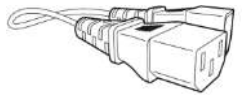


AC Power Cable
(It varies from country to country)



OCM Cable
(BN39-02743A)

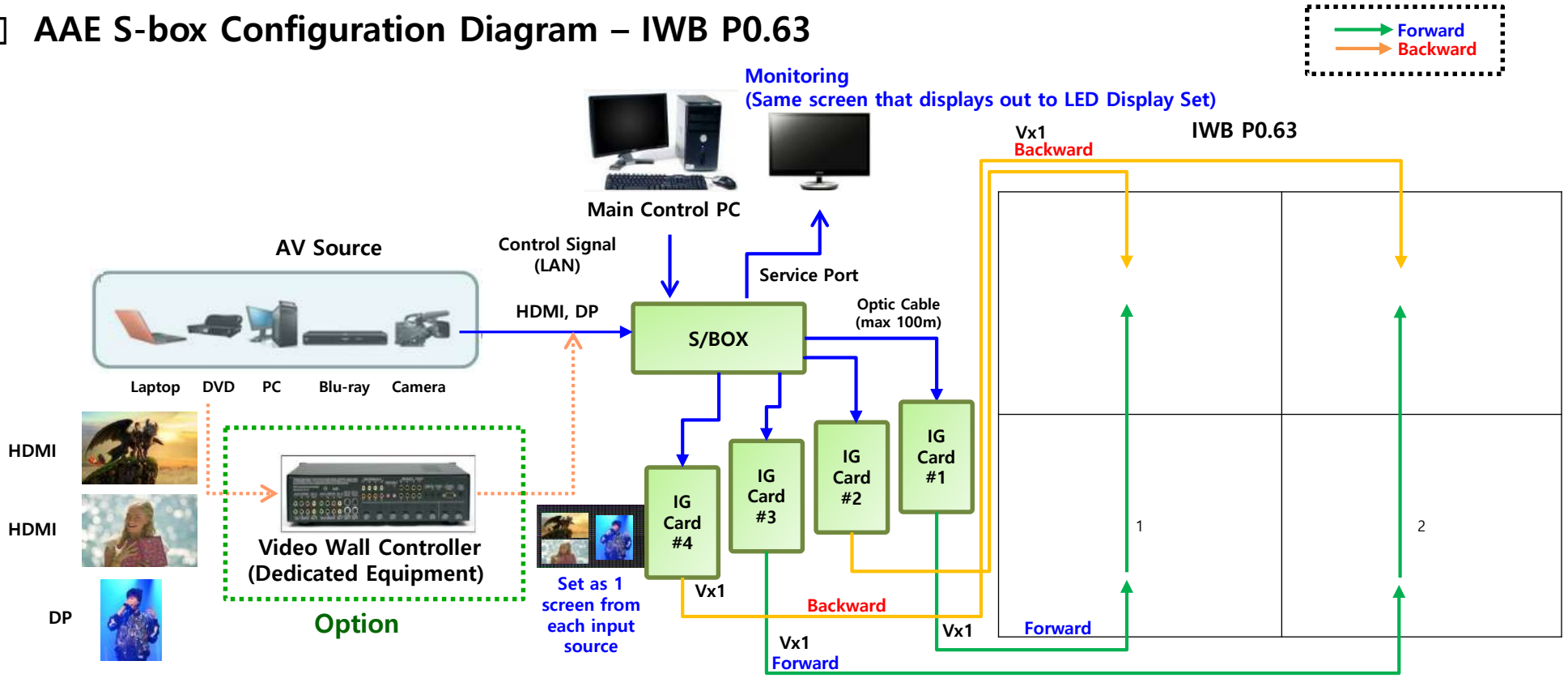
WEB Manual



Power extension
3903-000376

System Configuration for Screen

☐ AAE S-box Configuration Diagram – IWB P0.63



Case-1) Configuration for single screen : connect using S-Box

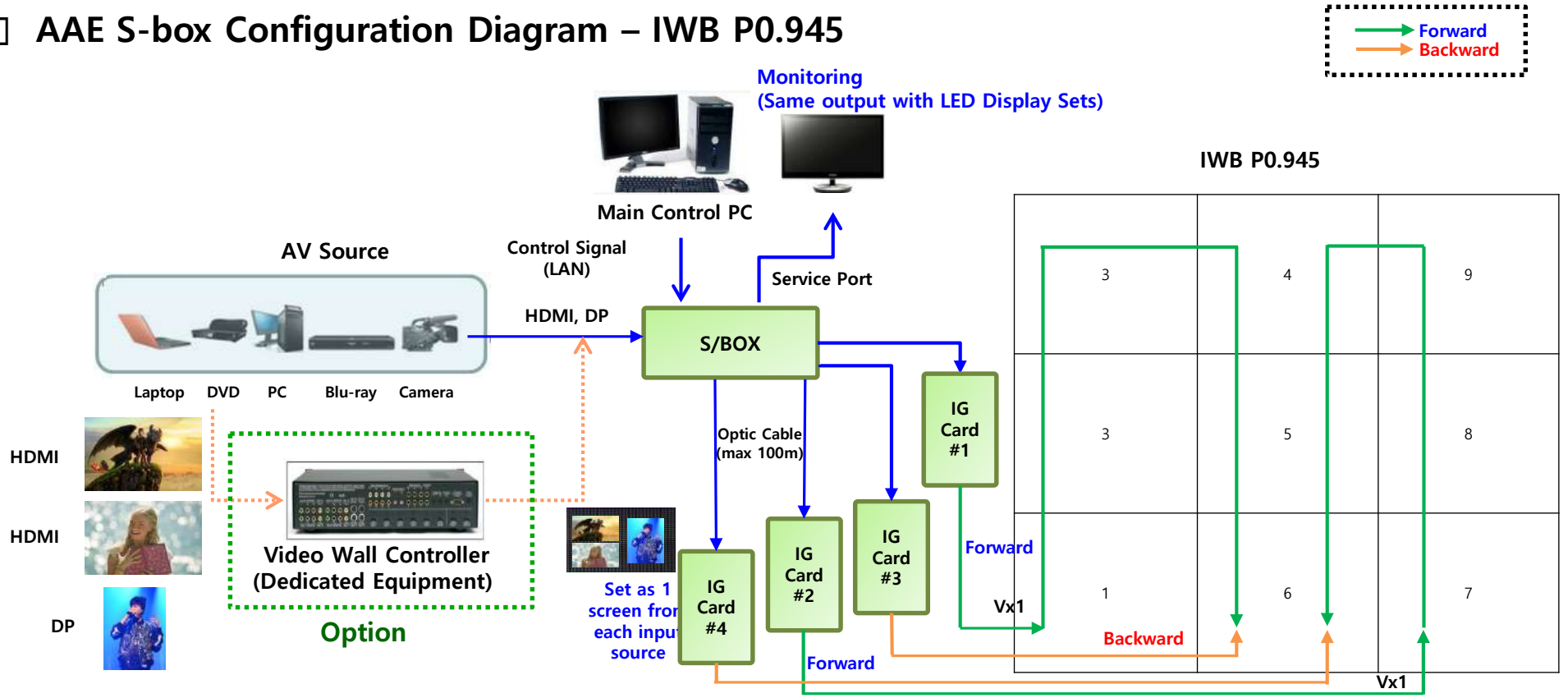
Case-2) Configuration for multi screen :

- connect using dedicated equipment : Mix first using Video Wall Controller and send it to S/Box

(※ Option ⬚) → Multi Screen combination and Play with synchronization

System Configuration for Screen

☐ AAE S-box Configuration Diagram – IWB P0.945



Case-1) Configuration for single screen : connect using S-Box

Case-2) Configuration for multi screen :

- connect using dedicated equipment : Mix first using Video Wall Controller and send it to S/Box

(※ Option ⬚) → Multi Screen combination and Play with synchronization

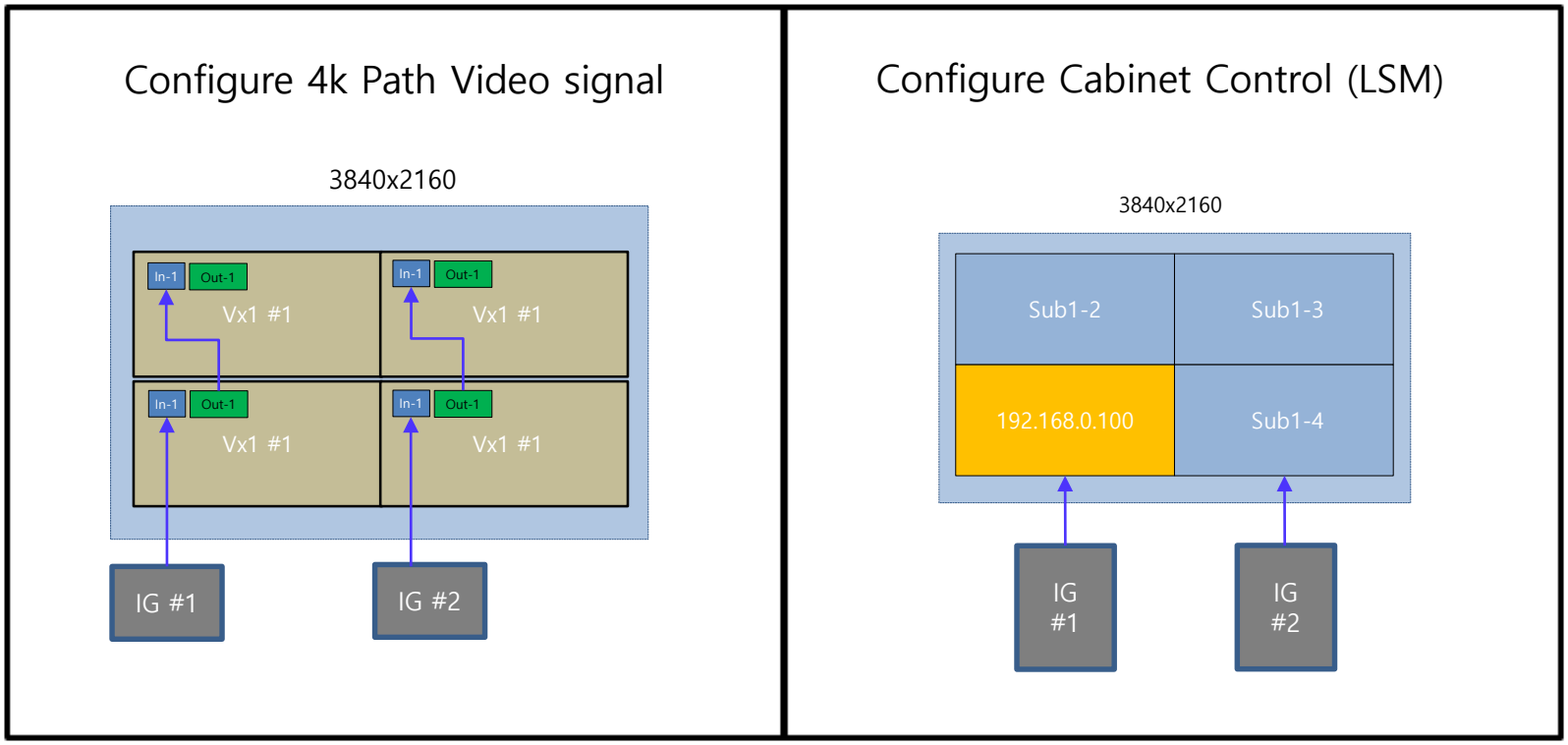
Screen Configuration - Cable

☐ Special Features of Screen Configuration (Compared to former models) – IWB P0.63

▶ Configure screen according to video size in half units

- **Cabinet Configuration :** FPGA 1EA + AM3352 1EA + In/Out Port x 1

※ LSM Layout : Picture Quality/Position/FW update by Cabinet



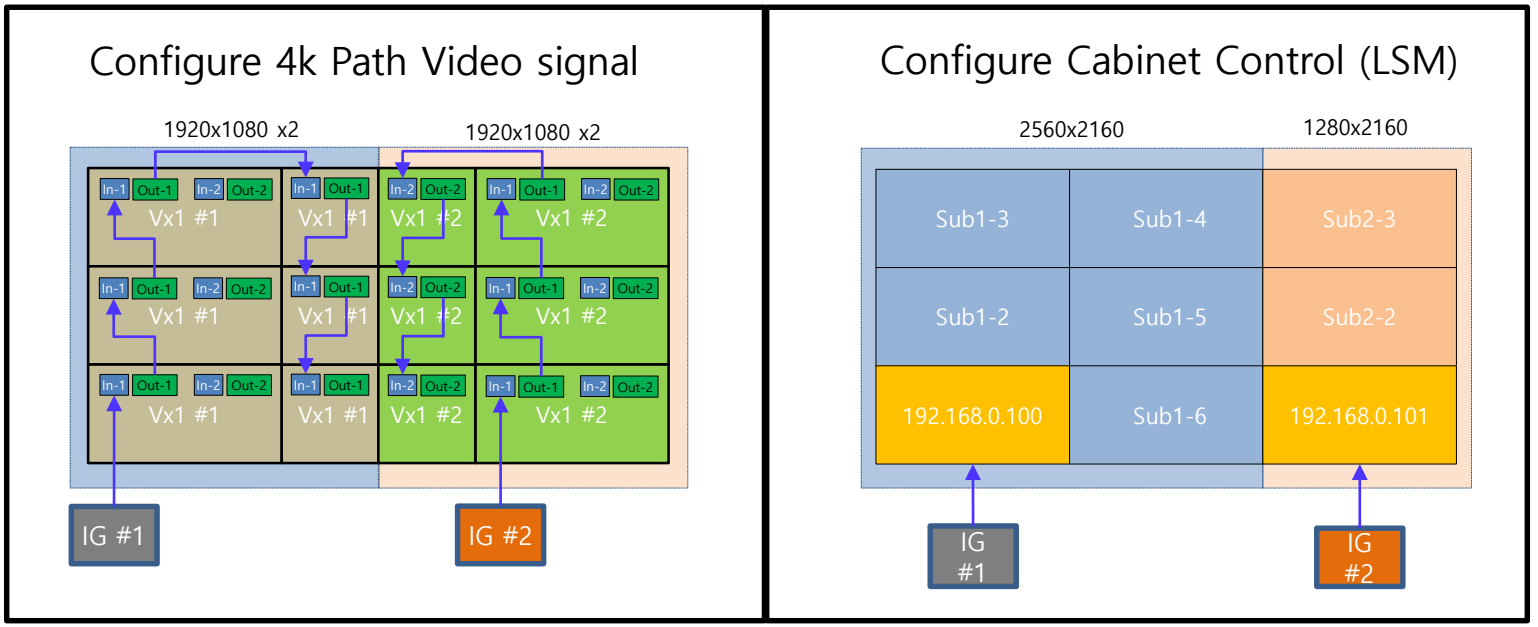
Screen Configuration - Cable

☐ Special Features of Screen Configuration (Compared to former models) – IWB P0.94

▶ Configure screen according to video size in half units

- **Cabinet Configuration :** FPGA 1EA + AM3352 1EA + In/Out Port x 2

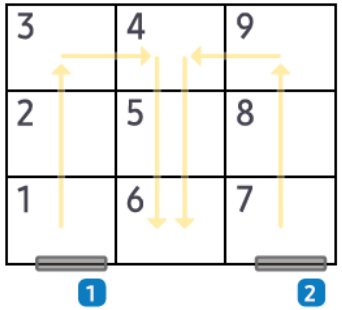
※ LSM Layout : Picture Quality/Position/FW update by Cabinet

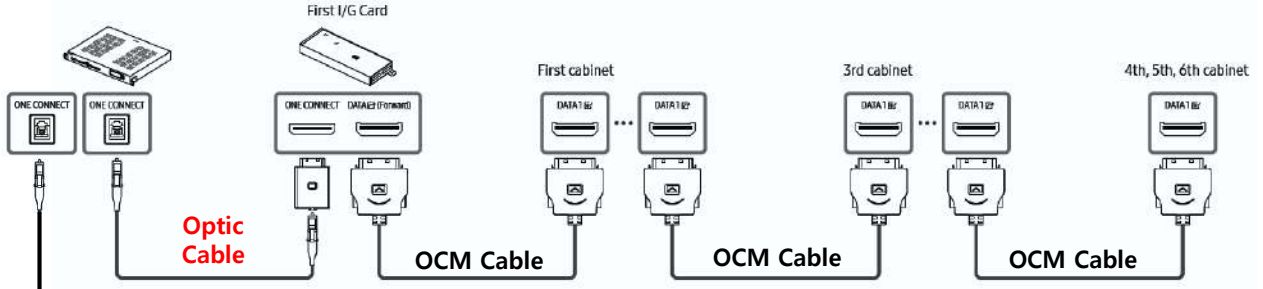


Screen Configuration - OCM Cable

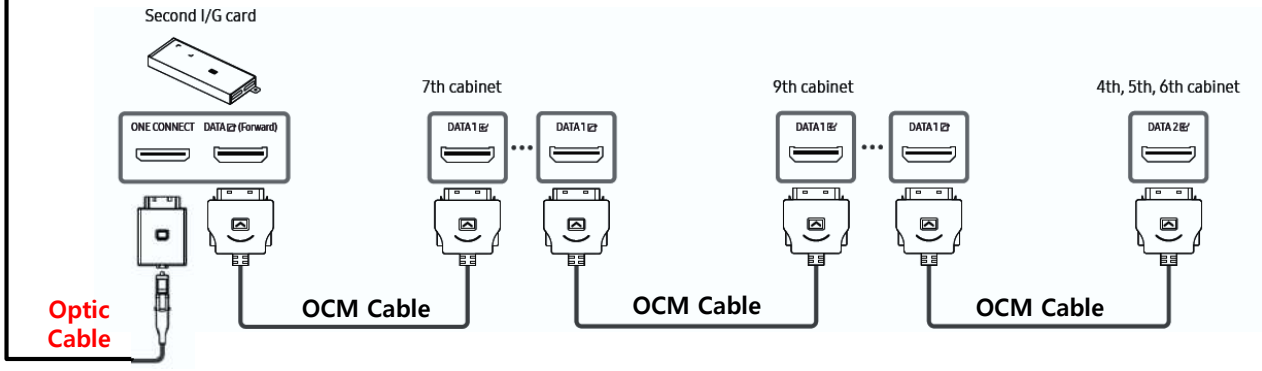
☐ Cable Connection Features by location – IWB P0.94

※ Cable Connections (ex. 3 X 3) ① S-Box → I/G Card → First Cabinet



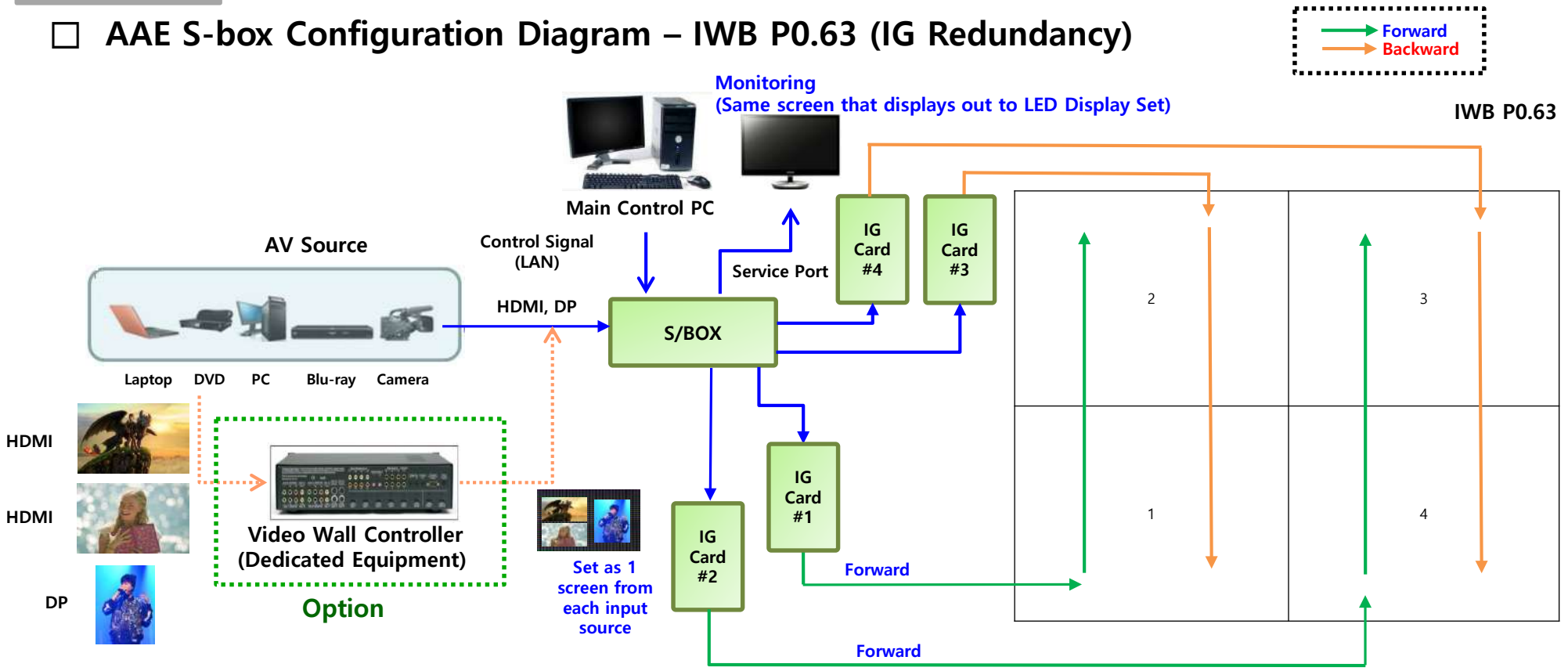


② I/G Card → Second cabinet



Screen Configuration – (Cable)

☐ AAE S-box Configuration Diagram – IWB P0.63 (IG Redundancy)



Case-1) Configuration for single screen : connect using S-Box

Case-2) Configuration for multi screen :

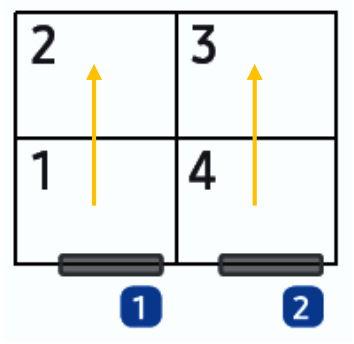
- connect using dedicated equipment : Mix first using Video Wall Controller and send it to S/Box

(※ Option ⬚) → Multi Screen combination and Play with synchronization

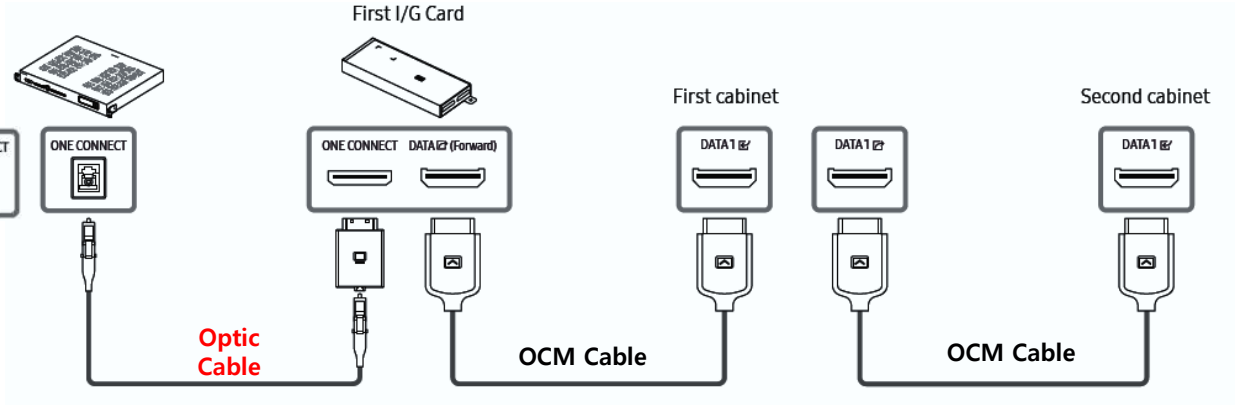
Screen Configuration - OCM Cable

☐ Cable Connection Features by location – IWB P0.94

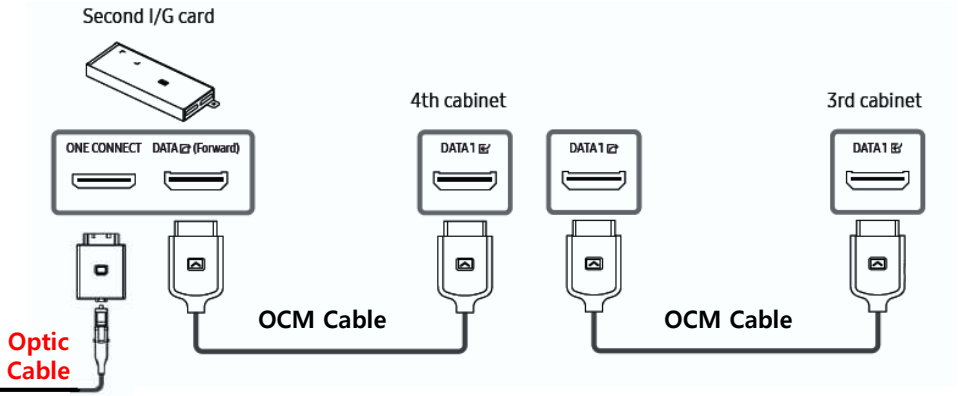
※※ Cable Connections (ex. 2 X 2, 4K)



① S-Box → I/G Card → First Cabinet



② I/G Card → Second cabinet



Contents

2. Preparation for Cabinet Installation

◆ Preparations before installation

① Remove the band surrounding the box.

② Open the top of the box and take out accessories and spare modules.

③ Lift the top of the box and take out the product wrapped in a vacuum packaging bag.

④ Tear off the top of the vacuum packing bag to remove the vacuum packing bag.

2. Preparation for Cabinet Installation

◆ Preparations before installation

◇ Connect the power cable to the SET and check whether the LED is damaged and the screen display.

① After AC power is applied, press the switch on the rear side for 1 second to release the power standby mode. 10 seconds after the NO VIDEO appears, press and release the switch for more than 3 seconds.

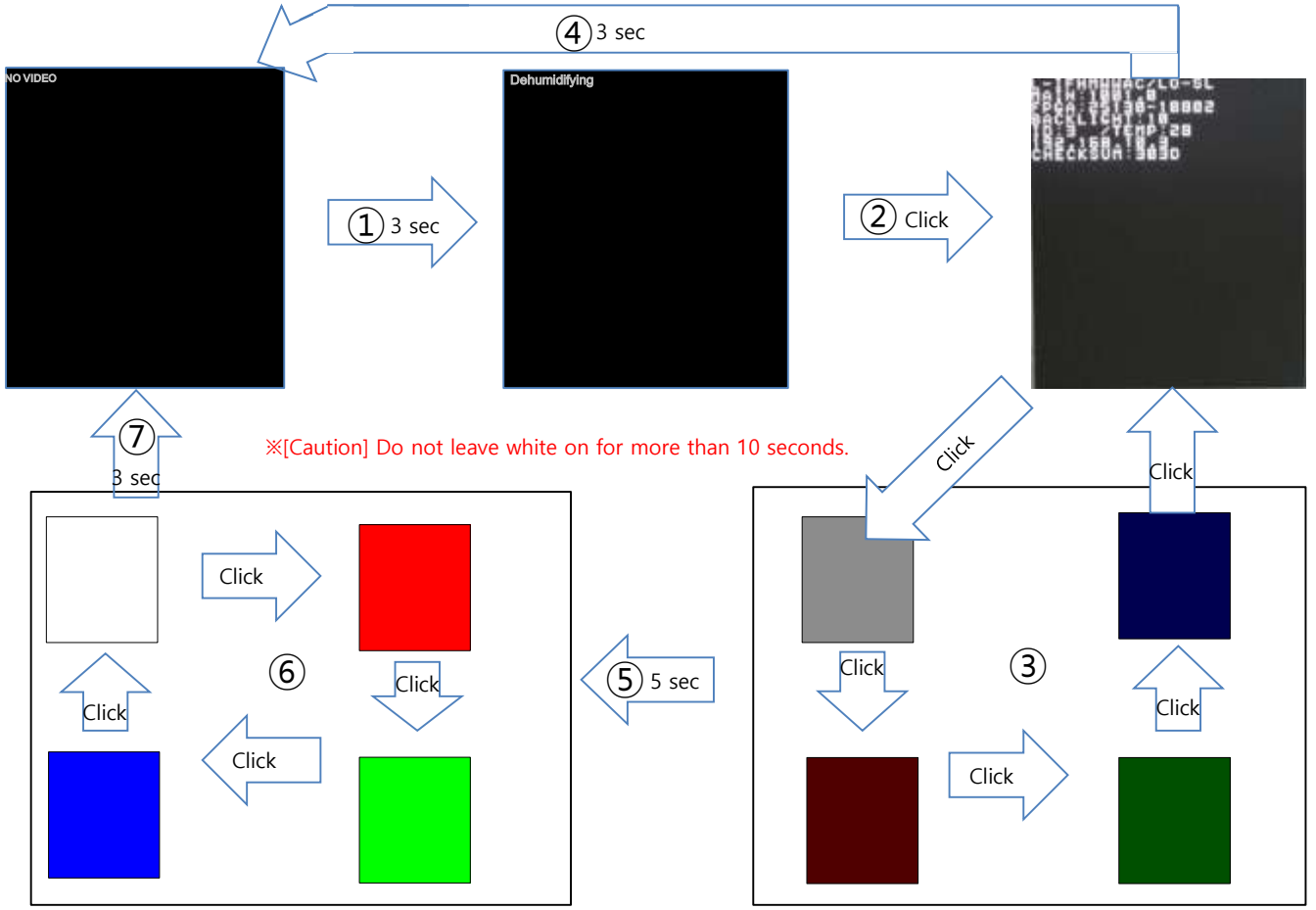
② On the Dehumidifying screen, if you press the Switch once more, the Factory Info window appears. Each time you press the switch in the factory info window, it changes in the order of gray, dark red, dark green, and dark blue.

③ If you press and release the switch for more than 3 seconds in the factory info window, it moves to 'NO VIDEO'.

④ If you need a bright pattern, press and release the switch for more than 3 seconds in the dark pattern.

⑤ When it changes to a bright pattern, each time the switch is pressed, it changes in the order of white, bright red, bright green, and bright blue.

⑥ If you press and release the switch for more than 3 seconds in a bright pattern, it moves to 'NO VIDEO'.



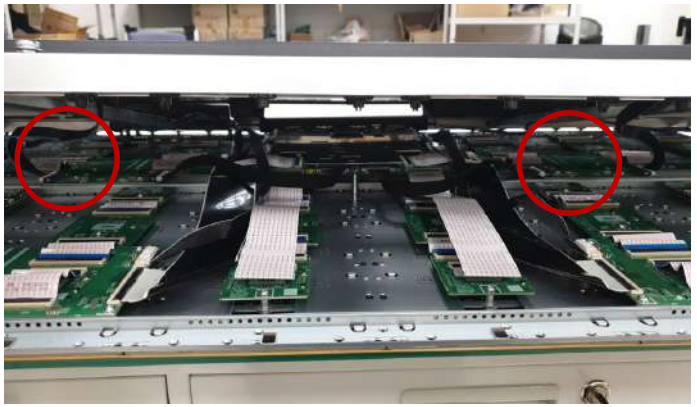
※ [Caution] Be careful because if you press the switch for more than 10 seconds, the factory reset is performed.

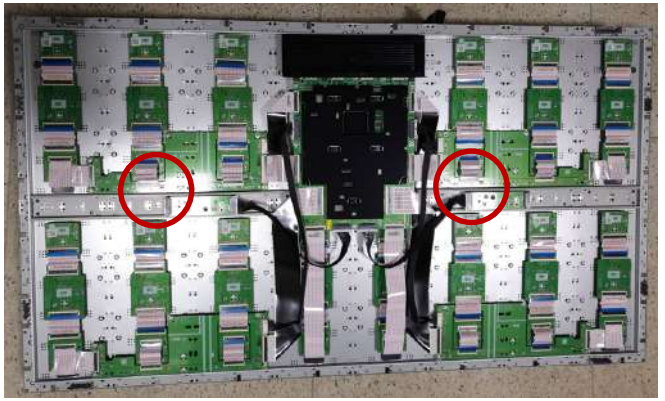
2. Preparation for Cabinet Installation(If module service is required after pre-inspection)

- If the defective module needs to be replaced

1) Place the product in a flat place and lift the frame part attached with a magnet.


2) Remove the power connection cable on the left and right sides of the center of the product and remove the frame.



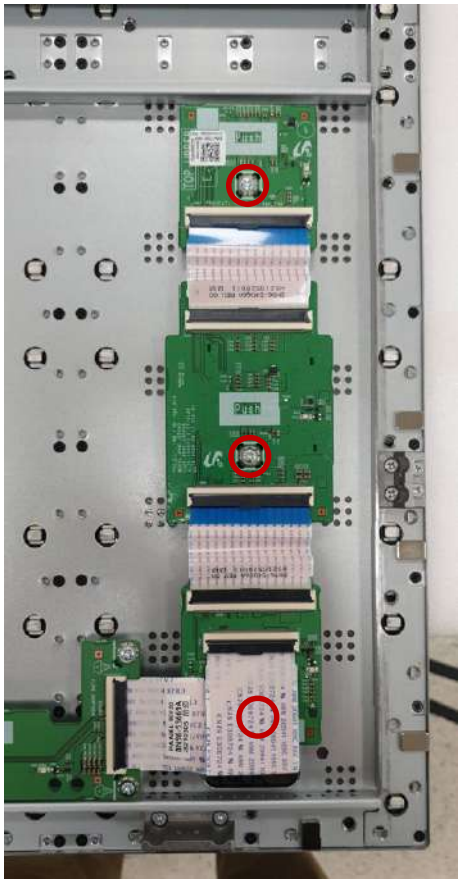


2. Preparation for Cabinet Installation(If module service is required after pre-inspection)

3) Unscrew the bridge board or TCON board above the module to replace. (Fig 1)

4) Remove the screw (same as SCREW G in accessory kit) surrounding the module to be replaced (18EA) and remove the module. (Fig 2)

5) Position the new module, push it so that there is no gap with the surrounding module, and assemble it in reverse order.
(If the screw is loose during reassembly, fasten it to SCREW H in the accessory kit.)



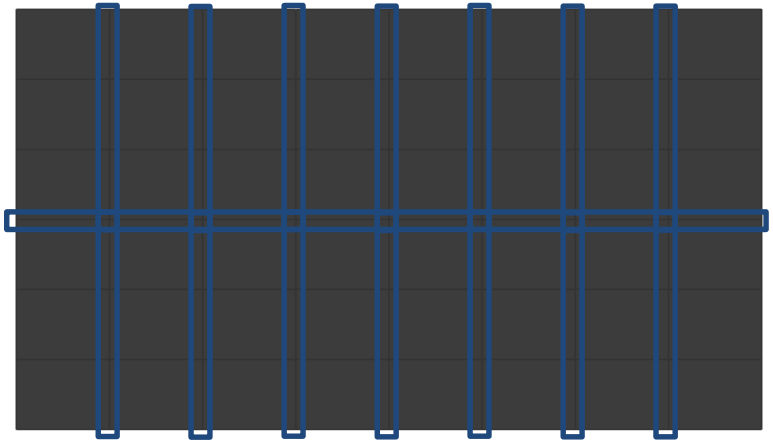
(Fig 1)

(Fig 2)

2. Preparation for Cabinet Installation(If module service is required after pre-inspection)

- Z step adjustment between modules is required

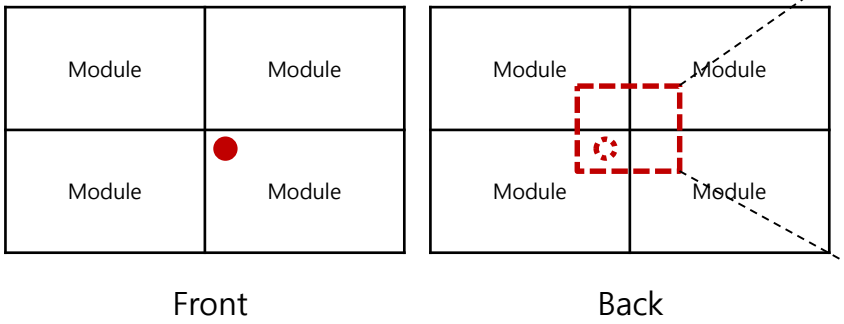
1) After checking the location of occurrence, separate the module units according to the order of pages 37, 1) to 2). (The adjustable position is where the 1*3 unit module meets)

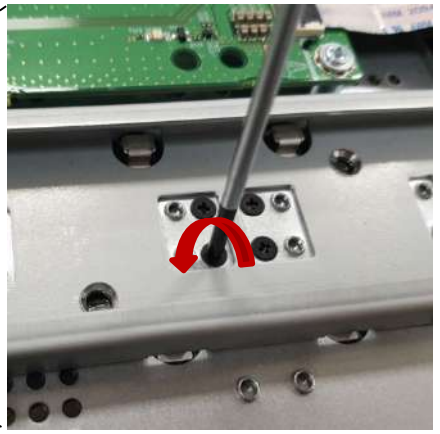


Adjustable position

2) Unfasten the fastening screw of the lower part of the module and fasten SCREW I (BN81-21525A) included in the accessory kit to the adjustment hole to support and correct it.

EX) When the screen is inspected on the front, ●is low





Contents

3. Frame kit Components

- FRAME KIT / ACCESSORY Components

No	Item	VG-LFB11SWB (1 X 1)	VG-LFB22SWB (2 X 2)	VG-LFB33SWB (3 X 3)
		Q'TY	Q'TY	Q'TY
1	FRAME TOP	1 (1 Wide)	1 (2 Wide)	1 (2 Wide)
2	FRAME TOP SHORT			1 (1 Wide)
3	FRAME BOT	1 (1 Wide)	1 (2 Wide)	1 (2 Wide)
4	FRAME BOT SHORT			1 (1 Wide)
5	FRAME SIDE	2	2	2
6	FRAME HORIZONTAL MID		1 (2 Wide)	2 (2 Wide)
7	FRAME HORIZONTAL MID SHORT			2 (1 Wide)
8	FRAME VERTICAL MID		1	2
9	BRACKET IG	3	5	5
10	BRACKET IG SUB	1	1	1
11	HORIZONTAL LINK	2	2	4
12	HORIZONTAL CENTER LINK		1	4
13	VERTICAL LINK	2	4	6
14	BRACKET SUPPORT L	1	2	3
15	BRACKET SUPPORT R	1	2	3
16	SCREW A (M6, L10) (6011-006960)	10	20	40
17	SCREW B (M4, L6) (6003-000131)	30	40	80
18	SCREW C (M4, L8) (6001-003041)	10	10	20
19	BOLT (M5, L55) (6011-008215)	8	16	24
20	ANCHOR	8	16	24
No	**Item**	**CY-WJBPBP**		
21	VACUUM HANDLE (BN81-23387A)	2		
22	CARRYING HANDLE (BN96-53937A)	2		
23	EXTENSION GUIDE JIG (BN81-23398A)	2		
24	EDGE PROTECTION (BN81-23396A)	2		
25	GAP TOOL (BN81-23397A)	2		
26	SCREW D (M4,L8) (6001-002621)	30		
27	HEADLESS BOLT E (M4, L8) (BN61-13143A)	30		
28	SCREW F (M4, L12) (BN81-23801A))	20		
29	SCREW G (M3,L2) (6001-002685)	30		
30	SCREW H (M3.2,L2) (BN81-23420A)	30		
31	SCREW I (M2.8,L2.3) (BN81-21525A)	30		
32	HEX WRENCH (2mm)	2		
33	HEX WRENCH (6mm)	1		
34	GLOVES	4		
설치 화면 Size (mm)		1209.4 * 680.3	2418.9 * 1360.5	3628.3 * 2040.8


1.FRAME TOP

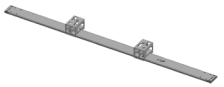

2. FRAME TOP SHORT


3.FRAME BOT

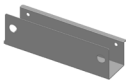

4. FRAME BOT SHORT


5. FRAME SIDE


6. FRAME HORIZONTAL MID

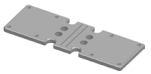

7. FRAME HORIZONTAL MID SHORT


8. FRAME VERTICAL MID


9. BRACKET IG


10. BRACKET IG SUB


11. HORIZONTAL LINK


12. HORIZONTAL CENTER LINK


13. VERTICAL LINK


14. BRACKET SUPPORT L


15. BRACKET SUPPORT R


16. SCREW A (M6, L10)


17. SCREW B (M4, L6)


18. SCREW C (M4, L8)


19. BOLT (M5, L55)


20. ANCHOR


21. VACUUM HANDLE


22. CARRYING HANDLE


23. EXTENSION GUIDE JIG


24. EDGE PROTECTION


25. GAP TOOL


26. SCREW D (M4,L8)


27. HEADLESS BOLT E (M4, L8)


28 SCREW F (M4, L12)


29. SCREW G (M3,L2)


30. SCREW H (M3.2,L2)


31. SCREW I (M2.8,L2.3)


32. HEX WRENCH (2mm)


33. HEX WRENCH (6mm)


34. GLOVES

Contents

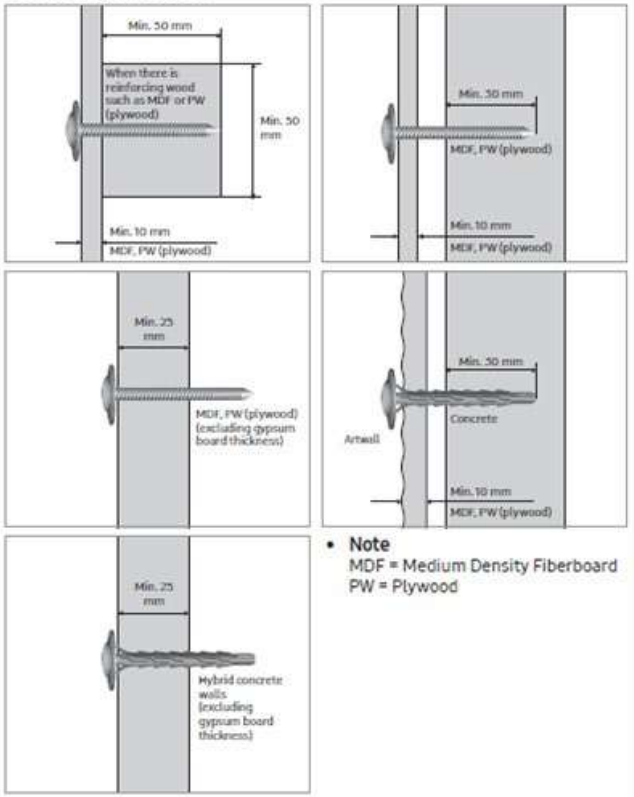
4. Frame installation

※ Precautions for Fastening the Screws

Standard Installation Requirements by Wall Type

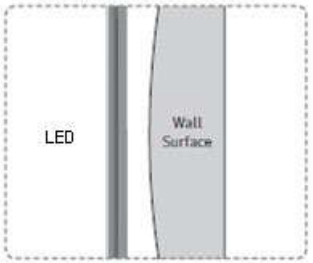
⚠ Check the wall type before installing.

- Can only be mounted on a concrete or interior wall of sufficient thickness. See the diagrams below.



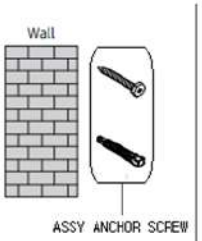
- **Note**
  MDF = Medium Density Fiberboard
  PW = Plywood

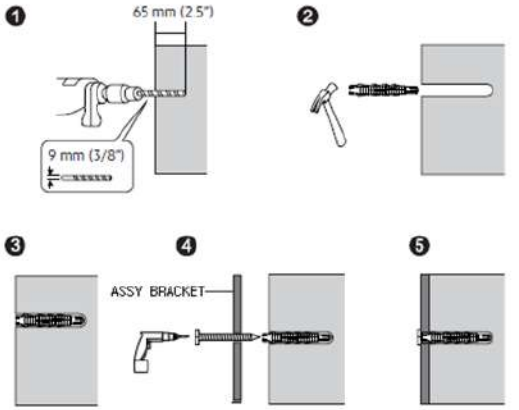
- First, check the status of the wall (type, thickness, flatness).



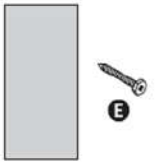
If the wall surface is not completely flat, gaps may form after installation.

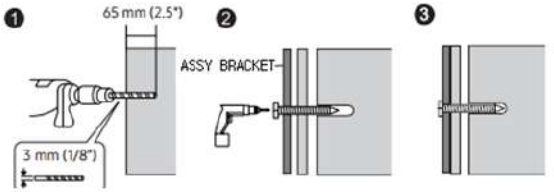
① Walls made of thick enough concrete

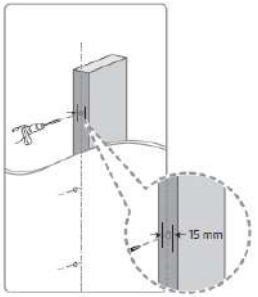




② Walls made of gypsum board with wood studs or MDF







Installation Requirements

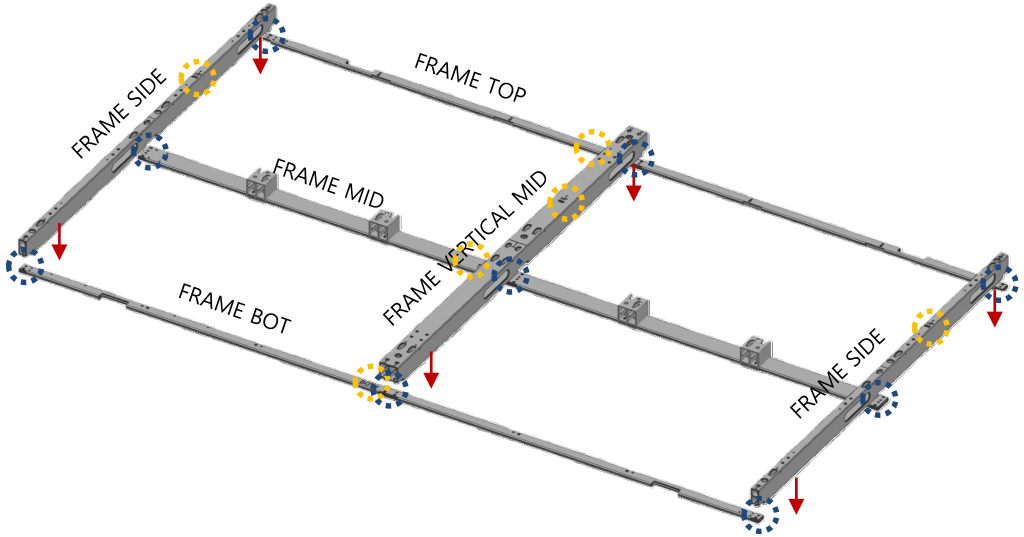
- Be sure to check the location of wooden studs in the wall before installing screws.
- Minimum wood stud size: 51 x 102 mm (2 x 4 in) Make holes (3 mm) first before installing screws.
- Holes for screws must be made at the center of studs.

⚠ Samsung is not responsible for problems that arise when the installation guide is not followed.

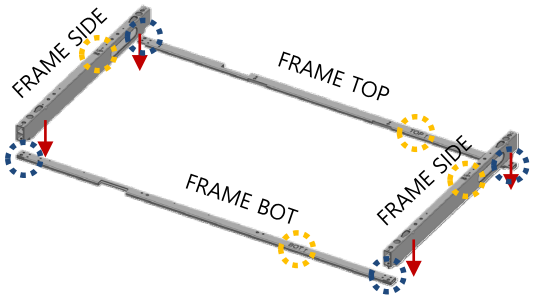
4. Frame installation (1*1, 2*2)

① Arrange FRAME TOP, BOT, and MID (for 2*2) and install FRAME SIDE and Vertical MID (for 2*2).

VG-LFB22SWB (2*2)

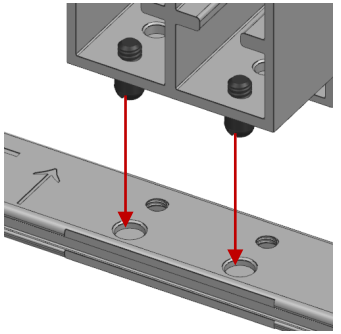


VG-LFB11SWB (1*1)



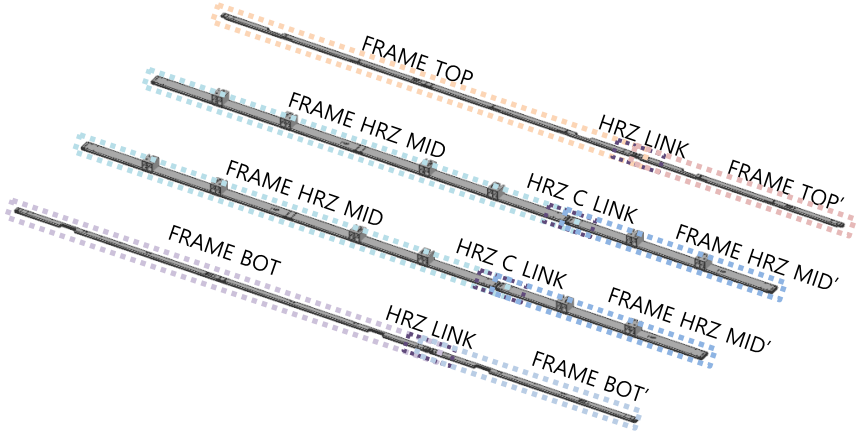
- Pay attention to the assembly direction. check
- (Check arrow direction)

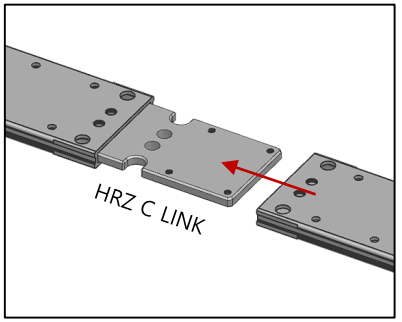
* Assemble according to guide groove check



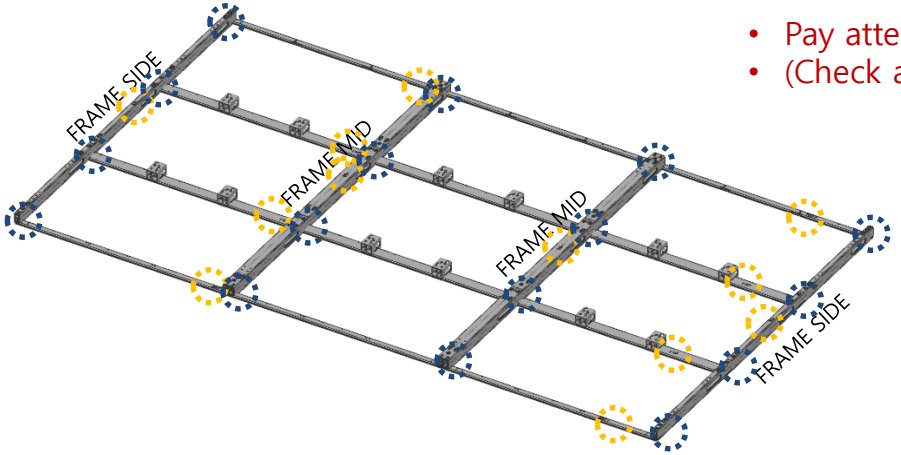
4. Frame installation (Normal installation, 3*3)

①'-1 FRAME TOP, BOT, and HRZ MID, and insert HRZ LINK and HRZ C LINK for extension.





①'-2 Insert FRAME SIDE and MID.

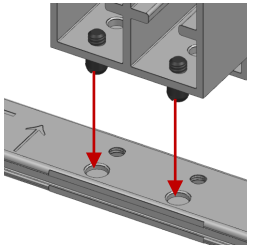


- Pay attention to the assembly direction.
- (Check arrow direction)

Check

* Assemble according to guide groove

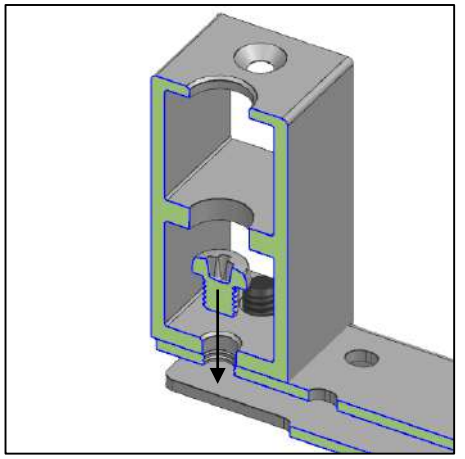
Check



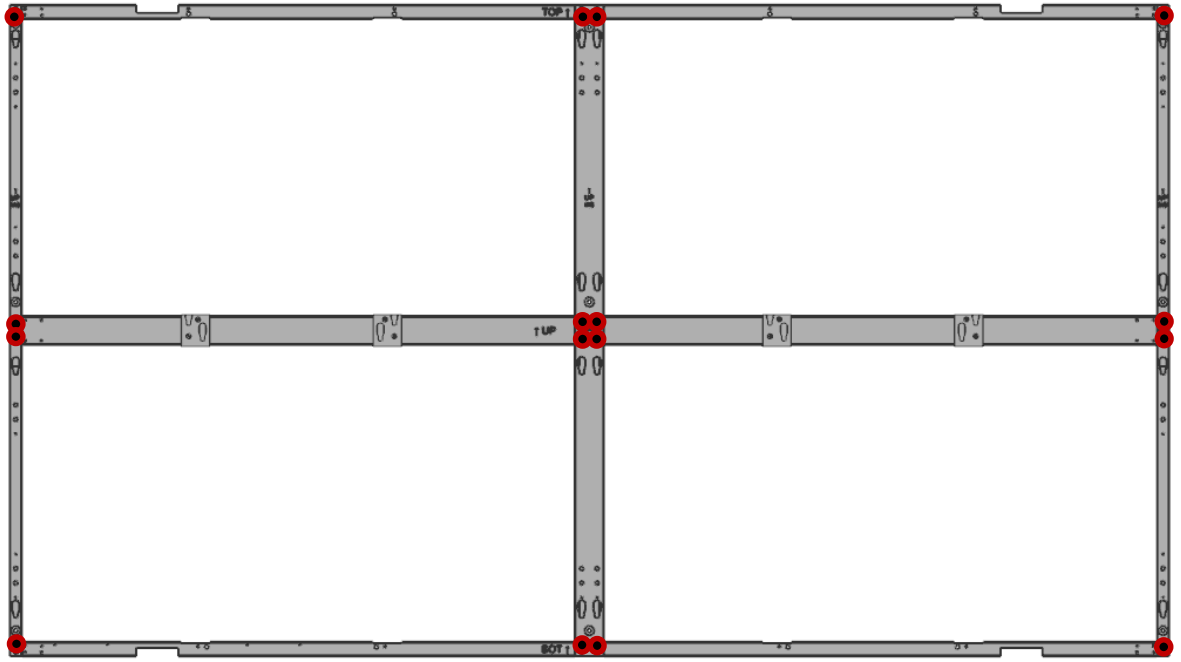
4. Frame installation (1*1, 2*2)

② Fasten the vertical frame and the horizontal frame.

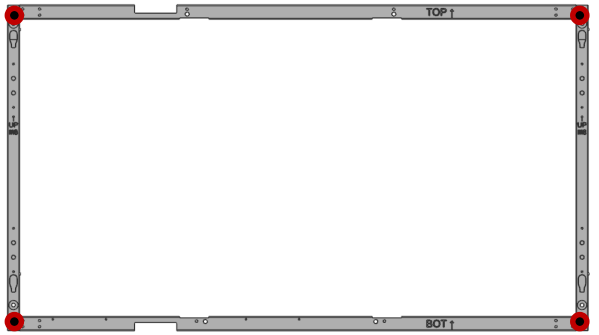
- Fix between FRAMEs using SCREW A (M6,L10)



- Fastening points (SCREW A) (for 2*2= 12)



- Fastening points (SCREW A) (for 1*1= 4)



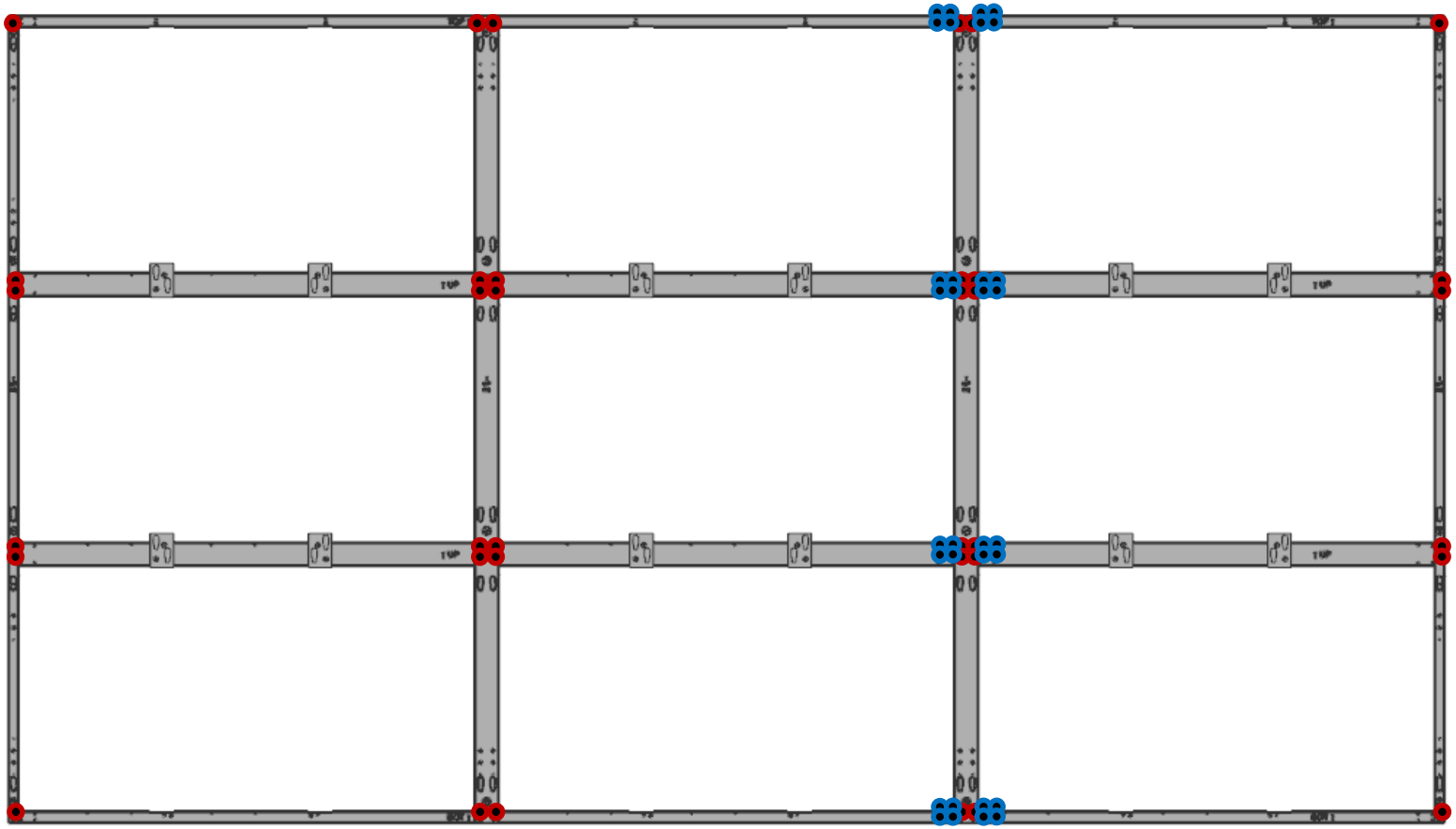
4. Frame installation (3*3)

② Fasten the vertical frame and the horizontal frame.

- Fix FRAMEs using SCREW A (M6,L10)
- Fix with FRAME and LINK using SCREW B (M4,L6)

● Fastening points (SCREW A) (for 3*3= 36)

● Fastening points (SCREW B) (for 3*3= 32)

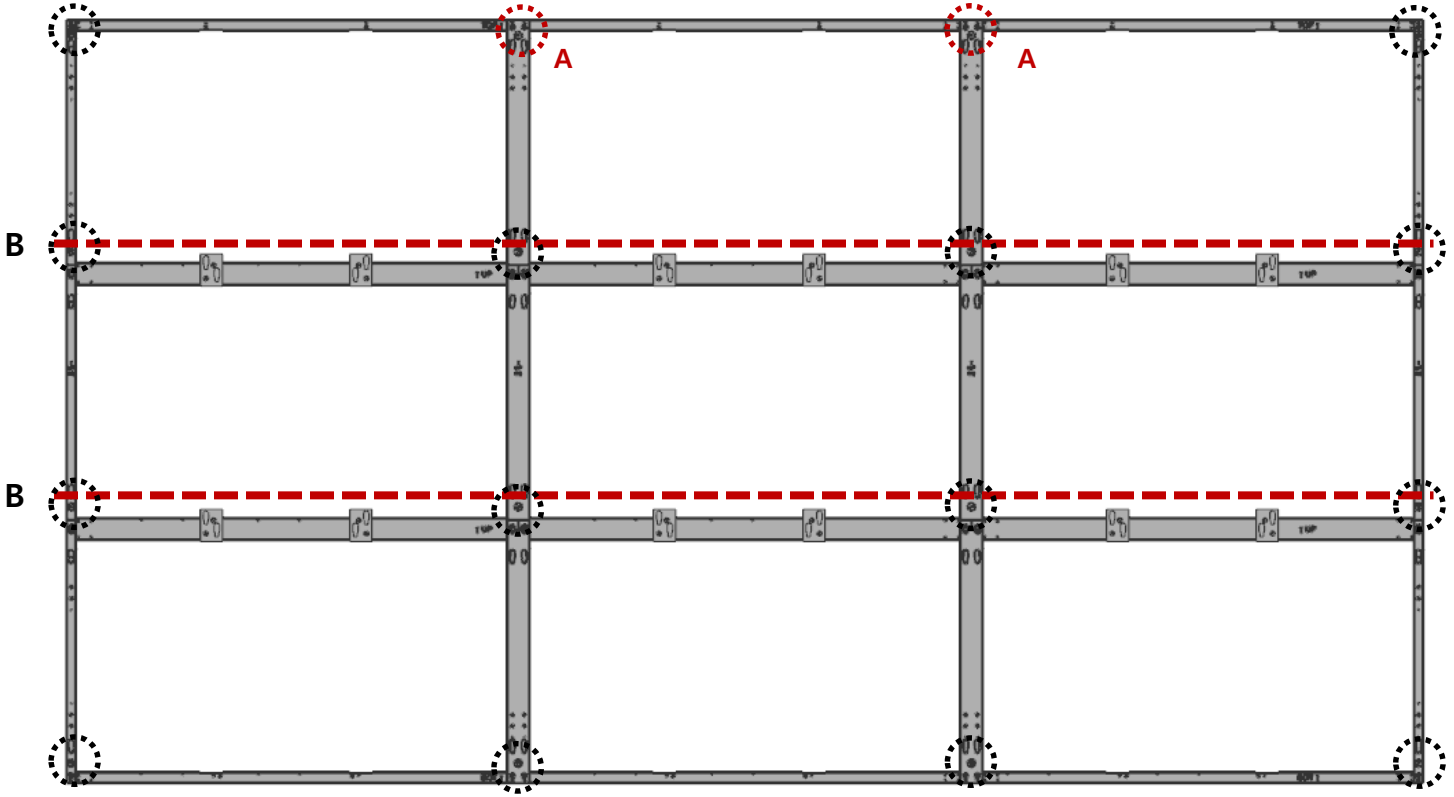


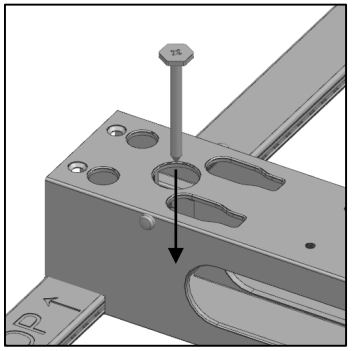
4. Frame installation (3*3)

③ Install the assembled FRAME on the wall

※ Before installation and during handling, it needs to be erected and moved to prevent bending. (Put down and move X)

- Fix one of the center top fastening points A to the wall first with BOLT (M5, L55), check if the screw hole is on the same horizontal line using a laser level, and then fasten it to the rest of the holes. (for 1*1= 4, for 2*2 = 16, for 3*3 = 20)

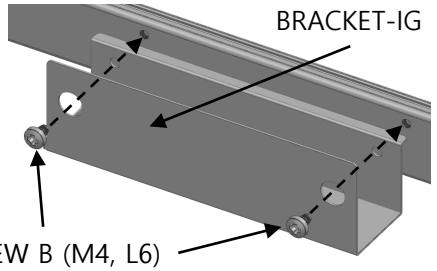




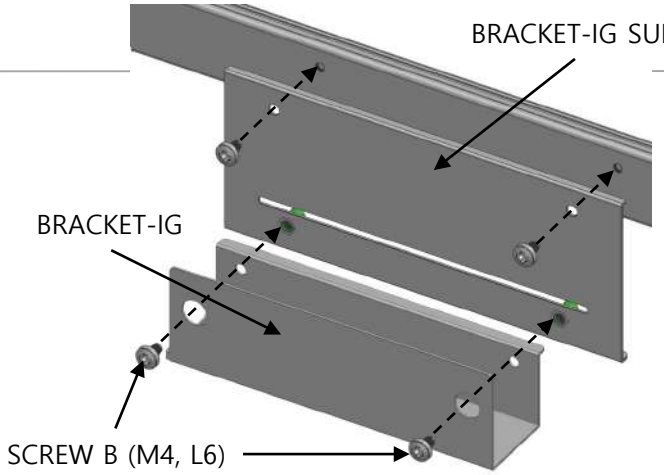
4. Frame installation

④ **Assemble the BRACKET-IG according to the installation environment.**

- Check the installation location of the IG card and bridge box according to the installation resolution and installation size
- and assemble them with SCREW B (M4, L6).

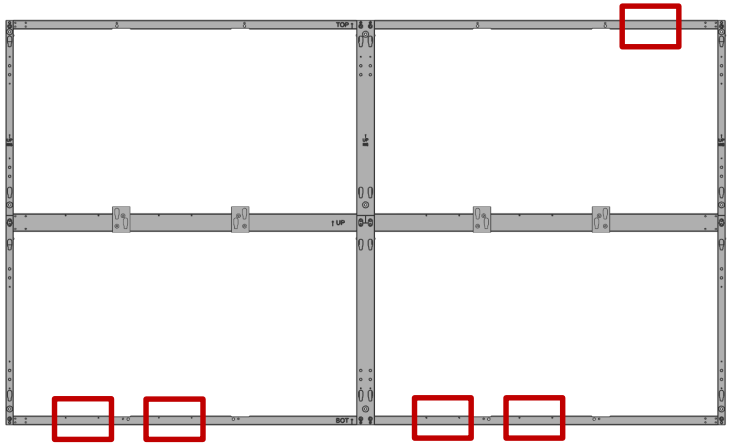


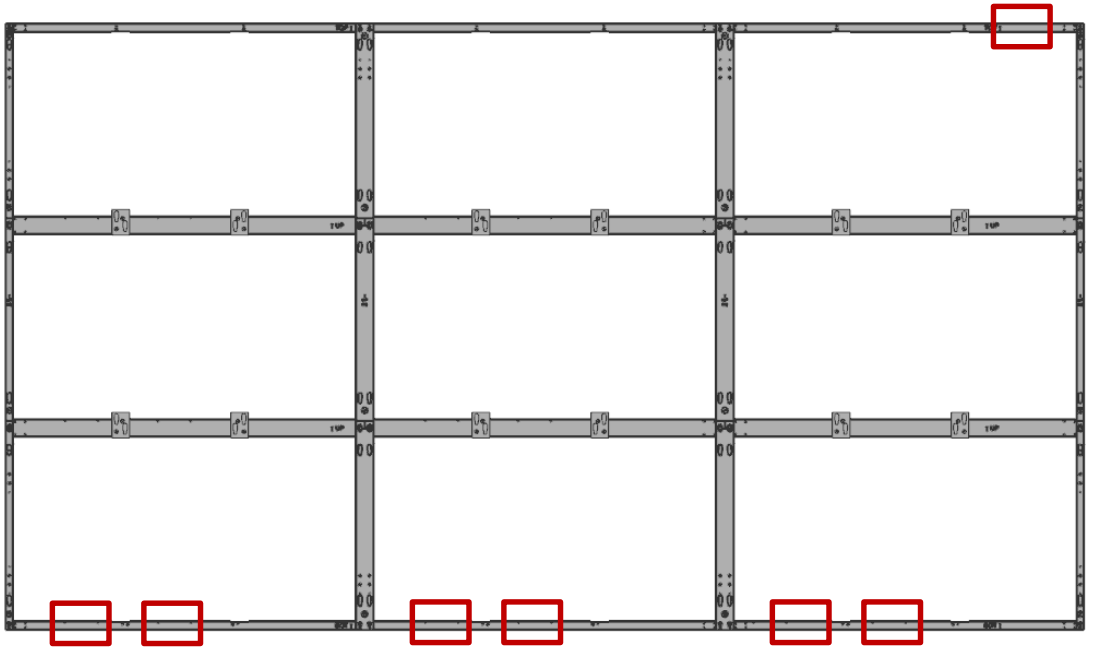
*** When installing B / IG at the bottom**



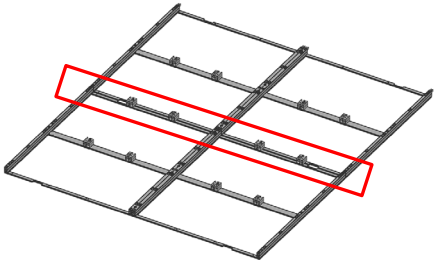
*** When installing B / IG at the top**

BRACKET-IG ASSEMBLYABLE POSITION

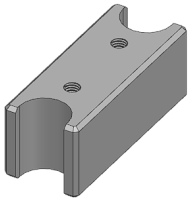




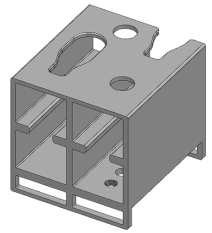
4. Frame installation



VERTICAL LINK



VERTICAL BLOCK



※ Note 1. FRAME extension in vertical direction

- Place FRAME H and FRAME V as extended installation specifications. (Fig. 1)
- Insert the VERTICAL LINK and VERTICAL BLOCK into the extended connection area. (Fig. 2)
- Adjust the distance using the EXTENSION GUIDE JIG. (Fig. 3)
- Fasten between FRAME ↔ LINK/BLOCK using SCREW C (FH,M4,L8). (Fig. 4)

Fig.1

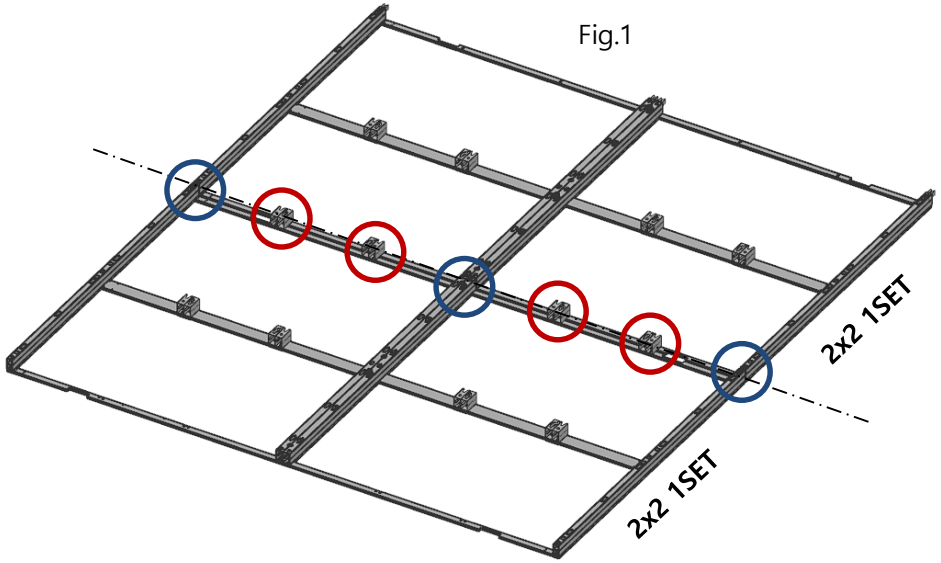


Fig.2

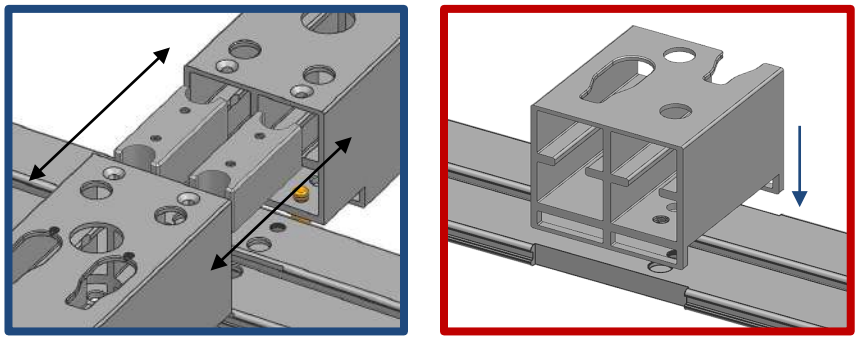


Fig.3

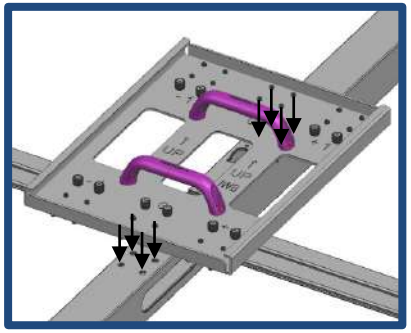
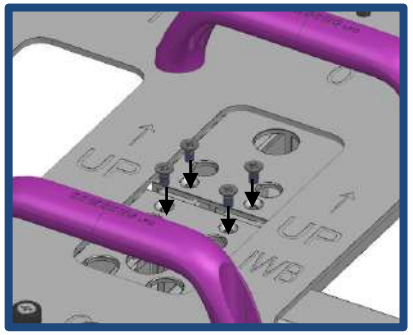


Fig.4



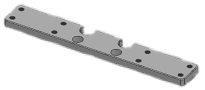
4. Frame installation

※ Note 2. FRAME extension in horizontal direction

- Place FRAME H and FRAME V as extended installation specifications. (Fig.1)
- Insert HORIZONTAL LINK and H CENTER LINK into the extended connection area. (Fig.2)

(If extend the frame that has already been installed on the wall, it will be omitted.)

H LINK



H CENTER LINK

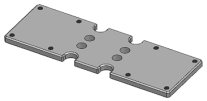


Fig.1

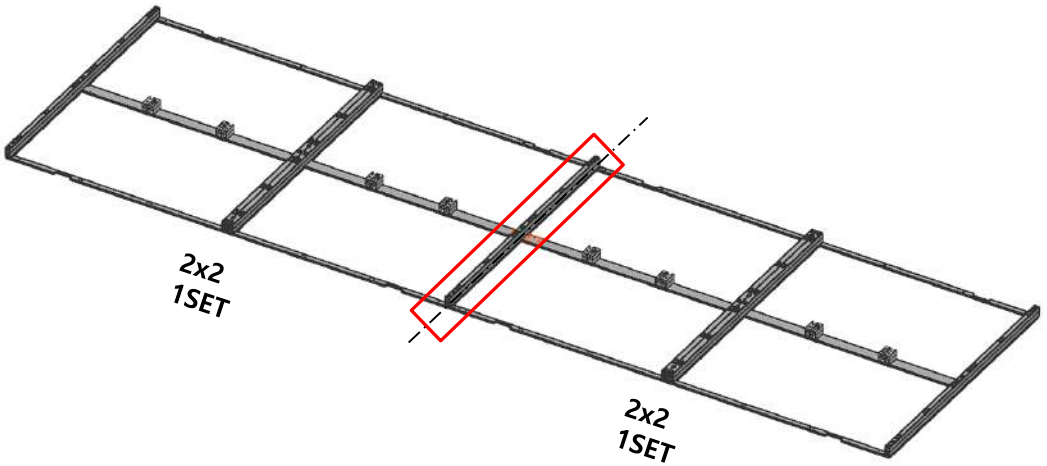
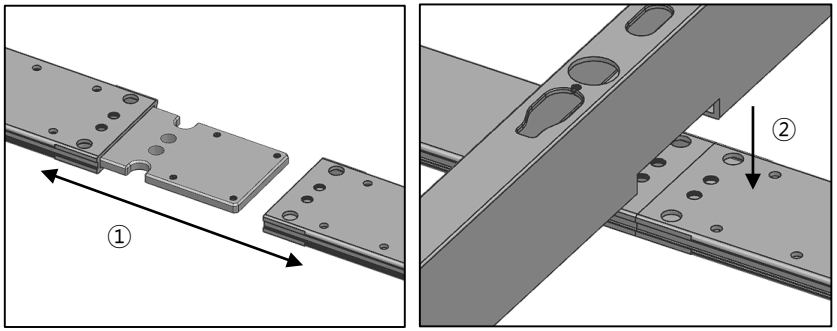


Fig.2



4. Frame installation

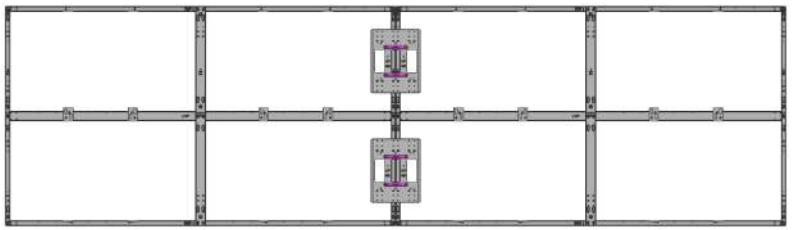
※ Note 2. FRAME extension in horizontal direction

- Insert the EXTENSION GUIDE JIG into two extended FRAME SIDEs according to the guide and fix them by turning the captive screw.

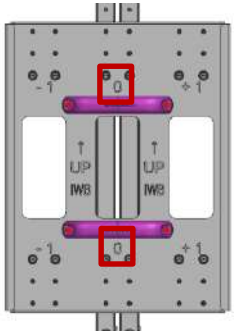
(Basically, install according to the 0 mark of the guide jig, and if the entire frame needs to be narrowed or widened, assemble it narrowly or widely by 1mm according to the -1 and +1 marks. (Fig.3))

- Connect FRAME ↔ LINK using SCREW B (M4, L6). (Fig.4)

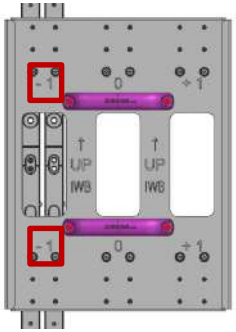
Fig.3



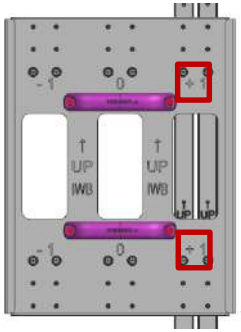
- Normal Gap



- If installation is required by narrowing 1mm



- If installation is required by expanding 1mm



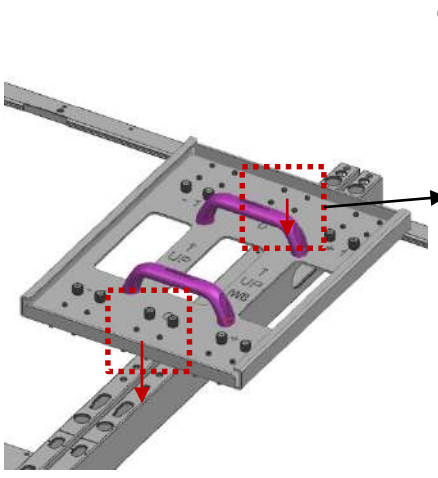
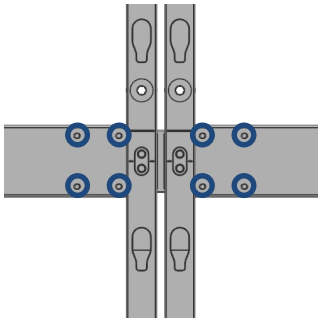
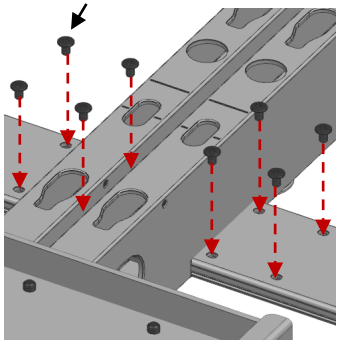


Fig.4



SCREW B (M4, L6)



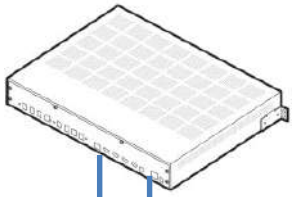
Contents

5. Cabinet installation

※ Pre-work before cabinet installation

- HDBase-T Cable, Bluetooth/Wi-Fi module, and 24pin system cable are connected to Bridge Box.
  - IR/ECO sensor module connects to IG Group 1.

[S-Box/M-Box]



HDBaseT Cable

OC (Fiber) Cable

※instructions
Connect the IR/ECO sensor to IG Group 1 and use it.

5. Cabinet installation

❑ Connection specifications according to AC input power

- Check the maximum connection quantity of cabinet per 1 AC power connection.

Model		IWB	
LED Pitch		P0.63	P0.94
Power (Max)		277 W	264 W
Max Daisy Chain	110V	3 EA	
	220V	5 EA	

Exceeding the recommended maximum number of devices can cause the circuit breaker of the product to trigger due to overload. Must CONNECT the devices less than the recommended maximum number of devices.

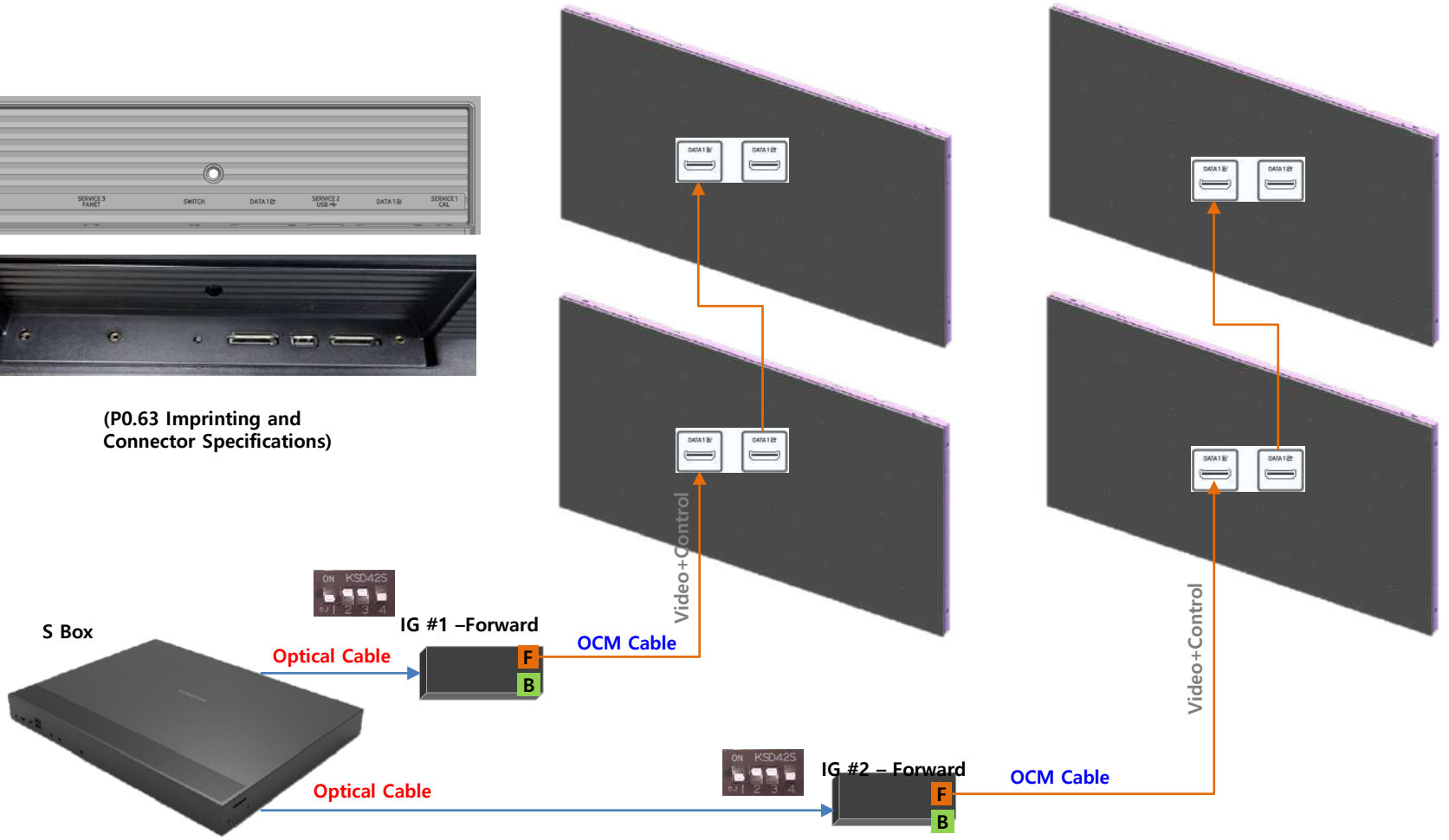
※ Samsung Electronics is not responsible for AC power connecting exceed recommended maximum number of devices. -

The label info which is attached behind product shows rated power of cabinet and rated current of outlet.

5. Cabinet installation

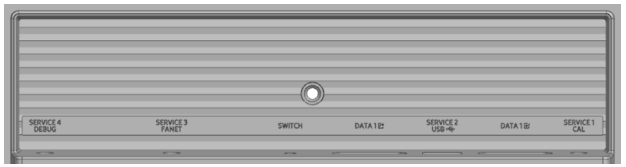
❑ 4K, 2x2, OCM Cable Connect Screen(IWB P0.63)

(P0.63 Imprinting and
Connector Specifications)

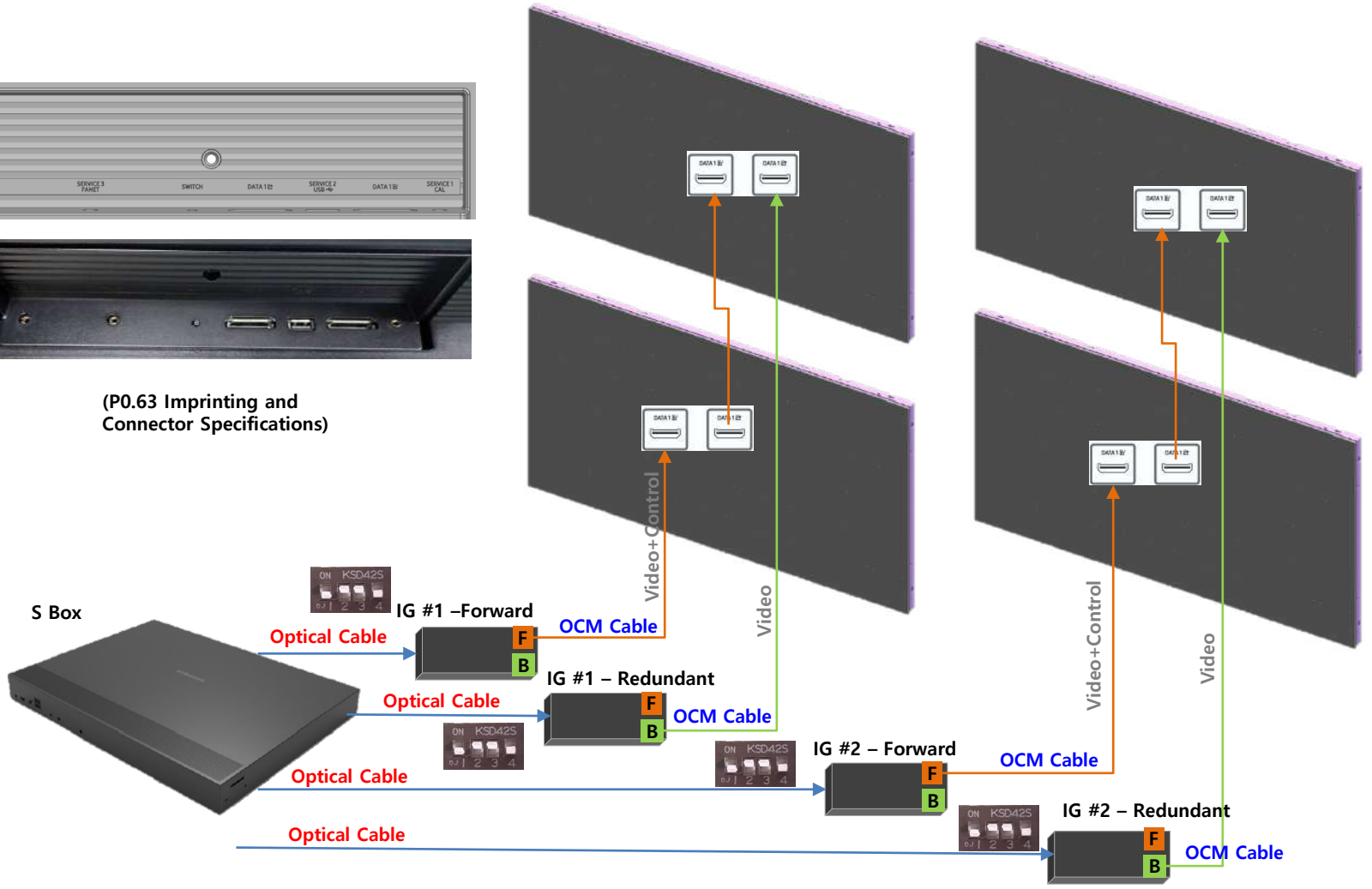


5. Cabinet installation

❑ 4K, 2x2, OCM Cable Connect Screen(IWB P0.63) + IG Redundancy



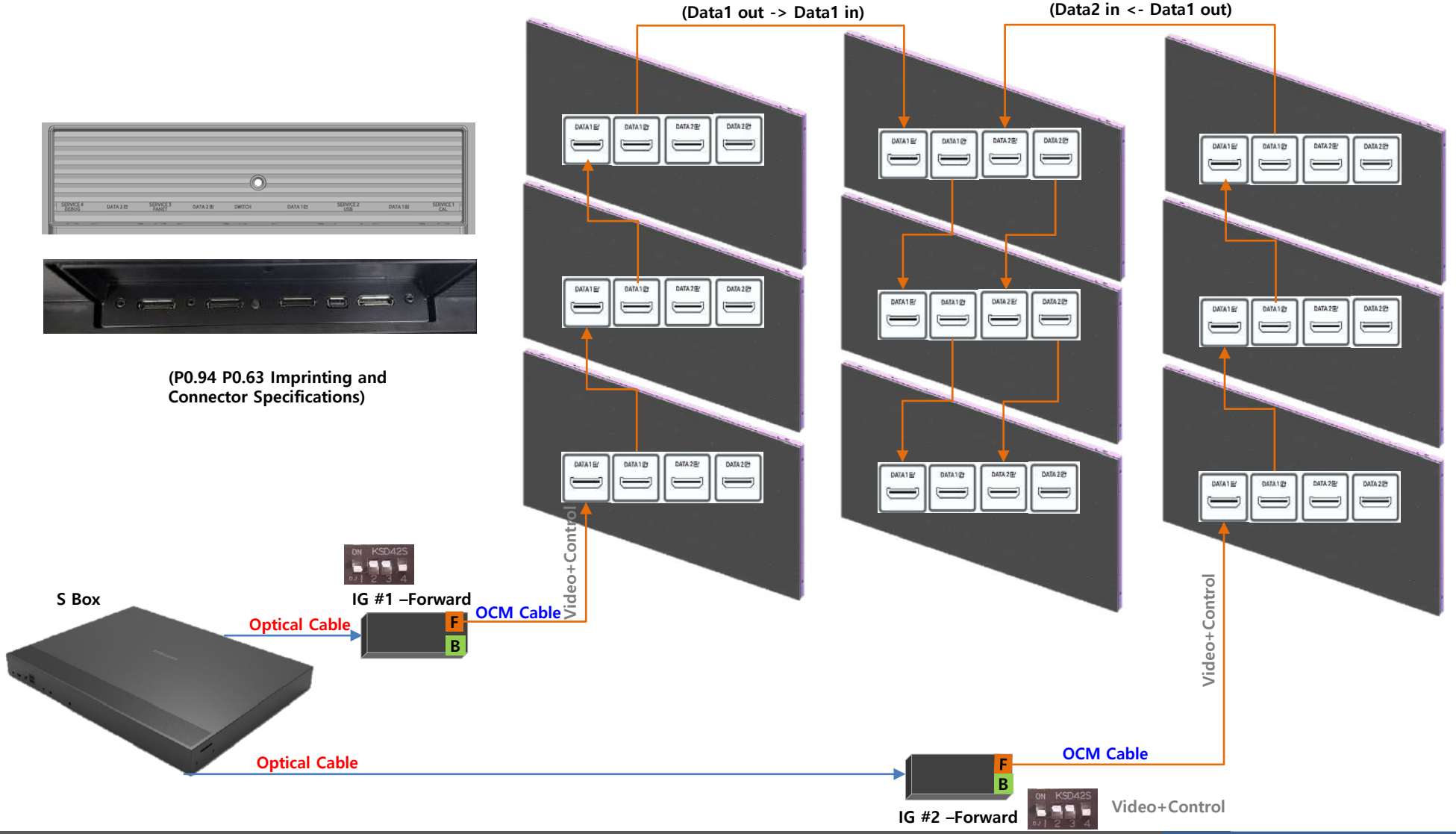
(P0.63 Imprinting and
Connector Specifications)



5. Cabinet installation

❑ 4K, 3x3, OCM Cable Connect Screen(IWB P0.94)

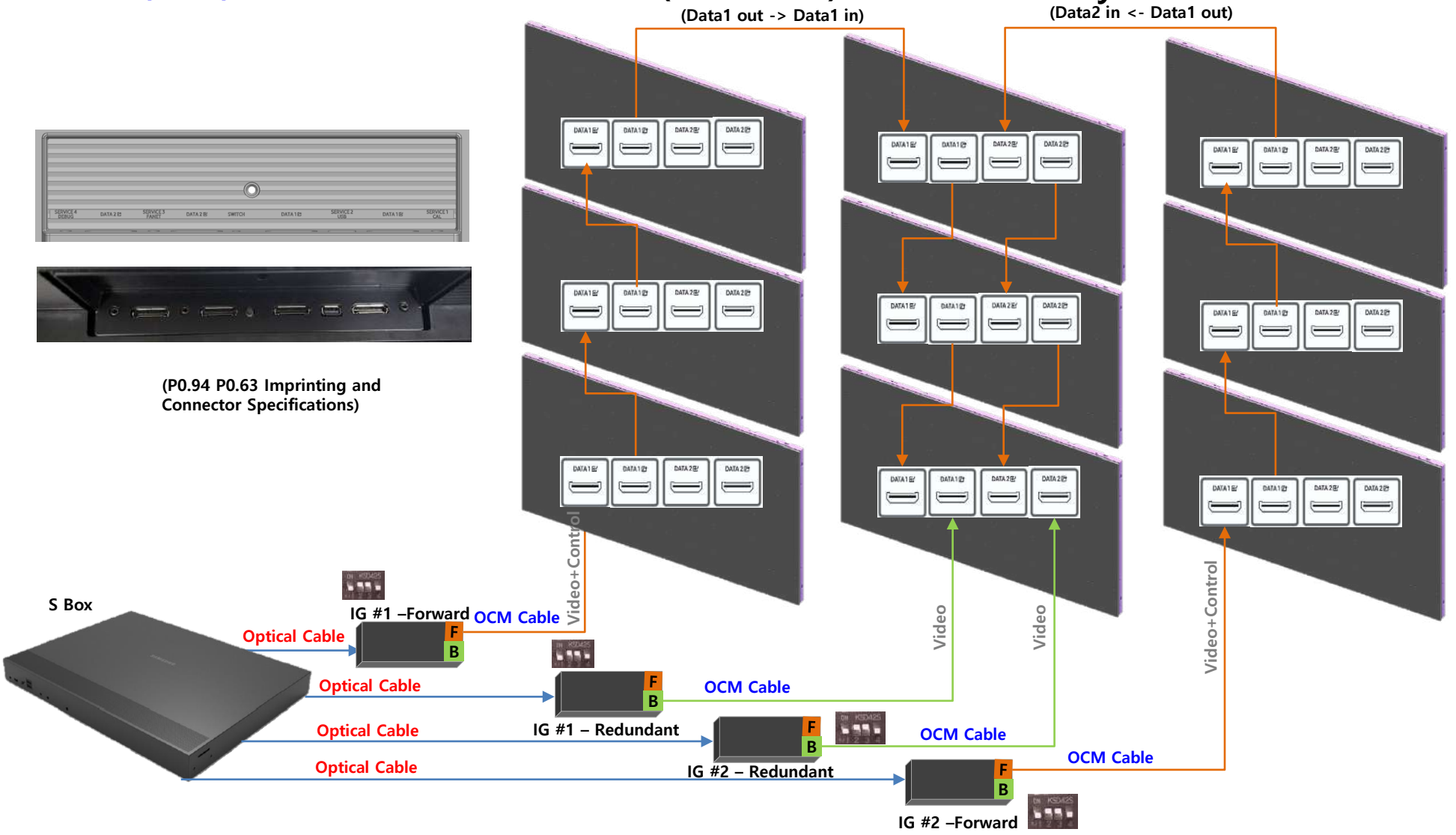
(P0.94 P0.63 Imprinting and
Connector Specifications)



5. Cabinet installation

❑ 4K, 3x3, OCM Cable Connect Screen(IWB P0.94) + IG Redundancy

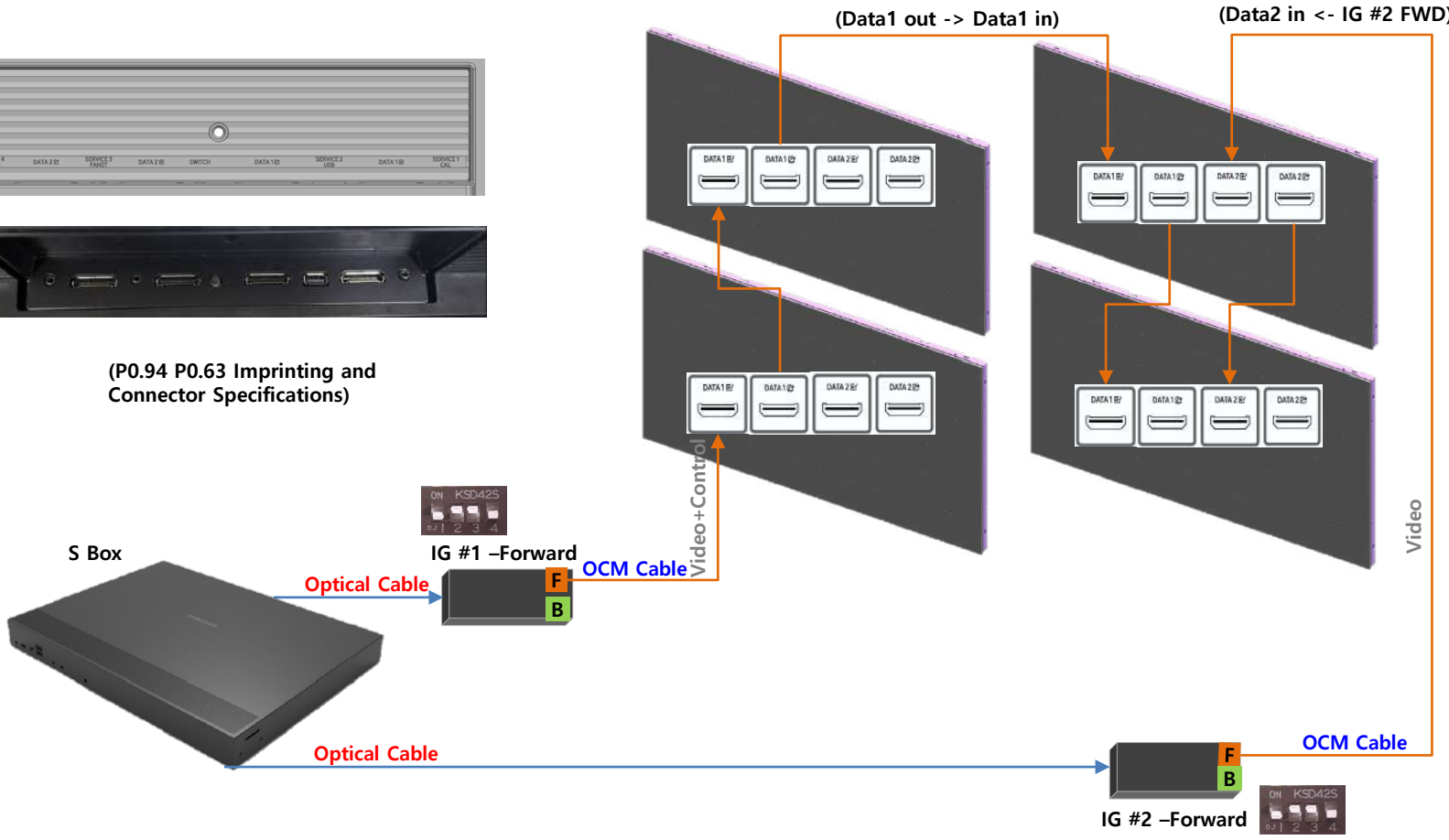
(P0.94 P0.63 Imprinting and
Connector Specifications)



5. Cabinet installation

❑ 2x2, OCM Cable Connect Screen(IWB P0.94)

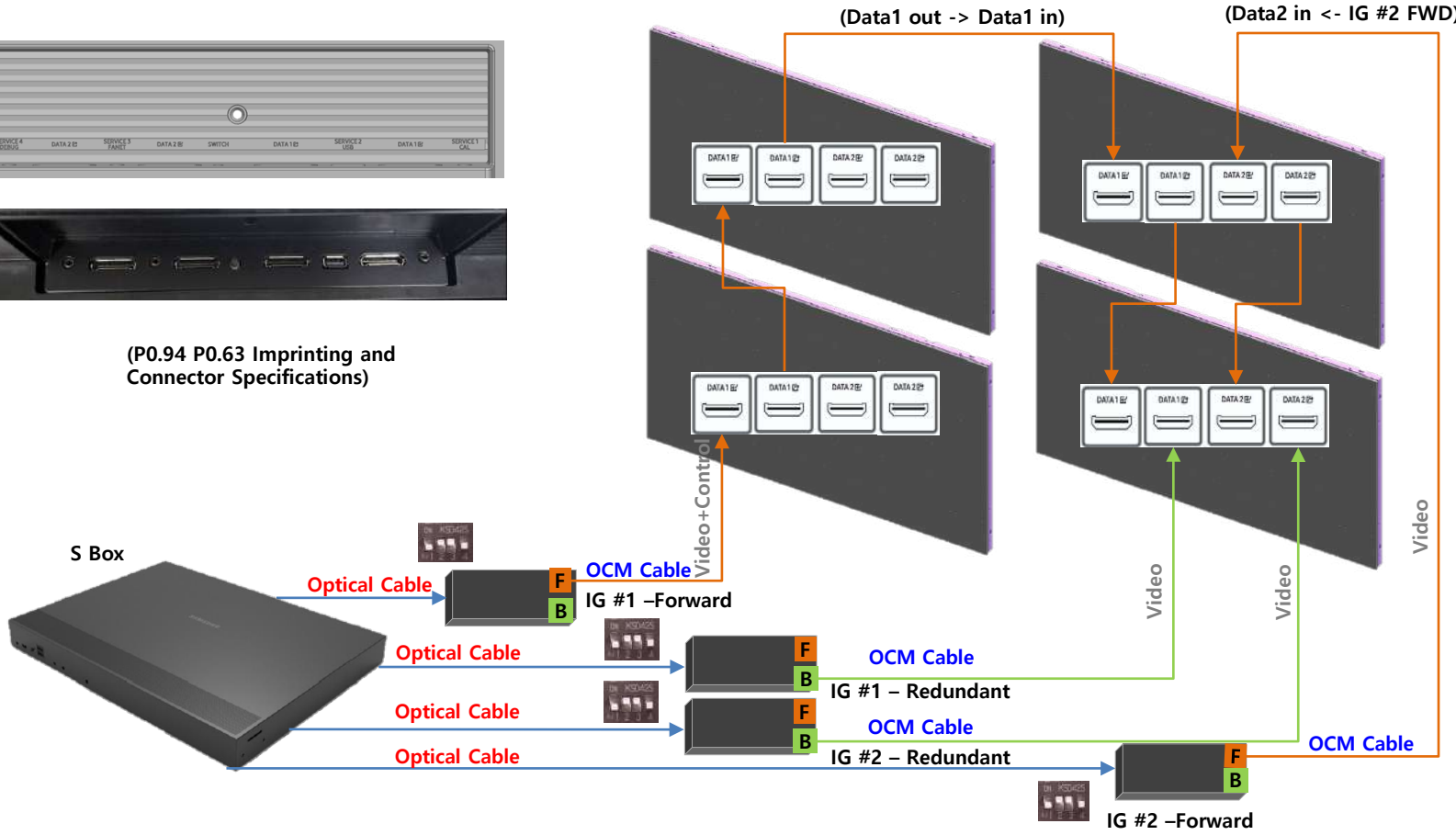
(P0.94 P0.63 Imprinting and
Connector Specifications)



5. Cabinet installation

❑ 2x2, OCM Cable Connect Screen(IWB P0.94) + IG Redundancy

(P0.94 P0.63 Imprinting and Connector Specifications)

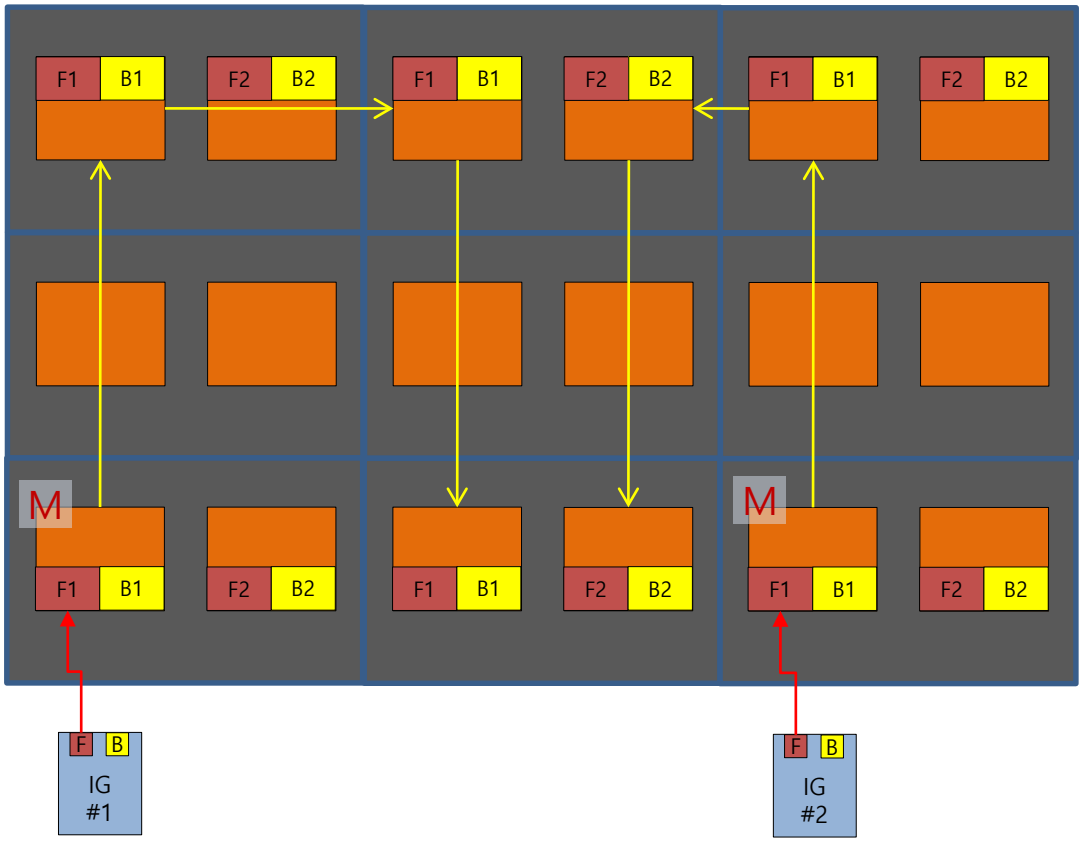


5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.94)

Model	Pitch	P0.94
	Resolutions	1280 x 720
Screen	Size	4K UHD
	Resolutions	3840 x 2160
	Cabinet	3 x 3 = 9
Installation Type		Cable
Redundancy	IG Backward	-
	IG add-on	X
	S-Box add-on	X
Q'ty	IG	2
	S-Box	1

■ Basic connection

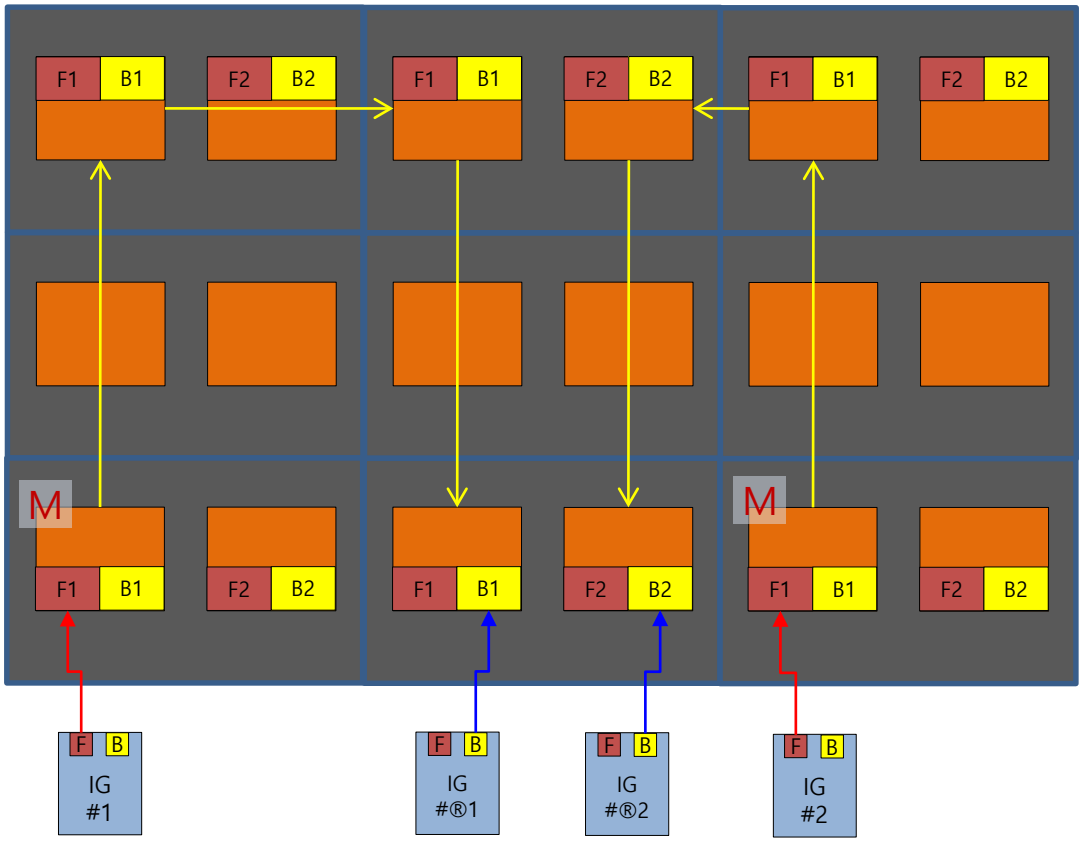


5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.94)

Model	Pitch	P0.94
	Resolutions	1280 x 720
Screen	Size	4K UHD
	Resolutions	3840 x 2160
	Cabinet	3 x 3 = 9
Installation Type		Cable
Redundancy	IG Backward	X
	IG add-on	O
	S-Box add-on	X
Q'ty	IG	2+2
	S-Box	1

■ Basic Redundancy configuration

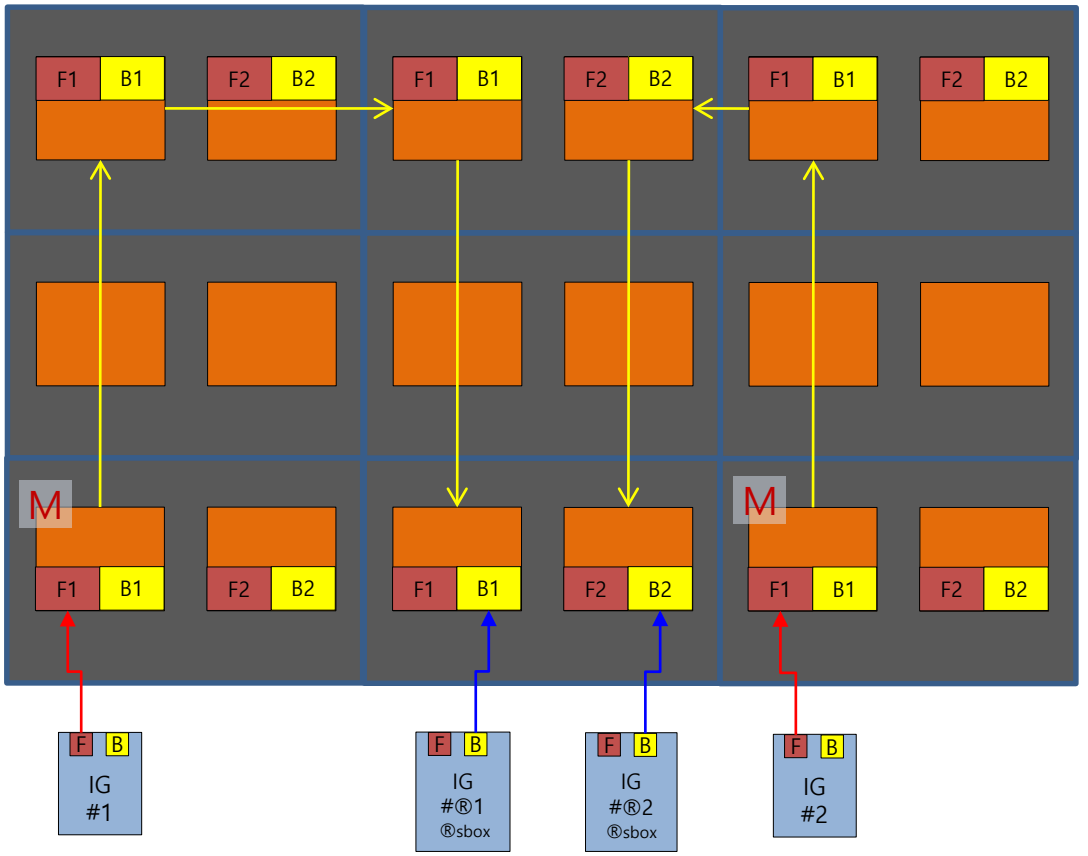


5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.94)

Model	Pitch	P0.94
	Resolutions	1280 x 720
Screen	Size	4K UHD
	Resolutions	3840 x 2160
	Cabinet	3 x 3 = 9
Installation Type		Cable
Redundancy	IG Backward	X
	IG add-on	O
	S-Box add-on	O
Q'ty	IG	2(+2)
	S-Box	1(+1)

■S-box add Redundancy configuration

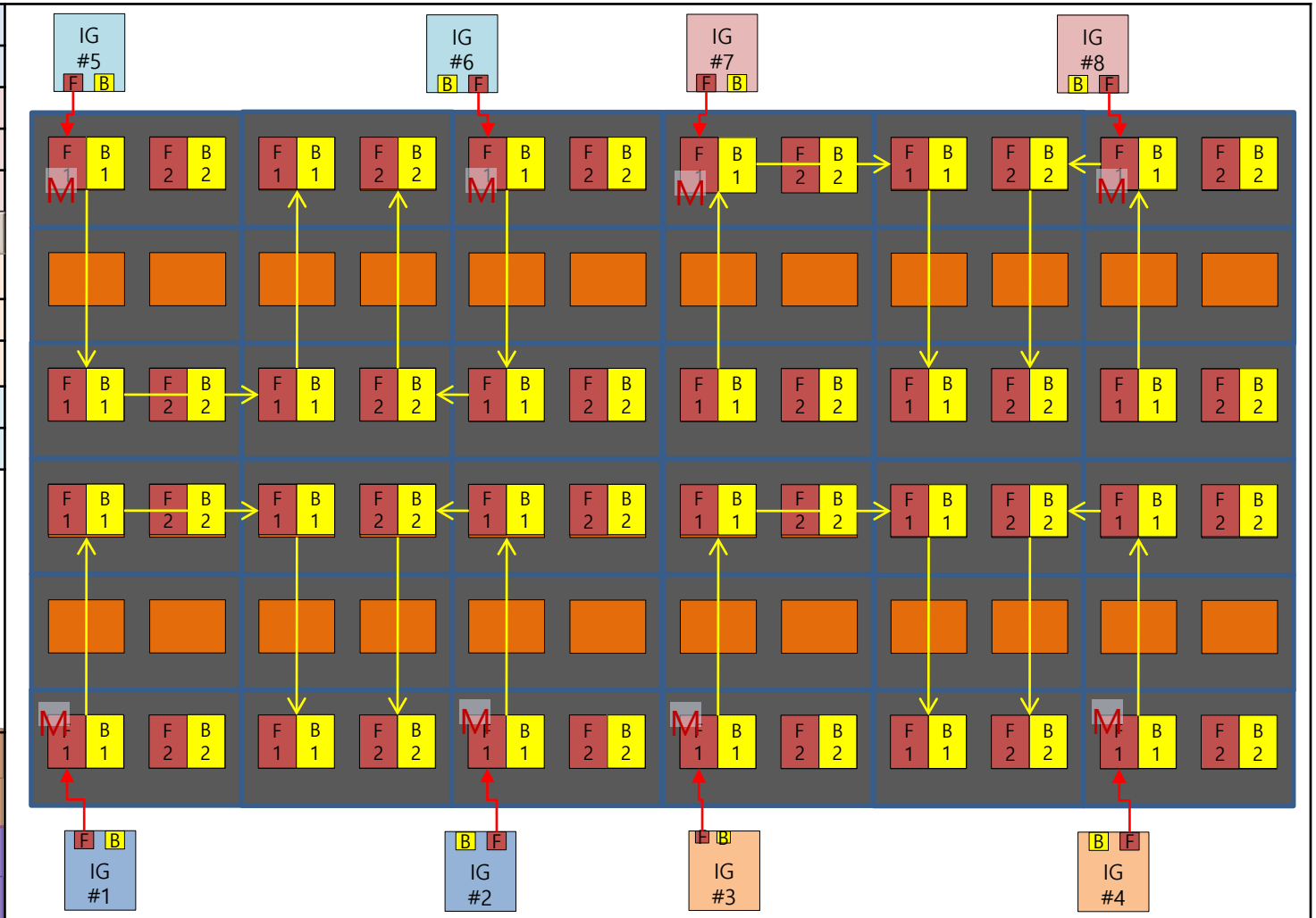


5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.94)

Model	Pitch	P0.94
	Resolutions	1280 x 720
Screen	Size	8K
	Resolutions	7680 x 4320
	Cabinet	6 x 6 = 36
Installation Type		Cable
Redundancy	IG Backward	-
	IG add-on	X
	S-Box add-on	X
Q'ty	IG	8
	S-Box	1

■ Basic connection



5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.94)

Model	Pitch	P0.94
	Resolutions	1280 x 720
Screen	Size	8K
	Resolutions	7680 x 4320
	Cabinet	6 x 6 = 36
Installation Type		Cable
Redundancy	IG Backward	X
	IG add-on	O
	S-Box add-on	O
Q'ty	IG	8(+8)
	S-Box	1(+1)

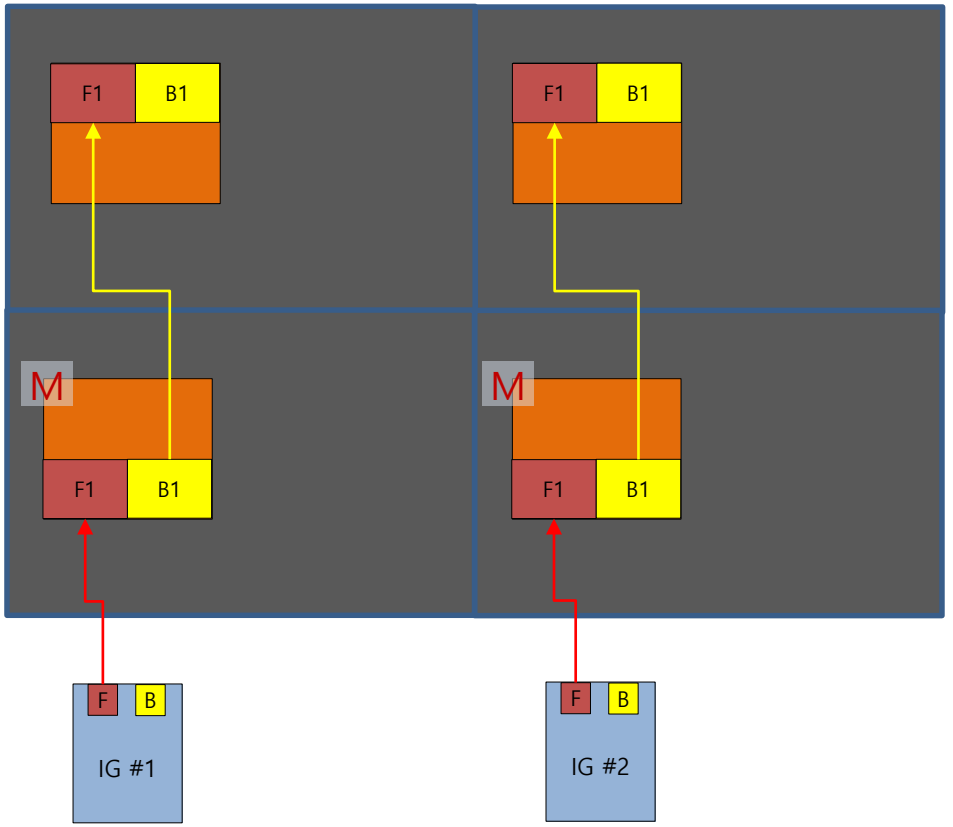
■ Basic Redundancy configuration

5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.63)

Model	Pitch	P0.63
	Resolutions	1920 x 1080
Screen	Size	4K UHD
	Resolutions	3840 x 2160
	Cabinet	2 x 2 = 4
Installation Type		Cable
Redundancy	IG Backward	-
	IG add-on	X
	S-Box add-on	X
Q'ty	IG	2
	S-Box	1

■ Basic Cable Connection

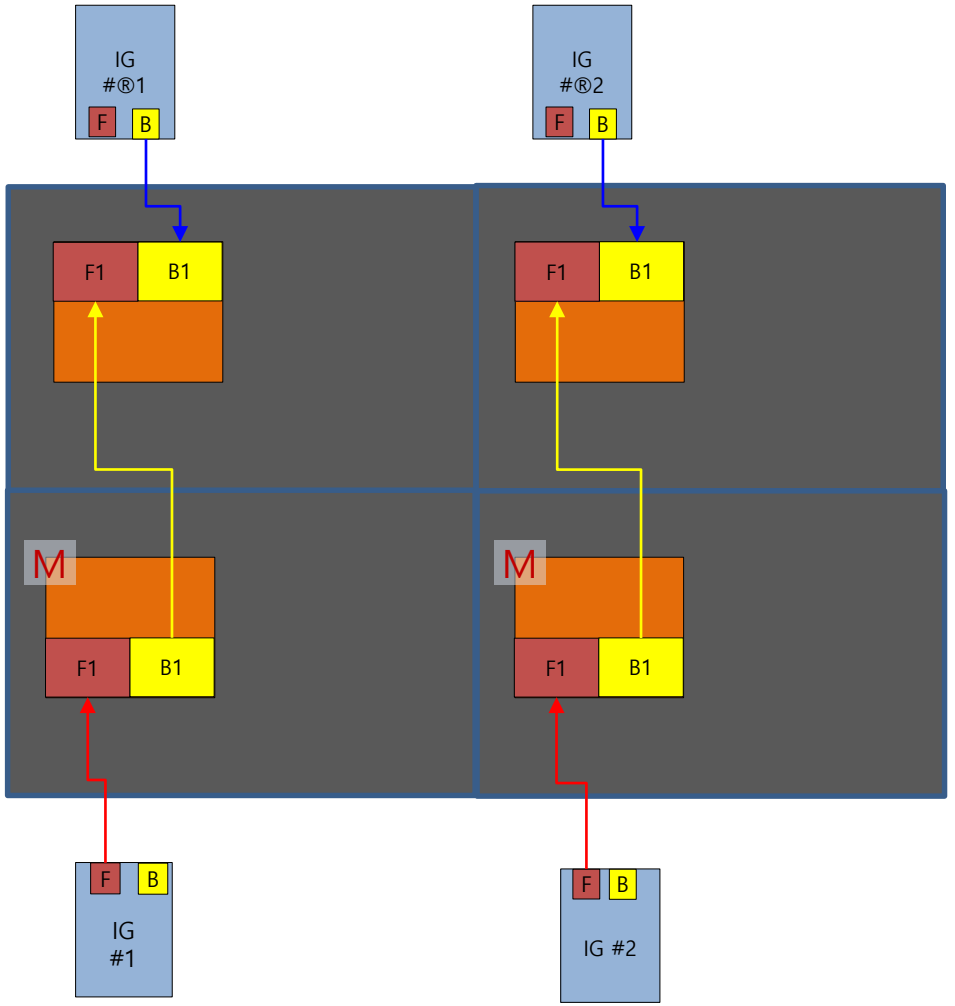


5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.63)

Model	Pitch	P0.63
	Resolutions	1920 x 1080
Screen	Size	4K UHD
	Resolutions	3840 x 2160
	Cabinet	2 x 2 = 4
Installation Type		Cable
Redundancy	IG Backward	X
	IG add-on	O
	S-Box add-on	X
Q'ty	IG	2(+2)
	S-Box	1

■ Basic Redundancy configuration



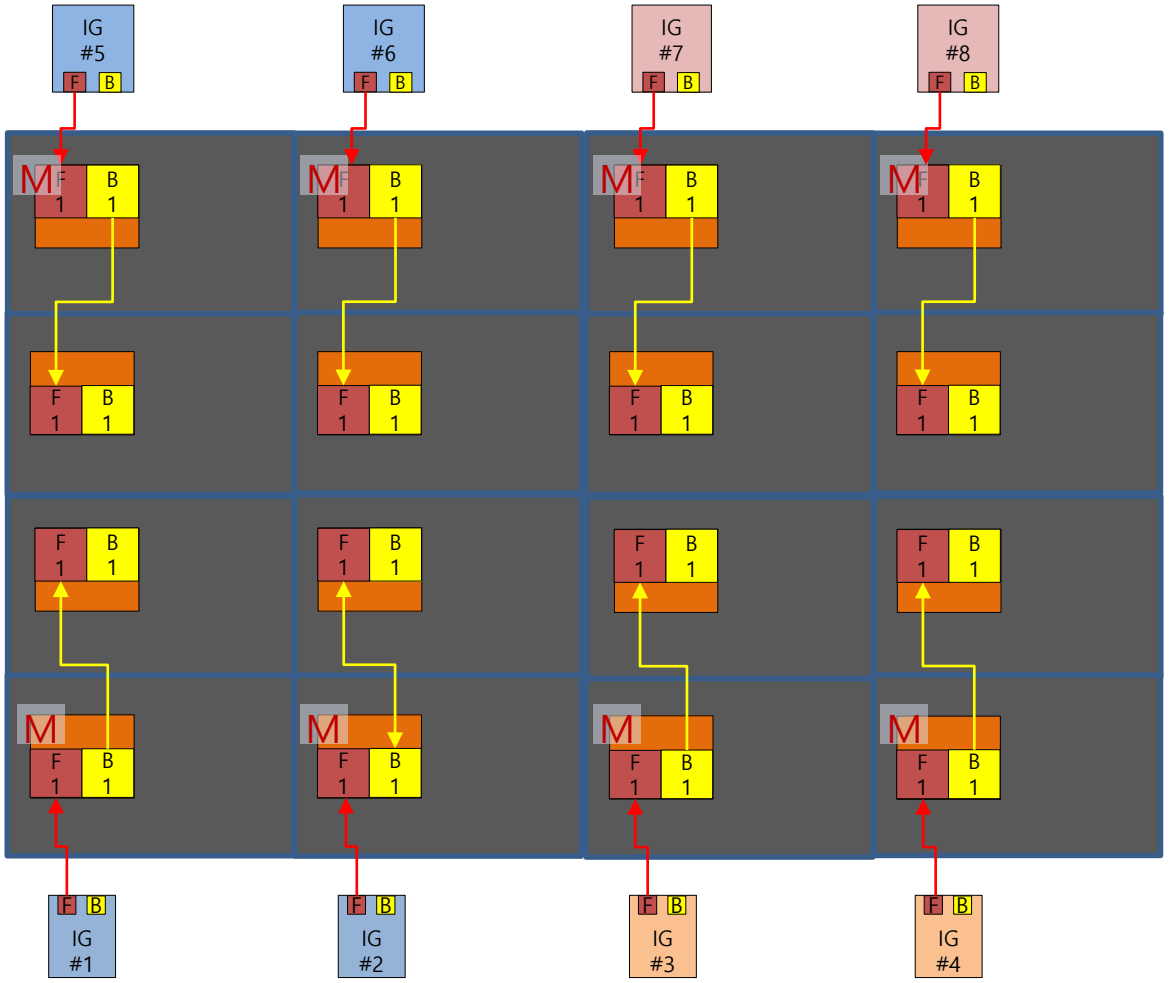
5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.63)

Model	Pitch	P0.63
	Resolutions	1920 x 1080
Screen	Size	8K
	Resolutions	7680 x 4320
	Cabinet	4 x 4 = 16
Installation Type		Cable
Redundancy	IG Backward	-
	IG add-on	X
	S-Box add-on	X
Q'ty	IG	8
	S-Box	1

■ Basic Cable connection

FHD IG #5 FHD	FHD IG #6 FHD	FHD IG #7 FHD	FHD IG #8 FHD
FHD IG #1 FHD	FHD IG #2 FHD	FHD IG #3 FHD	FHD IG #4 FHD



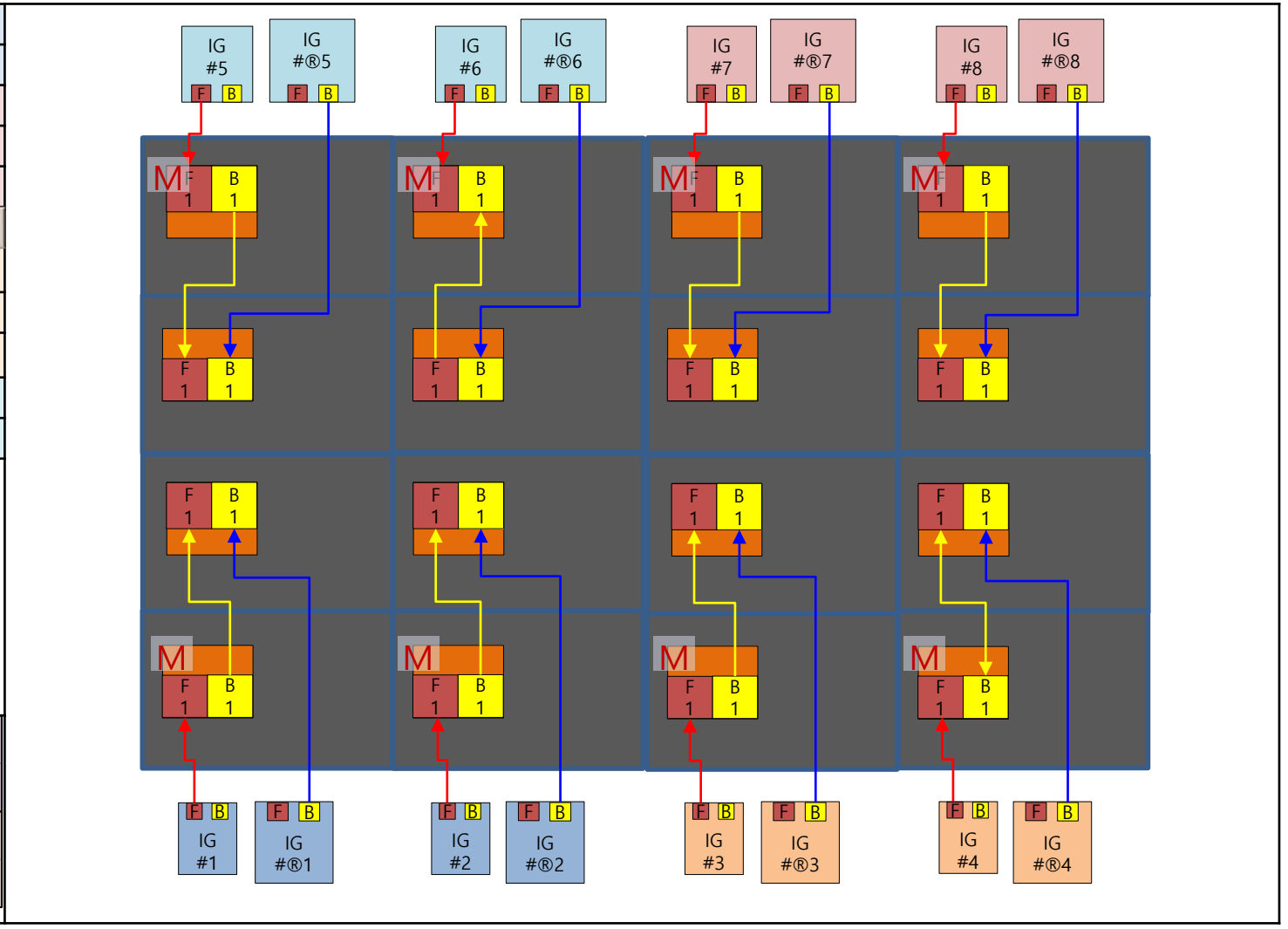
5. Cabinet installation

Connect Configuration by Resolutions(IWB P0.63)

Model	Pitch	P0.63
	Resolutions	1920 x 1080
Screen	Size	8K
	Resolutions	7680 x 4320
	Cabinet	4 x 4 = 16
Installation Type		Cable
Redundancy	IG Backward	X
	IG add-on	O
	S-Box add-on	O
Q'ty	IG	8(+8)
	S-Box	1(+1)

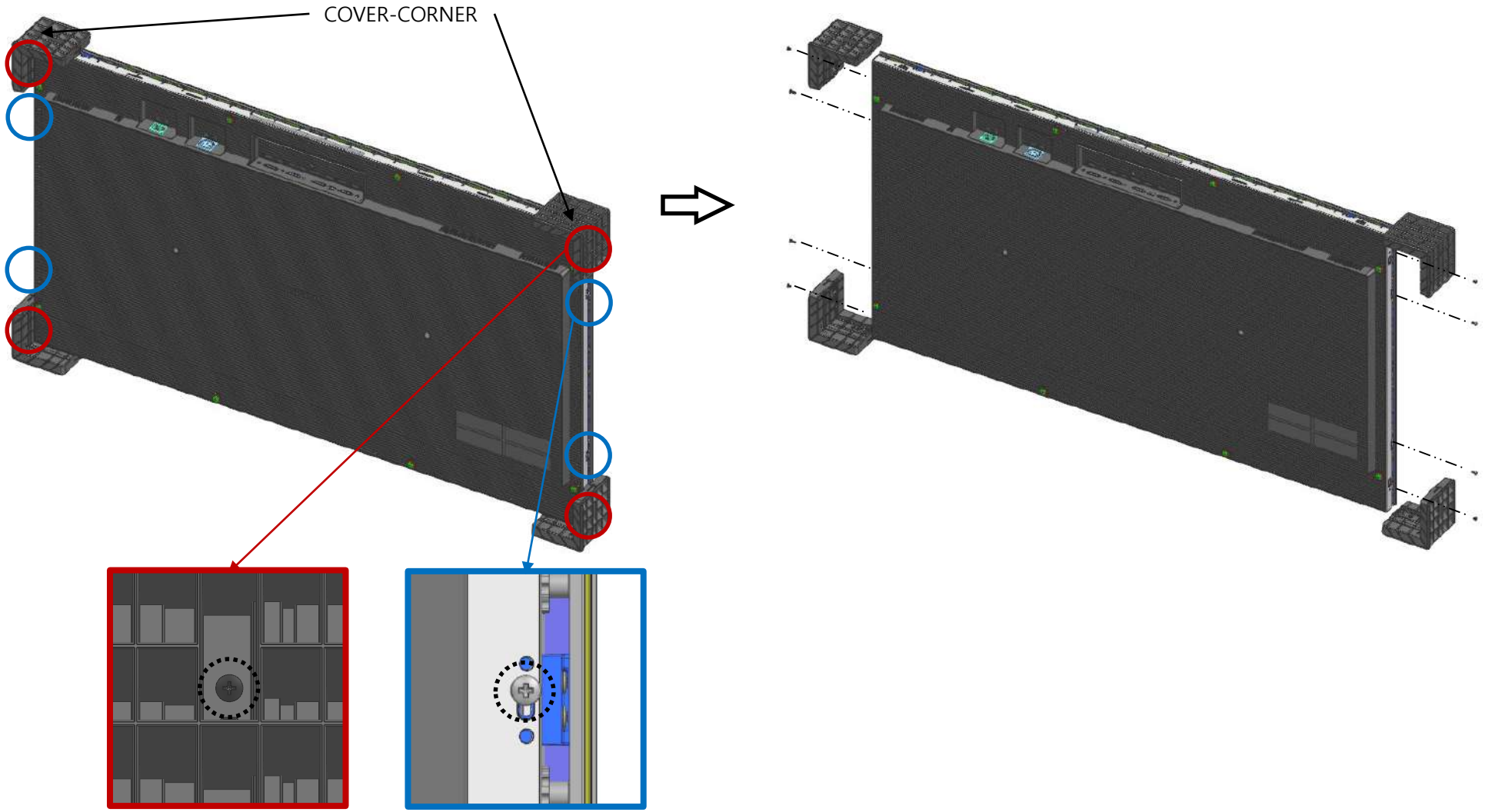
■ Basic Redundancy configuration

FHD IG #5 FHD	FHD IG #6 FHD	FHD IG #7 FHD	FHD IG #8 FHD
FHD IG #1 FHD	FHD IG #2 FHD	FHD IG #3 FHD	FHD IG #4 FHD



5. Cabinet installation

① Remove screws fastened to the COVER-CORNER(4pcs) and side frames (4pcs)

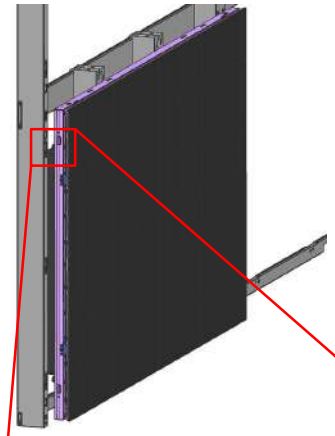


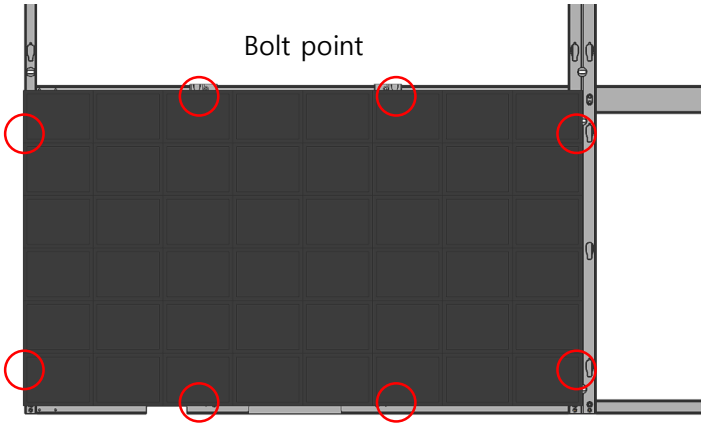
5. Cabinet + Frame installation (for 2x2)

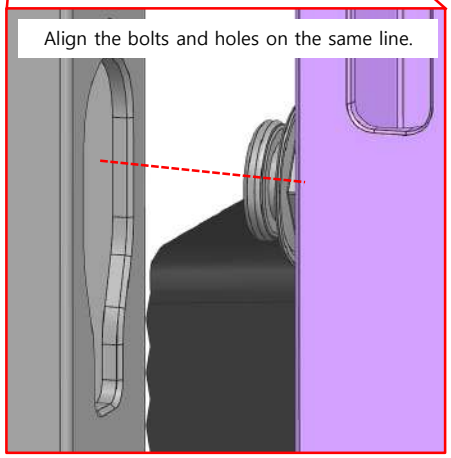
② Install the bolt on the back of the 1st cabinet by inserting it into the hole of FRAME.

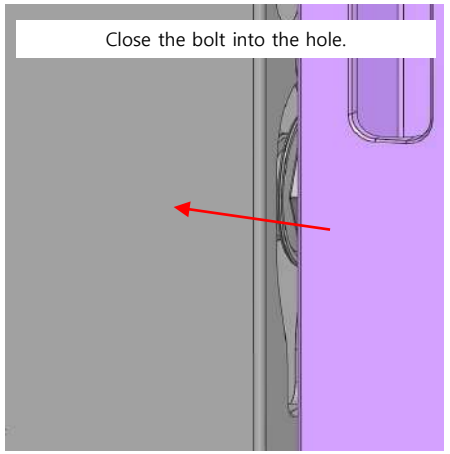
※ Move and install the cabinet in groups of two.

- Start on the left (or right) side of the lowest line of FRAME and install it by stacking it below. (Fig.1)









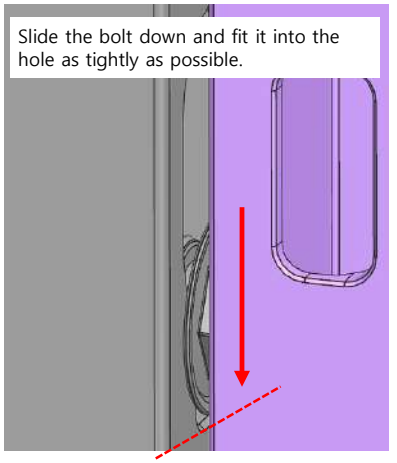
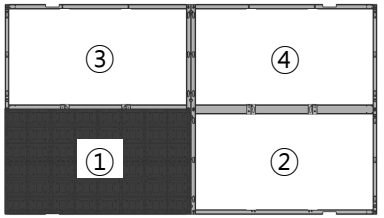
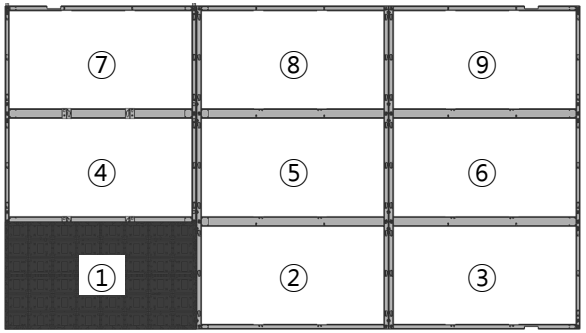


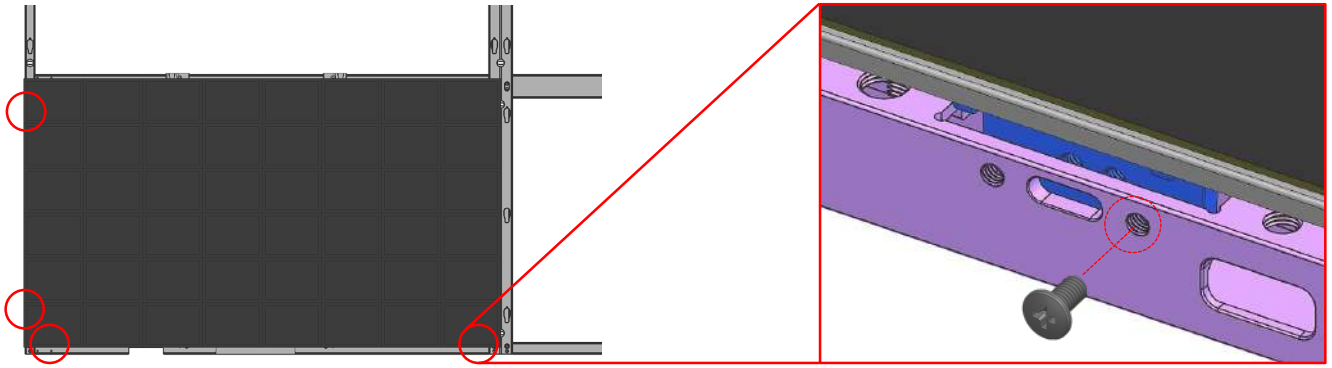
Figure 1 Example of Installation Sequence by 2x2, 3x3





5. Cabinet + Frame installation (for 2x2)

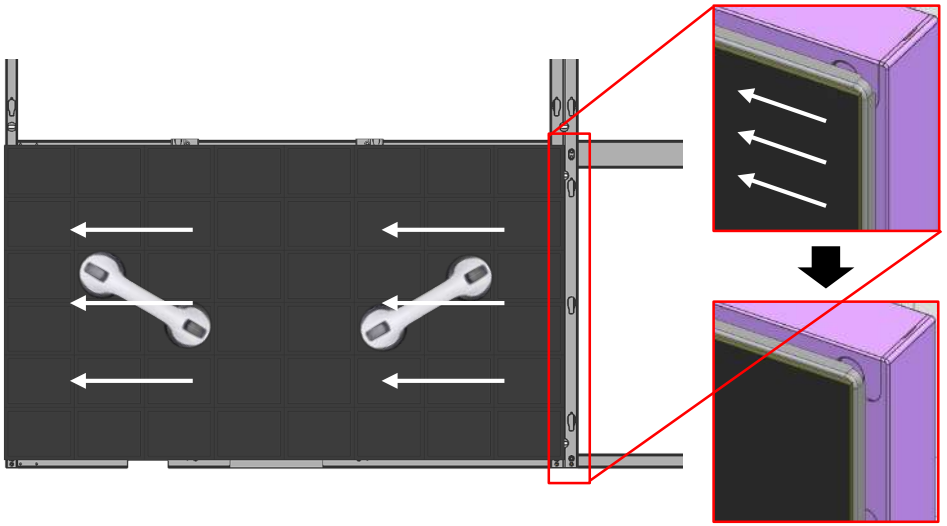
③ Fasten one SCREW D (M4,L8) to the left and right sides of the bottom of the 1st cabinet and the upper and lower left ends.

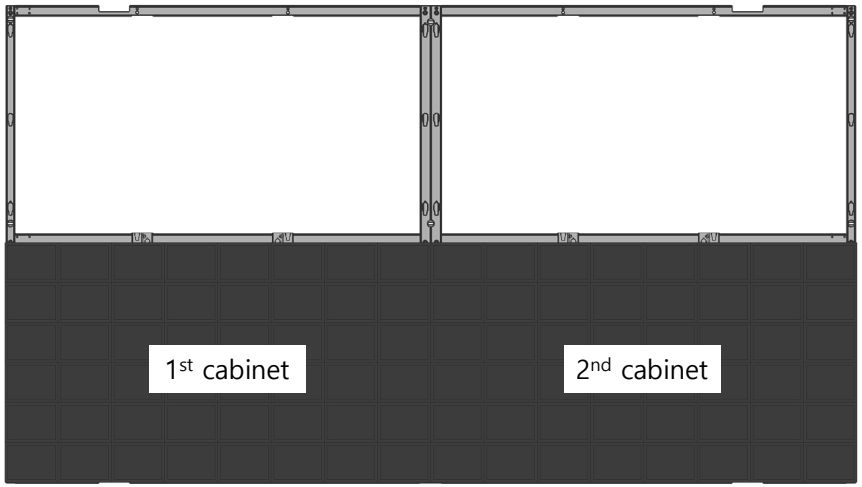


- Be careful not to adsorb between modules when using the adsorber

④ Using an adsorber, push the screen of the 1st cabinet to the left

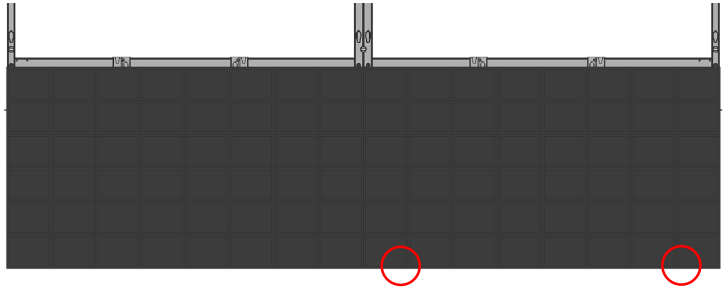
(= FRAME outward direction) and install the 2nd cabinet in FRAME in the same way as ①.

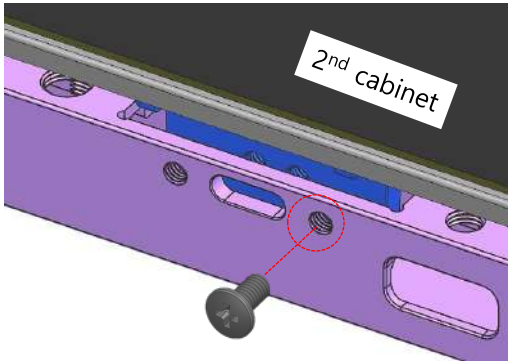




5. Cabinet + Frame installation (for 2x2)

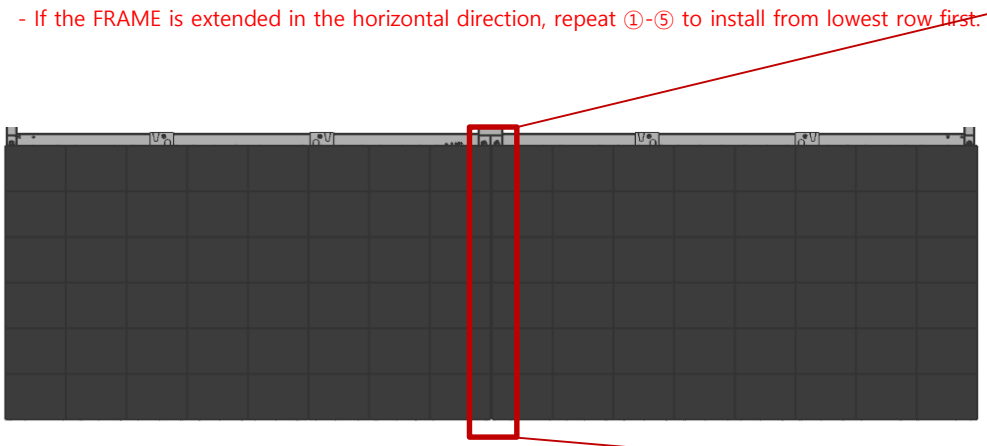
⑤ Fasten the SCREW D (M4,L8) on the left and right sides of the bottom with reference to ② in the 2nd cabinet. At this time, the Y-direction step difference with the side cabinet is adjusted by adjusting the fastening depth of the SCREW.

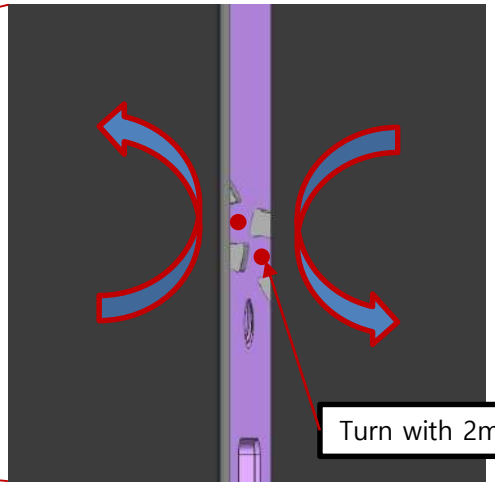




⑥ Check the difference in screen direction height (Z step) between the two modules, and if adjustment is needed, push the right screen to the right to create a space between them to adjust the internal adjustment bolt to correct the Z step.

- If the FRAME is extended in the horizontal direction, repeat ①-⑤ to install from lowest row first.

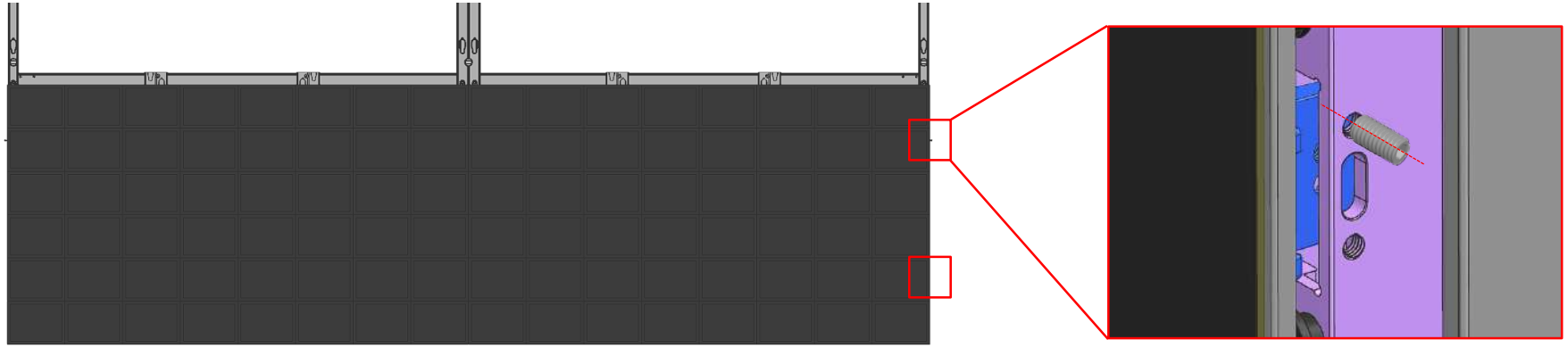




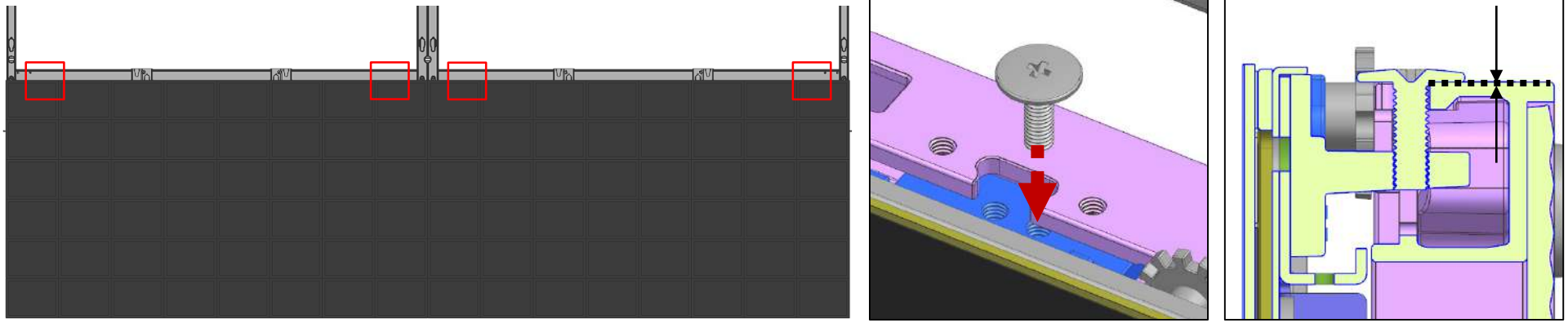
- Turn counterclockwise and the module come forward

5. Cabinet + Frame installation (for 2x2)

⑦ Two Headless bolts E (M4,L8) are fastened to the right outer cabinet of SCREEN to remove the gap between the cabinets and fix them so as not to move.

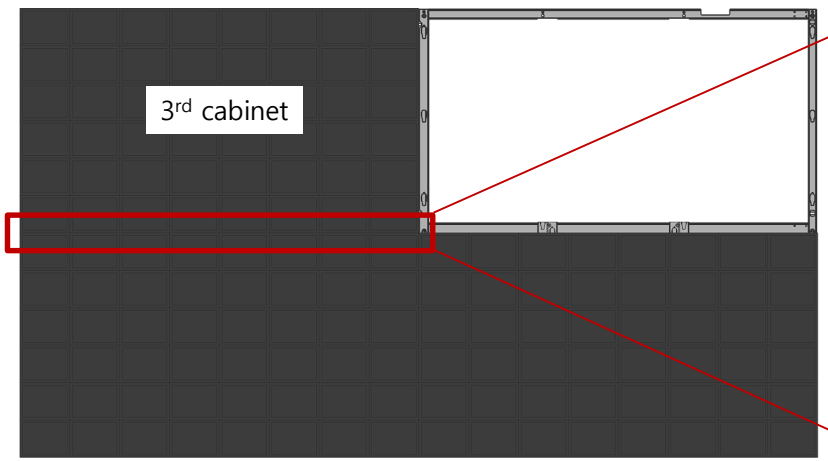


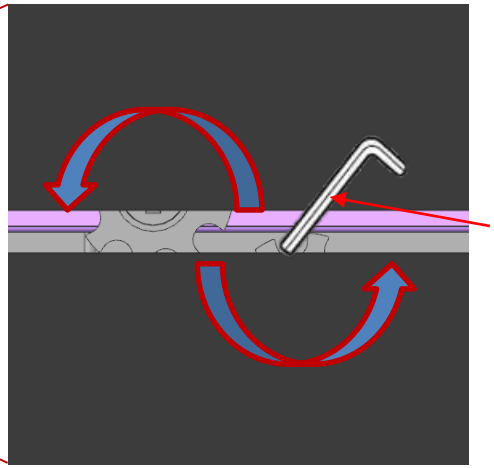
⑧ Fasten the SCREW F (M4, L12) at the top of the cabinet shown in the figure below. Tighten only until there is no space between the screw head and the frame, not pulling while fastening.



5. Cabinet + Frame installation (for 2x2)

⑨ Install the 3rd cabinet in FRAME in the same way as ①. Lift the upper module and adjust the Z step in the same way as ⑤.

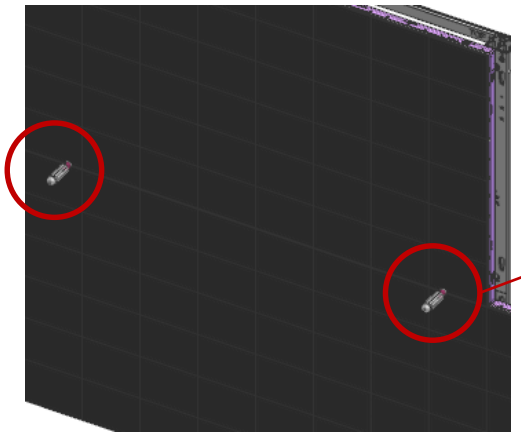


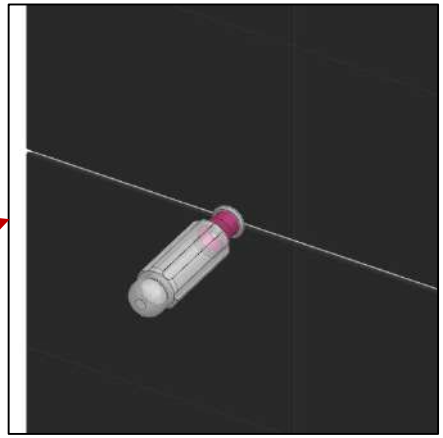


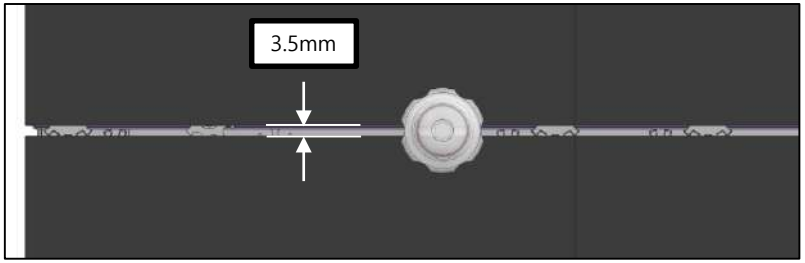
- Turn counterclockwise and the module come forward

- Use the 2mm hexagonal wrench enclosed in the accessory kit or use small tools within 3mm

⑨-1 If the upper module must be held to adjust the Z-step, insert the GAP TOOL enclosed in the installation frame between the modules to maintain the gap and adjust the Z-step. (Maintain 3.5mm gap)

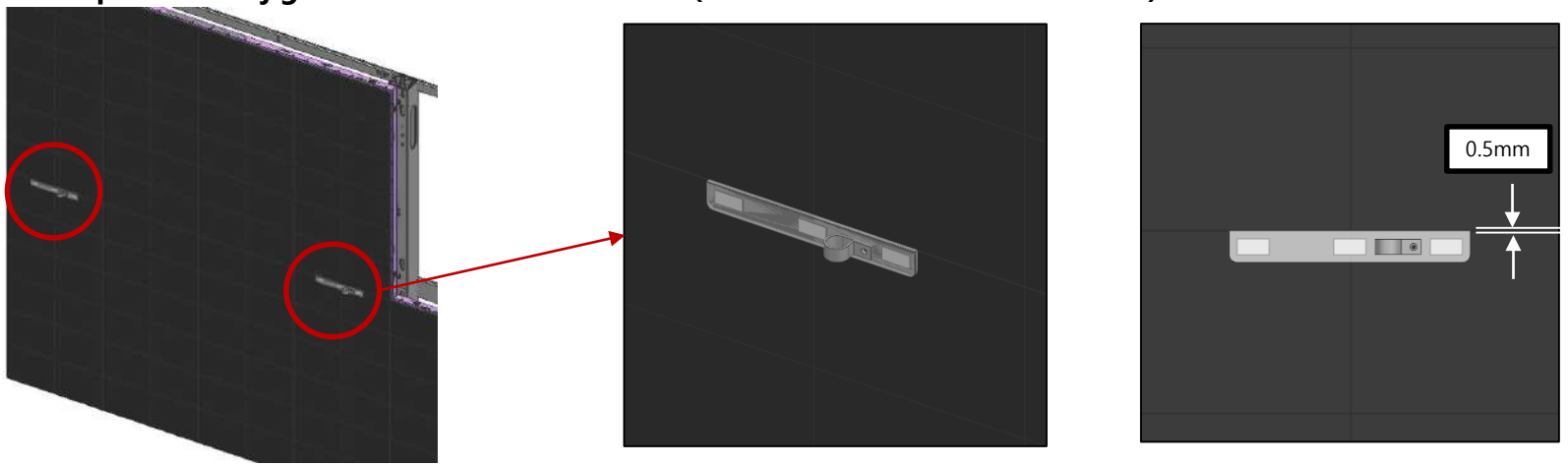




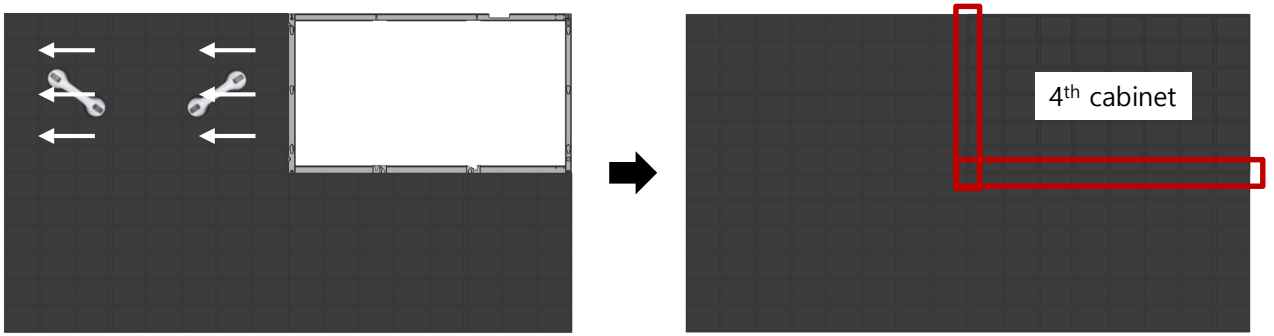


5. Cabinet + Frame installation (for 2x2)

⑨-2 In order to protect the module from the impact caused by moving the module up and down, work by attaching the enclosed protection jig in the installation frame. (Maintenance of 1mm interval)

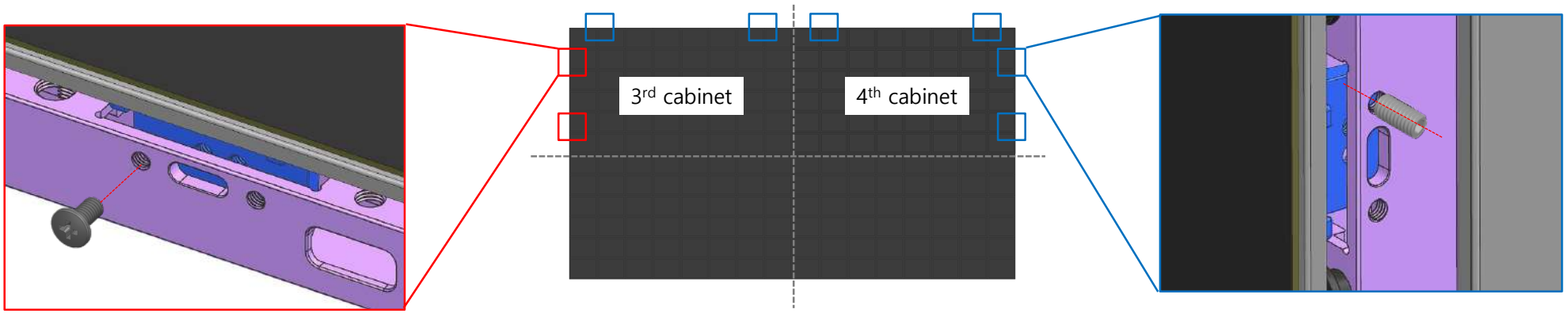


⑩ The 3rd cabinet is pushed to the left (= FRAME outward direction) of the cabinet using an adsorber.
After installing the 4th cabinet in FRAME in the same way as ①, adjust the Z step around the 4th cabinet using the method of ⑤ and ⑦.

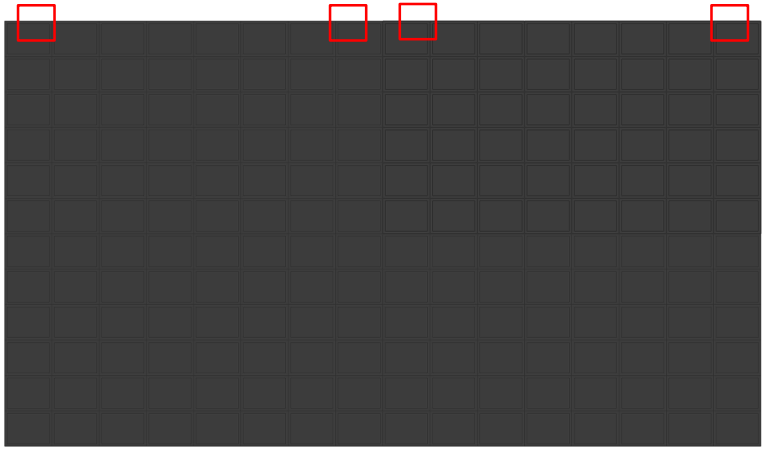


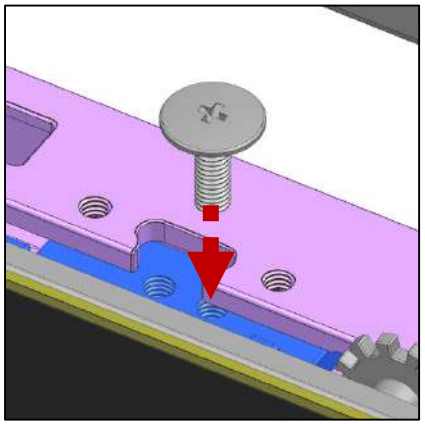
5. Cabinet + Frame installation (for 2x2)

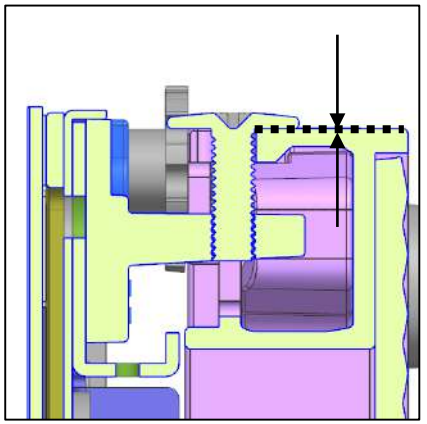
⑪ Fasten SCREW D (M4,L8) on the left side of the upper cabinet and Headless bolt E (M4,L6) on the upper and right sides.
The screw is tightened to the end, and reduce the upper and lower gaps using a Headless bolt.



⑫ As shown in ⑧, fasten the SCREW F (M4, L12) at the top of the cabinet shown in the figure below. Tighten only until there is no space between the screw head and the frame, not pulling while fastening.







Contents

6. FRAME BEZEL Components

- FRAME BEZEL (Basic) Components

No	Item	VG-LFB11SDB (1 X 1)	VG-LFB22SDB (2 X 2)	VG-LFB33SDB (3 X 3)
		Q'TY	Q'TY	Q'TY
1	BEZEL TOP	1 (1 Wide)	1 (2 Wide)	1 (2 Wide)
2	BEZEL TOP SHORT			1 (1 Wide)
3	BEZEL SIDE	2	2	2
4	BEZEL BOTTOM	1 (1 Wide)	1 (2 Wide)	1 (2 Wide)
5	BEZEL BOTTOM SHORT			1 (1 Wide)
6	BRACKET-LINK			2
7	SCREW A (M3, L5)	10	10	20
8	SCREW B (M4, L10)	10	20	20
9	SPACER (T0.5)	10	20	20
10	GAP SHEET	10	10	10
Screen Size (mm)		1209.4 * 680.3	2418.9 * 1360.5	3628.3 * 2040.8

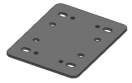
1. BEZEL TOP

2. BEZEL TOP SHORT

3. BEZEL SIDE

4. BEZEL BOTTOM

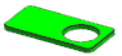
5. BEZEL BOTTOM SHORT



6. BRACKET-LINK

7. SCREW A (M3, L5)

8. SCREW B (M4, L10)



9. SPACER (T0.5)

10. GAP SHEET

6. FRAME BEZEL Components

- FRAME BEZEL (Extend) Components

No	Item	VG-LFB22SEB (2 X 2)	VG-LFB33SEB (3 X 3)
		Q'TY	Q'TY
1	BEZEL TOP	1 (2 Wide)	1 (2 Wide)
2	BEZEL TOP SHORT		1 (1 Wide)
3	BEZEL SIDE (EXTEND)	2	2
4	BEZEL BOTTOM	1 (2 Wide)	1 (2 Wide)
5	BEZEL BOTTOM SHORT		1 (1 Wide)
6	ANGLE A	2	2
7	ANGLE B	2	2
8	PLAIN C	4	4
9	BRACKET-LINK	8	10
10	SCREW A (M3, L5)	10	20
11	SCREW B (M4, L10)	20	20
12	SCREW C (M3, L3)	40	40
13	SPACER (T0.5)	20	20
14	GAP SHEET	10	10

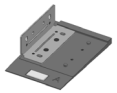
1. BEZEL TOP

2. BEZEL TOP (SHORT)

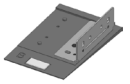
3. BEZEL SIDE(EXTEND)

4. BEZEL BOTTOM

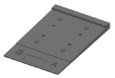
5. BEZEL BOTTOM (SHORT)



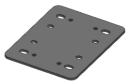
6. ANGLE A



7. ANGLE B



8. PLAIN C

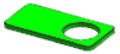


9. BRACKET-LINK

10. SCREW A

11. SCREW B

12. SCREW C



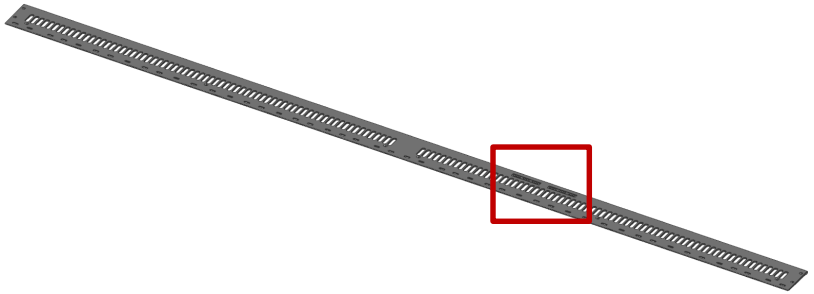
13. SPACER

14. GAP SHEET

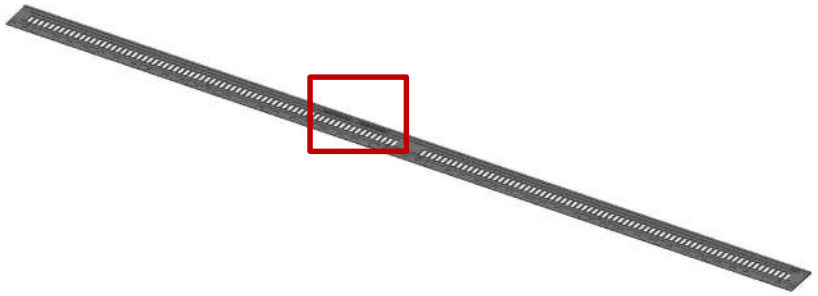
Contents

7. Frame Bezel installation

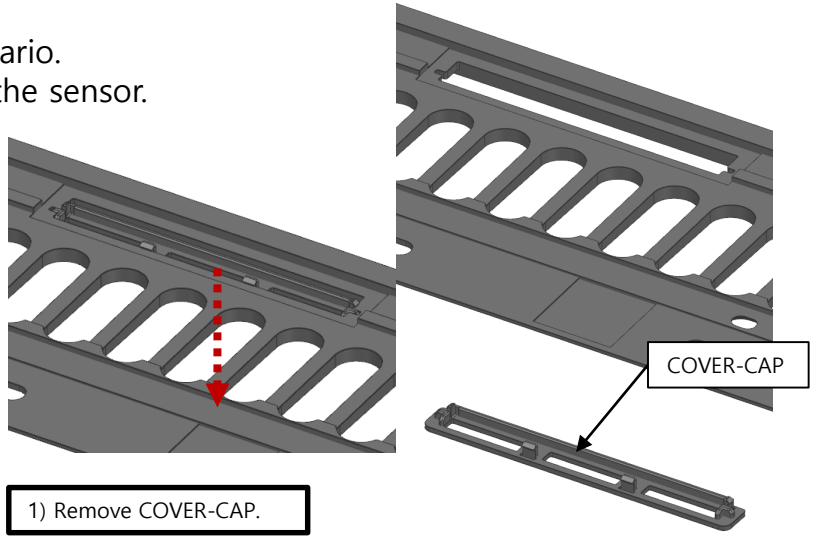
① Assemble sensors according to the location according to the installation scenario.
- Remove the COVER-CAP in the BEZEL TOP and BEZEL BOTTOM and assemble the sensor.



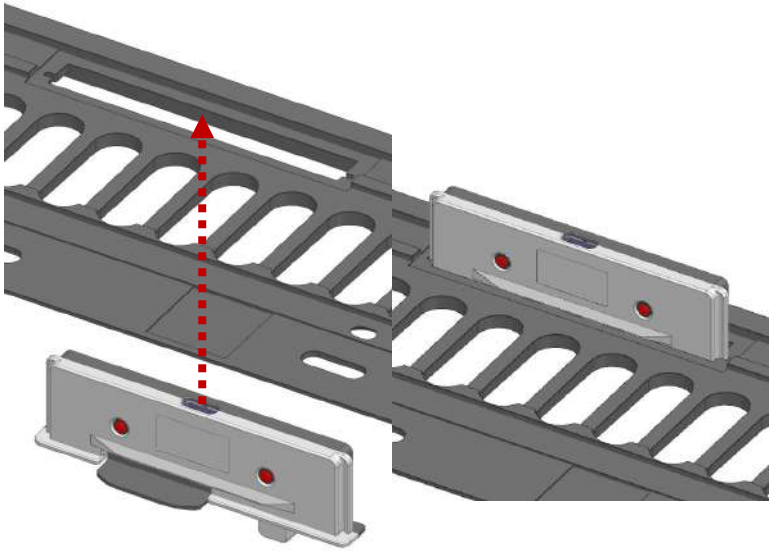
BEZEL TOP



BEZEL BOTTOM



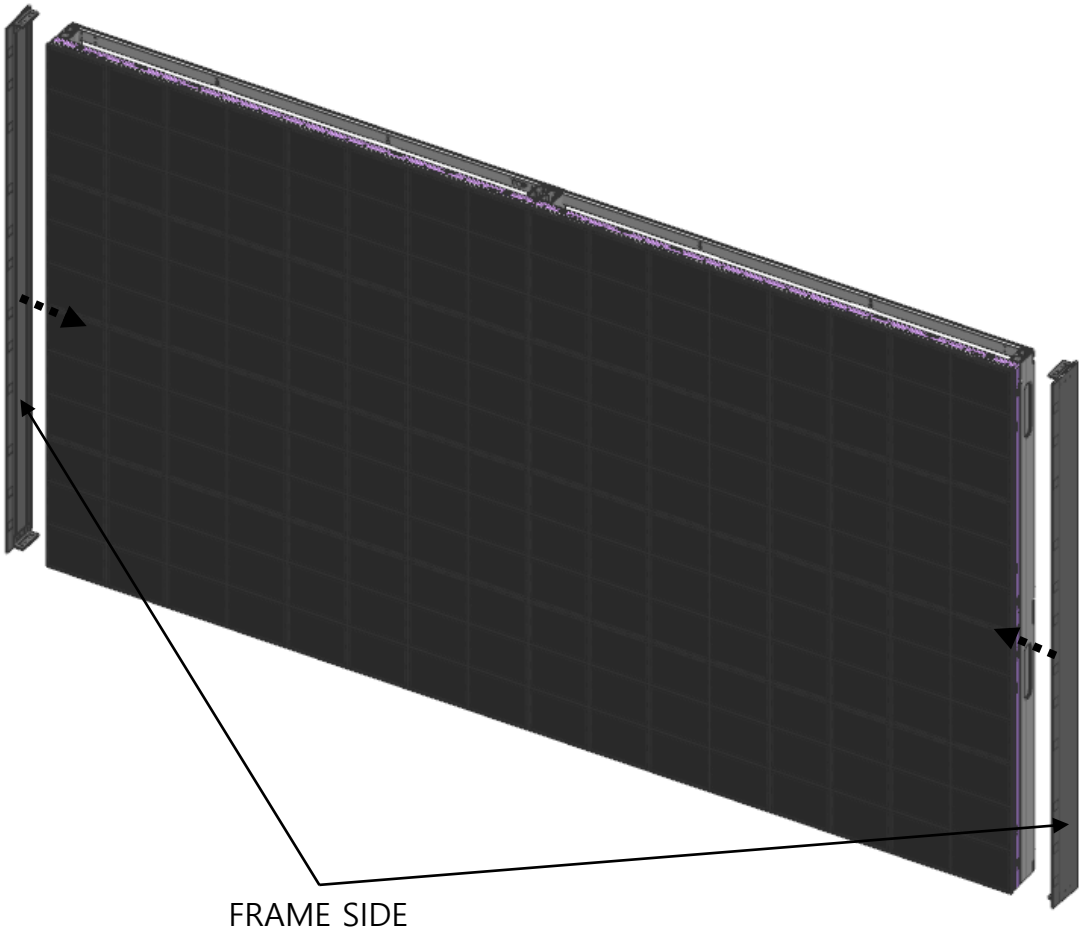
1) Remove COVER-CAP.

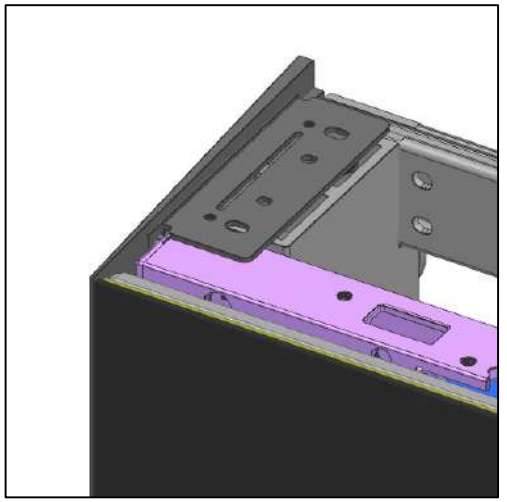


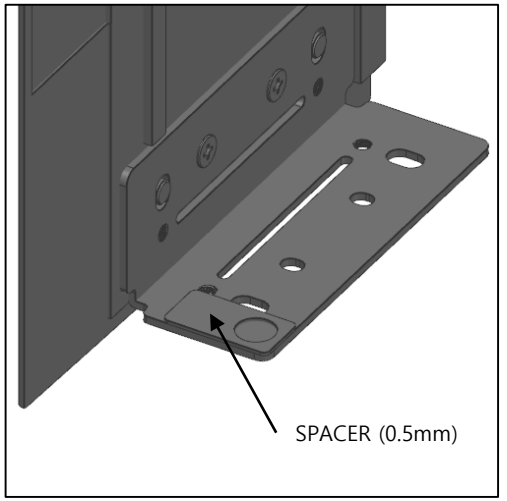
2) Insert the sensor in the direction and assemble it by pressing it until it makes a click sound.

7. Frame Bezel installation

② Install the BEZEL SIDE on the left and right sides of the installed cabinet.



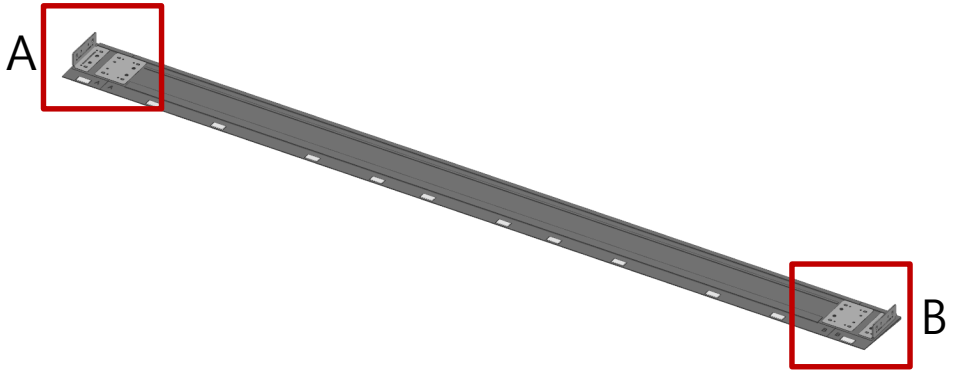


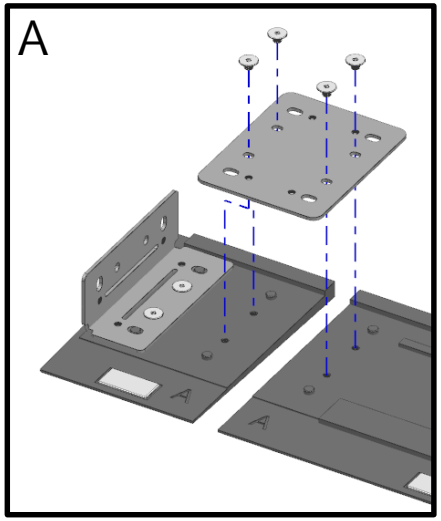


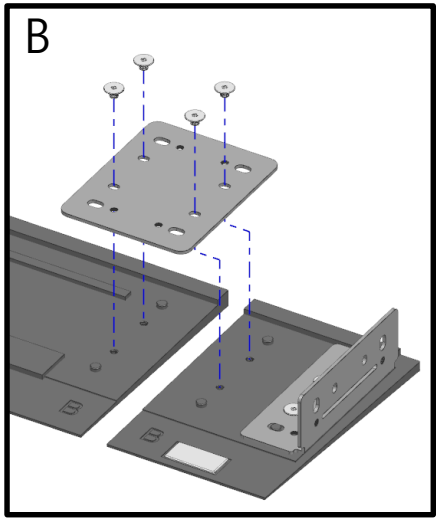
* When assembling the BEZEL SIDE, if the frame is too tight to assemble, remove the attached SPACER and assemble it.

7. Frame Bezel 설치

②-1 When installing VG-LFB**SEB, the BEZEL SIDE is assembled with ANGLE A and ANGLE B using BRACKET-LINK and SCREW C at both ends. And then install on the screen left and right side.



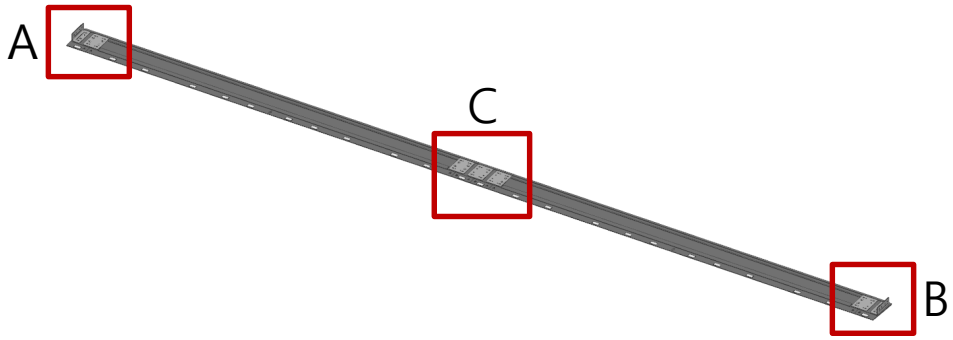


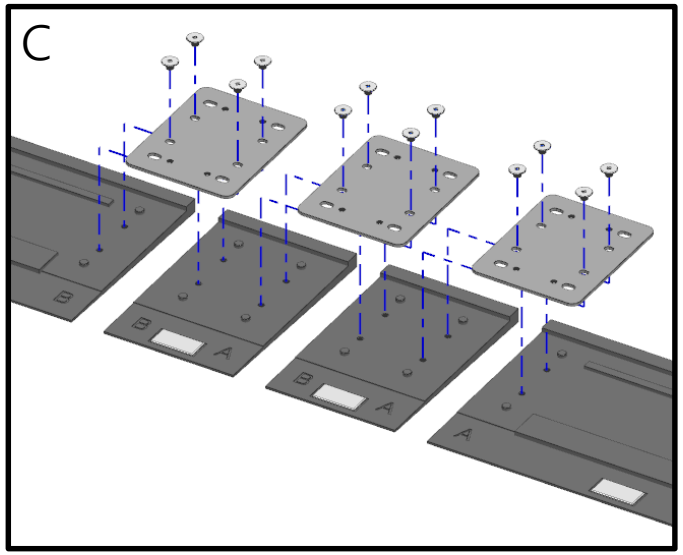


(+) 드라이버 (#1) 사용

7. Frame Bezel 설치

②-2 If you need to extend, assemble two PLAIN C between BEZEL SIDE using BRACKET-LINK and SCREW C. And then install on the screen left and right side.

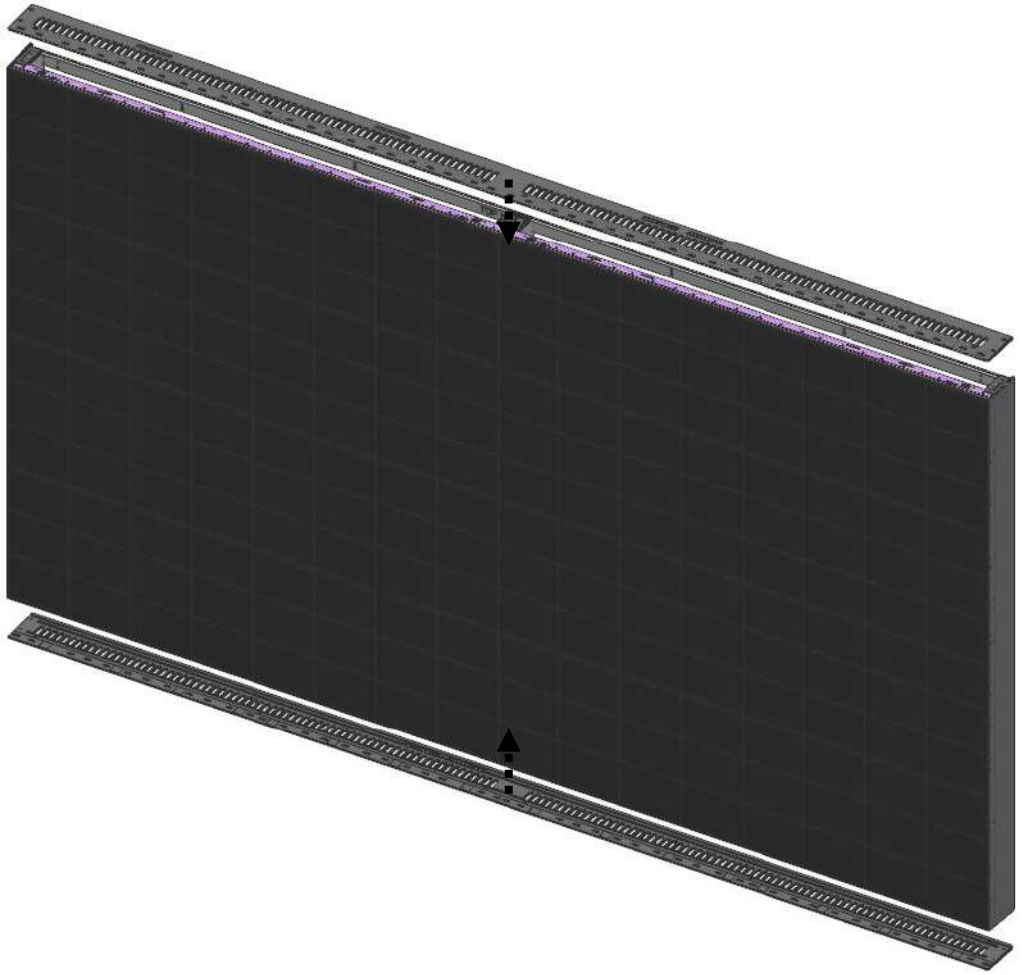




(+) 드라이버 (#1) 사용

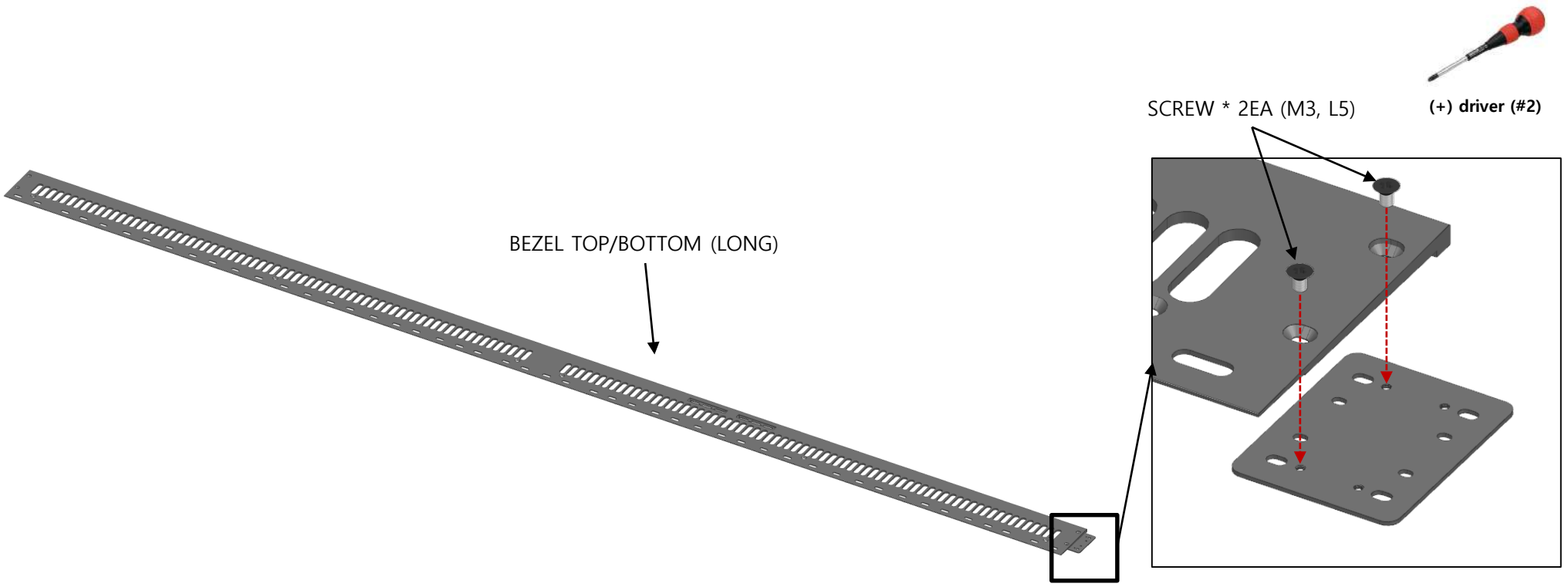
7. Frame Bezel installation

③ Place the BEZEL TOP and BEZEL BOTTOM up and down the cabinet.
- The magnet located at the end of the screen is temporarily supported by the force of the magnet.



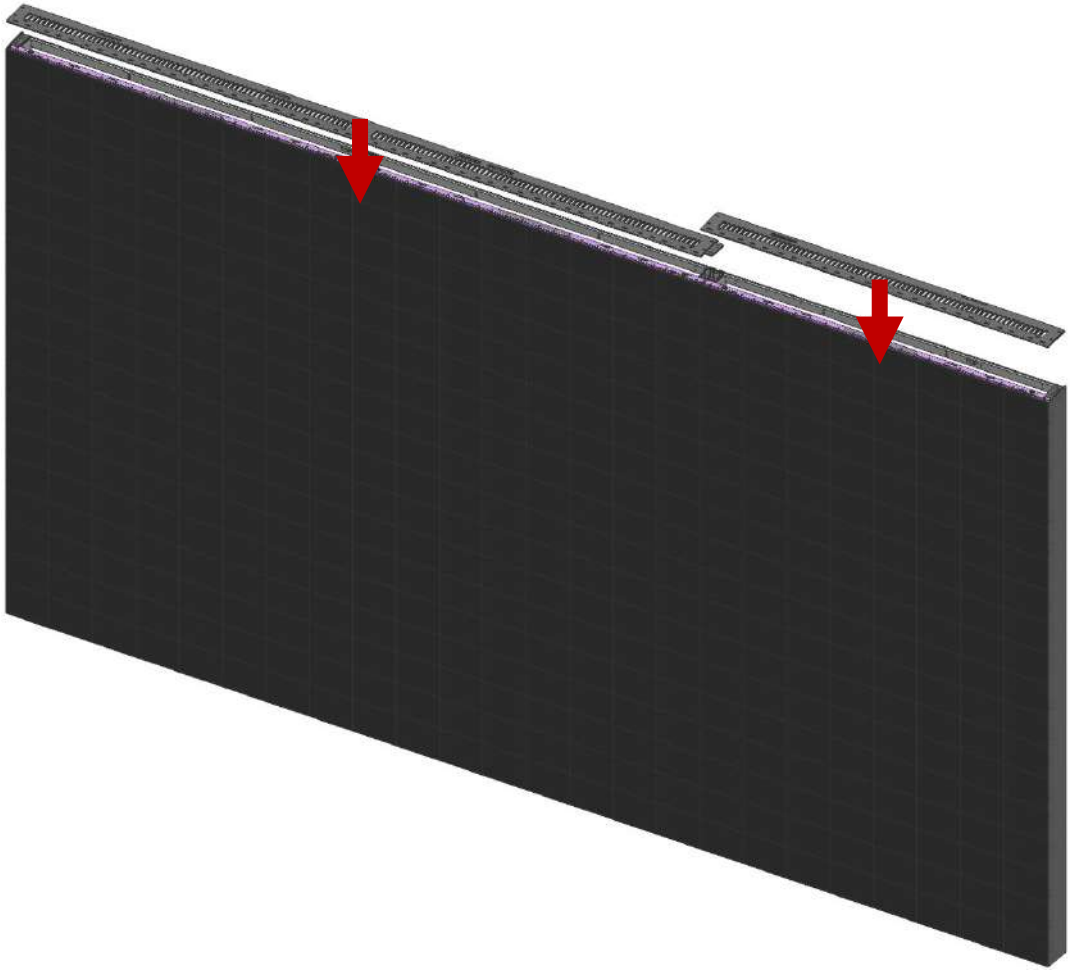
7. Frame Bezel installation (incase of horizontal 3 sets)

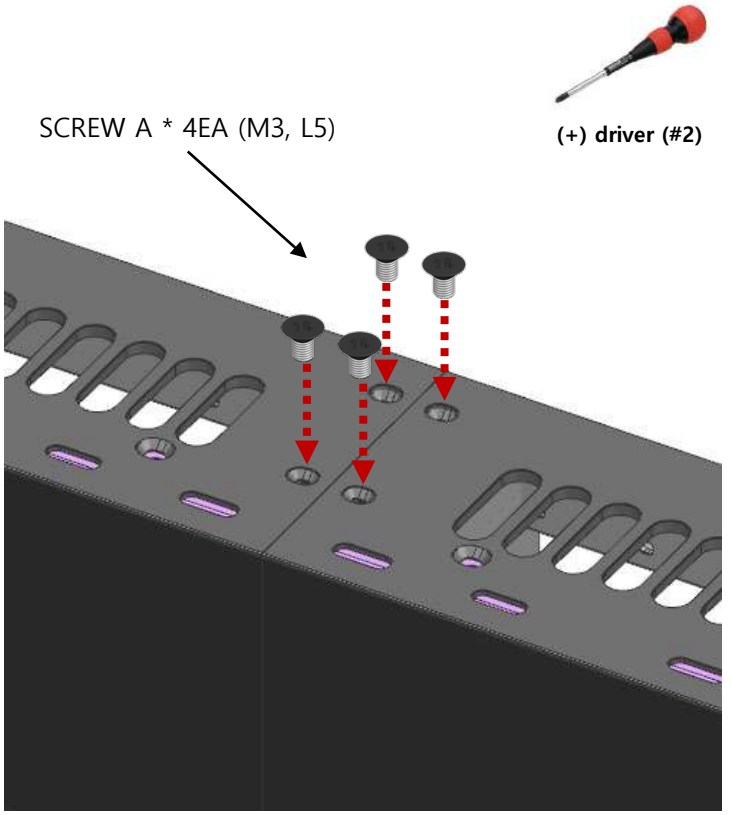
③-1 When installing three horizontal stages, first fasten one side of BRACKET-LINK to BEZEL TOP/BOTTOM LONG.



7. Frame Bezel installation (incase of horizontal 3 sets)

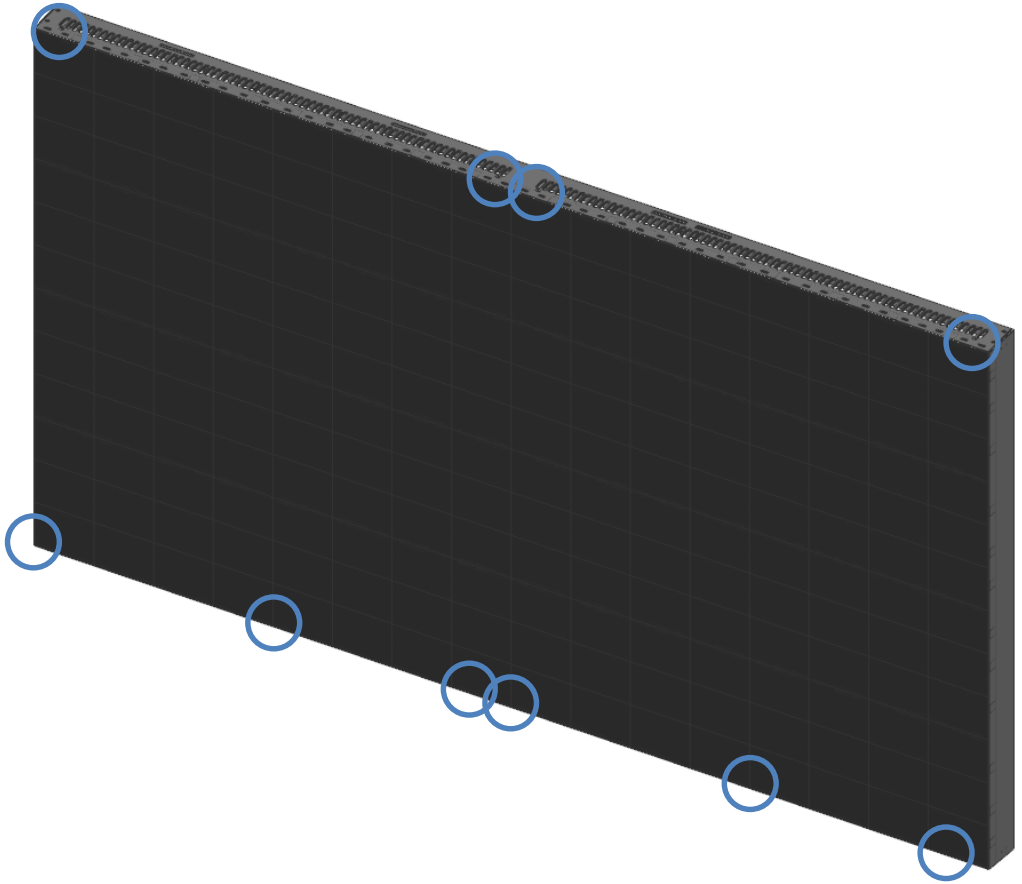
③-2 Position the BEZEL TOP/BOTTOM LONG that has assembled BRACKET-LINK first, place the BEZEL TOP/BOTTOM SHORT, and assemble it between BEZEL TOP/BOTTOM.





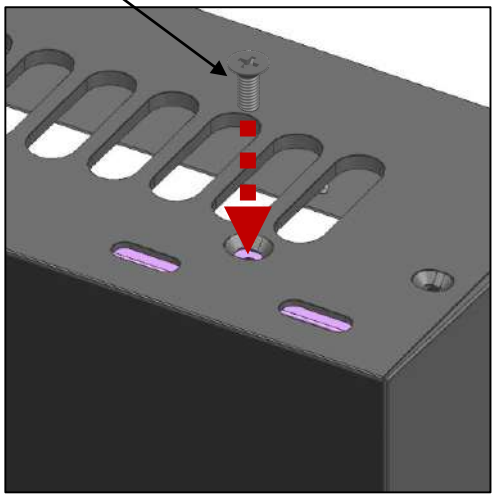
7. Frame Bezel installation

④ Fasten with SCREW B (M4, L10) to fix the cabinet and bezel.
- The lower part is additionally fastened to the middle of the cabinet in case of sagging.



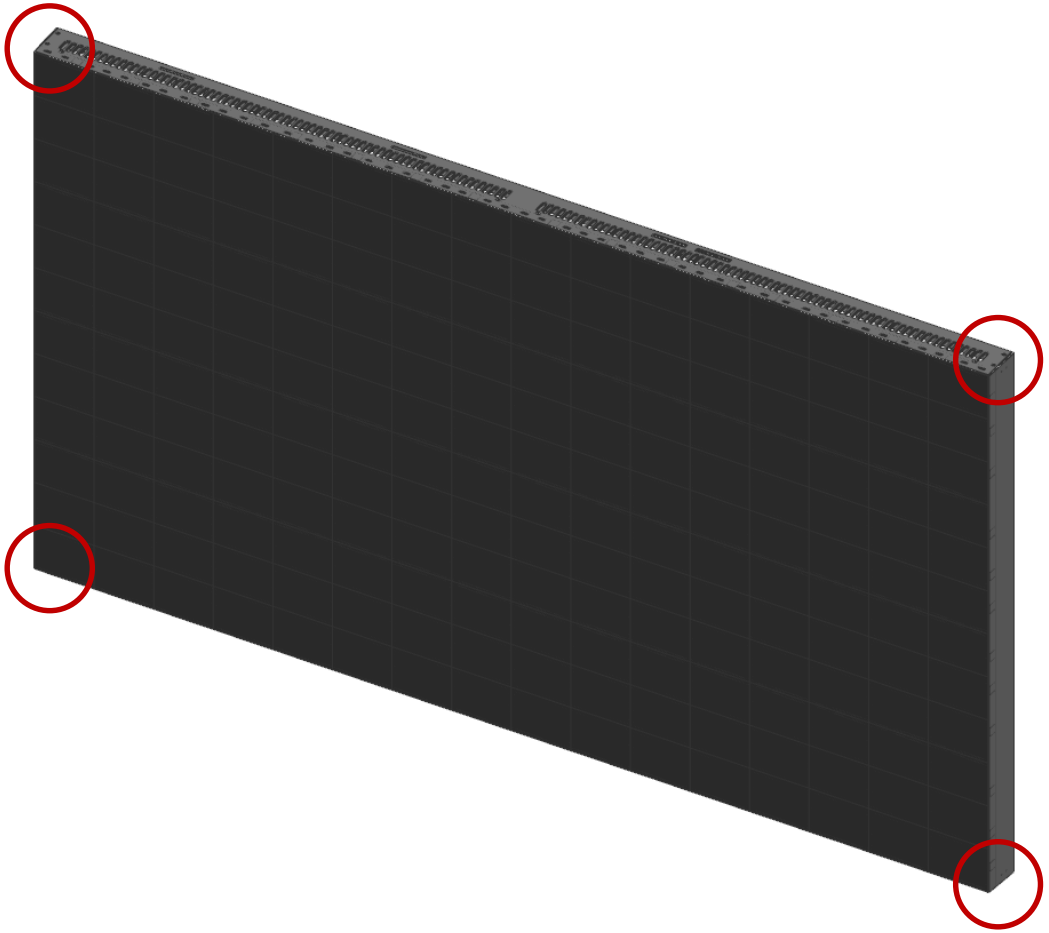
SCREW B * 2EA (M4, L10)

(+) driver (#2)



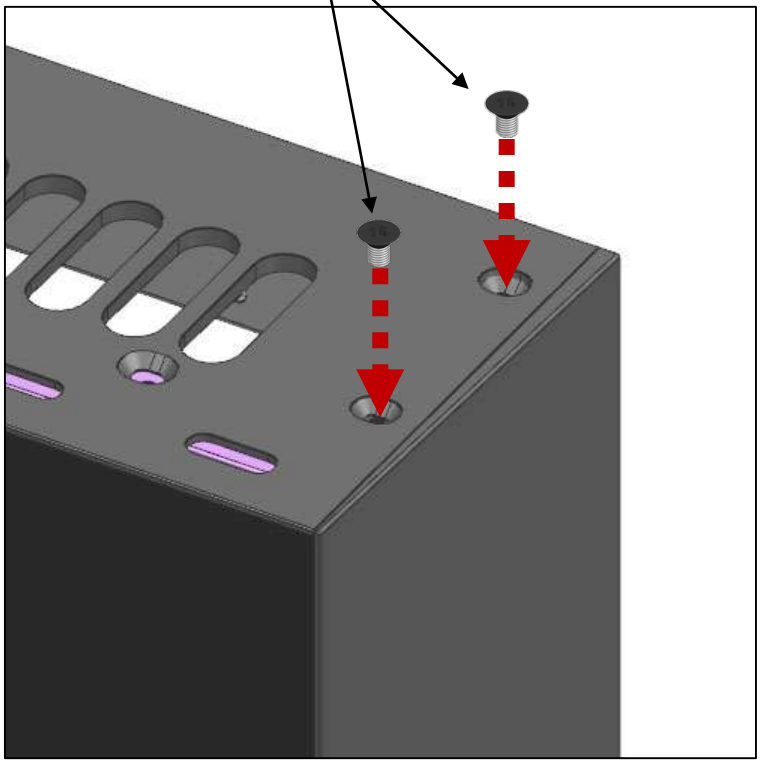
7. Frame Bezel installation

⑤ Connect the edge BEZEL TOP, BOTTOM and BEZEL SIDE to screw A (M3, L5) and connect them between bezels.



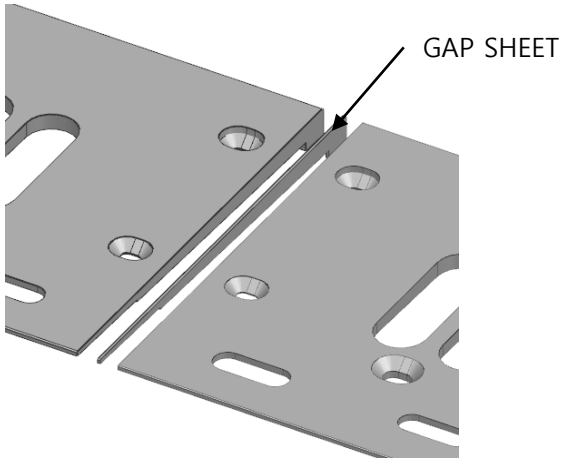
(+) driver (#2)

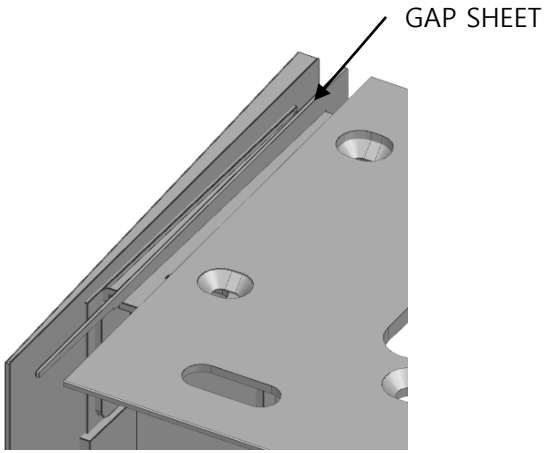
SCREW A * 2EA (M3, L5)



7. Frame Bezel installation

* When filling is needed due to gaps between BEZELs, attach the enclosed GAP SHEET to fill it.





Contents

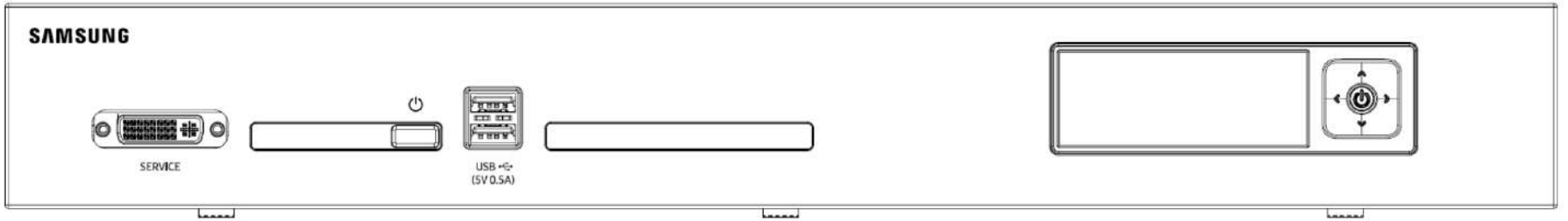
8. S-Box Installation and Connection

• S-BOX Connection (SNOWAAE)

※ Names of parts from Front / Rear side of the SET

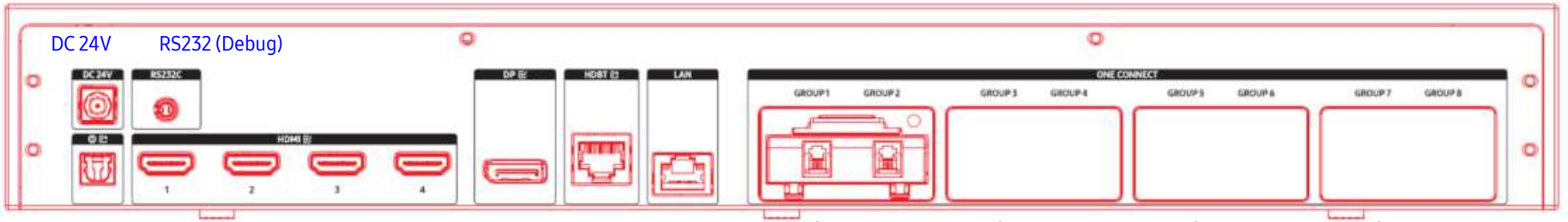
- Please refer to the image below for the names of each part on the front and back of the set.

- Front side



DVI-OUT (monitoring) | IR Rx / Power Btn ※ Remote Control Receiver | USB 2.0 | IR Tx ※ Sender for Remote Control | Info LCD | Jog Key

- Rear side



DC 24V | RS232 (Debug)

Optical Sound | HDMI #1 | HDMI #2 | HDMI #3 | HDMI #4 | DP | HDBT | LAN | CWDM #1, #2 | CWDM #3, #4 | CWDM #5, #6 | CWDM #7, #8

8. S-Box Installation and Connection

• SNOWAAE S-BOX Connection

① Input video signal to S-BOX. (Input port : HDMI, DP)

② Check the input signal through SOURCE STATUS.(RED : HDMI1 , GREEN : HDMI2, Blue : DISPLAY PORT)

③ AAE Box supports 8K(7680 x 4320 @60Hz) input resolutions.

※ 8K Input Setting : Menu – Picture – Advanced Settings – Input signal plus (Select input signal)

☞ Input Signal Plus: Default: OFF, When the item is changed, the S-BOX is rebooted.

☞ When operating with Multi HDMI, it is converted to 4K and played.

* Less than 4K@60Hz

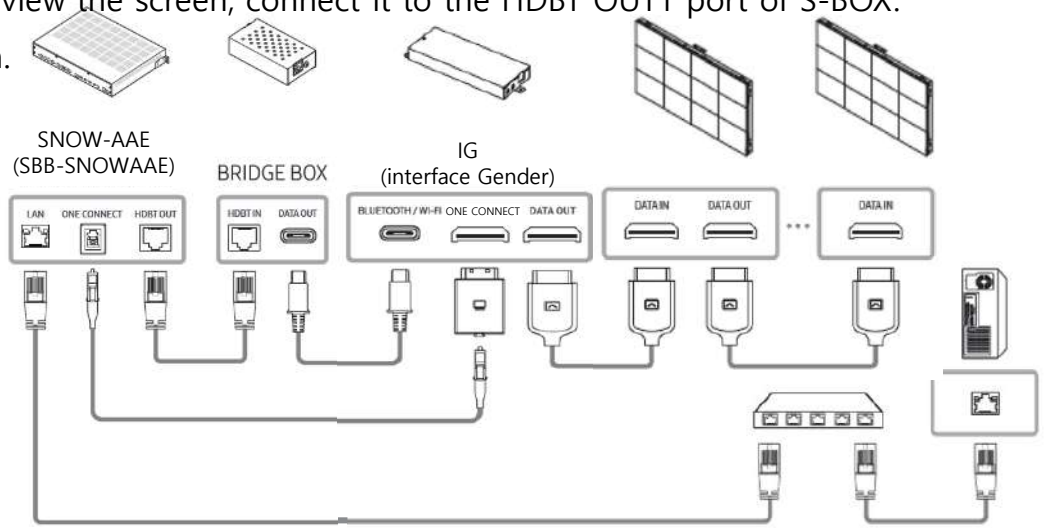
☞ When Screen Mirroring is activated, it is converted to the resolution of the screen transmission device and played.

④ Connect the optical Rx of the AAE Box and the optical Rx of the IG side with an optical cable.
(※ Connect optical Rx to IG's ONE CONNECT)

⑤ Displays the screen based on the cabinet at the top left. To view the screen, connect it to the HDBT OUT1 port of S-BOX.

⑥ S-BOX can only support screens composed of a single pitch.

【 INFORMATION LCD 】



8. S-Box Installation and Connection

☐ IG Settings by screen configuration (SNOW-AAE Only)

- Manual IG Switch settings decide Vx1 / STB Power / UART specification by screen type
- Settings by screen type IWB Model Pillar Structure not used

※ Shipping specification: Pillar FWD

No.	Screen type	IG settings	Dip SW setting	LED Indicator	IG Port	Video (Vx1)	NO. 1		NO. 2	NO. 3	Usage
							ETHERNET	STB_EN	REDUNDANCY SW (UART)	PILLA_DET	
1	Cable	FWD/BWD IG same			FWD	O	O	O	O	N/C	FWD/BWD config Using cables (IWB)
					BWD	O	X	X	X	X	

※ AAE IG Specifications

※ Dip Switch Specifications by Switch numbers

Switch No	Function	Specification	High	Low	Used for
1	ETHERNET	Open / Short for Ethernet signal	Open	Short	Cable + Pillar
	STB_POWER	Open / Short for Cabinet Power Control	Open	Short	
2	REDUNDANCY SW	Open / Short for Cabinet UART signal	Open	Short	Pillar Screen (IWA/IFA)
3	PILLAR Connection	Open / Short Pillar mode signal	Open	Short	Pillar Screen (IWA/IFA)
4	N/A	No use	X	X	No use

8. S-Box Installation and Connection

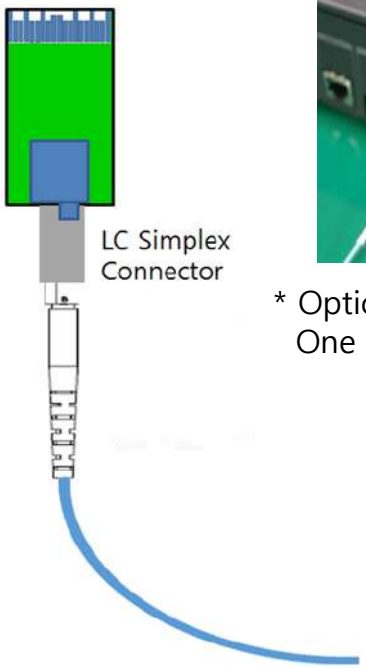
• Optical Cable Connection

① Optical Cable Connection

Connect optical cable from One connect terminal of AAE S-Box to Module Rx of I/G Board.

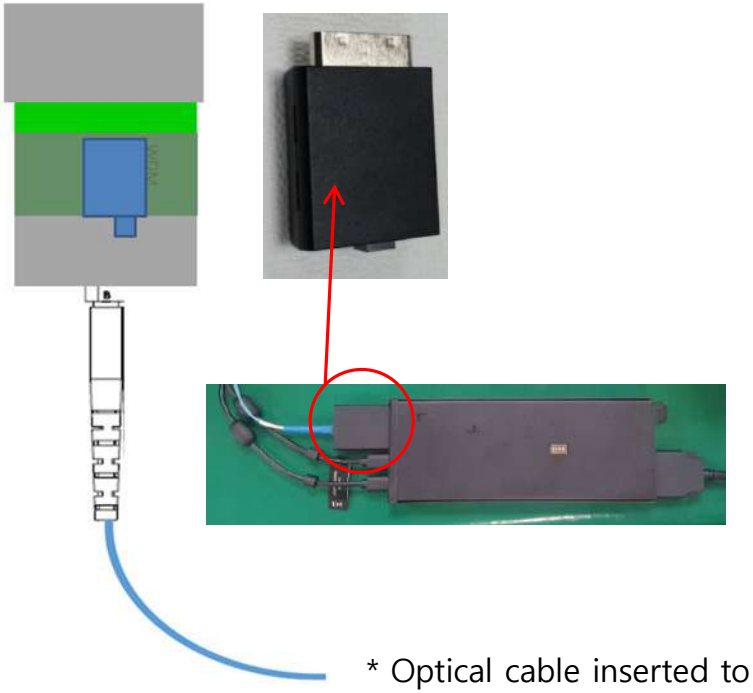
※When the optical modules Tx and Rx are connected, they must be connected by an optical cable without FDF connection or optical fusion.

One port of One Connect



* Optical cable inserted in One Connect of S-Box

Module Rx



* Optical cable inserted to Module Rx in AAE IG input terminal

8. S-Box Installation and Connection

② Instruction for handling Optical Cable

- Use BIMMF, OM3, LC-LC connector type optical cable for stability of operating.

* BIMMF (Bend Insensitive Multimode Fiber)

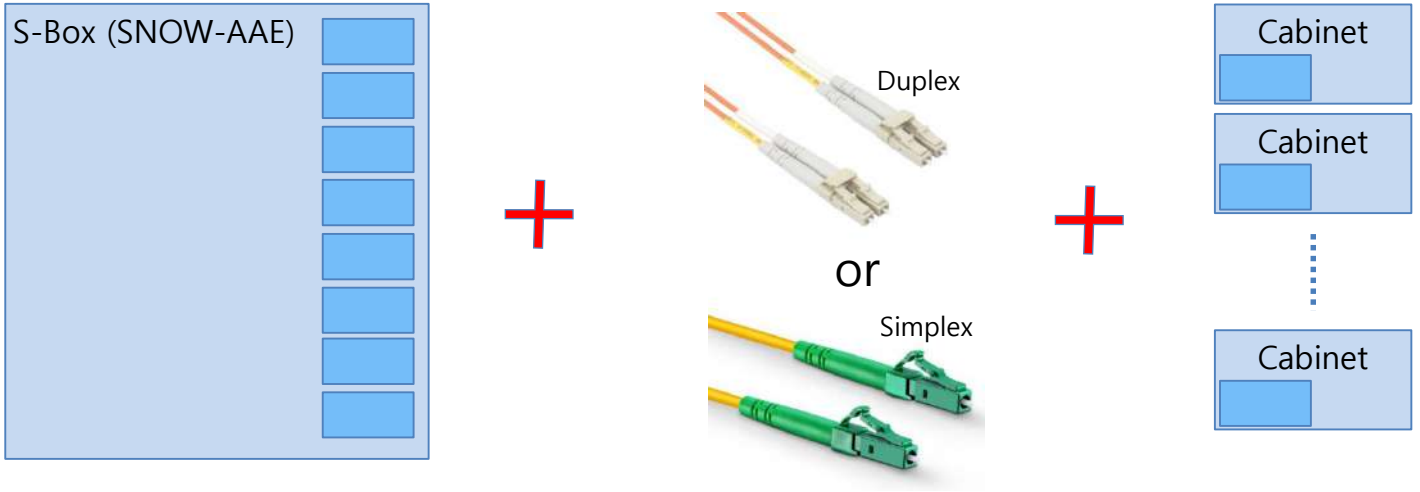
★ Unusable : Single Mode, OM1, OM2 type

- Do not contact with device sharp and rough.
- Do not wipe the optical cable with rough materials and dissolvent.
- The unconnected optical cable, use a protect cap. And cleans before connecting.

8. S-Box Installation and Connection

③ Cable Connection

- Since it is a common cause of malfunction, special attention is required when connecting the connector.
- In the case of duplex type, the locking structure is released and connected one by one like Simplex.



- Before inserting the cable, be careful not to contaminate the end and wipe it with a soft cloth for cleanliness.

8. S-Box Installation and Connection

③ Cable Connection

- Remove the dust protection cap and connect the cable as below picture.
- Insert with weak force until it sounds "Click".

- Keep the dust protection cap well for reuse. Insert a protection cap on an unused port to protect from dust.

8. S-Box Installation and Connection

③ Cable Connection

- Check it whether the cable is inserted well.




- Install the optical cable carefully. The optical cable does not have the tension of the upper/lower and the left/right.




8. S-Box Installation and Connection

③ Cable Connection

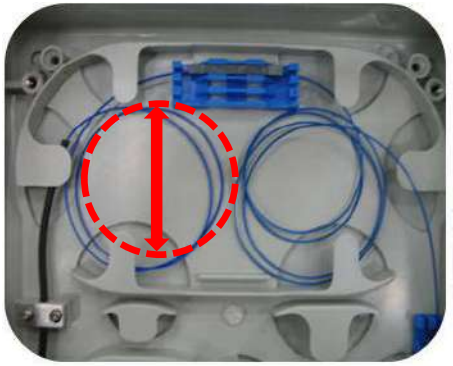
- When you remove the cable, press the detach clip to remove it. Do not just pull the cable as below.

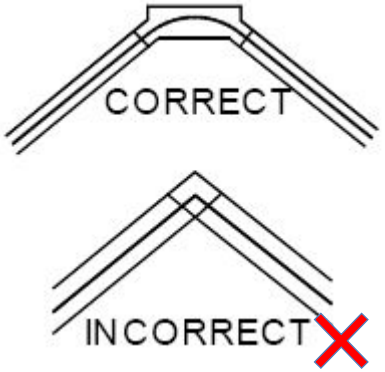
- Do not force the optical cable by pulling it up and down.

8. S-Box Installation and Connection

④ Instruction for handling Optical Cable

- Consider the pulling force so that the minimum force is applied to the optical fiber when installing the cable. (Refer to each cable specification.)
- Optical loss occurs, If the optical cable is bent above the allowed bending radius. Install cable below allowed bending radius. (Refer to below picture.)



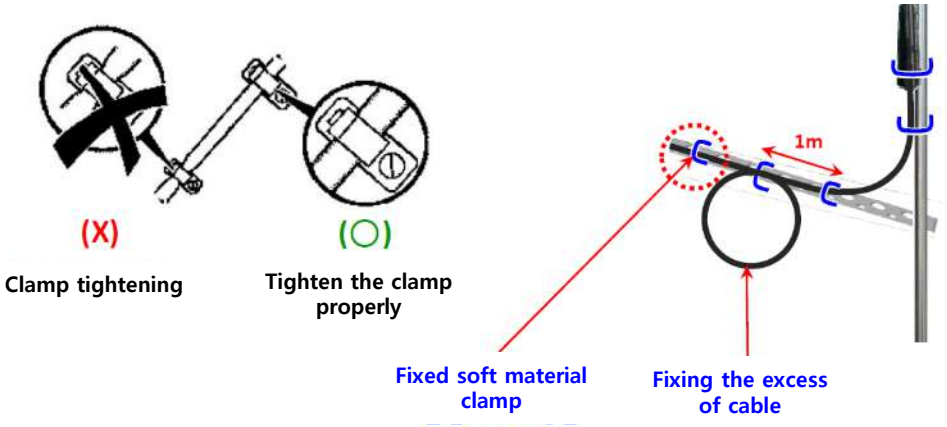


- Be careful not to bend or twist like a right angle (Refer to picture)
- Do not step on the optical cable or press it in weight. The cable can be broken by heavy things.
- Do not use cable tie, etc. Loss or disconnection can be occur due to bending and compression.

8. S-Box Installation and Connection

④ Instruction for handling Optical Cable

- Gently fix the optical cable to prevent direct compression when fixing it to Tray and so on.



- The clamp interval is recommended to be 1m or less for fixing.
- Compression properties depend on the structure and type of cable. Refer to cable specification.
- Do not shock the optical cable. In general, the impact load of the optical cable is below 7J, but the impact characteristics refer to each cable specification.
- Do not twist the cable. If the cable is twisted, the optical cable can be damaged.

8. S-Box Installation and Connection

❑ 24V Adaptor Connection

① Adadptor Connection

- Connect the enveloped 24V adaptor to rear power connector.

- Power on using Power button from Remote controller enveloped or push button at the front.

[Caution]

※ When powering on/off for the TEST, give enough time (more than 5mins) to be stable.

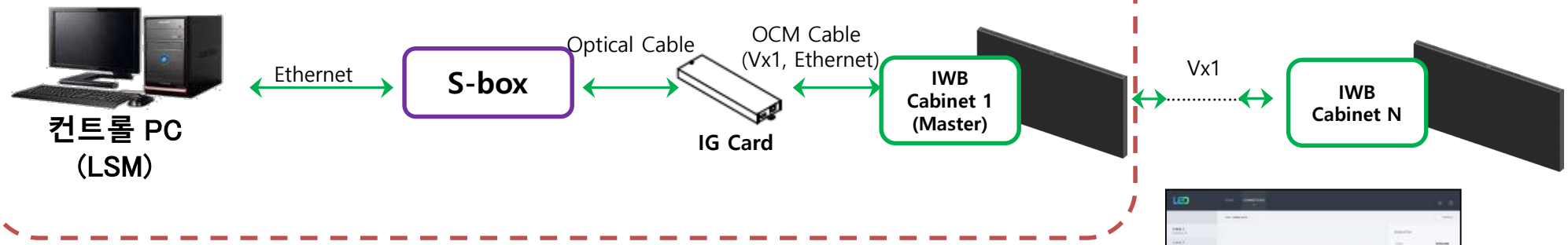
8. S-Box Installation and Connection

• S-Box Connection (Panel Configuration)

① S-Box Default Picture Setting

- The default picture configurations are optimized for IWA/IWB Cabinet in Samsung factory.
- The picture configurations will be configured automatically when you finish the installation.
- For the best picture quality, Please connect S-Box and LED displays via LSM software properly.
- The LED Display must be connected to Optical port in S-Box

* If the S-Box and LED Displays are not connected properly by LSM, the picture quality might not be correct.



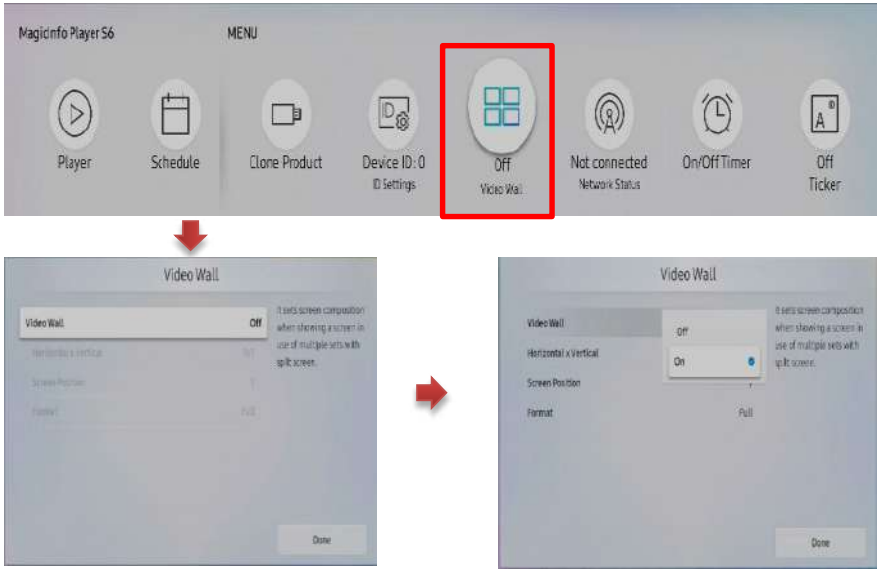
<Connected condition in LSM>

8. S-Box Installation and Connection

• S-Box Connection (Panel Configuration)

② S-Box Connection (Grouping)

- Home → Video Wall : OFF → On



[Caution]

1) Before executing S-Box Grouping in LSM (LED Signage Manager), be sure to set the resolution of the input source device to the resolution supported by S-Box Grouping. ※When S-Box Grouping, LED Picture size = FHD cannot be used

2) When inputting an unsupported resolution, the screen may not be visible or noise may occur on the screen. Turn off the Video Wall function and change the frequency of the video output source to 50Hz or 60Hz.

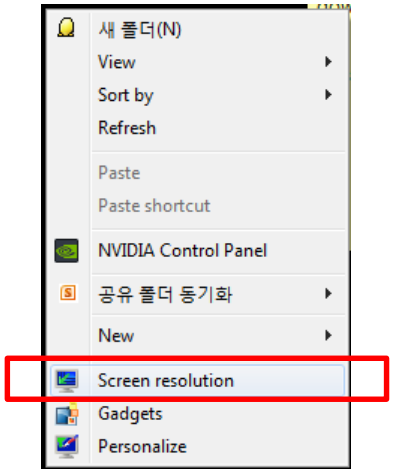
※'After 13.06, the S-Box Grouping function is provided through LSM. Check the latest version of LSM.

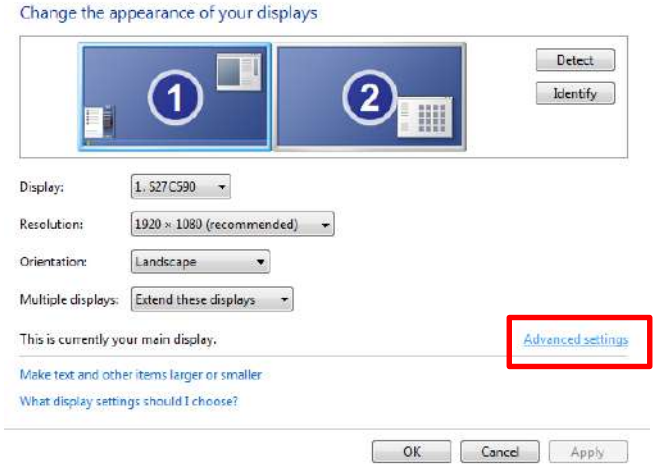
8. S-Box Installation and Connection

• S-Box Connection (Panel Configuration)

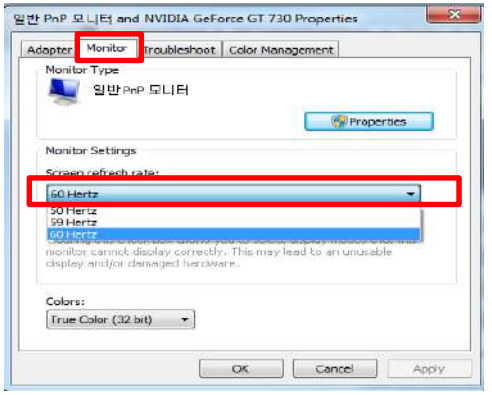
③ Setup the resolution of input PC

- PC: Click the right button of mouse → Click Screen resolution → Click Advanced settings





- Click “Monitor” tap → Monitor Settings → Setup “Screen refresh rate” to 60Hz



8. S-Box Installation and Connection

④ S-Box Grouping Support Frequency (1/2)

Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)	S-Box Grouping Supported
IBM/VESA, 640 x 480	31.469	59.940	25.175	N / N	-
Mac, 640 x 480	35.000	66.667	30.240	N / N	-
VESA, 640 x 480	37.861	72.809	31.500	N / N	-
VESA, 640 x 480	37.500	75.000	31.500	N / N	-
IBM, 720 x 400	31.469	70.087	28.322	N / P	-
VESA, 800 x 600	35.156	56.250	36.000	P / P	-
VESA, 800 x 600	37.879	60.317	40.000	P / P	-
VESA, 800 x 600	48.077	72.188	50.000	P / P	-
VESA, 800 x 600	46.875	75.000	49.500	P / P	-
Mac, 832 x 624	49.726	74.551	57.284	N / N	-
VESA, 1024 x 768	48.363	60.004	65.000	N / N	O
VESA, 1024 x 768	56.476	70.069	75.000	N / N	-
VESA, 1024 x 768	60.023	75.029	78.750	P / P	-
VESA, 1152 x 864	67.500	75.000	108.000	P / P	-
Mac, 1152 x 870	68.681	75.062	100.000	N / N	-
VESA, 1280 x 720	45.000	60.000	74.250	P / P	O
VESA, 1280 x 800	49.702	59.810	83.500	N / P	-
VESA, 1280 x 1024	63.981	60.020	108.000	P / P	O
VESA, 1280 x 1024	79.976	75.025	135.000	P / P	-
VESA, 1366 x 768	47.712	59.790	85.500	P / P	-
VESA, 1440 x 900	55.935	59.887	106.500	N / P	-

8. S-Box Installation and Connection

④ S-Box Grouping Support Frequency (2/2)

VESA, 1600 x 900	60.000	60.000	108.000	P / P	O
VESA, 1680 x 1050	65.290	59.954	146.250	N / P	-
VESA, 1920 x 1080	67.500	60.000	148.500	P / P	O
VESA CVT, 1920 x 1080	66.587	59.934	138.500	P / N	-
VESA CVT, 2560 x 1440	88.787	59.951	241.500	P / N	-
VESA CVT, 3840 x 2160	133.313	59.997	533.250	P / N	-
CTA-861 VIC 3, 720 x 480	31.469	59.940	27.000	N / N	-
CTA-861 VIC 4, 1280 x 720	45.000	60.000	74.250	P / P	O
CTA-861 VIC 5, 1920 x 1080i	33.750	60.000	74.250	P / P	-
CTA-861 VIC 16, 1920 x 1080	67.500	60.000	148.500	P / P	O
CTA-861 VIC 18, 720 x 576	31.250	50.000	27.000	N / N	O
CTA-861 VIC 19, 1280 x 720	37.500	50.000	74.250	P / P	O
CTA-861 VIC 20, 1920 x 1080i	28.125	50.000	74.250	P / P	-
CTA-861 VIC 31, 1920 x 1080	56.250	50.000	148.500	P / P	O
CTA-861 VIC 32, 1920 x 1080	27.000	24.000	74.250	P / P	-
CTA-861 VIC 33, 1920 x 1080	28.125	25.000	74.250	P / P	-
CTA-861 VIC 34, 1920 x 1080	33.750	30.000	74.250	P / P	-
CTA-861 VIC 93, 3840 x 2160	54.000	24.000	297.000	P / P	-
CTA-861 VIC 94, 3840 x 2160	56.250	25.000	297.000	P / P	-
CTA-861 VIC 95, 3840 x 2160	67.500	30.000	297.000	P / P	-
CTA-861 VIC 96, 3840 x 2160	112.500	50.000	594.000	P / P	O
CTA-861 VIC 97, 3840 x 2160	135.000	60.000	594.000	P / P	O

8. S-Box Installation and Connection

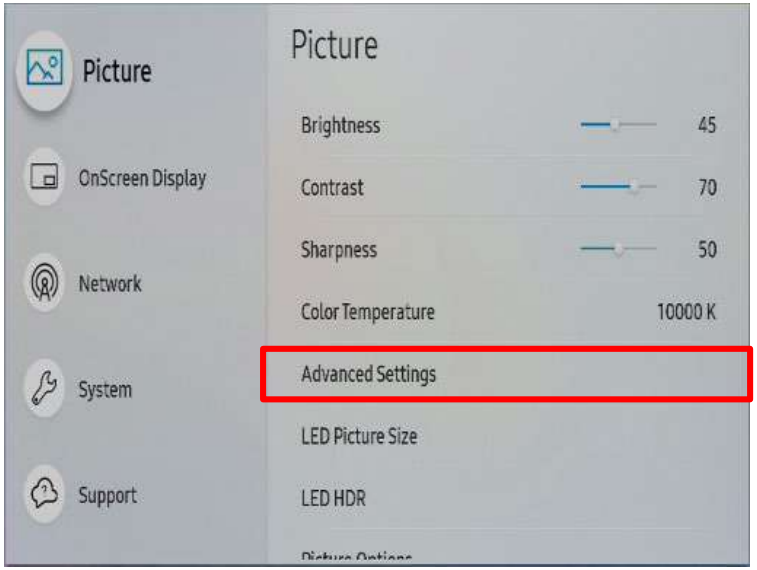
• S-Box Connection (Panel configuration)

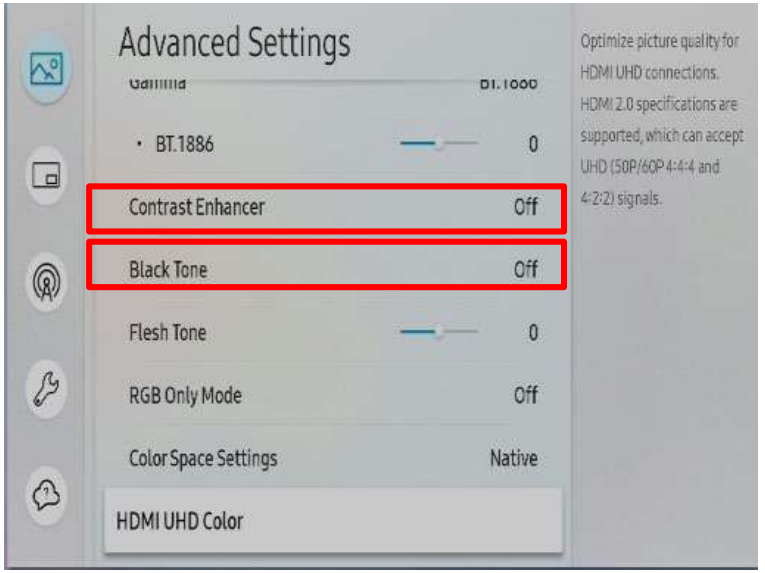
⑤ Picture Menu Settings

- In order to use S-Box grouping, both Dynamic Contrast and Black Tone functions should be turned off to reduce the image quality deviation between S-Boxes.
- Menu → Picture → Advanced Settings,

  -Dynamic Contrast: default “Medium” → Off

  -Black Tone: default “Darker” → Off





8. S-Box Installation and Connection

④ S-box Grouping Support Frequency (2/2)

① Service Port is a terminal dedicated to monitoring to check the operation status of the source being played and using the OSD during the initial installation of the S-Box.

② The resolution of the corresponding PORT is FHD (1920*1080 @ 60Hz).

③ Screen flickering and cracking may occur when UHD resolution source is input to S-BOX, but this is a phenomenon in which the corresponding port output is fixed down scalin without a specific scaling algorithm, and is not related to the actual LED cabinet screen output.

④ Connect a monitor to use SERIVCE PORT.

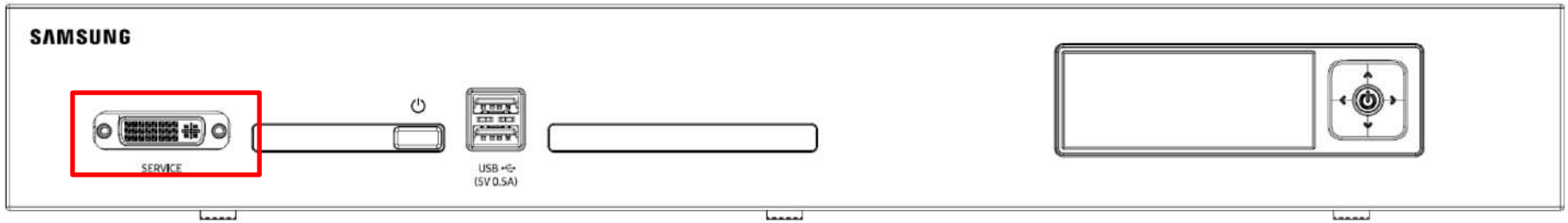
⑤ Network information is set in Menu → Network → Open Network Settings.

⑥ Check the network ping with a laptop, etc.

⑦ Select RJ-45 from Home → ID Settings → PC Connection Cable menu.

[Caution!] This port is for service only, and there is no function for users. Please do not connect.

SNOW-AAE



Contents

9. LSM configuration and usage description

9-1. Control Program for PC

❑ LSM(LED Signage Manager)

- **Software to remotely control the layout of the LED cabinet**
- **LSM program download location : Samsung Display Solutions (https://displaysolutions.samsung.com)**
  Solutions > LED Signage Solution > LED Signage Manager

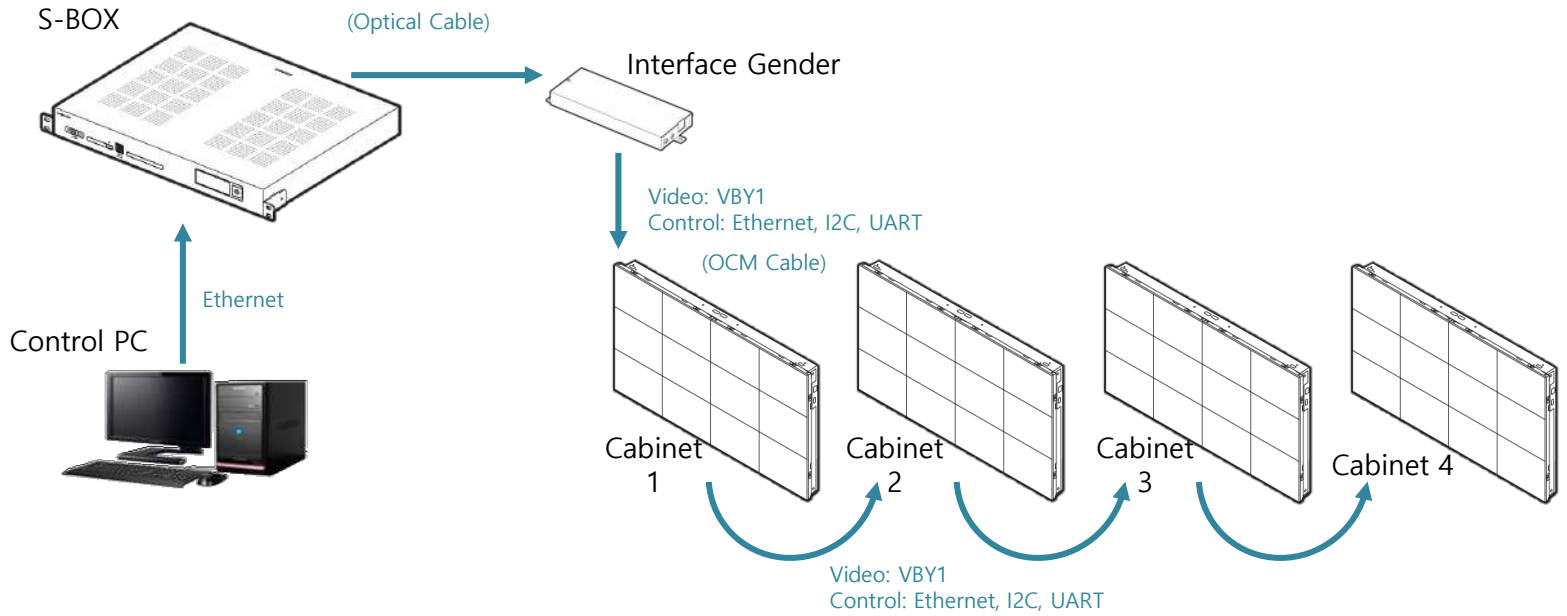
※ Partner login is required to download the program.

9. LSM configuration and usage description

9-1. Control Program for PC

❑ LSM connection between components

1. Connect the PC to the S-Box via Ethernet.
2. Use a LAN cable to connect the S-Box to the Interface Gender.
3. Use an OCM cable to connect the Interface Gender to the first LED cabinet.
4. Use OCM cables to connect the LED cabinets to one another in a daisy-chain configuration.

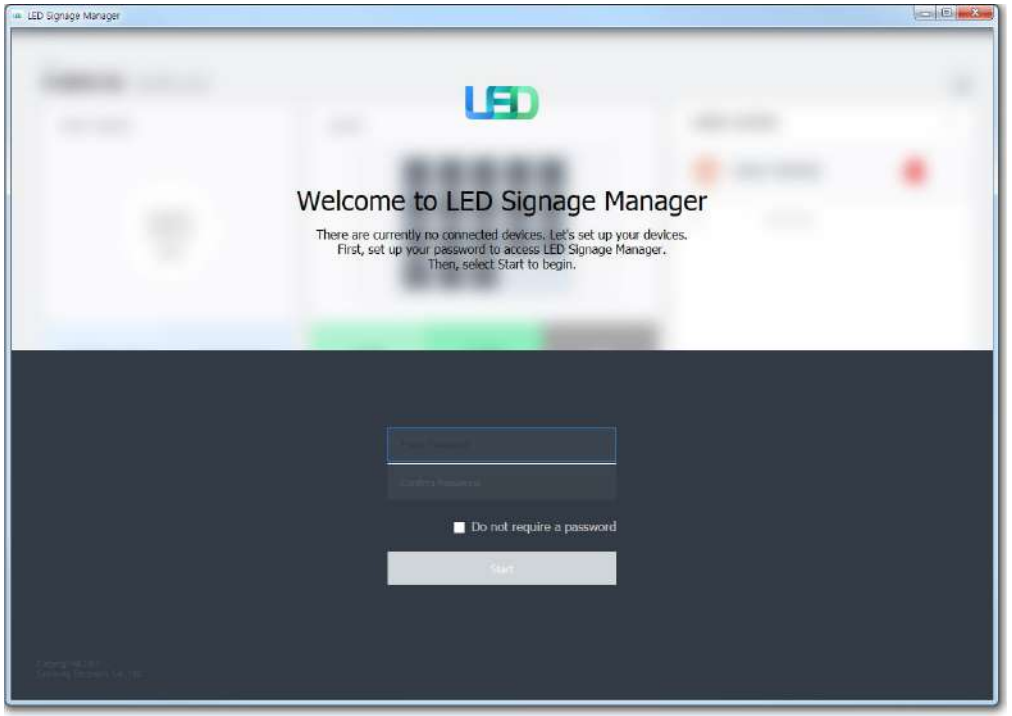


9. LSM configuration and usage description

9-1. Control Program for PC

❑ Run LSM

1. When the LSM is launched for the first time, the password setting page appears.
2. To set a password, enter the same password of your choice twice and click the Start button.
3. If you do not want to use a password, select the "Don't use password" checkbox.
   If this checkbox is selected, you not prompted for a password when the LSM is launched subsequently.



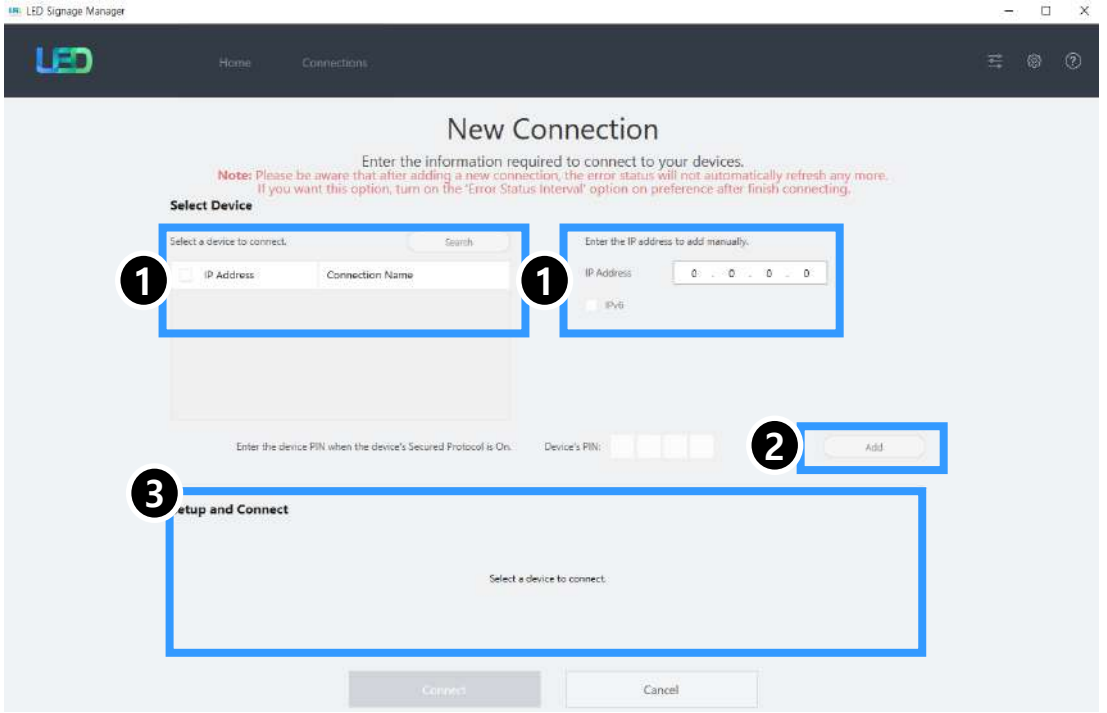
※ Caution!
- If you change the LED picture size during LSM setting, the SBOX reboots, so it may malfunction during LSM setting.
- Set the output resolution of the LED picture size to be the same as the installed screen resolution.

9. LSM configuration and usage description

9-1. Control Program for PC

❑ New Connection

1. To add connection information, you can directly enter Search or IP address. If you click the Search button, the IP address of the S-BOX that can be connected on the same network is displayed. If you know the IP address of S-BOX, you can enter it directly.
2. Clicking the Add button adds the connection information to Setup and Connect.
3. User can select S-Box's Model Type.
4. The model type is determined according to the S-Box product.
   For IWB products, it is connected to SNOWAAE, so you need to select 8K option.
   - Without Cabinet IP
   - With Cabinet IP (2K)
   - With Cabinet IP (4K)
   - **With Cabinet IP (4K-Pillar)**
   - **With Cabinet IP (8K)**
   - The Wall Luxury
   - All in One
   - With Cabinet IP (4K-Outdoor)



9. LSM configuration and usage description

9-1. Control Program for PC

❑ New Connection

[★ Caution!]
When configuring LED cabinet network settings, it is recommended that a static IP address be used.
If DHCP is used and the IP address is changed, the connection with LSM may be disconnected.
The 192.168.10.x band is used for internal communication with LED cabinets.
Use an IP address that does not belong to this band.
Use the IP address for LED (x4) assigned by your IT administrator. Do not assign an IP address arbitrarily.

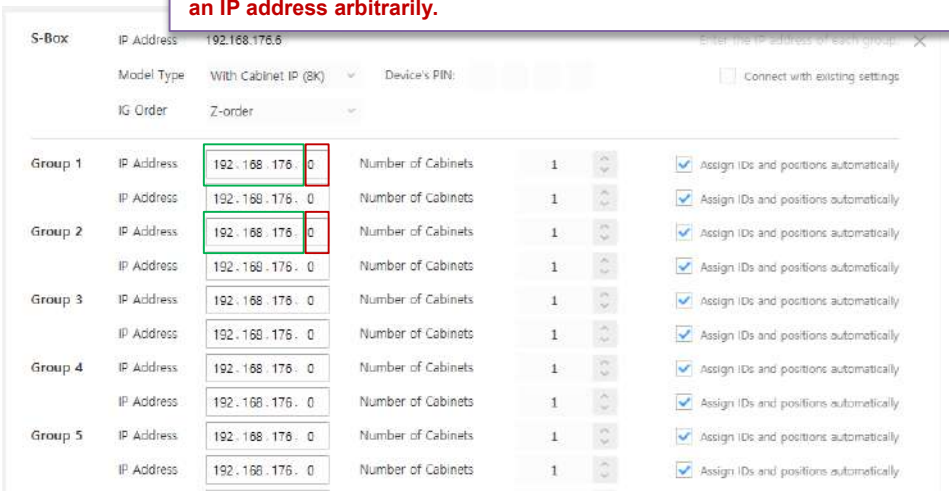
1. Select With Cabinet IP (8K). You must specify the IP address of the LED cabinets connected to each port. Set the number of connections and click Connect. * For 3x3 installation of IWB P 0.945 model, the first IP address of Group 1 and Group 2 should be used respectively.

2. Specify the IG order according to the screen output method. You can select Z-order or Reversed N-order.

※ If IP addresses are already set for the cabinets, select the "Connect with existing settings" checkbox.

※ You only need to give IP address to Cabinet Group that actually needs to be used.

※ If it is used as With Cabinet IP (8K), the 2nd IP address of each group is not used. The second IP of each group is available under With Cabinet IP (4K-Pillar) conditions.



IMPORTANT

※ Same with S-box

- P 0.945 case ※ Different from S-box / Each group sets differently
  - **1x1 When using installation**: Group 1 > IP Input/ Number of Cabinets > 1
  - **2x2 When using installation**: Group 1 > IP Input/ Number of Cabinets > 4
  - **3x3 When using installation**: Group 1 > IP Input/ Number of Cabinets > 6
    Group 2 > IP Input/ Number of Cabinets > 3

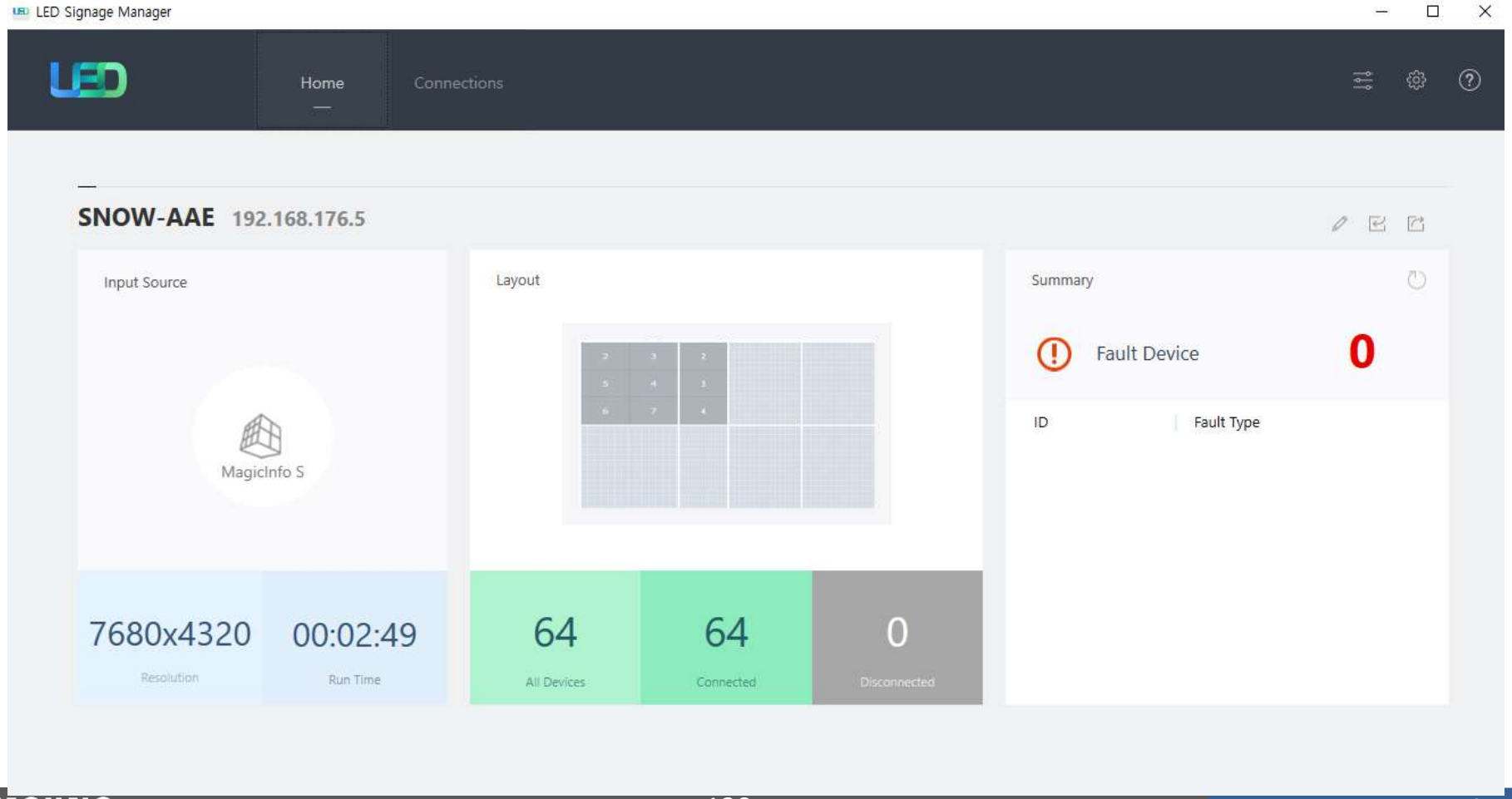
9. LSM configuration and usage description

9-1. Control Program for PC

[★ Caution!] For internal communication between the S-Box and LED cabinets, use ports 1515, 48484, 48485 and 58585
When firewalls / security network are in use, make sure the corresponding port between the S-Box and LED cabinets is enabled.

❑ Main Window – Home Window

1. **Home screen: Shows information about connected devices, the input source, the cabinet**

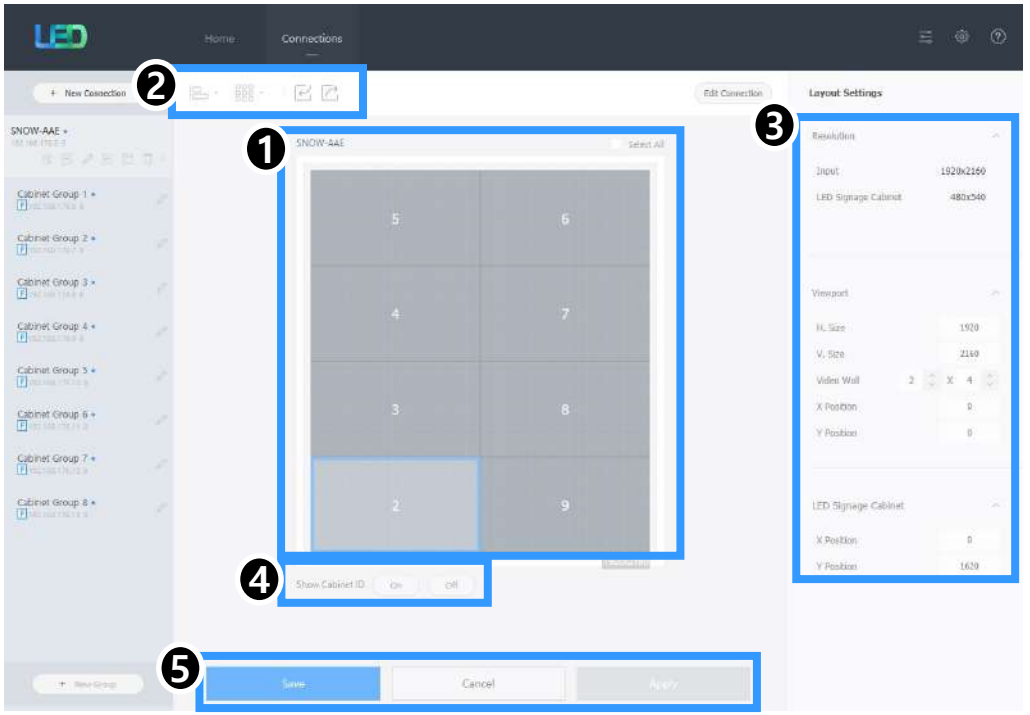


9. LSM configuration and usage description

9-1. Control Program for PC

❑ Main Window – Edit Connection Layout Window

1. Connection layout: Use the S-Box output source section to adjust the LED cabinet layout by rearranging cabinets.
2. Feature View : Align, Layout preset, Export and Import for Cabinet Layout
3. Device Information/Setting View:
   Shows LED cabinet information based on the following categories.
   (i) Resolution: Resolution of the input source
   (ii) ViewPort: Width/height, video wall matrix, x/y coordinate settings
   (iii) LED Signage Cabinet: X, Y positions of LED cabinets
4. Show ID: Select to cause each of all connected LED cabinets to display their ID.
5. Save/apply or cancel settings

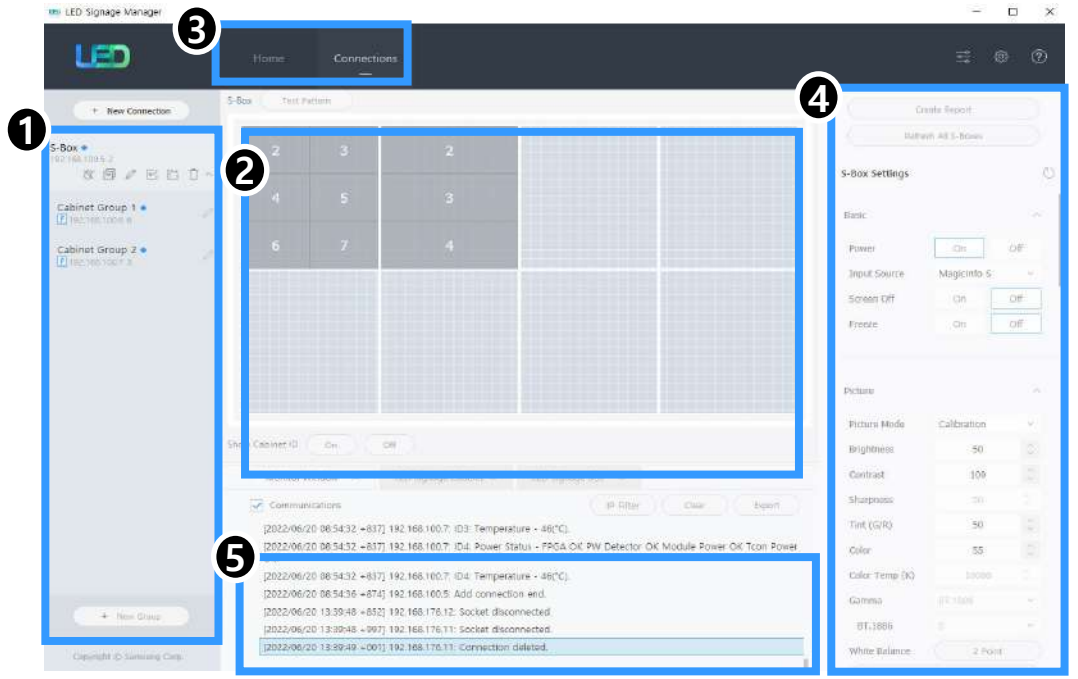


9. LSM configuration and usage description

9-1. Control Program for PC

❑ Main Window – Connection Window

1. **Device Connection list**
   Connected S-Boxes, Edit connection and Delete, Group information
2. **Connection layout (View Port)**
   Cabinet's layout
3. **Category View:**
   Use the Home and Connections tabs to configure system settings.
4. **Device Information/Setting View:**
   S-Box Settings, Cabinet Settings
5. **Sub Information View:**
   Monitor window (log), Basic information of S-Box and Cabinet

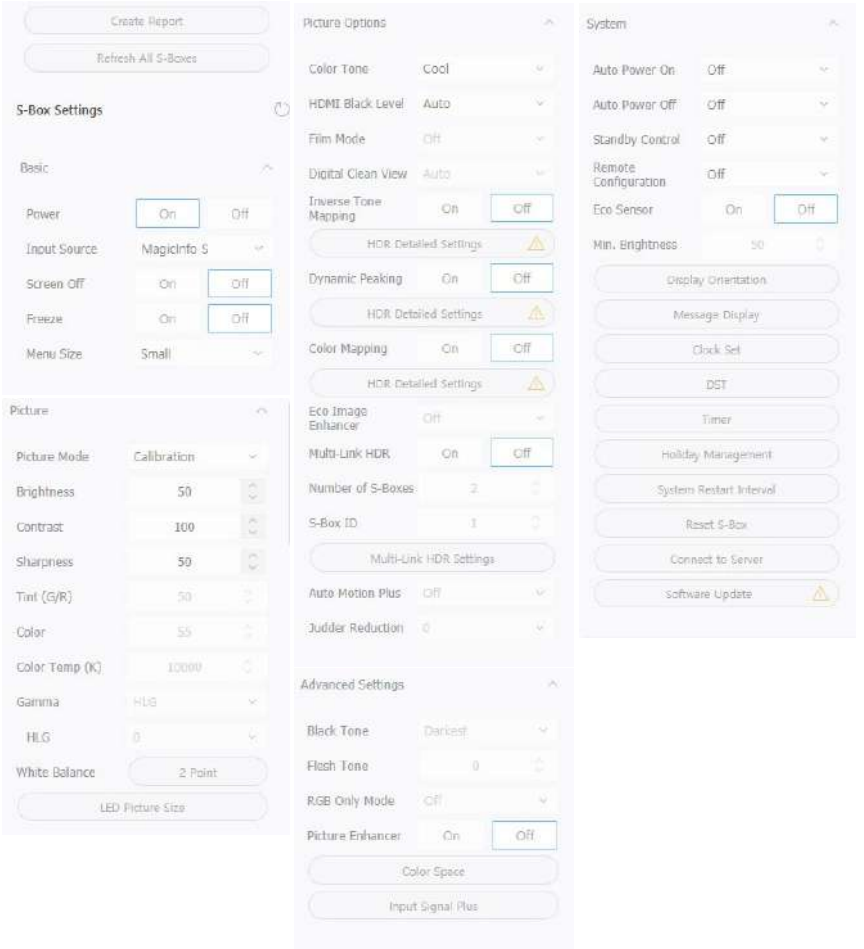


9. LSM configuration and usage description

9-1. Control Program for PC

❑ Main Window – Connection Window – Device Information / Setting View

1. Basic :
   . On/Off, Input source, Screen Mute / Freeze, Menu Size
2. Picture
   . Picture Mode, Brightness / Contrast /
   Sharpness, Color, Tint(G/R), Color Temp(K),
   Gamma, White Balance
3. Picture Options
   . Color Tone, HDMI Black Level, Film Mode, HDR
4. Advanced Settings
   . Black Tone, Flesh Tone, Color Space, Input Signal Plus
5. System
   . Auto Power On/Off, Standby Control
   Clock, Timer, System Restart Interval
   Software Update



9. LSM configuration and usage description

9-1. Control Program for PC

❑ Main Window – Connection Window – Device Information/Setting View

6. Cabinet Settings

. Pixel RGB Data Reload / Request *

. OnScreen Display On / Off

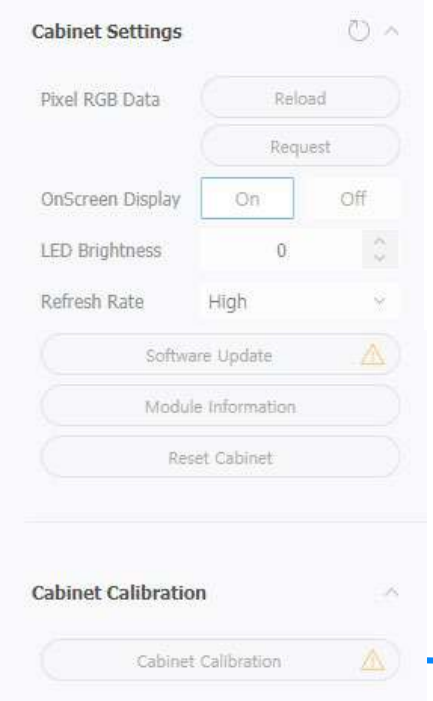
. LED Brightness

. Software Update

7. Cabinet Calibration

. Cabinet / Module / Edge

. Gradation



※ Caution

- When performing the Pixel Reload function, it may take about 15 mins to copy CC Data. If any command is entered into the Cabinet or S-Box before the OSD disappears during the function operation, the CC data may be damaged. If the OSD disappears after the operation is completed, make sure to reset the power of the cabinet and proceed other command.

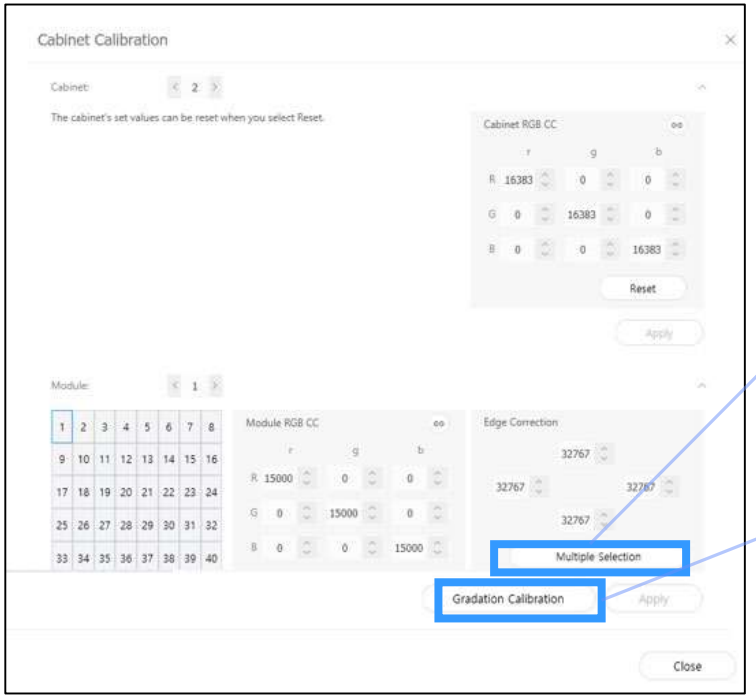
Refer to next page

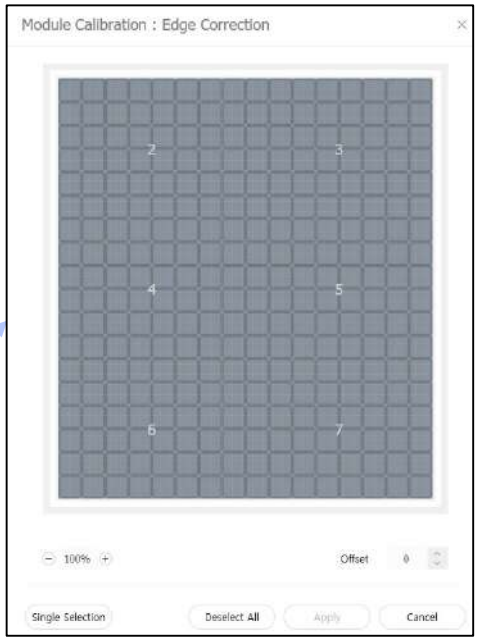
9. LSM configuration and usage description

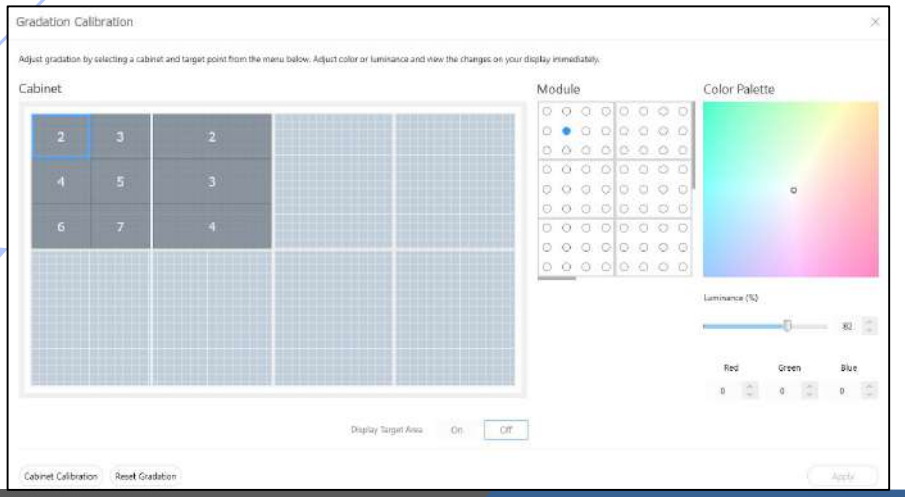
9-1. Control Program for PC

❑ Main Window – Cabinet Calibration

- RGB CC control for Cabinet and Module
- Edge Correction RGB CC control (Single / Multi)
- Gradation control







9. LSM configuration and usage description

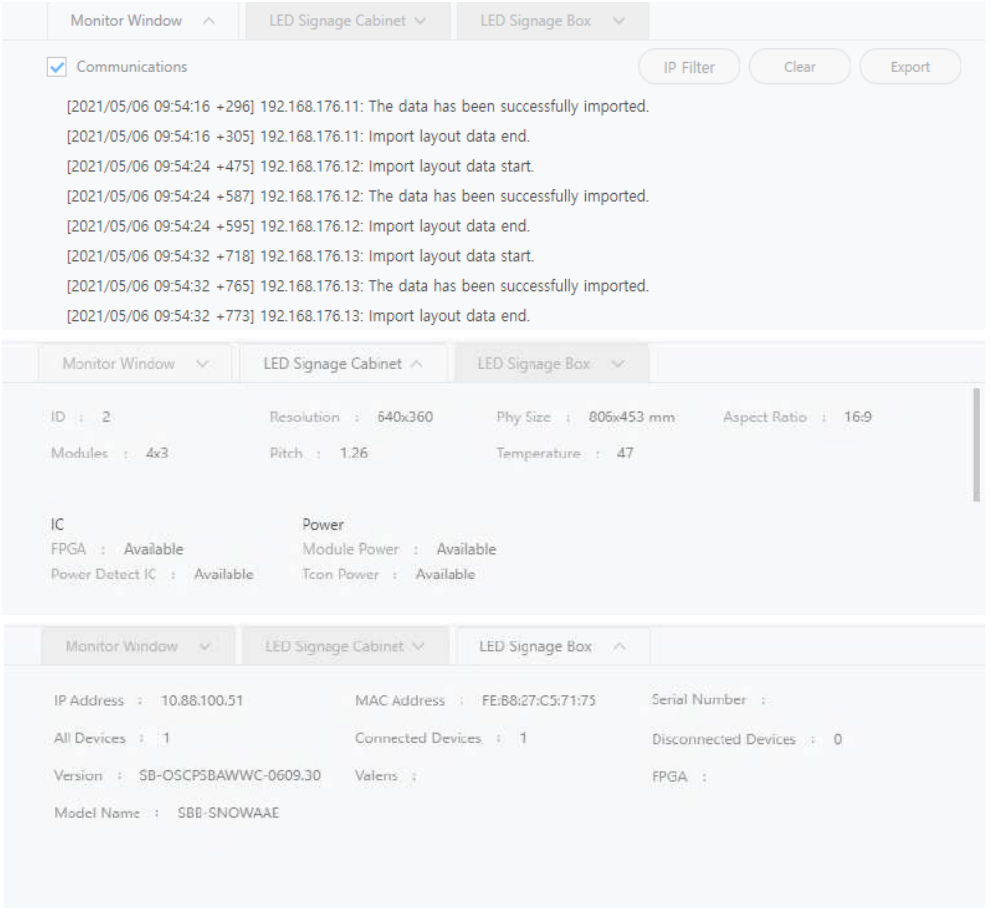
9-1. Control Program for PC

❑ Main Window – Connection Window – Sub Information View

1. Monitor Window:
   You can check the MDC communication log during extraction by Export button

2. LED Signage Cabinet:
   IC and Power information

3. LED Signage Box:
   Basic information (IP address, MAC address, Serial number, Versions, Model Name), Number of LED Cabinet (All, Connect, Unconnected)

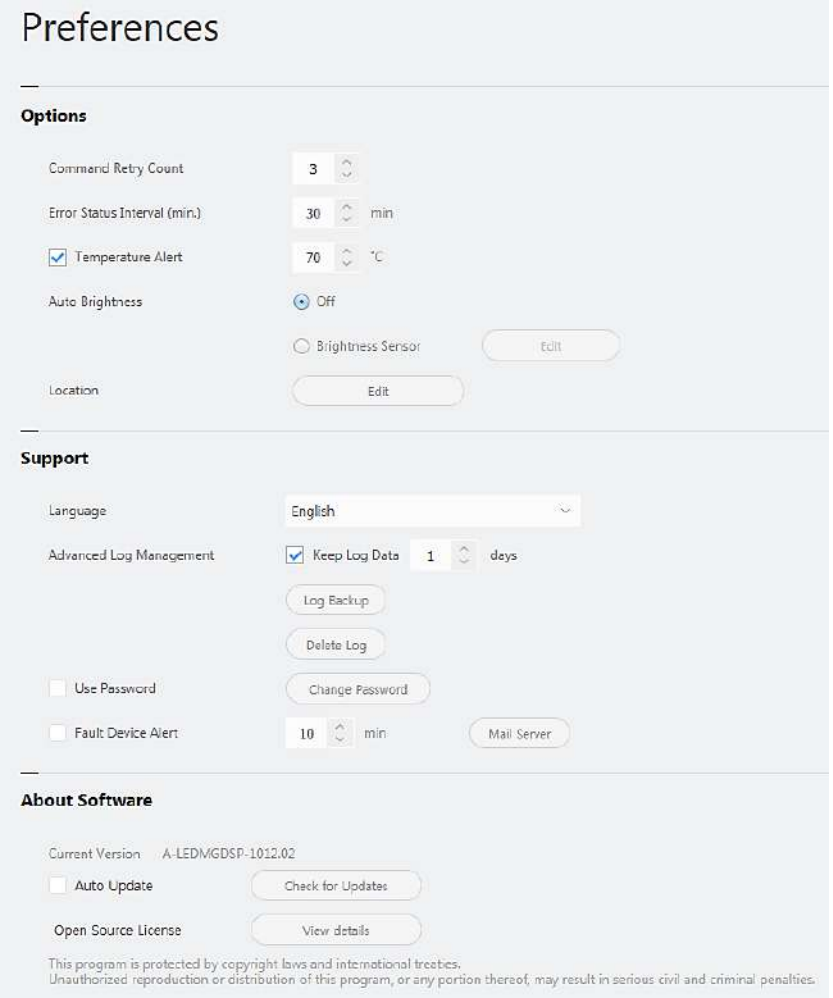


9. LSM configuration and usage description

9-1. Control Program for PC

❑ Main Window - Preferences

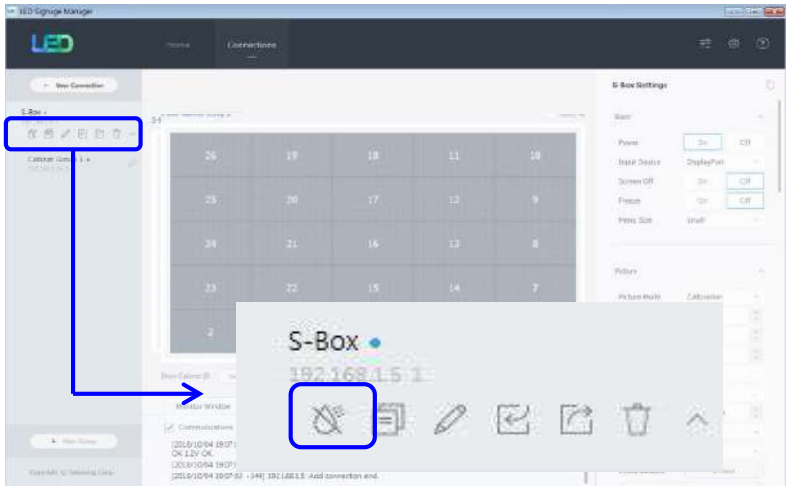
1. Options
   Command Retry Count
   Error Status Interval (Enable / Disable)
   Temperature Alert
2. Support
   Language
   Advanced Log Management
   Mail alert
   Change Password
3. About Software
   Check current version
   Update (for LSM)

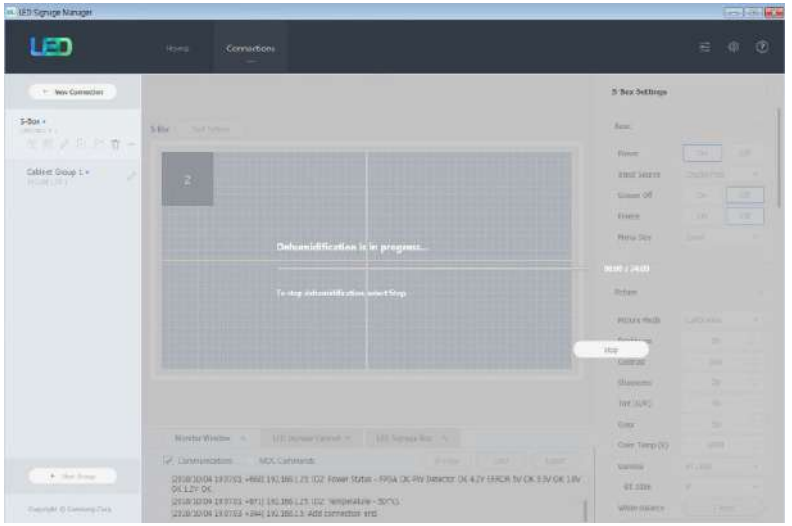


9. LSM configuration and usage description

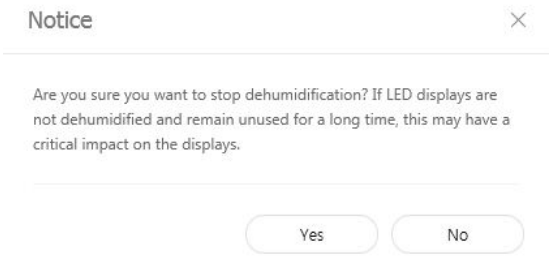
9-1. Control Program for PC

❑ Dehumidification





1. S-Box > Click Dehumidification icon
2. Start Dehumidification mode (24 hours)
3. Check progress
4. You can Stop it by “Stop” button



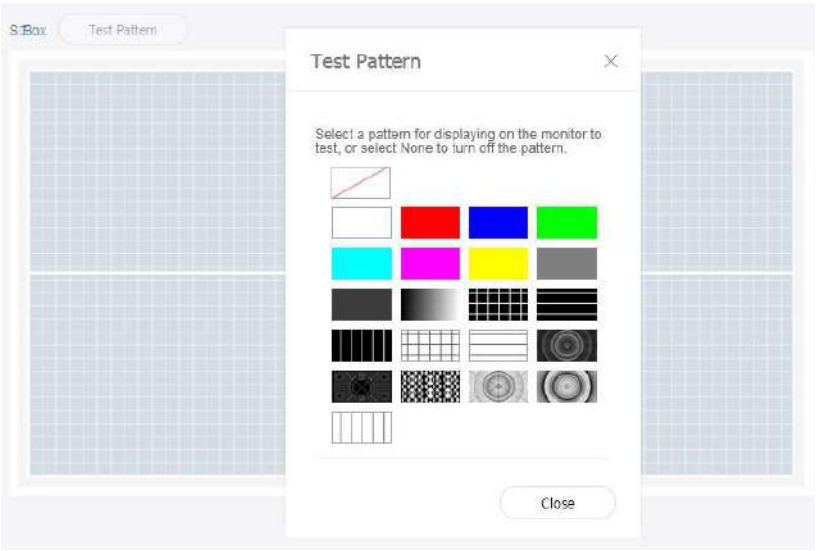
9. LSM configuration and usage description

9-1. Control Program for PC

❑ Test Pattern

1. Use test pattern of S-Box
   – Used for cabinet installation

※ When Test Pattern is turned ON, OFF or changed, the background screen may be displayed for a while due to Overlay layer switching



9. LSM configuration and usage description

9-1. Control Program for PC

❑ Power Mode

1. Keep LED cabinet's Power to be not turned off for redundancy installation.

2. Follow next steps to enable it.

   A. Close LSM and move to the LSM installation path

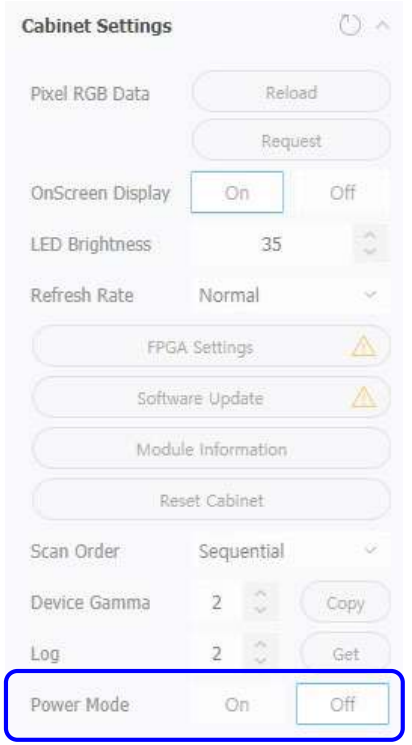
   B. Open LEDDisplayManagement_Config.xml file as Edit mode

   C. Change value from 0 to 1 of <ShowAdvancedSettings> and Save it.

   ※ If changes are not saved due to Windows OS permission problems, you can proceed by moving the file to the DESKTOP, editing it, and copying it back to the original folder.

   D. Run LSM again. You can see the "Power Mode" like right side.

3. If you click "On", LED Cabinet's power will be always ON.



9. LSM configuration and usage description

9-2. Software Update – Cabinet

※ Files are different according to update method (LSM or USB) for AM3352
※ Another tool is needed to update FPGA for USB using.

.

L-IWBMWWAC-xxxx.x Code Release

❑ Update via LSM

1. Prepare the file for SW File update

※ Please use the latest version of software.
※ You can download the latest version via SLM web sites.
- Site URL : https://displaysolutions.samsung.com/support/resources/product-support
  - Make sure the red parts are the same as the actual version of the products.
  - Make sure the blue parts are higher than the actual version of the products.

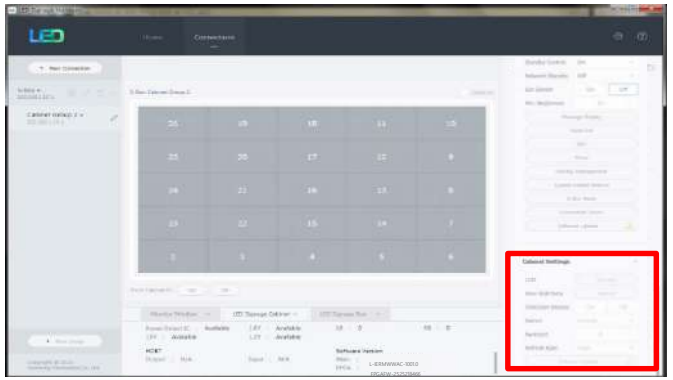
Cabinet : Main - L-xxxMWWAC-nnnn.n → xxx = Pan name, nnnn.n = version
FPGA - aabbc_dddef → aa = pixel pitch, bb = LED package type, c= year, ddd = date, e = hour, f = Driver IC

9. LSM configuration and usage description

9-2. Software Update – Cabinet

❑ Update via LSM

2. Click "Software Update" of Cabinet Settings



※ Files are different according to update method (LSM or USB) for AM3352
※ Another tool is needed to update FPGA for USB using.

L-IWBMWWAC-xxxx.x Code Release

3. Click "Browse" button to select update file.

※ Never choose "info.txt" file. It causes system failure.

4. Click "Update" button to start software update.

9. LSM configuration and usage description

9-2. Software Update – Cabinet

❑ Update via USB

※ Files are different according to update method (LSM or USB) for AM3352
※ Another tool is needed to update FPGA for USB using.

- L-IWAMWWAC-xxxx.x Code Release
- L-IFAMWWAC-xxxx.x Code Release

1. Prepare the following items.

   - USB memory formatted in FAT32 format
   - Copy the update file to the USB root folder

2. Insert the memory into the USB input terminal on the back of the cabinet. (Right from the front)

   - Located at the bottom right of the T-Con board (USB terminal)

3. Apply power while pressing the toggle switch on the back of the cabinet.

   - Apply AC power while pressing.
   - After AC power is applied, press the switch for 4 seconds to proceed with the update.

4. After attaching and detaching power, enter the test pattern and check the cabinet info.

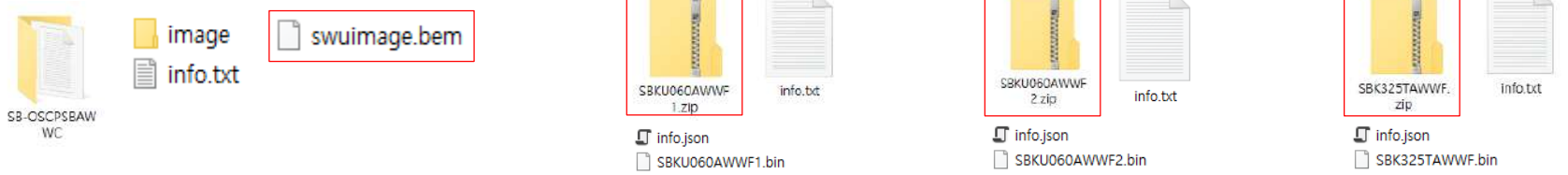
   - Refer to enter the test pattern

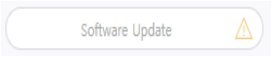
9. LSM configuration and usage description

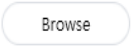
9-2. Software Update – S-Box

❑ Update via LSM

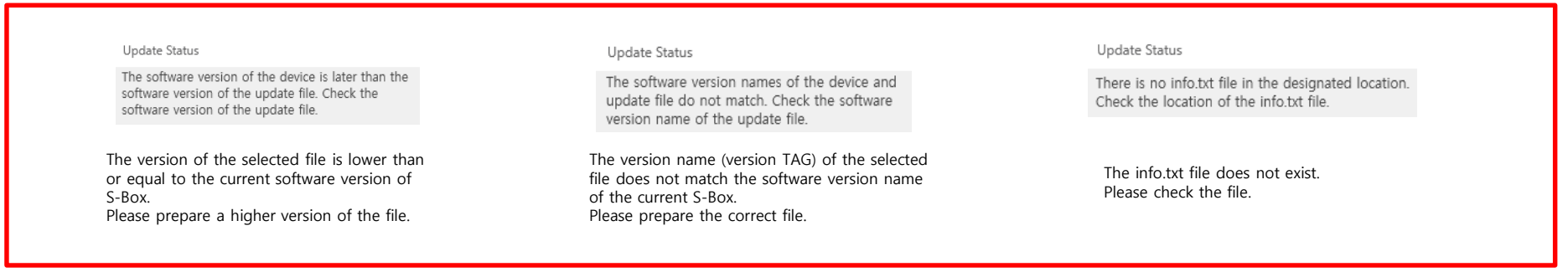
1. Prepare software file to be updated. (The file in the red box will be selected for software update.)



2. Click  button in S-Box settings

3. Choose prepared file by clicking  button.

4. Choose S-Box to be updated from the list, and click 



9. LSM configuration and usage description

9-2. SW update – S-Box ② Update via USB

1) OSCAR-P Main Micom Software upgrade

- **USB Download**

Firmware upgrade downloaded from the "www.samsung.com" website

1. Connect the USB drive where the files are stored to the set.
(Be careful not to disconnect the power or USB drive during the upgrade.)

2. When the firmware upgrade is complete, the set will automatically turn off and then turn on again.

3. After completing the upgrade, check the firmware version.
(The new version has a higher number than the old version.)

※ Note) Since it is recognized as a file name, it is safe to have other model upgrade files together.

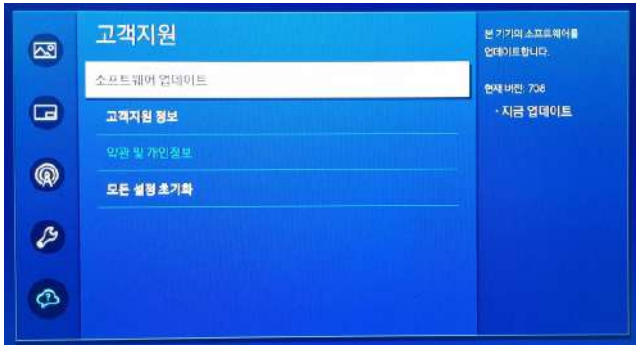
※ Note) After upgrading the software, the setting values specified by the existing user are returned to the default values. We recommend that you write down the current settings to facilitate resetting after upgrade.

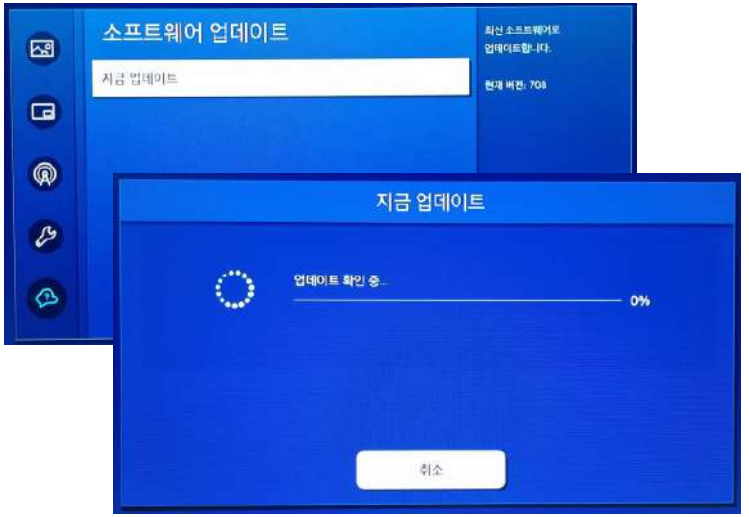
9. LSM configuration and usage description

9-2. SW update – S-Box ② Update via USB

1) OSCAR-P Main Micom software upgrade

1. Save the "SB-OSCPSBAWWC" folder to the USB root.
2. Connect USB.
3. Click the "MENU" key on the remote control.
4. Select the "Customer Support" menu.
5. Select the "Software Update" menu.
6. Select the "Update Now" menu to start the upgrade.
7. Wait for the upgrade to complete.
8. Check the SW version.





9. LSM configuration and usage description

9-2. SW update – S-Box ② Update via USB

2) Sub Micom Upgrade

(You can upgrade Sub Micom in Factory Mode. It takes about 1-2 minutes.)

1. Save the "OSPMICOM_LXTV_SS.bin" file to the USB root.
2. Connect USB.
3. Enter the factory mode.
4. Select the "SVC → UPGRADE" menu.
5. Move the cursor to the "SUBMICOM UPGRADE" menu.
6. Click the Enter button.
7. Press the '▶' button on the remote control to start the upgrade.

9. LSM configuration and usage description

9-2. SW update – S-Box ② Update via USB

3) SE19HM02 (Novatek), KU060/K325T (FPGA) Software Upgrade

※ Screen blinking may occur during Firmware update

1. Save the necessary files to each folder on the USB root.
   - SE19HM02: under SBNVT19HWWS folder
   - KU060 #1: Under the SBKU060AWWF1 folder
   - KU060 #2: Under the SBKU060AWWF2 folder
   - K325T: SBK325TAWWF folder
   - IG K325T: SBL325TIGWWF folder
2. Connect USB.
3. Enter the factory mode.
4. "In Factory, go to SVC> Upgrade FW Update> FW Update.
5. Move the cursor to the item you want to update.
6. Click the Enter button on the remote control to start the upgrade.

9. LSM configuration and usage description

9-2. SW update – S-Box ② Update via USB

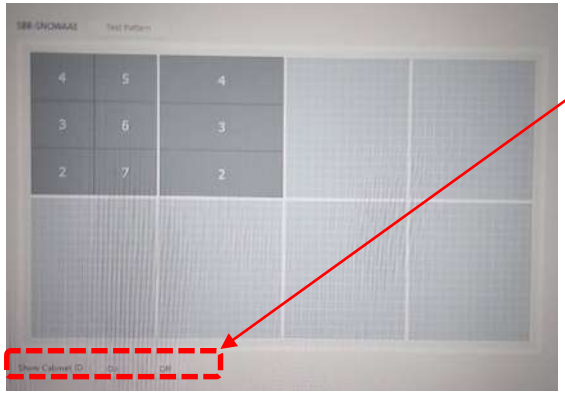
4) Valens TX/RX upgrade

(You can upgrade your Valens TX/RX in Factory Mode. It takes about 20 minutes.)

1. Save the "TB-VSTXSHWWS.bin" and "TB-VSRXSHWWS.bin" files to the USB root.
2. Connect USB.
3. Enter the factory mode.
4. Select the "SVC → UPGRADE" menu.
5. Move the cursor to the "VALENS UPGRADE" menu.
6. Click the Enter button.
7. Press the '▶' button on the remote control to start the upgrade.

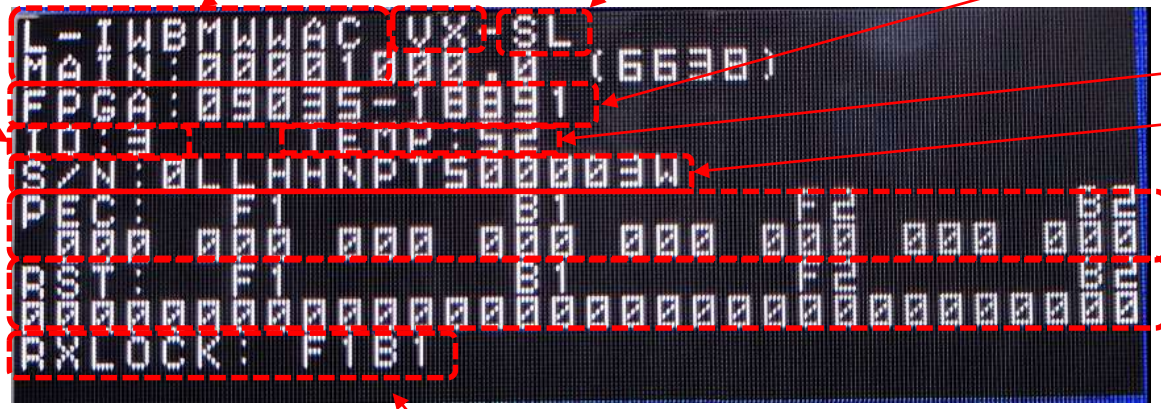
9. LSM configuration and usage description

❑ OSD Information



[P0.94 4K, 3x3 LSM]

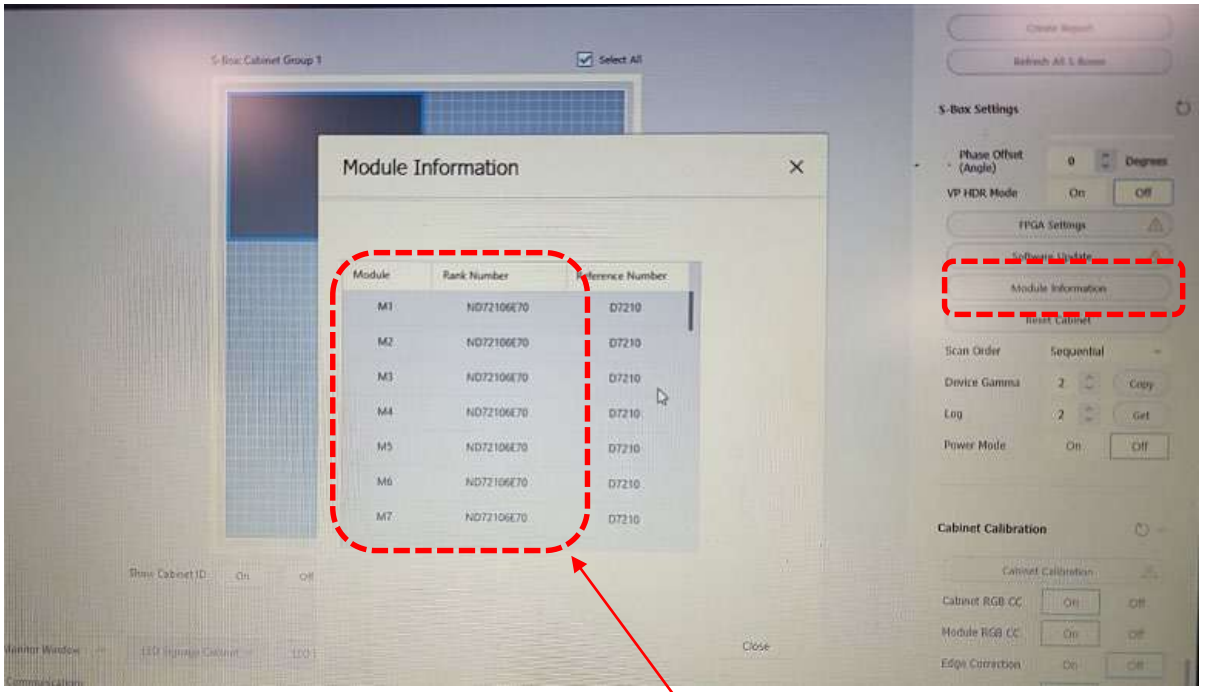
The OSD information of the cabinet can be turned on/off through the LSM.



9. LSM configuration and usage description

❑ Module Information

check each module information of the cabinet through LSM.



LED Bin information of each module

Contents

Appendix 1 – S-Box Network IP Settings

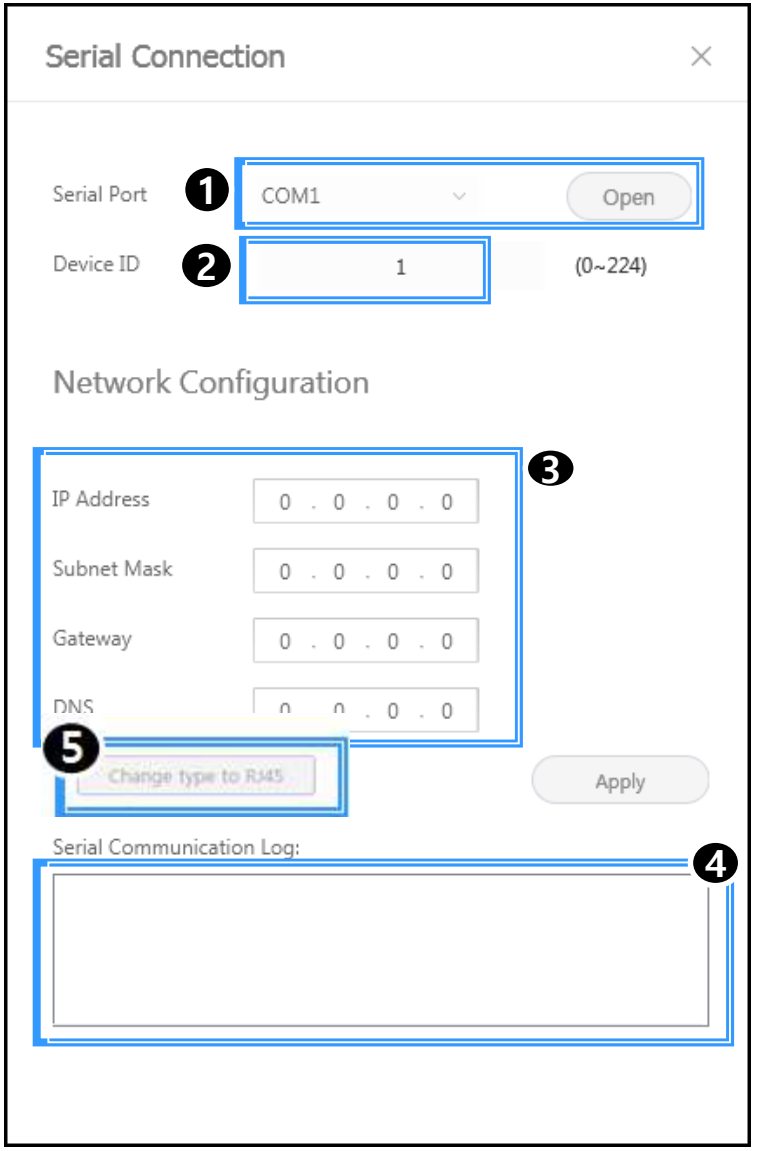
■ S-Box Network IP setting using PC

Using the file explorer, go to the folder where LSM is installed,

Run [Start]-Programs-Samsung-LED Signage Manager-Network Configuration.

1. Connect PC and S-Box with RS232C Cable, select the connected Serial Port, and click Open button to connect.
2. The ID of S-Box is set to 1 by default.
3. Enter S-Box's IP, Subnet Mask, Gateway, and DNS, and click Apply button to transmit.
4. Check the result. Check the MDC Protocol setting status.
5. If the IP setting is successful, the Change Type to RJ45 button is displayed. If the connection between LSM and S-Box works normally, click Change Type to RJ45 to change the S-Box connection mode to RJ45.

[★ Caution!] It is recommended to set a static IP address when setting up the S-Box network.
If the IP is changed when using DHCP, the LSM connection may be lost.
The 192.168.10.x band is used for communication inside the LED Cabinet.
Please use an IP other than the applicable band.
Do not assign an IP randomly, but get an S-Box (one) IP assigned through your IT administrator.



Appendix 2 - S-Box Installation and Connection

• Cautions when installing S-Box (SNOWJAU/SNOWAAE)

① It is recommended to install it in a 19inch Server rack.

② Install so that the vents are open and do not turn sideways or overturn.

③ Be careful as blocking the ventilation holes may cause the product to overheat.

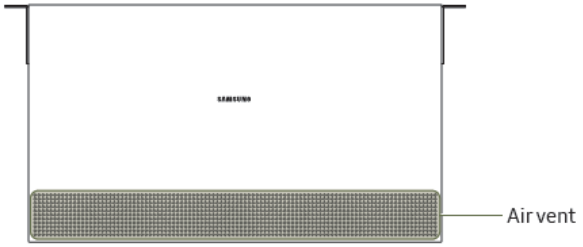
④ When installing multiple S-Boxes, install them at least 1U (44.45mm) away from the top product.

⑤ When installing on a wall, the product must be 10mm or more apart from the wall in the vertical, left and right, and in the case of a cable port, install it 50mm or more apart for cable connection

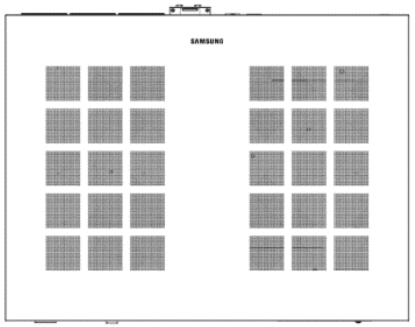
⑥ Keep the residual heat inside the rack below 35°C.

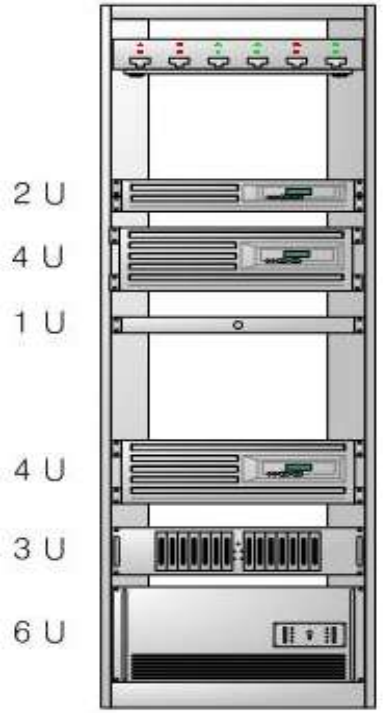
⑦ Be careful not to let liquids, etc., enter the product's ventilation holes.

SNOWJAU



SNOWAAE





Appendix 2 - S-Box Installation and Connection

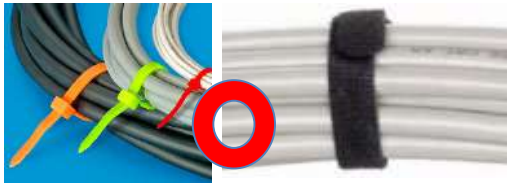
• S-Box Connection

⑧ Instruction for handling HDBaseT (HDBT) cable

- Use HDBase-T cables with 15 meter long at minimum and 100 meter long at maximum.
- Use only HDBase-T Alliance recommended Cables as described below.
  HDBT Alliance Site : https://hdbaset.org/hdbaset-recommended-cables/
- Do not over bend HDBase-T cables for cable integrity.
- Do not tie HDBase-T cables tightly in bundling.
- Do not bundle HDBase-T cables with any AC power cable.
- Keep away from electromagnetic interference environments (ex.high voltage cables, electric motor-based devices such as elevators or refrigerators, fluorescent lamps, lighting equipment, etc.).
- HDBT-Keep the distance between AC power cables: Keep at least 12" (=30.48cm) away from AC power cables.
- HDBT cables from one S-Box can be managed by bundling up to 4 cables.

★ Orderly Rolled (Recommend)

★ Random Rolled (Not Recommend)



Appendix 2 - S-Box Installation and Connection

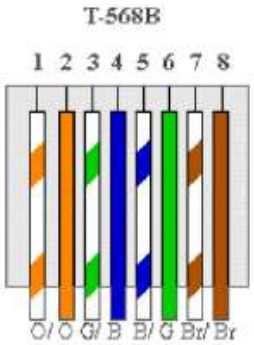
• S-Box Connection

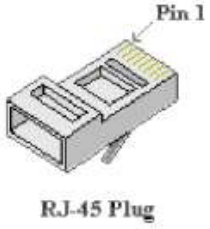
⑨ Finishing method for HDBase-T Cable

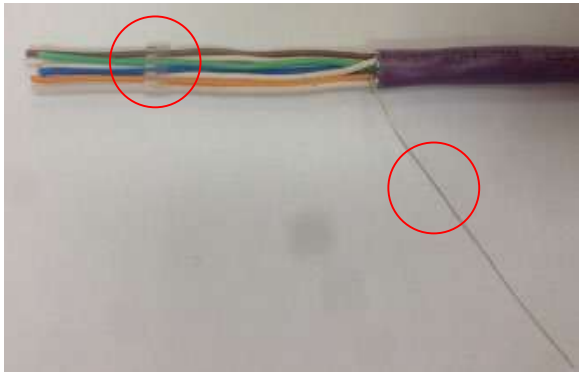
- **STP RJ45 shielded Plug**. RJ45 Connector should be CAT6 or CAT7 shielded RJ45 and load bar.

Load bar

- **Inserting a conductor (conductor) into the plastic loader:** Insert the conductor into the load bar of the RJ45 connector as shown below in the conductor structure (T-568B). Plastic load bar is absolutely necessary (because the thickness of the CAT6 cable is not located flat on the RJ45 connector like the general CAT5)







Load bar and Drain wire

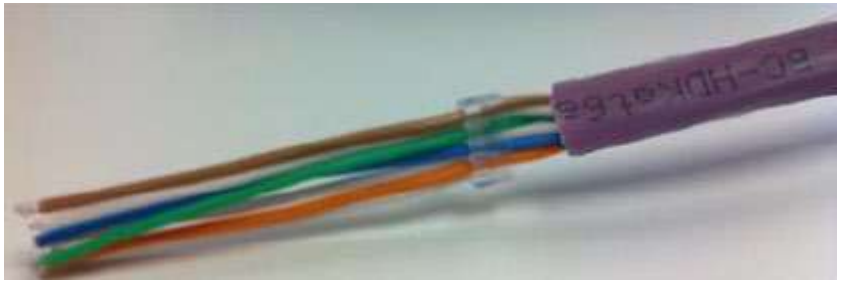
Wires aligned with Load bar

Appendix 2 - S-Box Installation and Connection

• S-Box Connection

⑨ Finishing method for HDBase-T Cable

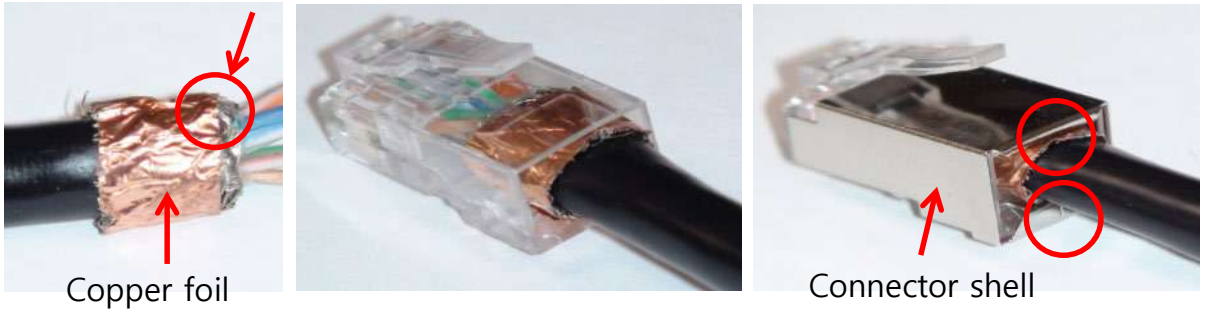
- Push the plastic loader as close as possible: Push the plastic load bar as close as possible to the cable.



- Cut all the wires leaving about 0.5” with a wire cutter.
- Ground is reinforced using drain wire. (refer to next page)

※ Without drain wire: Reinforced by contacting the connector shell as shown below using copper foil

Fold Al foil or Braid back and wrap it with Copper foil

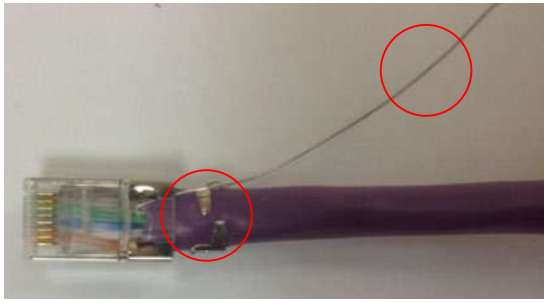


Appendix 2 - S-Box Installation and Connection

• S-Box Connection

⑩ Finishing method for HDBase-T Cable

- Drain wire is combined on the cable jacket as shown in the figure below using pliers.



- **Soldering the drain wire to the metal part of the RJ45 connector: After soldering the drain wire to the metal part of the RJ45 connector, cut off unnecessary parts. Conductors and shield continuity check with cable tester.**

Recommended) Drain wire soldering + Copper foil

Appendix 2 – Optical cable loss

- **Cable Loss according to Random mating Grade**

Random mating	Cable loss
Garde A	0.07 dB≤ Grade A ≤ 0.15 dB
Garde B	0.12 dB≤ Grade B ≤ 0.25 dB
Garde C	0.25 dB≤ Grade C ≤ 0.50 dB
Garde D	0.50 dB≤ Grade D ≤ 1.00 dB

- **The difference of Multi-Mode Cables**

		OM1	OM2	OM3	OM4
Core diameter		62.5 um	50 um	50 um	50 um
Cable color		Orange	Orange	aqua	aqua
Transmission distance	100M	2,000m	2,000m	2,000m	2,000m
	1G	275m	550m	550m	1,000m
	10G	33m	82m	300m	550m
	100G	-	-	100m	150m

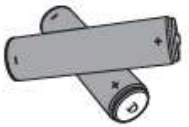
Appendix 3 - S-BOX Accessory List

◆ Accessories configuration (SNOW-JMU)

BN68-12473A
간단 사용 안내서

BN68-01146G
보증서

※ 표 참고
전원 케이블



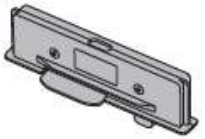
4301-000103
건전지 (AAA x 2)

BN59-01234A
리모컨

BN39-01545B
RS232C 어댑터

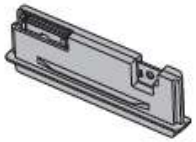
BN44-00924A
직류전원장치

BN39-02776A
OCM 케이블 x 4



BN96-49229A
센서

BN96-49132A
모듈 RX x 2



BN59-01317A
Bluetooth/Wi-Fi 모듈

BN39-02473C
Bluetooth/Wi-Fi 모듈 케이블

BN61-16067A
랙케이스 장착용 브라켓 x 2

6003-000133
나사 (M4 x L8) x 4

6003-001150
나사 (M5 x L12) x 4

BN63-18456A
가이드쿠션 x 2

BN39-02466B
USB Type-C 케이블 x 2

BN96-54035A
TX 모듈

【 Power cord by Region】

POWER CODE	
US	3903-001117
EU	3903-001118
KOREA	3903-001074
CHINA	3903-001075

Appendix 4 – AAE S-BOX Specification

◆ **SNOW-AAE Model Specification**

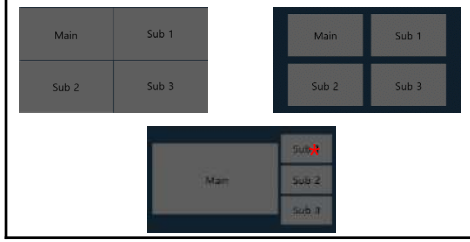
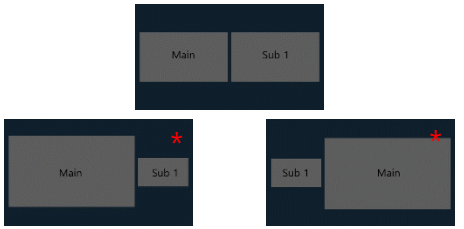
MODEL		SBB-SNOWAAE
PANEL		-
Input		HDMI1~4 In, DP In, RS232(for Service), 외장 IR/Eco, 외장 BT/WiFi, RJ45 LAN, USB, Power 24V
Output		DVI (for service), OC 8EA (to Cabinet), HDBT (for External BT/WiFi), SPDIF
Resolution	**Input**	[Default] 3840*2160@60 Hz [Max] 7680 x 4320 @ 60 Hz (DP, HDMI 4), 3840 x 2160 @ 60 Hz (HDMI 1~3)
	Output	4K 120Hz, 8K 120Hz
Platform		[SOC] OSCAR-P, [Scaler] SE19HM, [FPGA] KU060, K325T
SW	**OS**	TIZEN 6.0
	Magic Info	Magic Info 9
Additional Function		External BT/Wifi, External IR/ECO Sensor, RJ45 wired Ethernet
Power Consumption	**Voltage**	AC 100 to 240(60Hz/50Hz)
	Maximum Power Consumption	[MAX] 110W
	DPVS	0.3W ≤ 0.5W
Frequency sync	**Horizontal**	[HDMI 1~3] 30~135 kHz [DP, HDMI 4] 30~264 kHz
	Vertical	24~120 Hz
Additional Specification	**HDMI Ver**	[HDMI 1~3] 2.0, [HDMI 4] 2.1
	DP Ver	1.4a
	USB Support	USB 2.0 x2EA (0.5A)

Appendix 5 – AAE S-Box How to set Multiview function

◆About Multiview function

SOURCE → Multi View → ENTER

- When the selection button is pressed on the remote control while the Multi View is active, you can set to change the source and screen size, delete the screen and exit to full screen.
- When the 4 HDMI (Borderless) layout is selected, the sound on the HDMI 1 screen is heard, but the control bar does not appear. When any of 2 HDMI, 3 HDMI, and 4 HDMI is selected, the screen appears depending on the number of the connected devices.
- Note the following when any 8K content is input through HDMI 2.1. :
  - When the Screen Mirroring is activated through HDMI, the message indicating the unavailable content appears. (4K content is supported up to 60 Hz through HDMI connection.)
  - When using Multi-HDMI, content is played back after converting to 4K.
- Interlaced mode input is not recommended in Multi View. Use the progressive mode input.
- Multi View does not recommend frequencies above 60 Hz. The recommended input signal is 60 Hz or less
- Supported Layout list. (* marked layouts : It requires additional setting.)

4 screen	3screen	2screen	1screen + mirroring
			

Appendix 5 – AAE S-Box How to set Multiview function

◆ 4 HDMI (Borderless) Setting method

① "Source" Select -> "Multiview" Select

② "4HDMI(Borderless)" Select

③ Boardless Layout image display (video: 8K60Hz voice: HDMI1)

◆ 4 HDMI Setting method

① "Source" Select -> "Multiview" Select

② "4HDMI" Select

③ Adjust the size after selecting the desired input among 4 inputs

Appendix 5 – AAE S-Box How to set Multiview function

◆ Layout Configuration

- **Content Selection Mode**

- **Change source**
  Other HDMI source can be selected.

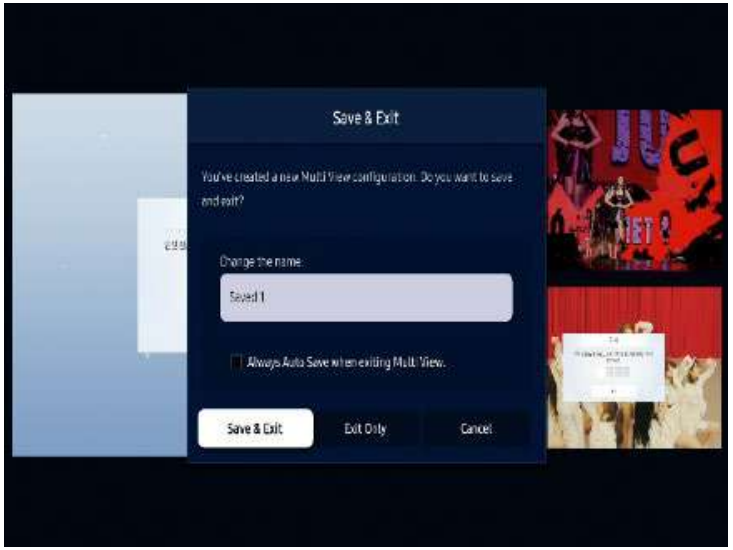
- **Change screen size**
  Screen size can be changed to large or small.

Large option

Small option

- **Exit to full screen**
  Change forused source to full screen.

◆ Saving Layout Configuration



It is possible to save layouts.
① Choose the "return" button on remote.
② Select the "Save & Exit" button.
- Layout name can modified.
- Auto Save mode supported.

Appendix 5 – AAE S-Box How to set Multiview function

◆ Supported resolution list

Resolution	H freq.(kHz)	V freq.(kHz)	CLK freq.(kHz)	Polarity(H/V)	Multi View
IBM/VESA, 640 x 480	31.469	59.940	21.175	N / N	0
Mac, 640 x 480	35.000	66.667	30.240	N / N	X
VESA, 640 x 480	37.861	72.809	31.500	N / N	X
VESA, 640 x 480	37.500	75.000	31.500	N / N	X
IBM, 720 x 400	31.469	70.087	28.322	N / P	X
VESA, 800 x 600	35.156	56.250	36.000	P / P	0
VESA, 800 x 600	37.879	60.317	40.000	P / P	X
VESA, 800 x 600	48.077	72.188	50.000	P / P	X
VESA, 800 x 600	46.875	75.000	49.500	P / P	X
Mac, 832 x 624	49.726	74.551	57.284	N / N	0
VESA, 1024 x 768	48.363	60.004	65.000	N / N	X
VESA, 1024 x 768	56.476	70.069	75.000	N / N	X
VESA, 1024 x 768	60.023	75.029	78.750	P / P	X
VESA, 1152 x 864	67.500	75.000	108.000	P / P	X
Mac, 1152 x 870	68.681	75.062	100.000	N / N	0
VESA, 1280 x 720	45.000	60.000	74.250	P / P	0
VESA, 1280 x 800	49.702	59.810	83.500	N / P	0
VESA, 1280 x 1024	63.981	60.020	108.000	P / P	X
VESA, 1280 x 1024	79.976	75.025	135.000	P / P	X
VESA, 1366 x 768	47.712	59.790	85.500	P / P	X
VESA, 1440 x 900	55.935	59.887	106.500	N / P	0
VESA, 1600 x 900	60.000	60.000	108.000	P / P	0
VESA, 1680 x 1050	65.290	59.945	146.250	N / P	0
VESA, 1920 x 1080	67.500	60.000	148.500	P / P	0
VESA CVT, 1920x1080	66.587	59.934	138.500	P / N	0
VESA CVT, 2560x1440	88.787	59.951	241.500	P / N	0
VESA CVT, 3840x2160	133.313	59.997	533.250	P / N	0
CTA-861 VIC 3, 720x480	31.469	59.940	27.000	N / N	0
CTA-861 VIC 4, 1280x720	45.000	60.000	74.250	P / P	0
CTA-861 VIC 5, 1920x1080i	33.750	60.000	74.250	P / P	X
CTA-861 VIC 16, 1920 x 1080	67.500	60.000	148.500	P / P	0

Resolution	H freq.(kHz)	V freq.(kHz)	CLK freq.(kHz)	Polarity(H/V)	Multi View
CTA-861 VIC 18, 720x576	31.250	50.000	27.000	N / N	0
CTA-861 VIC 19, 1280x720	37.500	50.000	74.250	P / P	X
CTA-861 VIC 20, 1920x1080i	28.125	50.000	47.250	P / P	0
CTA-861 VIC 31, 1920x1080	56.250	50.000	148.500	P / P	0
CTA-861 VIC 32, 1920x1080	27.000	24.000	74.250	P / P	0
CTA-861 VIC 33, 1920x1080	28.125	25.000	74.250	P / P	0
CTA-861 VIC 34, 1920x1080	33.750	30.000	74.250	P / P	0
CTA-861 VIC 93, 3840x2160	54.000	24.000	297.000	P / P	0
CTA-861 VIC 94, 3840x2160	56.250	25.000	297.000	P / P	0
CTA-861 VIC 95, 3840x2160	67.500	30.000	297.000	P / P	0
CTA-861 VIC 96, 3840x2160	112.500	50.000	594.000	P / P	0
CTA-861 VIC 97, 3840x2160	135.000	60.000	594.000	P / P	0
CTA-861 VIC64, 1920 x 1080	112.500	100.000	297.000	P / P	X
CTA-861 VIC63, 1920 x 1080	135.000	120.003	297.000	P / P	X
CTA-861 VIC117, 3840 x 2160	225.000	100.000	1188.000	P / P	X
CTA-861 VIC118, 3840 x 2160	270.000	120.000	1188.000	P / P	X
CTA-861 VIC218, 4096 x 2160	225.000	100.000	1188.000	P / P	X
CTA-861 VIC219, 4096 x 2160	270.000	120.000	1188.000	P / P	X
CTA-861 VIC194, 7680 x 4320	108.000	24.000	1188.000	P / P	X
CTA-861 VIC196, 7680 x 4320	132.000	30.000	1188.000	P / P	X
CTA-861 VIC198, 7680 x 4320	220.000	50.000	2376.000	P / P	X
CTA-861 VIC199, 7680 x 4320	264.000	60.000	2376.000	P / P	X

Thank you