

LG Digital Signage SERVICE MANUAL

CHASSIS : DWA2A

MODEL: LAEC015 LAEC015-GN

CAUTION

BEFORE SERVICING THE CHASSIS, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



P/NO : MFL63261649 (2112-REV00)

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PRECAUTION

WARNINGFORTHESAFETY-RELATEDCOMPONENT.

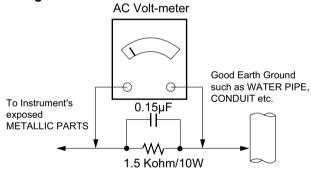
- There are some special components used in monitor that are important for safety. *These parts are marked* A *on the Exploded View.* It is essential that these critical parts should be replaced with the manufacturer's specified parts to prevent electric shock, fire or other hazard.
- Do not modify original design without obtaining written permission from manufacturer or you will void the original parts and labor guarantee.

Use only an insulated screwdriver to prevent electric shock.

CAUTION ELECTRIC SHOCK POSSIBLE !

• Handle the wires and connectors of the inverter. Circuit with extreme caution. If the wires are pressed together they can cause a short and may burn or cause a fire.

Leakage Current Hot Check Circuit



When the load is 25A between Earth and 2nd Ground for 1 second, Resistance must be less than 0.1 ohms *Base on Adjustment standard

Replaceable batteries A CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE.

ADVARSEL

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même

Remplacer uniquement avec une batterie du même type ou d'un type équivalent

recommandé par le constructeur.

Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

VORSICHT

Explosionsgefahr bei unsachgemäßem Austausch der Batterie

Entsorgung gebrauchter Batterien nach Anleitung

注意

電池を誤って交換すると爆発する危険があります。

必ず同一又は同等のタイプのものと交換して下さい。

SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the SAFETY PRECAUTIONS on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

- 1. Always unplug the receiver AC power cord from the AC power source before;
 - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
 - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
 - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.

CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

- Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
- Do not spray chemicals on or near this receiver or any of its assemblies.
- 4. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)

CAUTION: This is a flammable mixture.

Unless specified otherwise in this service manual, lubrication of contacts in not required.

- 5. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
- Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
- Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.

Always remove the test receiver ground lead last.

8. Use with this receiver only the test fixtures specified in this service manual.

CAUTION: Do not connect the test fixture ground strap to any heat sink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

 Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.

- 2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
- 3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
- 4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
- 5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
- 6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
- Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

 Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

- 1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500 °F to 600 °F.
- 2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
- 3. Keep the soldering iron tip clean and well tinned.
- Thoroughly clean the surfaces to be soldered. Use a mall wirebristle (0.5 inch, or 1.25cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
- 5. Use the following unsoldering technique
 - a. Allow the soldering iron tip to reach normal temperature. (500 °F to 600 °F)
 - b. Heat the component lead until the solder melts.
 - c. Quickly draw the melted solder with an anti-static, suctiontype solder removal device or with solder braid. CAUTION: Work quickly to avoid overheating the circuit board printed foil.
- 6. Use the following soldering technique.
 - a. Allow the soldering iron tip to reach a normal temperature (500 $^\circ\text{F}$ to 600 $^\circ\text{F}$)
 - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
 - c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

CAUTION: Work quickly to avoid overheating the circuit board printed foil.

d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

- Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
- Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

- 1. Carefully insert the replacement IC in the circuit board.
- 2. Carefully bend each IC lead against the circuit foil pad and solder it.
- 3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor

Removal/Replacement

- 1. Remove the defective transistor by clipping its leads as close as possible to the component body.
- Bend into a "U" shape the end of each of three leads remaining on the circuit board.
- 3. Bend into a "U" shape the replacement transistor leads.
- 4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device

Removal/Replacement

- 1. Heat and remove all solder from around the transistor leads.
- 2. Remove the heat sink mounting screw (if so equipped).
- 3. Carefully remove the transistor from the heat sink of the circuit board.
- 4. Insert new transistor in the circuit board.
- 5. Solder each transistor lead, and clip off excess lead.
- 6. Replace heat sink.

Diode Removal/Replacement

- 1. Remove defective diode by clipping its leads as close as possible to diode body.
- 2. Bend the two remaining leads perpendicular y to the circuit board.
- 3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
- 4. Securely crimp each connection and solder it.
- Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor

Removal/Replacement

- 1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
- 2. Securely crimp the leads of replacement component around notch at stake top.
- 3. Solder the connections.

CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

- 1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
- 2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
- 3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
- 4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

- 1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
- 2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
- 3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.

Carefully crimp and solder the connections.

CAUTION: Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

SPECIFICATION

1. Application range This specification is applied to the DWA2A chassis.

2. General Specification

No		Item		Specification	Remarks
1	Input	HDMI(3)	Maximum Resolution	3840x2160@30Hz	
			Recommend Resolu- tion	1920x1080@60Hz	
			HDCP Support	HDCP2.2	
			Color Format & Depth	Supporting color format - RGB444/YCbCr444 8/10/12bits - YCbCr422 12bit	
		DP	Maximum Resolution	3840x2160@30Hz	* DP Version: 1.2a
			Recommend Resolu- tion	1920x1080@60Hz	
			HDCP Support	HDCP1.3, HDCP2.2	
			Color Format & Depth	Supporting color format (8 Bits) - RGB444 - YCbCr444	
		USB	USB Version	2.0	* Device: Memory stick, Mouse, Service(F/W Download)
		RS232C In	UART Comm. w/ IR Dai	isy Chain	4P, 3.5mm Phone Jack
		IR/Brightness	Туре	Dongle type	5P, 3.5mm Phone Jack
		Sensor	IR Receiver	0	
			Brightness sensor	0	
		LAN	RJ45, 100Base-T	0	SuperSign CMS
2	Output	DP	Maximum Resolution	NA	SST(Single Stream Transmit)/Daisy Chain
			Recommend Resolu- tion	NA	
			HDCP Support	NA	
			Color Format & Depth	NA	
		Speaker Out	Туре	Built-in	* Measured conditon - USB(Music) : - 9dB - USB(Movie/AC3), HDMI(Music): -12dB - HDMI(PCM 2ch): -20dB - PC Audio In: 0.7Vrms
			Impedance	Тур. 6Ω	
			Output mode	BTL	
			Output Power	9W + 9W	
		Audio Out	Output type	NA	
			Output level	NA	
			Supporting mode	NA	
		SPDIF Out	Optical Audio out	0	
		RS232C Out	UART Comm. w/ IR Dai	isy Chain	4P, 3.5mm Phone Jack

No		Item		Specification			Remarks
3		Temp. Sensor	MM3286CFBE : 85 °C P	rotection			Board-in
	Eog_	Current Sen- sor	x		Board-in		
		Wi-Fi/BT	Wi-Fi	802.11ac, 802.11n			Built-in (LGSBWAC72)
			BT	Version 4.0,	Support Beaco	on	
		Logo Detach- able	none				
4		Operating	Horizontal frequency	27 - 68 kHz			
	signal	Frequency	Vertical frequency	24 - 62 Hz			
			Synchronization	Separate Sy	nc, Digital		
5	Remo	ote control	Wireless Remote Contro	(Infrared Radi	iation)		LG Code
		CON Working vity, Straight	Working Sensitivity, Straight	Min. 6m			
6	Lo	cal Key	8 key				INPUT, MENU, ν, ^, <, >, AUTO/ SET, Φ/Ι
7	Input Change Time		HDMI	3.0 sec + 10% below			1920x1080@60Hz (1080p@60Hz)
			DVI	NA			NA
			DP	5.0 sec + 10	% below	1920x1080@60Hz (1080p@60Hz)	
8	RTC Clo	ock Accuracy	± 3sec during 24 hours				
			Min	Тур	Max		
9	Power ON Time	Screen Mute			10	sec	
10	Standby D	Discharge Time	On Condition : No more the	an 1s, Off Con	dition : No more	e than 3s	
11	Module Li	fe Time		30,000		Hrs	
12	Environ- ment	Operation Temperature	0		40	deg	LGE Specification
	Condition	Operation Humidity	10		90	%	LGE Specification
		Storage Temperature	-10		50	deg	LGE Specification
		Storage Humidity	5		90	%	LGE Specification
13	Absolute	GND	1600Vac/1sec or 2250Vdc	/1sec			
	maximum rating	Signal	3000Vac/1sec or 4242Vdc	/1sec			
	·······································	Current	100mA(AC) / 10mA(DC)			mA	

3. Signal Timing (Supporting Resolution) 3.1. HDMI/DP (PC Mode)

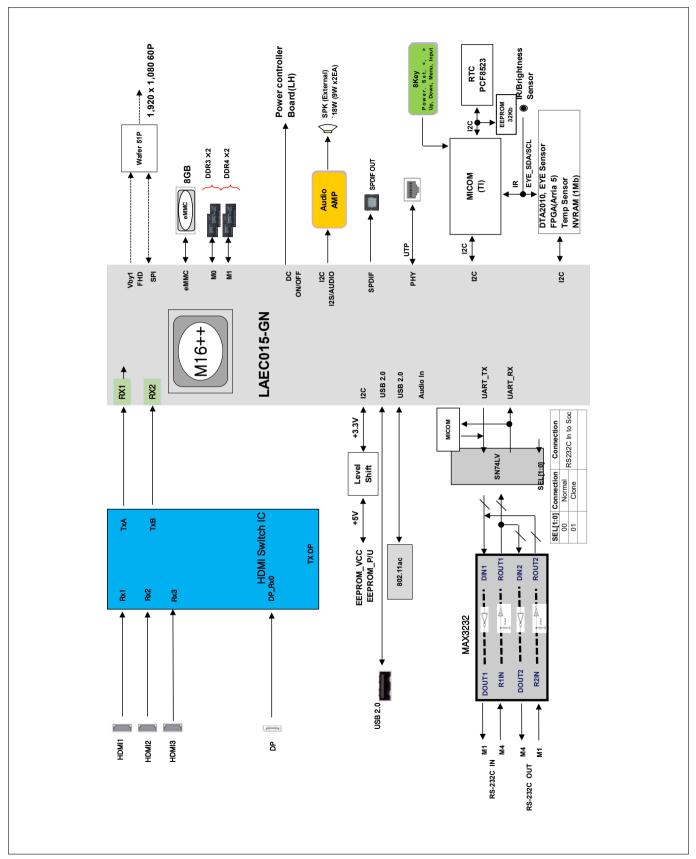
No.	Section	Pol.	Dot Clock [MHz]	Fre- quency [kHz]/ [Hz]	Total Cycle (E)	Dis- play (A)	Front Porch(B)	Sync. (D)	Back Porch(F)	Resolution	Support	
1	H(Pixels)	+	40	37.879	1056	800	40	128	88	800 x 600	All inputs	
	V(Lines)	+	-	60.317	628	600	1	4	23		l	
2	H(Pixels)	-	65	48.363	1344	1024	24	136	160	1024 x 768	_	
	V(Lines)	-		60	806	768	3	6	29			
3	H(Pixels)	+	74.5	44.772	1664	1280	64	128	192	1280 x 720	1280 x 720	_
	V(Lines)	+		59.855	748	720	3	5	20			
4	H(Pixels)	-	85.86	47.7	1800	1366	72	144	216	1366 x 768	-	
	V(Lines)	-	-	60	795	768	1	3	23			
5	H(Pixels)	+	108	63.981	1688	1280	48	112	248	1280 x 1024	-	
	V(Lines)	+	-	60.02	1066	1024	1	3	38			
6	H(Pixels)	-	146.25	65.29	2240	1680	104	176	280	1680 x 1050	-	
	V(Lines)	+	-	59.954	1089	1050	3	6	30			
7	H(Pixels)	+	148.5	67.5	2200	1920	88	44	88	1920 x 1080	1	
	V(Lines)	+	1	60	1125	1080	4	5	46			
8	H(Pixels)	+	297	67.5	4400	3840	176	88	296	3840 x 2160	1	
	V(Lines)	+	1	30	2250	2160	8	10	72	1		

3.2. HDMI/DP (DTV Mode)

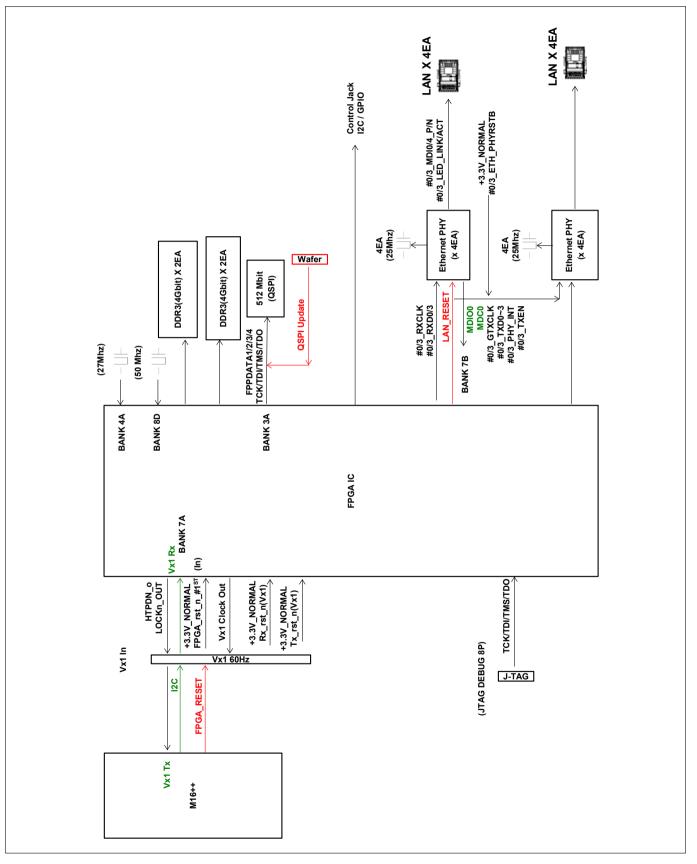
No.			Specification		
INO.	H-freq(kHz)	V-freq(Hz)	Remarks	Resolution	Support
1	31.5	60	EDTV 480p	480/60P	0
2	31.25	50	EDTV 576p	576/50P	0
3	37.5	50	HDTV 720p	720/50P	0
4	45	60	HDTV 720p	720/60P	0
5	28.1	50	HDTV 1080i 50Hz	1080/50i	0
6	33.75	60	HDTV 1080i 60Hz	1080/60i	0
7	56.25	50	HDTV 1080P 50Hz	1080/50P	0
8	67.432	59.94	HDTV 1080P 60Hz	1080/60P	0
9	67.5	60	HDTV 1080P 60Hz	1080/60P	0
10	67.5	30	UD 2160P 30Hz	2160/30P	0

BLOCK DIAGRAM

1. Main Board(M16PP board)



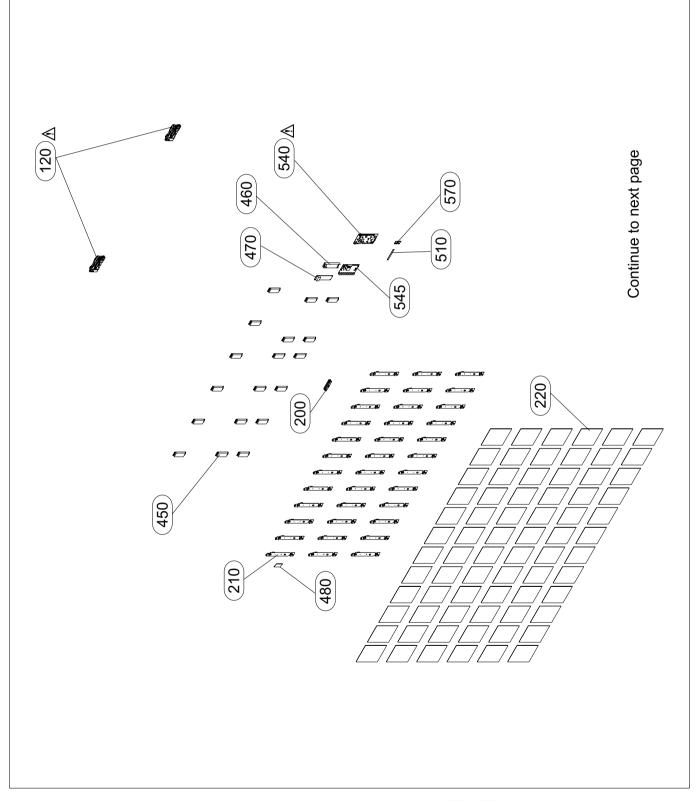
2. FPGA board(Arria5)

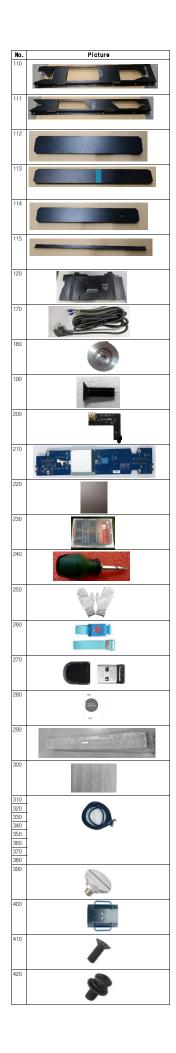


EXPLODED VIEW

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by \triangle in the EXPLODED VIEW. It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards. Do not modify the original design without permission of manufacturer.







DISASSEMBLY

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Dismount LED Display Module

Step1. Power off the LED display.

Step2. Hold the 2pcs handles, push the lock inward and pull the handles toward outside, and then take it up.



Step3. Take the tool up and horizontally fit it closely to the display surface. Please pay more attention to the direction.



Step4. Pull the handles towards the center.

Dismount LED Display Module

Step4. Pull the handles towards the center.



Step5. Ensure the magnet is locked. Take down the LDM carefully.

Step6. Put down the LDM and tool together carefully onto an anti-static soft pad. (such as white foam which used to protect the parts in the flight case)

Step7. Push the lock toward inside and pull the handles toward outside and lift the tool up carefully.





■ SET Disassemble

Step1. All the LMDs (LED Panel) have labels stuck on the back side. Please remove all LDMs by paying attention to their numbers.

<u>01-01</u>	<u>01-02</u>	<u>01–03</u>	<u>01-04</u>	<u>01-05</u>	<u>01-06</u>	<u>01-07</u>	<u>01–08</u>	<u>01-09</u>	<u>01–10</u>	<u>01-11</u>	<u>01-12</u>
<u>02-01</u>	<u>02–02</u>	<u>02–03</u>	<u>02-04</u>	<u>02-05</u>	<u>02-06</u>	<u>02–07</u>	<u>02-08</u>	<u>02-09</u>	<u>02-10</u>	<u>02-11</u>	<u>02–12</u>
<u>03-01</u>	<u>03-02</u>	<u>03-03</u>	<u>03-04</u>	<u>03-05</u>	<u>03-06</u>	<u>03-07</u>	<u>03-08</u>	<u>03-09</u>	<u>03-10</u>	<u>03-11</u>	<u>03-12</u>
<u>04–01</u>	<u>04–02</u>	<u>04-03</u>	<u>04-04</u>	<u>04–05</u>	<u>04–06</u>	<u>04–07</u>	<u>04–08</u>	<u>04–09</u>	<u>04-10</u>	<u>04-11</u>	<u>04–12</u>
<u>05–01</u>	<u>05–02</u>	<u>05–03</u>	<u>05-04</u>	<u>05–05</u>	<u>05-06</u>	<u>05–07</u>	<u>05–08</u>	<u>05–09</u>	<u>05–10</u>	<u>05–11</u>	<u>05–12</u>
<u>06-01</u>	<u>06-02</u>	<u>06-03</u>	<u>06-04</u>	<u>06-05</u>	<u>06-06</u>	<u>06-07</u>	<u>06-08</u>	<u>06-09</u>	<u>06-10</u>	<u>06-11</u>	<u>06-12</u>

Step2. Disconnect the sensor box module and the connected cable.



SET Disassemble

Step3. Uninstall Screws



Uninstall 11 pcs fasten





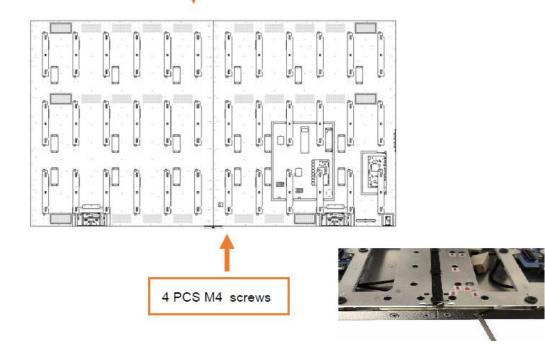
Uninstall 16 pcs M4 flat head screws

SET Disassemble

Step4. Uninstall M4 Screws



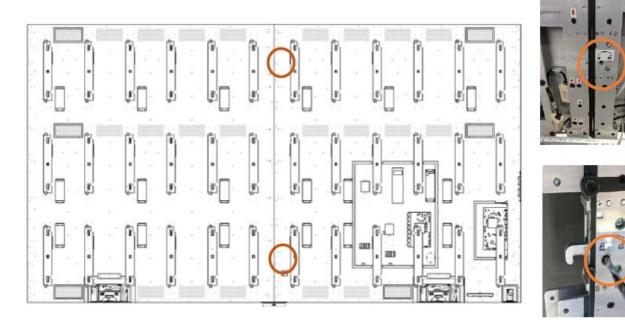




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■ SET Disassemble

Step5. Unfasten with a hexagonal plate.



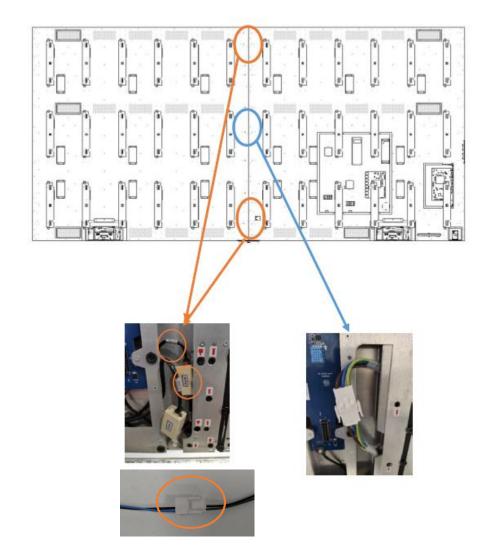


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SET Disassemble

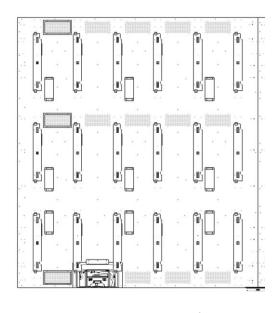
■ SET Disassemble

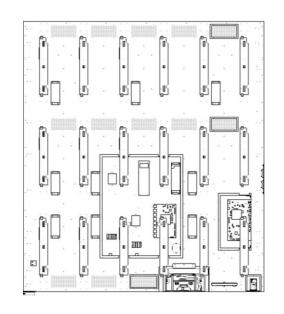
Step6. Disconnect all cables in cabinet



■ SET Disassemble

Step7. Separate the cabinets from each other.





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2. Assemble Step

Assemble

The assembly is in an opposite order of the steps that has been shown in "Disassemble Step".

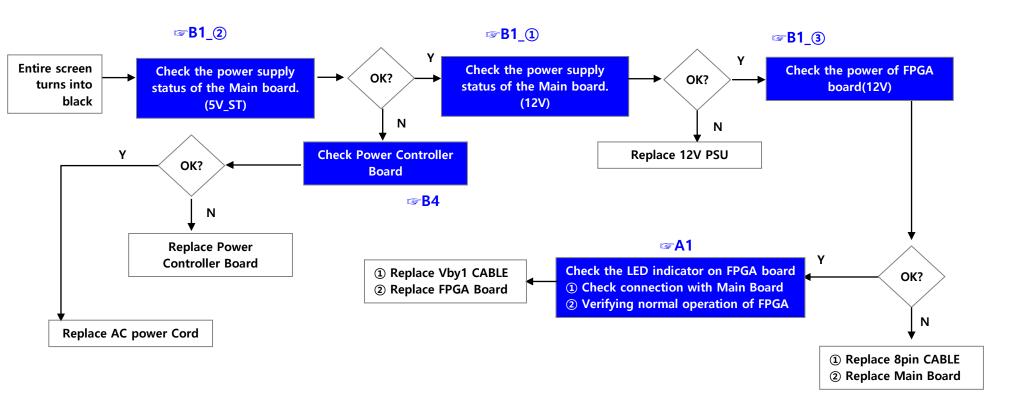
TROUBLESHOOTING GUIDE

AIO136 LED signage troubleshooting procedures

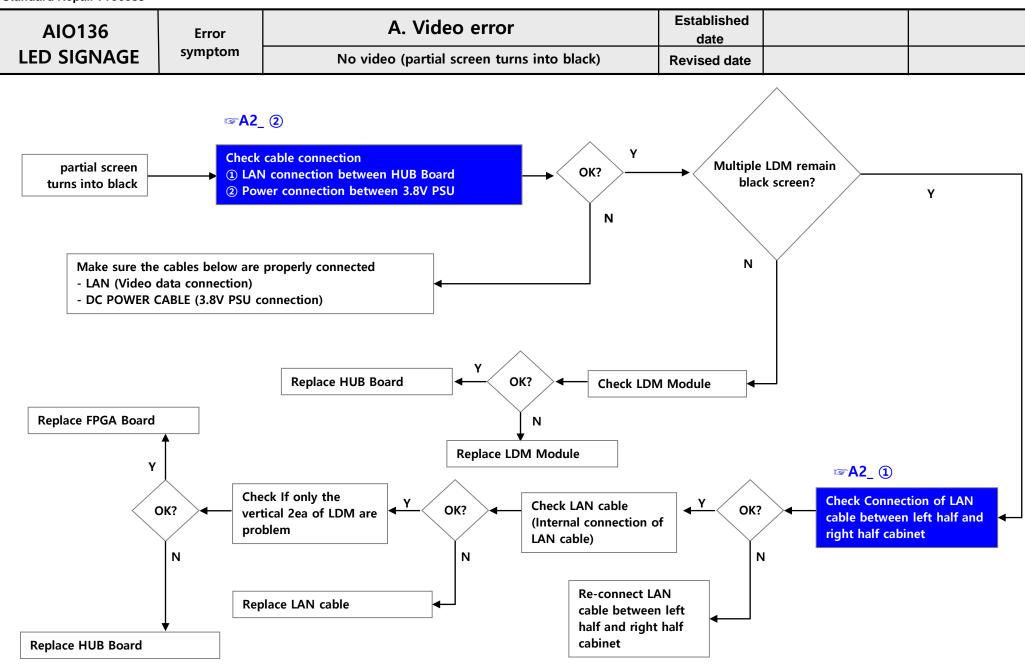
No.	Error symptom (1st category)	Error symptom (2nd category)	Page	Remarks
1		No Video (entire screen turns into black)	1	
2	A. Video Error	No Video (partial screen turns into black)	2	
3		Weird Pattern with an area covering the multiple modules of the screen	3	
4		Color Error	4	
1		No Power to entire screen	5	
2		No Power to partial screen	6	
3	B. Power Error	Weird Pattern with an area covering certain part of the single module (LED module 1EA only in certain areas)	7	
1	C. Exterior Defect	LED Defect (Line/Dot defect, etc.)	8	
1	D. Function Error	Error Alarm on the "Dashboard" of LED Assistant	9	

Standard Repair Process

AIO136	Error	A. Video error	Established date	
LED SIGNAGE	symptom	No video (Entire screen turns into black)	Revised date	

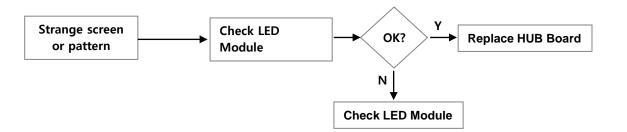


Standard Repair Process



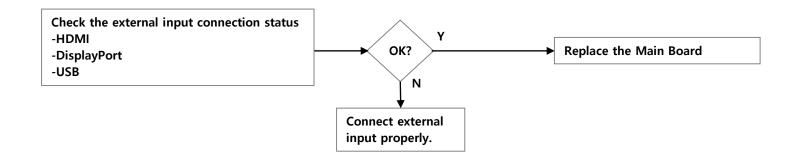
Standard	Repair	Process
----------	--------	---------

AIO136	Error symptom W	A. Video error	Established date	
LED SIGNAGE	symptom	Weird Pattern with an area covering the multiple modules of the screen	Revised date	



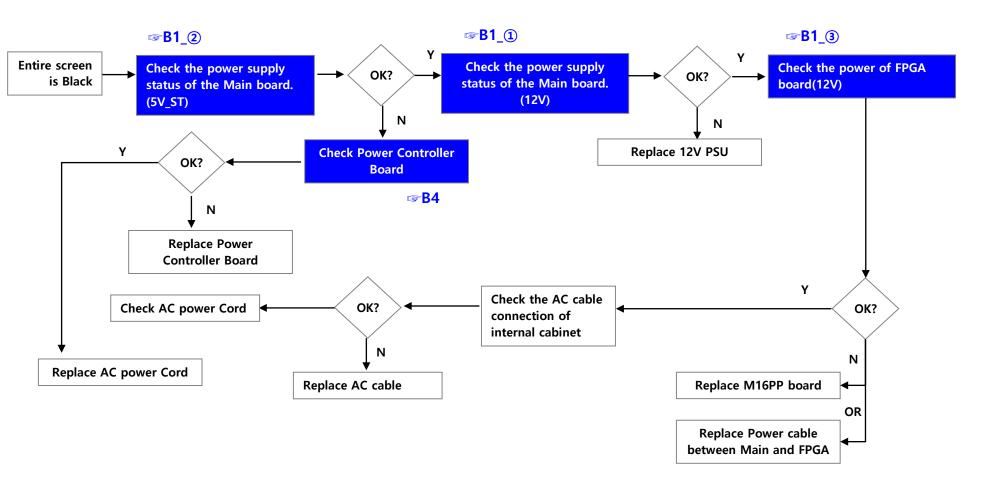
Standard Repair Process

AIO136	Error	A. Video error	Established date	
LED SIGNAGE	symptom	Color Error	Revised date	



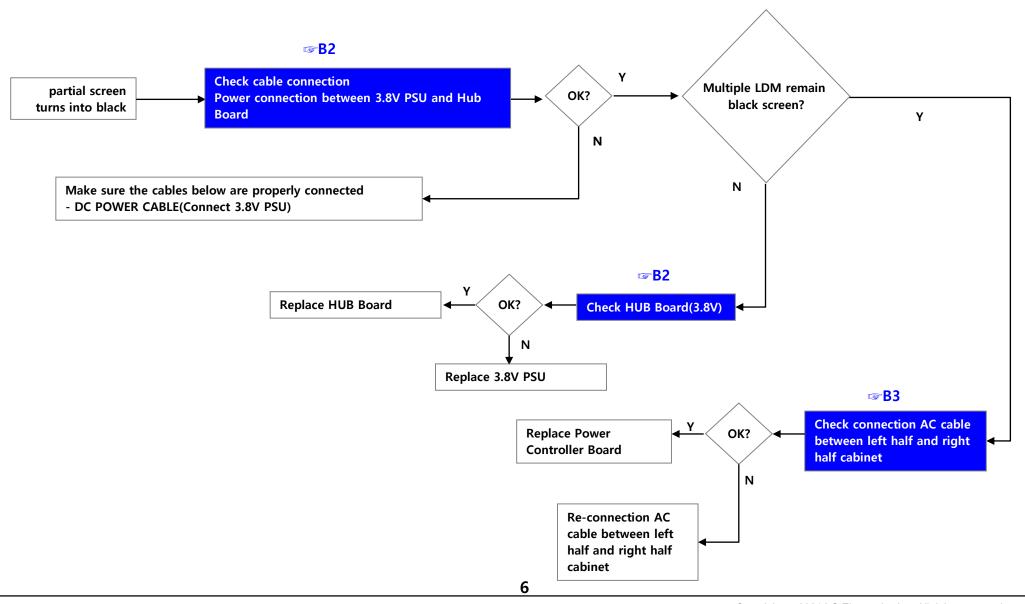
Standard Repair Process

AIO136	Error	B. Power error	Established date	
LED SIGNAGE	symptom	No Power to entire screen	Revised date	

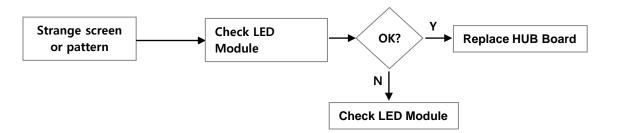


```
Standard Repair Process
```

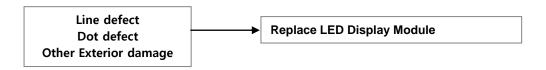
AIO136 LED SIGNAGE	Error symptom	B. Power error	Established date	
		No Power to partial screen	Revised date	



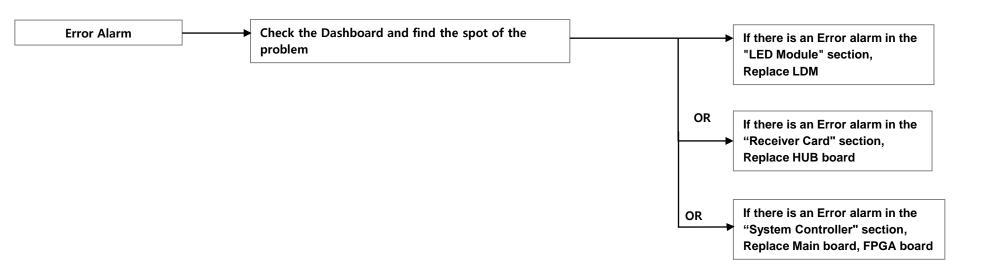
AIO136	Error symptom	B. Power error	Established date	
LED SIGNAGE		Weird Pattern with an area covering certain part of the single module (LED module 1EA only in certain areas)	Revised date	



AIO136 LED SIGNAGE	Error symptom	C. Exterior Defect	Established date	
		LED Defect (Line/Dot defect, etc.)	Revised date	



AIO136 LED SIGNAGE	Error symptom	D. Function Error	Established date	
		Error Alarm on the "Dashboard" of LED Assistant	Revised date	

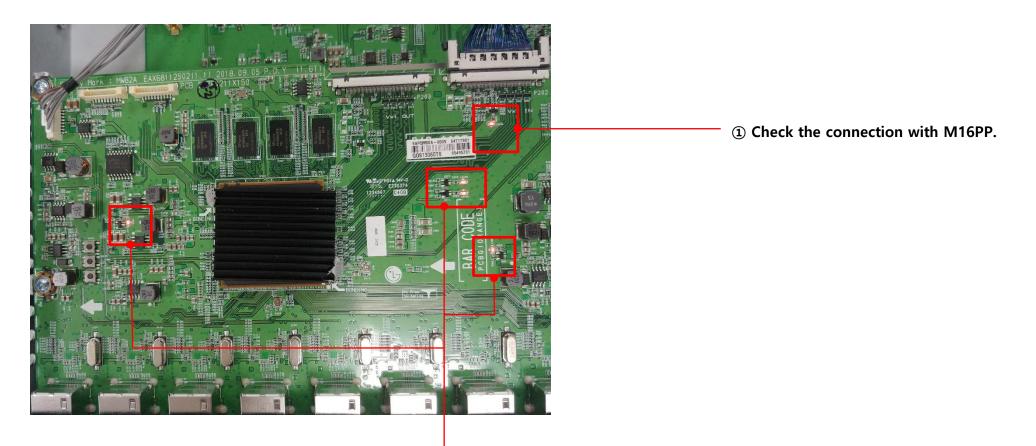


AIO136 LED SIGNAGE Standard Repair Process

No.	증상 (대분류)	상세 (소분류)	Page	Remarks
1	 A. Video error No Video (entire screen turns into black) No Video (partial screen turns into black) 	Check the Indicator on the System Controller FPGA board.	A1	
2	 Weird Pattern with an area covering the multiple modules of the screen Color Error 	Check LAN Cable connection. (cabinet <-> cabinet, HUB board <-> HUB board)	A2	
1	 B. Power error No Power to entire screen No Power to partial screen Weird Pattern with an area covering certain part of the 	Check the power of the system controller's main / FPGA board	B1	
2		Check PSU / HUB board	B2	
3		Check AC Cable connection between left half and right half	B3	
4	single module	Check Power Controller board	B4	
1	C. Exterior Defect - LED Defect (Line/Dot Defect, etc.)		C-1	

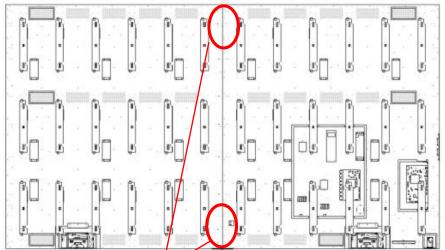
Standard Repair Process Detail Technical Manual

AIO136	Error symptom	A. Video error	Established date	
LED SIGNAGE	Content	Check the Indicator on the System Controller FPGA board.	Revised date	A1



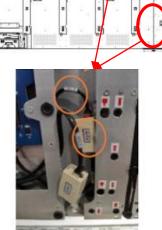
② Check normal operation of FPGA.

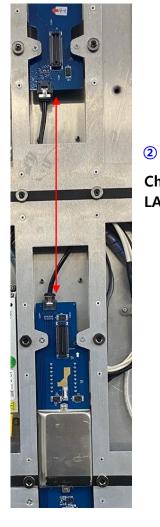
AIO136	Error symptom	A. Video error	Established date	
LED SIGNAGE	Content	Check LAN Cable connection. (cabinet <-> cabinet, HUB board <-> HUB board)	Revised date	A2



1

Check Connection of LAN cable between left half and right half cabinet.

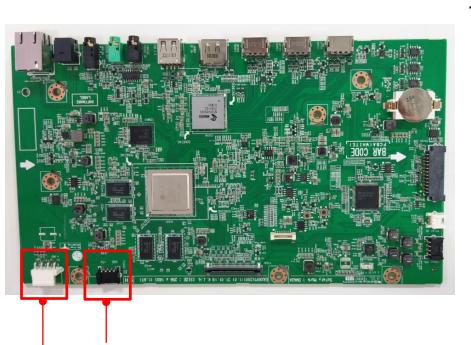




_

Check Connection of LAN cable between HUB boards.

AIO136	Error symptom	B. Power error	Established date	
LED SIGNAGE	Content	Check the power of the system controller's main / FPGA board	Revised date	B1



P20412V powered from main board



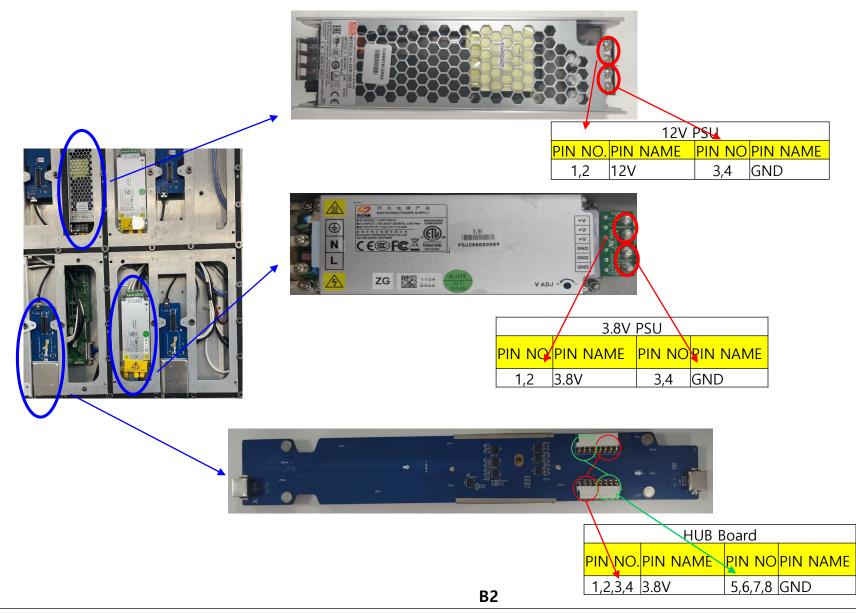
² P2400



1 P200

12V supplied from 12V PSU

AIO136	Error symptom	B. Power error	Established date	
LED SIGNAGE	Content	Check AC Cable connection between left half and right half	Revised date	B2



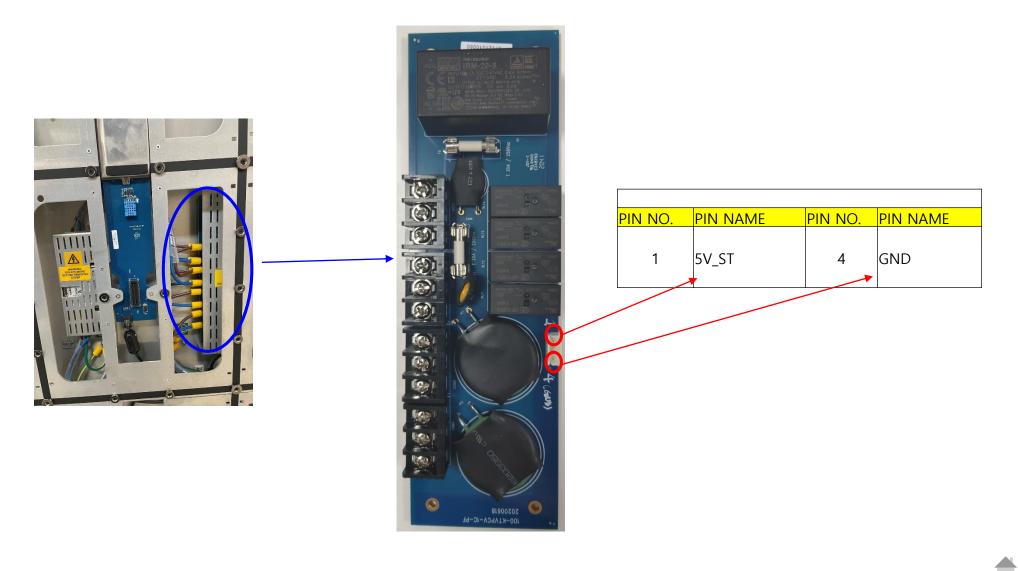
AIO136	Error symptom	B. Power error	Established date	
LED SIGNAGE	Content	Check AC Cable connection between left half and right half	Revised date	B3

13 I)

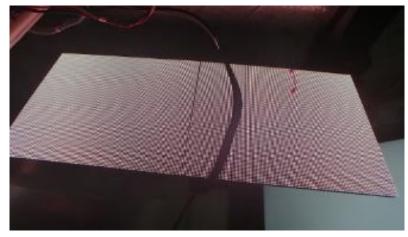


1 Check Connection of AC cable between left half and right half cabinet.

AIO136	Error symptom	B. Power error	Established date	
LED SIGNAGE	Content	Check Power Controller board	Revised date	B4



Appendix : When to replace LED display module



Line defect



Line defect



Line defect / Dot defect

Unrepairable Case :

If there is a defect in the LED module on the installation site as shown in the picture, there is no way to repair it in the field. Therefore, the LED display module should be replaced as soon as possible.

SOFTWARE UPDATE GUIDE

No.	Contents	Remarks
1	System Controller Mainboard F/W Update	
2	FPGA F/W Update	
3	Receiver Card F/W Update	
4	Receiver Card Setting Data (Configuration Data) Update	

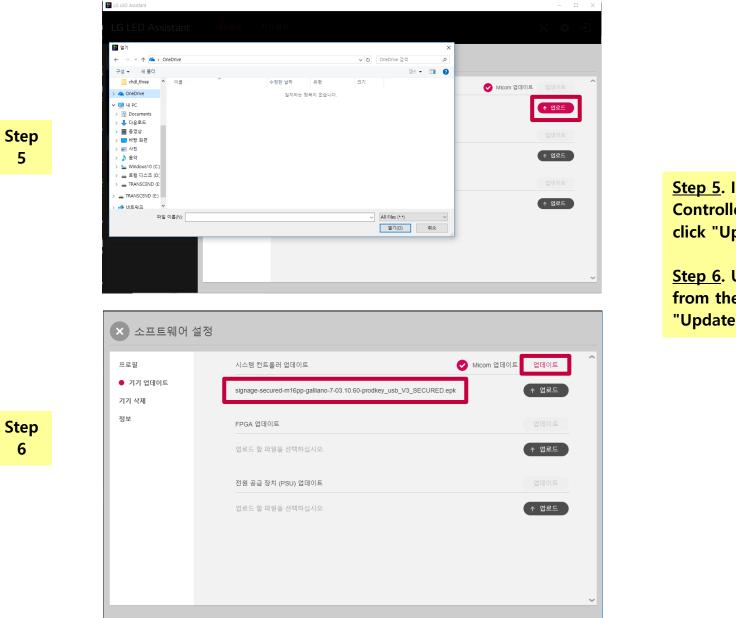
	LG LED Assistant												
	LG LED	Assistant	대시보드	기기 관리								*	₽ →
	2018. 12. 12. 오후	2:12:59											다 새로고철
	시스템 컨트롤러	연결됨 : 1 시스템 컨트롤러				LED 컨트롤러	연결됨 : 0 LED 컨	트롤러					모두 보기
	Error O	lo. 상태 아이디	종류 추가정!	d 전원 (시스템 컨트롤러)	이동	Error O	No. 상태	아이디	종류	추가 정보	전원 (시스템 :	컨트롤러)	이동
	Warning O		등록된 내용이	없습니다.		Warning O			등록	된 내용이 없습	니다.		
ep	전원 공급 장치 (P	SU) 연결됨 : 1 PSU			모두보기	LED 모듈 연결	됨 : 0 LED 모듈						모두보기
2	Error	lo. 상태 아이디	졸류 추가정!	d 전원 (시스템 컨트롤러)	이동	Error	No. 상태	아이디	졸류	추가 정보	전원 (시스템	컨트롤러)	이동
	O Warning O		등록된 내용이	없습니다.		O Warning O			등록	된 내용이 없습	니다.		
	로그 리포트												모두보기
	아이디	7[7]	졸류	상태		추가 정보	기간		,	시작 시간	ā	료 시간	
					등록된 내용	:이 없습니다.							
	× ئ سيت	프트웨어 실		11 컨트롤러 업데이트	등록된 내용	이 없습니다.				licom 업데0		데이트	
		_	시스템	템 컨트롤러 업데이트 드 할 파일을 선택하십/		이 없습니다.				ticom 업데이		데이트 업로드	
	프로필 ● 기기 업	_	시스1			이 없습니다.			N	ticom 업데 0	^		
ep	프로필 ● 기기 업 기기 삭제	_	시스1 업로: FPG/	드 할 파일을 선택하십/	۸ <u>۱</u> .	이 없습니다.				ticom 업데이	τ 2	업로드	
ep ~4	프로필 ● 기기 업 기기 삭제	_	시스(드 할 파일을 선택하십/ 4 업데이트	시오.	이 없습니다.				ticom 업데 이	→ E2 →	업로드 데이트	
≥p •4	프로필 ● 기기 업 기기 삭제	_	시스(업로: - - - - - - - - - - - - - - - - - - -	드 할 파일을 선택하십/ A 업데이트 드 할 파일을 선택하십/	시오. 시오. 이트	이 없습니다.			0	licom 업데이	12 *	업로드 데이트 업로드	

1. Run the LED Assistant.

<u>2</u>. Click "Software Settings" at the top left.

<u>3</u>. Select the "Device Update" tab on the

<u>4</u>. Check "Update Micom".



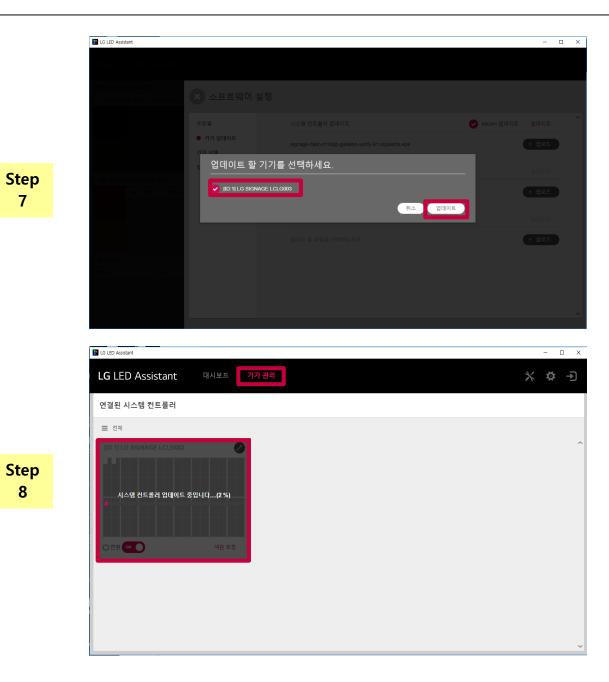
Step 5. In the "System Controller Update" section, click "Upload"

Step 6. Upload the firmware from the directory and click "Update".

LG LED Assistant

6

5



<u>Step 7</u>. Select System Controller from the pop-up, and click "Update".

<u>Step 8</u>. Check "Device Management" to see if firmware update is working normally.

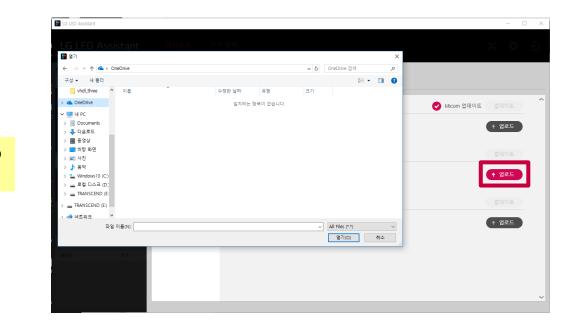
Vanning 이 진원 공급 정치 (PSU) 전철동 : 1PSU Error No. 상태 아이디 종류 추가 참: 이	모두 보기 LED 전트롭러 연결동·0.LE 가 정보 전용(사스범전트륨리) 아동 Error 1용이 없습니다. Vanning Vanning 모두 보기 LED 모듈 연결동·0.LE LED 모듈 연결동·0.LE	아이디 축류 주가정보 전문(사스업컨트롤라) 이동 동록된 내용이 없습니다. 용
시스템 전트등각 인명함 : 1 시스턴 전드등라 Error 이 생활 제품 1 / PSU · 문화 · 구가 2 · · · · · · · · · · · · · · · · · ·	가 정보 한분(사스럽 컨트롤라) 이동 Error No. 상태 1용이 없습니다. 전류 2 두 2 가 정보 전용(사스럽 컨트롤라) 이동 Error No. 상태 2 두 2 가 정보 전용(사스럽 컨트롤라) 이동 Error No. 상태	0 전트들러 (교두 보기) 이이디 총류 주가 정보 전표(시스템컨트롤라) 이동 동록된 내용이 없습니다. 음 (모두 보기)
No. 상태 이익디 종류 수가 성태 0	가 정보 한분(사스럽 컨트롤라) 이동 Error No. 상태 1용이 없습니다. 전류 2 두 2 가 정보 전용(사스럽 컨트롤라) 이동 Error No. 상태 2 두 2 가 정보 전용(사스럽 컨트롤라) 이동 Error No. 상태	아이디 축류 주가정보 전문(사스업컨트롤라) 이동 동록된 내용이 없습니다. 용
Envi O Waming O 전용 공급 장지 (PSU) 연결동: 1 PSU Envi O Waming S록된 내용이 등록된 내용이	(응이 없습니다. 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이	등록된 내용이 없습니다. 문주 보기
전원 공급 장치 (PSU) 인일용 : 1PSU Error O Warning 등록된 내용이	(교수보기) LED 모듈 전철당 : 0 LED 오 가 참보 전철(시스럽 컨트륨라) 아동 <mark>Error</mark> No. 상태	
Error O Wuming 등록된 내용이	Error	아이디 종류 추가 정보 전원(시스템 컨트롤러) 이동
Warning		
	용이 없습니다. O	등록된 내용이 없습니다.
로그 리포트		모두보기
★ 소프트웨어 설정		
	스템 컨트롤러 업데이트	♥ Micom 업데이트 업데이트
● 기기 업데이트 입로: 기기 삭제	법로드 할 파일을 선택하십시오.	(↑ 엽로드
정보 FPG	PGA 업데이트	
업로	법로드 할 파일을 선택하십시오.	↑ 업로드
전원	1원 공급 장치 (PSU) 업데이트	
업로	컴로드 할 파일을 선택하십시오.	↑ 업로드

2. FPGA F/W Update

LED Assistant.

oftware Settings" at

he "Device Update"





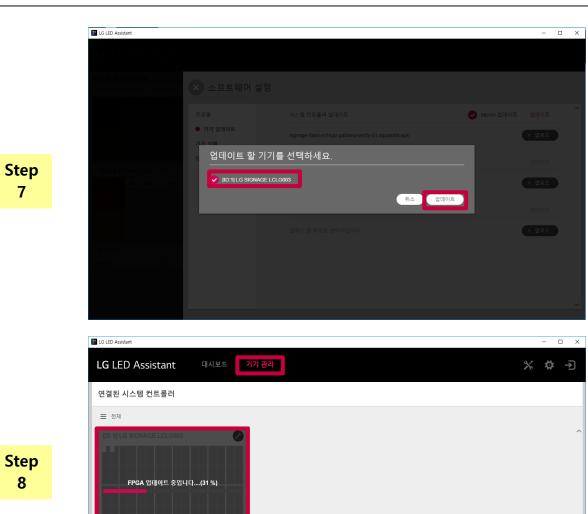
<u>Step 5</u>. In the "FPGA Update" section, click "Upload".

<u>Step 6</u>. Upload the firmware from the directory and click "Update" shown on the right.

2. FPGA F/W Update

Step 5

Step 6



Step 7. Select System Controller from the pop-up, and click "Update".

Step 8. Check "Device Management" to see if firmware update is working normally

Step 8

7

3. Receiver Card F/W Update

LG LED	A	ssist	tant												⊕ ×	¢
23/2021, 10:43	1:26	AM														N R
System Contro	ller (Connected :	9 System	controller(s)				SEE ALL	LED Control	BF Connected : 5	LED controlle	(8)				
Error	No.	Status	ID	Type	More info.		Power (System Controller)	Action	Error	No. Status	ID	Type	More Info.		Power (System Controller)	Actio
9	1	Error	6	Signal			011	1	0							
	2	Error	9	Signal			Off									
	3	Error	1	Signal			0#							There is no item.		
0	6	Error	1	Signal			01									
				Plant			CH		_							-
Power Supply	Unit (PSU) Con	inected : 0	PSU(s)					LED Module	Connected : 0 LE	D module(s)					
Error	No.	Status	ID	Type	More info.		Power (System Controller)	Action	Error	No. Status	ID	Type	More Info.		Power (System Controller)	Actio
0									0							
Warning						There is no item.								There is no item.		
0																
Receiver Card	Conn	ecled : 37 I	Receiver C	and(8)				SEE ALL								
			Receiver C	ard(s) Type	More info.		Power (System Controller)	Action								
Error	No.	Status			More info.		Power (System Controller) Off	_								
Error 50	No. 1	Status Error	10	Type				Action								
Error 50	No. 1	Staturs Error Error	ID 1-8-9	Type Power			or	Action								
Error 50	No. 1 2 3	Status Error Error Error	ID 1-8-9 1-8-8	Type Power Power			Off	Action								
Error 50 Warning 0	No. 1 2 3 4	Status Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6	Type Power Power Power			Off	Action								
Error 50 Warning 0	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6	Type Power Power Power Power			от ол ол	Action								SEE
Error 50 Warming 0	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 	Type Power Power Power Power		Туре	от ол ол	Action			Dur	ation		Start Time	End Time	SEE
Error 50 Warning 0	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 	Type Power Power Power Power		Туря Ронег	08 08 08	Action			Der	ation		Rest Time 2116-02.23 06 31 51	End Time Nat Connected	SEE
Varning 0	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 	Type Power Power Power Power Nome Device	•		off off off off off	Action	More info.			ation 20.10				SEE
Error 50 Warning 0 Log Report 15-1	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 	Type Power Power Power Power Power Power Receiver Card	- - -	Power	Off Off Off Off Off Off Off Off Off Off	Action	More info.			00:10		2018-02-23 05:31:51	Not Connected	955
Error 50 Warning 0	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 1-8-6	Type Power Power Power Power Power Receiver Card System Control	e e e e e e e e e e e e e e e e e e e	Power Signal	Off Off Off Off Off Off Off Off Off Status ERROR ERROR	Action	More Info. -		- 60 (00:10		2018-02-23 05:31:51 2018-02-23 05:30:41	Not Connected 2018-02-23 05 30:51	SEE

Step 1. Run the LED Assistant.

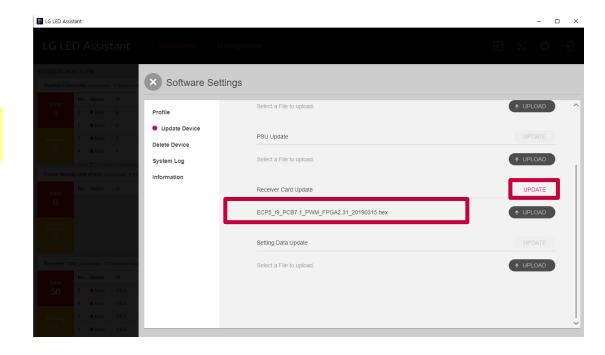
<u>Step 2</u>. Click "Software Settings" at the top left.

<u>Step 3</u>. Select the "Device Update" tab on the left.

LG LED Assistant			
Connected System Cont	× Software Se	ettings	
≡ All	Deafile	Select a File to upload.	↑ UPLOAD ^
[ID 1] LG SIGNAGE LCLG	Update Device	PSU Update	
31	Delete Device	Select a File to upload.	↑ UPLOAD
	System Log	сенская наско врава.	
		Receiver Card Update	UPDATE
		Select a File to upload.	↑ UPLOAD
O Power C Cor		Setting Data Update	UPDATE
		Select a File to upload.	↑ UPLOAD
			~

– 🗆 🗙 E LG LED Assistant 📑 열기 ✓ Õ ECP5_I9_PCB7.1_PWM_FPGA... 구성 🔻 새 폴더 💷 • 🔲 🔞 이르 수정한 날짜 유형 크기 OneDrive [] ECP5_I9_PCB7.1_PWM_FPGA2.31_20190315.hex 2020-10-19 오후 6:08 HEX 파일 1,280KB 🔲 📙 PC 🧊 3D 개체 ↑ UPLOAD 🕹 다운로드 📕 동영상 🙍 문서 🔜 바탕 화면 📰 사진 👌 음악 ↑ UPLOAD 🏪 Windows (C:) 🕳 Data (D:) 素 joohann.kim(\\\ ZUKEN_DB(##1 📣 네트워크 Custom Files (*.hex) 파일 이름(N): ECP5_I9_PCB7.1_PWM_FPGA2.31_20190315.hex 열기(0) 취소 Select a File to upload.

3. Receiver Card F/W Update



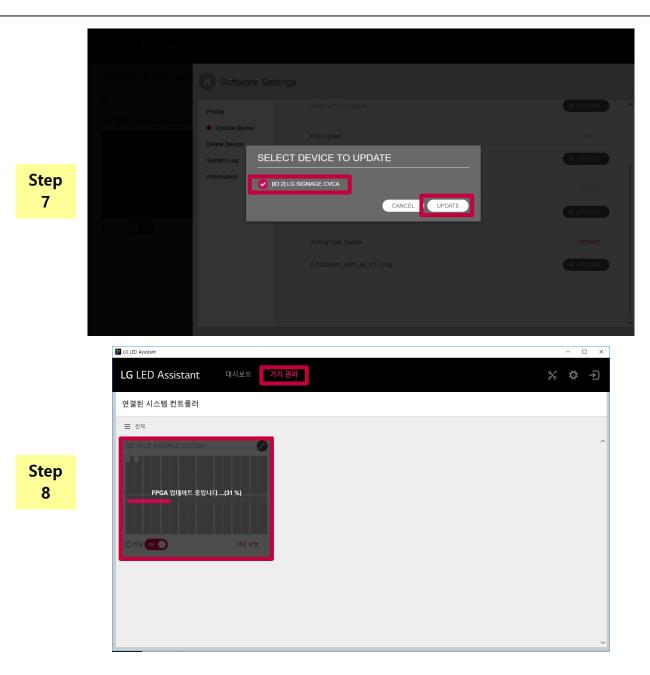
<u>Step 5</u>. In the "Receiver Card Update" section, click "Upload".

<u>Step 6</u>. Upload the firmware from the directory and click "Update" shown on the right.

Step 5

Step 6

3. Receiver Card F/W Update



<u>Step 7</u>. Select System Controller from the pop-up, and click "Update".

<u>Step 8</u>. Check "Device Management" to see if firmware update is working normally

LG LEI		5515	carre	Da		5									
11/23/2021, 10:4	43:26 /	A.M													
System Contr	oller c	Connected	9 System	controller(s)				SEE ALL	LED Controlle	f Connected : 5	LED controlle	(8)			
Error	No.	Status	ID	Type	More info.		Power (System Controller)	Action	Error	No. Status	ID	Type	More Info.		Power (System Contr
9	1	Error	6	Signal			Off	<u>^</u>							
	2	Error	9	Signal			Off								
Warning	3	Error	1	Signal			Off		Warning					There is no item.	
0	4	Error	1	Signal			Off								
				Planat			~.#		_						
Power Supply	Unit (PSU) Cor	inected : 01	PSU(s)					LED Module of	Connected : 0 LE	D module(s)				
Error	No.	Status	ID	Type	More info.		Power (System Controller)	Action	Error	No. Status	ID	Type	More Info.		Power (System Contr
						There is no item.			Warning					There is no item.	
0	1 Contre	ocled : 37	Receiver C	ard(s)		There is no item.			Warning O					There is no item.	
0 Receiver Card			Receiver Ci		More info.	There is no item.	Power (System Controller)	SEE ALL Action						There is no item.	
0 Receiver Caro Error	No.	Status		Type Power	More info.	There is no item.	Power (System Controller) Off	_	0					There is no item.	
0 Receiver Card	No.	Status	10	Type		There is no item.		Action	0					There is no item.	
0 Receiver Caro Error 50	No. 1 1 2	Status Error Error	ID 1-8-9	Type Power		There is no item.	011	Action	0					There is no item.	
0 Receiver Caro Error	No. 1 2 3 4	Status Error Error	ID 1-8-9 1-8-8 1-8-7	Type Power Power		There is no item.	011	Action	0					There is no item.	
0 Receiver Caro Error 50 Warming	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7	Type Power Power Power		There is no item.	011 011 011	Action	0					There is no item.	
0 Receiver Caro Error 50 Warming	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6	Type Power Power Power Power		There is no item.	Off Off Off	Action	0					There is no item.	
0 Receiver Card Error 50 Warning 0	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 1-8-6	Type Power Power Power Power		There is no item.	Off Off Off	Action	0		Der	tion		There is no item.	End Time
0 Receiver Caro Error 50 Warming 0 Log Report	No. 1 2 3 4	Status Error Error Error Error	10 1-8-9 1-8-8 1-8-7 1-8-6 1-8-7	Type Power Power Power Power			08 08 08 08	Action	0		Der	tion			End Tase Nat Consolid
0 Receiver Caro Error 50 Warming 0 Log Report	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 	Type Power Power Power Power Device	•	Ture	Off Off Off Car Status	Action	0 More Info.			ation 0 10		Sant Tane	
0 Receiver Caro 50 Warning 0 Log Report 10 2-15-1	No. 1 2 3 4	Status Error Error Error Error	ID 1-8-9 1-8-8 1-8-7 1-8-6 	Type Power Power Power Power Power Device Receiver Card	- - -	Тури Роми	Off Off Off Off Coff Stations ERROR	Action	0 More Info.					East Tane 2916 42 23 05 11 51	Not Connected

Step 1. Run the LED Assistant.

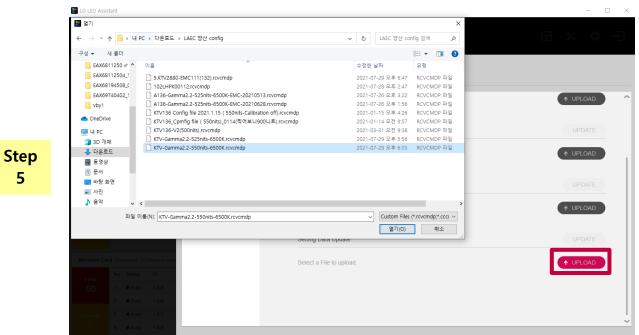
<u>Step 2</u>. Click "Software Settings" at the top left.

<u>Step 3</u>. Select the "Device Update" tab on the left.

LG LED Assistant				->]
Connected System Cont	× Software S	ettings		
IIA 🗐	Profile	Select a File to upload.	↑ UPLOAD	^
[ID 1] LG SIGNAGE LCLG D6	Update Device	PSU Update		
31	Delete Device	Select a File to upload.	↑ UPLOAD	
	System Log	зевец а не ю чризац.	TOPLOAD	
		Receiver Card Update		
		Select a File to upload.	↑ UPLOAD	
		Setting Data Update		
		Select a File to upload.	↑ UPLOAD	
				~

Step 1~2

Step 3~4

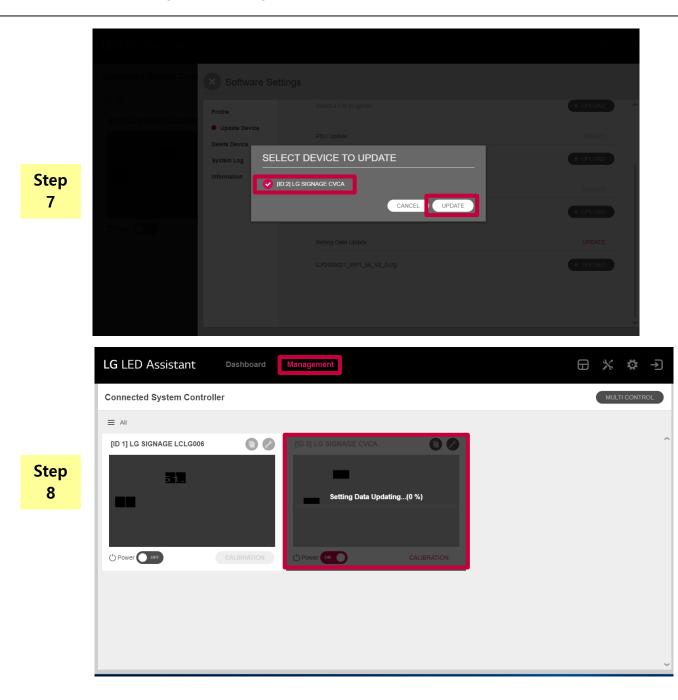


La Li D Assetta a Tile la Updale Profile Profi <u>Step 5</u>. In the "Setting Data Update" section, click "Upload".

<u>Step 6</u>. Upload the firmware from the directory and click "Update" shown on the right.

Step 6

4. Receiver Card Setting Data (Configuration Data) Update



<u>Step 7</u>. Select System Controller from the pop-up, and click "Update".

<u>Step 8</u>. Check "Device Management" to see if firmware update is working normally

