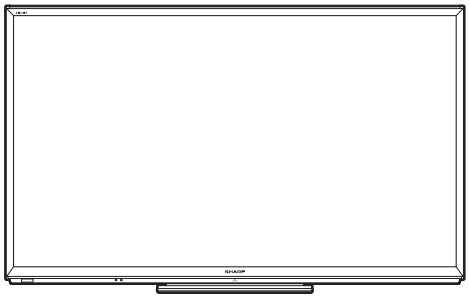
SHARP SERVICE MANUAL

No. S12V760LE745U



LCD COLOR TELEVISION

LC-60LE745U,C7450U
LC-60LE845U,C8470U
LC-60LE847U
LC-70LE745U,C7450U
LC-70LE845U,C8470U
MODELS LC-70LE847U

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

CONTENTS

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

SAFETY PRECAUTION

IMPORTANT SERVICE SAFETY PRECAUTION

■ **Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and the servicing guidelines which follow:**

■WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.

CAUTION: FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE REPLACE ONLY WITH SAME TYPE FUSE.

F7001 (250V 5A)

■BEFORE RETURNING THE RECEIVER (Fire & Shock Hazard)

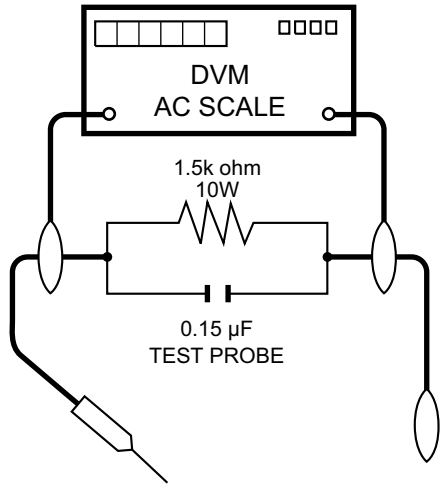
Before returning the receiver to the user, perform the following safety checks:

3. Inspect all lead dress to make certain that leads are not pinched, and check that hardware is not lodged between the chassis and other metal parts in the receiver.
4. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
5. To be sure that no shock hazard exists, check for leakage current in the following manner.

- Plug the AC cord directly into a 120 volt AC outlet.
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15μF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as electrical conduit or electrical ground connected to an earth ground.
- Use an AC voltmeter having with 5000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor.
- Connect the resistor connection to all exposed metal parts having a return to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.

  All checks must be repeated with the AC cord plug connection reversed. (If necessary, a nonpolarized adaptor plug must be used only for the purpose of completing these checks.)

  Any reading of 0.75 Vrms (this corresponds to 0.5 mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the monitor to the owner.



SAFETY NOTICE

Many electrical and mechanical parts in LCD color television have special safety-related characteristics.

These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by " ⚠ " and shaded areas in the Replacement Parts List and Schematic Diagrams.

For continued protection, replacement parts must be identical to those used in the original circuit.

The use of a substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire or other hazards.

PRECAUTIONS A PRENDRE LORS DE LA REPARATION

■ **Ne peut effectuer la réparation qu' un technicien spécialisé qui s'est parfaitement accoutumé à toute vérification de sécurité et aux conseils suivants.**

■ AVERTISSEMENT

1. N'entreprendre aucune modification de tout circuit. C'est dangereux.
2. Débrancher le récepteur avant toute réparation.

PRECAUTION: POUR LA PROTECTION CONTINUE CONTRE LES RISQUES D'INCENDIE, REMPLACER LE FUSIBLE

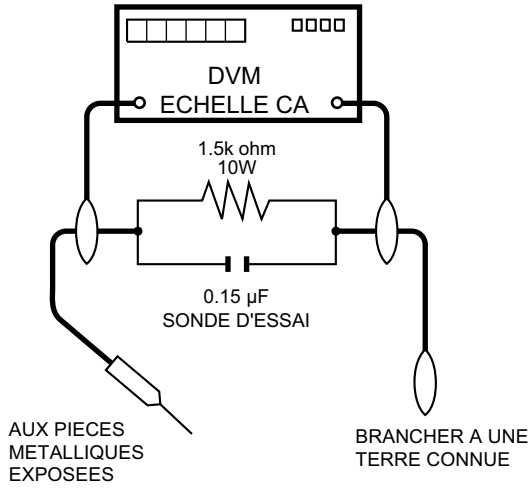
F7001 (250V 5A)

■ VERIFICATIONS CONTRE L'INCEN-DIE ET LE CHOC ELECTRIQUE

Avant de rendre le récepteur à l'utilisateur, effectuer les vérifications suivantes.

3. Inspecter tous les faisceaux de câbles pour s'assurer que les fils ne soient pas pincés ou qu'un outil ne soit pas placé entre le châssis et les autres pièces métalliques du récepteur.
4. Inspecter tous les dispositifs de protection comme les boutons de commande non-métalliques, les isolants, le dos du coffret, les couvercles ou blindages de réglage et de compartiment, les réseaux de résistancecapacité, les isolateurs mécaniques, etc.
5. S'assurer qu'il n'y ait pas de danger d'électrocution en vérifiant la fuite de courant, de la facon suivante:

- Brancher le cordon d'alimentation directem-ent à une prise de courant de 120V. (Ne pas utiliser de transformateur d'isolation pour cet essai).
- A l'aide de deux fils à pinces, brancher une résistance de 1.5 kΩ 10 watts en parallèle avec un condensateur de 0.15μF en série avec toutes les pièces métalliques exposées du coffret et une terre connue comme une conduite électrique ou une prise de terre branchée à la terre.
- Utiliser un voltmètre CA d'une sensibilité d'au moins 5000Ω/V pour mesurer la chute de tension en travers de la résistance.
- Toucher avec la sonde d'essai les pièces métalliques exposées qui présentent une voie de retour au châssis (antenne, coffret métallique, tête des vis, arbres de commande et des boutons, écusson, etc.) et mesurer la chute de tension CA en-travers de la résistance. Toutes les vérifications doivent être refaites après avoir inversé la fiche du cordon d'alimentation. (Si nécessaire, une prise d'adpatation non polarisée peut être utilisée dans le but de terminer ces vérifications.)
  La tension de pointe mesurèe ne doit pas dépasser 0.75V (correspondante au courant CA de pointe de 0.5mA).
  Dans le cas contraire, il y a une possibilité de choc électrique qui doit être supprimée avant de rendre le récepteur au client.



AVIS POUR LA SECURITE

De nombreuses pièces, électriques et mécaniques, dans les téléviseur ACL présentent des caractéristiques spéciales relatives à la sécurité, qui ne sont souvent pas évidentes à vue. Le degré de protection ne peut pas être nécessairement augmentée en utilisant des pièces de remplacement étalonnées pour haute tension, puissance, etc.
Les pièces de remplacement qui présentent ces caractéristiques sont identifiées dans ce manuel; les pièces électriques qui présentent ces particularités sont identifiées par la marque "⚠" et hachurées dans la liste des pièces de remplacement et les diagrammes schématiques.

Pour assurer la protection, ces pièces doivent être identiques à celles utilisées dans le circuit d'origine. L'utilisation de pièces qui n'ont pas les mêmes caractéristiques que les pièces recommandées par l'usine, indiquées dans ce manuel, peut provoquer des électrocutions, incendies, radiations X ou autres accidents.

PRECAUTIONS FOR USING LEAD-FREE SOLDER

■Employing lead-free solder

- “PWBs” of this model employs lead-free solder. The LF symbol indicates lead-free solder, and is attached on the PWBs and service manuals. The alphabetical character following LF shows the type of lead-free solder.

  Example:

Indicates lead-free solder of tin, silver and copper.

Indicates lead-free solder of tin, silver and copper.

■Using lead-free wire solder

- When fixing the PWB soldered with the lead-free solder, apply lead-free wire solder. Repairing with conventional lead wire solder may cause damage or accident due to cracks.

  As the melting point of lead-free solder (Sn-Ag-Cu) is higher than the lead wire solder by 40 °C, we recommend you to use a dedicated soldering bit, if you are not familiar with how to obtain lead-free wire solder or soldering bit, contact our service station or service branch in your area.

■Soldering

- As the melting point of lead-free solder (Sn-Ag-Cu) is about 220 °C which is higher than the conventional lead solder by 40 °C, and as it has poor solder wettability, you may be apt to keep the soldering bit in contact with the PWB for extended period of time. However, Since the land may be peeled off or the maximum heat-resistance temperature of parts may be exceeded, remove the bit from the PWB as soon as you confirm the steady soldering condition.

  Lead-free solder contains more tin, and the end of the soldering bit may be easily corroded. Make sure to turn on and off the power of the bit as required.

  If a different type of solder stays on the tip of the soldering bit, it is alloyed with lead-free solder. Clean the bit after every use of it.

  When the tip of the soldering bit is blackened during use, file it with steel wool or fine sandpaper.

- Be careful when replacing parts with polarity indication on the PWB silk.

Lead-free wire solder for servicing

PARTS CODE	PRICE RANK	PART DELIVERY	DESCRIPTION
ZHNDAi123250E	BL	J	ϕ0.3mm 250g (1roll)
ZHNDAi126500E	BK	J	ϕ0.6mm 500g (1roll)
ZHNDAi12801KE	BM	J	ϕ1.0mm 1kg (1roll)

OUTLINE

MAJOR SERVICE PARTS

■PWB Unit

No.	PARTS CODE	DESCRIPTION
N	DKEYMF953FM01	MAIN Unit
N	DUNTKF800FM53	KEY Unit
N	DUNTKF975FM04	LCD CONTROL Unit (LC-60/70LE745, 60/70C7450)
N	DUNTKF961FM02	LCD CONTROL Unit (LC-60LE845/847/C8470)
N	DUNTKF961FM01	LCD CONTROL Unit (LC-70LE845/LE847/C8470)
N	DUNTKG014FM02	ICON Unit
N	DUNTKG015FM02	R/C OPC Unit
N	DUNTKG017FM01	3D-IR Unit
N	RUNTKA936WJQZ	Wi-Fi UNIT
N	RUNTKA934WJQZ	POWER UNIT (LC-60LE745/845/847/C7450/C8470)
N	RUNTKA935WJQZ	POWER/DRIVER UNIT (LC-70LE745/845/847/C7450/C8470)
N	RUNTKA944WJZZ	S-LED Unit A, x2 (LC-60LE745/C7450)
N	RUNTKA966WJZZ	S-LED Unit A, x2 (LC-60LE845/847/C8470)
N	RUNTKA945WJZZ	S-LED Unit B, x2 (LC-60LE745/C7450)
N	RUNTKA967WJZZ	S-LED Unit B, x2 (LC-60LE845/847/C8470)
N	RUNTKA943WJZZ	S-LED Unit, x6 (LC-70LE745/C7450)
N	RUNTKA965WJZZ	S-LED Unit, x6 (LC-70LE845/LE847U/C8470)

NOTE: *1 Replace MAIN PWB Units (DKEYMF953FM01) in case of IC3103 failure.

■OTHER Unit

No.	PARTS CODE	DESCRIPTION
N	CLCDTA256WE01	60" LCD Panel Module Unit (LC-60LE745/C7450)
N	CLCDTA256WE03	60" LCD Panel Module Unit (LC-60LE845/847/C8470)
N	CLCDTA255WE01	70" LCD Panel Module Unit (LC-70LE745/C7450/847)
N	CLCDTA255WE03	70" LCD Panel Module Unit (LC-70LE845/LE847/C8470)
N	R1LK600D3HB70Z	60" Panel Unit (LC-60LE745/C7450) (LK600D3HB70Z)
N	R1LK600D3HB80Z	60" Panel Unit (LC-60LE845//847/C8470) (LK600D3HB80Z)
N	R1LK695D3GV00E	70" Panel Unit (LC-70LE745/C7450) (LK695D3GV00E)
N	R1LK695D3GV00D	70" Panel Unit (LC-70LE845/70LE847/C8470) (LK695D3GV00D)

■IC For Exclusive Use Of The Service

No.	PARTS CODE	DESCRIPTION	Q'ty
IC2004	RH-iXD241WJNUQ	IC (Monitor Microprocessor)	1

■Service Jigs

No.	PARTS CODE	DESCRIPTION	Q'ty
N	QCNW-C222WJQZ	Connecting Cord L=1000mm 80pins, LCD Control Unit to LCD Panel Unit	2
N	QCNW-M580WJQZ	Connecting Cord L=1000mm 41pins, Main to LCD Control Unit (LV)	1
N	QCNW-M539WJQZ	Connecting Cord L=1000mm 24pins, Main to POWER Unit (PD)	1

CHAPTER 1. SPECIFICATIONS

[1] SPECIFICATIONS

Specifications

TV

Item			Model:LC-70LE745U/C7450U LC-70845U/847U/C8470U	Model:LC-60LE745U/C7450U LC-60845U/847U/C8470U
LCD panel	Size		70″ Class (69 1/2″ Diagonal)	60″ Class (60 1/32″ Diagonal)
	Resolution		2,073,600 pixels (1,920 × 1,080)	
TV Function	TV-standard (CCIR)		American TV Standard ATSC/NTSC System	
	Receiving Channel	VHF/UHF	VHF 2-13ch, UHF 14-69ch	
		CATV	1-135ch (non-scrambled channel only)	
		Digital Terrestrial Broadcast (8VSB)	2-69ch	
		Digital cable*1 (64/256 QAM)	1-135ch (non-scrambled channel only)	
	Audio multiplex		BTSC System	
Audio out			10W × 2 + 15W (WF)	
Terminals	Back panel vertical inputs	HDMI 1	HDMI in with HDCP, ARC	
		HDMI 2	HDMI in with HDCP, Audio in (Ø 3.5 mm stereo jack)	
		HDMI 3	HDMI in with HDCP	
		HDMI 4	HDMI in with HDCP, MHL	
		AUDIO OUT	Audio out (Ø 3.5 mm stereo jack)	
		USB 1*2	Photo/Music/Video mode, Software update	
	Back panel surface inputs	COMPONENT	COMPONENT in	
		VIDEO 1	AV in	
		VIDEO 2	AV in	
		PC IN	ANALOG RGB (PC) in (15-pin mini D-sub female connector), Audio in (Ø 3.5 mm stereo jack)	
		RS-232C	9-pin D-sub male connector	
	Back panel horizontal inputs	ANT/CABLE	75 Ω Unbalance, F Type × 1 for Analog (VHF/UHF/CATV) and Digital (AIR/CABLE)	
		AUDIO IN	Audio in (Ø 3.5 mm stereo jack)	
		DIGITAL AUDIO OUTPUT	Optical Digital audio output × 1 (PCM/Dolby Digital)	
		ETHERNET	Network connector	
		USB 2*2	Photo/Music/Video mode, Software update	
OSD language			English/French/Spanish	
Power Requirement			AC 120 V, 60 Hz	
Power Consumption			200 W (0.1 W Standby with AC 120 V)	170 W (0.1 W Standby with AC 120 V)
Weight		TV + stand	90.4 lbs./41.0 kg	76.1 lbs./34.5 kg
		TV only	83.8 lbs./38.0 kg	60.6 lbs./27.5 kg
Dimensions*3 (W × H × D)		TV + stand	62 49/64 × 39 11/32 × 14 7/32 inches	54 47/64 × 34 59/64 × 14 27/64 inches
		TV only	62 49/64 × 38 × 2 13/64 inches	54 47/64 × 33 × 2 11/64 inches
Operating temperature			+32°F to +104°F (0°C to +40°C)	

*1 Emergency alert messages via Cable are unreceivable.

*2 **Skype will be available for the USB terminals. For details, refer to the following:**
- http://www.sharpusa.com (for the operation manual)
- http://freetalk.me/product/sharp/ (for information on the communication camera)
- http://www.skype.com (for details on Skype)

*3 The dimensional drawings are shown on the inside back cover.

- As part of policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

Cautions regarding use in high and low temperature environments

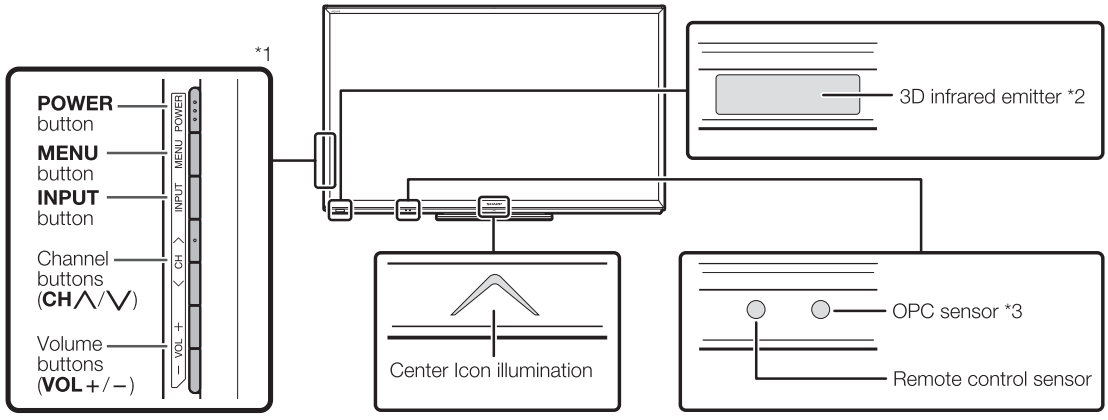
- When the unit is used in a low temperature space (e.g. room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the unit will recover when the temperature returns to normal.
- Do not leave the unit in a hot or cold location. Also, do not leave the unit in a location exposed to direct sunlight or near a heater, as this may cause the cabinet to deform and the front panel to malfunction.
  Storage temperature: −4°F to +140°F (−20°C to +60°C)

CHAPTER 2. OPERATION MANUAL

[1] OPERATION MANUAL

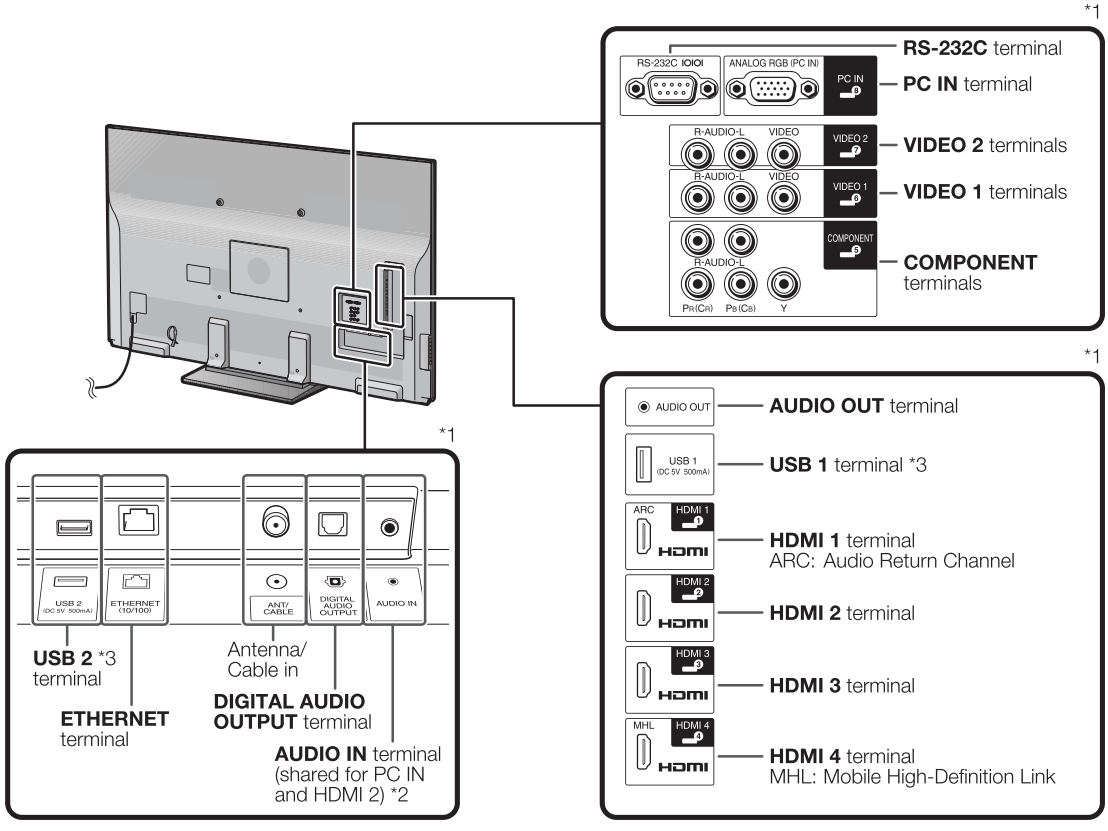
Part Names

TV (Front/Side)



*1 for button operations.
*2 This panel emits the infrared signal towards the 3D Glasses you wear when you view 3D images.
Do not place anything between the 3D infrared emitter on the TV and the infrared receiver on the 3D Glasses.
When the TV is in 3D mode, the emitter may look reddish.
*3 OPC: Optical Picture Control

TV (Rear)

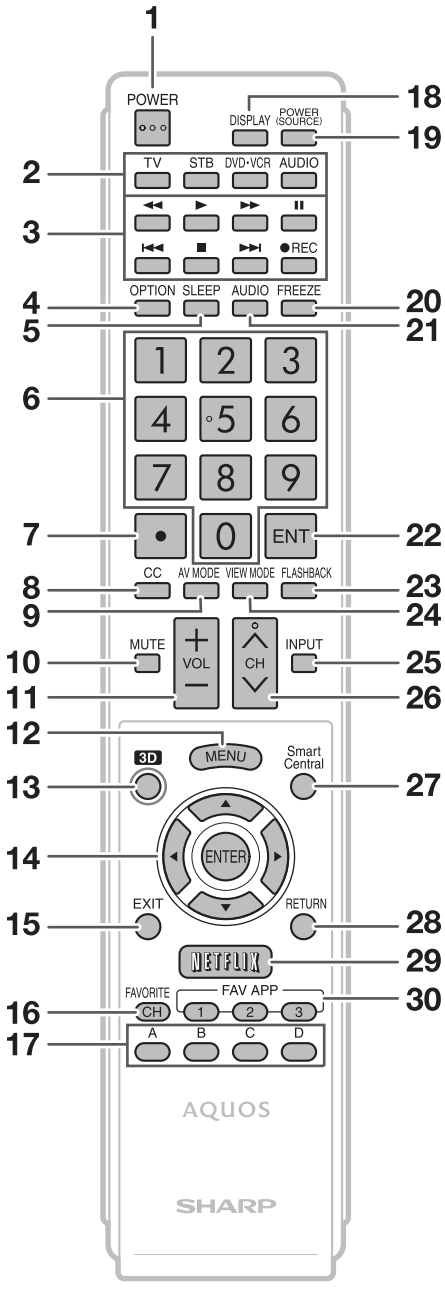


*1 for external equipment connection.
*2 for details on the Audio Select function.
*3 **Skype will be available for the USB terminals. For details, refer to the following:**

- http://www.sharpusa.com (for the operation manual)
- http://freetalk.me/product/sharp/ (for information on the communication camera)
- http://www.skype.com (for details on Skype)

Part Names

Remote Control Unit



NOTE

- When using the remote control unit, point it at the TV.

1 **POWER:** Switch the TV power on or enter standby.

2 **TV**, **STB**, **DVD•VCR**, **AUDIO:** Switches the remote control for TV, STB, BD, DVD, VCR and AUDIO operation.

* To enter the code registration mode, you need to press an appropriate button (**STB**, **DVD•VCR** or **AUDIO**) and **DISPLAY** at the same time.

3 **External equipment operational buttons:** Operate the external equipment.

4 **OPTION:** Display the Link Operation Menu screen. This button will function only when AQUOS LINK is used.

5 **SLEEP:** Set the sleep timer.

6 **0–9:** Set the channel.

7 **• (DOT):**

8 **CC:** Display captions from a closed-caption source.

9 **AV MODE:** Select an audio or video setting.

10 **MUTE:** Mute the sound.

11 **VOL +/–:** Set the volume.

12 **MENU:** Display the menu screen.

13 **3D:** Select between 3D and 2D image viewing.

14 **▲/▼/◀/▶, ENTER:** Select a desired item on the screen.

15 **EXIT:** Turn off the menu screen.

16 **FAVORITE CH:** Set the favorite channels.

17 **A**, **B**, **C**, **D:** Select 4 preset favorite channels in 4 different categories.

While watching, you can toggle the selected channels by pressing **A**, **B**, **C** and **D**.

18 **DISPLAY:** Display the channel information.

19 **POWER (SOURCE):** Turns the power of the external equipment on and off.

20 **FREEZE:** Set the still image. Press again to return to normal screen.

21 **AUDIO:** Selects the MTS/SAP or the audio mode during multichannel audio broadcasts.

22 **ENT:** Jumps to a channel after selecting with the **0–9** buttons.

23 **FLASHBACK:** Return to the previous channel or external input mode.

24 **VIEW MODE:** Select the screen size.

25 **INPUT:** Select a TV input source. (TV, HDMI1, HDMI2, HDMI3, HDMI4, COMPONENT, VIDEO1, VIDEO2, PC IN, Home Network (DLNA), USB)

26 **CH∧/∨:** Select the channel.

27 **SmartCentral:** Display the application window.

28 **RETURN:** Return to the previous menu screen.

29 **NETFLIX:** Display the Netflix screen.

30 **FAV APP 1, 2, 3:** You can assign your favorite applications to these buttons.

QUICK REFERENCE

Attaching the Stand

- Before attaching (or detaching) the stand, unplug the AC cord.
- Before performing work spread cushioning over the base area to lay the TV on. This will prevent it from being damaged.

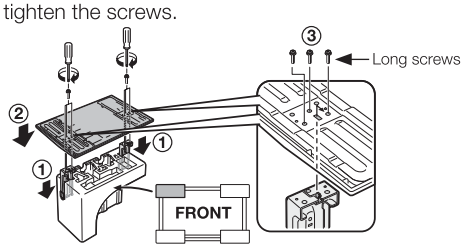
CAUTION

- **Be sure to follow the instructions. Incorrect installation of the stand may result in the TV falling over.**

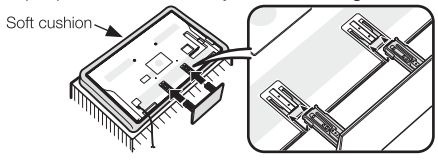
■LC-70LE745U/C7450U/845U/847U/C8470U

1 Confirm that there are 12 screws (6 long screws, 4 middle screws and 2 short screws) supplied with the stand unit.

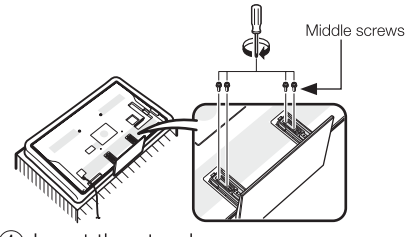
2 ① Set the post for the stand unit onto the polystyrene foam.
② Attach the base to the post.
③ Insert and tighten the 6 screws into the 6 holes on the bottom of the base.
- Hold the stand unit securely with one hand, and then tighten the screws.



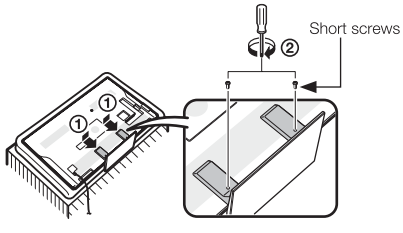
3 Insert the stand into the openings on the rear of the TV.
- Make sure that the stand is firmly inserted into the TV. Improper installation may result in tilting of the TV set.



4 Insert and tighten the 4 screws into the 4 holes on the rear of the stand unit.



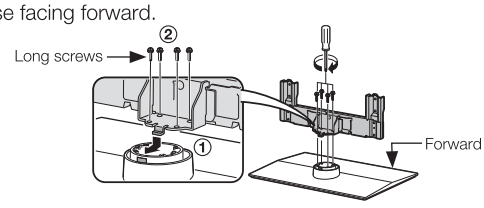
5 ① Insert the stand cover.
② Insert the 2 screws to secure the stand cover.



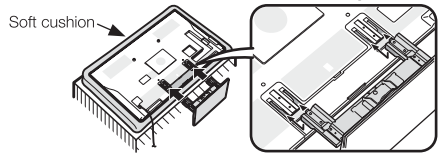
■LC-60LE745U/C7450U/845U/847U/C8470U

1 Confirm that there are 10 screws (4 long screws, 4 middle screws and 2 short screws) supplied with the stand unit.

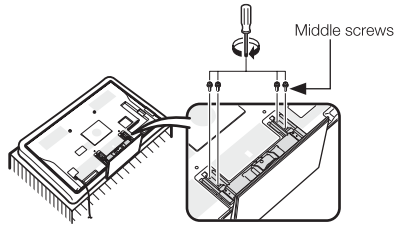
2 ① Attach the supporting post for the stand unit onto the base.
② Insert and tighten the 4 screws into the 4 holes on the top of the supporting post.
- The supporting post attaches to the base at an off-centered location on the base. Be sure to attach the supporting post in the direction indicated below and attach the stand to the TV with the wider side of the base facing forward.



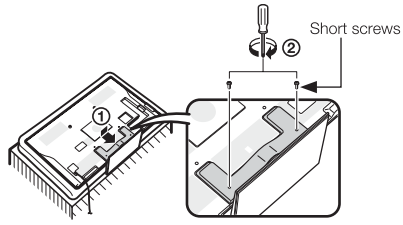
3 Insert the stand into the openings on the rear of the TV.
- Make sure that the stand is firmly inserted into the TV. Improper installation may result in tilting of the TV set.



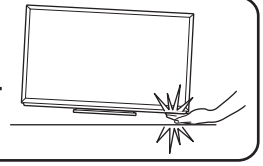
4 Insert and tighten the 4 screws into the 4 holes on the rear of the stand unit.



5 ① Insert the stand cover.
② Insert the 2 screws to secure the stand cover.



- In the installation procedure, be careful not to catch your fingers between the TV set and the floor.
- **Do not remove the stand from the TV unless using an optional wall mount bracket to mount it.**
- **After attaching the stand to the TV, do not hold the stand when you put up, set up, move or lay down the TV. (For LC-70C8470U/C7450U/845U/847U/C8470U)**



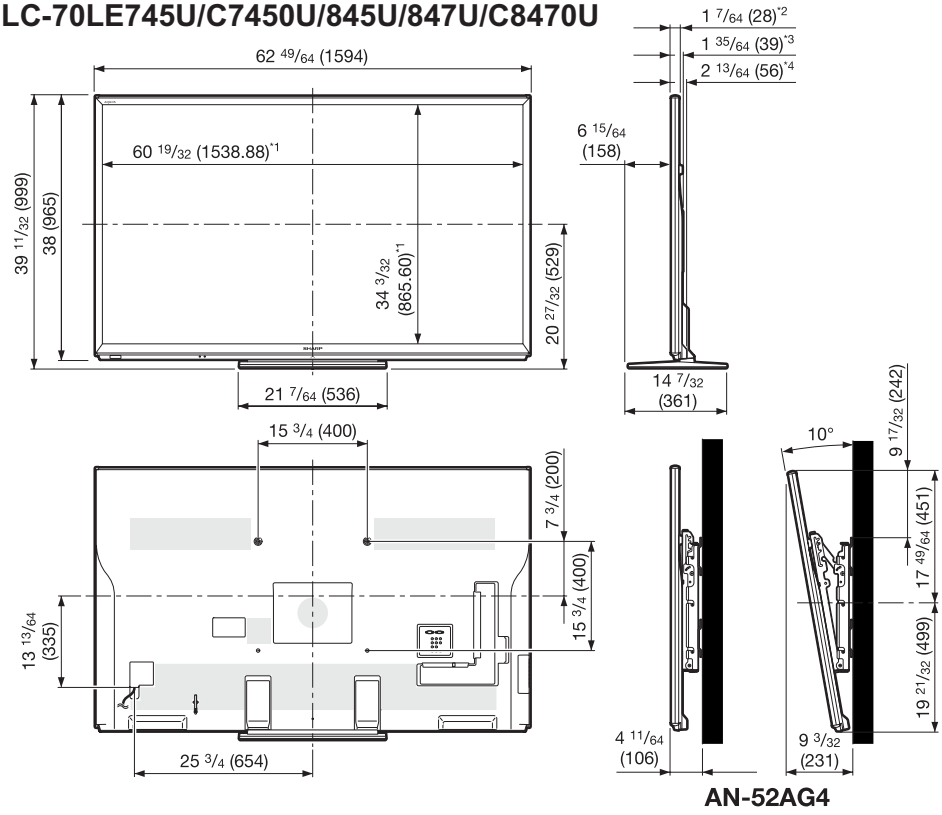
CHAPTER 3. DIMENSIONS

[1] DIMENSIONS

Dimensional Drawings

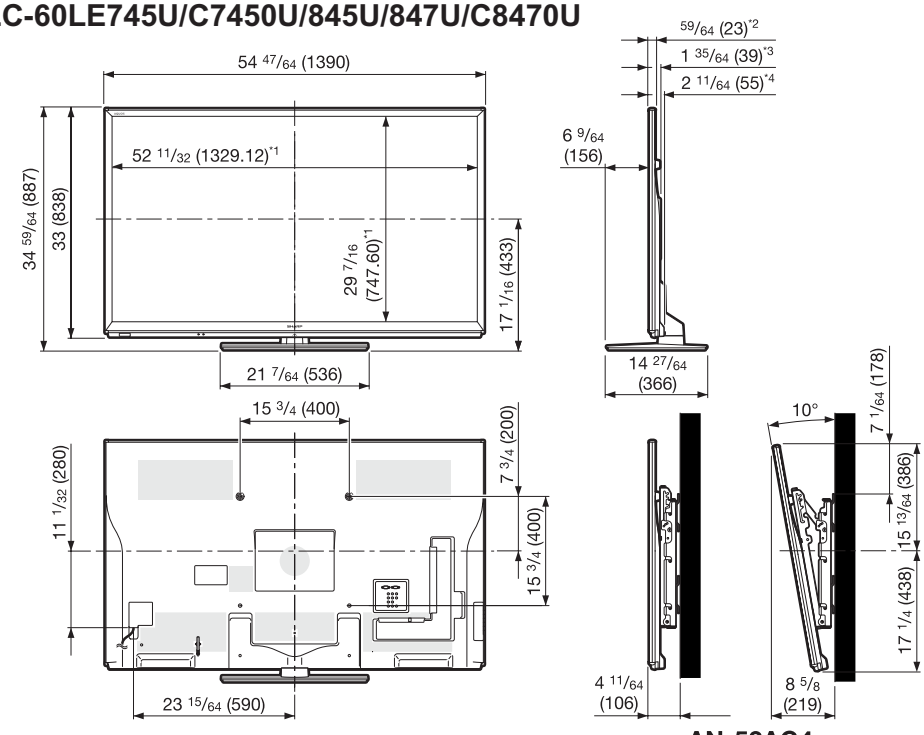
LC-70LE745U/C7450U/845U/847U/C8470U

Unit: inch (mm)



AN-52AG4

LC-60LE745U/C7450U/845U/847U/C8470U



AN-52AG4

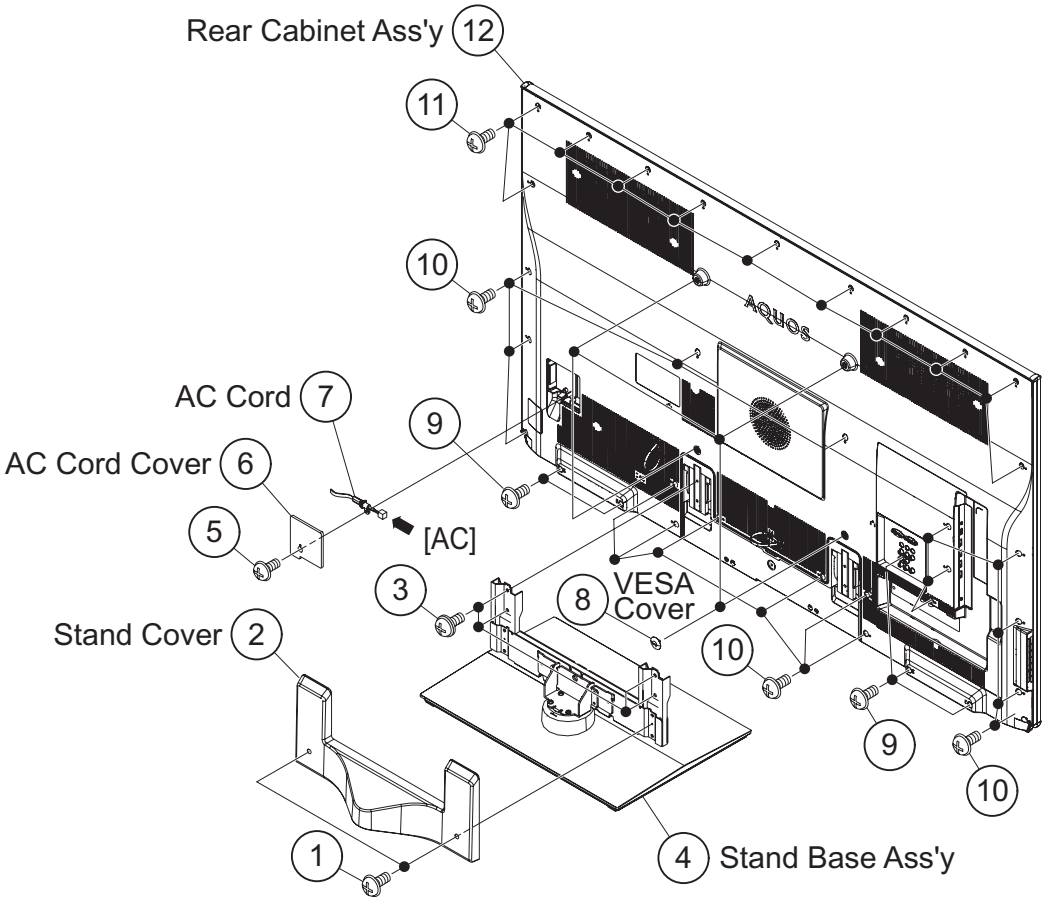
*1 Active area/Área activa/Zone active
*2 Thinnest part/Parte más delgada/Partie la plus mince
*3 Excluding projecting parts/Excluyendo partes salientes/Sauf les parties saillantes
*4 Including projecting parts/Incluyendo partes salientes/Parties saillantes incluses

CHAPTER 4. REMOVING OF MAJOR PARTS

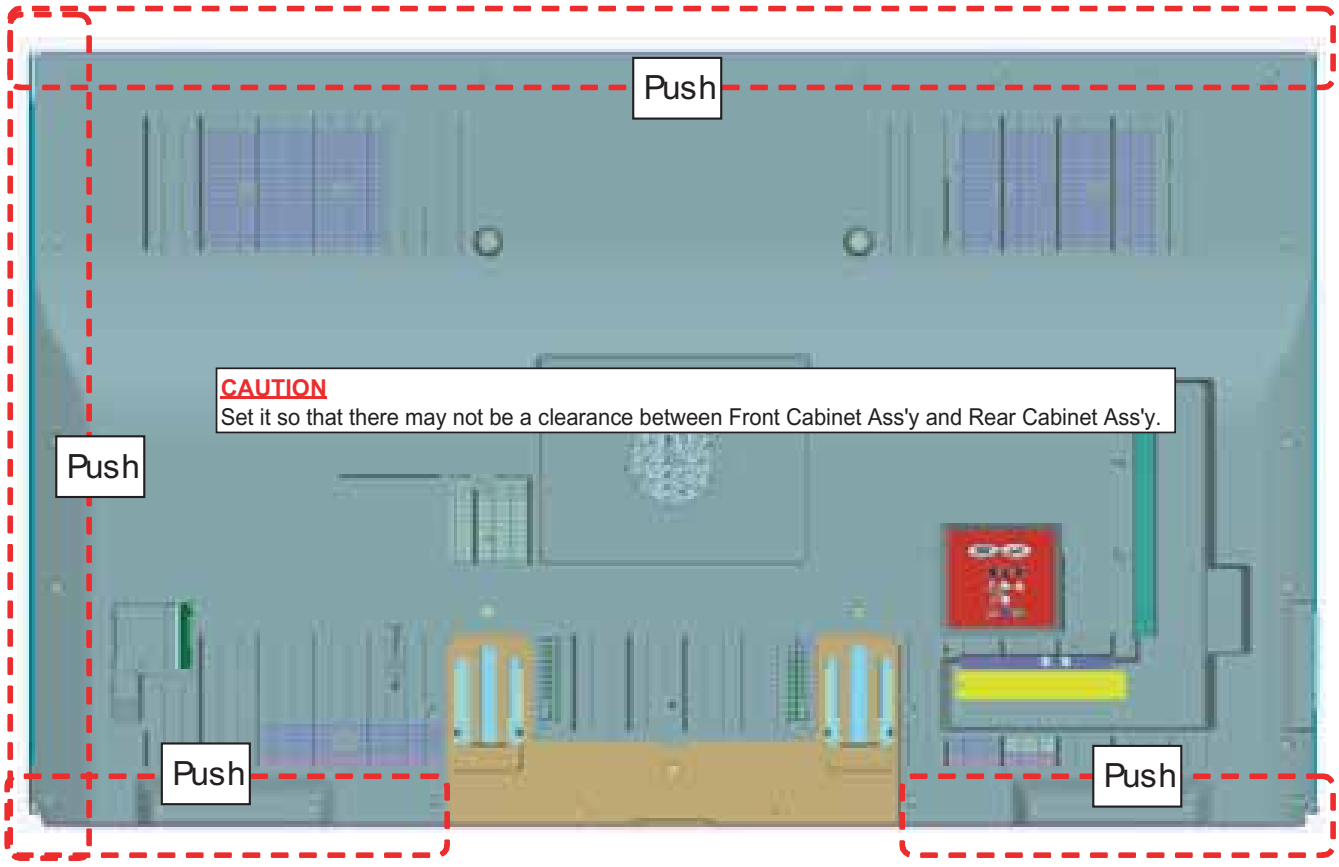
[1] REMOVING OF MAJOR PARTS (LC-60LE745U,C7450U,845U,847U,C8450U)

1. Removing of Stand Unit and Rear Cabinet Ass'y.

1. Remove the 2 lock screws ① and detach the Stand Cover ②.
2. Remove the 4 lock screws ③ and detach the Stand Base Ass'y ④.
3. Remove the 1 lock screw ⑤ and detach the AC Cord Cover ⑥.
4. Disconnect AC Wire and detach the AC Cord ⑦.
5. Remove the 4 VESA Covers ⑧, 5 lock screws ⑨, 18 lock screws ⑩ and 11 lock screws ⑪ and detach the Rear Cabinet Ass'y ⑫.

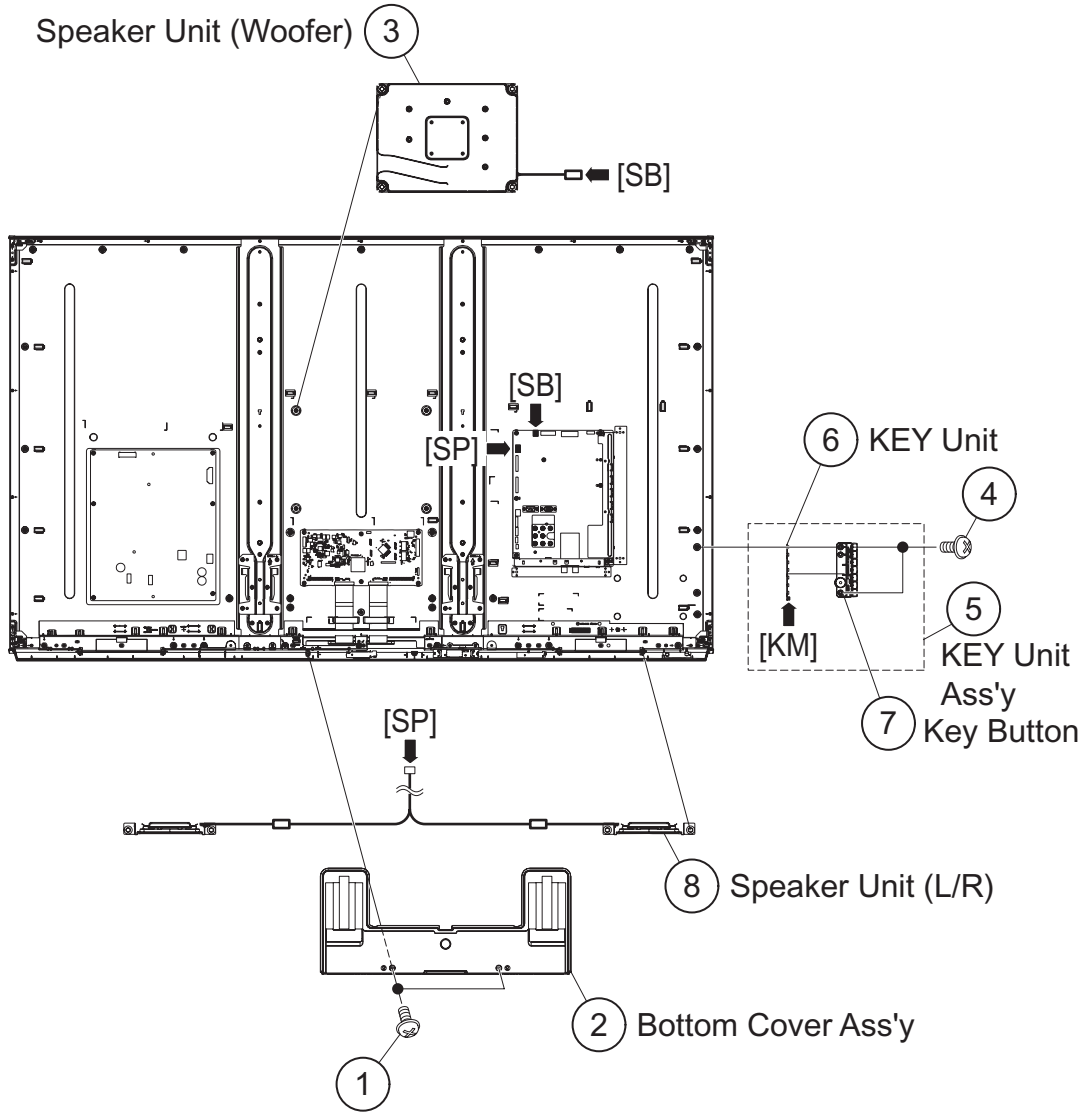


[Precautions for assembly]



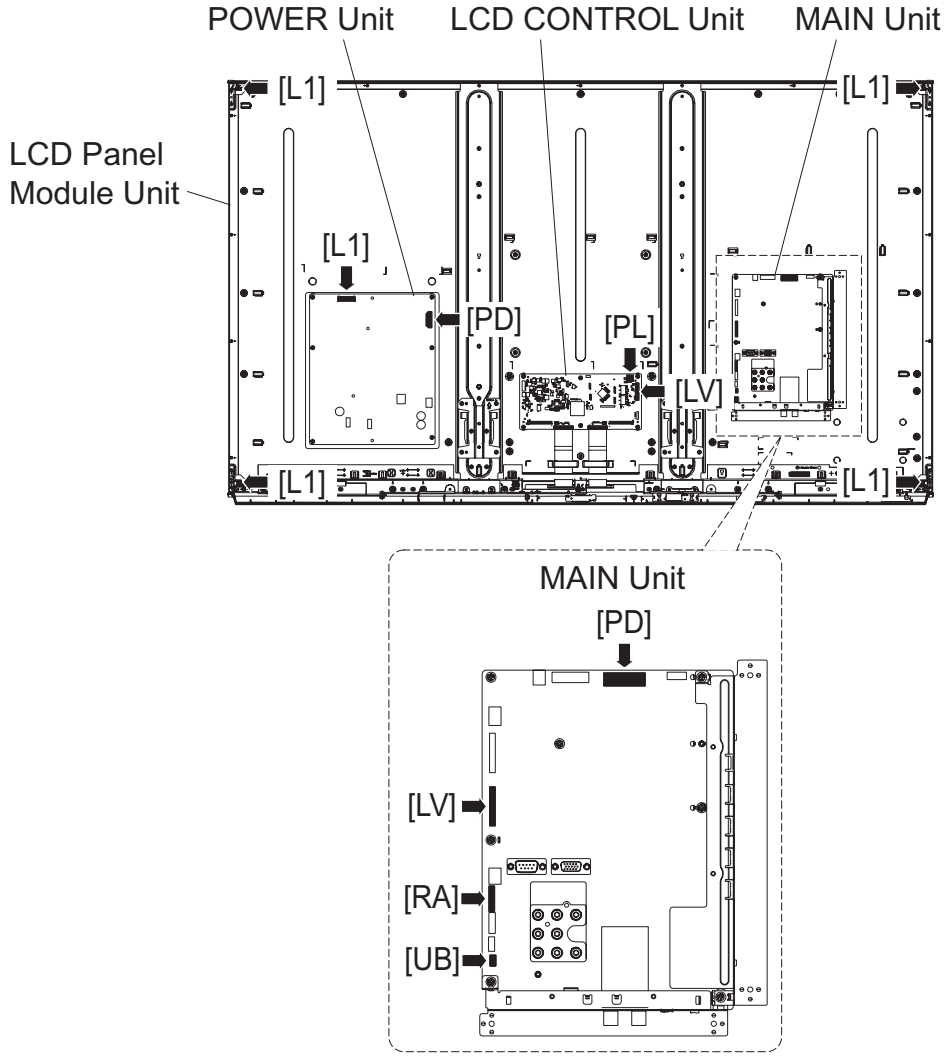
2. Removing of Bottom Cover Ass'y, Speaker Unit (Woofer),Speaker Unit (L/R) and KEY Unit.

1. Remove the 2 lock screws ① and detach the Bottom Cover Ass'y ②.
2. Detach the Speaker Unit (Woofer) ③.
3. Disconnect the SB wire.
4. Remove the 2 lock screws ④ and detach the KEY Unit Ass'y ⑤.
5. Disconnect the KM wier.
6. Detach the KEY Unit ⑥ from Key Buttom ⑦.
7. Detach the Speaker Unit (L/R)⑧.
8. Disconnect the SP wire.



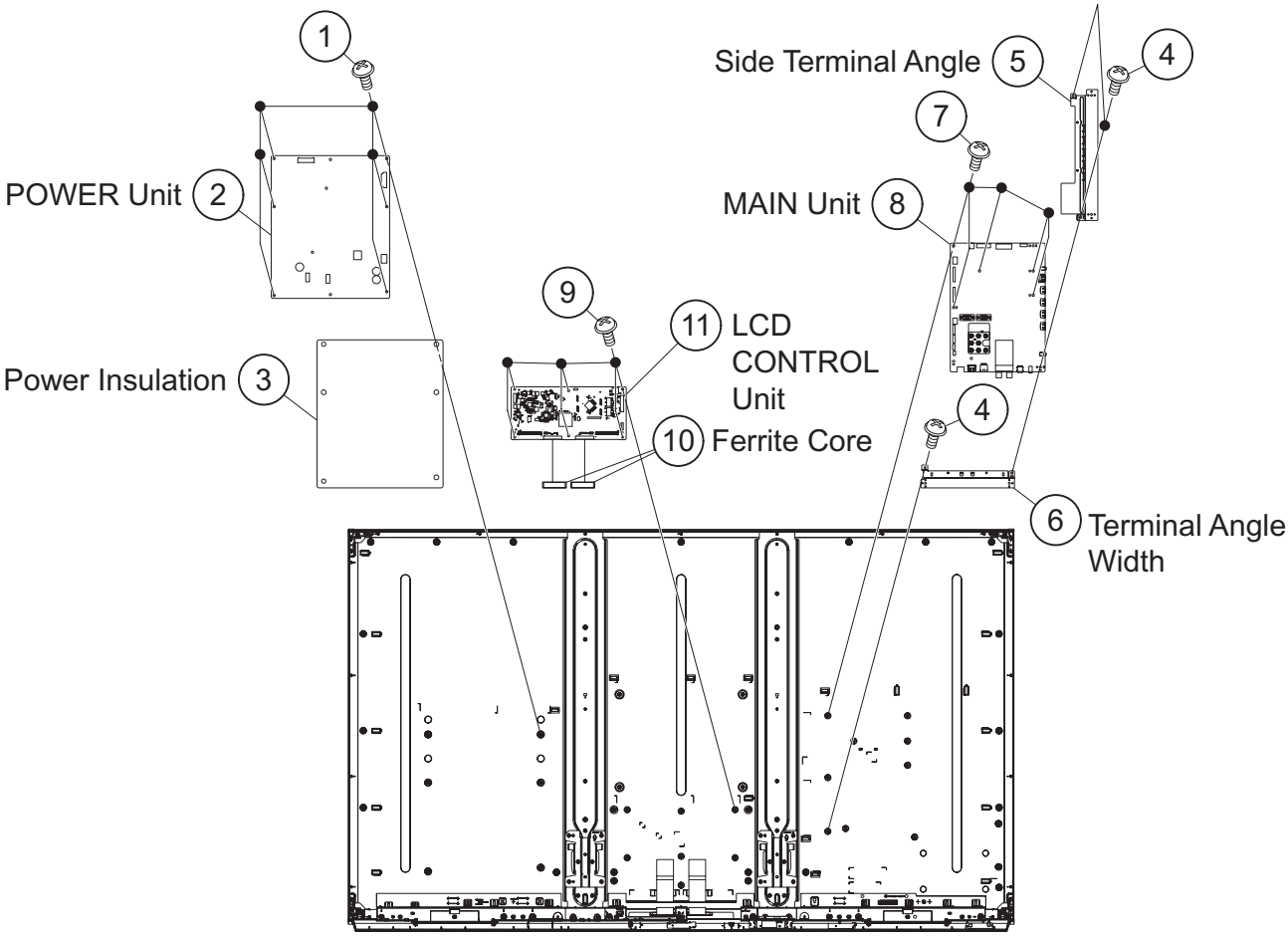
3. Removing of Connectors

1. Disconnect the following connectors from the MAIN Unit. (PD, LV, RA, UB)
2. Disconnect the following connectors from the LCD CONTROL Unit. (PL, LV)
3. Disconnect the following connectors from the POWER Unit. (PD, L1)
4. Disconnect the following connectors from the S-LED Unit A/B (L1) of LCD Panel Module Unit.



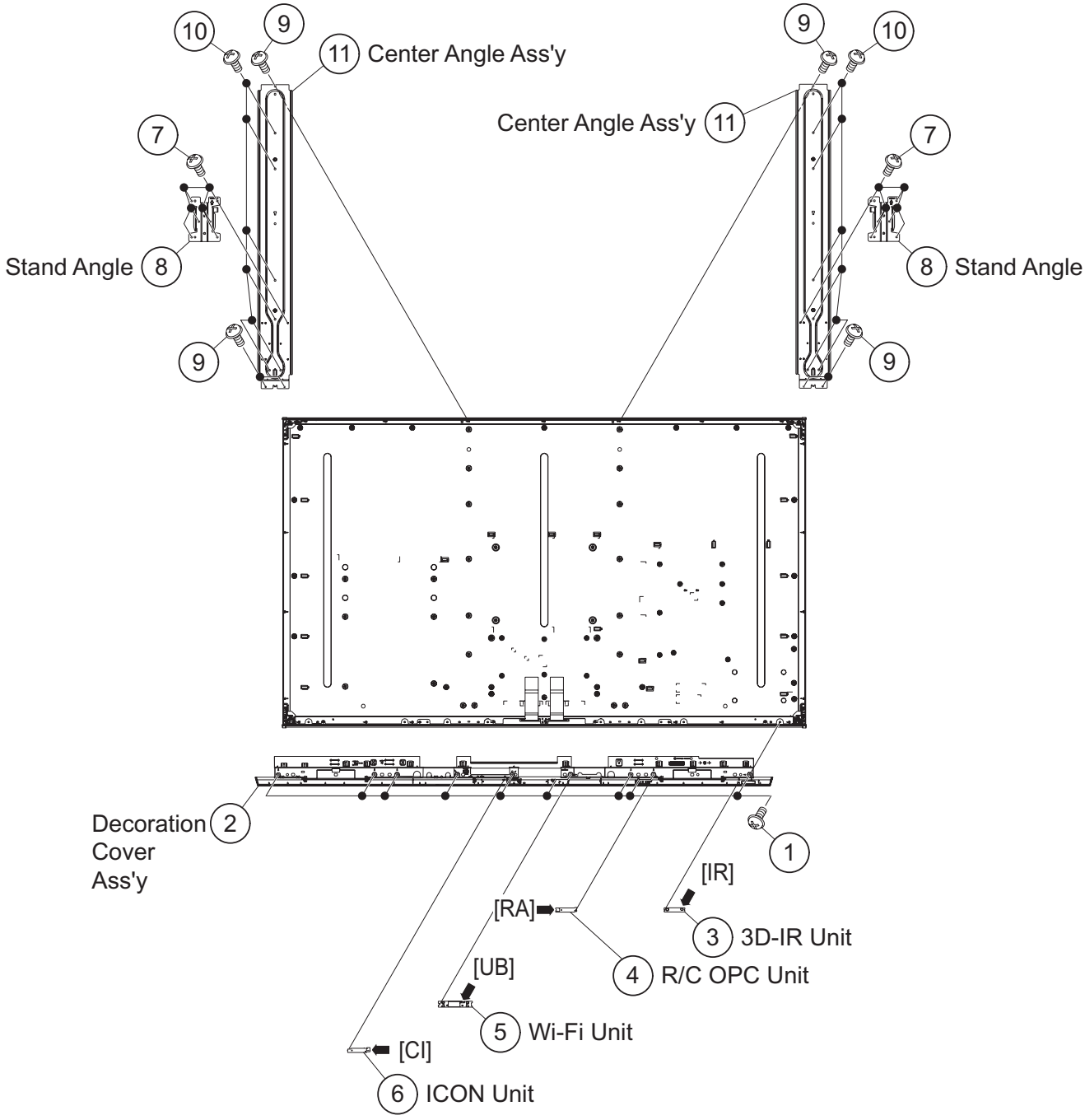
4. Removing of POWER Unit, MAIN Unit, LCD CONTROL Unit.

1. Remove the 6 lock screws ① and detach the POWER Unit ②.
2. Detach the Power Insulation ③.
3. Remove the 3 lock screws ④ and detach the Side Terminal Angle ⑤ and the Terminal Angle Width ⑥.
4. Remove the 5 lock screws ⑦ and detach the MAIN Unit ⑧.
5. Remove the 6 lock screws ⑨, 2 Ferrite Cores ⑩ and the LCD CONTROL Unit ⑪.



5. Removing of 3D-IR Unit, R/C OPC Unit, Wi-Fi Unit, ICON Unit, Decoration Cover Ass'y.

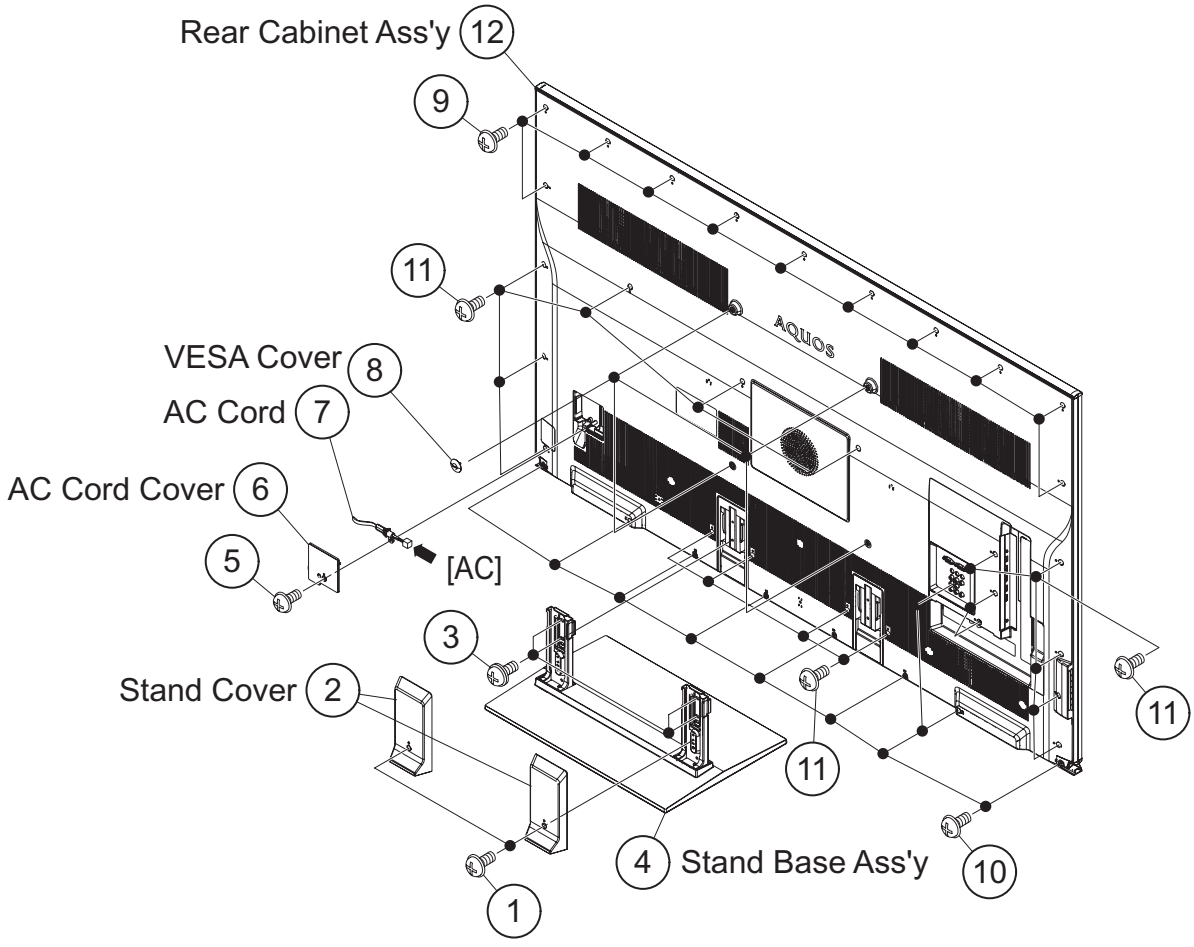
1. Remove the 9 lock screws ① and detach the Decoration Cover Ass'y ②.
2. Detach the 3D-IR Unit ③.
3. Disconnect the IR wire.
4. Detach the R/C OPC Unit ④.
5. Disconnect the RA wire.
6. Detach the Wi-Fi Unit ⑤.
7. Disconnect the UB wire.
8. Detach the ICON Unit ⑥.
9. Disconnect the CI wire.
10. Remove the 12 lock screws ⑦ and detach the 2 Stand Angles ⑧.
11. Remove the 6 lock screws ⑨, 12 lock screws ⑩ and detach the 2 Center Angle Ass'ys ⑪.



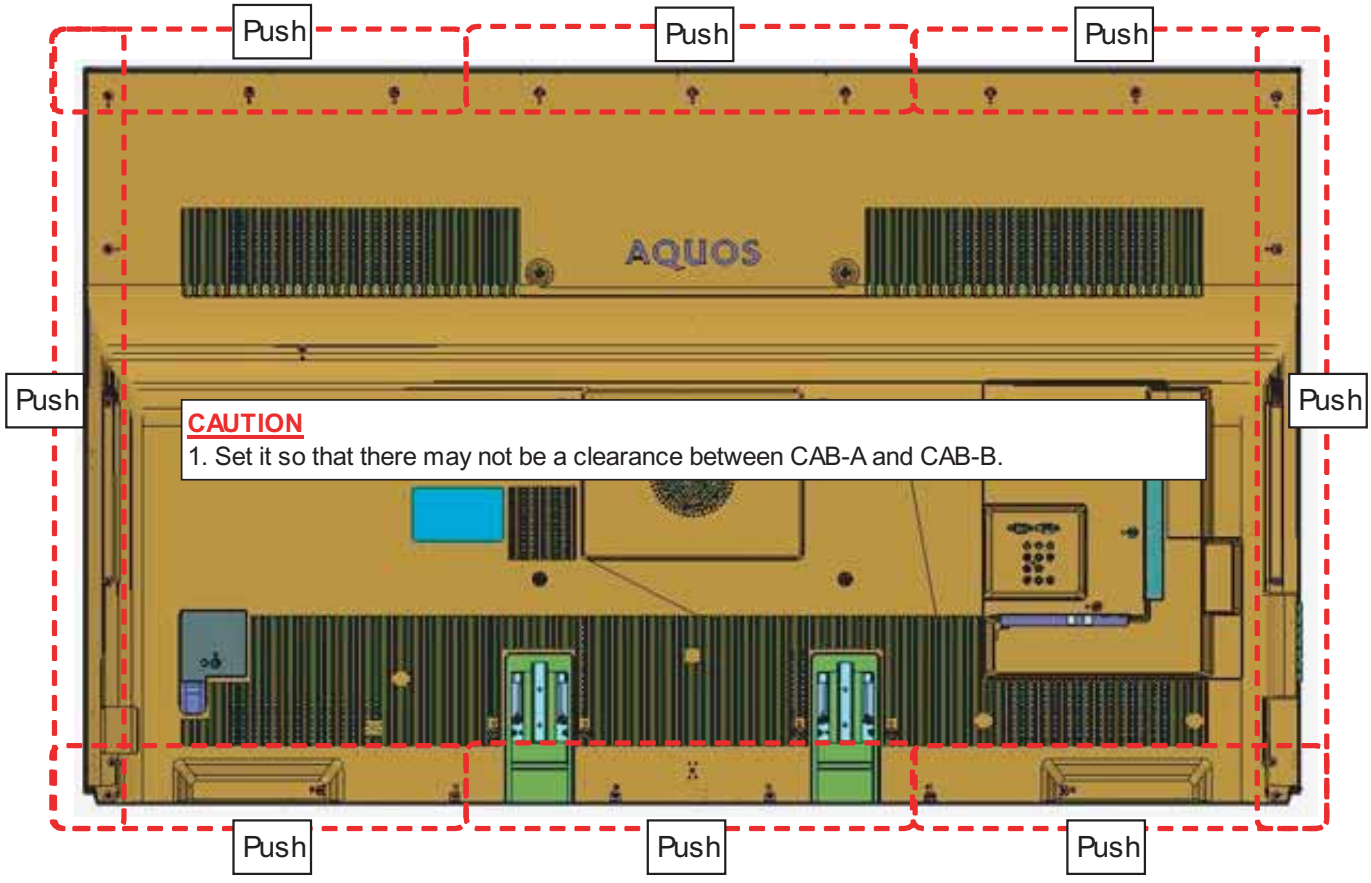
[2] REMOVING OF MAJOR PARTS (LC-70LE745U,C7450U,845U,847U,C8450U)

1. Removing of Stand Unit and Rear Cabinet Ass'y.

1. Remove the 2 lock screws ① and detach the 2 Stand Covers ②.
2. Remove the 4 lock screws ③ and detach the Stand Base Ass'y ④.
3. Remove the 1 lock screw ⑤ and detach the AC Cord Cover ⑥.
4. Disconnect AC wire and detach the AC Cord ⑦.
5. Remove the 4 VESA Covers ⑧, 11 lock screws ⑨, 9 lock screws ⑩ and 17 lock screws ⑪ and detach the Rear Cabinet Ass'y ⑫.

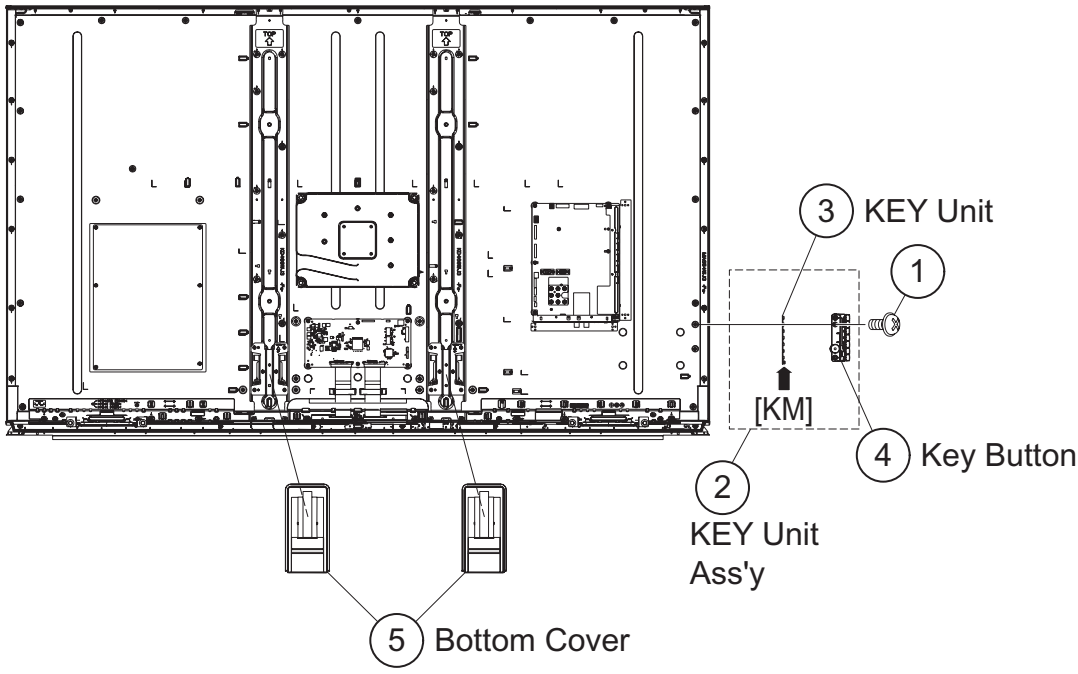


[Precautions for assembly]



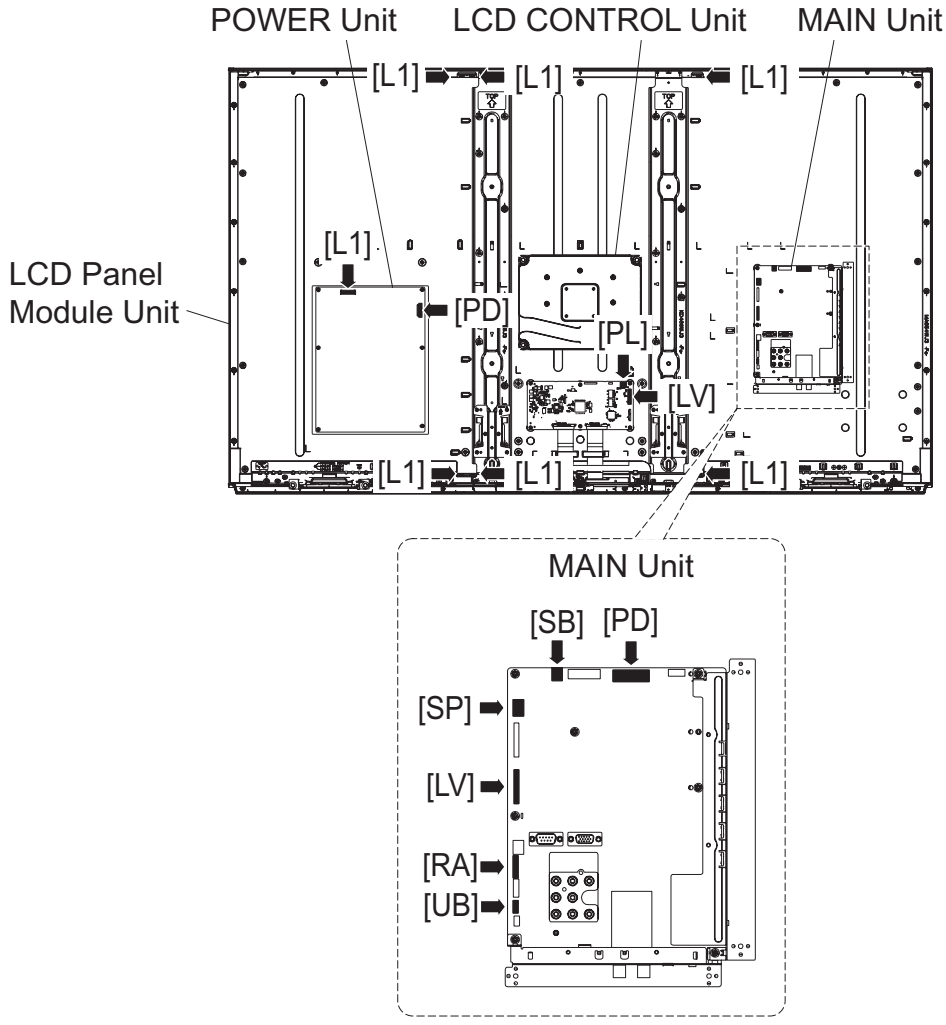
2. Removing of Bottom Cover and KEY Unit.

1. Remove the 1 lock screw ① and detach the KEY Unit Ass'y②.
2. Disconnect the KM wire.
3. Detach the KEY Unit ③ from Key Button ④.
4. Detach the 2 Bottom Covers ⑤.



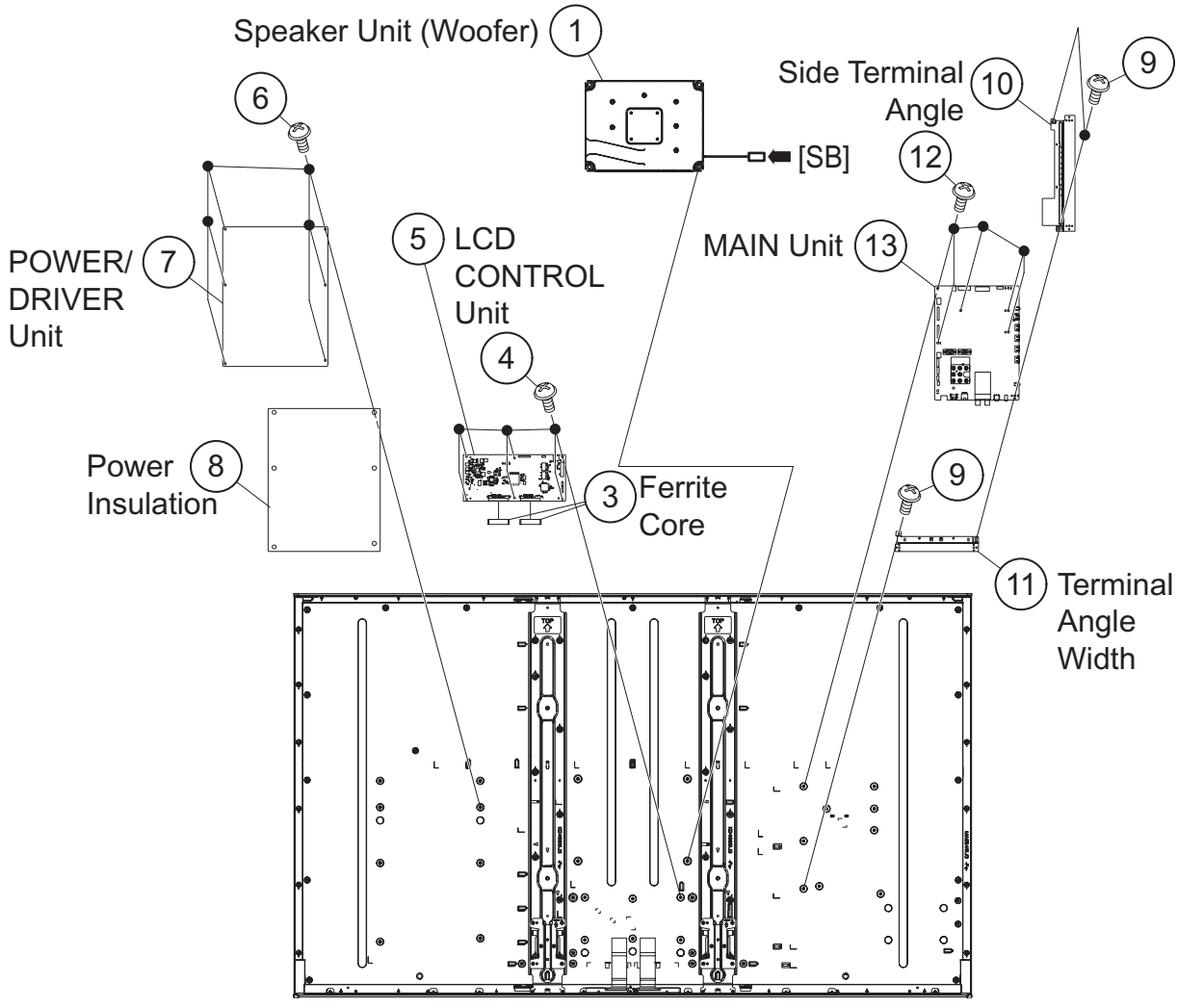
3. Removing of Connectors

1. Disconnect the following connectors from the MAIN Unit. (PD, SB, SP, LV, RA, UB)
2. Disconnect the following connectors from the LCD CONTROL Unit. (PL, LV)
3. Disconnect the following connectors from the POWER Unit. (PD, L1)
4. Disconnect the following connectors from the S-LED Unit (L1) of LCD Panel Module Unit.



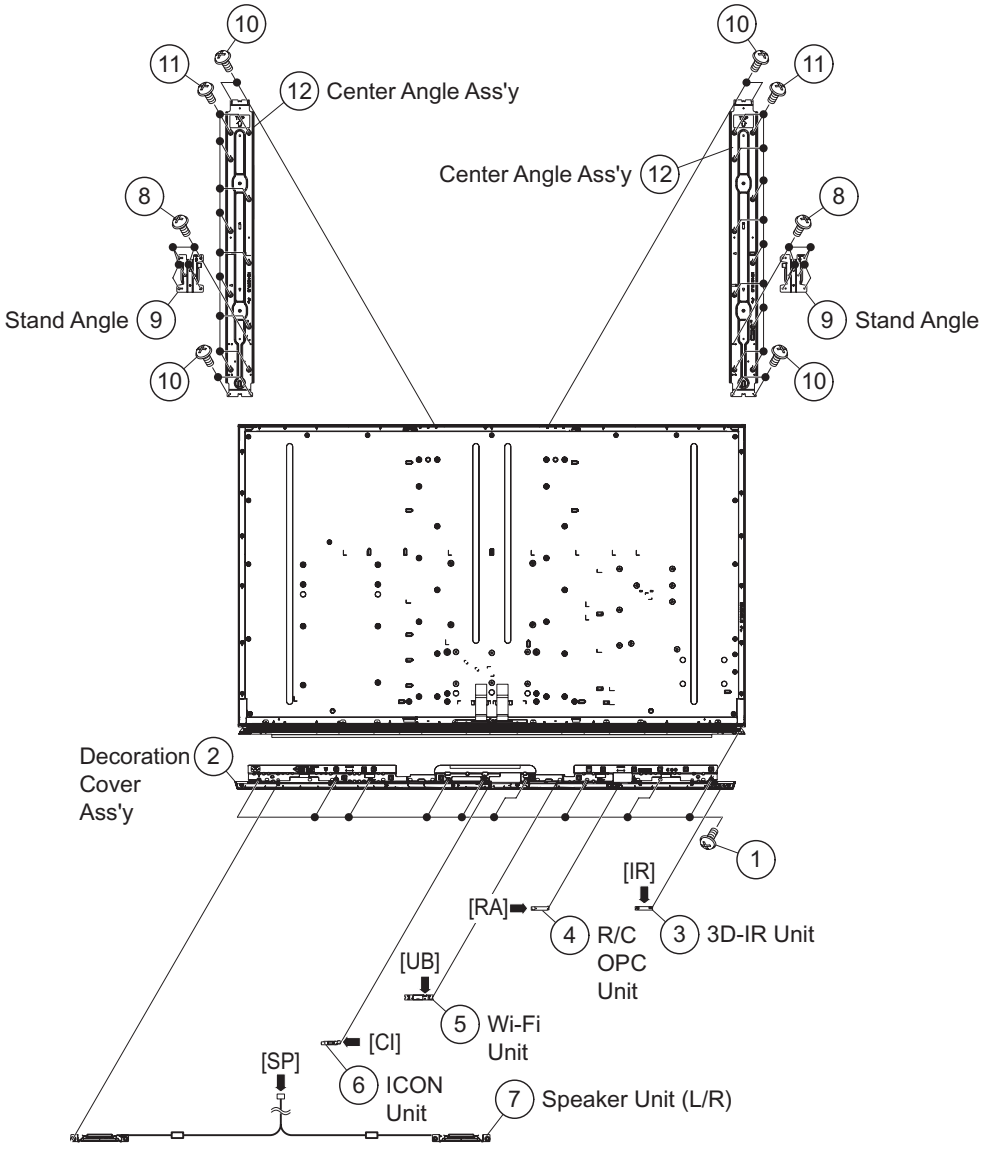
4. Removing of Speaker Unit (Woofer), LCD CONTROL Unit, MAIN Unit, POWER/DRIVE Unit.

1. Detach the Speaker Unit (Woofer) ①.
2. Disconnect the SB wire.
3. Remove the 2 Ferrite Cores ③, 6 lock screws ④ and detach the LCD CONTROL Unit ⑤.
4. Remove the 6 lock screws ⑥ and detach the POWER/DRIVER Unit ⑦.
5. Detach the Power Insulation ⑧.
6. Remove the 3 lock screws ⑨ and detach the side Terminal angle ⑩ and the Terminal Angle Width ⑪.
7. Remove the 5 lock screws ⑫ and detach the MAIN Unit ⑬.



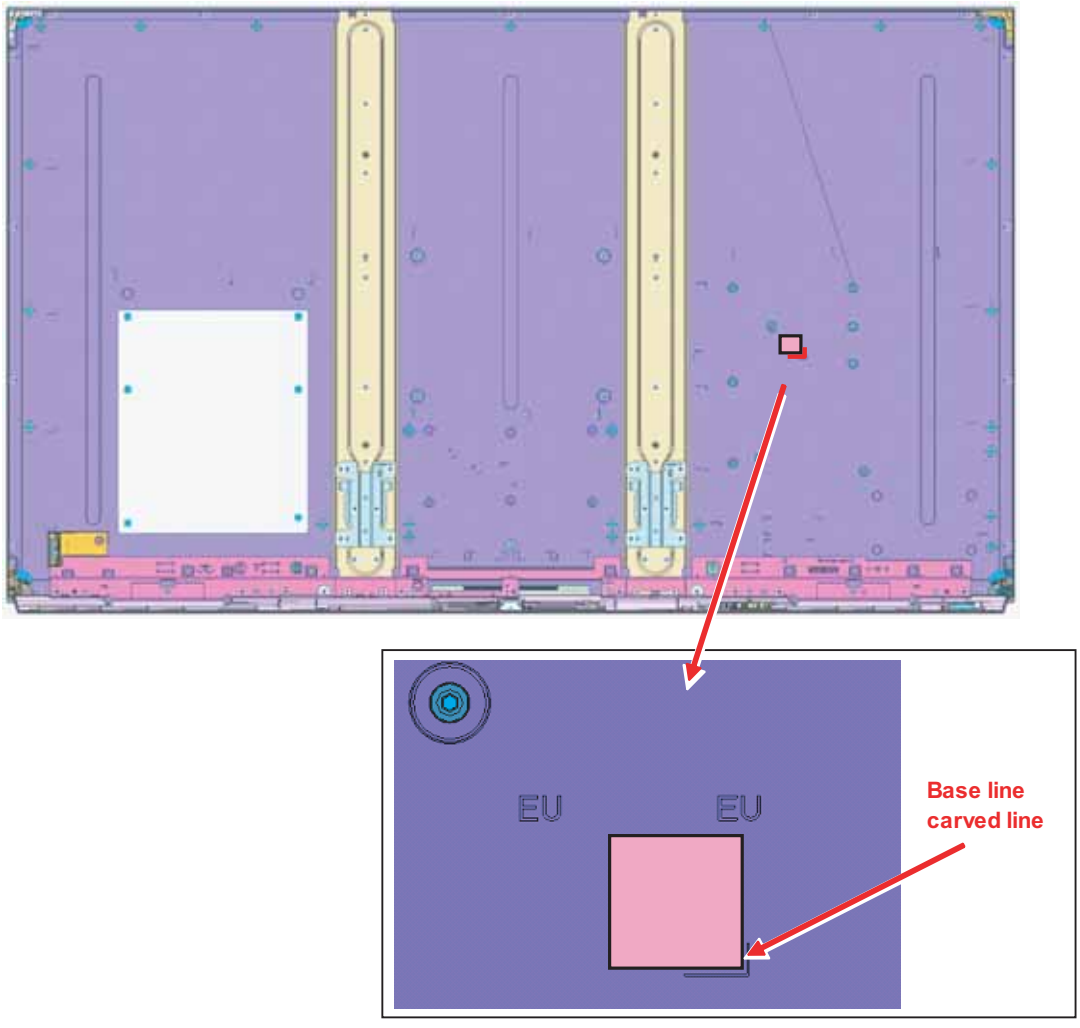
5. Removing of Decoration Cover Ass'y, 3D-IR Unit, R/C OPC Unit, Fi-Fi Unit, ICON Unit, Speaker Unit (L/R), Center Angle Ass'y.

1. Remove the 9 lock screws ① and detach the Decoration Cover Ass'y ②.
2. Detach the 3D-IR Unit ③.
3. Disconnect the IR wire.
4. Detach the R/C OPC Unit ④.
5. Disconnect the RA wire.
6. Detach the Wi-Fi Unit ⑤.
7. Disconnect the UB wire.
8. Detach the ICON Unit ⑥.
9. Disconnect the CI wire.
10. Detach the Speaker Unit (L/R) ⑦.
11. Disconnect the SP wire.
12. Remove the 12 lock screws ⑧ and detach the 2 Stand Angles ⑨.
13. Remove the 8 lock screws ⑩, 20 lock screws ⑪, and detach the 2 Center Angle Ass'ys ⑫.

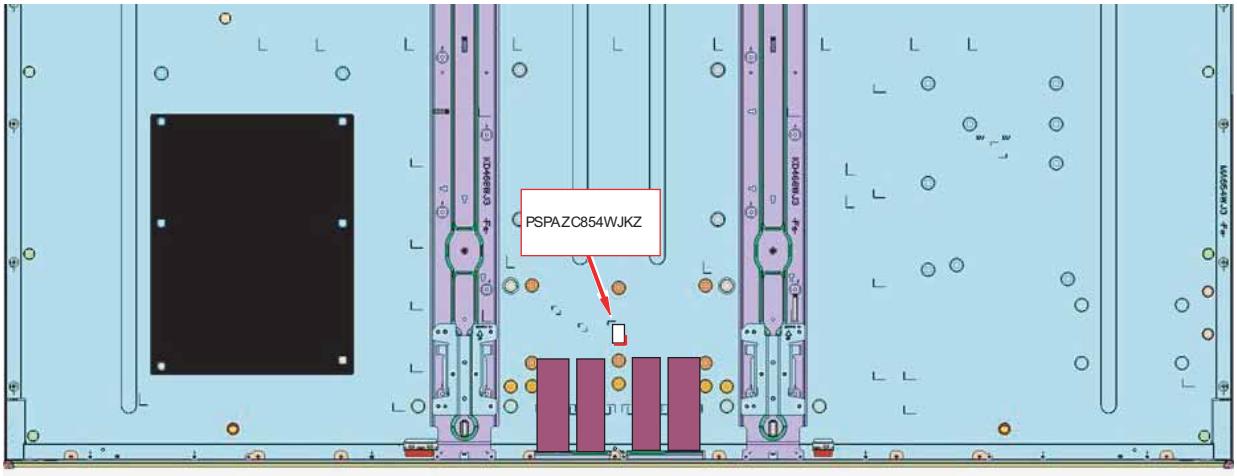


[3] The location putting on the heat measure sheet

1. MAIN PWB Unit



2. LCD CONTROL Unit (for LC-60/70LE845/847/C8470)



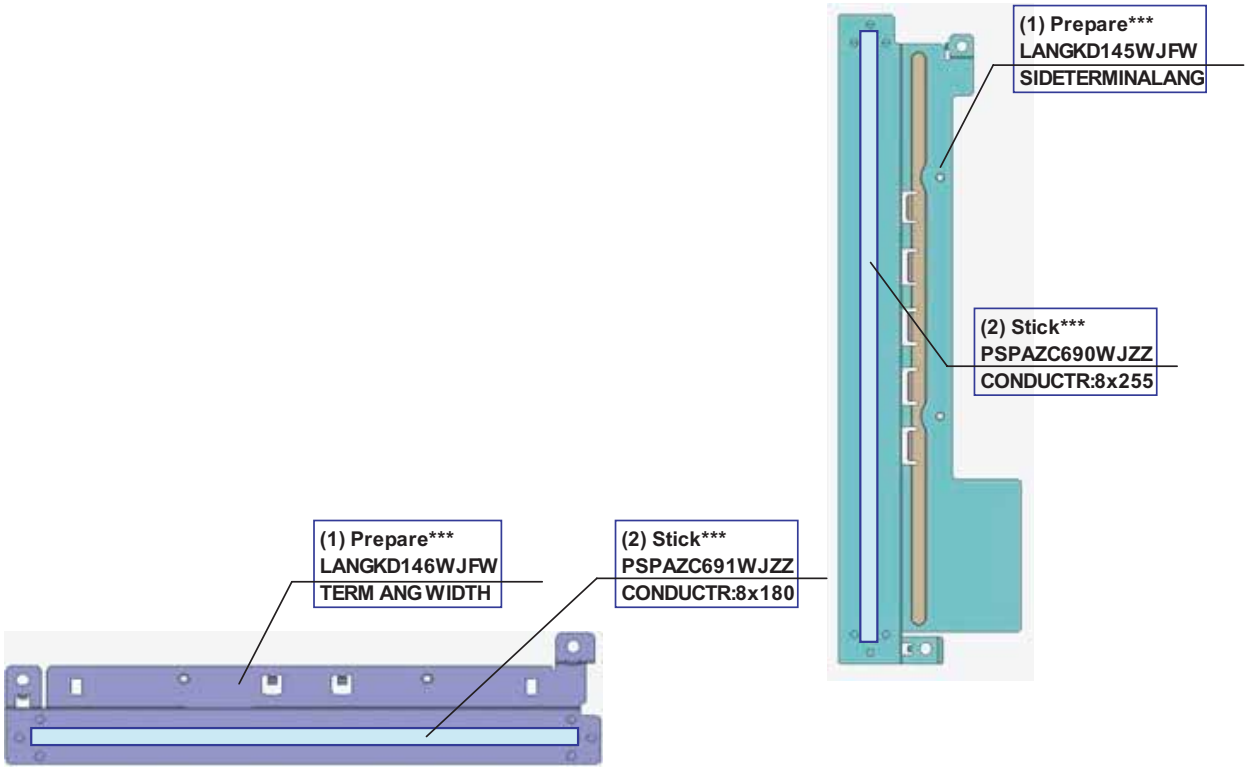
[4] Precautions for assembly

1. Points to be checked and precautions when servicing the unit

Mount the main PWB Ass'y on the backlight chassis and check that the EMI-prevention parts are not peeled and twisted from the access holes. (The EMI-prevention parts, conductive nonwoven fabric gaskets, must be seen from the access holes.)

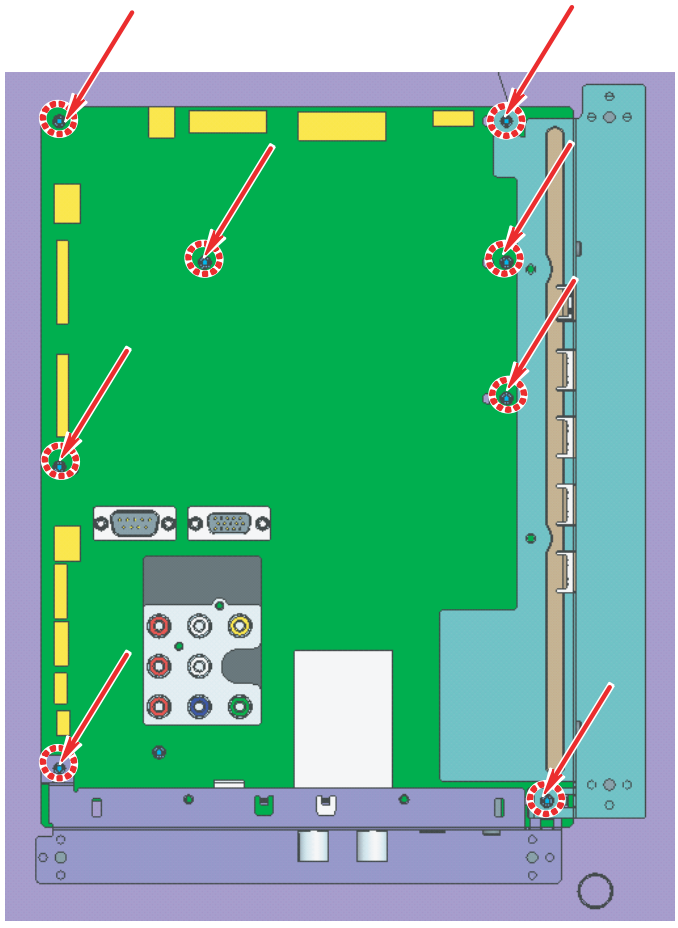
[Countermeasure]

Attach the conductive nonwoven fabric gaskets on the shielded case on the main PWB.



The following is a drawing mounting the main PWB Ass'y on the backlight chassis. (The parts indicated by -> are the access holes for confirmation.)

(Main PWB Ass'y => State where the shielded case and RF terminal angle are mounted on the main PWB)



CHAPTER 5. ADJUSTMENT

[1] ADJUSTMENT PROCEDURE

The adjustment values are set to the optimum conditions at the factory before shipping. If a value should become improper or an adjustment is required due to part replacement, make an adjustment according to the following procedure.

1. After replacement of any PWB unit and/or IC for repair, please note the following.

• When replacing the following units, make sure to prepare the new units loaded with updated software.

MAIN Unit: DKEYMF953FM01

• When replacing the LCD control PWB, perform the VCOM adjustment.

2. Upgrading of each microprocessor software

CAUTION: Never “POWER OFF” the unit when software upgrade is ongoing.

Otherwise the system may be damaged beyond recovery.

2.1. Software version upgrade

The model employs the following software.

- Main software (please use a software version after BSMK_632-732_xxx.USB).
- Monitor microprocessor software (please use a software version after BMSDMxxx.SMB.)

The main software, monitor microprocessor software can be upgraded by using a general-purpose USB Memory.

The followings are the procedures for upgrading, explained separately for the main software, monitor microprocessor software.

2.2. Main software version upgrade

2.2.1 Get ready before you start

- USB Memory of 128MB or higher capacity.
- PC running on Windows 98/98SE/ME/2000/XP operating system.
- USB Memory reader/writer or PC with a USB port.
- The file system of a USB memory is FAT. (FAT32 supports)
- Use the USB memory without other functions. (lock and memory reader...etc)

2.2.2 Preparations

To upgrade the main software, it is necessary to get ready the USB Memory for version upgrade before you start.

Follow the steps below and create the USB Memory for version upgrade.

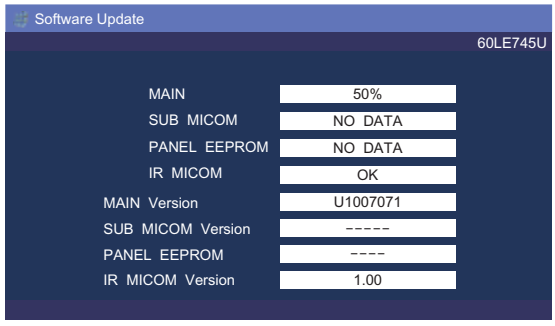
1. Copy the file BSMK_632-732_xxx.USB for version upgrade to the root directory (folder) of the USB Memory.

NOTE: In the USB Memory drive, do not store other folders or unrelated files, or more than one file for version upgrade.

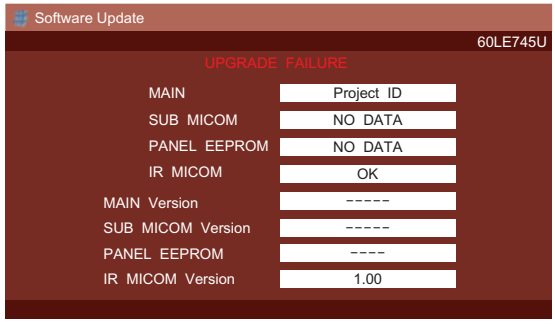
Now the USB Memory for version upgrade is ready.

2.2.3 How to upgrade the software

1. Unplug the AC cord.
2. Insert the USB Memory for version upgrade into the service socket.
3. Plug in the AC cord with power button pressed down.
4. After 5 seconds, unpress the power button.
5. After the unit startup, the system upgrade screen as shown below within 20-40 seconds.

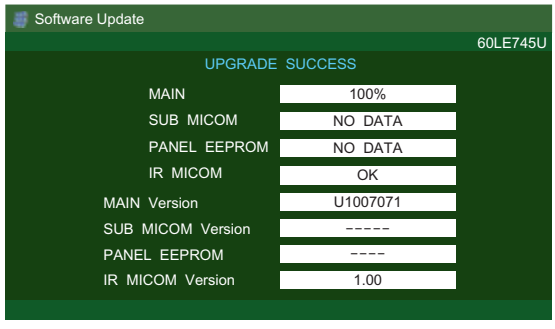


6. Even a single failure in the process will trigger the upgrade failure screen.



NOTE: In the event of a failure, repeat the upgrade process. If the process repeatedly fails, it is likely that the hardware need fixing.

7. Upon completion of the whole process, the upgrade success screen as shown below appears. You can check the new software version on this screen. The version information appears after the upgrade is complete.



8. Unplug the AC cord and remove the USB Memory for version upgrade.
9. Now the software version upgrade is complete.

NOTE: When you are done with the software version upgrade, start the set, go to the top page of the adjustment process screen and check the main software version information.

2.3. Monitor microprocessor software version upgrade

Create the USB memory for monitor microprocessor software version upgrade in the same manner as explained in the “Main software version upgrade”.

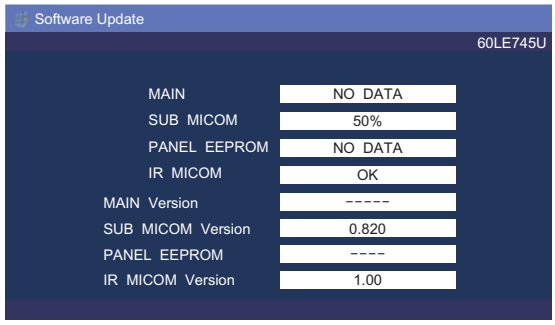
Copy the file BSMK_632-732_xxx.USB and BMSDMxxx.SMB. (named temporarily) for monitor microprocessor software version upgrade to the USB memory.

2.3.1 How to upgrade the software

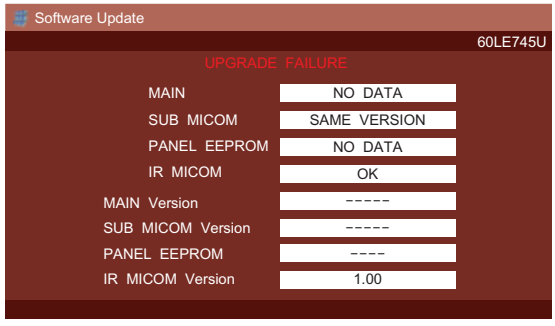
1. Unplug the AC cord.
2. Insert the USB Memory for version upgrade into the service socket.
3. Plug in the AC cord with power button pressed down.
4. After 5 seconds, unpress the power button.

CAUTION:
- The moment this operation is done, the upgrading of the monitor microprocessor software starts. While the upgrade is ongoing, never power off the unit. Otherwise the upgrade will fail and the system may be serious damaged beyond recovery (inability to start).
- After the monitor microprocessor software is upgraded, also perform the ‘Industry Init’.

5. After the unit startup, the upgrade starts. The power led will blink continuously. Also, an upgrade screen will be shown during a minor upgrade.

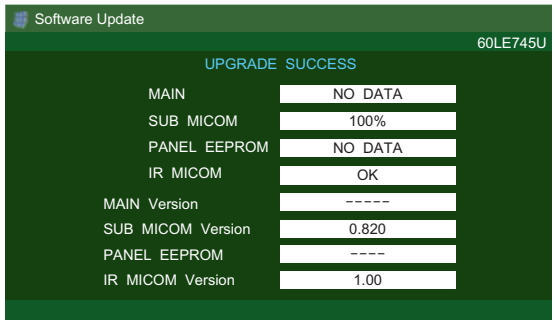


6. If the upgrade fails, power led will stop blinking. Also, the upgrade failure screen will be shown if upgrade screen was shown at 5.



NOTE: In the event of a transient failure, upgrade will be automatically retried up to three times. If the process repeatedly fails, hardware may be the cause.

7. The upgrade success screen will be shown if upgrade screen was shown at 5.



8. Unplug the AC cord and remove the USB Memory for version upgrade.
9. Now the software version upgrade is complete.

NOTE: When you are done with the software version upgrade, start the set, go to the top page of the adjustment process screen and check the monitor microprocessor software version information and panel size information.

3. Entering and exiting the adjustment process mode

1) Before entering the adjustment process mode, the AV position RESET in the video adjustment menu.
2) While holding down the “VOL (–)” and “INPUT” keys at a time, plug in the AC cord of the main unit to turn on the power.

   The letter “<K>” appears on the screen.
3) Next, hold down the “VOL (–)” and “CH (﹀)” keys at a time.

   (The “VOL (–)” and “CH (﹀)” keys should be pressed and held until the display appears.)

   Multiple lines of blue characters appearing on the display indicate that the unit is now in the adjustment process mode.

   When you fail to enter the adjustment process mode (the display is the same as normal startup), retry the procedure.
4) To exit the adjustment process mode after the adjustment is done, unplug the AC cord from the outlet to make a forced shutdown. (When the power was turned off with the remote controller, once unplug the AC cord and plug it again. In this case, wait 10 seconds or so before plugging.)

CAUTION: Use due care in handling the information described here lest your users should know how to enter the adjustment process mode. If the settings are tampered in this mode, unrecoverable system damage may result.

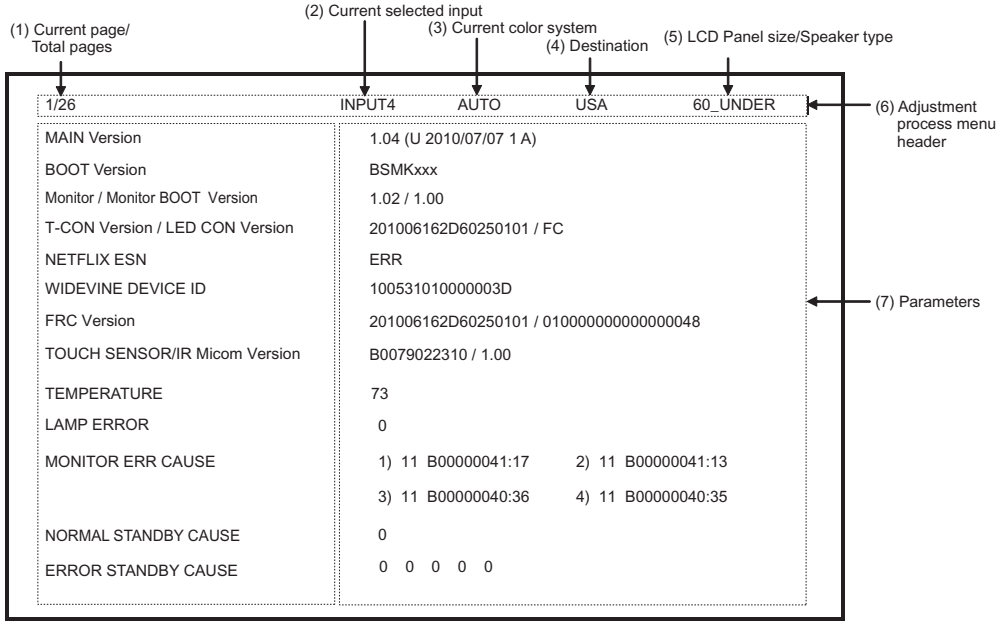
4. Remote controller key operation and description of display in adjustment process mode

1) Key operation

Remote controller key	Main unit key	Function
CH (﹀ / ﹀)	CH (﹀ / ﹀)	Moving an item (line) by one (UP/DOWN)
VOL (+/–)	VOL (+/–)	Changing a selected item setting (+1/ –1)
Cursor (UP/DOWN)	————	Turing a page (PREVIOUS/NEXT)
Cursor (LEFT/RIGHT)	————	Changing a selected line setting (+10/ –10)
INPUT	————	Input switching (toggle switching)
ENTER	————	Executing a function

*Input mode is switched automatically when relevant adjustment is started so far as the necessary input signal is available.

2) Description of display



5. List of adjustment process mode menu

The character string in brackets [ ] will appear as a page title in the adjustment process menu header.

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
1	1	MAIN Version	Main software version	
	2	BOOT Version		
	3	Monitor / Monitor BOOT Version	Monitor and monitor boot software version	
	4	T-CON Version / LED CON Version	LCD controller software version	
	5	NETFLIX ESN		
	6	WIDEVINE DEVICE ID		
	7	FRC Version		
	8	TOUCH SENSOR/IR Micom Version		
	9	TEMPERATURE	Panel temperature	
	10	LAMP ERROR	Number of termination due to lamp error	
	11	MONITOR ERR CAUSE		
	12	NORMAL STANDBY CAUSE		Refer to *1 under the list for details
	13	ERROR STANDBY CAUSE		Refer to *2 under the list for details
2	1	INDUSTRY INIT	Initialization to factory settings	
	2	INDUSTRY INIT(-Public)		
	3	PUBLIC MODE	Public mode	
	4	Center Acutime	Accumulated main operation time	
	5	RESET	Reset	
	6	Backlight Acutime	Accumulated monitor operation time	
	7	RESET	Reset	
	8	LAMP ERROR RESET	Reset LAMP ERROR	
	9	VIC XPOS	X-coordinate setting for VIC READ	
	10	VIC YPOS	Y-coordinate setting for VIC READ	
	11	VIC COLOR	Collected color data setting for VIC READ	
	12	VIC SIGNAL TYPE	Signal type setting for VIC READ	
	13	VIC READ	Picture level acquisition function	Level appears in green on the upper right
3	1	N358 MAIN ADJ(INPUT2)	CVBS and TUNER signal level adjustment	
	2	N358 MAIN ADJ(INPUT2)	CVBS signal level adjustment	
	3	TUNER DAC ADJ	TUNER signal level adjustment	
	4	N358 CONTRAST A_GAIN		
	5	N358 CONTRAST D_GAIN		
	6	N358 CONTRAST OFFSET		
	7	TUNER CONTRAST A_GAIN		
	8	TUNER CONTRAST D_GAIN		
	9	TUNER CONTRAST OFFSET		
4	1	TUNER VCHIP TEST(69ch)	Tuning test and VCHIP test (69ch)	
	2	TUNER VCHIP TEST(7ch)	Tuning test and VCHIP test (7ch)	
	3	TUNER VCHIP TEST(10ch)	Tuning test and VCHIP test (10ch)	
	4	TUNER VCHIP TEST(15ch)	Tuning test and VCHIP test (15ch)	
	5	INSPECT USB TERM		
	6	HDMI EDID WRITE		
	7	HDMI CEC TEST		
5	1	COMP15K ADJ(INPUT1)	Component 15K picture level adjustment (main)	
	2	COMP15K Y A_GAIN		
	3	COMP15K Cb A_GAIN		
	4	COMP15K Cr A_GAIN		
	5	COMP15K Y OFFSET		
	6	COMP15K Cb OFFSET		
	7	COMP15K Cr OFFSET		
6	1	COMP33K ADJ(INPUT1)	Component 33K picture level adjustment (main)	
	2	COMP33K Y A_GAIN		
	3	COMP33K Cb A_GAIN		
	4	COMP33K Cr A_GAIN		
	5	COMP33K Y OFFSET		
	6	COMP33K Cb OFFSET		
	7	COMP33K Cr OFFSET		

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
7	1	ANALOG RGB ADJ	Analog RGB picture level adjustment	
	2	R A_GAIN		
	3	G A_GAIN		
	4	B A_GAIN		
	5	R OFFSET		
	6	G OFFSET		
	7	B OFFSET		
8	1	VCOM ADJ	VCOM adjustment value	
9	1	LEV1	Standard value 1	Adjustment gradation setting.
	2	LEV2	Standard value 2	
	3	LEV3	Standard value 3	
	4	LEV4	Standard value 4	
	5	LEV5	Standard value 5	
	6	LEV6	Standard value 6	
10	1	MG1R	WB adjustment Point 1, R adjustment value	Parameter for six-point adjustment
	2	MG1G	WB adjustment Point 1, G adjustment value	
	3	MG1B	WB adjustment Point 1, B adjustment value	
	4	MG2R	WB adjustment Point 2, R adjustment value	
	5	MG2G	WB adjustment Point 2, G adjustment value	
	6	MG2B	WB adjustment Point 2, B adjustment value	
	7	MG3R	WB adjustment Point 3, R adjustment value	
	8	MG3G	WB adjustment Point 3, G adjustment value	
	9	MG3B	WB adjustment Point 3, B adjustment value	
11	1	MG4R	WB adjustment Point 4, R adjustment value	Parameter for six-point adjustment
	2	MG4G	WB adjustment Point 4, G adjustment value	
	3	MG4B	WB adjustment Point 4, B adjustment value	
	4	MG5R	WB adjustment Point 5, R adjustment value	
	5	MG5G	WB adjustment Point 5, G adjustment value	
	6	MG5B	WB adjustment Point 5, B adjustment value	
	7	MG6R	WB adjustment Point 6, R adjustment value	
	8	MG6G	WB adjustment Point 6, G adjustment value	
	9	MG6B	WB adjustment Point 6, B adjustment value	
12	1	MODE SELECT		
	2	POS SELECT		
	3	POS MIN		
	4	POS MID1		
	5	POS MID2		
	6	POS MID3		
	7	POS MID4		
	8	POS MID5		
	9	POS MID6		
	10	POS MAX		
13	1	CD MIN		
	2	CD MID1		
	3	CD MID2		
	4	CD MID3		
	5	CD MID4		
	6	CD MID5		
	7	CD MID6		
	8	CD MAX		
14	1	CALC		
	2	RESET		
	3	VAL1		
	4	VAL2		
	5	VAL3		
	6	VAL4		
	7	VAL5		
	8	VAL6		

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
15	1	MONITOR TIME OUT		
	2	MONITOR MAX TEMP		
	3	MONITOR ERROR CAUSE RESET		
16	1	LCD TEST PATTERN		
	2	LCD TEST PATTERN1		
	3	LCD TEST PATTERN2		
	4	LCD TEST PATTERN3		
	5	LCD TEST PATTERN4		
	6	TV TEST PATTERN 1		
	7	TV TEST PATTERN 2		
17	1	T-CON VERSION EXT.1	PRIMROSE 2D Version	
	2	T-CON VERSION EXT.2	PRIMROSE 3D Version	
	3	T-CON VERSION EXT.3	Blank (Not Use)	
	4	T-CON VERSION EXT.4	Blank (Not Use)	
18	1	READ/WRITE		
	2	SLAVE ADDRESS		
	3	RESISTER ADDRESS UPPER		
	4	RESISTER ADDRESS LOWER		
	5	WRITE DATA UPPER		
	6	WRITE DATA LOWER		
	7	READ DATA UPPER		
	8	READ DATA LOWER		
19	1	POWER LED BRIGHTNESS		
	2	MENU LED BRIGHTNESS		
	3	INPUT LED BRIGHTNESS		
	4	CH UP LED BRIGHTNESS		
	5	CH DOWN LED BRIGHTNESS		
	6	VOL UP LED BRIGHTNESS		
	7	VOL DOWN LED BRIGHTNESS		
	8	LOGO LED BRIGHTNESS		
	9	ICON LED BRIGHTNESS		
	10	ICON LED BRIGHTNESS (STANDBY)		
	11	3D LED BRIGHTNESS		
20	1	POWER KEY SENSITIVITY		
	2	MENU KEY SENSITIVITY		
	3	INPUT KEY SENSITIVITY		
	4	CH UP KEY SENSITIVITY		
	5	CH DOWN KEY SENSITIVITY		
	6	VOL UP KEY SENSITIVITY		
	7	VOL DOWN KEY SENSITIVITY		
21	1	KEY STRENGTH GET MODE		
	2	POWER KEY STRENGTH		
	3	MENU KEY STRENGTH		
	4	INPUT KEY STRENGTH		
	5	CH UP KEY STRENGTH		
	6	CH DOWN KEY STRENGTH		
	7	VOL UP KEY STRENGTH		
	8	VOL DOWN KEY STRENGTH		
22	1	CROSSTALK ADJ MODE		
	2	CROSSTALK TH1		
	3	CROSSTALK TH2		
	4	CROSSTALK TH3		
	5	CROSSTALK TH4		
	6	CROSSTALK GAIN1		
	7	CROSSTALK GAIN2		
	8	CROSSTALK GAIN3		

Page	Line	Item	Description	Remarks (adjustment detail, etc.)
23	1	WIFI SSID 2.4GHz	Set AP SSID	
	2	WIFI SSID 5GHz	Set AP SSID	
	3	WIFI RSSI 2.4GHz	Set RSSI threshold	
	4	WIFI RSSI 5GHz	Set RSSI threshold	
	5	WIFI TIME 2.4GHz	Set Time Out	
	6	WIFI TIME 5GHz	Set Time Out	
	7	WIFI RSSI TEST	Execute test	
	8	WIFI RSSI RESULT	Display test result	
24	1	KEY LOCK (1217)		
	2	KOUTEI AREA ALL CLEAR		
	3	A MODE AREA CLEAR		
	4	BACKUP AREA CLEAR		
	5	B MODE AREA CLEAR		
	6	EXECUTION		
25	1	ERROR STANDBY CAUSE1		
	2	ERROR STANDBY CAUSE2		
	3	ERROR STANDBY CAUSE3		
	4	ERROR STANDBY CAUSE4		
	5	ERROR STANDBY CAUSE5		
	6	ERROR STANDBY CAUSE RESET		
26	1	EEP SAVE	Writing setting values to EEPROM	
	2	EEP RECOVER	Reading setting values from EEPROM	
	3	MODEL NAME		
	4	PANEL SIZE		
	5	SETTING FOR ADJ		
	6	PANEL LIMIT		
	7	PANEL RANGE LIMIT		
	8	SHORT CHECK MODE		
	9	SHORT CHECK CURRENT		
	10	CURRENT SW		
	11	TEST NETWORK UPDATE		

***1 Details of P1.12 (NORMAL STANDBY CAUSE)**

When TV set is powered off due to normal use or product specification, the last cause will be recorded.

The code, character string and description for the standby cause are below.

If you power off by remote, the cause will not be recorded.

Code	Character string	Description
2	NO_OPERT	No operation off
3	NO_SIGNA	No signal off
6	SLEEP_TM	Off timer
8	OFF_232C	Command from RS232C

***2 Details of P1.13 (ERROR STANDBY CAUSE)**

When TV set is powered off due to any anomaly detection, the past 5 causes will be recorded.

You can confirm the time those causes occurred and character string in the adjustment process mode menu. (Page 25/26)

The time is accumulated total after TV set is powered on, and the value corresponds to “Center Acutime” in the adjustment process mode menu.

The code, character string and description for the standby cause are below.

If no error has occurred, the code is 0 and the character string is “NO RECORD”.

Code	Character string	Description
1A	E_MONITR	Monitor trouble detected
1B	E_CVICBT	Driver boot error
22	E_TCNERR	Software abnormality of LCD controller
48	E_MRESET	Failure of resetting menu settings (Initial Setup - Reset)
50	E_TCNF_S	T-CON FPGA status error
54	E_TCON_E	T-CON hung-up

Monitor ERR STBY table

Outline: Communication/Power failure detected by the monitor microprocessor is stored in EEPROM, and last 4 abnormal can be confirmed in the Process mode A.

Location: Page 1 of the process mode A: MONITOR ERR CAUSE. “0” if there is no error. It is cleared to 0 on the last page of the process mode A.

Display	Error description	
02	Initial communication from the main CPU is not received.	Check UART bus between main CPU and sub CPU.
03	Only the initial communication is received.	
04	Until panel information request reception	
05	Until initialization completion reception	
06	Until version notification transmission	
07	Until start-up information notification transmission	
08	Until start-up information response reception	
09	Until time-out setting reception	
0A	Request time-out	
0B	Restart time-out during the beginning of time acquisition start-up	
0C	Ending sequence time-out	
0D	Preset start-up time-out during completion	
0E	Download, start-up time-out	
0F	Time acquisition time-out	
11	Regular communication time-out	
16	Backlight error	See p.6-5
1A	Monitor temperature failure	- Check TV setting environment
		- Check the other monitor (ref No.)
1E	DET_13V failure	Check 13V power line.
1F	DET_D3V3 failure	Check D3V3 power line.
20	ERROR_3D (3D-PWB) failure	Check 3D-PWB
21	DET_PNLxxV failure	Check T-CON power line
23	Error standby request from the main CPU	Check ERROR STANDBY CAUSE (p.5-8)

6. Special features

* STANDBY CAUSE (Page 1/26)

  Display of a cause (code) of the last standby

  The cause of the last standby is recorded in EEPROM whenever possible.

  Checking this code will be useful in finding a problem when you repair the troubled set.

* EEP SAVE (Page 26/26)

  Storage of EEP adjustment value

* EEP RECOVER (Page 26/26)

  Retrieval of EEP adjustment value from storage area

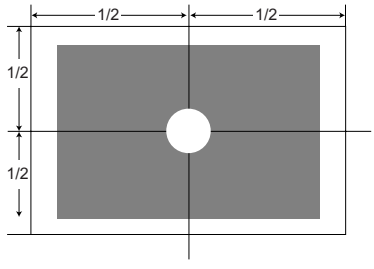
7. Writing the microprocessor software

7.1. Writing the main microprocessor software and monitor microprocessor software (Main PWB: QPWBXF953WJZZ)

	Adjustment item	Adjustment conditions	Adjustment procedure
1	Writing the main microprocessor software and monitor microprocessor software <Main PWB>	Checker process Checking the file version Checking the USB memory	1) Using the checker, connect the specified writing tool to the SC8452 (TL8461 - TL8475). 2) Using the checker, connect the USB memory to the J9502 (TL9503, TL9506 - 9508). 3) Apply the specified voltage to the PWB and boot it up with the tool connected. 4) Send the software writing start command via RS232C. 5) Send the writing status check command and confirm the response of OK. Then turn off the power. CAUTION: When the USB memory is not inserted or reading error occurs, nothing is written.

8. Signal adjustment

8.1. LCD section adjustment [LCD module adjustment]

	Adjustment item	Adjustment conditions	Adjustment procedure
1	Opposite bias adjustment (LCD module adjustment item)	Adjustment in the center position of the panel	1) Enter the process mode using the process adjustment remote control. 2) Select [VCOM ADJ] using the Channel ∧/∨ keys on the remote control. 3) Press the Enter key to check that the pattern for adjustment is displayed. 4) Make adjustment so that the flicker located in the center of the screen is minimized using the Volume +/- keys on the remote control. 5) If the optimum condition is obtained in step 4, press the Enter key to turn off the pattern. CAUTION: * Make adjustment with no ANT signal (since the brightness is changed by the active backlight). [Adjustment position] 

8.2. Image adjustment

8.2.1 Device check

■ Before adjustment, check that the adjustment jig and signal source are set for Sharp LCD US.

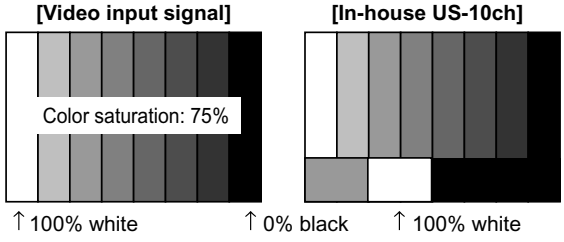
■ Signal generator level adjustment check (Adjust to the standard value level.)

- Composite signal: 0.714Vp-p ± 0.02Vp-p (Pedestal to white)
- 15K component signal: Y level: 0.714Vp-p± 0.02Vp-p (Pedestal to white)
  PB/PR level: 0.7Vp-p ± 0.02Vp-p
- 33K component signal: Y level: 0.7Vp-p ± 0.02Vp-p (Pedestal to white)
  PB/PR level: 0.7Vp-p ± 0.02Vp-p
- Analog RGB: RGB level: 0.7Vp-p ± 0.02Vp-p (Pedestal to white)

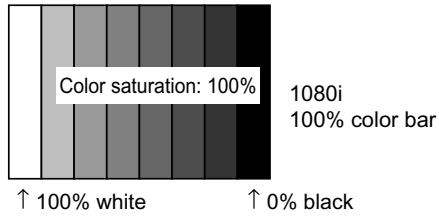
8.2.2 Process mode

	Adjustment point	Adjustment conditions	Adjustment procedure
	Process mode		Enter the process adjustment mode using the process adjustment remote control.

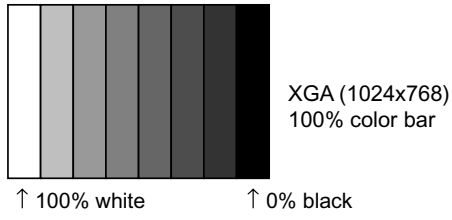
8.2.3 Composite N358 signal/tuner adjustment

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Setting	N358 signal US-10ch	• Send the N358 color bar (color saturation: 75%) signal to the composite input. • Send the in-house signal (use US-10ch) to TUNER. 
2	Automatic adjustment execution		Point the cursor to [■N358 ALL ADJ(INPUT2)] and press the [Enter] key. The adjustment is complete when [■N358 ALL ADJ(INPUT2) OK] is displayed.

8.2.4 Component 33K signal adjustment

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Setting	1080i signal	• Send the 100% color bar signal to the component input. 
2	Automatic adjustment execution		Point the cursor to [■COMP33K ADJ(INPUT1)] and press the [Enter] key. The adjustment is complete when [■COMP33K ADJ(INPUT1) OK] is displayed. Component 15K is automatically adjusted internally. (For AUTO CLAMP 1, copy the parameter from 33K.)

8.2.5 Analog RGB signal adjustment

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Setting	Signal: XGA (1024x768) 60Hz SYNC: HV separate	• Send the 100% color bar signal to the PC input. 
2	Automatic adjustment execution		Point the cursor to [■ANALOG RGB ADJ] and press the [Enter] key. The adjustment is complete when [■ANALOG RGB ADJ OK] is displayed.

8.2.6 Tuner/V-CHIP adjustment

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Setting	NTSC RF signal US-7(AIR)ch	• Send the NTSC signal to the RF antenna input.
2	Automatic adjustment execution		Point the cursor to [■VCHIP TEST(*07ch)] and press the [Enter] key. (* Adjust the selected channel to the in-house signal.) The adjustment is OK when [■VM-OK] is displayed in green. (NG when VM-NG is displayed in red.)

9. White balance adjustment

9.1. White balance adjustment (For details about the adjustment procedure, refer to “Kameyama Model Integrated Monitor WB Adjustment Specification V1.92”.)

<table>
<tr><th></th><th>Adjustment point</th><th>Adjustment conditions</th><th>Adjustment procedure</th></tr>
<tr><td>1</td><td>Setting</td><td></td><td>1) Set the unit to the following conditions.
AV MODE: [DYNAMIC]
Backlight: +16
Active Backlight: OFF
Aging Time: Min. 60 minutes
2) Connect the unit with the white balance adjustment jig.</td></tr>
<tr><td>2</td><td>Automatic adjustment execution</td><td>[Command]
Process mode
KRSW0001
KKT10037

Setting
KY0F0000
0SDS0001
SBSL0016

Multi-point adjustment mode
MSET0001

Point 6
LEV60232
MG6G****
MG6B****
MG6R****

Point 5
LEV50202
MG5G****
MG5B****
MG5R****

Point 4
LEV40174
MG4G****
MG4B****
MG4R****

Point 3
LEV30120
MG3G****
MG3B****
MG3R****

Point 2
LEV20059
MG2G****
MG2B****
MG2R****

Point 1
LEV10046
MG1G****
MG1B****
MG1R****

Writing
MSET0003</td><td>[Adjustment procedure]
1) Send the “adjustment process” code using the remote control.
2) Specify the strongest color as the fixed color, and adjust the RGB by the MG6***** command so that it becomes the standard value through negative adjustment.
3) For the point 5, set the G correction value (808 x G value of point 6/928) (fractions rounded off) and adjust the RB so that it becomes the standard value.
4) For the point 4, set the G correction value (696 x G value of point 6/928) (fractions rounded off) and adjust the RB so that it becomes the standard value.
5) For the point 3, set the G correction value (480 x G value of point 6/928) (fractions rounded off) and adjust the RB so that it becomes the standard value.
6) Set the point 2 to the specified gradation, set the G correction value (236 x G value of point 6/928) (fractions rounded off) and adjust the RB so that it becomes the standard value.
7) For the point 1, set the G correction value (184 x G value of point 6/928) (fractions rounded off) and adjust the RB so that it becomes the standard value.
8) Write the adjustment value by the MSET0003 command and turn off the AC power.
* RGB initial value of point 6: Set gradation 928
* RGB initial value of points 1 to 5: G correction value of each point

[Adjustment value]
* According to the “Standard settings” submitted by the Technical Department [LC70LE640U] LE640U model teaching set

[Adjustment standard value]
Measuring instrument: [Minolta CA-210] Technical measuring instrument

<table>
<tr><th></th><th>Level</th><th>Reference value</th><th>Adjustment spec</th><th>Inspection spec</th></tr>
<tr><td>Point 6</td><td>928</td><td>X=0.272
y=0.277</td><td>±0.0010</td><td>±0.0020</td></tr>
<tr><td>Point 5</td><td>808</td><td>X=0.272
y=0.277</td><td>±0.0010</td><td>±0.0020</td></tr>
<tr><td>Point 4</td><td>696</td><td>X=0.272
y=0.277</td><td>±0.0015</td><td>±0.0030</td></tr>
<tr><td>Point 3</td><td>480</td><td>X=0.272
y=0.277</td><td>±0.0020</td><td>±0.0040</td></tr>
<tr><td>Point 2</td><td>236</td><td>X=0.272
y=0.277</td><td>±0.0030</td><td>±0.0060</td></tr>
<tr><td>Point 1</td><td>184</td><td>X=0.272
y=0.277</td><td>±0.004</td><td>±0.0080</td></tr>
<tr><td>Remarks</td><td></td><td colspan="3">Setting conditions for inspection
AV MODE: [DYNAMIC] (Reset)
Monochro: ON
Active Backlight: OFF
Aging Time: Min. 60 minutes</td></tr>
</table>
Brightness specification after adjustment
• LC-70/60LE745U,845U,847U: Min 280cd/m2
• LC-70/60C7450U,C8470U: Min 280cd/m2</td></tr>
</table>

10. Key writing

10.1. MAC key writing (MAIN PWB: QPWBXF953WJZZ)

1. Write the MAC key data on IC3103 (IC3104) mounted on the main PWB.
2. Carry out thorough data management to avoid redundant writing of data.
   If the IC where data is written is damaged, replace the PWB since only the IC cannot be changed.

10.2. NETFLIX/WMDRM key writing (MAIN PWB: QPWBXF953WJZZ)

1. Write the NETFLIX/WMDRM key data on IC3103 mounted on the main PWB.
2. Carry out thorough data management to avoid redundant writing of data.
   If the IC where data is written is damaged, replace the PWB since only the IC cannot be changed.

11. Factory setting

After completing the factory setting, pull out the AC cord to complete the setting.

CAUTION: Do not turn on the power after completing the factory setting. If the power is turned on, configure the factory setting again.

	Adjustment point	Adjustment conditions	Adjustment procedure
1	Factory setting	Complete the setting by pulling out the AC cord.	• Point the cursor to [INDUSTRY INIT (+Cause)], set to “ON” using [+]/[-] of the [VOL] key, and press the [ENT] key. The version confirmation screen appears on the green screen. It is completed when [SUCCESS] is displayed at the top. (If error occurs, [ERROR] is displayed on the red screen.) • Turn off the AC power.
			The following items are initialized when configuring the factory setting. 1) User set value 2) Channel data (broadcasting frequency, etc.) 3) Password setting value 4) Operating time 5) Standby Cause 6) Auto installation flag 7) V-CHIP block setting value

12. Software version

1. Main microprocessor
2. Monitor microprocessor
3. T-CON ROM

[2] PUBLIC MODE SETTING PROCEDURE

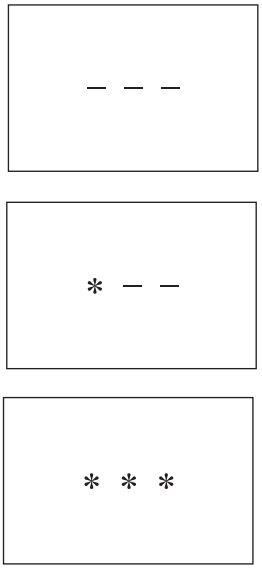
1. How to start Public Mode

• There are the following two ways to get the public mode setup screen displayed.

① In the adjustment process mode, turn on “PUBLIC MODE”. Also press the “CH (∧)” and “VOL (+)” keys on the set at once and turn on the power.

② 1) Press the “INPUT” and “VOL (+)” keys on the set at once and turn on the power.

2) Get the password input screen displayed.



Procedure

- The input starts with the leftmost digit.
- Use the numeric keys [1] thru [9] and [0] keys on the remote controller. The other keys are not acceptable.
- With a numeric-key input, "–" will change to "✻". The input position will move one digit to the right.
- With all the 3 digits entered, the password will be verified.

3) The 3-digit password is now verified.

The password [0] [2] [7] provides for the public mode screen. (This screen comes on with whatever adjustment process settings.)

With any other passwords, the screen changes to the normal mode.

2. How to exit Public Mode

There are the following ways to quit the public mode setup screen.

• Turn off “PUBLIC MODE” in the adjustment process mode. (☆) ← This way alone is not for quitting the setup screen, but for quitting the mode itself.

• Turn off the power with the “POWER” key. (★)

• Select “EXECUTE”. (★)

★... “PUBLIC MODE” stays on in the adjustment process mode.

☆... The settings will be back to the factory ones.

3. Public Mode Setting Values

• With the factory settings made, the public mode settings get initialized. (The adjustment process remains intact.)

4. Public Mode Menu

The guidance is not displayed on screen.

Setup procedure

- To move the cursor up and down, use the “cursor UP/DOWN” key (remote controller) and “CH (∧)/(∨)” key (remote controller and set).
- To change the settings, use the “cursor RIGHT/LEFT” key (remote controller) and “VOL (+)/(–)” key (remote controller and set).
- To save new settings, keep the cursor at “EXECUTE” and use “ENTER” key (remote controller and set).

PUBLIC MODE	
POWER ON FIXED	[VARIABLE]
MAXIMUM VOLUME	[60]
VOLUME FIXED	[VARIABLE]
VOLUME FIXED LEVEL	[20]
RC BUTTON	[RESPOND]
PANEL BUTTON	[RESPOND]
MENU BUTTON	[RESPOND]
AV POSITION FIXED	[VARIABLE]
ON SCREEN DISPLAY	[YES]
INPUT MODE START	[NORMAL]
INPUT MODE FIXED	[VARIABLE]
LOUD SPEAKER	[ON]
RC_PATH_THROUGH	[OFF]
232C POWON	[DISABLE]
PUBLIC MODE	[OFF]
RESET	
EXECUTE	

5. On Setting Items

* “EZ-SETUP” discussed below indicates “EZ-SETUP after the first power-on”.

1) POWER ON FIXED

Selection	Selection between “Variable” and “Fixed” (loop provided)
Default	– (Variable)
Explanation	In “Fixed” setting, the power-off by the power key of the unit is invalidated and the image is kept being received. The power can be turned off by stopping the power supply from AC.
Limit in Setting	Refer to the “Power-On Fixed” sheet.
Exception	None
Remarks	• In “Variable” setting, the power operation is in wait for 1 sec. and then turned off when the main power switch is off.

2) MAXIMUM VOLUME

Selection	Adjustment from 0 to 60 (no loop)
Default	60
Explanation	Sound volume can not be adjusted higher than the preset value.
Limit in Setting	• When the sound volume is set lower than 59, only figures are displayed and the sound volume bar is not displayed. • The maximum sound volume for ON-timer (Wake up timer) is limited also to the preset value.
Exception	
Remarks	• When the sound volume is set higher than the MAX setting by the adjusting process, the sound volume control operation is prohibited for turn-up and the sound volume should be turned down to MAX in this state.

3) VOLUME FIXED

Selection	Selection between “Variable”, “Fixed”, “ACON (AC CTRL)” and “AC/RCON (AC/RC CTRL)” (loop provided)
Default	Variable
Explanation	• FIXED: Fixed at the level adjusted for a fixed volume. • AC CTRL: Start-up at the level specified for a fixed volume at ACON. • AC/RC CTRL: Start-up at the level specified for a fixed volume at start.

Limit in Setting	• The sound volume for the ON-timer (Wake up timer) is fixed also without display of menu. Besides, the setting is made impossible. (Basically, the menu is not displayed.)
	• The following keys become invalid:
	  • Sound volume Up/Down (VOL +/–) [for both remote control and the unit]
	  • Mute (MUTE)

Exception	• In the item “VOLUME” of adjustment process, the sound volume can be set freely irrespective of this setting.
Remarks	• As for sound volume fixing and sound volume MAX level, the sound volume fixing has priority. • Once the sound volume has been changed by adjustment process, it should be set back to the sound volume preset by sound volume fixing level when the adjustment process ends.

4) VOLUME FIXED LEVEL

Selection	Adjustment from 1 to 60 (no loop)
Default	20
Explanation	The sound volume to be fixed by “Volume fixed” is determined.
Limit in Setting	None
Exception	None
Remarks	Setting is valid only when “Volume fixed” is selected for “fixed”.

5) RC BUTTON

Selection	Selection between “Respond”, “No Respond” and “Limited” (loop provided)
Default	Respond
Explanation	Making the remote controller settings. • At the “No Respond” setting, the remote controller keys are disabled. Its power key (reception/standby key) is disabled too. • At the “Limited” setting, some channel-related keys alone are operative. All the other remote controller keys (power, volume ▲/▼, channel ▲/▼, light control (brightness sensor), broadcast select) are inoperative.
Limit in Setting	① In “No respond” setting, all the keys (including the power key) are not accepted.
Exception	• Adjustment process, inspection process and hotel only keys are valid irrespective of setting. • All the keys can be used in adjustment process, inspection mode and hotel menu irrespective of setting.
Remarks	

6) PANEL BUTTON

Selection	Selection between “Respond” and “No respond” (loop provided)
Default	Respond
Explanation	All the operations by keys (except the power key) of the unit can be invalidated.
Limit in Setting	
Exception	• Adjustment process, inspection mode and hotel menu mode can be started irrespective of setting. • All the keys can be used in adjustment process, inspection mode and hotel menu irrespective of setting.
Remarks	

7) MENU BUTTON

Selection	Selection between “Respond” and “No respond” (loop provided)
Default	Respond
Explanation	In “No respond” setting, the menu operation by the menu key of the remote control and the menu key of the unit are invalidated.
Limit in Setting	
Exception	• Adjustment process, inspection mode and hotel menu mode can be started irrespective of setting. • All the keys can be used in adjustment process, inspection mode and hotel menu irrespective of setting.
Remarks	

8) ON SCREEN DISPLAY

Selection	Selection between “Yes”, “No” (loop provided)
Default	Yes
Explanation	• At the “No” setting, the following items are not displayed on screen: register, setting, adjustment menu, channel call and volume bar. On the wide-screen models, an input selection is immediately made because the menu is not displayed. • At the “Limited” setting, some items cannot be displayed on screen. On the Japan-destined models, the channel call “Message” alone cannot be displayed. (This is because the channel call message may be confused with a message being sent from the hotel.) On the North America-destined models, the OSD works the same as at the “No” setting.
Limit in Setting	• Keys falling under any of the following items become invalid. ① Appearance of screen changes and the sound changes. ② Personal functions which are hard to restore. Screen display, menu, OFF-timer, ON-timer, AV MODE, screen size switching, clock setting, treble emphasis, AUDIO ONLY, sound changeover, LANGUAGE, CLOSED CAPTION
Others	• Simple input switching is generated. Those which are restored soon after leaving as they are and may be requested for change by customer are not prohibited. Brightness sensor (BACKLIGHT) and PIC. FLIP
Exception	• Such a caution which is displayed independently is displayed as it is. Non-responding signal caution
Remarks	• When CC has already been ON, CLOSED CAPTION is displayed.

9) INPUT MODE START

Selection	Selection between “Normal”, “Air (✻)”, “INPUT 1/2/3”, “PC”, “HDMI 1/2/3/4/5”, “DVI” (loop provided)
Default	Normal
Explanation	In power-ON, the input source to be started or channel can be set. (In standard mode, the operation follows the last memory.)
About options	• All the input sources in the model are made selectable. • In TV mode, the channel to be set follows the last memory and the content of the last memory is included in the notation by options. Ex.) Air (2), Cable (98.1) etc.
Limit in Setting	• The display of channel setting menu and the channel setting operation are prohibited.
Exception	
Remarks	• In setting at “Normal”, the setting of “Input mode fixed” is changed to “Variable” and selection should be prohibited.

10)INPUT MODE FIXED

Selection	Selection between “Variable”, “Fixed”, “ACON (AC CTRL)” and “AC/RCON (AC/RC CTRL)” (loop provided)
Default	– (Variable)
Explanation	• At the “Fixed” setting, the TV set gets started with the settings of “Input mode start”, and then any other channels and inputs are not accepted. • At the “ACON (AC CTRL)” setting, the TV set gets started with the settings of “Input mode start” under AC control. • At the “AC/RCON (AC/RC CTRL)” setting, the TV set gets started with the settings of “Input mode start” under either control.
Limit in Setting	• With the execution of hotel mode, the input source is forced to change to that set by “Input mode start” and the channel switching and input switching are prohibited thereafter. • ON-timer's (Wake-up timer) channel items are not displayed or the operation is prohibited. (Basically, they are not displayed.) • The following keys are invalidated. CH ▲ / ▼, direct tuning button, FLASHBACK, input ✻However, the keys (input switching and CH ▲ / ▼ keys) of the unit for menu operation remain valid.
Exception	None
Remarks	• In the following case, setting is cancelled and mode is changed to “Variable”. ① When the setting of “Input mode start” is set to “Normal”.

11)RC_PATH_THROUGH

Selection	Selection between “OFF”, “ON: TV RCE” and “ON: TV RCD” (loop provided)
Default	OFF
Explanation	Function to feed the remote controller-received signal to Pin 9 (open) on the RS232C.
Limit in Setting	None
Exception	None
Remarks	None

12)AV POSITION FIXED

Selection	Selection between “Variable” and “Fixed” (loop provided)
Default	Variable
Explanation	In case of “Fixed” setting, – Menu “Picture” and “Audio” setting can't be changed like “Dynamic (Fixed)”. – When “AV Mode” key is pressed, TV just displays current AV Mode (cannot be changed.).
Limit in Setting	None
Exception	None
Remarks	• When receiving with AV Position key, OPC, Dolby key and other direct audio select keys, the current display stays on and no setting can be changed. • Even by initializing personal information, the hotel-mode settings are kept intact. In this way, the AV positions, video and audio adjustment settings are not initialized.

13)LOUD SPEAKER (ON/OFF)

Selection	Selection between “ON” and “OFF” (loop provided)
Default	ON
Explanation	If “OFF” is selected, TV stops Speaker output even without Headphone connected.
Limit in Setting	None
Exception	None
Remarks	• Press the volume UP/DOWN key, and the mute icon appears for 4 seconds. • The mute key and audio-related keys are displayed with caution. • Usually, the headphones and monitor audio outputs can be adjustable.

14)232C POWON

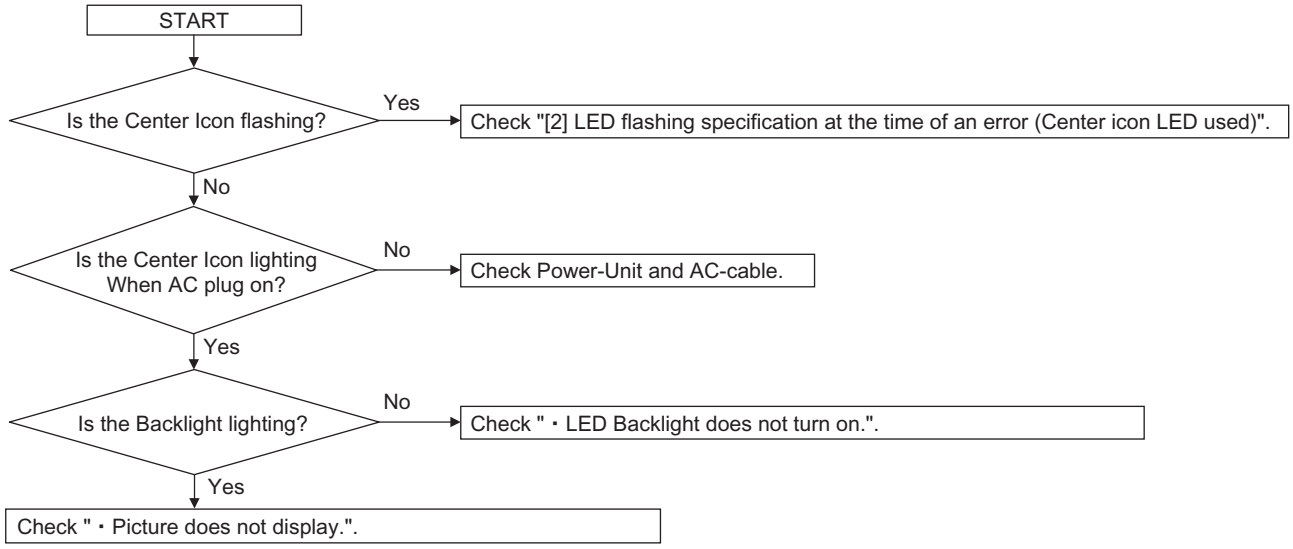
Selection	Selection between “Disable” and “Enable” (loop provided)
Default	Disable
Explanation	In the standby mode, the power-on by the 232C command is enabled or disabled.
Limit in Setting	None
Exception	None
Remarks	None

15)PUBLIC MODE (ON/OFF)

Selection	Selection between “ON” and “OFF” (loop provided)
Default	OFF
Explanation	In case of “ON”, public mode settings are effected.
Limit in Setting	None
Exception	None
Remarks	The public-mode settings are operable only when this item is set at ON.

CHAPTER 6. TROUBLESHOOTING TABLE

[1] Failure diagnosis by LED in front of cabinet



[2] LED flashing specification at the time of an error (Center icon LED used)

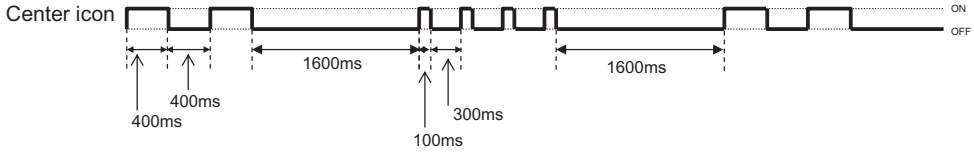
1. Display method

- Since only the center icon LED can be used, slow flashing and fast flashing are combined.
- Refer to Table 1.
- The Start from the detail display. (No outline display)
- After recovering from an error, if the same error cannot be generated again, refer to MONITOR ERR CAUSE on the process screen.
- During version upgrade, the brightness of the flashing LED changes smoothly.
- When completing version upgrade, the brightness of the LED changes in a staircase pattern.

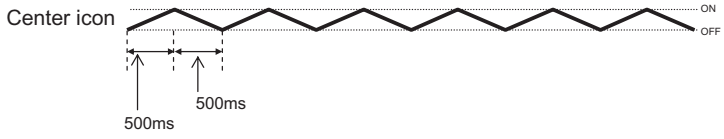
2. LED flashing method

Error flashing

<Detail display example>



- **Flashing during Verup**



- **Flashing when completing Verup**

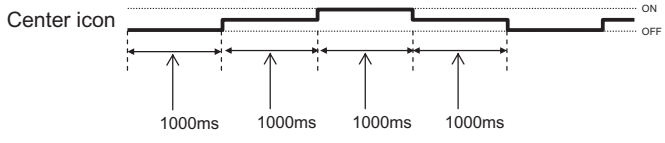


Table 1. Concrete flashing pattern

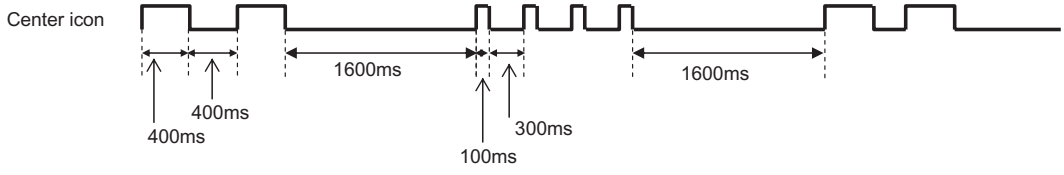
Item	Detail display		Cause
	Slow flashing	Fast flashing	
Inverter/Lamp system failure	Flashes once	Flashes once	Lamp error
Power PWB failure (Power failure, etc.)	Flashes twice	Flash once	Power supply error 2 (*2) AC_DET error
		Flash twice	Power supply error 2 (*2) UR+13V error
		Flash 3 times	Power supply error 2 (*2) D+3.3V error
		Flash 5 times	Panel power supply error
Main PWB failure (Communication failure, etc.)	Flashes 3 times	Flashes once	Initial communication error
		Flashes twice	Start-up confirmation communication error
		Flashes 3 times	Regular communication error
		Flashes 5 times	Other communication error
Others	Flashes 4 times	Flashes once	Temperature error
		Flashes twice	Sync error
		Flashes 3 times	Notification from the main microprocessor (*3)
VerUP executing	Flashes smoothly	None	Version upgrading
VerUP succeeded	Flashes in a staircase pattern	None	Version upgrade succeeded
VerUP failed	None	Flashes continuously	Version upgrade failed
ROM data failure	None	Flashes continuously	Start-up after failing version upgrade (*4)

*2: They depend on the system. Power supply error is defined from product to product.

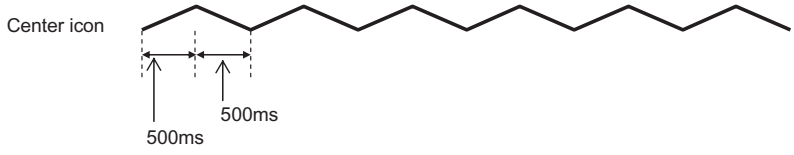
*3: For details, refer to ERROR STANDBY CAUSE on the adjustment process screen.

*4: If the boot section is abnormal, there is no flashing (flashing impossible).

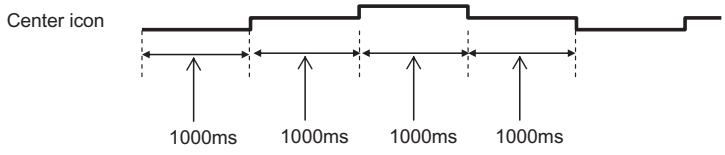
3. New method



・Flashing during Verup



・Flashing when completing Verup



LED flashing timing chart at the time of an error

1) Inverter/Lamp failure details (Flashes slowly once and flashes fast) Note

Error type	Center icon LED operation	Pins are monitor microprocessor pins unless otherwise specified.
Lamp failure Flashes fast once	H: On  L: Off	ERR_PNL (19pin): Hi failure. Confirmed after 8 consecutive detections at 64msec intervals (detected only when the backlight is on). Note that after five detection counts, the lamp cannot be activated except in the monitor process. Accumulated counts are cleared to 0 by the setting in the process A.

2) Power failure details (Flashes slowly twice and flashes fast) Note

Error type	Center icon LED operation	Pins are monitor microprocessor pins unless otherwise specified.
PS_ON AC_DET failure Flashes fast once	H: On  L: Off	AC_DET (28pin) failure (L). If error is detected during start-up or operation by interrupt, the power is turned on again.
SM_POW Main 13V failure Flashes fast twice	H: On  L: Off	DET_13V (32pin) failure (L). Main 13V is not applied. If error is detected during start-up or operation, the power is turned on again by polling.
D_POW Digital 3.3V failure Flashes fast 3 times	H: On  L: Off	DET_D3V3 (33pin) failure (L). Digital 3.3V is not applied. If error is detected during start-up or operation, the power is turned on again by polling.
PANEL_POW Panel 12V failure Flashes fast 5 times	H: On  L: Off	DET_PNL12V (34pin) failure (L). Panel power is not applied. Detection is started after turning on the panel power and receiving command; the power is turned off by polling.

3) Communication failure details (Flashes slowly 3 times and flashes fast) Note

Error type	Center icon LED operation	Basically, debug print logs are analyzed or communication logs are analyzed by a bus monitor.
Initial communication reception failure Flashes fast once	H: On  L: Off	Initial communication from the main CPU is not received. (Request for the monitor model No. is not received.) → Communication line failure or main CPU start-up failure
Start-up confirmation reception failure Flashes fast twice	H: On  L: Off	Start-up reason confirmation from the main CPU cannot be received. (Start-up communication until start-up reason notification command is not received.) → Main CPU start-up failure or monitor microprocessor reception failure
Regular communication failure Flashes fast 3 times	H: On  L: Off	Regular communication that is performed at 1 second intervals in the normal operation is interrupted. → Main CPU operation failure or monitor microprocessor reception failure
Other communication failure Flashes fast 5 times	H: On  L: Off	When a request (PM_REQ=H) is sent from the main microprocessor, the request command is not output from the main CPU, etc. → Main CPU operation failure or monitor microprocessor reception failure

4) Other failure details (Flashes slowly 4 times and flashes fast) Note

Error type	Center icon LED operation	Pins are monitor microprocessor pins unless otherwise specified.
Monitor temperature failure Flashes fast once	H: On  L: Off	If the panel temperature is 60°C or more for 15 seconds or more in a row, CAUTION appears on the OSD (flashes in red in the lower right screen). If the panel temperature is 60°C or more for 25 seconds or more in a row, error standby is activated. (MONITOR MAX TEMP on page 15 of the process A: Change of temperature failure AD value): Thermistor
Main failure Flashes fast 3 times	H: On  L: Off	Main microprocessor detection error (CPU temperature error, etc.) The details are displayed on page 1 of the process A of the main microprocessor.

[3] TROUBLESHOOTING TABLE

• LED Backlight does not turn on.

If it is not an error of power supply/LED driver,
It is start-up in the lamp error disregard mode.

↓

Do you start?

↓ YES

When main unit is replaced, does it start normally?

↓ YES

Replace main unit.

↓ NO

When LCD control unit is replaced, does it start normally?

↓ YES

Replace LCD control unit.

↓ NO

When the parts in the panel can be replaced. →Replace all LED-bars in the panel module.
When the parts in the panel cannot be replaced. →Replace panel module.

If it is not an error of power supply/LED driver,
It is start-up in the lamp error disregard mode.

↓

Do you start?

↓ NO

When power supply unit is replaced, does it start normally?

↓ YES

Replace power supply unit.

↓ NO

When main unit is replaced, does it start normally?

↓ YES

Replace main unit.

↓ NO

When LCD control unit is replaced, does it start normally?

↓ YES

Replace LCD control unit.

↓ NO

When the parts in the panel can be replaced. →Replace all LED-bars in the panel module.
When the parts in the panel cannot be replaced. →Replace panel module.

Trouble Shooting Panel Module

When C-S FPC is replaced, does screen display normally?

YES

Replace C-S FPC.

NO

When C-PWB is replaced, does screen display normally?

YES

Replace C-PWB.
(Adjust “VCOM ADJ” after replace C-PWB)

NO

Replace Panel HIRAKI.
(Adjust “VCOM ADJ” after replace Panel HIRAKI)

• Picture does not display.

Trouble Shooting LCD controller board(C-PWB)

A screen isn't displayed.
(The LED Backlight has shone at start-up)

YES → • It is checked whether PL/LW is connected correctly.
• Replace another C-PWB.

NO ↓

Please enter the adjustment process mode and display “LCD TEST PATTERN” of 18 page.
Please press volume (-)/(+) keys and a test pattern is displayed.
Is it all usually displayed?

YES → It isn't the fault of a C-PWB.
Please check operation with reference to other items.

NO ↓

Is only the half of the right screen or the left screen displayed normally?

YES → • It is checked whether FFC (to Panel) is connected correctly.
• Replace another C-PWB.

NO ↓

Please check the C-PWB.
Replace another board.

<HDMI input> No video (1)-1

↓

HDMI: No external input video [INPUT-1]

↓

Is INPUT-1 selected on the input select menu screen?

NO → Select INPUT-1 on the input select menu screen for the right input signal.

↓ YES

Does the HOT PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1501 to pin (60) of IC2601 (HDMI_SW)?

NO → Check the line between the pin(18) of SC1501 and the pin(60) of IC2601.

↓ YES

Does the HPD signal come from pin (59) of IC2601 to pin (19) of SC1501?

NO → Check the line between the pin (19) of SC1501 and the pin (59) of IC2601.

↓ YES

Is IC2601(HDMI-SW) accessed by I2C, with HDMI connected, to read the DDC-I2C SCL/SDA data?

NO → Check the DDC-I2C line and its peripheral circuits.
①SC1501 pin(15)(SCL), pin(16)(SDA)
②IC2601 pin(58), pin(57)

↓ YES

Are there the TMDS signal at input pins of IC3301(CPU)?

NO → Check the TMDS line (between SC1501 and IC2601) and its peripheral circuits.
[IC2601 TMDS input pins]
pin(26/27)(CLK-/+), pin(28/29)(D0-/+), pin(30/31)(D1-/+), pin(31/33)(D2-/+).

Check the TMDS line (between IC2601 and IC3301) and its peripheral circuits.
[IC3301 TMDS input pins]
pin(AH35/AH34)(CLK-/+),
pin(AG35/AG34)(D0-/+),
pin(AG37/AG36)(D1-/+),
pin(AF35/AF34)(D2-/+).

Check the I2C line (between IC2601 and IC3301).
①IC2601:pin(71)(SCL), pin(70)(SDA)
②IC3301:pin(AN12), pin(AP12)

Check IC2601 and its peripheral circuits.

↓ YES

Is the T-CON PWB connected?
VBO_LOCKN pin (40) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3301 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

<HDMI input> No video (1)-2

↓

HDMI: No external input video [INPUT-2]

↓

Is INPUT-2 selected on the input select menu screen?

NO → Select INPUT-2 on the input select menu screen for the right input signal.

↓ YES

Does the HOT PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1502 to pin (75) of IC2601 (HDMI_SW)?

NO → Check the line between the pin(18) of SC1502 and the pin(75) of IC2601.

↓ YES

Does the HPD signal come from pin (74) of IC2601 to pin (19) of SC1502?

NO → Check the line between the pin (74) of IC2601 and the pin (19) of SC1502.

↓ YES

Is IC2601(HDMI-SW) accessed by I2C, with HDMI connected, to read the DDC-I2C SCL/SDA data?

NO → Check the DDC-I2C line and its peripheral circuits.
①SC1501 pin(15)(SCL), pin(16)(SDA)
②IC2601 pin(73), pin(72)

↓ YES

Are there the TMDS signals at input pin of IC3301(CPU)?

NO → Check the TMDS line (between SC1502 and IC2601) and its peripheral circuits.
[IC2601 TMDS input pins]
pin(17/18)(CLK-/+), pin(19/20)(D0-/+), pin(21/22)(D1-/+), pin(23/24)(D2-/+).

Check the TMDS line (between IC2601 and IC3301) and its peripheral circuits.
[IC3301 TMDS input pins]
pin(AH35/AH34)(CLK-/+),
pin(AG35/AG34)(D0-/+),
pin(AG37/AG36)(D1-/+),
pin(AF35/AF34)(D2-/+).

Check the I2C line (between IC2601 and IC3301).
①IC2601:pin(71)(SCL), pin(70)(SDA)
②IC3301:pin(AN12), pin(AP12)

Check IC2601 and its peripheral circuits.

↓ YES

Is the T-CON PWB connected?
VBO_LOCKN (40pin) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3301 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

<HDMI input> No video (1)-3

↓

HDMI: No external input video [INPUT-3]

↓

Is INPUT-3 selected on the input select menu screen?

NO → Select INPUT-3 on the input select menu screen for the right input signal.

↓ YES

Does the HOT PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1503 to pin (56) of IC2601 (HDMI_SW)?

NO → Check the line between the pin(18) of SC1503 and the pin(56) of IC2601.

↓ YES

Does the HPD signal come from pin (55) of IC2601 to pin (19) of SC1503?

NO → Check the line between the pin (55) of IC2601 and the pin (19) of SC1503.

↓ YES

Is IC2601(HDMI-SW) accessed by I2C, with HDMI connected, to read the DDC-I2C SCL/SDA data?

NO → Check the DDC-I2C line and its peripheral circuits.
①SC1501 pin(15)(SCL), pin(16)(SDA)
②IC2601 pin(54), pin(53)

↓ YES

Are there the TMDS signal at input pins of IC3301(CPU)?

NO → Check the TMDS line (between SC1503 and IC2601) and its peripheral circuits.
[IC2601 TMDS input pins]
pin(8/9)(CLK-/+), pin(10/11)(D0-/+), pin(12/13)(D1-/+), pin(14/15)(D2-/+).

Check the TMDS line (between IC2601 and IC3301) and its peripheral circuits.
[IC3301 TMDS input pins]
pin(AH35/AH34)(CLK-/+), pin(AG35/AG34)(D0-/+), pin(AG37/AG36)(D1-/+), pin(AF35/AF34)(D2-/+).

Check the I2C line (between IC2601 and IC3301).
①IC2601:pin(71)(SCL), pin(70)(SDA)
②IC3301:pin(AN12), pin(AP12)

Check IC2601 and its peripheral circuits.

↓ YES

Is the T-CON PWB connected?
VBO_LOCKN pin(40) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3301 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

<HDMI input> No video (1)-4

↓

HDMI: No external input video [INPUT-4]

↓

Is INPUT-4 selected on the input select menu screen?

NO → Select INPUT-4 on the input select menu screen for the right input signal.

↓ YES

Does the HOT PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1504 to pin (51) of IC2601 (HDMI_SW)?

NO → Check the line between the pin(18) of SC1504 and the pin(51) of IC2601.

↓ YES

Does the HPD signal come from pin (50) of IC2601 to pin (19) of SC1504?

NO → Check the line between the pin (50) of IC2601 and the pin (19) of SC1504.

↓ YES

Is IC2601(HDMI-SW) accessed by I2C, with HDMI connected, to read the DDC-I2C SCL/SDA data?

NO → Check the DDC-I2C line and its peripheral circuits.
①SC1501 pin(15)(SCL), pin(16)(SDA)
②IC2601 pin(49), pin(48)

↓ YES

Are there the TMDS signal at input pins of IC3301(CPU)?

NO → Check the TMDS line (between SC1504 and IC2601) and its peripheral circuits.
[IC2601 TMDS input pins]
pin(99/100)(CLK-/+), pin(1/2)(D0-/+), pin(3/4)(D1-/+), pin(5/6)(D2-/+).

Check the TMDS line (between IC2601 and IC3301) and its peripheral circuits.
[IC3301 TMDS input pins]
pin(AH35/AH34)(CLK-/+), pin(AG35/AG34)(D0-/+), pin(AG37/AG36)(D1-/+), pin(AF35/AF34)(D2-/+).

Check the I2C line (between IC2601 and IC3301).
①IC2601:pin(71)(SCL), pin(70)(SDA)
②IC3301:pin(AN12), pin(AP12)

Check IC2601 and its peripheral circuits.

↓ YES

Is the T-CON PWB connected?
VBO_LOCKN (40pin) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3303 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

No video (2)

↓

COMPONENT: No external input video [INPUT-5]

↓

Is INPUT-5 selected on the input select menu screen?
Is the INPUT-SELECT for the input signal?

↓ NO

Select INPUT-5 on the input select menu screen for the right input signal.

↓

Does the INPUT-5 COMP1_PLUG detection function?

Check the line between pin (17) of input terminal (J510) and pin (B29) of IC3301 (CPU).

①J510:pin(17)

②IC3301:pin(B29)

↓ YES

Are there the COMPONENT video signal inputs at pins(AU26/AP25)(Y)/(AR26)(Pb) and (AP26)(Pr) of IC3301(CPU)?

↓ NO

Check the line between the input terminals of J510 and IC3301.

①J510 pin(18)(Y) pin(16)(Pb) pin(15)(Pr)

②IC3301 pin(AU26/AP25) pin(AR26) pin(AP26)

↓ YES

Is the T-CON PWB connected?
VBO_HTPDN pin (40) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3301 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

No video (3)

COMPOSITE: No external input video [INPUT-6]

Is INPUT-6 selected on the input select menu screen?

NO

Select INPUT-6 on the input select menu screen for the right input signal.

NO

Does the INPUT-6 CVBS1_PLUG detection function?

Check the line between pin(9) of input terminal(J510) and pin(D28) of IC3301(CPU).

①J510:pin(9)

②IC3301:pin(D28)

YES

Is there the COMPOSITE signal input at pin (AR31) of IC3301 (CPU)?

NO

Check the line between pin (10) of J510 and pin (AR31) of IC3301(CPU).

①J510:pin(10)

②IC3301:pin(AR31)

YES

COMPOSITE: No external input video [INPUT-7]

Is INPUT-7 selected on the input select menu screen?

NO

Select INPUT-7 on the input select menu screen for the right input signal.

NO

Does the INPUT-7 CVBS2_PLUG detection function?

Check the line between pin(4) of input terminal(J510) and pin(E28) of IC3301(CPU).

①J510:pin(4)

②IC3301:pin(E28)

YES

Is there the COMPOSITE signal input at pin (AR30) of IC3301 (CPU)?

NO

Check the line between pin (5) of J510 and pin (AR30) of IC3301(CPU).

①J510:pin(9)

②IC3301:pin(AR30)

YES

Is the T-CON PWB connected?
VBO_LOCKN pin(40) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness. Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3301 and its peripheral circuits. (IC3501/IC3502/IC3503/IC3504, etc.)

YES

Check the panel module and harness.

No video (4)

↓

PC: No external input video [INPUT-8]

↓

Is INPUT-8 selected on the input select menu screen?

↓ NO

Select INPUT-8 on the input select menu screen for the right input signal.

↓

Is IC2601 (HDMI-SW) accessed by I2C, with PC connected, to read the VGA_SCL/SDA data?

Check the DDC-12C line and its peripheral circuits. (IC2601 and its peripherals).

↓ YES

Are there the video signal inputs at pins (AR24/AT24) (G), (AU24) (B) and (AR25) (R) of IC3301 (CPU)?
Are there the VSYNC/HSYNC signal inputs at pins (AM25) and (AN25) of IC3301?

↓ NO

Check the line between SC510 and IC3301,and their peripheral circuits.

↓ YES

Is the T-CON PWB connected?
VBO_LOCKN pin (40) of SC3801 become Low if there is no problem in the connection.

NO → Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO → Check IC3301 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

No video (5)

No video at UHF/VHF broadcast signal reception

No video at digital broadcast signal reception

Is the specified TV signal selected on the input select menu screen?

Are there the IF signal at input pins(AT32/AU32)(TUN_IFN/P) of IC3301(CPU)?

NO

Check the IF signal line between IC3301 and TU1104, and their peripheral circuits.

Check the Tuner I2C lines.

①TU1104:pin(5)(TUN_SCL), pin(4)(TUN_SDA)

②IC3301:pin(V35), pin(V34)

YES

Are there the IF signal at input pins(AT32/AU32)(TUN_IFN/P) of IC3301(CPU)?

Is there IF-AGC signal at input pin(12) of TU1104?

NO

Check the IF signal line between IC3301 and TU1104, and their peripheral circuits.

Check the IF-AGC line between pin(U35) of IC3301 and pin(12) of TU1104.

Check the Tuner I2C lines.

①TU1104:pin(5)(TUN_SCL), pin(4)(TUN_SDA)

②IC3301:pin(V35), pin(V34)

YES

Is the T-CON PWB connected?
VBO_LOCKN (40pin) of SC3801 become Low if there is no problem in the connection.

NO →

Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/- (36/37pin), VBO_CN_TXB+/- (32/33pin),
VBO_CN_TXC+/- (28/29pin), VBO_CN_TXD+/- (24/25pin).

NO →

Check IC3301 and its peripheral circuits.
(IC3501/IC3502/IC3503/IC3504, etc.)

YES

Check the panel module and harness.

No video (6)

↓

MHL:No external input video [INPUT-4] (using MHL Cable with Mobile Phone)

↓

Is INPUT-4 selected on the input select menu screen?

→ NO: Select INPUT-4 on the input select menu screen for the right input signal.

↓ YES

Does the MHL Cable detection function?

→ NO: Check the MHL Cable.

Does the CD_SENSE signal (High level) come from pin(2) of SC1504 to pin(69) of IC2601(HDMI-SW)?

→ NO: Check the line between the pin(2) of SC1504 and the pin(69) of IC2601.

↓ YES

Does the CBUS signal come from pin(50) of IC2601 to pin(19) of SC1504?

→ NO: Check the CBUS line between the pin(19) of SC1504 and the pin(50) of IC2601, and their peripheral circuits.(Q1507, etc.)

↓ YES

Does the VBUS signal (5V valtage power signal) output from pin(6) of IC1507 to pin(18) of SC1504?

→ NO: Check the VBUS line between the pin(19) of SC1504 and the pin(6) of IC1507, and their peripheral circuits.(IC1508, IC1509, etc)

↓ YES

Are there the TMDS signal at input pin(1/2)(D0-/+) of IC2601(HDMI-SW)?

→ NO: Check the TMDS line (between SC1504 and IC2601) and its peripheral circuits.(IC1504, etc.)

↓ YES

Are there the TMDS signal at input pins of IC3301(CPU)?

→ NO: Check the TMDS line (between IC2601 and IC3301) and its peripheral circuits.
[IC3301 TMDS input pins]
pin(AH35/AH34)(CLK-/+),
pin(AG35/AG34)(D0-/+),
pin(AG37/AG36)(D1-/+),
pin(AF35/AF34)(D2-/+).

Check the I2C line (between IC2601 and IC3301).
①IC2601:pin(71)(SCL), pin(70)(SDA)
②IC3301:pin(AN12), pin(AP12)

Check IC2601 and its peripheral circuits.

↓ YES

Is the T-CON PWB connected?
VBO_LOCKN pin(40) of SC3801 become Low if there is no problem in the connection.

→ NO: Check the T-CON PWB and harness.
Check IC3301 and SC3801 and their peripheral circuits in Main PWB.

↓ YES

Are the V-By-One HS signal input to the pin of SC3801?
VBO_CN_TXA+/-(36/37pin), VBO_CN_TXB+/-(32/33pin),
VBO_CN_TXC+/-(28/29pin), VBO_CN_TXD+/-(24/25pin).

→ NO: Check IC3301 and its peripheral circuits.(IC3501/IC3502/ IC3503/IC3504, etc.)

↓ YES

Check the panel module and harness.

• Does not sound.

No audio (1)

INPUT-6 No audio.

Is INPUT-6 selected on the input select menu screen?

NO → Refer to ": No external input video [INPUT-6]".

YES

Is the audio output selected for "VARIABLE" on the menu screen?

NO → Set the audio output to "FIXED".

YES

Does the audio signal come from pins (8) (L) and (7) (R) of input terminal (J510) to pins (AP34) (L) and (AU36) (R) of IC3301 (CPU)?

NO → Check the line between J510 and IC3301.

YES

INPUT-7 No audio.

Is INPUT-7 selected on the input select menu screen?

NO → Refer to ": No external input video [INPUT-7]".

YES

Is the audio output selected for "VARIABLE" on the menu screen?

NO → Set the audio output to "FIXED".

YES

Does the audio signal come from pins (3) (L) and (2) (R) of input terminal (J510) to pins (AR37) (L) and (AT36) (R) of IC3301 (CPU)?

NO → Check the line between J510 and IC3301.

YES

INPUT-5 No audio.

Is INPUT-5 selected on the input select menu screen?

NO → Refer to ": No external input video [INPUT-5]".

YES

Is the audio output selected for "VARIABLE" on the menu screen?

NO → Set the audio output to "FIXED".

YES

Does the audio signal come from pins (13) (L) and (12) (R) of input terminal (J510) to pins (AT37) (L) and (AT35) (R) of IC3301 (CPU)?

NO → Check the line between J510 and IC3301.

YES

Does the digital audio signal come from pins(AR11/AP11/AN9)(CPU_AOBCK/AOLRCK/AOSDATA0) of IC3301(CPU) to pins(6/7/5)(SP_BCLK/SP_LRCLK/SP_DATA) of IC1703(Audio DSP)?

NO → Check the line between IC3301 and IC1703, and their paripheral circuits.

YES

- About the L/R Speakers.

Does the digital audio signal come from pins (30/21/26/27) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1902 (AMP for L/R)?

- About the Subwoofer speaker.

Does the digital audio signal come from pins (30/21/26/28) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1901 (AMP for SW)?

NO → Check IC2701 and its paripheral circuits.(X2701, etc.)

YES

- About the L/R Speakers.

Is the audio output from IC1902 as specified?

- About the Subwoofer Speaker.

Is the audio output from IC1901 as specified?

NO →

- About the L/R Speakers.

Check IC1902 and its peripheral circuits.

- About the Subwoofer Speaker.

Check IC1901 and its peripheral circuits.

YES

- About the L/R Speakers.

Check the connector (P1903) L/R speakers and their peripheral circuits.

- About the Subwoofer Speaker.

Check the connector (P1904), subwoofer speaker and their peripheral circuits.

No audio (2)

[PC analog audio input] INPUT-8 No audio.

Is INPUT-8 selected on the input select menu screen?

NO → Refer to ": No external input video [INPUT-8]".

YES

Is the audio output selected for "VARIABLE" on the menu screen?

NO → Set the audio output to "FIXED".

YES

Is the "Terminal Setting" - "Audio select" selected for "Video + Audio" on the menu screen?

NO → Set the HDMI audio output to "Video+Audio".

YES

[HDMI analog audio input] INPUT-2 No audio.

Is INPUT-2 selected on the input select menu screen?

NO → Refer to ": No external input video [INPUT-2]".

YES

Is the audio output selected for "VARIABLE" on the menu screen?

NO → Set the audio output to "FIXED".

YES

Is the "Terminal Setting" - "Audio select" selected for "Video + Analog" on the menu screen?

NO → Set the HDMI audio output to "HDMI+Analog".

YES

Does the digital audio signal come from pins(AR11/AP11/AN9)(CPU_AOBCK/AOLRCK/AOSDATA0) of IC3301(CPU) to pins(6/7/5)(SP_BCLK/SP_LRCLK/SP_DATA) of IC1703(Audio DSP)?

NO → Check the line between IC3301 and IC1703 and their peripheral circuits.

YES

- About the L/R Speakers.

Does the digital audio signal come from pins (30/21/26/27) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1902 (AMP for L/R)?

- About the Subwoofer speaker.

Does the digital audio signal come from pins (30/21/26/28) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1901 (AMP for SW)?

NO → Check IC1703 and its paripheral circuits.(X1701, etc.)

YES

- About the L/R Speakers.

Is the audio output from IC1902 as specified?

- About the Subwoofer Speaker.

Is the audio output from IC1901 as specified?

NO →

- About the L/R Speakers.

Check IC1902 and its peripheral circuits.

- About the Subwoofer Speaker.

Check IC1901 and its peripheral circuits.

YES

- About the L/R Speakers.

Check the connector (P1903) L/R speakers and their peripheral circuits.

- About the Subwoofer Speaker.

Check the connector (P1904), subwoofer speaker and their peripheral circuits.

No audio (3)

No audio at UHF/VHF broadcast signal reception.

Is TV selected on the input select menu screen?

NO → Refer to “No video at UHF/VHF broadcast signal reception”.

YES

Is the audio output selected for “VARIABLE” on the menu screen?

NO → Set the audio output to “FIXED”.

YES

No audio at digital broadcast signal reception.

Is TV selected on the input select menu screen?

NO → Refer to “No video at digital broadcast signal reception”.

YES

Is the audio output selected for “VARIABLE” on the menu screen?

NO → Set the audio output to "FIXED".

YES

Does the digital audio signal come from pins(AR11/AP11/AN9)(CPU_AOBCK/AOLRCK/AOSDATA0) of IC3301(CPU) to pins(6/7/5)(SP_BCLK/SP_LRCLK/SP_DATA) of IC1703(Audio DSP)?

NO → Check the line between IC3301 and IC1703, and their paripheral circuits.

YES

- About the L/R Speakers.

Does the digital audio signal come from pins (30/21/26/27) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1902 (AMP for L/R)?

- About the Subwoofer speaker.

Does the digital audio signal come from pins (30/21/26/28) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1901 (AMP for SW)?

NO → Check IC1703 and its paripheral circuits.(X1701, etc.)

YES

- About the L/R Speakers.

Is the audio output from IC1902 as specified?

- About the Subwoofer Speaker.

Is the audio output from IC1901 as specified?

NO

- About the L/R Speakers.

Check IC1902 and its peripheral circuits.

- About the Subwoofer Speaker.

Check IC1901 and its peripheral circuits.

YES

- About the L/R Speakers.

Check the connector (P1903) L/R speakers and their peripheral circuits.

- About the Subwoofer Speaker.

Check the connector (P1904), subwoofer speaker and their peripheral circuits.

No audio (4)

↓

INPUT-1 No audio (HDMI connected)
INPUT-2 No audio (HDMI connected)
INPUT-3 No audio (HDMI connected)
INPUT-4 No audio (HDMI connected or MHL connected)

↓

[INPUT-1 input]
Is INPUT-1 selected on the input select menu screen?

[INPUT-2 input]
Is INPUT-2 selected on the input select menu screen?

[INPUT-3 input]
Is INPUT-3 selected on the input select menu screen?

[INPUT-4 input]
Is INPUT-4 selected on the input select menu screen?

↓ NO

Refer to ": No external input video [INPUT-1/2/3/4]".

↓ YES

[INPUT-1 input]
If no video appears, refer to "No external input video (HDMI) [INPUT-1]".

[INPUT-2 input]
If no video appears, refer to "No external input video (HDMI) [INPUT-2]".

[INPUT-3 input]
If no video appears, refer to "No external input video (HDMI) [INPUT-3]".

[INPUT-4 input]
If no video appears, refer to "No external input video (HDMI) [INPUT-4]".

↓

Is the audio output selected for "VARIABLE" on the menu screen?

↓ NO

Set the audio output to "FIXED".

↓ YES

Does the digital audio signal come from pins(AR11/AP11/AN9)(CPU_AOBCK/AOLRCK/AOSDATA0) of IC3301(CPU) to pins(6/7/5)(SP_BCLK/SP_LRCLK/SP_DATA) of IC1703(Audio DSP)?

↓ NO

Check the line between IC3301 and IC1703 and their peripheral circuits.

↓ YES

- About the L/R Speakers.

Does the digital audio signal come from pins (30/21/26/27) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1902 (AMP for L/R)?

- About the Subwoofer speaker.

Does the digital audio signal come from pins (30/21/26/28) of IC1703 (Audio DSP) to pin (5/7/8/6) of IC1901 (AMP for SW)?

↓ NO

Check IC1703 and its paripheral circuits.(X1701, etc.)

↓ YES

- About the L/R Speakers.

Is the audio output from IC1902 as specified?

- About the Subwoofer Speaker.

Is the audio output from IC1901 as specified?

↓ NO

- About the L/R Speakers.

Check IC1902 and its peripheral circuits.

- About the Subwoofer Speaker.

Check IC1901 and its peripheral circuits.

↓ YES

- About the L/R Speakers.

Check the connector (P1903) L/R speakers and their peripheral circuits.

- About the Subwoofer Speaker.

Check the connector (P1904), subwoofer speaker and their peripheral circuits.

No audio signal at Digital Audio Output terminal (Analog sound heard)

No INPUT-1/2/3/4 (HDMI) audio.

If no video appears, refer to “No external input video (HDMI) [INPUT-1/2/3/4]”.

No audio at digital broadcast signal reception.

If no video appears, refer to “No video at digital broadcast signal reception”.

Is there the SPDIF signal output (CPU_ASPDIF) at pin (AR16) of IC3301 (CPU)?

NO

Check the IC3301 and its peripheral circuits.

YES

Is there the SPDIF signal (OPT_OUT) input at pin (2) of IC503 (SPDIF BUFFER & SPDIF-MUTE)?

NO

Check the line between IC3301 and IC503.

YES

Is there the MUTE signal input at pin (1) of IC503? (usual: High, Mute: Low)

NO

Check the AUDIO_MUTE and their peripheral circuits (Q505, etc.).

YES

Is there the SPDIF signal input at pin (1) of D527 (OPTICAL OUTPUT)?

YES

Check the speakers and the optical cable.

NO

Check D527 and its peripheral circuits.

No optical output under the following conditions as per HDMI requirements.

* Audio contents protected.
* Audio frequency beyond 48kHz.
* Audio bit length beyond 16bits.

No monitor audio output

Is the audio output from the monitor set at “VARIABLE” or “FIXED” on the menu screen?

NO → Check IC3301 (CPU) and its peripheral circuits.

YES

Are there the audio signal outputs at pins (AN34) (HP_MONITOR_L) and (AN3532) (HP_MONITOR_R) of IC3301 (CPU)?

NO → Check IC3301 (CPU) and its peripheral circuits.

YES

Does the audio signal come from pins (2) (MONI_HP_L) and (11) (MONI_HP_R) of IC1702 (Line-out Amplifier) to pins (3) (L) and (2) (R) of J504?

NO → Check the line between IC1702 and J504 and their peripheral circuits.
Check the LINE_MUTE line and its peripheral circuits(Q506/Q510, etc).

YES

Check the connector (J504) and their peripheral circuits, and speakers and the Cable.

No connect network

Does the signal come to 1pin of LAN-jack J9501?
(see fig-1, fig-2)

NO → Check the interface device and peripheral circuits.
(power-LED of hub, LINK-LED of hub)

YES

Does the signal come to AT18 pin of IC3301?
(see fig-2)

NO → Check the line between J9501 and IC3301.
Check the LAN-jack J9501.

YES

Check IC3301 and its peripheral circuits.

fig-1 LAN-jack J9501

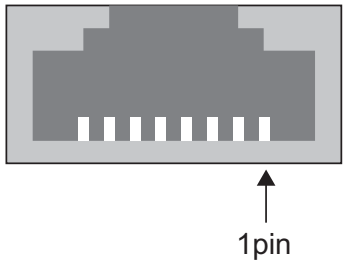
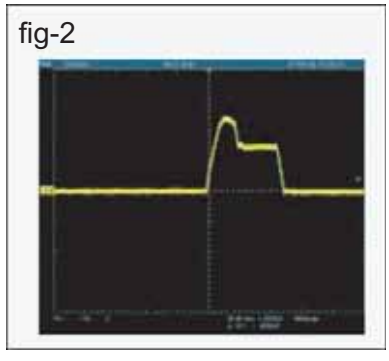


fig-2



CHAPTER 7. MAJOR IC INFORMATIONS

[1] MAJOR IC INFORMATIONS

1. MAJOR IC INFORMATIONS

1.1. IC2601 (VHiSii9387A-1Q)

This IC is 5 input and 1 output HDMI port processor.

The TMDS cores run at 2.25Gbps. (Supports video resolutions up to 1080p, 60Hz, 12bit.)

The adaptive equalizer provides long cable support.

This IC has been pre-programmed with HDCP keys.

EDID and DDC support for 5 HDMI/DVI ports and 1 VGA port. (This IC includes 512-byte NVRAM and 256-byte SRAM for 5 HDMI ports and 128-byte SRAM for VGA port.)

This IC supports the mandatory and several optional 3D formats described in the HDMI 1.4 Specification.

“Audio Return Channel” and “HDMI Ethernet Channel” support for one receiver port.

“MHL” support for resolutions up to 1080i@60Hz can be assigned to any one input port.

When changing this IC, please write EDID (how to write EDID is shown in Chapter 5 and section 10.1).

1.2. IC2004 (RH-iXD241WJNUQ)

The monitor microprocessor is intended to communicate with the main microprocessor and to operate the system.

It also controls power of the entire system.

1.3. IC1901, IC1902 (VHiYDA164EZ-1Y)

The Class-D type digital audio power amplifier YDA164EZ gives maximum continuous output of 10 W/ch or woofer output 15W.

1.4. IC3301 (RH-iXD414WJQZQ)

This LSI is FULL HIGH-DEFINITION 1080P DIGITAL TV SYSTEM-ON-A-CHIP.

It combines a transport de-multiplexer, a high definition video decoder, an AC3 audio decoder, a four-link LVDS transmitter, a V-by-One transmitter, and an NTSC/PAL/SECAM TV decoder with a 3D comb filter (NTSC/PAL).

It supports Full-HD MPEG1/2/4/H.264/DiviX/VC1/RM/AVS/VP6/VP8 video decoder standards, and JPEG.

Audio support includes a BTSC and a Dolby AC3/MPEG-2 Layer 1, 2, audio decoder.

Two SPDIF output and a pair of analog outputs (L-R) are provided.

The LSI incorporates a complete ARM Cortex-A9 dual core based microprocessor subsystem including caches with bridging to memory and a local bus, where external peripherals can be attached.

Integrated peripherals include four USB 2.0, three UARTs, counter/timers and GPIO controllers.

It supports ATSC/DVB-T/DVB-C demodulators.

1.5. IC3501, IC3502 (RH-iXD405WJQZQ)

These are 2G-bit (128M x 16bit) DDR3-1600 synchronous DRAM.

1.6. IC3503, IC3504 (RH-iXD406WJQZQ)

These are 1G-bit (64M x 16bit) DDR3-1600 synchronous DRAM.

1.7. IC3102 (RH-iXD389WJQZQ)

The 2G-bit NAND flash memory device stores the main CPU program.

1.8. IC3104 (VHiBR24T64J-1Y)

This is 64k-bit EEPROM device including the user setting.

1.9. IC2007 (VHiBR24T02J-1Y)

This is 2k-bit EEPROM device stores the nomitor microprocessor setting.

1.10. IC506 (VHiM3221EiP-1Y)

This IC is a high speed, single-channel RS-232 transceiver interface device that operates from a single 3.3V power supply.

The device provides the electrical interface between an asynchronous communication controller and the serial-port connector.

This device operate at data signaling rates up to 460kbit/s.

All RS-232 (Tout and Rin) and CMOS (Tin and Rout) inputs and outputs are protected against electrostatic discharge (up to +/- 15kV ESD protection).

1.11. IC1702 (VHiAK4201EU-1Y)

This IC is audio amplifier for line-out/head-phone.

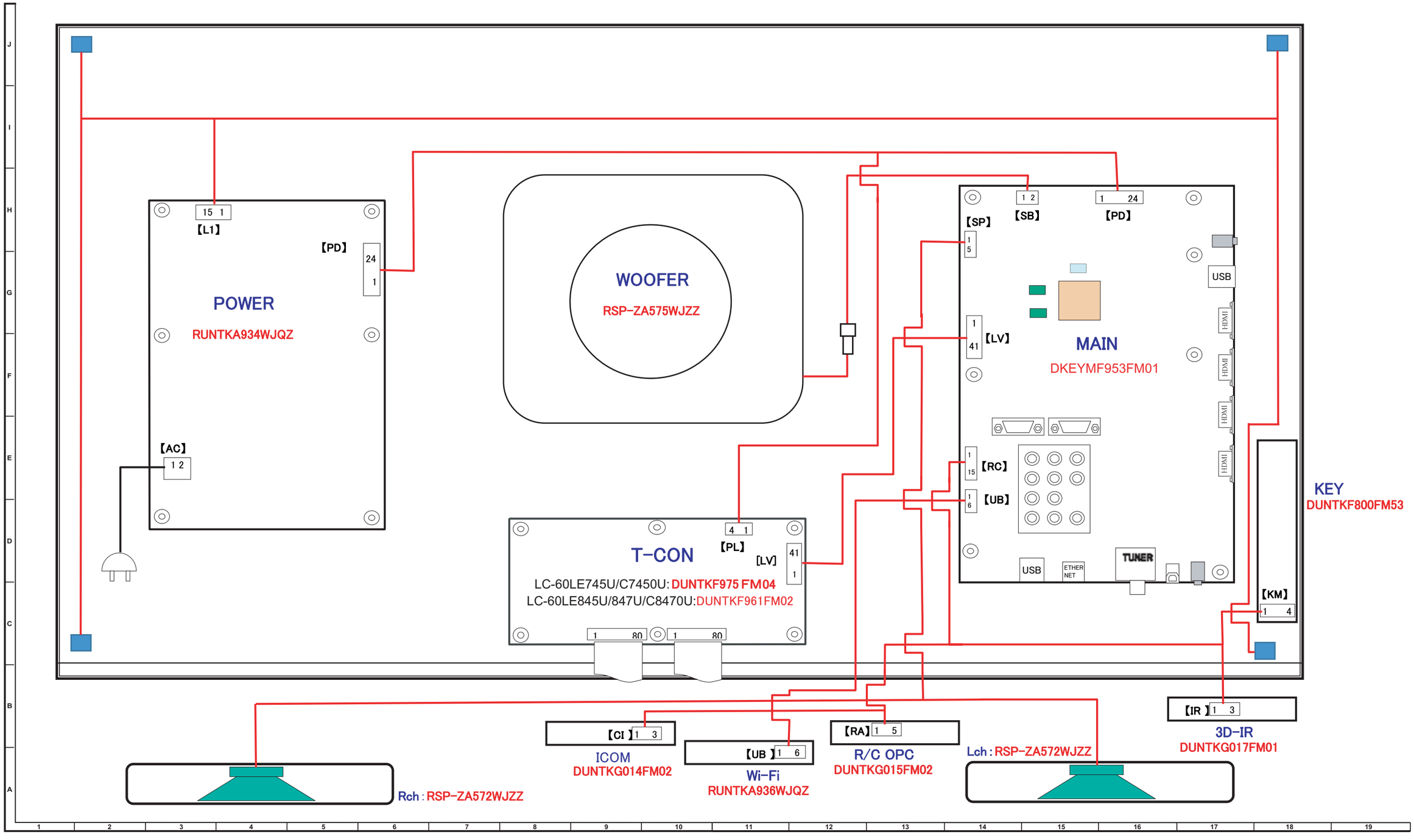
1.12. IC1704 (VHiYSS952QZ-1Y)

Audio DSP (YSS952QZ) has digital audio adjustment function (for example, PEQ, bass/treble, balance, bass enhancer, etc.) and adjusts TVs audio quality.

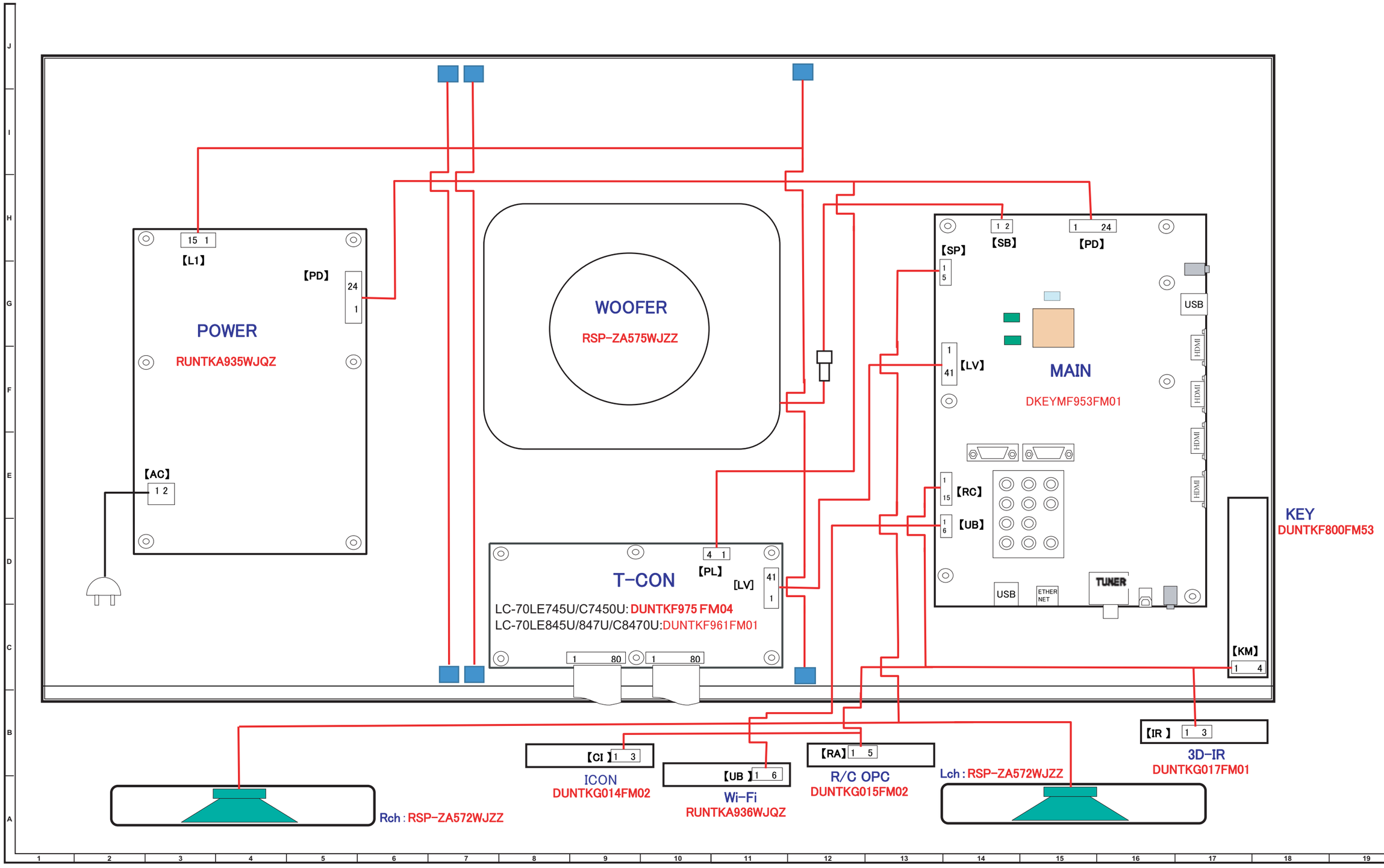
- MEMO -

CHAPTER 8. OVERALL WIRING/SYSTEM BLOCK DIAGRAM

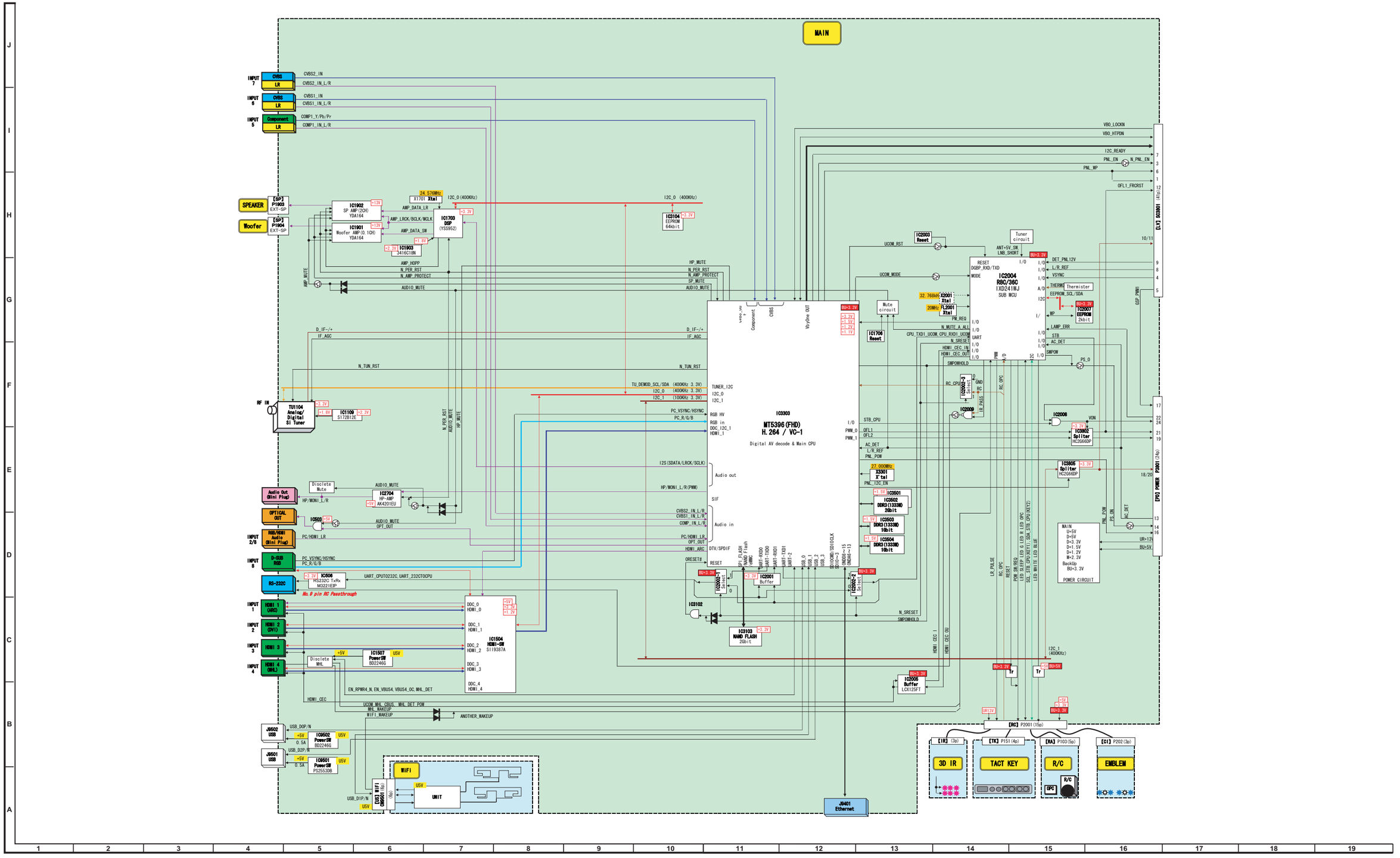
[1] OVERALL WIRING DIAGRAM (LC-60LE745U,C7450U,845U,847U,C8450U)



[2] OVERALL WIRING DIAGRAM (LC-70LE745U,C7450U,845U,847U,C8450U)



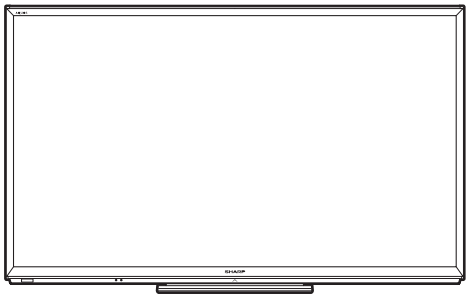
[3] SYSTEM BLOCK DIAGRAM



- MENO -

SHARP PARTS GUIDE

No. S12V760LE745U



LCD COLOR TELEVISION

LC-60LE745U,C7450U
LC-60LE845U,C8470U
LC-60LE847U
LC-70LE745U,C7450U
LC-70LE845U,C8470U
MODELS LC-70LE847U

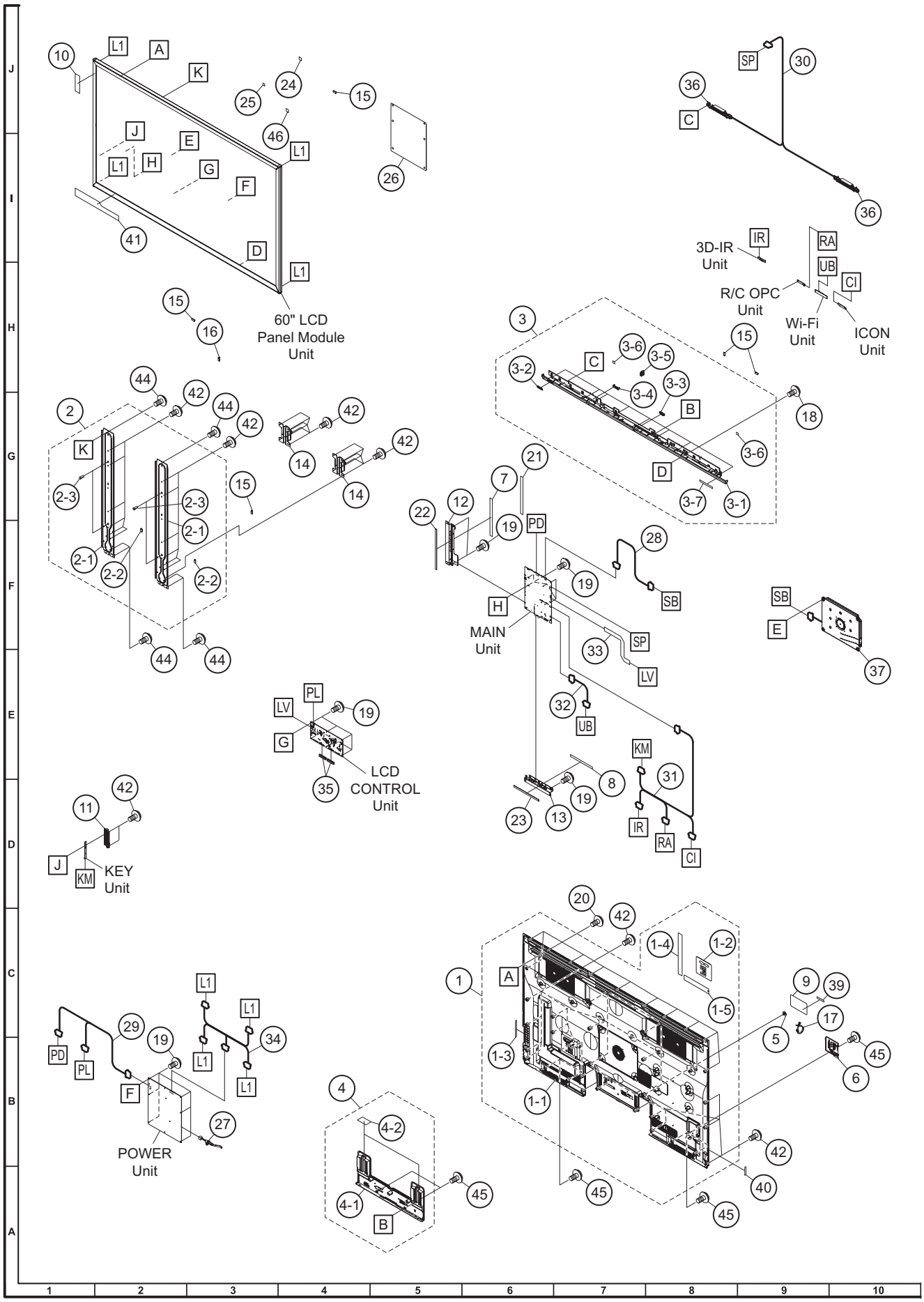
CONTENTS

Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

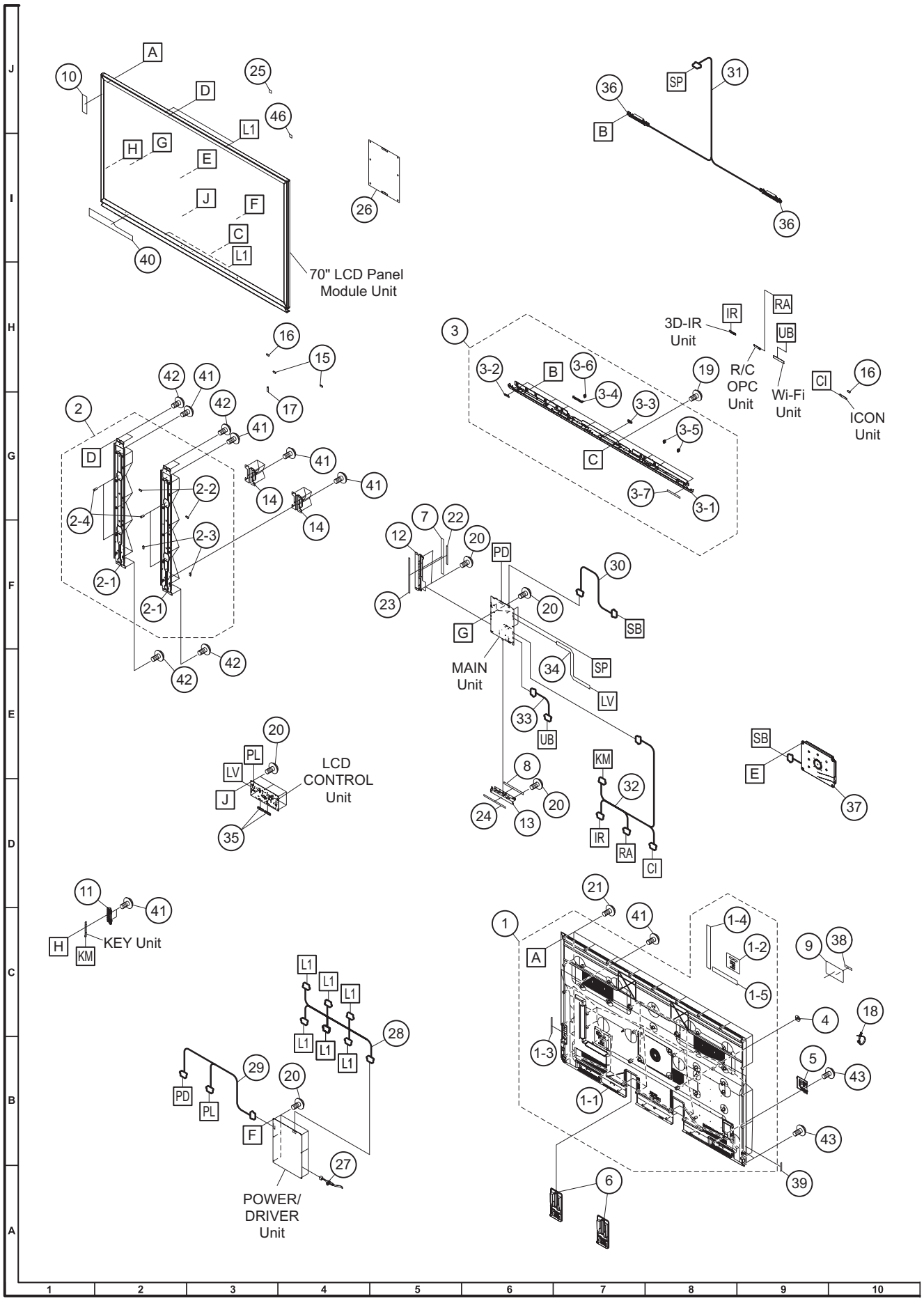
	NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
	[1] PRINTED WIRING BOARD ASSEMBLIES					
	N	DKEYMF953FM01		N	X	MAIN Unit
	N	DUNTKF800FM53			X	KEY Unit
	N	DUNTKF975FM04		N	X	LCD CONTROL Unit (LC-60/70LE745, 60/70C7450)
	N	DUNTKF961FM02		N	X	LCD CONTROL Unit (LC-60LE845/847/C8470)
	N	DUNTKF961FM01		N	X	LCD CONTROL Unit (LC-70LE845/LE847/C8470)
	N	DUNTKG014FM02			X	ICON Unit
	N	DUNTKG015FM02			X	R/C OPC Unit
	N	DUNTKG017FM01		N	X	3D-IR Unit
	N	RUNTKA936WJQZ		N	X	Wi-Fi UNIT
⚠	N	RUNTKA934WJQZ		N	X	POWER UNIT (LC-60LE745/845/847/C7450/C8470)
⚠	N	RUNTKA935WJQZ		N	X	POWER/DRIVER UNIT (LC-70LE745/845/847/C7450/C8470)
	N	RUNTKA944WJZZ		N	X	S-LED Unit A, x2 (LC-60LE745/C7450)
	N	RUNTKA966WJZZ		N	X	S-LED Unit A, x2 (LC-60LE845/847/C8470)
	N	RUNTKA945WJZZ		N	X	S-LED Unit B, x2 (LC-60LE745/C7450)
	N	RUNTKA967WJZZ		N	X	S-LED Unit B, x2 (LC-60LE845/847/C8470)
	N	RUNTKA943WJZZ		N	X	S-LED Unit, x6 (LC-70LE745/C7450)
	N	RUNTKA965WJZZ		N	X	S-LED Unit, x6 (LC-70LE845/LE847U/C8470)
	[2] LCD PANEL MODULE Unit					
	N	CLCDTA256WE01		N	X	60" LCD Panel Module Unit (LC-60LE745/C7450)
	N	CLCDTA256WE03		N	X	60" LCD Panel Module Unit (LC-60LE845/847/C8470)
	N	CLCDTA255WE01		N	X	70" LCD Panel Module Unit (LC-70LE745/C7450/847)
	N	CLCDTA255WE03		N	X	70" LCD Panel Module Unit (LC-70LE845/LE847/C8470)
	N	R1LK600D3HB70Z		N	X	60" Panel Unit (LC-60LE745/C7450) (LK600D3HB70Z)
	N	R1LK600D3HB80Z		N	X	60" Panel Unit (LC-60LE845//847/C8470) (LK600D3HB80Z)
	N	R1LK695D3GV00E		N	X	70" Panel Unit (LC-70LE745/C7450) (LK695D3GV00E)
	N	R1LK695D3GV00D		N	X	70" Panel Unit (LC-70LE845/70LE847/C8470) (LK695D3GV00D)

[3] CABINET PARTS (LC-60LE745U/845U/847U/C7450U/C8470U)



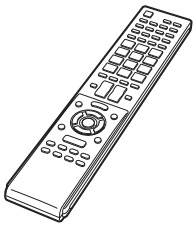
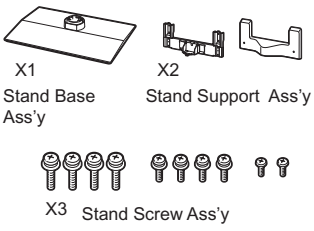
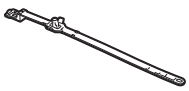
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[3] CABINET PARTS (LC-60LE745U/845U/847U/C7450U/C8470U)					
1	CCABBC053WJ31		N	X	Rear Cabinet Ass'y
1-1	GCABBC053WJ3A		N	X	Rear Cabinet
1-2	HiNDPE034WJSA			X	Terminal Ind-b
1-3	HiNDPE573WJSA		N	X	OPE Label
1-4	HiNDPE587WJSA		N	X	TERM IND (Side)
1-5	HiNDPE588WJSA		N	X	TERM IND (Bottom)
2	CANGKD512WJ31		N	X	Center Angle Ass'y, x2
2-1	LANGKD512WJ3W		N	X	Center Angle
2-2	LHLDWA175WJUZ	AC		J	Wire Holder
2-3	NSFTZA546WJFN		N	X	VESA Boss, x2
3	CCOVAE296WJ31		N	X	Decoration Cover Ass'y
3-1	GCOVAE296WJ3A		N	X	Decoration Cover
3-2	GCOVAE310WJ3A		N	X	3D IR Cover
3-3	GCOVAE311WJ3A		N	X	Center I-CON Cover
3-4	HDECQB692WJ3A		N	X	LED Decoration
3-5	LHLDWA151WJKZ	AB		J	Wire Holder
3-6	PSPAHC570WJZZ		N	X	Himeron, x2
3-7	TLABZD154WJZZ		N	X	Lisence Label
4	CCOVAE298WJ31		N	X	Bottom Cover Ass'y
4-1	GCOVAE298WJ3A		N	X	Bottom Cover
4-2	PSPAHC565WJZZ		N	X	Himeron, x2
5	GCOVAC576WJKZ	AC		J	VESA Cover, x4
6	GCOVAE163WJ3A			X	AC Cord Cover
7	HDECPA090WJZZ			X	Decoration Sheet (Side)
8	HDECPA091WJZZ			X	Decoration Sheet (Bottom)
9	HiNDPE569WJSA		N	X	Model Label (for LC-60LE745)
9	HiNDPE602WJSA			X	Model Label (for LC-60C7450)
9	HiNDPE577WJSA		N	X	Model Label (for LC-60LE845)
9	HiNDPE600WJSA		N	X	Model Label (for LC-60C8470)
9	HiNDPE598WJSA		N	X	Model Label (for LC-60LE847)
10	HiNDPE571WJZZ		N	X	Energy Label (for LC-60LE745/C7450)
10	HiNDPE579WJZZ		N	X	Energy Label (for LC-60LE845/847/C8470)
11	JBTN-A958WJ3A		N	X	Key Button
12	LANGKD145WJFW		N	X	Side Terminal Angle
13	LANGKD146WJFW			X	Terminal Angle Width
14	LANGKD518WJ3W		N	X	Stand Angle, x2
15	LHLDWA175WJUZ	AC		J	Wire Holder, x5
16	LHLDWA176WJUZ	AC		J	Wire Holder
17	LHLDWA303WJKA	AE		J	Cable Clamp
18	LX-BZA202WJF8	AA		J	Screw, x9
19	LX-BZA207WJF7	AA		J	Screw, x20
20	LX-BZA474WJF8		N	X	Screw, x11
21	PSPAKA511WJKZ		N	X	Spacer
22	PSPAZC690WJZZ			X	Conductr (8*255)
23	PSPAZC691WJZZ	AE		J	Conductr (8*180)
24	PSPAZC805WJKZ		N	X	Cooler (25*25*8)
25	PSPAZC877WJKZ		N	X	Shading Sheet
26	PZETKA665WJKZ		N	X	Power Insulation
⚠ 27	QACCDA084WJPZ			X	AC Cord
28	QCNW-M534WJZZ		N	X	Connecting Cord (SB)
29	QCNW-M540WJZZ		N	X	Connecting Cord (PD)
30	QCNW-M542WJZZ		N	X	Connecting Cord (SP)
31	QCNW-M543WJZZ		N	X	Connecting Cord (RC)
32	QCNW-M544WJZZ		N	X	Connecting Cord (UB)
33	QCNW-M545WJZZ		N	X	Connecting Cord (LW)
34	QCNW-M553WJQZ		N	X	Connecting Cord (L1)
35	RCORFA061WJZZ	AG		J	Ferrite Cord, x2
36	RSP-ZA572WJZZ		N	X	Speaker Unit (L/R), x2
37	RSP-ZA575WJZZ		N	X	Speaker Unit (Woofer)
39	TLABNB037WJZZ			X	Back Serial Label
40	TLABNE225WJZZ		N	X	Side Serial Label
41	TLABZD155WJZZ		N	X	POP Label (for LC-60LE745)
41	TLABZD168WJZZ			X	POP Label (for LC-60C7450)
41	TLABZD162WJZZ		N	X	POP Label (for LC-60LE845)
41	TLABZD166WJZZ		N	X	POP Label (for LC-60LC8470)
42	XBPS830P06WS0	AA		J	Screw, x44
44	XBPS830P08000	AA		J	Screw, x6
45	XEBS830P12000	AA		J	Screw, x8
46	PSPAZC854WJKZ			X	Cooler (12*15*9) (for LC-60LE845/847/C8470)

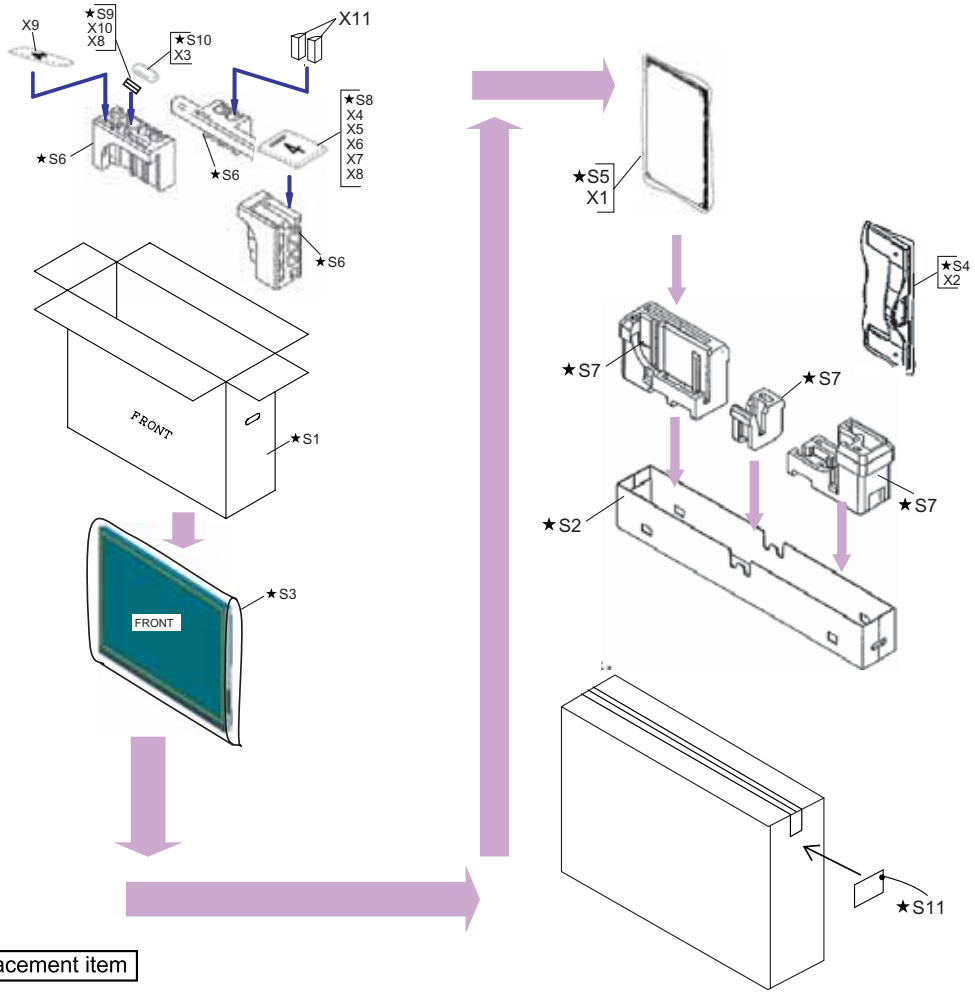
[4] CABINET PARTS (LC-70KE745U/845U/847U/C7450U/C8470U)



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] CABINET PARTS (LC-70KE745U/845U/847U/C7450U/C8470U)					
1	CCABBC054WJ31		N	X	Rear Cabinet Ass'y
1-1	GCABBC054WJ3A		N	X	Rear Cabinet
1-2	HiNDPE034WJSA			X	Terminal Indica
1-3	HiNDPE573WJSA		N	X	OPE Label
1-4	HiNDPE587WJSA		N	X	TERM IND (Side)
1-5	HiNDPE588WJSA		N	X	TERM IND (Bottom)
2	CANGKD468WJ31		N	X	Center Angle Ass'y, x2
2-1	LANGKD468WJ3W		N	X	Center Angle
2-2	LHLDWA151WJKZ	AB		J	Wire Holder
2-3	LHLDWA175WJUZ	AC		J	Wire Holder
2-4	NSFTZA546WJFN			X	VESA BOSS, x2
2-5	PSPAHC566WJZZ		N	X	Himeron
3	CCOVAE297WJ31		N	X	Decoration Cover Ass'y
3-1	GCOVAE297WJ3A		N	X	Decoration Cover
3-2	GCOVAE310WJ3A		N	X	3D IR Cover
3-3	GCOVAE311WJ3A		N	X	Center I-CON Cover
3-4	HDECQB692WJ3A		N	X	LED Decoration
3-5	LHLDWA048WJKZ	AB		J	Wire Holder, x2
3-6	LHLDWA151WJKZ	AB		J	Wire Holder
3-7	TLABZD154WJZZ		N	X	Lisence Label
4	GCOVAC576WJKZ	AC		J	VESA Cover, x4
5	GCOVAE163WJ3A			X	AC Cord Cover
6	GCOVAE299WJ3A		N	X	Bottom Cover, x2
7	HDECPA090WJZZ			X	Decoration Sheet (Side)
8	HDECPA091WJZZ			X	Decoration Sheet (Bottom)
9	HiNDPE570WJSA		N	X	Model Label (for LC-70LE745)
9	HiNDPE601WJSA			X	Model Label (for LC-70C7450)
9	HiNDPE578WJSA		N	X	Model Label (for LC-70LE845)
9	HiNDPE599WJSA		N	X	Model Label (for LC-C8470)
9	HiNDPE597WJSA		N	X	Model Label (for LC-70LE847)
10	HiNDPE572WJZZ		N	X	Energy Label (Except LC-70LE845)
10	HiNDPE580WJZZ		N	X	Energy Label (for LC-70LE845/LE847)
11	JBTN-A958WJ3A		N	X	Key Button
12	LANGKD145WJFW		N	X	Side Terminal Angle
13	LANGKD146WJFW			X	Terminal Angle Width
14	LANGKD518WJ3W		N	X	Stand Angle, x2
15	LHLDWA151WJKZ	AB		J	Wire Holder, x2
16	LHLDWA175WJUZ	AC		J	Wire Holder, x2
17	LHLDWA176WJUZ	AC		J	Wire Holder
18	LHLDWA303WJKA	AE		J	Cable Clamp
19	LX-BZA202WJF8	AA		J	Screw, x9
20	LX-BZA207WJF7	AA		J	Screw, x20
21	LX-BZA474WJF8		N	X	Screw, x11
22	PSPAKA511WJKZ		N	X	Spacer
23	PSPAZC690WJZZ			X	Conductr (8*255)
24	PSPAZC691WJZZ	AE		J	Conductr (8*180)
25	PSPAZC805WJKZ		N	X	Cooler (25*25*8)
26	PZETKA666WJKZ		N	X	Power Insulation
⚠ 27	QACCDA084WJPZ			X	AC Cord
28	QCNW-M531WJQZ		N	X	Connecting Cord (L1)
29	QCNW-M533WJZZ		N	X	Connecting Cord (PD)
30	QCNW-M534WJZZ		N	X	Connecting Cord (SB)
31	QCNW-M535WJZZ		N	X	Connecting Cord (SP)
32	QCNW-M536WJZZ		N	X	Connecting Cord (RC)
33	QCNW-M537WJZZ		N	X	Connecting Cord (UB)
34	QCNW-M538WJZZ		N	X	Connecting Cord (LW)
35	RCORFA061WJZZ	AG		J	Ferrite Core, x2
36	RSP-ZA572WJZZ		N	X	Speaker Unit (L/R), x2
37	RSP-ZA575WJZZ		N	X	Speaker Unit (Woofer)
38	TLABNB037WJZZ			X	Back Serial Label
39	TLABNE225WJZZ		N	X	Side Serial Label
40	TLABZD155WJZZ		N	X	POP Label (for LC-70LE745)
40	TLABZD168WJZZ		N	X	POP Label (for LC-70C7450)
40	TLABZD162WJZZ		N	X	POP Label (for LC-70LE845)
40	TLABZD166WJZZ		N	X	POP Label (for LC-70C8470)
40	TLABZD164WJZZ		N	X	POP Label (for LC-70LE847)
41	XBPS830P06WS0	AA		J	Screw, x50
42	XBPS830P08000	AA	N	J	Screw., x8
43	XEBS830P12000	AA		J	Screw, x10
46	PSPAZC854WJKZ			X	Cooler (12*15*9) (for LC-70LE845/847/C8470)

[5] SUPPLIED ACCESSORIES/PACKING PARTS (LC-60LE745U/845U/847U/C7450U/C8470U)

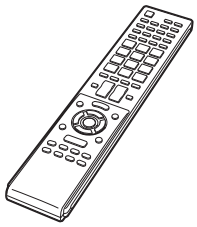
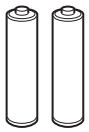
X9 Remote control unit	X10 "AAA" size battery	Stand unit
		
X6 Operation manual	**X8 Cable tie**	**X7 Connection guide**
		
	X11 3D Glasses, x2	X4 Enquete Cord X5 Guarantee Card

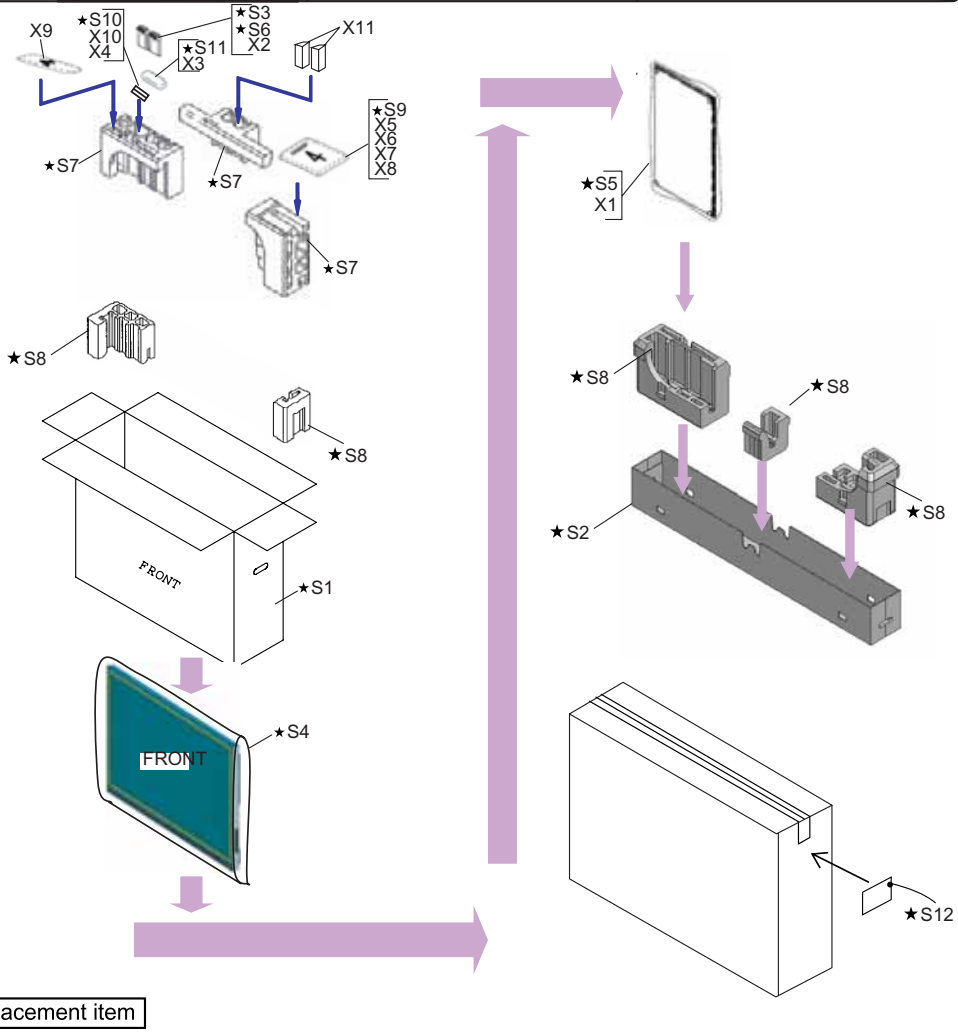


★ Not Replacement item

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[5] SUPPLIED ACCESSORIES/PACKING PARTS (LC-60LE745U/845U/847U/C7450U/C8470U)					
X1	CDAi-A823WJ01		N	X	Stand Base Ass'y
X2	CANGKD137WJ01	BD		J	Stand Support Ass'y
X3	CSAKKA016WJ01		N	X	Stand Screw Ass'y
X4	TCADEA290WJZZ			X	Enquete Card
X5	TGAN-B610WJZZ			X	Guarantee Card
X6	TiNS-F441WJZZ		N	X	Operation Manual (for LC-60LE745)
X6	TiNS-F448WJZZ			X	Operation Manual (for LC-60C7450)
X6	TiNS-F442WJZZ		N	X	Operation Manual (for LC-60LE845)
X6	TiNS-F448WJN1		N	X	Operation Manual (for LC-60C8470)
X7	TMAN-A047WJZZ		N	X	Conection Guide
X8	LHLDWA303WJKA	AE		J	Cable Clamp
X9	RRMCGB005WJSA		N	X	Remote Control
X10	Not available	-		-	AAA size battery, x2
X11	KOPTLA004WJQZ				3D Glasses, x2 (LC-60C8470)
S1	SPAKCG705WJZZ	-		-	Packing Case (NOT REPLACEMENT ITEM) (for LC-60C7450)
S1	SPAKCG675WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-60LE845)
S1	SPAKCG707WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-60C8470)
S1	SPAKCG712WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-60LE847)
S2	SPAKCG661WJZZ	-	N	-	Bottom Case (NOT REPLACEMENT ITEM)
S3	SPAKPB427WJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S4	SPAKPB695WJZZ	-	N	-	Wrapping Paper (Support) (NOT REPLACEMENT ITEM)
S5	SPAKPB851WJZZ	-	N	-	Wrapping Paper (Stand) (NOT REPLACEMENT ITEM)
S6	SPAKXD577WJZZ	-	N	-	Packing Add. (Top) (NOT REPLACEMENT ITEM)
S7	SPAKXD578WJZZ	-	N	-	Packing Add. (Bottom) (NOT REPLACEMENT ITEM)
S8	SSAKA0101GJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S9	SSAKAA032WJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S10	SSAKKA016WJZZ	-	N	-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S11	TLABKA009WJZZ	-		-	Case No. Label (NOT REPLACEMENT ITEM)

[4] SUPPLIED ACCESSORIES/PACKING PARTS (LC-70LE745U/845U/847U/C7450U/C8470U)

X9 Remote control unit	X10 "AAA" size battery	Stand unit
		 X1 Stand Base Ass'y X2 Stand Support Ass'y  X3 Stand Screw Ass'y
X7 Operation manual	**X4 Cable tie**	**X8 Connection guide**
		
	X11 3D Glasses, x2	X5 Enquete Cord X6 Guarantee Card



★ Not Replacement item

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[6] SUPPLIED ACCESSORIES/PACKING PARTS (LC-70LE745U/845U/847U/C7450U/C8470U)					
X1	CDAi-A821WJ31		N	X	Stand Base Ass'y
X2	CANGKD525WJ31		N	X	Stand Support Ass'y
X3	CSAKKA011WJ04		N	X	Stand Screw Ass'y
X4	LHLDWA303WJKA	AE		J	Cable Clamp
X5	TCADEA290WJZZ			X	Enquete Card
X6	TGAN-B610WJZZ			X	Guarantee Card
X7	TiNS-F441WJZZ		N	X	Operation Manual (for LC-70LE745)
X7	TiNS-F448WJZZ			X	Operation Manual (for LC-70C7450)
X7	TiNS-F442WJZZ		N	X	Operation Manual (for LC-70LE845)
X7	TiNS-F448WJN1		N	X	Operation Manual (for LC-C8470)
X8	TMAN-A047WJZZ		N	X	Conection Guide
X9	RRMCGB005WJSA		N	X	Remote Control
X10	Not available	-		-	AAA size battery, x2
X11	KOPTLA004WJQZ				3D Glasses, x2 (LC-70C8470)
S1	SPAKCG660WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-70LE745)
S1	SPAKCG706WJZZ	-		-	Packing Case (NOT REPLACEMENT ITEM) (for LC-70C7450)
S1	SPAKCG676WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-70LE845)
S1	SPAKCG708WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-70C8470)
S1	SPAKCG713WJZZ	-	N	-	Packing Case (NOT REPLACEMENT ITEM) (for LC-70LE847)
S2	SPAKCG662WJZZ	-	N	-	Bottom Case (NOT REPLACEMENT ITEM)
S3	SPAKPB723WJ2Z	-		-	Wrapping Paper (Stand) (NOT REPLACEMENT ITEM)
S4	SPAKPB733WJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S5	SPAKPB842WJZZ	-	N	-	Wrapping Paper (Support) (NOT REPLACEMENT ITEM)
S6	SPAKPB868WJZZ	-	N	-	Stand Sheet (NOT REPLACEMENT ITEM)
S7	SPAKXD579WJZZ	-	N	-	Packing Add. (Top) (NOT REPLACEMENT ITEM)
S8	SPAKXD580WJZZ	-	N	-	Packing Add. (Bottom) (NOT REPLACEMENT ITEM)
S9	SSAKA0101GJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S10	SSAKAA032WJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S11	SSAKKA011WJZZ	-		-	Polyethylene Bag (NOT REPLACEMENT ITEM)
S12	TLABKA009WJZZ	-		-	Case No. Label (NOT REPLACEMENT ITEM)
[7] SERVICE JIG (USE FOR SERVICING)					
N	QCNW-C222WJQZ	AW		J	Connecting Cord L=1000mm 80pins, LCD Control Unit to LCD Panel Unit, x2
N	QCNW-M580WJQZ			J	Connecting Cord L=1000mm 41pins, Main to LCD Control Unit (LW)
N	QCNW-M539WJQZ			J	Connecting Cord L=1000mm 24pins, Main to POWER Unit (PD)

SHARP

Feb. 2012
SH. DS

SHARP CORPORATION
AV Systems Group
CS Promotion Center
Yaita,Tochigi 329-2193, Japan