SHARP SERVICE MANUAL

No. S40F340D68UT/

LCD COLOR TELEVISION

MODEL LC-40D68UT

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.

F701 (250V 6.3A)

F721 (300V 2A)

F4732 (250V 1A)

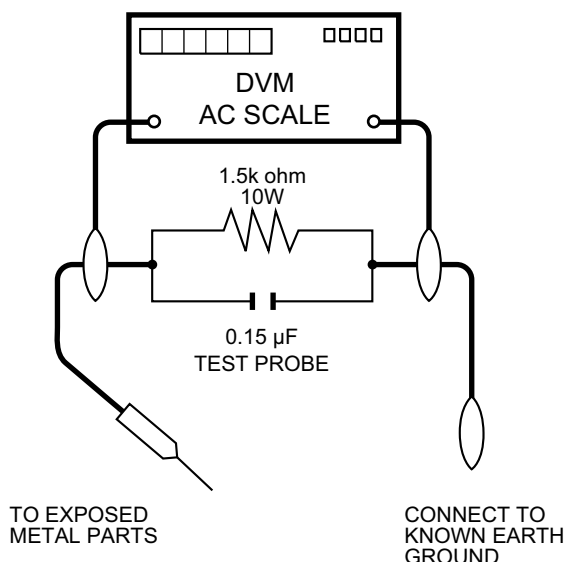### ■BEFORE RETURNING THE RECEIVER (Fire & Shock Hazard)

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
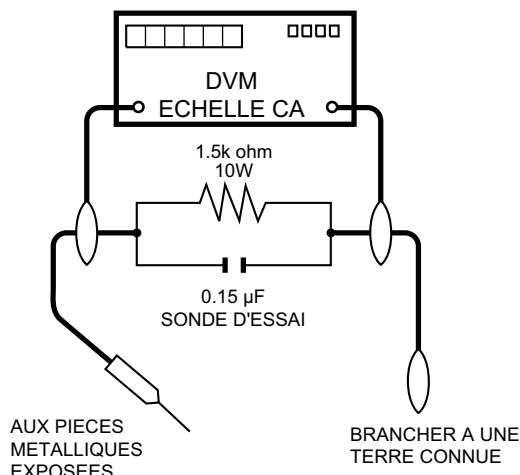>
> F701 (250V 6.3A)
> F721 (300V 2A)
> F4732 (250V 1A)

■ 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 façon 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.
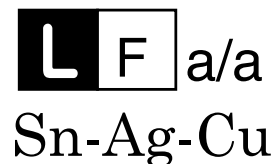
PRECAUTIONS FOR USING LEAD-FREE SOLDER

■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:

L F a	**L F a/a**
Sn-Ag-Cu	Sn-Ag-Cu
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

Ref No.	Parts Code	Description
N	DUNTKF463FM02	MAIN Unit
N	DUNTKF465FM02	TERMINAL Unit
N	DUNTKE266FM02	KEY Unit
N	DUNTKF096FM01	R/C, LED Unit
N	RDENCA393WJQZ	POWER Unit
N	9JS-5540T04C04	LCD CONTROL Unit
N	9JS-1940T04001	INVERTER Unit

■OTHER UNIT

Ref No.	Parts Code	Description
N	R1LK400D3LF31Z	40" LCD Panel Module Unit

■IC FOR EXCLUSIVE USE OF THE SERVICE

Ref No.	Parts Code	Description	Q'ty
IC602	VHiS24CS02JHES	IC R1EX24002ASAS0A	1
IC1610	VHiR24002AS3YS	IC R1EX24002ASAS0A	1
IC1611	VHiR24002AS2YS	IC R1EX24002ASAS0A	1
IC1612	VHiR24002AS4YS	IC R1EX24002ASAS0A	1
IC2002	RH-iXC165WJN5Q	IC R5F212A8SNFP	1
IC8451	RH-iXC895WJN1S	IC MX25L6405DMI-12G	1

■SERVICE JIGS

Ref No.	Parts Code	Description	Q'ty
N	QCNW-G401WJQZ	L=1000mm 4-5pins, Main to Key (KM)	1
N	QCNW-H649WJPZ	L=1000mm 4pins, Main to Speaker (SP)	1
N	QCNW-H762WJQZ	L=1000mm 10pins, Main to R/C LED (RA)	1
N	QCNW-K865WJQZ	L=1000mm 51pins, Main to T-CON (LW)	1
N	QCNW-K866WJQZ	L=1000mm 12-14pins, Main to Power (PD)	1
N	QCNW-K867WJQZ	L=1000mm 14pins, Power to Inverter (LB2)	1

CHAPTER 1. SPECIFICATIONS

[1] SPECIFICATIONS

Item			Model: LC-40D68UT
LCD panel	Size		40" Class (40" 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			8W × 2
Terminals	Rear	INPUT 1	AV in, COMPONENT in
		INPUT 2	COMPONENT in
		INPUT 4	ANALOG RGB (PC) in (15-pin mini D-sub female connector), Audio in (ø 3.5 mm stereo minijack)
		INPUT 6	HDMI in with HDCP, Audio in (ø 3.5 mm stereo minijack)
		INPUT 7	HDMI in with HDCP
		ANT/CABLE	75 Ω Unbalance, F Type × 1 for Analog (VHF/UHF/CATV) and Digital (AIR/CABLE)
		AUDIO	Audio in (ø 3.5 mm stereo minijack)
		DIGITAL AUDIO OUTPUT	Optical Digital audio output × 1 (PCM/Dolby Digital)
		OUTPUT	Audio out
	Side	INPUT 3	AV in
		INPUT 5	HDMI in with HDCP
		SERVICE	Software update
OSD language			English/French/Spanish
Power Requirement			AC 120 V, 60 Hz
Power Consumption			170 W (0.4 W Standby with AC 120 V)
Weight	TV + stand		33.1 lbs./15.0 kg
	TV only		28.7 lbs./13.0 kg
Dimension[*2] (W × H × D)	TV + stand		38 $^7/_8$ × 26 $^9/_{64}$ × 12 $^3/_8$ inch
	TV only		38 $^7/_8$ × 24 $^{19}/_{64}$ × 4 $^1/_4$ inch
Operating temperature			+32°F to −104°F (0°C to +40°C)

[*1] Emergency alert messages via Cable are unreceivable.
[*2] The dimensional drawings are shown on the Spanish operation manual.
• 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.

Optional Accessory

The listed optional accessory is available for the Liquid Crystal Television. Please purchase it at your nearest shop.
• Additional optional accessories may be available in the near future. When purchasing, please read the newest catalogue for compatibility and check the availability.
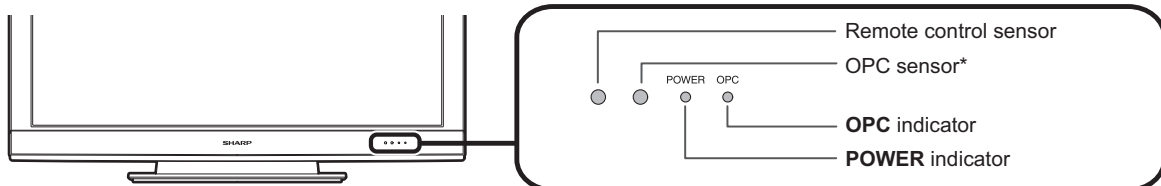
Part name	Model number
Wall mount bracket	AN-37AG2
Attachment	AN-37P30

CHAPTER 2. OPERATION MANUAL
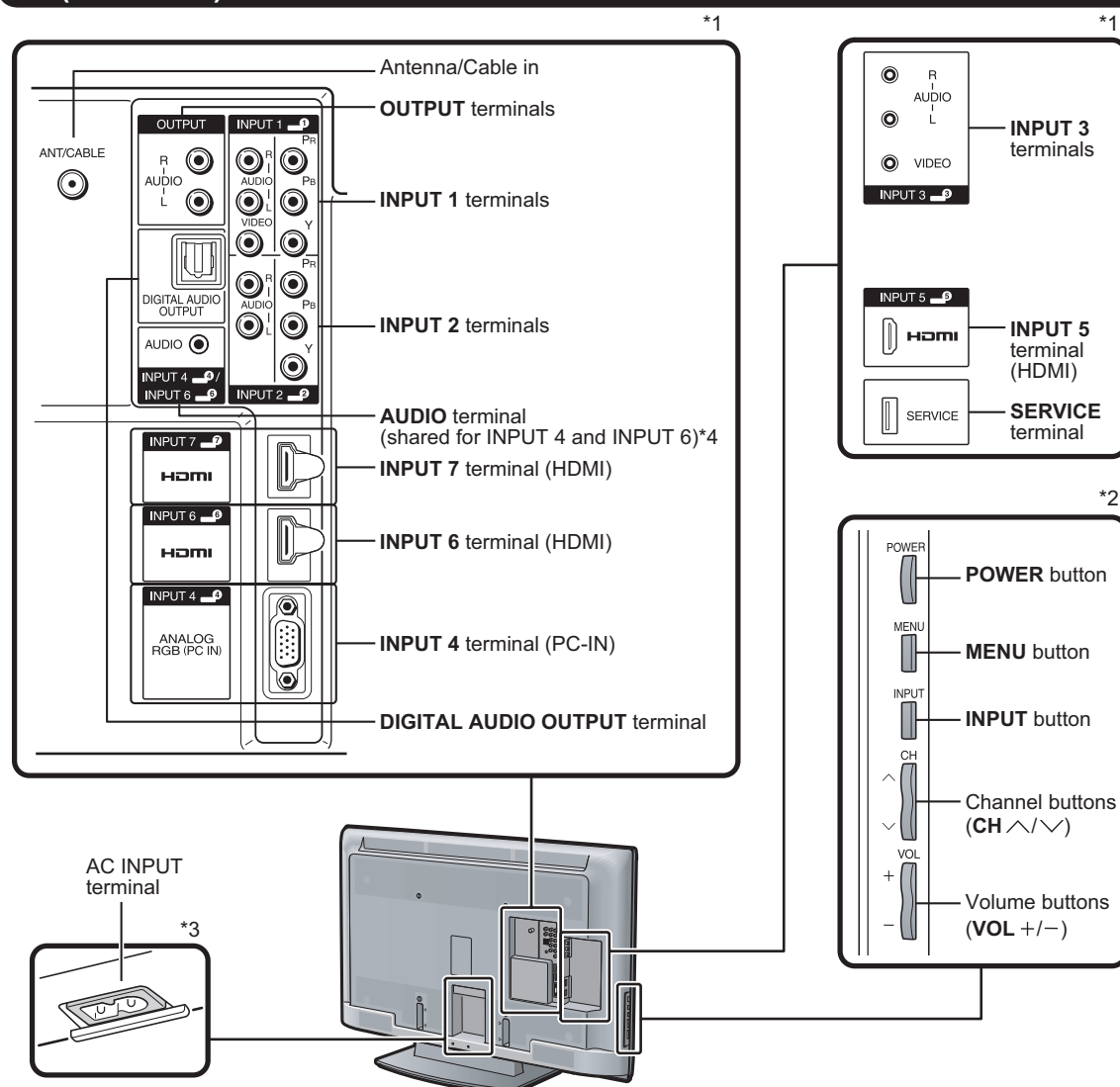
[1] OPERATION MANUAL

TV (Front)

Remote control sensor
OPC sensor*
POWER OPC
OPC indicator
POWER indicator

* OPC: Optical Picture Control

TV (Rear/Side)

*1

Antenna/Cable in
OUTPUT terminals
ANT/CABLE
INPUT 1 terminals
INPUT 2 terminals
AUDIO terminal
(shared for INPUT 4 and INPUT 6)*4
INPUT 7 terminal (HDMI)
INPUT 6 terminal (HDMI)
INPUT 4 terminal (PC-IN)
DIGITAL AUDIO OUTPUT terminal

*1
INPUT 3 terminals
INPUT 5 terminal (HDMI)
SERVICE terminal

*2
POWER button
MENU button
INPUT button
Channel buttons (**CH** ∧/∨)
Volume buttons (**VOL** +/−)

AC INPUT terminal
*3

*1 External equipment connection.
*2 Button operations.
*3 Connecting the AC cord.
*4 Details on the PC Audio Select function.

NOTE
• The illustrations in this operation manual are for explanation purposes and may vary slightly from the actual operations.

Direct Button Operation

① POWER

You can turn on the TV or put it on standby by pressing **POWER** on the TV or on the remote control unit.

② Changing Channels

You can change channels by pressing **CH∧/∨** or **0–9**, • (DOT).

Examples:
To select a 1 or 2-digit channel number (e.g., Channel 5):
Press **5** ⟶ **ENT**.
To select a 3-digit channel number (e.g., Channel 115):
Press **1** ⟶ **1** ⟶ **5** ⟶ **ENT**.
To select a 4-digit channel number (e.g., Channel 22.1):
Press **2** ⟶ **2** ⟶ **• (DOT)** ⟶ **1** ⟶ **ENT**.

NOTE
• When selecting a 1-digit channel number, it is not necessary to press **0** before the number.
• When you enter **0–9** only, channel selection will be made if there is no operation within a few seconds.
• If you push "0" by itself, nothing will happen.
• Complete the above steps within a few seconds.
• When you enter **0–9** and • (DOT), channel selection will be made if there is no operation within a few seconds.

③ FAVORITE CH

You can select 4 preset favorite channels in 4 different categories.
Press **A**, **B**, **C** or **D**.
• While watching the TV, you can toggle the selected channels by pressing **A**, **B**, **C** and **D**.

NOTE
• Details of favorite channel settings.

④ Changing Volume

You can change the volume by pressing **VOL＋/－** on the TV or on the remote control unit.
• To increase the volume, press **VOL＋**.
• To decrease the volume, press **VOL－**.
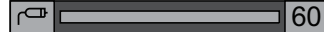
Audio status

Output device	Output Select	
	Fixed	**Variable**
Speaker	Variable sound	Mute

• When "Output Select" is set to "Variable", the indicator on the screen changes as shown below.

NOTE
• Details on the Output Select function.

⑤ MUTE

Mutes the current sound output.
Press **MUTE**.
• " 🔇 " will be displayed on the screen for 30 minutes, and the sound is silenced.

NOTE
• Within 30 minutes of pressing **MUTE**, mute can be canceled by pressing **VOL＋/－** or **MUTE**.
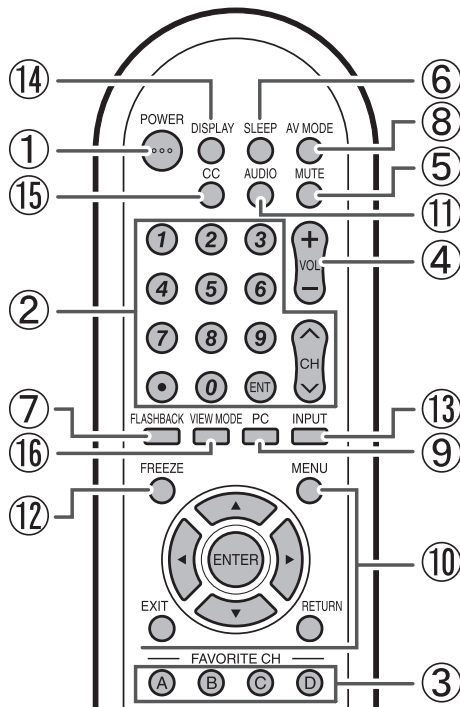• Mute will be canceled after 30 minutes have passed. However, the TV will not suddenly output a loud sound as the volume level is set to 0 automatically.

⑥ Sleep Timer

Allows you to set a time when the TV automatically switches to standby.
Press **SLEEP**.
• The remaining time displays when the sleep timer has been set.
• Each time you press **SLEEP**, the remaining time switches as shown below.

Off ⟹ 30 ⟹ 60 ⟹ 90 ⟹ 120

• When set, the time automatically starts counting down.
• If you want to adjust the sleep timer, you can press **SLEEP** twice then change the time setting.
• When it is 5 minutes before the time expires, the remaining time will start to keep appearing every minute.

NOTE
• Select "Off" by pressing **SLEEP** to cancel the sleep timer.
• The TV will enter standby when the remaining time reaches 0.

⑦ FLASHBACK

Press **FLASHBACK** to switch to the previously tuned channel.
• Press **FLASHBACK** again to switch back to the currently tuned channel.

NOTE
• **FLASHBACK** will not work if no channel has been changed after the TV is turned on.

⑧ AV MODE

AV MODE gives you several viewing options to choose from to best match the surrounding environment of the TV, which can vary due to factors like room brightness, type of program watched or the type of image input from external equipment.

Press **AV MODE**. Current AV MODE displays.
• Press **AV MODE** again before the mode displayed on the screen disappears. The mode changes as shown below:

Example:
When the input source is TV, INPUT 1, 2 or 3 terminals
STANDARD ➡ MOVIE ➡ GAME ➡ USER [TV]
DYNAMIC ⬅——————————DYNAMIC (Fixed)

Example:
When the input source is INPUT 4, 5, 6 or 7 terminals
STANDARD ➡ MOVIE ➡ GAME ➡ PC
DYNAMIC ⬅ DYNAMIC (Fixed)⬅ USER[🖮]

STANDARD: For a highly defined image in a normal lighting.
MOVIE: For a movie.
GAME: Lowers image brightness for easier viewing.
PC: For PC.
USER: Allows the user to customize settings as desired. You can set the mode for each input source.
DYNAMIC (Fixed): Changes the image and sound settings to the factory preset values. No adjustments are allowed.
DYNAMIC: For a clear-cut image emphasizing high contrast, useful for sports viewing.

NOTE
• You can select a different AV MODE item for each input mode. (For example, select STANDARD for TV input and DYNAMIC for INPUT 1.)
• When you play games, "GAME" is recommended for AV MODE.

⑨ PC

Allows you to gain quick access to PC mode.
Press **PC**.

⑩ Operating On-Screen Display Menu

You can operate the on-screen display menu by using the following buttons.
MENU: Displays the menu screen.
▲/▼/◄/►, ENTER: Select a desired item on the screen.
RETURN: Returns to the previous menu screen.
EXIT: Turns off the menu screen.

NOTE
• For operating the on-screen display menu, see "Menu Operation Buttons".

⑪ AUDIO

■ MTS/SAP stereo mode
The TV has a feature that allows reception of sound other than the main audio for the program. This feature is called Multi-channel Television Sound (MTS). The TV with MTS can receive mono sound, stereo sound and Secondary Audio Programs (SAP). The SAP feature allows a TV station to broadcast other information, which could be audio in another language or something completely different like weather information.

You can enjoy Hi-Fi stereo sound or SAP broadcasts where available.
• **Stereo broadcasts:** View programs like live sporting events, shows and concerts in dynamic stereo sound.
• **SAP broadcasts:** Receive TV broadcasts in either MAIN or SAP sound. MAIN sound: The normal program soundtrack (either in mono or stereo). SAP sound: Listen to a second language, supplementary commentary or other information. (SAP is mono sound.)
If stereo sound is difficult to hear.
• Obtain a clearer sound by manually switching to fixed mono-sound mode.

You can change MTS as shown below to match the television broadcast signal.

Press **AUDIO** to toggle between audio modes.

Examples: when receiving MTS and SAP
STEREO mode: STEREO ⬌ MONO
STEREO + SAP mode: ST (SAP) ➡ SAP (ST) ➡ MONO

MAIN + SAP mode: MAIN ⬌ SAP
MONO mode: MONO

■ Digital broadcasting audio mode
The types of audio transmitted in a digital broadcast include SURROUND as well as MONO and STEREO. In addition, it is possible for multiple audio tracks to accompany a single video track.

Press **AUDIO** to toggle between audio modes.

Example: when receiving Digital broadcasting
Audio 1: STEREO ➡ Audio 2: STEREO
Audio 3: SURROUND ⬅

NOTE
• MTS only operates while in TV mode.

⑫ FREEZE

Allows you to capture and freeze a moving image that you are watching.
Press **FREEZE**.
• A moving image is captured.
• Press **FREEZE** again to cancel the function.

NOTE
• When this function is not available, "No displaying still image available." will display.
• The still image automatically goes out after 30 minutes.
• If you are using the freeze function and a broadcast activates the V-CHIP BLOCK, the freeze function will be canceled and a V-CHIP BLOCK message will appear.

⑬ INPUT

To view external source images, select the input source by pressing **INPUT** on the remote control unit or on the TV.

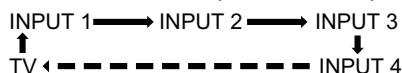**1** Press **INPUT**.
  • A list of selectable sources appears.
2 Press **INPUT** again or press ▲/▼ to select the input source.
  • Each time **INPUT** is pressed, the input source toggles.

    INPUT 1 ⟶ INPUT 2 ⟶ INPUT 3
      ⬆   ⬇
    TV ◄ ─ ─ ─ ─ ─ ─ ─ INPUT 4

  • An image from the selected source automatically displays.
  • If the corresponding input is not plugged in, you cannot change the input. Be sure to connect the equipment beforehand.

NOTE
• External equipment connection.
• Press **PC** to switch to an image from the PC.

⑭ DISPLAY

Displays channel information being viewed.
Press **DISPLAY**.

⑮ Closed Captions and Digital Closed Captions

Your TV is equipped with an internal Closed Caption decoder. It allows you to view conversations, narration and sound effects as subtitles on your TV. Closed Captions are available on some TV programs and on some VHS home video tapes at the discretion of the program provider.

Digital Closed Caption service is a new caption service available only on digital TV programs (also at the discretion of the service provider). It is a more flexible system than the original Closed Caption system, because it allows for a variety of caption sizes and font styles. When the Digital Closed Caption service is in use, it will be indicated by the appearance of DTVCC.

Not all programs and VHS videotapes offer closed captions. Please look for the "CC" symbol to ensure that captions will be shown.

In the Closed Caption system, there can be more than one caption service provided. Each is identified by its own number. The "CC1" and "CC2" services display subtitles of TV programs superimposed over the program's picture.
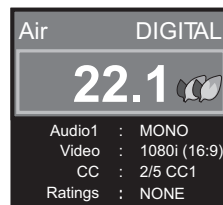
In the Closed Caption system, the "T1 (TEXT1)" or "T2 (TEXT2)" services display text that is unrelated to the program being viewed (e.g., weather or news). These services are also superimposed over the program currently being viewed.

1 Press **CC**.
  • This will present the Closed Caption information display.
2 Press **CC** while the Closed Caption information is still on the screen.
  • Press repeatedly until you select the desired closed caption service.

Closed Caption information

  • Regardless of whether or not an analog broadcast provides Closed Caption service, the closed caption display will toggle in the sequence: CC1, CC2, T1, and T2.
  • When a digital broadcast provides Closed Caption service, the closed caption display will toggle in the sequence: DTVCC (actual service), CC1, CC2, T1, and T2. CC1, CC2, T1, and T2 are always displayed.

Example:

If a program has three services (DTVCC, CC1 and T1 (TEXT1)), the closed caption display will toggle in this sequence:

1/5 DTVCC1 ⟶ 2/5 CC1 ⟶ 3/5 CC2 ⟶ 4/5 T1 ⟶ 5/5 T2 ⟶ OFF

  • The **CC** button keeps a record of the last service selected in its memory.
    If the last closed caption mode (e.g. 1/5 DTVCC) you selected is not available for the next program, or on another channel, the closed caption service that is available is automatically selected.

Examples:

In a case where there are two closed caption services provided (for instance, DTVCC and CC1), and DTVCC is displayed as your current selection, if DTVCC is not broadcast for the next program, the other closed caption service, CC1, will be displayed.

NOTE
• When "Power Saving" is set to "Standard" or "Advanced", the Power Saving leaf icon appears on the channel information window. Details of Power Saving settings.
• Detailed closed caption settings.
• When the program contains no closed caption, "--" displays in the closed caption information. (Only when receiving a digital broadcast.)
• Four kinds of closed caption service (CC1, CC2, T1 (TEXT1), T2 (TEXT2)) are potentially available, but a broadcast may contain none or only some of these services at the discretion of the program provider.

⑯ VIEW MODE

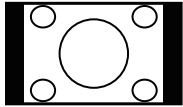You can select the screen size.

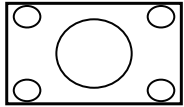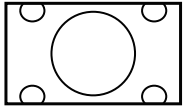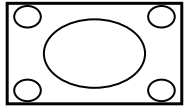**1** Press **VIEW MODE**.
  • The View Mode menu displays.
  • The menu lists the View Mode options selectable for the type of video signal currently being received.
2 Press **VIEW MODE** or ▲/▼ while the View Mode menu is displayed to select a desired item on the menu.
  • You can sequentially select a View Mode that has its own aspect ratio.

■ For 4:3 programs

Example: Screen size images

Side Bar	S.Stretch (Smart stretch)	Zoom	Stretch
Suitable for viewing conventional 4:3 programs in their normal format.	Suitable for stretching 4:3 programs to fill the screen.	Suitable for viewing wide-screen 2.35:1 anamorphic DVDs in full screen.	This mode is useful for 1.78:1 DVDs. When viewing 1.85:1 DVDs, stretch mode will still show very thin black bands at the top and bottom of the screen.

■ For HD programs

  Stretch: Suitable for viewing wide-screen 1.78:1 aspect ratio program, stretch mode will still show very thin black bands at the top and bottom of the screen.
  Dot by Dot (1080i/p only): Detects the resolution of the signal and displays an image with the same number of pixels on the screen.
  Full Screen (720p only): You can select "Full Screen" only when receiving a 720p signal.
  S.Stretch (Smart stretch): Suitable for stretching 4:3 programs to fill the screen.
  Zoom: Suitable for viewing wide-screen 2.35:1 aspect-ratio programs in full screen.
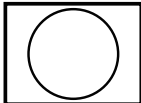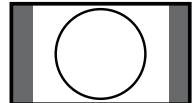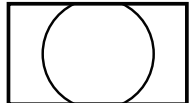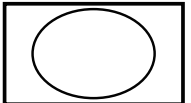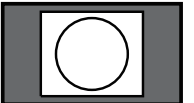
NOTE
• When using Dot by Dot or Full Screen, it is possible to see noise or bars around different outer portions of the screen. Please change view mode to correct this.
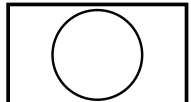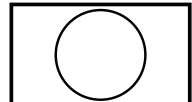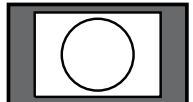
■ For PC input mode

NOTE
• Connect the PC before making adjustments.
• Selectable screen size may vary with input signal type.

Example: Screen size images

Input signal	Normal	Zoom	Stretch	Dot by Dot
4:3	Keeps the original aspect ratio in a full screen display.	For viewing widescreen programs. The top and bottom of the image is cropped.	An image fully fills the screen.	Detects the resolution of the signal and displays an image with the same number of pixels on the screen.

Input signal	Stretch	Dot by Dot
16:9	An image fully fills the screen.	Detects the resolution of the signal and displays an image with the same number of pixels on the screen.

QUICK REFERENCE
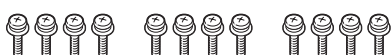
Attaching/Detaching the Stand

- 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.
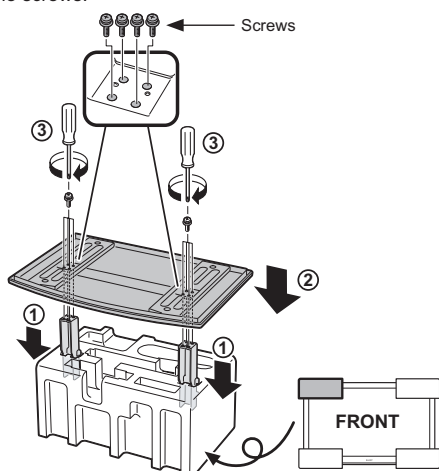
CAUTION

- **Attach the stand in the correct direction.**
- **Do not remove the stand from the TV unless using an optional wall mount bracket to mount it.**
- **Be sure to follow the instructions. Incorrect installation of the stand may result in the TV falling over.**
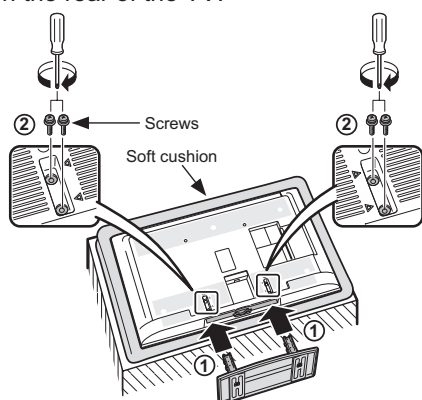
1 Confirm that there are 12 screws (all the same size) supplied with the stand unit.

2 ① Set the post for the stand unit onto the box.
   ② Attach the base to the post.
   ③ Insert and tighten the 8 screws into the 8 holes on the bottom of the base.
   - Hold the stand unit securely with one hand, and then tighten the screws.

Screws

FRONT

3 ① Insert the stand into the openings on the bottom of the TV.

   ② Insert and tighten the 4 screws into the 4 holes on the rear of the TV.

Screws

Soft cushion

NOTE

- To detach the stand, perform the steps in reverse order.

Setting the TV on the Wall

CAUTION
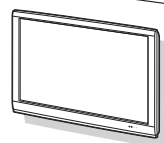
- **This TV should be mounted on the wall with both the AN-37AG2 (SHARP) wall mount bracket and the AN-37P30 (SHARP) attachment of the wall mount bracket. The TV cannot be mounted when with only the AN-37AG2 wall mount bracket. The use of other wall mount brackets may result in an unstable installation and may cause serious injuries.**
- **Installing the TV requires special skill that should only be performed by qualified service personnel. Customers should not attempt to do the work themselves. SHARP bears no responsibility for improper mounting or mounting that results in accident or injury.**

Using an optional bracket to mount the TV
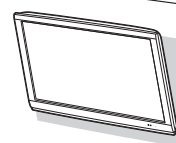
- You can ask a qualified service professional about using an optional AN-37AG2 + AN-37P30 bracket to mount the TV to the wall.
- Carefully read the instructions that come with the bracket before beginning work.

Hanging on the wall

AN-37AG2 + AN-37P30 wall mount bracket. (See the bracket instructions for details.)
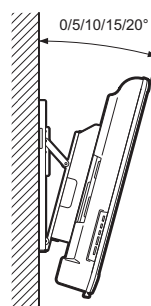
Vertical mounting   Angular mounting

About setting the TV angle

0/5/10/15/20°

- The center of the display: $^5/_{16}$ inch (7.9 mm) under the "A" position.
- Refer to the operation manual of 37AG2/AN-37P30 for details.

NOTE

- Detach the cable clamp on the rear of the TV when using the optional mount bracket.
- Due to the terminal configuration on this TV, when you wall-mount this model, make sure there is enough space between the wall and the TV for the cables.
- To use this TV mounted on a wall, remove the covers at the 4 locations on the rear of the TV, and then use the screws supplied with the wall mount bracket to secure the bracket to the rear of the TV.

Appendix

Troubleshooting

Problem	Possible Solution
• No power	• Check if you pressed **POWER** on the remote control unit. If the indicator on the TV does not light up, press **POWER** on the TV. • Is the AC cord disconnected? • Has the power been turned on?
• Unit cannot be operated.	• External influences such as lightning, static electricity, may cause improper operation. In this case, operate the unit after first turning off the power of the TV or unplugging the AC cord and replugging it in after 1 or 2 minutes.
• Remote control unit does not operate.	• Are batteries inserted with polarity (+, -) aligned? • Are batteries worn out? (Replace with new batteries.) • Are you using it under strong or fluorescent lighting? • Is a fluorescent light illuminated near the remote control sensor? • Is "RC Control Lock" selected in "Operation Lock Out"?
• Picture is cut off/with sidebar screen.	• Is the image position correct? • Are screen mode adjustments such as picture size made correctly?
• Strange color, light color, or color misalignment	• Adjust the picture tone. • Is the room too bright? The picture may look dark in a room that is too bright.
• Power is suddenly turned off.	• Is the sleep timer set? • Check the power control settings. • The unit's internal temperature has increased. Remove any objects blocking vent or clean.
• No sound	• Is connection to other components correct? • Is the volume too low? • Is "Variable" selected in "Output Select"? • Have you pressed **MUTE** on the remote control unit? • Check the audio output of the connected external equipment. Is the volume too low or muted? • When external equipment is connected via an HDMI cable, you may need to configure the audio to be output through the HDMI cable. • When audio is not output from external equipment connected to the INPUT 4 or INPUT 6 terminal, check the "PC Audio Select" setting. • Even when external equipment is connected using an HDMI-certified cable, an audio cable connection may be required depending on the type of equipment and the media being played back. In this case, in addition to connecting an HDMI-certified cable to the INPUT 6 (HDMI) terminal, connect a ø 3.5 mm stereo minijack cable to the AUDIO terminal and set "PC Audio Select" to "INPUT6 (HDMI)". • When connecting a PC via an HDMI-certified cable, check the following: - Is the audio output of the PC configured correctly? Check the audio output settings and output audio format in Sound Properties on the PC. Only PCM format audio can be output. Compressed audio (with a sampling rate of 32kHz, 44.1kHz, or 48kHz) and DTS format audio cannot be output. - Depending on the board, only video signals may be output. In this case, in addition to connecting an HDMI-certified cable to the INPUT 6 (HDMI) terminal, connect a ø 3.5 mm stereo minijack cable to the AUDIO terminal and set "PC Audio Select" to "INPUT6 (HDMI)". • If you are using a DVI-HDMI conversion cable to connect external equipment to the TV, check the following: - Is an audio cable connected? The DVI-HDMI conversion cable is for video only. Connect a ø 3.5 mm stereo minijack cable to listen to the audio. - Is INPUT 6 being used? When the TV is connected to another HDMI terminal, the audio and video are not output together even if a ø 3.5 mm stereo minijack cable is connected to the shared AUDIO terminal for INPUT 4 and INPUT 6. - Is "INPUT4 (PC)" selected in "PC Audio Select"?

LC-40D68UT

Appendix

Problem	Possible Solution

• No picture	• Is connection to other components correct?
	• Is correct input signal source selected after connection?
	• Is the correct input selected?
	• Is "On" selected in "Audio Only"?
	• If the PC image is not displayed, check the following:
	  - When connecting a laptop PC to the TV, check that display output mode of the PC is set to external monitor.
	  - Check the resolution setting on the PC. Is a non-compatible signal being input?

• Picture quality of HD programs is poor.	• To enjoy HD images from external equipment, you are required to set up HDMI connection or component connection. • If the program content is not of HD quality, HD images cannot be displayed. Check that the program you are viewing provides HD images. • The HD cable/satellite set-top box may need to be configured to output HD images via cable/satellite. • The cable/satellite broadcast may not support a signal resolution of 1080p.
• The TV sometimes makes a cracking sound.	• This is not a malfunction. This happens when the cabinet slightly expands and contracts according to change in temperature. This does not affect the TV's performance.

Troubleshooting - Error Message

The example of an error message displayed on a screen	Possible Solution
• Failed to receive broadcast.	• Check the antenna cable. Check that the antenna is correctly setup.
• No broadcast now.	• Check the broadcast time in the program guide.
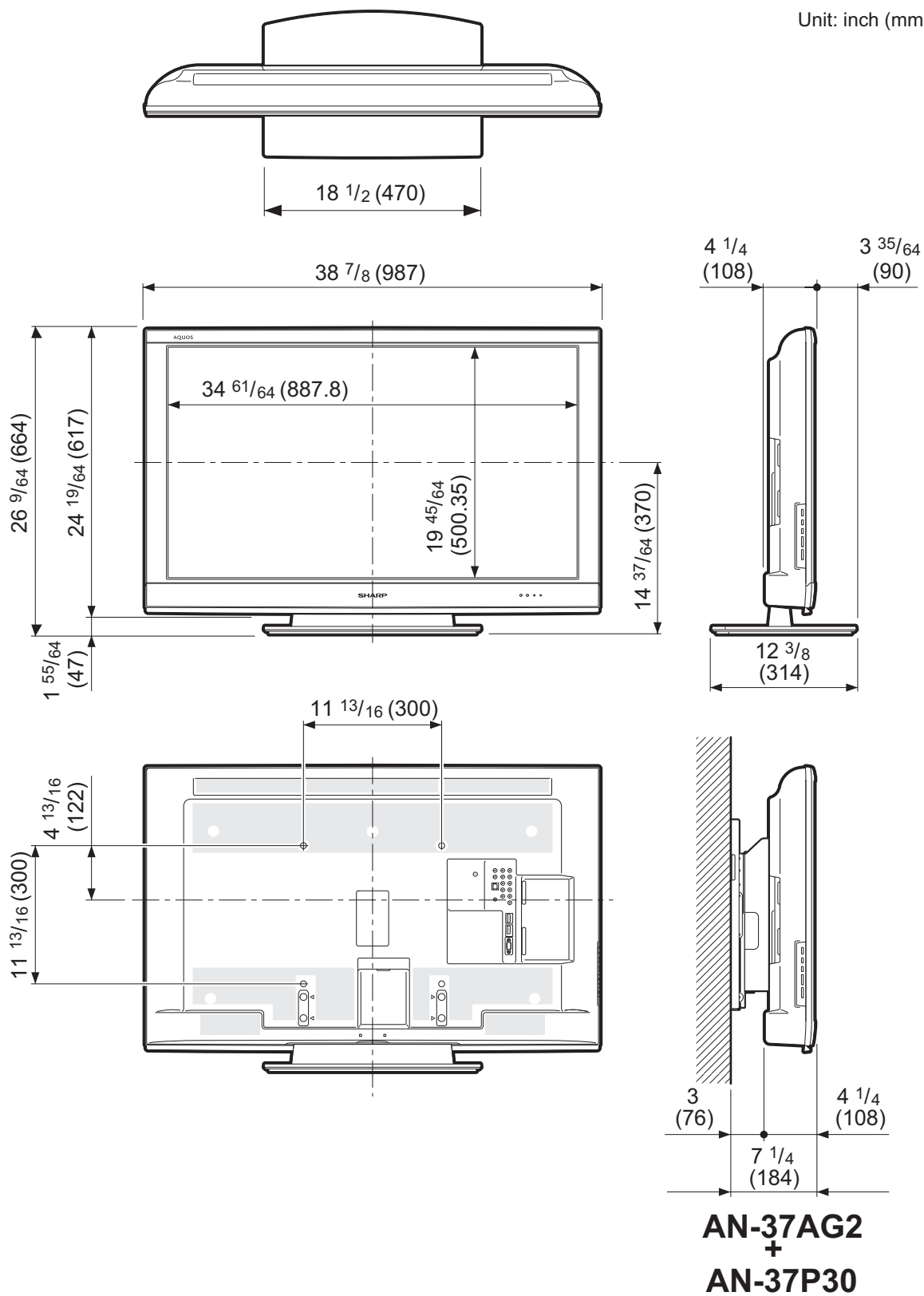
Cautions regarding use in high and low temperature environments
• When the unit is used in a low temperature space (e.g. room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the unit will recover when the temperature returns to normal.
• Do not leave 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 Liquid Crystal panel to malfunction.
  Storage temperature: -4°F to +140°F (-20°C to +60°C)

CHAPTER 3. DIMENSIONS

[1] DIMENSIONS

Unit: inch (mm)

18 1/2 (470)

38 7/8 (987)

34 61/64 (887.8)

4 1/4 (108)

3 35/64 (90)

26 9/64 (664)

24 19/64 (617)

19 45/64 (500.35)

14 37/64 (370)

12 3/8 (314)

1 55/64 (47)

11 13/16 (300)

4 13/16 (122)

11 13/16 (300)

3 (76)

4 1/4 (108)

7 1/4 (184)

AN-37AG2
+
AN-37P30
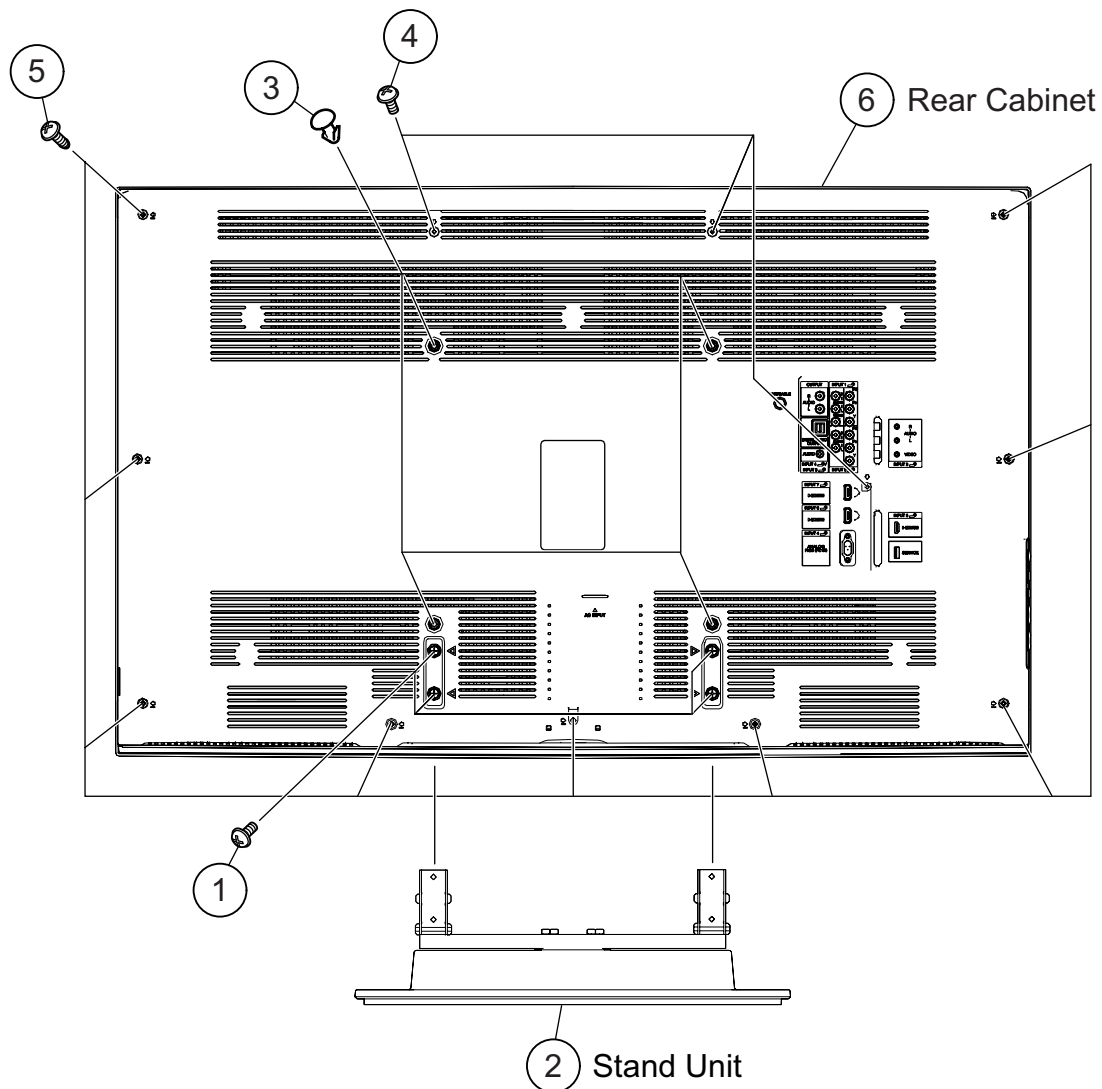
CHAPTER 4. REMOVING OF MAJOR PARTS

[1] REMOVING OF MAJOR PARTS
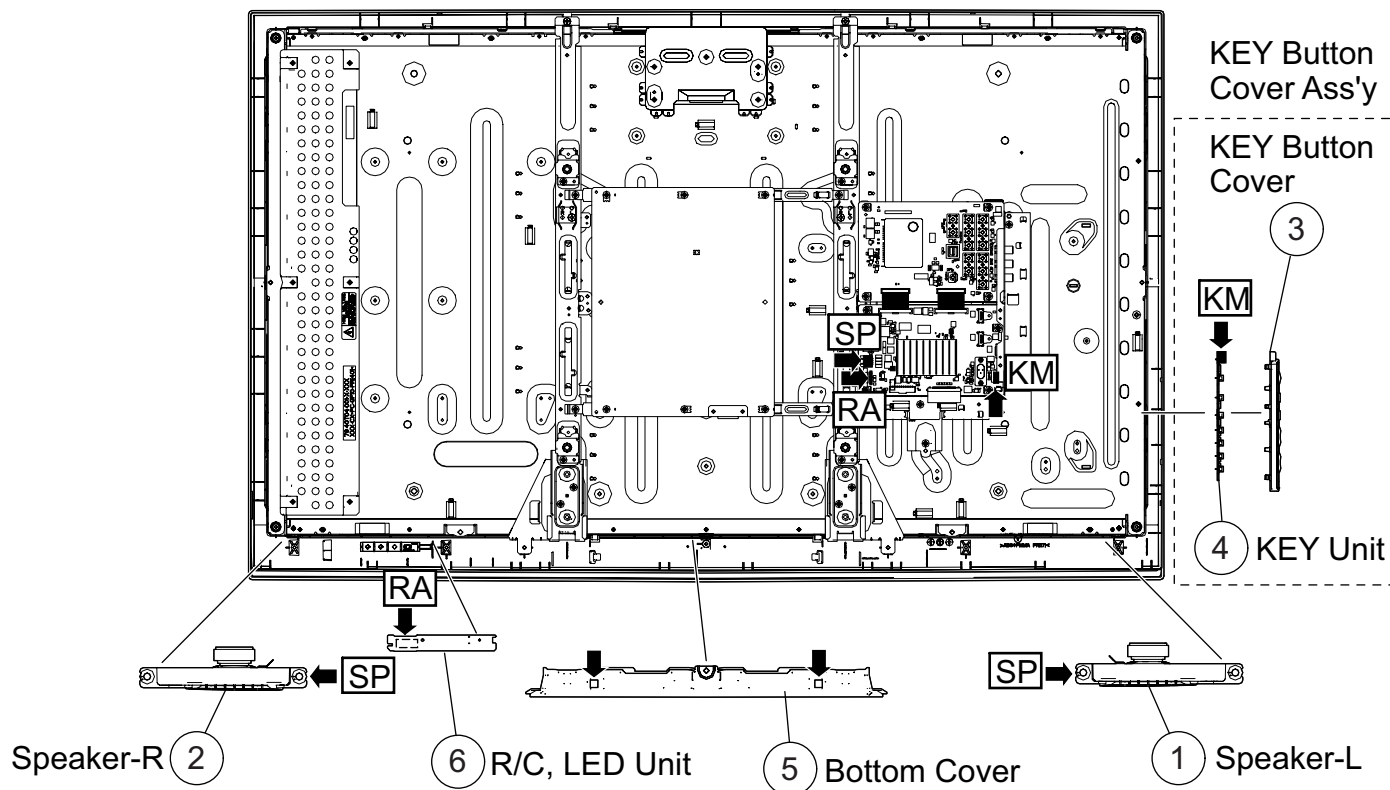
1. Removing of Stand Unit and Rear Cabinet.

1. Remove the 4 lock screws ① and detach the Stand Unit ②.

2. Detach the 4 pieces VESA Hole Cover ③.

3. Remove the 3 lock screws ④, 9 lock screws ⑤ and detach the Rear Cabinet ⑥.
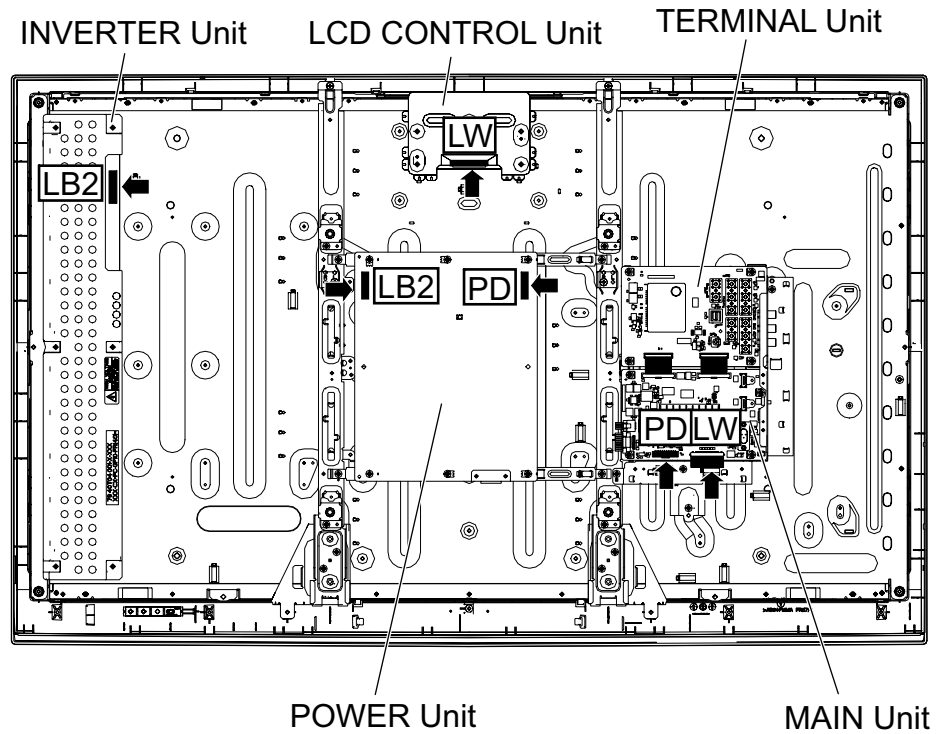
2. Removing of Speaker-L/R, KEY Unit Ass'y, Bottom Cover and R/C, LED Unit.

1. Disconnect SP wire and detach the Speaker-L ①/Speaker-R ②.

2. Detach the KEY Button Cover Ass'y.

3. Detach the KEY Unit ④ from KEY Button Cover ③ and disconnect KM wire.

4. Detach the Bottom Cover ⑤.

5. Detach the R/C, LED Unit ⑥ and disconnect RA wire.

KEY Button
Cover Ass'y

KEY Button
Cover

③

KM

④ KEY Unit

SP

RA

KM

RA

SP

Speaker-R ②

⑥ R/C, LED Unit

⑤ Bottom Cover

① Speaker-L

LC-40D68UT
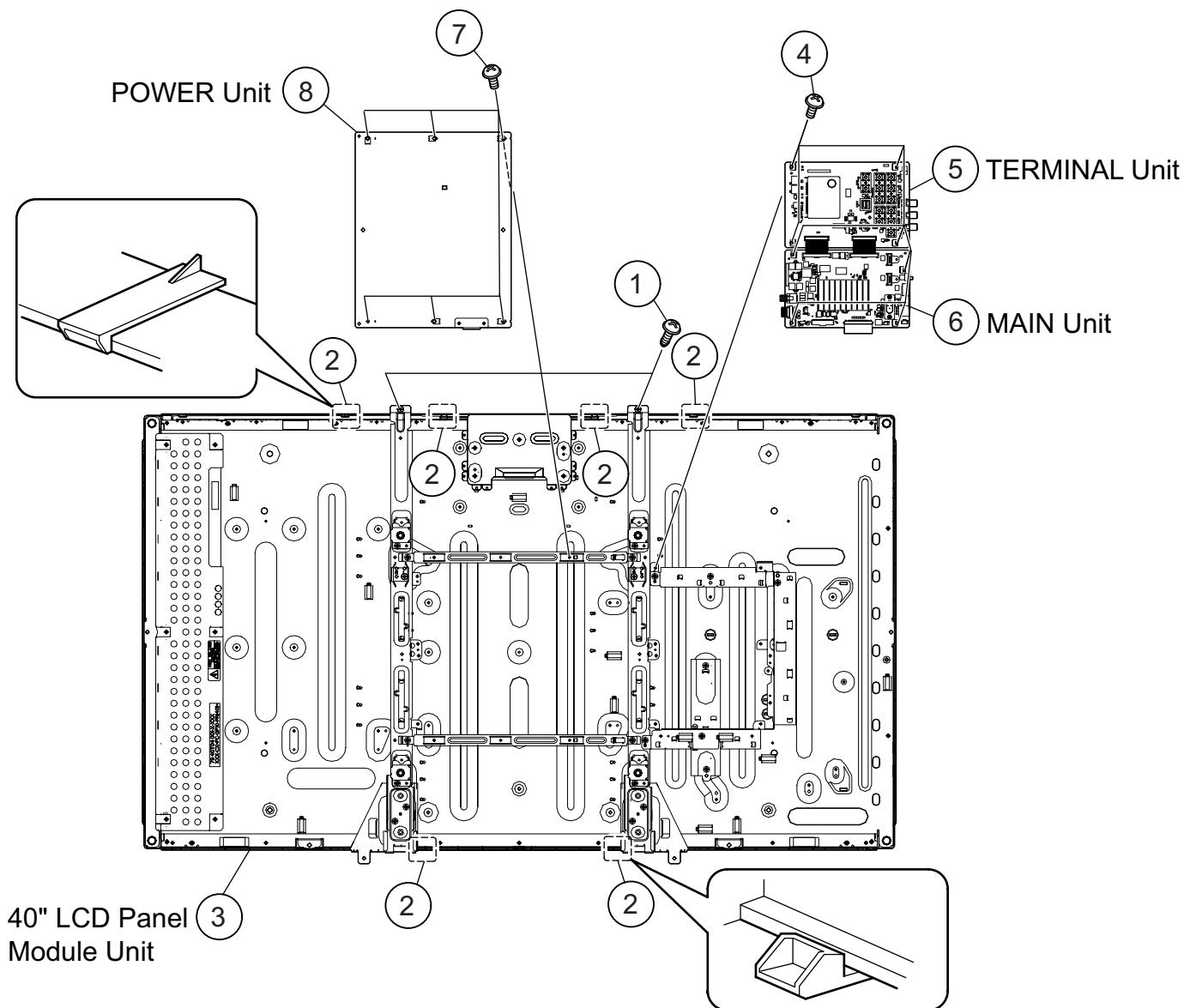
3. Removing of Connectors.

1. Disconnect the following connectors from MAIN Unit. (PD, LW)

2. Disconnect the following connectors from POWER Unit. (PD, LB2)

3. Disconnect the following connectors from LCD CONTROL Unit. (LW)

4. Disconnect the following connectors from INVERTER Unit. (LB2)

INVERTER Unit   LCD CONTROL Unit   TERMINAL Unit

POWER Unit   MAIN Unit
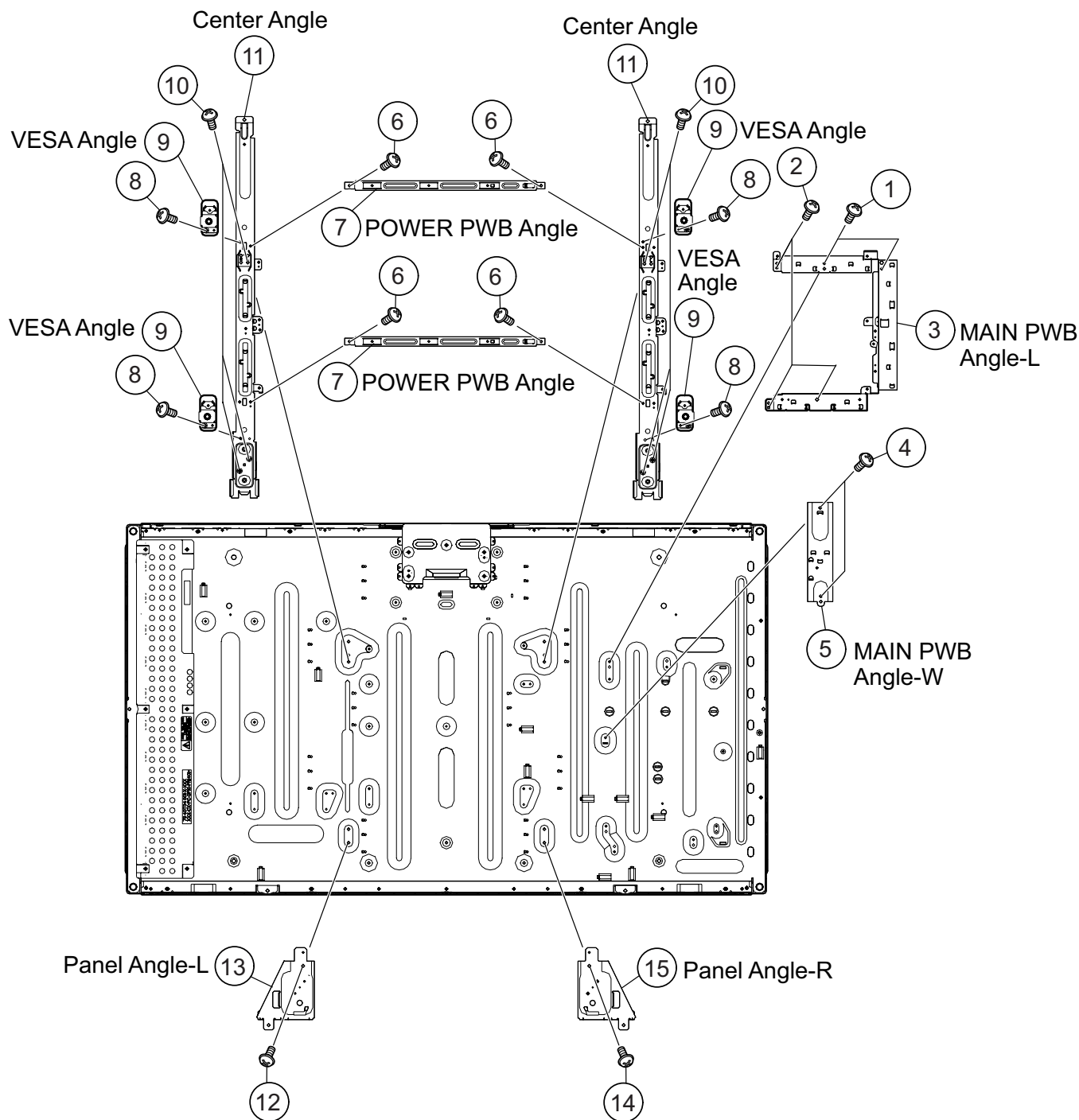
4. Removing of 40" LCD Panel Module Unit, TERMINAL Unit, MAIN Unit and POWER Unit.

1. Remove the 2 lock screws ①, 6 hooks ② and detach the 40" LCD Panel Module Unit ③.

2. Remove the 8 lock screws ④ and detach the TERMINAL Unit ⑤/MAIN Unit ⑥.

3. Remove the 6 lock screws ⑦ and detach the POWER Unit ⑧.

POWER Unit ⑧

TERMINAL Unit ⑤

MAIN Unit ⑥

40" LCD Panel Module Unit ③

5. Removing of MAIN PWB Angle-L/W, POWER PWB Angle, VESA Angle, Center Angle and Panel Angle-L/R.

1. Remove the 2 lock screws ①, 3 lock screws ② and detach the MAIN PWB Angle-L ③.

2. Remove the 2 lock screws ④ and detach the MAIN PWB Angle-W ⑤.

3. Remove the 4 lock screws ⑥ and detach the 2 pieces POWER PWB Angle ⑦.

4. Remove the 4 lock screws ⑧ and detach the 4 pieces VESA Angle ⑨.

5. Remove the 6 lock screws ⑩ and detach the 2 pieces Center Angle ⑪.

6. Remove the 1 lock screw ⑫ and detach the Panel Angle-L ⑬.

7. Remove the 1 lock screw ⑭ and detach the Panel Angle-R ⑮.

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: DUNTKF463FM02

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
- Monitor microprocessor software

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

The monitor microprocessor software can be upgraded with E8 Emulator Debugger.

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 is not applied)
- 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 BFN_M_xxxAx.bin 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.
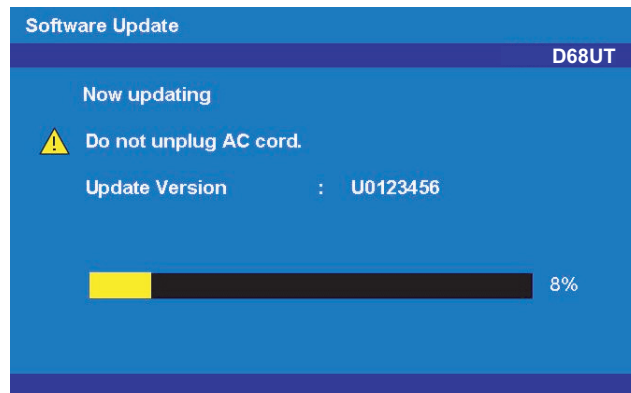
Now the USB Memory for version upgrade is ready.

2.2.3 How to upgrade the software
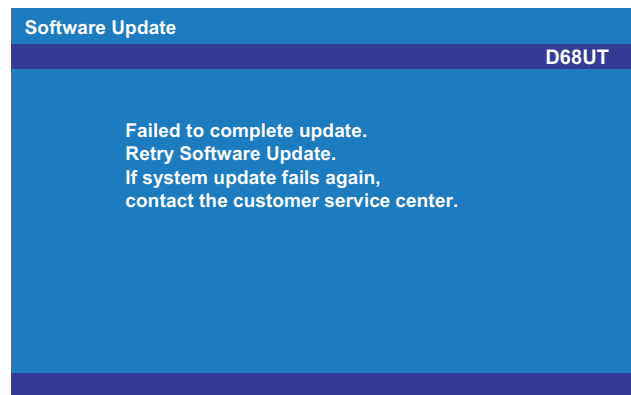
1. Unplug the AC cord.
2. Insert the USB Memory for version upgrade (prepared as above) into the service socket located Right side of Main Board terminals, under INPUT3 terminal.
3. Plug in the AC cord with power button pressed down after 5 seconds, releases the power button.

4. After the unit startup, the system upgrade screen as shown below appears within 10-40 seconds.

```
Software Update
                                                    D68UT

    Now updating

  ⚠  Do not unplug AC cord.

    Update Version          :    U0123456


    ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮    8%
```
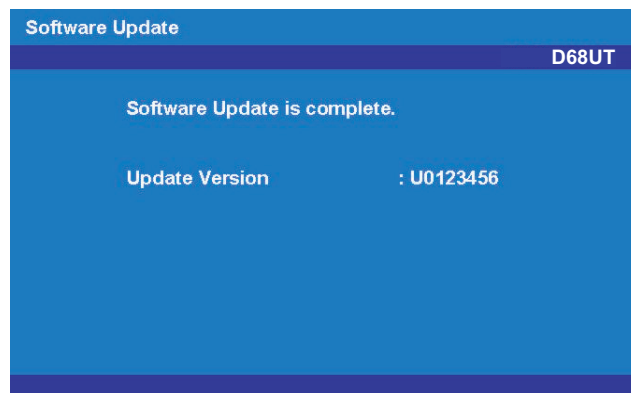
5. Even a single failure in the process will trigger the upgrade failure screen.

```
Software Update
                                                    D68UT


        Failed to complete update.
        Retry Software Update.
        If system update fails again,
        contact the customer service center.
```

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

6. 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.

```
Software Update
                                                    D68UT
        Software Update is complete.

        Update Version                  : U0123456
```

7. Unplug the AC cord and remove the USB Memory for version upgrade.

8. 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

1) Download "E8 Emulator" from Renesas Web site and install it.

   http://america.renesas.com/sensitivity.do? downloadId=C2003512
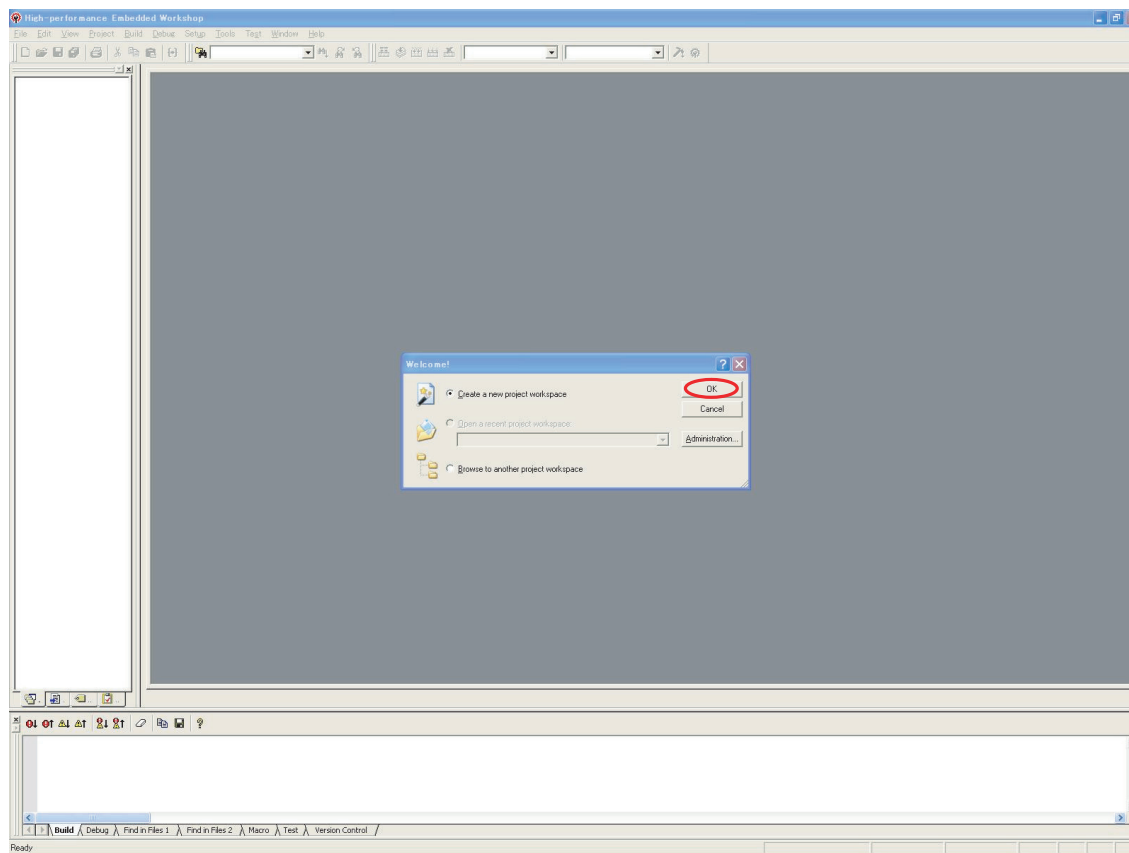
   Product Name: E8 Emulator Software V.2.11 Release 01 for M16C, H8 Upgrade (Debugger package version) Oct.24.08

2) Connect E8 Emulator Debugger to PC from USB port. (Driver of "E8 Emulator Debugger" found in CD-ROM.)

3) Connect E8 writer to LCD's 20PIN port.

4) Run "High Performance Embedded Workshop" in start menu.
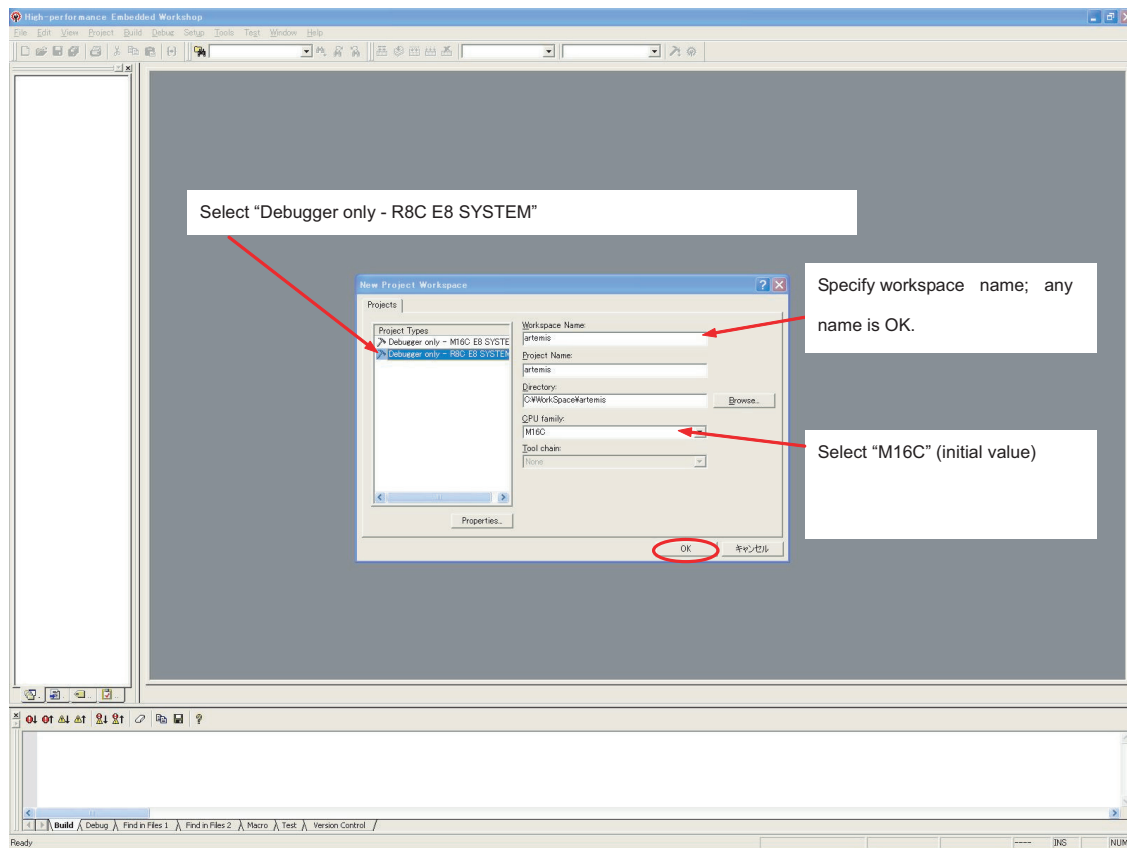
5) Confirm the screen below comes up and click "OK".

If second time, you can select "open a recent project work".
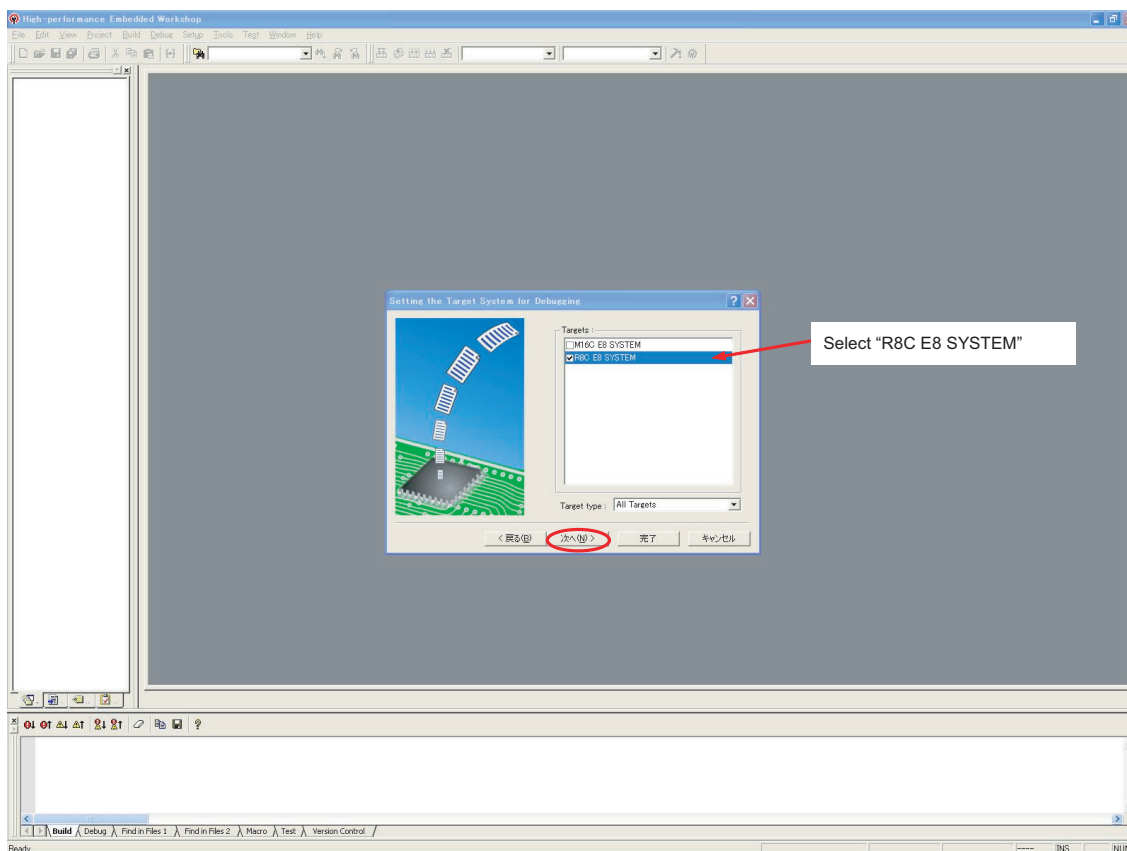
Choose "OK".

6) In the next page input information as specified below and click "OK".

Select "Debugger only - R8C E8 SYSTEM"

Specify workspace name; any name is OK.

Select "M16C" (initial value)
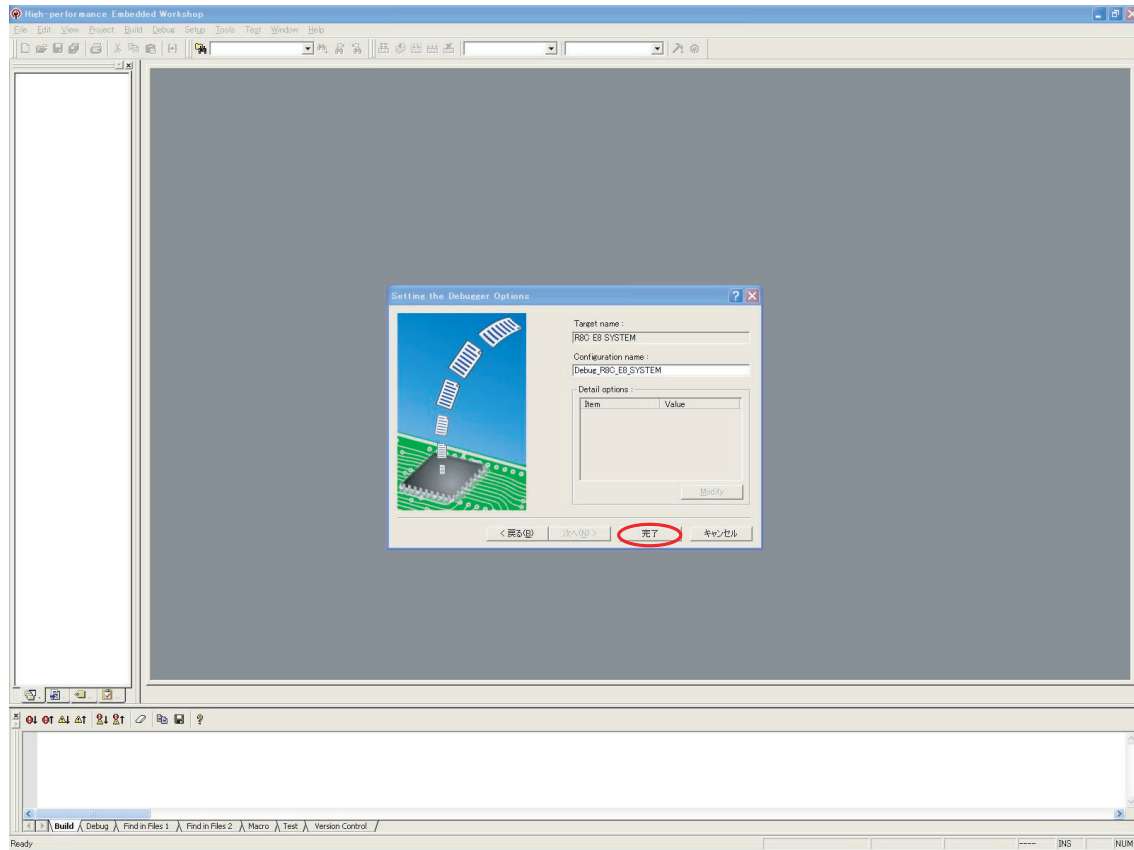
7) Select entry as below and click "次へ (N)"

   * "次へ (N)" means "NEXT"

Select "R8C E8 SYSTEM"
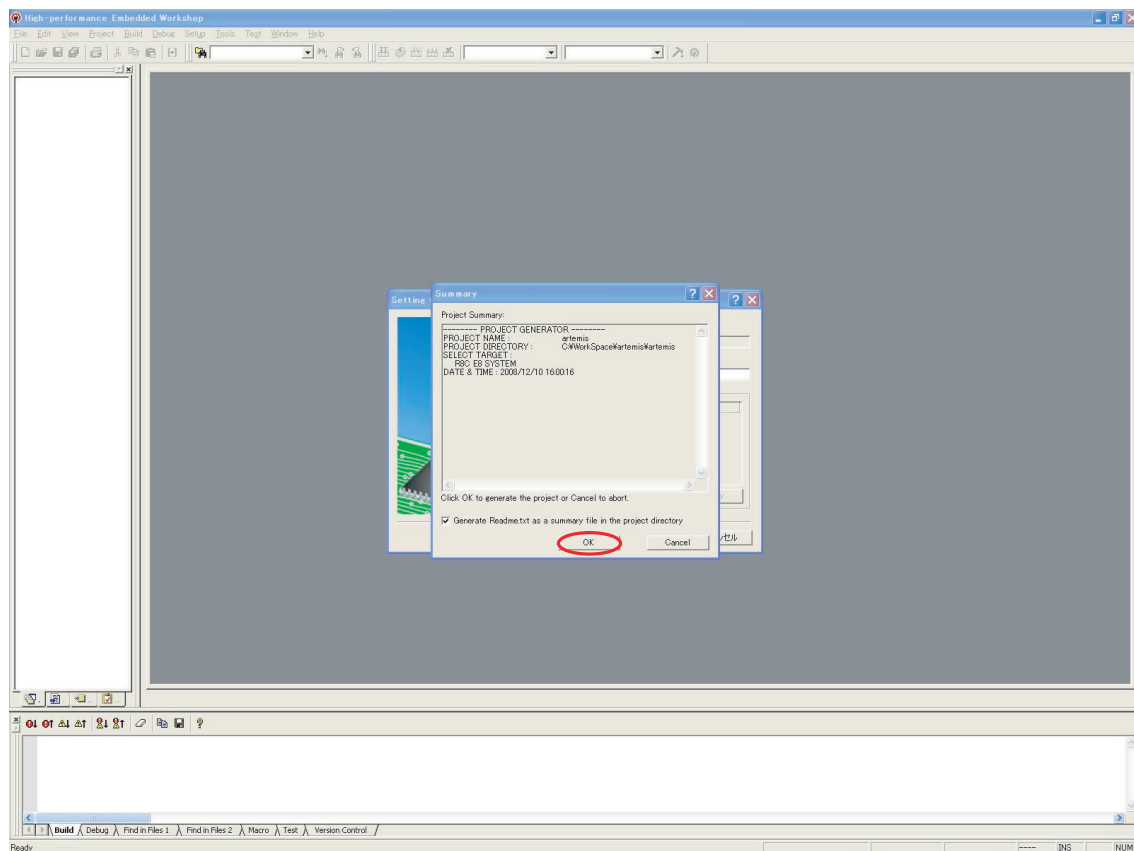
8) click "完了".

   * "完了"means "COMPLETE".
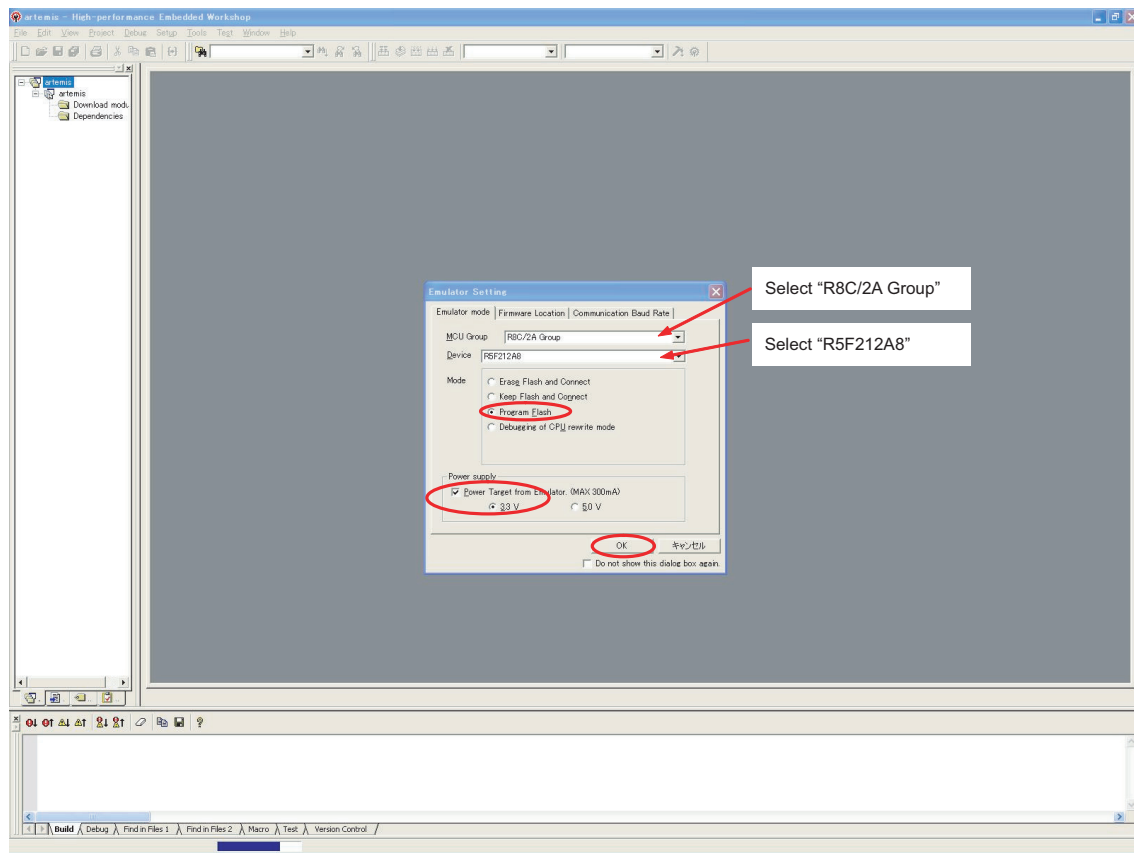
9) Click "OK".
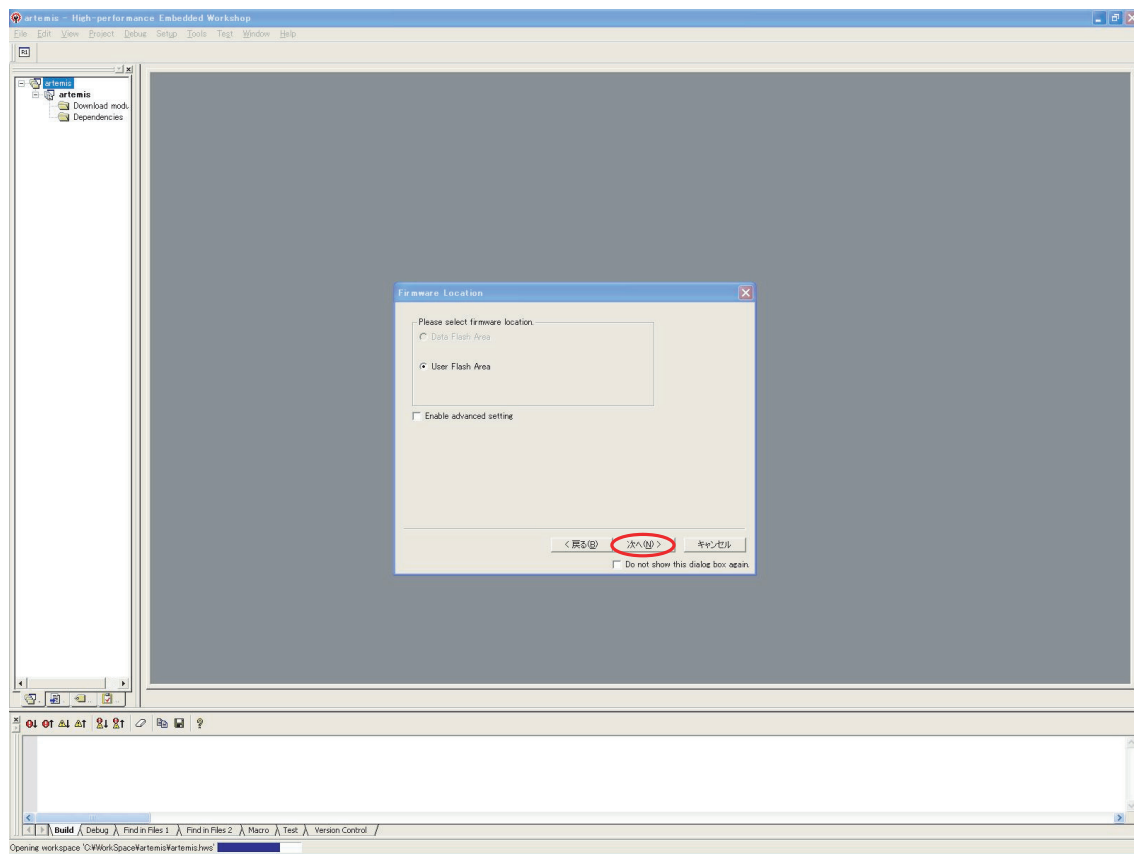
10)Select entries as specified below and click "OK".

Select "R8C/2A Group"

Select "R5F212A8"
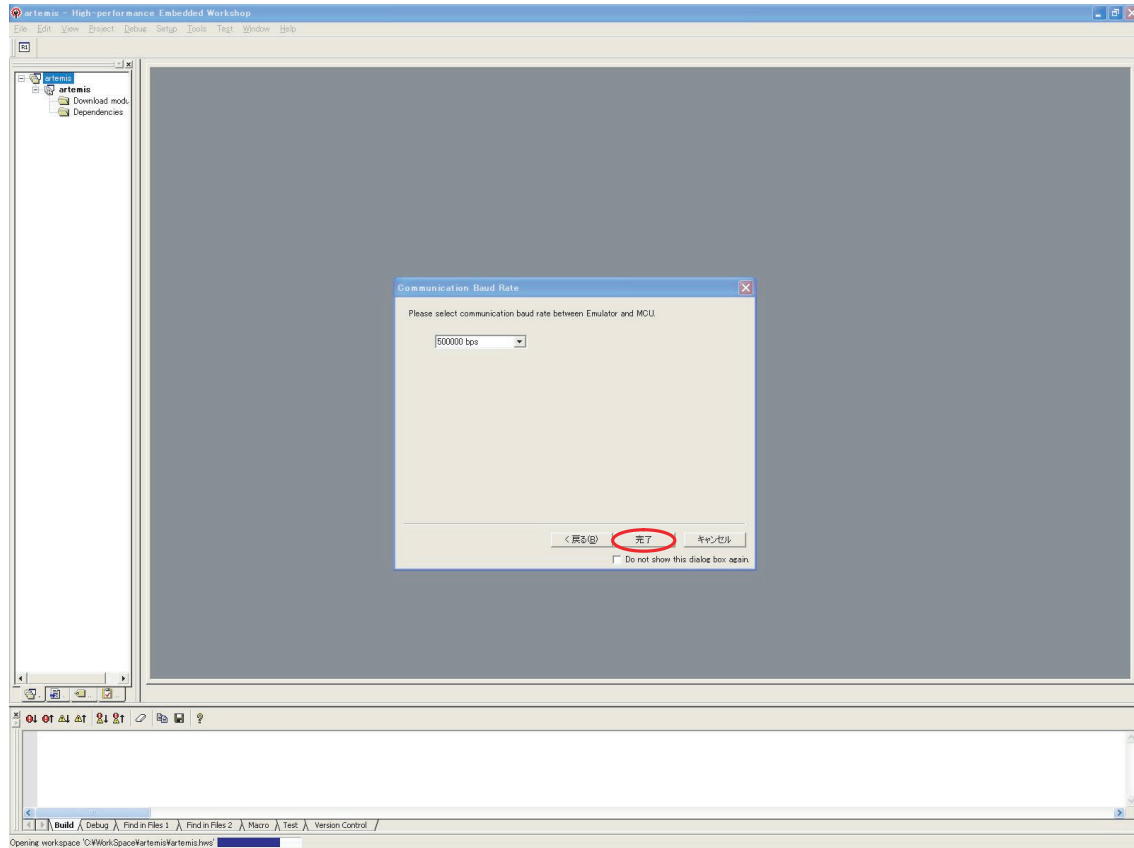
11)Click "次へ (N)".

   *"次へ" means "NEXT".
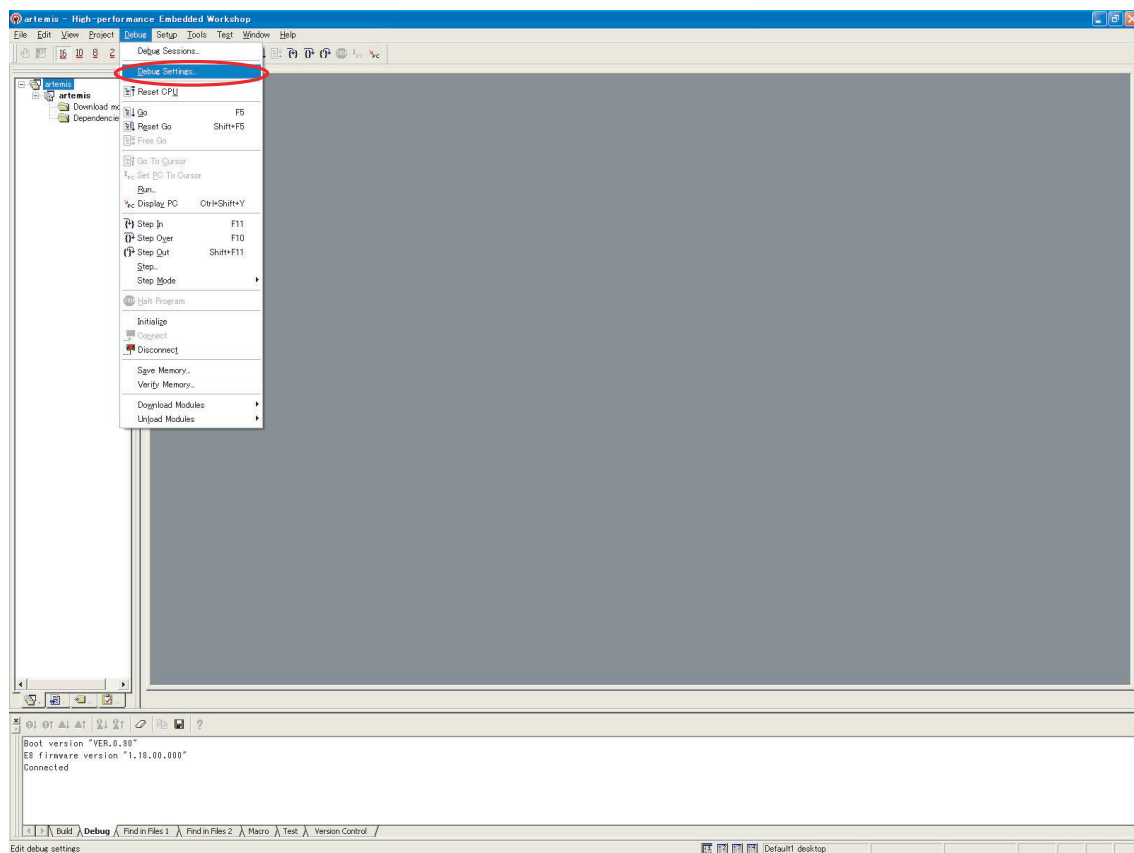
12)Click "完了".

   * "完了" means "COMPLETE".
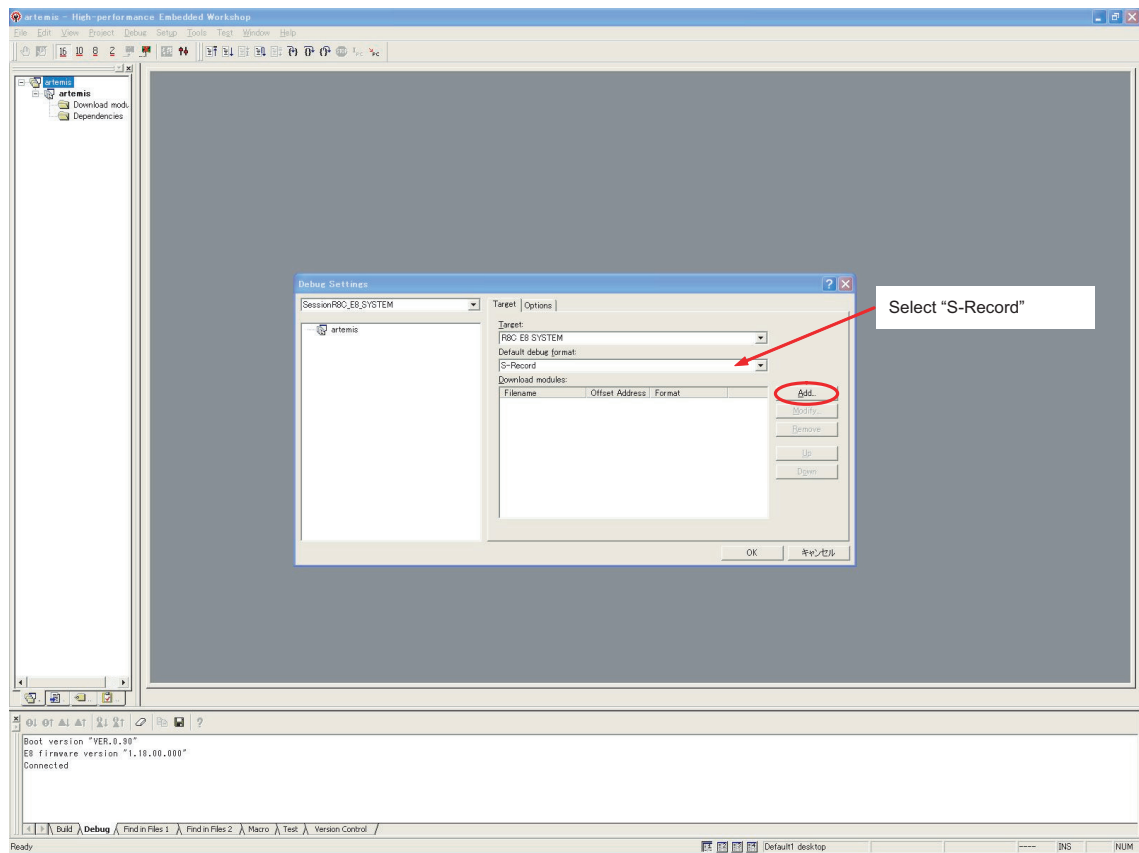
13)In the screen below, click "Debug Settings".
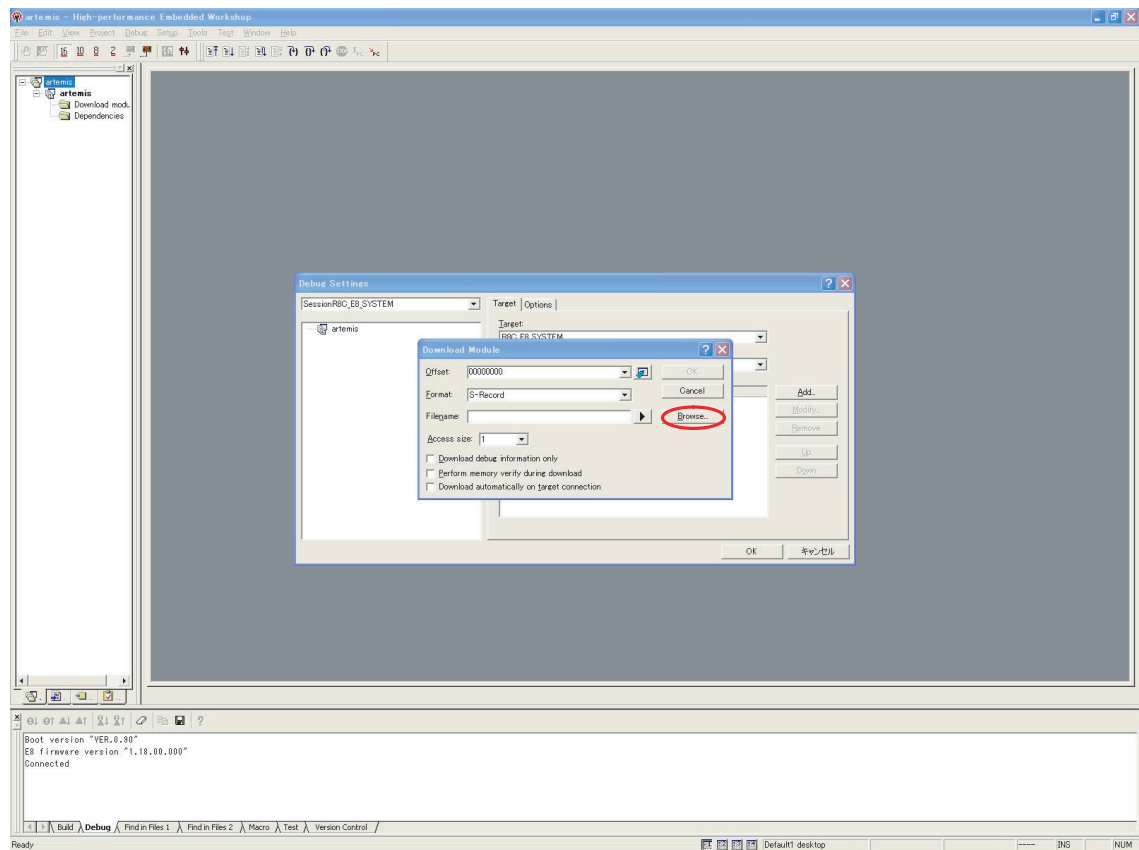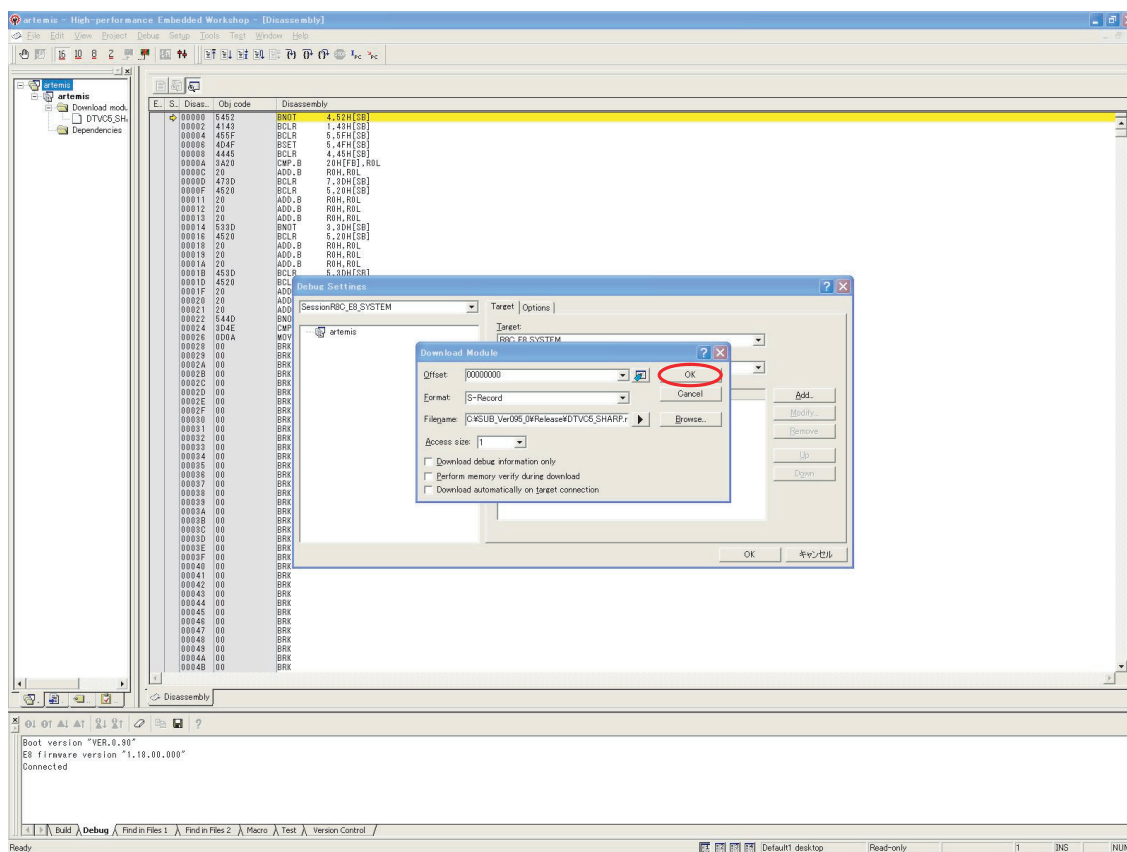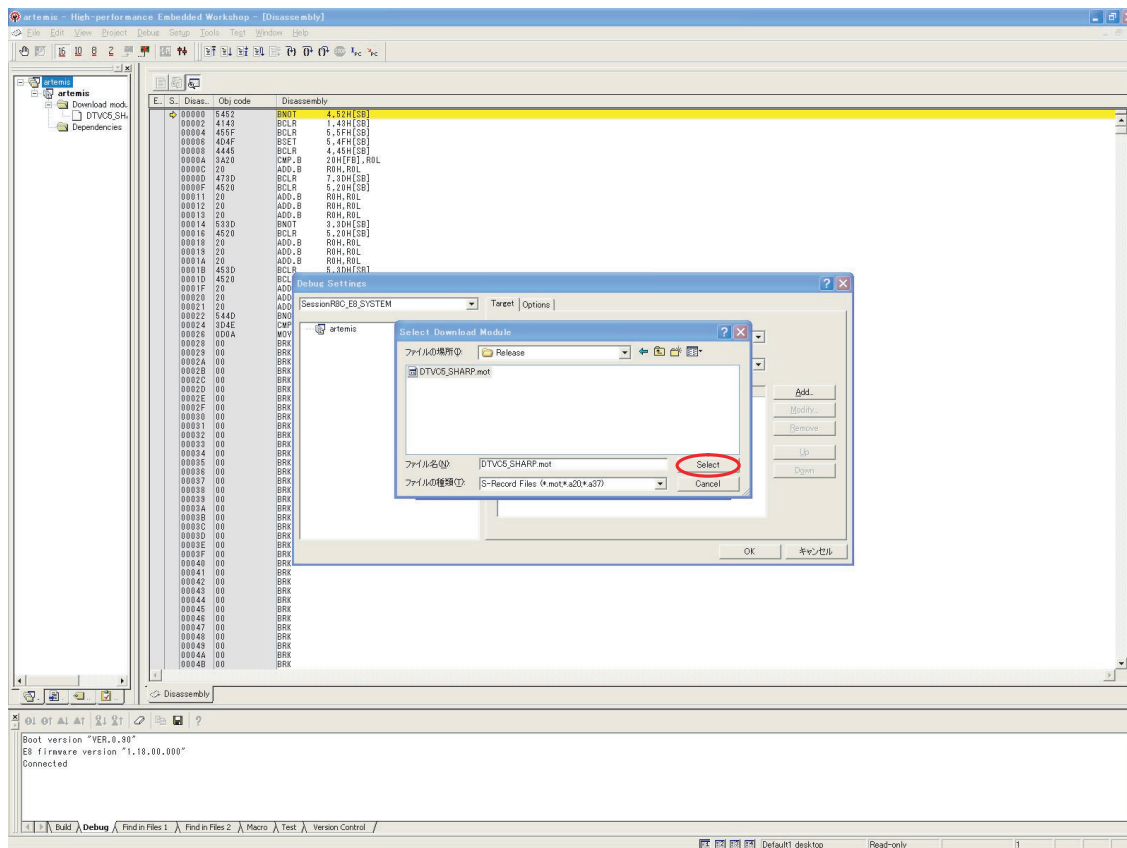
14)Select "S-Record" and click "Add".

Select "S-Record"
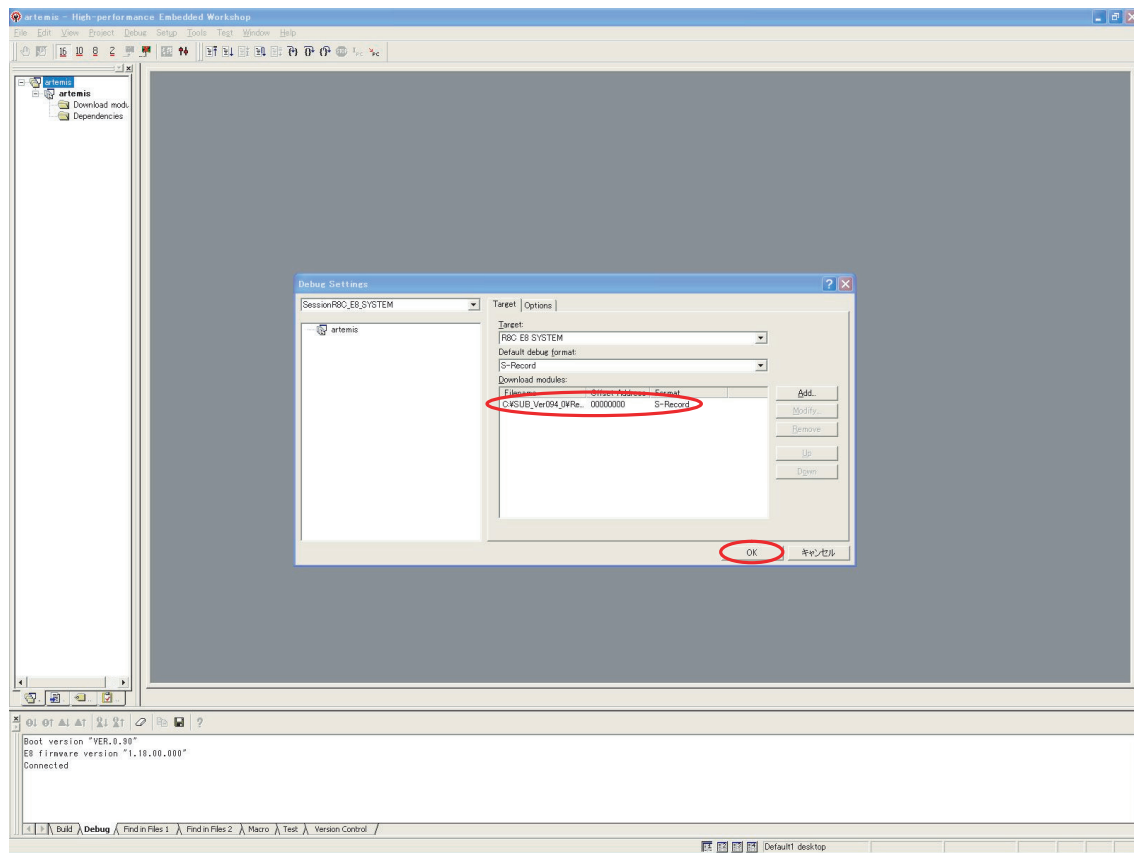
15)Click "Browse" and specify the location of mot-file.
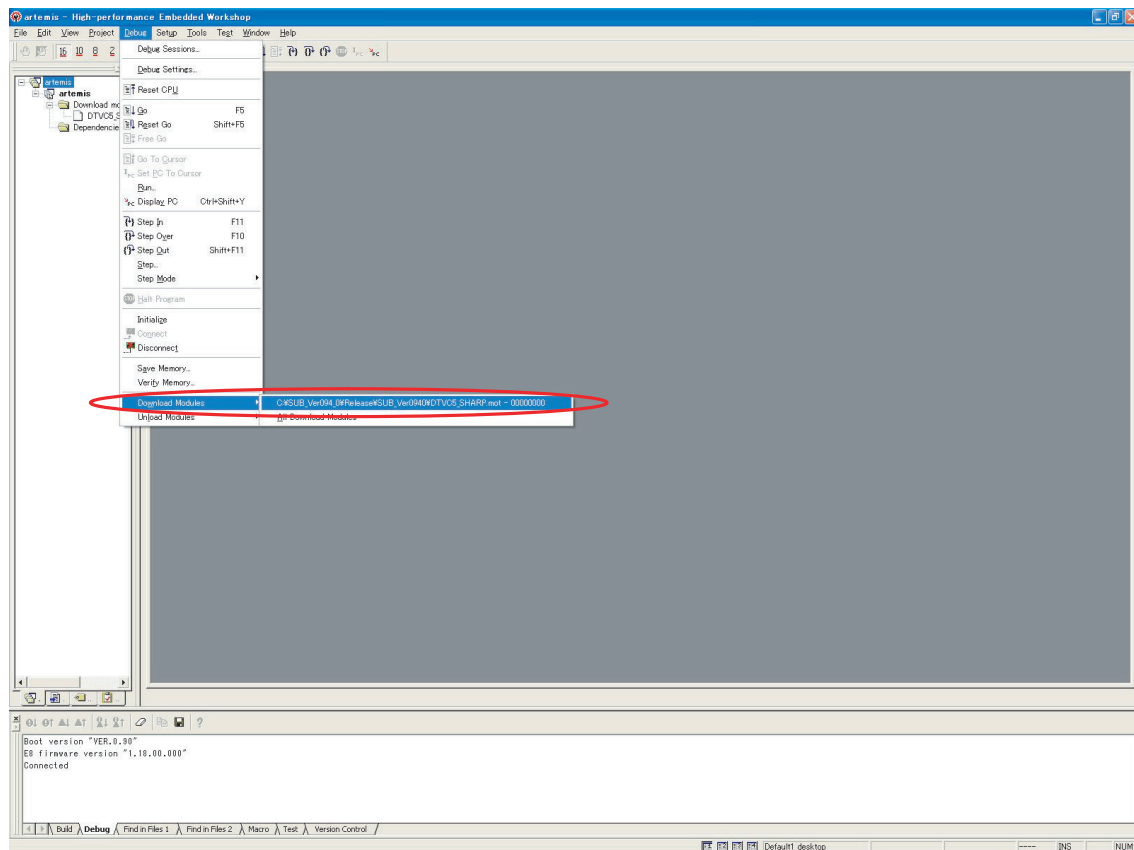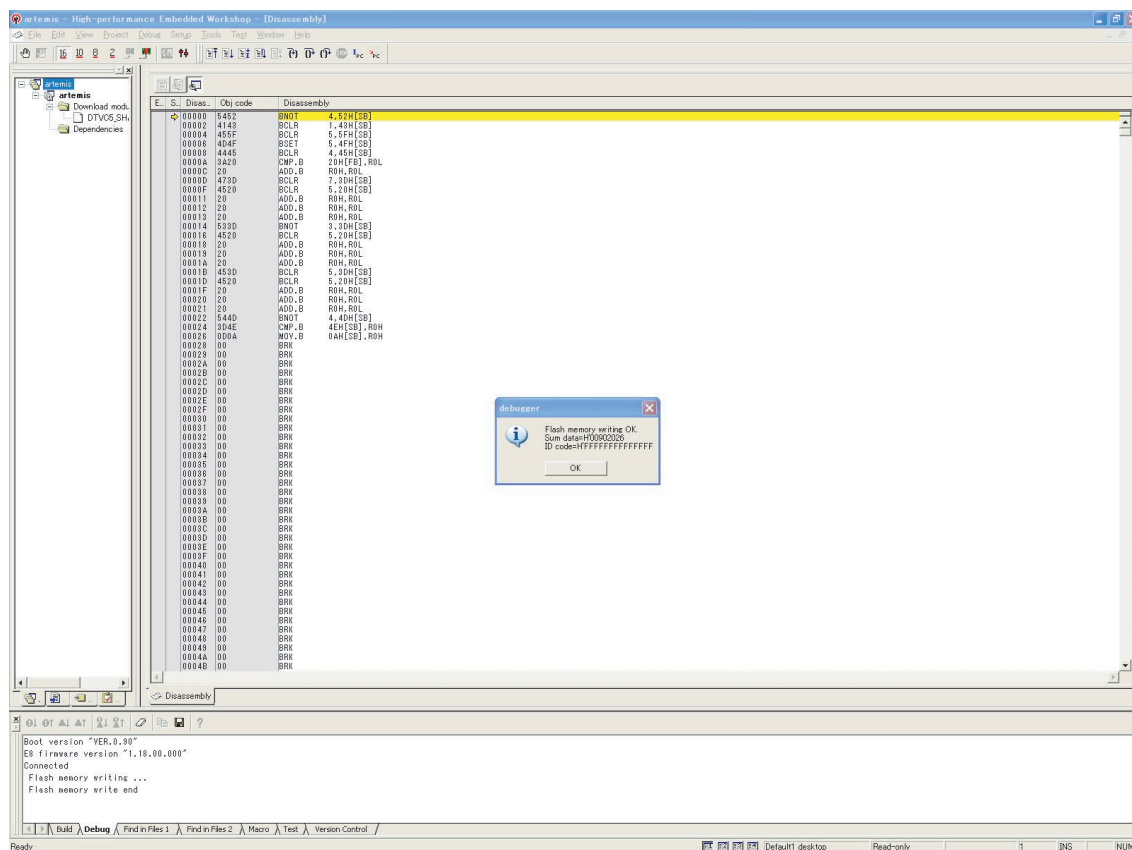
16)Confirm the file name of mot-file appears in the dialog entry and click "OK".

17)From main menu, continuously click "Debug", "Download Modules" and the mot-file location, then writing process starts.

18)Confirm the dialog-box below appears. It means the writing process completed successfully

Then shut down "High Performance Embedded Workshop", unplug 20PIN connector, and E8 firmware updating finish.

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 white 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 in adjustment process mode

Basic operation

Selecting the receiving channels

* Using the CH (∨)/(∧) keys, turn up and down an actual receiving channel.

   Snap press: The channels are turned up and down one by one.

   Continuous press: The next receivable channel is searched.

* Various adjustments: The items are adjusted one by one by selecting on the menu screen and using the cursor key and VOL (+) (–) keys.

* With the CURSOR UP/DOWN keys, select an adjustment item.

* Using the MENU key, the adjustment items are selected one after another. When the bottom item on a page is already selected and the MENU key is pressed, the top item on the next page is selected.

* If any item on a page is selected and the preset key is pressed, the top item on the next page is selected.

   Page1 - Page2 - Page3 - Page7 - Page9 - Page10 ...

* If any item on a page is selected and the manual memory key is pressed, the top item on the same page is selected.

* Using the CURSOR LEFT/RIGHT keys and VOL (+) (–) keys, turn up and down the setting of a selected item.

   Hierarchical shift

* When the ENTER key is pressed on any item other than I2C DATA on page 2, the setting page of the item shows up.

* To quit the setting page, press the front screen key.

5. List of adjustment process mode menu

Top hierarchical menu item

Page	Item	Description	Remarks (adjustment detail, etc.)
1	MODEL INCH SIZE INDUSTRY INIT ERROR NO RESET PUBLIC MODE V-CHIP CANADIAN VCHIP EXT CONTROL TEMPERATURE SYSCON VER ROM C5　VER ROM BOOT　VER ROM	Number of termination due to lamp error and Reset Public mode Monitor software version Main software version	
2	I2C DATA I2C DATA SOUND TUNER DVP DVP-M2 OTHERS HOTEL POWERFIX		Refer to SOUND Refer to TUNER Refer to DVP Refer to DVP-M2 Refer to OTHERS

The second hierarchical menu item

SOUND			
Page	Item	Description	Remarks (adjustment detail, etc.)
SOUND1	Audio Switch Output Trim Flat Mode Sound Delay Lipsync PRESCALE FM/AM-M PRESCALE DTV PRESCALE HDMI PRESCALE PC PRESCALE AV PRESCALE BD		
SOUND2	PEQ1 GAIN PEQ2 GAIN PEQ3 GAIN PEQ4 GAIN PEQ5 GAIN PEQ6 GAIN PEQ7 GAIN		
SOUND3	PEQ1 Fc PEQ2 Fc PEQ3 Fc PEQ4 Fc PEQ5 Fc PEQ6 Fc PEQ7 Fc PEQ1 Q PEQ2 Q PEQ3 Q PEQ4 Q PEQ5 Q PEQ6 Q PEQ7 Q		

SOUND

Page	Item	Description	Remarks (adjustment detail, etc.)
SOUND4	Sub Sonic Filter Sub Sonic Filter Fc Virtual Surround Band LPF Fc Band HPF Fc AGC Switch AGC Mode AGC Gain Max AGC Gain Min AGC Threshold AGC Attack Time AGC Release Time Harmonic Switch Harmonic Mode Harmonic Gain Harmonic LPF Harmonic HPF	5 – 14	
SOUND5	DRC Switch DRC Threshold LPF DRC Threshold HPF DRC Ratio DRC Attack Time DRC Release Time DRC LPF Fc DRC HPF Fc		

TUNER

Page	Item	Description	Remarks (adjustment detail, etc.)
TUNER1	TUNER SWITCH AFT UP AFT DOWN LSYNC HSYNC LSYNC2 HSYNC2 SYNCSEP_HC SYNCSEP_HLC SYNCSEP_HMC SEP_SLV		
TUNER2	AFT 1STEPTIME		

DVP

Page	Item	Description	Remarks (adjustment detail, etc.)
DVP1	TAMP1 L YDATA TAMP1 H TAMP ALL NTSC TAMP1 PAL-M TAMP PAL-N TAMP	TUNER signal level adjustment	
DVP2-1	IN 1 IN 2 IN 3 IN 4 IN 5 IN 6	Standard value 1 Standard value 2 Standard value 3 Standard value 4 Standard value 5 Standard value 6	Adjustment gradation setting.

DVP			
Page	**Item**	**Description**	**Remarks (adjustment detail, etc.)**
DVP2-2	R6	WB adjustment Point 6, R adjustment value	Parameter for six-point adjustment
	G6	WB adjustment Point 6, G adjustment value	
	B6	WB adjustment Point 6, B adjustment value	
	R5	WB adjustment Point 5, R adjustment value	
	G5	WB adjustment Point 5, G adjustment value	
	B5	WB adjustment Point 5, B adjustment value	
	R4	WB adjustment Point 4, R adjustment value	
	G4	WB adjustment Point 4, G adjustment value	
	B4	WB adjustment Point 4, B adjustment value	
	R3	WB adjustment Point 3, R adjustment value	
	G3	WB adjustment Point 3, G adjustment value	
	B3	WB adjustment Point 3, B adjustment value	
	R2	WB adjustment Point 2, R adjustment value	
	G2	WB adjustment Point 2, G adjustment value	
	B2	WB adjustment Point 2, B adjustment value	
	R1	WB adjustment Point 1, R adjustment value	
	G1	WB adjustment Point 1, G adjustment value	
	B1	WB adjustment Point 1, B adjustment value	
	ADJ SETTING OK		1: OK
DVP3 (M2-HD)	AUTO GAIN-OFFSET ALL		
	AUTO GAIN-OFFSET	Component 33K picture level adjustment	
	AD R GAIN		
	AD G GAIN		
	AD B GAIN		
	RGTAR GGTAR BGTAR		
	RGCAL GGCAL BGCAL		
	RHPOS GHPOS BHPOS		
	RVPOS GVPOS BVPOS		
DVP4 (M2-SD)	AUTO GAIN-OFFSET	Component 15K picture level adjustment	
	AD R GAIN		
	AD G GAIN		
	AD B GAIN		
	RGTAR GGTAR BGTAR		
	RGCAL GGCAL BGCAL		
	RHPOS GHPOS BHPOS		
	RVPOS GVPOS BVPOS		
DVP5 (M2-PC)	AUTO GAIN-OFFSET	Analog RGB picture level adjustment	
	AD R GAIN		
	AD G GAIN		
	AD B GAIN		
	RGTAR GGTAR BGTAR		
	RGCAL GGCAL BGCAL		
	RHPOS GHPOS BHPOS		
	RVPOS GVPOS BVPOS		

DVP-M2			
Page	**Item**	**Description**	**Remarks (adjustment detail, etc.)**
DVP-M2 1	DVP TEST PATTERN		
	ENDPOINT		
	STARTPOINT		
	PQ SWITCH		
	STD COLOR OFFSET		
	STD TINT OFFSET		
	ETC COLOR OFFSET		
	ETC TINT OFFSET		
DVP-M2 2	N358 TV CONT		
	N358 TV BRIGHT		
	N358 TV COLOR		
	N358 TV TINT		
	N358 TV SHARP V1 OVER		
	N358 TV SHARP V1 UNDER		
	N358 TV SHARP V2 OVER		
	N358 TV SHARP V2 UNDER		
	N358 TV SHARP H1 OVER		
	N358 TV SHARP H1 UNDER		
	N358 TV SHARP H2 OVER		
	N358 TV SHARP H2 UNDER		
	N358 TV SHARP H3 OVER		
	N358 TV SHARP H3 UNDER		

DVP-M2			
Page	**Item**	**Description**	**Remarks (adjustment detail, etc.)**
DVP-M2 3	N358 AV CONT N358 AV BRIGHT N358 AV COLOR N358 AV TINT N358 AV SHARP V1 OVER N358 AV SHARP V1 UNDER N358 AV SHARP V2 OVER N358 AV SHARP V2 UNDER N358 AV SHARP H1 OVER N358 AV SHARP H1 UNDER N358 AV SHARP H2 OVER N358 AV SHARP H2 UNDER N358 AV SHARP H3 OVER N358 AV SHARP H3 UNDER	5 – 16	
DVP-M2 4	525I CONT 525I BRIGHT 525I COLOR 525I TINT 525I SHARP V1 OVER 525I SHARP V1 UNDER 525I SHARP V2 OVER 525I SHARP V2 UNDER 525I SHARP H1 OVER 525I SHARP H1 UNDER 525I SHARP H2 OVER 525I SHARP H2 UNDER 525I SHARP H3 OVER 525I SHARP H3 UNDER		
DVP-M2 5	525P CONT 525P BRIGHT 525P COLOR 525P TINT 525P SHARP V1 OVER 525P SHARP V1 UNDER 525P SHARP V2 OVER 525P SHARP V2 UNDER 525P SHARP H1 OVER 525P SHARP H1 UNDER 525P SHARP H2 OVER 525P SHARP H2 UNDER 525P SHARP H3 OVER 525P SHARP H3 UNDER		
DVP-M2 6	1125I CONT 1125I BRIGHT 1125I COLOR 1125I TINT 1125I SHARP V1 OVER 1125I SHARP V1 UNDER 1125I SHARP V2 OVER 1125I SHARP V2 UNDER 1125I SHARP H1 OVER 1125I SHARP H1 UNDER 1125I SHARP H2 OVER 1125I SHARP H2 UNDER 1125I SHARP H3 OVER 1125I SHARP H3 UNDER		

DVP-M2			
Page	**Item**	**Description**	**Remarks (adjustment detail, etc.)**
DVP-M2 7	750P CONT 750P BRIGHT 750P COLOR 750P TINT 750P SHARP V1 OVER 750P SHARP V1 UNDER 750P SHARP V2 OVER 750P SHARP V2 UNDER 750P SHARP H1 OVER 750P SHARP H1 UNDER 750P SHARP H2 OVER 750P SHARP H2 UNDER 750P SHARP H3 OVER 750P SHARP H3 UNDER	5 – 17	
DVP-M2 8	1125P CONT 1125P BRIGHT 1125P COLOR 1125P TINT 1125P SHARP V1 OVER 1125P SHARP V1 UNDER 1125P SHARP V2 OVER 1125P SHARP V2 UNDER 1125P SHARP H1 OVER 1125P SHARP H1 UNDER 1125P SHARP H2 OVER 1125P SHARP H2 UNDER 1125P SHARP H3 OVER 1125P SHARP H3 UNDER		
DVP-M2 9	DTV 525I CONT DTV 525I BRIGHT DTV 525I COLOR DTV 525I TINT DTV 525I SHARP V1 OVER DTV 525I SHARP V1 UNDER DTV 525I SHARP V2 OVER DTV 525I SHARP V2 UNDER DTV 525I SHARP H1 OVER DTV 525I SHARP H1 UNDER DTV 525I SHARP H2 OVER DTV 525I SHARP H2 UNDER DTV 525I SHARP H3 OVER DTV 525I SHARP H3 UNDER		
DVP-M2 10	DTV 525P CONT DTV 525P BRIGHT DTV 525P COLOR DTV 525P TINT DTV 525P SHARP V1 OVER DTV 525P SHARP V1 UNDER DTV 525P SHARP V2 OVER DTV 525P SHARP V2 UNDER DTV 525P SHARP H1 OVER DTV 525P SHARP H1 UNDER DTV 525P SHARP H2 OVER DTV 525P SHARP H2 UNDER DTV 525P SHARP H3 OVER DTV 525P SHARP H3 UNDER		

DVP-M2			
Page	**Item**	**Description**	**Remarks (adjustment detail, etc.)**
DVP-M2 11	DTV 1125I CONT DTV 1125I BRIGHT DTV 1125I COLOR DTV 1125I TINT DTV 1125I SHARP V1 OVER DTV 1125I SHARP V1 UNDER DTV 1125I SHARP V2 OVER DTV 1125I SHARP V2 UNDER DTV 1125I SHARP H1 OVER DTV 1125I SHARP H1 UNDER DTV 1125I SHARP H2 OVER DTV 1125I SHARP H2 UNDER DTV 1125I SHARP H3 OVER DTV 1125I SHARP H3 UNDER	5 – 18	
DVP-M2 12	DTV 750P CONT DTV 750P BRIGHT DTV 750P COLOR DTV 750P TINT DTV 750P SHARP V1 OVER DTV 750P SHARP V1 UNDER DTV 750P SHARP V2 OVER DTV 750P SHARP V2 UNDER DTV 750P SHARP H1 OVER DTV 750P SHARP H1 UNDER DTV 750P SHARP H2 OVER DTV 750P SHARP H2 UNDER DTV 750P SHARP H3 OVER DTV 750P SHARP H3 UNDER		
DVP-M2 13	DTV 525I CONT DTV 525I BRIGHT DTV 525I COLOR DTV 525I TINT DTV 525I SHARP V1 OVER DTV 525I SHARP V1 UNDER DTV 525I SHARP V2 OVER DTV 525I SHARP V2 UNDER DTV 525I SHARP H1 OVER DTV 525I SHARP H1 UNDER DTV 525I SHARP H2 OVER DTV 525I SHARP H2 UNDER DTV 525I SHARP H3 OVER DTV 525I SHARP H3 UNDER		
DVP-M2 14	HDMI 525P CONT HDMI 525P BRIGHT HDMI 525P COLOR HDMI 525P TINT HDMI 525P SHARP V1 OVER HDMI 525P SHARP V1 UNDER HDMI 525P SHARP V2 OVER HDMI 525P SHARP V2 UNDER HDMI 525P SHARP H1 OVER HDMI 525P SHARP H1 UNDER HDMI 525P SHARP H2 OVER HDMI 525P SHARP H2 OVER HDMI 525P SHARP H3 OVER HDMI 525P SHARP H3 OVER		

DVP-M2			
Page	**Item**	**Description**	**Remarks (adjustment detail, etc.)**
DVP-M2 15	HDMI 1125I CONT HDMI 1125I BRIGHT HDMI 1125I COLOR HDMI 1125I TINT HDMI 1125I SHARP V1 OVER HDMI 1125I SHARP V1 UNDER HDMI 1125I SHARP V2 OVER HDMI 1125I SHARP V2 UNDER HDMI 1125I SHARP H1 OVER HDMI 1125I SHARP H1 UNDER HDMI 1125I SHARP H2 OVER HDMI 1125I SHARP H2 UNDER HDMI 1125I SHARP H3 OVER HDMI 1125I SHARP H3 UNDER	5 – 19	
DVP-M2 16	HDMI 750P CONT HDMI 750P BRIGHT HDMI 750P COLOR HDMI 750P TINT HDMI 750P SHARP V1 OVER HDMI 750P SHARP V1 UNDER HDMI 750P SHARP V2 OVER HDMI 750P SHARP V2 UNDER HDMI 750P SHARP H1 OVER HDMI 750P SHARP H1 UNDER HDMI 750P SHARP H2 OVER HDMI 750P SHARP H2 UNDER HDMI 750P SHARP H3 OVER HDMI 750P SHARP H3 UNDER		
DVP-M2 18	HDMI 1125P CONT HDMI 1125P BRIGHT HDMI 1125P COLOR HDMI 1125P TINT HDMI 1125P SHARP V1 OVER HDMI 1125P SHARP V1 UNDER HDMI 1125P SHARP V2 OVER HDMI 1125P SHARP V2 UNDER HDMI 1125P SHARP H1 OVER HDMI 1125P SHARP H1 UNDER HDMI 1125P SHARP H2 OVER HDMI 1125P SHARP H2 UNDER HDMI 1125P SHARP H3 OVER HDMI 1125P SHARP H3 UNDER		
DVP-M2 19	HDMI PC CONT HDMI PC BRIGHT HDMI PC COLOR HDMI PC TINT HDMI PC SHARP V1 OVER HDMI PC SHARP V1 UNDER HDMI PC SHARP V2 OVER HDMI PC SHARP V2 UNDER HDMI PC SHARP H1 OVER HDMI PC SHARP H1 UNDER HDMI PC SHARP H2 OVER HDMI PC SHARP H2 UNDER HDMI PC SHARP H3 OVER HDMI PC SHARP H3 UNDER		

DVP-M2

Page	Item	Description	Remarks (adjustment detail, etc.)
DVP-M2 20	HDMI PC (Dot) CONT HDMI PC (Dot) BRIGHT HDMI PC (Dot) COLOR HDMI PC (Dot) TINT HDMI PC (Dot) SHARP V1 OVER HDMI PC (Dot) SHARP V1 UNDER HDMI PC (Dot) SHARP V2 OVER HDMI PC (Dot) SHARP V2 UNDER HDMI PC (Dot) SHARP H1 OVER HDMI PC (Dot) SHARP H1 UNDER HDMI PC (Dot) SHARP H2 OVER HDMI PC (Dot) SHARP H2 UNDER HDMI PC (Dot) SHARP H3 OVER HDMI PC (Dot) SHARP H3 UNDER	5 – 20	
DVP-M2 21	PC CONT PC BRIGHT PC COLOR PC TINT PC SHARP V1 OVER PC SHARP V1 UNDER PC SHARP V2 OVER PC SHARP V2 UNDER PC SHARP H1 OVER PC SHARP H1 UNDER PC SHARP H2 OVER PC SHARP H2 UNDER PC SHARP H3 OVER PC SHARP H3 UNDER		
DVP-M2 22	PC (Dot) CONT PC (Dot) BRIGHT PC (Dot) COLOR PC (Dot) TINT PC (Dot) SHARP V1 OVER PC (Dot) SHARP V1 UNDER PC (Dot) SHARP V2 OVER PC (Dot) SHARP V2 UNDER PC (Dot) SHARP H1 OVER PC (Dot) SHARP H1 UNDER PC (Dot) SHARP H2 OVER PC (Dot) SHARP H2 UNDER PC (Dot) SHARP H3 OVER PC (Dot) SHARP H3 UNDER		
DVP-M2 23	HUE R HUE Y HUE G HUE C HUE B HUE M HUE R-Y HUE Y-G HUE G-C HUE C-B HUE B-M HUE M-R		

DVP-M2

Page	Item	Description	Remarks (adjustment detail, etc.)
DVP-M2 24	SAT R SAT Y SAT G SAT C SAT B SAT M SAT R-Y SAT Y-G SAT G-C SAT C-B SAT B-M SAT M-R		
DVP-M2 25	BRI R BRI Y BRI G BRI C BRI B BRI M BRI R-Y BRI Y-G BRI G-C BRI C-B BRI B-M BRI M-R		
DVP-M2 27	AV BLACK STRETCH PC BLACK STRETCH		
DVP M2 28	COLOR TEMP High R COLOR TEMP High G COLOR TEMP High B COLOR TEMP Mid-High R COLOR TEMP Mid-High G COLOR TEMP Mid-High B COLOR TEMP Middle R COLOR TEMP Middle G COLOR TEMP Middle B COLOR TEMP Mid-Low R COLOR TEMP Mid-Low G COLOR TEMP Mid-Low B COLOR TEMP Low R COLOR TEMP Low G COLOR TEMP Low B		

OTHERS

Page	Item	Description	Remarks (adjustment detail, etc.)
OTHERS1	L ERROR WAIT L ERROR H TIME PWM FREQ PWM DUTY OPC THRESHOLD VCOM ADJ RS232C SWITCH LCD TEST PATTERN	VCOM adjustment value	
OTHERS2	INSPECT USB TERM TUNER VCHIP TEST (69ch) TUNER VCHIP TEST (7ch) TUNER VCHIP TEST (10ch) TUNER VCHIP TEST (15ch) MONITOR MAX TEMP	Tuning test and VCHIP test (69ch) Tuning test and VCHIP test (7ch) TUNER VCHIP TEST (10ch) TUNER VCHIP TEST (15ch)	
OTHERS3	DDR CHECK BA [1:0] ADDR [13:0] DQ [15:0] FRC ON/OFF CENTER CROSS		

6. Video signal adjustment procedure

6.1. AD TRANSFORM LEVEL Adjustment

6.1.1 Input 1080i signal

1. Input 1080i color bar signal.

   Signal generation: LEADER LT448

   Signal: color BAR.

   Setting: 02: 1080i/59.94 (30sf)

   H: 33.72 KHz   V: 29.97Hz

NOTE: Please use the third color Bar of LT448 generator.

2. Adjusting AUTO GAIN-OFFSET in page 4 of DVP3 (M2-HD) to RUN.

   When "AUTO GAIN-OFFSET OK" appears, this adjustment is complete.

6.1.2 Input 480i signal

1. Input 480i color bar signal.

   Signal: color BAR.

   Setting: 15: 480i/60

   H: 15.73 KHz   V: 29.97Hz

NOTE: Please use the third color Bar of LT448 generator.

2. Adjusting AUTO GAIN-OFFSET in page 5 of DVP4 (M2-SD) to RUN.

   When "AUTO GAIN-OFFSET OK" appears, this adjustment is complete

6.1.3 Input PC XGA signal.

1. Input XGA color bar signal (RGB)

   Signal generation: LEADER LT448

   Signal: color BAR (SATURATION 75%)

   Setting: 28: XGA

   H: 48.36KHz   V: 60Hz

   SYNC: OFF

NOTE: Please use the color Bar of SATURATION.

2. Adjusting AUTO GAIN-OFFSET in page 6 of DVP5 (M2-PC) to RUN.

   When "AUTO GAIN-OFFSET OK" appears, this adjustment is complete.

NOTE: **If want to set all item to ON, please set to RUN in ADJUST PROCESS.**

6.2. TEMP Adjustment

6.2.1 Receive US-10ch(JPN-8ch) the standard color bar signal

6.2.2 See if the "YDATA" reading (maximum) on Adjustment Process Page 1 is within the range in the follow table. If not, adjust the "TEMP ALL" setting on the same page to have the "YDATA" reading (maximum) within this range.

MODEL	
SETTING VALUE (NTSC)	163-170

Refines

(Adjustment Process Menu Page 1)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
0	D	V	P	1																							
1		►	T	A	M	P	1		L													1	6	3			
2			Y	D	A	T	A																9	8			
3			T	A	M	P	1		H													1	7	0			
4			T	A	M	P		A	L	L												O	F	F			
5			N	T	S	C		T	A	M	P	1											7	7			
6			P	A	L	–	M		T	A	M	P											6	4			
7			P	A	L	–	N		T	A	M	P											6	4			

6.3. Tuner/V-Chip test

	Adjustment item	Adjustment conditions	Adjustment procedure
1	Adjustment	NTSC RF signal US-7 (AIR) ch	Feed the NTSC signal to RF ANTENNA input.
2	Auto adjustment performance		Bring the cursor on [OTHERS]→[OTERRS2]→[.TUNER VCHIP TEST (*07ch)] and press [LEFT]. (*Select the channel according to the RF signal.) [.A-OK (***.**)/VM-OK] appears in blue when finished. (If [A-NG/VM-NG] appears in yellow or red, the test is incomplete.) Make sure a displacement of ±0.0625 MHz from the center frequency is accept- able.

7. Adjustment of white balance

	Adjustment item	Adjustment conditions	Adjustment procedure

1	Setting	Backlight: +16 (MAX)
		Active contrast: OFF
		Monochrome: ON
			For detailed adjustment procedure refer to "Kameyama Model Integral WB Adjustment Specifications".
			1) Insert AC code in TV while pushing [INPUT] button and [VOL -] button (The buttons are located at right side of TV) and "K" mark is displayed.
			2) Make the following setting for the TV.
			    AV MODE: Dynamic
			    Backlight: +16
			    Aging time: Min. 60 minutes
			3) Push [CH ⌄] button and [VOL -] button to enter the Adjustment Mode. (The buttons are located at right side of TV.)
			4) Select [OTHERS] by R/C and push [ENTER] button of R/C.
			5) Select [CENTER CROSS] and push [ENTER].
			   And the Cross is displayed. (It's center of the display.)
			6) Set the CA210 probe at the center of display.
			7) Push [Enter] button and the Cross is cleared.

2	Adjustment procedure		1) On the Adjustment Mode, select the [DVP] and push [Enter] button of R/C. 2) Move to [DVP 2] and push [6] button of R/C. 3) With the strongest color being fixed, turn down the R, G and B settings to their reference levels. * Initial R, G and B settings at the point 1: Gradation level set at 512. [Adjustment value] AS per the "standard set" submitted by Engineering Department. [Adjustment reference] Instrument: [Minolta CA-210] Engineering instrument.

	Level	Reference	Adj. spec	Ins. spec
Point 1	512	X=0.272 y=0.277	±0.0015	±0.003
Note		Set conditions for inspection AV MODE: [DYNAMIC] (Reset) Aging Time: Min. 60 minutes		

8. Initialization of factory settings

8.1. Making factory settings

Use the adjustment remote controller for the factory settings.

8.1.1 Press the ENTER key at the INDUSTRY INT on Adjustment Process Page1 which is selected "YES".

8.1.2 Sever seconds later, "SETTING COMPLETE" "TV VER *.**" appears at the center of the screen.

If background of screen is green, the settings are complete.

```
┌─────────────────────────────────┐
│                                 │
│   SETTING COMPLETE              │
│                                 │
│   TV VER *.**                   │
│                                 │
│                                 │
└─────────────────────────────────┘
```
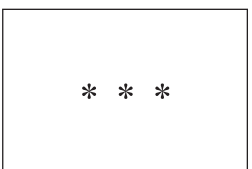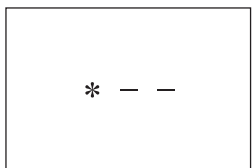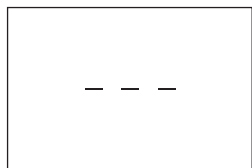
8.1.3 Power off the set.

NOTE: Do not turn on the power once the factory settings have been made. Otherwise the factory setting must be made again.

[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 "ENTER". (★)

★... "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 "ENTER" 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  ]
ON SCREEN DISPLAY          [YES       ]
BLUE SCREEN                [NO        ]
INPUT MODE START           [NORMAL    ]
INPUT MODE FIXED           [VARIABLE  ]
RESET
ENTER
```

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	

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	None
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". (loop provided)
Default	Variable
Explanation	Sound volume is fixed and made in variable.

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) R/C 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	①In "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.
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) BLUE SCREEN

Selection	Selection between "Yes", "NO" (loop provide)
Default	No
Explanation	In "Yes" setting, when don't receive any signal or on signal input, the screen is blue.
Limit in Setting	None
Exception	None
Remarks	

10)INPUT MODE START
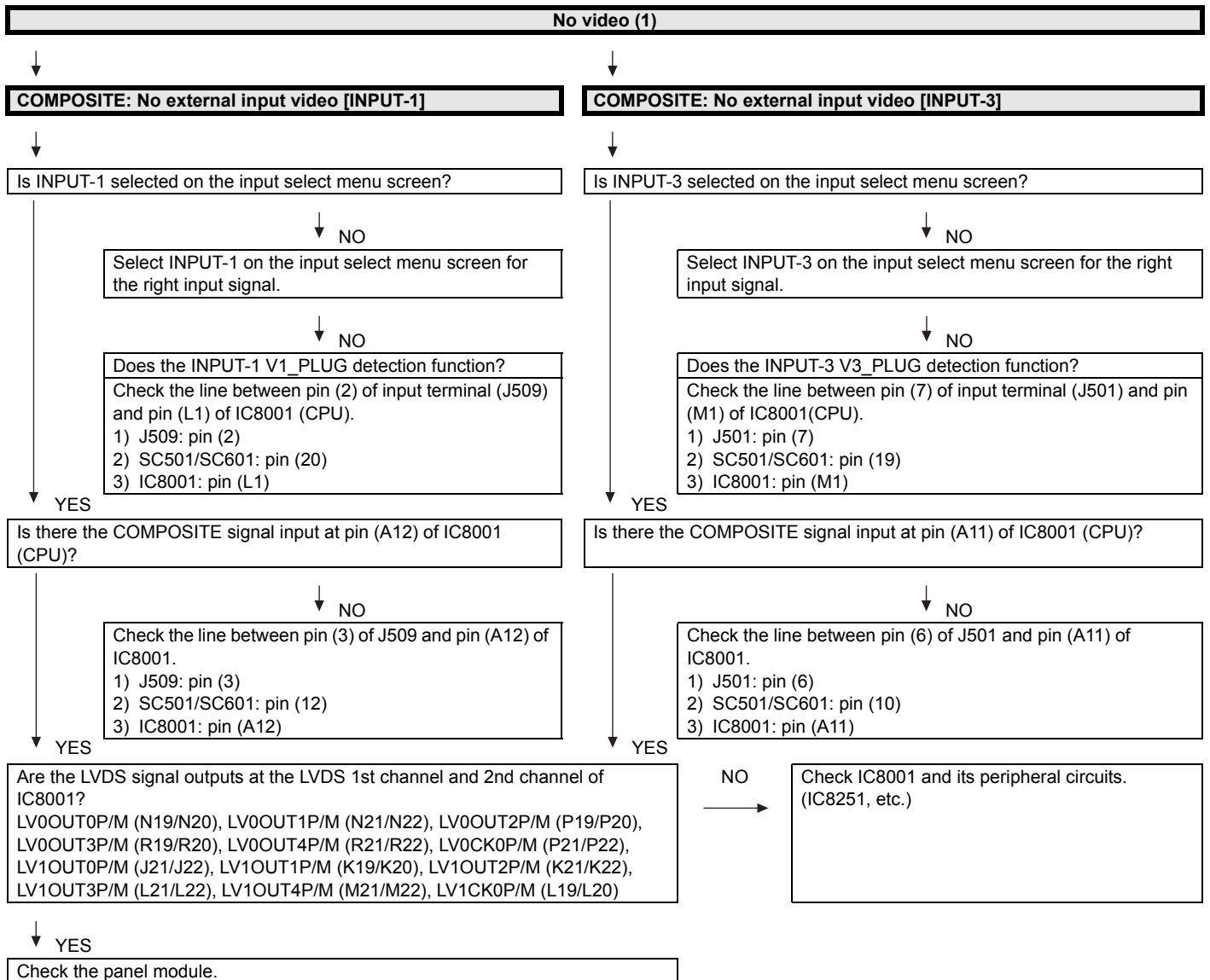
Selection	Selection between "Normal", "TV (CH✳)", "INPUT 1/2/3/4/5/6/7/8".
Default	Normal
Explanation	In power-ON, the input source to be started or channel can be set. (In standard mode, the operation follows the last memory.)
About options	• All the input sources in the model are made selectable. • 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.) TV (CH2), TV (CH4) 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.
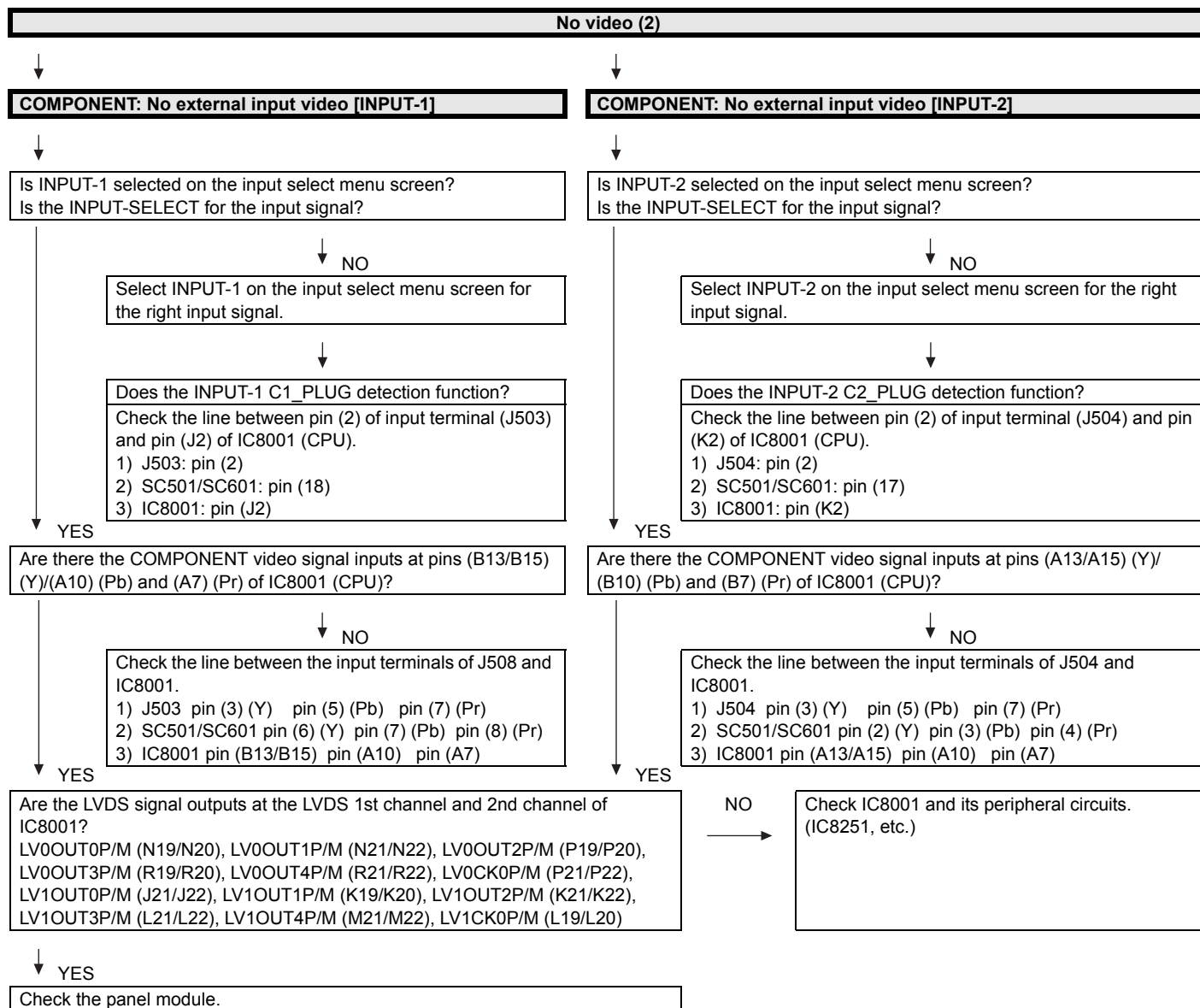
11)INPUT MODE FIXED

Selection	Selection between "Variable", "Fixed". (loop provided)
Default	– (Variable)
Explanation	The input mode is fixed at the input source or the channel set at the "Input mode start" in 10 and other input sources and channels can be made non-selectable.
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".

CHAPTER 6. TROUBLESHOOTING TABLE

[1] TROUBLESHOOTING TABLE

No video (1)

COMPOSITE: No external input video [INPUT-1]

COMPOSITE: No external input video [INPUT-3]

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

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

NO

Select INPUT-1 on the input select menu screen for the right input signal.

NO

Select INPUT-3 on the input select menu screen for the right input signal.

NO

Does the INPUT-1 V1_PLUG detection function?
Check the line between pin (2) of input terminal (J509) and pin (L1) of IC8001 (CPU).
1) J509: pin (2)
2) SC501/SC601: pin (20)
3) IC8001: pin (L1)

NO

Does the INPUT-3 V3_PLUG detection function?
Check the line between pin (7) of input terminal (J501) and pin (M1) of IC8001(CPU).
1) J501: pin (7)
2) SC501/SC601: pin (19)
3) IC8001: pin (M1)

YES

Is there the COMPOSITE signal input at pin (A12) of IC8001 (CPU)?

YES

Is there the COMPOSITE signal input at pin (A11) of IC8001 (CPU)?

NO

Check the line between pin (3) of J509 and pin (A12) of IC8001.
1) J509: pin (3)
2) SC501/SC601: pin (12)
3) IC8001: pin (A12)

NO

Check the line between pin (6) of J501 and pin (A11) of IC8001.
1) J501: pin (6)
2) SC501/SC601: pin (10)
3) IC8001: pin (A11)

YES

YES

Are the LVDS signal outputs at the LVDS 1st channel and 2nd channel of IC8001?
LV0OUT0P/M (N19/N20), LV0OUT1P/M (N21/N22), LV0OUT2P/M (P19/P20), LV0OUT3P/M (R19/R20), LV0OUT4P/M (R21/R22), LV0CK0P/M (P21/P22), LV1OUT0P/M (J21/J22), LV1OUT1P/M (K19/K20), LV1OUT2P/M (K21/K22), LV1OUT3P/M (L21/L22), LV1OUT4P/M (M21/M22), LV1CK0P/M (L19/L20)

NO

Check IC8001 and its peripheral circuits. (IC8251, etc.)

YES

Check the panel module.

No video (2)

COMPONENT: No external input video [INPUT-1]

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

NO

Select INPUT-1 on the input select menu screen for the right input signal.

Does the INPUT-1 C1_PLUG detection function?
Check the line between pin (2) of input terminal (J503) and pin (J2) of IC8001 (CPU).
1) J503: pin (2)
2) SC501/SC601: pin (18)
3) IC8001: pin (J2)

YES

Are there the COMPONENT video signal inputs at pins (B13/B15) (Y)/(A10) (Pb) and (A7) (Pr) of IC8001 (CPU)?

NO

Check the line between the input terminals of J508 and IC8001.
1) J503 pin (3) (Y) pin (5) (Pb) pin (7) (Pr)
2) SC501/SC601 pin (6) (Y) pin (7) (Pb) pin (8) (Pr)
3) IC8001 pin (B13/B15) pin (A10) pin (A7)

YES

Are the LVDS signal outputs at the LVDS 1st channel and 2nd channel of IC8001?
LV0OUT0P/M (N19/N20), LV0OUT1P/M (N21/N22), LV0OUT2P/M (P19/P20), LV0OUT3P/M (R19/R20), LV0OUT4P/M (R21/R22), LV0CK0P/M (P21/P22), LV1OUT0P/M (J21/J22), LV1OUT1P/M (K19/K20), LV1OUT2P/M (K21/K22), LV1OUT3P/M (L21/L22), LV1OUT4P/M (M21/M22), LV1CK0P/M (L19/L20)

YES

Check the panel module.

COMPONENT: No external input video [INPUT-2]

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

NO

Select INPUT-2 on the input select menu screen for the right input signal.

Does the INPUT-2 C2_PLUG detection function?
Check the line between pin (2) of input terminal (J504) and pin (K2) of IC8001 (CPU).
1) J504: pin (2)
2) SC501/SC601: pin (17)
3) IC8001: pin (K2)

YES

Are there the COMPONENT video signal inputs at pins (A13/A15) (Y)/(B10) (Pb) and (B7) (Pr) of IC8001 (CPU)?

NO

Check the line between the input terminals of J504 and IC8001.
1) J504 pin (3) (Y) pin (5) (Pb) pin (7) (Pr)
2) SC501/SC601 pin (2) (Y) pin (3) (Pb) pin (4) (Pr)
3) IC8001 pin (A13/A15) pin (A10) pin (A7)

YES

NO

Check IC8001 and its peripheral circuits. (IC8251, etc.)

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No video (3)

↓

PC: 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 (left)   ↓ (right)

	Is IC602 (EEPROM) accessed by I2C, with PC connected, to read the DDC_I2C DSUB_SCL/DSUB_SDA data?
	Check the DDC line and its peripheral circuits. (IC602 and its peripherals).

Are there the video signal inputs at pins (B12) (G), (A9) (B) and (A6) (R) of IC8001 (CPU)? Are there the VSYNC/HSYNC signal inputs at pins (B16) and (B17) of IC8001?	NO →	Check the line between SC601 and IC8001 (IC601, etc.).

↓ YES

Are the LVDS signal outputs at the LVDS 1st channel and 2nd channel of IC8001? LV0OUT0P/M (N19/N20), LV0OUT1P/M (N21/N22), LV0OUT2P/M (P19/P20), LV0OUT3P/M (R19/R20), LV0OUT4P/M (R21/R22), LV0CK0P/M (P21/P22), LV1OUT0P/M (J21/J22), LV1OUT1P/M (K19/K20), LV1OUT2P/M (K21/K22), LV1OUT3P/M (L21/L22), LV1OUT4P/M (M21/M22), LV1CK0P/M (L19/L20)	NO →	Check IC8001 and its peripheral circuits. (IC8251, etc.)

↓ YES

Check the panel module.

<HDMI input> No video (4)-1

HDMI: No external input video [INPUT-5]

↓

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

↓ NO
Select INPUT-5 on the input select menu screen for the right input signal.

↓ YES
Does the INPUT-1 C1_PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1602 to pin (B18) of IC8001 (CPU)?
Does the HPD signal come from pin (W16) of IC8001 to pin (19) of SC1602?

↓ NO
Check the line between the input terminals of SC1602 and IC8001 and their peripheral circuits.

↓ YES
Do the DDC_I2C signals come from pins (15/16) (DDC_SCL/DDC_SDA) of SC1602 to pins (A18/A19) of IC8001 (CPU)?
Are there the TMDS signal inputs at pins (H21/H20) (CLK-/+), (G21/G22) (D0-/+), (F21/F22) (D1-/+), (G20/G19) (D2-/+), all of IC8001?

↓ NO
Check the line between the input terminals of SC1602 and IC8001 and their peripheral circuits.
Check IC1611 (EEPROM of EDID) and its peripheral circuits.
(DDC_SCL: pin5, DDC_SDA: pin6, all of IC1611)

↓ YES
Are the LVDS signal outputs at the LVDS 1st channel and 2nd channel of IC8001?
LV0OUT0P/M (N19/N20), LV0OUT1P/M (N21/N22), LV0OUT2P/M (P19/P20), LV0OUT3P/M (R19/R20), LV0OUT4P/M (R21/R22), LV0CK0P/M (P21/P22), LV1OUT0P/M (J21/J22), LV1OUT1P/M (K19/K20), LV1OUT2P/M (K21/K22), LV1OUT3P/M (L21/L22), LV1OUT4P/M (M21/M22), LV1CK0P/M (L19/L20)

NO → Check IC8001 and its peripheral circuits. (IC8251, etc.)

↓ YES
Check the panel module.

HDMI: 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.

↓ YES
Does the HOT PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1601 to pin (A17) of IC8001 (CPU)?
Does the HPD signal come from pin (W17) of IC8001 to pin (19) of SC1601?

↓ NO
Check the line between the input terminals of SC1601 and IC8001 and their peripheral circuits.

↓ YES
Do the DDC_I2C signals come from pins (15/16) (DDC_SCL/DDC_SDA) of SC1601 to pins (D16/D17) of IC8001 (CPU)?
Are there the TMDS signal inputs at pins (D20/D19) (CLK-/+), (E21/E20) (D0-/+), (D22/D21) (D1-/+), (C22/C21) (D2-/+), all of IC8001?

↓ NO
Check the line between the input terminals of SC1602 and IC8001 and their peripheral circuits.
Check IC1610(EEPROM of EDID) and its peripheral circuits. (DDC_SCL: pin5, DDC_SDA: pin6, all of IC1610)

↓ YES

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\<HDMI input\> No video (4)-2

↓

HDMI: 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. |

↓ YES

| Does the HOT PLUG detection function?
Does the DDC5V signal come from pin (18) of SC1603 to pin (C17) of IC8001 (CPU)?
Does the HPD signal come from pin (W19) of IC8001 to pin (19) of SC1603? | NO → | Check the line between the input terminals of SC1603 and IC8001 and their peripheral circuits. |

↓ YES

| Do the DDC_I2C signals come from pins (15/16) (DDC_SCL/ DDC_SDA) of SC1602 to pins (C18/B19) of IC8001 (CPU)?
Are there the TMDS signal inputs at pins (D20/D19) (CLK-/+), (C20/C19) (D0-/+), (B22/B21) (D1-/+), (A22/S21) (D2-/+), all of IC8001? | NO → | Check the line between the input terminals of SC1603 and IC8001 and their peripheral circuits.
Check IC1612 (EEPROM of EDID) and its peripheral circuits. (DDC_SCL: pin5, DDC_SDA: pin6, all of IC1611) |

↓ YES

| Are the LVDS signal outputs at the LVDS 1st channel and 2nd channel of IC8001?
LV0OUT0P/M (N19/N20), LV0OUT1P/M (N21/N22),
LV0OUT2P/M (P19/P20), LV0OUT3P/M (R19/R20),
LV0OUT4P/M (R21/R22), LV0CK0P/M (P21/P22),
LV1OUT0P/M (J21/J22), LV1OUT1P/M (K19/K20),
LV1OUT2P/M (K21/K22), LV1OUT3P/M (L21/L22),
LV1OUT4P/M (M21/M22), LV1CK0P/M (L19/L20) | NO → | Check IC8001 and its peripheral circuits. (IC8251, etc.) |

↓ YES

| Check the panel module. |

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?

| Is there the analog video signal output (VIDEO) at pin (19) of tuner (TU1101)? | Are there the video signal outputs (IF_P/N) at the pins (12) and (13) of tuner (TU1101)? |

NO

Check the Tuner I2C lines.
1) TU1101: pin (8) (TUN_SDA_C5), pin (9) (TUN_SCL_C5)
2) SC1101/SC1201: pin (16), pin (15)
3) IC8001: pin (F2), pin (E1)

Check TU1101 and its peripheral circuits.

NO

Check the Tuner I2C lines.
1) TU1101:pin (8) (TUN_SDA_C5), pin (9) (TUN_SCL_C5)
2) SC1101/SC1201: pin (16), pin (15)
3) IC8001: pin (F2), pin (E1)

Check TU1101 and its peripheral circuits.

YES

Is there the analog video signal input at pin (B11) of IC8001 (CPU)?

YES

Are there the video signal inputs at pin (A4)/(B4) (IF_P/N) of IC8001 (CPU)?

Are there IF-AGC signal inputs at pin (F1) of IC8001 (CPU)?

NO

Check the line between IC8001 and TU1101, and their peripheral circuits.
1) TU1101: pin (19)
2) SC1101/SC1201: pin (3)
3) IC8001: pin (B11)

NO

Check the line between IC8001 and TU1101, and their peripheral circuits.
1) TU1101: pin (12) (IF_P), pin (13) (IF_N), pin (14) (IF_AGC)
2) SC1101/SC1201: pin (5), pin (6), pin (10)
3) IC8001:pin (A4), pin (B4), pin (F1)

YES

Are the LVDS signal outputs at the LVDS 1st channel and 2nd channel of IC8001?
LV0OUT0P/M (N19/N20), LV0OUT1P/M (N21/N22), LV0OUT2P/M (P19/P20), LV0OUT3P/M (R19/R20), LV0OUT4P/M (R21/R22), LV0CK0P/M (P21/P22), LV1OUT0P/M (J21/J22), LV1OUT1P/M (K19/K20), LV1OUT2P/M (K21/K22), LV1OUT3P/M (L21/L22), LV1OUT4P/M (M21/M22), LV1CK0P/M (L19/L20)

YES

NO

Check IC8001 and its peripheral circuits.
(IC8251, etc.)

YES

Check the panel module.

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No audio (1)-1

INPUT-1 No audio. **INPUT-2 No audio.**

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

NO → Refer to ":No external input video [INPUT-1]".

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 (5) (L) and (7) (R) of input terminal (J509) to pins (12) (L) and (1) (R) of IC503 (AUDIO SWITCH)?

NO → Check the line between J509 and IC503.

YES

Does the audio signal come from pins (13) (L) and (3) (R) of IC503 to pins (B2) (L) and (A1) (R) of IC8001 (CPU)?

NO →
- Check IC503/IC8001 and its peripheral circuits. (IC502, Q509, Q510, etc.)
- Check the audio signal lines between IC503 and IC8001.
  1) IC503: pin (13) (A_INL), pin (3) (A_INR)
  2) SC501/SC601: pin (15), pin (14)
  3) IC8001: pin (B12), pin (A1)
- Check the audio switching signals (AUDIO_CTL0/1) between IC503 and IC8001.
  1) IC8001: pin (L1) (AUDIO_CTL0), pin (K1) (AUDIO_CTL1)
  2) SC1101/SC1201: pin (17), pin (18)
  3) Q510: pin (2), Q509: pin (2)
  4) IC503: pin (10), pin (9)

YES

Does the audio signal come from pins (C4/A3) (SPOUT_L/R) of IC8001 (CPU) to pins (3) (INLP), and (7) (INRP) of IC2701 (AMP)?

NO → Check the line between IC8001 and IC2701, and their peripheral circuits (Q1306/Q1307, AMP_MUTE line, etc.).

YES

Is the audio output from IC2701 as specified?

NO → Check IC2701 and its peripheral circuits.

YES

Check the connector (P2701), speakers and their peripheral circuits.

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

Does the audio signal come from pins (2) (L) and (4) (R) of input terminal (J505) to pins (15) (L) and (2) (R) of IC503 (AUDIO SWITCH)?

NO → Check the line between J505 and IC503.

YES

Does the audio signal come from pins (13) (L) and (3) (R) of IC503 to pins (B2) (L) and (A1) (R) of IC8001 (CPU)?

NO →
- Check IC503/IC8001 and its peripheral circuits. (IC502, Q509, Q510, etc.)
- Check the audio signal lines between IC503 and IC8001.
  1) IC503: pin (13) (A_INL), pin (3) (A_INR)
  2) SC501/SC601: pin (15), pin (14)
  3) IC8001: pin (B12), pin (A1)
- Check the audio switching signals (AUDIO_CTL0/1) between IC503 and IC8001.
  1) IC8001: pin (L1) (AUDIO_CTL0), pin(K1) (AUDIO_CTL1)
  2) SC1101/SC1201: pin (17), pin (18)
  3) Q510: pin (2), Q509: pin (2)
  4) IC503: pin (10), pin (9)

YES

No audio (1)-2

↓

INPUT-3 No audio.

↓

| Is INPUT-3 selected on the input select menu screen? | NO → | Refer to ":No external input video [INPUT-3]". |

↓ 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 (5) (L) and (4) (R) of input terminal (J501) to pins (14) (L) and (5) (R) of IC503 (AUDIO SWITCH)? | NO → | Check the line between J501 and IC503. |

↓ YES

| Does the audio signal come from pins (13) (L) and (3) (R) of IC503 to pins (B2) (L) and (A1) (R) of IC8001 (CPU)? | NO → | Check IC503/IC8001 and its peripheral circuits. (IC502, Q509, Q510, etc.) |

| | | Check the audio signal lines between IC503 and IC8001.
1) IC503: pin (13) (A_INL), pin (3) (A_INR)
2) SC501/SC601: pin (15), pin (14)
3) IC8001: pin (B12), pin (A1) |

| | | Check the audio switching signals (AUDIO_CTL0/1) between IC503 and IC8001.
1) IC8001: pin (L1) (AUDIO_CTL0), pin (K1) (AUDIO_CTL1)
2) SC1101/SC1201: pin (17), pin (18)
3) Q510: pin (2), Q509: pin (2)
4) IC503: pin (10), pin (9) |

↓ YES

| Does the audio signal come from pins (C4/A3) (SPOUT_L/R) of IC8001 (CPU) to pins (3) (INLP), and (7) (INRP) of IC2701 (AMP)? | NO → | Check the line between IC8001 and IC2701, and their peripheral circuits (Q1306/Q1307, AMP_MUTE line, etc.). |

↓ YES

| Is the audio output from IC2701 as specified? | NO → | Check IC2701 and its peripheral circuits. |

↓ YES

| Check the connector (P2701), speakers and their peripheral circuits. |

LC-40D68UT

No audio (2)

[PC analog audio input] INPUT-4 No audio. | **[HDMI analog audio input] INPUT-6 No audio.**

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

NO → Refer to ":No external input video [INPUT-4]".

YES

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

NO → Set the audio output to "FIXED".

YES

Is the "PC Audio Select" selected for "Input4 (PC)" on the menu screen?

NO → Set the HDMI audio output to "Input4 (PC)".

YES

Does the audio signal come from pins (2) (L) and (3) (R) of input terminal (J506) to pins (11) (L) and (4) (R) of IC503 (AUDIO SWITCH)?

NO → Check the line between J601 and IC8001.

YES

Does the audio signal come from pins (13) (L) and (3) (R) of IC503 to pins (B2) (L) and (A1) (R) of IC8001 (CPU)?

NO →
Check IC503/IC8001 and its peripheral circuits. (IC502, Q509, Q510, etc.)

Check the audio signal lines between IC503 and IC8001.
1) IC503: pin (13) (A_INL), pin (3) (A_INR)
2) SC501/SC601: pin (15), pin (14)
3) IC8001: pin (B12), pin(A1)

Check the audio switch control signal lines (AUDIO_CTL0/1) between IC503 and IC8001.
1) IC8001: pin (L1) (AUDIO_CTL0), pin (K1) (AUDIO_CTL1)
2) SC1101/SC1201: pin (17), pin (18)
3) Q510: pin (2), Q509: pin (2)
4) IC503: pin (10), pin (9)

YES

Does the audio signal come from pins (C4/A3) (SPOUT_L/R) of IC8001 (CPU) to pins (3) (INLP), and (7) (INRP) of IC2701 (AMP)?

NO → Check the line between IC8001 and IC2701, and their peripheral circuits (Q1306/Q1307, AMP_MUTE line, etc.).

YES

Is the audio output from IC2701 as specified?

NO → Check IC2701 and its peripheral circuits.

YES

Check the connector (P2701), speakers and their peripheral circuits.

[HDMI analog audio input] 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

Is the "PC Audio Select" selected for "Input6 (HDMI)" on the menu screen?

NO → Set the HDMI audio output to "Input6 (HDMI)".

YES

Is the HDMI audio output selected for "Digital" on the menu screen?

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

YES

No audio (3)

↓

INPUT-5 No audio (HDMI connected)
INPUT-6 No audio (HDMI connected)
INPUT-7 No audio (HDMI connected)

↓

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

[INPUT-6 input]
Is INPUT-6 selected on the input select menu screen?
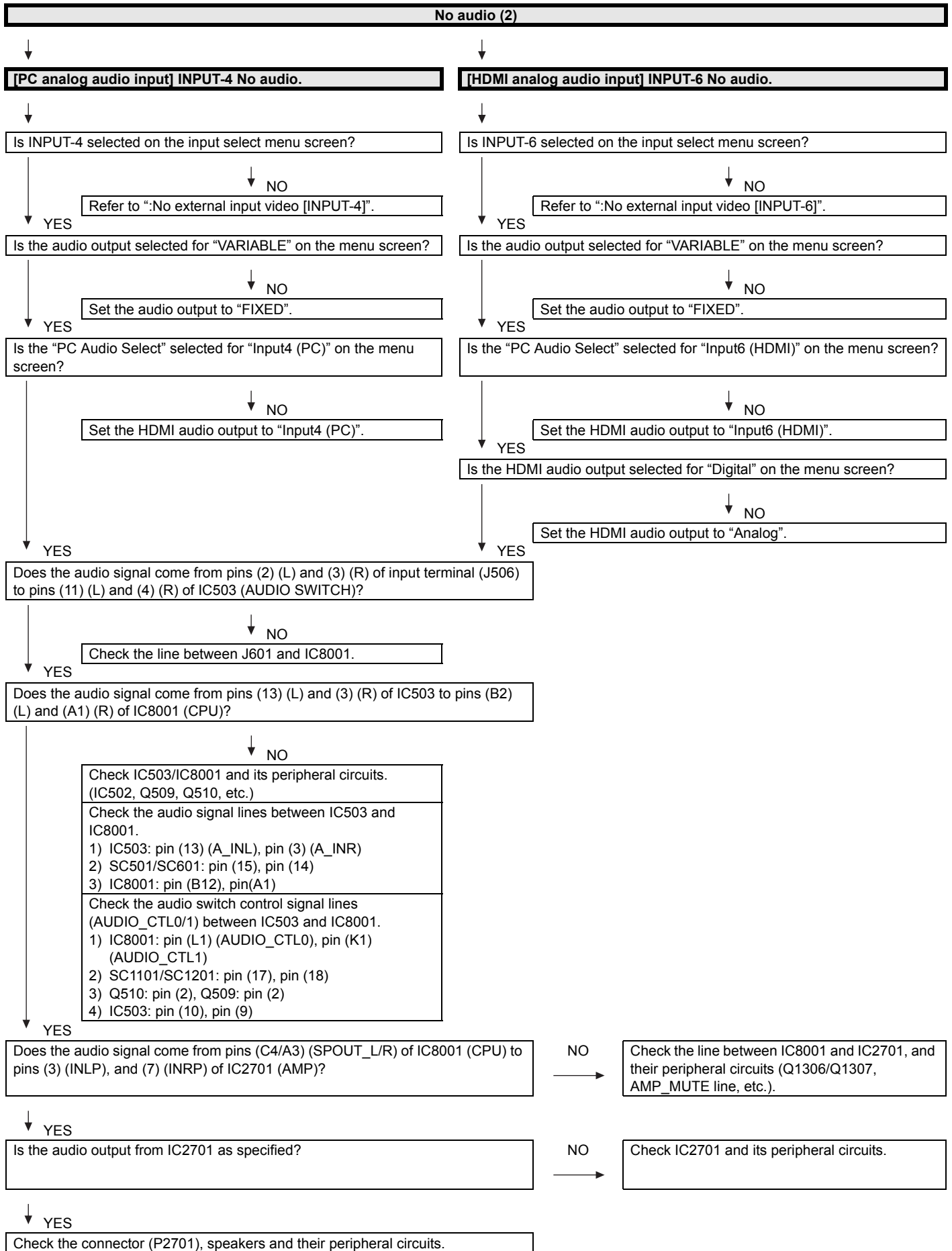
[INPUT-7 input]
Is INPUT-7 selected on the input select menu screen?

↓ NO
Refer to ":No external input video [INPUT-5/6/7]".

↓ YES

[INPUT-5 input]
If no video appears, refer to "No external input video (HDMI) [INPUT-5]".

[INPUT-6 input]
If no video appears, refer to "No external input video (HDMI) [INPUT-6]".

[INPUT-7 input]
If no video appears, refer to "No external input video (HDMI) [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 (C4/A3) (SPOUT_L/R) of IC8001 (CPU) to pins (3) (INLP), and (7) (INRP) of IC2701 (AMP)?

↓ NO
Check the line between IC8001 and IC2701, and their peripheral circuits (Q1306/ Q1307, AMP_MUTE line, etc.).

↓ YES
Is the audio output from IC2701 as specified?

↓ NO
Check IC2701 and its peripheral circuits.

↓ YES
Check the connector (P2701), speakers and their peripheral circuits.

LC-40D68UT

No audio (4)

No audio at UHF/VHF broadcast signal reception.

No audio at digital broadcast signal reception.

Is TV selected on the input select menu screen?

Is TV selected on the input select menu screen?

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

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

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

YES
If no video appears, refer to "No video at digital broadcast signal reception".
Is the audio output selected for "VARIABLE" on the menu screen?

→ NO
Set the audio output to "FIXED".

→ NO
Set the audio output to "FIXED".

YES
Is there the SIF signal output at pin (16) of tuner (TU1101)?
Is there the AFT signal output at pin (17) of tuner (TU1101)?

→ NO
Check the Tuner I2C lines.
1) TU1101: pin (8) (TUN_SDA_C5), pin (9) (TUN_SCL_C5)
2) SC1101/SC1201: pin (16), pin (15)
3) IC8001: pin (F2), pin (E1)
Check TU1101 and its peripheral circuits.

YES
Does the SIF signal come from pin (16) of tuner (TU1101) to pin (D5) of IC8001 (CPU)?
Does the AFT signal come from pin (17) of tuner (TU1101) to pin (W22) of IC8001 (CPU)?

→ NO
Check the line between TU1101 and IC8001, and their peripheral circuits (Q1101, Q1102, etc.).
1) TU1101: pin (16) (SIF), pin (17) (AFT_OUT)
2) SC1101/SC1201: pin (8), pin (12)
3) IC8001: pin (D5), pin (W22)

YES

YES
Does the audio signal come from pins (C4/A3) (SPOUT_L/R) of IC8001 (CPU) to pins (3) (INLP), and (7) (INRP) of IC2701 (AMP)?

NO →
Check the line between IC8001 and IC2701, and their peripheral circuits (Q1306/Q1307, AMP_MUTE line, etc.).

YES
Is the audio output from IC2701 as specified?

NO →
Check IC2701 and its peripheral circuits.

YES
Check the connector (P2701), speakers and their peripheral circuits.

No monitor audio output

Is the audio output from the monitor set at "VARIABLE" or "FIXED" on the menu screen?	NO →	Check IC8001 (CPU) and its peripheral circuits.

YES ↓

Are there the audio signal outputs (I2S Line) at pins (H4) (LINE_LRCLK), (J4) (LINE_MCLK), (K3) (LINE_BCLK) and (K4) (LINE_DATA) of IC8001 (CPU)?	NO →	Check IC8001 (CPU) and its peripheral circuits.

YES ↓

Does the audio signal come from pins (H4/J4/K3/K4) (LINE_LRCLK/LINE_MCLK/LINE_BCLK/LINE_DATA) of IC8001 to pins (4) (LRCLK), (1) (MCLK), (2) (BCLK) and (3) (DATA) of IC1301 (Audio DAC)?	NO →	Check IC8001 (CPU) and each signal lines/its peripheral circuits.

YES ↓

Does the audio signal come from pins (11)/(10) (LINE_OUT_L/R) of IC1301 to pins (4) (L) and (2) (R) of J507?	NO →	Check the line between IC1301 and J507 and their peripheral circuits. 1) TU1301: pin (11) (LINE_OUT_L), pin (10) (LINE_OUT_R) 2) SC501/SC601: pin (22), pin (21) 3) J507: pin (4) (L), pin (2) (R) Check the LINE_MUTE line and its peripheral circuits (Q1310/Q1311, etc.).

YES ↓

Check the connector (J507) and their peripheral circuits, and speakers and the Cable.

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

No INPUT-5/6/7 (HDMI) audio.	No audio at digital broadcast signal reception.

If no video appears, refer to "No external input video (HDMI) [INPUT-5/6/7]".	If no video appears, refer to "No video at digital broadcast signal reception".

Is there the SPDIF signal output (OPT_OUT) at pin (J3) of IC8001 (CPU)? — NO → Check the IC8001 and its peripheral circuits.

YES

Is there the SPDIF signal (OPT_OUT) input at pin (2) of IC1304 (SPDIF BUFFER)? — NO → Check the line between IC8001 and IC1304.

YES

Is there the MUTE signal input at pin (1) of IC1304? (usual: High, Mute: Low) — NO → Check the MUTE_A_ALL, AC_DET, OPU_MUTE, HDMI_MUTE signals, and their peripheral circuits. (Q1304, Q1312, D1310, D1314, etc.)

YES

Is there the SPDIF signal input at pin (1) of D507 (OPTICAL OUTPUT)? — NO → Check the line between IC1304 and D507.
1) IC1304: pin (4) (OPT_OUT_TO_TERM)
2) SC1101/SC1201: pin (1)
3) D507: pin (1)

No optical output under the following conditions as per HDMI requirements.
* Audio contents protected.
* Audio frequency beyond 48kHz.
* Audio bit length beyond 16bits.

YES

Check the speakers and the optical cable.

LED flashing timing chart for error notification.

250ms   1sec

Unused

1) Power LED (Large classification)

Error type	Power green LED operation (1 cycle)	Pins are monitor microprocessor (IC2002) pins.
Lamp error Flashes once: Fast	H: On L: Off	Judged by the ERR_PNL port. Confirmed after 10 consecutive detections at 500 ms intervals (detected only when the backlight is on). [Released] • Set "LAMP ERROR" of the adjustment process to 0. • Execute AC_ON with [CH_DOWN] and [VOL_UP] on the unit down. • Continuous illumination for 3 minutes. NOTE: After five detection counts, the lamp cannot be activated except in the monitoring process. (For the first time, only the inverter is reset, and error OFF is not activated.)
Power error Flashes twice	H: On L: Off	Refer to "Power error details". Detection is performed at 16 ms intervals, and each terminal for monitoring the power is polled. If the error logic is detected twice in a row, error is confirmed so as to shift to the error standby.
Communication error with the main CPU Flashes 3 times	H: On L: Off	Judged by the communication line error or main CPU communication error. Refer to "Communication error details". Communication line with the main CPU: TxD, RxD Check debug statements for the main CPU.
Vsync error Flashes 4 times	H: On L: Off	VSYNC error (L or H fixed). Image processing IC operation error
Monitor temperature error Flashes 5 times	H: On L: Off	Judged by monitoring temperature with the temperature sensor. When the panel temperature is 60°C or more for 15 seconds or more in a row, caution is displayed. If the panel temperature is 60°C or more for 25 seconds or more in a row, error standby is activated. [Released] Reduce the value of MONITOR MAX TEMP of OTHERS (temperature protection threshold).
Program area data destruction Flashes 8 times	H: On L: Off	Flash ROM data error in the microprocessor. [Released] Write the microprocessor software.

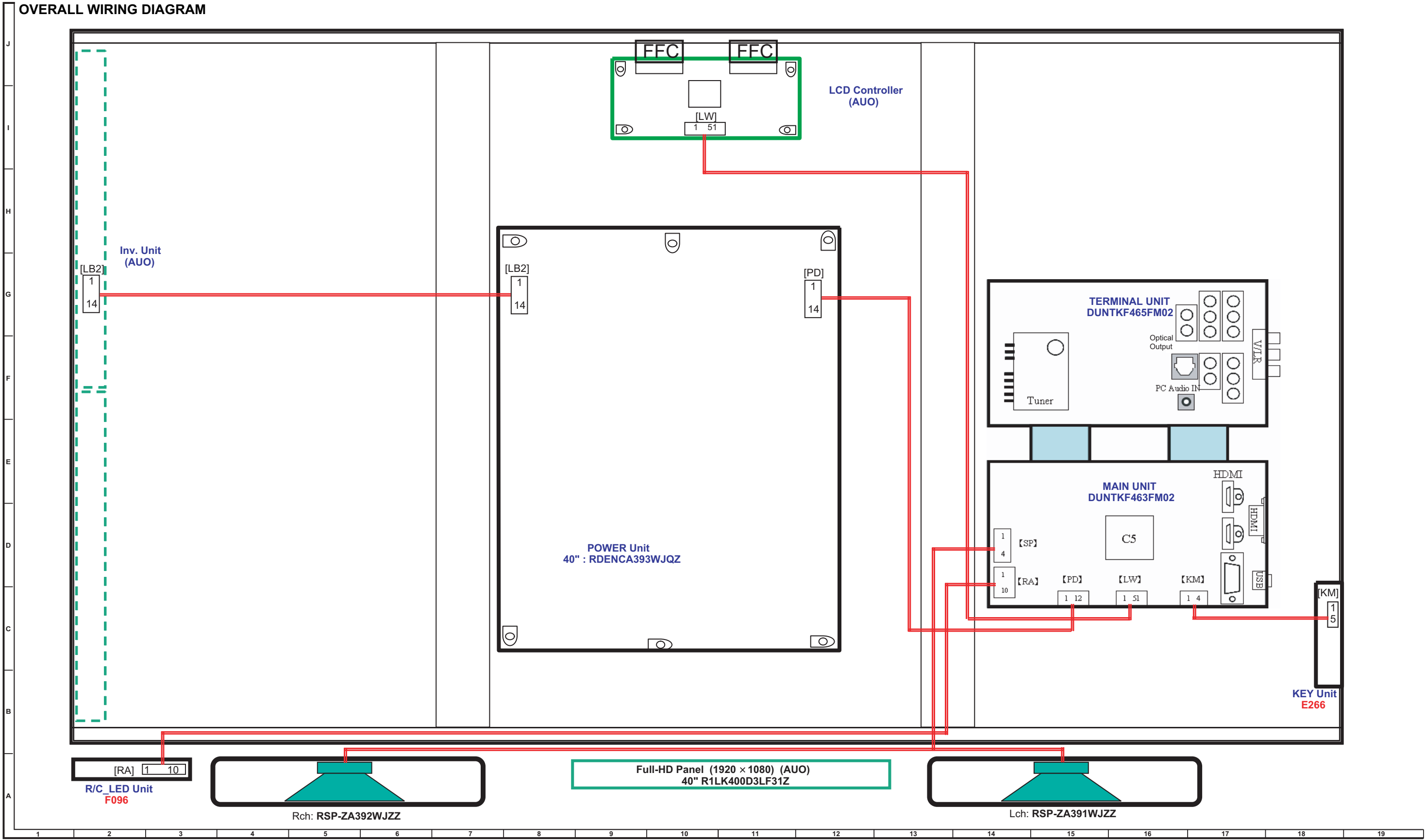**2) Power error details (Power LED flashes twice and OPC LED flashes)**

Error type	OPC LED operation (1 cycle)	Pins are monitor microprocessor pins unless otherwise specified.
DET_POW1 error Flashes once	H: On L: Off	DET_POW1 error (L). Detected by the above polling. UR13V is not applied.
DET_POW2 error Flashes twice	H: On L: Off	DET_POW2 error (L). Detected by the above polling. Detection starts in 400 ms after SMPOW becomes High. D3.3V is not applied.
DET_6V error Flashes 3 times	H: On L: Off	DET_6V error (L). D5V or A5V is not applied.
PNL_POW0 error Flashes 5 times	H: On L: Off	DET_POW0 error (L). Detected by the above polling. Detection starts in 400 ms after PNL_ON becomes High. Panel power is not applied.
Main error Flashes 7 times	H: On L: Off	Main microprocessor detection error. (FAN error, 1bitAMP error, etc.)

3) Communication error details (Power LED flashes 3 times and OPC LED flashes)
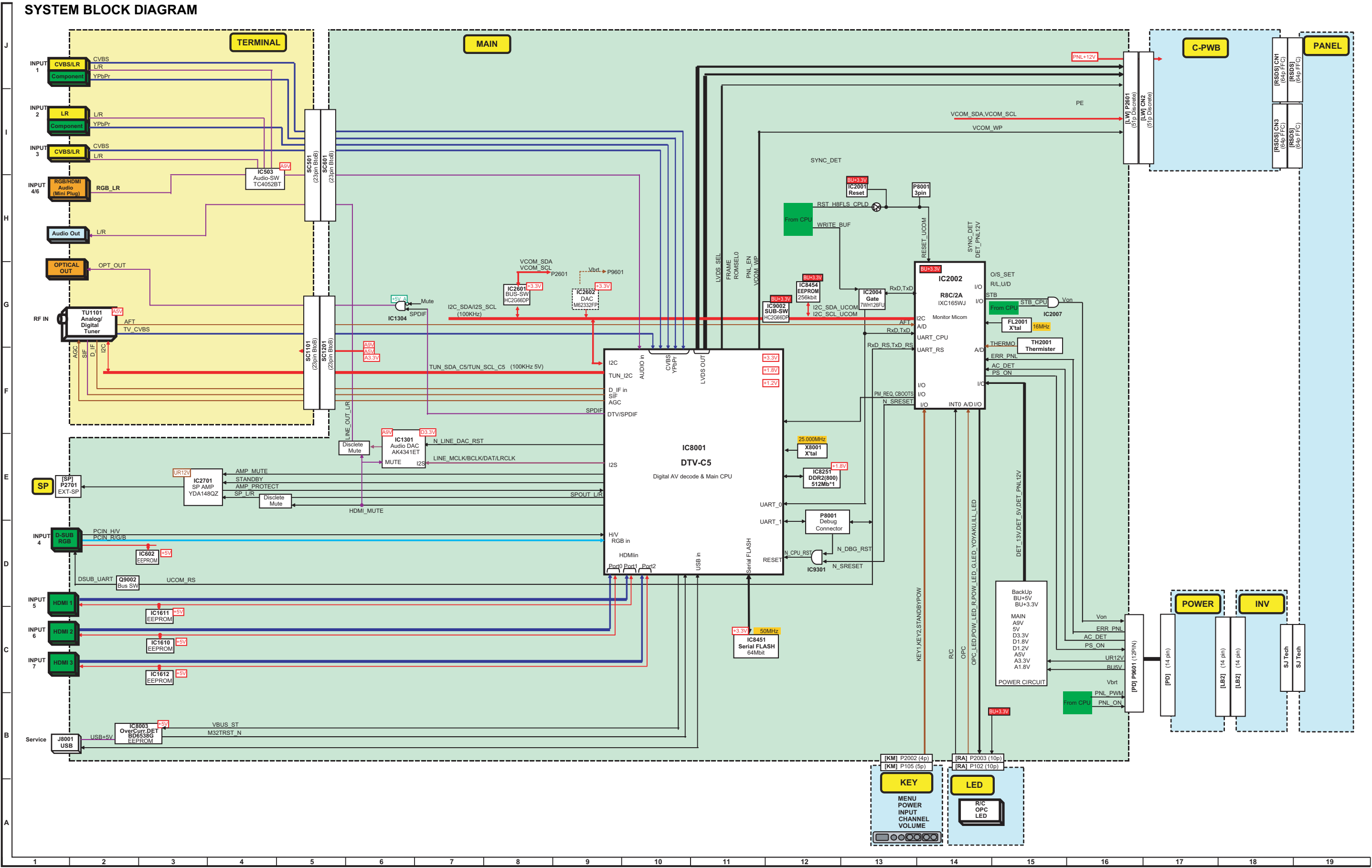
Error type	OPC LED operation (1 cycle)	Basically, log analysis of debug print statements or communication log analysis by a bus monitor is performed.
Initial communication reception error Flashes once	H: On L: Off	Initial communication from the main CPU is not received. If initial communication from the main microprocessor is not received within 15 seconds during start-up, it is judged to be an error. The unit is reset and restarted until the third error, and error standby is activated at the fourth error. Communication line error or main CPU start-up failure.
Time-out setting reception error Start-up confirmation reception error Flashes twice	H: On L: Off	Time-out setting and start-up mode change from the main CPU is not received. Main CPU start-up failure or front microprocessor reception failure.
Regular communication error Flashes 3 times	H: On L: Off	In the operation state, regular communication is performed every 1 second. If communication from the min CPU is not received five times in a raw, it is judged to be a regular communication error. The regular communication errors are counted. The unit is reset and restarted until the third error, and error standby is activated at the fourth error. The regular communication error counter is cleared to 0 when normal operation continues for 10 minutes. Main CPU start-up failure or front microprocessor reception failure.

CHAPTER 7. OVERALL WIRING/BLOCK DIAGRAM
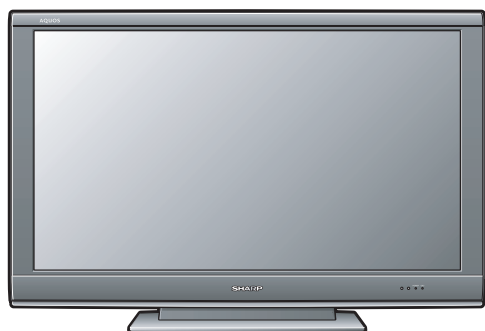
[1] OVERALL WIRING DIAGRAM

OVERALL WIRING DIAGRAM

FFC · FFC

LCD Controller (AUO)

[LW] 1 51

Inv. Unit (AUO)

[LB2] 1 14

[LB2] 1 14

[PD] 1 14

TERMINAL UNIT DUNTKF465FM02

Optical Output

PC Audio IN

Tuner

VLR

MAIN UNIT DUNTKF463FM02

HDMI

HDMI

C5

USB

【SP】 1 4

【RA】 1 10

【PD】 1 12

【LW】 1 51

【KM】 1 4

[KM] 1 5

POWER Unit 40" : RDENCA393WJQZ

KEY Unit E266

[RA] 1 10

R/C_LED Unit F096

Full-HD Panel (1920 × 1080) (AUO) 40" R1LK400D3LF31Z

Rch: **RSP-ZA392WJZZ**

Lch: **RSP-ZA391WJZZ**

SYSTEM BLOCK DIAGRAM

SHARP PARTS GUIDE

LCD COLOR TELEVISION
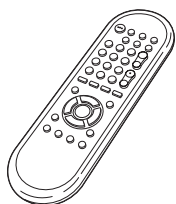
MODEL **LC-40D68UT**

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

LC-40D68UT
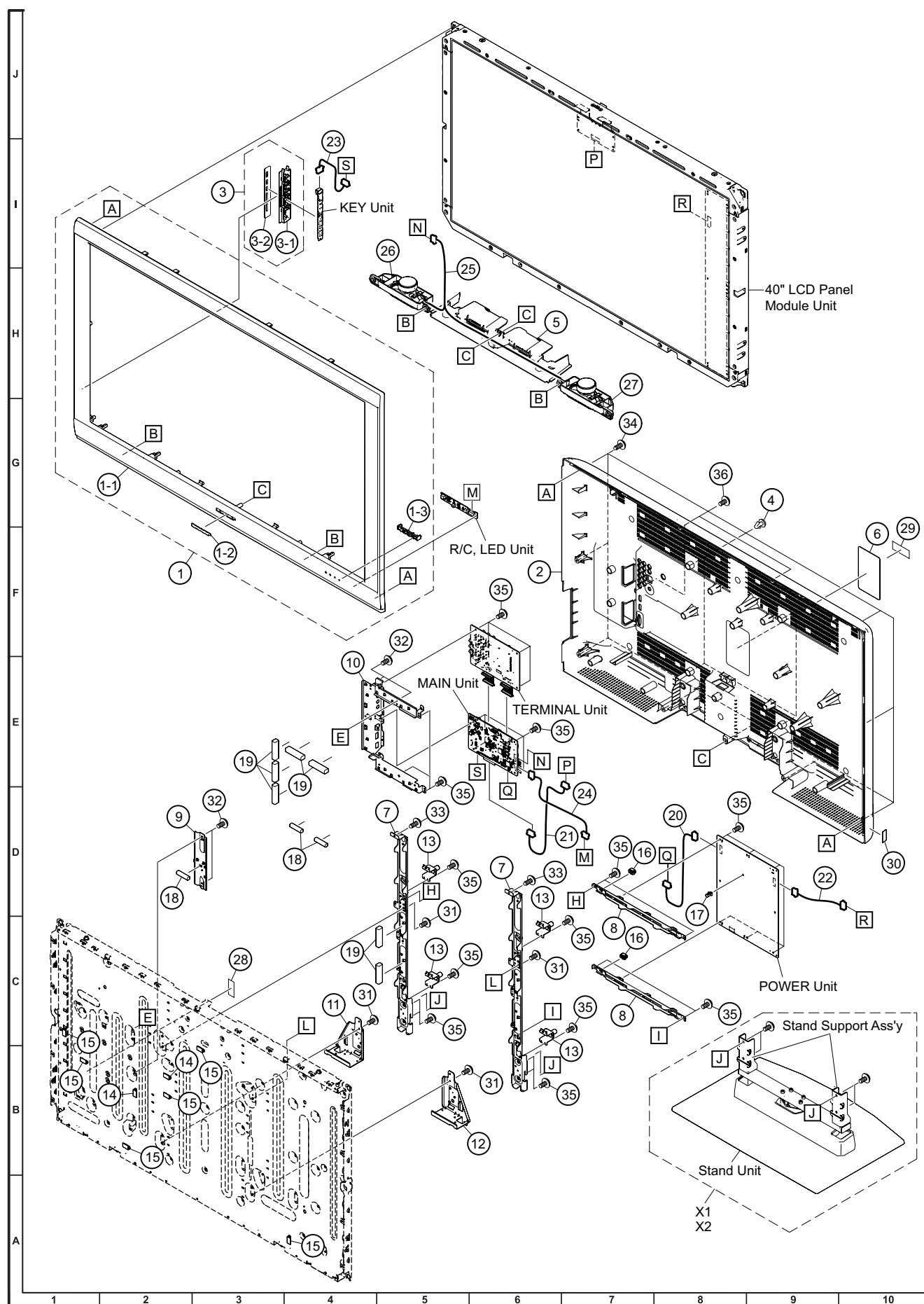
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[1] PRINTED WIRING BOARD ASSEMBLIES					
N	DUNTKF463FM02	BN	N	X	MAIN Unit
N	DUNTKF465FM02	AZ	N	X	TERMINAL Unit
N	DUNTKE266FM02	AH		X	KEY Unit
N	DUNTKF096FM01	AN		X	R/C, LED Unit
N	RDENCA393WJQZ	BD	N	X	POWER Unit
N	9JS−5540T04C04		N	J	LCD CONTROL Unit
N	9JS−1940T04001		N	J	INVERTER Unit
[2] LCD PANEL MODULE					
N	R1LK400D3LF31Z	DD	N	X	40" LCD Panel Module Unit

[3] CABINET PARTS

KEY Unit

40" LCD Panel
Module Unit

R/C, LED Unit

MAIN Unit

TERMINAL Unit

POWER Unit

Stand Support Ass'y

Stand Unit

X1
X2

LC-40D68UT
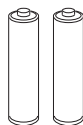
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[3] CABINET PARTS					
1	CCABAC508WJ31	AZ	N	X	Front Cabinet Ass'y
1-1	Not available	–	N	–	Front Cabinet
1-2	HBDGBA061WJSA	AH		J	SHARP Badge
1-3	Not available	–	N	–	LED Cover
2	GCABBB678WJ3A	BA	N	X	Rear Cabinet
3	CBTN-A863WJ31	AF	N	X	KEY Button Cover Ass'y
3-1	JBTN-A863WJ3A	AF	N	X	KEY Button Cover
3-2	HiNDPD653WJSA	AC	N	X	KEY Button Label
4	GCOVAC576WJKZ	AC		J	VESA Hole Cover, x4
5	GCOVAD656WJ3A	AG	N	X	Bottom Cover
6	HiNDPD658WJSA	AB	N	X	Model Label
7	LANGKC597WJZZ	AG	N	X	Center Angle, x2
8	LANGKC598WJZZ	AC	N	X	POWER PWB Angle, x2
9	LANGKC599WJZZ	AC	N	X	MAIN PWB Angle-W
10	LANGKC600WJZZ	AE	N	X	MAIN PWB Angle-L
11	LANGKC603WJZZ	AE	N	X	Panel Angle-L
12	LANGKC604WJZZ	AE	N	X	Panel Angle-R
13	LANGKC624WJM1	AE	N	X	VESA Angle, x4
14	LHLDWA133WJKZ	AC		J	Wire Holder, x2
15	LHLDWA175WJUZ	AC		J	Wire Holder, x6
16	LHLDWA289WJKZ	AC		J	Wire Holder, x2
17	LHLDZB650WJKZ	AA	N	X	PWB Spacer
18	PMLT-A610WJZZ	AA	N	X	Gasket, x3
19	PMLT-A635WJZZ	AB	N	X	Gasket, x7
20	QCNW-K760WJQZ	AG	N	X	Connecting Cord (PD)
21	QCNW-K761WJQZ	AU	N	X	Connecting Cord (LW)
22	QCNW-K762WJPZ	AG	N	X	Connecting Cord (LB2)
23	QCNW-K763WJQZ	AD	N	X	Connecting Cord (KM)
24	QCNW-K764WJQZ	AH	N	X	Connecting Cord (RA)
25	QCNW-K765WJPZ	AH	N	X	Connecting Cord (SP)
26	RSP-ZA391WJZZ	AP		J	Speaker-L
27	RSP-ZA392WJZZ	AP		J	Speaker-R
28	TLABK0023TAZZ	AA		J	Bar Code Label
29	TLABNB037WJZZ	AB	N	X	Serial No. Label (Back)
30	TLABNC391WJZZ	–	N	–	Serial No. Label (Side)
31	XBBS740P06000	AA		J	Screw (for BL Chassis), x4
32	XBPS730P06WS0	AA		J	Screw (for BL Chassis), x4
33	XEBS740P10000	AB		J	Screw (for Front Cabinet), x2
34	XEBS940P16000	AB		J	Screw (for Front Cabinet/Rear Cabinet), x9
35	XHPS830P06WS0	AA		J	Screw (for Angle), x29
36	XHPS830P10WS0	AB		J	Screw (for Rear Cabinet), x3

[4] SUPPLIED ACCESSORIES
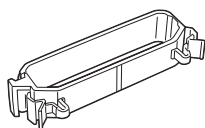
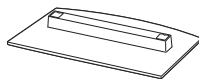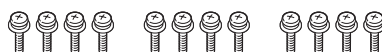X6 Remote control unit   X11 "AA" size battery   X5 AC cord

X2 Stand unit   X1 Stand support ass'y

X4 Cable clamp

X3 Screw ass'y
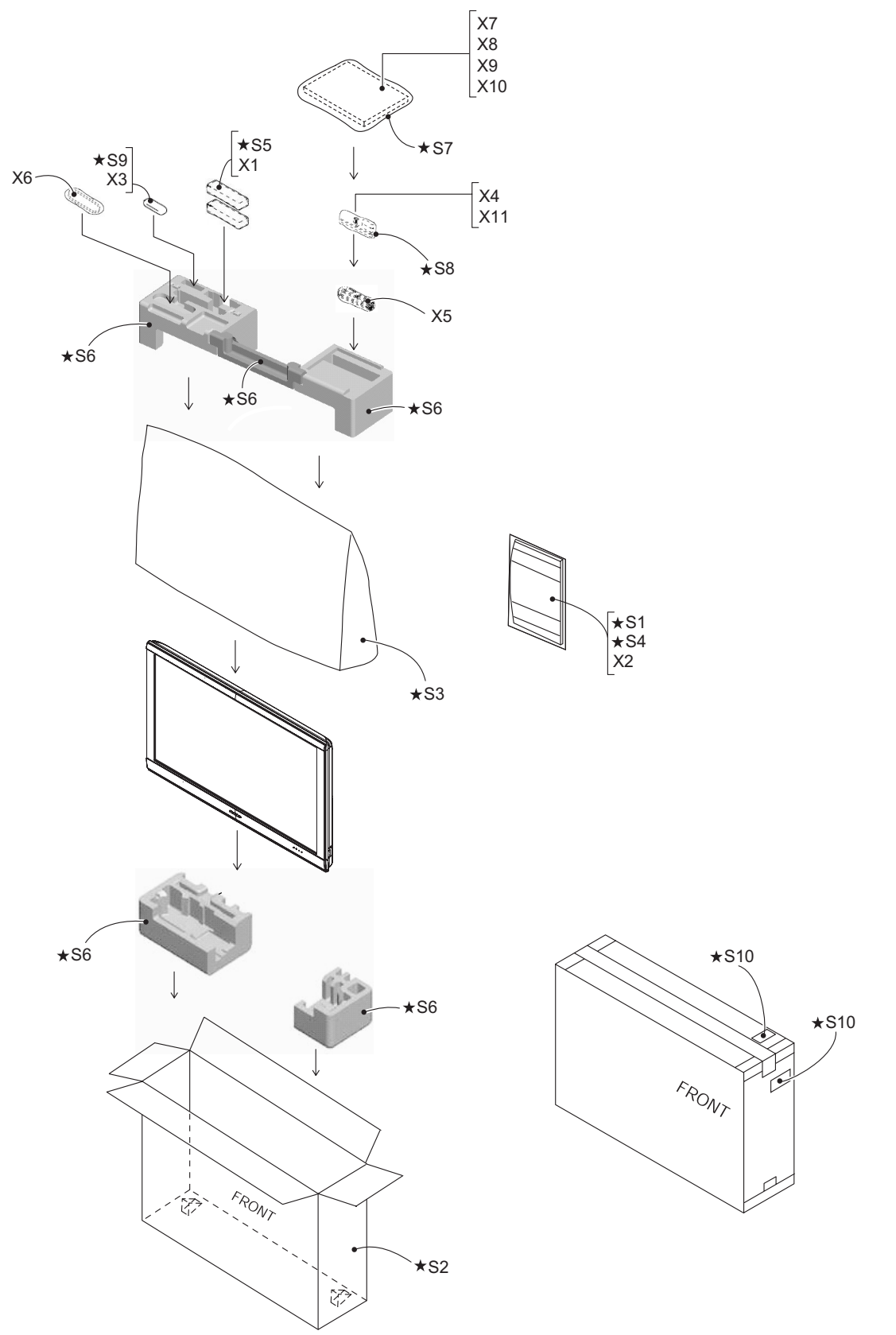
X7 Enquete Card   X8 Extendwaranty

X9 Operation manual   X10 Connection guide

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[4] SUPPLIED ACCESSORIES					
X1	C A N G F A 6 7 5 W J 0 1	A F	N	X	Stand Support Ass'y, x2
X2	C D A i − A 5 7 9 W J 0 1	A Z	N	X	Stand Unit
X3	C S A K H A 0 3 6 W J 0 1	A D	N	X	Screw Ass'y
X4	L H L D W A 2 9 8 W J K A	A D		J	Cable Clamp
X5	Q A C C D A 0 6 6 W J P Z	A K	N	X	AC Cord
X6	R R M C G A 6 6 7 W J S A	A H		X	Remote Control
X7	T C A D E A 2 4 3 W J Z Z	A B	N	X	Enquete Card
X8	T G A N − A 8 4 5 W J N 1	A B	N	X	Extendwaranty
X9	T i N S − E 6 4 0 W J Z Z	A C	N	X	Operation Manual (English)
X9	T i N S − E 6 4 1 W J Z Z	A C	N	X	Operation Manual (French)
X9	T i N S − E 6 4 2 W J Z Z	A C	N	X	Operation Manual (Spanish)
X10	T M A N − A 0 3 6 W J Z Z	A B	N	X	Connection Guide
X11	N o t a v a i l a b l e	−		−	Battery

[5] PACKING PARTS (NOT REPLACEMENT ITEM)

X7
X8
X9
X10

★S5
X1

★S9
X3

X6

★S7

X4
X11

★S8

X5

★S6

★S6

★S6

★S3

★S1
★S4
X2

★S6

★S6

★S6

FRONT

★S2

★S10

★S10

FRONT

★ Not Replacement item

6

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART DELIVERY	DESCRIPTION
[5] PACKING PARTS (NOT REPLACEMENT ITEM)					
S1	SPAKAA520WJZZ	–	N	–	Cover Sheet
S2	SPAKCF434WJZZ	–	N	–	Packing Case
S3	SPAKPB219WJZZ	–	N	–	Sack
S4	SPAKPB422WJZZ	–	N	–	Wrapping Paper
S5	SPAKPB423WJZZ	–	N	–	Wrapping Paper
S6	SPAKXC881WJZZ	–	N	–	Packing Foam
S7	SSAKA0101GJZZ	–	N	–	Polyethylene Bag
S8	SSAKAA032WJZZ	–		–	Polyethylene Bag
S9	SSAKHA036WJZZ	–	N	–	Polyethylene Bag
S10	TLABKA009WJZZ	–	N	–	Case No. Label
[6] SERVICE JIGS (USE FOR SERVICING)					
N	QCNW−G401WJQZ	AP		J	L=1000mm 4-5pins, Main to Key (KM)
N	QCNW−H649WJPZ	AP		J	L=1000mm 4pins, Main to Speaker (SP)
N	QCNW−H762WJQZ	AV		J	L=1000mm 10pins, Main to R/C LED (RA)
N	QCNW−K865WJQZ		N	J	L=1000mm 51pins, Main to T-CON (LW)
N	QCNW−K866WJQZ		N	J	L=1000mm 12-14pins, Main to Power (PD)
N	QCNW−K867WJQZ		N	J	L=1000mm 14pins, Power to Inverter (LB2)

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LC-40D68UT

SHARP