

HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

AZ2-F Chassis
Segment: P-2

ORIGINAL MANUAL ISSUE DATE: 2/2011

Version	Date	Subject
1.0	2/2/2011	No revisions or updates are applicable at this time.
2.0	6/24/2011	Added VCOM Adjustments to Sect. 7 - Service Adjustments. Replaced and/or added pages 51-56. Updated TOC.

LCD Digital Color TV
SONY®

SERVICE MANUAL



KDL-46CX520

AZ2-F Chassis
Segment: P-2

LCD Digital Color TV

SONY®

MODEL LIST

<i>MODEL</i>	<i>COMMANDER</i>	<i>DESTINATION</i>
KDL-32CX520	<i>RM-YD071</i>	<i>LATIN AMERICA</i>

<i>MODEL</i>	<i>COMMANDER</i>	<i>DESTINATION</i>
KDL-40CX520	<i>RM-YD071</i>	<i>LATIN AMERICA</i>

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SECTION 1 - SAFETY AND FEATURES

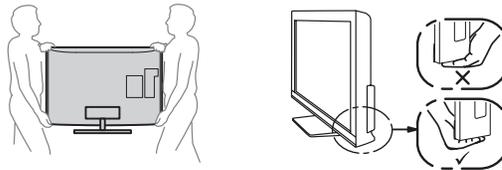
WARNINGS AND CAUTIONS

CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

CARRYING THE TV

- Disconnect all cables when carrying the TV.
- Carry the TV with the adequate number of people; larger size TVs require two or more people.
- Correct hand placement while carrying the TV is very important for safety and to avoid damage.



WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the AC power line.

SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and  mark on the exploded views are critical for safe operation.

Replace all components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. It is essential that all critical parts be replaced only with the part number specified in this manual to prevent electric shock, fire, or other hazard.

Circuit adjustments that are critical for safe operation are identified in this manual.

Follow these procedures whenever critical components are replaced or improper operation is suspected.

NOTE: Do not modify the original design without obtaining written permission from the manufacturer or you will void the original parts and labor guarantee.

SECTION 1 - SAFETY AND FEATURES

CAUTION

- ⊘ **Do Not** use paper towels, any type of abrasive pad, rags, rubber or vinyl materials to clean the screen. Using these materials could easily scratch the screen which may result in permanent damage.
- ⊘ **Do Not** use any cleaning product containing alkaline/acid cleaner, scouring powder, or volatile solvent, such as alcohol, ammonia, benzene, thinner or insecticide. Using any of these harsh cleaners may result in permanent damage to the screen.
- ⊘ **Do Not** spray water or detergent directly onto the TV screen . If liquid drips into the bottom of the screen it may cause a failure.

CLEANING THE LCD PANEL

CAUTION: When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

Clean the cabinet of the TV with a dry soft cloth.

Wipe the LCD screen gently with a soft cloth.

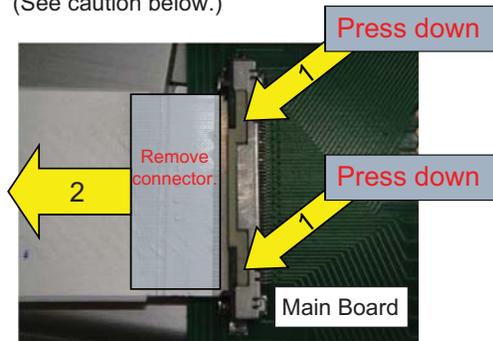
- ☑ Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.
- ☑ If using a chemically pretreated cloth, please follow the instruction provided on the package.
- ☑ Never use strong solvents such as a thinner, alcohol or benzine for cleaning.
- ☑ Periodic vacuuming of the ventilation openings is recommended to ensure to proper ventilation.

SECTION 1 - SAFETY AND FEATURES

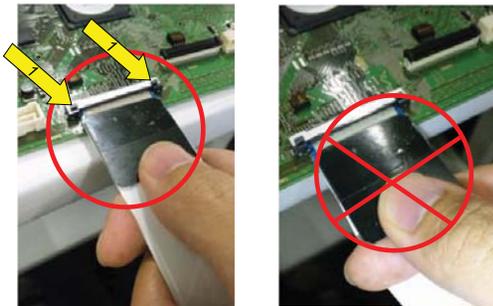
HANDLING THE LVDS FFC CONNECTOR

DISCONNECTING THE LVDS FFC CONNECTOR

1. Gently press down on the release tabs of the connector slot.
2. Holding onto the entire LVDS FFC Connector, pull out the connector while continuing to hold down the release tabs of the connector slot.
(See caution below.)

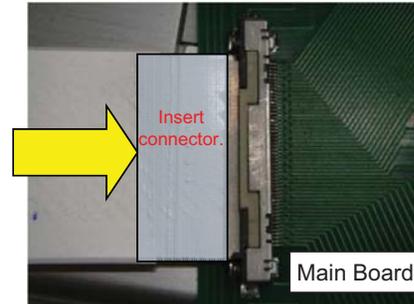


Use caution when you connecting or removing the LVDS FFC Connector.
DO NOT remove the connector by the reinforcement tab only.

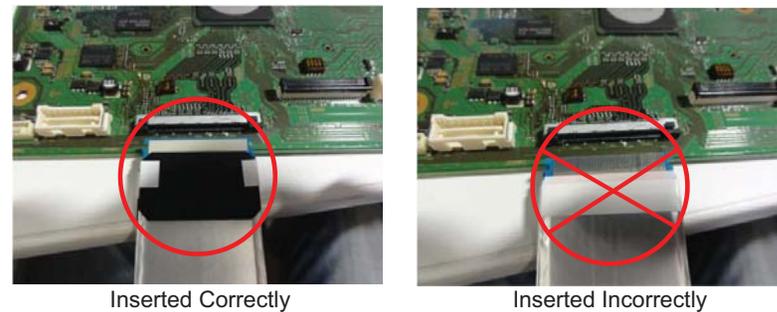


CONNECTING THE LVDS FFC CONNECTOR

1. Holding onto the entire LVDS FFC Connector, insert the LVDS FFC Connector into the connector slot.



CAUTION: The LVDS FFC Connector can be inserted into the Main Board upside down. If it is inserted upside down, the pins on the LVDS FFC Connector will short-circuit and damage the board.



SECTION 1 - SAFETY AND FEATURES

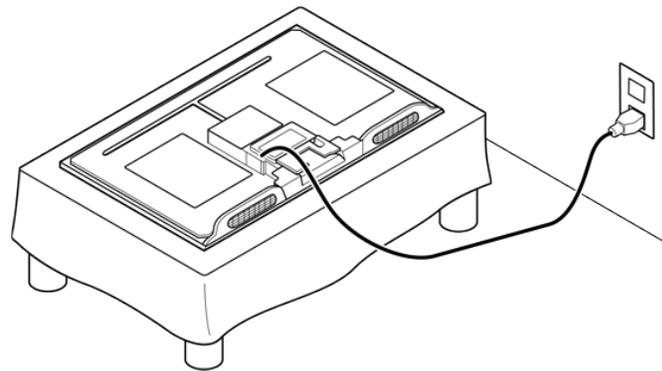
SAFETY-RELATED WARNINGS

USE CAUTION WHEN HANDLING THE LCD PANEL

When repairing the LCD panel, be sure you are grounded by using a wrist band.

When installing the LCD panel on a wall, the LCD panel must be secured using the 4 mounting holes on the rear cover.

1. Do not press on the panel or frame edge to avoid the risk of electric shock.
2. Do not scratch or press on the panel with any sharp objects.
3. Do not leave the module in high temperatures or in areas of high humidity for an extended period of time.
4. Do not expose the LCD panel to direct sunlight.
5. Avoid contact with water. It may cause a short circuit within the module.
6. Disconnect the AC power when replacing the backlight or inverter circuit.
(High voltage occurs at the inverter circuit at 650Vrms.)
7. Always clean the LCD panel with a soft cloth material.
8. Use care when handling the wires or connectors of the inverter circuit. Damaging the wires may cause a short.
9. Protect the panel from ESD to avoid damaging the electronic circuit (C-MOS).
10. During the repair, **DO NOT leave the Power On for more than 1 hour while the TV is face down on a cloth.**



SECTION 1 - SAFETY AND FEATURES

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

SECTION 1 - SAFETY AND FEATURES

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA(500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground.

If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60-to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

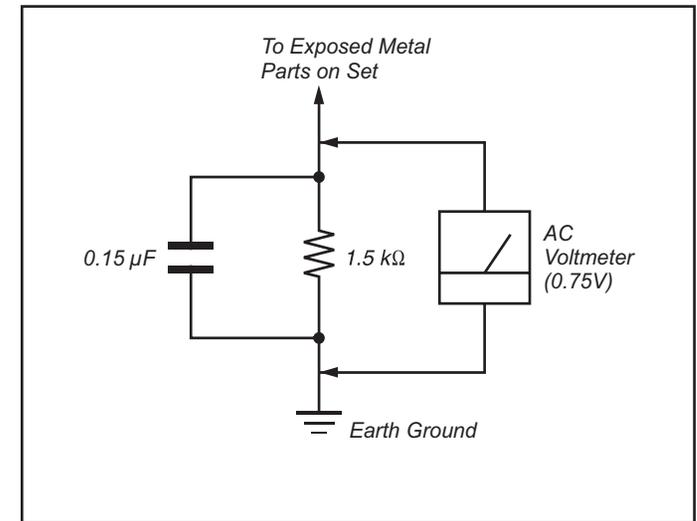


Figure A. Using an AC voltmeter to check AC leakage.

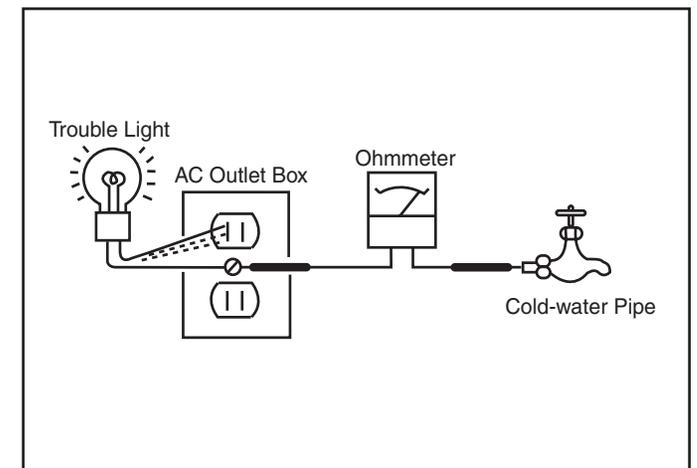


Figure B. Checking for earth ground.

SELF DIAGNOSIS FUNCTION

The TVs in this manual contain a self-diagnostic function. If an error occurs, the STANDBY LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY LED flash indicator is listed in the Operating Instruction manual for the user's reference.

If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

For complete information, refer to ["Section 4 - Troubleshooting" on page 21.](#)

SECTION 1 - SAFETY AND FEATURES

OVERVIEW

The AZ2-F chassis is one of several designs for the 2011 model line of Sony Bravia® LCD televisions. This manual covers the following models:

KDL32CX520

KDL40CX520

FEATURES

Several new features are introduced in this chassis model lineup along with some carryovers from the previous year.

FULL HD 1080P RESOLUTION

Experience amazing Full HD 1080p picture quality, the highest at-home resolution. Take full advantage of HD sources like a Blu-ray Disc™ Player or PlayStation®3 gaming console via the 16:9 wide screen panel (1920 x 1080).

INTERNET STREAMING & CONNECTIVITY

Internet Streaming:Internet favorites now streaming on your television. In addition to Qriocity™, watch hit movies with Netflix®, popular TV shows on Hulu Plus™ or user-generated video on YouTube™. You can even listen to personalized music on Pandora®. Enjoy the widest selection of internet content at your fingertips.1

Skype™ Ready:Connect to friends and family all over the globe with Internet voice and video calls using your TV. Make free video Skype-to-Skype calls and low-cost Skype-to-phone calls with a Sony® compact microphone/camera (required, sold separately).2

Integrated Wi-Fi®:Conveniently stream entertainment straight from the Internet and from your home network using the built-in Wi-Fi®.1

DLNA® Streaming:Access and share photos, videos and music on your TV by streaming them from compatible DLNA® device like your PC or Playstation®3 system.3

SECTION 1 - SAFETY AND FEATURES

FASTER START-UP

Quick Start & Viewing feature enables this Sony television to go from 'OFF' to 'ON' 2-3 times faster than previous Sony televisions.

BRAVIA® SYNC™ COMPATIBLE

Conveniently operate and control other BRAVIA® Sync™ compatible devices - including BRAVIA® HDTVs, Blu-ray Disc™ Players, surround sound systems, Handycam® camcorders and Cyber-shot® digital still cameras, all with one remote control.

X-REALITY™ ENGINE

Enjoy a vivid, lifelike picture experience. Sony's X-Reality engine brings out the best by analyzing each scene so you see sharpened images, and amazing contrast detail.

NAVIGATION MADE EASY

Enjoy an easy-to-use menu that allows you to navigate additional content or adjust the picture settings while watching your favorite program.

LIGHTSENSOR™ TECHNOLOGY

Enjoy customized picture brightness and save energy without lifting a finger. The built-in Light Sensor automatically adjusts the picture brightness based on the amount of light in the room.

PRESENCE SENSOR

Save energy when you're not around. The television's built-in motion sensor has the ability to scan the room and detect movement. If the sensor detects no movement it automatically turns off the picture leaving only sound. After more time and no movement, the TV turns itself off minimizing any unnecessary power draw.

USB PHOTOS, VIDEOS & MUSIC

Share your photos on the big screen or listen to your favorite music. Simply connect your digital camera, USB-enabled MP3 player, or USB storage device directly to your HDTV's USB input.

SECTION 1 - SAFETY AND FEATURES

SPECIFICATIONS

Sistema	
Sistema de TV	NTSC: Norma de TV americana ATSC (8VSB terrestre): 8VSB compatible con ATSC QAM en cable: ANSI/SCTE 07 2000 (No incluye la funcionalidad CableCARD)
Cobertura de canales	Terrestre analógico: 2 - 69 / Terrestre digital: 2 - 69 Cable analógico: 1 - 135 / Cable digital: 1 - 135
Sistema del panel	Panel LCD (pantalla de cristal líquido)
Salida de bocinas	10 W + 10 W
Tomas de entrada/salida	
CABLE/ANTENNA (Cable/Antena)	Terminal externo de 75 ohms para entrada de señal de radiofrecuencia
VIDEO IN 1/2 (Entrada de video 1/2)	VIDEO / AUDIO
COMPONENT IN	(Entrada de componente) YPBPR (video componente) / Formato de señal: 480i, 480p, 720p, 1 080i, 1 080p AUDIO
HDMI IN 1/2/3/4 (Entrada HDMI 1/2/3/4)	HDMI: Video: 480i, 480p, 720p, 720/24p/30p, 1 080i, 1 080p, 1 080/24p/30p Audio: PCM lineal de dos canales 32: 44.1 y 48 kHz, 16, 20 y 24 bits, Dolby Digital Entrada de audio analógico (minitoma) (solo HDMI IN 4) ARC (solo HDMI IN 1)
AUDIO OUT (Salida de audio)/ Auriculares	500 mV rms (típico) Minitoma estéreo / Impedancia: ≥ 16 ohms
DIGITAL AUDIO OUT (OPTICAL)	Señal de audio óptica digital PCM/Dolby Digital
PC IN (Entrada de PC)	Subminiatura D de 15 contactos, RGB analógico
PC/HDMI 4 AUDIO IN (Entrada de audio de PC/HDMI)	Minitoma estéreo
LAN	Conector 10BASE-T/100BASE-TX (La velocidad de la conexión podría variar en función del entorno de red. No se garantizan la tasa de comunicación ni la calidad de comunicación 10BASE-T/100BASE-TX para este TV.)
USB/DLNA	Consulte el i-Manual para el formato compatible.

PRECAUCIÓN

Para evitar descargas eléctricas y exposición a contactos eléctricos, no utilice este enchufe polarizado de corriente alterna con un cable de extensión, receptáculo u otro tomacorriente a menos que los contactos eléctricos puedan ser introducidos completamente.

- Opere el TV únicamente con ca de 110 V a 240 V (EE.UU./ Canadá 120 V)

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Ferguson Patent Properties, LLC: N° de patente de EE. UU. 5.717.422 N° de patente de EE. UU. 6.816.141

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La clase 32 ofrece un tamaño de imagen visible de 31,5 pulgadas (80,1/80,0 cm) (medidas diagonalmente).

- Las ilustraciones del control remoto utilizadas en este manual pertenecen al RM-YD071 a menos que se indique lo contrario.
- Las ilustraciones utilizadas en este manual pueden ser diferentes según su modelo de TV.
- Conserve este manual para referencia futura.

SECTION 1 - SAFETY AND FEATURES

Nombre del modelo KDL-	40CX520	32CX520
Alimentación y otras especificaciones		
Requisitos de alimentación	110-240 V ca, 50/60 Hz	
Consumo energético en uso	170W	101W
Consumo energético en espera	Menos de 0,15W con 120 V ca y menos de 0,25 W con 240 V ca	
Tamaño de pantalla (cm) (medido diagonalmente)(pulgadas)	101,6 40	80,1 31,5 (32 clase)
Resolución del monitor	1.920 puntos (horizontal) × 1.080 líneas (vertical)	
Bocina Gama completa (mm)	45 × 130 (2)	30 × 100 (2)
Dimensiones con soporte (mm)	991 × 636 × 250	799 × 532 × 230
Dimensiones sin soporte (mm)	991 × 606 × 71	799 × 502 × 70
patrón de orificios de montaje mural (mm)	300 × 300	200 × 200
tamaño de tornillos de montaje mural (mm)	M6 (8-12 mm)	
Peso con soporte (kg)	16,3	11,4
Peso sin soporte (kg)	12,9	8,7
Accesorios suministrados	Consulte "Verificación de los accesorios"	
Control remoto Modelo	RM-YD071	
Requisitos de alimentación	3 V cc (2 Pilas tipo AAA)	
Accesorios opcionales (no suministrados)	Cables de conexión Kit de correa de soporte Soporte de montaje mural: SU-WL500 Gafas 3D: TDG-BR250/TDG-BR200/TDG-BR100/TDG-BR50 (para KDL-32EX723) Adaptador USB para LAN inalámbrica	
Temperatura de funcionamiento	0 °C - 40 °C	

- La disponibilidad de los accesorios opcionales dependerá de las existencias.
- El diseño y las especificaciones están sujetos a cambios sin previo aviso.

Verificación de los accesorios

Control remoto (1)*1

Pilas de tamaño AAA (2)

Soporte de sobremesa (1)*2

Tornillos de fijación para el soporte de sobremesa (M5 × 16) (3)

Tornillos de montaje para el soporte de sobremesa (M6 × 14) (3)

Llave hexagonal (1)

Manual de instrucciones (este manual) y otros documentos

*1 Consulte la tabla de Especificaciones al final de este manual.

*2 Se requiere ensamblar la base de soporte de sobremesa. Para ensamblar la base de soporte de sobremesa consulte el folleto suministrado de la base de soporte de sobremesa.

SECTION 2 - SOFTWARE REQUIREMENTS

OVERVIEW

There are 2 reasons for updating the software on the TVs.

- Software updates for customers
These updates are for enhancements or improvements that have been made to the software after the TV was released.
- Software update for servicers
These updates are specifically for servicers to use during a service call.

SOFTWARE UPDATES FOR CUSTOMERS

The subject of software updates is a very important. The televisions of today have advanced to the point where they are not simply a television anymore. They are evolving into devices that are designed to integrate with numerous other devices found in the home. Some examples are: Portable audio and video devices, still cameras, home computer networks and accessing the internet to name a few.

Communications with these varying devices requires that the television be compatible with varying communications protocols. Although standards are detailed for each of these protocols, the real world dictates that occasional errors may occur that could prevent devices from operating or communicating properly.

Keeping the software in the television up-to-date is a procedure that is normally handled by the owner of the television. Most customers who own computers and other digital devices are familiar with and are accustomed to updating the software in their products. If a customer contacts the Sony Customer Support Center and it is deemed to be correctable with a software update, the issue is handled at the customer level.

SECTION 2 - SOFTWARE REQUIREMENTS

SOFTWARE UPDATES FOR SERVICERS

The models in this manual utilize a “generic” type main board. In the past, many different main boards needed to be stocked due to differences in software requirements. The software loaded on the board was specific to the model and its features along with the type of LCD panel installed during production.

Replacement main boards are now stocked with basic software. Once the replacement board is installed in the unit, the most current software needs to be installed using a USB thumb drive containing the necessary software downloaded.

This new method of supplying main boards significantly reduces the complexity of replacing LCD panels and main boards. Information about the LCD panel is stored on the TCON circuits. This information is automatically loaded onto the main board when the TV is powered up. With the correct software version the main board and/or the TCON or LCD panel can be replaced more efficiently.

In addition to software installation, service adjustment information may need to be modified or verified to complete the service of the TV. Service adjustment information is covered in [“Section 7 - Service Adjustments” on page 48.](#)

SOFTWARE UPDATE RESPONSIBILITY

Software updates are designed to be performed by the customer. Warranty repairs in which the issue can be resolved by a software update **are not reimbursable**. Most issues involving software updates are handled by the customer service center and should not be directed to an authorized service center. It is the responsibility of the servicer to prevent service calls for issues that involve software updates. Exceptions to this are certain cases whereby the customer is unable or unwilling to perform the task. In this situation, the servicer will be notified and receive the proper authorization for reimbursement.

It is the servicer’s responsibility, however, to ***make certain that any TV requiring a legitimate service is running the latest software version and to install it if necessary.***

CHECKING THE SOFTWARE VERSION

The easiest way to check the version of software that is currently on the TV is to access the Contact Sony screen by using the customer menu.

SECTION 2 - SOFTWARE REQUIREMENTS

EXAMPLES OF SOFTWARE CORRECTABLE SYMPTOMS

Most symptoms that are correctable by software updates involve communications issues with other devices or minor glitches in the operation of a specific function. Below is a list of some of the symptoms that may be corrected with a software update:

- Fluctuations in picture brightness
- Intermittent picture freezing or noise
- Problems with certain inputs (especially HDMI)
- Intermittent or distorted audio
- Erratic remote control operation
- Unit turns on and off by itself
- Loss of color
- Internet connectivity
- Certain features not working correctly (photo or video file viewing)

SECTION 3 - CHASSIS OVERVIEW

OVERVIEW

The primary circuits contained in the AZ2F chassis for the consists of a main circuit board (designated as the BATV board), power supply board (G2AS for the 32" and the G2BS for the 40"), the HMS3 board, HLR2 board, Timing Control (TCON), and the LCD panel assembly.

NOTE: For connector part number information, refer to ["Connectors" on page 45](#). For Wire Dressing information, refer to ["Wire Dressing Diagrams" on page 47](#).

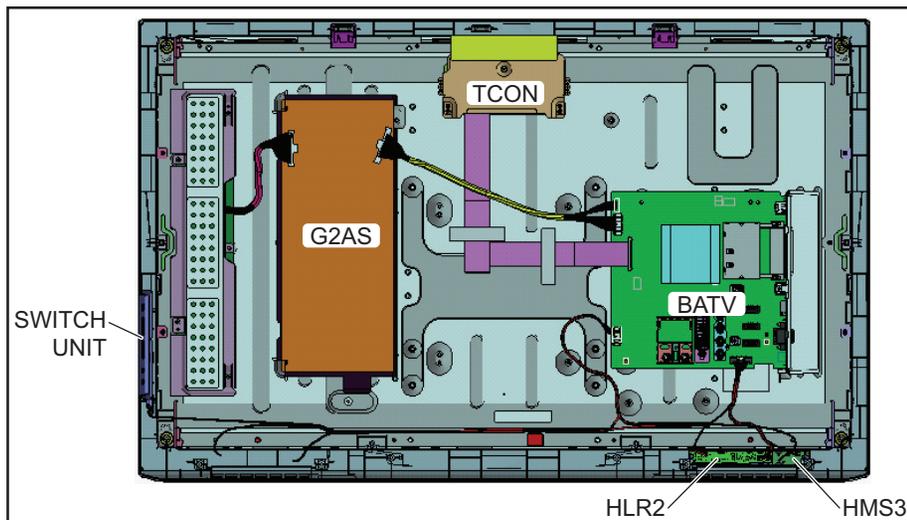


FIGURE 3-1. KDL-32CX520 ONLY

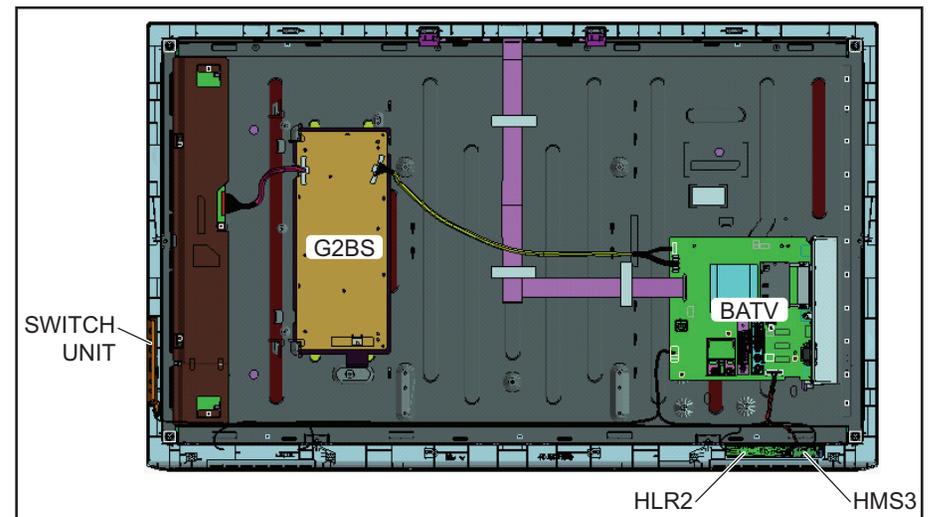


FIGURE 3-2. KDL-40CX520 ONLY

SECTION 3 - CHASSIS OVERVIEW

OVERALL CIRCUIT DESCRIPTIONS

[“Figure 3-4. Block Diagram” on page 17](#) provides an overview of the AZ2-F chassis. Below is a description of the components and their functions.

MAIN BOARD

The circuits located on the BATV Board perform all Video and Audio processing functions. It also contains all the microprocessor control circuits.

SWITCH UNIT

This board contains the power, channel and volume up/down and menu buttons.

SENSOR BOARD

The HMS3 board contains the motion sensor.

POWER SUPPLY BOARD

The power supply boards are the G2AS for the 32” and the G2BS for the 40” models

Except for some regulator circuits on the main board, the power supply boards are the power supply system boards.

LED BOARD

The HLR2 board power, standby and timer LED’s are located on this board along with the IR remote receiver and light sensor.

LCD PANEL ASSEMBLY

The LCD Panel Assembly includes the LCD Panel, TCON Board, and LED Backlight system.

The LCD Panel contains the actual liquid crystals, color filters, and polarizers. The liquid crystals are manipulated by the applied voltage to pass a specific amount of light - from the backlight- depending on the level of voltage applied.

The TCON performs all the control, timing, charge, and discharge functions driving the operation of the LCD Panel.

A new LCD Panel assembly from parts will include the following items.

1. LCD Panel
2. LED Backlighting Components
3. TCON Board

SECTION 4 - TROUBLESHOOTING

OVERVIEW

This chapter provides information regarding the Self Diagnosis feature in our TVs.

UPDATING THE SOFTWARE

As mentioned in [“Section 2 - Software Requirements” on page 12](#) there are several issues that may be resolved by updating the software to the latest version. For a list of possible correctable issues see [“Examples of Software Correctable Symptoms” on page 14](#).

SECTION 4 - TROUBLESHOOTING

TRIAGE CHART

Use the Triage Chart to determine what may possibly be causing the error before going out to the customers location.

Before you make the service call...

1. Confirm the symptom from the customer.
2. Select that symptom from the chart.
3. Bring all the boards listed for that symptom.
4. Follow the troubleshooting charts in the technical guides to isolate the board.

5. Chart Color Code

RED DOT: Most likely defective part

BLUE TRIANGLE: Secondary possible defective part

BLACK TEXT: Part that may correct the symptom

Reference	Symptoms - Shutdown. Power LED blinking red diagnostics sequences					No Power	Video - missing or distorted			Remote	Audio	Skype (Accessory)
	2	3	5	6	7	No Green Power LED (Dead Set)	Stationary colored lines or dots	No video through one of the inputs	No video all Inputs	No Remote	No Audio	Skype doesn't connect
BATV BOARD	▲	●	▲	▲	●	▲	▲	●	●	▲	●	▲
G* BOARD	●	▲	▲	●		●					▲	
HLR2 BOARD			▲							●		
SPEAKER		▲									●	
SKYPE MODULE												●
LVDS CABLE			▲				▲		▲			
TCON			●									
LCD Panel				●	▲		●					
Problem	POWER	POWER AUDIO	PANEL (TCON)	PANEL (INT)	TEMP							

SECTION 4 - TROUBLESHOOTING

PROTECTION SHUTDOWN



Critical voltages and circuit operations are monitored by the CPU on the main board. If a fault is detected the Self-Diagnostic function in the TV will force the TV to shut down by the CPU. The monitored circuit in which the fault occurred will cause the CPU to flash the Stand-By LED in groups of repeating sequences. The number of blinks in these groups identifies which voltage or circuit caused the protection event.

Not all of the available protect codes are used in every model. For example, models that are LED backlit do not use the 4-blink balancer error as this circuit is found in models that are backlit with fluorescent lamps. The following list contains the protect circuits and diagnostics codes used in the models listed in this manual. [“Figure 4-3. Diagnostic Table” on page 23](#) provides guidance in locating the possible component causing the shutdown.

STANDBY LED FLASH COUNT

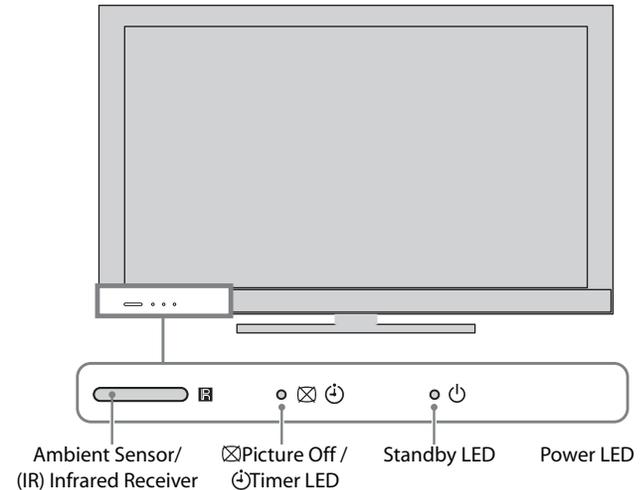


FIGURE 4-1. LED DISPLAY

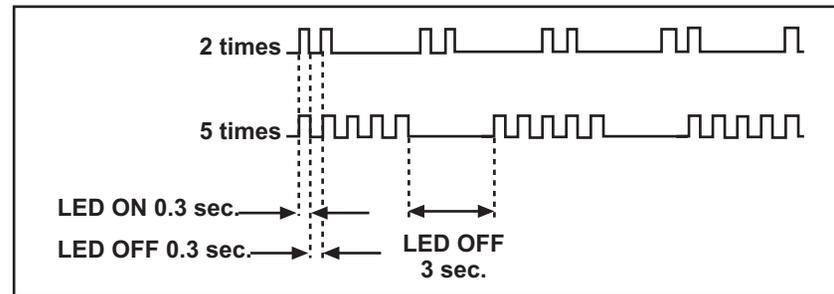


FIGURE 4-2. BLINK COUNT

SECTION 4 - TROUBLESHOOTING

2X Blink - Main Power Error

A loss of REG12V from the power supply triggers this protect event. This symptom is usually remedied by replacing the power supply board. If the error continues after the power supply board is replaced, suspect excessive loading which is causing the power supply to shut down. This is usually caused by a failure of the inverter circuits. Unplug the inverter and turn the TV back on. If a 6X error is displayed, the inverter (or LCD panel) must be replaced.

3X Blink- DC Regulator/Audio Error

The first thing to check when a 3X blink protection mode occurs is the physical condition of the speakers and speaker connections. The speakers should measure 8 ohms. Shorted speakers or connections can cause a 3X blink protection mode.

If the speakers and connections check okay, then the defective component is on the main board. Either an open F4200, defective DC Regulator, or defective Audio amplifier will cause a 3X blink protection mode which would require replacing the main board.

A defect on the Power Supply Board may also cause a 3X blink protection mode and shut-off. Check the AU12V level at CN6704/pin 14. If 0V is measure before shut-off the power supply board needs to be replaced.

5X Blink - TCON Error

A communications error with the timing control circuits (TCON) has occurred. If the TCON is available for replacement, replace the TCON. If the TCON is not available, the LCD panel must be replaced since the TCON circuit is part of the LCD panel assembly. In rare cases a loose or defective LVDS cable could also be the cause.

6X Blink - Backlight System Failure

If the inverter circuits fails to generate high voltage or one or more of the backlight lamps fails to light, the television will shut down and display this diagnostics error. Observing for the presence of backlighting is crucial in determining which component is likely at fault.

If the backlights turn on before the 6X shutdown occurs, it is safe to assume that the inverter circuits are functioning and one of the lamps failed to ignite. Replacing the LCD panel is necessary. If the backlights never turn on before the 6X shutdown, the inverter has failed. If the inverter is available for replacement, replace the inverter. If the inverter is not available, replace the LCD Panel.

7X Blink - Temperature Failure

A digital thermometer IC located on the main board provides a temperature reading of the chassis and LCD panel. If the temperature exceeds a pre-determined point the TV will shut down. If this problem occurs immediately at turn-on, the temperature sensing IC has failed and replacing the main board is required. If this occurs after the TV has been running for a while, check for ventilation issues that could cause the TV to run hotter than normal.

SECTION 4 - TROUBLESHOOTING

DIAGNOSTIC CODE DESCRIPTIONS

The Diagnostic Table provides an overview of the number of times the Standby LED blinks and the possible location.

Number of times Standby LED blinks	Diagnostic Item	Possible Causes	Possible Location
NA	RGB_SEN	RGB Sensor ACK Error	NA
2	MAIN_POWER	Main Power Over Voltage Protection	G2AS (Power) Board (KDL-32CX520 Only) G2BS (Power) Board (KDL-40CX520 Only)
3	AUD_PROT	Audio Error Detection	BATV Board
	DC_ALERT	DTT Error	
4	BALANCER	Panel Balancer Error	NA
5	TCON_ERR	TCON Error	TCON Control MT Board LVDS Connection
	HFR_ERR	HFR Error	
	P_ID_ERR	Panel ID NVM Error	
	PANEL_POWE	Panel Error	
6	BACKLITE	Backlight Error	LCD Panel G2AS (Power) Board (KDL-32CX520 Only) G2BS (Power) Board (KDL-40CX520 Only)
7	TEMP_ERR	Temperature Error	BATV Board

FIGURE 4-3. DIAGNOSTIC TABLE

SECTION 4 - TROUBLESHOOTING

VIEWING THE SELF CHECK DIAGNOSTIC HISTORY

It is possible to bring up past occurrences of a failure for confirmation on the Self Check diagnostic history screen. This feature is useful for failures which are intermittent or when the customer is not sure what is causing the television to shut down.

1. TV must be in standby mode. (Power off).
2. Press the following buttons on the Remote Commander within a second of each other:
3. **DISPLAY** → Channel **5** → Volume **-** → **POWER**.

* NOTE: This differs from accessing Service Adjustments Mode (Volume +)

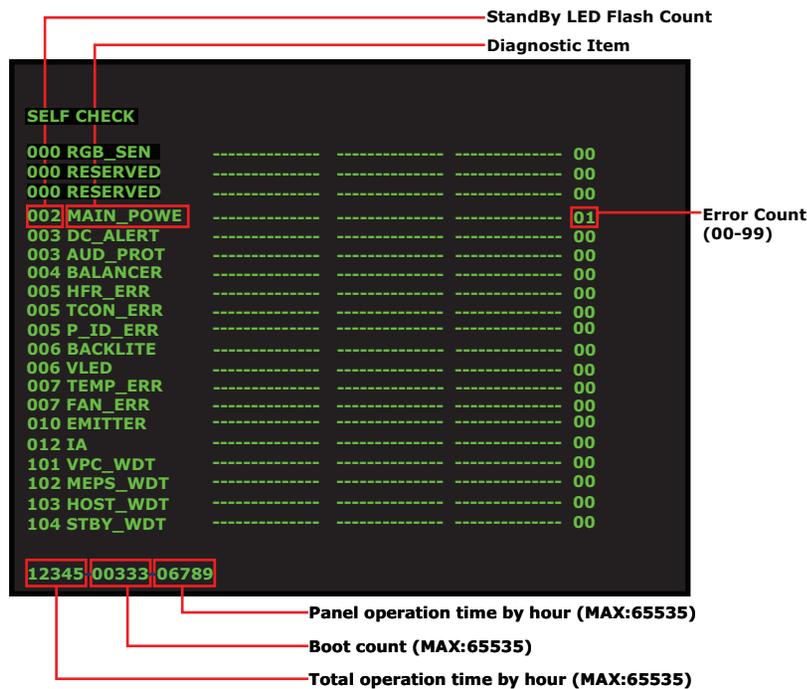


FIGURE 4-4. SAMPLE SELF CHECK DIAGNOSIS PAGE

CLEARING THE SELF CHECK DIAGNOSTIC LIST

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen after you have completed the repairs to be sure you have cleared the result display to "0".

1. To clear the Error history and Error count press **8** → **0**.

RESETTING THE LCD PANEL OPERATING HOURS

The 3 sets of numbers displayed on the lower left corner of the screen indicates the total accumulated operating hours of the television and the operating hours of the LCD panel. Total operating hours is on the left, boot count in the center and panel hours in the right group (The center numbers are not used.)

1. To clear the LCD Panel operating hours of the LCD Panel after replacing the panel, press **7** → **0**.

EXITING THE SELF CHECK DIAGNOSTIC SCREEN

1. To exit the Self Diagnostic screen, turn off the power to the TV by pressing the POWER button on the remote or the POWER button on the TV.

SECTION 5 - FLOW CHARTS AND DIAGRAMS

OVERVIEW

The following flow charts provide information to determine what repair parts to order based on the TV error.

DIAGNOSING THE ERROR

Use the Overall Flowchart to determine which flowchart to review to find a solution.

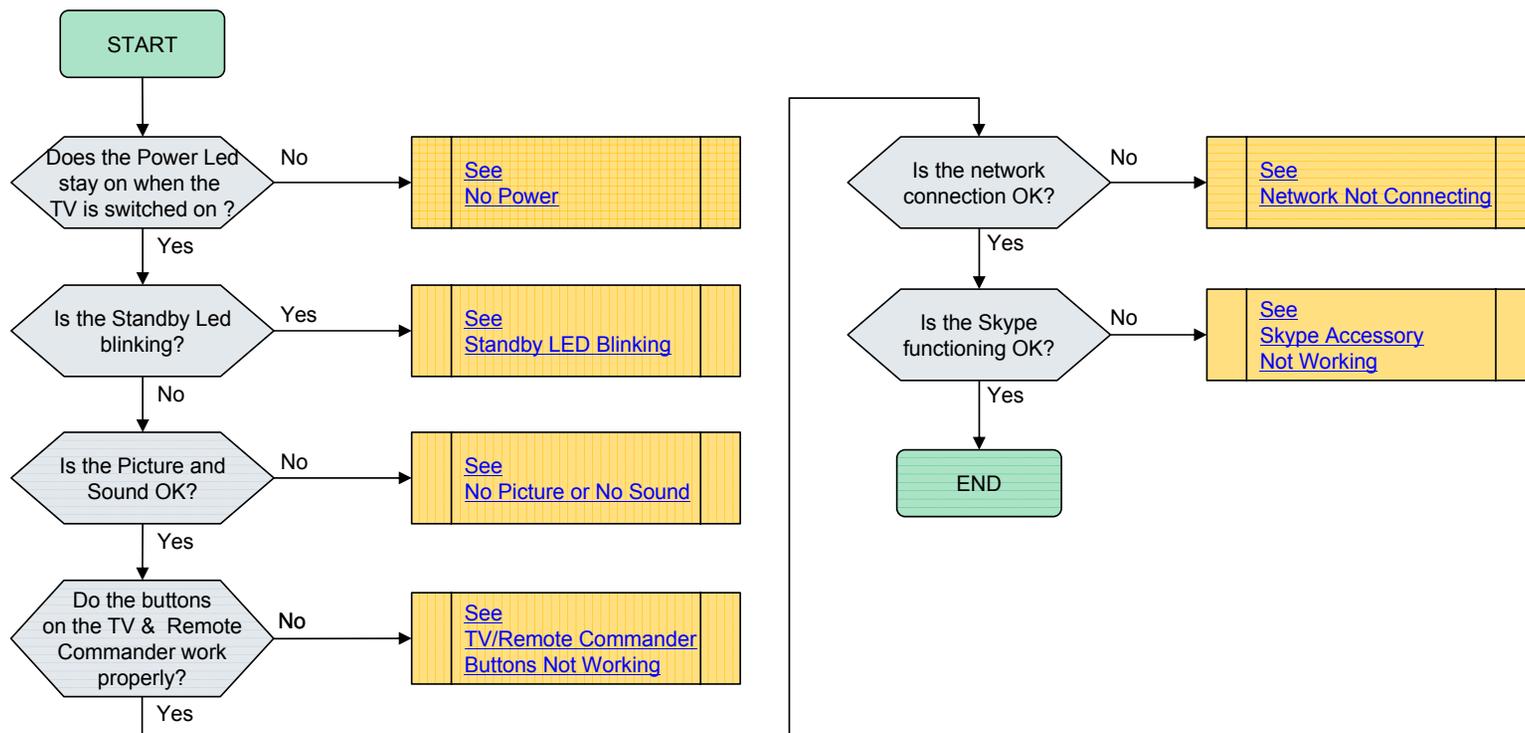


FIGURE 5-1. OVERALL FLOWCHART

SECTION 5 - FLOW CHARTS AND DIAGRAMS

NO POWER

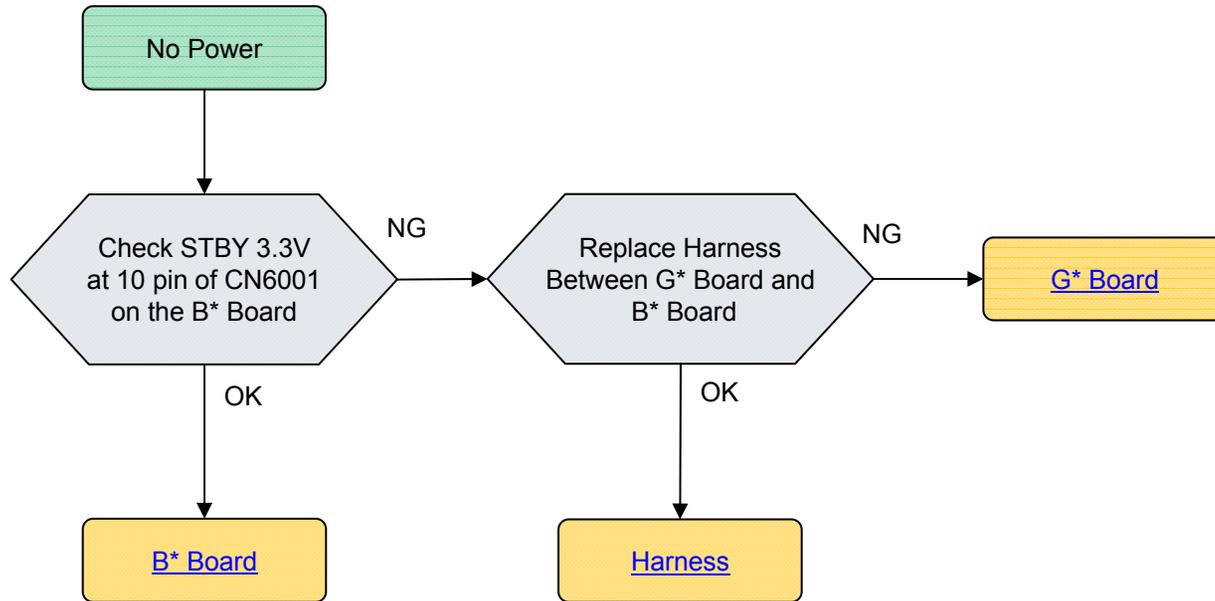


FIGURE 5-2. NO POWER

SECTION 5 - FLOW CHARTS AND DIAGRAMS

STANDBY LED BLINKING

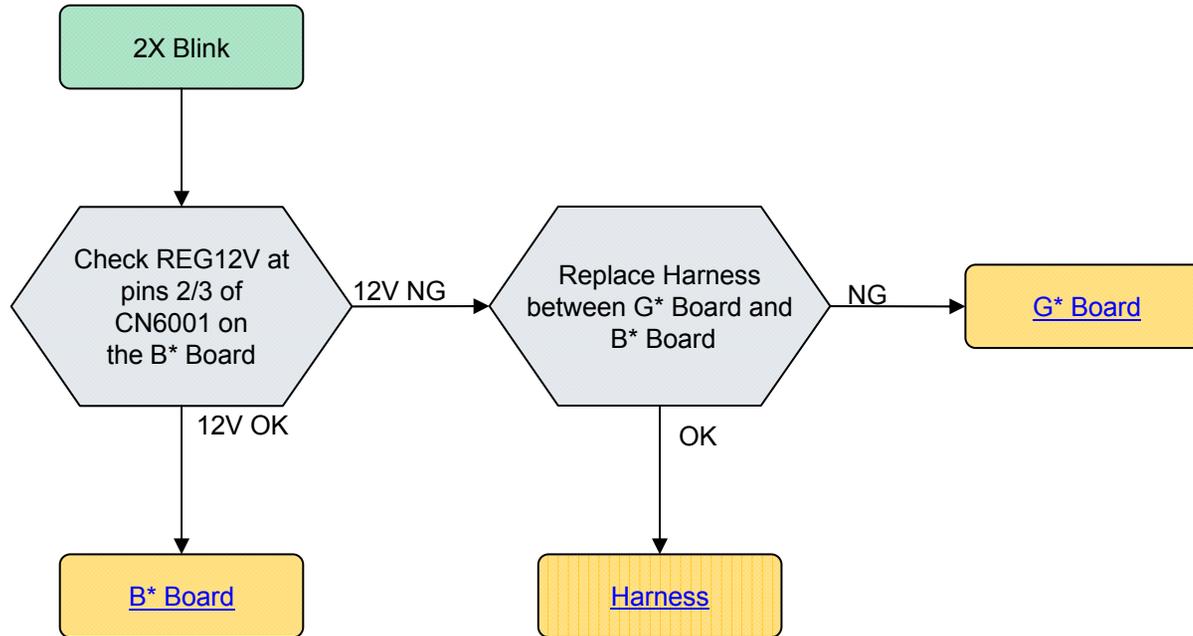


FIGURE 5-3. 2 BLINK ERROR

SECTION 5 - FLOW CHARTS AND DIAGRAMS

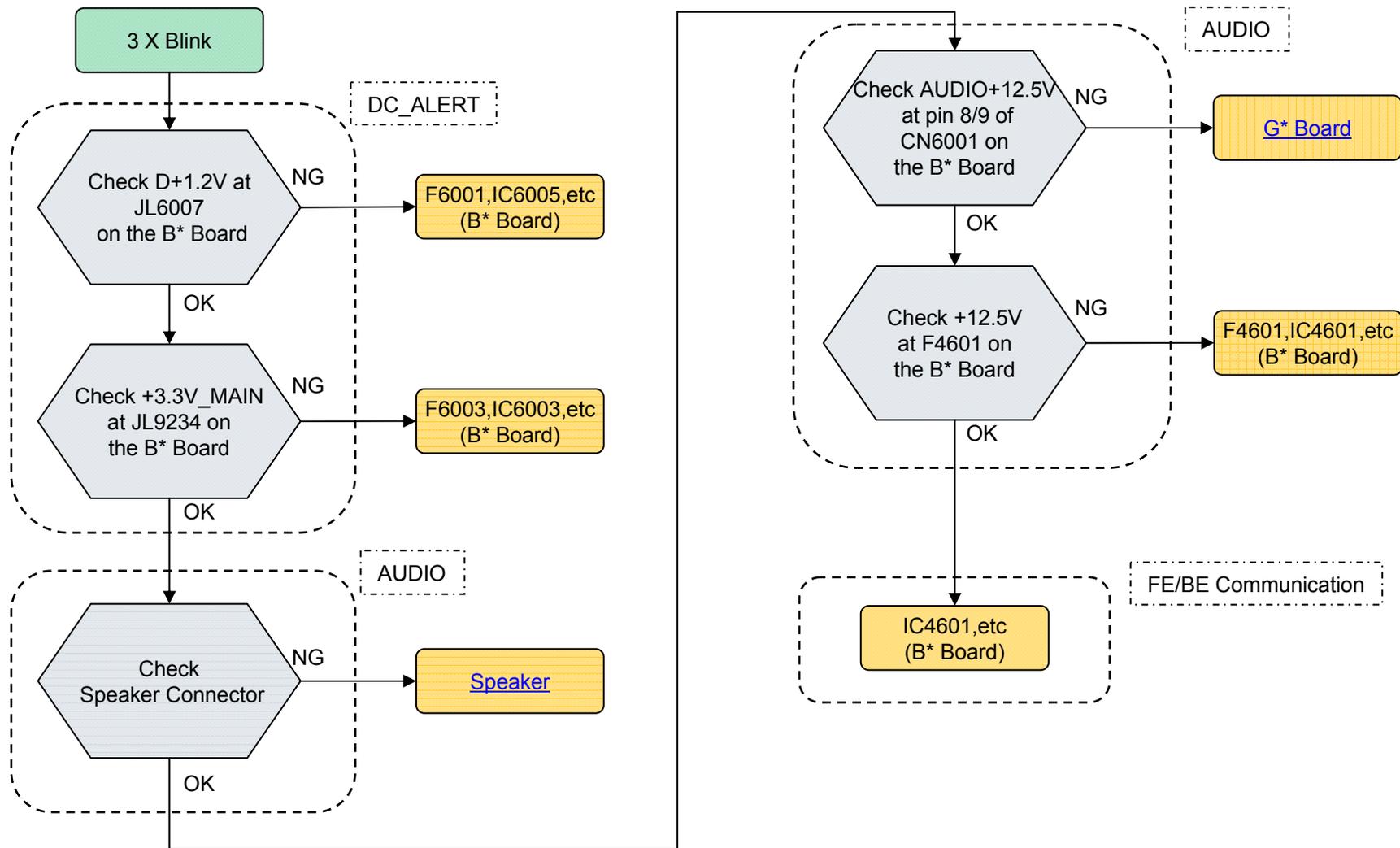


FIGURE 5-4. 3 BLINK ERROR

SECTION 5 - FLOW CHARTS AND DIAGRAMS

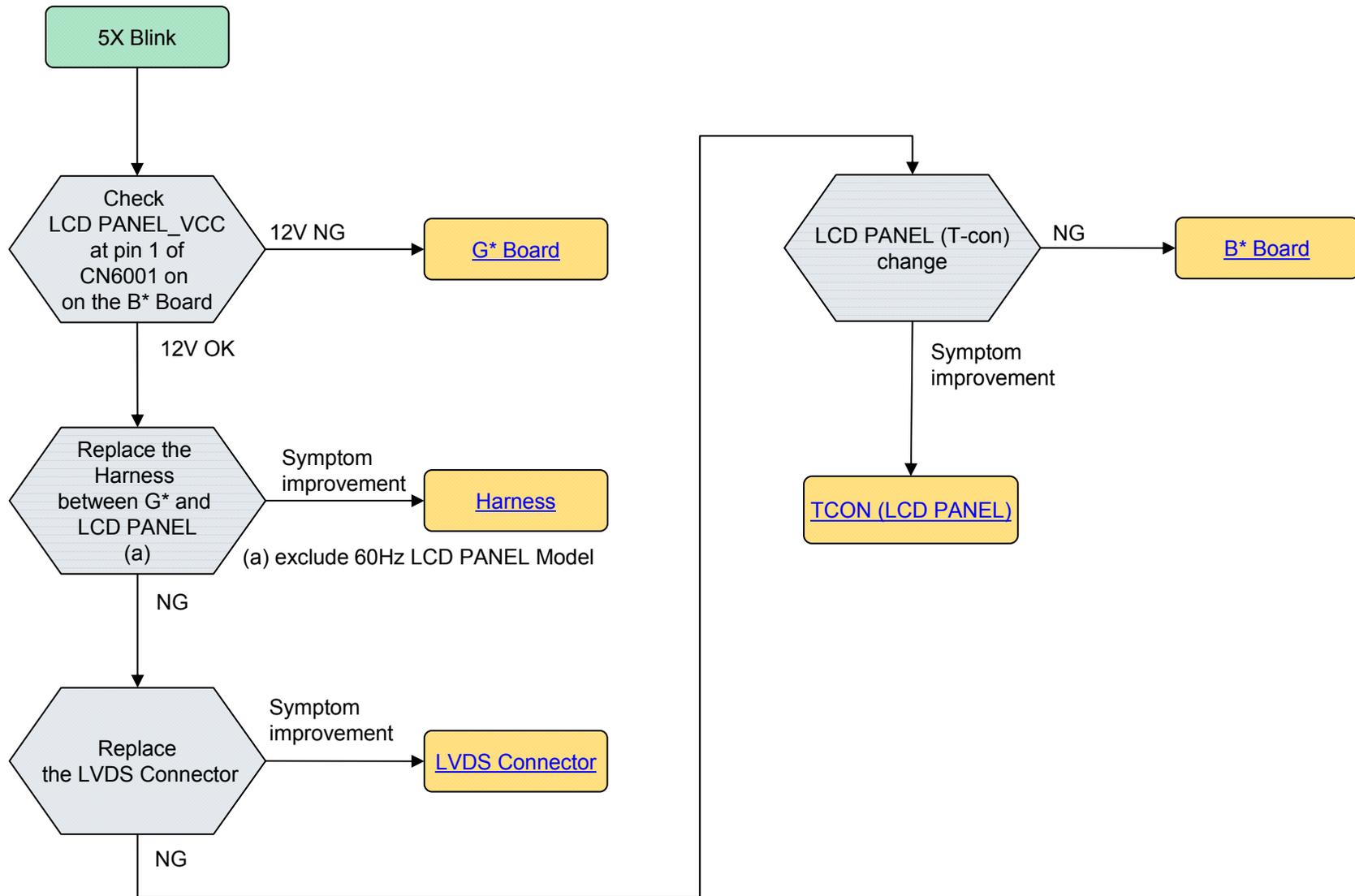


FIGURE 5-5. 5 BLINK ERROR

SECTION 5 - FLOW CHARTS AND DIAGRAMS

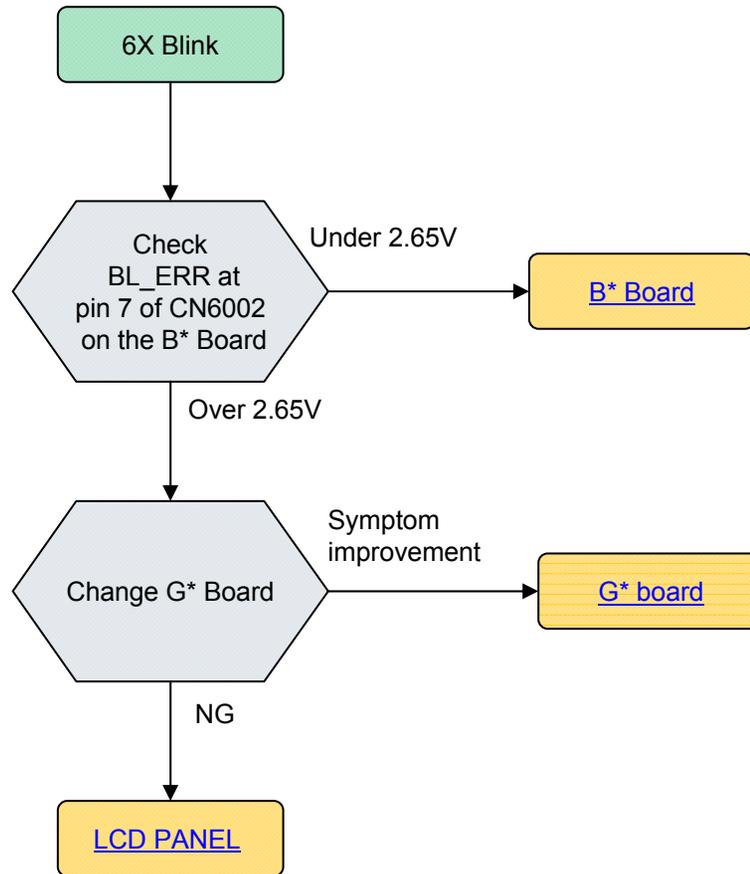


FIGURE 5-6. 6 BLINK ERROR

SECTION 5 - FLOW CHARTS AND DIAGRAMS

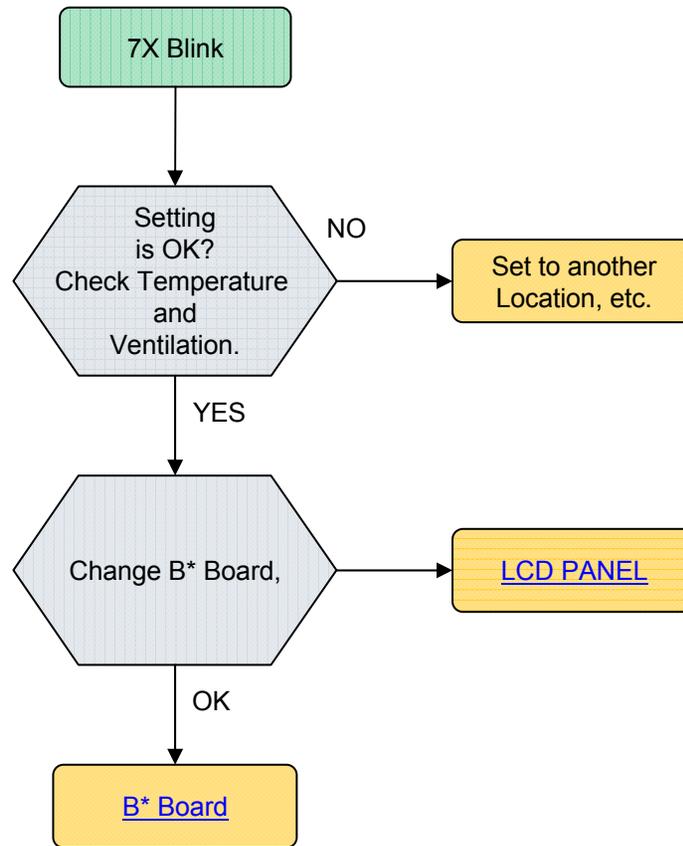


FIGURE 5-7. 7 BLINK ERROR
FIGURE 5-8.

SECTION 5 - FLOW CHARTS AND DIAGRAMS

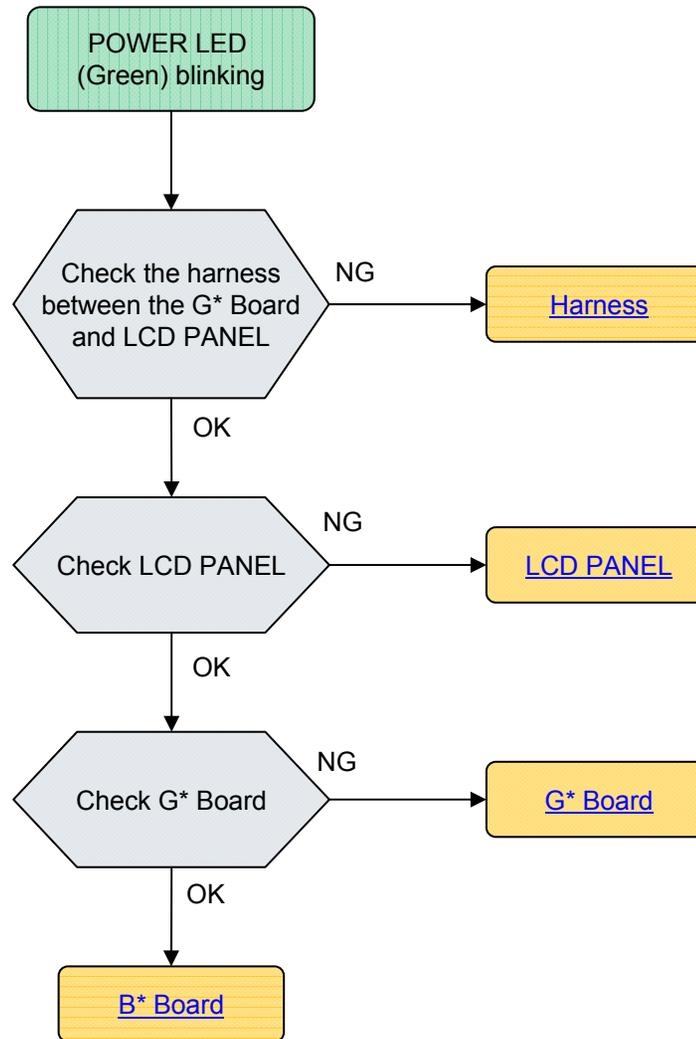


FIGURE 5-9. POWER LED BLINKING

SECTION 5 - FLOW CHARTS AND DIAGRAMS

NO PICTURE

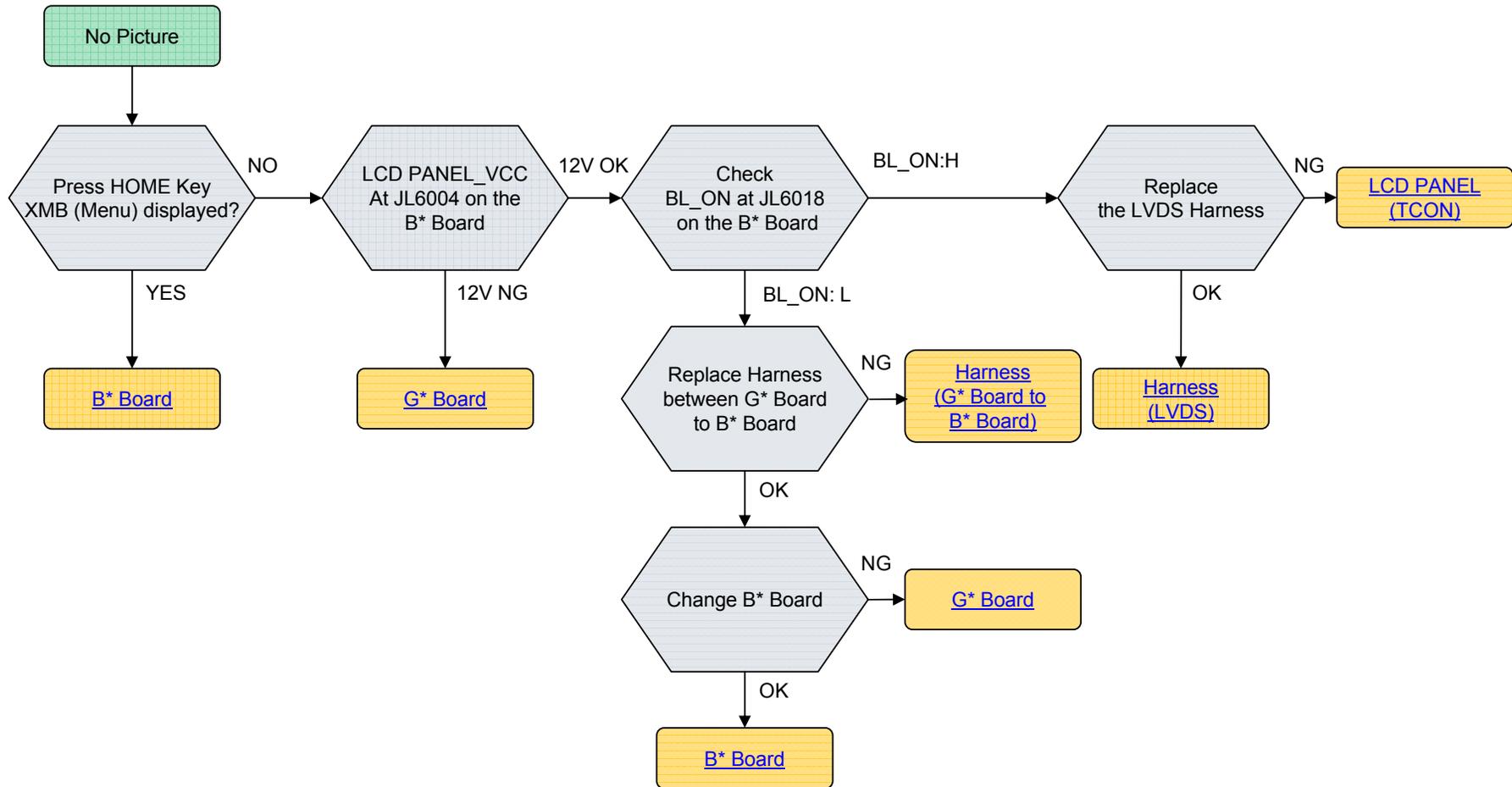


FIGURE 5-10. NO PICTURE ERROR

SECTION 5 - FLOW CHARTS AND DIAGRAMS

NO SOUND

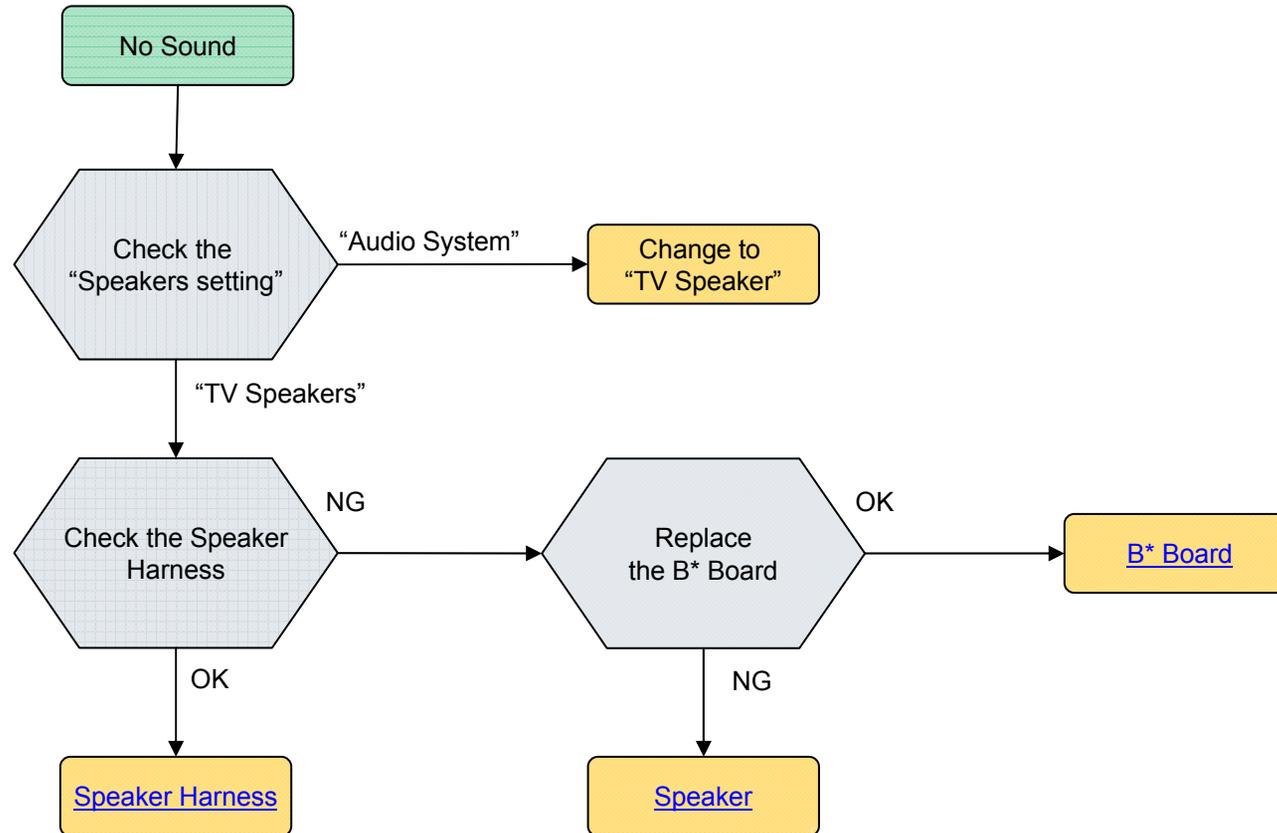


FIGURE 5-11. AUDIO ERROR

SECTION 5 - FLOW CHARTS AND DIAGRAMS

TV/REMOTE COMMANDER BUTTONS NOT WORKING

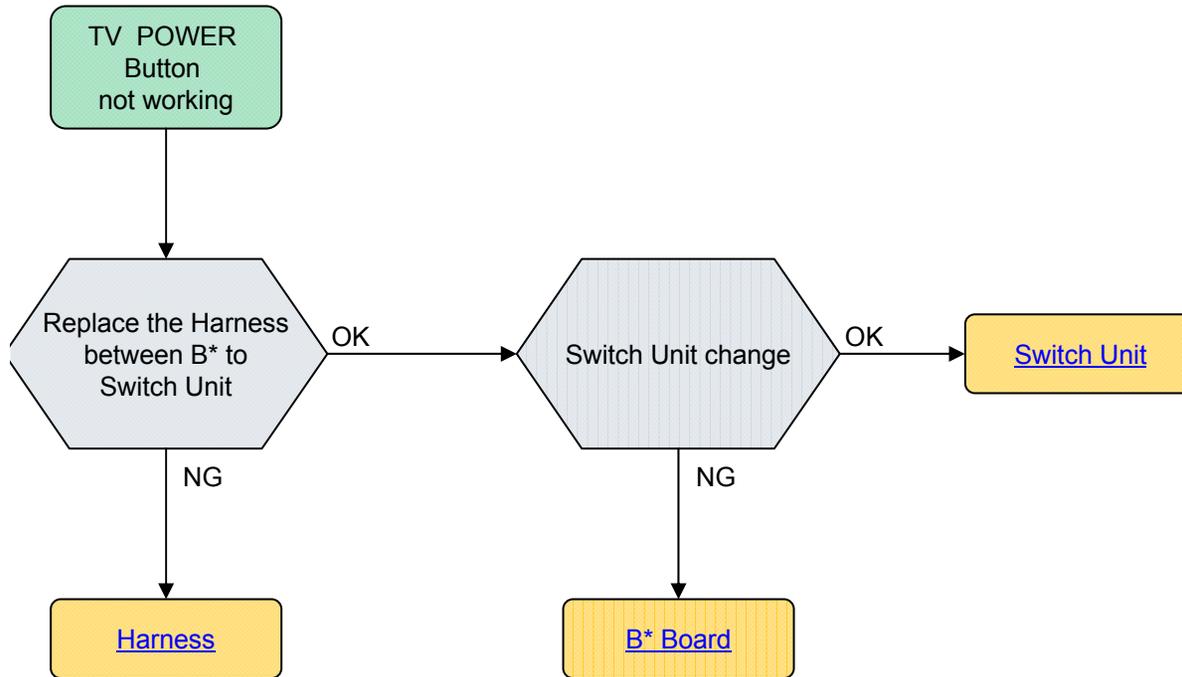


FIGURE 5-12. TV BUTTONS MALFUCTIONING

SECTION 5 - FLOW CHARTS AND DIAGRAMS

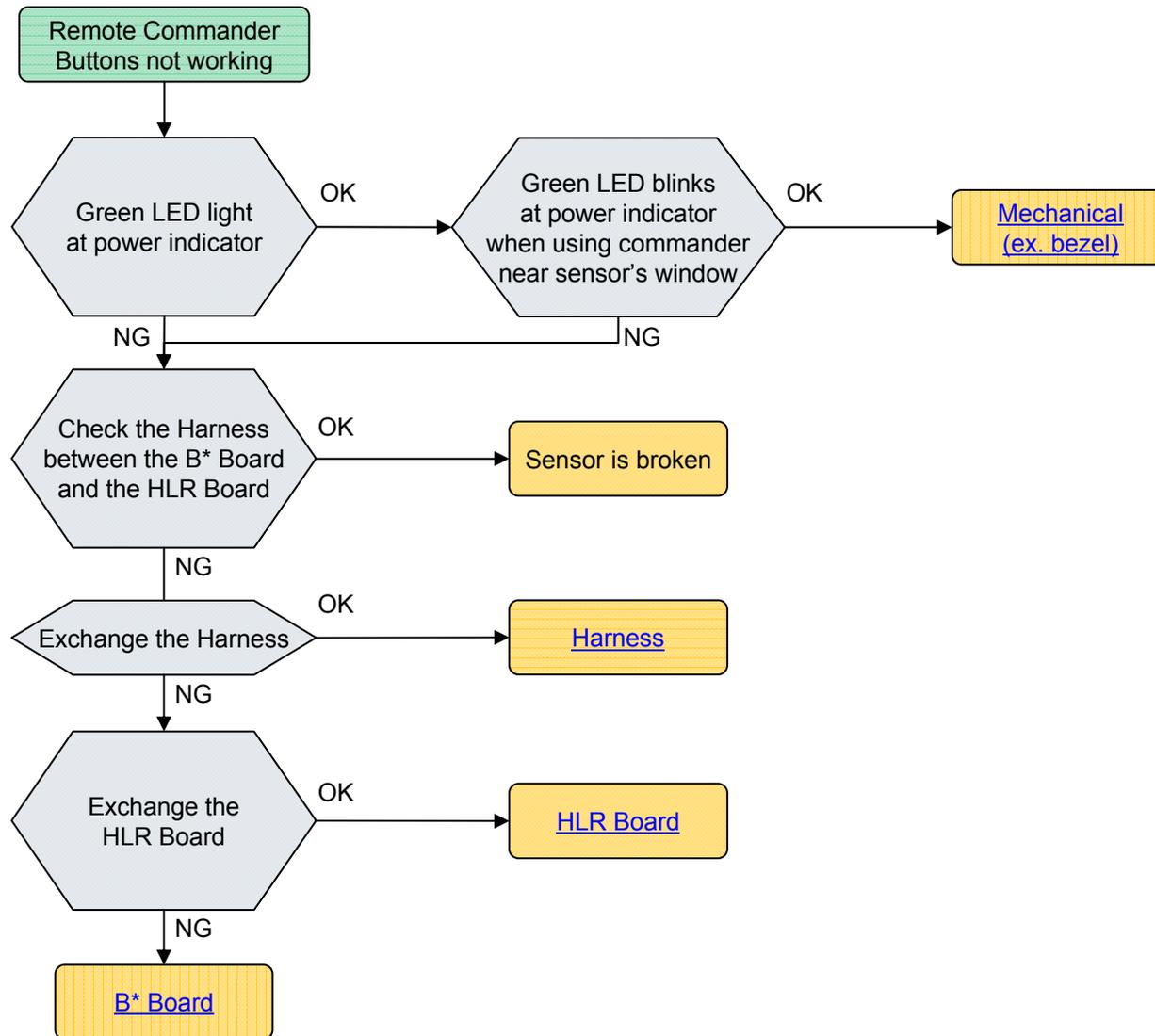


FIGURE 5-13. IR MALFUNCTIONING

SECTION 5 - FLOW CHARTS AND DIAGRAMS

NETWORK NOT CONNECTING

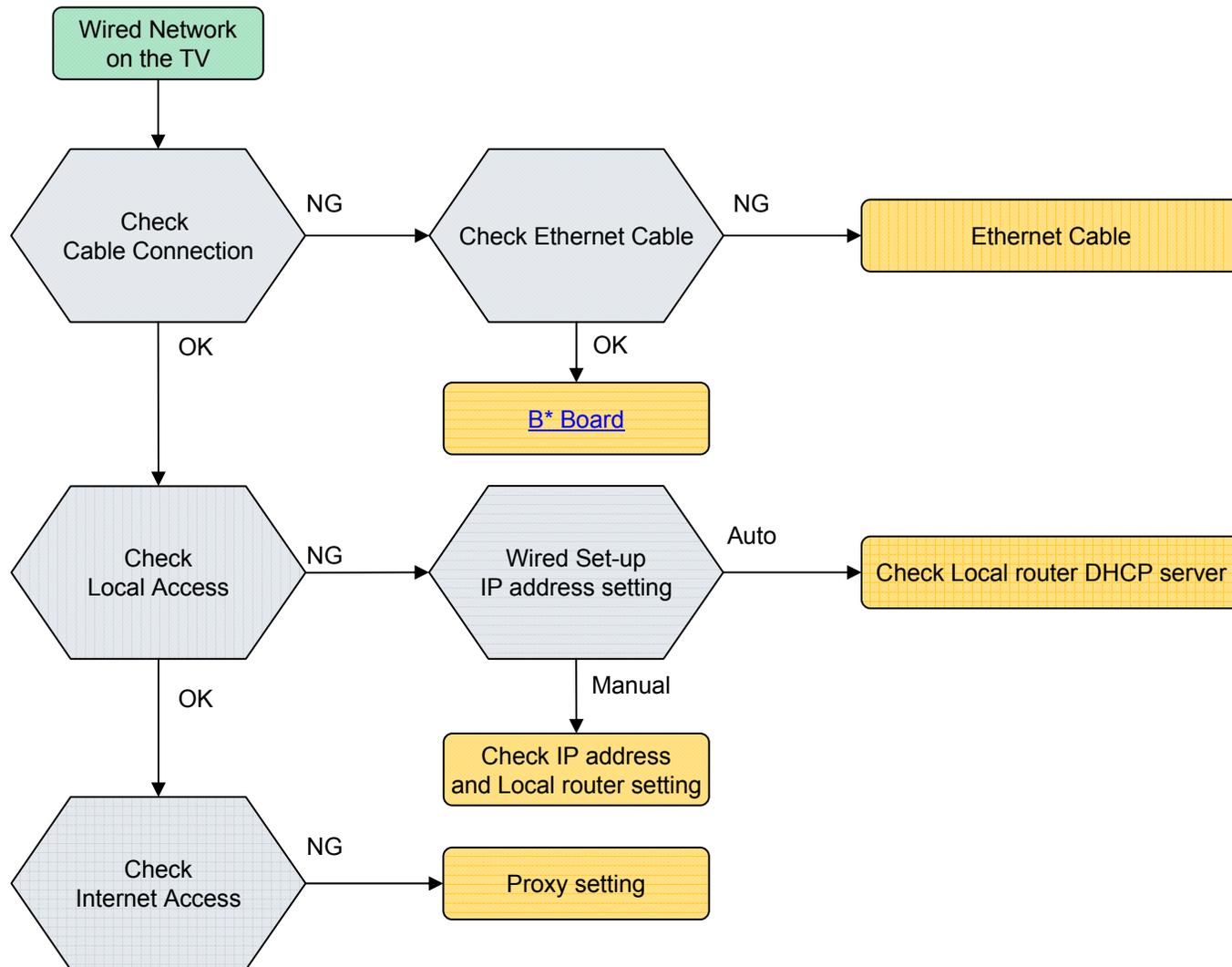


FIGURE 5-14. WIRELESS NETWORK MALFUCTIONING

SECTION 5 - FLOW CHARTS AND DIAGRAMS

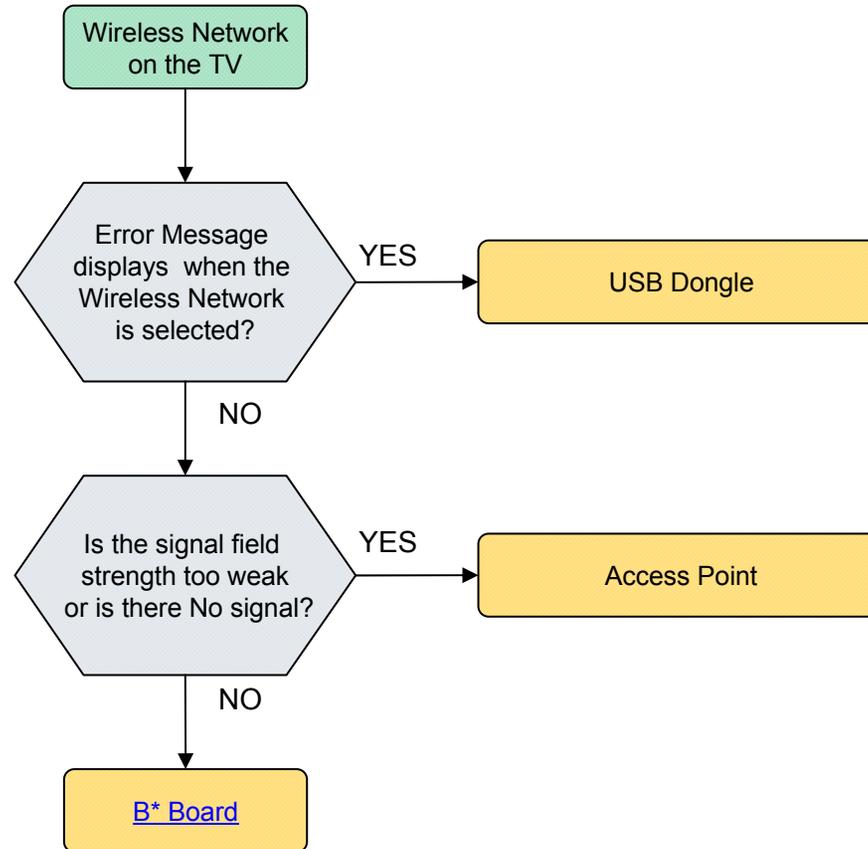


FIGURE 5-15. USB DEVICE MALFUNCTIONING

SECTION 5 - FLOW CHARTS AND DIAGRAMS

SKYPE ACCESSORY NOT WORKING

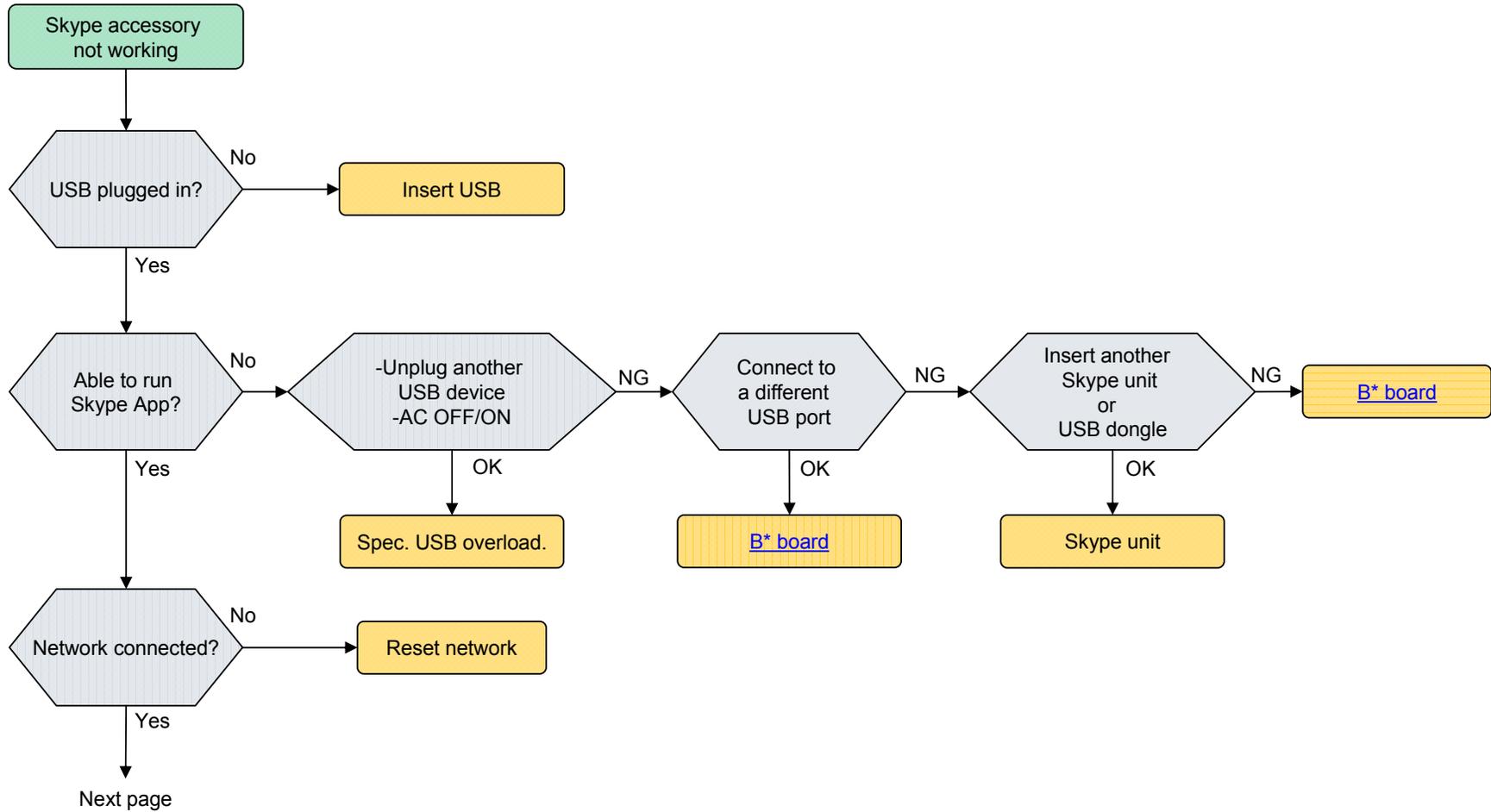


FIGURE 5-16. SKYPE NOT WORKING PROPERLY (PAGE 1 OF 2)

SECTION 5 - FLOW CHARTS AND DIAGRAMS

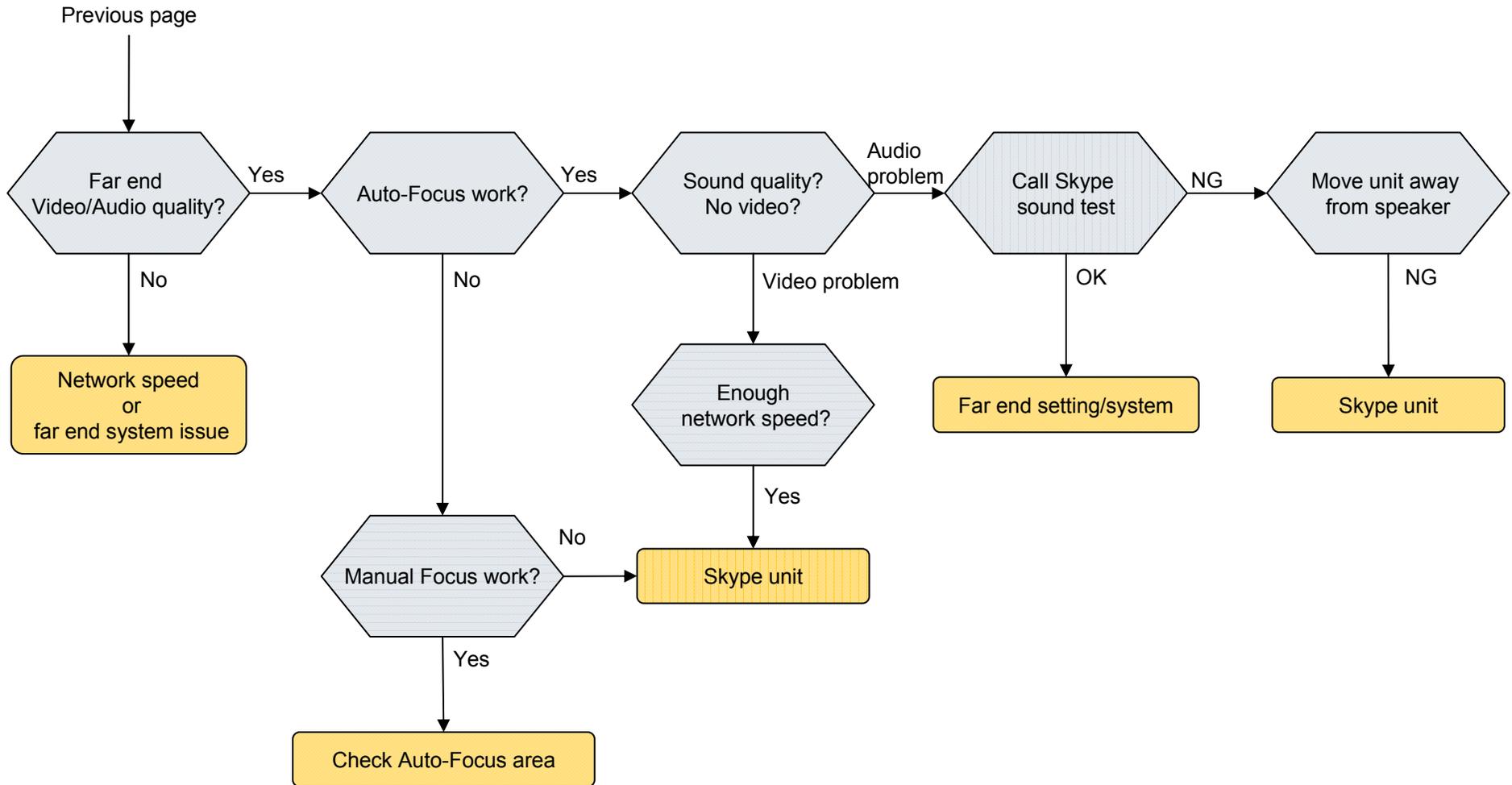
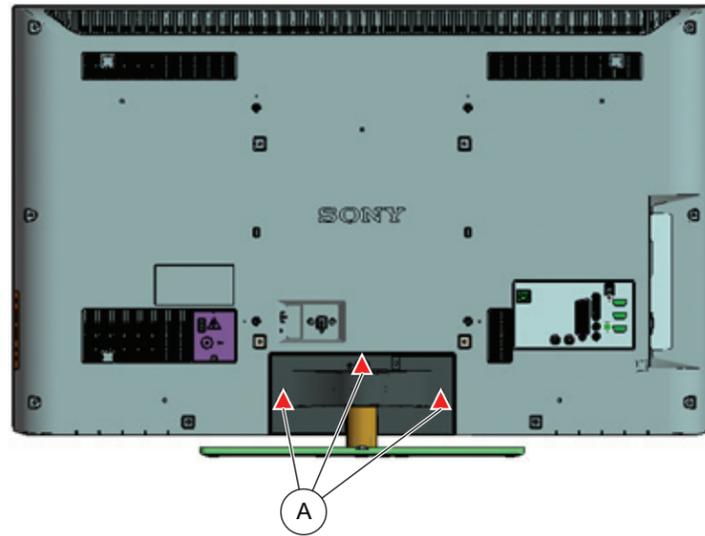


FIGURE 5-17. SKYPE NOT WORKING PROPERLY (PAGE 2 OF 2)

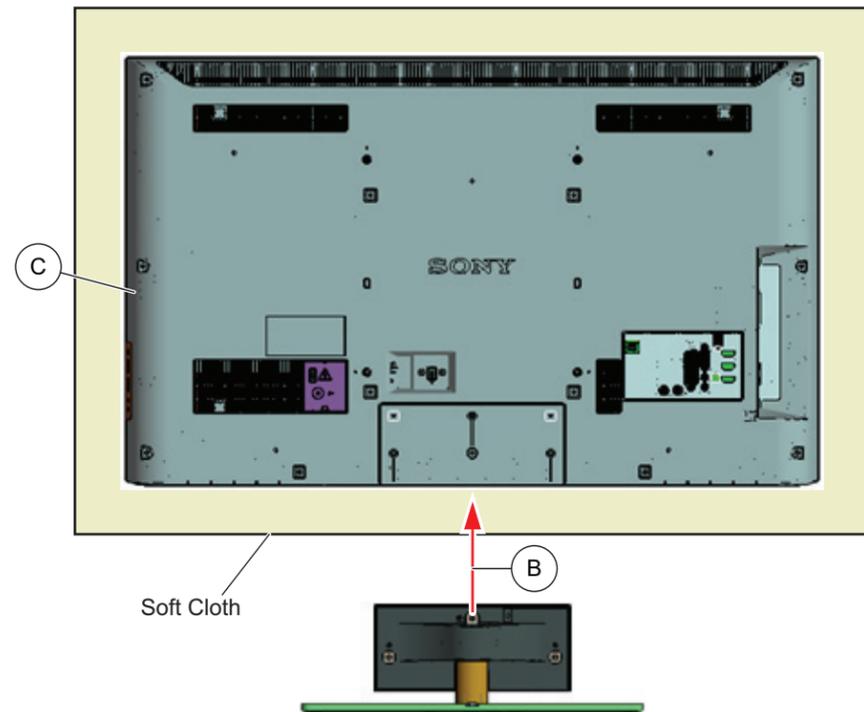
SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

TABLE-TOP STAND ASSEMBLY REMOVAL

- Ⓐ Remove 3 screws from Table-Top Stand Assembly



- Ⓑ Lift up TV set to detach from Table-Top Stand Assembly
 Ⓒ Gently place the LCD TV set face down onto a soft cloth



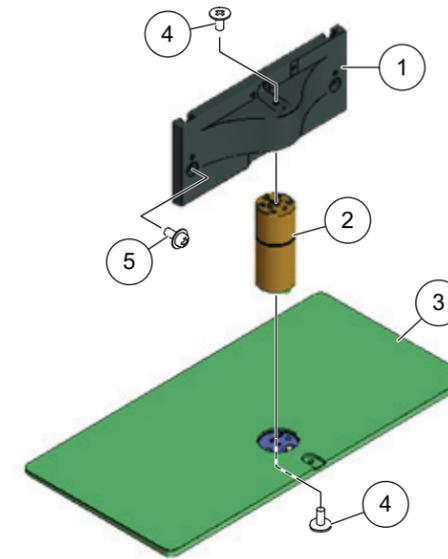
Components not identified by a part number or description are not stocked because they are seldom required for routine service.

NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

* Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.

NOTE: The components identified by a red outline and a \triangle mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.



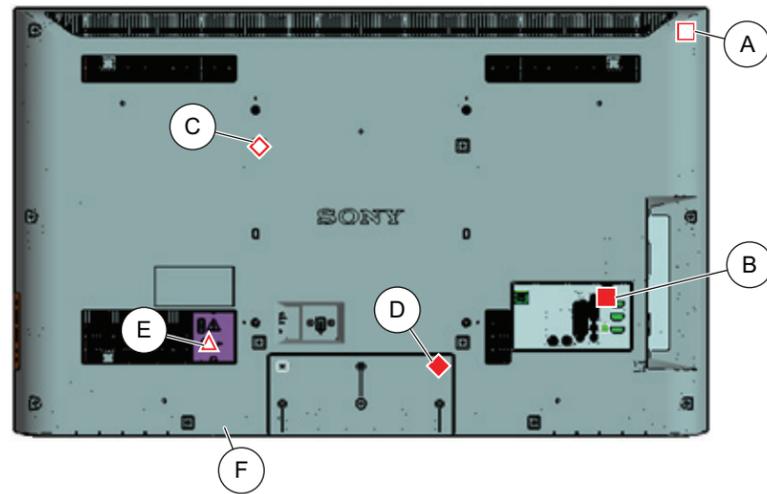
REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
1	4-267-493-02	STAND HEAD (M3) (KDL-32CX520 ONLY)		4	4-259-541-01	USER SCREW ST (SCREWS TO ATTACH NECK TO BASE STAND AND HEAD STAND)	
1	4-267-500-02	STAND HEAD (ML3) (KDL-40CX520 ONLY)		5	2-580-608-01	SCREW, +PSW M5X16 (SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV) For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets	
2	4-259-178-01	NECK (M3) (KDL-32CX520 ONLY)		\triangle	2-580-608-01	SCREW, +PSW M5X16	
2	4-259-181-01	NECK (ML3) (KDL-40CX520 ONLY)					
3	4-267-570-01	STAND, BASE(M3) (KDL-32CX520 ONLY)					
3	4-267-571-02	STAND, BASE (ML3) (KDL-40CX520 ONLY)					

SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

REAR COVER AND AC COVER REMOVAL

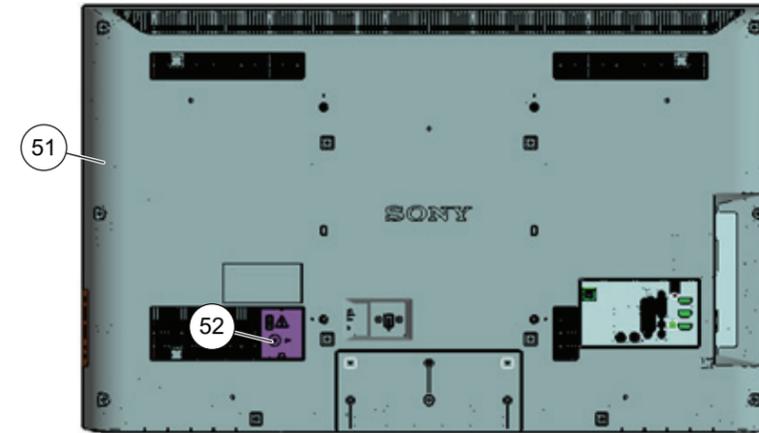
CAUTION: Do not damage the G2AS/G2BS Board Connector and Power Supply Cord when removing the Rear Cover. Refer to [“Removing the Power Cord from the Rear Cover” on page A-1](#) for instructions.

- Ⓐ Remove 10 screws from Rear Cover
- Ⓑ Remove 1 screw from Terminal Area position
- Ⓒ Remove 3 screws from Rear Cover
- Ⓓ Remove 2 screws from Rear Cover
- Ⓔ Remove 1 screw from AC Cover
- (Refer to [“Removing the Power Cord from the Rear Cover” on page A-1](#))
- Ⓕ Gently lift up Rear Cover from bottom side to detach from Bezel



NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

NOTE: The components identified by a red outline and a \square mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
51	4-275-907-01	REAR COVER (32 ATL)		\triangle	4-256-393-01	SCREW, +PSW M3X6 W12	
51	4-275-908-01	REAR COVER (40 ATL)		\blacksquare	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
52	4-266-269-01	COVER, AC(M)		\square	2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	
				\blacklozenge	4-257-907-01	JOINT, STAND	
				\diamond	4-159-298-01	SCREW, +PSW M4X10	

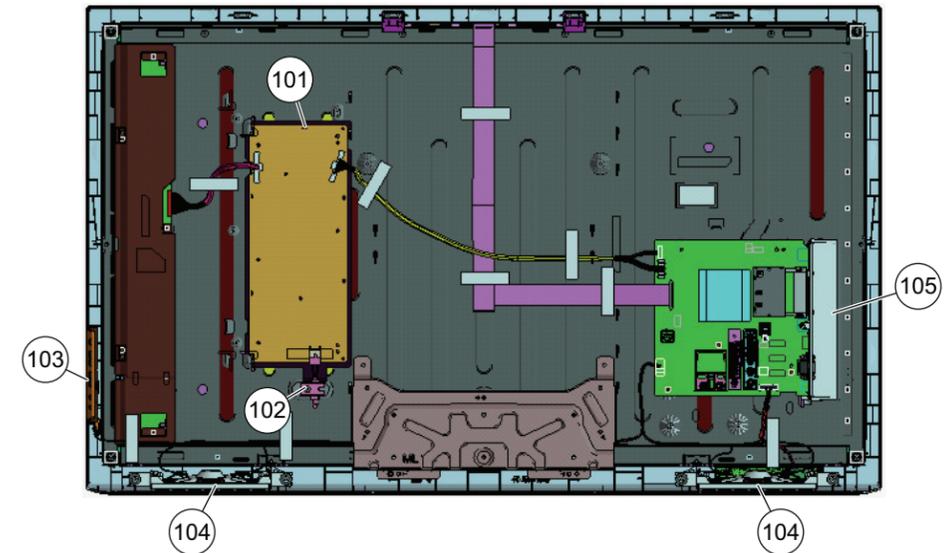
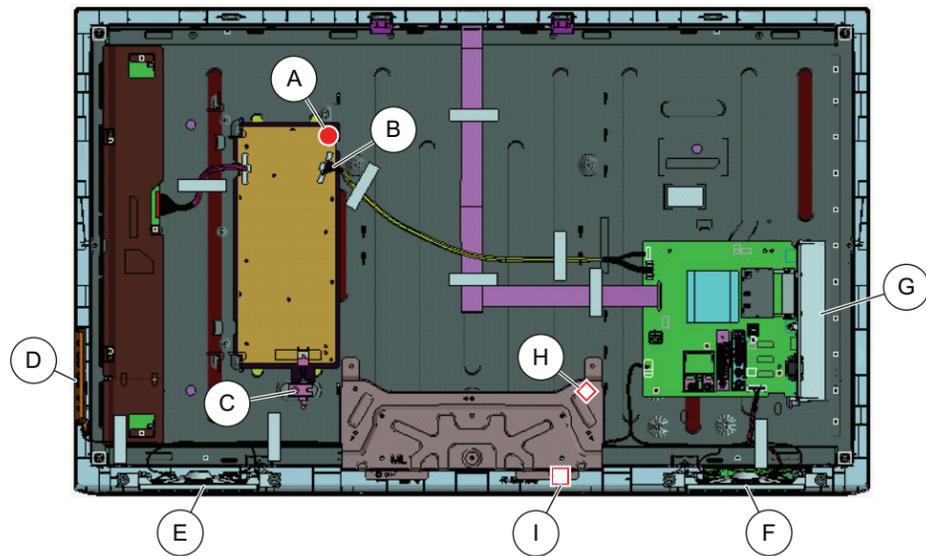
SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

G2AS/G2BS (POWER) BOARD, SWITCH UNIT AND SPEAKER REMOVAL

NOTE: The components identified by shading and \triangle mark are critical for safety. Replace only with part number specified.

NOTE: The components identified by a red outline and a \square mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

- Ⓐ Remove 2 screws from G2AS/G2BS Board
- Ⓑ Disconnect 3 connectors from G2AS/G2BS Board
- Ⓒ Lift up AC Power Cord to detach from LCD Panel
- Ⓓ Lift up Switch Unit and disconnect 1 connector to detach from Bezel
- Ⓔ Slide-out right side Speaker to detach from Bezel
- Ⓕ Slide-out left side Speaker to detach from Bezel
- Ⓖ Release 2 clips to detach Side Jack Bracket from BATV Board
- Ⓗ Remove 2 screws from Bottom Frame to detach from LCD Panel
- Ⓘ Remove 2 screws from Bottom Frame to detach from Bezel



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
101	1-474-281-11	G2AS BOARD, COMPLETE (KDL-32CX520 ONLY)		104	1-858-589-11	LOUDSPEAKER (KDL-32CX520 ONLY)	
101	1-474-282-11	G2BS BOARD, COMPLETE (KDL-40CX520 ONLY)		104	1-858-585-11	LOUDSPEAKER (KDL-40CX520 ONLY)	
\triangle 102	1-838-797-11	POWER-SUPPLY CORD (WITH CONN.)		105	4-256-427-01	BRACKET, SIDE (BAT-V CCFL)	
103	1-489-581-11	SWITCH UNIT		\square	2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	
				\diamond	4-159-298-01	SCREW, +PSW M4X10	
				\bullet	2-990-421-41	SCREW (+PSW) (M3X6)	

SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

BATV (MAIN) BOARD, HLR2 BOARD, HMS3 BOARD AND LCD PANEL REMOVAL

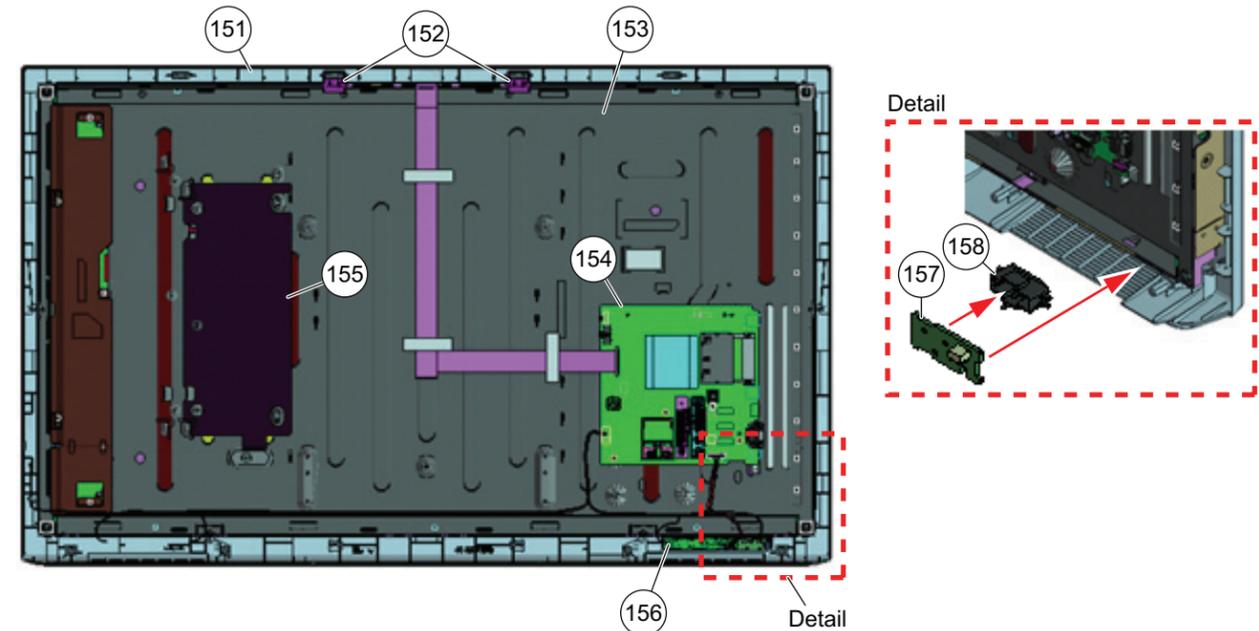
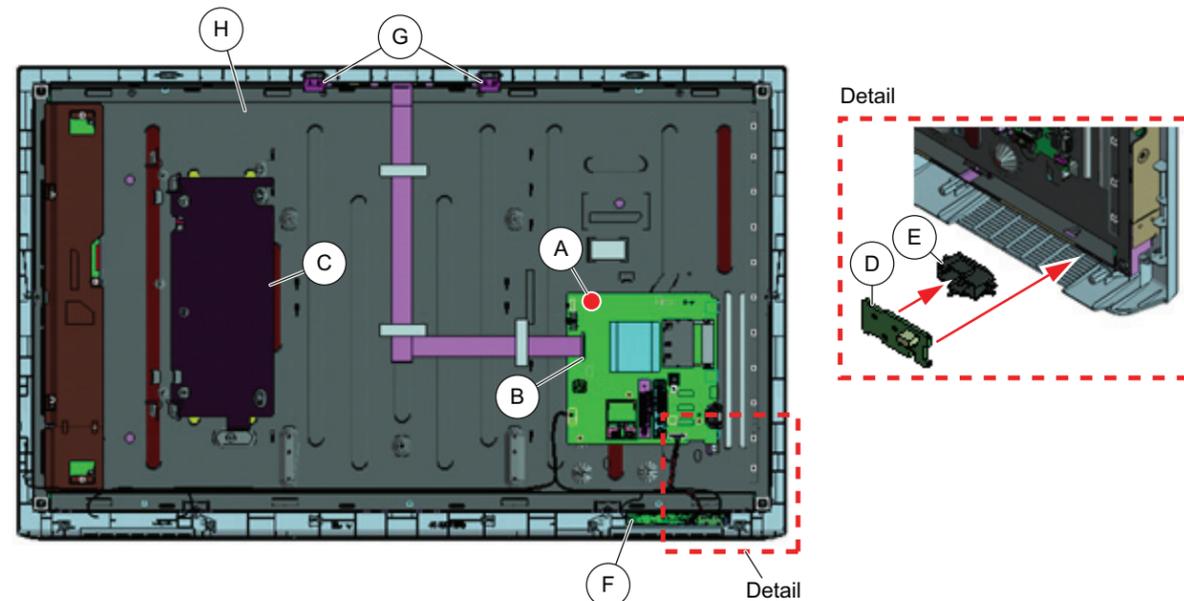
NOTE: The components identified by shading and  mark are critical for safety. Replace only with part number specified.

NOTE: The components identified by a red outline and a  mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

Note: Refer to Handling the [“Handling the FFC Connector” on page 3](#) to disconnect the LVDS Connector.

Note: The Insulation Sheet (G2) is not included with the LCD Panel and must be replaced when replacing the LCD Panel.

- Ⓐ Remove 5 screws from BATV Board
- Ⓑ Disconnect 5 connectors from BATV Board (Refer to [“Handling the FFC Connector” on page 3](#))
- Ⓒ Gently peel-off Insulation Sheet to detach from LCD Panel
- Ⓓ Release clips and disconnect 1 connector to detach HMS3 Board from LED Guide
- Ⓔ Lift up FRENEL LENS to detach from HMS3 Board
- Ⓕ Release clips and disconnect 1 connector to detach HLR2 Board from LED Guide
- Ⓖ Lift up 2 Panel Support brackets to detach from Bezel
- Ⓗ Gently lift-up LCD Panel to detach from Bezel



CLEANING THE LCD PANEL ASSEMBLY

CAUTION: When cleaning the TV, be sure to unplug the power cord to avoid any chance of electric shock.

Clean the cabinet of the TV with a dry soft cloth.

Wipe the LCD screen gently with a soft cloth.

- ◆ Stubborn stains may be removed with a cloth slightly moistened with a solution of mild soap and warm water.
- ◆ If using a chemically pretreated cloth, please follow the instruction provided on the package.
- ◆ Never use strong solvents such as a thinner, alcohol or benzene for cleaning.
- ◆ Periodic vacuuming of the ventilation openings is recommended to ensure the proper ventilation.

REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
151	4-275-852-01	BEZEL (32 ATL) (KDL-32CX520 ONLY)		 154	A-1816-671-B	BATV BOARD, COMPLETE	AFTER REPLACING THE MAIN BOARD OR THE LCD PANEL, YOU MUST UPDATE THE SOFTWARE TO THE LATEST VERSION.
151	4-275-853-01	BEZEL (40 ATL) (KDL-40CX520 ONLY)		155	4-268-448-01	SHEET, INSULATION (G2)	ORDER THIS PART WHEN REPLACING THE LCD PANEL.
152	4-166-126-11	SUPPORT, PANEL		156	A-1792-877-A	HLR2 BOARD, MOUNTED	
153	NA	LCD PANEL		157	A-1792-511-A	HMS3 BOARD, MOUNTED	
		FOR ALL LCD PANEL AND TCON PART NUMBER INFORMATION REFER TO THE LCD PANELS SERVICE MANUAL		* 158	1-856-184-11	FRENEL LENS	
					2-990-421-41	SCREW (+PSW) (M3X6)	

SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

SCREW LEGEND

KDL-32CX520

P/N	DESCRIPTION	REMARKS	TOTAL
▲ 2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(3)	3
△ 4-256-393-01	SCREW, +PSW M3X6 W12	AC COVER(1)	1
■ 7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TERMINAL AREA(1)	1
□ 2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	RC(10), BTM FRM to BEZ(2)	12
◆ 4-257-907-01	JOINT, STAND	RC(2)	2
◇ 4-159-298-01	SCREW, +PSW M4X10	RC to BTM FRM(1), RC to PNL(2), BTM FRM(2)	5
● 2-990-421-41	SCREW, (+PSW) (M3X6)	BATV(5), G2AS(2)	7
☆ 4-259-541-01	USER SCREW ST	HEAD STAND to NECK(1), BASE STAND to NECK(2)	3

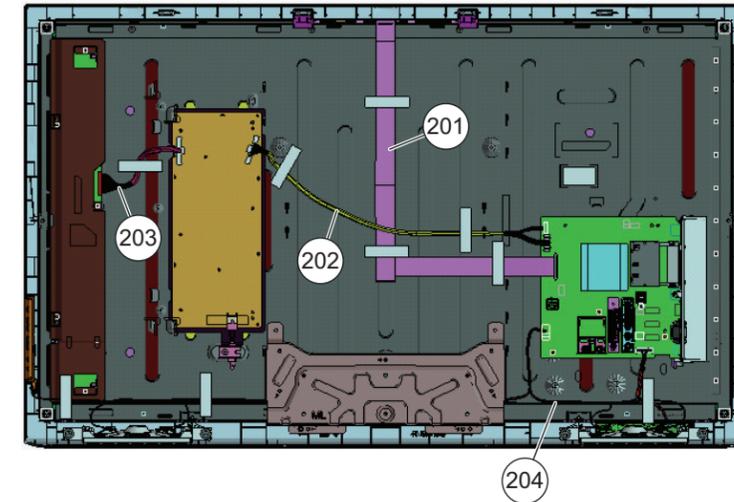
KDL-40CX520

P/N	DESCRIPTION	REMARKS	TOTAL
▲ 2-580-608-01	SCREW, +PSW M5X16	TABLE-TOP STAND(3)	3
△ 4-256-393-01	SCREW, +PSW M3X6 W12	AC COVER(1)	1
■ 7-685-648-79	SCREW, +BVTP 3X12 TYPE2 IT-3	RC to TERMINAL AREA(1)	1
□ 2-580-640-01	SCREW, +BVTP 4X16 TYPE2 IT-3	RC(10), BTM FRM to BEZ(2)	12
◆ 4-257-907-01	JOINT, STAND	RC(2)	2
◇ 4-159-298-01	SCREW, +PSW M4X10	RC to BTM FRM(1), RC to PNL(2), BTM FRM(2)	5
● 2-990-421-41	SCREW, (+PSW) (M3X6)	BATV(5), G2BS(2)	7
☆ 4-259-541-01	USER SCREW ST	HEAD STAND to NECK(1), BASE STAND to NECK(2)	3

NOTE: The components identified by shading and △ mark are critical for safety. Replace only with part number specified.

NOTE: The components identified by a red outline and a 🔒 mark contain confidential information. Specific instructions must be adhered to whenever these components are repaired and/or replaced. See Appendix A: Encryption Key Components in the back of this manual.

CONNECTORS



REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
*	201	1-838-842-11	(LVDS) FLEXIBLE FLAT CABLE I4 32S (KDL-32CX520 ONLY)	*	203	1-910-800-98	CONNECTOR ASSEMBLY 14P (KDL-32CX520 ONLY)
*	201	1-838-843-11	(LVDS) FLEXIBLE FLAT CABLE I4 40S (FOR S-LCD PANEL) (KDL-40CX520 ONLY)	*	203	1-910-801-55	CONNECTOR ASSEMBLY 14P (KDL-40CX520 ONLY)
	201	1-838-844-11	(LVDS) FLEXIBLE FLAT CABLE I4 40CS (FOR CMI PANEL) (KDL-40CX520 ONLY)	*	204	1-910-801-08	HARNESS ASSEMBLY (KDL-32CX520 ONLY)
*	202	1-910-801-00	CONNECTOR ASSEMBLY 15P (KDL-32CX520 ONLY)	*	204	1-910-801-64	HARNESS ASSEMBLY (KDL-40CX520 ONLY)
*	202	1-910-801-56	CONNECTOR ASSEMBLY 15P (KDL-40CX520 ONLY)				

SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

ACCESSORIES AND PACKING

3-299-071-05 FLYER, SAFETY
4-273-074-11 FLYER, SAFETY
4-279-563-32 MANUAL, INSTRUCTION
* 4-275-364-11 SUPPLEMENT(STAND INSTALLATION)

4-259-541-01 USER SCREW ST
(SCREWS TO ATTACH NECK TO BASE STAND AND HEAD STAND)

2-580-608-01 SCREW, +PSW M5X16
(SCREWS TO ATTACH TABLE-TOP STAND TO LCD TV)

For product protection and safety reasons, Sony strongly recommends that you use the screws provided with the TV

CAUTION: These screws cannot be used to secure the TV to the Wall Mount Brackets

MISCELLANEOUS

X-2549-819-1 BAG, SCREW ASSEMBLY (M)
4-188-302-11 HEX WRENCH
4-100-136-01 SHEET (CORE), C
4-256-443-01 SHEET, RADIATION (BAT-L/V)
4-087-858-41 SHEET, VIBRATION PROOF
4-260-776-02 SPACER (G B)
X-2549-230-1 SUPPORT BELT KIT
7-632-452-24 TAPE (NO.303) 18MMX35M YEL

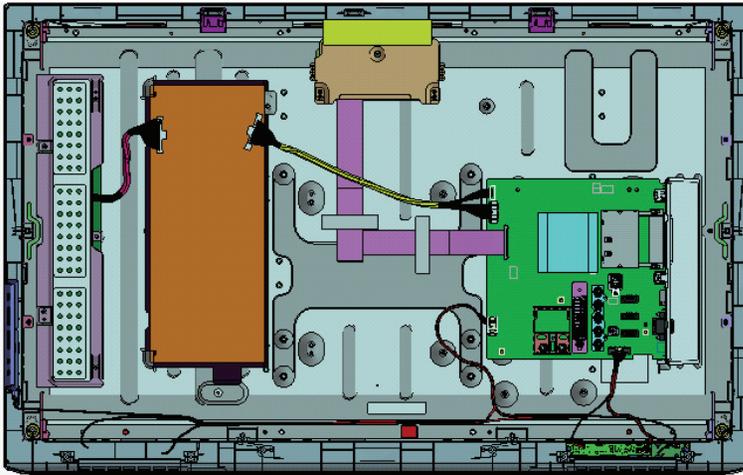
REMOTE COMMANDER

1-489-664-11 REMOTE COMMANDER (RM-YD071)

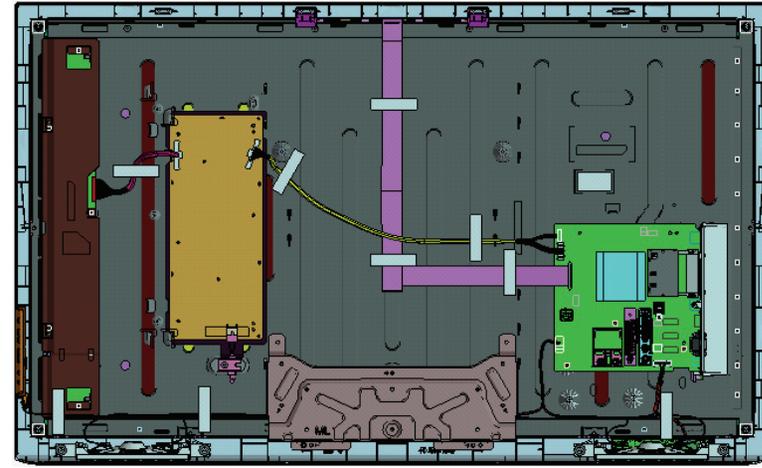
SECTION 6 - DISASSEMBLY/PART NUMBER INFORMATION

WIRE DRESSING DIAGRAMS

KDL-32CX520 ONLY



KDL-40CX520 ONLY



SECTION 7 - SERVICE ADJUSTMENTS

OVERVIEW

As mentioned in [“Section 2 - Software Requirements” on page 12](#) the models in this manual utilize a “generic” type main board, therefore certain service adjustments settings must be confirmed when either the main Board, LCD Panel, or TCON Board are replaced.

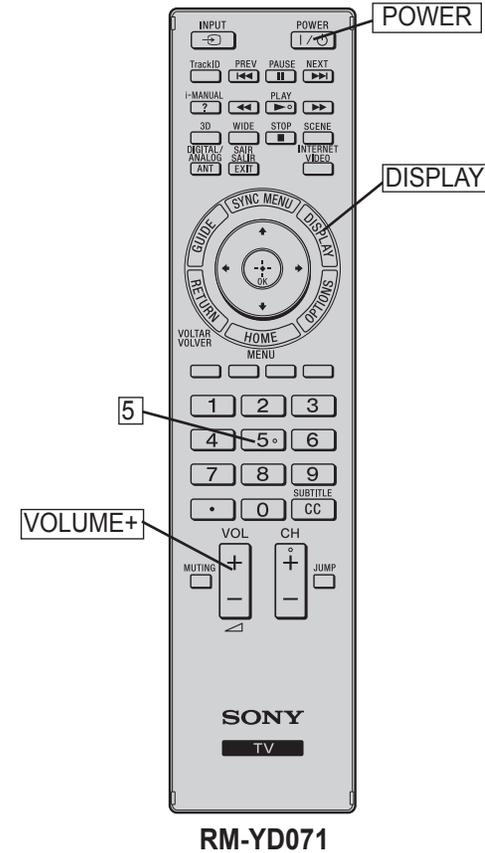
UPDATING THE SOFTWARE

After replacing the Main Board, LCD Panel, or TCON Board, you **MUST UPDATE** the SOFTWARE to the latest version. .

ACCESSING SERVICE ADJUSTMENTS

1. TV must be in standby mode. (Power off).
2. Access Service Mode by pressing the following buttons on the Remote Commander within a second of each other:

DISPLAY → Channel **5** → Volume **+** → **POWER** .



SECTION 7 - SERVICE ADJUSTMENTS

3. The **DIGITAL Service Menu** displays.

NOTE: There are 3 Service Menus for this model, DIGITAL, CHASSIS, and VPC. If the DIGITAL Service Menu is not displayed, press **JUMP** or **OPTIONS** on the Remote Commander.

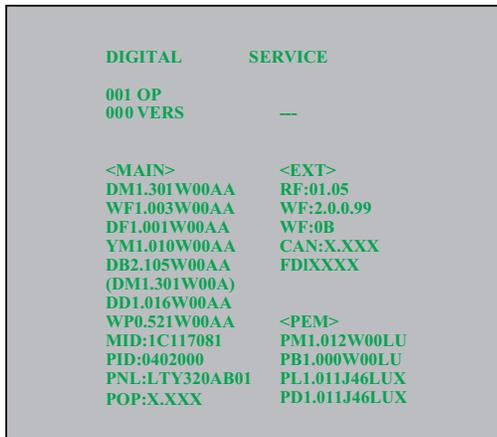


FIGURE 7-1. SAMPLE DIGITAL SERVICE MENU

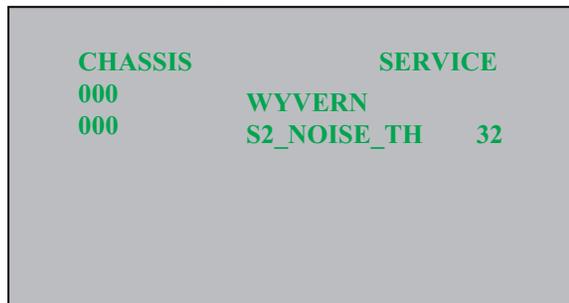
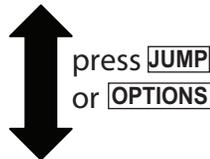


FIGURE 7-2. SAMPLE CHASSIS SERVICE MENU

VIEWING OR CHANGING SERVICE DATA

Within each Service Menu are Categories and data information.

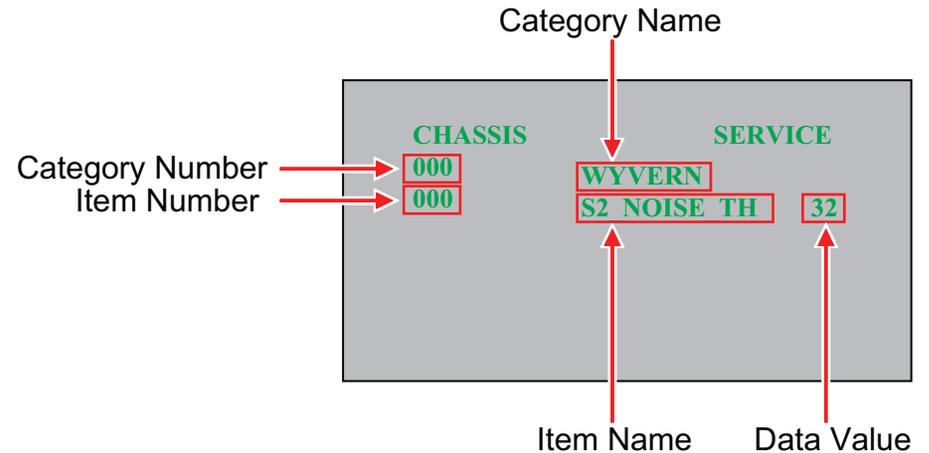


FIGURE 7-3. SERVICE DATA DEFINITIONS

Use the buttons on the Remote Commander to review or change the service data.

- To change the Category, press **2** to move to the Next Category or press **5** to go back to the Previous Category.

Note: Pressing **2** or **5** only changes the Categories within the Service Menu displayed.

- To change the adjustment item, press **1** to move to the Next Item or **4** to go back to the Previous Item.
- To change the Data Value, press **3** to increase the Data Value or **6** to decrease the Data Value.
- Press **MUTING** then press **0** to WRITE (Save) the changes.
- To exit service mode, press **HOME** or turn the TV power off.

SECTION 7 - SERVICE ADJUSTMENTS

VERIFYING SERVICE ADJUSTMENTS

The following procedures should be performed after updating the software to ensure that the service adjustment data is accurate.

- Verify the Segment Code
- Verify the Destination
- Verify the Model Name

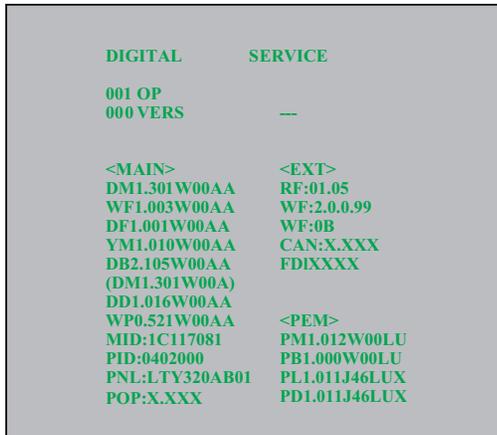
VERIFYING THE SEGMENT CODE

After updating the software, go into Service Mode to verify the Segment Code data value is set.

CAUTION: Selecting the incorrect destination may requiring replacing the Main Board.

1. TV must be in standby mode. (Power off).
2. Access Service Mode by pressing the following buttons on the Remote Commander within a second of each other:

DISPLAY → Channel **5** → Volume **+** → **POWER** .



3. Press **2** to move to the **002 MODEL** category.



4. Using the table, press **3** to increase the data value or **6** to decrease the data value, to select the correct segment code data value.

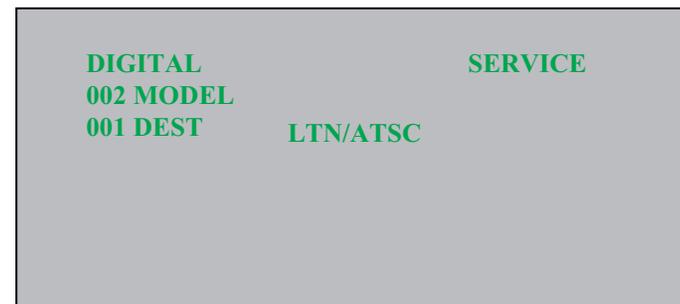
Model Name	Code Name	Segment Code
KDL-32CX520	P-2	I4
KDL-40CX520	P-2	I4

5. Proceed to "Verifying the Destination".

VERIFYING THE DESTINATION

The correct model may need to be selected after updating the software.

6. Press **1** to move to the **001 DEST** item.



SECTION 7 - SERVICE ADJUSTMENTS

- Using the table, press **3** to increase the data value or **6** to decrease the data value, to select the correct destination of the TV.

DESTINATION	DATA VALUE
Latin America	LTN/ATSC

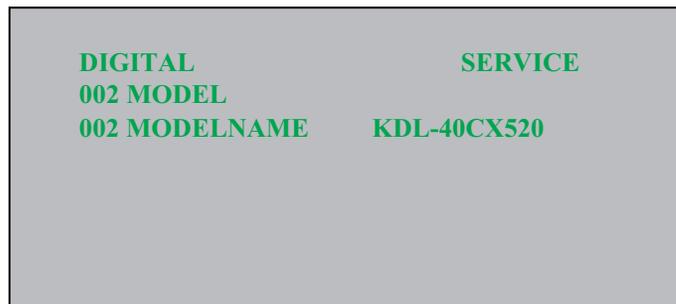
CAUTION: Verify the DESTINATION is set correctly before proceeding to the next step. If another destination Data Value is selected, it may possibly corrupt the software which would require a main Board replacement.

- Proceed to "Verifying the Model Name".

VERIFYING THE MODEL NAME

The correct model may need to be selected after updating the software.

- Press **1** to move to the **002 MODEL** item.



- If the correct model does not display, press **3** until the model displayed matches the model of the TV.
- Press **MUTING** then press **0** to WRITE (Save) the changes.

- To exit service mode, press **HOME** or turn the TV power off.

SETTING VCOM ADJUSTMENTS

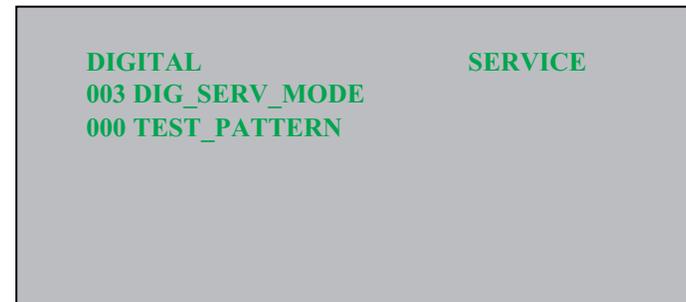
VCOM adjustments are only required if there is any flickering when the TV is turned on.

DISPLAYING THE VCOM TEST PATTERN

- TV must be in standby mode. (Power off).
- Access Service Mode by pressing the following buttons on the Remote Commander within a second of each other:

DISPLAY → Channel **5** → Volume **+** → **POWER** .

- Press **2** to move to the **003 DIG_SRV_MODE** Category.



SECTION 7 - SERVICE ADJUSTMENTS

4. Press **0** to display the **TEST PATTERN**.

```
DIGITAL (DIG_SERV_MODE)  SERVICE
TEST PATTERN
1 VIDEO
2 AUDIO
```

5. Press **ENTER** to display **1 Video**.

```
DIGITAL (DIG_SERV_MODE)  SERVICE
TEST PATTERN
-->1 VIDEO
*1 White
2 Ramp
3 R Raster
4 G Raster
5 B Raster
6 Color Bar
7 VCOM Adjustment1
8 VCOM Adjustment2
9 Off
```

6. Chose one of the VCOM test patterns to determine which one displays the most flickering.

a. Press **7** to display **VCOM Adjustment1**.

b. Press **ENTER** twice to display the VCOM test pattern.

or

a. Press **8** to display **VCOM Adjustment2**.

b. Press **ENTER** twice to display the VCOM test pattern.

7. Press **RETURN** twice to exit the test pattern screen.

ADJUSTING THE VCOM DATA

8. Press **JUMP** to access the **VPC** Service Menu.

9. Press **2** to move to **002 VCOM** category.

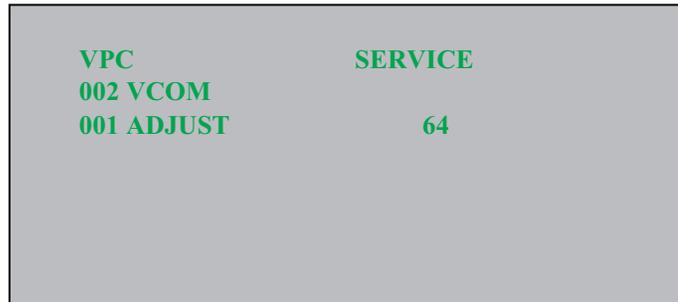
10. Press **1** to move to **000 ENABLE** item.

```
VPC                SERVICE
002 VCOM
000 ENABLE         0
```

11. Press **3** to increase the data value from 0 to 1.

SECTION 7 - SERVICE ADJUSTMENTS

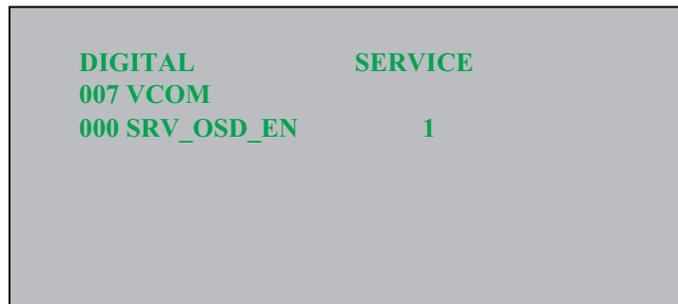
12. Press **1** to move to **001 ADJUST** item.



13. Press **3** or **6** to increase or decrease the data value until the flickering in the picture is at an acceptable level.

VERIFYING THE VCOM ADJUSTMENT SETTINGS

14. Press **JUMP** to access the **DIGITAL** Service Menu.
15. Press **2** to move to **007 VCOM** category.

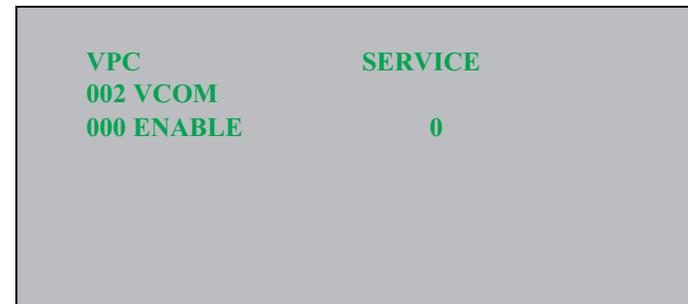


16. Press **3** to remove the on menu display.
17. Verify that flickering is at an acceptable level.

NOTE: If the picture continues to flickers, repeat steps [8](#) thru [17](#) until flickering is acceptable.

COMPLETING THE VCOM ADJUSTMENTS

18. Press **JUMP** to access the **VPC** Service Menu.
19. Press **2** to move to **002 VCOM** category.
20. Press **1** to move to **000 ENABLE** item.



21. Press **6** to decrease the data value from 1 to 0.
22. Exit service mode.

SECTION 7 - SERVICE ADJUSTMENTS

OPTIONAL ADJUSTMENTS

All Sony TVs are set for optimal viewing performance. Refer to the following instructions if the customer requests additional adjustments.

SETTING WHITE BALANCE ADJUSTMENTS

White Balance adjustment data is located on the Digital Service Menu.

1. TV must be in Standby Mode. (POWER off).
2. Press the following buttons on the Remote Commander within a second of each other:

DISPLAY → Channel **5** → Volume **+** → **POWER**

```
DIGITAL      SERVICE
001 OP
000 VERS      --

<MAIN>      <EXT>
DM1.301W00AA RF:01.05
WF1.003W00AA WF:2.0.0.99
DF1.001W00AA WF:0B
YM1.010W00AA CAN:X.XXX
DB2.105W00AA FDIXXX
(DM1.301W00A)
DD1.016W00AA
WP0.521W00AA <PEM>
MID:1C117081 PM1.012W00LU
PID:0402000  PB1.000W00LU
PNL:LTY320AB01 PL1.011J46LUX
POP:X.XXX    PD1.011J46LUX
```

3. Press **JUMP** or **OPTIONS** on the Remote Commander until the **VPC** menu displays.

```
VPC          SERVICE
000          DATA_COPY
000          BU_TRANS      0
```

4. Press **2** to move to "006 WB" Category.

```
VPC          SERVICE
006          WB
000          R_DRV        128
```

5. To change the data value of the **R_DRV**, press **3** to increase the value or **6** to decrease the value.

NOTE: The data value must be set between the range 1 to 255.

6. Press **1** to move to the next item (**001 G_DRV**).
7. To change the data value, press **3** to increase the value or **6** to decrease the value.
8. Repeat steps 6 and 7 for each of the following items:

002 B_DRV

003 R_BKG

004 G_BKG

005 B_BKG

SECTION 7 - SERVICE ADJUSTMENTS

9. To save the changes, press **MUTING** then press **0**.
10. To exit service mode, press **HOME** or turn the TV power off.

RESETTING THE TV TO FACTORY CONDITION

Use the following instructions to restore the User Adjustments and Channel Memory settings to the preset factory conditions.

1. While holding down the  on the Remote Commander, press the POWER button on the TV Switch Unit of the set.
2. The set restarts and displays the Initial Setup screen. This may take several minutes.

RESETTING THE TV TO FACTORY CONDITION USING SERVICE MODE

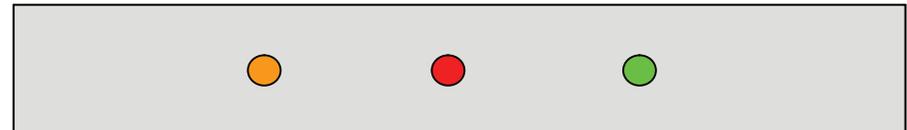
1. TV must be in Standby Mode. (POWER off).
2. Press the following buttons on the Remote Commander within a second of each other:

DISPLAY → Channel **5** → Volume **+** → **POWER** .

3. If necessary, press **JUMP** or **OPTIONS** to go to DIGITAL mode.
4. Press **8**.
“SERVICE” changes to green RST.
5. Press **MUTING** .
RST executes the command and displays EXE.
6. Press **0** .

EXE-RST displays green, then red indicating the TV is writing the data.

When the process is complete the green SERVICE text displays and the LED display as shown below:



TIMER

Standby

POWER

7. Cycle AC Power by unplugging the AC Cord from the AC Outlet, and then plug it back in.

The set restarts and displays the Initial Setup screen. This may take several minutes.



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APPENDIX A - REMOVING THE REAR COVER

REMOVING THE POWER CORD FROM THE REAR COVER

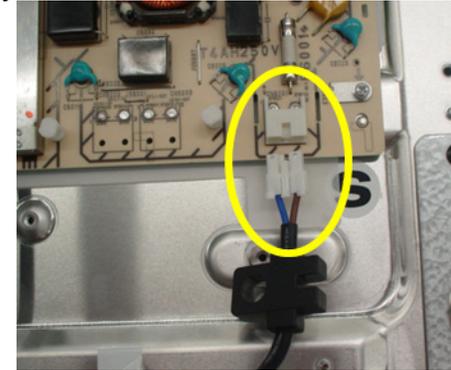
The AC Power Cord is connected to the Power Supply board and then routed out through the Rear Cover. When removing the Rear Cover use caution to avoid pulling the AC Power Cord which may damage the cord.

Caution: These instructions should be followed whenever removing the Rear Cover.

1. Using the instructions provided in the [“Rear Cover and AC Cover Removal” on page 42](#), remove the screws from the Rear Cover.
2. Remove 1 screw from AC Cover, then lift up Rear Cover with AC Cover and AC Power Cord attached.
Note: Hold AC Power Cord while lifting up Rear Cover. Do not pull the AC Power Cord or damage the connector on the Power Board.



3. Disconnect the AC Power Cord to detach from Power Supply Board.



4. Release the clips on the inside of the rear cover to detach the AC Cover.

