



LED/LCD-TV

Chassis : U57E

Model : UE40D5003BW

UE26D4003BW

UE32D4003BW

Chassis : U57F

Model : UE22D5003BW

UE19D4003BW

Chassis : U56G

Model : LE32D400E1W

LE32D403E2W

LE40D503F7W

SERVICE Manual

TFT-LED/LCD TV



UE32D4003BW



LE32D400E1W

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2. Product specifications
3. Disassembly and Reassembly
4. Troubleshooting
5. Wiring Diagram

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1. Precautions

1-1. Safety Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1-1. Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2. Servicing the LED/LCD TV

1. When servicing the LED/LCD TV, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3. Fire and Shock Hazard

Before returning the LED/LCD TV to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the LED/LCD TV.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):

WARNING : Do not use an isolation transformer during this test.

Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

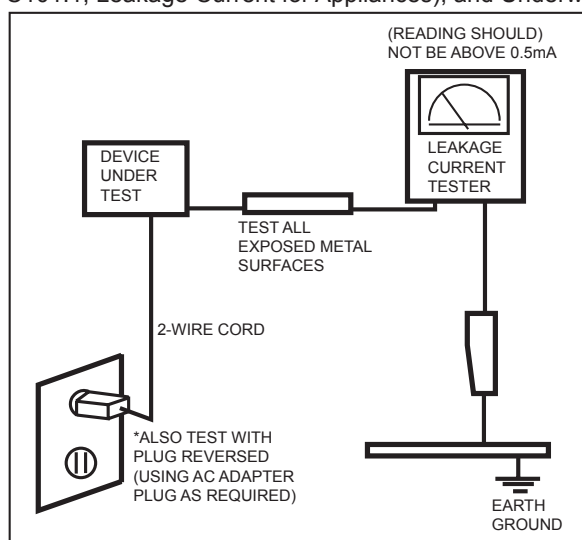



Figure 1-1. Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4. Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by  on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2. Servicing Precautions

WARNING: An electrolytic capacitor installed with the wrong polarity might explode.

Caution: Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

Note: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
(a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug. The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3. Electrostatically Sensitive Devices (ESD) Precautions

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

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the LED/LCD TV.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4. Installation Precautions

1. For safety reasons, more than a people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (0.4m) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

Model	HF00DF000BW
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Model	UE22D5003BW	
Feature		
<div><div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div><div>▶ Brightness : 480 cd/m²</div><div>▶ High Contrast Ratio : 6,000 :1</div><div>▶ Response Time : 8.5 ms</div></div>		
Specifications		
Item	Description	
LCD Panel	22 inch FHD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	476.64(H) x 268.11(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	515.8 x 124 x 350.0 mm_with stand 515.8 x 39.9 x 315.6 mm_without stand	
Weight	3.5 kg_with stand 3.4 kg_without stand	
Stand Weight	0.1 kg	
TV System	Tuning	Frequency Synthesizer (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	- MAX Internal Audio Output Power : Each 3 W (Left/Right) - BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz	

2. Product specifications

Model	UE40D5003BW	
Feature		
<div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div> <div>▶ Brightness : 480 cd/m²</div> <div>▶ High Contrast Ratio : 6,000 :1</div> <div>▶ Response Time : 8.5 ms</div>		
Specifications		
Item	Description	
LCD Panel	40 inch FHD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	885.6(H) x 498.15(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	943.8 x 219.4 x 603.5 mm_with stand 943.8 x 51.0 x 561.4 mm_without stand	
Weight	11 kg_with stand 10.6 kg_without stand	
Stand Weight	0.4 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	<div>- MAX Internal Audio Output Power : Each 3 W (Left/Right)</div> <div>- BASS Control Range : -8 dB ~ + 8dB</div> <div>- TREBLE Control Range : -8 dB ~ +8 dB</div> <div>- Headphone Out : 10 mW MAX</div> <div>- Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz</div>	

Model	UE19D4003BW	
Feature		
<div><div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div><div>▶ Brightness : 480 cd/m²</div><div>▶ High Contrast Ratio : 6,000 :1</div><div>▶ Response Time : 8.5 ms</div></div>		
Specifications		
Item	Description	
LCD Panel	19 inch HD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	409.8(H) x 230.4(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	447.2 x 124 x 312.4 mm_with stand 447.2 x 39.9 x 277.8 mm_without stand	
Weight	2.9 kg_with stand 2.8 kg_without stand	
Stand Weight	0.1 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	- MAX Internal Audio Output Power : Each 3 W (Left/Right) - BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz	

2. Product specifications

Model	UE26D4003BW	
Feature		
<div><div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div><div>▶ Brightness : 480 cd/m²</div><div>▶ High Contrast Ratio : 6,000 :1</div><div>▶ Response Time : 8.5 ms</div></div>		
Specifications		
Item	Description	
LCD Panel	26 inch HD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	575.679(H) x 323.721(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	624.0 x 169.4 x 418.3 mm _with stand 624.0 x 45.1 x 377.2 mm _without stand	
Weight	4.4 kg _with stand 4.1 kg _without stand	
Stand Weight	0.3 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	<div>- MAX Internal Audio Output Power : Each 3 W (Left/Right)</div> <div>- BASS Control Range : -8 dB ~ + 8dB</div> <div>- TREBLE Control Range : -8 dB ~ +8 dB</div> <div>- Headphone Out : 10 mW MAX</div> <div>- Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz</div>	

Model	UE32D4003BW	
Feature		
<div><div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div><div>▶ Brightness : 480 cd/m²</div><div>▶ High Contrast Ratio : 6,000 :1</div><div>▶ Response Time : 8.5 ms</div></div>		
Specifications		
Item	Description	
LCD Panel	32 inch HD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	679.6845(H) x 392.256(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	756.4 x 182.4 x 498.1 mm _with stand 756.4 x 47.8 x 454.0 mm _without stand	
Weight	7.2 kg _with stand 6.3 kg _without stand	
Stand Weight	0.9 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	<div>- MAX Internal Audio Output Power : Each 3 W (Left/Right)</div> <div>- BASS Control Range : -8 dB ~ + 8dB</div> <div>- TREBLE Control Range : -8 dB ~ +8 dB</div> <div>- Headphone Out : 10 mW MAX</div> <div>- Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz</div>	

2. Product specifications

Model	LE40D503F7W	
Feature		
<div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div> <div>▶ Brightness : 480 cd/m²</div> <div>▶ High Contrast Ratio : 6,000 :1</div> <div>▶ Response Time : 8.5 ms</div>		
Specifications		
Item	Description	
LCD Panel	40 inch HD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	575.679(H) x 323.721(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	967.0 x 199.9 x 626.1 mm _with stand 967.0 x 107.1 x 586.3 mm _without stand	
Weight	13.25 kg _with stand 11.6 kg _without stand	
Stand Weight	1.65 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	- MAX Internal Audio Output Power : Each 3 W (Left/Right) - BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz	

Model	LE32D403E2W	
Feature		
<div><div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div><div>▶ Brightness : 480 cd/m²</div><div>▶ High Contrast Ratio : 6,000 :1</div><div>▶ Response Time : 8.5 ms</div></div>		
Specifications		
Item	Description	
LCD Panel	32 inch HD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	697.6(H) x 392.2(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	784.4 x 181.9 x 542.3 mm_with stand 784.4 x 103.3 x 502.9 mm_without stand	
Weight	8.66 kg_with stand 7.65 kg_without stand	
Stand Weight	1.01 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	- MAX Internal Audio Output Power : Each 3 W (Left/Right) - BASS Control Range : -8 dB ~ + 8dB - TREBLE Control Range : -8 dB ~ +8 dB - Headphone Out : 10 mW MAX - Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz	

2. Product specifications

Model	LE32D400E1W	
Feature		
<div><div>▶ DTV/ATV, 2-HDMI, 1-SCART, 1-USB2.0</div><div>▶ Brightness : 480 cd/m²</div><div>▶ High Contrast Ratio : 6,000 :1</div><div>▶ Response Time : 8.5 ms</div></div>		
Specifications		
Item	Description	
LCD Panel	32 inch HD	
Scanning Frequency	Horizontal : 50 kHz ~ 75 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M color	
Maximum resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω , internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	697.6(H) x 392.2(V) mm	
AC power voltage & Frequency	AC 110 V ~ 220 V, 60 Hz	
Power Consumption	Under 110 W (Under 0.3 W, Stand by)	
Dimensions Set (W x D x H)	784.4 x 181.9 x 542.3 mm _with stand 784.4 x 103.3 x 502.9 mm _without stand	
Weight	9.2 kg _with stand 8.1 kg _without stand	
Stand Weight	1.1 kg	
TV System	Tuning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	DVB-T/C, PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HE-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Spec.	<div>- MAX Internal Audio Output Power : Each 3 W (Left/Right)</div> <div>- BASS Control Range : -8 dB ~ + 8dB</div> <div>- TREBLE Control Range : -8 dB ~ +8 dB</div> <div>- Headphone Out : 10 mW MAX</div> <div>- Output Frequency : RF : 80 Hz ~ 15 kHz AV/Componet/HDMI : 80 Hz ~ 20 kHz</div>	

2-2. Detail Factory Option

※ If you replace the main board with new one, please change the factory option as well.
The options you must change are "Type" and "Front Color".

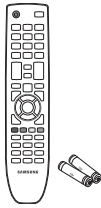
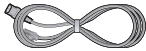
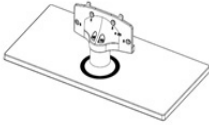
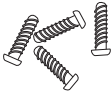
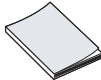


2-2-1. UD5003 / UD4003

Model Name		UE22D5003BW	UE40D5003BW	UE19D4003BW	UE26D4003BW	UE32D4003BW
Panel	Vendor	AML	CHILIN(CMI)	AML	CHILIN(CMI)	CHILIN(CMI)
	CODE	BN07-01044A	BN07-00990B	BN07-01043A	BN07-01049A	BN07-00988D
	SPEC	LTM215HT04-V	LD400BGC-C2	LTM185AT05-V	LD260AGC-C1	LD320AGC-C4
SMPS	Vendor	POWER	SEC	POWER	SEC	SEC
	CODE	BN44-00467A	BN44-00473A	BN44-00467A	BN44-00471A	BN44-00472A
	SPEC	PD22A0_BPNV	PD46G0_BSM	PD22A0_BPNV	PD26G0S_BSM	PD32G0S_BSM
1	Factory Reset					
2	Type					
3	Local set	EU	EU	EU	EU	EU
4	Model	UD5003	UD5003	UD4003	UD4003	UD4003
5	TUNER	SEC_TC	SEC_TC	SEC_TC	SEC_TC	SEC_TC
6	Ch Table					
7	Front Color					

2-2-2. LD503/LD403/LD400

Model Name		LE40D503F7W	LE32D403E2W	LE32D400E1W
Panel	Vendor	AML	SHARP	AML
	CODE	BN07-01052A	BN07-01050A	BN07-00978A
	SPEC	LTF400HM05	CD320AGD-T1	LTF320AP11
SMPS	Vendor	HANSOL	SEC	SEC
	CODE	BN44-00469B	BN44-00468A	BN44-00438A
	SPEC	IV40F1_BHS	PSIV121411C	PSIV121411A
1	Factory Reset			
2	Type			
3	Local set	EU	EU	EU
4	Model	LD503	LD403	LD400
5	TUNER	SEC_TC	SEC_TC	SEC_TC
6	Ch Table			
7	Front Color			

2-3. Accessories

Product	Description	Model	Code. No	Remark
	Remote Control & Batteries (AAA x 2)	ALL	AA59-00496A 4301-000121	Samsung Electronics Service center
	Power Cord	ALL	3903-000525	
	Stand	5003	22" : BN90-03532B 40" : BN90-03523C	
		4003	19" : BN90-03532B 26" : BN90-03524C 32" : BN90-03522C	
		503	40" : BN90-03541B	
		403	32" : BN90-03540B	
		400	32" : BN90-03549A	
	Screw 6001-002621 : M4 x L8 6003-001782 : M4 x L12	5003	22" : 6003-001782 40" : 6002-001294 6001-002621	
		4003	19" : 6003-001782 26" : 6002-001294 32" : 6001-002621	
		503	40" : 6002-001294	
		400/403	32" : 6002-001294	
	Quick Start Guide	5003/4003	BN68-03713A	
		503/403/400	BN68-03717A	
	Cleaning Cloth	ALL	BN63-01798B	
	Warranty Card / Registration Card / Safety Guide Manual (Not available in all locations)	ALL	BN68-00514K BN68-03019A	

2-4. New Features explanation

2-4-1. My Contents

■ Using the My Contents

Enjoy photos, music and/or movie files saved on a USB Mass Storage Class (MSC) device and/or your PC.

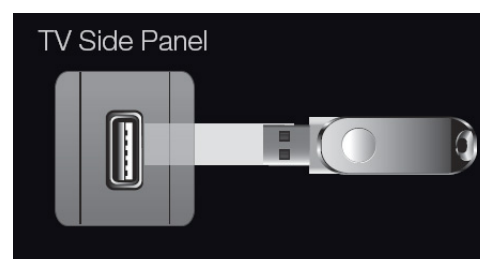
1. Press the **CONTENT** button to select **My Contents**.
2. Press **▲/▼** button to select desired menu (**Videos**, **Photos**, **Music**), then press the **ENTER** button.



** It may differ depending on the model.*

■ Connecting a USB Device

1. Turn on your TV.
2. Connect a USB device containing photo, music and/or movie files to the USB jack on the side of the TV.
3. When USB is connected to the TV, popup window appears. Then you can select **Connected Device**.







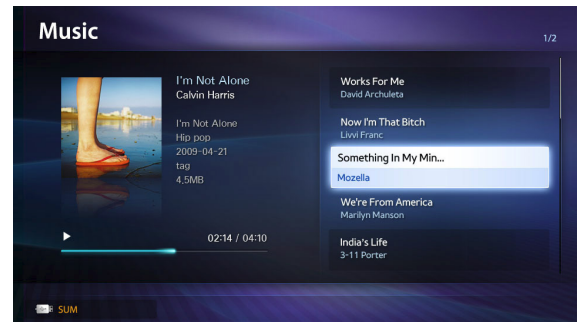
** It may differ depending on the model.*



- ☑ It might not work properly with unlicensed multimedia files.
- ☑ Need-to-Know List before using **My Contents**.
 - MTP (Media Transfer Protocol) is not supported.
 - The file system supports FAT16, FAT32 and NTFS.
 - Certain types of USB Digital camera and audio devices may not be compatible with this TV.
 - **My Contents** only supports USB Mass Storage Class (MSC) devices. MSC is a Mass Storage Class Bulk-Only Transport device. Examples of MSC are Thumb drives, Flash Card Readers and USB HDD (USB HUB are not supported). Devices should be connected directly to the TV's USB port.
 - Before connecting your device to the TV, please back up your files to prevent them from damage or loss of data. SAMSUNG is not responsible for any data file damage or data loss.
 - USB (HDD) is not supported. **for LED 4000 series**
 - Connect a USB HDD to the dedicated port, USB 1 (HDD) port. **for LED 5000 series**
 - Do not disconnect the USB device while it is loading.
 - The higher the resolution of the image, the longer it takes to display on the screen.
 - The maximum supported JPEG resolution is 15360X8640 pixels.
 - For unsupported or corrupted files, the "Not Supported File Format" message is displayed.
 - If the files are sorted by Basic View, up to 1000 files can be displayed in each folder.
 - MP3 files with DRM that have been downloaded from a non-free site cannot be played. Digital Rights Management (DRM) is a technology that supports the creation, distribution and management of the content in an integrated and comprehensive way, including the protection of the rights and interests of the content providers, the prevention of the illegal copying of contents, as well as managing billings and settlements.
 - If more than 2 PTP devices are connected, you can only use one at a time.
 - If more than two MSC devices are connected, some of them may not be recognized. A USB device that requires high power (more than 500mA or 5V) may not be supported. If an over-power warning message is displayed while you are connecting or using a USB device, the device may not be recognized or may malfunction.
 - If the TV has been no input during time set in Auto Protection Time, the Screensaver will run.
 - The power-saving mode of some external hard disk drives may be released automatically when connected to the TV.
 - If a USB extension cable is used, the USB device may not be recognized or the files on the device may not be read.
 - If a USB device connected to the TV is not recognized, the list of files on the device is corrupted or a file in the list is not played, connect the USB device to the PC, format the device and check the connection.
 - If a file deleted from the PC is still found when **My Contents** is run, use the "Empty the Recycle Bin" function on the PC to permanently delete the file.

■ Music


01. Playing Music

1. Press the ◀/▶/▲/▼ button to select the desired Music in the file list.
2. Press the **ENTER**  button or  (**Play**) button.
 - You can use  (**REW**) and  (**FF**) buttons during playback.






-  Only displays the files with MP3 and PCM file extension. Other file extensions are not displayed, even if they are saved on the same USB device.
-  If the sound is abnormal when playing MP3 files, adjust the **Equalizer** in the **Sound** menu. (An over-modulated MP3 file may cause a sound problem.)

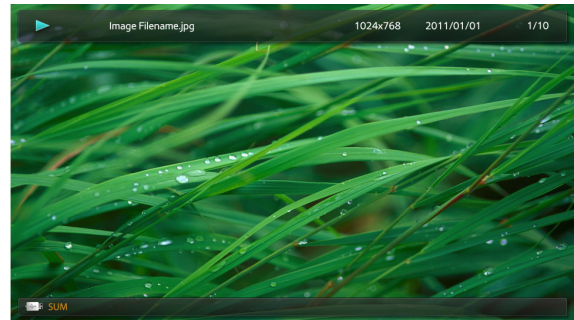
02. Playing selected music


1. Press the  (**Edit Mode**) button.
2. Select the desired music.
 - The check box appears to the left of the selected files.
3. Press the **TOOLS** button and select **Play Selected Contents**.
 - You can select or deselect all music pressing the **Select All/Deselect All**.

■ Photos

01. Viewing a Photo (or Slide Show)

1. Press the ◀/▶/▲/▼ button to select the desired Music in the file list.
2. Press the **ENTER**  button or  (**Play**) button.
 - When a selected photo is displayed, press the **ENTER**  button to start the slide show.
 - During the slide show, all files in the file list will be displayed in order.



- ☞ When you press the  (**Play**) button in the file list, slide show will be started immediately.
- ☞ Music files can be automatically played during the Slide Show if the **Background Music** is set to **On**.
- ☞ The **BGM Mode** cannot be changed until the BGM has finished loading.

2-4-2. e-Manual

■ How to view the e-Manual



Press the **E-MANUAL** button on your remote. Move the cursor using up/down/right/left buttons to highlight a category, then a topic, and then press the **ENTER** button. The e-Manual displays page you want to see.



MENU → **Support** → **e-Manual** → **ENTER**

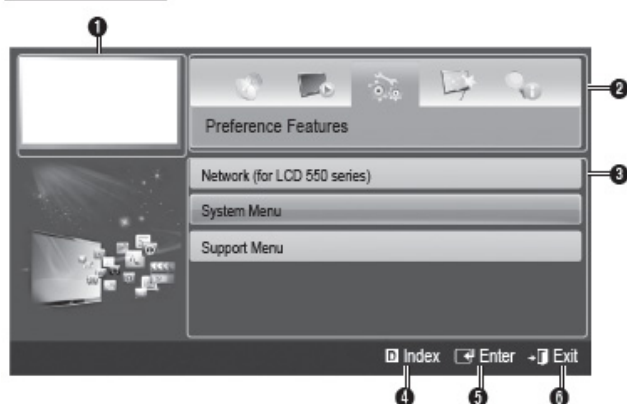


If you want to return to **e-manual**, press the **E-MANUAL** button on remote.



It is not available to connect **Try now** directly in the external input source.

Screen Display



- ❶ Currently displayed video, TV program, etc.
- ❷ The category list. Press ◀ or ▶ button to select category you want.
- ❸ Displays the sub-menu list. Use the arrow buttons on your remote to move the cursor. Press **ENTER** button to select the sub-menu you want.
- ❹ **D** Blue (**Index**): Displays the index screen.
- ❺ **Enter**: Selects a category or sub-menu.
- ❻ **Exit**: Exit the e-Manual.

How to toggle between an e-Manual topic and the corresponding OSD menu(s).



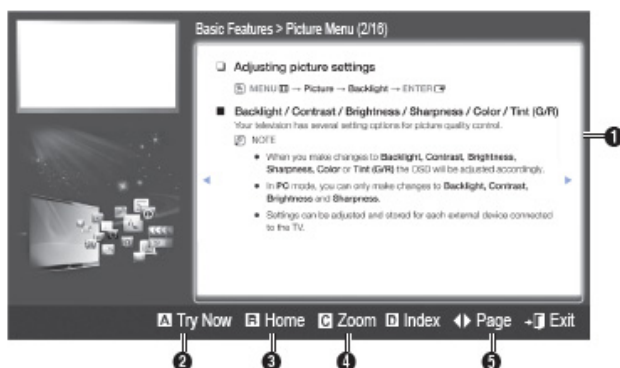
Method 1

1. If you want to use the menu that corresponds to an e-Manual topic, press the red button to select **Try Now**.
2. To return to the e-Manual screen, press the **E-MANUAL** button.

Method 2

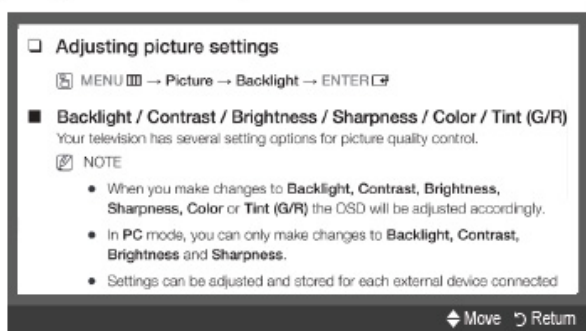
1. Press the **ENTER** button when a topic is displayed. "Are you sure?" appears. Select **Yes**, and then press the **ENTER** button. The OSD window appears.
2. To return to the **e-Manual** screen, press the **E-MANUAL** button.

Viewing the Contents



- ❶ Contents Area: Contains the topic contents, if you selected a sub-menu. To move previous or next page, press the ◀ / ▶ button.
- ❷ Try Now: Displays the OSD menu that corresponds to the topic. To return to the e-Manual screen, press the e-Manual button.
- ❸ Home: Moves to the e-Manual home screen.
- ❹ Zoom: Magnifies a screen. You can scroll through the magnified screen by using ▲ / ▼ buttons.
- ❺ ◀▶ (Page): Moves to previous or next page.

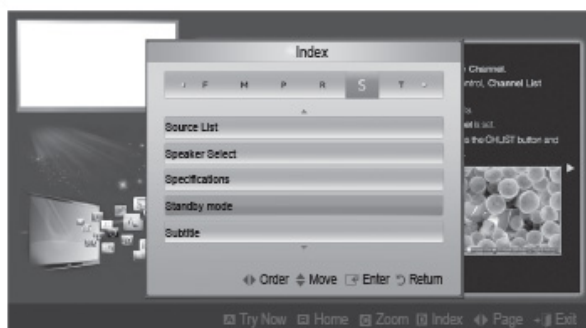
Using the Zoom mode



Select the **Zoom**, and then press **ENTER** to magnify the screen. You can scroll through the magnified screen by using the ▲ or ▼ buttons.

To return to the screen to normal size, press the **RETURN** button.

How to search for a topic on the index page



1. To search for a topic, press the left or right arrow button to select a letter, and then press **ENTER**. The Index displays a list of topics and keywords that begin with the letter you selected.
 2. Press the up or down arrow button to select a topic or keyword, and then press the **ENTER** button.
 3. The e-Manual page with the topic appears.
- To close the **Index** screen, press the **RETURN** button.

3. Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the LED/LCD TV.


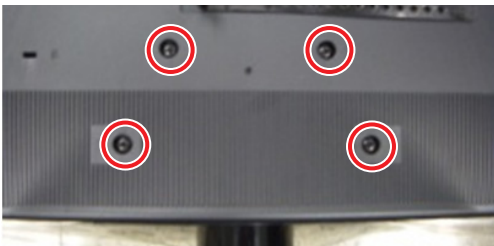




⚠ WARNING: This LED/LCD TV contains electrostatically sensitive devices. Use caution when handling these components.

3-1. Disassembly and Reassembly



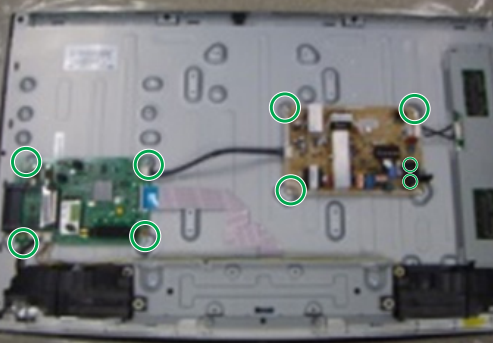

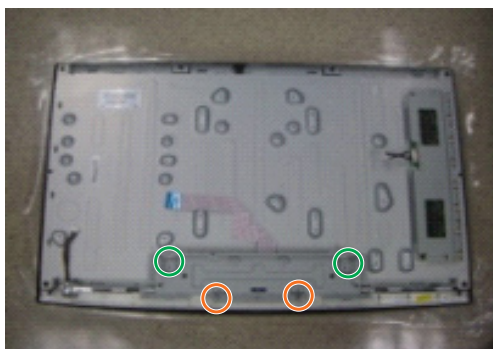



⚠ Cautions:

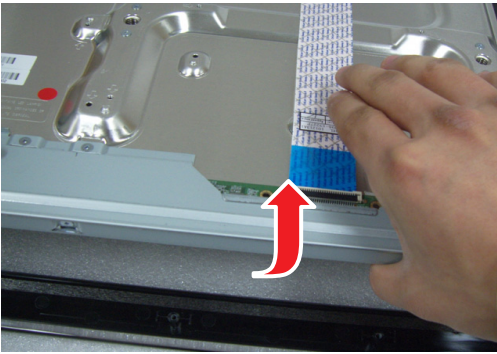
1. Disconnect the LED/LCD TV from the power source before disassembly.
2. Follow these directions carefully; never use metal instruments to pry apart the cabinet.

■ LE32D400

Description	Picture Description	Screws
1 Place the TV face down on cushioned table.		
Remove 4 screws from the Stand.		 6003-001785
Remove Stand.		
2 Remove the screws of Rear-Cover. <ul style="list-style-type: none"> • 32D400/32D403/32D503 : Remove the 8 screws. 		 6003-001782


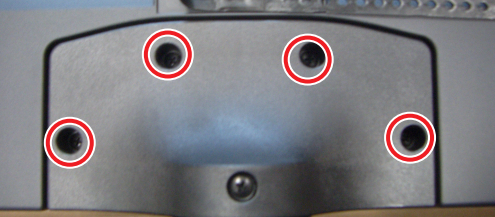
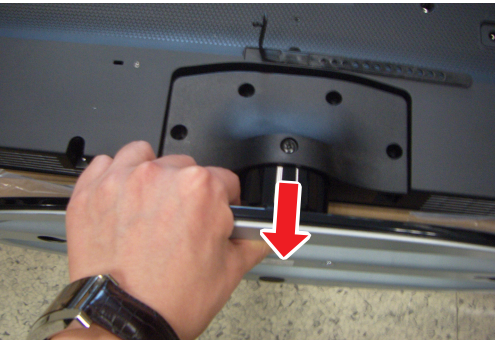

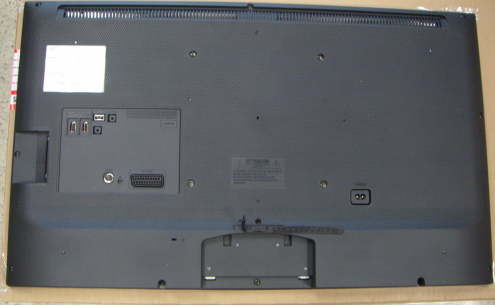


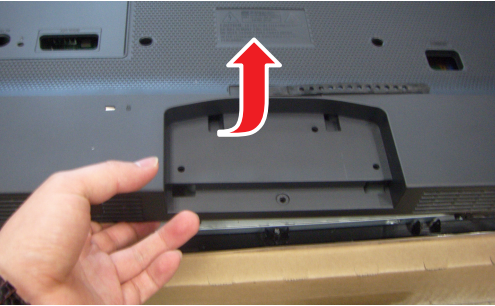
3. Disassembly and Reassembly

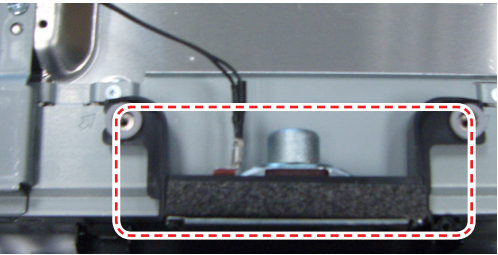
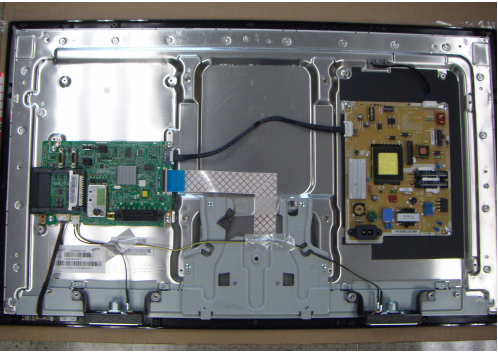

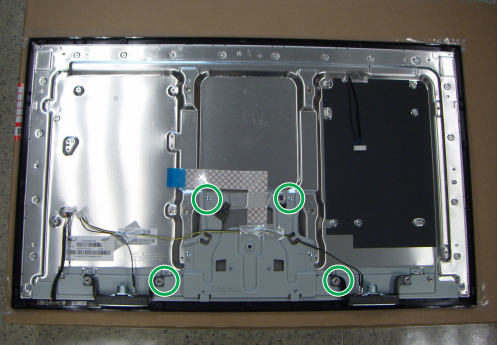

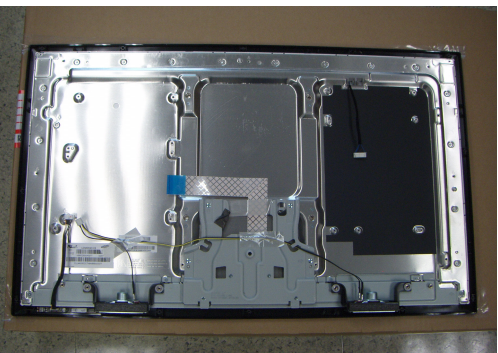
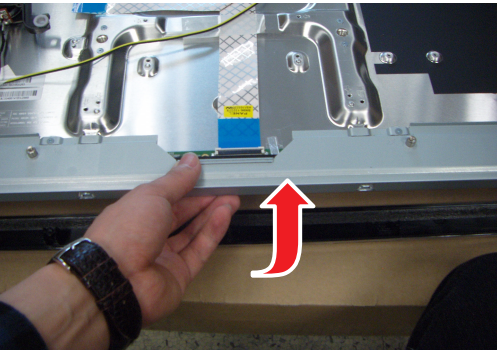
Description	Picture Description	Screws
3 Lift up the Rear-Cover.		
4 Remove the left and right speaker.		
5 Remove the 4 screws of Main Board. Remove the 5 screws of SMPS Board.		 6003-001782
6 Remove the 6 screws of Bracket Stand Link & Guide. (Machine type : 4 EA)		 6003-001782  6003-001782
7 Remove the Stand Link.		

Description		Picture Description	Screws
8	Lift up the Panel.		

※ Reassembly procedures are in the reverse order of disassembly procedures.








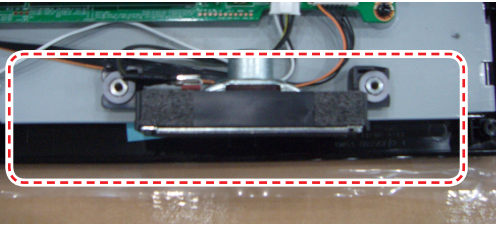
UE32D4003

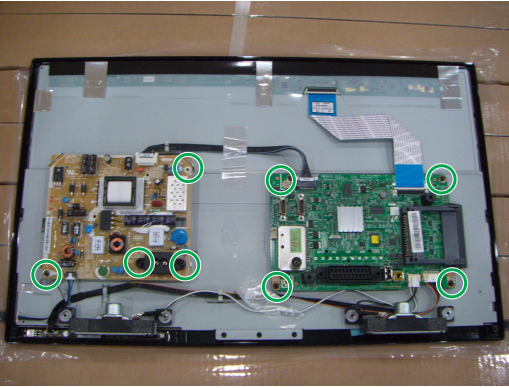



Description	Picture Description	Screws
<div>1</div> <div>Place the TV face down on cushioned table.</div> <div>Remove 4 screws from the Stand.(machine type)</div> <div>Remove Stand.</div>	  	 <div>6001-002621 (Machine)</div>
<div>2</div> <div>Remove the screws of Rear-Cover.</div> <div> <ul style="list-style-type: none"> • 26D4003 : Remove the 4 screws. • 32D4003 : Remove the 10 screws. (machine type : 1 EA) • 40D5003 : Remove the 11 screws. (machine type : 3 EA) </div>		 <div>6003-001782</div>  <div>6001-002671 (Machine)</div>
<div>3</div> <div>Lift up the Rear-Cover.</div>		

Description	Picture Description	Screws
4 Remove the left and right speaker.		
5 Remove the 4 screws of Main Board. Remove the 5 screws of SMPS Board.		 6001-002653 (Machine)
6 Remove the 4 screws of Bracket Stand Link		 6001-002653 (Machine)
7 Remove the Stand Link.		
8 Lift up the Panel.		

※ Reassembly procedures are in the reverse order of disassembly procedures.

■ UE22D5003

Description	Picture Description	Screws
1 Place the TV face down on cushioned table.		
Remove 2 screws from the stand. (machine type)		 6003-001782
Remove Stand.		
2 Remove the screws of Rear-Cover. • 19D4003/22D5003 : Remove the 4 screws.		 6003-001782
3 Lift up the Rear-Cover.		
4 Remove the left and right speaker.		

Description	Picture Description	Screws
5 Remove the 4 screws of Main Board. Remove the 3 screws of SMPS Board.		 6003-000115
6 Remove the Stand Link.		
7 Lift up the Panel.		

※ Reassembly procedures are in the reverse order of disassembly procedures.

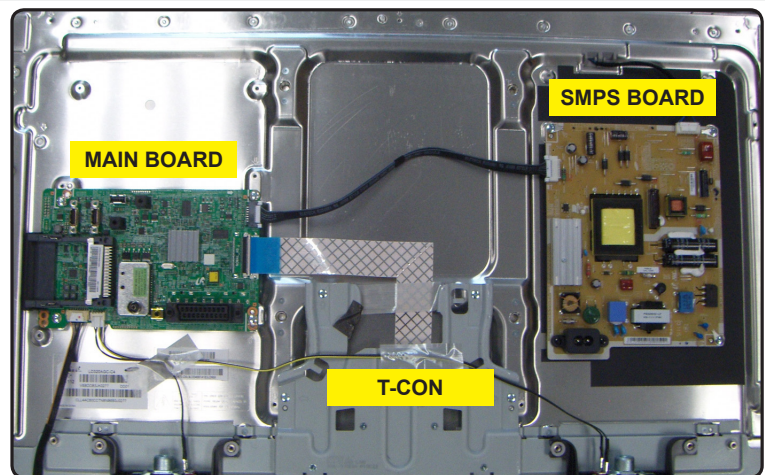
4. Troubleshooting

4-1. Troubleshooting

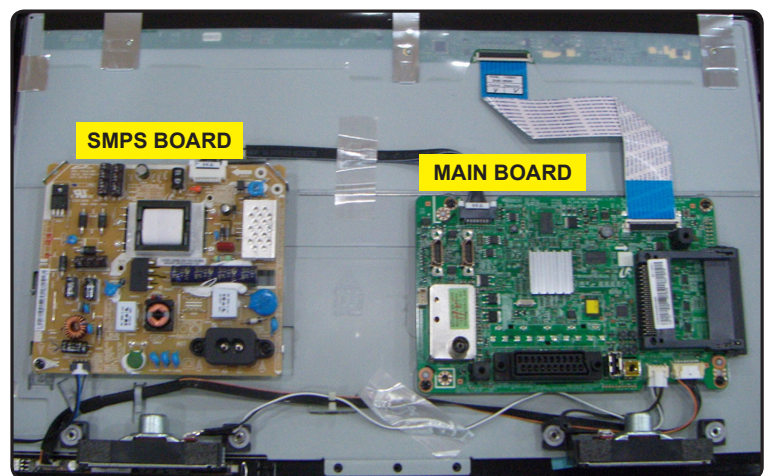
4-1-1. Previous check

1. Check the various cable connections first.
 - Check to see if any cables are damaged or burnt.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.

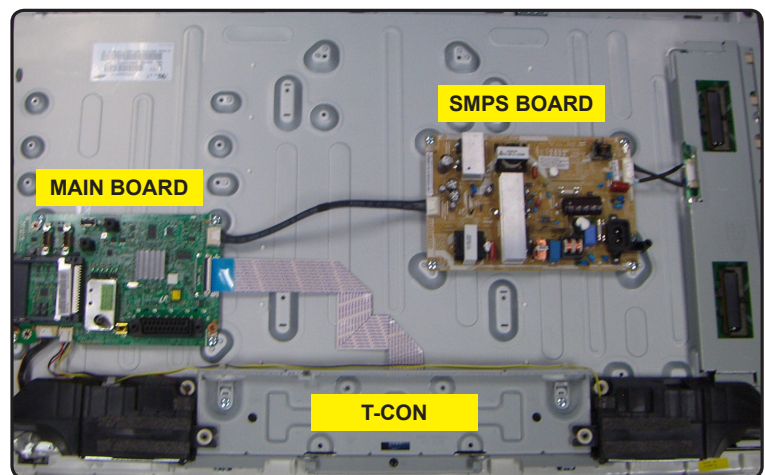
UD4003(19", 26", 32")
UD5003(22", 40")



UD4003(19")
UD5003(22")

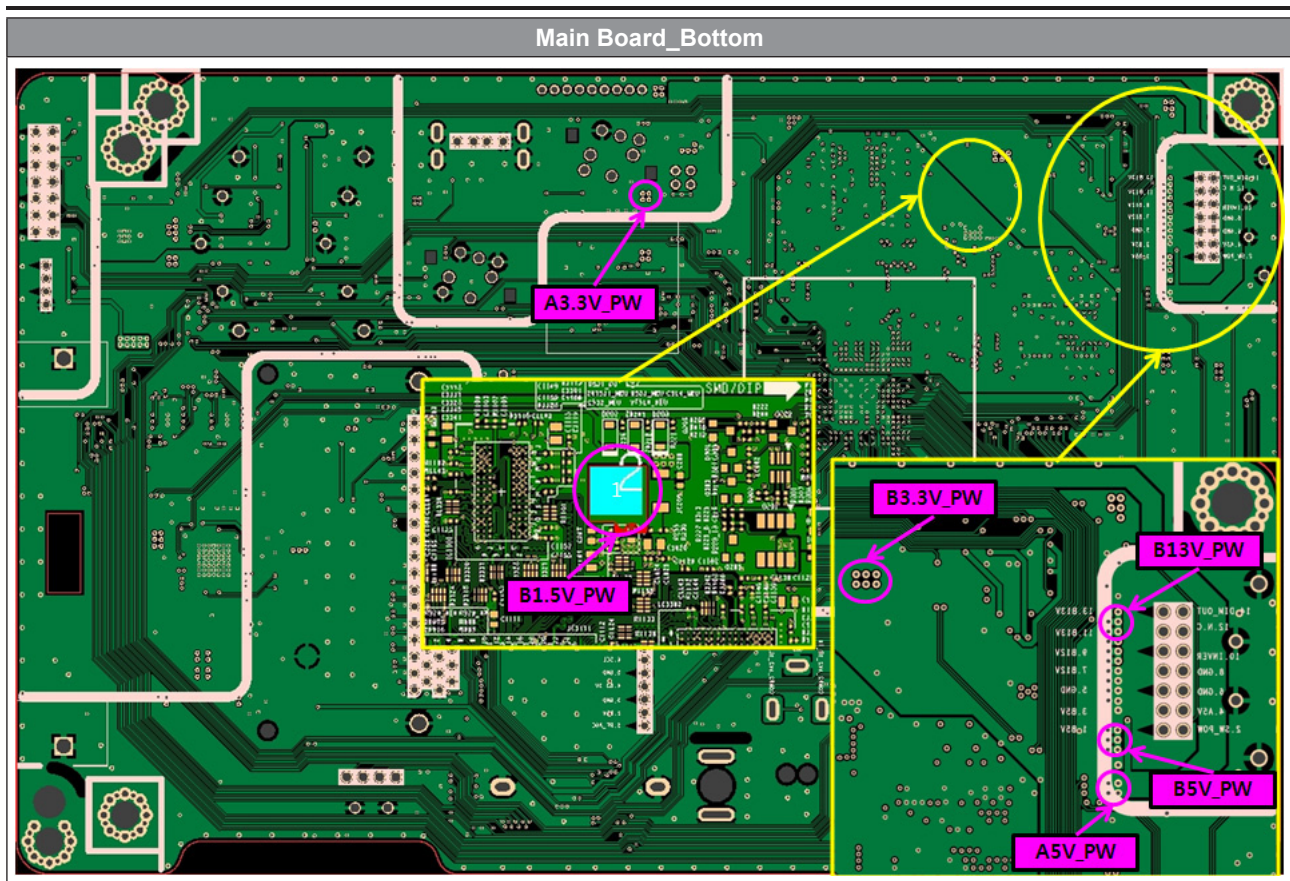


LD400 / LD403(32")
LD503(40")



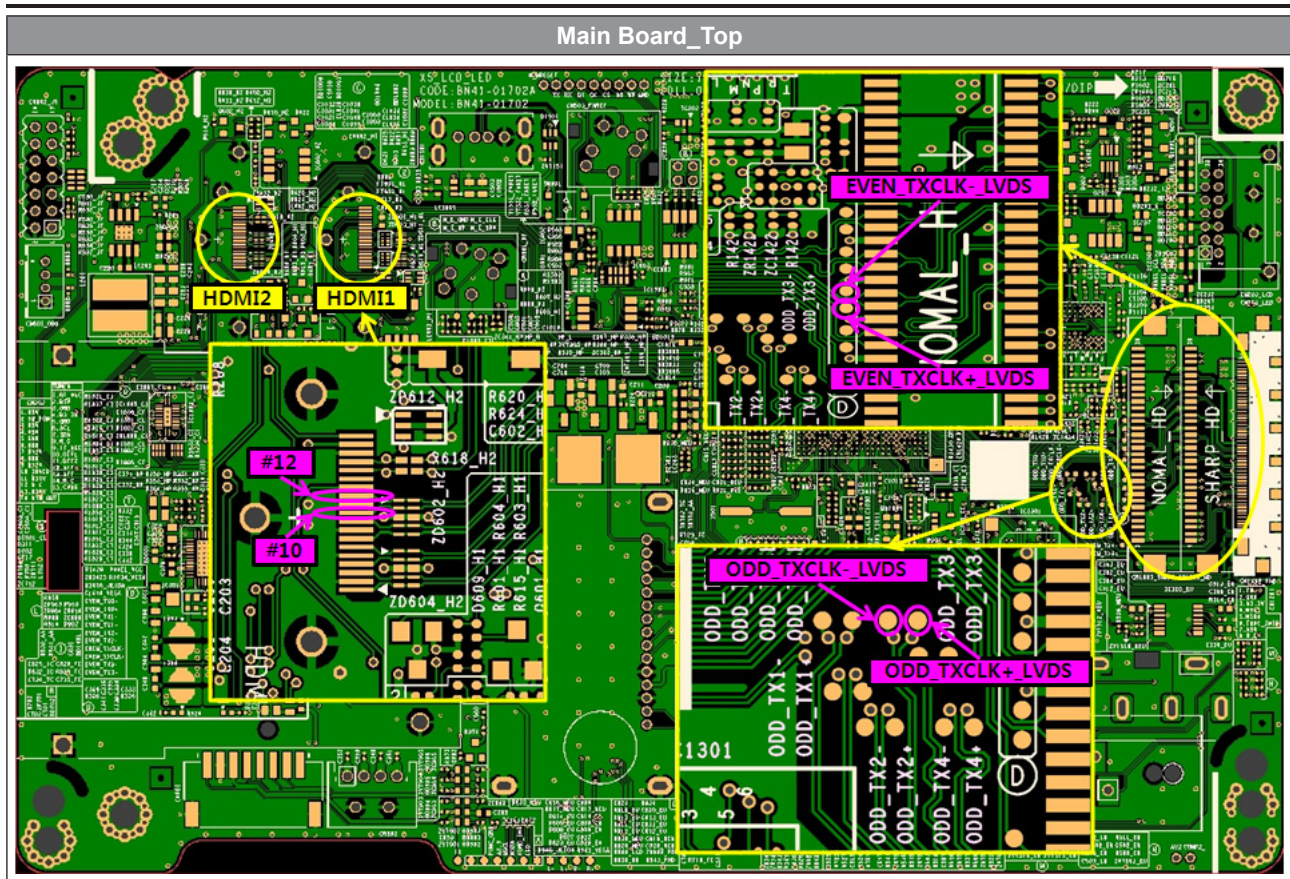
4-1-2. Flip (UE40D5003BW*** / UE26/32D4003BW*** / LE40D503F7W*** / LE32D400E1W*** / LE32D403E2W***)■ **No Power**

Symptom	<ul style="list-style-type: none"> - The LEDs on the front panel do not work when connecting the power cord. - The SMPS relay does not work when connecting the power cord. - The units appears to be dead.
Major checkpoints	<p>The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following:</p> <ul style="list-style-type: none"> - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Diagnostics	<pre> graph TD Q1[Lamp(Backlight) Off, power indicator LED on?] -- No --> A1[Change the 14p power cable.] Q1 -- Yes --> Q2[Lamp(Backlight) Off, power indicator LED on ?] Q2 -- No --> A2[Change INVERTER/BALANCE B'D.] Q2 -- Yes --> Q3[Does proper Stand-By DC A5V appear at VIA - A5V_PW ?] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[Does proper Main DC B13V, B5V appear at VIA - B13V_PW, B5V_PW ?] Q4 -- No --> A3 Q4 -- Yes --> Q5[Does proper DC A3.3V appear at VIA - A3.3V_PW ?] Q5 -- No --> A3 Q5 -- Yes --> Q6[Does proper B3.3V, B1.5V appear at VIA - B3.3V_PW, B1.5V_PW] Q6 -- No --> A3 Q6 -- Yes --> Q7[Does proper DC B13V appear at LVDS connector Pin #1~5 of T-con b'd?] Q7 -- No --> A4[Change the LVDS cable.] Q7 -- Yes --> Q8[Does proper DC B13V appear at F1 of T-con b'd?] Q8 -- No --> A5[Change the T-con b'd.] Q8 -- Yes --> Q9[A power is supplied to set?] Q9 -- No --> A6[Check a other function. (No picture part) Replace a LCD Panel.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.



■ No video (HDMI 1, 2 - Digital signal)

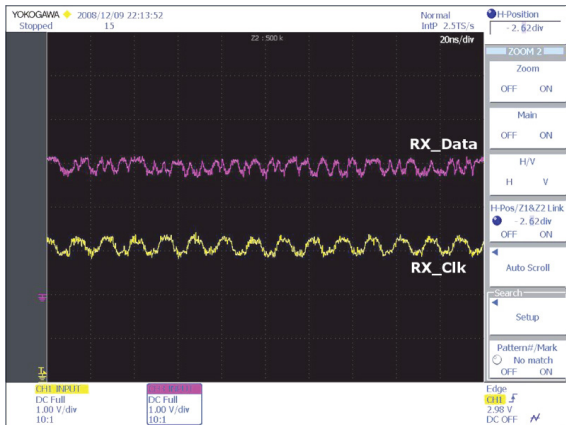
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the HDMI source. – Check the HDMI switch, Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the HDMI source and check the connection of HDMI cable ?] Q2 -- No --> A2[Input the HDMI signal properly.] Q2 -- Yes --> Q3[Does the signal appear at CN601 (Pin#12 , #7)(HDMI1) CN604 (Pin#12 , #7)(HDMI2) (HDMI RX_Clk , RX_Data) ?] Q3 -- No --> A3[Check CN601, CN604 CN602, CN603. Check HDMI cable. Change the Main Assy.] Q3 -- Yes --> Q4[Does the digital data appear at TP-E_TXCLK+, E_TXCLK- , O_TXCLK+, O_TXCLK- ?] Q4 -- No --> A4[Check IC1001 (X6). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact Tech support.] </pre> <p>The flowchart provides a systematic approach to diagnosing the 'No video' issue. It begins by checking the power indicator LED and backlight. If the LED is off, the device is in 'Stand-by mode'. If the LED is on, it proceeds to check the HDMI source and cable connection. If the connection is correct, it checks for signal at the HDMI ports (CN601, CN604). If no signal is present, it suggests checking the cables and the main assembly. If signal is present, it checks for digital data at the TXCLK pins. If no data is present, it suggests checking IC1001 and the main assembly. If data is present, it checks the LVDS cable, T-Con board, and LCD panel. If all these checks fail, it advises contacting technical support.</p>
Caution	Make sure to disconnect the power before working on the IP board.



■ WAVEFORMS

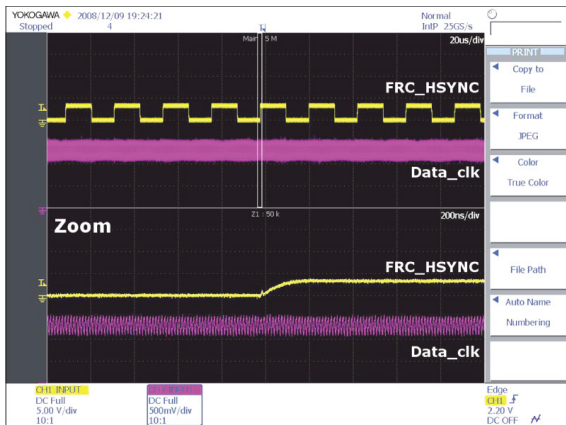
3

HDMI input (RX_Data, RX_Clk)



2

LVDS output



■ No Video (Tuner_CVBS)

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Tuner CVBS source. – Check the Tuner, Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[Does the DC TU5V_PW, TU33V_PW appear at TP - TUNER_33V, B 5V Pin of Tuner ?] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[Does the digital data appear at TP-E_TXCLK+, E_TXCLK- , O_TXCLK+, O_TXCLK- ?] Q4 -- No --> A4[Check IC1001 (X6). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

Main Board_Top

15" LCD LED
CODE: 8N41-01702A
MODEL: 8N41-01702

VOIP

EVEN TXCLK- LVDS
EVEN TXCLK+ LVDS

10M H

ODD TXCLK- LVDS
ODD TXCLK+ LVDS

#4, B5V_TU_PW
#2, B5V_TU_PW

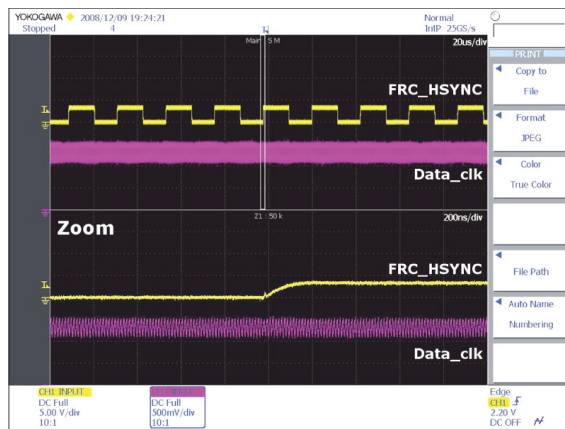
1301

ODD_TX1-
ODD_TX1+
ODD_TX2-
ODD_TX2+
ODD_TX3-
ODD_TX3+
ODD_TX4-
ODD_TX4+

NOMAL_HD
SHARP_HD

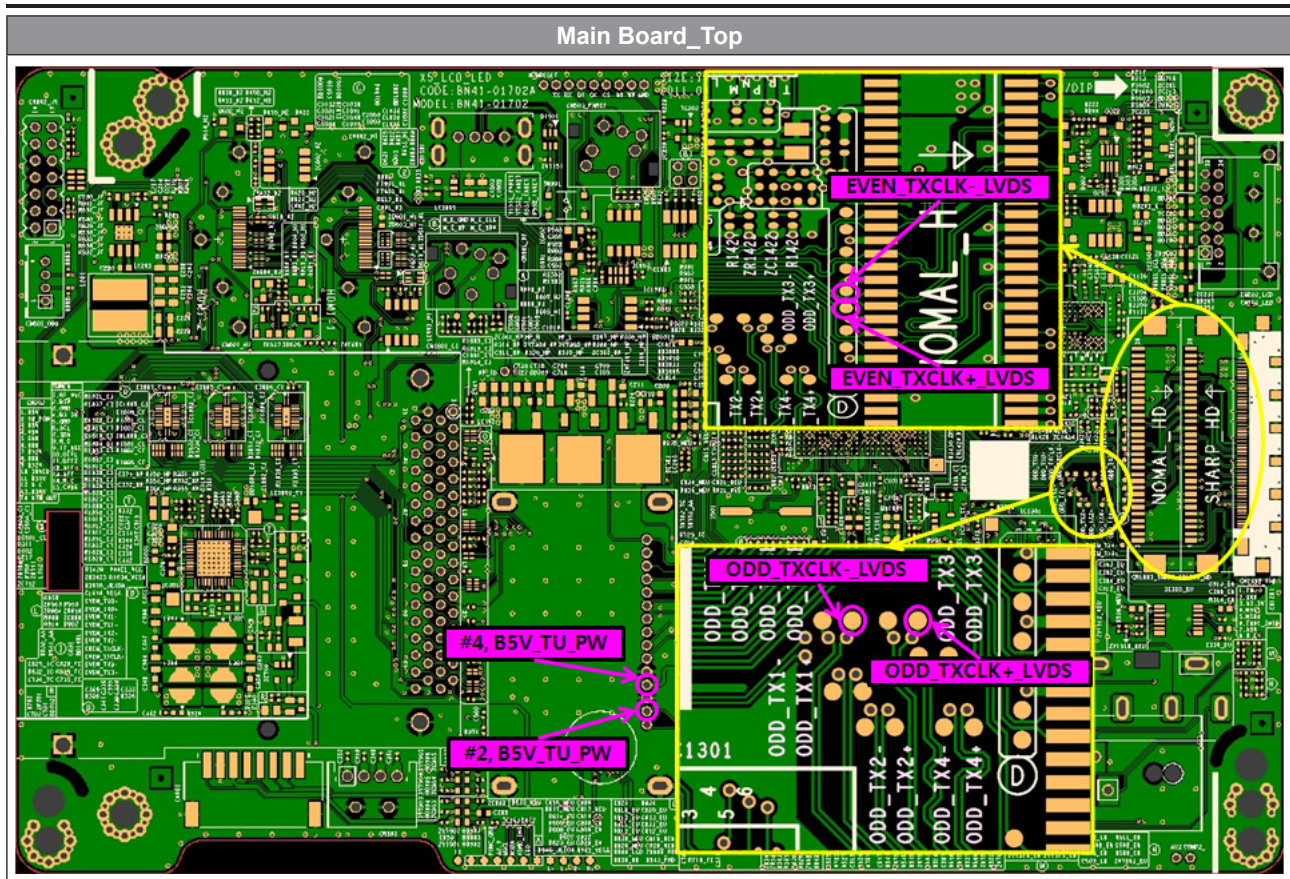
■ WAVEFORMS

2 LVDS output



■ No Video (Tuner DTV)

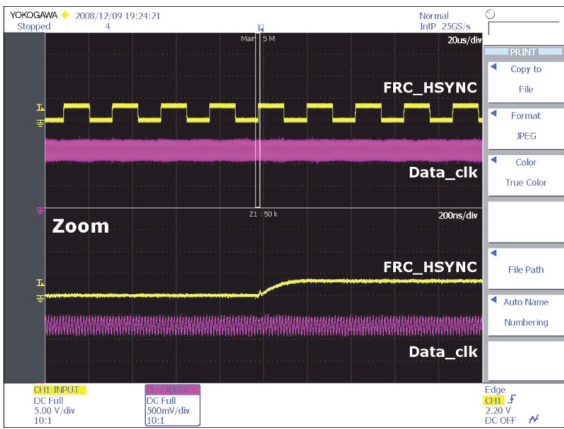
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the DTV source. – Check the Tuner, Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[Check the 'signal strength' in Self Diagnosis menu Strength is enough ?] Q3 -- No --> A3[Check the D-TV source.] Q3 -- Yes --> Q4[Does the DC B5V_TU_PW, B33V_TU_PW appear at #3, #5 Pin of Tuner ?] Q4 -- No --> A4[Change the Main Assy.] Q4 -- Yes --> Q5[Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK- ?] Q5 -- No --> A5[Check IC1001 (X6). Change the Main Assy.] Q5 -- Yes --> Q6[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q6 -- No --> A6[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.



■ WAVEFORMS

2

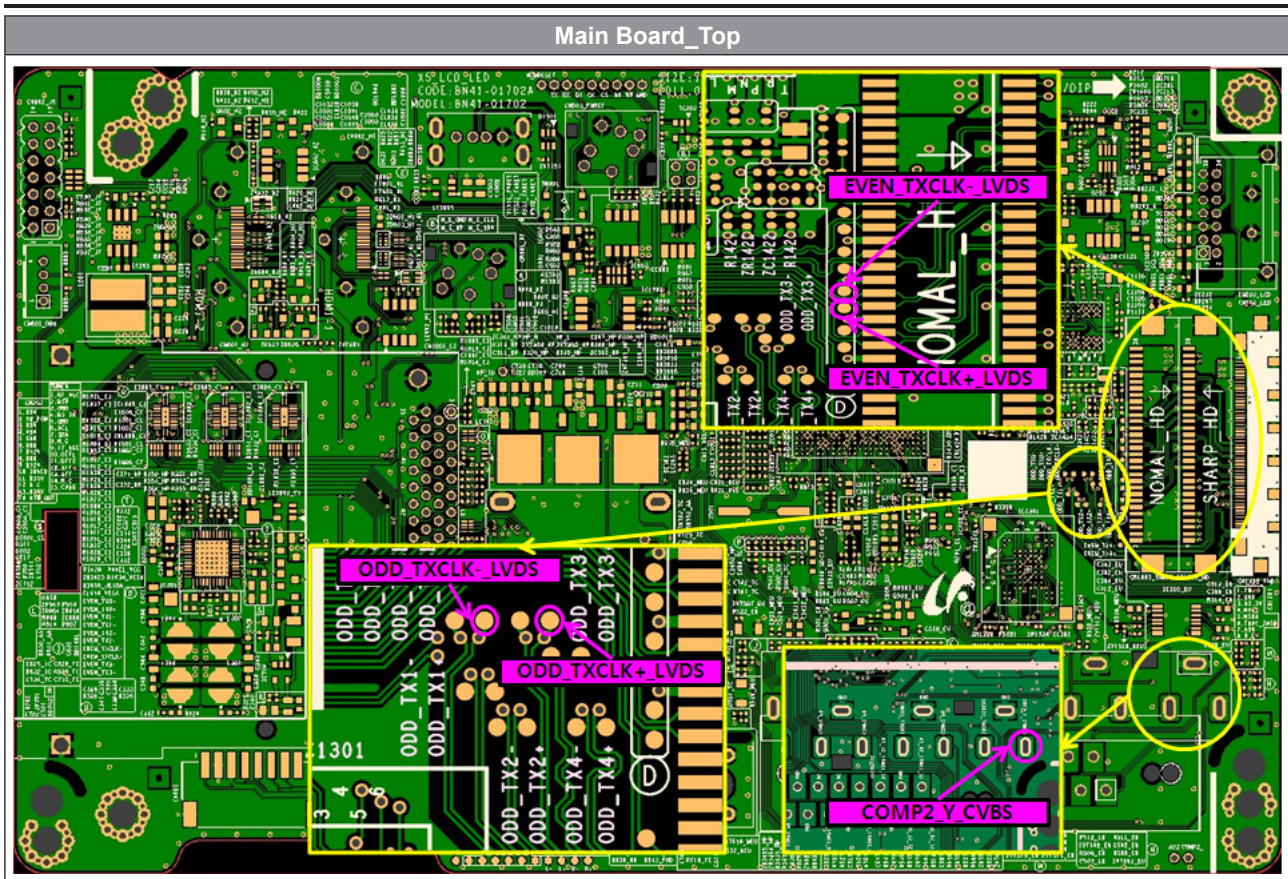
LVDS output



■ No Video (Video CVBS)

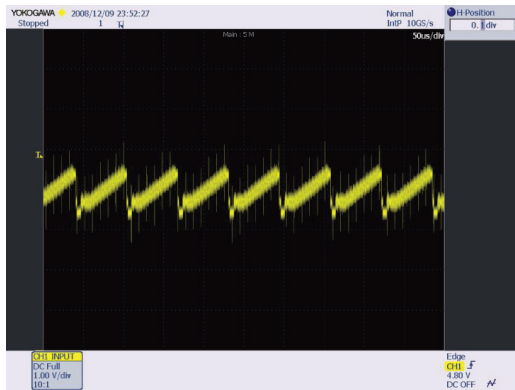
Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Video CVBS source – Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the video source and check the connection of video cable?] Q2 -- No --> A2[Input the video source properly.] Q2 -- Yes --> Q3[Does the CVBS data appear at PIN - COMP1_Y_CVBS ?] Q3 -- No --> A3[Check CN503. Change the Main Assy.] Q3 -- Yes --> Q4[Does the digital data appear at TP-E_TXCLK+, E_TXCLK- , O_TXCLK+, O_TXCLK- ?] Q4 -- No --> A4[Check IC1001 (X6). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

4. Troubleshooting

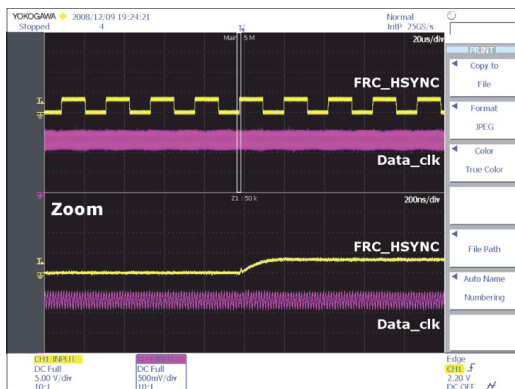


■ WAVEFORMS

4 CVBS OUT (Grey Bar)

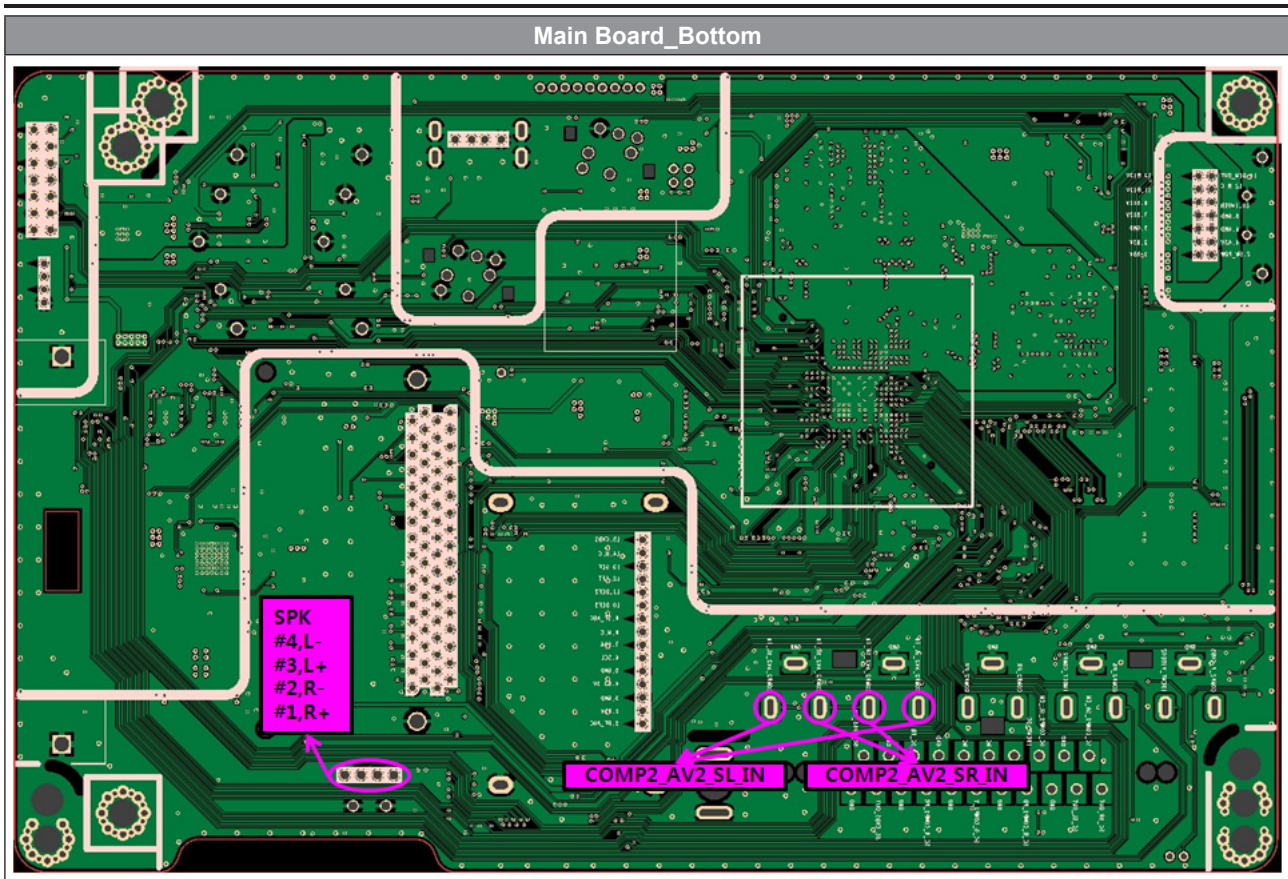


2 LVDS output



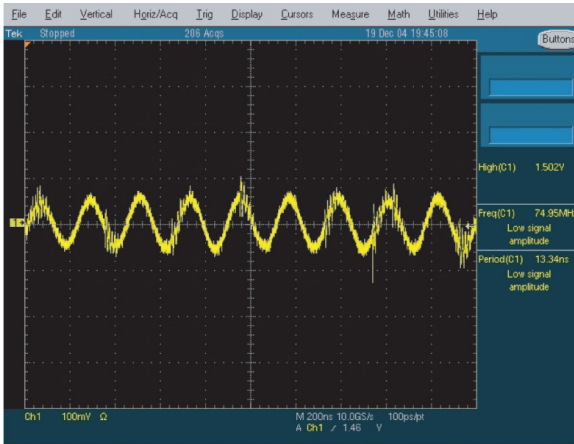
■ No Sound

Symptom	– Video is normal but there is no sound..
Major checkpoints	<ul style="list-style-type: none"> – When the speaker connectors are disconnected or damaged. – When the sound processing part of the Main Board is not functioning. – Speaker defect.
Diagnostics	<pre> graph TD Q1[Check the source and check the connection of sound cable (Comp/PC/DVI to HDMI) ?] -- No --> A1[Input the sound source properly.] Q1 -- Yes --> Q2[Does the sound data appear at PIN - COMP1_SR_IN, COMP1_SL_IN VIA - PC_DVI_SR_IN, PC_DVI_SL_IN (PC/DVI) ?] Q2 -- No --> A2[Check CN503, CN402. Change the Main Assy.] Q2 -- Yes --> Q3[Does the DC B12VS appear at CN201 PIN 7,9 - B12VS_PW ?] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[Does the sound data appear at TP - SPK_L-, SPK_L+, SPK_R-, SPK_R+ ?] Q4 -- No --> A4[Check IC1001 (X6). Change the Main Assy.] Q4 -- Yes --> Q5[Replace speaker ? TBD] Q5 -- No --> A5[Please, Contact Tech support.] </pre> <p>The flowchart for diagnosing 'No Sound' starts with checking the source and sound cable connection. If 'No', the user is instructed to input the sound source properly. If 'Yes', it proceeds to check for sound data at specific pins (COMP1_SR_IN, COMP1_SL_IN, PC_DVI_SR_IN, PC_DVI_SL_IN). If 'No', it instructs to check CN503, CN402 and change the main assembly. If 'Yes', it checks for DC B12VS at CN201 PIN 7,9. If 'No', it instructs to change the main assembly. If 'Yes', it checks for sound data at TP - SPK_L-, SPK_L+, SPK_R-, SPK_R+. If 'No', it instructs to check IC1001 (X6) and change the main assembly. If 'Yes', it asks to replace the speaker (TBD). If 'No', it instructs to contact tech support.</p>
Caution	Make sure to disconnect the power before working on the IP board.



■ WAVEFORMS

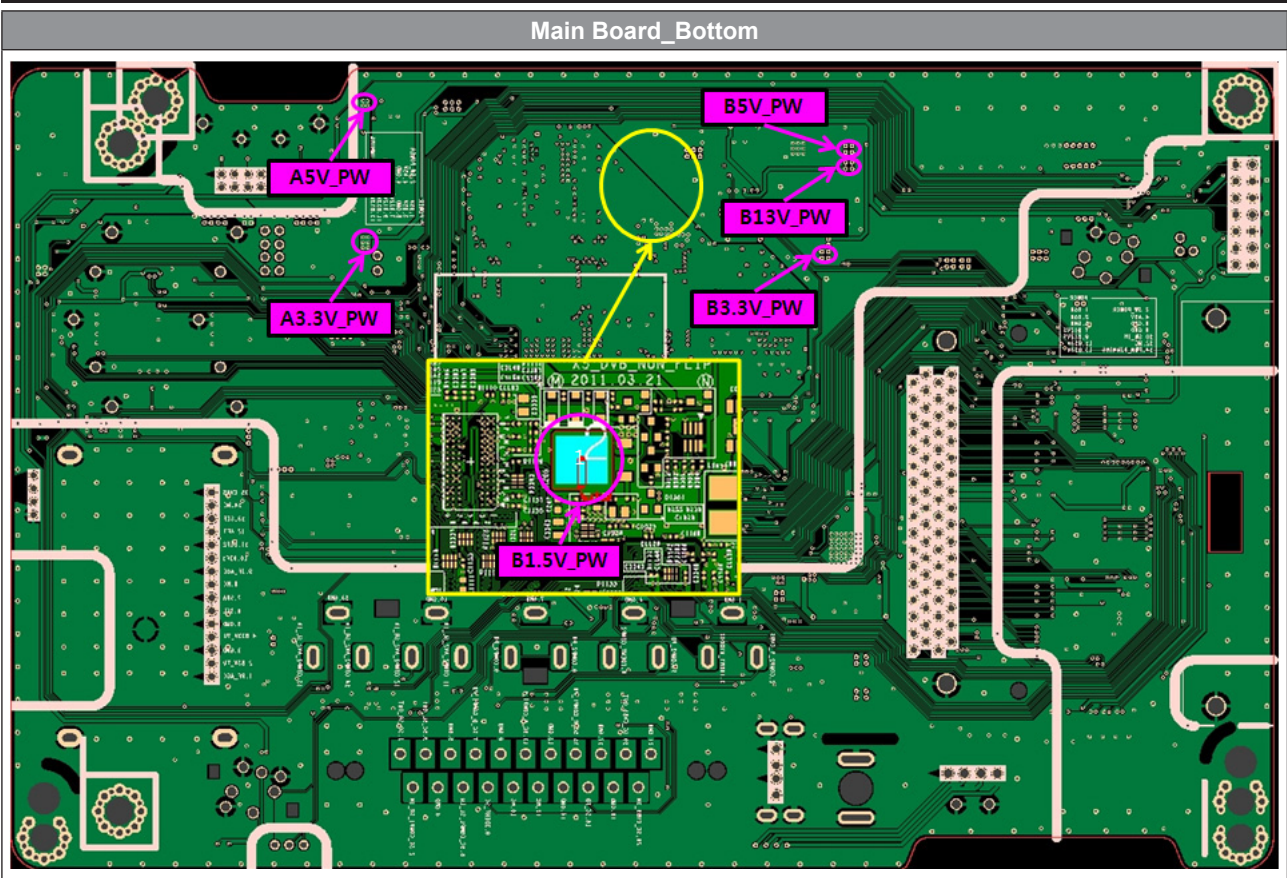
7 Speaker out



4-1-3. Non Filp (UE22D5003BW*** / UE19D4003BW***)

■ No Power

Symptom	<ul style="list-style-type: none"> - The LEDs on the front panel do not work when connecting the power cord. - The SMPS relay does not work when connecting the power cord. - The units appears to be dead.
Major checkpoints	<p>The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following:</p> <ul style="list-style-type: none"> - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Diagnostics	<pre> graph TD Q1[Lamp(Backlight) Off, power indicator LED on?] -- No --> A1[Change the 14p power cable.] Q1 -- Yes --> Q2[Lamp(Backlight) Off, power indicator LED on ?] Q2 -- No --> A2[Change INVERTER/BALANCE B'D.] Q2 -- Yes --> Q3[Does proper Stand-By DC A5V appear at VIA - A5V_PW ?] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[Does proper Main DC B13V, B5V appear at VIA - B13V_PW, B5V_PW ?] Q4 -- No --> A3 Q4 -- Yes --> Q5[Does proper DC A3.3V appear at VIA - A3.3V_PW ?] Q5 -- No --> A3 Q5 -- Yes --> Q6[Does proper B3.3V, B1.5V appear at VIA - B3.3V_PW, B1.5V_PW] Q6 -- No --> A3 Q6 -- Yes --> Q7[Does proper DC B13V appear at LVDS connector Pin #1~5 of Panel ?] Q7 -- No --> A4[Change the LVDS cable.] Q7 -- Yes --> Q8[A power is supplied to set?] Q8 -- No --> A5[Check a other function. (No picture part) Replace a LCD Panel.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.



■ No video (HDMI 1, 2 - Digital signal)

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the HDMI source. – Check the HDMI switch, Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the HDMI source and check the connection of HDMI cable ?] Q2 -- No --> A2[Input the HDMI signal properly.] Q2 -- Yes --> Q3[Does the signal appear at CN601 (Pin#12 , #7)(HDMI1) CN604 (Pin#12 , #7)(HDMI2) (HDMI RX_Clk , RX_Data) ?] Q3 -- No --> A3[Check CN601,CN602. Check HDMI cable. Change the Main Assy.] Q3 -- Yes --> Q4[Does the digital data appear at TP-E_TXCLK+, E_TXCLK- , O_TXCLK+, O_TXCLK-] Q4 -- No --> A4[Check IC1111 (X5). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact Tech support.] </pre> <p>The flowchart provides a systematic approach to diagnosing the 'No video' issue. It begins by checking the power indicator LED and backlight status. If the LED is off, the user is directed to check the 'Stand-by mode'. If the LED is on, the next step is to verify the HDMI source and cable connection. If the connection is correct, the user is prompted to check for signal at specific pins (CN601, CN604) for HDMI1 and HDMI2. If no signal is present, the user is advised to check these components and the main assembly. If signal is present, the next step is to check for digital data at specific pins (TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-). If no digital data is present, the user is directed to check IC1111 (X5) and the main assembly. If digital data is present, the final step is to check the LVDS cable, T-Con board, and LCD panel. If these are all correct, the user is advised to contact technical support.</p>
Caution	Make sure to disconnect the power before working on the IP board.

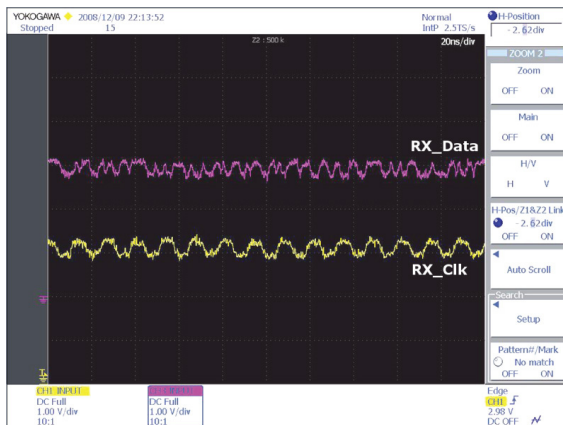
This image shows the top view of the Main Board. Key components and labels include:

- Top Center:** PCB CODE: BN41-D1703A, MODEL: BN41-D1703, SIZE: 192X122MM(W/L) 1 2T, X5 DVB NON FLIP, 2011.03.21.
- Left Side:** Two yellow circles highlight the **HDMI1** and **HDMI2** ports.
- Bottom Left:** A yellow box highlights the **ZD611_H1** component, with pink arrows pointing to pins **#12** and **#10**.
- Top Right:** A yellow circle highlights the **FHD** and **HD** ports.
- Bottom Right:** A yellow box highlights the **ODD_TXCLK+ LVDS** and **EVEN_TXCLK- LVDS** components, with pink arrows pointing to pins **RD212-13** and **RD201-5**.

■ WAVEFORMS

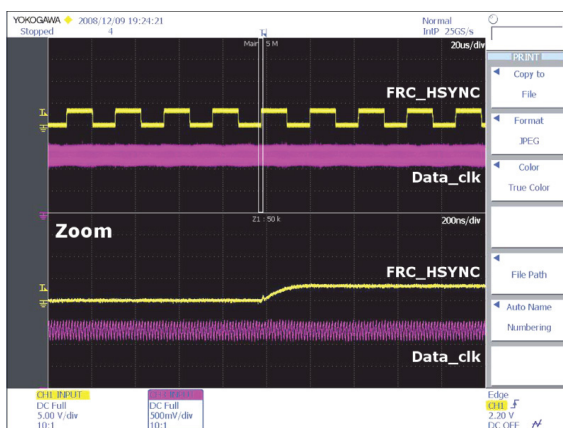
3

HDMI input (RX_Data, RX_Clk)



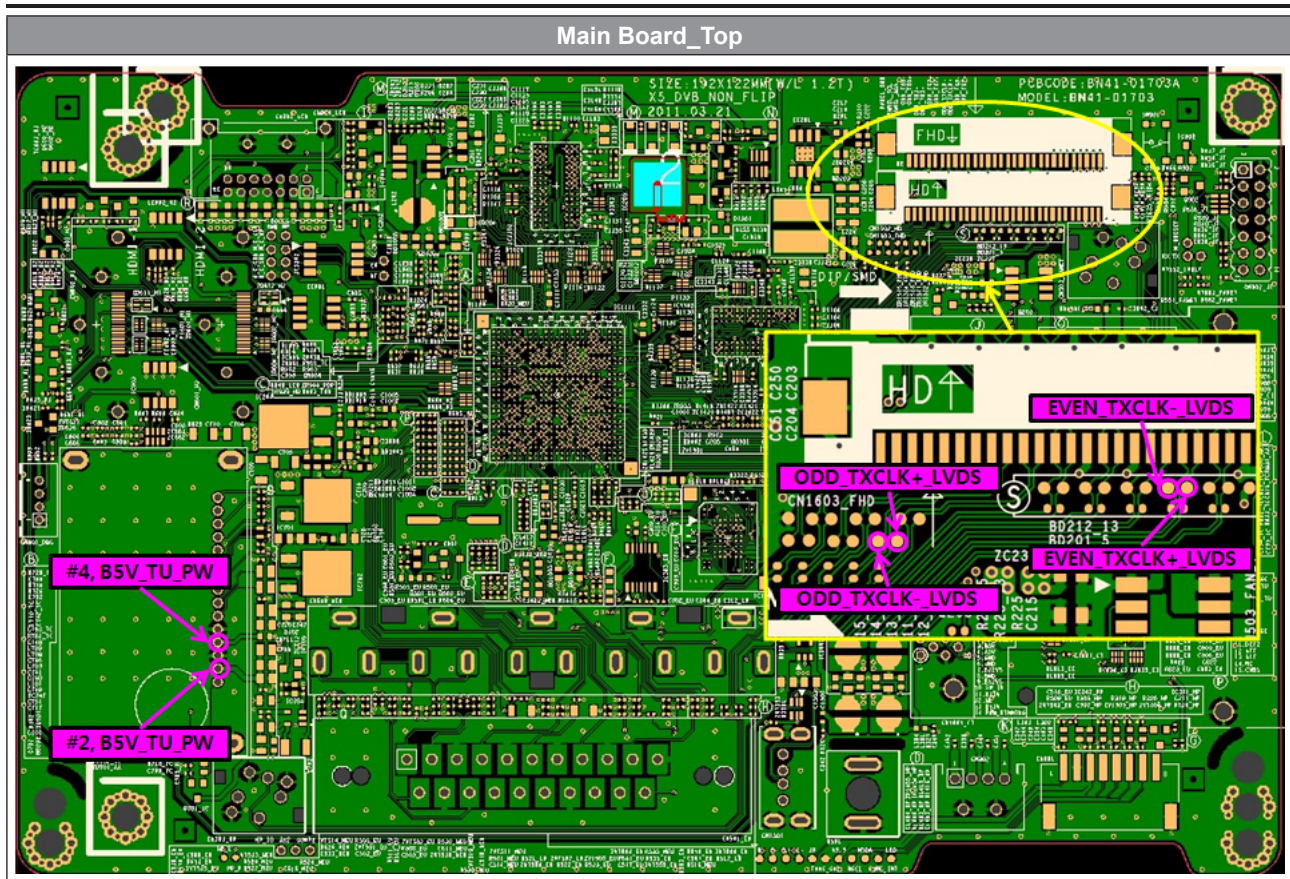
2

LVDS output



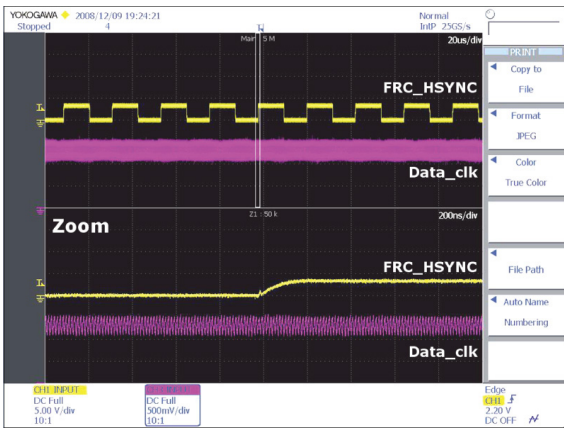
■ No Video (Tuner_CVBS)

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Tuner CVBS source. – Check the Tuner, Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'] Q1 -- Yes --> Q2[Check the RF source and check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[Does the DC B5V_TU_PW, B33V_TU_PW appear at #2, #4 Pin of Tuner ?] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK- ?] Q4 -- No --> A4[Check IC1111 (X5). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.



■ WAVEFORMS

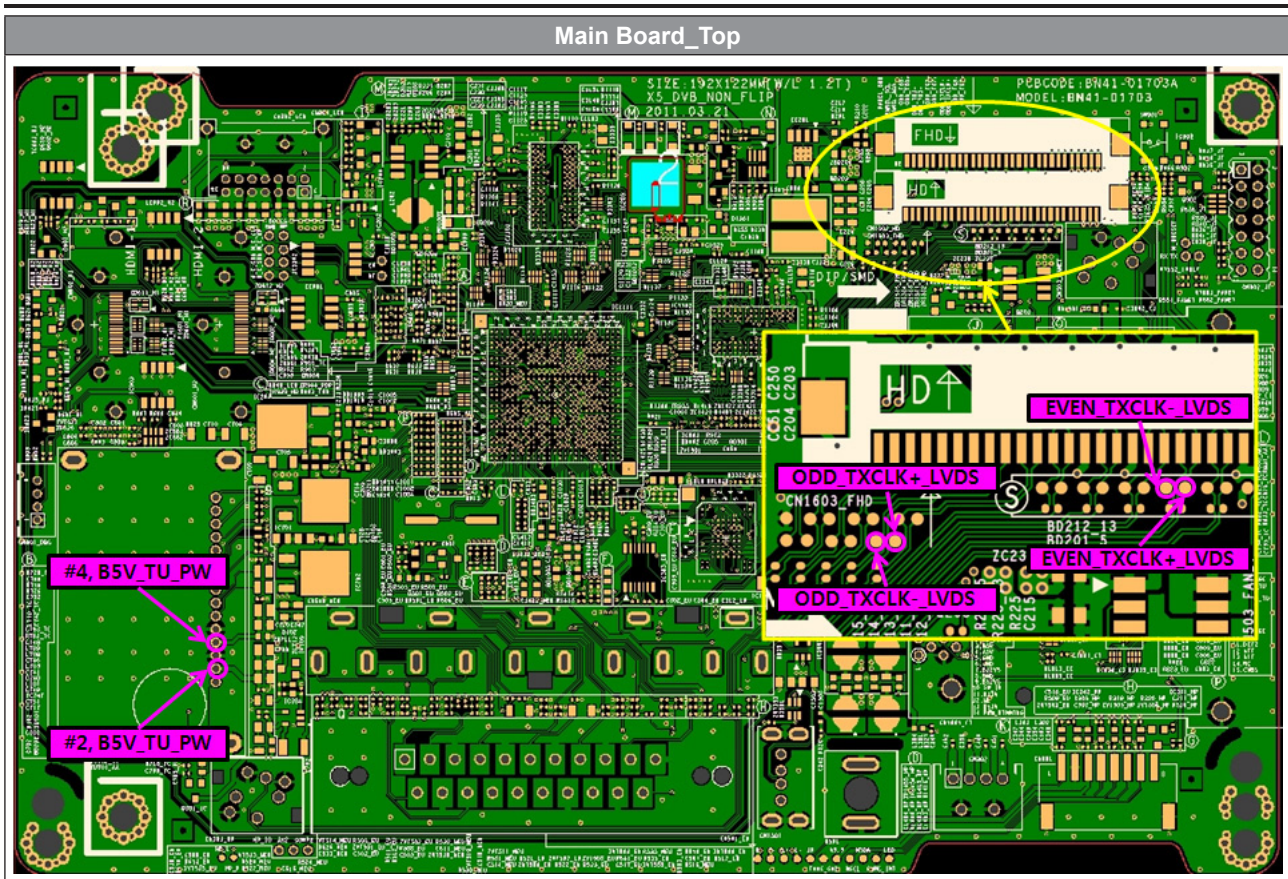
2 LVDS output



■ No Video (Tuner DTV)

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the DTV source. – Check the Tuner, Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'] Q1 -- Yes --> Q2[Check the connection of RF cable ?] Q2 -- No --> A2[Input the RF source properly.] Q2 -- Yes --> Q3[Check the 'signal strength' in Self Diagnosis menu Strength is enough?] Q3 -- No --> A3[Check the D-TV source.] Q3 -- Yes --> Q4[Does the DC B5V_TU_PW, B33V_TU_PW appear at #2, #4 Pin of Tuner ?] Q4 -- No --> A4[Change the Main Assy.] Q4 -- Yes --> Q5[Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-?] Q5 -- No --> A5[Check IC1111 (X5). Change the Main Assy.] Q5 -- Yes --> Q6[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q6 -- No --> A6[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

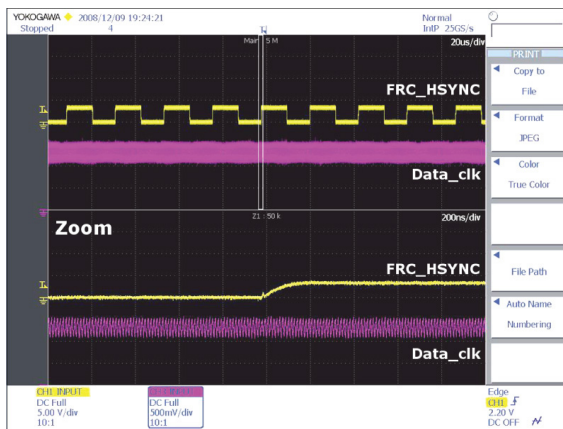
4. Troubleshooting



■ WAVEFORMS

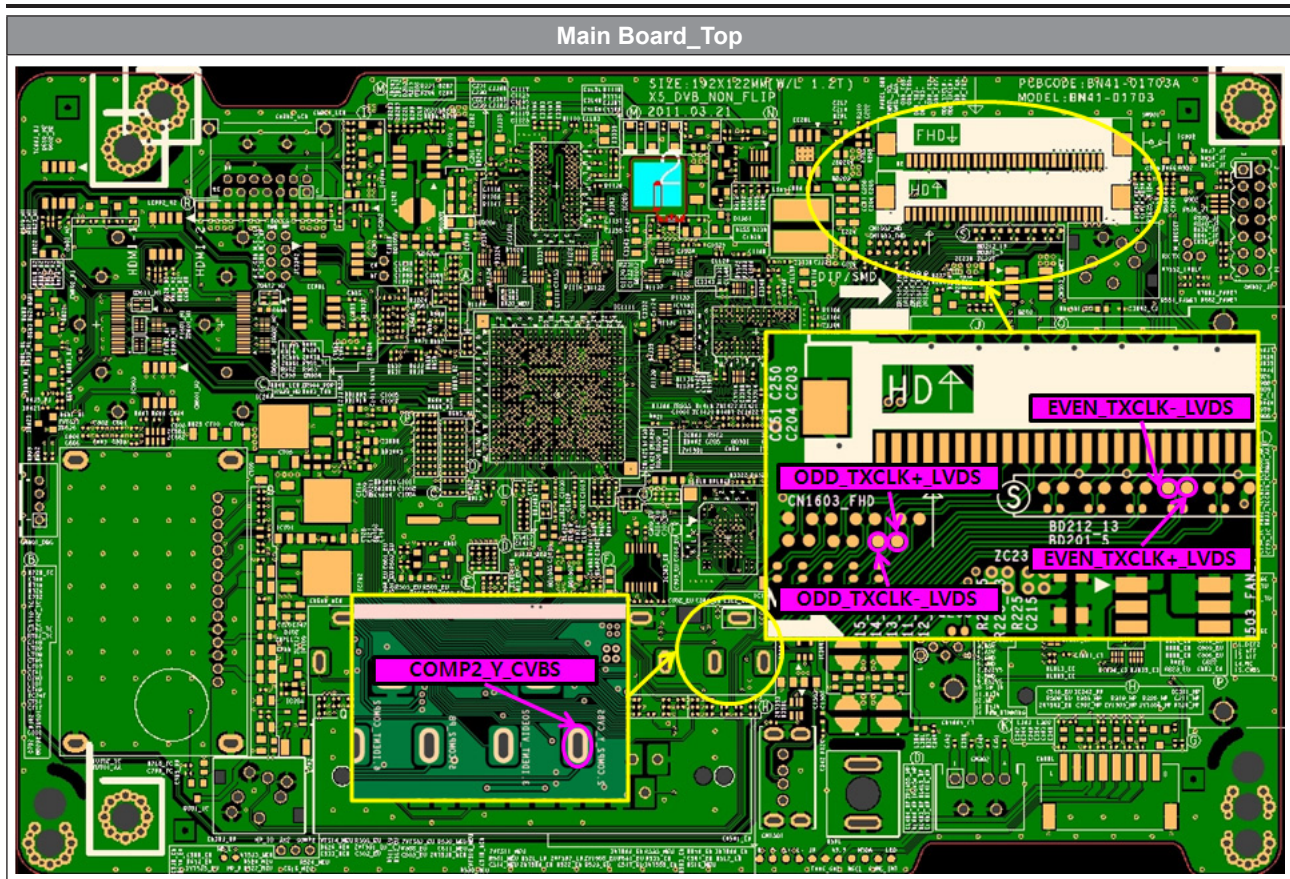
2

LVDS output



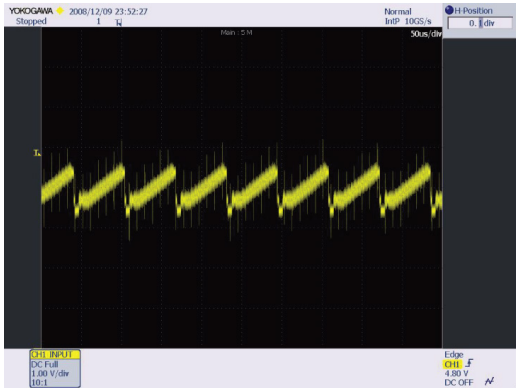
■ No Video (Video CVBS)

Symptom	– Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> – Check the Video CVBS source – Check the Main Chipset. – This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<pre> graph TD Q1[Power indicator LED is off. Lamp(Backlight) on, no video ?] -- No --> A1[Check a set in the 'Stand-by mode'.] Q1 -- Yes --> Q2[Check the video source and check the connection of video cable?] Q2 -- No --> A2[Input the video source properly.] Q2 -- Yes --> Q3[Does the CVBS data appear at PIN - COMP2_Y_CVBS ?] Q3 -- No --> A3[Check CN502_NEU. Change the Main Assy.] Q3 -- Yes --> Q4[Does the digital data appear at TP-E_TXCLK+, E_TXCLK- , O_TXCLK+, O_TXCLK- ?] Q4 -- No --> A4[Check IC1111 (X5). Change the Main Assy.] Q4 -- Yes --> Q5[Check the LVDS cable? Check the T-Con B'd? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact Tech support.] </pre>
Caution	Make sure to disconnect the power before working on the IP board.

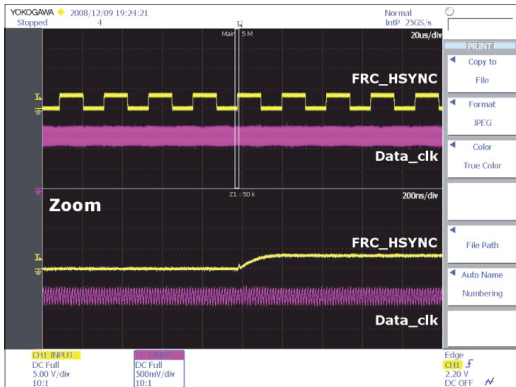


■ WAVEFORMS

4 CVBS OUT (Grey Bar)

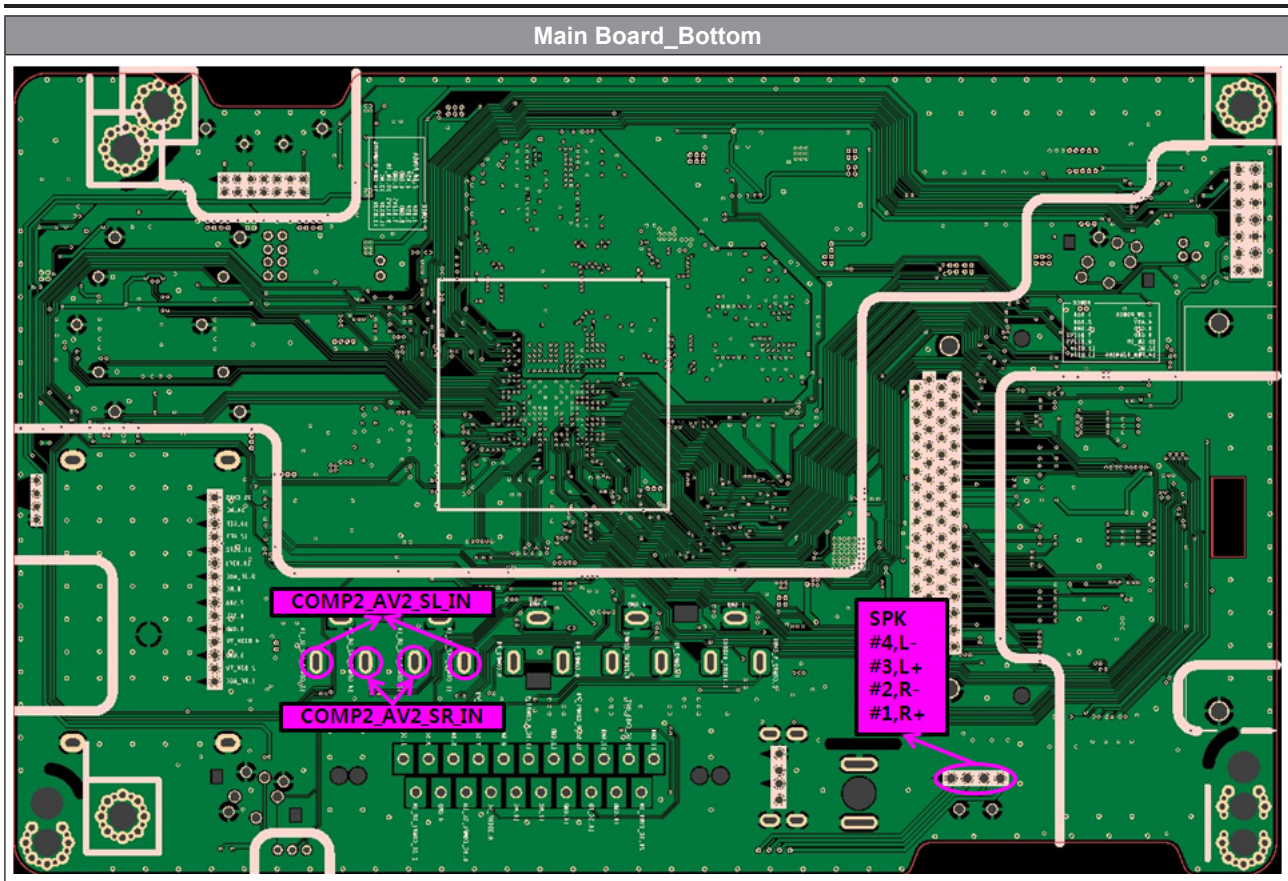


2 LVDS output



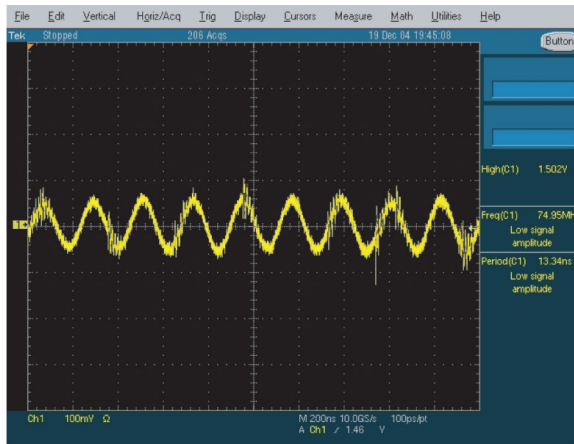
■ No Sound

Symptom	– Video is normal but there is no sound..
Major checkpoints	<ul style="list-style-type: none"> – When the speaker connectors are disconnected or damaged. – When the sound processing part of the Main Board is not functioning. – Speaker defect.
Diagnostics	<pre> graph TD Q1[Check the source and check the connection of sound cable ? (HDMI)] -- No --> A1[Input the sound source properly.] Q1 -- Yes --> Q2[Does the sound data appear at PIN - COMP2_SR_IN,COMP2_SL_IN ?] Q2 -- No --> A2[Check CN502_NEU. Change the Main Assy.] Q2 -- Yes --> Q3[Does the DC B12VS appear at CN201 PIN 7,9 - B12VS_PW ?] Q3 -- No --> A3[Change the Main Assy.] Q3 -- Yes --> Q4[Does the sound data appear at TP - SPK_L-, SPK_L+, SPK_R-, SPK_R+ ?] Q4 -- No --> A4[Check IC1111 (X5). Change the Main Assy.] Q4 -- Yes --> Q5[Replace speaker ?] Q5 -- No --> A5[Please, Contact Tech support.] </pre> <p>The flowchart for diagnosing 'No Sound' starts with checking the source and HDMI connection. If not working, it suggests inputting the sound source properly. If the connection is correct, it moves to checking for sound data at specific pins (COMP2_SR_IN, COMP2_SL_IN). If no data is present, it suggests checking CN502_NEU and changing the main assembly. If data is present, it checks for DC B12VS at CN201 pins 7 and 9. If not present, it suggests changing the main assembly. If present, it checks for sound data at TP pins (SPK_L-, SPK_L+, SPK_R-, SPK_R+). If no data is present, it suggests checking IC1111 (X5) and changing the main assembly. If data is present, it suggests replacing the speaker. If the speaker is not the issue, it suggests contacting tech support.</p>
Caution	Make sure to disconnect the power before working on the IP board.



■ WAVEFORMS

7 Speaker out



4-2. Alignments and Adjustments

4-2-1. General Alignment Instruction

1. Usually, a color LED/LCD TV needs only slight touch-up adjustment upon installation.
Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV.
When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on.
Make sure that the power cord is disconnected before replacing any parts.
7. To protect against shock hazard, use an isolation transformer.

4-3. Factory Mode Adjustments

4-3-1. Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control



- If you have Factory remot - control



4-3-2. How to Access Service Mode

Using the Customer Remote

1. Turn the power off and set to stand-by mode.
2. Press the remote buttons in this order; POWER OFF- INFO - MENU - MUTE to turn the set on.
3. The set turns on and enters service mode. This may take approximately 20 seconds.
4. Press the Power button to exit and store data in memory.
- If you fail to enter service mode, repeat steps 1 and 2 above.
5. Initial SERVICE MODE DISPLAY State

Option	T-MSU ♠ D ♣ ♣ C-XXXX T-MSU ♠ D ♣ ♣ S-XXXX	♠	OPTION (Option-Model)	
Control	E-Manual : XXXXXXXXXXX-XXXX	5	X5-TV	LD400 / LD403 / LD503 / UD4003 / UD5003
SVC		♣ ♣	OPTION (Option-Local Set)	
Expert	EDID SUCCESS	EU	EU / EU_* / NORDIG / CIS_* / AD_*	
ADC/WB	HDCP SUCCESS			
Advanced	CALIB : AV / COMP / PC / HDMI / Option : XXXX XXXX T-MSXDXX-XXXX SDAL-X.XX.X.X RFS : "Mstar-X5 XXXX" 20XX-XX-XX F-ET-0xXX-XXXX Type : XXXXXXXX Model : XXXXXXXX CIP SUCCESS LOCK X Factory Data Ver : XX EERC Version : XXX DTP-AP-COMP-XXX DTP-BP-HAL-XXXX DTP-BP-XXXX-XX Date Of Purchase : XX/XX/XXXX			

* How to enter the hidden factory mode.

- a. into the factory mode
 - b. move the tap to Advanced
 - c. key input : 0 + 0 + 0 + 0
- ** hidden menu : Advanced

6. Buttons operations withn Service Mode

Menu	Full Menu Display/Move to Parent Menu
Direction Keys ▲/▼	Item Selection by Moving the Cursor
Direction Keys ◀/▶	Data Increase / Decrease for the Selected Item
Source	Cycles through the active input source that are connected to the unit

4-3-3. Factory Data

Option			
Factory Name	Data	Range	Use
Factory Reset			
Type		19A6TH0C/19I6TH0C/22D6TF0C/22I6TF0C /26A6AH0C/26D6AH0C/26L6AH0C/32A6AF0C /32A6AH0C/32D6AF0C/32L6AH0C/37L6AF0C /40A6AF0C/40D6AF0C/40L6AF0C/46A6AF0C /46D6AF0C/19A6TH0E/19L6TH0E/22D6TF0E /22L6TF0E/23A6TF0E/24L6TF0E/27A6TF0E /32A6AH0E/32A6UF0E/32P6AH0E/32P6UF0E /32L6UF0E/32L6AH0E/37P6UF0E/40A6UF0E /40P6UF0E/40H6UF0E/46A6UF0E/46P6UF0E /43DHHcD/51DFHcD/51DHHcD/51DSArD/51DSCrD /59DFHcD/59DSArD/59DSCrD/64DFHcD/64DSCrD	Select Panel Type 1 2 : inch 3 : vendor 4 : refresh 5 : POL 6 : resolution 7 : multi 8 : BLU
Local Set	EU	EU/EU_ITALY/EU_GER/EU_FRANCE /EU_BENELUX/EU_UK/EU_ARMENIA/NORDIG /AD_AU/AD_NZ/AD_SINGAPOL/CIS_RUSIA /CIS_UKRINA/CIS_KAZAKH/EU_TURKEY /EU_AFRICA/EU_MOROCCO/EA_VIET/EA_THAI /EA_INA/EA_CHINA/EA_INDIA/EA_SRILANKA /EA_NEPAL/EA_BANGLA/EA_IRAN/EA_ISRAEL /EA_EGYPT/EA_LIBYA/EA_CIS/EA_M_ASIA /EA_IRAQ/EA_ARAB/EA_SAUDI/EA_PAKISTAN /EA_E_ASIA/EA_AFRICA/EA_S_AFRICA/EA_MAL /EA_PHI/ED_IRAN/ED_VIET/ED_INA/ED_ISRAEL /COLOMBIA/TAIWAN	Select Area
Model	LD550	LD400 / LD450 / LD480 / LD550 / LD570 / LD580 / UD4000 / UD4010 / UD5000 / UD5500 / UD5550 / UD5700 / PD450 / PD451 / PD460 / PD490 / PD491 / PD540 / PD541 / PD550 / PD551 / PD560 / PD570 / PD6400 / PD6500 / PD6600 / PD6900 / PD7000 / LD460H / LD463H / LD467H / LD468H / LD560H / LD568H / LD580H / UD4000H / UD5000H / UD5500H / LD567H / PD6452 / PD6910 / PD580 / PD480 / PD452 / PD420 / LD430 / LD530 / UD4020 / UD5010 / LD531 / LD551 / PD495 / PD6905 / PD6915 / PD7005 / UD5030 / LD451 / LD455 / LD481 / LD555 / LD556 / LD575 / LD578 / LD579 / LD585 / UD4005 / UD4015 / UD4025 / UD5005 / UD5015 / UD5020 / UD5025 / UD5520 / UD5705 / UD5720 / UD5725 / LD452 / LD552 / LD400E / LD403 / LD503 / UD4003 / UD5003 / UD5800 / PD530 / PD6980 / LD461H / LD561H /	Select Model
TUNER	SEC_TC	SEC_ATSC / SEC_TC / ALPS_TC / SI_TCS / SI_T2 / SEC_ISDB / SEC_ATC / SI_ATC / SI_TW	EU/AU(DVB-TC/DVB-T) : SEC_TC
Ch Table		PBA / SUWON / SESK / SEH / SERK / SDMA_AU / SDMA_NZ / SDMA_SG / SEIN / SAVINA / SIEL_C / SIEL_N / TTSEC / TSED / TSE / IRAN / SESK-T2 / SUWON-T2 / INL	
Front Color		P-S-C-BK / P-S-R-BK / P-S-BK / P-S-B-BK / P-T-R- BK / P-T-C-BK / P-T-W-Bn / P-T-W-Gy / P-T-M-Bn / P-T-C-Gy / P-T-R-Gy / P-W-Milk / P-W-M-Wt / P-W-D-Gy / P-W-Vio / L-S-C-BK / L-S-R-BK / L-S- BK / L-S-B-BK / L-T-R-BK / L-T-C-BK / L-T-W-Bn / L-T-W-Gy / L-T-M-Bn / L-T-C-Gy / L-T-R-Gy / L-W- Milk / L-W-M-Wt / L-W-D-Gy / L-W-Vio / U-S-C-BK / U-S-R-BK / U-S-BK / U-S-B-BK / U-T-R-BK / U-T-C- BK / U-T-W-Bn / U-T-W-Gy / U-T-M-Bn / U-T-C-Gy / U-T-R-Gy / U-T-BL-M / U-T-BK-M / U-TC-L-M / U-W-Milk / U-W-M-Wt / U-W-D-Gy / U-W-Vio	LD503 : L-S-BK UD5003 : U-S-BK

Control			
Factory Name	Data	Range	Use
EDID			
EDID ON/OFF	OFF	Download EDID data to EEPROM. 1. Set "ON" of EDID ON/OFF 2. Go EDID WRITE ALL and Push Enter or ▷ button. 3. If You See Success message, SET "OFF" of EDID ON/OFF Case of HDMI 1.2 EDID Service 1. Go EDID VER and Set HDMI 1.2 2. Go EDID PORT and Select HDMI port	
EDID WRITE ALL	...		
EDID WRITE PC	...		
EDID WRITE HDMI	...		
EDID WRITE HDMI1	...		
EDID WRITE HDMI2	...		
EDID WRITE HDMI3	...		
EDID WRITE HDMI4	...		
EDID VER	...		
EDID PORT	...		
EDID WRITE DVI	...		
Sub Option			
RS-232 Jack	UART	Debug/Logic/UART	Select Setting of UART port. Initial value is "UART"
Watchdog	ON	ON/OFF	Select Watchdog. Initial value is "ON"
WD Count	0	255	Watchdog Count. Read Only.
Dimm Type	EXT	fixed	Select Dimming Type. Initial value is "EXT"
Lvds Format	JEIDA	JEIDA/VESA/19INCH	Select LVDS format. 19/22/27inch : "VESA" other inch : "JEIDA"
OTN Server Type	operating	operating/development	
OTN Test Server	OFF	OFF/ A/B/C/D/E Zone	
OTN Support	ON	ON/OFF	
OTN Reset		not modified	
OTN Duration	OFF	ON/OFF	
OTN Fail Test	OFF	ON/OFF	
View Log		not modified	

4. Troubleshooting

KEY SENSITIVITY	36	0~255	LD400 : 72 LD45*/LD48*/LD5** : 36 UD40** : 38 UD50** : 41 UD55**/UD57** :36 TA350 : 32 TA550 : 34
Hotel Option			
Hotel Hospitality	OFF		
Shop Option			
Shop Mode	OFF	ON/OFF	
Exhibition Mode	OFF	ON/OFF	
Sound			
High Devi	OFF	ON/OFF	
Carrier_Mute	OFF	ON/OFF	
Speaker Delay Normal	10	0~255	Audio delay for Lipsync
Pilot Level High Thld	0x28h	0x00~0xff	Control for ATV sound of stereo /multiplex
Pilot Level Low Thld	0x10h	0x00~0xff	Control for ATV sound of stereo /multiplex
Speaker EQ	ON	ON/OFF	Control for sound precision
SVC			
Factory Name	Data	Range	Use
Test Pattern			
Panel Auto Setting			
Panel Display Time	0Hr		
Logic Usb D/L	off		
Tuner Status			
T-CON Usb Download			
MICOM UPGRADE	off		Set ON→Sub micom upgrade ,after upgrade Main Micom (over 5 minutes)
BT ADDRESS	0		
BT UPGRADE			
SVC Reset			
Test Pattern			
Pattern Sel	OFF	OFF/White/Black/Red/Green/Blue/Cross/OneDot/ColorBar/GrayStep	"Test for Input of Scaler. If you can see pattern well, there is problem at input of Scaler."
Logic Pattern Sel	...	Not modified	
Logic Level Sel	...	Not modified	
TUNER STATUS			
DVB			
ISDB-T			
DVB			
SNR		Not modified	
BER		Not modified	
Singal Strength		Not modified	

Bandwidth		Not modified	
Frequency		Not modified	
LNA Status		Not modified	
FFT		Not modified	
Modulation		Not modified	
Code Rate		Not modified	
GI		Not modified	
Hier Modulation		Not modified	
Frequency Offset		Not modified	
Timing Offset		Not modified	
AGC		Not modified	
UCB		Not modified	
PLL Type		Not modified	
DEMOD Type		Not modified	
TPS LOCK		Not modified	
RS Lock		Not modified	
SSI		Not modified	
SQI		Not modified	

ISDB-T

FFT Size_1		Not modified	
Guard Interval_1		Not modified	
Freq. Offset_1		Not modified	
SNR_1		Not modified	
IF AGC_1		Not modified	
TMCC Lock_1		Not modified	
TS Packet_1		Not modified	
Master Lock_1		Not modified	
A_Modulation_1		Not modified	
A_Code Rate_1		Not modified	
A_Timer InterLeave_1		Not modified	
A_Segments Num_1		Not modified	
A_Ber_1		Not modified	
B_Modulation_1		Not modified	
B_Code Rate_1		Not modified	
B_Timer InterLeave_1		Not modified	
B_Segments Num_1		Not modified	
B_BER_1		Not modified	
C_Modulation_1		Not modified	
C_Code Rate_1		Not modified	
C_Timer InterLeave_1		Not modified	
C_Segments Num_1		Not modified	

4. Troubleshooting

C_BER_1		Not modified	
---------	--	--------------	--

ADC_WB			
Factory Name	Data	Range	Use

ADC

AV Calibration	Success	Success / Failure	
Comp Calibration	Success	Success / Failure	
PC Calibration	Success	Success / Failure	
HDMI Calibration	Success	Success / Failure	

ADC Target

1st_AV_Low	64	0 ~1020	
1st_AV_High	880	0 ~1020	
1st_AV_Delta	2	0 ~ 7	
1st_COMP_Y_Low	64	0 ~1020	
1st_COMP_Cb_Low	512	0 ~1020	
1st_COMP_Cr_Low	512	0 ~1020	
1st_COMP_Y_High	940	0 ~1020	
1st_COMP_Cb_High	512	0 ~1020	
1st_COMP_Cr_High	512	0 ~1020	
1st_COMP_Delta	2	0 ~ 7	
1st_PC_Low	4	0 ~1020	
1st_PC_High	1004	0 ~1020	
1st_PC_Delta	2	0 ~ 7	
2nd_ACH_Low	4	0 ~124	
2nd_ACH_High	940	0 ~1020	
2nd_PC_Low	4	0 ~124	
2nd_PC_High	940	0 ~1020	
2nd_Delta	2	0 ~ 7	

ADC RESULT

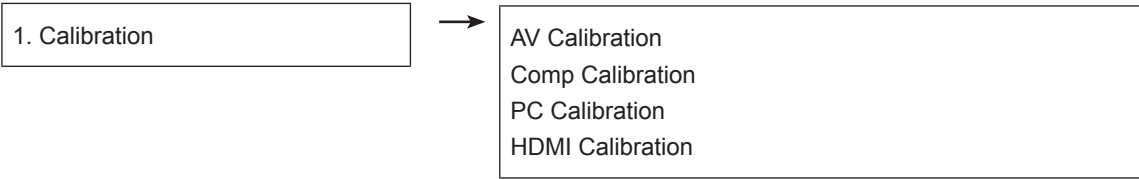
1st_Y_GH	0	0 ~ 511	
1st_Y_GL	0	0 ~ 255	
1st_Cb_BH	0	0 ~ 511	
1st_Cb_BL	0	0 ~ 255	
1st_Cr_RH	0	0 ~ 511	
1st_Cr_RL	0	0 ~ 255	
2nd_R_L	0	0 ~ 255	
2nd_G_L	0	0 ~ 255	
2nd_B_L	0	0 ~ 255	
2nd_R_H	0	0 ~ 255	
2nd_G_H	0	0 ~ 255	
2nd_B_H	0	0 ~ 255	

WB	Mode	
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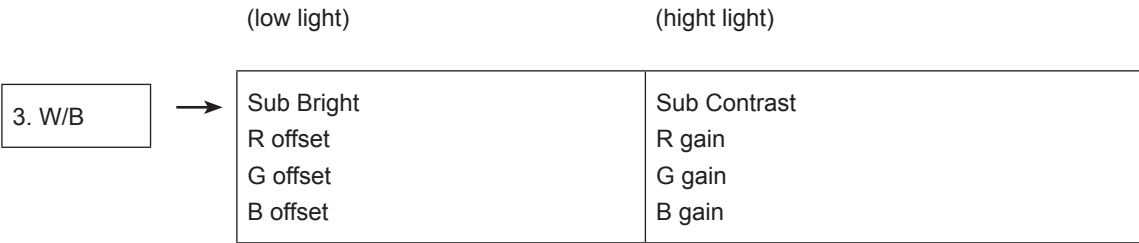
Sub Brightness	128	0 ~ 255	
R_Offset	128	0 ~ 255	
G_Offset	128	0 ~ 255	
B_Offset	128	0 ~ 255	
Sub Contrast	128	0 ~ 255	
R_Gain	128	0 ~ 255	
G_Gain	128	0 ~ 255	
B_Gain	128	0 ~ 255	
Movie R Offset	512	0 ~ 1023	
Movie B Offset	512	0 ~ 1023	
Movie R Gain	512	0 ~ 1023	
Movie B Gain	512	0 ~ 1023	

4-4. White Balance - Calibration

4-4-1. White Balance -Calibration



4-4-2. White Balance - Adjustment

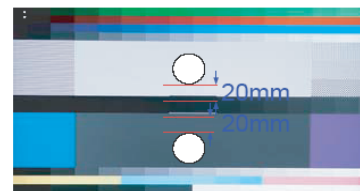


(W/B adjustment Condition refer next page)

4-5. White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).
2. Since the adjustment value and the data value vary depending on the input source, you have to adjust these in CVBS, Component 1 and HDMI 1 modes.
3. The optimal values for each mode are configured by default. (Refer to Table 1, 2)
It varies with Panel's size and Specification.

- Equipment : CS-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60min ↑
- Calibration and Manual setting for WB adjustment.



- HDMI : Calibration at #24 Chessboard Pattern → Manual adjustment #92 pattern (720p)
 COMP: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (720p)
 CVBS: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (PAL)

- If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.
- White Balance Manual Adjustment

P-Mode	Adjustment Coordinate				
		x	y	Y (Luminance)	T(K) + MPCD
CVBS (PAL)	H/L	272	278	- (Sub_CT:130)	12,000 (±0)
	L/L	272	278	12.6cd/m ² (3.7 Ft)	12,000 (±0)
COMP (720P)	H/L	272	278	- (Sub_CT:130)	12,000 (±0)
	L/L	272	278	13.0cd/m ² (3.8 Ft)	12,000 (±0)
HDMI (720P)	H/L	272	278	- (Sub_CT:130)	12,000 (±0)
	L/L	272	278	13.0cd/m ² (3.8 Ft)	12,000 (±0)

- Adjustment Specification

White Balance : High light (±1), Low light (±3)

Luminance : High light (Don't care), Low light (±0.2 Ft/L)

4-6. Servicing Information

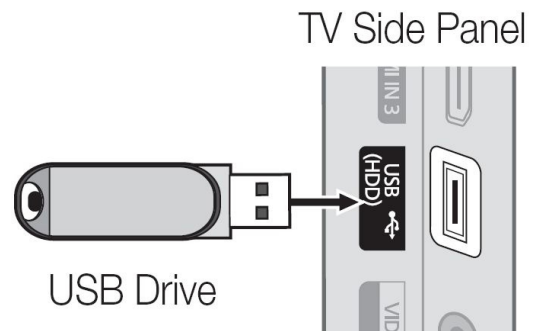
4-6-1. USB Download Method (Main SW & e-Manual)

Samsung may offer upgrades for TV's firmware in the future.

Upgrades will be possible by connecting a USB drive to the USB port located on your TV.

1. Insert a USB drive containing the firmware (**T-MSU4DEUC**) upgrade into the USB port on the rear of the TV.
2. Press the **MENU** button to display the menu. Press the **▲** or **▼** button to select "Support", then press the **ENTER** button.
3. Press the **▲** or **▼** button to select "Software Upgrade", then press the **ENTER** button to select "By USB". The message "Scanning for USB. It may take up to 1 minute." is displayed.
4. The message "Upgrade version XXXX to version XXXX? The system will be reset after upgrade." is displayed. Press the **◀** or **▶** to select the "OK", then press the **ENTER** button.

Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete. When software is upgraded, video and audio settings you have made will return to their default (factory) settings. We recommend you write down your settings so that you can easily reset them after the upgrade.



4-7. How To Upgrade Sub Micom

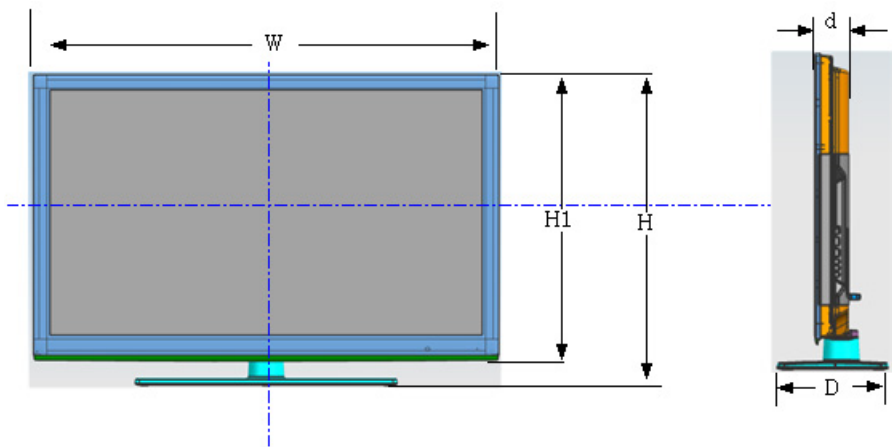
4-7-1. Sub S/W (in Factory mode)

If you don't have DDC Manager, Use this method.

1. Into the Factory Mode.
2. Select "SVC". (Use ► button.)
3. Select "MICOM UPGRADE off". (use ► button.)
4. If message change from "off" to "wait", TV is upgrading Sub S/W. (It takes about 5 min.)
5. If update completes, TV set will booting automatically.

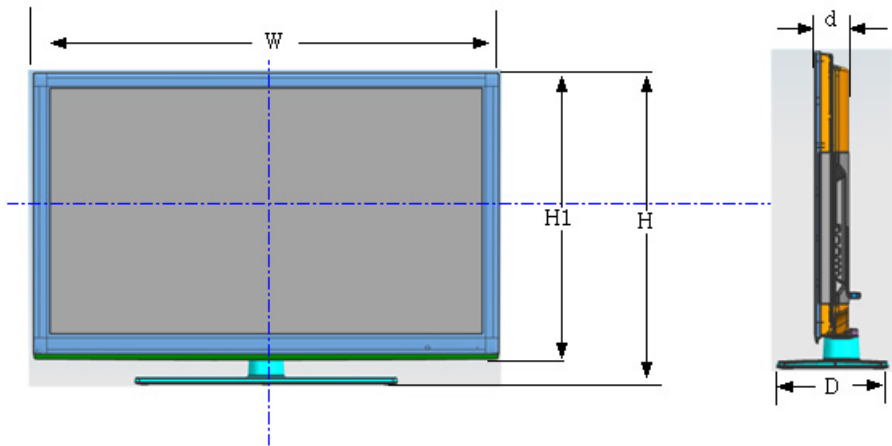
4-8. Mechanical diagram

4-8-1. UD5003_40003



		22D5003	40D5003	19D4003	26D4003	32D4003
Size [mm]	Set with Stand (W x D x H)	515.8 x 124 x 350.0	943.8 x 219.4 x 603.5	447.2 x 124 x 312.4	624.0 x 169.4 x 418.3	756.4 x 182.4 x 498.1
	Set without Stand (W x D x H1)	515.8 x 39.9 x 315.6	943.8 x 51.0 x 561.4	447.2 x 39.9 x 277.8	624.0 x 45.1 x 377.2	756.4 x 47.8 x 454.0
Weight [Kg]	Set with Stand	3.5	11	2.9	4.4	7.2
	Set without Stand	3.4	9.6	2.8	4.1	6.3

4-8-2. LD503_403



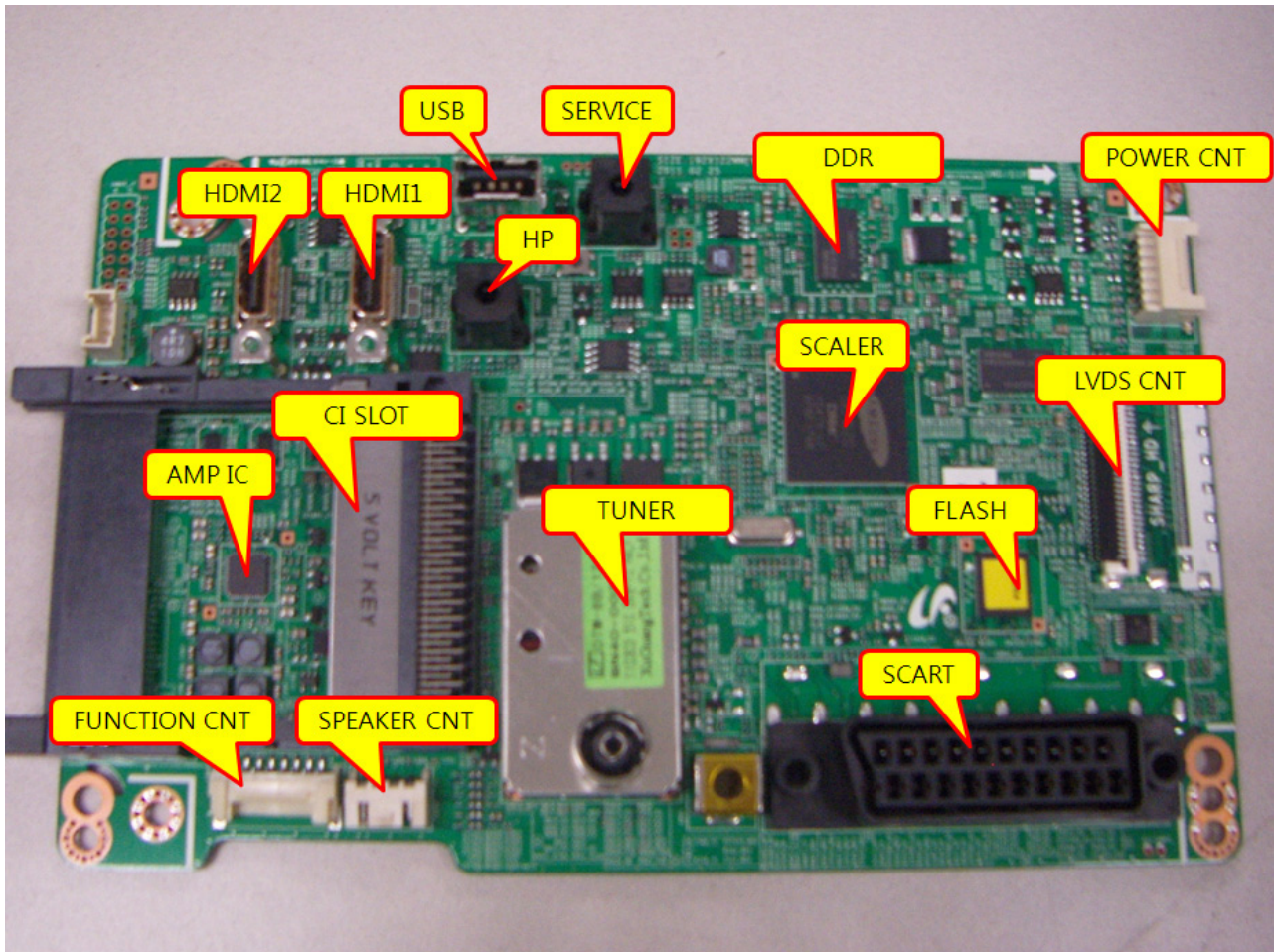
		40D503	32D403	32D400
Size [mm]	Set with Stand (W x D x H)	967.0 x 199.9 x 626.1	784.4 x 181.9 x 542.3	784.4 x 182.4 x 545.3
	Set without Stand (W x D x H1)	967.0 x 107.1 x 586.3	784.4 x 103.3 x 502.9	784.4 x 88.8 x 502.9
Weight [Kg]	Set with Stand	13.25	8.66	9.2
	Set without Stand	11.6	7.65	8.1

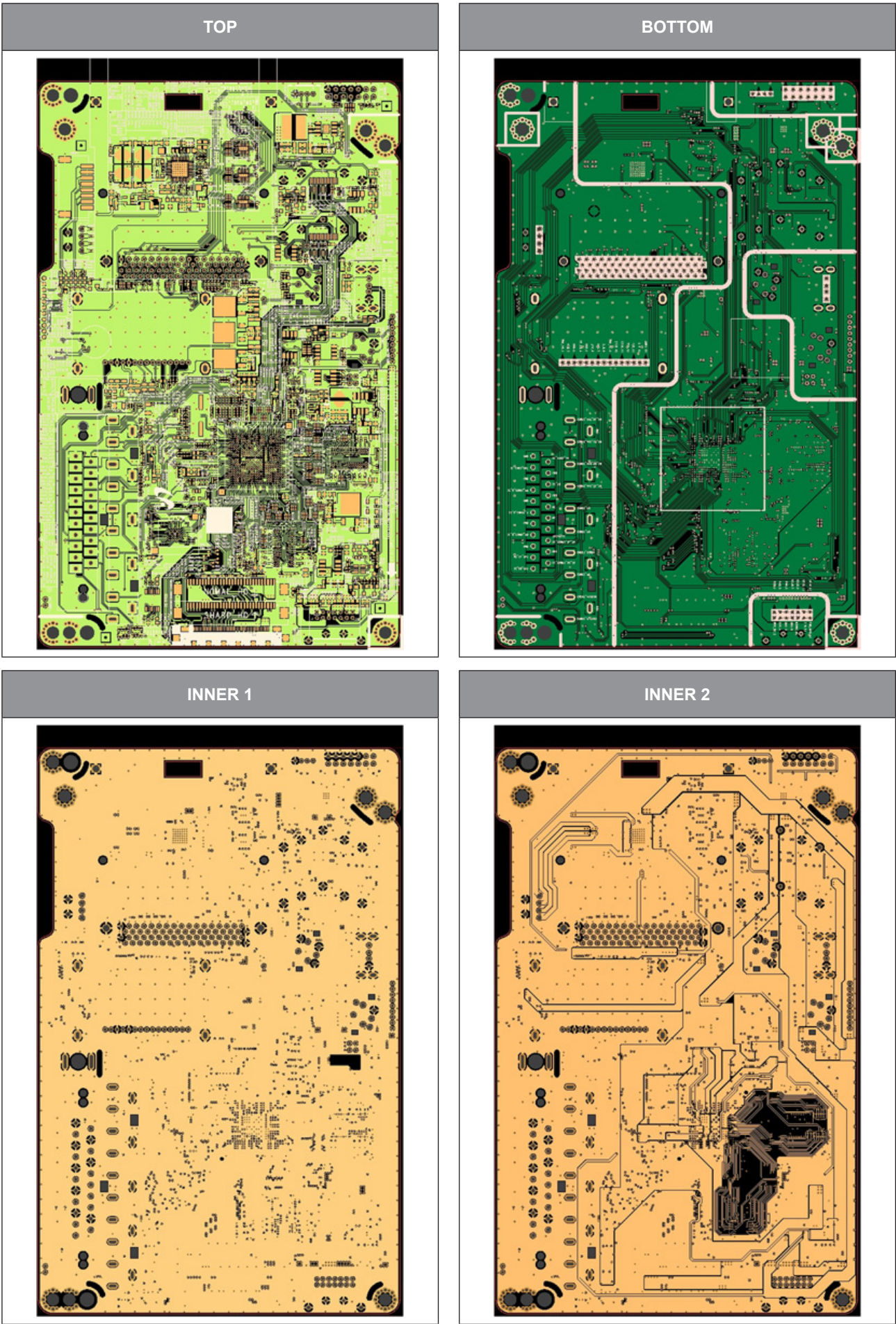
4-9. PCB diagram

4-9-1. PCB layout

■ Flip (UE40D5003BW*** / UE26/32D4003BW*** / LE40D503F7W*** / LE32D400E1W*** / LE32D403E2W***)

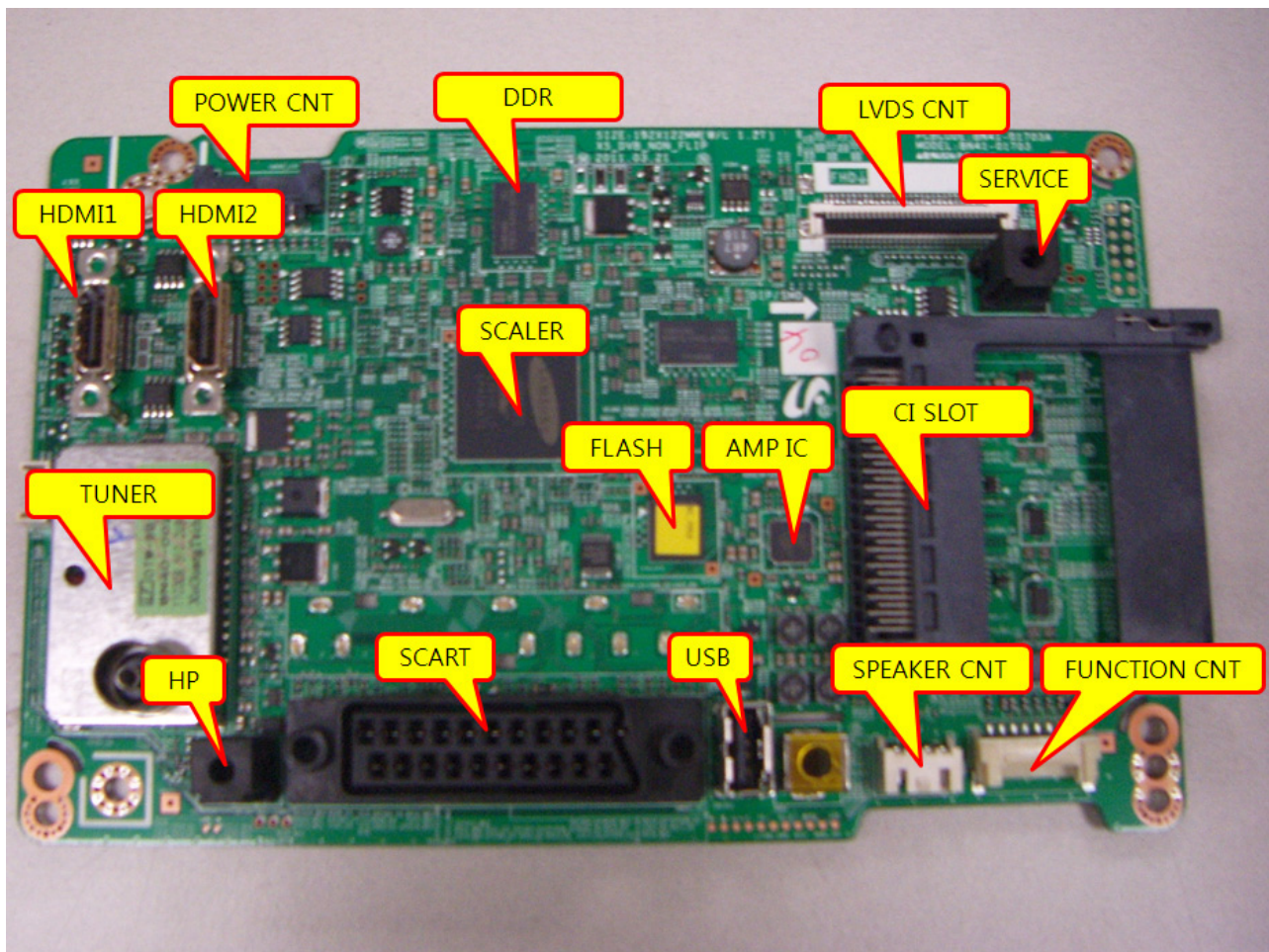
PCB

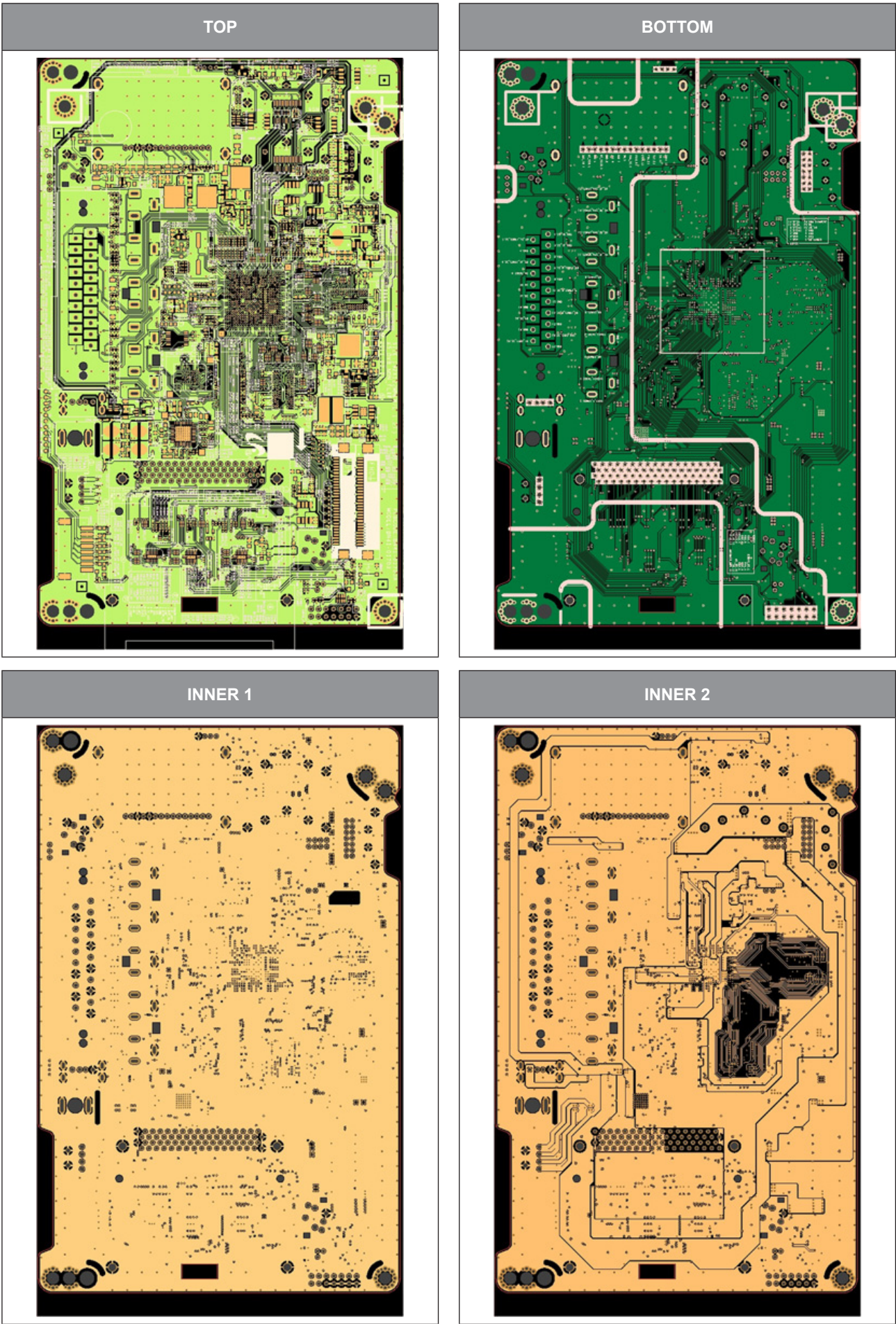




■ Non Filp (UE22D5003BW* / UE19D4003BW***)**

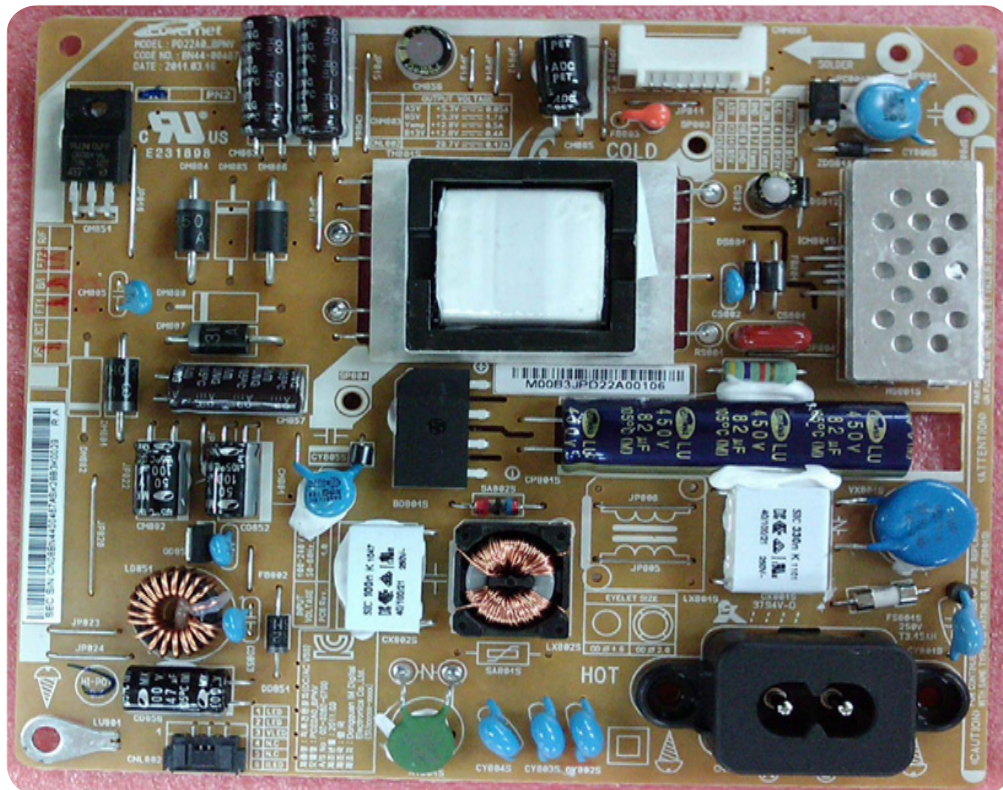
PCB





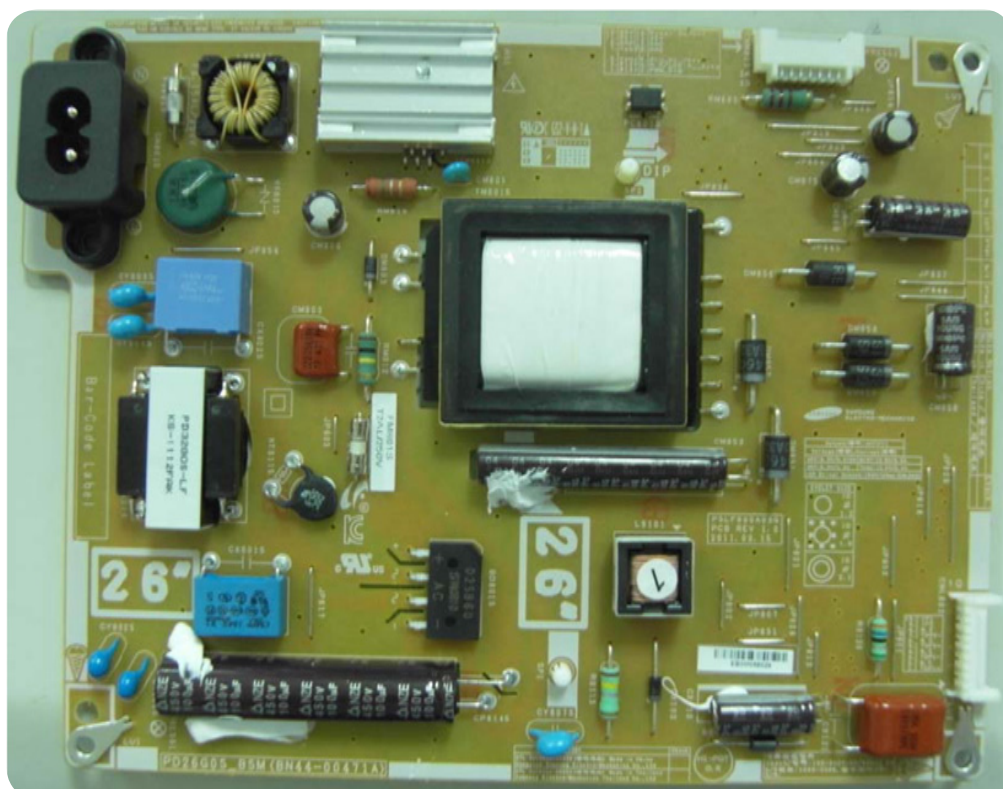
■ SMPS_UD4003 / 19"

Model / Inch	CODE	P/N
UD4003 / 19"	BN44-00467A	PD22A0_BPNV



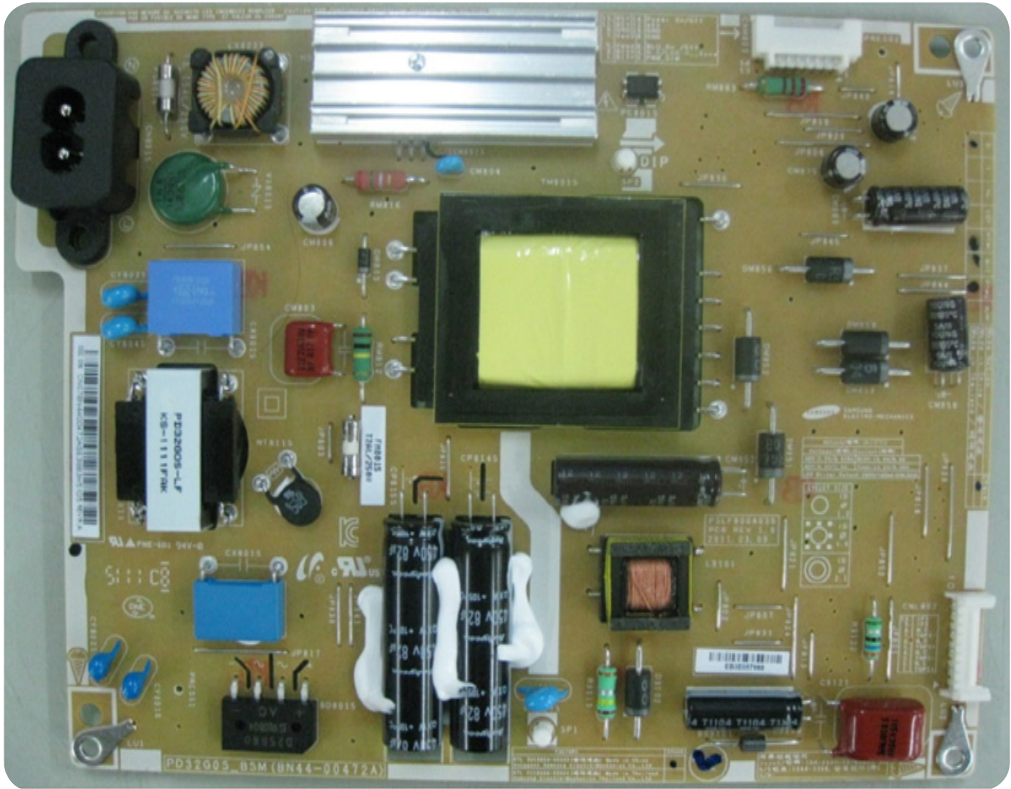
■ SMPS_UD4003 / 26"

Model / Inch	CODE	P/N
UD4003 / 26"	BN44-00471A	PSLF800A03G



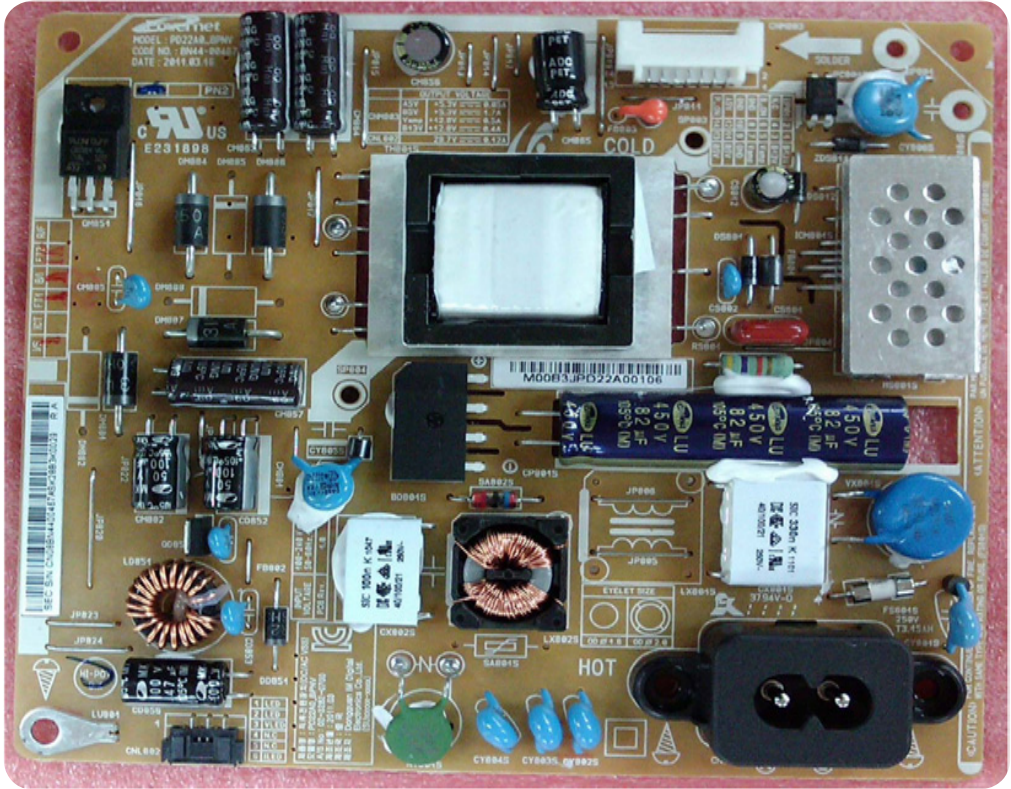
■ SMPS_UD4003 / 32"

Model / Inch	CODE	P/N
UD4003 / 32"	BN44-00472A	PSLF800A03S



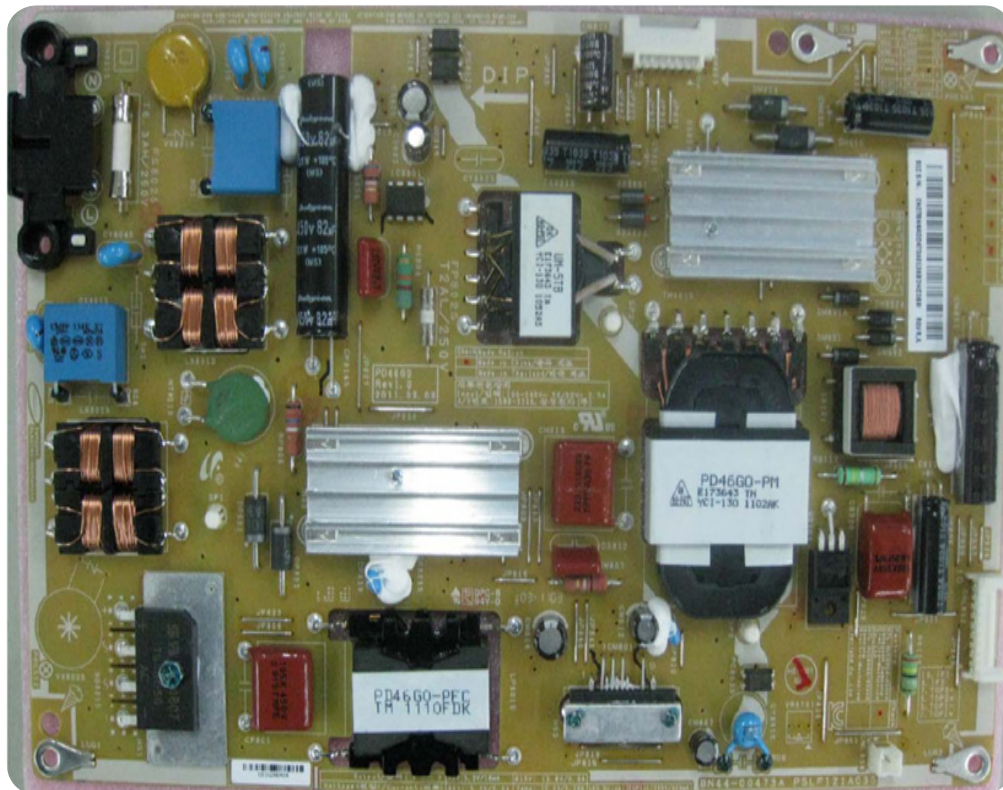
■ SMPS_UD5003 / 22"

Model / Inch	CODE	P/N
UD5003 / 22"	BN44-00467A	PD22A0_BPNV



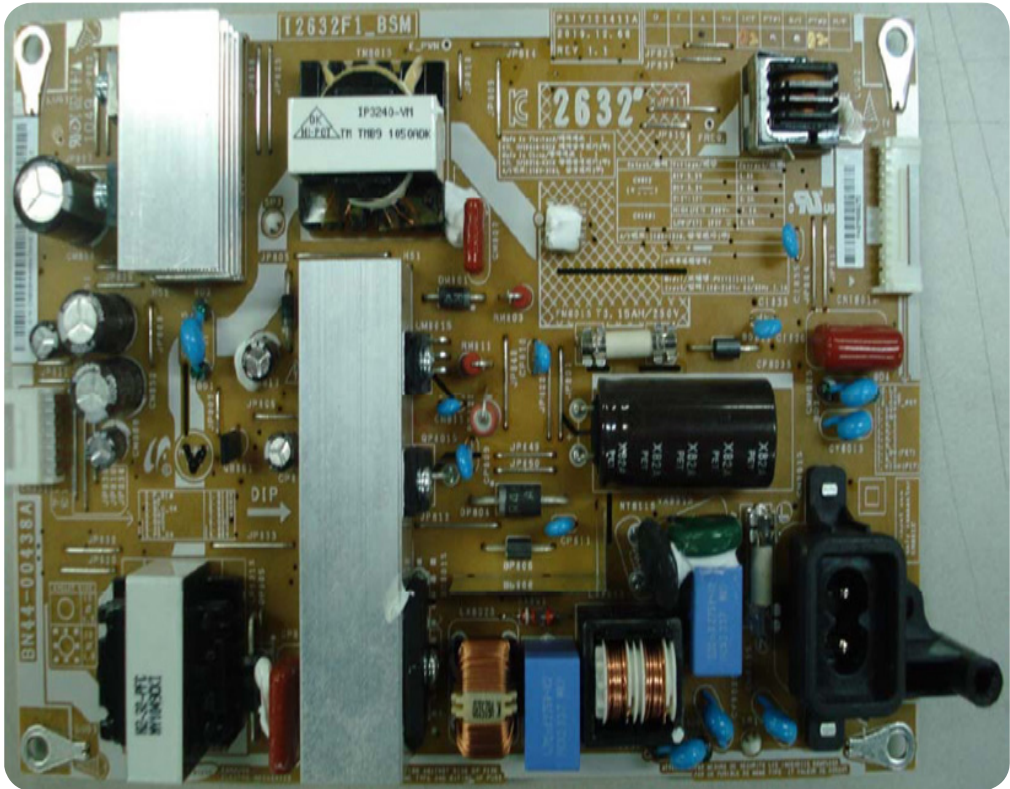
■ UD5003 / 40"

Model / Inch	CODE	P/N
UD5003 / 40"	BN44-00473A	PSLF121A03S



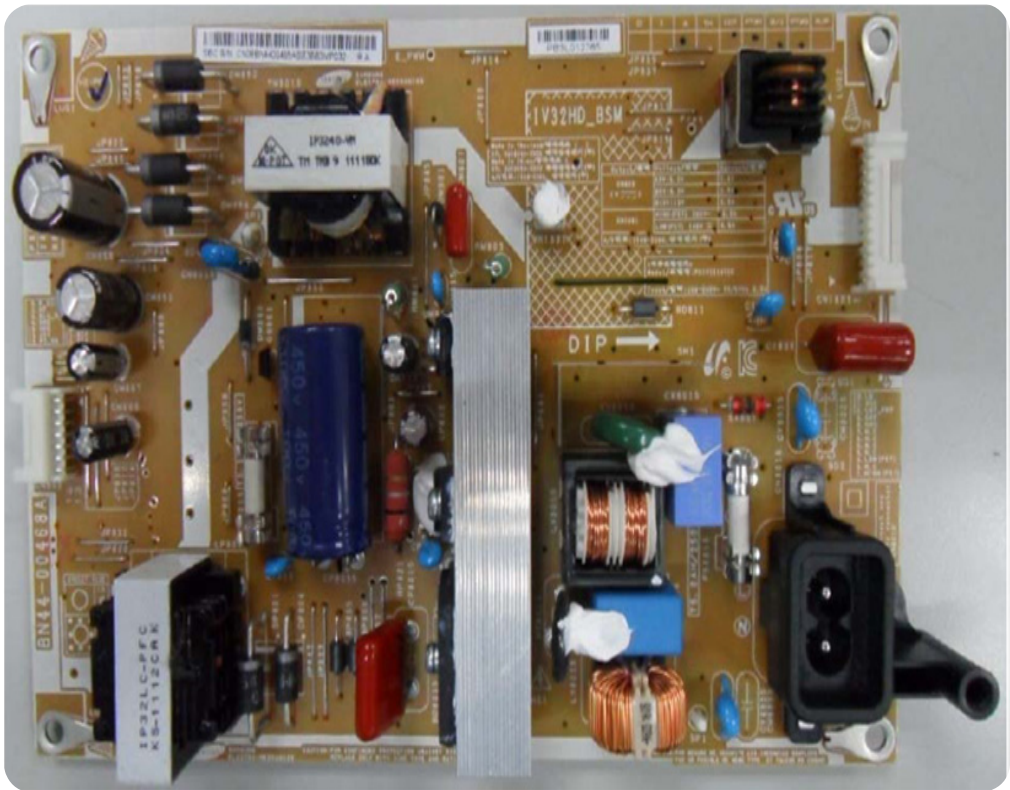
■ SMPS_LD400 / 32"

Model / Inch	CODE	P/N
LD400 / 32"	BN44-00438A	PSIV121411A



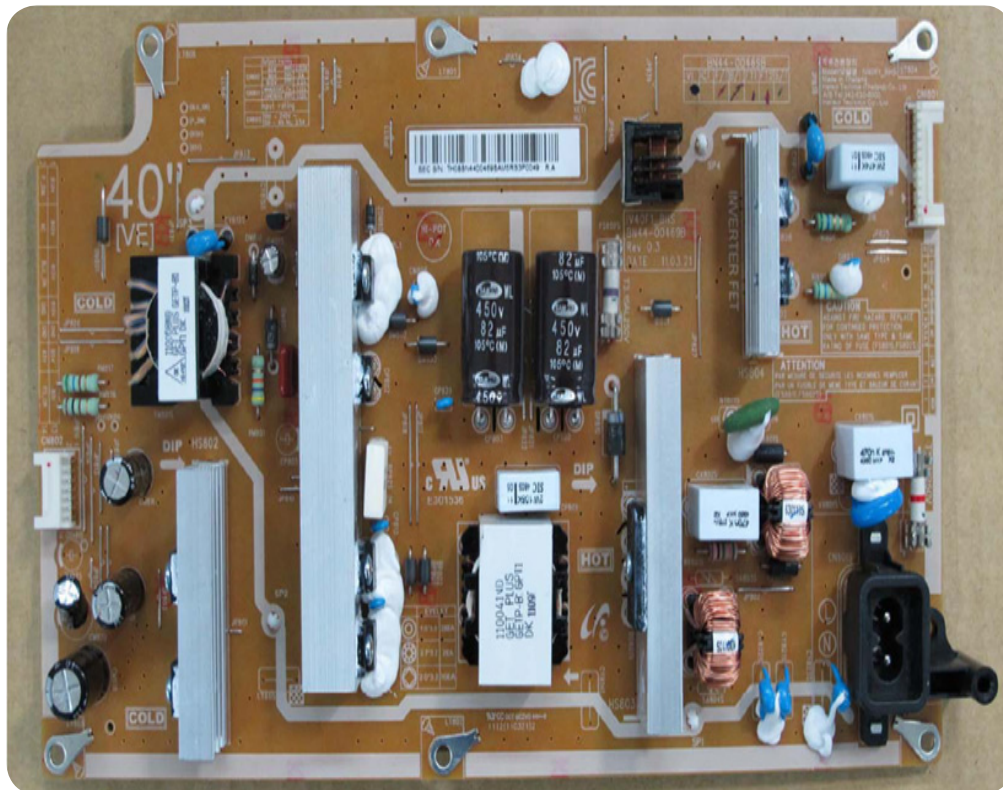
■ SMPS_LD403 / 32"

Model / Inch	CODE	P/N
LD403 / 32"	BN44-00468A	PSIV121411C



■ SMPS_LD503 / 32"

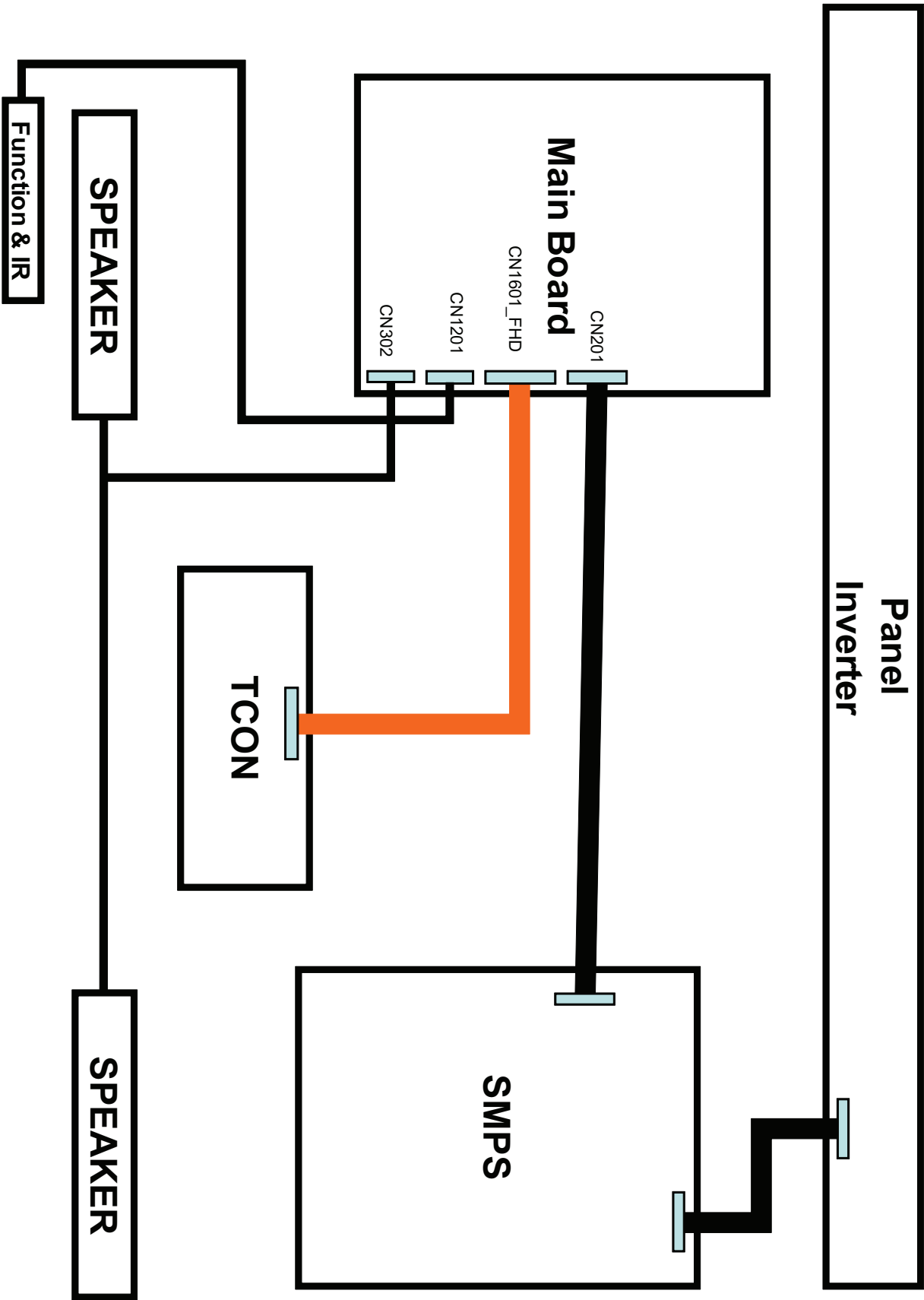
Model / Inch	CODE	P/N
LD503 / 32"	BN44-00469B	IV40F1_BHS



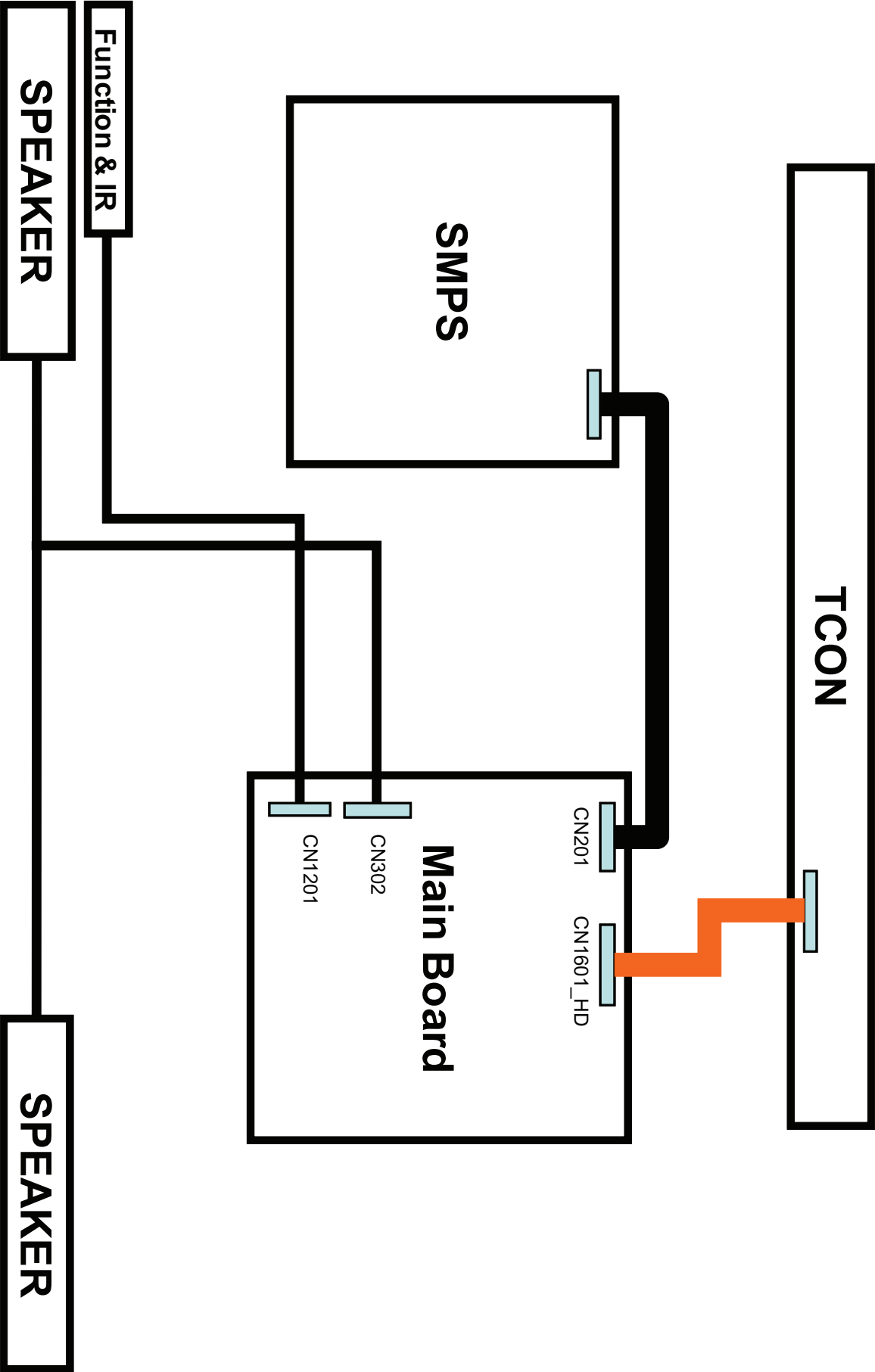
5. Wiring Diagram

5-1. Wiring Diagram

■ 26"/32"/40"



■ 19"/22"



5-2. Connector

■ Flip (26"/32"/40")

POWER IN (CN201_LED/CN202_LCD)			
1	B5V	8	GND
2	SW_POWER	9	GND
3	B5V	10	SW_INVERTER
4	A5V	11	B13V
5	GND	12	NC
6	GND	13	B13V
7	B12VS	14	PWM_DIMMING

LVDS OUT (CN1602_FHD)			
1	NC	27	EVEN[0]-
2	NC	28	GND
3	NC	29	ODD[4]+
4	NC	30	ODD[4]-
5	NC	31	ODD[3]+
6	NC	32	ODD[3]-
7	FORMAT	33	GND
8	SDA_Panel	34	ODDCLK+
9	TCON_WP	35	ODDCLK-
10	NC	36	GND
11	SDA_Panel	37	ODD[2]+
12	SCL_Panel	38	ODD[2]-
13	GND	39	ODD[1]+
14	EVEN[4]+	40	ODD[1]-
15	EVEN[4]-	41	ODD[0]+
16	EVEN[3]+	42	ODD[0]-
17	EVEN[3]-	43	GND
18	GND	44	GND
19	EVENCLK+	45	GND
20	EVENCLK-	46	NC
21	GND	47	Panel_VCC
22	EVEN[2]+	48	Panel_VCC
23	EVEN[2]-	49	Panel_VCC
24	EVEN[1]+	50	Panel_VCC
25	EVEN[1]-	51	Panel_VCC
26	EVEN[0]+		

FUNCTION (CN901)			
1	IR	5	MSDA
2	GND	6	FUNC_INTR
3	3.3V	7	LED_STB
4	MSCL	8	NC

(CN1601_HD)			
1	Panel_VCC	16	ODDCLK+
2	Panel_VCC	17	ODDCLK-
3	Panel_VCC	18	GND
4	Panel_VCC	19	ODD[2]+
5	Panel_VCC	20	ODD[2]-
6	GND	21	GND
7	GND	22	ODD[1]+
8	GND	23	ODD[1]-
9	TCON_WP	24	GND
10	FORMAT	25	ODD[0]+
11	NC	26	ODD[0]-
12	GND	27	GND
13	ODD[3]+	28	SDA_TCON
14	ODD[3]-	29	SCL_TCON
15	GND	30	NC

SPEAKER (CN302)			
1	R+	3	L+
2	R-	4	L-

USB (CN1501)			
1	5V	3	USB_DP
2	USB_DM	4	GND

HEADPHONE (CN301)			
1	GND	4	GND
2	HP_R	5	NC
3	HP_L	6	GND
7	IDENT_HP		

HDMI (CN601~CN602)			
1	RX2+	11	GND
2	GND	12	RXCLK-
3	RX2-	13	HDMI_CEC
4	RX1+	14	NC
5	GND	15	SCL
6	RX1-	16	SDA
7	RX0+	17	GND
8	GND	18	5V / IDENT
9	RX0-	19	HPD
10	RXCLK+		

5. Wiring Diagram

SCART (CN501_EU)			
1	SC_SR_OUT	12	NC
2	SC_COMP1_SR_IN	13	GND
3	SC_SL_OUT	14	GND
4	GND	15	SC_R_COMP1_PR
5	GND	16	SC_FB
6	SC_COMP1_SL_IN	17	GND
7	SC_B_COMP1_PB	18	GND
8	IDENT_SC	19	SC_CVBS_OUT
9	GND	20	SC_CVBS_IN
10	NC	21	GND
11	SC_G_COMP1_Y		

• TUNER (option by sec code)

DVB_TC (BN40-00221A)			
1	RF_AGC	9	IF-AGC
2	5V	10	DIF 1
3	GND	11	DIF 2
4	33V	12	AFT
5	GND	13	SIF
6	SCL	14	NC
7	SDA	15	CVBS
8	IF-TP		

■ Non_Flip (19"/22")

POWER IN (CN201_LED/CN202_LCD)			
1	B5V	8	GND
2	SW_POWER	9	GND
3	B5V	10	SW_INVERTER
4	A5V	11	B13V
5	GND	12	NC
6	GND	13	B13V
7	B12VS	14	PWM_DIMMING

LVDS OUT (CN1603_FHD)			
1	Panel_VCC	16	EVEN[1]-
2	Panel_VCC	17	GND
3	Panel_VCC	18	EVEN[0]+
4	NC	19	EVEN[0]-
5	NC	20	ODD[3]+
6	NC	21	ODD[3]-
7	GND	22	ODDCLK+
8	EVEN[3]+	23	ODDCLK-
9	EVEN[3]-	24	GND
10	EVENCLK+	25	ODD[2]+
11	EVENCLK-	26	ODD[2]-
12	EVEN[2]+	27	ODD[1]+
13	EVEN[2]-	28	ODD[1]-
14	GND	29	ODD[0]+
15	EVEN[1]+	30	ODD[0]-

(CN1602_HD)			
1	Panel_VCC	16	EVENCLK+
2	Panel_VCC	17	EVENCLK-
3	Panel_VCC	18	GND
4	Panel_VCC	19	EVEN[2]+
5	Panel_VCC	20	EVEN[2]-
6	GND	21	GND
7	GND	22	EVEN[1]+
8	GND	23	EVEN[1]-
9	TCON_WP	24	GND
10	FORMAT	25	EVEN[0]+
11	NC	26	EVEN[0]-
12	GND	27	GND
13	EVEN[3]+	28	SDA_TCON
14	EVEN[3]-	29	SCL_TCON
15	GND	30	NC

FUNCTION (CN901)			
1	IR	5	MSDA
2	GND	6	FUNC_INTR
3	3.3V	7	LED_STB
4	MSCL	8	NC

SPEAKER (CN302)			
1	R+	3	L+
2	R-	4	L-

HEADPHONE (CN301)			
1	GND	4	GND
2	HP_R	5	NC
3	HP_L	6	GND
7	IDENT_HP		

HDMI (CN601~CN602)			
1	RX2+	11	GND
2	GND	12	RXCLK-
3	RX2-	13	HDMI_CEC
4	RX1+	14	NC
5	GND	15	SCL
6	RX1-	16	SDA
7	RX0+	17	GND
8	GND	18	5V / IDENT
9	RX0-	19	HPD
10	RXCLK+		

SCART (CN501_EU)			
1	SC_SR_OUT	12	NC
2	SC_COMP1_SR_IN	13	GND
3	SC_SL_OUT	14	GND
4	GND	15	SC_R_COMP1_PR
5	GND	16	SC_FB
6	SC_COMP1_SL_IN	17	GND
7	SC_B_COMP1_PB	18	GND
8	IDENT_SC	19	SC_CVBS_OUT
9	GND	20	SC_CVBS_IN
10	NC	21	GND
11	SC_G_COMP1_Y		



• TUNER (option by sec code)

TUNER (BN40-00221A)			
1	RF_AGC	9	IF-AGC
2	5V	10	DIF 1
3	GND	11	DIF 2
4	33V	12	AFT
5	GND	13	SIF
6	SCL	14	NC
7	SDA	15	CVBS
8	IF-TP		

5-3. Connector Functions

Connector	Functions
Main ↔ IP (14p)	Supply main power and dimming signal from IP Board to Main Board.
Main ↔ T-CON (51p/30p LVDS)	The LVDS signal transfered from Main Board to Panel.
IP ↔ Panel (6p) (use only AMLCD panel)	Supply power from IP board to Driver Board.

5-4. Cables

Use	LEAD (Main-IP 14P)	LEAD (IP-Invertor 12P)	LEAD (IP-Driver B'D 6P)
Code	LD400/LD403 32" : BN39-01449A LD503 32" : BN39-01449C UD4003 19" : BN39-01455G 26" : BN39-01455E 32" : BN39-01455D UD5003 22" : BN39-01455E 40" : BN39-01455K	LD400 32" : BN39-01448A LD403 32" : BN39-01448E LD503 32" : BN39-01448C	UD4003 19" : BN39-01465D UD5003 22" : BN39-01465C
Photo			
Use	LVDS (Main - TCON)		
Code	FHD LD503 32" : BN96-17116R UD5003 22" : BN96-18829M 40" : BN96-17116M	HD LD400 32" : BN96-13227A LD403 32" : BN96-17545F UD4003 19" : BN96-18829L 26" : BN96-18829P 32" : BN96-13227X	
Photo	