SAMSUNG

UHD TV

Chassis : UKU6000P
Model   : UN40KU6000G
UN50KU6000G
UN55KU6000G
UN60KU6000G
UN65KU6000G

SERVICE *Manual*

UHD TV

UN**KU6000G

Contents

Contents

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

> **⚠ WARNING**
>
> For continued safety, do not attempt to modify the circuit board.
>
> Disconnect the AC power and DC power jack before servicing.

1-1-2. Servicing the LED TV

1. When servicing the LED 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 monitor 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 monitor.

2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistorcapacitor networks, mechanical insulators, etc.

3. Leakage Current Hot Check:
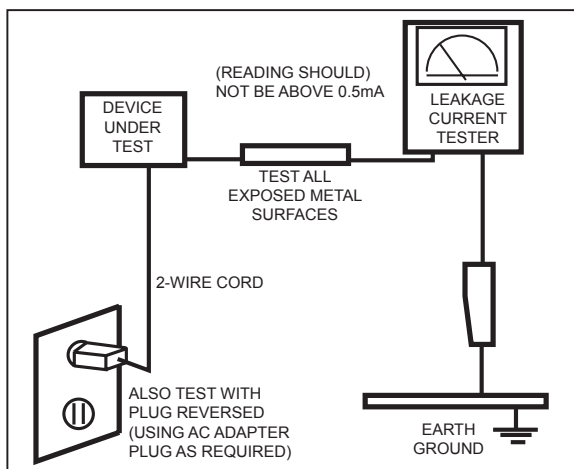
> **⚠ WARNING**
>
> Do not use an isolation transformer during this test.
>
> Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

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 safetyrelated 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 theblades 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. Static Electricity 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 monitor.

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.

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

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
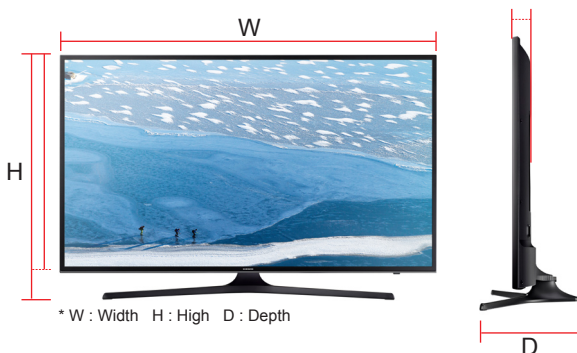
1. For safety reasons, more than a people are required for carrying the product.

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.

8. If an equipment is provided with a replaceable battery, and if replacement by an incorrect type could result in an explosion (for example, with some lithium batteries), the following applies:

> **CAUTION**
> - Risk of explosion if battery is replaced by an incorrect type dispose of used batteries according to the instructions.
> - Do not dispose of batteries in a fire.
> - Do not short circuit, disassemble or overheat the batteries.
> - Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
> - Do not be exposed to excessive heat such as sunshine, fire or the like.

2. Product Specifications

2-1. Product information

Model	UN**KU6000G		
Front View			
Detail View			
Front Color	Dark Titan		
Dimension (WxHxD)	40"	Body	917.7 x 535.7 x 62.6 mm
		With stand	917.7 x 596.5 x 288.1 mm
	50"	Body	1128.9 x 654.4 x 63.2 mm
		With stand	1128.9 x 723.7 x 310.5 mm
	55"	Body	1242.6 x 718.4 x 63.2 mm
		With stand	1242.6 x 787.5 x 310.5 mm
	60"	Body	1363.6 x 789.5 x 64.0 mm
		With stand	1363.6 x 852.8 x 369.4 mm
	65"	Body	1463.5 x 844.5 x 64.6 mm
		With stand	1463.5 x 907.6 x 369.4 mm

Model			UN**KU6000G
Weight	40"	Without Stand	7.7 kg
		With stand	8.6 kg
	50"	Without Stand	12.2 kg
		With stand	13.2 kg
	55"	Without Stand	15.0 kg
		With stand	16.0 kg
	60"	Without Stand	20.9 kg
		With stand	22.9 kg
	65"	Without Stand	23.7 kg
		With stand	25.8 kg

2-2. Detail Specification

Item		UN40KU6000GXUG
General Information	Product	LED
	Series	6
	Country	URUGUAY
	Platform(TV)	SoC	Jazz-L
Display	Screen Size	40"
	Resolution	3,840 × 2,160
	Quantum Dot Display	N/A
	Ultra Black	N/A
	Screen Curvature	N/A
	10 bit Support	N/A
Video	Picture Engine	UHD Up-Scaling
	Motion Rate	120
	PQI (Picture Quality Index)	1300
	HDR (High Dynamic Range)	HDR Pro
	Dynamic Contrast Ratio	Mega Contrast
	Micro Dimming	UHD Dimming
	Precision Black (Local Dimming)	N/A
	Quantum Dot Color	N/A
	Active Crystal Color	N/A
	Wide Color Enhancer (Plus)	N/A
	PurColor	Yes
	Auto Depth Enhancer	N/A
	Contrast Enhancer	Yes
	Auto Motion Plus	Yes
	Film Mode	Yes
	Peak Illuminator	N/A
Audio	Dolby Digital Plus	Yes
	DTS Codec	Yes
	Sound Output (RMS)	20W
	Speaker Type	2CH(Down Firing w/Bass Reflex)
	Woofer	N/A
	Wallmount Sound Mode	Yes
	Multiroom Link	Yes
	TV SoundConnect	N/A
	BT Headset Support	N/A

Item		UN40KU6000GXUG
Smart TV	Samsung SMART TV	Yes
	Apps	Yes
	Games	N/A
	Cloud Game	N/A
	Billing	Yes(CL)
	Automated Content Recognition (ACR)	N/A
	Web Browser	Yes
Smart Interaction	Voice Recognition	N/A
Convergence	TV to Mobile - Mirroring	Yes
	Mobile to TV - Mirroring, DLNA	Yes
	Samsung SMART View	Yes
	Bluetooth Low Energy	N/A
	RVU	N/A
	WiFi Direct	Yes
IoT Service	TV as Hub Support	N/A
	TV as Things Support	N/A
	IoT Client Application	N/A
Tuner/Broadcasting	Digital Broadcasting	ISDB-T
	Analog Tuner	Yes (Trinorma)
	2 Tuner	N/A
	CI (Common Interface)	N/A
	Data Broadcasting	GINGA(UY)
Connectivity	HDMI	3
	USB	2
	Component In (Y/Pb/Pr)	1
	Composite In (AV)	1(Common Use for Component Y)
	Ethernet (LAN)	Yes
	Headphone	N/A
	Audio Out (Mini Jack)	N/A
	Digital Audio Out (Optical)	1
	RF In (Terrestrial / Cable input / Satellite input)	1/1(Common Use for Terrestrial)/0
	Ex-Link (RS-232C)	N/A
	CI Slot	N/A
	Scart	N/A
	HDMI A / Return Ch. Support	Yes
	HDMI Quick Switch	Yes
	Wireless LAN Adapter Support	N/A
	Wireless LAN Built-in	Yes
	Anynet+ (HDMI-CEC)	Yes

Item		UN40KU6000GXUG
Design	Design	JU6000 Concept modified
	Bezel Type	VNB
	Slim Type	Slim
	Front Color	Dark Titan
	Light Effect (Deco)	N/A
	Stand Type	V-Shape
	Swivel (Left/Right)	N/A
Additional Feature	Instant On	Yes
	Processor	Quad-Core
	Accessibility	Enlarge/High Contrast
	Digital Clean View	Yes
	One Connect (Jack)	N/A
	Auto Channel Search	Yes
	Auto Power Off	Yes
	BD Wise Plus	N/A
	Caption (Subtitle)	Yes
	Channel List USB-Clone	N/A
	Connect Share™ (HDD)	Yes
	ConnectShare™ (USB 2.0)	Yes
	Embeded POP	Yes
	EPG	Yes
	Extended PVR	Yes
	Game Mode	Yes
	OSD Language	Local Languages
	Picture-In-Picture	Yes
	BT HID Built-in	N/A
	USB HID Support	Yes
	Time Shift	Yes
	MBR Support	N/A
	Ultra Clean View	N/A
Eco Feature	Eco Sensor	Yes
	Energy Efficiency Class	N/A
Power	Power Supply	AC100-240V 50/60Hz
	Power Consumption (Max)	125 W

Item		UN50KU6000GXUG
General Information	Product	LED
	Series	6
	Country	URUGUAY
	Platform(TV)	SoC | Jazz-L
Display	Screen Size	50"
	Resolution	3,840 × 2,160
	Quantum Dot Display	N/A
	Ultra Black	N/A
	Screen Curvature	N/A
	10 bit Support	N/A
Video	Picture Engine	UHD Up-Scaling
	Motion Rate	120
	PQI (Picture Quality Index)	1300
	HDR (High Dynamic Range)	HDR Pro
	Dynamic Contrast Ratio	Mega Contrast
	Micro Dimming	UHD Dimming
	Precision Black (Local Dimming)	N/A
	Quantum Dot Color	N/A
	Active Crystal Color	N/A
	Wide Color Enhancer (Plus)	N/A
	PurColor	Yes
	Auto Depth Enhancer	N/A
	Contrast Enhancer	Yes
	Auto Motion Plus	Yes
	Film Mode	Yes
	Peak Illuminator	N/A
Audio	Dolby Digital Plus	Yes
	DTS Codec	Yes
	Sound Output (RMS)	20W
	Speaker Type	2CH(Down Firing w/Bass Reflex)
	Woofer	N/A
	Wallmount Sound Mode	Yes
	Multiroom Link	Yes
	TV SoundConnect	N/A
	BT Headset Support	N/A

Item		UN50KU6000GXUG
Smart TV	Samsung SMART TV	Yes
	Apps	Yes
	Games	N/A
	Cloud Game	N/A
	Billing	Yes(CL)
	Automated Content Recognition (ACR)	N/A
	Web Browser	Yes
Smart Interaction	Voice Recognition	N/A
Convergence	TV to Mobile - Mirroring	Yes
	Mobile to TV - Mirroring, DLNA	Yes
	Samsung SMART View	Yes
	Bluetooth Low Energy	N/A
	RVU	N/A
	WiFi Direct	Yes
IoT Service	TV as Hub Support	N/A
	TV as Things Support	N/A
	IoT Client Application	N/A
Tuner/Broadcasting	Digital Broadcasting	ISDB-T
	Analog Tuner	Yes (Trinorma)
	2 Tuner	N/A
	CI (Common Interface)	N/A
	Data Broadcasting	GINGA(UY)
Connectivity	HDMI	3
	USB	2
	Component In (Y/Pb/Pr)	1
	Composite In (AV)	1(Common Use for Component Y)
	Ethernet (LAN)	Yes
	Headphone	N/A
	Audio Out (Mini Jack)	N/A
	Digital Audio Out (Optical)	1
	RF In (Terrestrial / Cable input / Satellite input)	1/1(Common Use for Terrestrial)/0
	Ex-Link (RS-232C)	N/A
	CI Slot	N/A
	Scart	N/A
	HDMI A / Return Ch. Support	Yes
	HDMI Quick Switch	Yes
	Wireless LAN Adapter Support	N/A
	Wireless LAN Built-in	Yes
	Anynet+ (HDMI-CEC)	Yes

	Item	UN50KU6000GXUG
Design	Design	JU6000 Concept modified
	Bezel Type	VNB
	Slim Type	Slim
	Front Color	Dark Titan
	Light Effect (Deco)	N/A
	Stand Type	V-Shape
	Swivel (Left/Right)	N/A
Additional Feature	Instant On	Yes
	Processor	Quad-Core
	Accessibility	Enlarge/High Contrast
	Digital Clean View	Yes
	One Connect (Jack)	N/A
	Auto Channel Search	Yes
	Auto Power Off	Yes
	BD Wise Plus	N/A
	Caption (Subtitle)	Yes
	Channel List USB-Clone	N/A
	Connect Share™ (HDD)	Yes
	ConnectShare™ (USB 2.0)	Yes
	Embeded POP	Yes
	EPG	Yes
	Extended PVR	Yes
	Game Mode	Yes
	OSD Language	Local Languages
	Picture-In-Picture	Yes
	BT HID Built-in	N/A
	USB HID Support	Yes
	Time Shift	Yes
	MBR Support	N/A
	Ultra Clean View	N/A
Eco Feature	Eco Sensor	Yes
	Energy Efficiency Class	N/A

Item		UN55KU6000GXUG
General Information	Product	LED
	Series	6
	Country	URUGUAY
	Platform(TV)	SoC | Jazz-L
Display	Screen Size	55"
	Resolution	3,840 × 2,160
	Quantum Dot Display	N/A
	Ultra Black	N/A
	Screen Curvature	N/A
	10 bit Support	N/A
Video	Picture Engine	UHD Up-Scaling
	Motion Rate	120
	PQI (Picture Quality Index)	1300
	HDR (High Dynamic Range)	HDR Pro
	Dynamic Contrast Ratio	Mega Contrast
	Micro Dimming	UHD Dimming
	Precision Black (Local Dimming)	N/A
	Quantum Dot Color	N/A
	Active Crystal Color	N/A
	Wide Color Enhancer (Plus)	N/A
	PurColor	Yes
	Auto Depth Enhancer	N/A
	Contrast Enhancer	Yes
	Auto Motion Plus	Yes
	Film Mode	Yes
	Peak Illuminator	N/A
Audio	Dolby Digital Plus	Yes
	DTS Codec	Yes
	Sound Output (RMS)	20W
	Speaker Type	2CH(Down Firing w/Bass Reflex)
	Woofer	N/A
	Wallmount Sound Mode	Yes
	Multiroom Link	Yes
	TV SoundConnect	N/A
	BT Headset Support	N/A

Item		UN55KU6000GXUG
Smart TV	Samsung SMART TV	Yes
	Apps	Yes
	Games	N/A
	Cloud Game	N/A
	Billing	Yes(CL)
	Automated Content Recognition (ACR)	N/A
	Web Browser	Yes
Smart Interaction	Voice Recognition	N/A
Convergence	TV to Mobile - Mirroring	Yes
	Mobile to TV - Mirroring, DLNA	Yes
	Samsung SMART View	Yes
	Bluetooth Low Energy	N/A
	RVU	N/A
	WiFi Direct	Yes
IoT Service	TV as Hub Support	N/A
	TV as Things Support	N/A
	IoT Client Application	N/A
Tuner/Broadcasting	Digital Broadcasting	ISDB-T
	Analog Tuner	Yes (Trinorma)
	2 Tuner	N/A
	CI (Common Interface)	N/A
	Data Broadcasting	GINGA(UY)
Connectivity	HDMI	3
	USB	2
	Component In (Y/Pb/Pr)	1
	Composite In (AV)	1(Common Use for Component Y)
	Ethernet (LAN)	Yes
	Headphone	N/A
	Audio Out (Mini Jack)	N/A
	Digital Audio Out (Optical)	1
	RF In (Terrestrial / Cable input / Satellite input)	1/1(Common Use for Terrestrial)/0
	Ex-Link (RS-232C)	N/A
	CI Slot	N/A
	Scart	N/A
	HDMI A / Return Ch. Support	Yes
	HDMI Quick Switch	Yes
	Wireless LAN Adapter Support	N/A
	Wireless LAN Built-in	Yes
	Anynet+ (HDMI-CEC)	Yes

Item		UN55KU6000GXUG
Design	Design	JU6000 Concept modified
	Bezel Type	VNB
	Slim Type	Slim
	Front Color	Dark Titan
	Light Effect (Deco)	N/A
	Stand Type	V-Shape
	Swivel (Left/Right)	N/A
Additional Feature	Instant On	Yes
	Processor	Quad-Core
	Accessibility	Enlarge/High Contrast
	Digital Clean View	Yes
	One Connect (Jack)	N/A
	Auto Channel Search	Yes
	Auto Power Off	Yes
	BD Wise Plus	N/A
	Caption (Subtitle)	Yes
	Channel List USB-Clone	N/A
	Connect Share™ (HDD)	Yes
	ConnectShare™ (USB 2.0)	Yes
	Embeded POP	Yes
	EPG	Yes
	Extended PVR	Yes
	Game Mode	Yes
	OSD Language	Local Languages
	Picture-In-Picture	Yes
	BT HID Built-in	N/A
	USB HID Support	Yes
	Time Shift	Yes
	MBR Support	N/A
	Ultra Clean View	N/A
Eco Feature	Eco Sensor	Yes
	Energy Efficiency Class	N/A
Power	Power Supply	AC100-240V 50/60Hz
	Power Consumption (Max)	125 W

	Item	UN65KU6000GXUG
General Information	Product	LED
	Series	6
	Country	URUGUAY
	Platform(TV)	SoC | Jazz-L
Display	Screen Size	65"
	Resolution	3,840 × 2,160
	Quantum Dot Display	N/A
	Ultra Black	N/A
	Screen Curvature	N/A
	10 bit Support	N/A
Video	Picture Engine	UHD Up-Scaling
	Motion Rate	120
	PQI (Picture Quality Index)	1300
	HDR (High Dynamic Range)	HDR Pro
	Dynamic Contrast Ratio	Mega Contrast
	Micro Dimming	UHD Dimming
	Precision Black (Local Dimming)	N/A
	Quantum Dot Color	N/A
	Active Crystal Color	N/A
	Wide Color Enhancer (Plus)	N/A
	PurColor	Yes
	Auto Depth Enhancer	N/A
	Contrast Enhancer	Yes
	Auto Motion Plus	Yes
	Film Mode	Yes
	Peak Illuminator	N/A
Audio	Dolby Digital Plus	Yes
	DTS Codec	Yes
	Sound Output (RMS)	20W
	Speaker Type	2CH(Down Firing w/Bass Reflex)
	Woofer	N/A
	Wallmount Sound Mode	Yes
	Multiroom Link	Yes
	TV SoundConnect	N/A
	BT Headset Support	N/A

Item		UN65KU6000GXUG
Smart TV	Samsung SMART TV	Yes
	Apps	Yes
	Games	N/A
	Cloud Game	N/A
	Billing	Yes(CL)
	Automated Content Recognition (ACR)	N/A
	Web Browser	Yes
Smart Interaction	Voice Recognition	N/A
Convergence	TV to Mobile - Mirroring	Yes
	Mobile to TV - Mirroring, DLNA	Yes
	Samsung SMART View	Yes
	Bluetooth Low Energy	N/A
	RVU	N/A
	WiFi Direct	Yes
IoT Service	TV as Hub Support	N/A
	TV as Things Support	N/A
	IoT Client Application	N/A
Tuner/Broadcasting	Digital Broadcasting	ISDB-T
	Analog Tuner	Yes (Trinorma)
	2 Tuner	N/A
	CI (Common Interface)	N/A
	Data Broadcasting	GINGA(UY)
Connectivity	HDMI	3
	USB	2
	Component In (Y/Pb/Pr)	1
	Composite In (AV)	1(Common Use for Component Y)
	Ethernet (LAN)	Yes
	Headphone	N/A
	Audio Out (Mini Jack)	N/A
	Digital Audio Out (Optical)	1
	RF In (Terrestrial / Cable input / Satellite input)	1/1(Common Use for Terrestrial)/0
	Ex-Link (RS-232C)	N/A
	CI Slot	N/A
	Scart	N/A
	HDMI A / Return Ch. Support	Yes
	HDMI Quick Switch	Yes
	Wireless LAN Adapter Support	N/A
	Wireless LAN Built-in	Yes
	Anynet+ (HDMI-CEC)	Yes

Item		UN65KU6000GXUG
Design	Design	JU6000 Concept modified
	Bezel Type	VNB
	Slim Type	Slim
	Front Color	Dark Titan
	Light Effect (Deco)	N/A
	Stand Type	V-Shape
	Swivel (Left/Right)	N/A
Additional Feature	Instant On	Yes
	Processor	Quad-Core
	Accessibility	Enlarge/High Contrast
	Digital Clean View	Yes
	One Connect (Jack)	N/A
	Auto Channel Search	Yes
	Auto Power Off	Yes
	BD Wise Plus	N/A
	Caption (Subtitle)	Yes
	Channel List USB-Clone	N/A
	Connect Share™ (HDD)	Yes
	ConnectShare™ (USB 2.0)	Yes
	Embeded POP	Yes
	EPG	Yes
	Extended PVR	Yes
	Game Mode	Yes
	OSD Language	Local Languages
	Picture-In-Picture	Yes
	BT HID Built-in	N/A
	USB HID Support	Yes
	Time Shift	Yes
	MBR Support	N/A
	Ultra Clean View	N/A
Eco Feature	Eco Sensor	Yes
	Energy Efficiency Class	N/A
Power	Power Supply	AC100-240V 50/60Hz
	Power Consumption (Max)	125 W

2-3. NEW Key Features

2-3-1. 16" New UI

■ Smart Hub
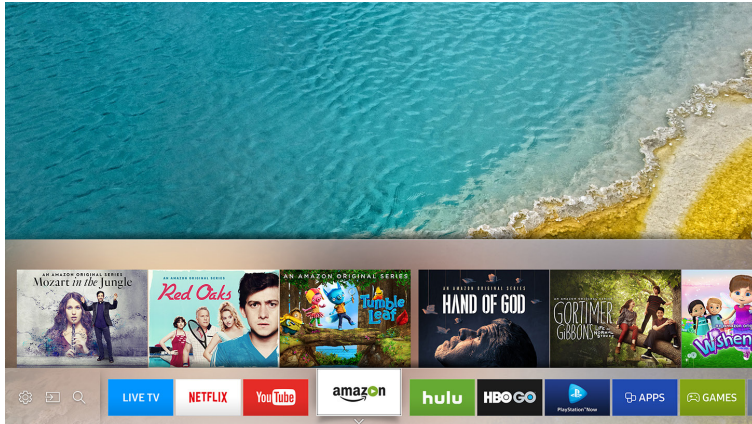
■ APPS Service

2-4. Smart Control

⏻ (Power): Press to turn the TV on or off.

123 (Number pad): When pressed, a number strip appears on the bottom of the screen. Select numbers and then select Done to enter a numeric value. Use to change the channel, enter a PIN, enter a ZIP code, etc.

4 color buttons (color): Use these colored buttons to access additional options specific to the feature in use.

EXTRA: While watching content, press to display extra information from the content provider.

Directional pad (up/down/left/right): Moves the focus, and changes the values seen on the TV's menu.

Select: Selects or runs a focused item. When pressed while you are watching content, detailed program information appears.

↩ (Return): Press to return to the previous menu. When pressed for 1 second or more, the running function is terminated. When pressed while you are watching a program, the previous channel appears.

⌂ (Smart hub): Press to return to the Home Screen.

▷⫿ (Play/pause): When pressed, the playback controls appear. Using these controls, you can control the media content that is playing.

VOL (Volume): Move the button up or down to adjust the volume.

To mute the sound, press the button. When pressed for 1 second or more, the Accessibility Shortcuts menu appears.

CH (Channel): Move the button up or down to change the channel.

To see the Guide screen, press the button.
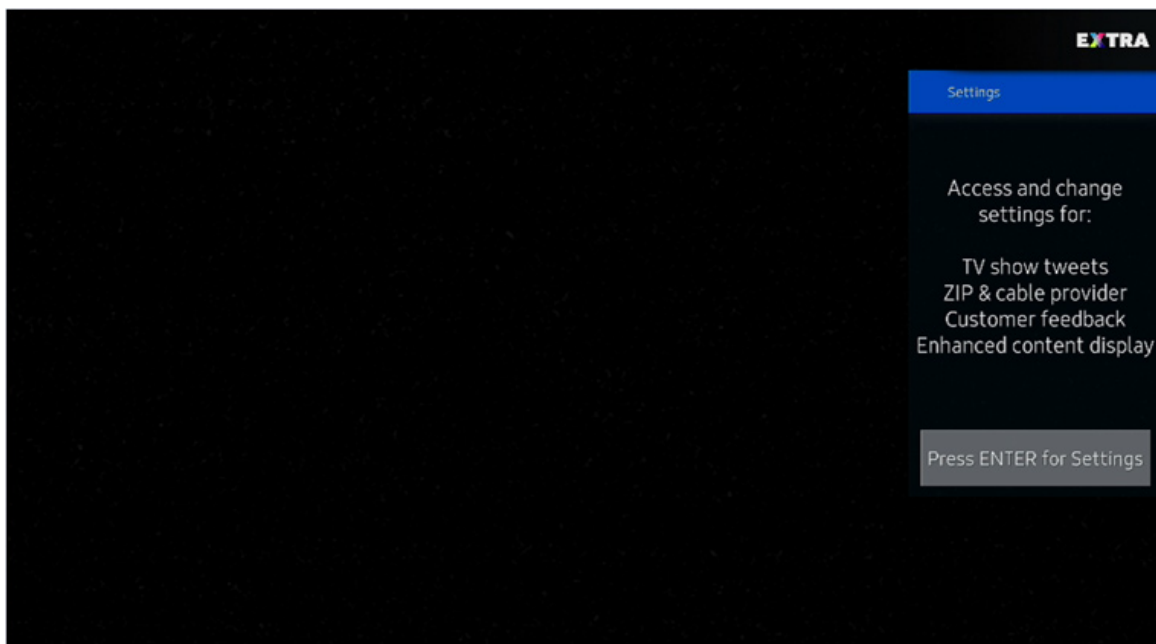
2-4-1. 123 Key

2-4-2. EXTRA Key

2-5. HDMI Color

2-5-1. HDMI UHD Color

• When you set the HDMI connection to On, the TV turns off and then on automatically.

• The HDMI connection with HDMI UHD Color set to Off supports up to UHD 50P/60P 4:2:0 input signals, while the HDMI connection with HDMI UHD Color set to On supports up to UHD 50P/60P 4:4:4 and 4:2:2 input signals. For more information, refer to "Supported Resolutions for UHD Input Signals.

• Each HDMI connection can be individually optimized for HDMI UHD Color. When you connect the TV to an external device that supports only the UHD 24 or 30 Hz frequency or any FHD frequency, the HDMI UHD Color function may not be available. In this case, set HDMI UHD Color to Off.

2-5-2. HDMI Black Level

• This function is only available when the input signal, connected to the TV via an HDMI connector, is set to RGB444.

2-6. Supported Formats

2-6-1. Supported Subtitle Formats

■ Supporen external subtitles

Name	Format
MPEG-4 Timed text	.ttxt
SAMI	.smi
SubRip	.srt
SubViewer	.sub
Micro DVD	.sub or .txt
SubStation Alpha	.ssa
Advanced SubStation Alpha	.ass
Powerdivx	.psb
SMPTE-TT Text	.xml

■ Supporen internal subtitles

Name	Container
Xsub	AVI
SubStation Alpha	MKV
Advanced SubStation Alpha	MKV
SubRip	MKV
VobSub	MKV
MPEG-4 Timed text	MP4
TTML in smooth streaming	MP4
SMPTE-TT Text	MP4
SMPTE-TT PNG	MP4

2-6-2. Supported image formats and resolutions

File Extension	Type	Resolution
*.jpg *.jpeg	JPEG	15360x8640
*.png	PNG	4096x4096
*.bmp	BMP	4096x4096
*.mpo	MPO	15360x8640

2-6-3. Supported music formats and codecs

File Extension	Type	Codec	Note
*.mp3	MPEG	MPEG1 Audio Layer 3	-
*.m4a *.mpa *.aac	MPEG4	AAC	
*.flac	FLAC	FLAC	Supports up to two channels.
*.ogg	OGG	Vorbis	Supports up to two channels.
*.wma	WMA	WMA	WMA 10 Pro supports up to 5.1 channels. WMA lossless audio is not supported. Supports up to M2 profile.
*.wav	wav	wav	
*.mid *.midi	midi	midi	Supports type 0 and type 1. Seek is not supported. Supports USB device only.
*.ape	ape	ape	
*.aif *.aiff	AIFF	AIFF	
*.m4a	ALAC	ALAC	

2-6-4. Supported video codecs

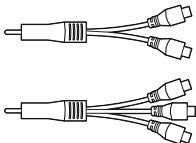| File Formats	Container	Video Codecs	Resolution	Frame rate (fps)	Bit rate (Mbps)	Audio Codec
*.avi *.mkv *.asf *.wmv *.mp4 *.mov *.3gp *.vro *.mpg *.mpeg *.ts *.tp *.trp *.mov *.flv *.vob *.svi *.m2ts *.mts *.divx	AVI MKV ASF MP4 3GP MOV FLV VRO VOB PS TS SVAF	H.264 BP/MP/HP	4096 x 2160	4096 x 2160: 30 3840 x 2160: 60	60	Dolby Digital LPCM ADPCM(IMA, MS) AAC HE-AAC WMA Dolby Digital Plus MPEG(MP3) DTS(Core, LBR) G.711(A-Law, μ-Law)
		HEVC (H.265 - Main, Main10, Main4:2:2 10)		60	80	
		Motion JPEG	3584 x 2160	30	80	
		MVC	1920x1080	60	20	
		DivX 3.11 / 4 / 5 / 6				
		MPEG4 SP/ASP				
		Window Media Video v9 (VC1)				
		MPEG2				
		MPEG1				
		Microsoft MPEG-4 v1, v2, v3		30		
		Window Media Video v7 (WMV1), v8 (WMV2)				
		H.263 Sorrenson				
		VP6				
*.webm	WebM	VP8	1920 x 1080	60	20	Vorbis
		VP9	4096 x 2160	4096 x 2160: 60	40	

■ Other Restrictions

> 📝 **NOTE**
>
> - Codecs may not function properly if there is a problem with the content.
> - Video content does not play or does not correctly if there is an error in the content or container.
> - Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility.ratings
> - If the Index Table is has an error, the Seek(Jump)function will not work.
> - When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
> - Some USB/digital camera devices may not be compatible with the TV.
> - HEVC codec is only available in MKV / MP4 / TS containers.

2-7. Accessories

> 📝 **NOTE**
>
> • The items' colors and shapes may vary depending on the model.
> • Cables not included in the package contents can be purchased separately.
> • The part code for some accessories may differ depending on your region.

Product	Code. No	Product	Code. No
• Samsung Smart Remote	BN59-01259B	• User Manual	BN68-07855A
• Batteries (AA x 2)	4301-000101	• Regulatory Guide	BN68-04972E
• Power Cord	3903-001118		

Image	Product	Code. No
	• COMPONENT IN / AV IN Adapter	BN39-02189A BN39-02190A
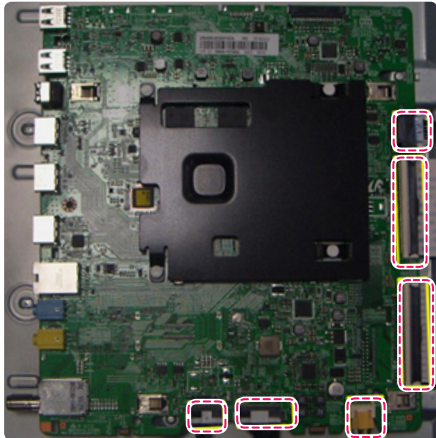
3. Disassembly and Reassembly
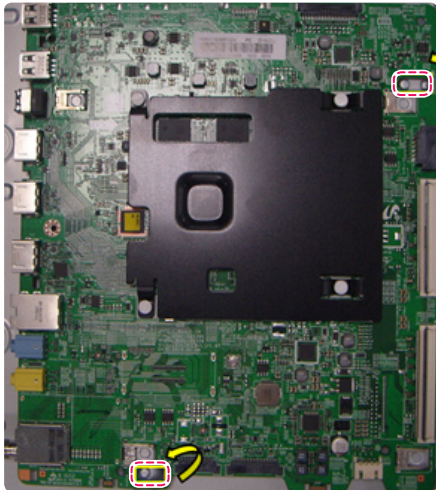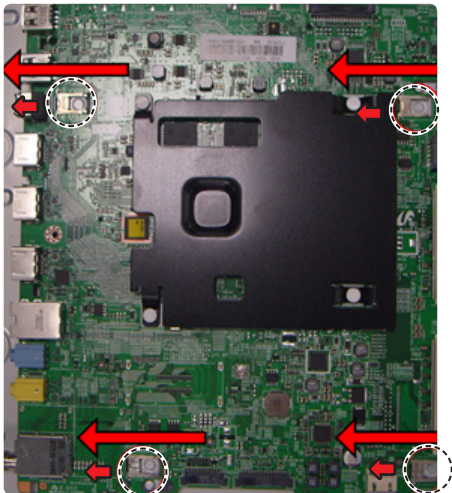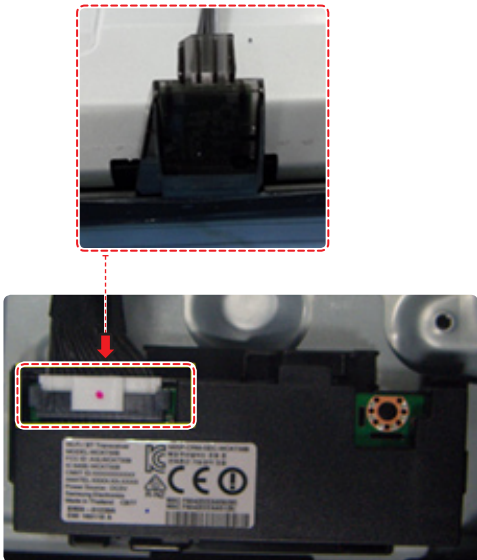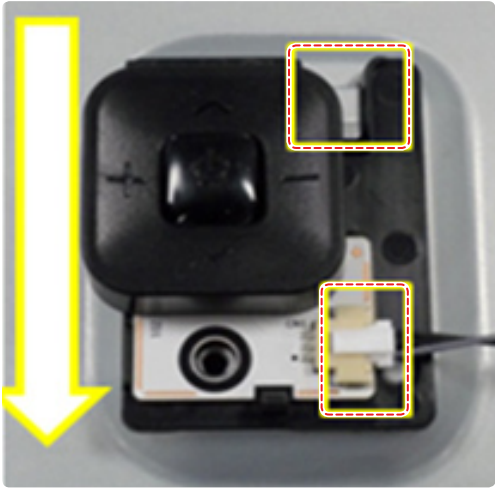
<table>
<tr>
<td rowspan="2">⚠
CAUTION</td>
<td>**1.** Disconnect the LED TV from the power source before disassembly.</td>
</tr>
<tr>
<td>**2.** Follow these directions carefully; never use metal instruments to pry apart the cabinet.
  – Recommend Torque : 22.0 ~ 26.5lbf
      •   A strength of Torque can be changed depending on the situation.</td>
</tr>
</table>

3-1. Disassembly and Reassembly

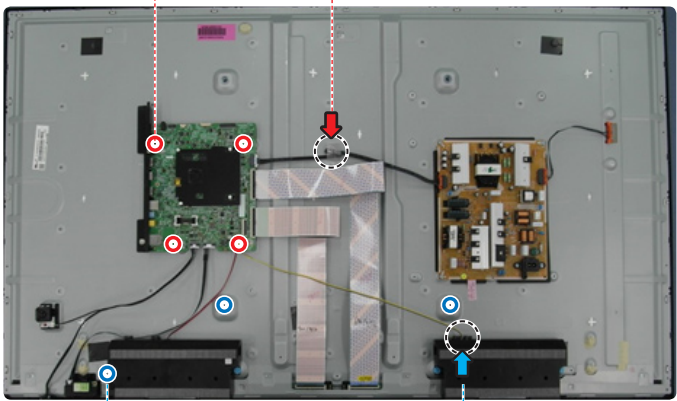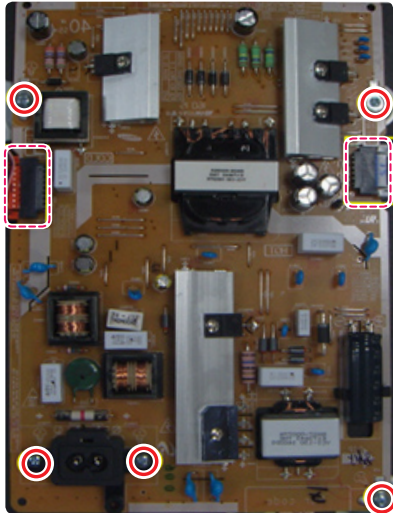|	Description	Picture Description
1	Carefully position the TV so that the screen is facing downwards. Make sure to place the TV upon a soft cushion or any material that will prevent damage to the screen.	
2	Remove the screws connecting the stand to the TV. Then carefully remove the stand. **Screws** **6902-002474 x 4EA** TORQUE : 22.0 ~ 26.5lbf	
3	Remove the screws for the 'Rear Cover'. Then carefully remove the 'Rear Cover'. **Screws** **6001-002755 x 17EA** TORQUE : 22.0 ~ 26.5lbf **6003-001782 x 1EA** TORQUE : 22.0 ~ 26.5lbf	 C/R+PANEL : 16EA C/R+MAIN : 1EA C/R+SMPS : 1EA TORQUE : 22.0~26.5 lbf

Description	Picture Description
4 Remove the Electric tapes shown on the images. • ➡ Filament Tape • ➡ Dressing • ⊙ Caution • ⊙ Sliding Fixing Point 📝 **NOTE** When assembling the TV, the electric tapes must be applied on the same locations. Please remember to take a picture of where the tapes were first applied.	Sliding Fixing Point Filament Tape Caution Dressing
5 Remove the 'Lead Connectors' and screws from the SMPS unit Then carefully remove the SMPS unit. **Screws** 🔩 **6001-003016 5EA** TORQUE : 22.0 ~ 26.5lbf	
6 Remove the cables from the 'TV Board'.	

Description	Picture Description	
7 Use both hands to hold the 'Main Board' and gently lift up 2 point marked.		3-3
8 Slide the board to the Left side to release the board. Then carefully remove the 'TV Board'.		
9 Remove the BT/WIFI and IR unit.		

Description	Picture Description
10 Remove the JOG unit.	
11 Lastly, remove the speakers on both side.	
* Panel - Rear Side	

CAUTION

- Always remember to disconnect the Poewr Cord before assembling or disassembling the LED TV.
- Always take precautions and follow the steps properly. Remember to take a picture before disassenbling.
- Recommeded screwdriver torque :
   - The torque may need to be adjusted accordingly.

4. Troubleshooting

4-1

4-1. Previous Check

■ Check list for initial operation

1. Check the various cable connections first.
   - Check to see if there is a burnt or damaged cable.
   - 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.
3. How to distinguish if the problem is caused by Main Board or T-CON Board.
   - No Video

Symptom	I f the problem is No Video but BLU is on and Indication LED is blinking repeatedly and faster than nomal booting.
Check Points	• Replace the T-CON Board.

   - Distorted Picture :

Check Points	• Check the inner patterns.

4-2. How to Check Fault Symptom

4-2-1. Power

■ TV POWER STANDBY

1. TV in Standby
   - √ **Standby LED Indicator**

2. If Not Lit:
   - √ AC 120Vac Line

3. If missing:
   - √ 120Vac Source and Power Cord

4. If OK:
   - √ Resistance on SMPS **Fuse** after first removing AC power cord.

5. If fusses are open replace SMPS.

6. If fuses are OK:
   - √ **Standby**: **A13V** (Always On) to Main Board. Should all be approx. 9 **VDC**

7. If any missing remove the SMPS connector to Main Board .
   - √ Standby A13V again for 9VDC.
   - − If OK replace **Main Board**.
   - − If still missing replace **SMPS**.

■ FUNCTION/IR Control

1. TV in Standby
   - √ **LED Status**

2. If **LED** is **OFF**
   - √ LED 1.7Vdc (pin 8)and VCC for 3.3Vdc
     - • If missing suspect Function Assy/Cable/Main board.

3. If **LED** is **ON**
   - √ Switch Operation activates on screen display.

<On Screen Selections with Function Control>
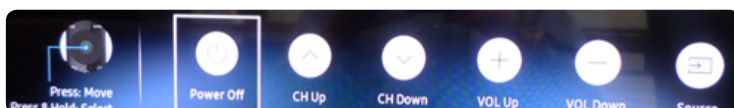
If missing:

1. Check the STBY voltage from SMPS to Main Board. If STBY is OK suspect **Main Board**.

2. Check Jog Shuttle 5 SW Operation (**Key 1** & **Key 2**) for command changes. If incorrect suspect a **stuck Jog switch** which also holds data to Main preventing operation.

3. Check **SDA**, **SCL** for effective 3.3Vdc (after power on)

4. Check **IR** with Standard Remote command changes. (3.3V to 2.5V effective DC)

<Function/IR>
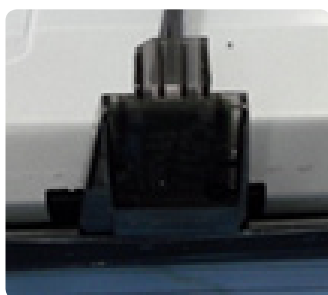
	CN1101 (FUNCTION/IR)		
1	IR 3.3Vdc to 2.5Vdc (Effective DC)	2	GND
3	A3.3V_PW	4	AMP_SCL_I2C 3.3Vdc (effective DC)
5	AMP_SDA_I2C 3.3 Vdc (effective DC)	6	KEY_INPUT1 1.8dc to 0V with PWR On command
7	KEY_INPUT2 1.8Vdc to command Voltage	8	LED_STB_OUT 1.7Vdc STBY
9	N/C	10	N/C
11	N/C	12	N/C

<Jog Function Switch>

P	CMD	Signal	DC Voltage
1	Center	Key 1	**1.8V** to 0 Vdc
2	Vol+	Key 2	**1.8V** to 1.0 Vdc
2	Vol-	Key 2	**1.8V** to 1.5 Vdc
2	CH+	Key 2	**1.8V** to 0 Vdc
2	CH-	Key 2	**1.8V** to 0.6 Vdc
3		GND	

■ SMPS POWER

1. **Power TV On.**
   - √ **PS_ON**. **2Vdc** (when off) changes to **3.3Vdc** (on)
   - – May already be On if IoT USB is loaded or TV Smart Things Hub mode is active.
2. if voltage error or no change.
   - √ Jog Function Control Test.
3. If OK replace Main Board.
   - √ All **A13V** **supplies to** full voltage level **12.7VDC**.
4. If any wrong voltage, remove the SMPS connector to Main Board.
   - √ A13V again for 12.7VDC.
5. If OK replace Main Board.
6. If still wrong voltage replace SMPS.
   - √ **OD** (Over Voltage Detect) : 3.3Vdc (Operating Normal)
7. If 0V or changing, an SMPS or Panel error exists. Perform Backlight Test.
   - √ **BLU_PWM** 0V- Off to approx 1 – 3.3 V pending Backlight dim level
   - √ If missing/error replace **Main Board**.
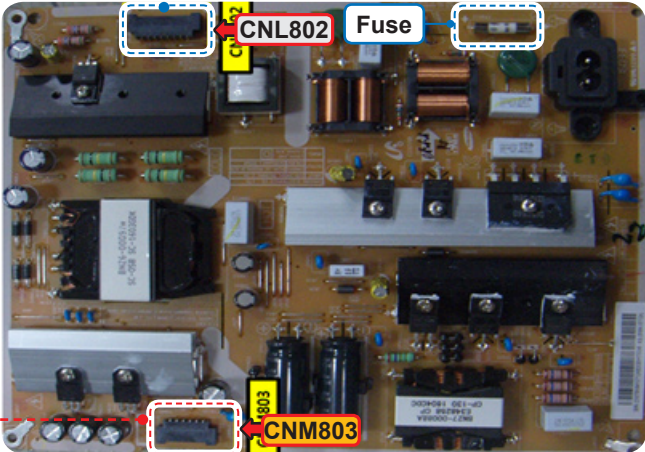
CNL802			
1	**2+**	9	**1+**
2	NC	10	NC
3	NC	11	NC
4	**2-**	12	**1-**
5	NC	13	NC
6	NC	14	NC
7	NC	15	IF2
8	NC	16	IF1

CNM803			
1	Fail Count	7	**A13V**
2	ANA-DIM	8	**POWER_ON/OFF**
3	**A13V**	9	**A13V**
4	OD_ON/OFF	10	GND
5	**A13V**	11	GND
6	**BLU_PWM**	12	GND

■ BACKLIGHTS
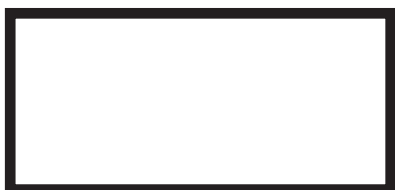
1. **Activate Backlights Test**:
   - Disconnect Lead Cable from Main Board to Power Supply. (CN202)
   - √ TV Screen for active backlight LEDs.
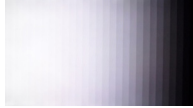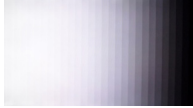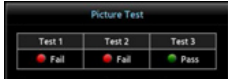
2. **If NO BACKLIGHTS**
   - √ Plus (+) & Minus (-) pin voltages on the Panel Connector.
   - If no pin voltages replace SMPS.
   - If voltages exist but no backlight:
   - √ The highest pin voltage (BL Drive Supply)
   - Remove Panel connector and measure again to compare.
   - If the voltage was high and stays the same high reading a string of Panel LEDs are open. Replace the Panel.
   - If the v**oltage was low** and remains low the **SMPS** is defective.
   - If the voltage was low and goes high a string of panel LEDs are shorted replace the **Panel**.

<u>For BACKLIGHT DIMMING PROBLEMS:</u>

- • Go to **Menu → Picture → Backlight** and vary level (0 – 20)
- • If no backlight changes observed:
  - √ Panel Connector pin voltages and BLU_PWM voltages (CNM801) while changing backlight level.
- • If Panel voltages don't change, and BLU_PWM changes, replace **SMPS**.
- • If BLU_PWM doesn't change replace **Main/T-Con Board**.

4-2-2. Video

■ Customer Picture Test

MAIN/TCON BOARD				
Main Section	Pre- FRC (T-CON)	Post FRC (T-CON)	Test Result	Problem
Pass	Pass	Pass		Check Signal Source and other inputs to One Connect
Fail	Pass	Pass		Replace Main/T-CON Board
Fail	Fail	Pass		Replace Main/T-CON Board
Fail	Fail	Fail		Replace Main/T-CON Board or Panel

■ MAIN / T-CON Board

1. Main Board Section

❶ Start Up Logo	❷ Customer Picture Test 1	❸ Mute - 147 - Mute

Video Operation : **Generated on Main Section.**

1. If OK:

   √ Source & Input Cables.

   √ Other inputs.

   √ One Connect Cable/Box.

2. If Noisy:

   √ T-CON Section Test Patterns.

2. PRE FRC of T-CON Section

Customer Picture Test 2
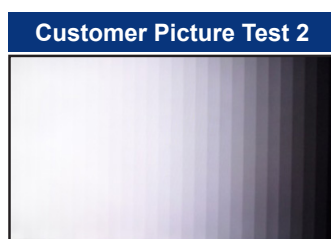
Video Operation : **Generated at Pre FRC, of T-CON Section.**

1. If OK:

   √ Main Section.

2. If Noisy:

   √ Post FRC Pattern.

3. POST FRC of T-CON Section

Customer Picture Test 3
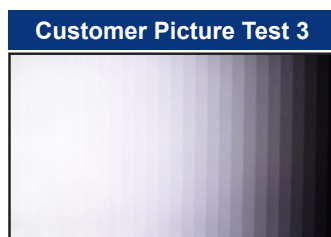
Video Operation : **Generated at Post FRC of T-CON Section.**

1. If OK:

   √ Main / T-CON Board (defective).

2. If Noisy:

   √ Mute - 369 - Mute.

4. T-CON Section

Mute - 369 - Mute

📝 **NOTE**

May not be available for Larger models over 70 inches.

Video Operation : **Generated at T-CON Section.**

1. **If OK:**
   - √   Main / T-CON Board (defective).

2. **If Noisy:**
   - √   Main / T-CON Board.

■ PANEL

1. **If Noisy:**

    √ Panel (defective).

4-2-3. Audio

■ AUDIO
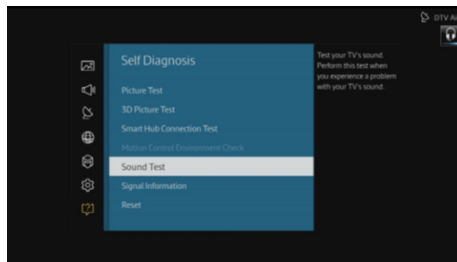
Source

- **No TV Sound**
    - √ Menu → Audio → Speaker Settings set to **TV Speaker**

- **Noisy / Distorted TV Audio**
    - √ Customer Menu → Support → **Sound Test**

- **If Sound Test FAILS : (Missing / Noisy Audio)**
    - √ Speakers (compare resistance/quality)
        - • Compare audio level out to speakers with multi meter.
    - √ Replace defective Speakers or Main Board or Cable.

- **IF Sound Test OK :**
    - √ Audio Source & External Cables.
    - √ With external Audio Generator (device or App).
    - √ Other Inputs.
    - √ One Connect Mini.

- **Optical Digital Out Errors**
    - √ Red light from Optical Digital Out.
        - • If missing replace One Connect Mini

- **No HDMI Audio**
    - √ Source / HDMI Cable & One Connect Mini Connectors.
        - • Swap with other HDMI Inputs/Sources.
        - • Perform **EDID Write** in Factory Mode (Can restore missing HDMI Audio).
    - √ Bulletins and Latest firmware on TV.
        - • If not restored replace One Connect Mini/Main.
        - • Check Audio Format PCM/Dolby based on external Receiver.

- **ARC Issues**
    - √ HDMI Cable is input to the ARC Designated HDMI port.
    - √ ARC (HDMI Control) is enabled on the external Receiver.

- **Bluetooth Audio "Sound Share" Connection Issues**
    - √ Sound Bar is in TV Mode.
        - • To Connect, Press & Hold Play Button until Sound Bar pairing mode begins.

4-2-4. Network

<TV>   <Router>   <Internet>

■ TV to Router "Failure"

Check Network Status **(TV ──✕→ Router ────→ Internet)**
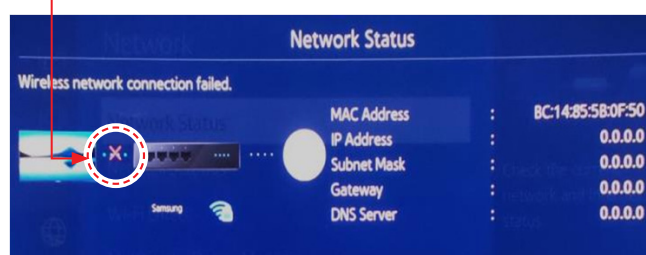
- • **Wired & Wireless MAC Address** in Customer Support Menu.
  - √ **No Wired MAC Address**: Replace Main Board.
  - √ **No Wireless MAC Address**: Module cabling & voltages from Main Board.
  - √ If operating voltages are OK but signal missing.
    - • Replace WiFi Module (WiFi/Bluetooth Module).
- • Proper **security passcode**
  - √ Check Wi-Fi signal strength at TV (use WiFi Analyzer or similar App).
    - • Try another source (Hot spot or Test Router).
  - √ Check related Bulletins.
  - √ Check **Factory Mode → SVC → Info → WiFi Error Count** (replace module for high error counts).

■ Router to Network "Failure"

Check Network Status **(TV ────→ Router ──✕→ Internet)**
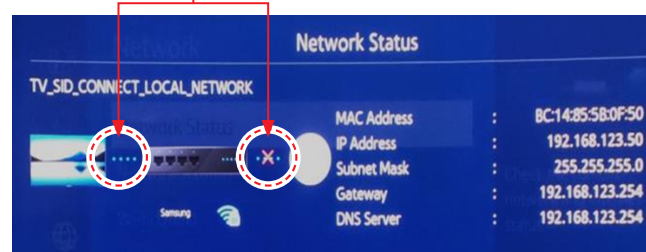
- • Instruct the customer the TV has proper connection to the router and is likely OK.
  - √ Check other devices using network are OK. If they test OK this does not mean the TV should be working.
- • Try another source (Hotspot) to test/show TV Network operation.

4-2-5. Smart Hub

Go to Menu > Support > Self Diagnosis > Smart Hub Connection Test

<TV>   <Router>   <Internet>   <Samsung Server>

1. Network / Gateway	• **If it Fails:** √ TV to Router Connection Test in "**Network Trouble shooting**"
2. DNS Test	• **If it Fails:** √ DNS setting in "**Network Settings**" • **If DNS is set manually:** √ Settings are correct (may be set to 8.8.8.8 to prevent Netflix issues) • **If it still fails:** √ DNS Test with setting to Auto Mode • If it fails both Manual & Auto problem is ISP or Router.
3. ISP Blocking	• **If it Fails:** √ Internet Service Provider is Active. √ With DNS setting at 8888. √ With Hot Spot.
4. Samsung Server Test	• **If it Fails:** √ Network Status. • **If OK:** √ Reset Smart Hub. √ Terms of Agreement are accepted.
5. Samsung Apps	• **If it Fails:** √ Reset Smart Hub. √ Samsung Apps load correctly. √ Perform "**Apps Reset**" in Factory Mode. √ Go to Smart Hub and complete Terms of Agreement and set up information. √ Samsung Apps load correctly. √ Before selecting an App, allow Apps to load or failure wilre-occur.

For Netflix Operation/Connection Issues:

- Check Certificate & Netflix ESN Status in Factory Mode.
  - If Certificate and ESN exists, "**CO**", "**NfO**", change the **DNS** to **8.8.8.8**
  - If Certificate is missing, "**C/**" replace the TV's Main Board.
  - If ESN number is missing: **NF/** do not replace the Main Board.
    - Reset TV Clock and check for correct Time & Date. Netflix relies on correct settings.
    - Reset Smart Hub. / Reset Apps In Factory Mode.

For Streaming Issues:

- Go to TV Web Browser / Go to speedof.me / testmy.net
  - √ **Check Speed** for at least 5 Mbps(HD streaming) / 25 Mbps (4K Streaming).
  - √ **Check Latency** for less than 50ms.

4-2-6. Bluetooth / WiFi Module

Pin1
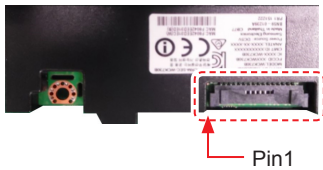
BT / WIFI			
1	BT_NRESET	2	BT_POWER_DET
3	BT_WAKE	4	-
5	BT_D-_USB	6	BT_D+_USB
7	-	8	BT_WELCOME
9	WIFI_PHY_ON	10	-
11	WIFI_D+_USB	12	WIFI_D-_USB
13	-	14	WIFI_5V
15	WIFI_WOL	16	WIFI_NRESET

Pins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Standby	3.3 Vdc	0	3.3 Vdc	NC	0	0	0	0V	0V	0	3 Vdc	0	0	5 Vdc	3.3 Vdc	3.3 Vdc
Power ON	3.3 Vdc	3.3 Vdc	3.3 Vdc		0.7V eff.dc BT Sig (DM) 4V p-p	2.5V eff.dc BT Sig (DM) 4V p-p	0	0V	3.3 Vdc	0	2.5V eff.dc WIFI Sig (DP) 0.5V p-p	2.5V eff.dc WIFI Sig (DM) 0.5V p-p	0	5 Vdc	3.3 Vdc	3.3 Vdc

Go to Menu > Support > Contact Samsung
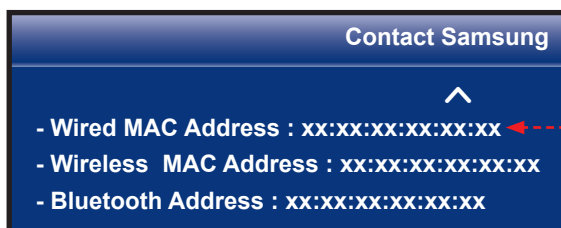
Missing or Error : Replace **Main Board**.

√ Wireless MAC Address

√ Bluetooth Address

- If **Bluetooth Address** or **Wireless MAC Address** are missing or errors exist.
- BT & Wi-Fi Connector Voltages.
  - If Voltages are OK but no BT or Wi-Fi Signals voltage(s), replace defective Module.
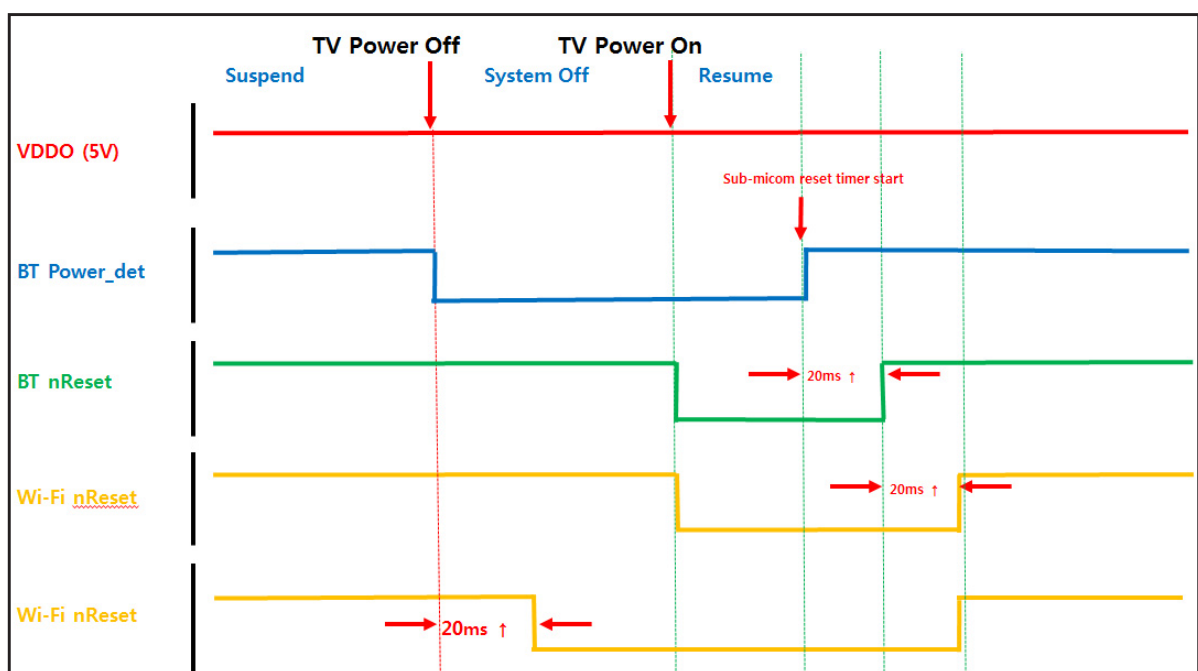
4-3. Factory Mode Adjustments

4-15

4-3-1. Entering Factory Mode

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

■ Factory Remote

1. Power TV ON.
2. Select TV Source.
3. **Info → Factory**.
4. Use **MENU** for return.

■ Samsung IR Remote (Limited Operation)

1. TV Power Standby.
2. Press as follows.

   • Remote Button : **MUTE → 1 → 8 → 2 → Power**

• **Option** (must set Option Bytes when replacing Main Board.)
• Option → **Factory Reset** (returns TV to out of box condition. Does not reset Apps.)
• SVC → **Test Patterns**
• SVC → Info → **ER Count** (Important to check for errors.)
   − Resets to 0 with Factory Reset.

First Screen Appearing in Factory Mode (SAMPLE)

```
MODE : CATV, RES : NOSIGNAL

Option
Control
Debug
SVC
ADC/WB
Advanced
```

T-JZL6AKUC-XXXX.XX
T-JZMAKUS-XXXX

tztv-X.X.-main2016-jazz-L__XXXXXXXX.X

BT Version : BLUETOOTH-VER-XXXX
E-Manual:----
CAMERA:****
Blaster Version : Not support

E-POP Version : JAZZLUHD-XXXX.X
EDID SUCCESS
HDCP SUCCESS
CALIB : AV/COMP/PC/HDMI/
Option : NONE_16,NONE,6000,NONE
DTCP Not Support
FRC-[JAZZ-L/?][NON FRC][HW:0x00]
TCON Version:----

Model : NNN0O6000
Wired MAC SUCCESS
Wireless MAC SUCCESS
WIFI Version : BCM43569_16210_WLC_E_
STATUS_ABORT

CO NfO WO MO D/ HX P/ AO O S/ N/ RO SC/ SiO(P)
NS//
Factory Data Ver : XXX / Fixed Ver : XX
EERC Version : 75 / WB Ver : 8

CPLD/LD : N/A
SmartControl : 0
Board Info : 2015/12/29/PV/12/BN41-02528A
Factory Reset In Production : ----
SID : ----
Date of purchase : --/--/----

√ **Testing Items**

√ Main SW Version
√ Sub SW Version

√ Wired MAC (Status)
√ Wireless MAC (Wi-Fi Module)

√ CO NFO WO. etc.
- Certificate
- Netfix
- Wide Vine
- etc. Status

4-3-2. Detail Factory Option

📝 **NOTE**

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

■ UN40KU6000GXUG

Multi Bom		FA01	FB02	FC03
Panel Type		**40A6AU0VK**	**40A6AU2VK**	**40A6AU0VK**
PANEL	Vendor	SDC	SDC	SDC
	Code	BN95-02634B	BN95-02634C	BN95-02634B
	Specification	CY-GK040HGLV2V/H	CY-GK040HGLV3V/H	CY-GK040HGLV2V/H
SMPS	Vendor	SANSUI	SANSUI	DYREL
	Code	BN94-10711A	BN94-10711A	BN44-00806A
	Specification	L40S5_KVD	L40S5_KVD	L40S6_FDY,AC/DC
MAIN	Chassis Ass'y	BN91-17275R	BN91-18304T	BN91-17275R
	PBA Ass'y	BN94-10798G	BN94-11233T	BN94-10798G

Multi Bom		FD04	FE05	FF06
Panel Type		**40A6AU2VK**	**40A6AU3VK**	**40A6AU3VK**
PANEL	Vendor	SDC	SDC	SDC
	Code	BN95-02634C	BN95-02634Q	BN95-02634Q
	Specification	CY-GK040HGLV3V/H	CY-GK040HGLV7V	CY-GK040HGLV7V
SMPS	Vendor	DYREL	SANSUI	DYREL
	Code	BN44-00806A	BN94-10711A	BN44-00806A
	Specification	L40S6_FDY,AC/DC	L40S5_KVD	L40S6_FDY,AC/DC
MAIN	Chassis Ass'y	BN91-18304T	BN91-18633P	BN91-18633P
	PBA Ass'y	BN94-11233T	BN94-11834P	BN94-11834P

Local set	URU_DTV	**BOM Model**	6000	**Front Color**	U-F-KU60	**SW Model**	UKU6000

■ UN50KU6000GXUG

Multi Bom		DA01	DB03	DK04
Panel Type		50D6AU0VK	50D6AU2VK	50D6AU0VK
PANEL	Vendor	INX	INX	INX
	Code	BN95-02636B	BN95-02636C	BN95-02636Z
	Specification	CY-GK050HGNV2V/H	CY-GK050HGNV3V/H	CY-GK050HGNVEV
SMPS	Vendor	SEC	SEC	HANSOE
	Code	BN94-10712A	BN94-10712A	BN44-00807A
	Specification	L55S5_KVD	L55S5_KVD	L55S6_FHS,AC/DC
MAIN	Chassis Ass'y	BN91-17277S	BN91-18336J	BN91-17277S
	PBA Ass'y	BN94-10800J	BN94-11256J	BN94-10800J

Multi Bom		DJ05	DH06	DG07
Panel Type		50D6AU2VK	50D6AU4VK	50D6AU5VK
PANEL	Vendor	INX	INX	INX
	Code	BN95-03664A	BN95-03988A	BN95-04099A
	Specification	CY-GK050HGNVFV	CY-GK050HGNVSV	CY-GK050HHNV3V
SMPS	Vendor	HANSOE	HANSOE	HANSOE
	Code	BN44-00807A	BN44-00807A	BN44-00807A
	Specification	L55S6_FHS,AC/DC	L55S6_FHS,AC/DC	L55S6_FHS,AC/DC
MAIN	Chassis Ass'y	BN91-18336J	BN91-18738C	BN91-18647J
	PBA Ass'y	BN94-10800J	BN94-11967C	BN94-11896J

Local set	URU_DTV	BOM Model	6000	Front Color	U-F-KU60	SW Model	UKU6000

■ UN55KU6000GXUG

Multi Bom		FA01	BA03	BJ04
Panel Type		**55A6AU0VK**	**55B6AU0VK**	**55B6AU0VK**
PANEL	Vendor	SDC	BOE	BOE
	Code	BN95-02637B	BN95-02638B	BN95-02638E
	Specification	CY-GK055HGLV2V/H	CY-GK055HGEV2V/H	CY-GK055HGEV5V
SMPS	Vendor	SEC	SEC	HANSOE
	Code	BN94-10712A	BN94-10712A	BN44-00807A
	Specification	L55S5_KVD	L55S5_KVD	L55S6_FHS,AC/DC
MAIN	Chassis Ass'y	BN91-17278U	BN91-17370Q	BN91-17370Q
	PBA Ass'y	BN94-10801K	BN94-10832K	BN94-10832K

Multi Bom		FJ05	FK06
Panel Type		**55A6AU0VK**	**55A6AU2VK**
PANEL	Vendor	SDC	SDC
	Code	BN95-02637G	BN95-02637L
	Specification	CY-GK055HGLV6V	CY-GK055HGLV9V
SMPS	Vendor	HANSOE	HANSOE
	Code	BN44-00807A	BN44-00807A
	Specification	L55S6_FHS,AC/DC	L55S6_FHS,AC/DC
MAIN	Chassis Ass'y	BN91-17278U	BN91-15500N
	PBA Ass'y	BN94-10801K	BN94-12007D

Local set	URU_DTV	BOM Model	6000	Front Color	U-F-KU60	SW Model	UKU6000

■ UN60KU6000GXUG

Multi Bom		EA01
Panel Type		60H6AU0VK
PANEL	Vendor	SHARP
	Code	BN95-02639B
	Specification	CY-GK060HGSV2V/H
SMPS	Vendor	SOLUM
	Code	BN44-00808D
	Specification	L65S6N_FSM W,AC/DC
MAIN	Chassis Ass'y	BN91-17279R
	PBA Ass'y	BN94-10802J

Local set	URU_DTV	BOM Model	6000	Front Color	U-F-KU60	SW Model	UKU6000

■ **UN65KU6000GXUG**

Multi Bom		FA01
Panel Type		**65A6AU0VK**
PANEL	Vendor	SDC
	Code	BN95-02640B
	Specification	CY-GK065HGLV2V/H
SMPS	Vendor	SOLUM
	Code	BN44-00808D
	Specification	L65S6N_FSM W,AC/DC
MAIN	Chassis Ass'y	BN91-17280V
	PBA Ass'y	BN94-10803J

Local set	URU_DTV	BOM Model	6000	Front Color	U-F-KU60	SW Model	UKU6000

4-3-3. Factory Data

■ Option

Factory Menu Name		Data	Range
Factory Reset		-	
Type	40"	40A6AU0VK, 40A6AU2VK, 40A6AU3VK	
	50"	50D6AU0VK, 50D6AU2VK, 50D6AU4VK, 50D6AU5VK	
	55"	55A6AU0VK, 55B6AU0VK, 55A6AU2VK	
	60"	60H6AU0VK	
	65"	65A6AU0VK	
Local Set		URU_DTV	
SW Model		UKU6000	
BOM Model		6000	
TUNER		-	
Ch Table		NONE	
MRT Option			

■ Control

Factory Menu Name	Data	Range
EDID		
EDID ON/OFF	Off	
EDID WRITE ALL	…	
EDID WRITE HDMI	…	
EDID WRITE PC	…	
HDMI EDID Ver	…	
HDMI EDID Port	…	
Sub Option		
RS-232 Jack	UART	RS-232 mode setting
EXT Link Support	ON	
Serial Log On/Off	ON	
Watchdog	ON	
FRC Monitoring	OFF	
Checksum	0x0000	
Fast Boot In Production	ON	
USB Serial	OFF	
ECO IC TYPE	NONE	
Info Link Server Type	development	

Factory Menu Name	Data	Range
Info Link Country	None	
TTX Group	UserOSD	
Visual Test	Disable	
OPTION_SWU		
DPMS Support	OFF	
RF Remocon Support	OFF	
CDD mode		
DPMS Support	OFF	
T-CON Device	JazzL	
RM Server Type	Operating	
LMN LEAVE THRESHOLD	160	
LMN TRIM THRESHOLD	80	
LMN TERM THRESHOLD	60	
EOS Click	OFF	
BP PMS Reset	1	
FAnet Thread	2	
CI CPSD Version	1	
ACM_MC	ON	
UNIQUE TRIPLET	ON	
FS_FAV	OFF	
Private Range USE	ON	
SCSA Support	ON	
SPI Protection		
FKP Server Type	Default	
OCM Support	OFF	
Preloading Support	ON	
Multitasking Support	ON	
Browser preloading Support	GENERAL	
EXT IR Boot Support	OFF	
APP BOOTING SUPPORT	ON	
NagSam Support	OFF	
EWBS Support	OFF	
MVPD MBR Provider	COMCAST	
Cloudscan Always Upload	OFF	
FirstScreen Cache Size	300	
Hotel Option		OFF
Hospitality Mode		

Factory Menu Name	Data	Range
Power On		
Menu OSD		
Music Mode		
External Source		
Eco Solution		
Cloning		
Shop Option		
Exhibition Mode	OFF	
Peak Mode	OFF	
Metadata	ON	
Shopmode Picture Reset	ON	
Asia Option		
Unblance	OFF	
AF Level adjust	0	
TX Power Level	0	
Mono Last Memory	OFF	
H Shaking	0	
SOUND		
High Devi	OFF	
Carrier_Mute	ON	*If the broadcast signal is not good, TV will complement the characteristics of the signal (most use when weak signal comes from the growing area countries)
Pilot Level High Thld	0x20h	*If the noise comes from weakness-electromagnetic field, TV will be set Mute automatically (Only default on in North America)
Pilot Level Low	0x10h	
Carrier2 Amp High ThLD	9	
Carrier2 Amp Low THLD	6	
Amp Volume	0xc9h	
Amp Scale	0x35h	
Amp EQ Check Sum	0xXXXXXXXX	
Subwoofer Support	0	
Woofer Type	0	
Woofer Volume	0xc6h	
Woofer Scale	0x56h	
Woofer checksum	NONE	
PEQ Inx	1	

Factory Menu Name	Data	Range
PEQ Test	Ready	
Speaker EQ	ON	
Bottom CheckSum	NONE	
Wall Filter Type	0	
SRS Tuning Parm	0	
SPDIF PCM Gain	-9	
AudioDock BT Delay	90	
3D_Glass BT delay	50	
Mic Scale	OFF	
India Sound	0	
Speaker Delay Normal	0	
NTV CU Delay	Normal	
Lipsync Inx	7	
Lipsync Checksum	0x4D13	
Lipsync USB Test	Ready	
Lipsync BT Checksum	0x0000	
TP Volume	0xc9h	
TP Scale	0x64h	
TP EQ CheckSum	NONE	

■ Debug

Factory Menu Name	Data	Range
Spread Spectrum		
DDR Margin		
BT_ON_OFF	ON	
RF Mute Time	600ms	
Tuner Margin	3	
FRC		
TCON		
MPEG Margin	20	
H.264 Margin	15	
CAM Wait Time	15	
Voice Debug	OFF	
Power Mnangement		
Cert Option	Waiting	
RM_BIST_DTV	0	
RM_BIST_ATV	0	

Factory Menu Name	Data	Range
RM_BIST_CABLE	0	
SerDES Check		
Stress Mode	OFF	
Log Analyzer	ON	
Error Popup On/Off	OFF	
Dead Lock KILL	OFF	
CES Option	OFF	
CES Convergence Option	OFF	
CES ATSC 3_0	OFF	
CES OOBE MVPD SUPPROT	OFF	
BT DUT	OFF	
BT Throughput	Fauilure	
Reproduce Module	ON	
21_9		
DB Download		
Read Eco Sensor Data	0	
No Signal Power OFF	ON	
Alert Option	ON	
Defualt HDMI1 Booting	OFF	

■ SVC

Factory Menu Name	Data	Range
Self Test(for HW)		
Info		
Reset		
OPTION_HDMI		
DVB CI		
Test Pattern		
Upgrade		
T-CON DATA UPGRADE	NG	
T-CON FW UPGRADE	NG	
T-CON CheckSum	N/A	
T-CON2 Usb Download	Failure	* UpgradeT-CON eeprom
T-CON2 CheckSum		* virsion of T-CON eeprom
PANEL EEPROM UPGRADE	Failure	
PANEL FLASH UPGRADE	Failure	

Factory Menu Name	Data	Range
Logic Usb D/L		
SUBMICOM UPGRADE	Ready	* Upgrade Sub-Micom Program
SUBMICOM JP USB UPGRADE	Ready	
BT UPGRADE		* Upgarde BT(There is upgrade program in Main-Image)
BT FREEPAIRING	ON	
Function Upgrade	Failure	
FRC3D FW UPGRADE		
FRC3D SRP UPGRADE		
FRC2 3D LD UPGRADE		
FRC2 3D FW UPGRADE		
Camera Upgade		* Upgarde Camera module(There is upgrade program in Main-Image)
Mic Upgrade		* Upgarde MIC in Camera module(There is upgrade program in Main-Image)
Jump UPGRADE	Failure	
IR Blaster Upgrade	Failure	
IR Blaster delay time	50	
NTV CU UPDATE	Failure	
UD LDC PROFILE UPGRADE	Failure	
Pic Data USB Update	VER:0x000	
Eco Data USB Update	VER:0x0035	
CI CPLD Upgrade	Failure	
SC ADK Upgrade	Failure	
Other setting		
SVC Panel	ORIGINAL	
S/N		

■ ADC/WB

Factory Menu Name	Data	Range
ADC		
AV Calibaration	NA	
Comp Calibration	NA	
PC Calibration	NA	
HDMI Calibration	NA	
ADC Result		
1st_Y_GH	255	
1st_Y_GL	246	

Factory Menu Name	Data	Range
1st_Cb_BH	…	
1st_Cb_BL	…	
1st_Cr_RH	…	
1st_Cr_RL	..	
2nd_R_L	129	
2nd_G_L	129	
2nd_B_L	129	
2nd_R_H	109	
2nd_G_H	109	
2nd_B_H	109	
White Balance		
R-Offset	128	
G-Offset	128	
B-Offset	128	
R-Gain	128	
G-Gain	128	
B-Gain	128	
WB-W2_R_Offset	128	
WB_W2_B_Offset	128	
WB_W2_R_Gain	152	
WB_W2_B_Gain	75	
WB_N_R_Offset	128	
WB_N_B_Offset	128	
WB_N_R_Gain	140	
WB_N_B_Gain	119	
MGA		
MGA On/Off	OFF	
R1_Gain	512	
G1_Gain	512	
B1_Gain	512	
R2_Gain	512	
G2_Gain	512	
B2_Gain	512	
R3_Gain	512	
G3_Gain	512	
B3_Gain	512	
R4_Gain	512	

Factory Menu Name	Data	Range
G4_Gain	512	
B4_Gain	512	
R5_Gain	512	
G5_Gain	512	
B5_Gain	512	
R6_Gain	512	
G6_Gain	512	
B6_Gain	512	
R7_Gain	512	
G7_Gain	512	
B7_Gain	512	
R8_Gain	512	
G8_Gain	512	
B8_Gain	512	
R9_Gain	512	
G9_Gain	512	
B9_Gain	512	
R10_Gain	512	
G10_Gain	512	
B10_Gain	512	
SPI White Balance		
SPI MGA		
WB Data to SPI		0

■ **Advanced**

4-4. White Balance

4-4-1. Calibration

1. Into the Factory Mode.

2. Select **ADC/WB** menu.

3. Select **ADC** menu.

Option		AV Calibration
Control		Comp Calibration
Debug		PC Calibration
SVC		HDMI Calibration
ADC/WB		
Advanced		

4-4-2. Service Adjustment

You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ Color Calibration

• Adjust Specification

Source	Setting Mode	Pattern	Use Equipment
HDMI	1280 x 720@60 Hz	Pattern #24 (Chess Pattern)	CA210 & Master MSPG925 Generator
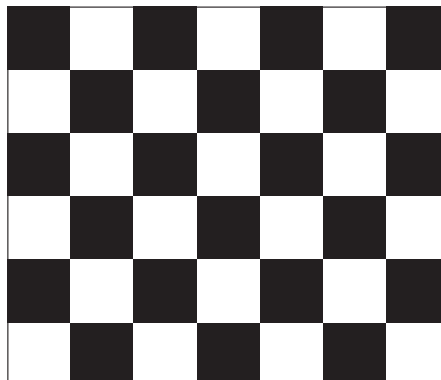
(Chess Pattern)

- Use other equipment only after comparing the result with that of the Master equipment.

Input mode	Calibration	Pattern
CVBS IN (Model_#1)	Perform in NTSC B&W Pattern #24	Lattice
Component IN (Model_#6)	Perform in 720p B&W Pattern #24	Lattice
PC Analog IN (Model_#21)	Perform in VESA XGA (1024x768) B&W Pattern #24	Lattice
HDMI IN	Perform in 720p B&W Pattern #24	Lattice

Method of Color Calibration (AV)

1. Apply the NTSC Lattice (N0. 3) pattern signal to the AV IN 1 port.
2. Press the Source key to switch to "AV1" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "AV Calibration" menu.
6. In "AV Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "AV Calibration" status from Failure to Success.

Method of Color Calibration (Component)

1. Apply the 720p Lattice (N0. 6) pattern signal to the Component IN 1 port.
2. Press the Source key to switch to "Component1" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "Comp Calibration" menu.
6. In "Comp Calibration Off" status, press the " ▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "Comp Calibration" status from Failure to Success.

Method of Color Calibration (PC)

1. Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
2. Press the Source key to switch to "PC" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "PC Calibration" menu.
6. In "PC Calibration Off" status, press the " ▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "PC Calibration" status from Failure to Success.

Method of Color Calibration (HDMI)

1. Apply the 720p Lattice (N0. 6) pattern signal to the HDMI1/DVI IN port.
2. Press the Source key to switch to "HDMI1" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "HDMI Calibration" menu.
6. In "HDMI Calibration Off" status, press the "▶" key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the "HDMI Calibration" status from Failure to Success.

4-4-3. Adjustment

1. Into the Factory Mode.

2. Select **ADC/WB** menu.

3. Select **White Balance** menu.

Option
Control
Debug
SVC
ADC/WB
Advanced

White Balance

(Low Light)

Sub Brightness
R offset
G offset
B offset

(Hight Light)

Sub Contrast
R gain
G gain
B gain
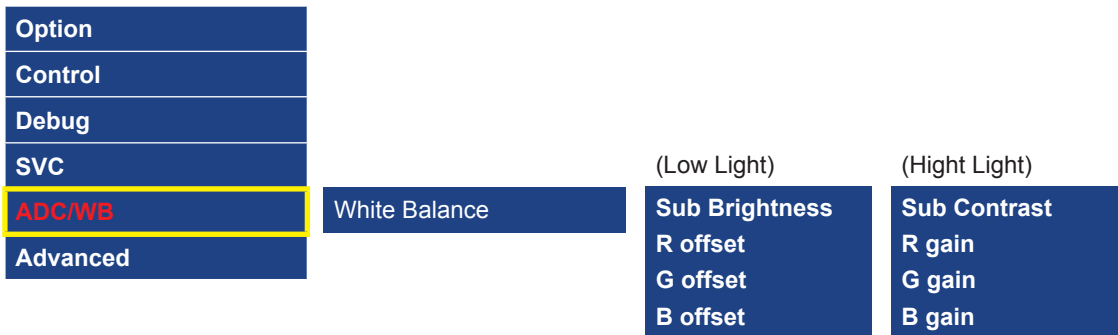
4-5. RS-232C

- Port : COM#(Serial)
- Baud rate : 9600
- Data Bit : 8 bit
- Parity : None
- Stop Bits : 1
    - Flow Control : None

-P1-
FEMALE

-P1-		-P2-	
Rx	2 ←	1	Tx
Tx	3 →	2	Rx
Gnd	5 —	3	Gnd

-P2-
(STEREO PLUG)
(3.5Ø)
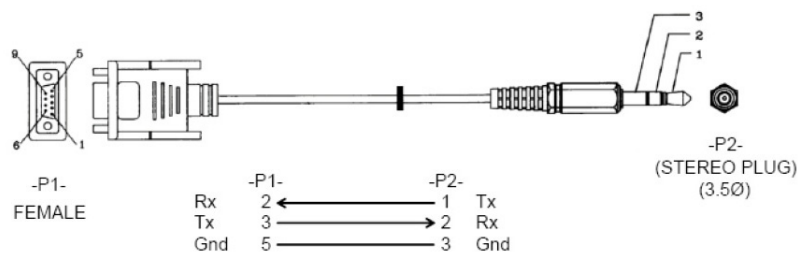
Description of RS232C

Pin#	Name	Full Name	Pin#	Name	Full Name	Pin#	Name	Full Name
1	CD	Carrier Detect	4	DTR	Data Terminal Ready	7	RTS	Request To Send
2	RxD	Received Data	5	GND	Signal Ground	8	CTS	Clear To Send
3	TxD	Transmitted Data	6	DSR	Data Set Ready	9	RI	Ring Indicator

4-5. AV Control Tabe

Control Item			Cmd1	Cmd2	Cmd3	Value
General	**Power**	Power	0x00	0x00	0x00	0x00
		Off				0x01
		On				0x02
	Volume	Direct	0x01	0x00	0x00	(0~100)
		Up			0x01	0x00
		Down			0x02	0x00
	Mute		0x02	0x00	0x00	0x00
	Ch.	Direct	0x04	-		
		Continuous	Up	0x03	0x00	0x01	0x00
			Down			0x02	0x00
Input	**Source List**	TV	TV	0x0a	0x00	0x00	0x00
		AV	AV1			0x01	0x00
			AV2				0x01
			AV3				0x02
		S-Video	S-Video1			0x02	0x00
			S-Video2				0x01
			S-Video3				0x02
		Component	Component1			0x03	0x00
			Component2				0x01
			Component3				0x02
		PC	PC1			0x04	0x00
			PC2				0x01
			PC3				0x02
		HDMI	HDMI1			0x05	0x00
			HDMI2				0x01
			HDMI3				0x02
			HDMI4				0x03
		DVI	DVI1			0x06	0x00
			DVI2				0x01
			DVI3				0x02
		RVU	RVU			0x07	0x00
PICTURE	**Mode**	Dynamic(Entertain)		0x0b	0x00	0x00	0x00
		Standard					0x01
		Movie					0x02
		Natural					0x03
		CAL-NIGHT					0x04
		CAL-DAY					0x05
		BD Wise					0x06

Control Item			Cmd1	Cmd2	Cmd3	Value
		Relax				0x07
PICTURE	BackLight(CellLight)	0~20		0x01	0x00	(0~20)
	Contrast	0~100		0x02	0x00	(0~100)
	Brightness	0~100		0x03	0x00	(0~100)
	Sharpness	0~100		0x04	0x00	(0~100)
	Color	0~10		0x05	0x00	(0~100)
Tint	G/R			0x06	0x00	(0~100)
Advanced Settings	Black Tone	Off		0x07	0x00	0x00
		Dark				0x01
		Darker				0x02
		Darkest				0x03
	Dynamic Contrast	Off			0x01	0x00
		Low				0x01
		Medium				0x02
		HIgh				0x03
	Gamma	-3 ~ 3			0x03	(-3~3)
	RGB Only Mode	Off			0x05	0x00
		Red				0x01
		Green				0x02
		Blue				0x03
	Color Space	Auto			0x06	0x00
		Native				0x01
		Custom				0x02
	White Balance	R-Offset(LCD)			0x07	(-50~50)
	White Balance	G-Offset(LCD)			0x08	(-50~50)
	White Balance	B-Offset(LCD)			0x09	(-50~50)
	White Balance	R-Gain(LCD)			0x0a	(-50~50)
	White Balance	G-Gain(LCD)			0x0b	(-50~50)
	White Balance	B-Gain(LCD)			0x0c	(-50~50)
	White Balance	Reset(LCD)			0x0d	0x00
	Flesh Tone	-15 ~ 15			0x0e	(-15~15)
	xvYCC	Off			0x10	0x00
		On				0x01
	Motion Lighting	Off			0x11	0x00
		On				0x01
	Color Space Custom Color	Red			0x12	0x00
		Green				0x01
		Blue				0x02

Control Item				Cmd1	Cmd2	Cmd3	Value
			Yellow				0x03
PICTURE	Advanced Settings	Color Space Custom Color	Cyan				0x04
			Magenta				0x05
		Color Space Custom Color Red Value	0~100			0x13	0~100
		Color Space Custom Color Green Value	0~100			0x14	0~100
		Color Space Custom Color Blue Value	0~100			0x15	0~100
		Reset				0x16	0x00
		LED Motion Plus	Off		0x0a	0x07	0x00
			On(Normal)				0x01
			Cinema				0x02
			Ticker				0x03
		10p White Balance	Off		0x0e	0x00	0
			On			0x00	1
			Red		0x0f	(1~10)	(-50~50)
			Green		0x10	(1~10)	(-50~50)
			Blue		0x11	(1~10)	(-50~50)
			Reset		0x12	0	(1~10)
			10 Point		0x13	0x00	0x00
			Interval		0x14	0x00	0x00
	Picture Option	Color Tone	Cool		0x0a	0x00	0x00
			Standard				0x01
			Warm1				0x02
			Warm2				0x03
		Digital Noise Filter	Off			0x02	0x00
			Low				0x01
			Medium				0x02
			High				0x03
			Auto				0x04
			Auto Visualization				0x05
		MPEG Noise Filter	Off			0x03	0x00
			Low				0x01
			Medium				0x02
			High				0x03
			Auto				0x04
		HDMI Black Level	Normal			0x04	0x00
		HDMI Black Level	Low				0x01

Control Item			Cmd1	Cmd2	Cmd3	Value
		Film Mode	Off			0x05	0x00
PICTURE	Picture Option	Film Mode	Auto1				0x01
			Auto2				0x02
			Cinema Smooth				0x03
		Auto Motion Plus	Off			0x06	0x00
			Clear				0x01
			Standard				0x02
			Smooth				0x03
			Custom				0x04
		Blur Reduction				0x07	value
		Judder Reduction				0x08	value
		LED Clear Motion				0x09	Off
		Reset				0x10	0x00
		HDMI UHD Color	Off			0x11	0x00
			On				0x01
		Analog Clean View	On			0x12	0x00
			Off				0x01
	Screen Adjustment	Picture Size	16:9	0x0c	0x0a	0x01	0x00
			Zoom1				0x01
			Zoom2				0x02
			Wide Fit				0x03
			4:3				0x04
			Screen Fit				0x05
			Smart View I				0x06
			Smart View II				0x07
			Auto Wide				0x08
			Wide Zoom				0x09
			Zoom				0x0a
		Fit to Screen	Off		0x0b	0x00	0x00
		Zoom	Zoom1		0x0c	0x00	0x00
			Zoom2				0x01
			Zoom3				0x02
			Zoom4				0x03
		Position	Position1			0x01	0x00
			Position2				0x01
			Position3				0x02
			Position4				0x03
	Screen Adjustment	Reset			0x0d	0x00	0x00

Control Item				Cmd1	Cmd2	Cmd3	Value
	Reset Picture	Reset Picture		0x0d	0x0b	0x00	0x00
PICTURE	**3D**	3D Mode	Off	0x0e	0x0c	0x00	0x00
			2D->3D				0x01
			Side By Side				0x02
			Top Bottom				0x03
			Line By Line				0x04
			Vertical Line				0x05
			Checker BD				0x06
			Frame Sequence				0x07
		3D->2D	Off			0x01	0x00
			On				0x01
		3D View Point				0x02	(-5~5)
		Depth				0x03	(1~10)
		3D Auto View	Off			0x05	0x00
			Message Notice				0x01
			On				0x02
			Auto1				0x03
			Auto2				0x04
		3D Light Control	Low			0x06	0x00
			High				0x01
		L/R Change	L to R			0x07	0x00
			R to L				0x01
		3D Perspective				0x08	value
		Optimize				0x09	value
	Factory-SVB	Expert-N/D Adj	On	0x0b	0x0d	0x00	0x00
			Off				0x01
			Fix				0x02
	Apply Picture Mode	All Sources		0x0f	0x00	0x00	0x00
		Current Source					0x01
	Pip	Pip	Off	0x11	0x00	0x00	0x00
			On				0x01
		Antenna	Cable			0x01	0x00
			Air				0x01
		Channel	DTV Cable			0x02	0x00
			DTV Terrestrial				0x01
		Size	Size1			0x03	0x00

Control Item				Cmd1	Cmd2	Cmd3	Value
			Size2				0x01
PICTURE	Pip	Size	Size3				0x02
			Size4				0x03
		Position	Position1			0x04	0x00
			Position2				0x01
			Position3				0x02
			Position4				0x03
		Sound Select	Main			0x05	0x00
			Sub				0x01
	Picture Off			0x12	0x00	0x00	0x00
Sound	Sound Mode	Standard		0x0c	0x00	0x00	0x00
		Music					0x01
		Movie					0x02
		Clear Voice					0x03
		Amplify					0x04
	Equalizer	Balance			0x01	0x00	(0~20)
		100hz				0x01	(0~20)
		300hz				0x02	(0~20)
		1khz				0x03	(0~20)
		3khz				0x04	(0~20)
		10khz				0x05	(0~20)
		Reset				0x06	0x00
	SRS TruSurround HD	Off			0x02	0x00	0x00
	Virtual Surrond	On					0x01
	SRS TruDialog	Off			0x03	0x00	0x00
	Dialog Clarify	On					0x01
	Preferred Language	English			0x04	0x00	0x00
		Spanish					0x01
		French					0x02
		Korean					0x03
		Japanese					0x04
	Multi-Track Sound	Mono			0x05	0x00	0x00
		Stereo					0x01
		SAP					0x02
	Auto Volume	Off			0x06	0x00	0x00
	Auto Volume	Normal					0x01
		Night					0x02
	Speaker Select	TV Speaker			0x07	0x00	0x00

Control Item			Cmd1	Cmd2	Cmd3	Value
		External Speaker				0x01
Sound	Speaker Select	Audio Out				0x01
	Sound Select	Main		0x08	0x00	0x00
		Sub				0x01
	Sound Reset	Sound Reset		0x09	0x00	0x00
	3D Audio	Off		0x0a	0x00	0x00
		Low				0x01
		Medium				0x02
		High				0x03
	Auto Stereo	Manual		0x0b	0x00	0x00
		Auto				0x01
	TV Installation Type	Stand		0x0c	0x00	0x00
		Wallmount				0x01
	Audio Delay	Dealy Value (0~250)		0x0d	0x00	0~250 (0x00~0xFA)
	SRS CS Headphone	Off		0x0e	0x00	0x00
	Balance			0x0f	0x00	0x00
	Add New Device	On		0x10	0x00	0x00
		Off				0x01
	Audo Multi-Output	Off		0x11	0x00	0x00
	Multiroom Link Settings	Multiroom		0x12	0x00	0x00
	HDMI Audio Input Format	Bitstream		0x13	0x00	0x00
		PCM				0x01
	Audio Format	PCM		0x14	0x00	0x00
		Dolby Digital				0x01
		DTS				0x02
		DTS Neo 2:5				0x03
		AAC/HEAAC				0x04
	Dolby Digital Comp	RF		0x15	0x00	0x01
	HD Audio	Off		0x16	0x00	0x00
		On				0x01
KEY	Key Generation		0x0d	0x00	0x00	*Refer for Table
OSD	Show/Hide Control	Show	0x0e	0x00	0x00	0x00
		Hide				0x01
Get Status	Power (On/Off)		0xf0	0x00	0x00	0x00
Get Status	Volume(0~100)		0xf0	0x01	0x00	0x00

Control Item		Cmd1	Cmd2	Cmd3	Value
Get Status	**Mute (On/Off)**	0xf0	0x02	0x00	0x00
	Channel Number	0xf0	0x03	0x00	0x00
	Source (TV/AV/…/HDMI/…)	0xf0	0x04	0x00	0x00
	Picture Size	0xf0	0x05	0x00	0x00
	3D (On/Off)	0xf0	0x06	0x00	0x00
	Picture Mode	0xf0	0x07	0x00	0x00
	Sound Mode	0xf0	0x08	0x00	0x00

* Refer for Table

KEY	Value
Up	96 (0x60)
Down	97 (0x61)
Left	101 (0x65)
Right	98 (0x62)
Menu	26 (0x1A)
Enter(OK)	104 (0x68)
EXIT	45 (0x2D)

4-6. Updating the TV's Software

View your TV's software version and update it if necessary.

- **Settings** ➝ **Support** ➝ **Software Update**

■ Updating the TV's software to the latest version

- **Settings** ➝ **Support** ➝ **Software Update** ➝ **Update now**

You can update your TV's software by downloading the update from the Internet directly to your TV or copying the update from a USB device that contains it to your TV.

- Updating from the Internet requires an active Internet connection.
- To update using a USB flash drive, download the update package from Samsung.com to your computer. Then, save the update package in the USB device's top-level folder. Otherwise, the TV will not be able to locate the update package.

⚠
CAUTION
DO NOT turn off the TV's power until the update is complete. The TV will turn off and on automatically after completing the software update. All video and audio settings return to their default settings after a software update.

■ Updating the TV automatically

- **Settings** ➝ **Support** ➝ **Software Update** ➝ **Auto Update**

If the TV is connected to the Internet, you can have the TV's software update itself automatically while you are watching the TV. When the background update is completed, it is applied the next time the TV is turned on.
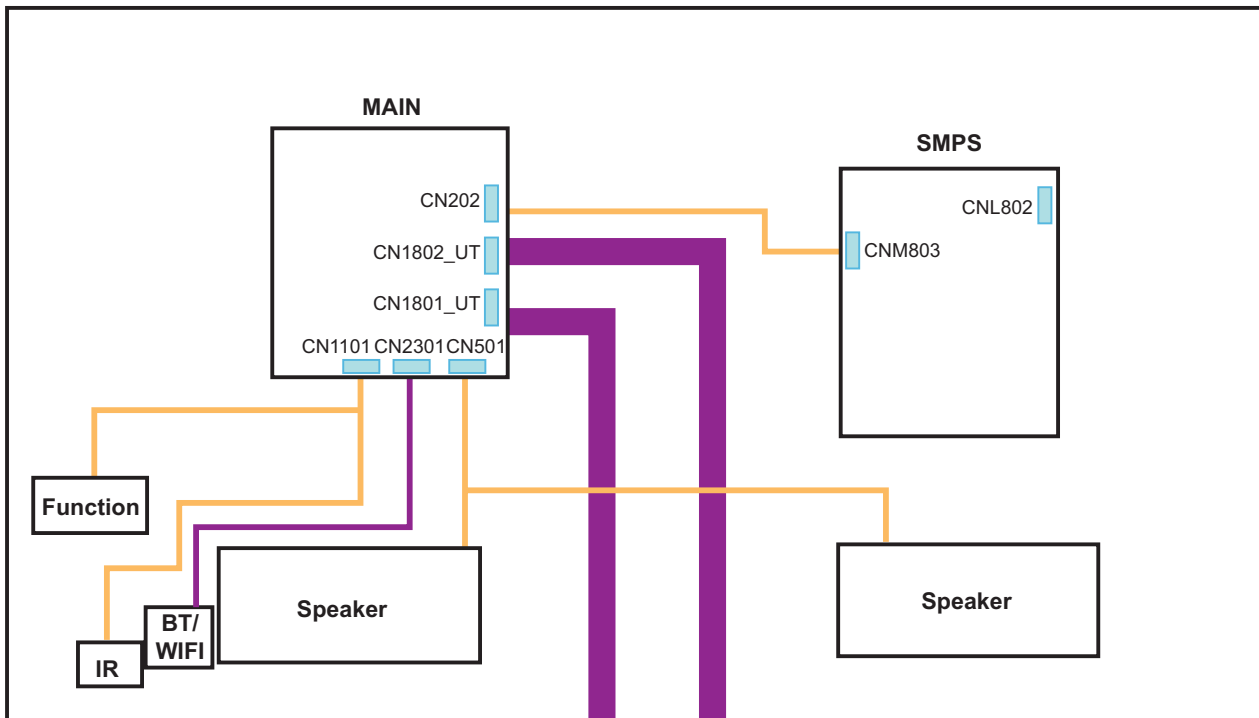
- This function may take a longer time if another network function is running concurrently.
- This function requires an Internet connection.
- If you agree to the Smart Hub terms and conditions, **Auto Update** is set to **On** automatically. If you do not want the TV's software to update itself automatically, set **Auto Update** to **Off**.
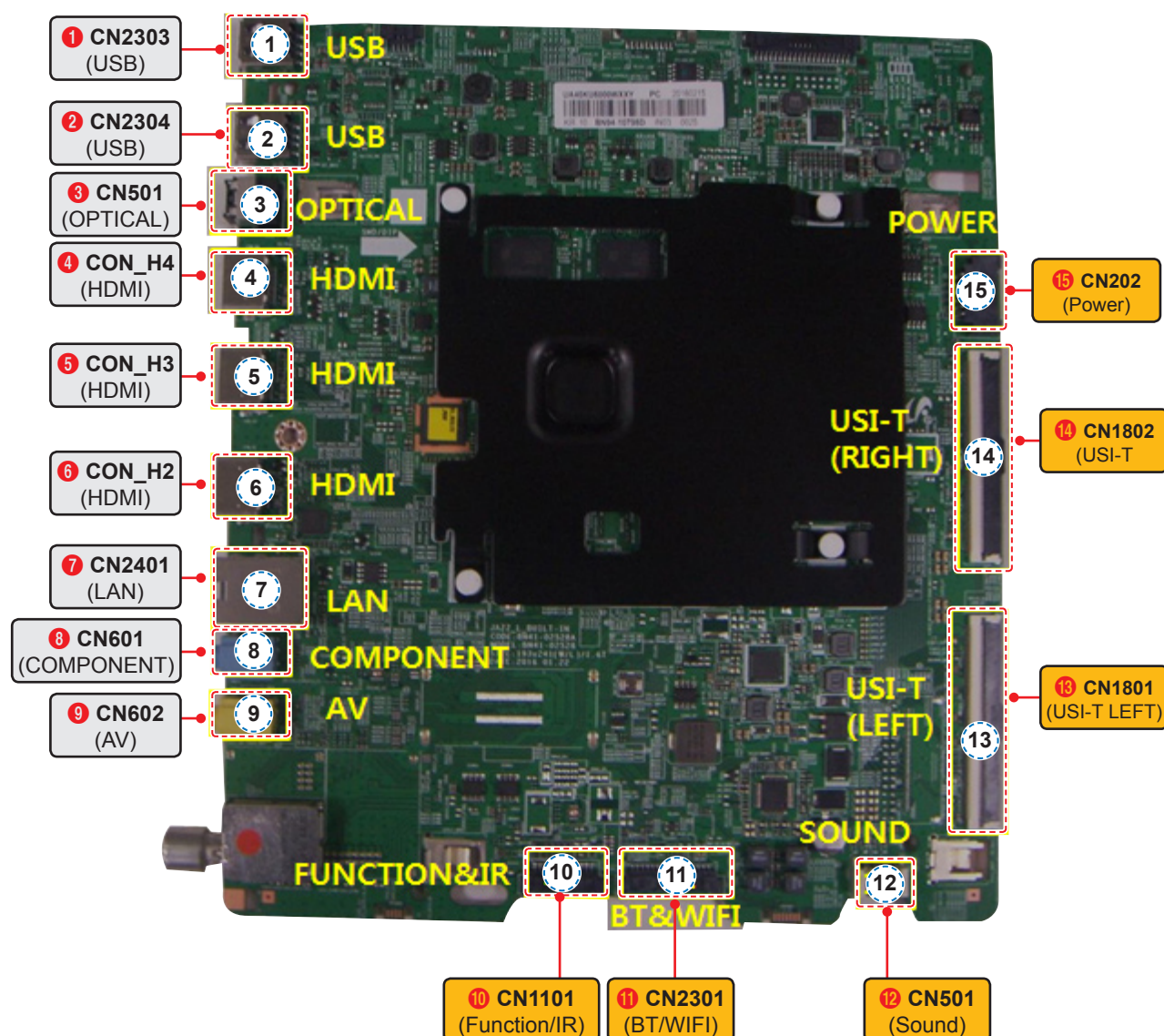
5. Wiring Diagram

5-1. Layout
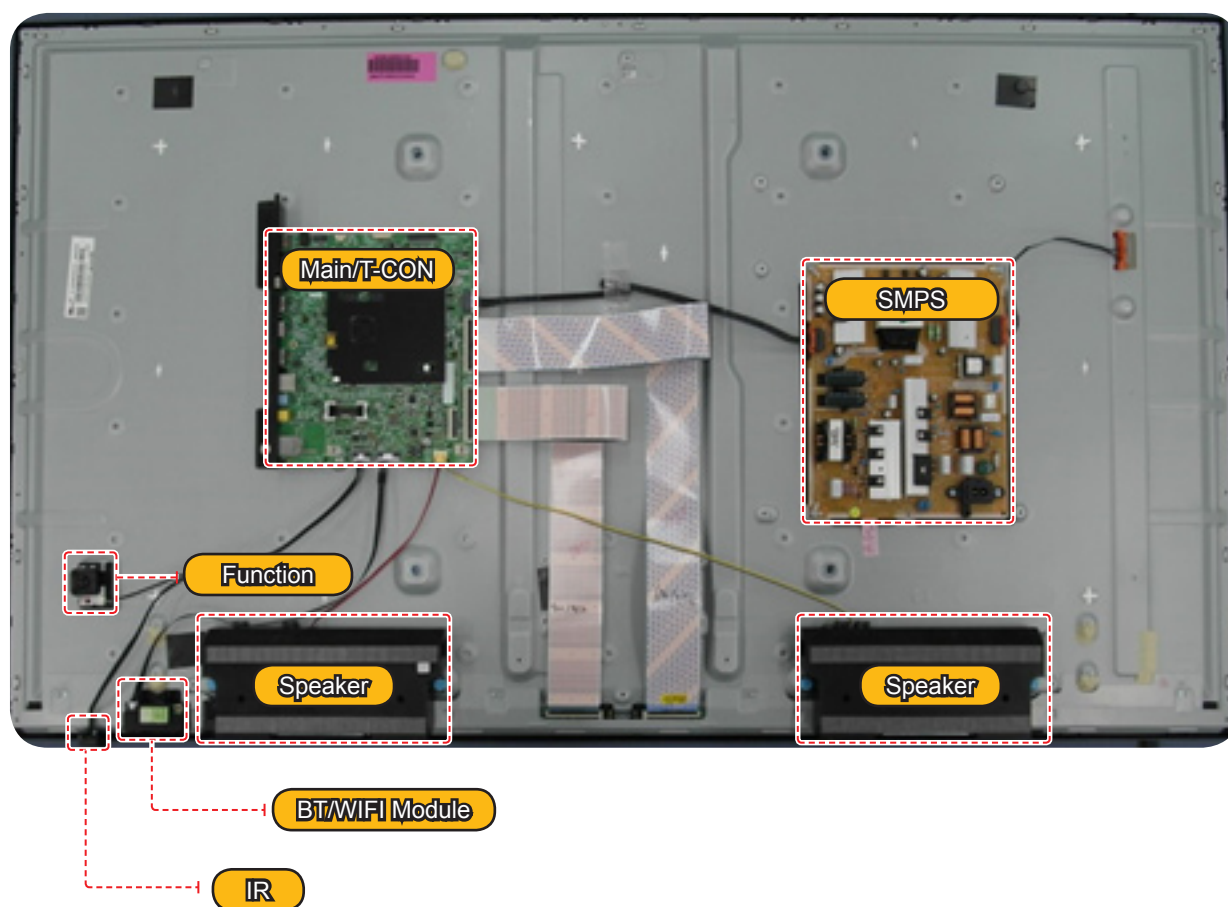
5-2. Wiring Diagram

5-3. Connector

5-3-1. Main Board

■ Main Board Pin Map

❶ CN2303 (USB)		
1	A5V_USB2_PW	2	JACK_D+_USB2
3	JACK_D-_USB2	4	GND

❷ CN2304 (USB)		
1	B5V_USB1_PW	2	JACK_D+_USB1
3	JACK_D-_USB1	4	GND

❸ CN501 (OPTICAL)		
1	SPDIF_OUT	2	GND
3	B5V_PW		

❹ CON_H4 (HDMI)		
1	HDMI4_RX2+_HDMI	11	GND
2	GND	12	HDMI4_RXC-_HDMI
3	HDMI4_RX2-_HDMI	13	CEC
4	HDMI4_RX1+_HDMI	14	GND
5	GND	15	HDMI4_SCL_DDC
6	HDMI4_RX1-_HDMI	16	HDMI4_SDA_DDC
7	HDMI4_RX0+_HDMI	17	GND
8	GND	18	HDMI4_IDENT
9	HDMI4_RX0-_HDMI	19	HDMI4_HPD
10	HDMI4_RXC+_HDMI		

❺ CON_H3 (HDMI)		
1	HDMI3_RX2+_HDMI	11	GND
2	GND	12	HDMI3_RXC-_HDMI
3	HDMI3_RX2-_HDMI	13	CEC
4	HDMI3_RX1+_HDMI	14	GND
5	GND	15	HDMI3_SCL_DDC
6	HDMI3_RX1-_HDMI	16	HDMI3_SDA_DDC
7	HDMI3_RX0+_HDMI	17	GND
8	GND	18	HDMI3_IDENT
9	HDMI3_RX0-_HDMI	19	HDMI3_HPD
10	HDMI3_RXC+_HDMI		

❻ CON_H2 (HDMI)		
1	HDMI2_RX2+_HDMI	11	GND
2	GND	12	HDMI2_RXC-_HDMI
3	HDMI2_RX2-_HDMI	13	CEC
4	HDMI2_RX1+_HDMI	14	GND
5	GND	15	HDMI2_SCL_DDC
6	HDMI2_RX1-_HDMI	16	HDMI2_SDA_DDC
7	HDMI2_RX0+_HDMI	17	GND
8	GND	18	HDMI2_IDENT
9	HDMI2_RX0-_HDMI	19	HDMI2_HPD
10	HDMI2_RXC+_HDMI		

❼ CN2401_LAN (LAN)		
1	LAN_TXD+_LAN	5	GND
2	GND	6	LAN_RXD-_LAN
3	LAN_TXD-_LAN	7	NC
4	LAN_RXD+_LAN	8	GND

❽ CN601 (COMPONENT)		
1	GND	5	TEST_SR
2	COMP_PB	6	GND
3	COMP_PR	7	GND
4	IDENT_VIDEO		

❾ CN602 (AV)		
1	GND	5	TEST_SR
2	AV1_CVBS_IN	6	TEST_SL
3	COMP_AV1_SR_IN	7	COMP_AV1_SL_IN
4	IDENT_VIDEO		

❿ CN1101 (FUNCTION/IR)		
1	IR	7	KEY_INPUT2
2	GND	8	LED_STB_OUT
3	A3.3V_PW	9	NC
4	AMP_SCL_I2C	10	NC
5	AMP_SDA_I2C	11	NC
6	KEY_INPUT1	12	NC

⑪ CN2301 (BT/WIFI)			
1	BT_NRESET	9	WIFI_PHY_ON
2	BT_MODULE_WAKE	10	GND
3	BT_WAKE	11	WIFI_D+_USB
4	GND	12	WIFI_D-_USB
5	BT_D-_USB	13	GND
6	BT_D+_USB	14	A5V_PW
7	GND	15	WIFI_WOL
8	BT_WELCOMP	16	WIFI_NRESET

⑫ CN501 (SOUND)			
1	OUT_C	3	OUT_A
2	OUT_D	4	OUT_B

⑮ CN202 (POWER)			
1	GND	7	A13V_PW
2	GND	8	PWM_DIMMING_OUT1
3	A13V_PW	9	A13V_PW
4	GND	10	OVD_ON_OFF
5	A13V_PW	11	SMPS_FET_FAIL_ DEFECT
6	SW_POWER	12	ANA_DIMMING

🔴13 **CN1801 (USI-T LEFT)**						
1	FB_TRDY_1	2	GND	3	PANEL_3.3V_PW	4	PANEL_3.3V_PW
5	FB_VCOM1_2CELL	6	VCOM1_CELL	7	VCOM2_CELL	8	VCOM3_CELL
9	VSS_-7.5V_PW	10	VOFF_-11V_PW	11	-	12	CKV1_MB4
13	CKV2_MB4	14	CKV3_MB4	15	CKV4_MB4	16	CKVB1_MB4
17	CKVB2_MB4	18	CKVB3_MB4	19	CKVB4_MB4	20	STVP_MB4
21	ASG_MON_L_MB4	22	-	23	GND	24	GND
25	DEMURA_SSPHOLD_SPI	26	DEMURA_SSPWP_SPI	27	DEMURA_SSPRXD_SPI	28	DEMURA_SSPTXD_SPI
29	DEMURA_SSPFRM_SPI	30	DEMURA_SSPCLK_SPI	31	GND	32	JM_USIT_TX_CH0_A+
33	JM_USIT_TX_CH0_A-	34	GND	35	JM_USIT_TX_CH0_B+	36	JM_USIT_TX_CH0_B-
37	GND	38	JM_USIT_TX_CH1_A+	39	JM_USIT_TX_CH1_A-	40	GND
41	JM_USIT_TX_CH1_B+	42	JM_USIT_TX_CH1_B-	43	GND	44	JM_USIT_TX_CH2_A+
45	JM_USIT_TX_CH2_A-	46	GND	47	JM_USIT_TX_CH2_B+	48	JM_USIT_TX_CH2_B-
49	GND	50	JM_USIT_TX_CH3_A+	51	JM_USIT_TX_CH3_A-	52	GND
53	JM_USIT_TX_CH3_B+	54	JM_USIT_TX_CH3_B-	55	GND	56	JM_USIT_TX_CH4_A+
57	JM_USIT_TX_CH4_A-	58	GND	59	JM_USIT_TX_CH4_B+	60	JM_USIT_TX_CH4_B-
61	GND	62	JM_USIT_TX_CH5_A+	63	JM_USIT_TX_CH5_A-	64	GND
65	JM_USIT_TX_CH5_B+	66	JM_USIT_TX_CH5_B-	67	GND	68	JM_USIT_TX_CH6_A+
69	JM_USIT_TX_CH6_A-	70	GND	71	JM_USIT_TX_CH6_B+	72	JM_USIT_TX_CH6_B-
73	GND	74	JM_USIT_TX_CH7_A+	75	JM_USIT_TX_CH7_A-	76	GND
77	JM_USIT_TX_CH7_B+	78	JM_USIT_TX_CH7_B-	79	GND	80	SFC1
81	GND	82	PI_DSF_MONITOR	83	PORTNUM	84	VCCA_1.9V_PW
85	VCCB_1.8V_PW	86	L_L_CELL	87	L_H_CELL	88	HAVDD_8.5V_PW
89	U_L_CELL	90	U_H_CELL	91	AVDD_17V_PW	92	AVDD_17V_PW
93	AVDD_17V_PW	94	AVDD_17V_PW	95	-	96	FB_TRDY_2

🔴14 CN1802 (USI-T RIGHT)							
1	FB_TRDY_E	2	GND	3	AVDD_17V_PW	4	AVDD_17V_PW
5	AVDD_17V_PW	6	AVDD_17V_PW	7	U_H_CELL	8	U_L_CELL
9	HAVDD_8.5V_PW	10	L_H_CELL	11	L_L_CELL	12	VCCB_1.8V_PW
13	VCCA_1.9V_PW	14	PI_DSF_MONITOR	15	PORTNUM	16	GND
17	-	18	-	19	-	20	GND
21	SFC1	22	GND	23	JM_USIT_TX_CH8_A+	24	JM_USIT_TX_CH8_A-
25	GND	26	JM_USIT_TX_CH8_B+	27	JM_USIT_TX_CH8_B-	28	GND
29	JM_USIT_TX_CH9_A+	30	JM_USIT_TX_CH9_A-	31	GND	32	JM_USIT_TX_CH9_B+
33	JM_USIT_TX_CH9_B-	34	GND	35	JM_USIT_TX_CH10_A+	36	JM_USIT_TX_CH10_A-
37	GND	38	JM_USIT_TX_CH10_B+	39	JM_USIT_TX_CH10_B-	40	GND
41	JM_USIT_TX_CH11_A+	42	JM_USIT_TX_CH11_A-	43	GND	44	JM_USIT_TX_CH11_B+
45	JM_USIT_TX_CH11_B-	46	GND	47	JM_USIT_TX_CH12_A+	48	JM_USIT_TX_CH12_A-
49	GND	50	JM_USIT_TX_CH12_B+	51	JM_USIT_TX_CH12_B-	52	GND
53	JM_USIT_TX_CH13_A+	54	JM_USIT_TX_CH13_A-	55	GND	56	JM_USIT_TX_CH13_B+
57	JM_USIT_TX_CH13_B-	58	GND	59	JM_USIT_TX_CH14_A+	60	JM_USIT_TX_CH13_A-
61	GND	62	JM_USIT_TX_CH13_B+	63	JM_USIT_TX_CH14_B-	64	GND
65	JM_USIT_TX_CH15_A+	66	JM_USIT_TX_CH13_A-	67	GND	68	JM_USIT_TX_CH13_B+
69	JM_USIT_TX_CH15_B-	70	GND	71	SFC2	72	GND
73	-	74	ASG_MON_R_MB4	75	STVP_MB4	76	CKVB4_MB4
77	CKVB3_MB4	78	CKVB2_MB4	79	CKVB1_MB4	80	CKV4_MB4
81	CKV3_MB4	82	CKV2_MB4	83	CKV1_MB4	84	-
85	VOFF_-11V_PW	86	VSS_-7.5V_PW	87	-	88	VCOM3_CELL
89	FB_VCOM3_CELL	90	VCOM2_CELL	91	VCOM1_CELL	92	FB_VCOM4_CELL
93	PANEL_3.3V_PW	94	PANEL_3.3V_PW	95	FB_TRDY_3	96	GND

5-3-2. SMPS Board

■ SMPS Board Pin Map

	❶ CNM803		
1	Fail Count	7	**A13V**
2	ANA-DIM	8	**POWER_ON/OFF**
3	**A13V**	9	**A13V**
4	OD_ON/OFF	10	GND
5	**A13V**	11	GND
6	BLU_PWM	12	GND

	❷ CNL802		
1	**2+**	9	**1+**
2	NC	10	NC
3	NC	11	NC
4	**2-**	12	**1-**
5	NC	13	NC
6	NC	14	NC
7	NC	15	IF2
8	NC	16	IF1

5-4. Cable

	40"	50"	55"	60"	65"
LEAD CONNECTOR-BLU					
	Panel - SMPS Cable				
	BN39-02216B		BN39-02216C	BN39-02030F	
LEAD CONNECTOR-Power					
	POWER - MAIN Cable				
	BN39-02217A			BN39-02025G	
LEAD CONNECTOR-WIFI					
	WIFI - MAIN				
	BN39-02218A		BN39-02218B	BN39-02218C	
LEAD CONNECTOR-FUNCTION					
	MAIN - IR/JOG				
	BN39-02220A	BN39-02220C		BN39-02220D	
ASSY CABLE P-FFC					
	MAIN - PANEL (L)				
	BN96-39891A	BN96-39820B	BN96-39820D	BN96-39904A	BN96-39823B
ASSY CABLE P-FFC					
	MAIN - PANEL (R)				
	BN96-39823C	BN96-39823D	BN96-39903A		BN96-39902A