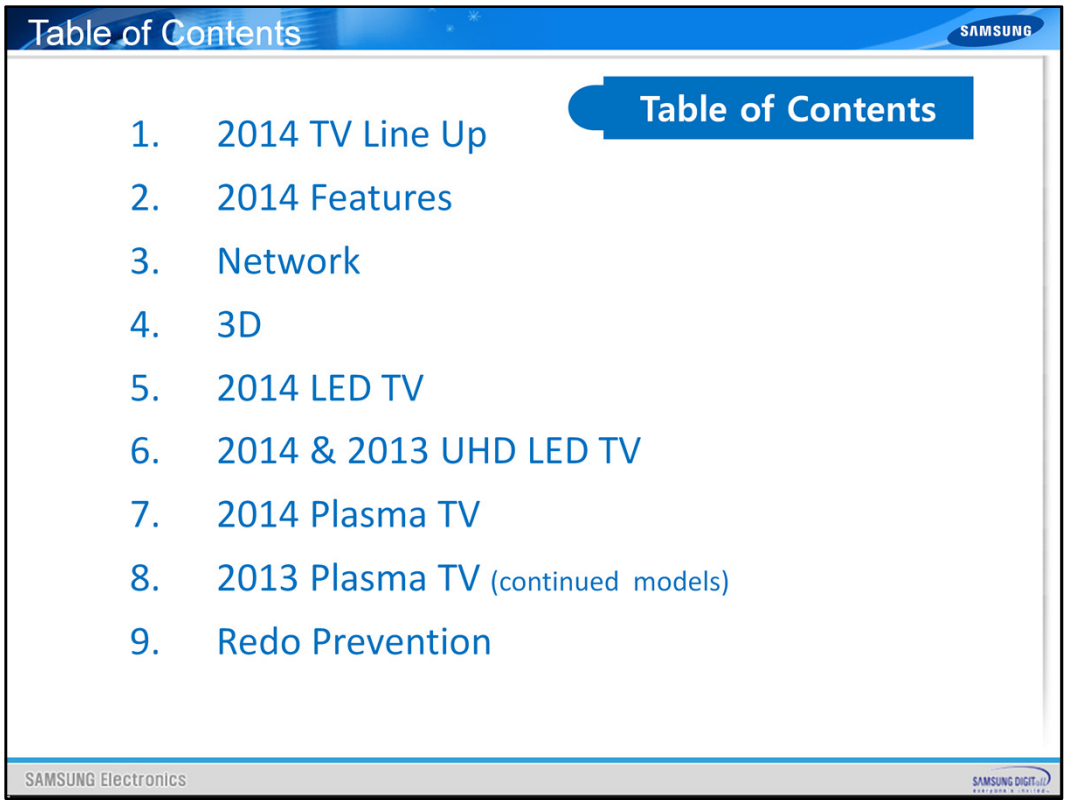
The 2014 Samsung TV Certification Course is designed to assist in technical understanding and troubleshooting the new 2014 LED and Plasma TVs. Completing the course and receiving a 70% passing grade on the exam will certify and prepare you for the repair of 2014 Samsung TVs.
We thank you for your participation.



This training includes: 2014 Lineup, Features, Network, 3D, LED TV, UHD LED TV, Plasma TV, & REDO Prevention

2014 TV Line Up

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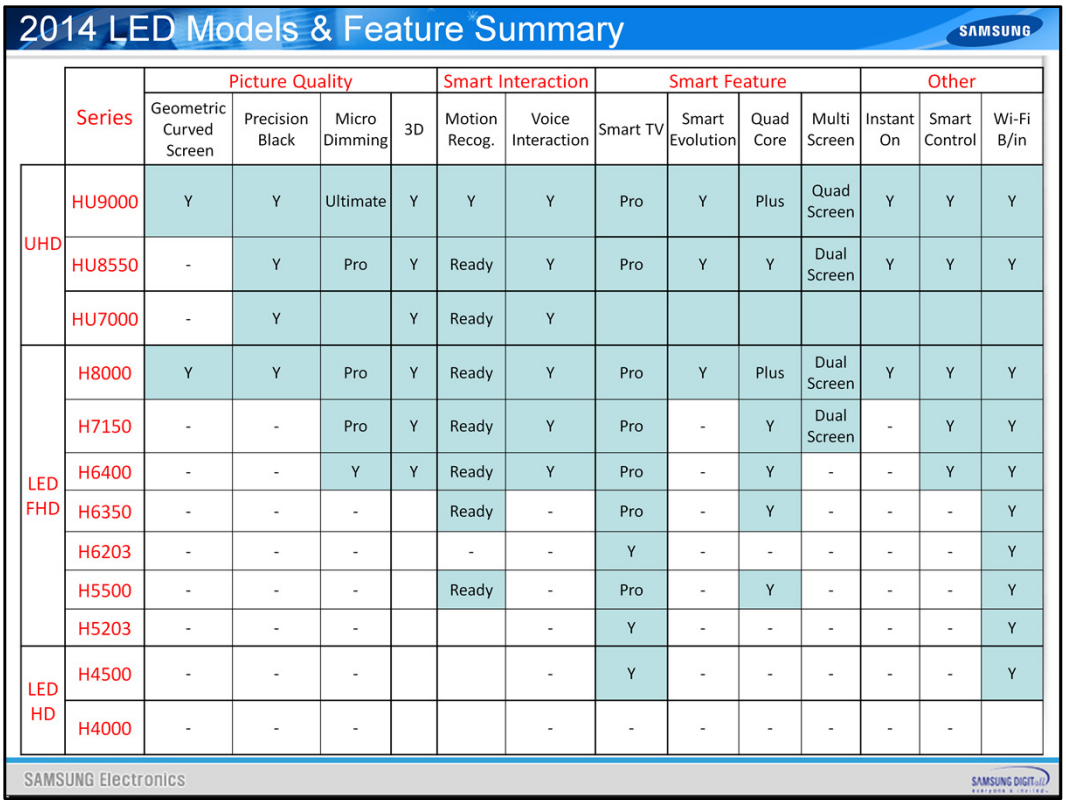

2014 LED Models & Feature Summary

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	Series	Picture Quality				Smart Interaction		Smart Feature				Other		
		Geometric Curved Screen	Precision Black	Micro Dimming	3D	Motion Recog.	Voice Interaction	Smart TV	Smart Evolution	Quad Core	Multi Screen	Instant On	Smart Control	Wi-Fi B/in
UHD	HU9000	Y	Y	Ultimate	Y	Y	Y	Pro	Y	Plus	Quad Screen	Y	Y	Y
	HU8550	-	Y	Pro	Y	Ready	Y	Pro	Y	Y	Dual Screen	Y	Y	Y
	HU7000	-	Y		Y	Ready	Y							
LED FHD	H8000	Y	Y	Pro	Y	Ready	Y	Pro	Y	Plus	Dual Screen	Y	Y	Y
	H7150	-	-	Pro	Y	Ready	Y	Pro	-	Y	Dual Screen	-	Y	Y
	H6400	-	-	Y	Y	Ready	Y	Pro	-	Y	-	-	Y	Y
	H6350	-	-	-		Ready	-	Pro	-	Y	-	-	-	Y
	H6203	-	-	-		-	-	Y	-	-	-	-	-	Y
	H5500	-	-	-		Ready	-	Pro	-	Y	-	-	-	Y
	H5203	-	-	-			-	Y	-	-	-	-	-	Y
LED HD	H4500	-	-	-			-	Y	-	-	-	-	-	Y
	H4000	-	-	-			-	-	-	-	-	-	-	

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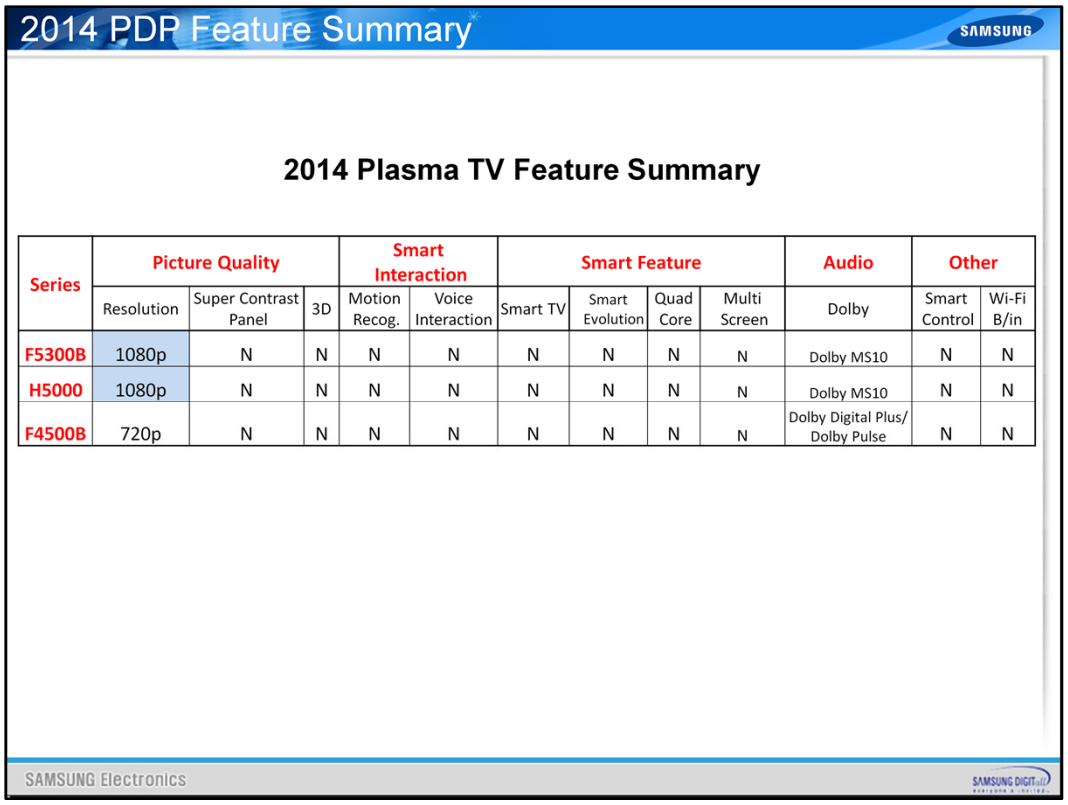
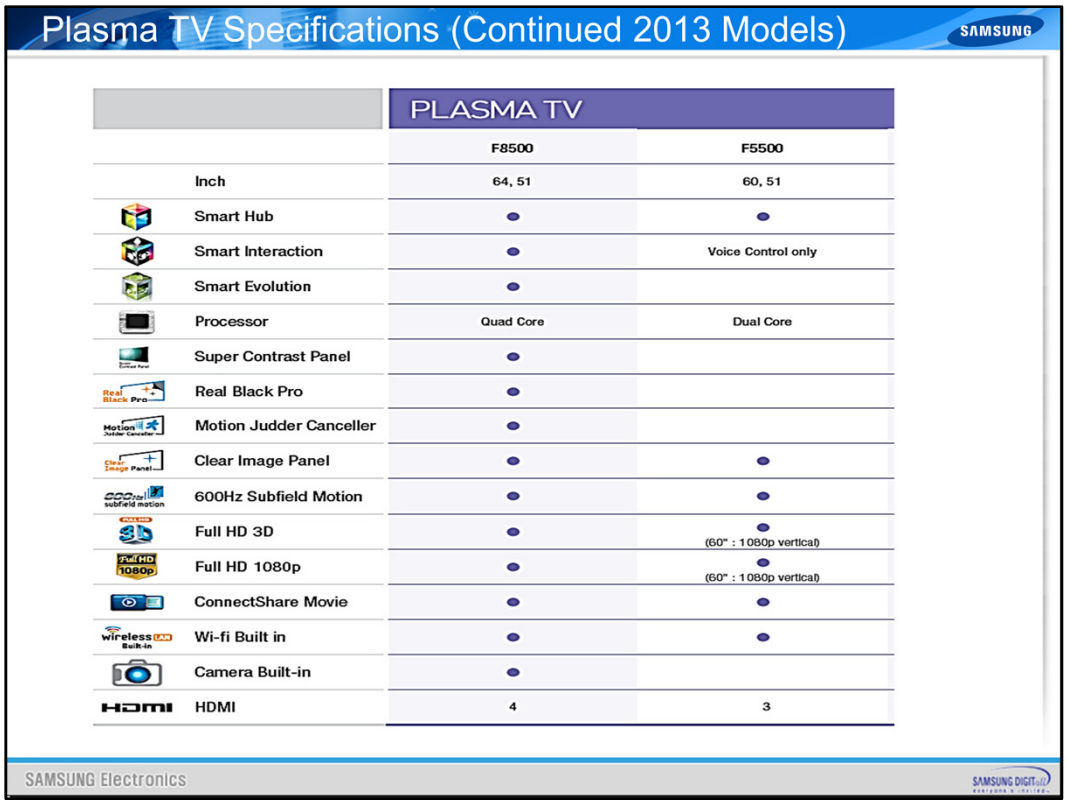
The 2014 LED Models & Features are listed and include the new curved U9000 UHD TVs as well as the new curved H8000. The Picture quality features, Smart Interaction, Smart Features, and other items like Instant ON, Smart Control and Wi-Fi & Bluetooth are included for model comparison.



Series	Picture Quality			Smart Interaction		Smart Feature				Audio	Other	
	Resolution	Super Contrast Panel	3D	Motion Recog.	Voice Interaction	Smart TV	Smart Evolution	Quad Core	Multi Screen	Dolby	Smart Control	Wi-Fi B/in
F5300B	1080p	N	N	N	N	N	N	N	N	Dolby MS10	N	N
H5000	1080p	N	N	N	N	N	N	N	N	Dolby MS10	N	N
F4500B	720p	N	N	N	N	N	N	N	N	Dolby Digital Plus/ Dolby Pulse	N	N

New 2014 Plasma models are limited to the standard line models without Smart Features or Wi-Fi & Bluetooth. The F5300B & H5000 models have full HD 1080p resolution.



The Plasma TV Line Up includes continued 2013 F8500 premium & F5500 Smart feature models.
Smart Hub, Smart Interaction , Smart Evolution , Quad or Dual Core Processors, Built in Wi-Fi & Bluetooth and other items are listed and compared.

2014 Samsung TV Additions

New Features:

- New “Golf” Quad Core Processor for expanded user operations and processing.
- New Instant On (LED TVs)
- New expanded Smart Hub 5 Panel selections and new 3.0 Smart Interaction.
- New “Evolution Kit” for 2012/2013 TV Upgrade to 2014
- Added Customer Self Diagnostics info. plus 3D screen operation & 3D glasses test

LED TVs:

- New Curved H8000 LED TVs
- New Curved HU9000/U8550 55”/65” UHD TVs (“4K” 3840H X 2160V Resolution)
- New 110 inch UHD & 105 inch curved UHD LED TVs
- Future Retractable Curved to Flat 85” UHD TV

PLASMA TVs:

- New F5300B, H5000, F4500B, standard line series with NT14L Platform and separate Main & Logic boards
- 2013 PNF8500 “Reference” TV (Fox Platform) & PNF5500 (X12 Platform) continued

OLED TV: 2013 KN55S9 (No new models – Training on PlusOne)

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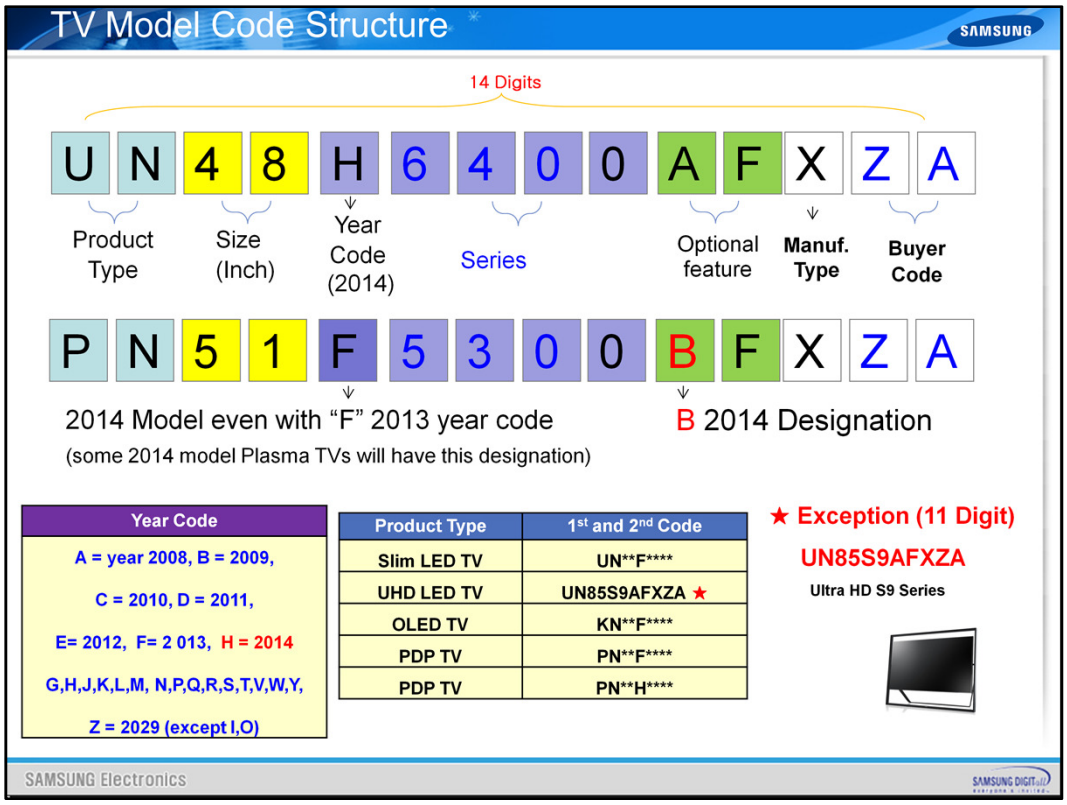
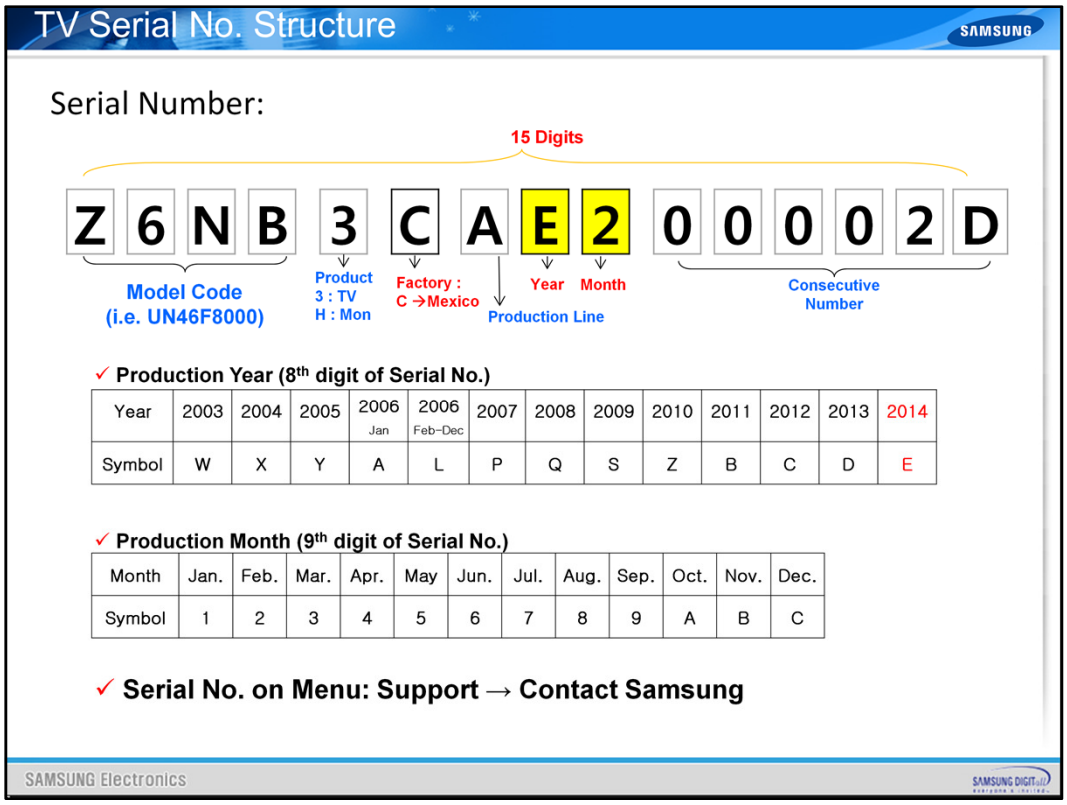
Some of the 2014 Samsung TV Additions are highlighted.



The 14 digit model code structure is listed here for your reference. New is the "H" Year Code for 2014. The "G" was skipped. Also… Special Note: Some models like the Plasma - PN example seen here continued using the "F" Year Code and added a "B" in the Optional feature bracket for 2014 designation.



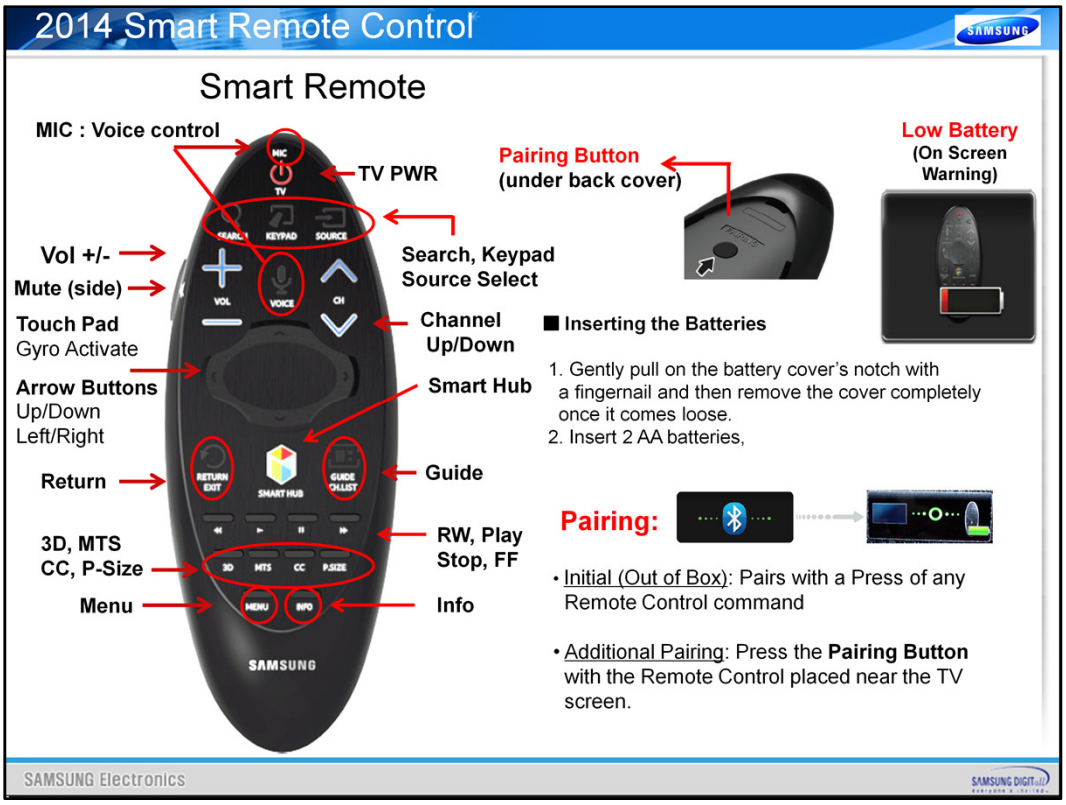
Important Serial Number structure is listed:
Model Code, Product, Factory, Production Line, Year/Month… and **“E” for 2014**

-

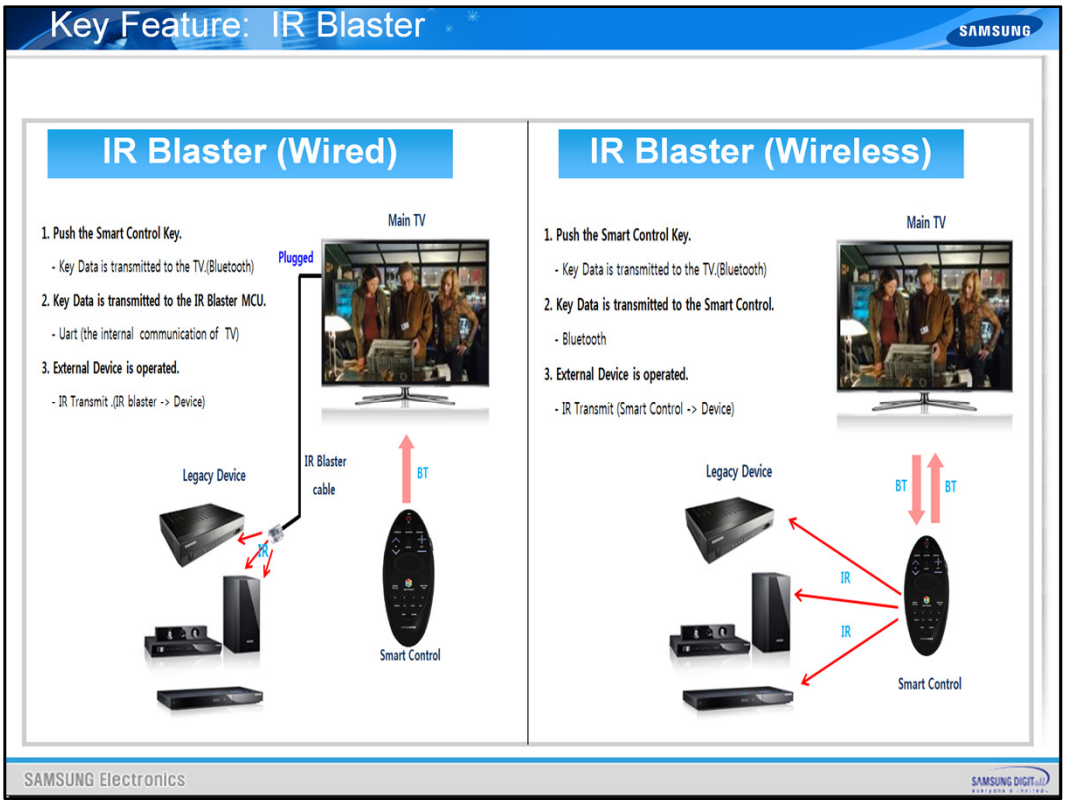
Key Features for 2014

New expanded 2014 Five Panel Smart Hub is seen here. New Multimedia and Game panels plus improvements in the Movie & TV Shows, Samsung Apps, and ON TV Panels.

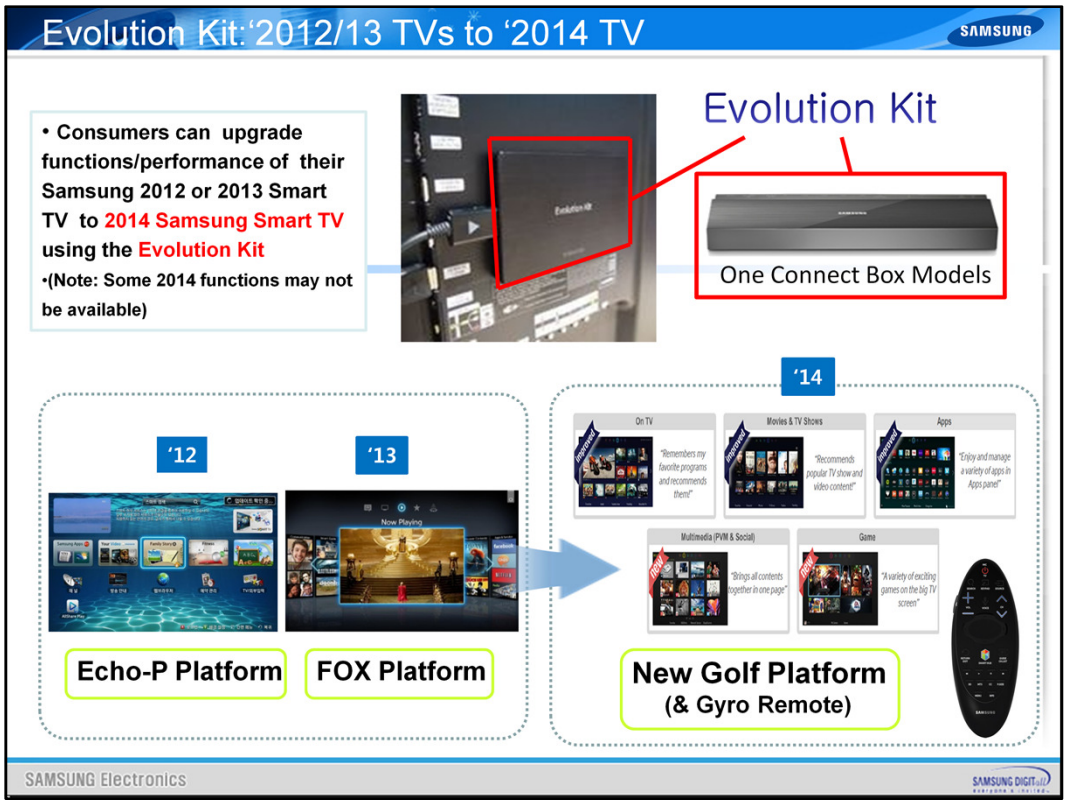
-Instant On, new for 2014, allows the LED TV to display in 1.3 seconds. This mode is the default setting that can be enabled or disabled from the Menu. For troubleshooting purposes note the Boot Logo will display during start up only for the 5.3 sec normal Boot when Instant On is disabled.



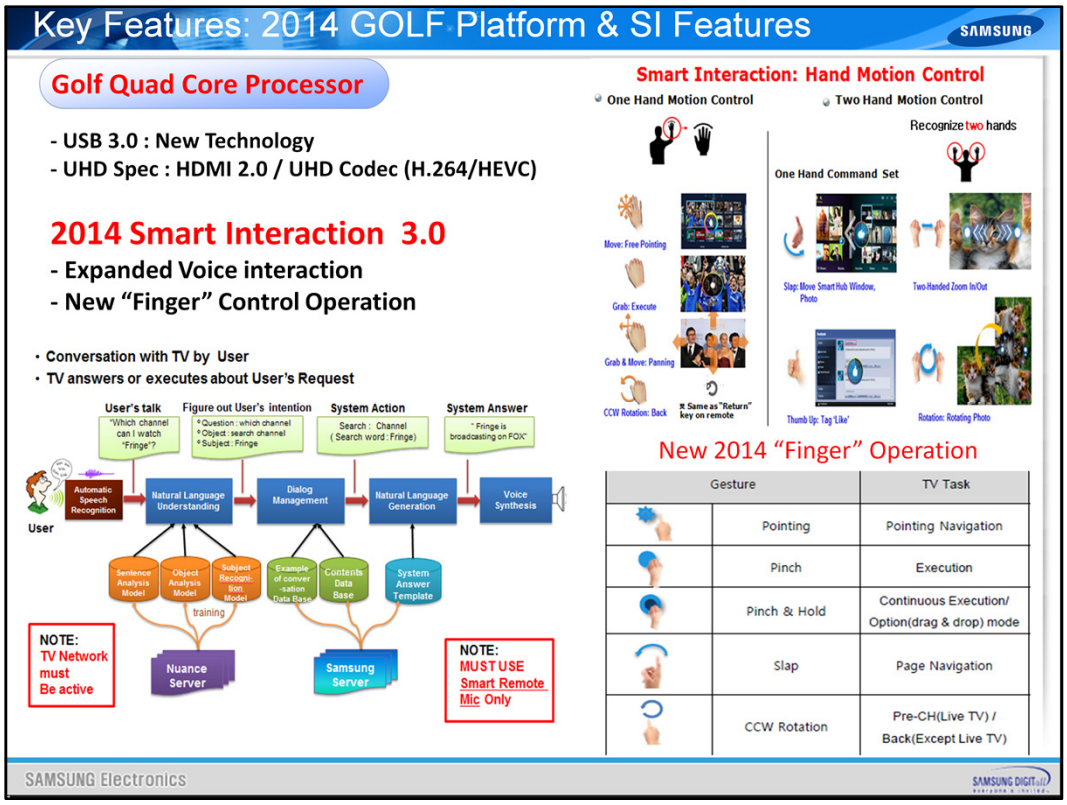
New 2014 Smart Remote Control with new Gyro Function and operating functions are labeled. The Gyro guiding light beam appears by placing your thumb or finger on the touch pad. Navigate the beam to the desired menu or icon location and press enter on the pad to activate. The Power ON command is IR and remaining commands are Bluetooth. Initial out of the box Pairing is triggered with any function command. Pairing can be performed with the pairing button located under the rear access cover as well as replacing the two AA batteries. A battery condition appears while pairing and a low battery warning will also appear automatically on screen.



Seen on the left… The IR Blaster can be Wired, using an external IR Blaster Cable with Emitter that connects through a mini jack on the TV. The Remote and TV correspond via Bluetooth and the TV sends corresponding IR commands through the Wired Blaster to the device (like an external Set Top Box). It can also be a Wireless Blaster, seen on the right, utilizing the Remote as the IR Blaster while corresponding to the TV via Bluetooth. The TV then sends the commands back to the Remote which then sends it out as IR to the devices. The remote has additional IR emitters for better transmitting coverage of the IR signal to the external devices.

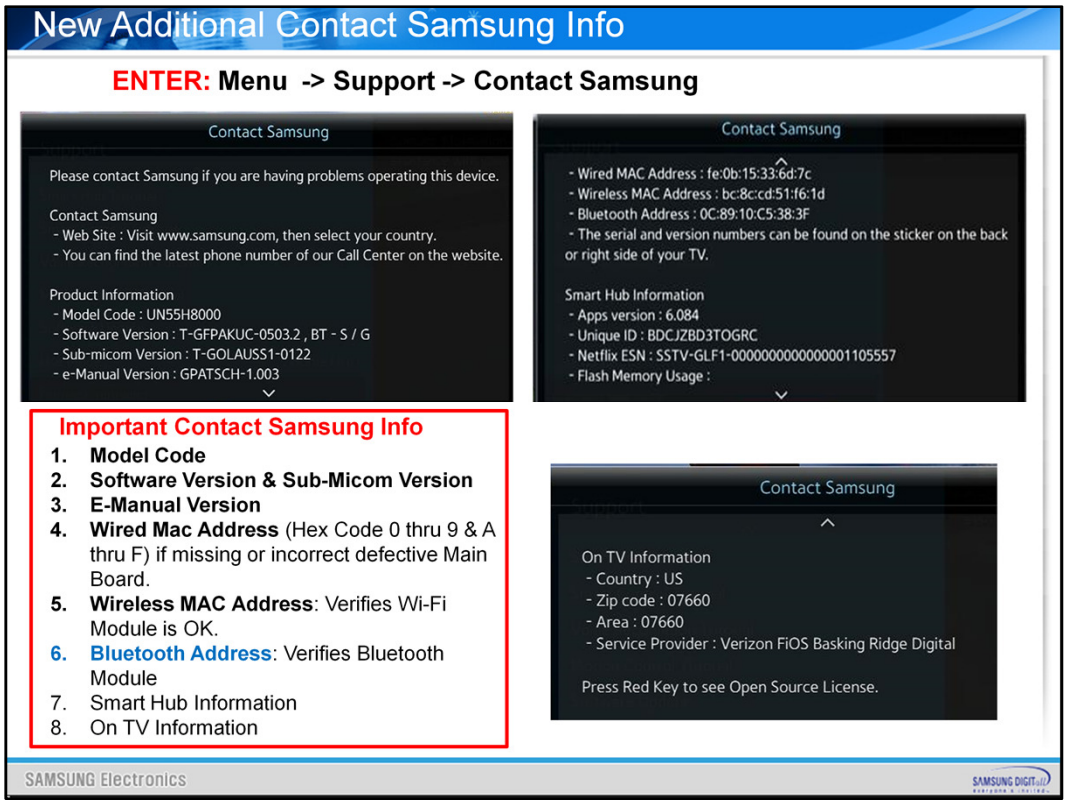


-Evolution kit: Consumers can upgrade functions and performance of their Samsung 2012 or 2013 premium level smart TV (2012 Echo-P or 2013 Fox Platforms) to the new 2014 Golf Platform model using the special Evolution kit seen on the top left or for UHD models the special One Connect Box seen on the top right. The new Gyro Remote is included. Some 2014 Functions may not be available.

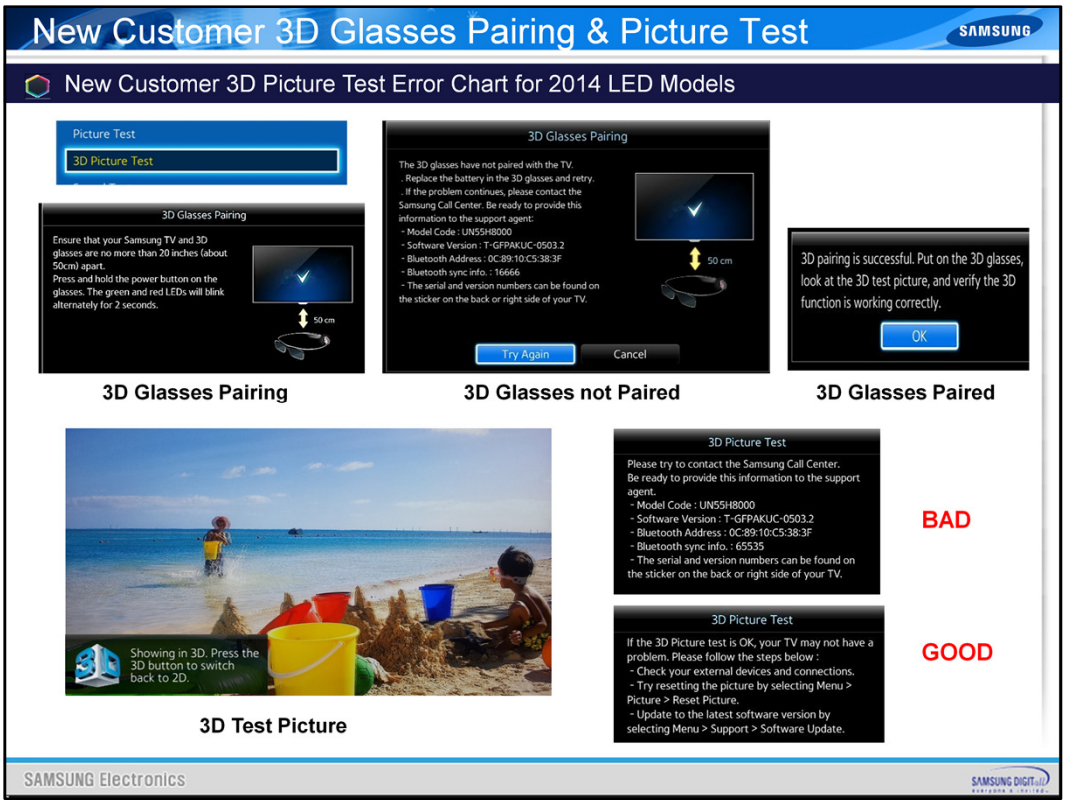


Key Features include the New Golf Quad Core Processor & new USB 3.0 and HDMI 2.0. Also 2014 Smart Interaction 3.0 with expanded natural voice interaction and new 2014 Finger Control operation in addition to the previous Smart Interaction Hand Controls and Face Recognition.

Screen Mirroring and Sound Customizer from Key features introduced in 2013 also continues. Screen Mirroring that connects the TV to view specific model Samsung Phones and Tablets directly to the Screen Mirroring TV input source without the need of being on the same network …. and Sound Customizer that programs the frequency response of the TV audio specific to the individuals hearing abilities.

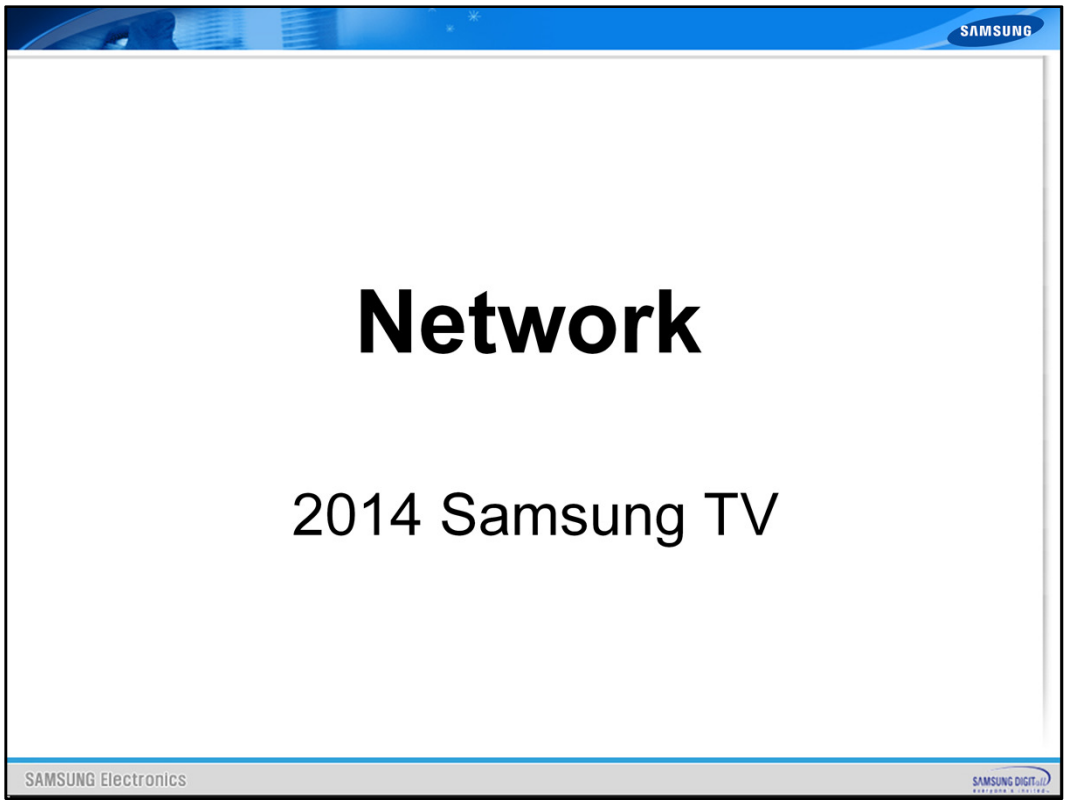


The new 2014 Contact Samsung Screen information is seen here and includes added Smart Hub and On TV Information. Valuable for troubleshooting.

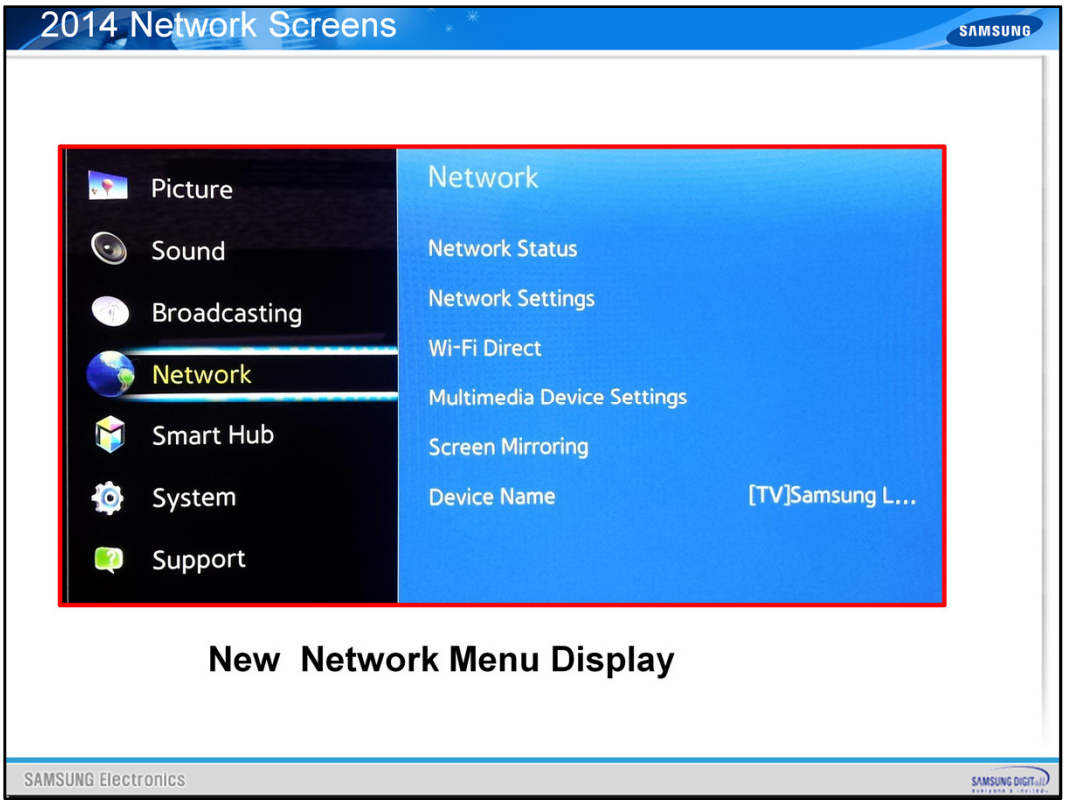


A new and important Customer 3D Glasses Pairing Test and 3D Picture Test has also been added and will be examined later in detail.

Mobil GSPN and "Remote Management" have also been made available. Introduced in 2011, Remote Management has been expanded and now allows remote TV testing/diagnosis by the Samsung authorized service centers who have Mobil GSPN access capabilities.

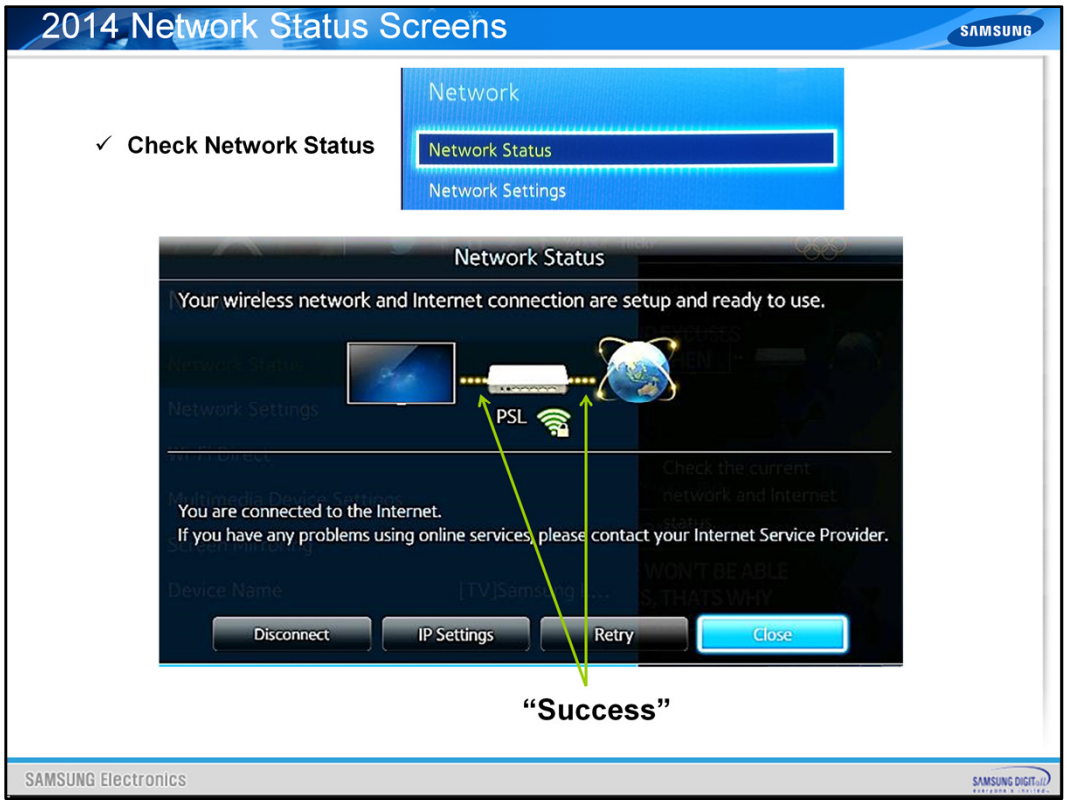


This section focuses on Network Operation, testing, and important troubleshooting methods as well as related Smart Hub issues and Wi-Fi Module troubleshooting.

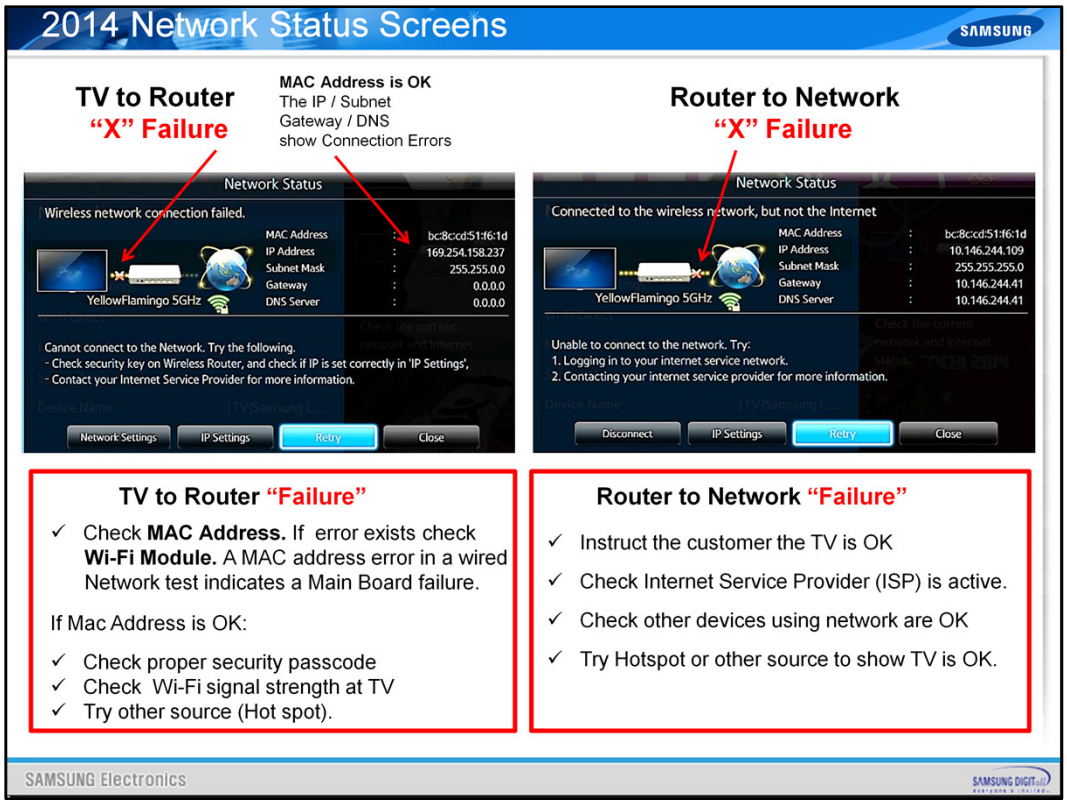


The 2014 Network Menu includes Network Status, Settings, Wi-Fi Direct, Multimedia Device Settings, Screen Mirroring and Device Name.

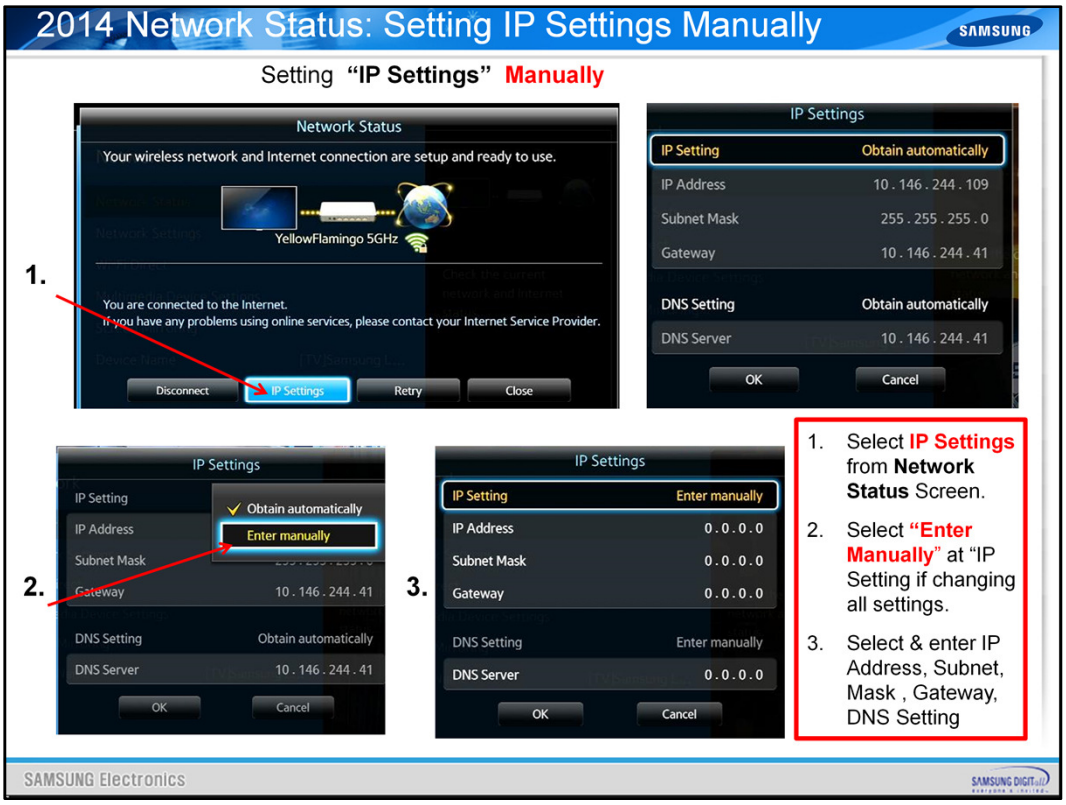
Functions of each item are listed with on screen side bars highlighted:
Network Status: Check the current network and Internet Status.
Wi-Fi Direct: For connecting directly to devices without a wireless router
Screen Mirroring: Mirroring screens and content of certain Samsung Smart Phones & Tablet models to the TV. Whatever the device sees the TV mirrors. The same Network is not required.
Network Settings: Important For setting up the Network
Multimedia Device Settings: For sharing content with other devices on the same network
Device Name: Personalizing device name shown on network and other items



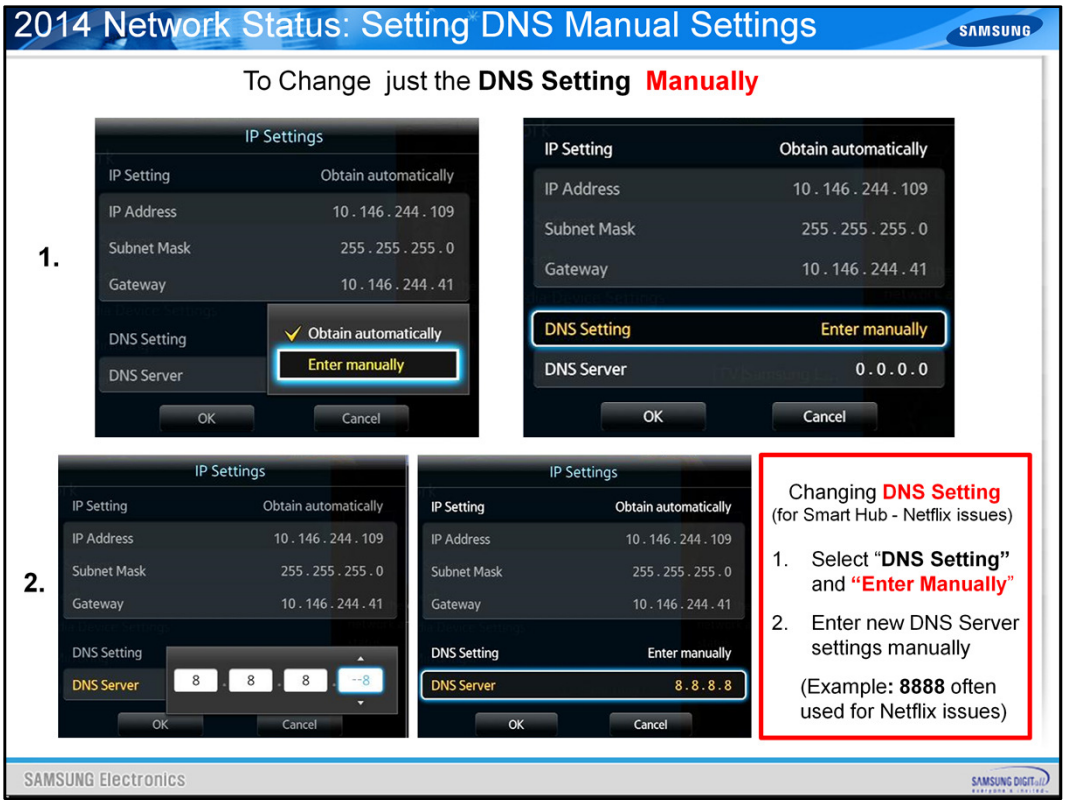
✓ Use the important Network Status screen to check the connection between the TV & the Router and the Router to the Internet. Both show to be successful in this example.



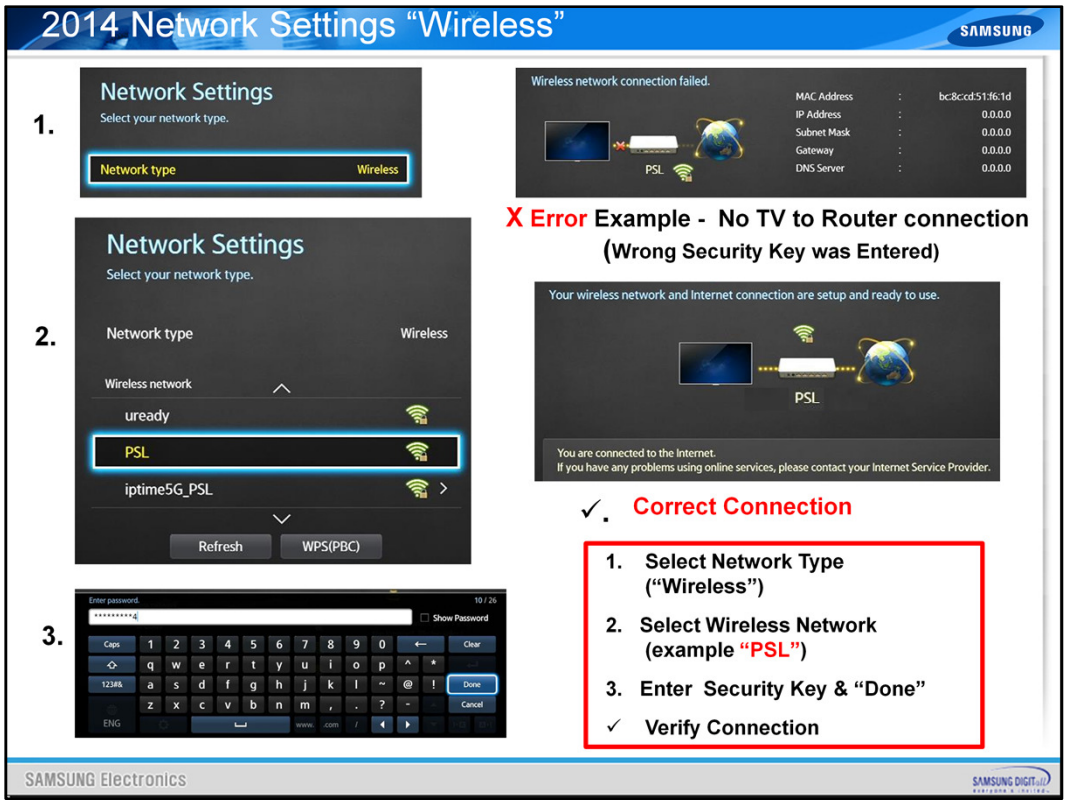
Follow the two failure examples listed. TV to Router & Router to Network.



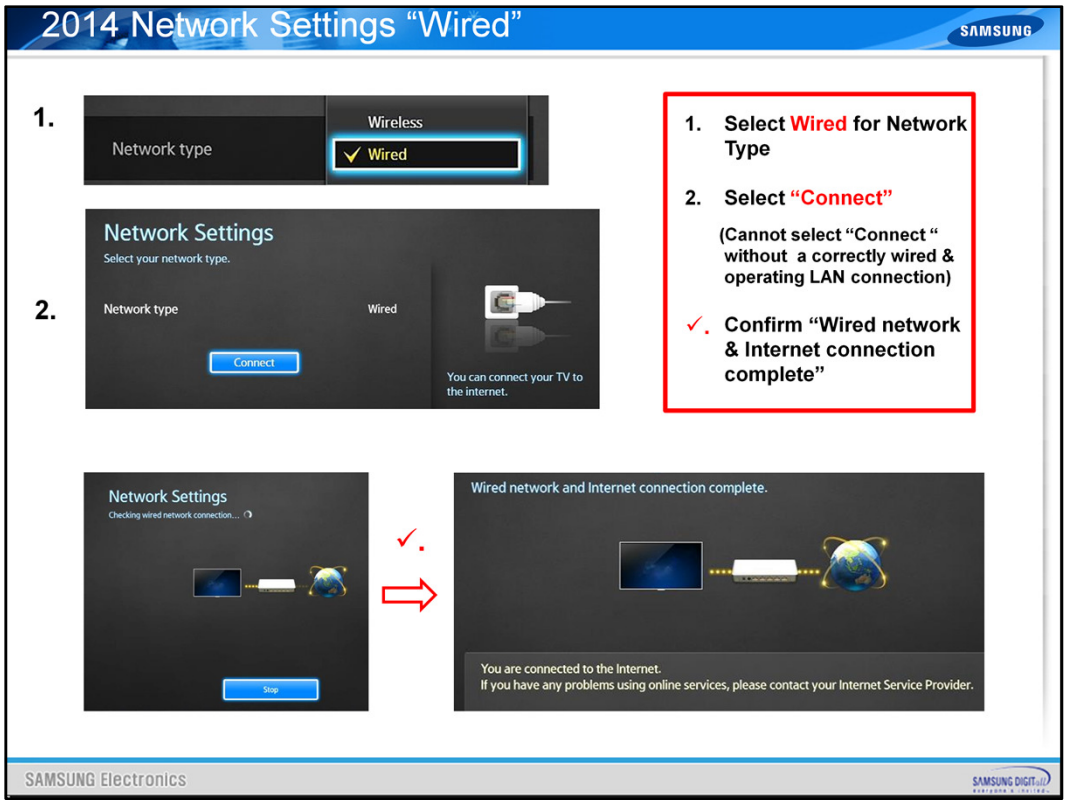
To change IP settings Manually… Follow the steps listed.



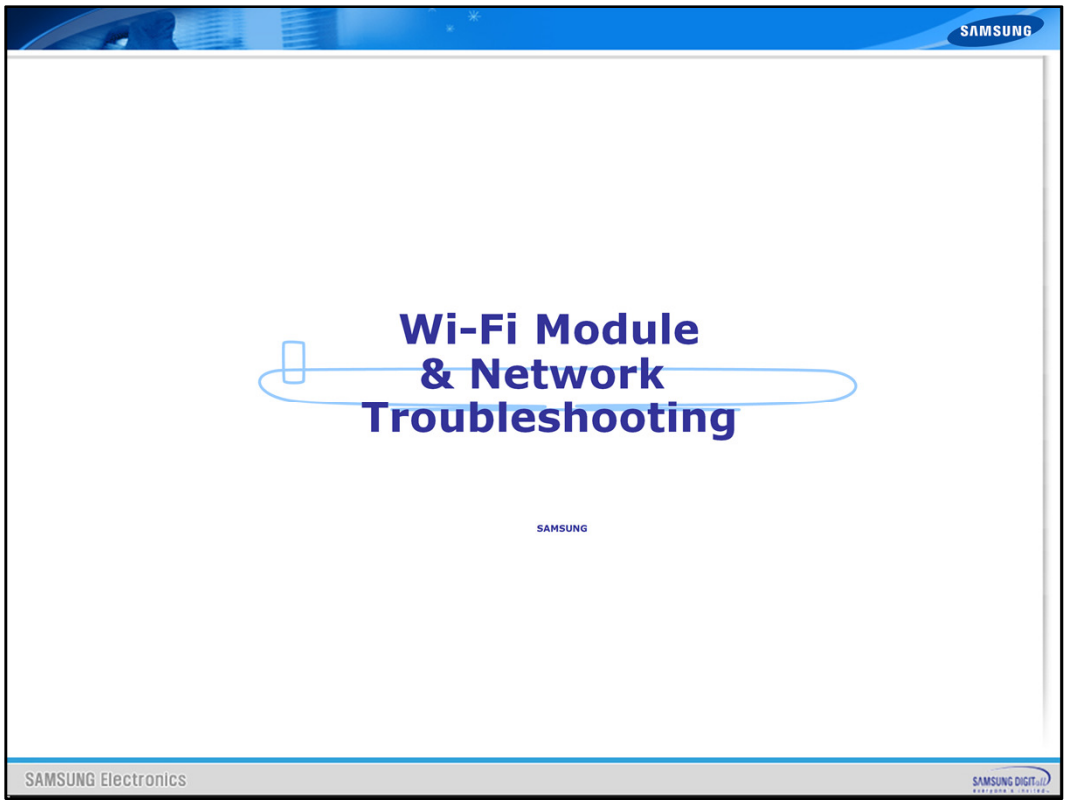
To change just the DNS Setting follow these steps.



For Wireless Network Settings: Follow the steps listed



For Wired Network Settings connect a proper Wired LAN connection to the TV and follow these steps: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Wi-Fi Module
& Network
Troubleshooting
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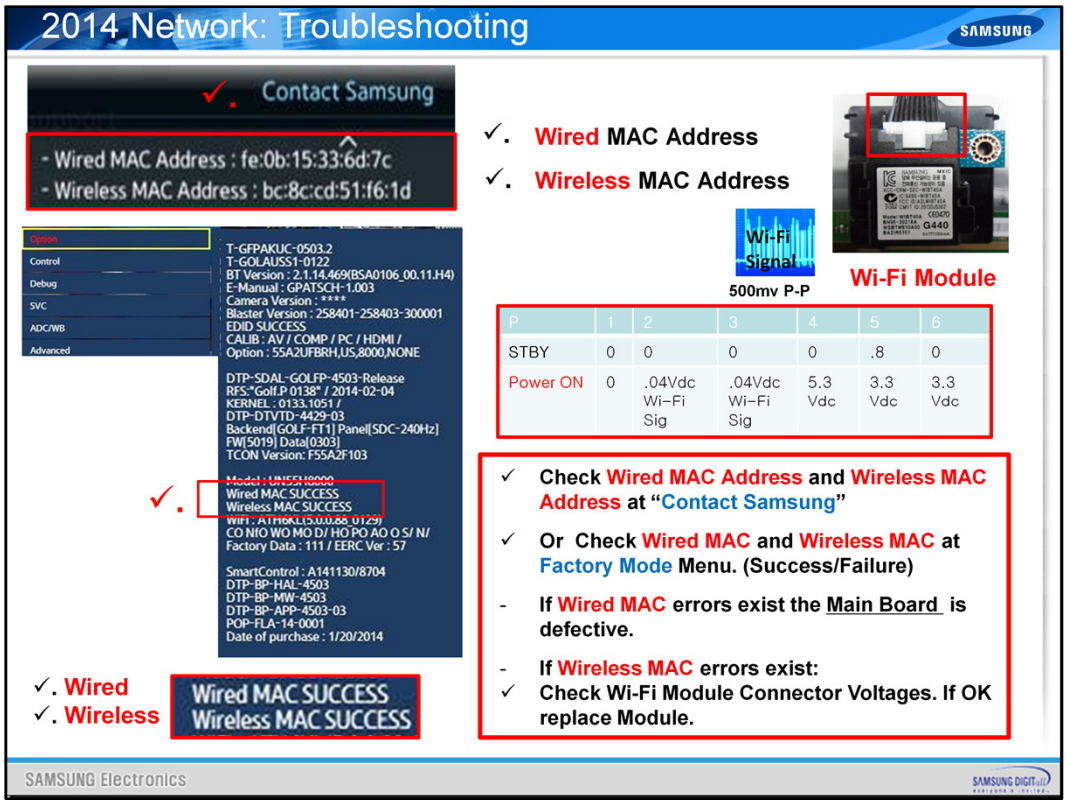
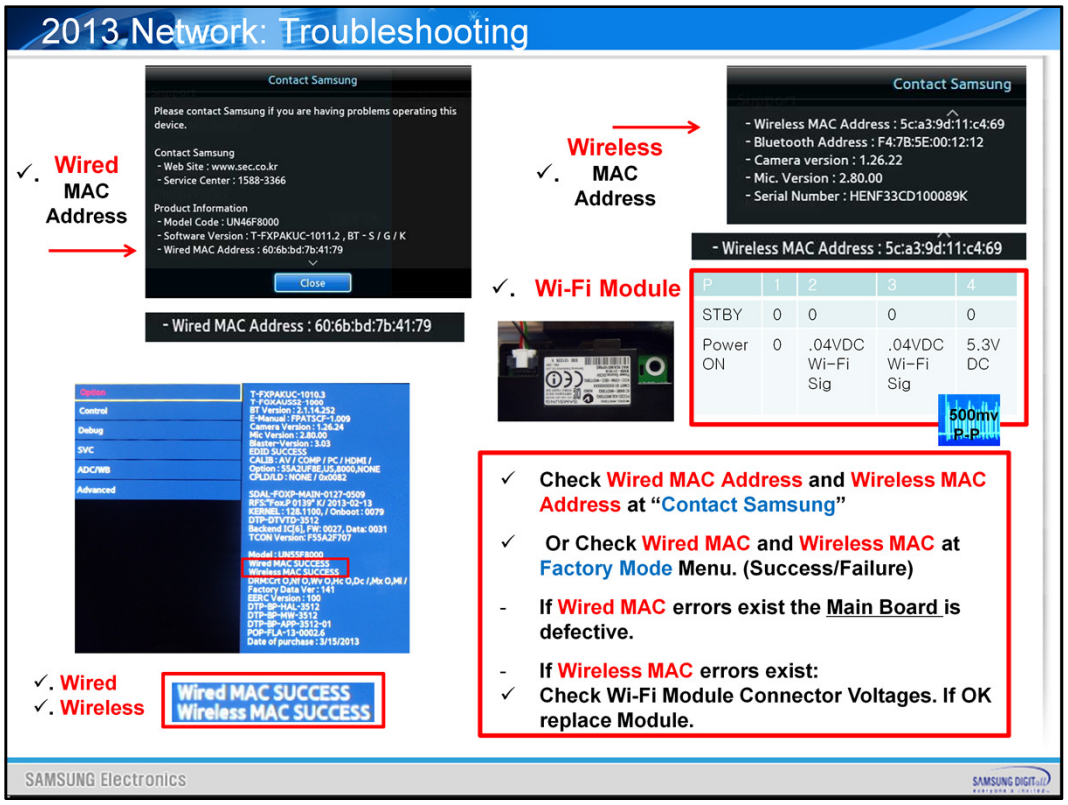
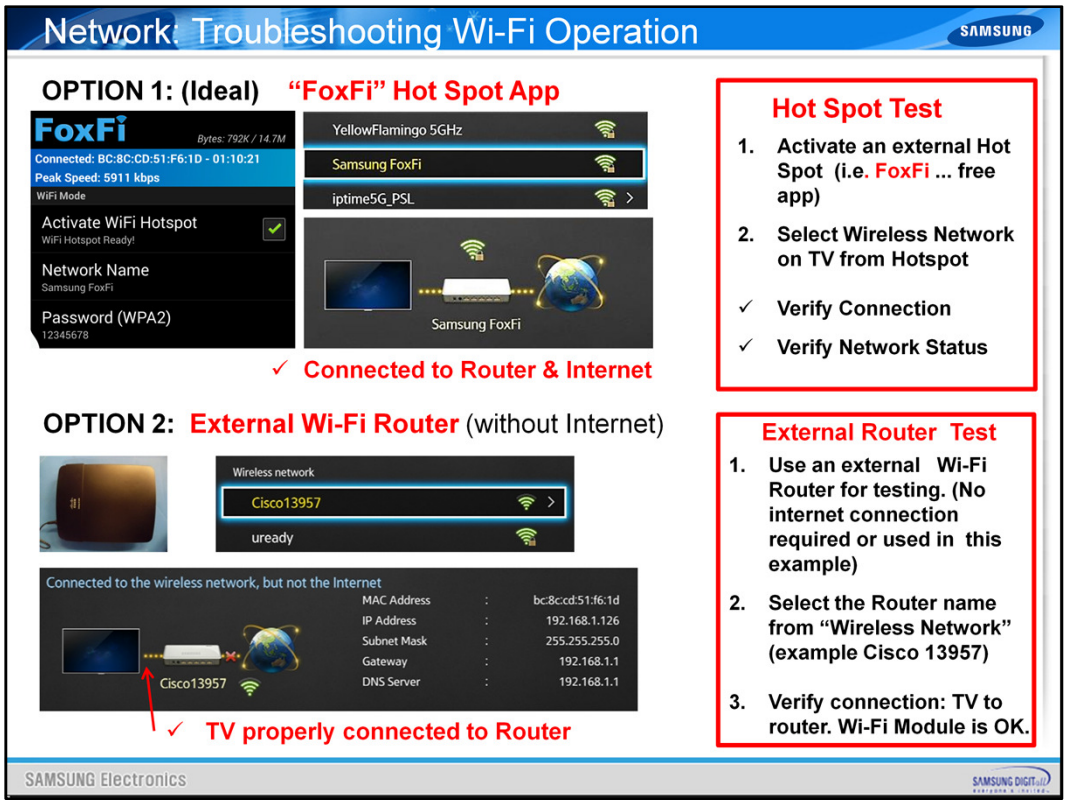


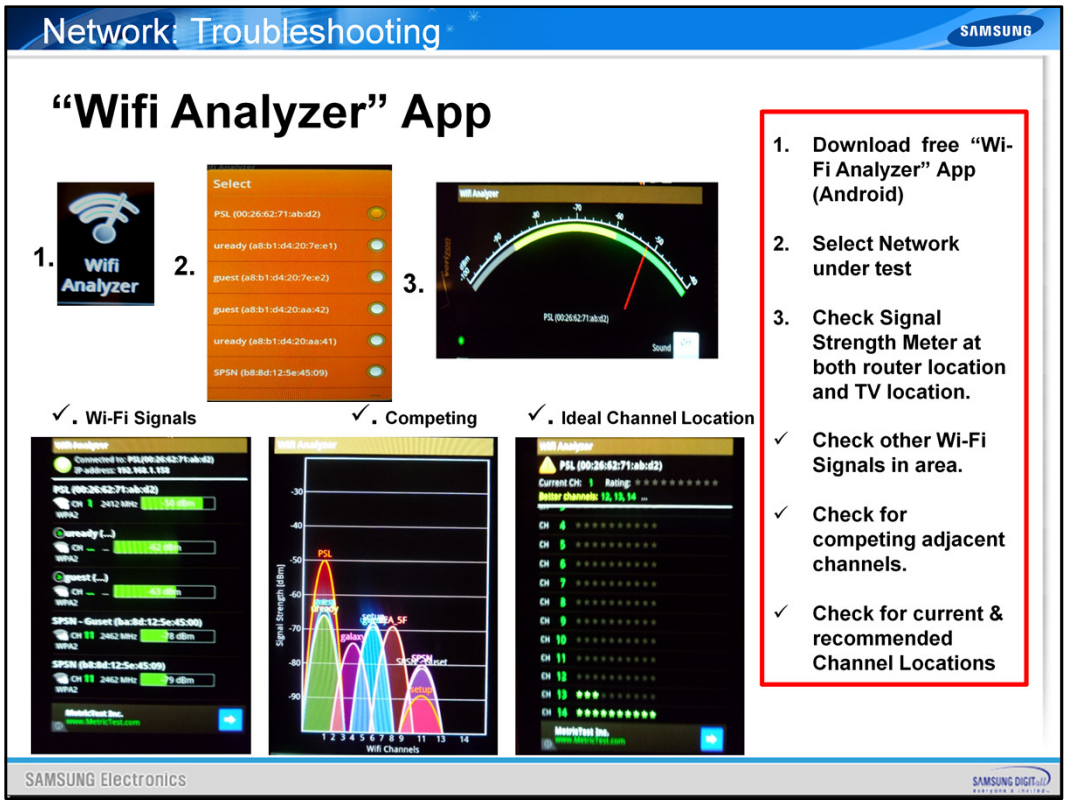
To check the Wired and Wireless MAC conditions and the Wi-Fi Module for 2014 TVs follow these steps.



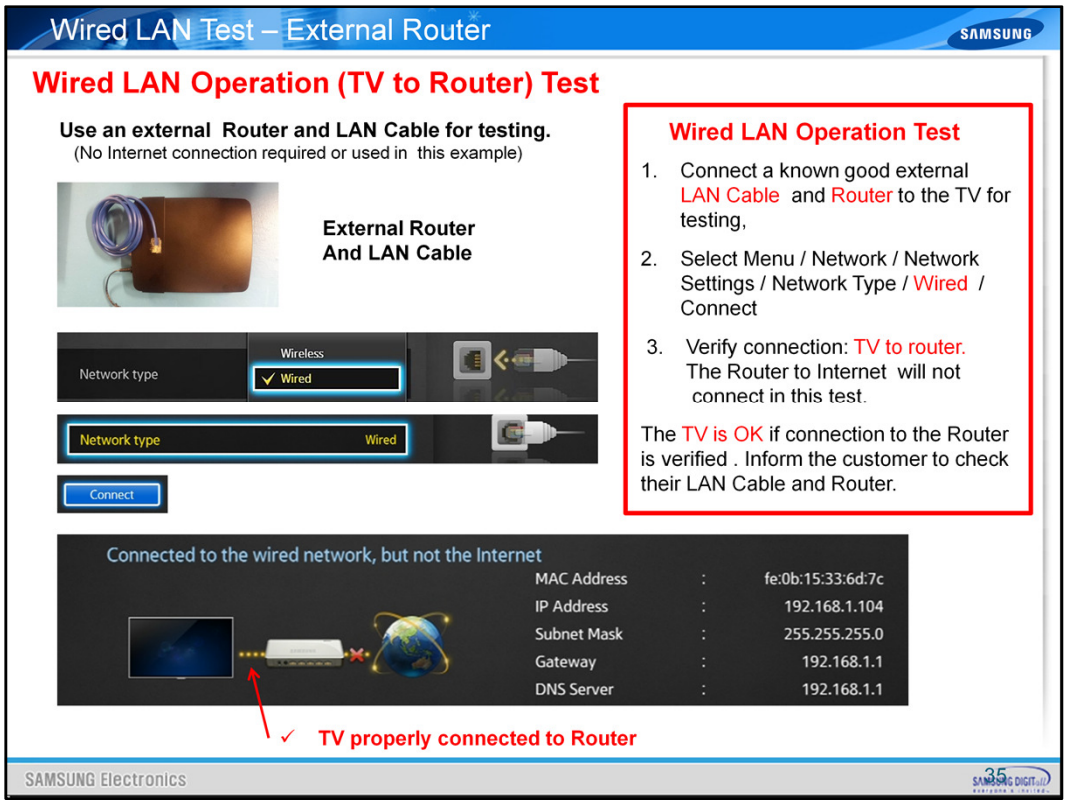
To Troubleshoot the 2013 TVs follow the same steps as for 2014 TVs. The exception is that the Wireless Module connector has 4 pins to test instead of the 6 pins for 2014 TVs. Refer to the 4 pin voltage chart in this slide.



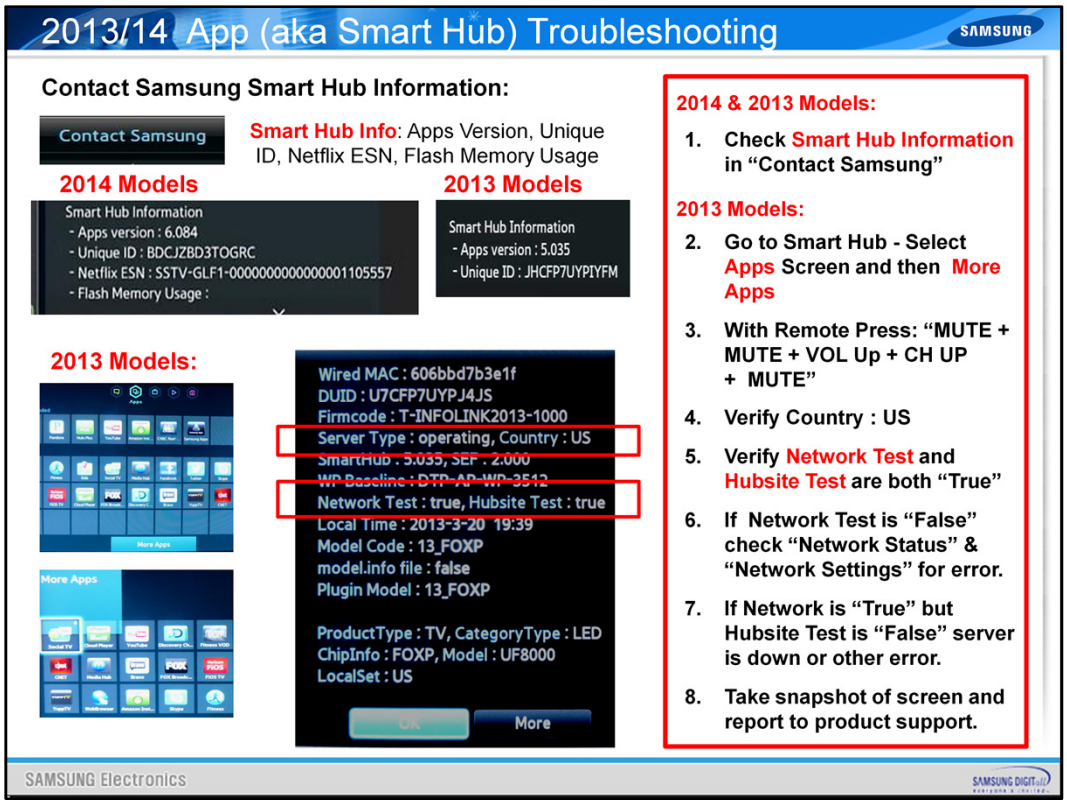
You can download Free apps on Android and other compatible phones and also use an inexpensive router to test the Wi-Fi TV operating condition.



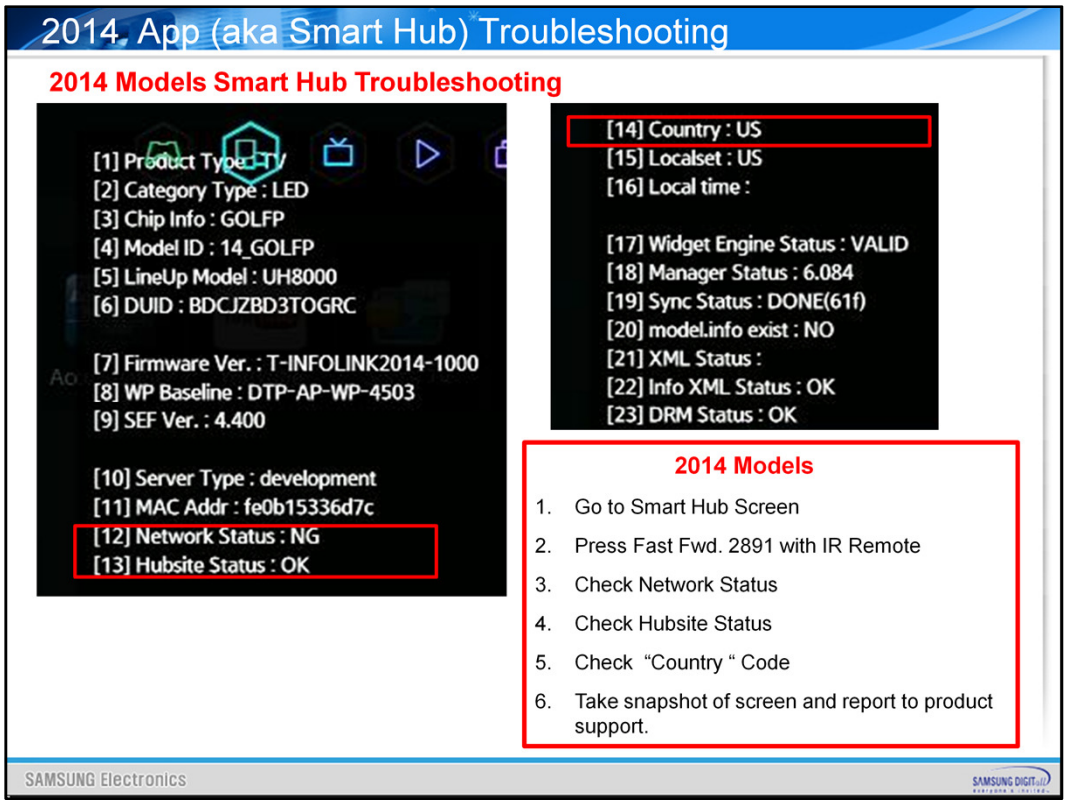
Download a free app from your Android called Wi-Fi Analyzer.



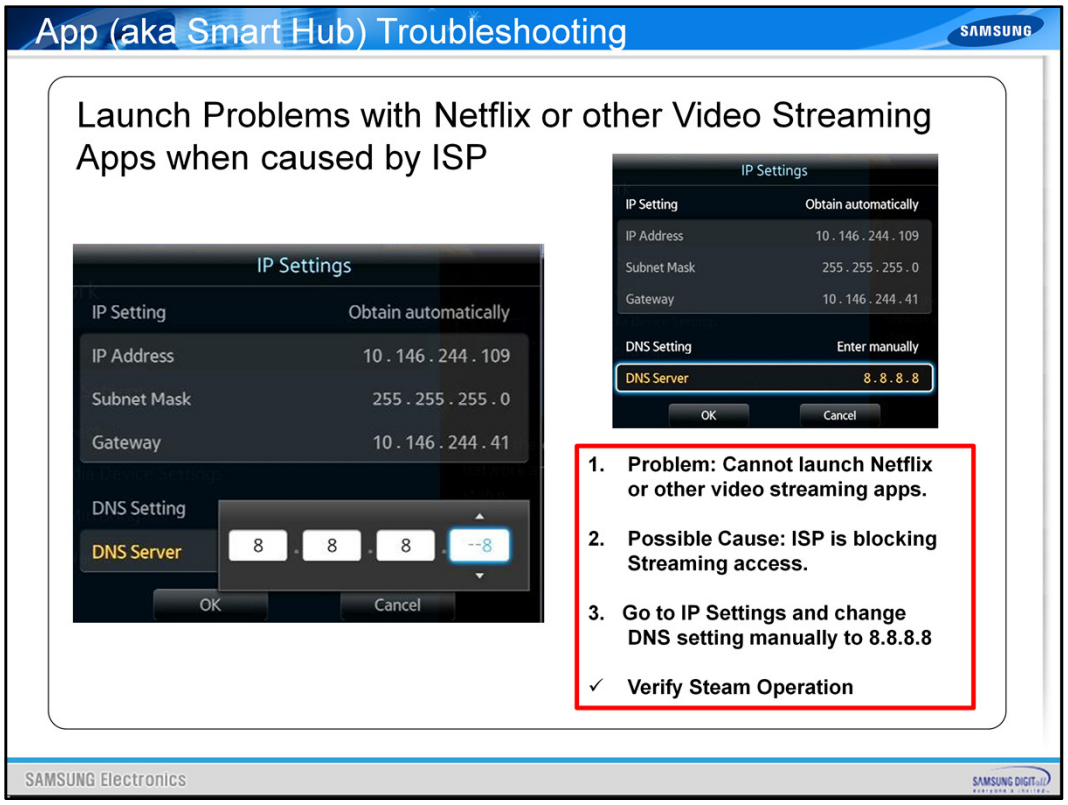
Wired LAN Operation (TV to Router) Test using an external Router



Testing important Apps Operation Screens



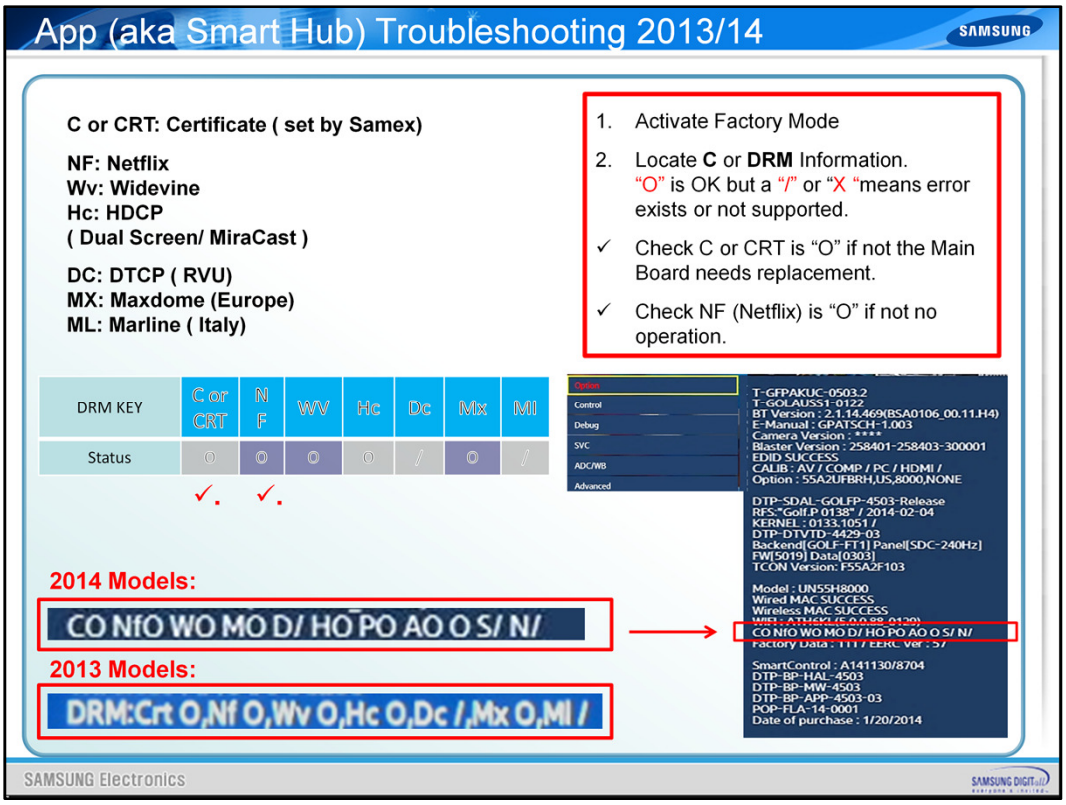
For 2014 TVs: To get the special informational screen to appear follow steps listed.



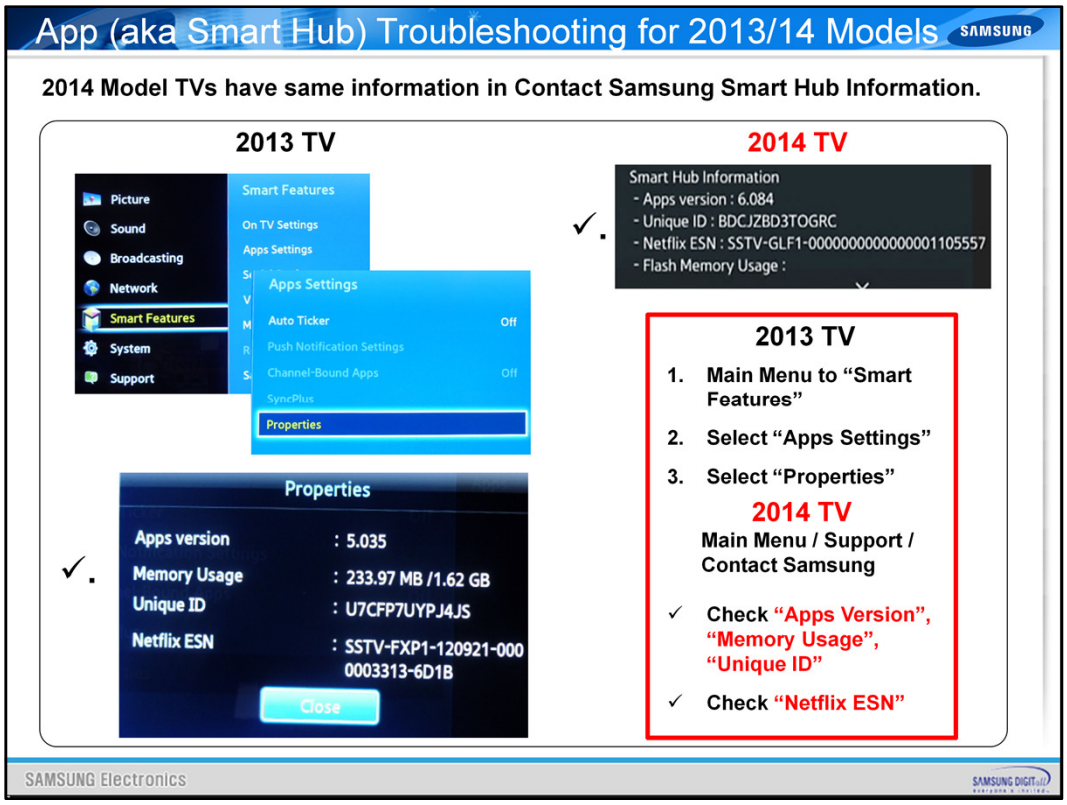
Troubleshooting Netflix Problems by ISP "Internet Service Provider"

1. **Problem: Cannot launch Netflix or other video streaming apps.**
2. **Possible Cause: ISP is blocking Streaming access.**
3. **Go to IP Settings and change DNS setting manually to 8.8.8.8**

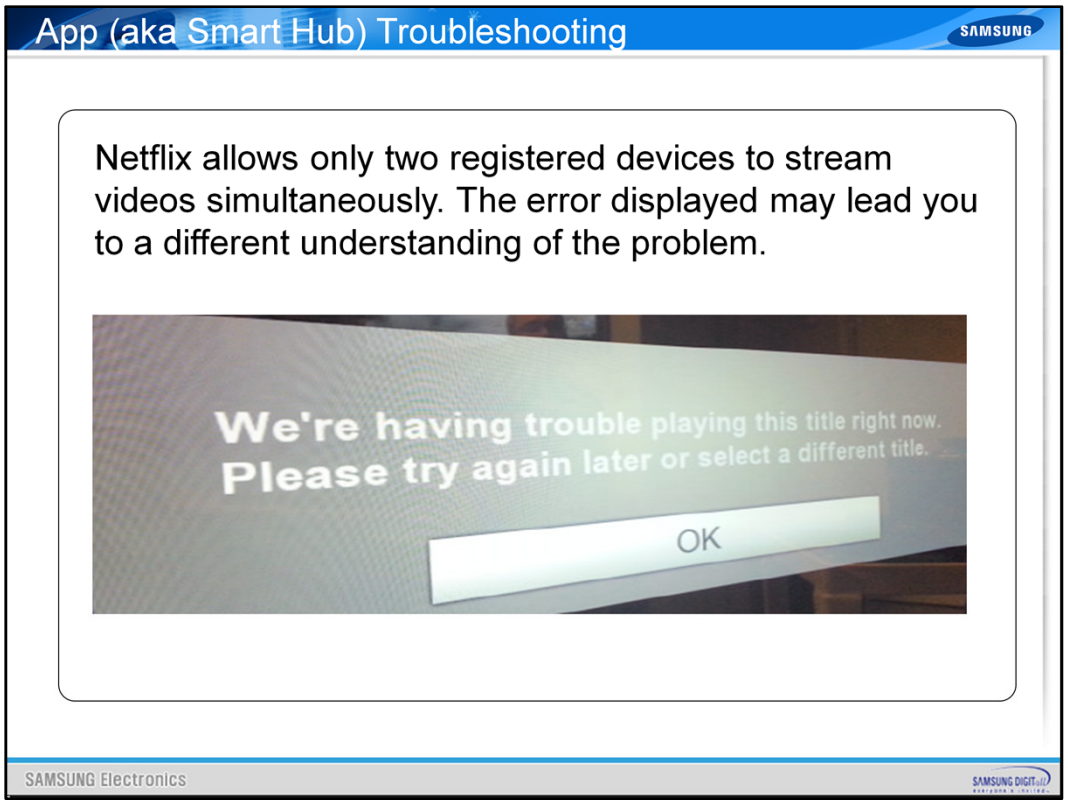
✓ **Verify Steam Operation**



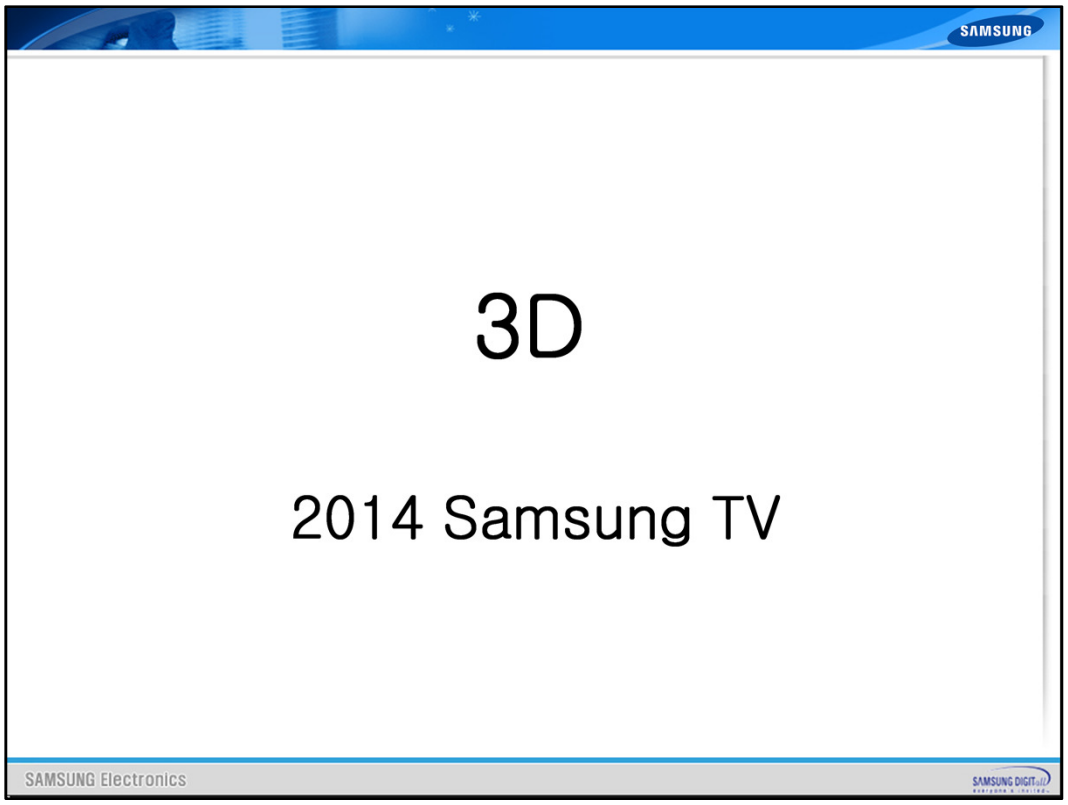
Follow the steps listed for troubleshooting important Certificate (set at Samex) and other operation status for proper Smart Hub Operation.



To Verify Netflix ESN & other Important Info: Follow Steps



Netflix allows only two registered devices to stream videos simultaneously. Although a Netflix family plan may allow a few more. The error displayed on the TV may lead you to a different understanding of the problem.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2014 Samsung TV
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■ 3D is created using a stereo imaging system that duplicates the natural separation of the human eye. This spacing is on average ~2.55 inches apart. Seen here are the left image and the right image where you can see the bubbles in the photos are in slightly different distances and position.

3D Formats:

Format	Input images	explanation	Input source	notes
Frame Packing		•**Inserting Blink Active Space between Left and Right images.** •* **Full resolution : 1920x1080x2(Left and Right each) + Blink = 1920x2205**	HDMI 1.4	1. HDMI 1.4 standard format 2.Automatically activating (Not in the menu or UI) 3. BD format
Top & Bottom		•In 1 frame , Left image on the upper half , Right image on the bottom half . * Vertically half resolution	HDMI, USB, DTV(VOD), PC	3D Broadcasting Format
Side by Side		* In 1 frame , Left image on the left half , Right image on the right half. * Horizontally half resolution	HDMI, USB, DTV(VOD), PC	3D Broadcasting Format
Line by Line		• In 1 frame , every horizontal line, Left and Right image in turn. * Vertically half resolution	PC	1. MPEG encoding impossible 2. Only in PC
Vertical Stripe		* In 1 frame , every vertical line, Left and Right image in turn. * Horizontally half resolution	PC	1. MPEG encoding impossible 2. Only in PC
Checker Board		* In 1 frame , every pixel , Left and Right image in turn. * Half resolution both vertically and horizontally	PC	1. MPEG encoding impossible 2. Only in PC
Frame Sequential		• Left And Right image in turn in every frame • Full resolution spatially but Half resolution timely.	PC	

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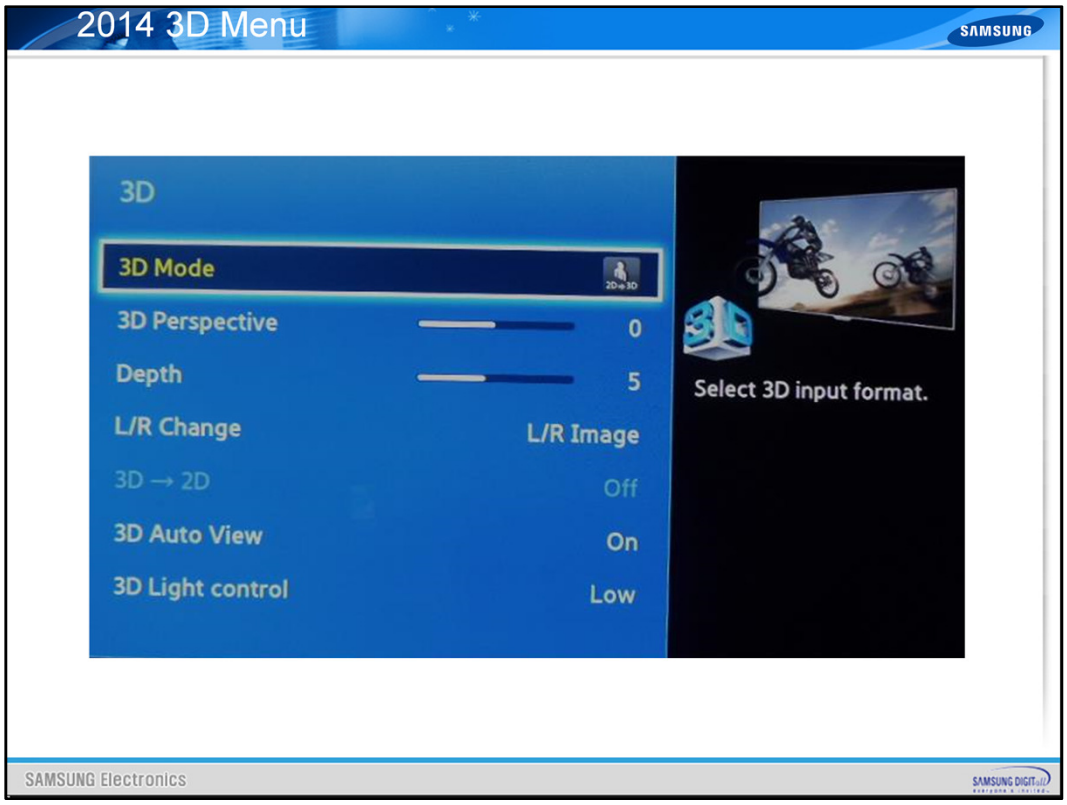
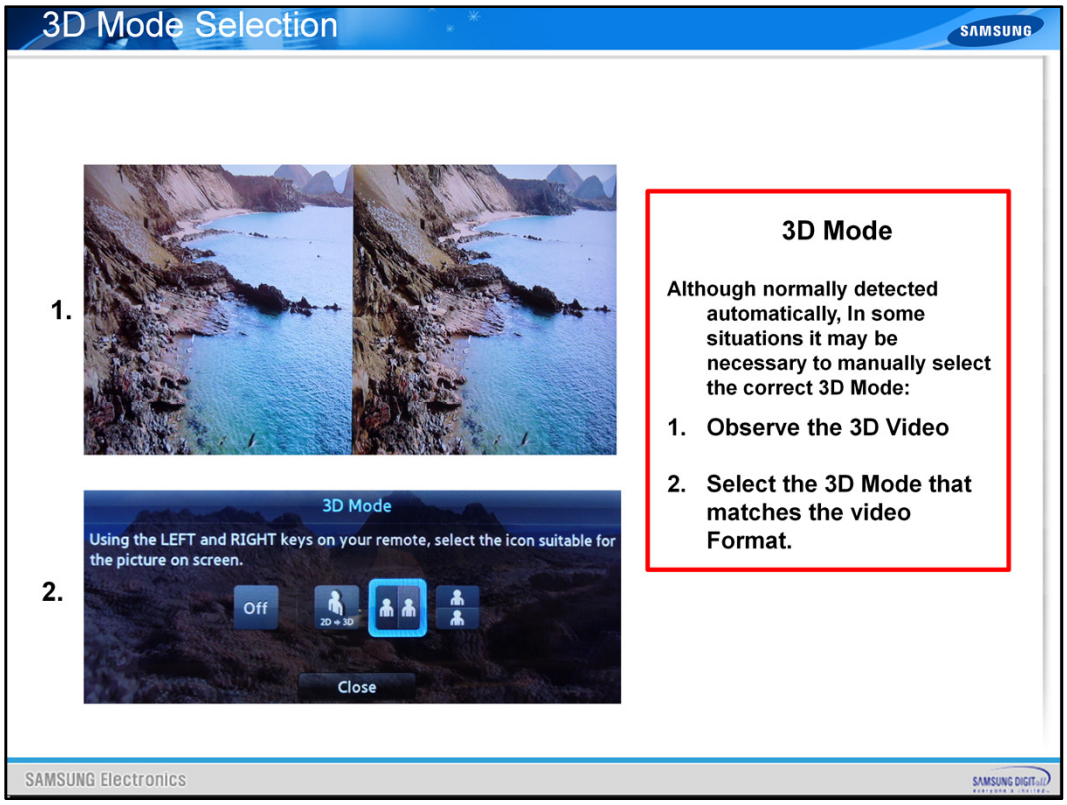
- **Samsung uses frame packing method (left image over right image with an added blinking period or shutter at full HD resolution)**
- **The 3D HDMI format is 1.4** but does not require any special HDMI Cable
- **Top and bottom and side by side are used for broadcast 3D** (NOT FULL HD) where Vertical or Horizontal resolution is lost to maintain broadcast specifications.
-.

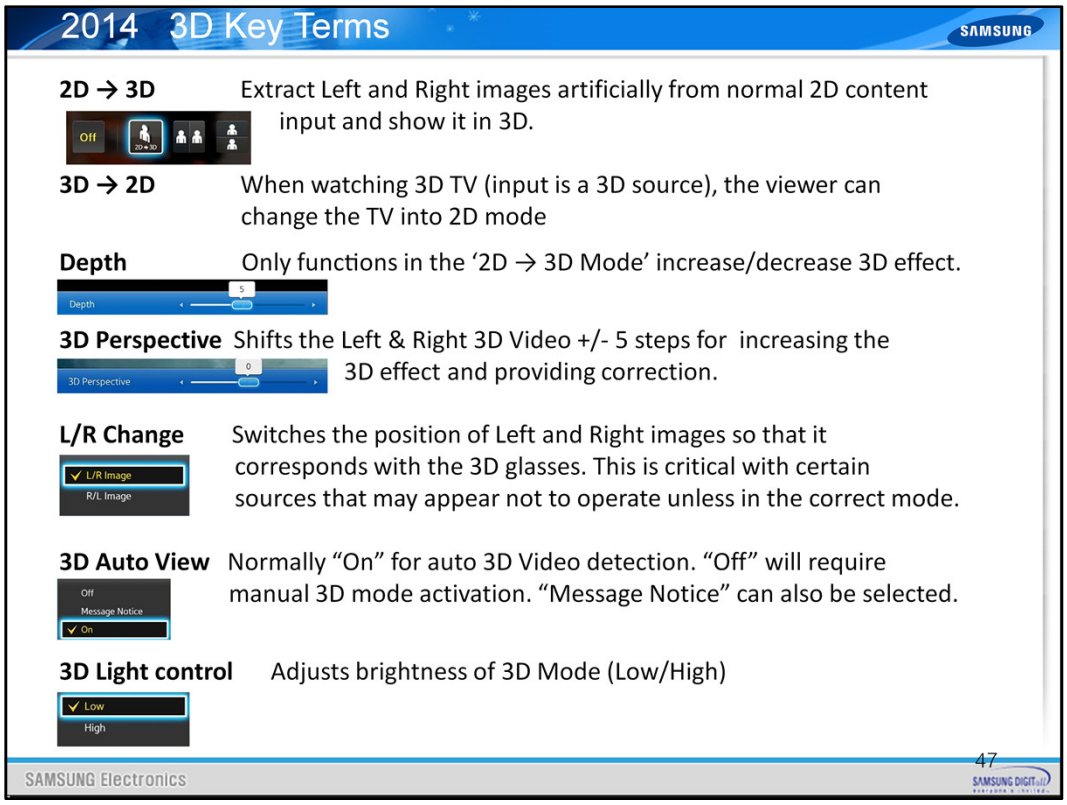


2013 3D Menu is shown



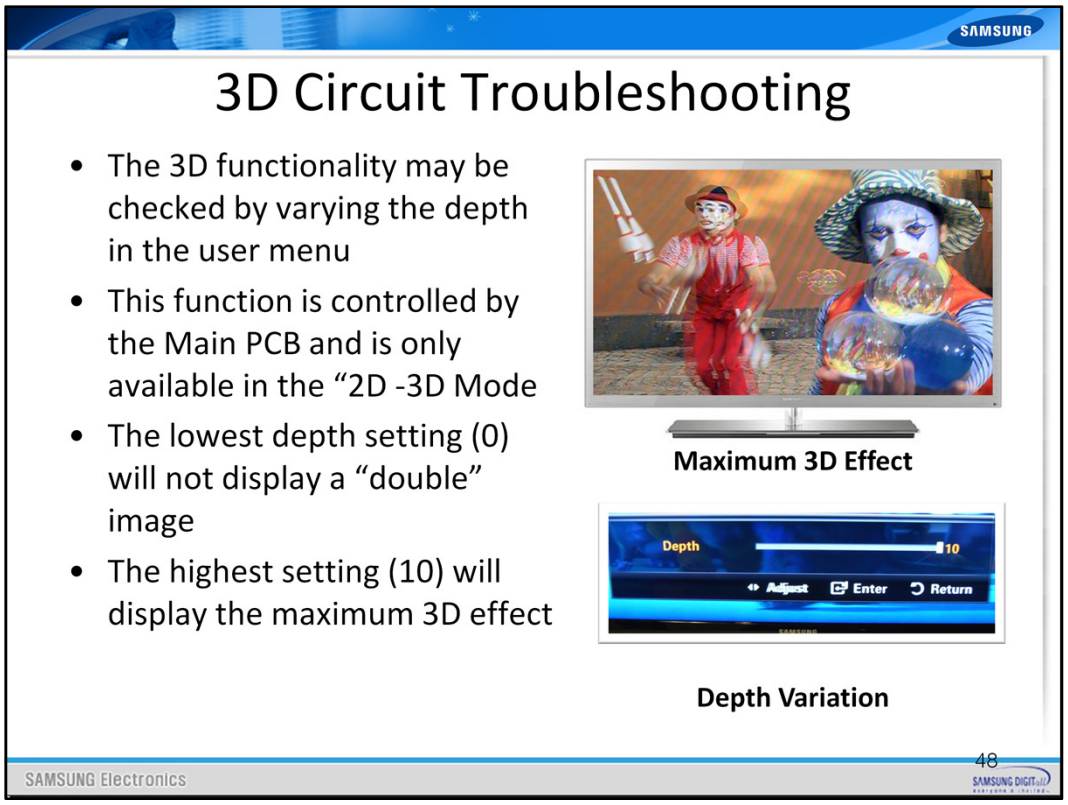
Although normally detected automatically, In some situations it may be necessary to manually select the correct 3D Mode:

1. **Observe the 3D Video**
2. **Select the 3D Mode that matches the video Format.**

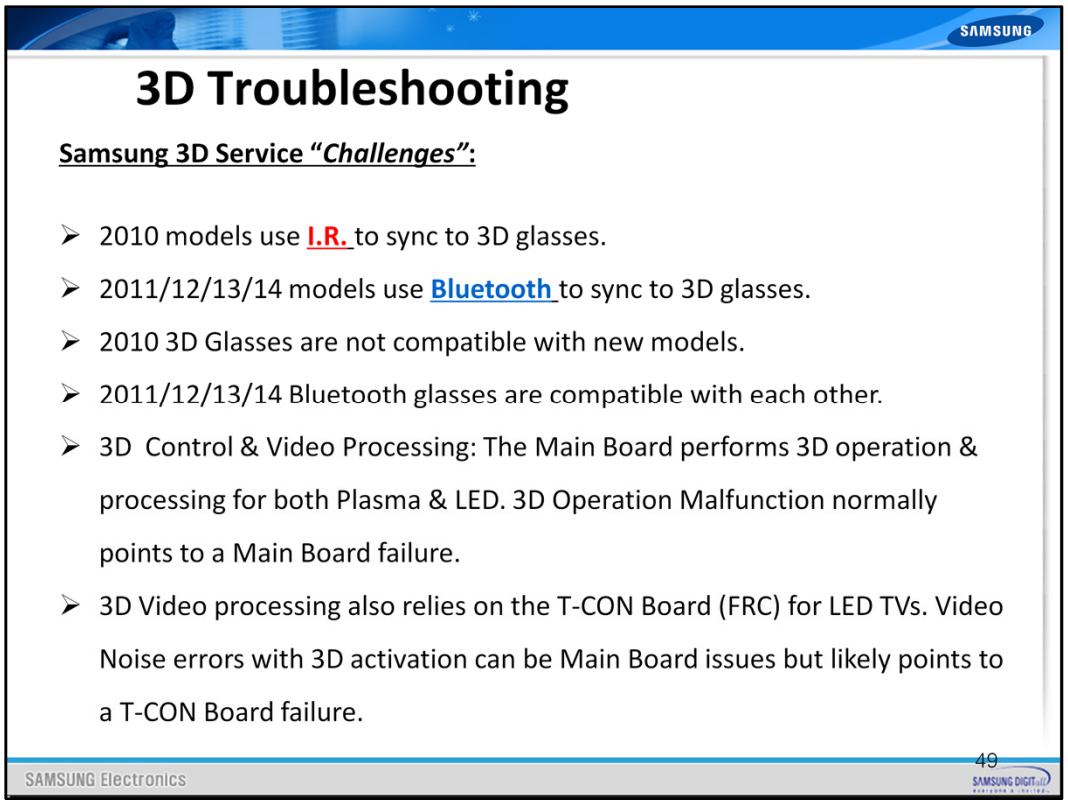


3D terms appearing in the menus are listed

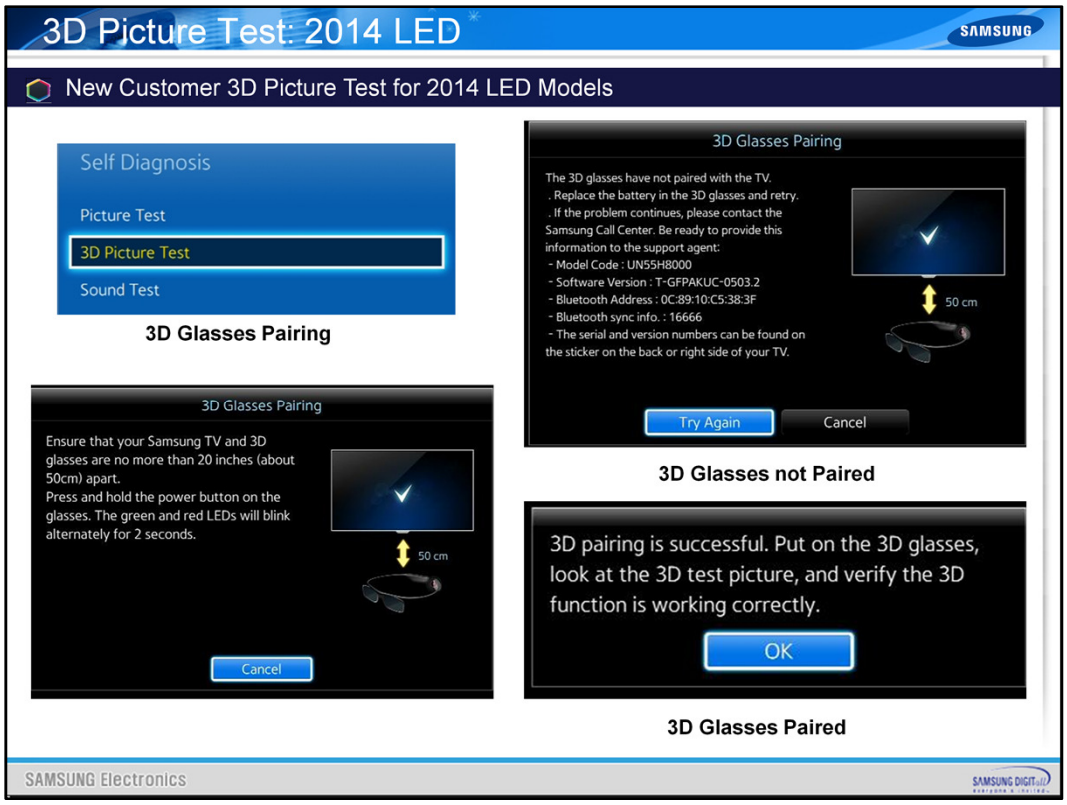
-**2D to 3D** Any 2D source is artificially changed to 3D
-**3D to 2D** Option of shutting off 3D when automatically activated.
Depth Control – Increases/Decreases the 3D effect **available only in 2 to 3D Mode**
3D Perspective Also Increases/Decreases the 3D effect in 3D Mode
L/R Correction – Adjusts Left / Right images to correspond with 3D glasses.
3D Auto View Normally "On" for auto 3D Video detection. "Off" will require manual 3D mode activation.
3D Light control Adjusts brightness of 3D Mode (Low/High)



Check functionality of 3D circuit on Main PCB.
- 0: No double image
- 10: Maximum 3D effect

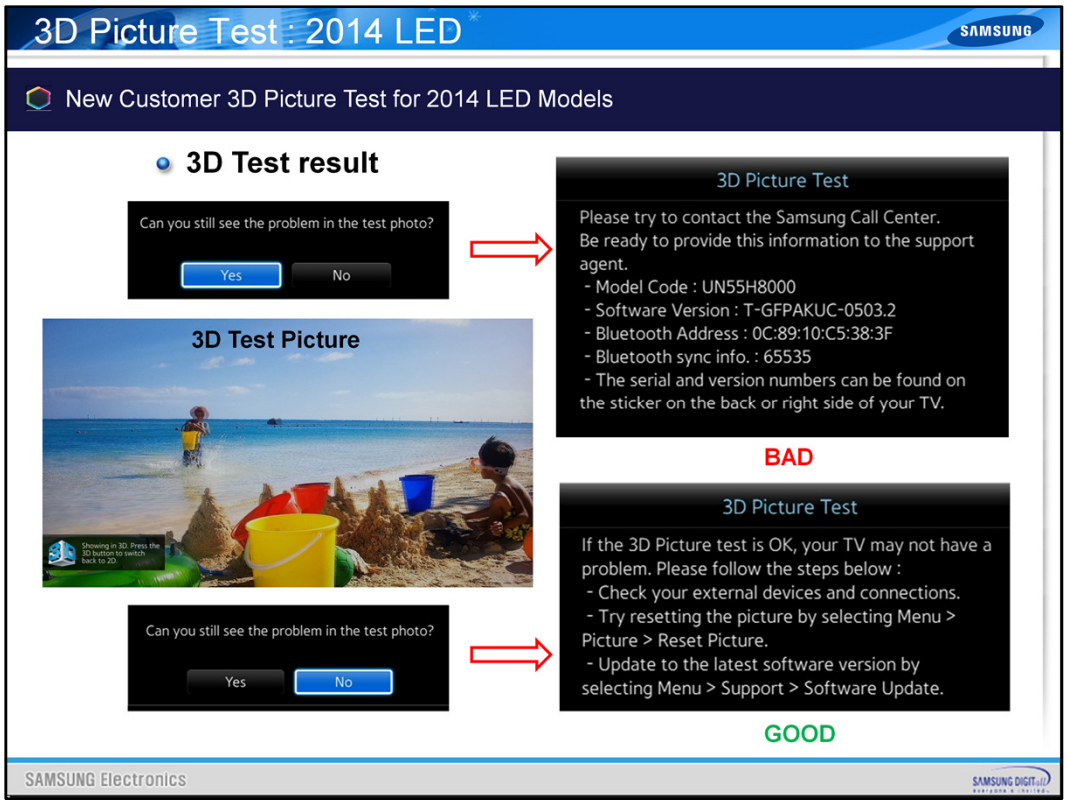


3D Troubleshooting challenges from previous years.

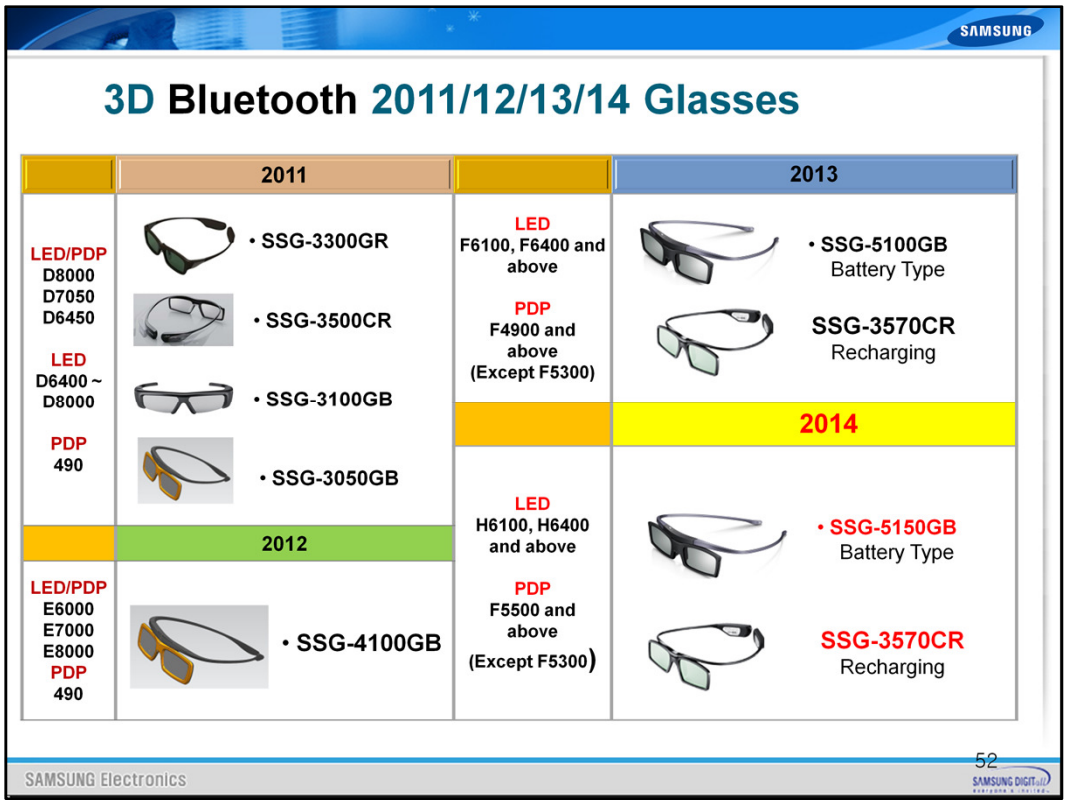


New Customer 3 D Picture Test and 3 D Glasses Pairing Test has been added for 2014 LED TVs.

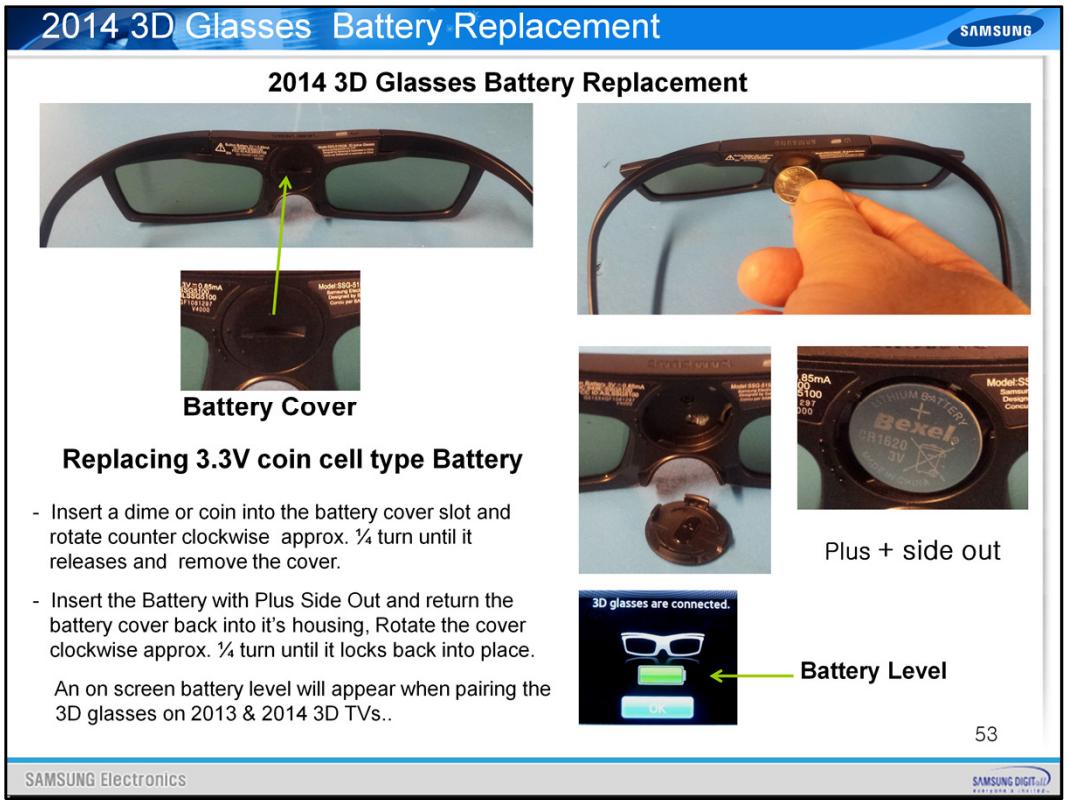
1. Select Self Diagnosis and 3 D Picture Test in the Customer Support Menu
2. You will be instructed to Pair the Glasses as shown in the bottom left screen
3. If the glasses do not pair the top right screen will appear and give direction to replace the battery, try another set of glasses, or contact Samsung Call Center with TV information listed. Note that it includes important Bluetooth pairing and Address information.
4. If the Glasses Pair you will be instructed to look at the 3 D test picture



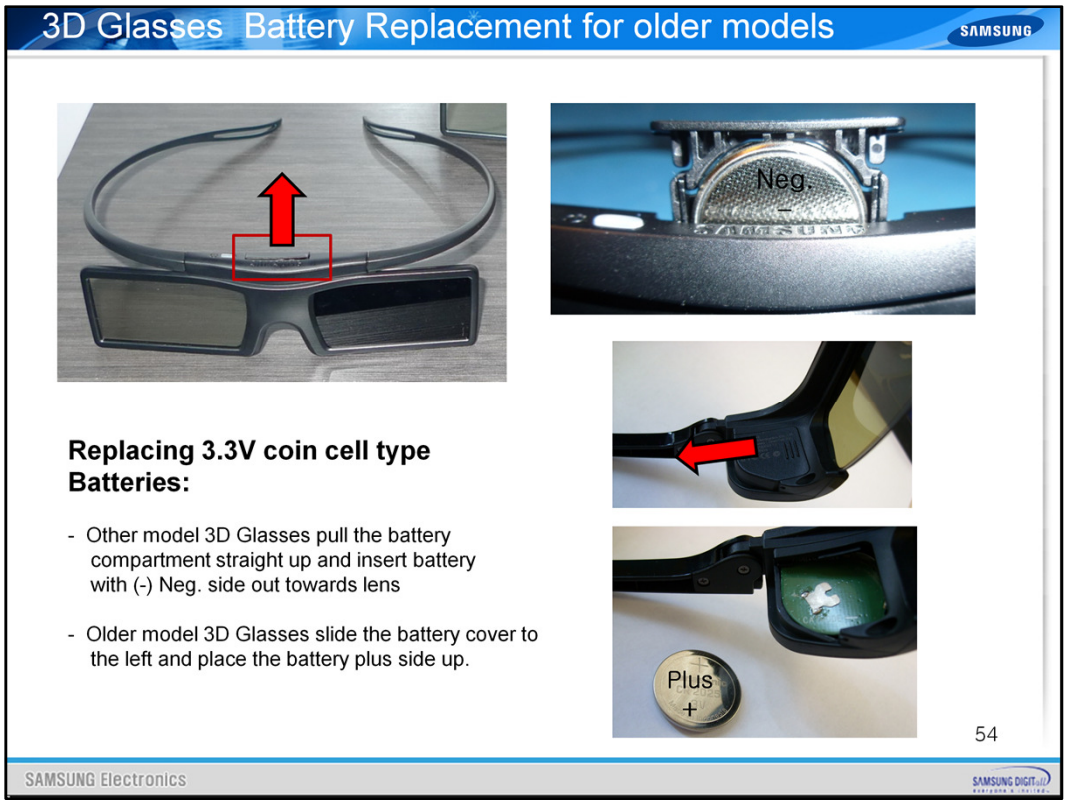
The 3D Picture Test will then appear and ask “Can you still see problem in the test photo”
If you say Yes the screen at the top right appears instructing you to contact the Samsung Call Center with the TV information displayed
If you say No the lower right hand screen appears giving troubleshooting instructions, including checking external device, resetting the TV, and performing a software update to the TV.



2011 2012 2013 & 2014 Bluetooth Model 3D Glasses are listed. All Bluetooth Model 3D glasses are compatible. The 2010 IR 3D Glasses are not compatible.

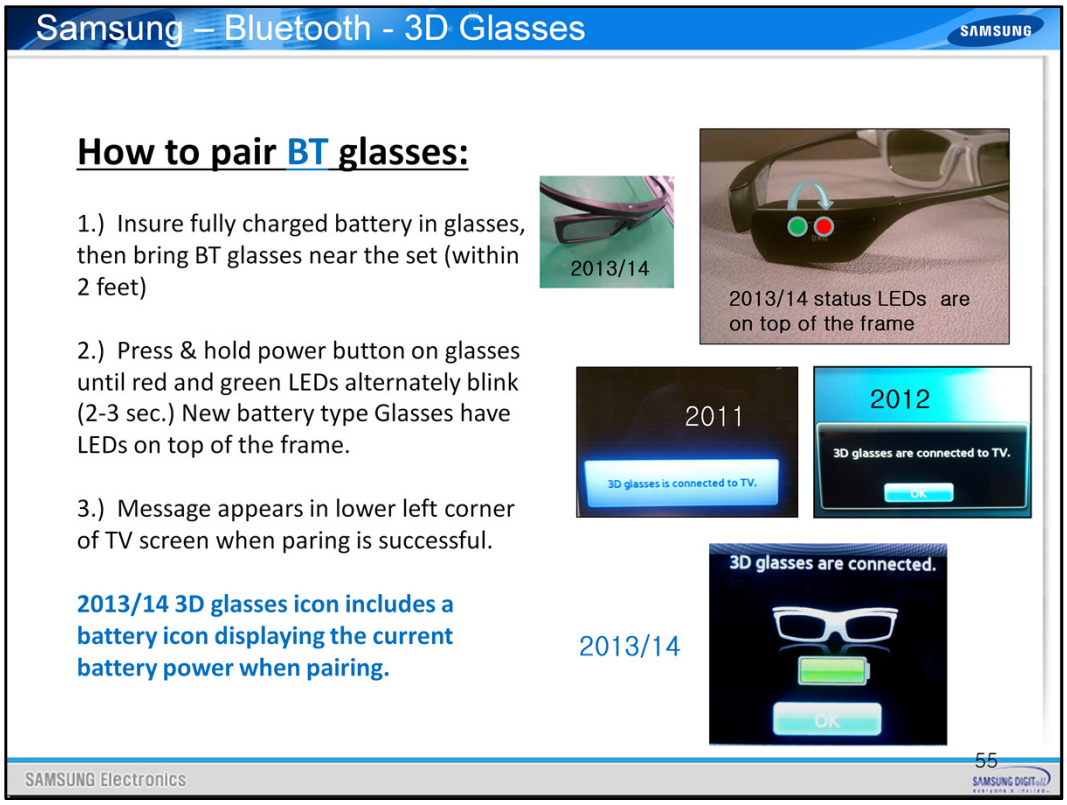


Replacing 3.3V coin cell type Battery

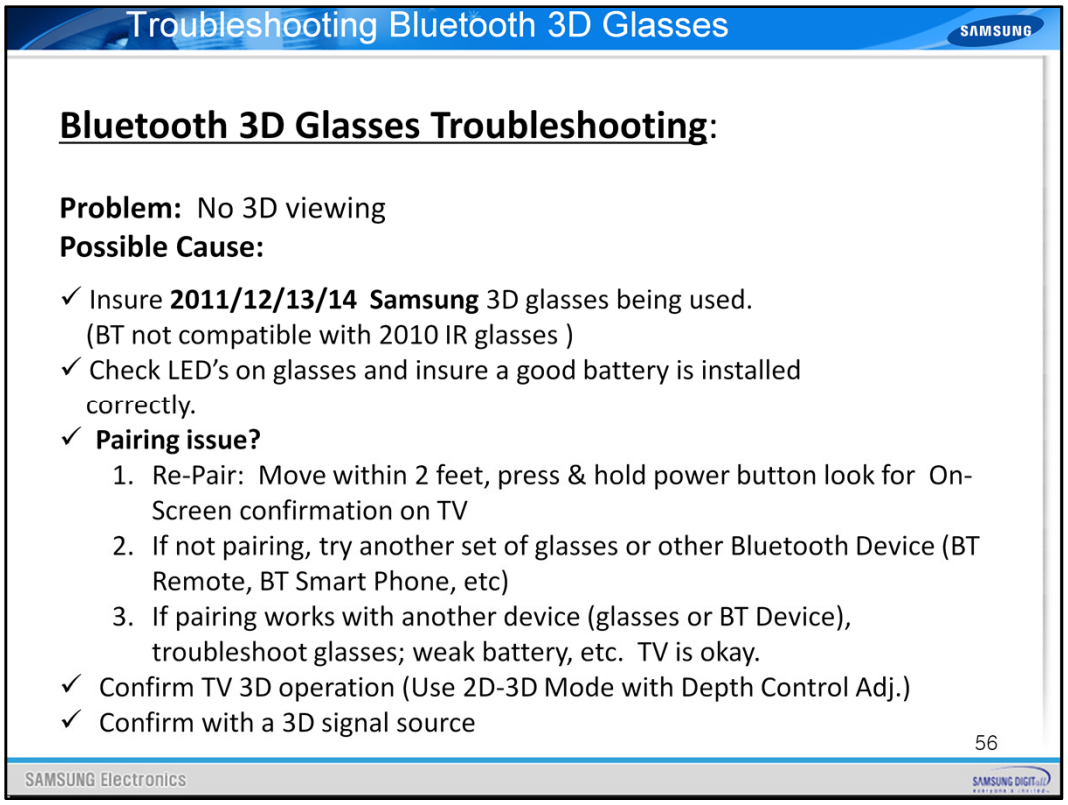


- For other model 3D Glasses pull the battery compartment straight up and insert battery with (-) Neg. side out towards lens

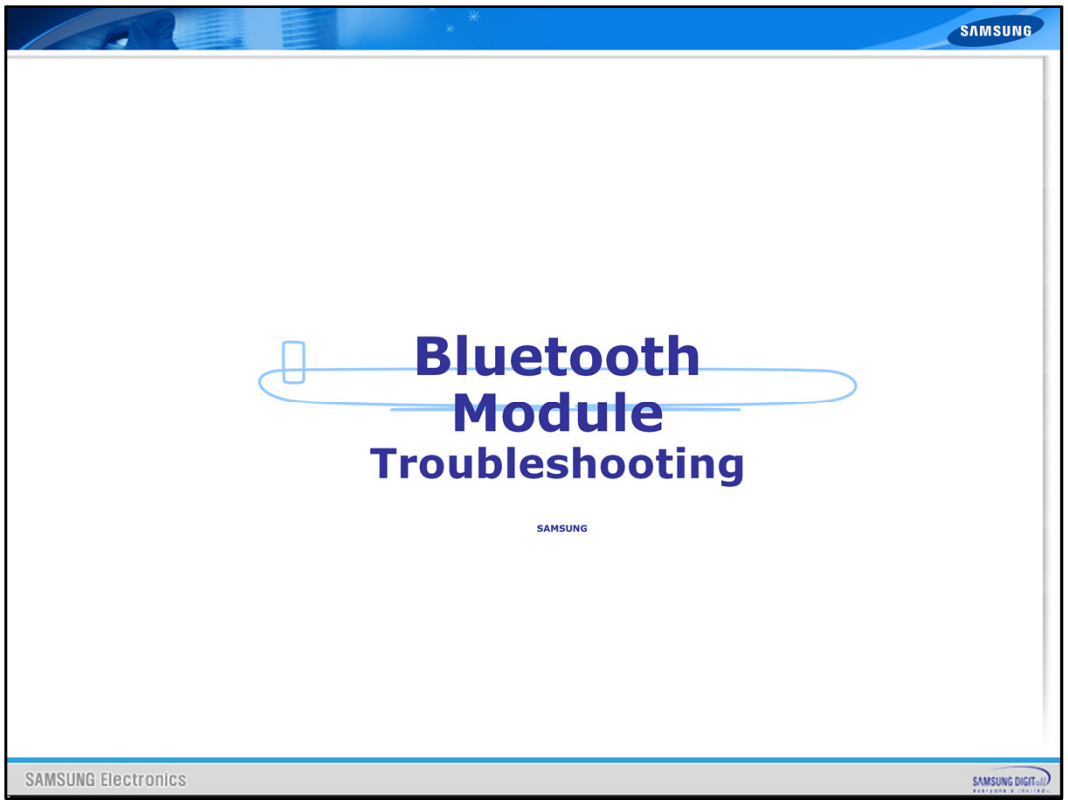
- Older model 3D Glasses slide the battery cover to the left and place the battery plus side up.



Pairing 2014 Bluetooth Glasses is the same as 2011, 2012 and 2013 Bluetooth models… New pairing icon is displayed including the current Battery Power condition.



Bluetooth 3D Glasses Troubleshooting: Problems listed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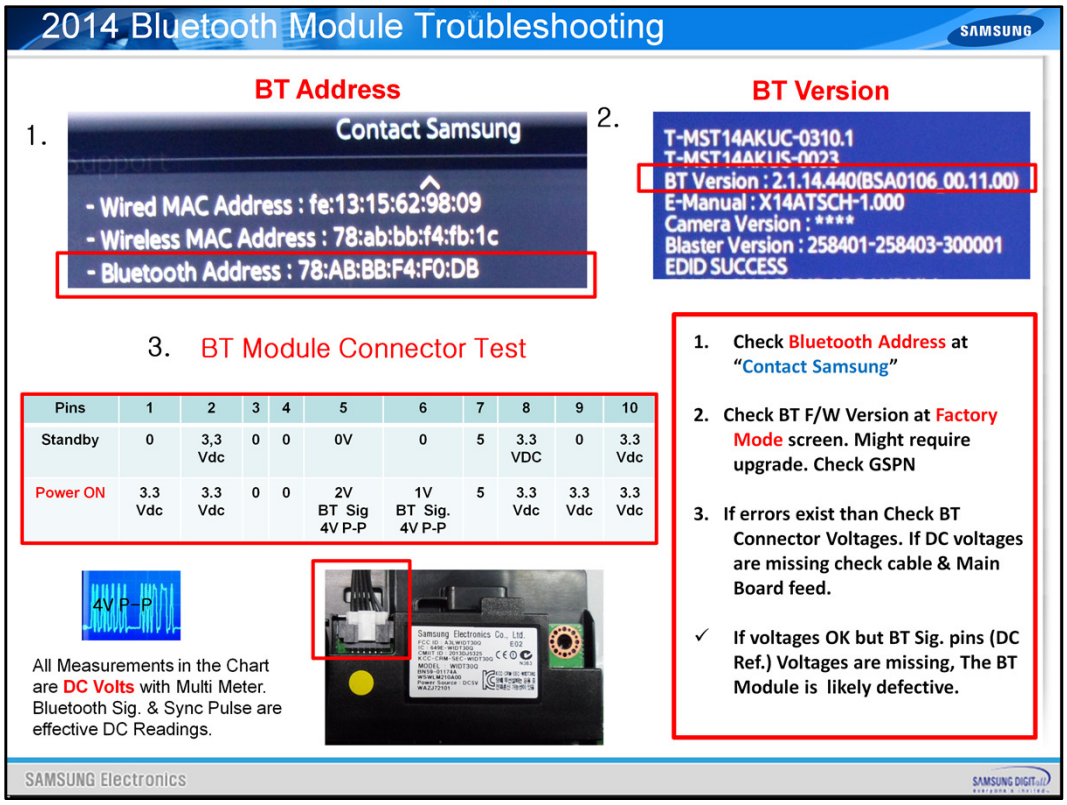
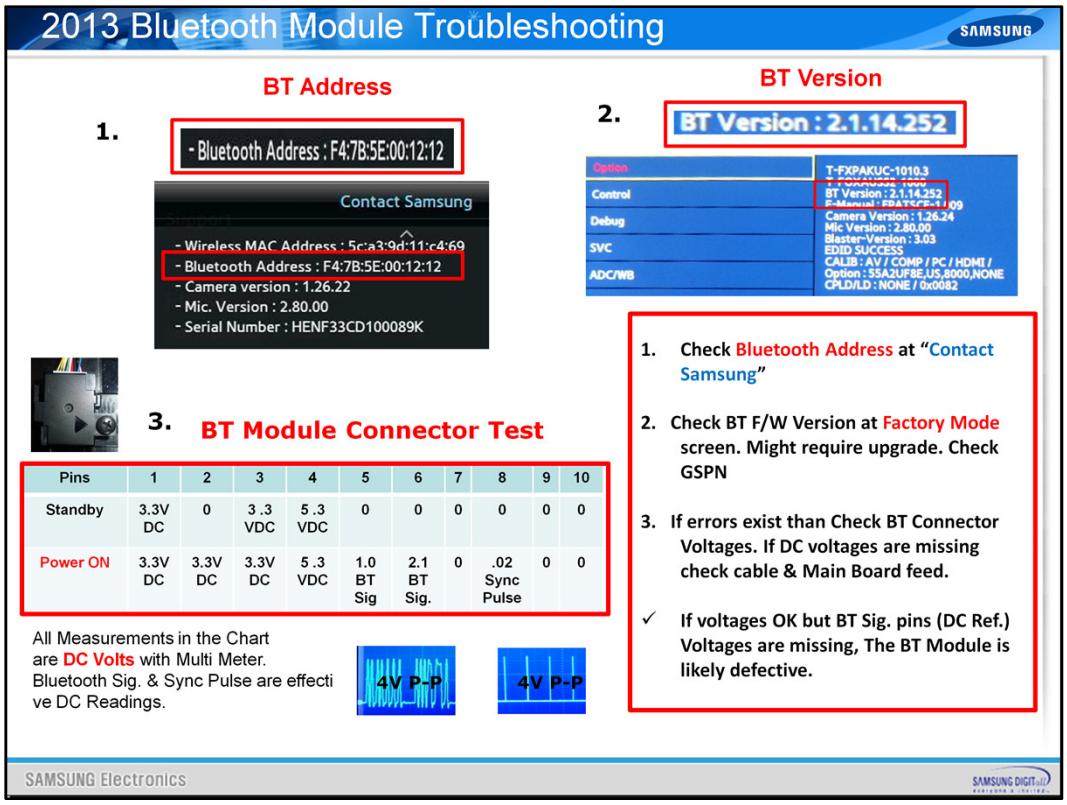


Important 2014 Bluetooth Module Troubleshooting:

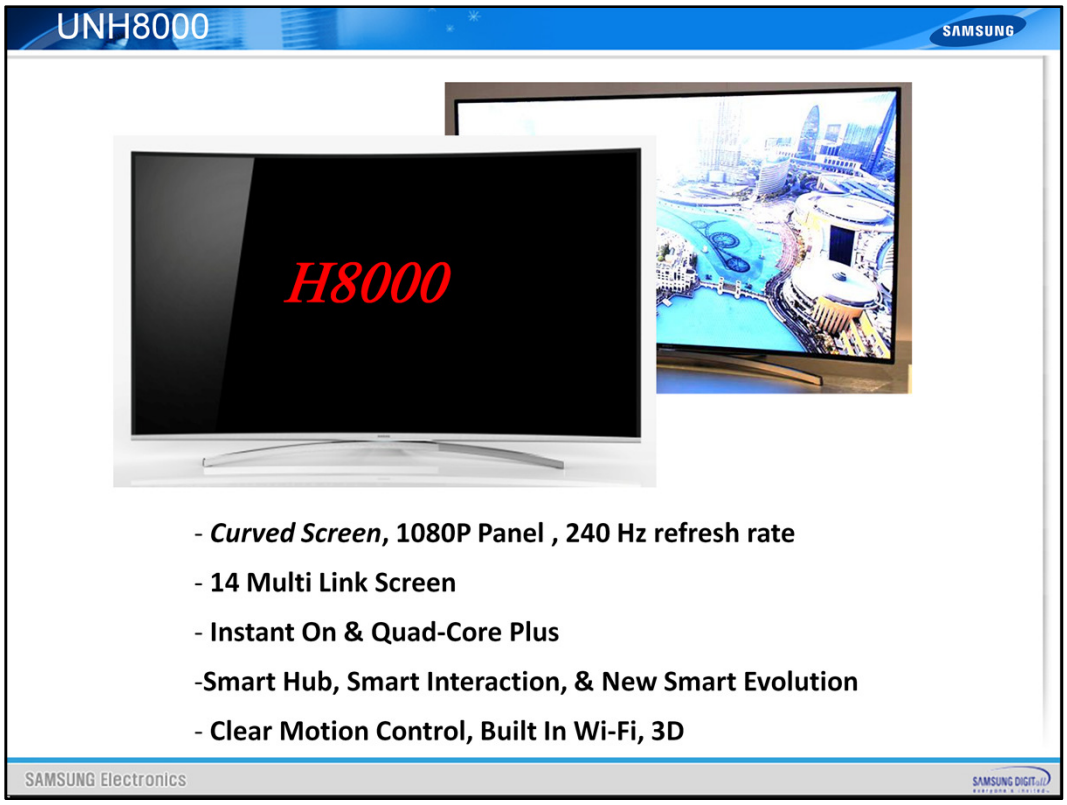
1. **Check Bluetooth Address at "Contact Samsung"**
2. **Check BT Version at Factory Mode screen. Might require upgrade. Check GSPN**
3. **If errors exist than Check BT Connector Voltages. If DC voltages are missing check cable & Main Board feed.**

✓ **If voltages OK but BT Sig. pins (DC Ref.) Voltages are missing, The BT Module is likely defective.**

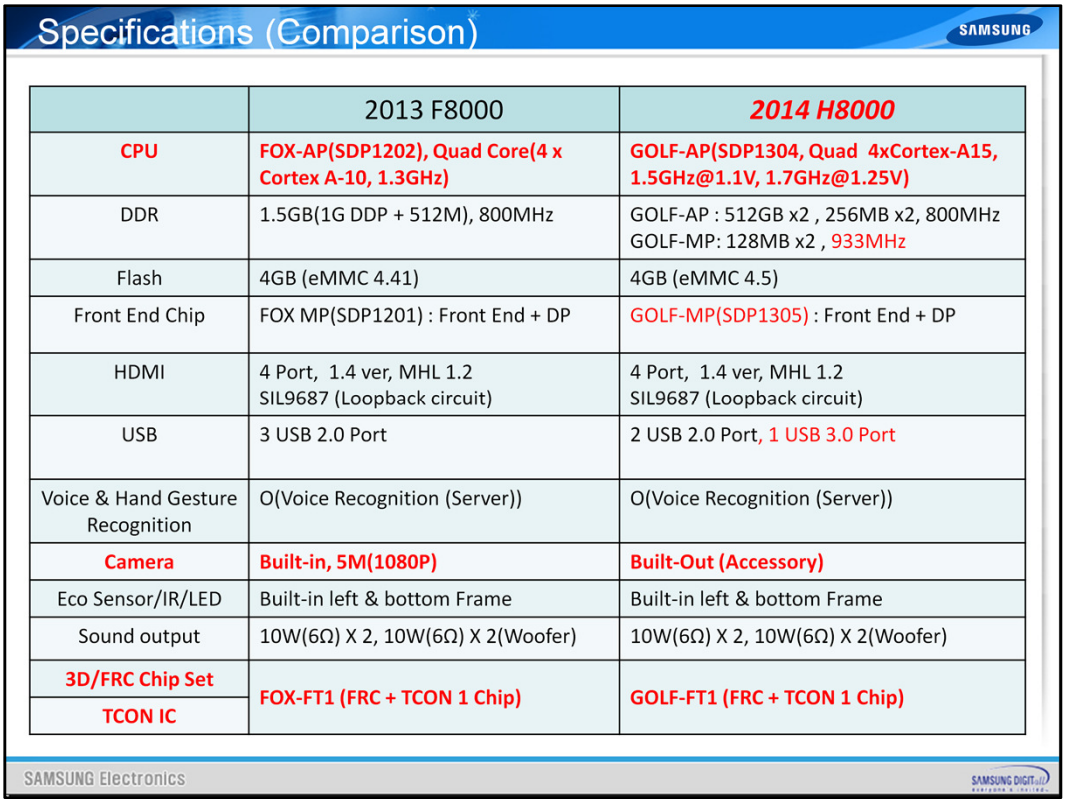


Important 2013 Bluetooth Module Troubleshooting is listed.
This is the same test as for 2014 with the exception that the Bluetooth 10 pin connector is configured differently.

LED

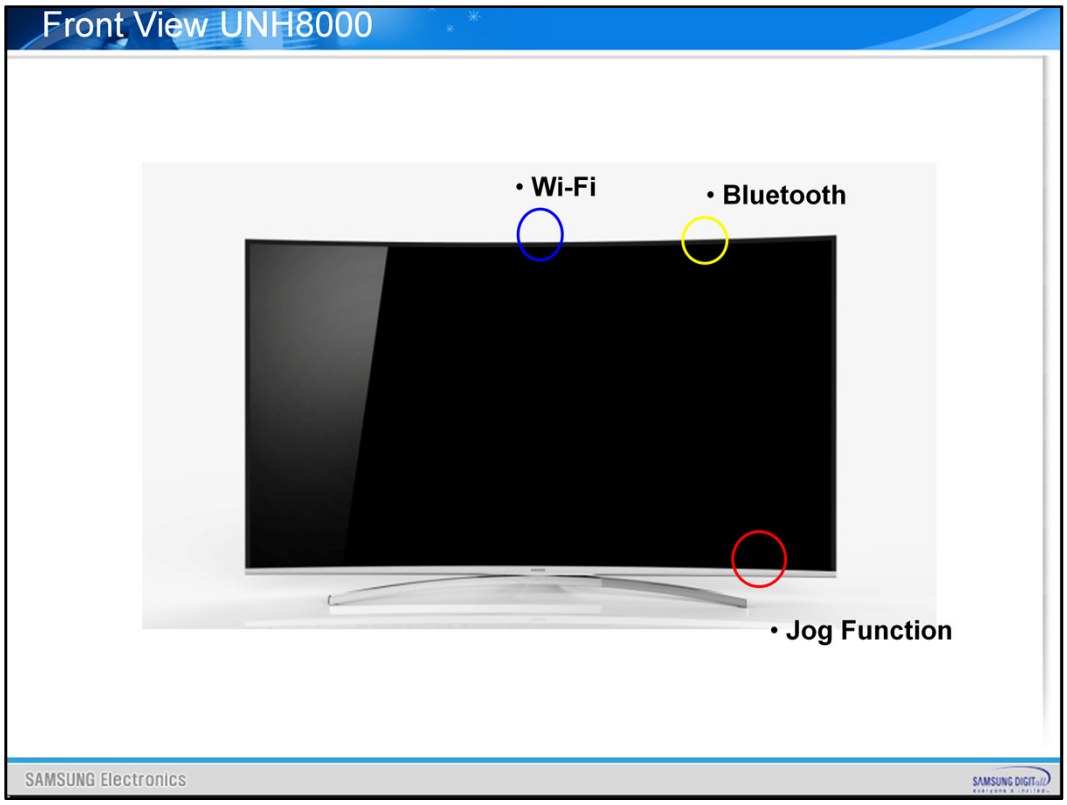


H8000 with featured items listed

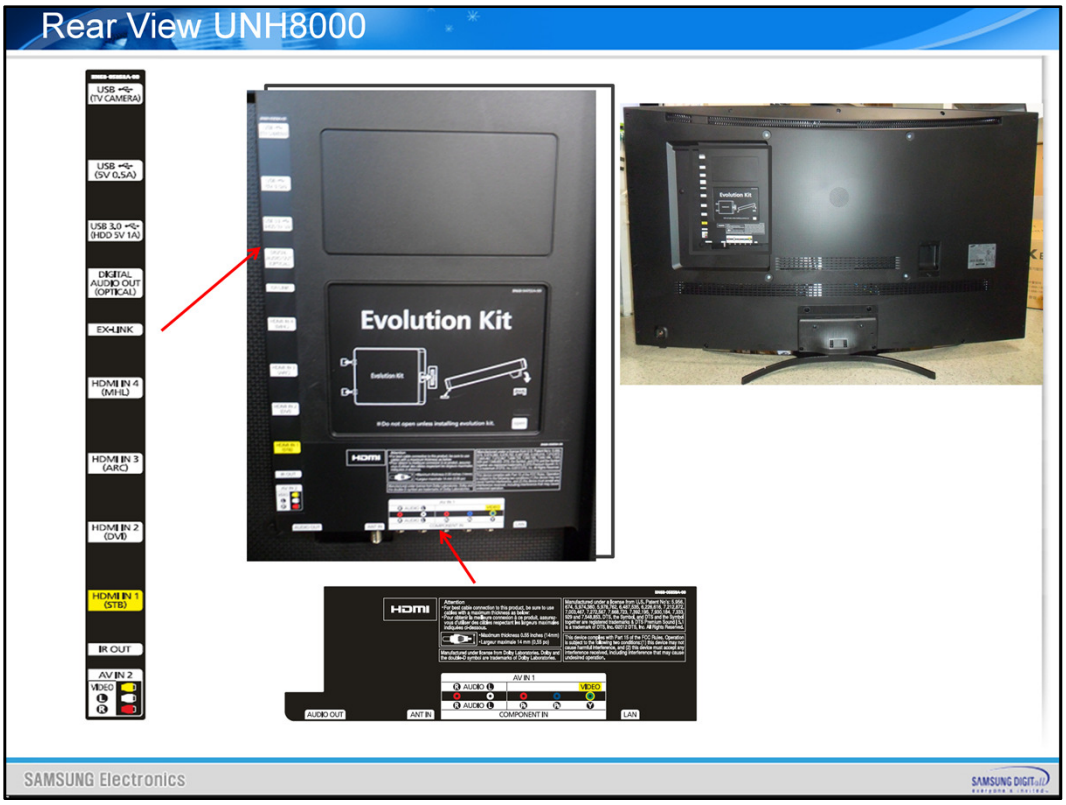


	2013 F8000	2014 H8000
CPU	FOX-AP(SDP1202), Quad Core(4 x Cortex A-10, 1.3GHz)	GOLF-AP(SDP1304, Quad 4xCortex-A15, 1.5GHz@1.1V, 1.7GHz@1.25V)
DDR	1.5GB(1G DDP + 512M), 800MHz	GOLF-AP : 512GB x2 , 256MB x2, 800MHz GOLF-MP: 128MB x2 , 933MHz
Flash	4GB (eMMC 4.41)	4GB (eMMC 4.5)
Front End Chip	FOX MP(SDP1201) : Front End + DP	GOLF-MP(SDP1305) : Front End + DP
HDMI	4 Port, 1.4 ver, MHL 1.2 SIL9687 (Loopback circuit)	4 Port, 1.4 ver, MHL 1.2 SIL9687 (Loopback circuit)
USB	3 USB 2.0 Port	2 USB 2.0 Port, 1 USB 3.0 Port
Voice & Hand Gesture Recognition	O(Voice Recognition (Server))	O(Voice Recognition (Server))
Camera	Built-in, 5M(1080P)	Built-Out (Accessory)
Eco Sensor/IR/LED	Built-in left & bottom Frame	Built-in left & bottom Frame
Sound output	10W(6Ω) X 2, 10W(6Ω) X 2(Woofer)	10W(6Ω) X 2, 10W(6Ω) X 2(Woofer)
3D/FRC Chip Set	FOX-FT1 (FRC + TCON 1 Chip)	GOLF-FT1 (FRC + TCON 1 Chip)
TCON IC		

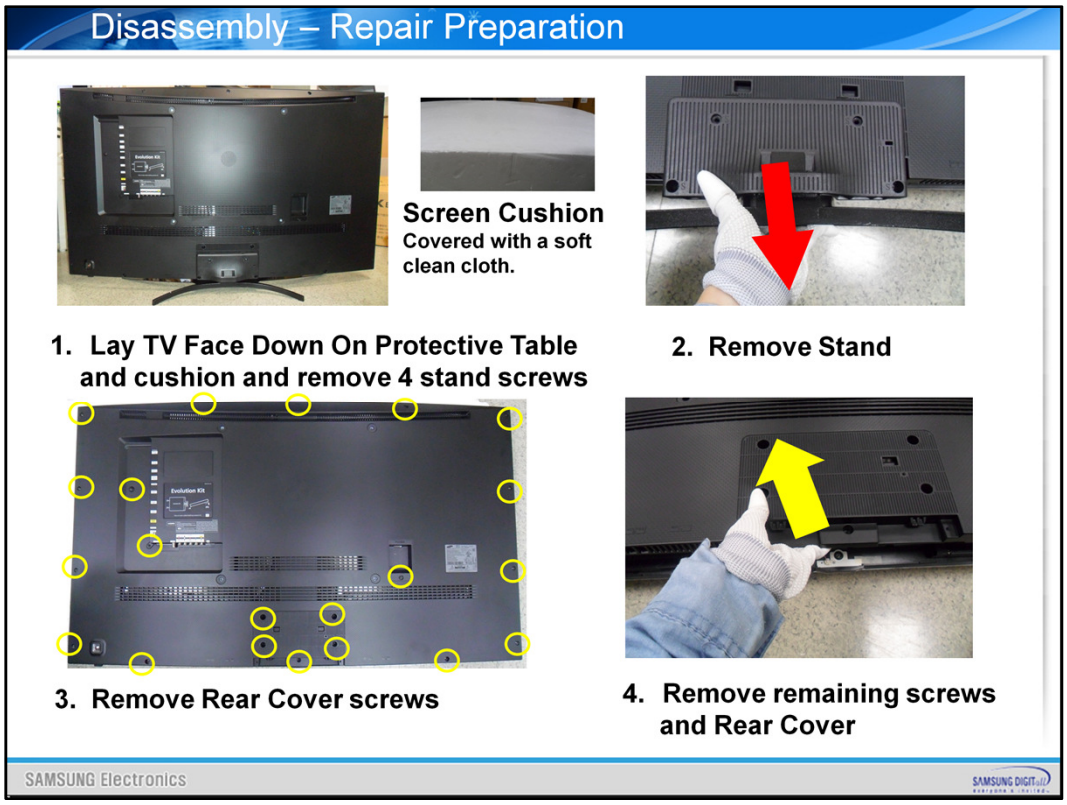
2014 H8000 specifications are shown as compared to the 2013 F8000 series.
Highlighted is the new Golf Quad Core processor
The built in MOIP camera has been removed but is available as an accessory option.



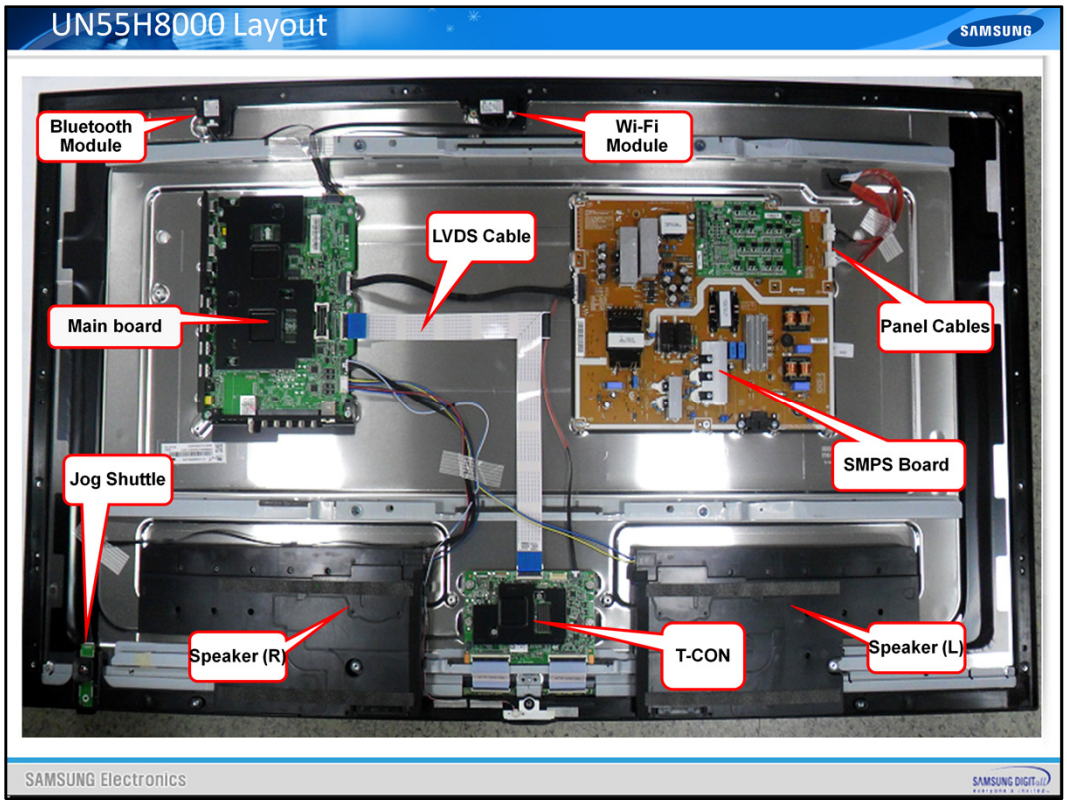
Front View includes locations of the Wi-Fi Module and Bluetooth Module now located at the top screen area, and Jog Function Control lower right side.



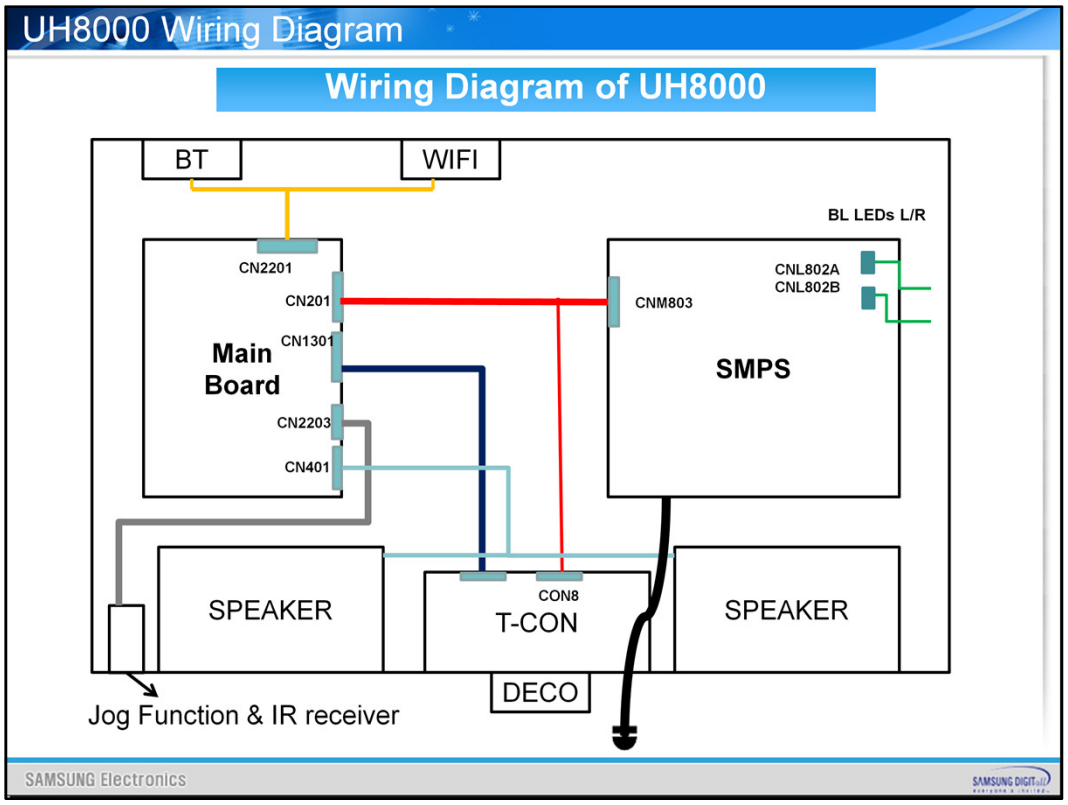
The UNH8000 Rear View includes the connections layout and Evolution Kit access for performing future upgrades.



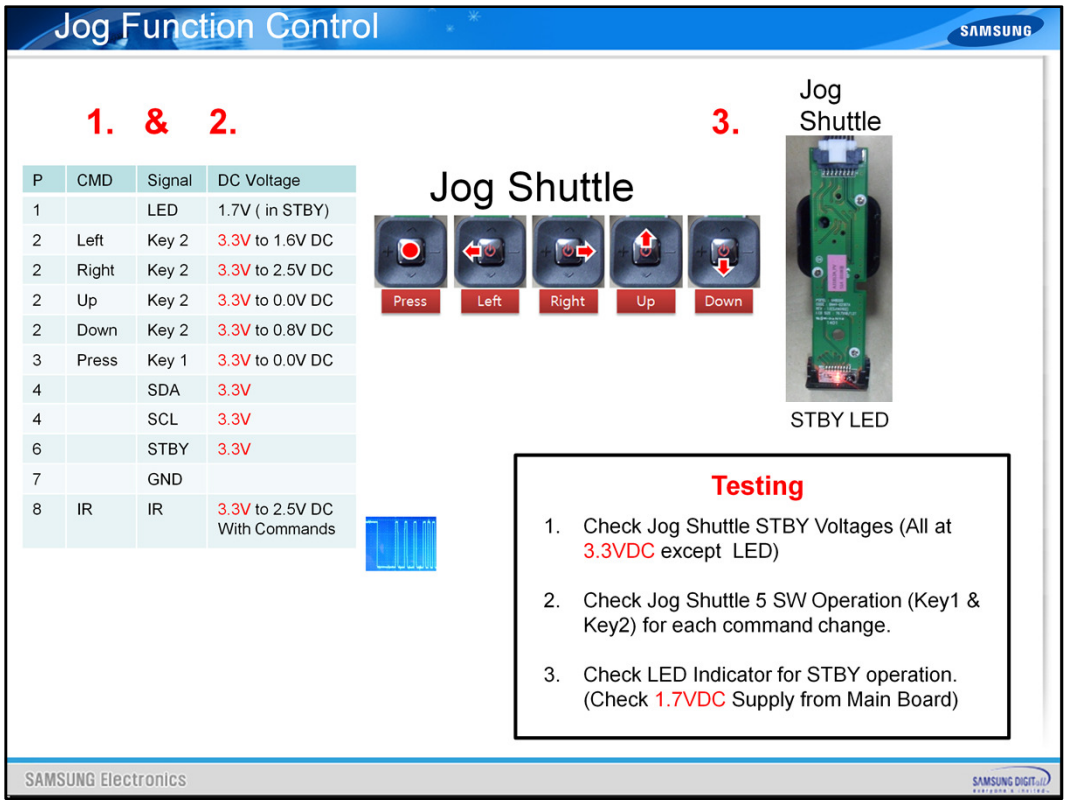
Important disassembly procedure is to protect the TV and curved screen. It must be laid face down on protected cushion to remove the stand before the rear Cover can be removed.



The Layout for the UN46H8000 is shown and includes the Main Board, LVDS Cable, SMPS Board, T-CON Board, Jog Shuttle, & Speakers. The Wi—Fi Module and Bluetooth Module are now located near the top of the frame.

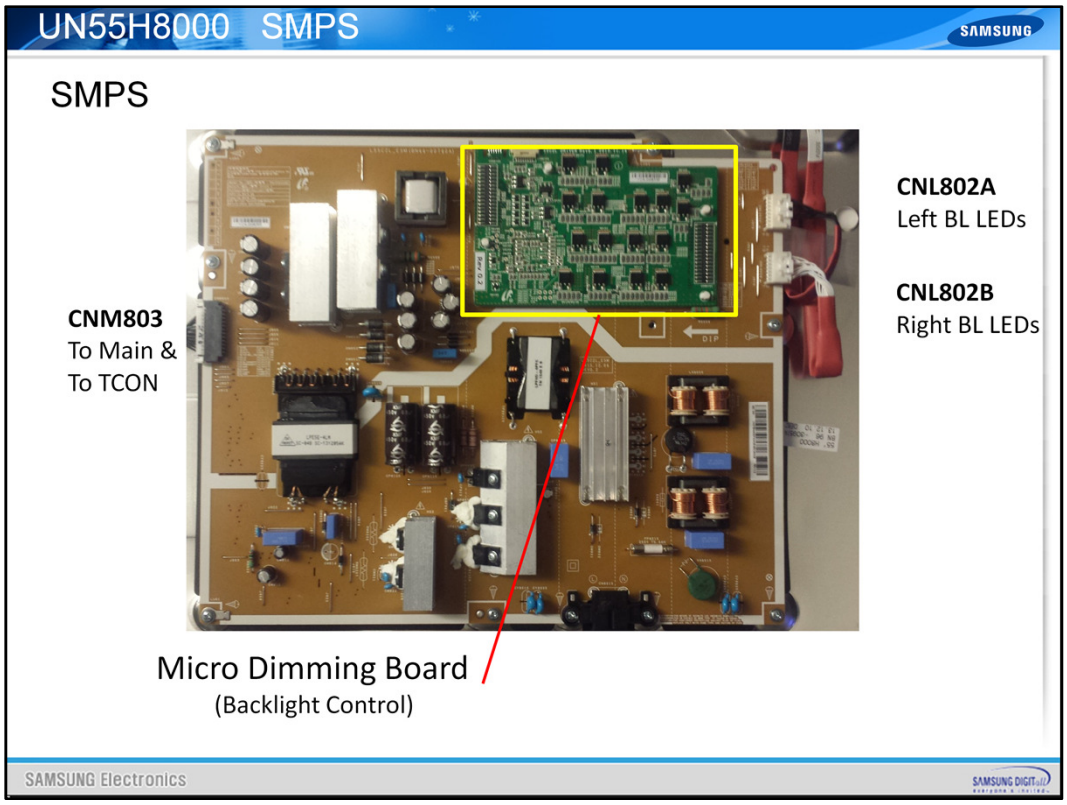


Wiring Diagram includes Main cabling and connectors to SMPS, Bluetooth and Wi-Fi Modules. Main to Speaker, Jog Function, and Deco - Samsung Logo. Main through LVDS cable to T-CON Board, as well as T-CON backlight control signals to SMPS and SMPS to the Back Light Panel LEDs.

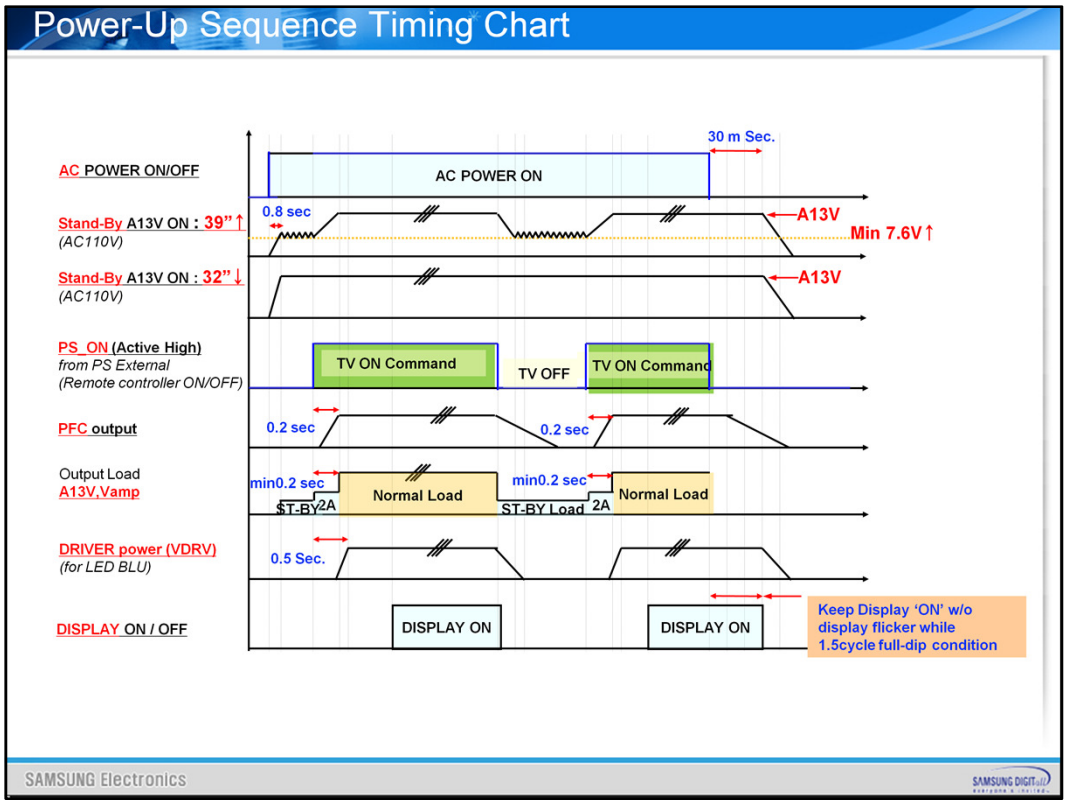


TESTING

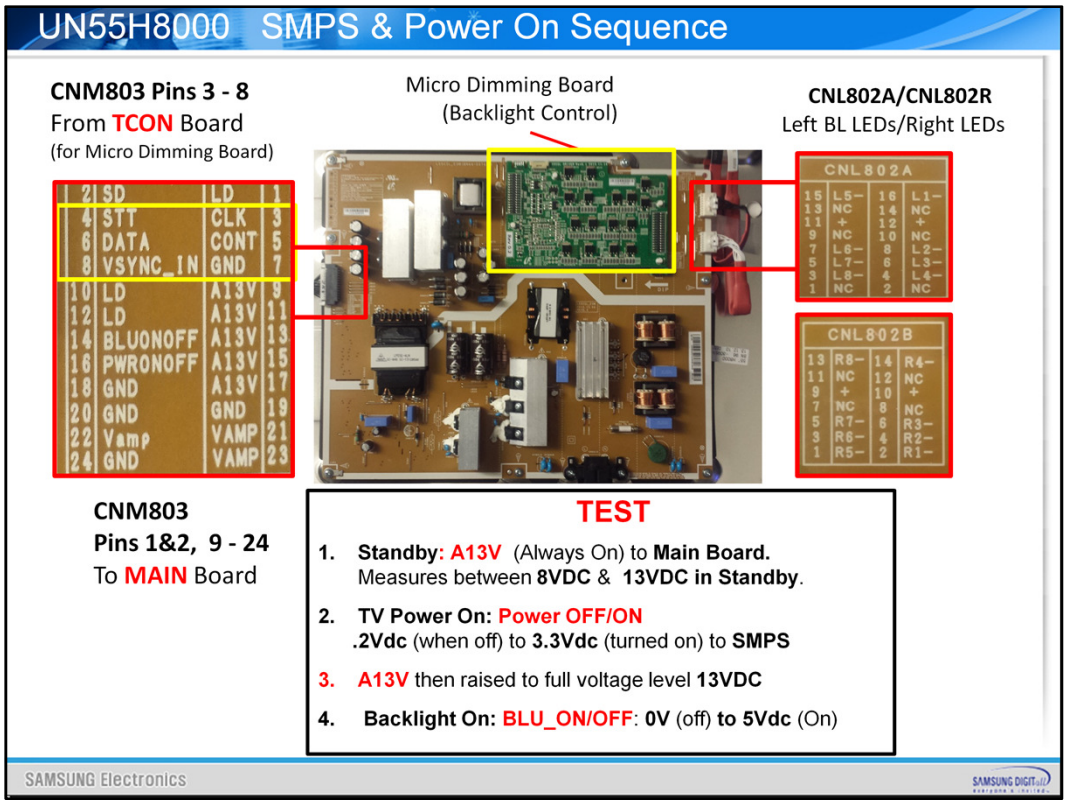
1. Check Jog Shuttle STBY Voltages (All at 3.3V except LED at 1.8V)
2. Check Jog Shuttle 5 SW Operation (Key1 & Key2) for each command change
3. Check LED Indicator for STBY operation. (Check 1.8V Supply from Main Board)



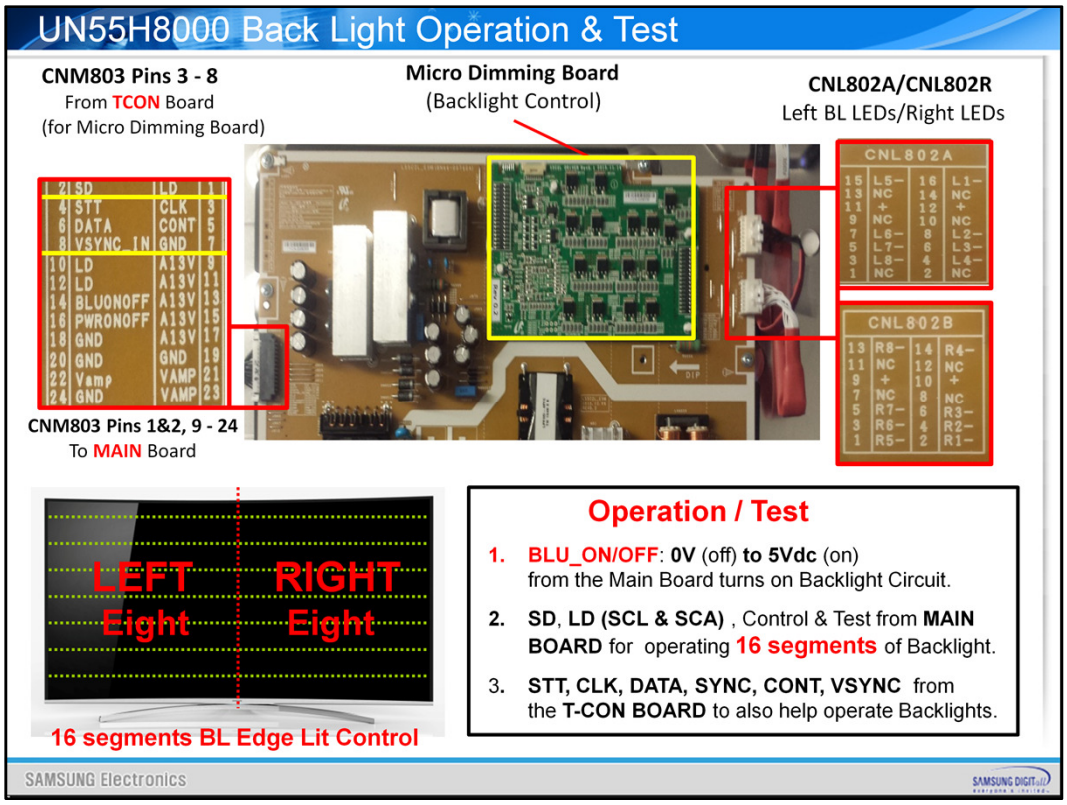
The UN55H8000 SMPS seen here includes the attached Micro Dimming Board (not provided separately), and connectors CNM803 to both the Main & T-CON Boards as well as the two L&R LED Backlight LEDs Connectors CNL802A & B.



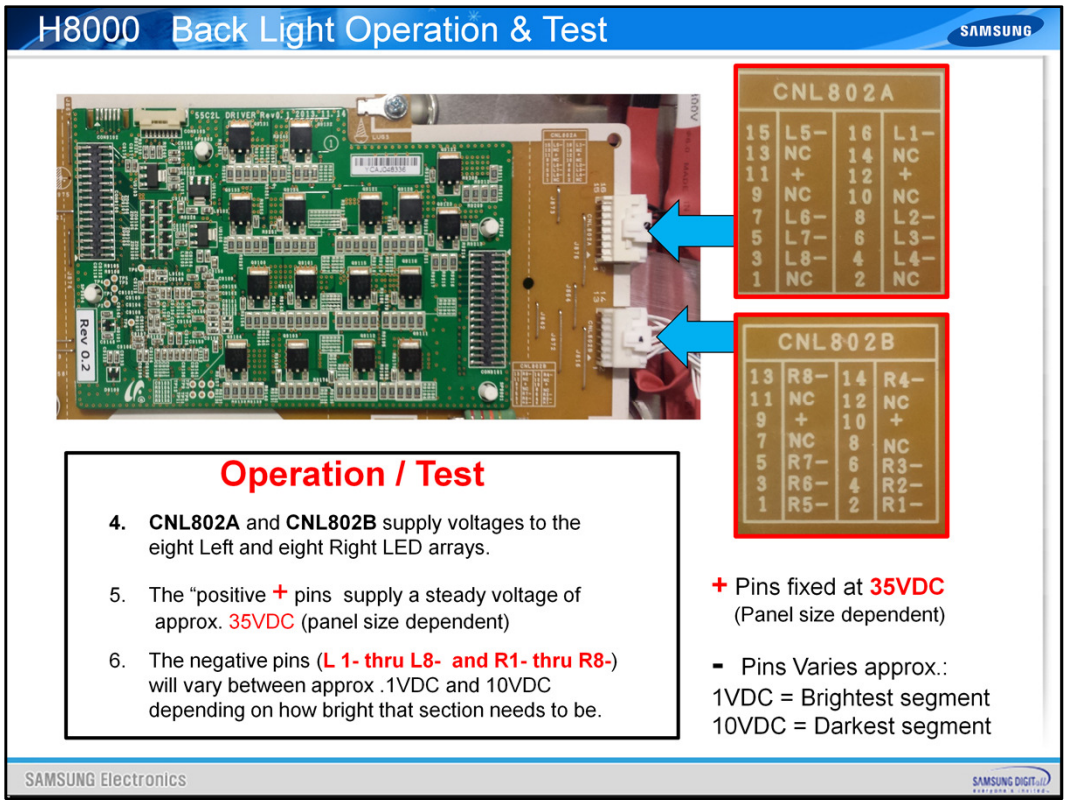
Power-Up Sequence Timing Chart is provided. It shows supply operation during standby, power on and power down "TV OFF" sequence. Details and testing of the Power sequence will be described in the next slides.



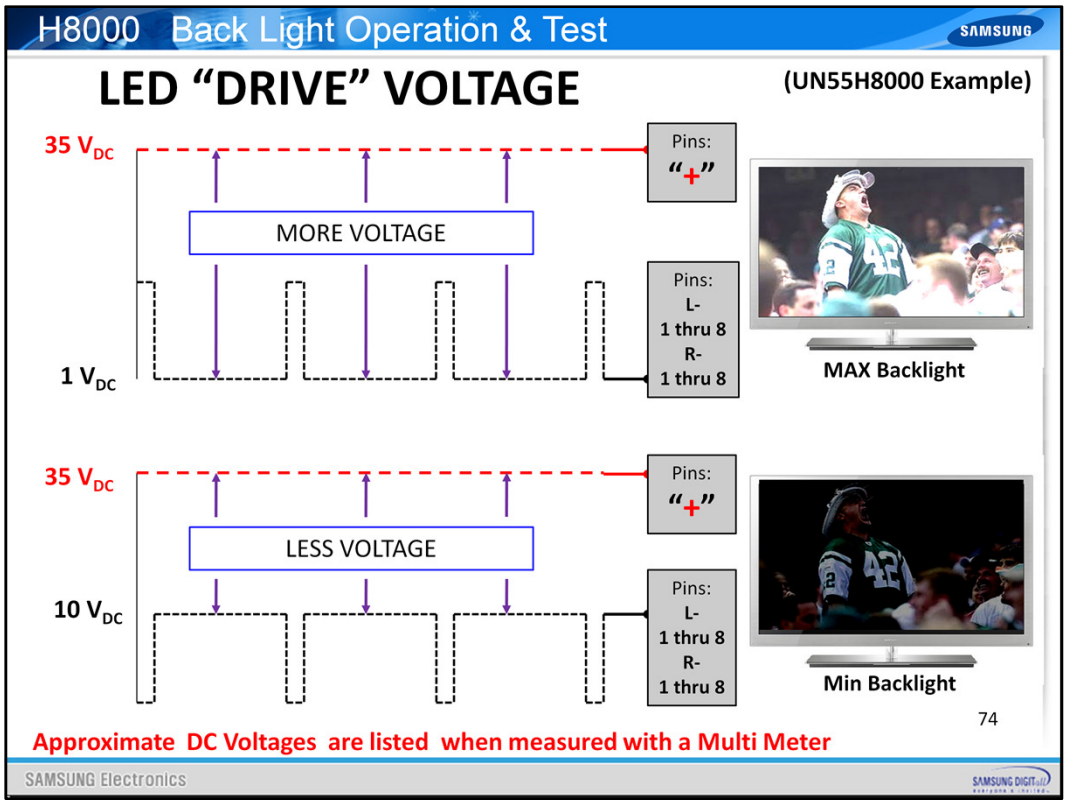
New for 2014 SMPS has been the removal of A5V standby and “B” switched voltages. There is only A13V that is for both for standby and power on operation. Connectors CNM803 includes Pins 3 thru 8 from the T-CON Board for Micro Dimming Board, and Pins 1&2 For testing initial power on sequence follow steps 1 through 4.



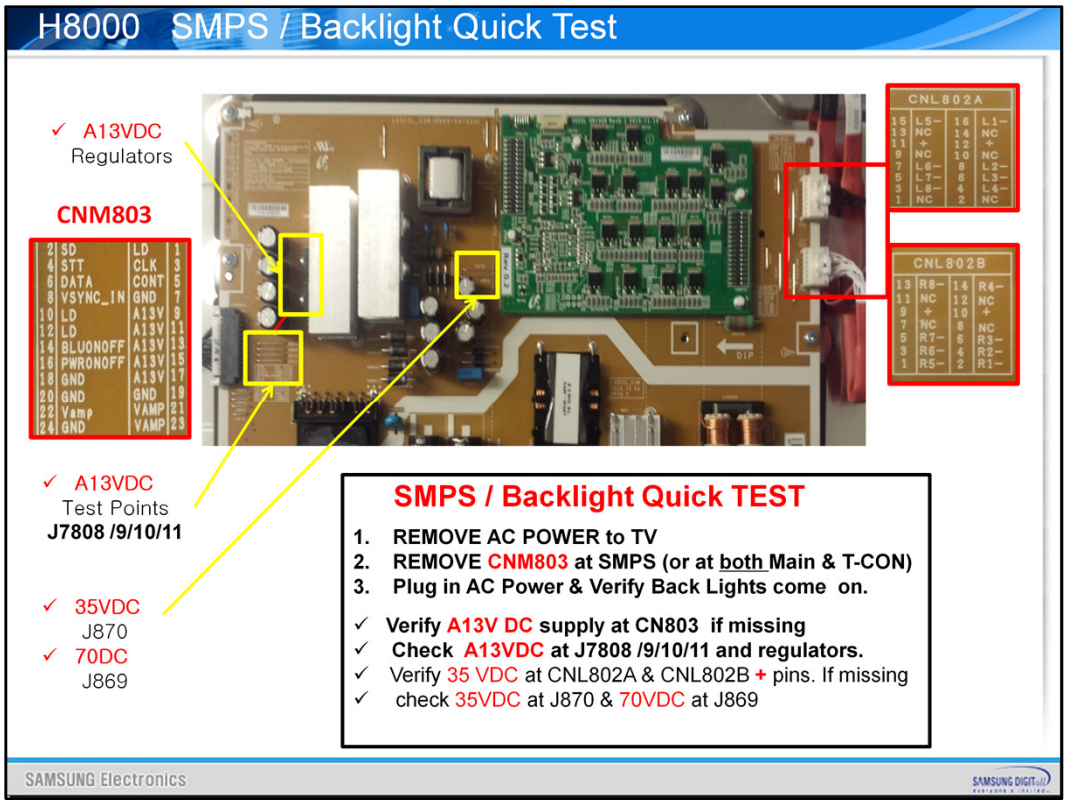
The H8000 TVs use 16 individually controlled L&R segments of Edge Lit LEDS. The operation of these segments are controlled by the Main Board monitoring the video signal and sending commands to the Micro Dimming Board to raise or lower the level of each Back Light segment. The T-CON Board also supplies important operating information to the Micro Dimming Board. See Steps 1 through 3



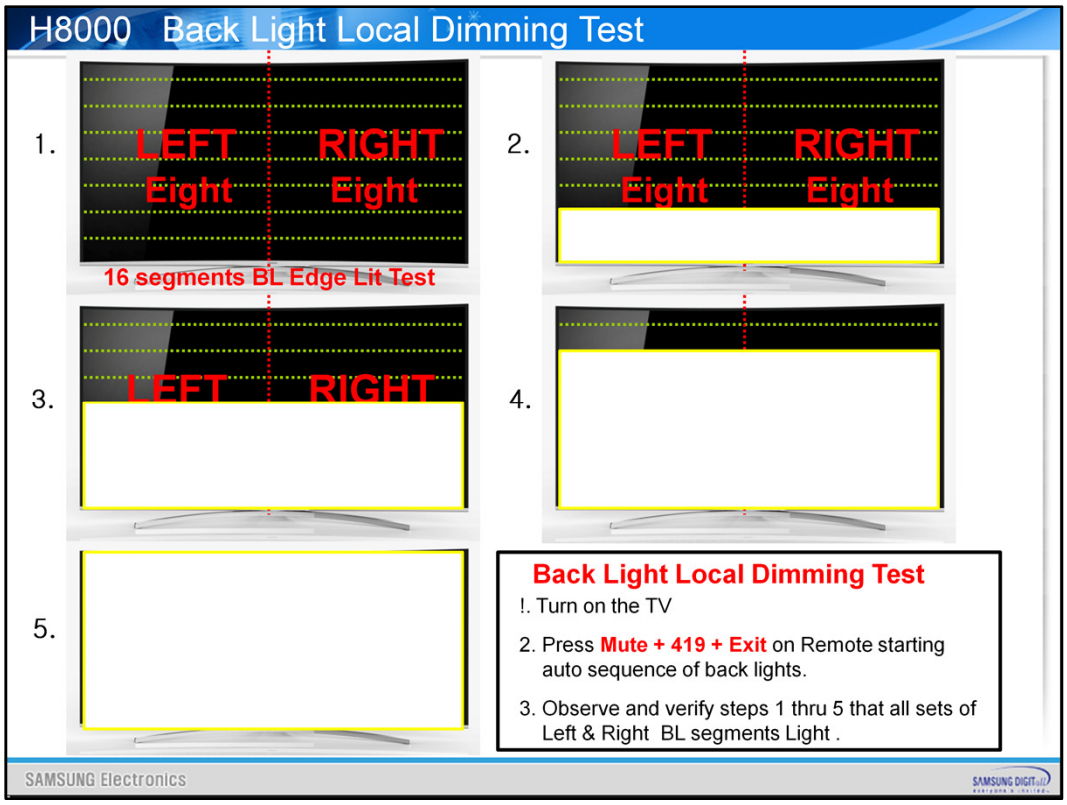
Back light Operation & Test continues with important SMPS BL output Drives: Steps 4 thru 6.



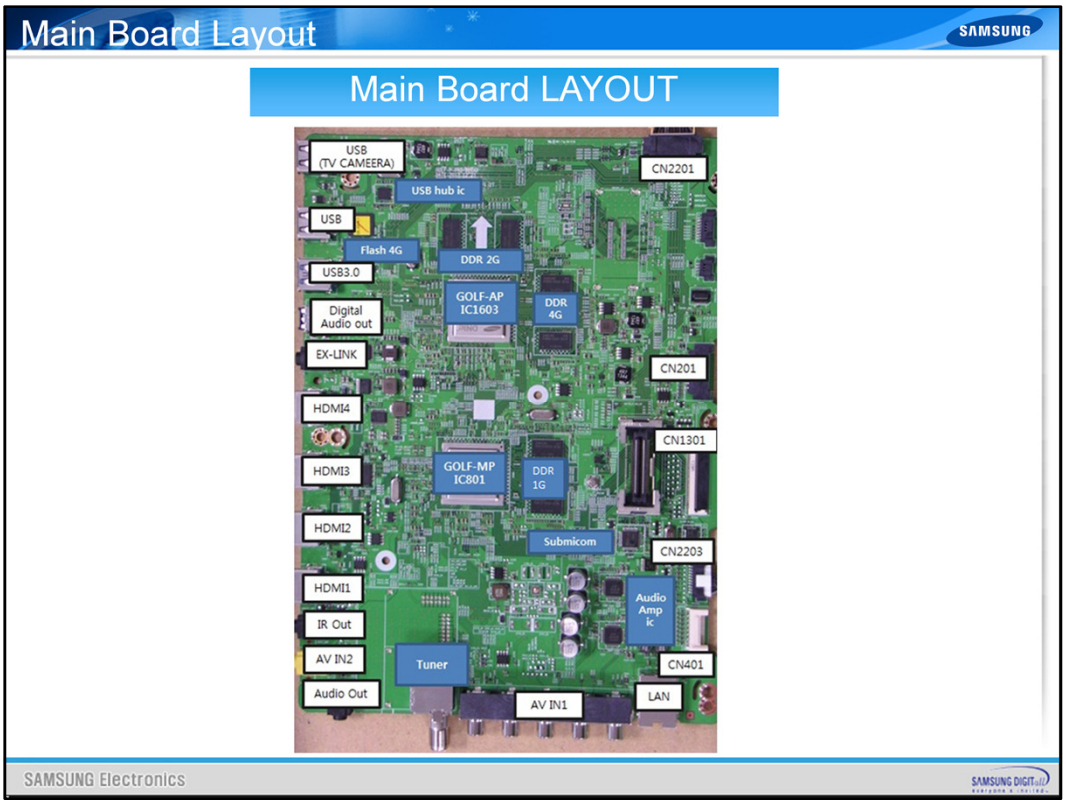
LED Drive operation is displayed and includes the fixed 35V (example) Supply to the plus LED Pins and varying 10V supply to the negative LED Pins along with their effect on screen Backlight condition. Notice the 10 volt supply is actually a TTL type signal that varies in duty cycle on time. As this negative side 10 volt drive goes higher in level (more on time of the 10V feed) the panel LEDs becomes dimmer. Use a standard DC volt meter to test the effective voltage and changes.



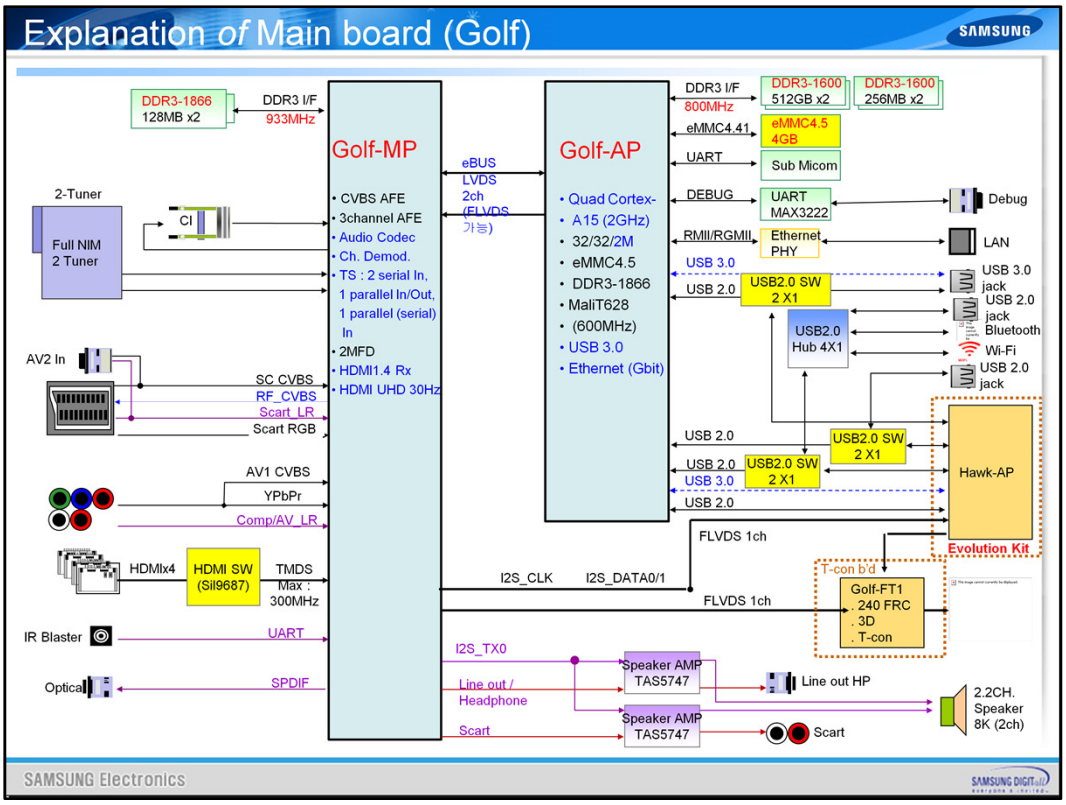
Quick Test of SMPS & Backlight Operation: Follow Steps & Check Points in Chart



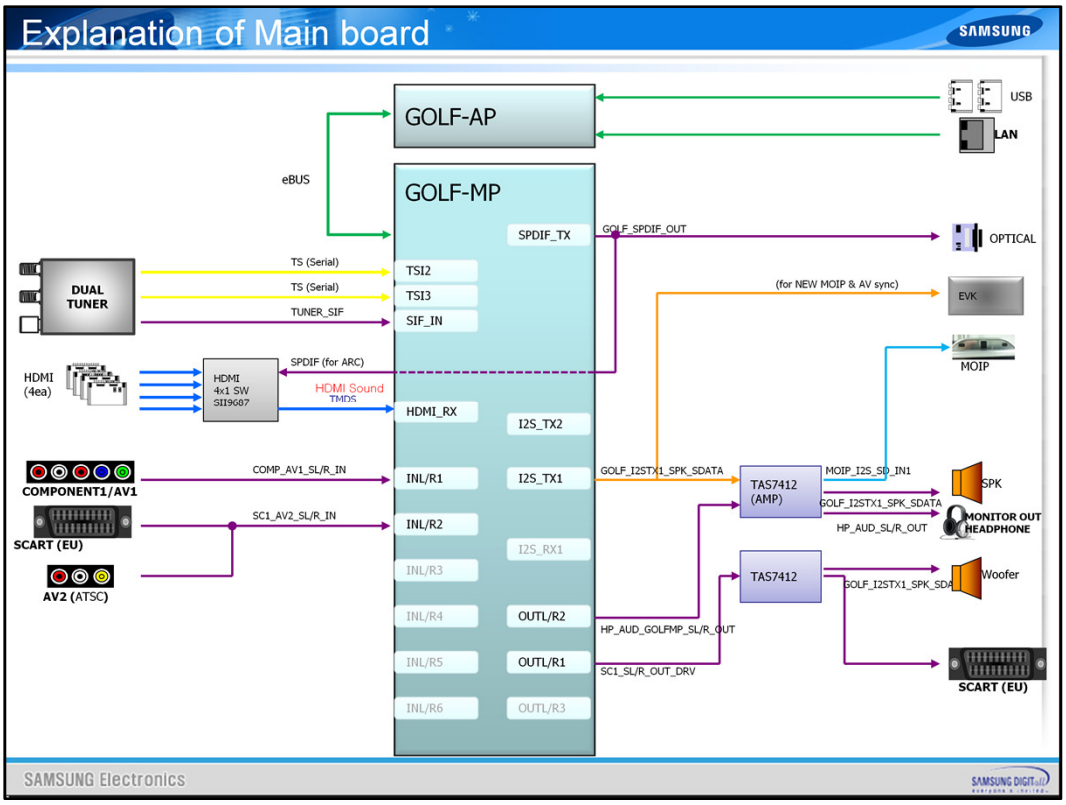
Back Light Local Dimming Test



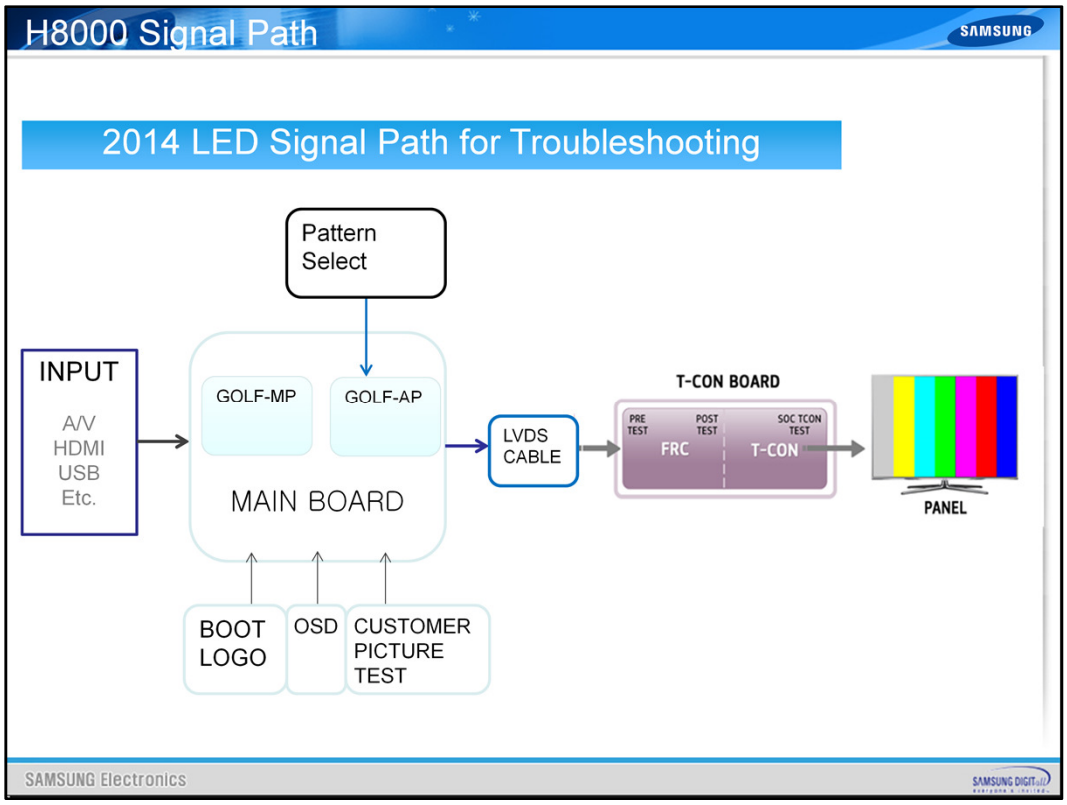
The Main Board Layout for the H8000 is pictured. The Golf-AP CPU & Golf-MP Scaler and accompanying ICs as well as USB, Audio, HDMIs, IR, AV, Tuner and all connectors are labeled.



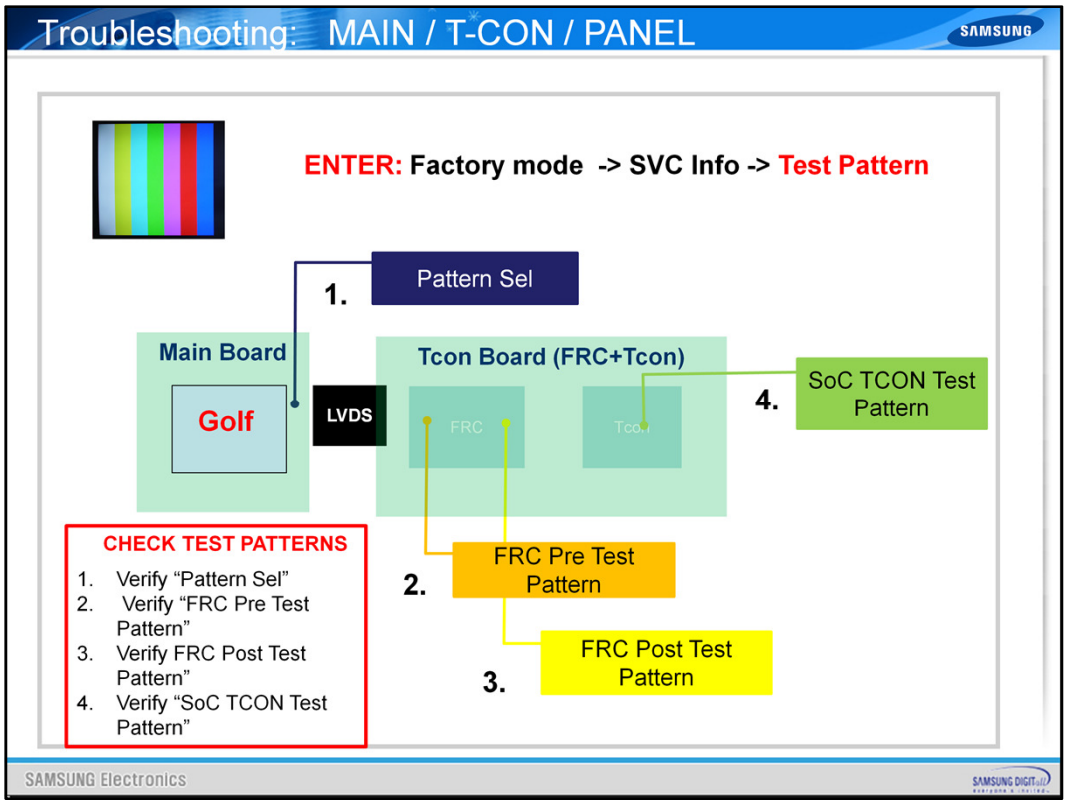
Tuner, HDMI, Audio & Video Inputs are sent to the Golf-MP. Golf-AP receives USB, Wi-Fi, Bluetooth sending info to the Fox MP as well as shared communications… Golf MP sends audio out to amps on Main Board and LVDS Video Data Signals thru LVDS to 240 FRC/T-CON IC located in T-Con Board. Final video signal outputting to the Panel.



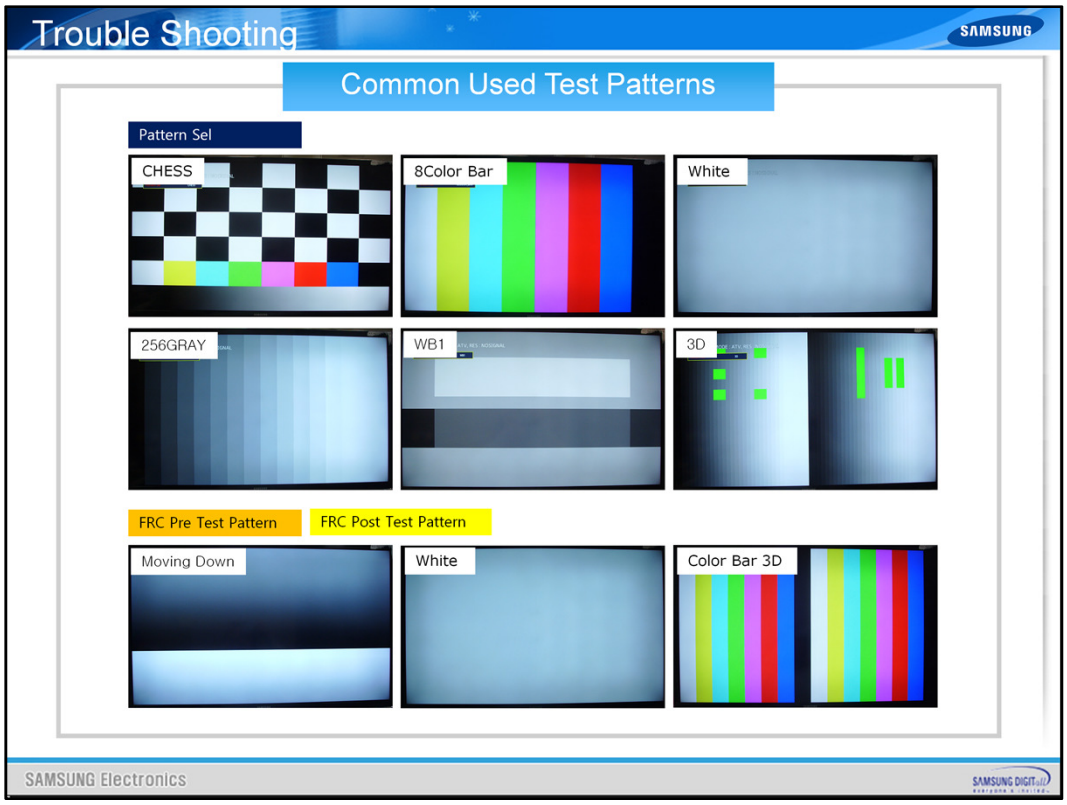
Audio Path includes all input feeds to Golf-MP for processing with L&R Audio out signals to Amp 1 & Amp 2 on Main Board. SPDIF Audio Optical Out and MOIP Audio & Video signals are Processed as well by the Golf MP.



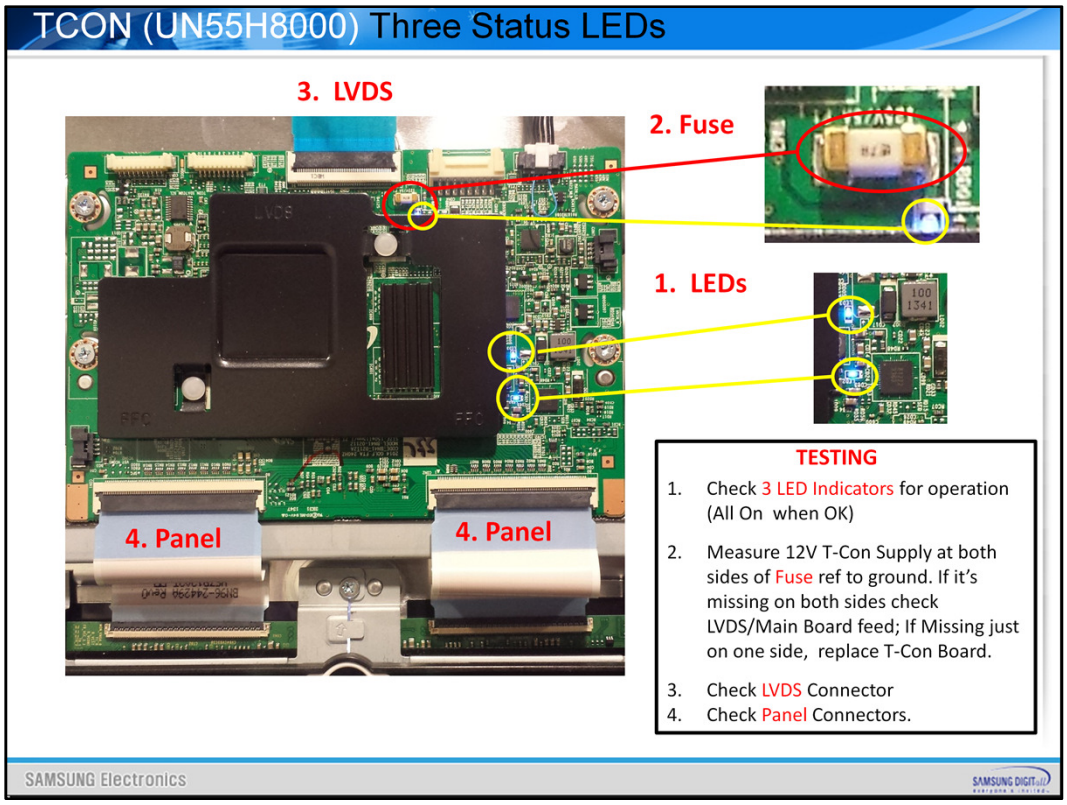
The Golf signal path includes all inputs to the Main Board. The 10 Bit Data Signal than passes thru LVDS to the new single FRC/TCON IC located in the T-Con Board. The T-Con Processor sends the final signal to the panel.



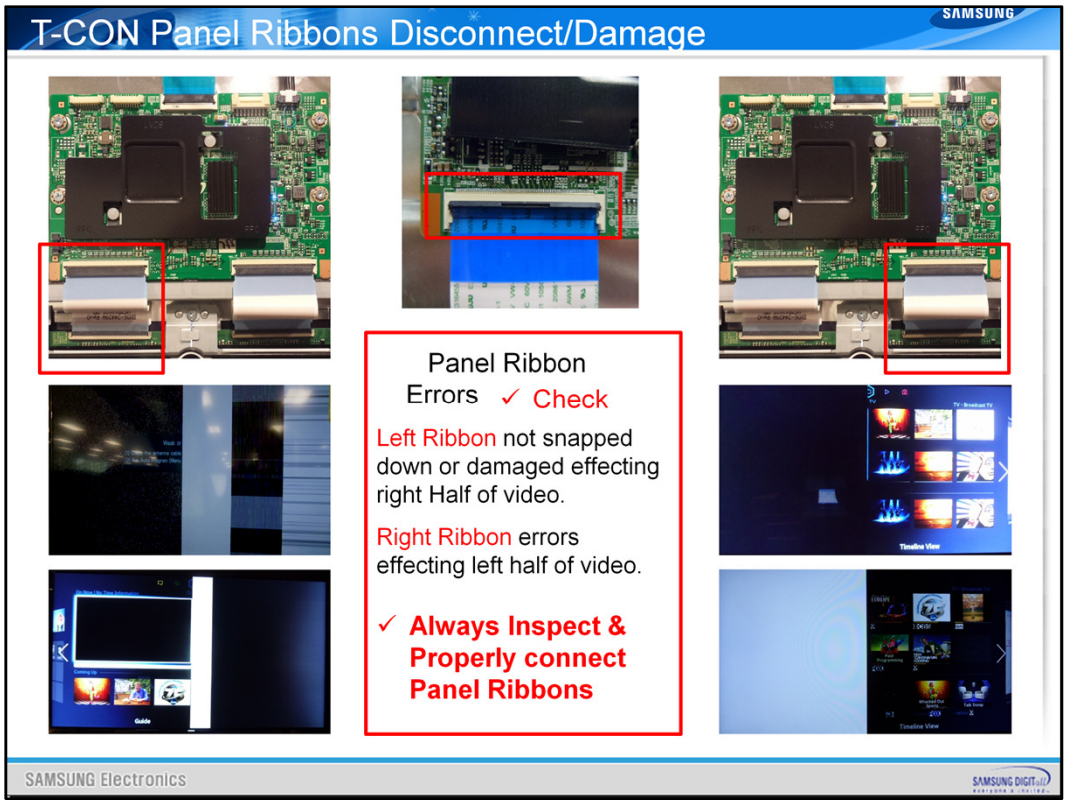
Golf Platform Main Board sends important 10 Bit Video Data Signal thru LVDS to FRC/T-CON Board than to the Panel. To troubleshoot important Video Path: Check specific Test Patterns listed in Service Mode:



Test Patterns: Pattern Sel, FRC Pre, & FRC Post

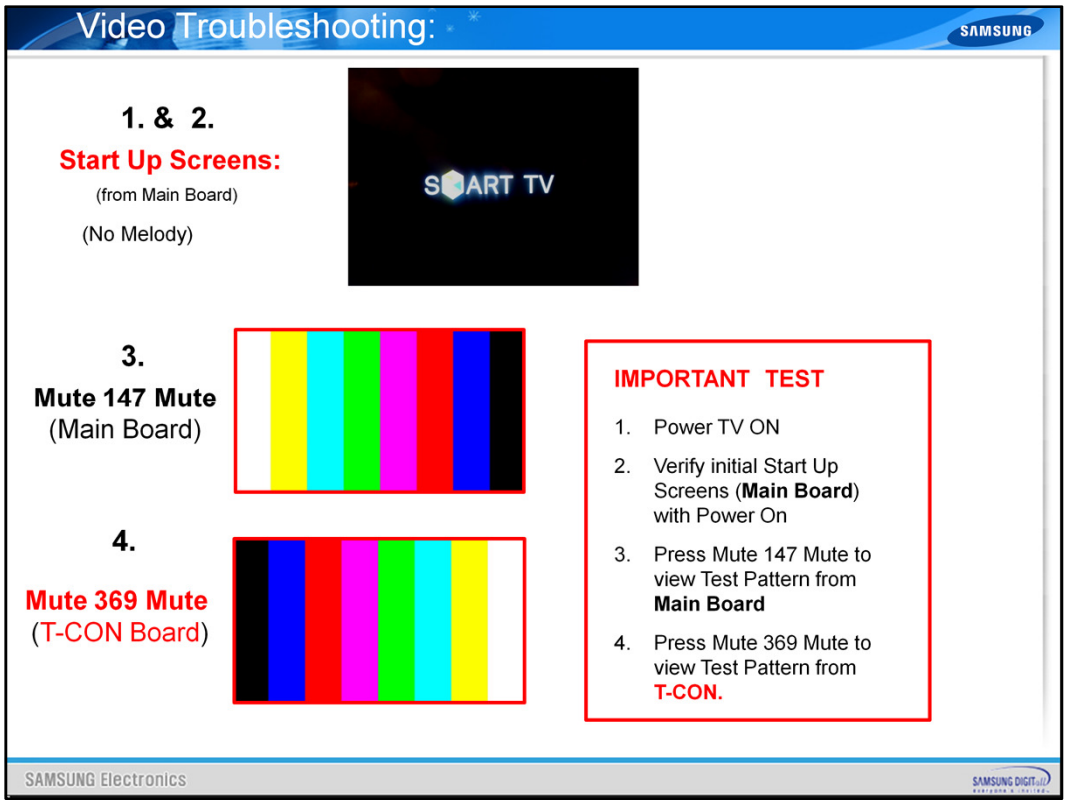


Testing T-Con Board. Follow steps listed.



Examples with Left Ribbon Not Snapped Down or Damaged effecting right Half of video and Right Ribbon effecting left half.

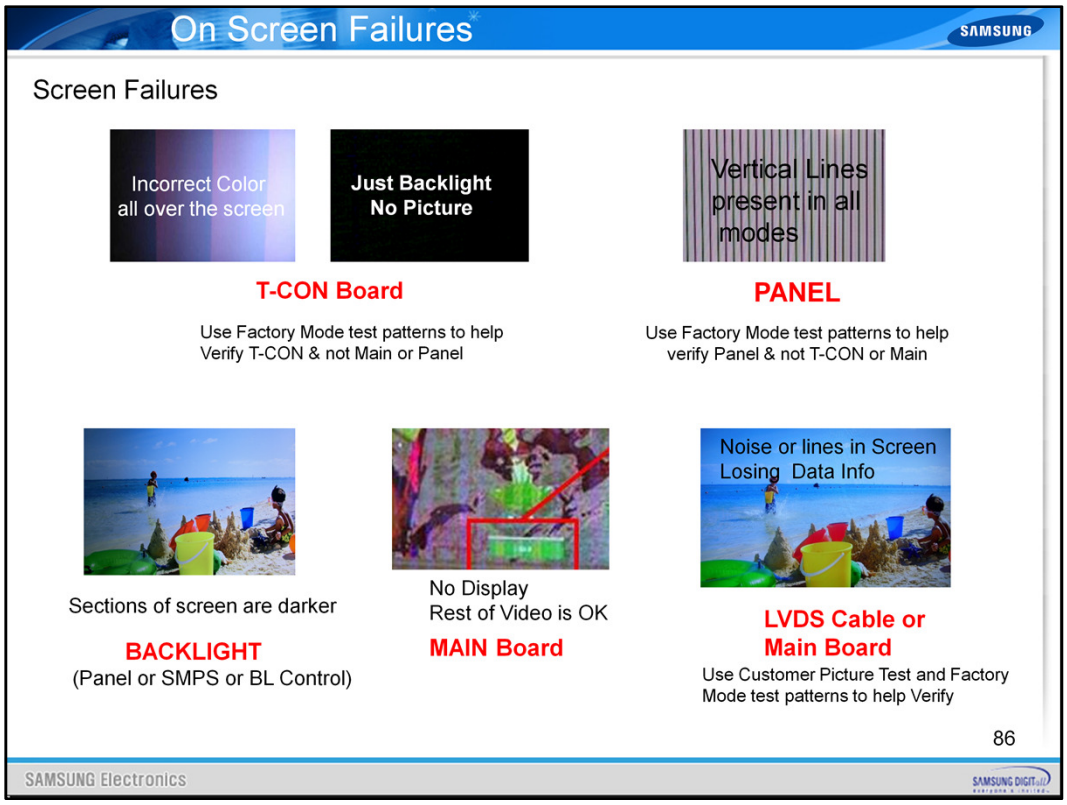
Always Inspect & Properly connect Panel Ribbons



For Important Video Troubleshooting use this quick method of observing Main & T-Con Board Video Processing Status

This is especially useful for TVs that have hard to see display errors

1. Power the TV ON
2. Verify initial Start Up Screens (**Main Board**) with Power On
3. Press Mute 147 Mute to view Test Pattern from **Main Board**
4. Press Mute 369 Mute to view Test Pattern from **T-CON.**

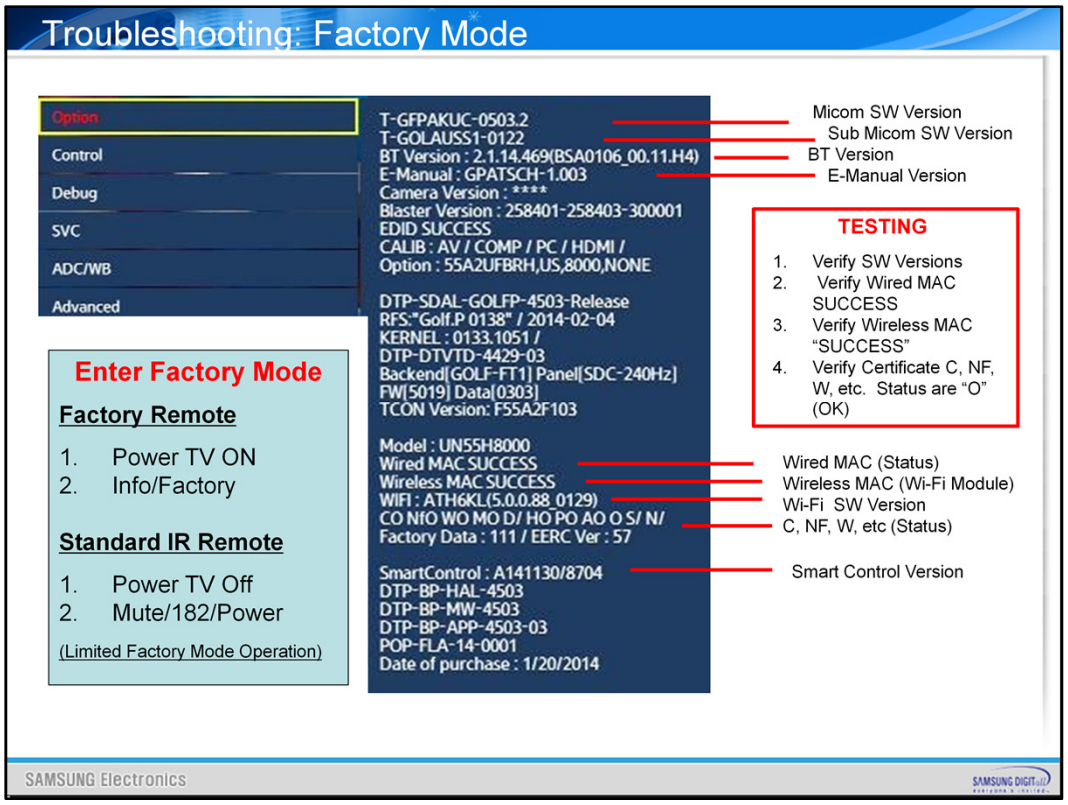


Some of the On screen failure examples are shown.

1. The T Con Board failure on the Top Left may include Incorrect color all over the screen or Just Backlight and no Picture. Use Factory Mode test patterns to help verify T CON and not defective Main Board or Panel.
2. A possible Panel failure with vertical lines present in all modes is seen on the top right. Use Factory Mode test patterns to help verify Panel & not T CON or Main Board.
3. Backlight failure is seen on lower left with Sections of screen being darker than the rest of the screen. Suspect Panel or S M P S or B L Control.
4. Main Board failure, bottom center, with no on screen display.
5. Noise lines in screen losing data information. Suspect **L V D S Cable or Main Board.** Use Customer Picture Test and Factory Mode test patterns to help Verify failure.

Remember that Defective LVDS Cables can also look like T-CON or PANEL Failures. Always test and replace the LVDS Cable first.

Remember Defective LVDS Cables can also look like T-CON or PANEL Failures. Always test and replace the LVDS Cable first.



The initial Factory Service Mode Screen is shown.
Factory Mode can be entered two ways but you Must use a Factory Remote to make important Option Byte changes and have full operation and screens.

TESTING & OBSERVATION from this screen include:

1. Verify S W Versions
2. Verify Wired MAC is SUCCESS
3. Verify Wireless MAC is "SUCCESS"
4. Verify Certificate C, NF, W, etc. Their Status should be "O" for Operational.

Setting Option Bytes & Factory Reset (Required with Main Board Replacements)

1.

2.

Model	Type	SW Model	Local Set	Front Color
UN55H8000AFXZA	55A2UF8RH	UH8000	US	U-CF-B80

❖ Factory Reset

3.

4.

Setting Option Bytes

Required with Main Board Replacement

1. Enter Factory Mode with Service Remote (required to change all settings) and select Option screen.
2. Check Option Byte Table settings located on GSPN (Fast Tracks or Tips) for latest exact model information.)
3. Select each item needed to change (Type, Local Set, SW Model, BOM Model, Tuner, etc.)
4. Additional items are located in MRT Option such as Front Color, LVDS Format, Region, etc), if necessary to change.

❖ **Factory Reset :** Select & perform after replacing a Main Board or for re-establishing out of box TV settings.

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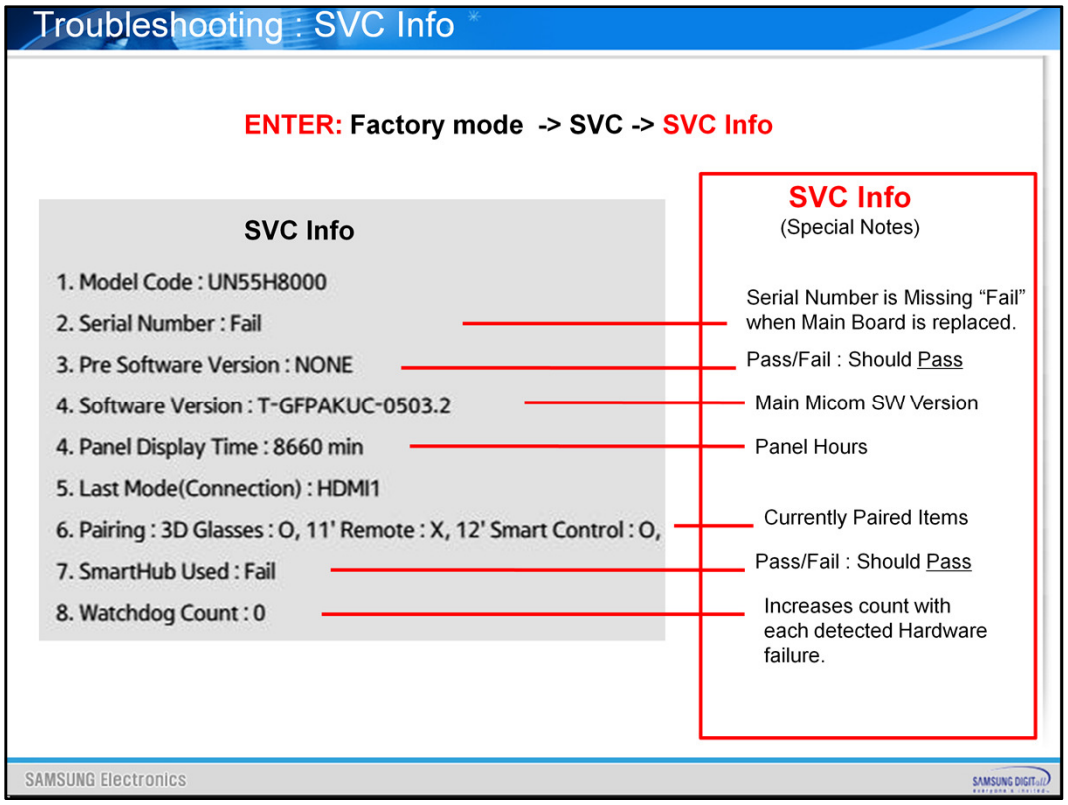
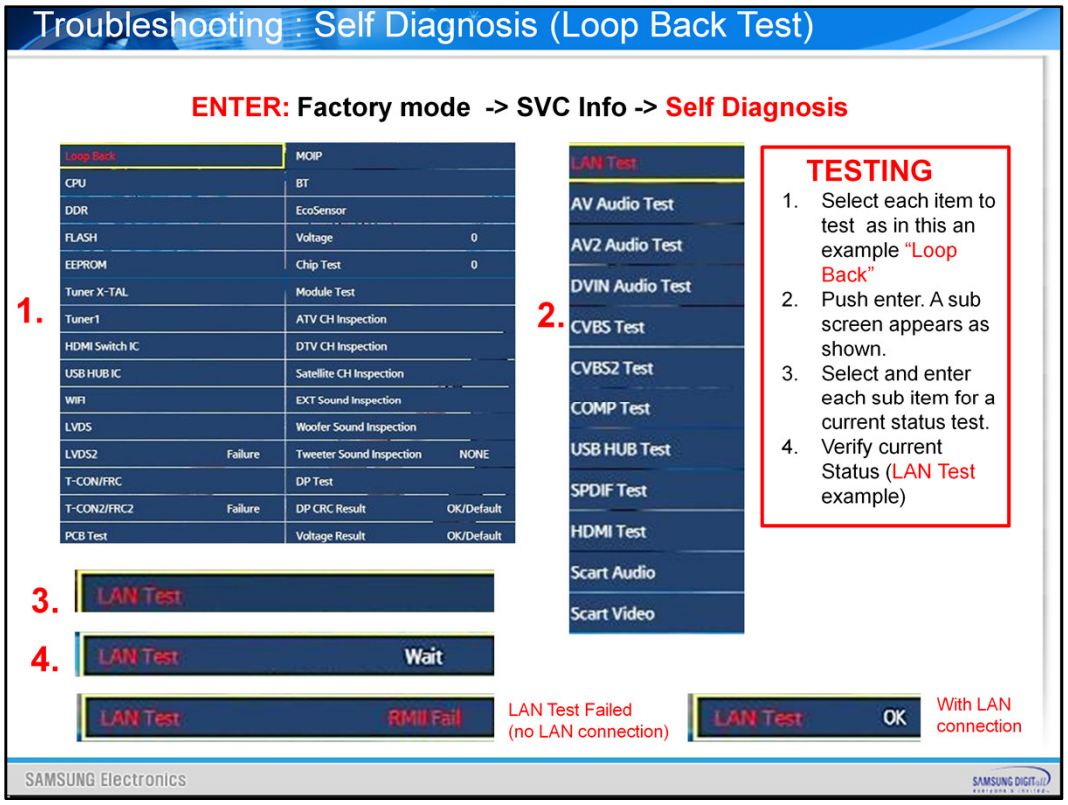
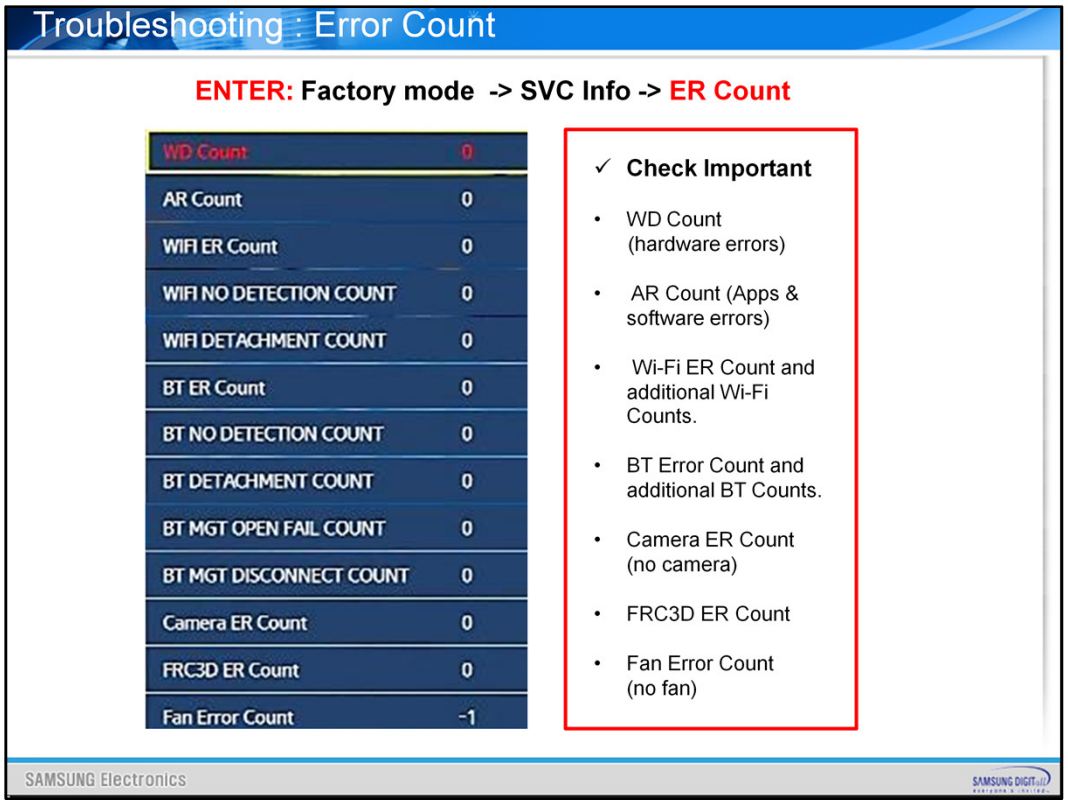
Option Byte Setting are shown for the 8000 and procedure. They must be verified and set after any Main Board replacement. The Factory Remote is required for these changes. The TV will not allow changes when using Mute 182 Power for Service Mode activation.



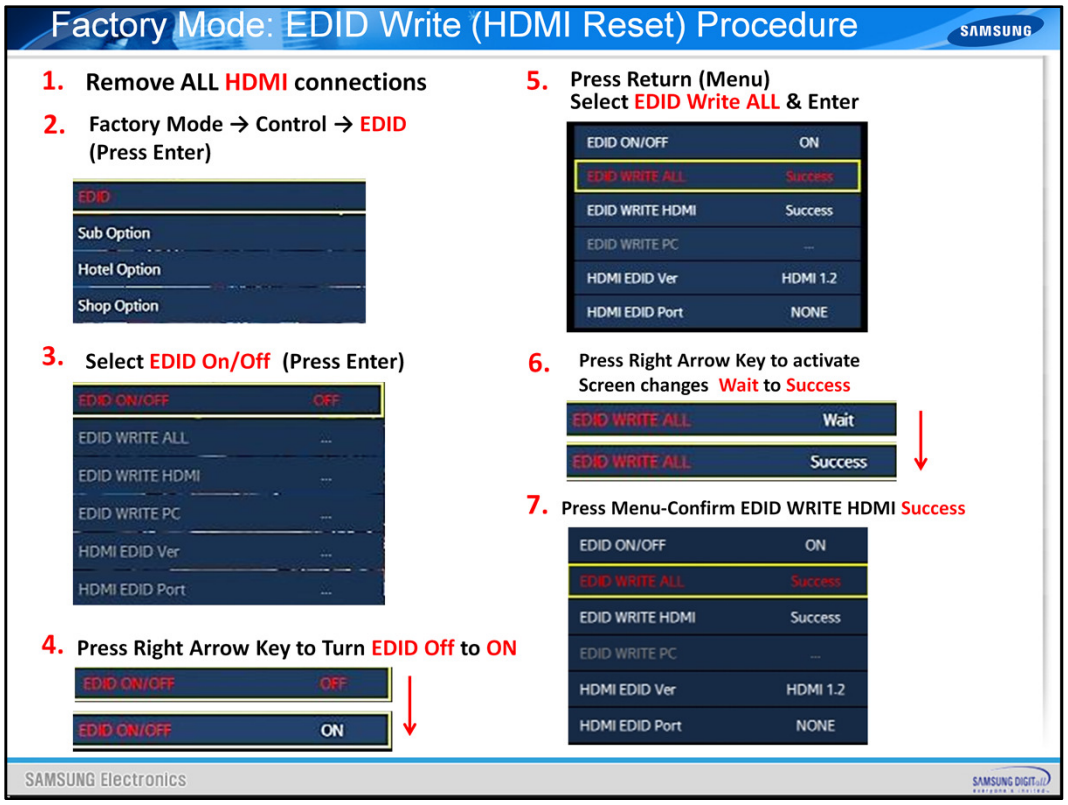
Important Service Information can be viewed from SVC Info.



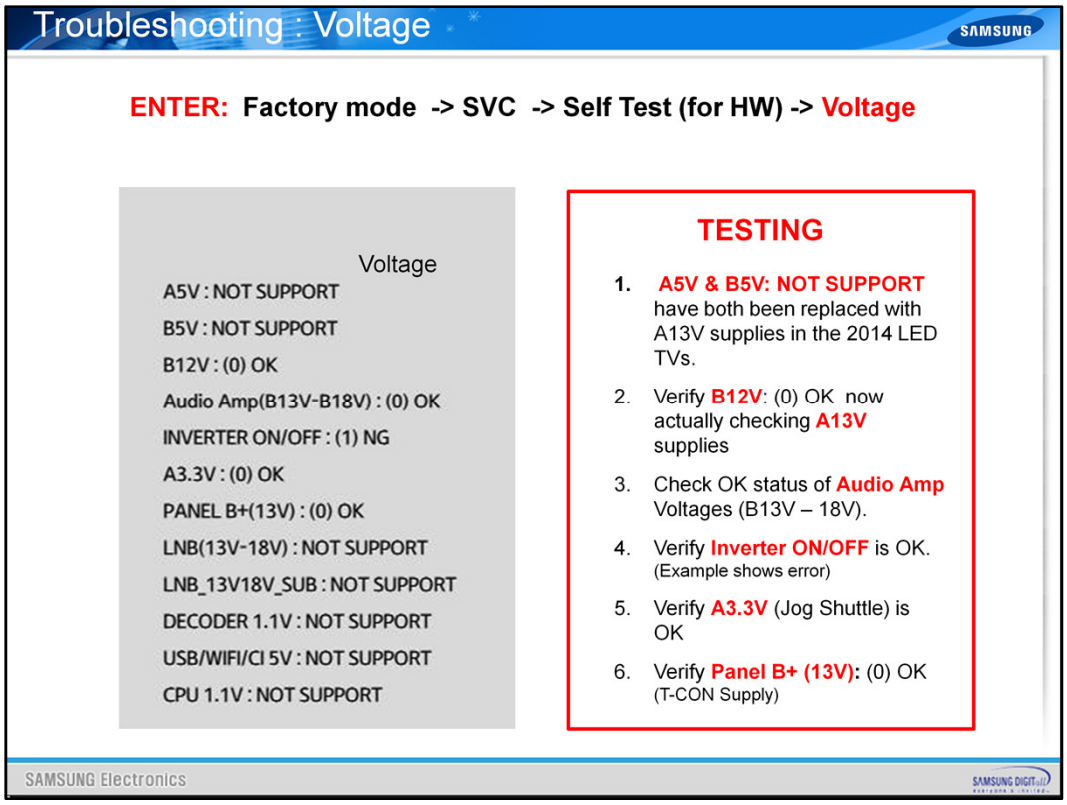
Important Loop Back Testing can be performed for each item listed with Self Diagnosis while displaying its status.



Check Important WD Count hardware failures, AR Count Apps & software failures, Wi Fi, Bluetooth, HDMI, and F R C 3 D error count.



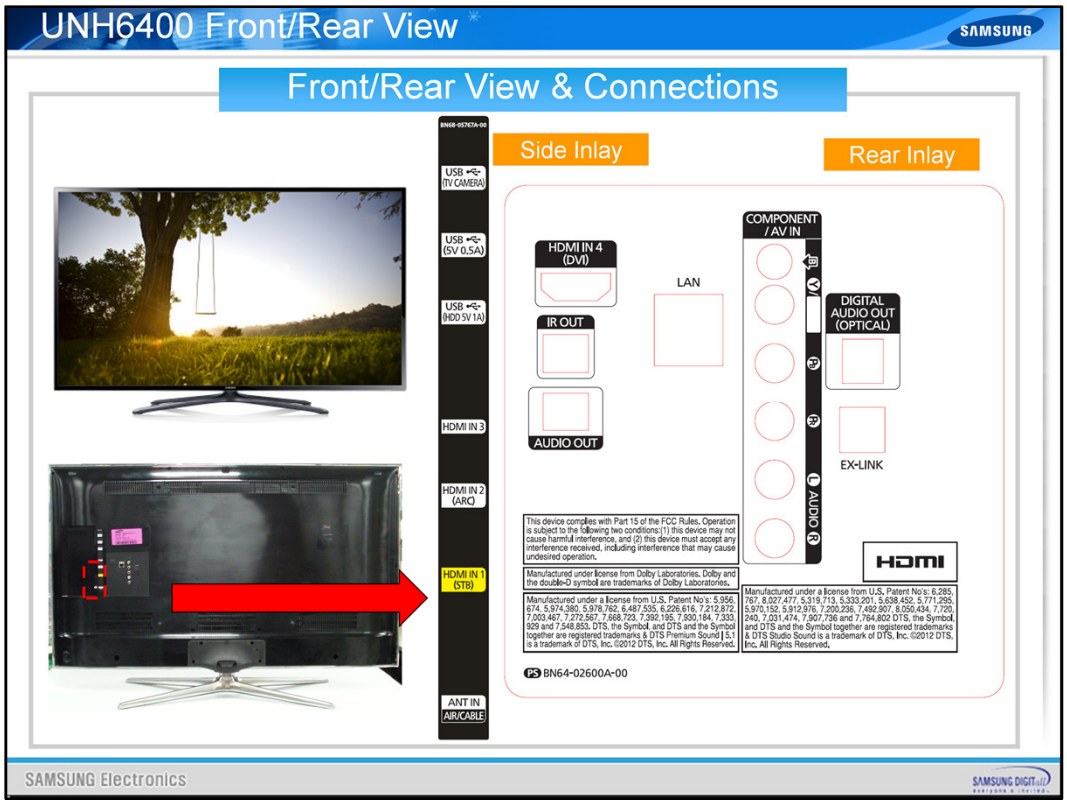
Important EDID rewrite procedure is shown. This can restore HDMI inputs that are no longer working or have audio or video missing.
Follow steps 1 through 7.



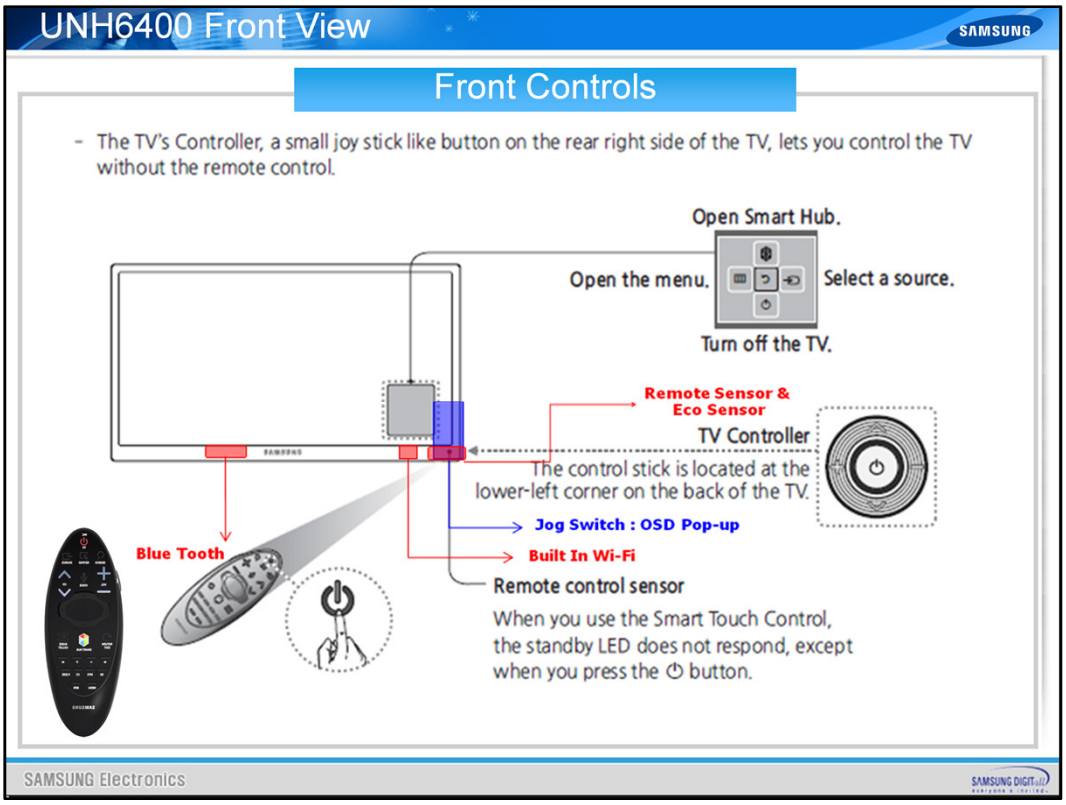
Important Voltage Status can also be selected from Self Diagnosis. It will display readings based on the type of TV & Model. For instance Panel B+ 13V for LED TVs.

2014 Contact Samsung Screen information is seen here for the H8000.

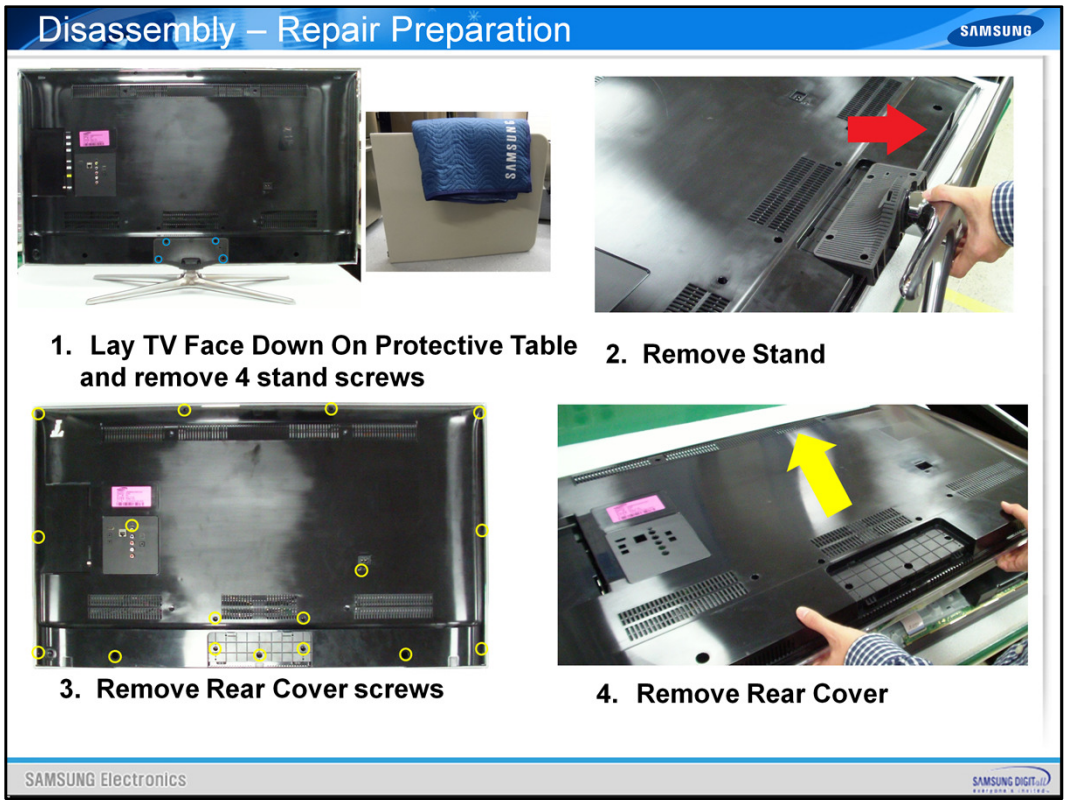
Listed in this slide are special features fro the UNH6400.



The front and rear views are shown in this slide with all the important connectors for the UNH6400 Series TVs. It's important that the external Set Top Box connections are made to HDMI 1 input, highlighted in yellow. This is dedicated for this purpose and necessary fro proper operation. HDMI 3 is dedicated for ARC audio input.

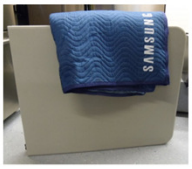


Front Panel Control Locations

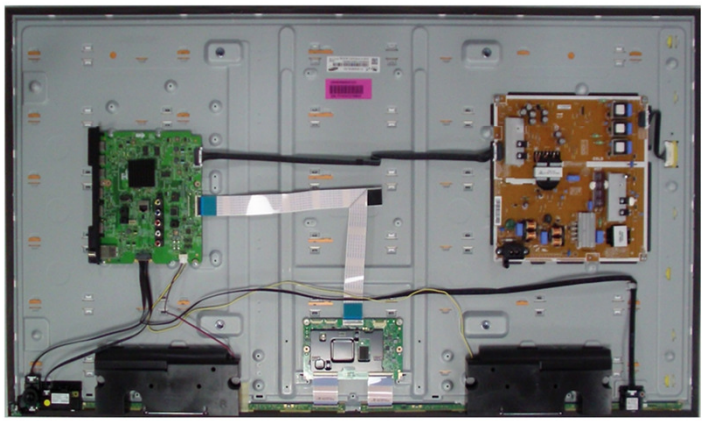


Important Disassembly

Repair Preparation



- Lay the TV Face Down On Protective Table
- TV cannot be re-attached to the stand for servicing



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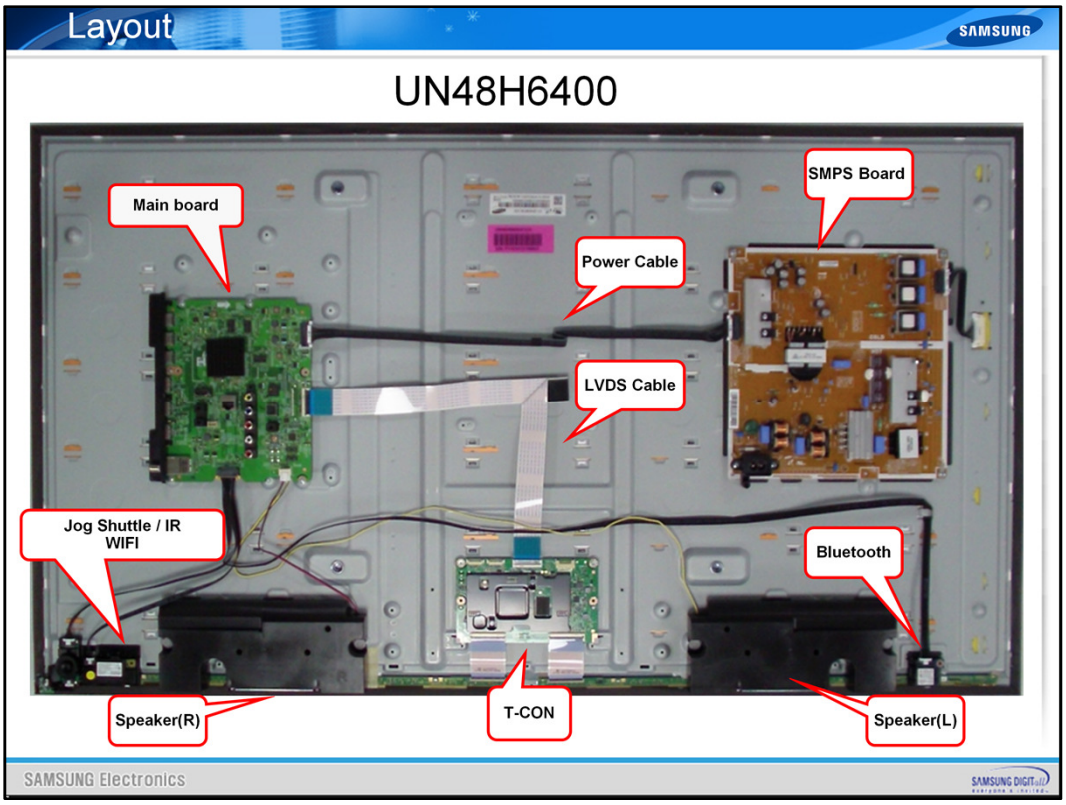
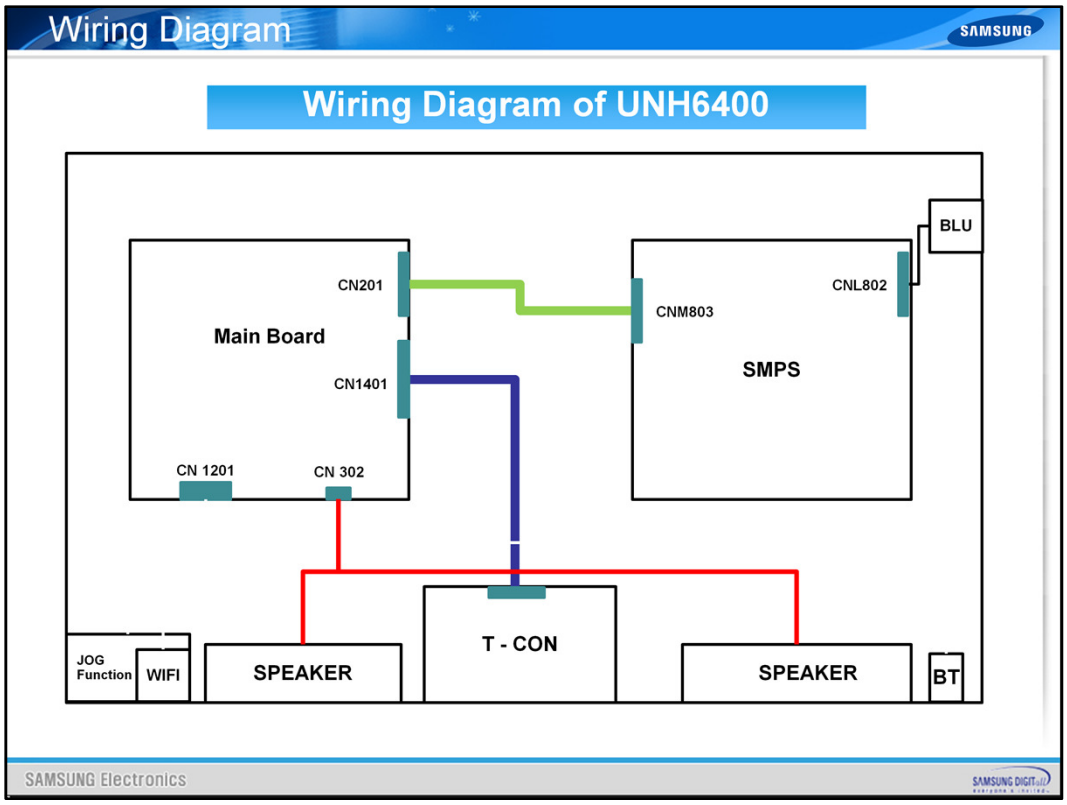
Stand cannot be re-attached



The Layout for the UN48H6400 is shown and includes Main Board, LVDS Cable, SMPS Board, T-CON Board, Jog Shuttle, & Speakers.



Wiring Diagram includes Main Board cabling and connectors to SMPS. Main to Bluetooth and Wi Fi Modules. Main to Speakers. Main through LVDS to T-CON Board, as well as SMPS to the Back Light Panel LEDs. Not shown is the Main Board to the Jog Function Control, Wi Fi Module, and Bluetooth Module.

Jog Function Control

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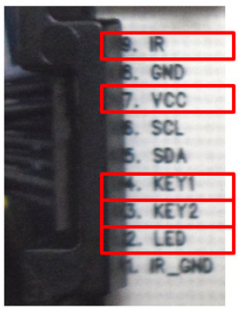
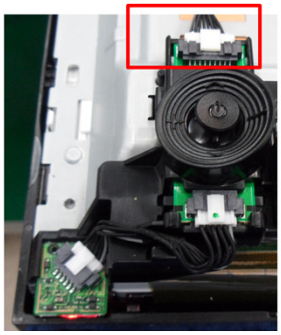
Jog Shuttle

1. & 2.

P	CMD	Signal	DC Voltage
1	IR Gnd		No connection
2		LED	1.8V (in STBY)
3	Left	Key 2	3.3V to 1.6V DC
3	Right	Key 2	3.3V to 2.5V DC
3	Up	Key 2	3.3V to 0.0V DC
3	Down	Key 2	3.3V to 0.8V DC
4	Press	Key 1	3.3V to 0.0V DC
5		SDA	3.3V
6		SCL	3.3V
7		VCC	3.3V
8		GND	
9	IR	IR	3.3V to 2.5V DC With Commands (Effective DC)



3.



STBY LED

Testing

1. Check Jog Shuttle STBY Voltages (All at 3.3V except LED)
2. Check Jog Shuttle 5 SW Operation (Key1 & Key2) for each command change.
3. Check LED Indicator for STBY operation. (Check 1.8V Supply from Main Board)

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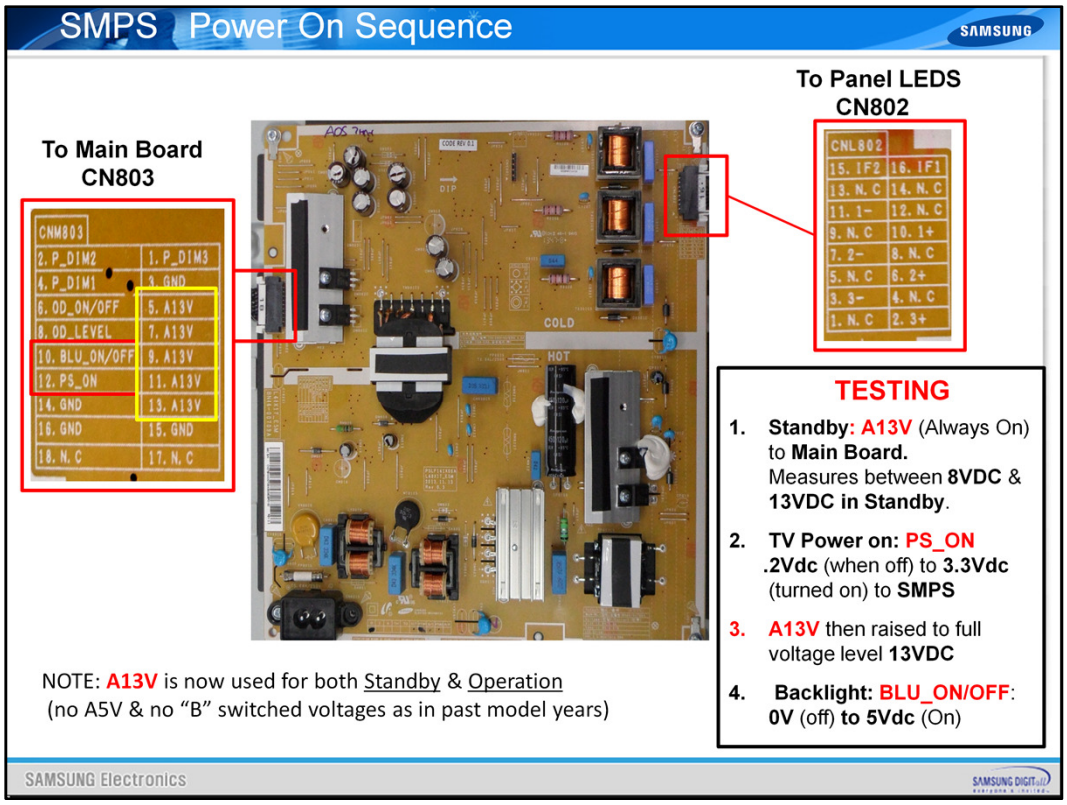
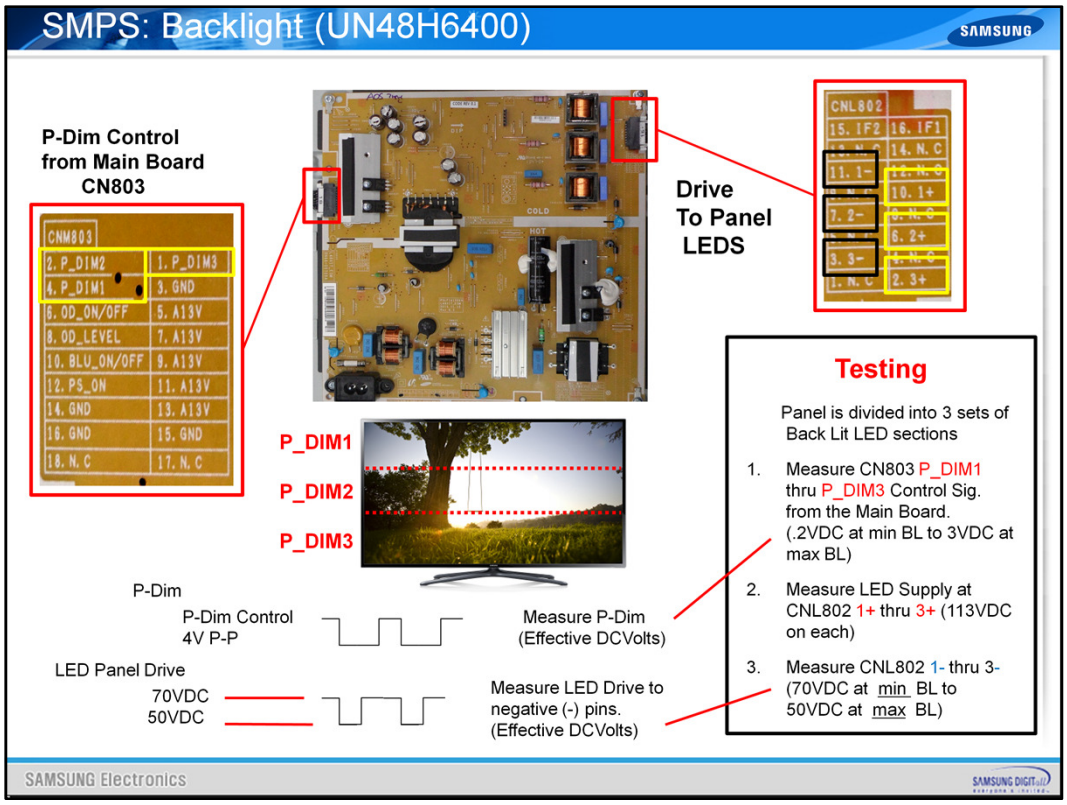
Jog Shuttle for H6400 is shown with testing procedure, similar to other models.

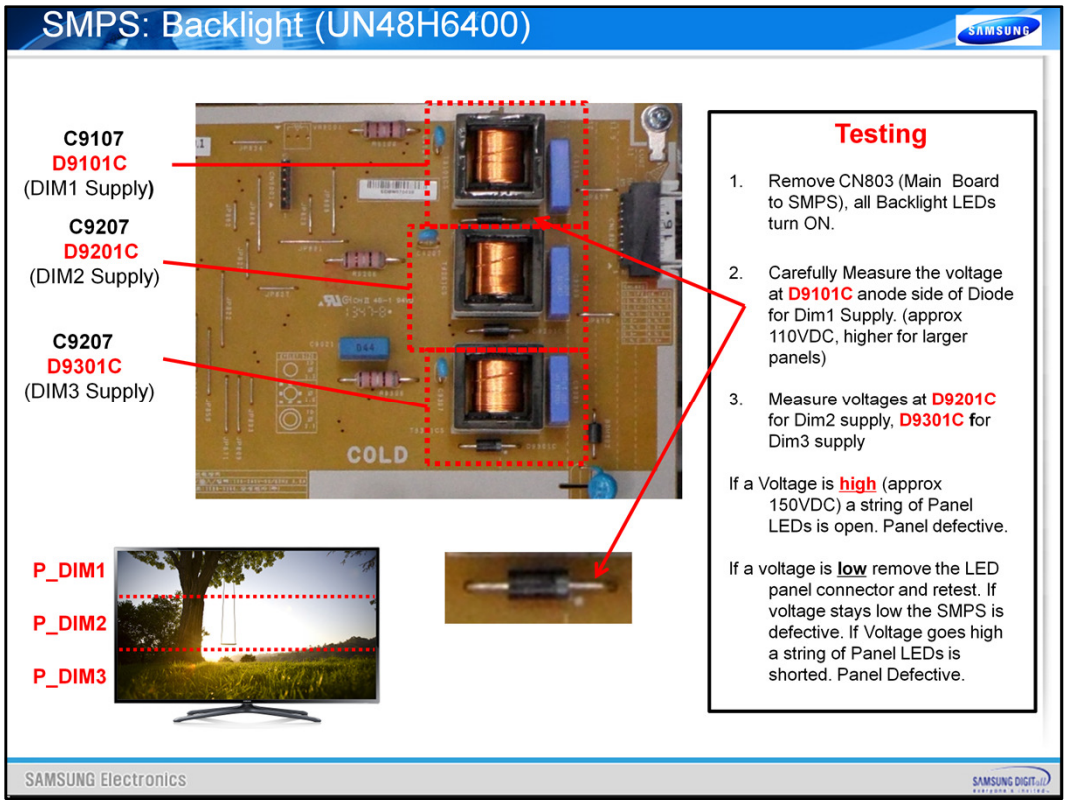


SMPS Operation and Test.

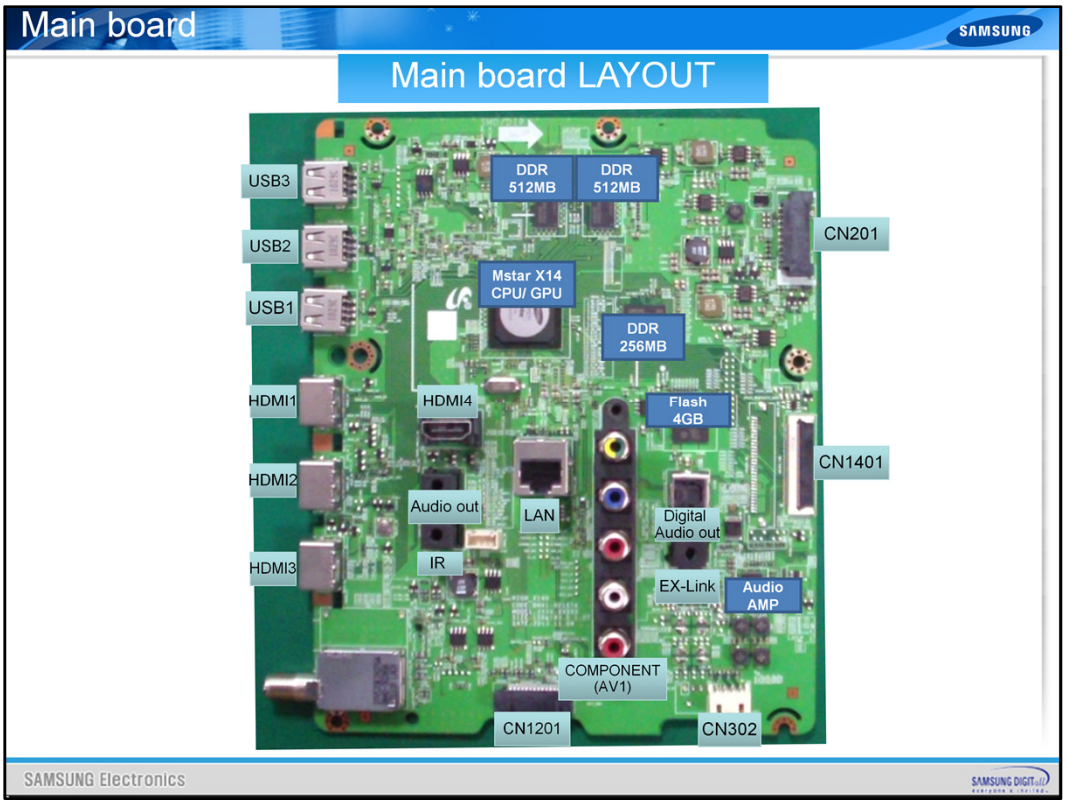
NOTE: **A13V** is now used for both Standby & Operation
(no A5V & no "B" switched voltages as in past model years)



The SMPS Backlight Operation and testing is examined.
The Panel is divided into 3 sets of Back Lit LED sections seen on the TV screen in the slide. Follow steps 1 through 3.



SMPS Backlight Test: Follow steps 1 thru 3. Check special troubleshooting notes included in Testing.



The Main Board Layout for the H6400 is shown. The Mstar X14 CPU and accompanying ICs as well as USB's, HDMI's, Audio Out, IR, Component and Tuner and all connectors are labeled.

Main board: Pin Map

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CN1201

1	IR	14	A5V
2	GND	15	LED_STB
3	GND	16	BT_WAKE
4	FRAME_SYNC_IN	17	GND
5	A3.3V	18	POWER_DET
6	BT_SYNC	19	NC
7	MSCL	20	BT_RESET
8	GND	21	GND
9	MSDA	22	WIFI_DP
10	USB_BT_DP	23	WIFI_DM
11	KEY_INPUT1	24	B5V_DC_PW
12	USB_BT_DM	25	WIFI_WOL
13	KEY_INPUT2	26	WIFI_RESET

CN201

1	A13V_PW	11	A13V_PW
2	A13V_PW	12	OVD_LEVEL
3	GND	13	A13V_PW
4	GND	14	OVD_ON_OFF
5	A13V_PW	15	GND
6	GND	16	FRC_PWM1
7	A13V_PW	17	FRC_PWM2
8	SW_POWER_OUT	18	FRC_PWM3
9	A13V_PW		
10	SW_INVERTER		

CN1401

1	NC	27	EVEN_TX0-
2	GND	28	GND
3	FRC_SDA	29	ODD_TX4+
4	FRC_PWM1	30	ODD_TX4-
5	FRC_SCL	31	ODD_TX3+
6	FRC_PWM3	32	ODD_TX3-
7	FRC_PWM2	33	GND
8	TCON_SDA	34	ODD_TXCLK+
9	PANEL_I2C_EN	35	ODD_TXCLK-
10	BT_SYNC	36	GND
11	UPDATE_CHK	37	ODD_TX2+
12	TCON_SCL	38	ODD_TX2-
13	GND	39	ODD_TX1+
14	EVEN_TX4+	40	ODD_TX1-
15	EVEN_TX4-	41	ODD_TX0+
16	EVEN_TX3+	42	ODD_TX0-
17	EVEN_TX3-	43	GND
18	GND	44	GND
19	EVEN_TXCLK-	45	GND
20	EVEN_TXCLK+	46	FRC_PWM4
21	GND	47	PANEL_13V_PW
22	EVEN_TX2+	48	PANEL_13V_PW
23	EVEN_TX2-	49	PANEL_13V_PW
24	EVEN_TX1+	50	PANEL_13V_PW
25	EVEN_TX1-	51	PANEL_13V_PW
26	EVEN_TX0+		

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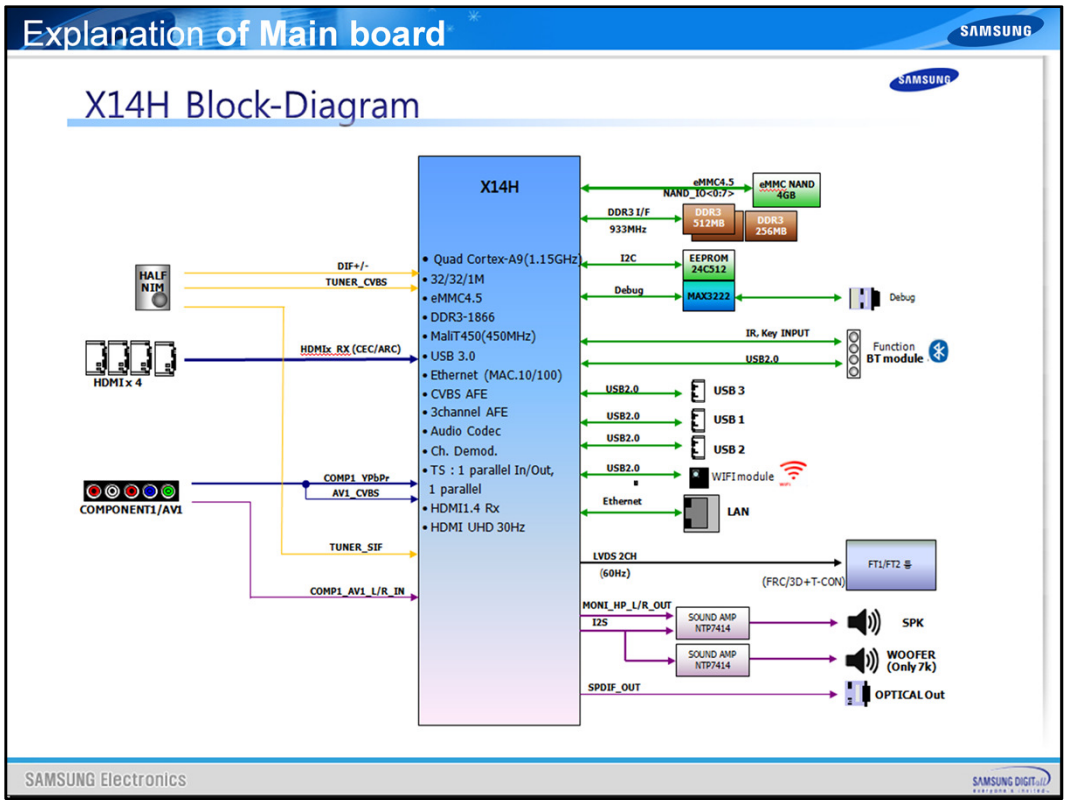
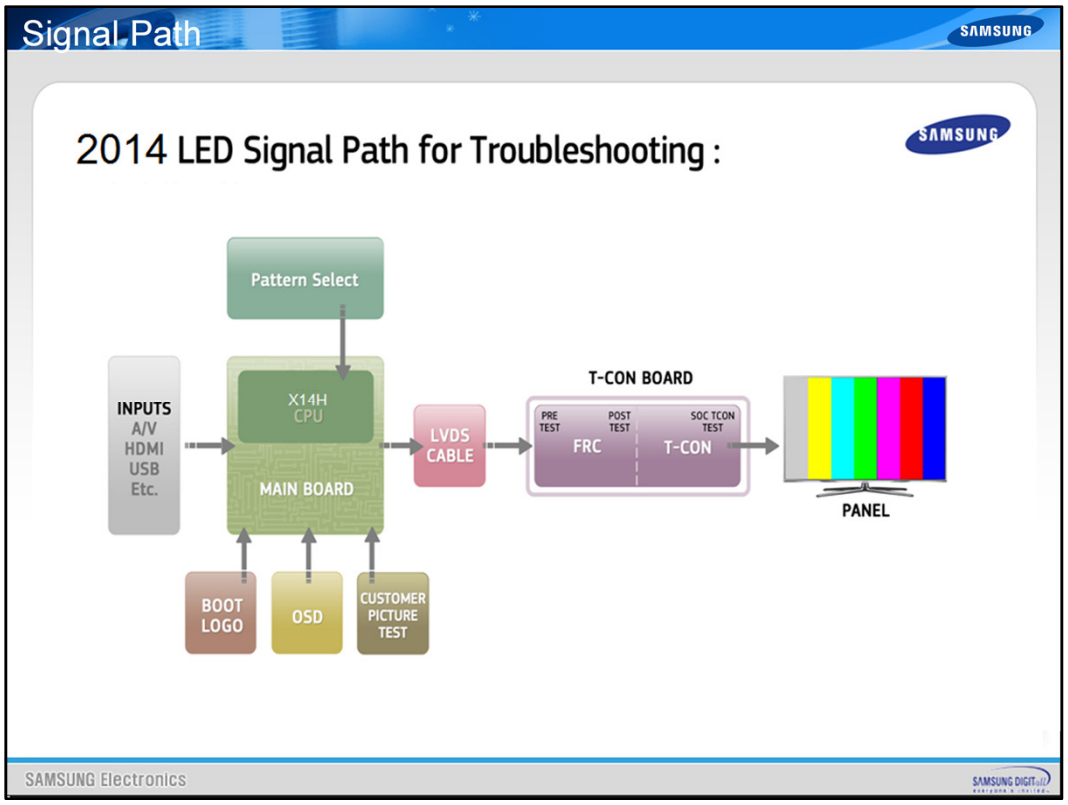
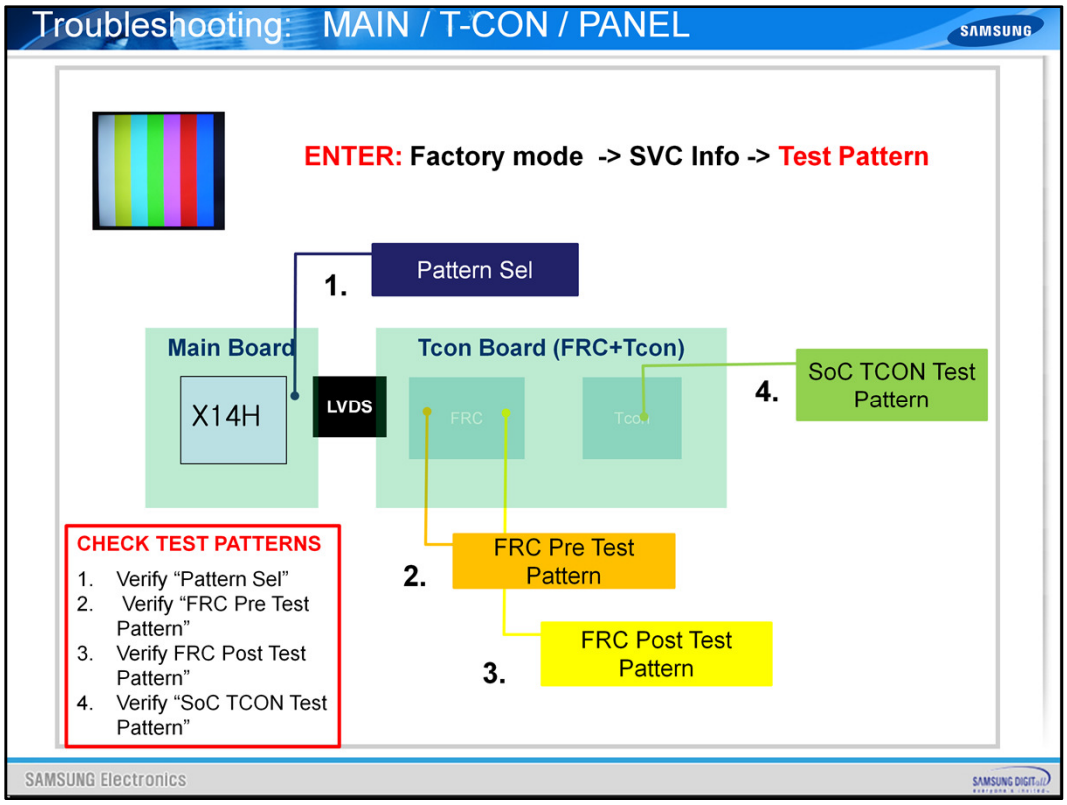
Pin outs for some of the important connectors are shown. CN1201 to Wi-Fi, Bluetooth, and Jog Shuttle; CN201 to SMPS; and CN1401 to T-CON.



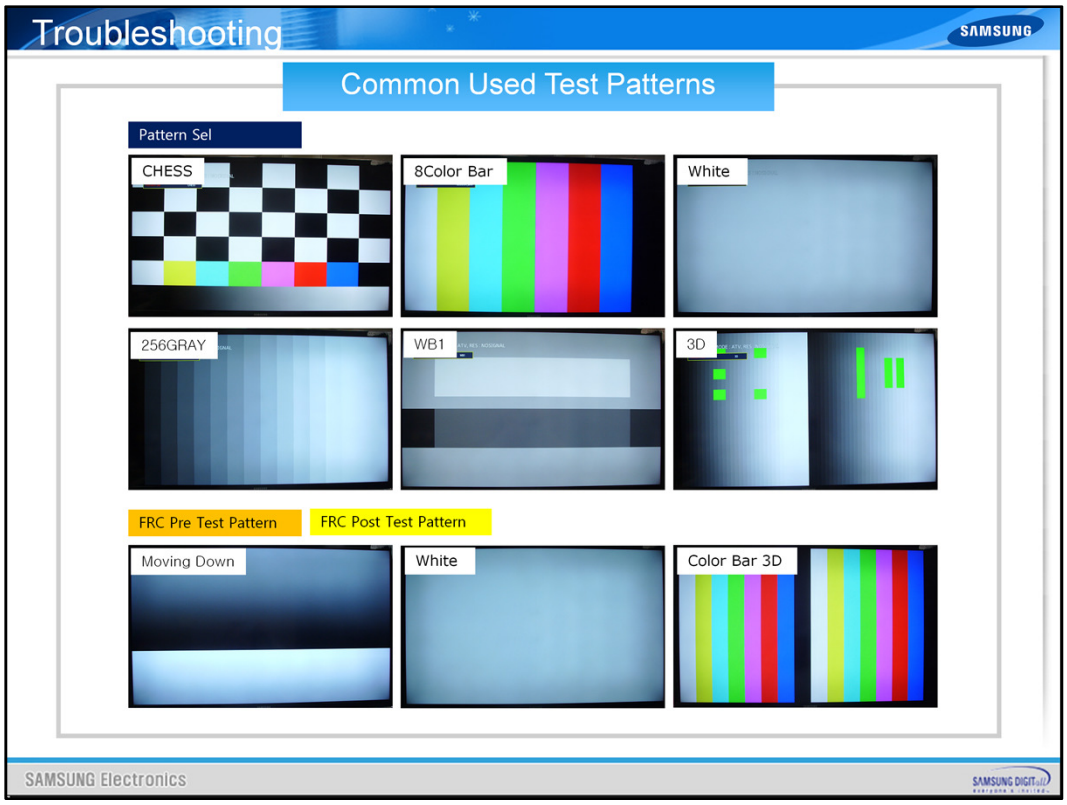
Tuner, HDMI, HDMI, USB, Bluetooth, Wi-Fi, and all inputs are sent to the X14H One Chip Processor. Audio out is sent to the audio amps and Optical Output. The LVDS Video Data Signals are sent through LVDS to the FRC/T-CON IC located in the T-Con Board. The final video signal is outputting to the Panel.



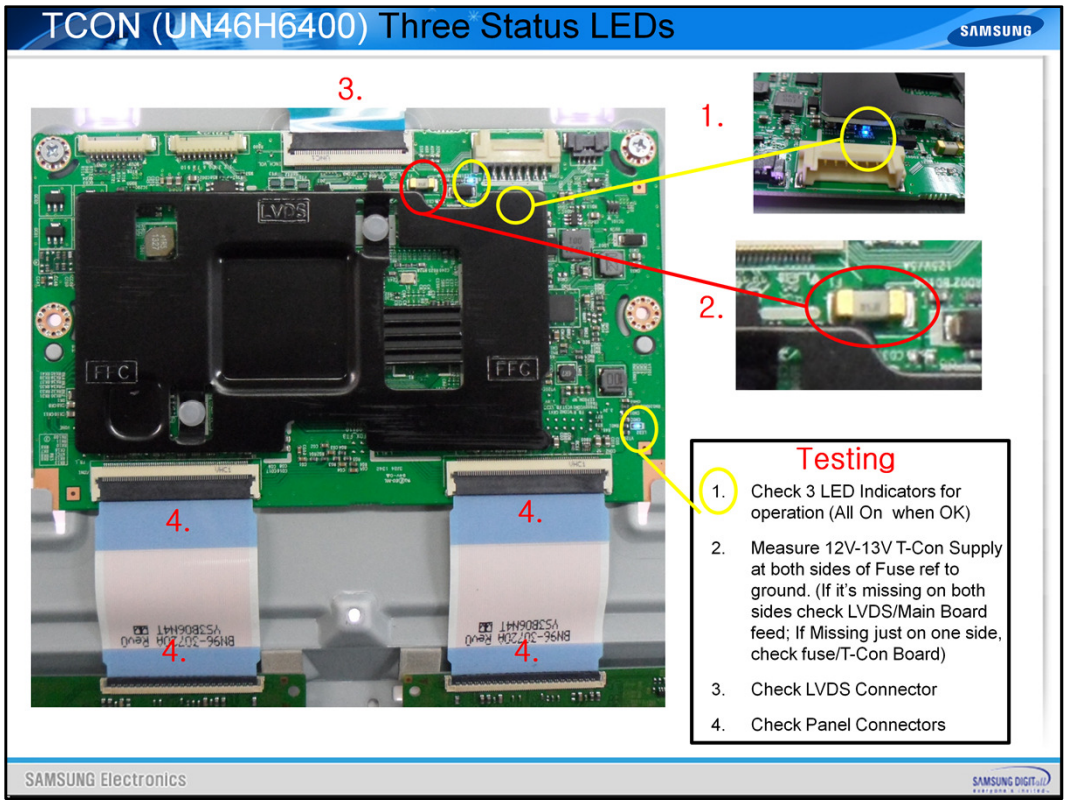
The X14 signal path includes all inputs to the Main Board. The 10 Bit Data Signal than passes thru LVDS to the FRC/TCON IC located in the T-Con Board. The T-Con Processor sends the final signal to the panel.



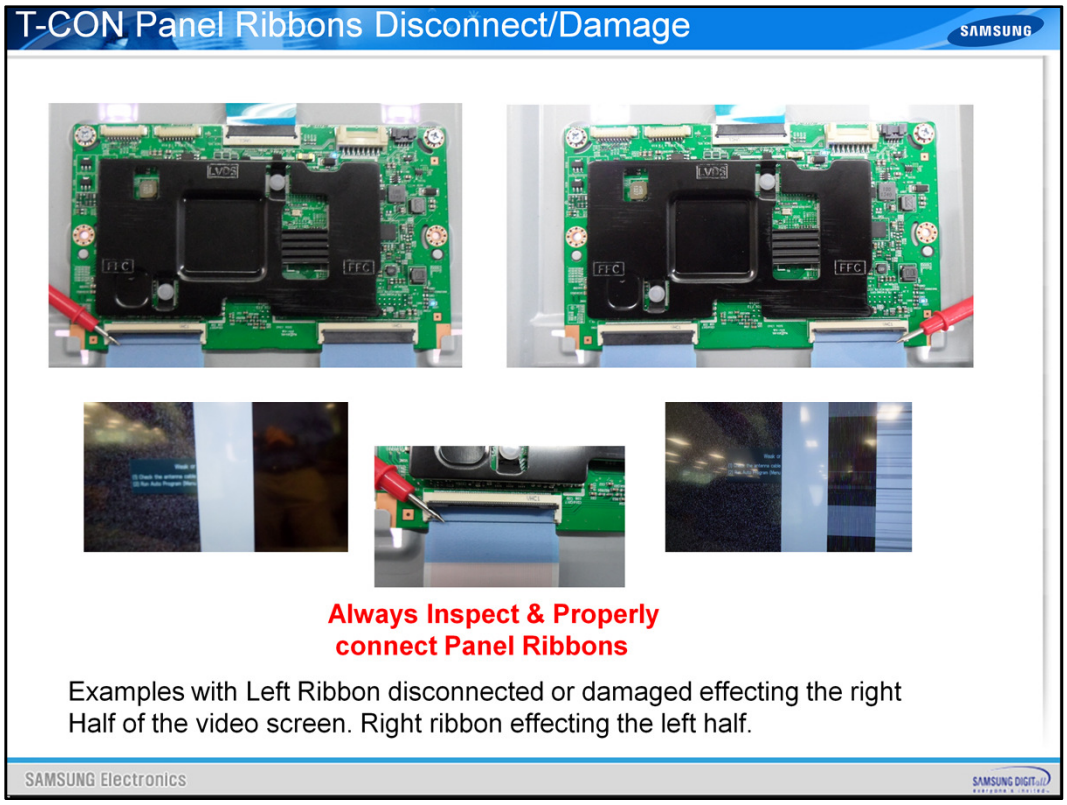
X14 Main Board sends important 10 Bit Video Processed Signal thru LVDS to FRC/T-CON Board than to the Panel.
To troubleshoot important Video Path: Follow steps listed



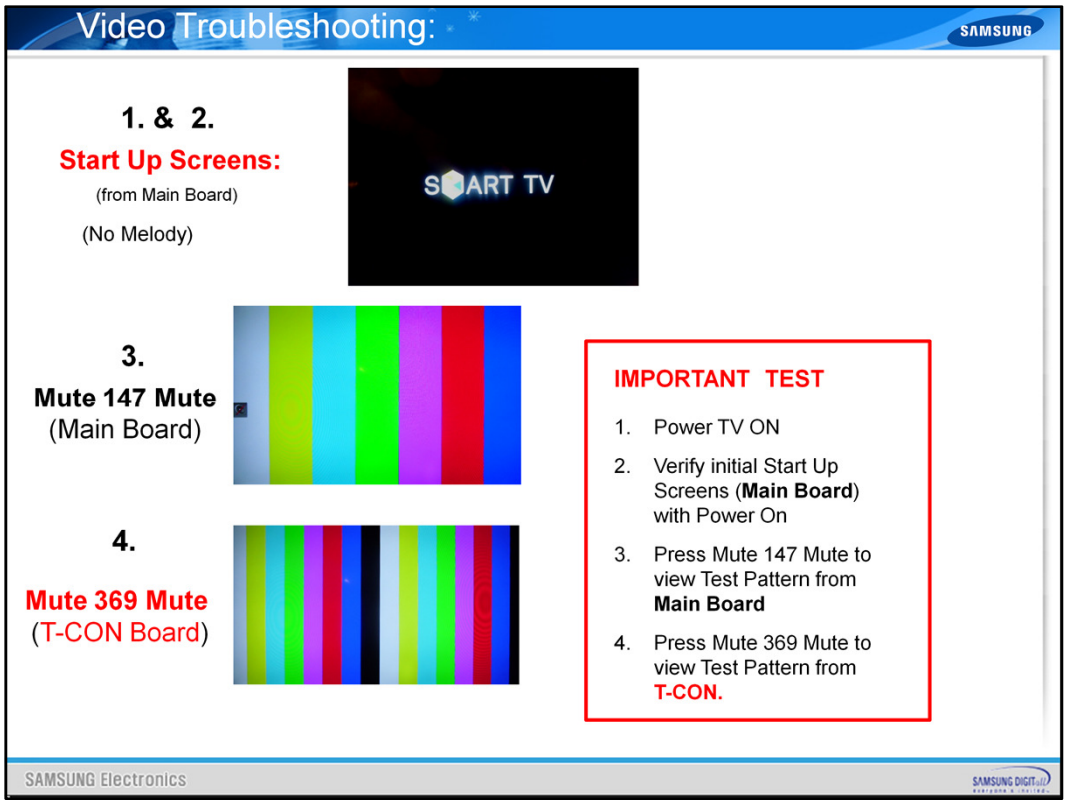
A few of the Test Patterns from Pattern Select, F R C Pre, and F R C Post are shown.



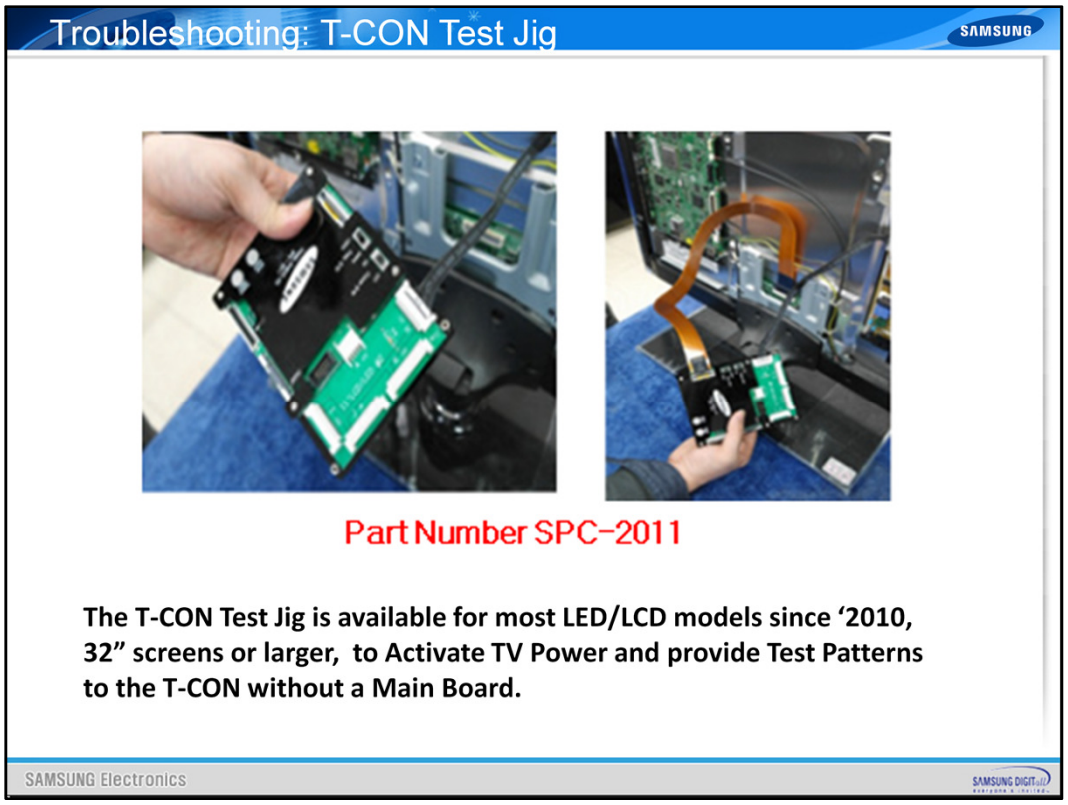
All three LEDs must be lit in order for the T-CON to operate correctly. They monitor DC regulator supplies on the T-CON Board. If all three LEDs are out then the fuse is likely open or there is no 12V supply voltage coming from the LVDS Cable/Main Board. The left LED is the 12V Supply Regulator and if its out no Video condition, the Middle is the 3.1V Regulator, if it's out: Noisy Picture, the Right LED is the T-CON DC to DC Converter (approx 17 pending panel size) : If it's out no Video.



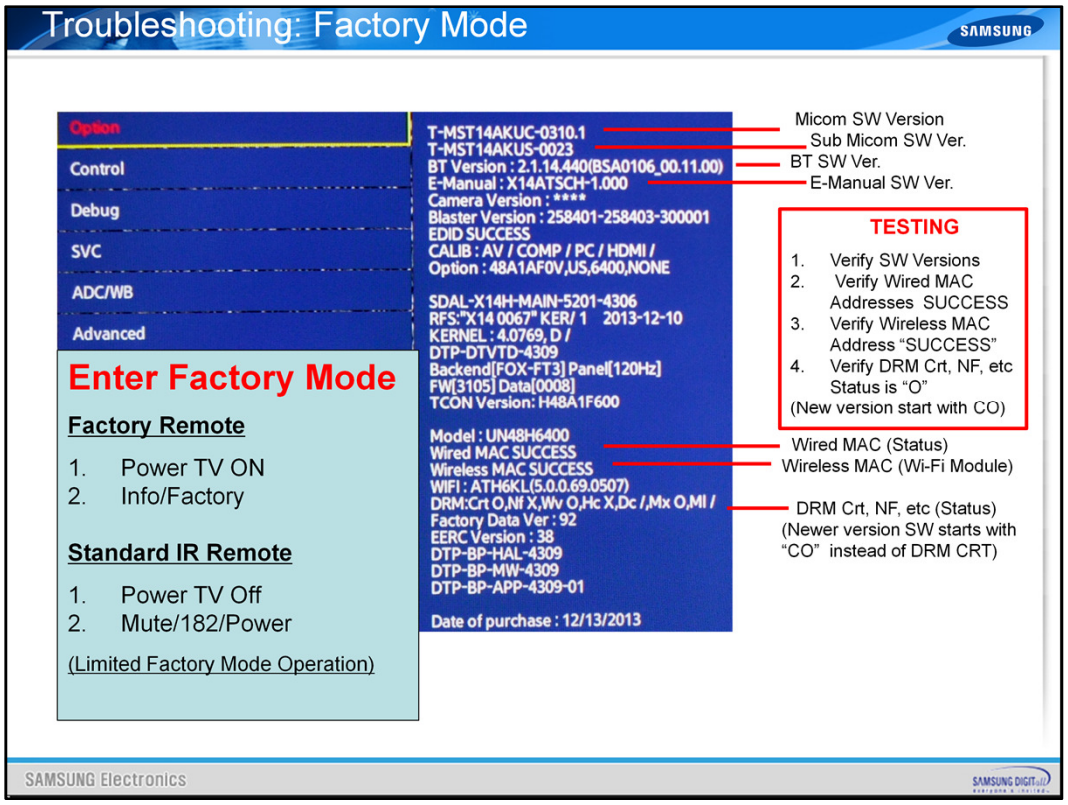
Examples are shown with the Left Ribbon Disconnected or Damaged effecting the right
Half of the video and the Right ribbon effecting the left half of the video.
Always Inspect and Properly connect Panel Ribbon Cables.



For Important Video Troubleshooting use this quick method of observing Main & T-Con Board Video Processing Status
This is especially useful for TVs that have hard to see display errors.



The T-CON Test Jig is available for most LED/LCD models since 2010, 32 inch screens or larger, to Activate TV Power and provide Test Patterns to the T-CON Board without a Main Board.



The initial Factory Service Mode Screen is shown.
Factory Mode can be entered two ways but Must use a Factory Remote to get full operation and screens. See testing steps listed.

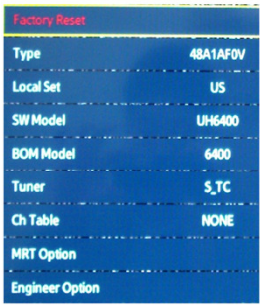
Troubleshooting: Option Bytes

1.

2.

Type	40A1AF0V	48A1AF0V	55A1AF0V	60H1AF0S
Local set	US			
SW Model	H6400			
BOM Model	6400			
Tuner	S_TC			
Ch table	NONE			
Country	-			
Front Color	U-T-CL-M64			

3.



4.

Setting Option Bytes

1. Enter Factory Mode with Service Remote (required to change all settings) and select Option screen.
2. Check Option Byte Table settings located on GSPN (Fast Tracks or Tips) for latest exact model information. (Do not use the Service Manual)
3. Select each item needed to change (Type, Local Set, SW Model, BOM Model, Tuner, etc.)
4. Additional items are located in MRT Option such as Front Color, LVDS Format, Region, etc), if necessary to change.

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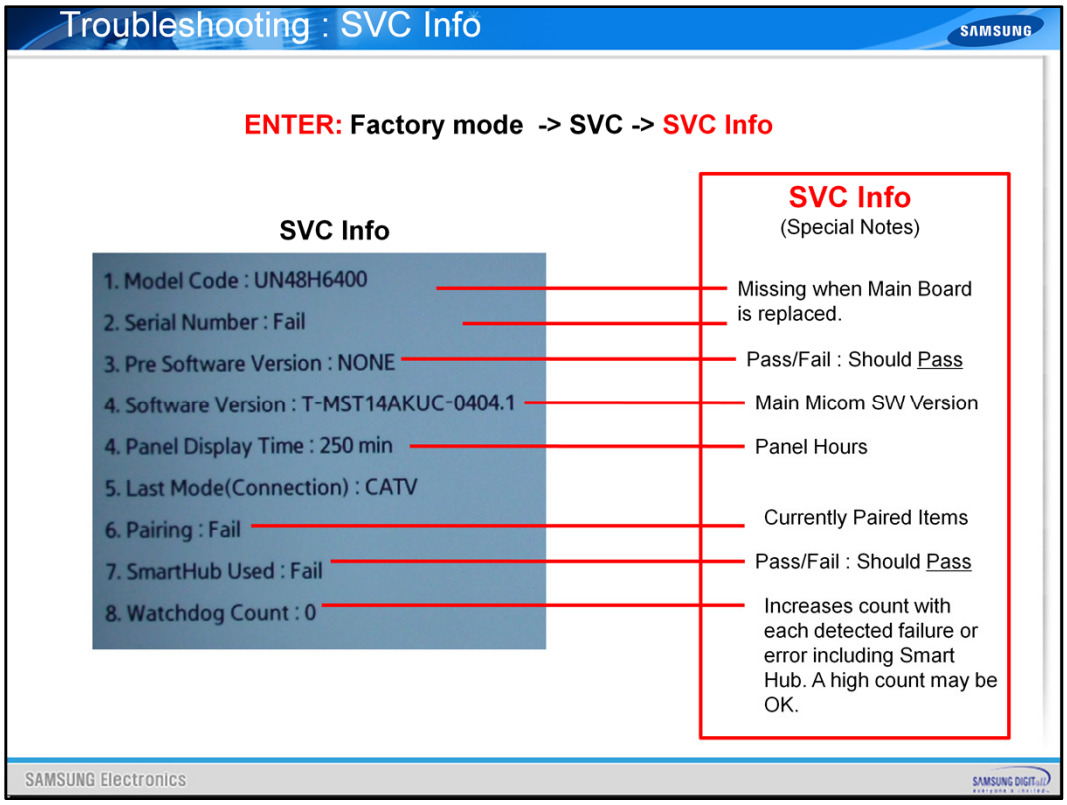
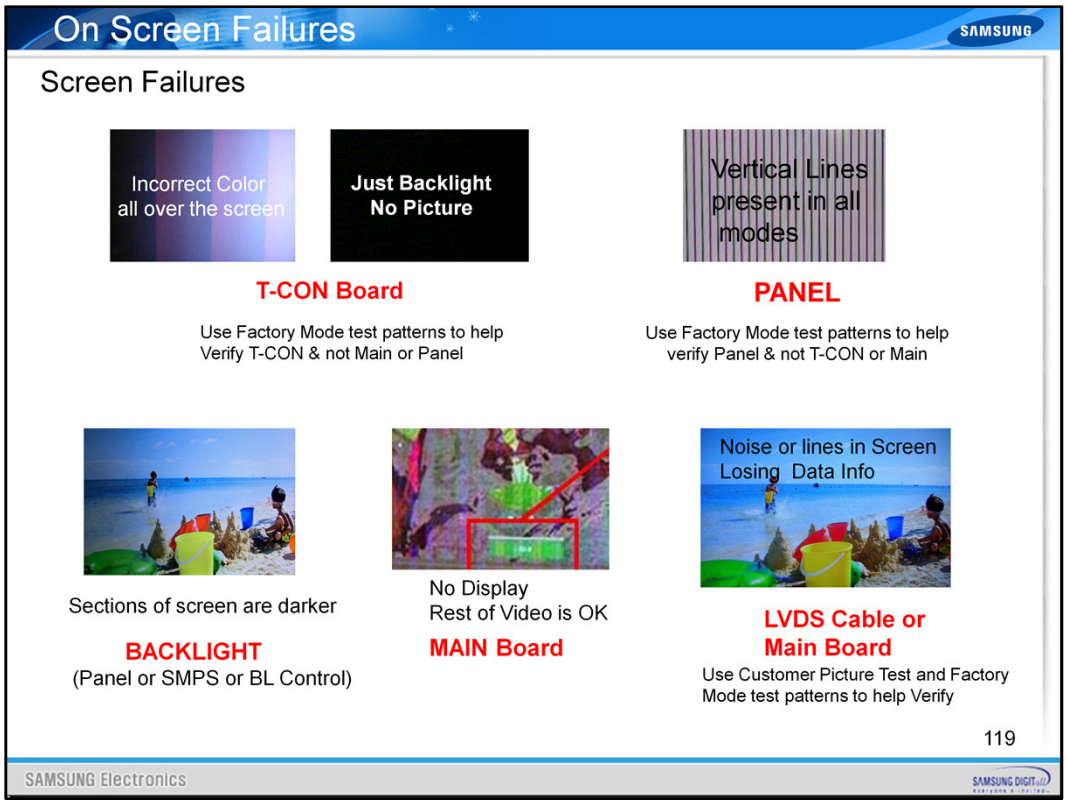
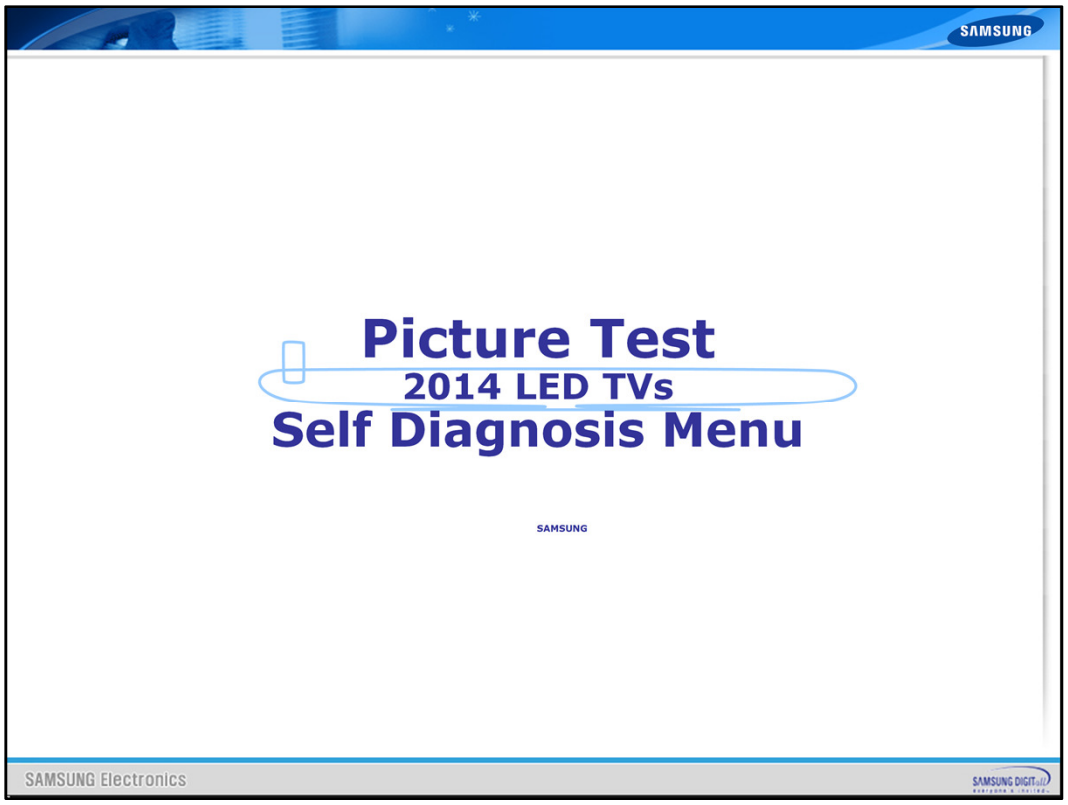
Setting Option Bytes: Follow steps listed



Important SVC Info screen shown can be selected from SVC/SVC INFO
Model, Serial Number, SW Versions, Panel Hours,
Important Customer Pairing info… Use to test what is currently paired…
Smart Hub & Important WD Count



Various Screen errors are again displayed. They are the same as those described in the H8000 LED TV section.
Remember defective LVDS Cables can also look like T-CON or PANEL Failures. Always test and replace the LVDS Cable first.
Always perform on screen pattern testing to verify exact failure location.

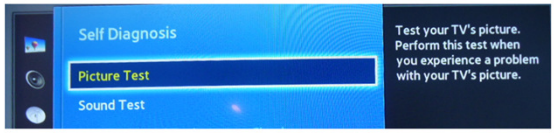


Customer Support Picture Test for 2014 LED TVs, similar to the 2013 LED Picture test with the exception of the new screen patterns used.

Troubleshooting: MAIN/T-CON/PANEL with Self Diagnosis Picture Test

ENTER: Menu -> Support -> Self Diagnosis -> Picture Test

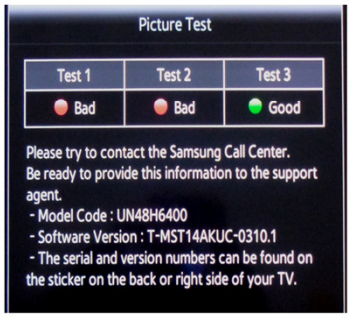
1.



2.

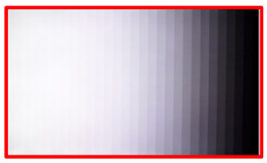
Picture Test

1. Enter **Picture Test**
2. **Verify Test 1** Photo which is from Main Board, if it's OK suspect source, cable, or input.
3. **Verify Test 2** Test Pattern from T-Con (FRC). If it's OK - Main Board or LVDS problem.
4. **Verify Test 3** from T-Con. If it's OK and Test 2 failed, than T-Con Board problem.

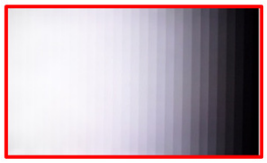


(Sample when Test 1 & Test 2 Fails & Test 3 Passes. Problem is T-Con Board.)

3.



4.



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Customer Picture Test Procedure for LED TVs with FRC Circuit (120Hz or 240Hz models)

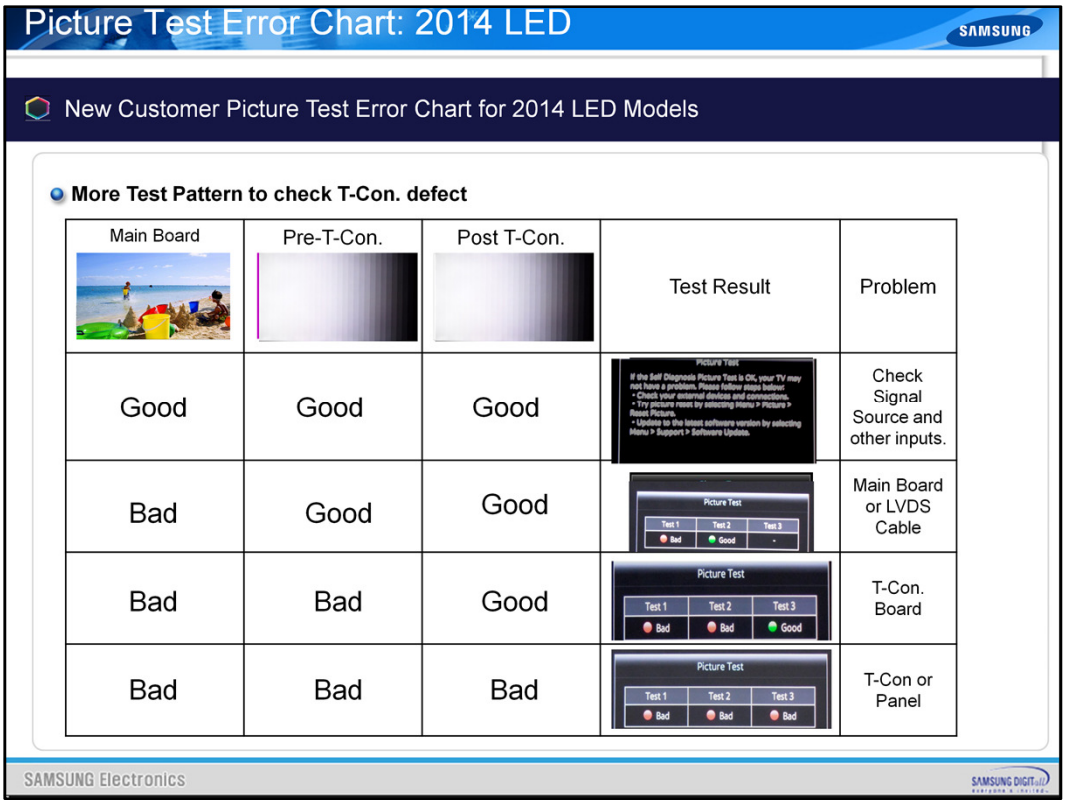

Chart shows probable failures with specific error conditions diagnosing Main, LVDS, T-CON or Panel Failures


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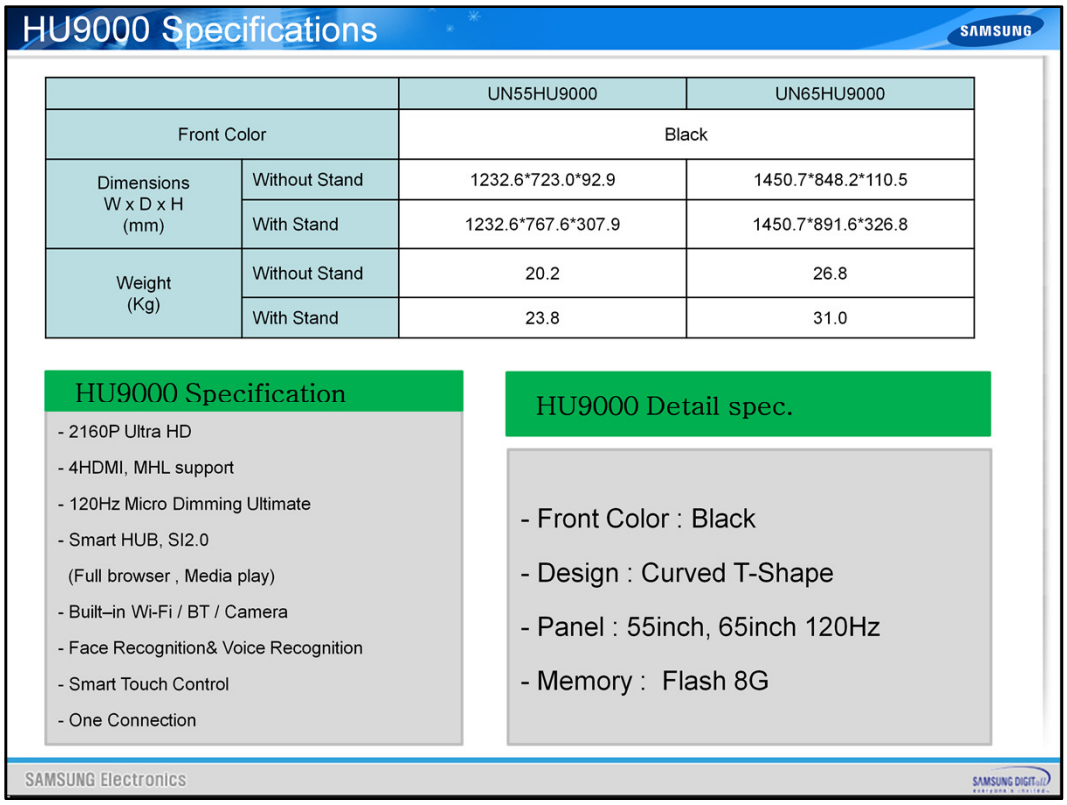
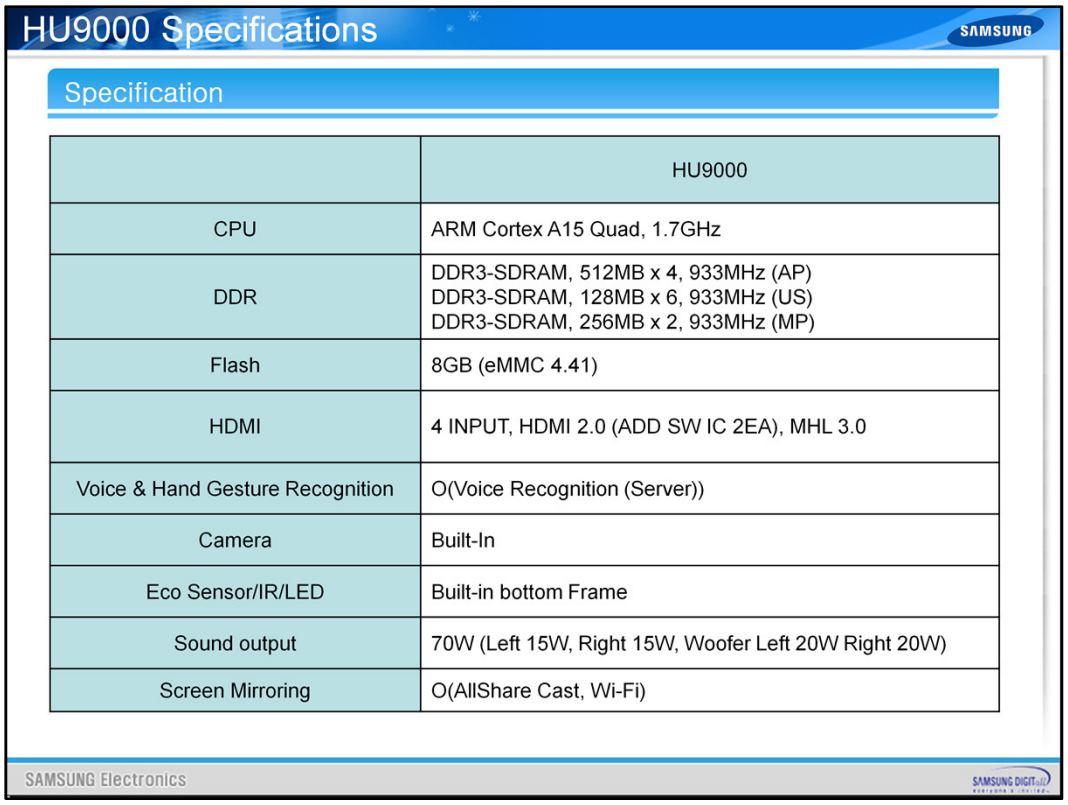
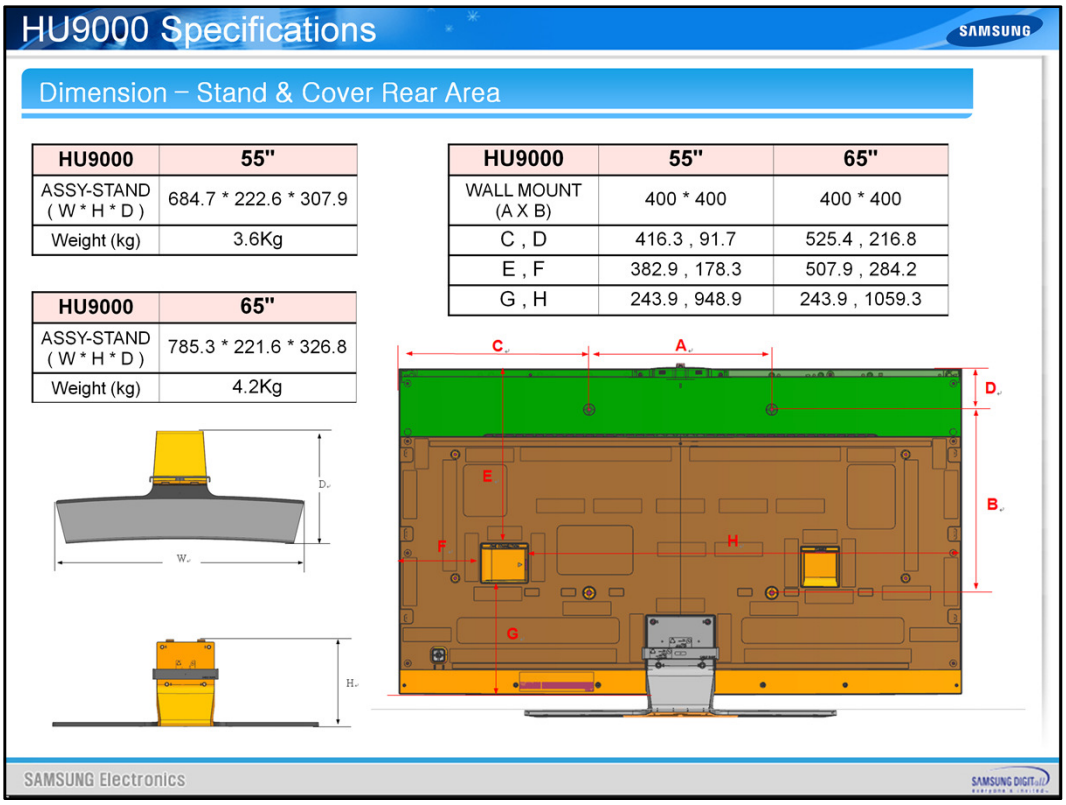
UHD TV
UN55HU9000FXZA
UN65HU9000FXZA
SAMSUNG Electronics



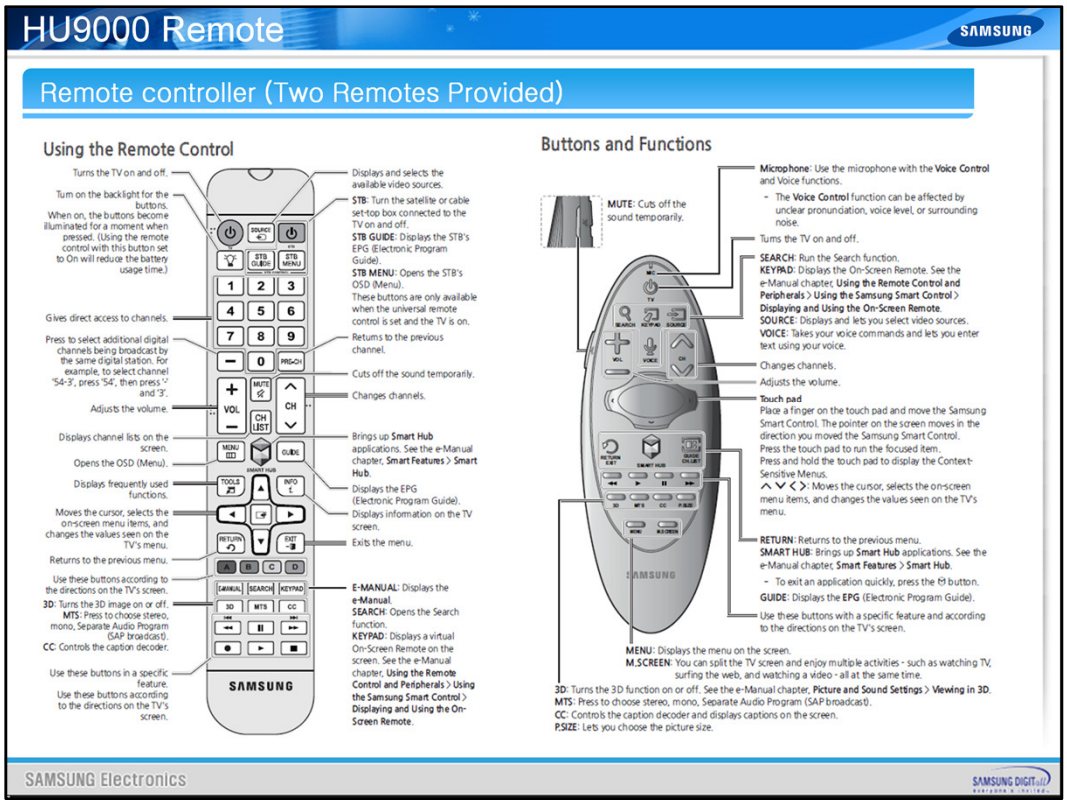
HU9000 Specifications and features are listed for both the 55 inch and 65 inch curved UHD models. The key listed item is the external “One Connect Box” used for Samsung UHD 9000 series TV Models.



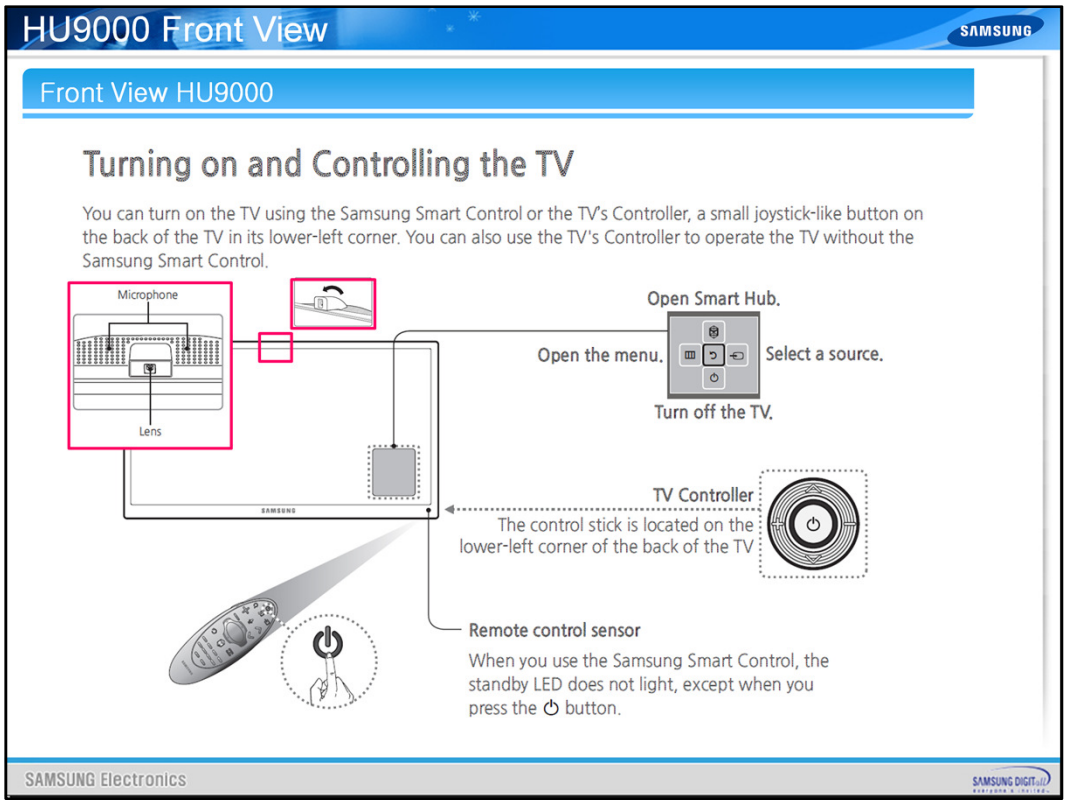
Additional specifications include the A R M Cortex A 15 Quad Core Processor at 1.7 Gigahertz and 8 Gigabyte Flash as well as built in M O I P Camera.



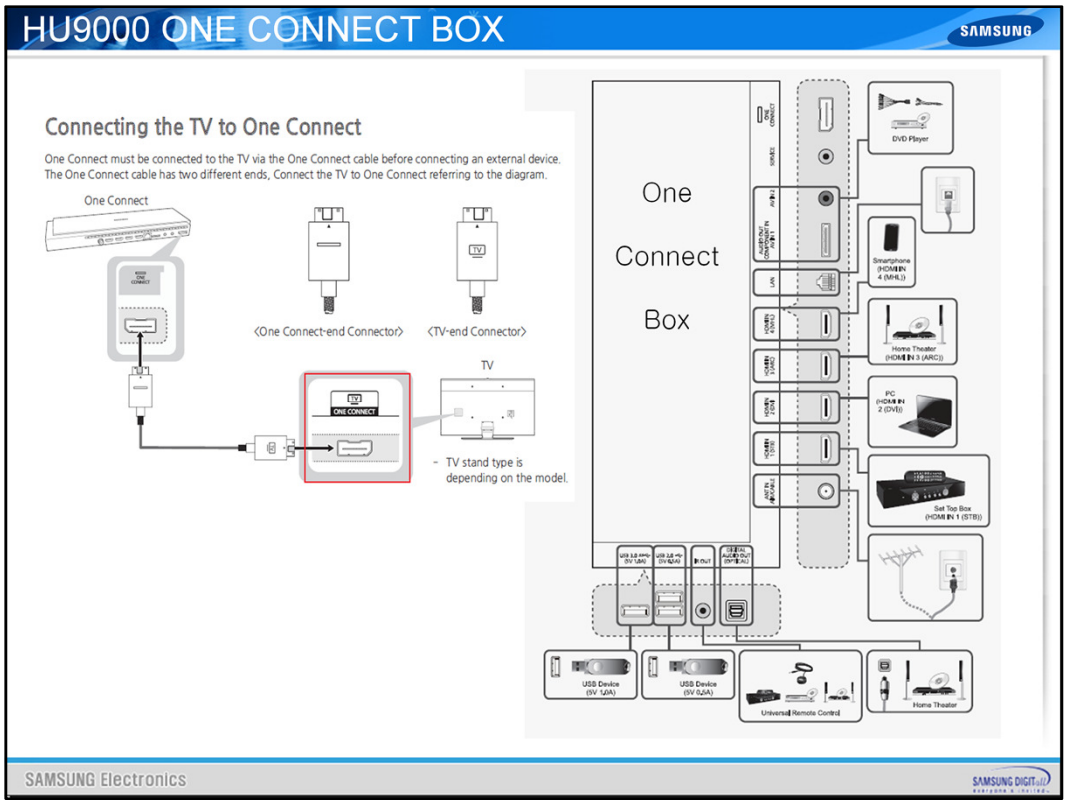
Important dimensions for the HU9000 65 inch and 55 inch models with wall mounting specifications included for reference.



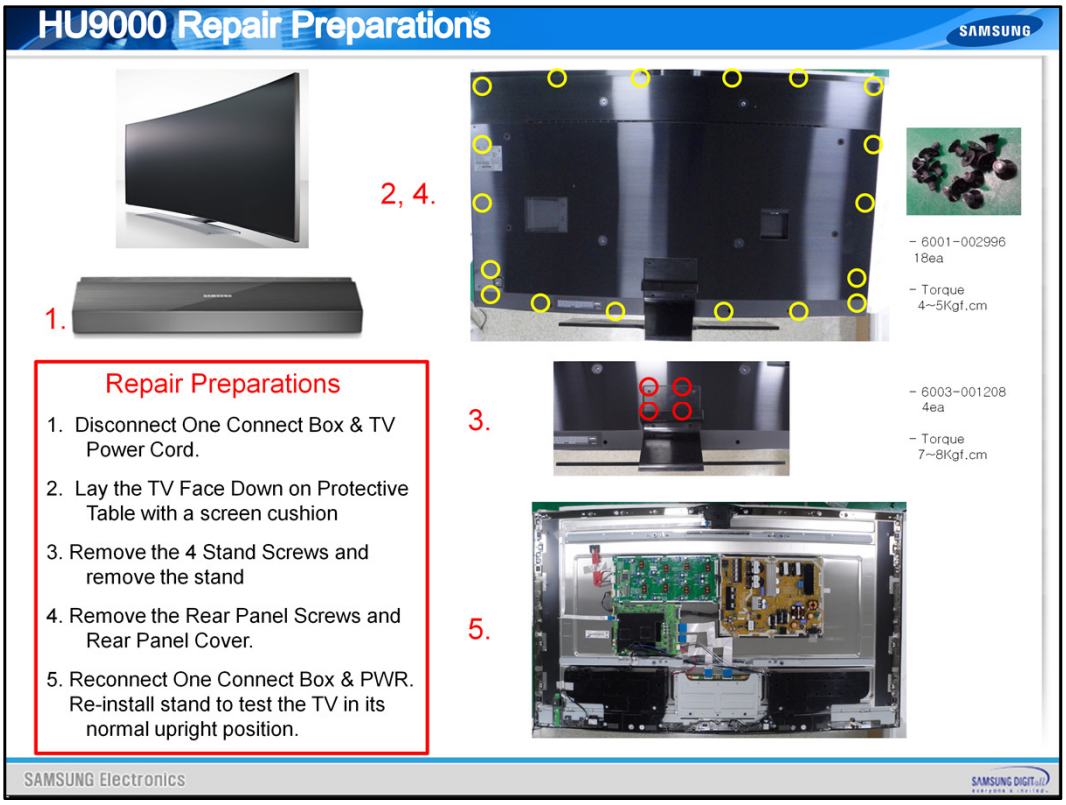
Two remotes are provided for these models. The standard IR remote on the left and the new 2014 Smart Gyro remote on the right.



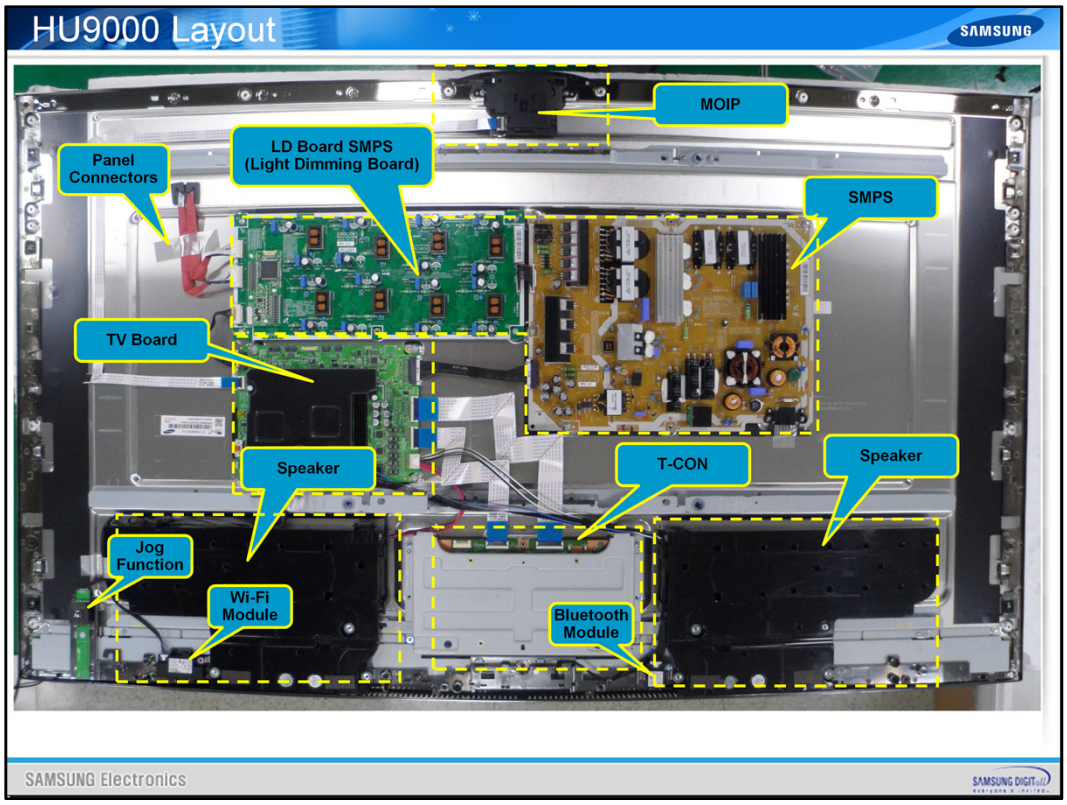
The front view shown here includes the locations of the MOIP Camera, Remote control sensor, and TV Jog Function controller.



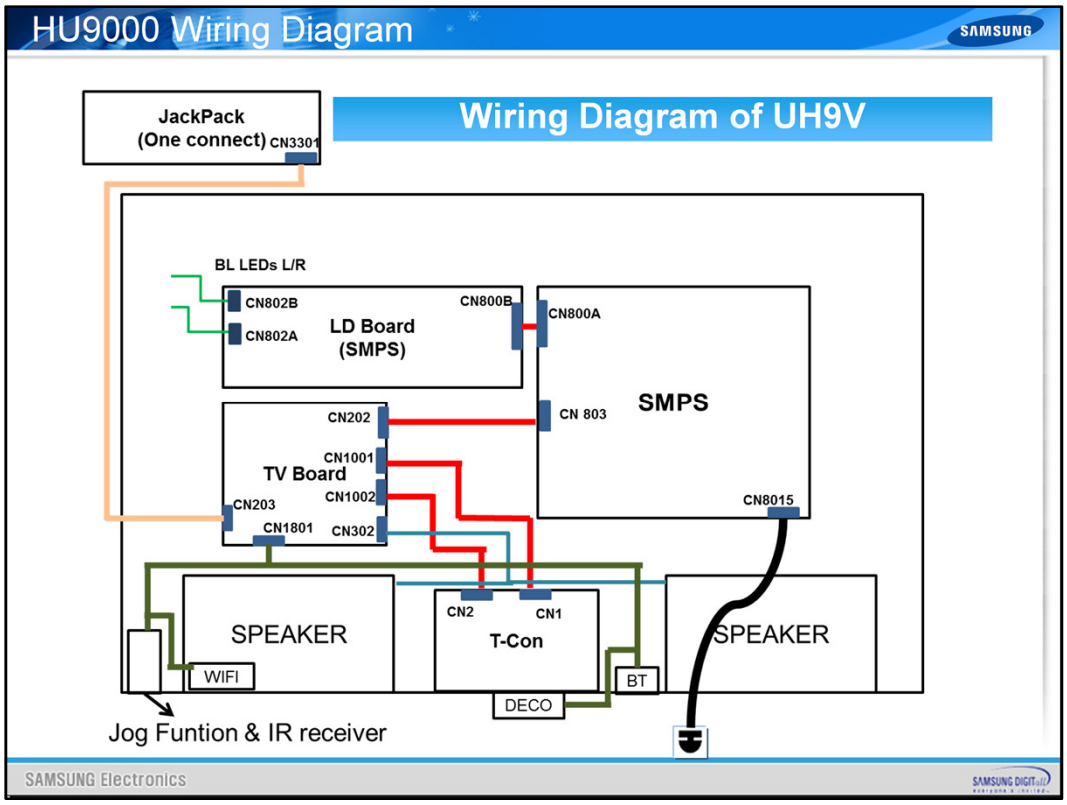
The external One Connect Box is illustrated with it's one connection to the TV seen on the upper left. All sources connect to the One Connect Box. The single One Connect Cable connects to the TV along with the TV AC Power Cable. The One connect Box gets its operating power from the TV through the one connection cable. The One Connect cable is keyed on both ends along with icons representing the TV end and the One connect Box end. The cable is 3 meters and specific for the Samsung One Connect Box. It's important to use the correct One Connect Box and Cable for the specific model. Other Samsung One Connect Box models may not be compatible and actually cause screen errors or damage to the TV or Box. If the TV is powered on without the One Connect Box a special disconnect Icon will appear on the TV and no TV functions will operate.



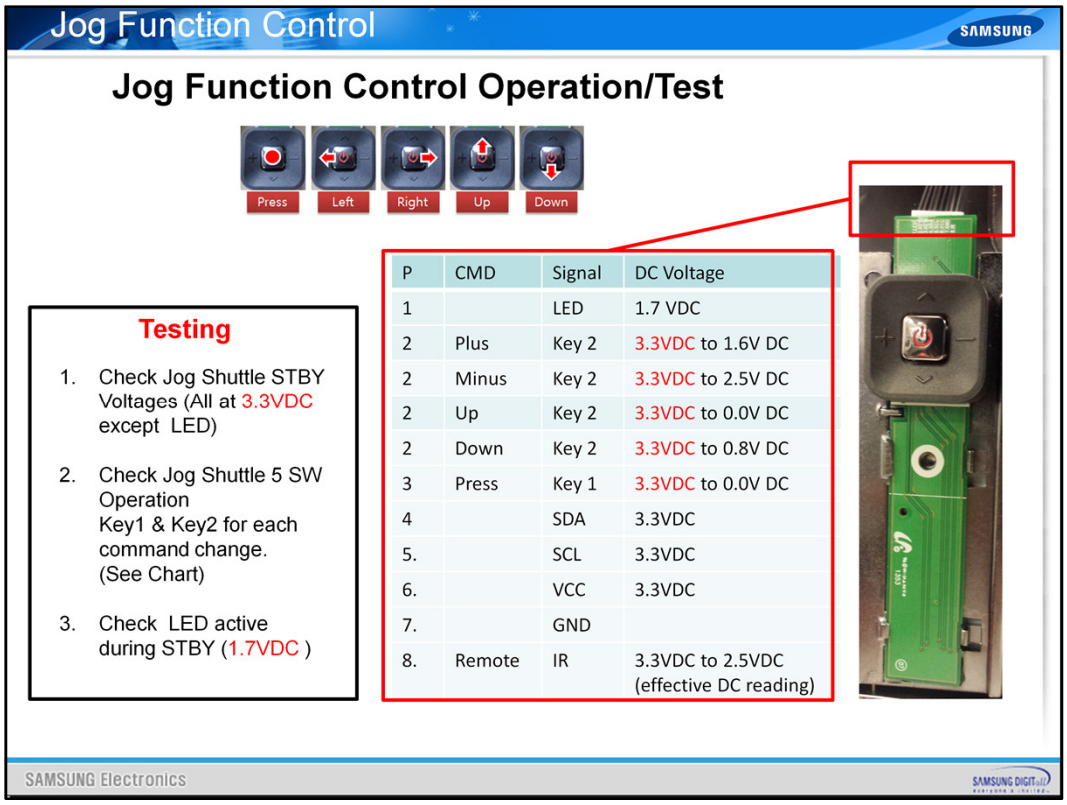
Important repair preparations are listed and include special protection of the curved screen.



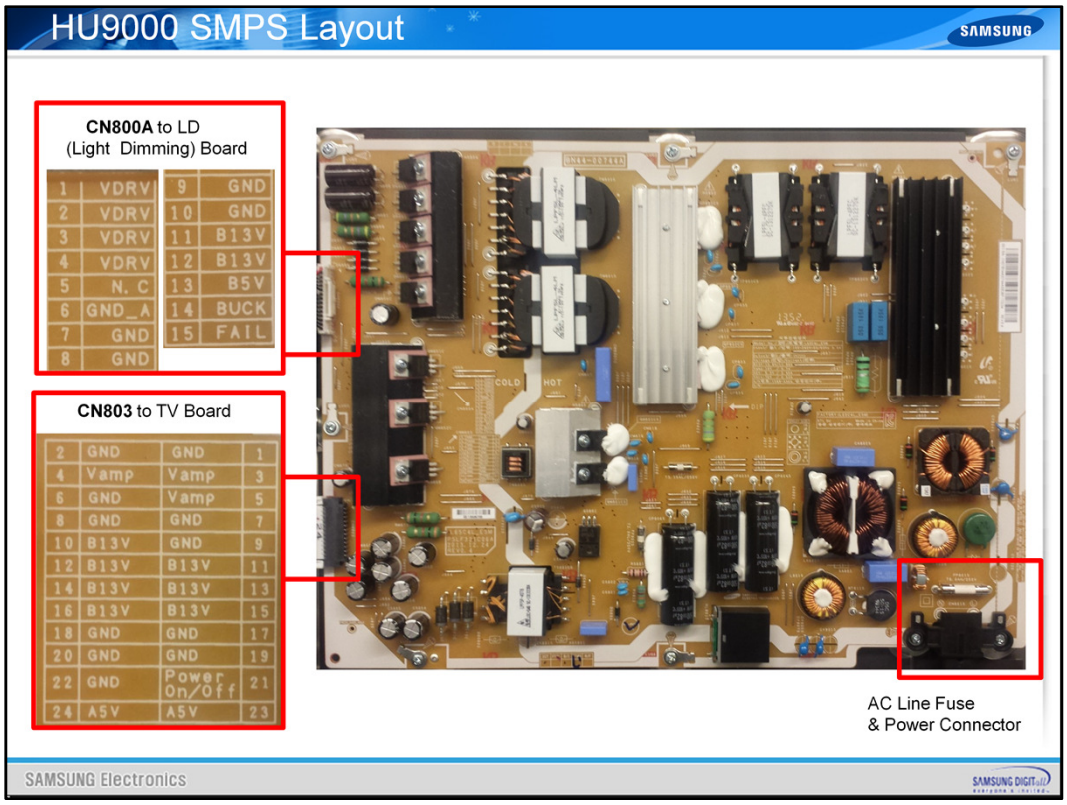
The Layout for the HU9000 is seen here and includes the SMPS Board, LD (Light Dimming) Board (SMPS), TV Board, MOIP Camera Mic Module, Jog Function Board, Wi-Fi & Bluetooth Modules, and Left & Right Speakers.



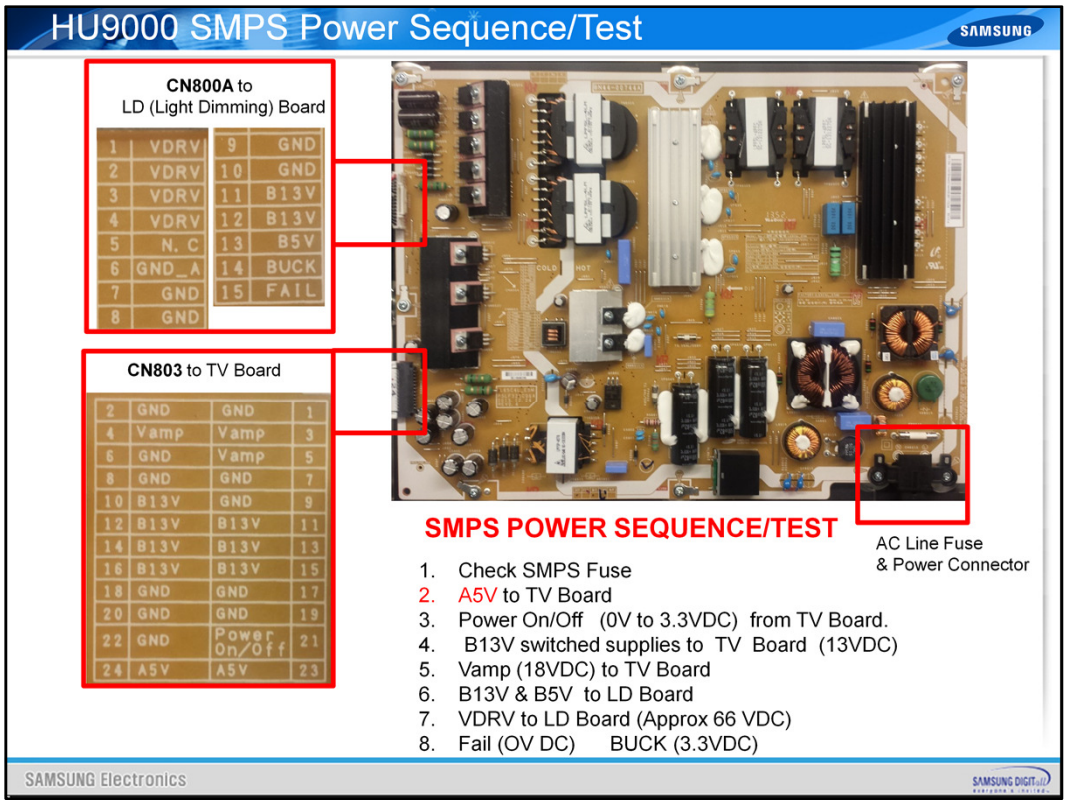
The Wiring Diagram for the HU9000 includes the SMPS to the LD Board which includes Backlight Micro Dimming, the TV Board sometimes known as the TV's Main Board which connects to the external One Connect Box. The TV Board also connects to the SMPS, T-CON with two LVDS Cables for UHD, speakers, Jog Shuttle, MOIP not shown, and Bluetooth and Wi-Fi Modules.



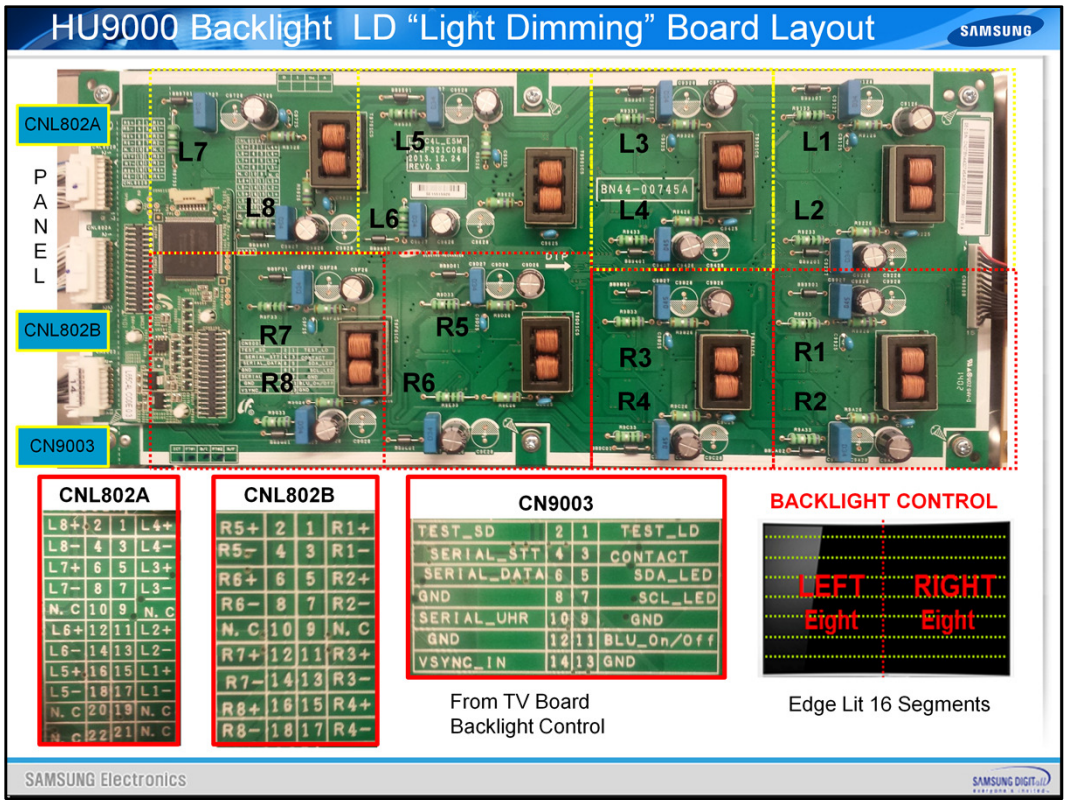
The Jog Shuttle is similar in operation to the standard LED models already discussed with the same steps for testing just different pin outs as seen here. Remember that the pins, except the Standby LED, should read approximately 3.3 Volts DC before any commands are triggered. This is important for troubleshooting.



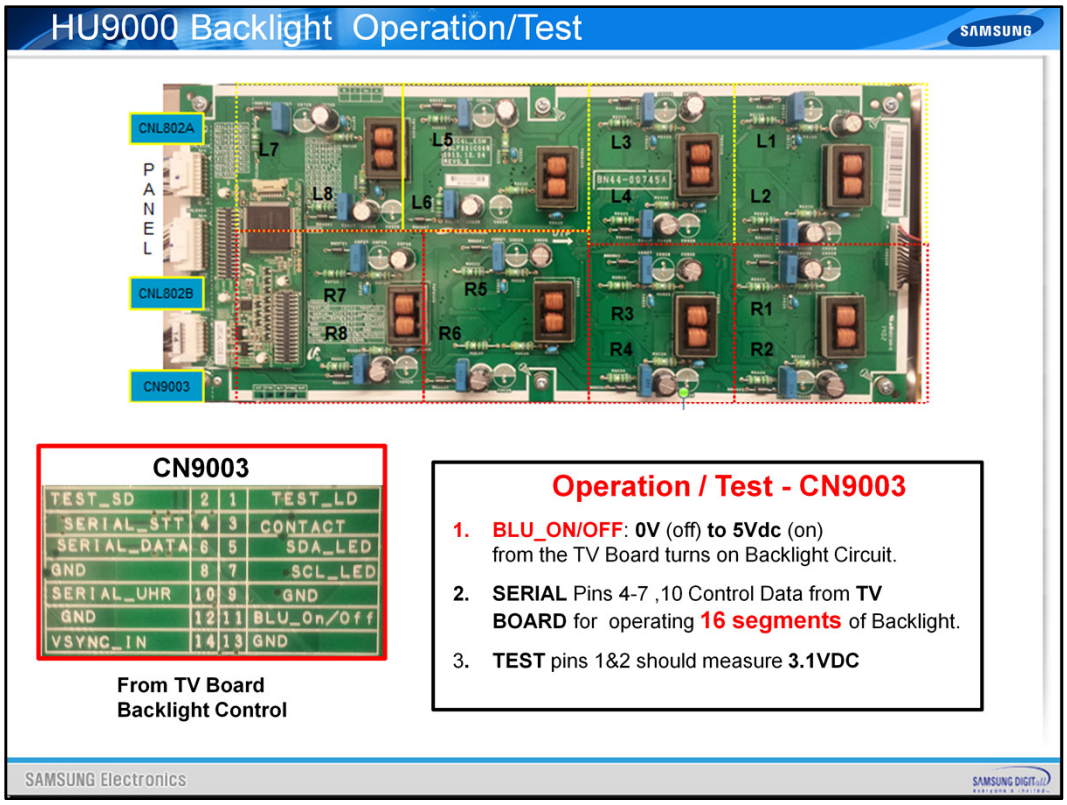
The SMPS Power Supply Layout is seen here and includes the 15 pin connector to the LD **Light Dimming** Board and the 24 pin connector to the TV Board.



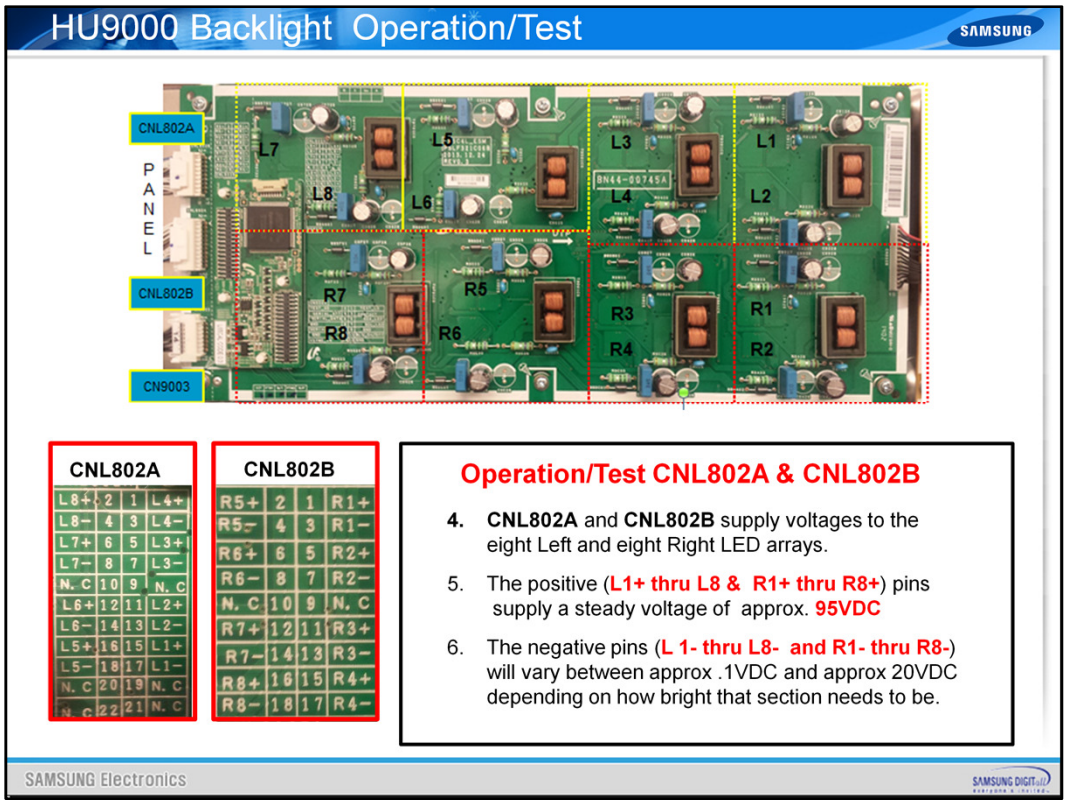
SMPS POWER SEQUENCE and TEST is listed.



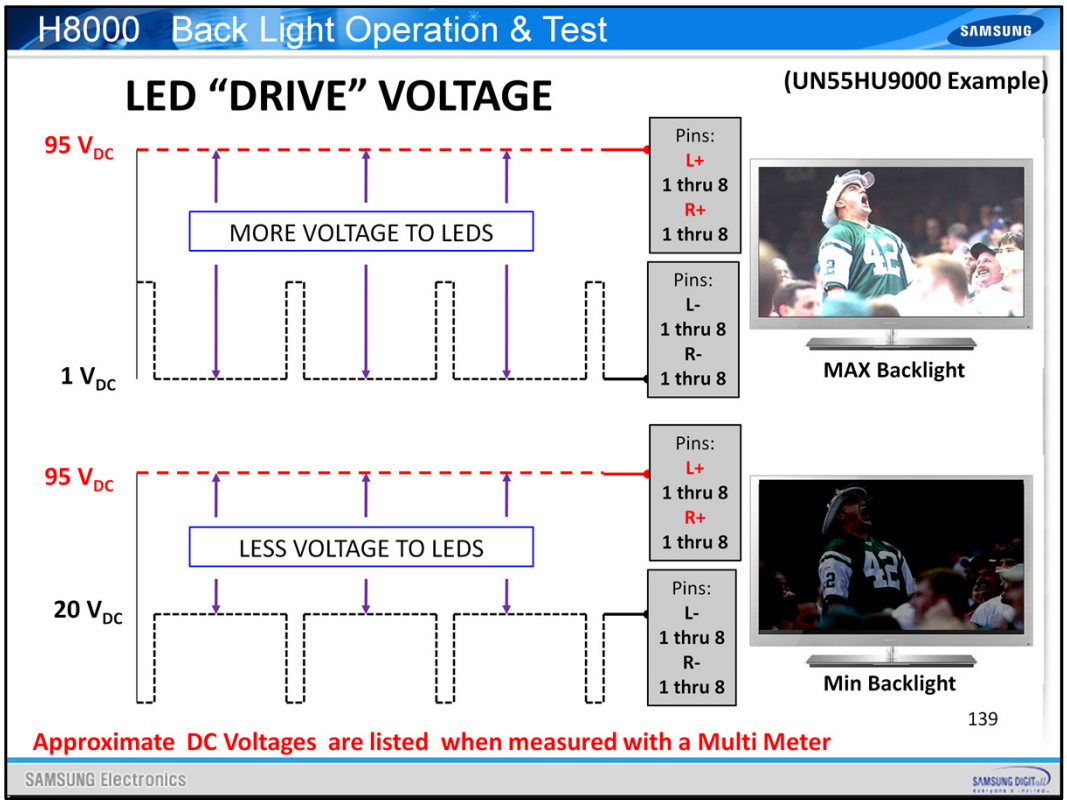
The Backlight's LD "Light Dimming" Board shown here consists of 16 segments of LED control. L1 through L8 and R1 through R8, for left edge lit LED's and Right edge lit LED's on the Panel. The LD Board receives it's control signals from the TV Board at CN9003 14 pin connector. CNL802A for Left edge outputs the L plus and L minus backlight drive signals and CNL802B outputs the R plus and R minus for the Right edge panel backlight drive signals.



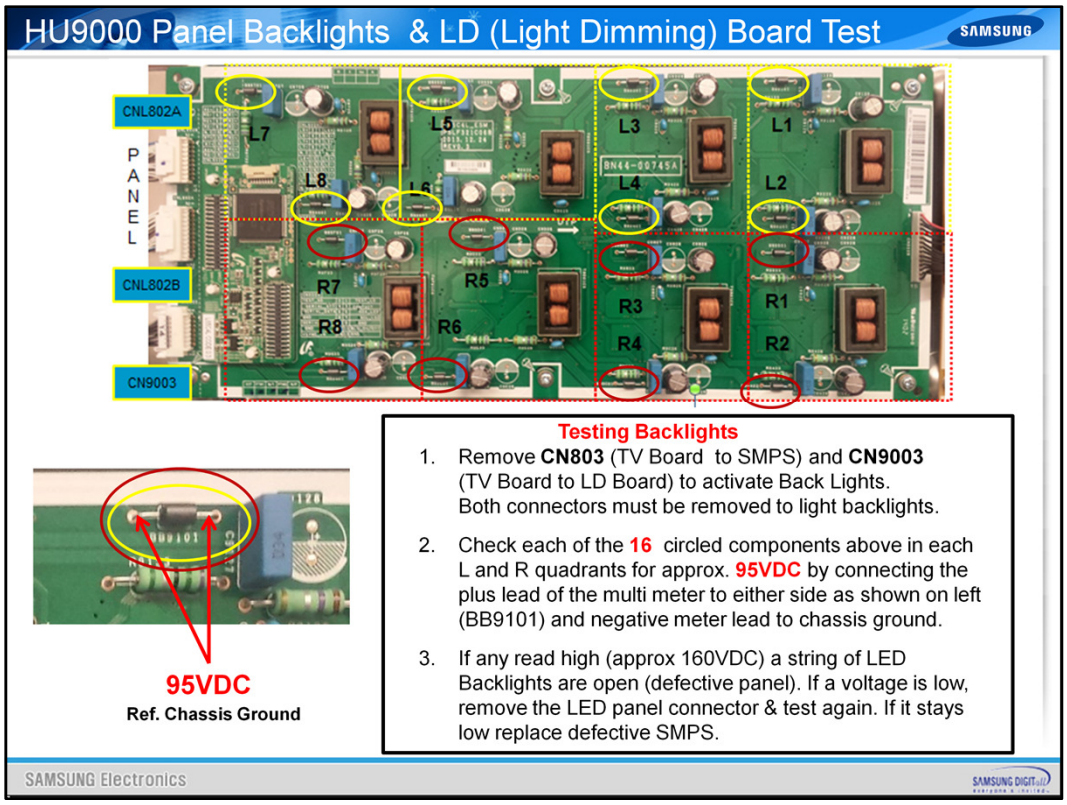
Operation Sequence and Test CN 9003 from TV Board.



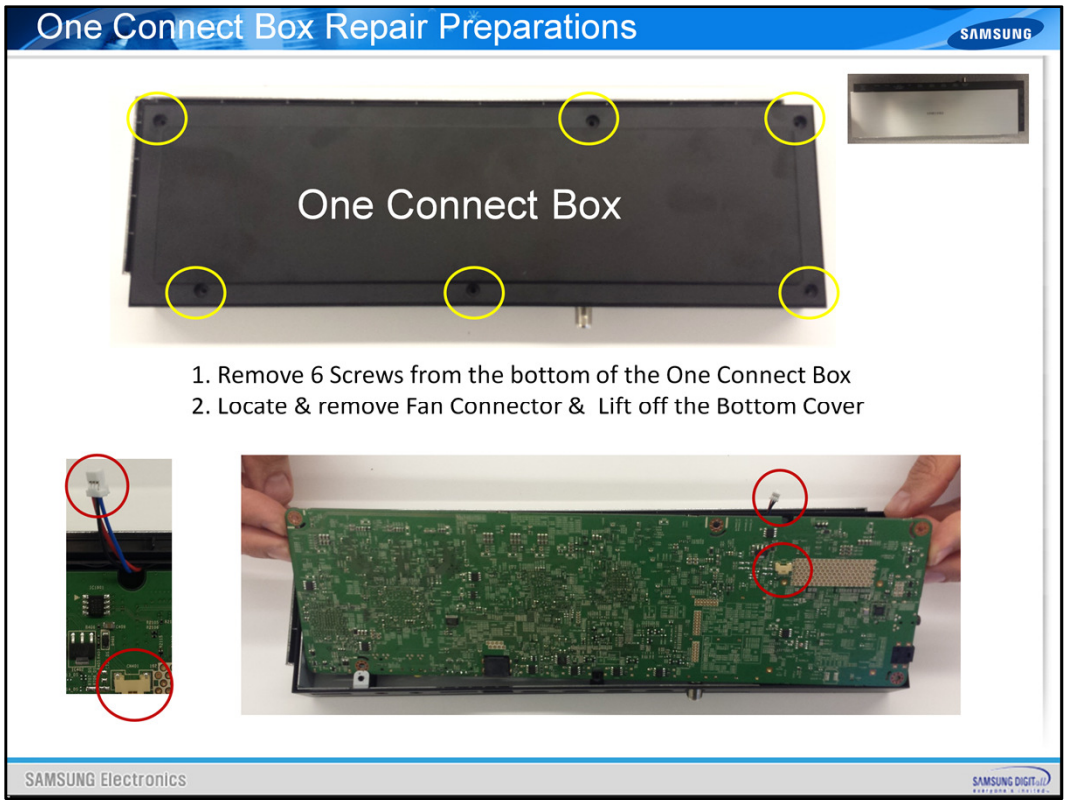
Operation and Test are continued at CNL802A and CNL802B Backlight Panel Connectors.



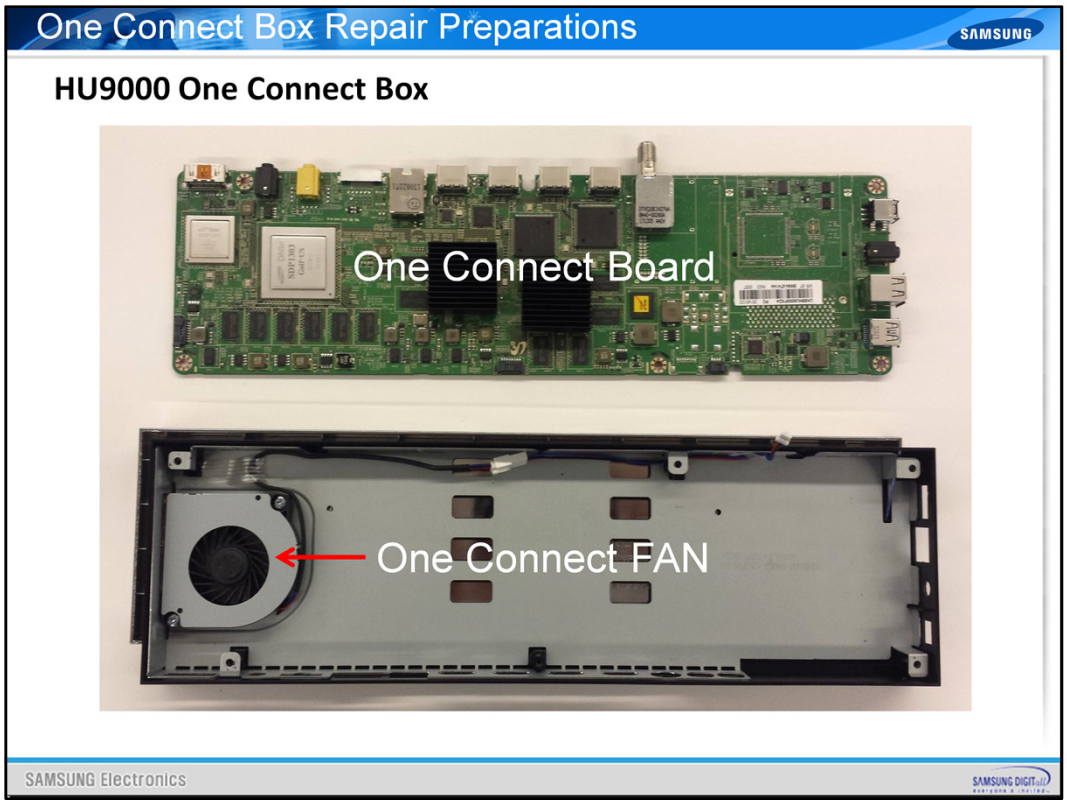
LED Drive operation is displayed and includes the fixed 35 Volts Supply to the plus LED Pins and varying 10 Volts supply to the negative LED Pins along with their effect on the screen Backlight condition. Notice the 10 volt supply is actually a TTL type signal that varies in duty cycle on time. As this negative side 10 volt drive goes higher in level, more on time of the 10V feed, the panel LEDs becomes dimmer. Use a standard DC volt meter to test the effective voltage and changes.



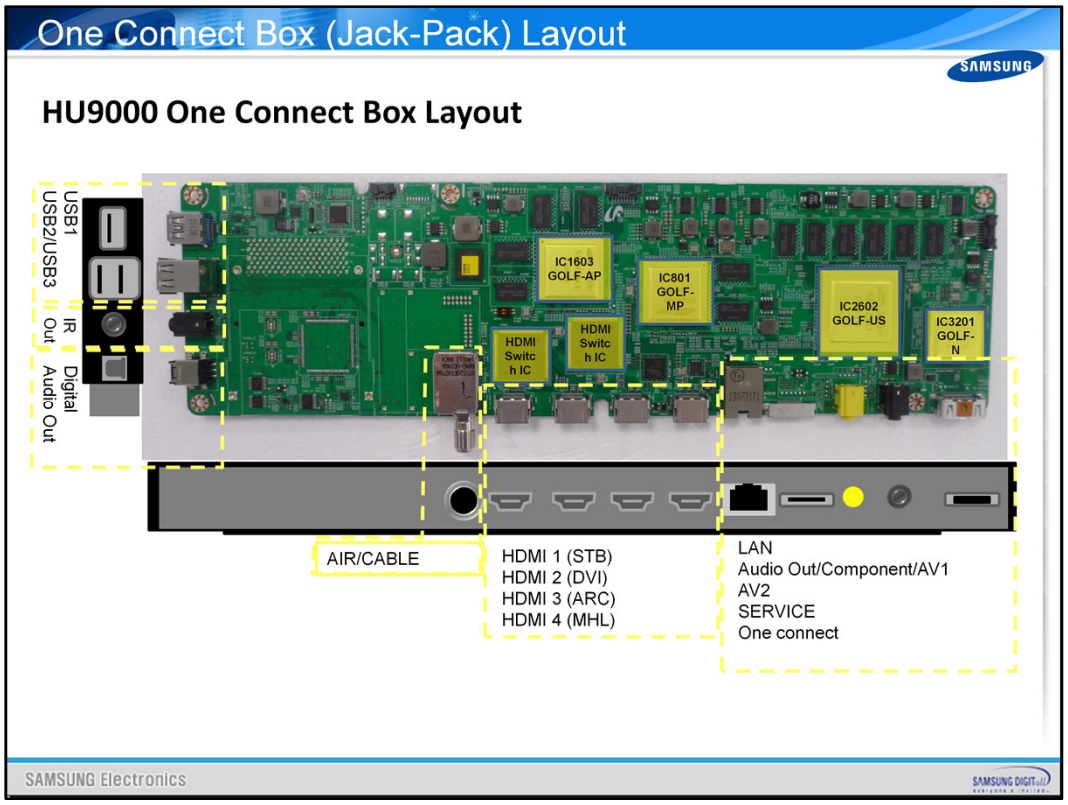
Testing and Troubleshooting the Panel Backlights and LD Board for Operation and Repair.



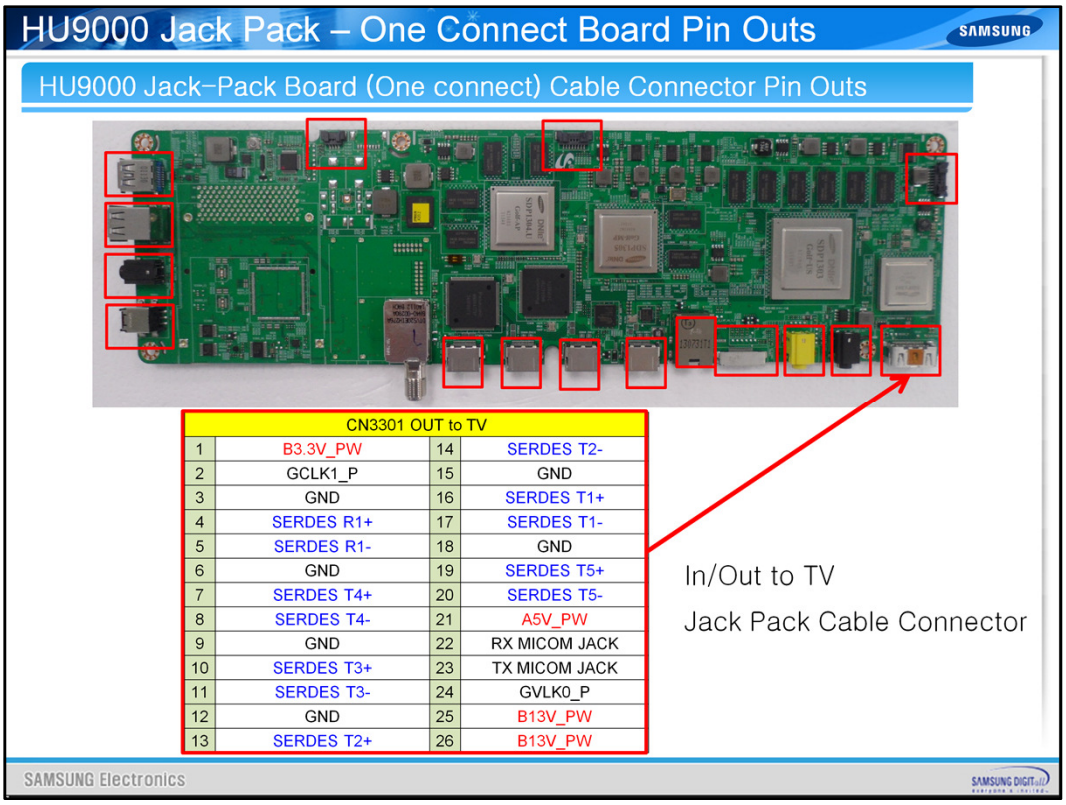
To prepare the One Connect Box for servicing:
1. Remove 6 Screws from the bottom of the One Connect Box
2. Locate & remove Fan Connector & Lift off the Bottom Cover



One Connect Box Main Board and Fan locations.



The Layout or the One Connect box includes important IC Locations including the Golf Microprocessor since the One Connect Box actually operates as the TV's Main Board. Connections include USB's, HDMI's, IR Out, Digital Audio Out, Air and Cable RF connector, LAN & AV & Component connectors.



The 26 pin One Connect Cable includes the A5V Standby Power, switched voltages B13V and B 3.3V, and important Signal information labeled SERDES which stands for “Serial to De serial” data type information.

One Connect Box (Jack-Pack)

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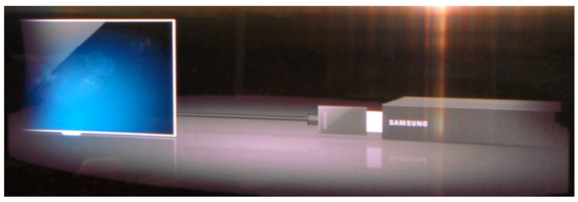
- TROUBLESHOOTING: **ONE CONNECT BOX**

SYMPTOM: TV Power's On with no on screen video or menu:

1. Power the TV "Off"
2. Unplug One Connect Cable to the TV.
3. Power the TV "ON"



One Connect Box (Jack pack) disconnect banner will appear.

4. If there is a problem in the One Connect Box and the TV Panel is OK the disconnect banner will appear.
5. Replace defective One Connect Board.

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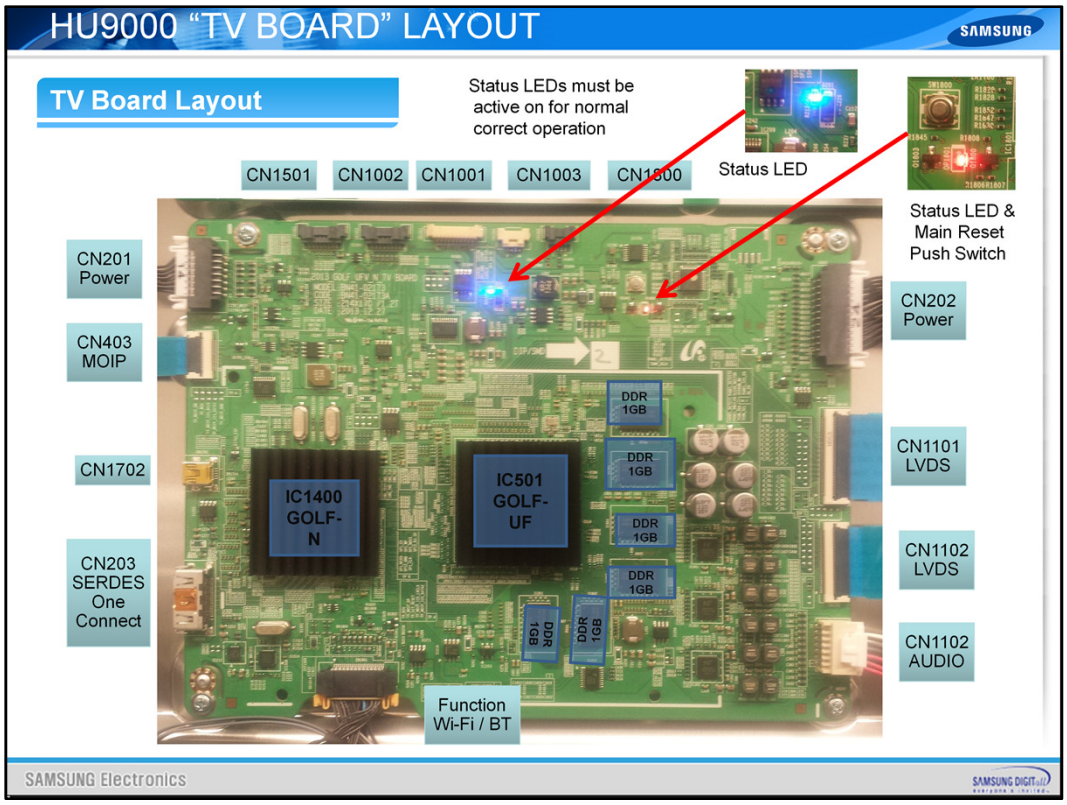
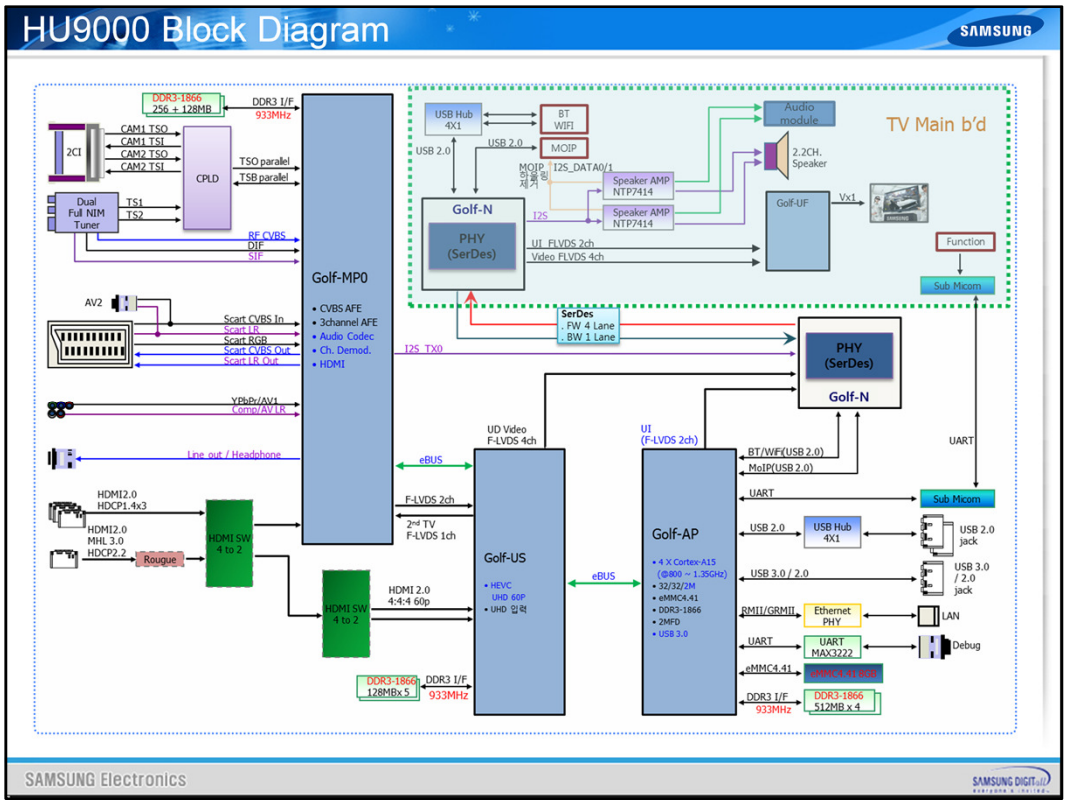
Follow these steps for troubleshooting the One-Connect Box. A typical symptom may be that the TV Power's On with no on screen video or menu:



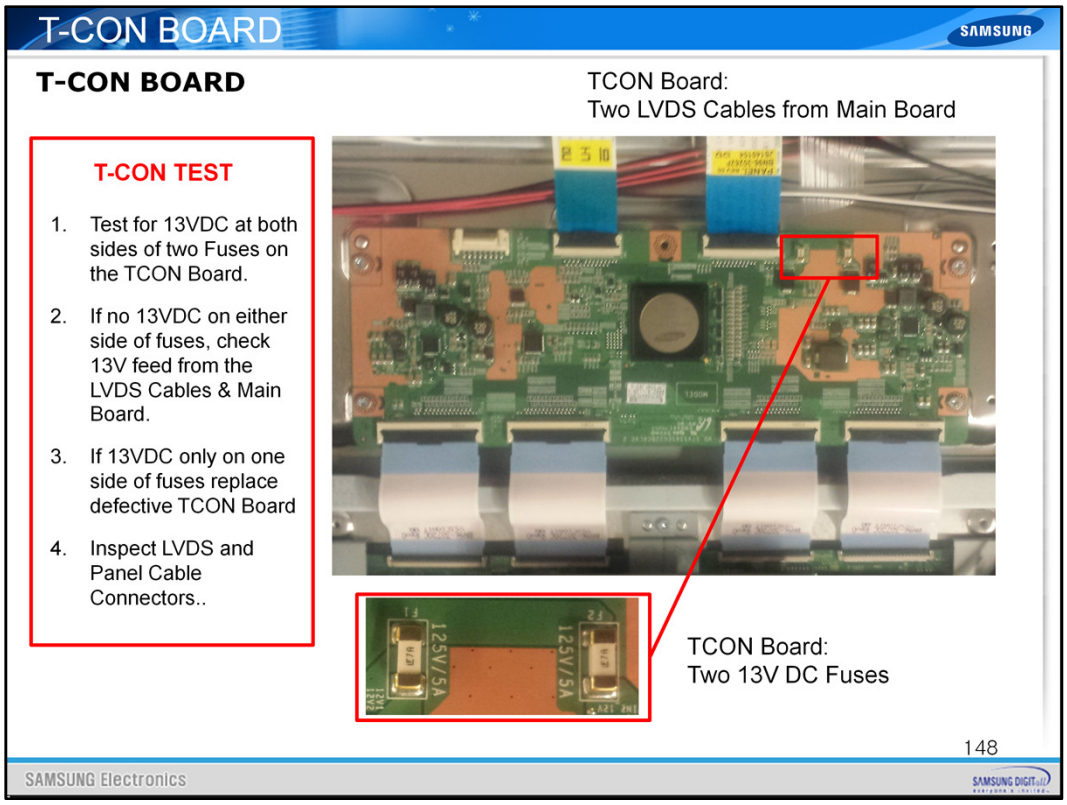
Important Status LEDs seen at the top must be on for normal and correct TV Board operation.

The TV Board Layout includes important IC's Golf-N and Golf – UF which support the Golf Main CPU in the One Connect Box. The input connectors include the important SERDES Connect for the One Connect Cable, MOIP Camera and Mic connector, and the two LVDS Connectors for T-CON Board Connection.

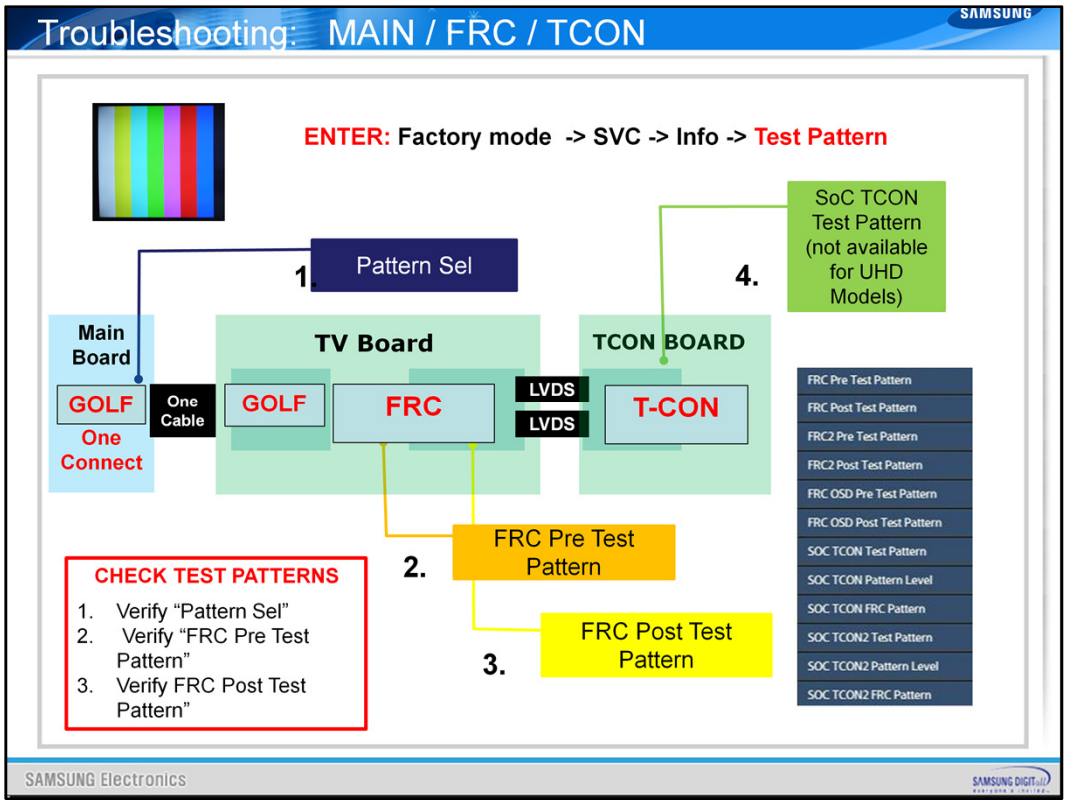
This TV Board consists of the important FRC, Frame Rate Control, Circuitry.



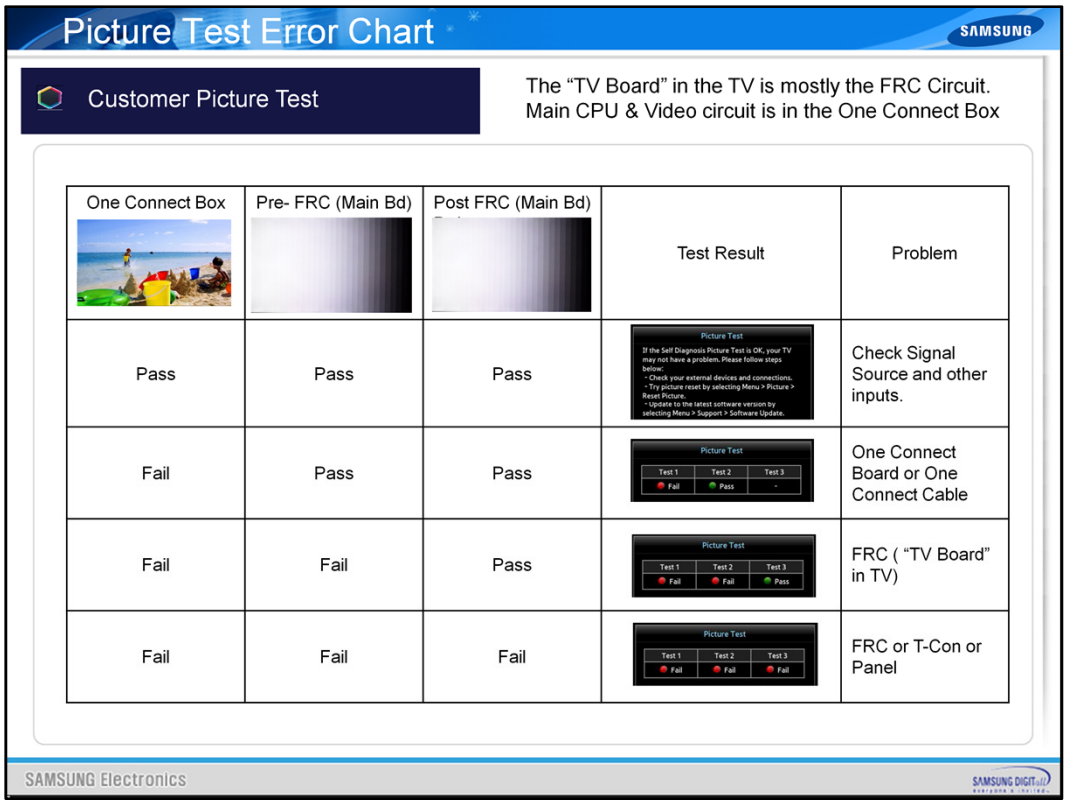
The Operational Block Diagram includes the Golf MPO, Golf US, and Golf AP located in the One Connect Box. All inputs connect and are processed by these IC's. The section seen here in the dashed line area at the top right are the IC's on the TV Board. The Golf-N processes the special signal from the One Connect Box and outputs two LVDS video Data signals to the Golf UF in the T-Con Board to the TV.



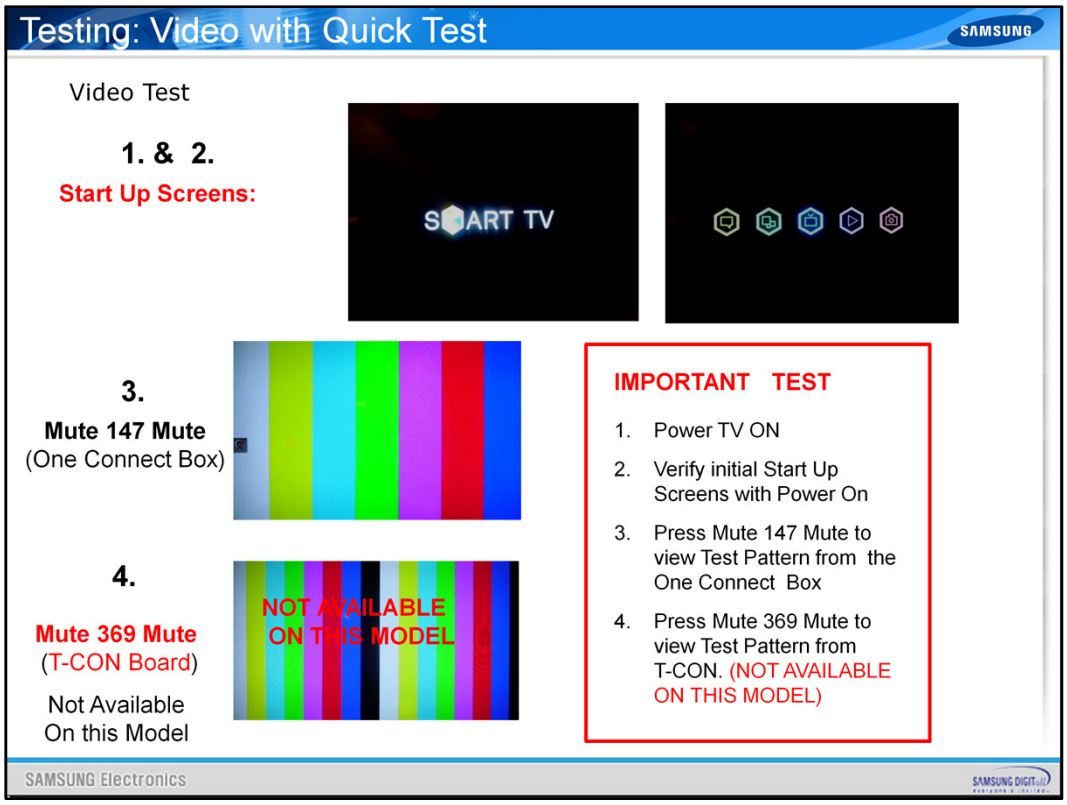
Testing the T-Con Board is similar for other LED TVs.



The input signals enter the One Connect Box which outputs the special SERDES Data Signal to the TV Board. The TV Board, primarily FRC, processes the signal and outputs the UHD Video Signal through two LVDS Cables, to the T-CON board, which processes and outputs through 4 connectors to the Panel.
Follow Test Procedure Listed.

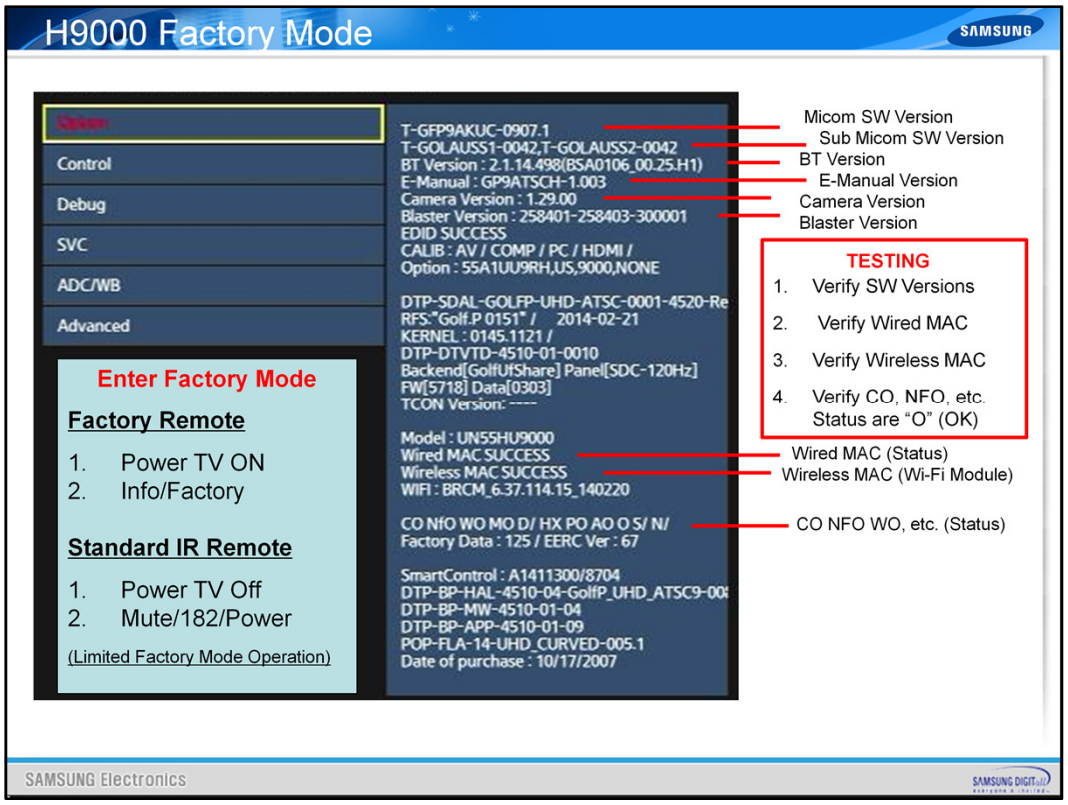


Customer Picture Test is similar procedure for other LED TVs, however the resulting Problems seen here, is specific for the 2014 H U 9000 models.
The first photo signal is generated on the Main Board in the One Connect Box. The next two are generated from the FRC circuit on the TV Board in the Panel. If the first test fails and the other two are OK than the One Connect Main Board or One Connect Cable is at fault and requires replacing. The other failures would be related to the TV’s TV Board or Panel.

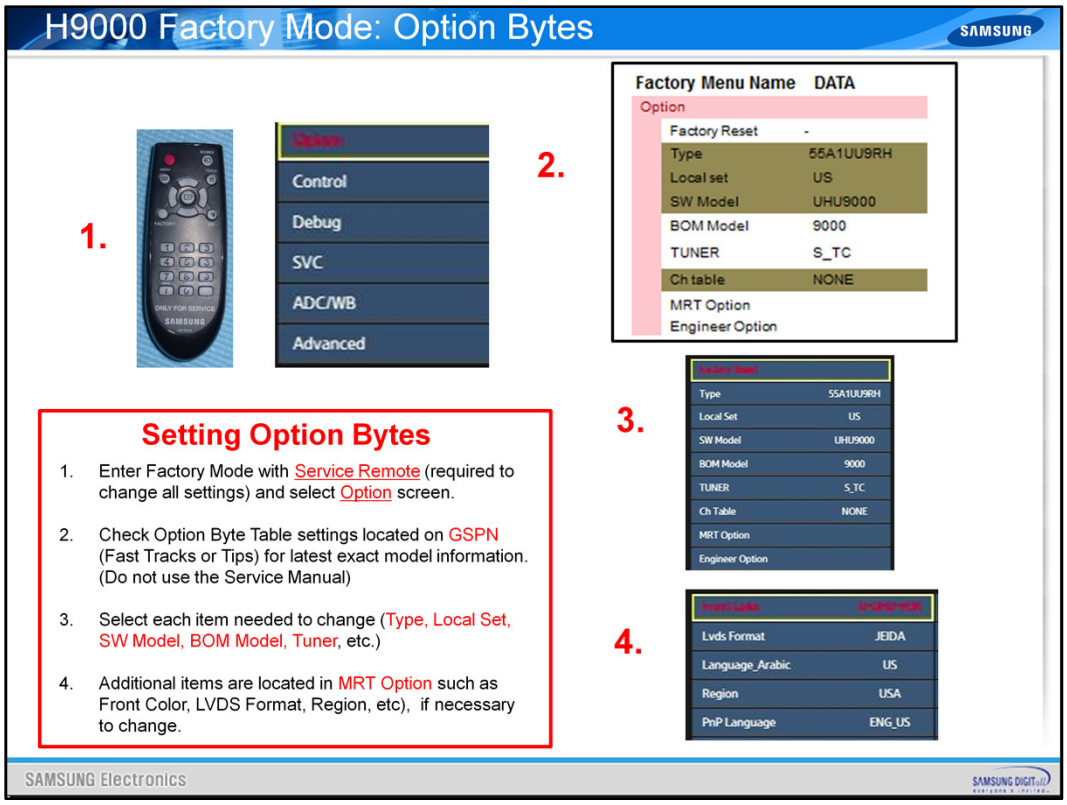


The Quick Test can also be performed for this model but with limitations.

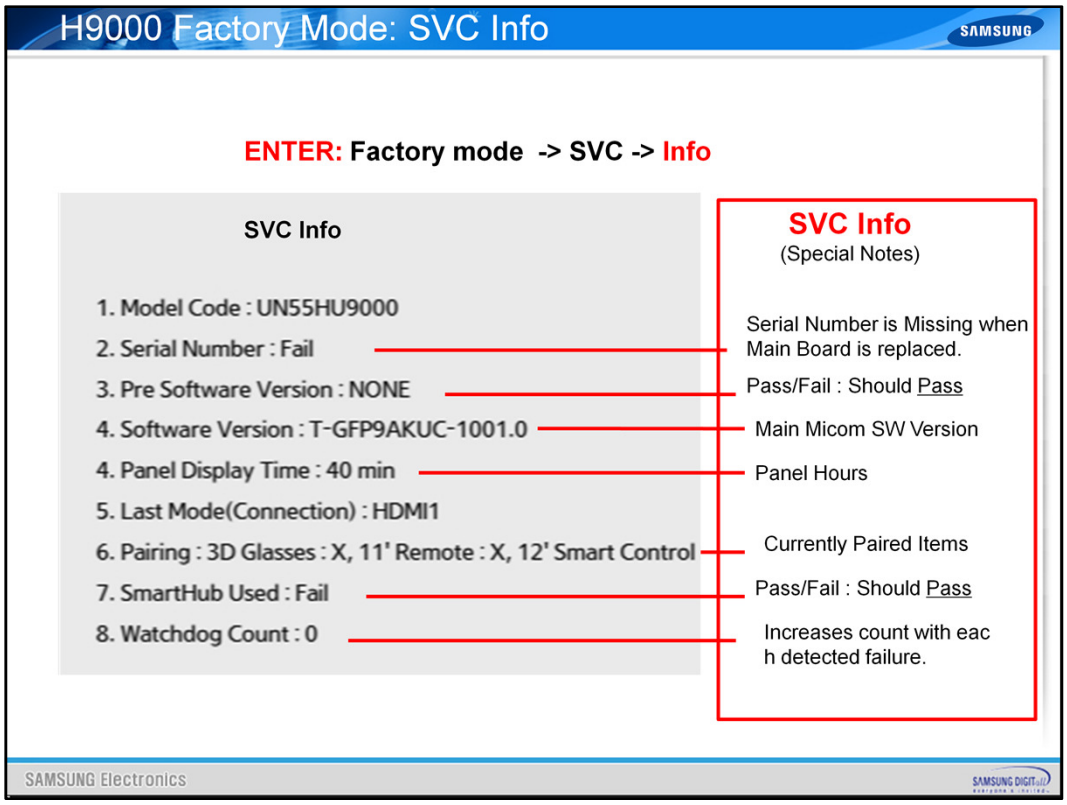
Screen errors are shown for the HU9000 Models.
Typical T-Con Board or Panel Failures are shown in the top left two errors displayed. LVDS Cables or connections errors in the top right. Backlight errors in the bottom left screen. These failures are common to LED TVs. Seen on the bottom right two screens are the One Connect Box Main Board failures including errors in the On Screen Display and a One Connect Main Board data information failure causing “Mostly White Screen with significant data noise on the top and bottom of the screen”.



The initial Factory Service Mode Screen is shown.
Factory Mode can be entered two ways but you Must use a Factory Remote to make important Option Byte changes and have full operation and screens.
See testing.



The Important Option Byte Settings must be verified and set after any Main Board replacement. The Factory Remote is required for these changes. The TV will not allow changes when using Mute 182 Power for Service Mode activation. The procedure is the same as already demonstrated for other TVs. Listed here are the screens and Option Byte table information that appear for this H9000 model.



Important Service Information can be viewed from SVC Info.

F9000 Factory Mode: ER Count / Voltage

ENTER: Factory mode -> SVC -> Info -> ER Count

[redacted]	[redacted]	Serdes Error Count	1
Power Fail Count	0	Serdes Reset Count	-1
AR Count	2		
WIFI ER Count	2		
WIFI NO DETECTION COUNT	-1		
WIFI DETACHMENT COUNT	-1		
BT ER Count	0		
BT NO DETECTION COUNT	-1		
BT DETACHMENT COUNT	-1		
BT MGT OPEN FAIL COUNT	-1		
BT MGT DISCONNECT COUNT	-1		
Camera ER Count	0		
FRC3D Emergency Reboot On/Off	OFF		
FRC3D ER Count	0		
Fan Error Count	-1		

ENTER: Factory mode -> SVC -> Self Test for HW) -> Voltage

A5V : (0) OK
B5V : (0) OK
B12V : (0) OK
Audio Amp(B13V-B18V) : (0) OK
INVERTER ON/OFF : (0) OK
A3.3V : (0) OK
PANEL B+(13V) : (0) OK
LNB(13V-18V) : NOT SUPPORT
LNB_13V18V_SUB : NOT SUPPORT
DECODER 1.1V : (0) OK
USB/WIFI/CI 5V : (0) OK
CPU 1.1V : (0) OK

TESTING

1. Check important and expanded **Error Count** Status Screen. Verify each item listed.
2. Check important **Voltage** Status

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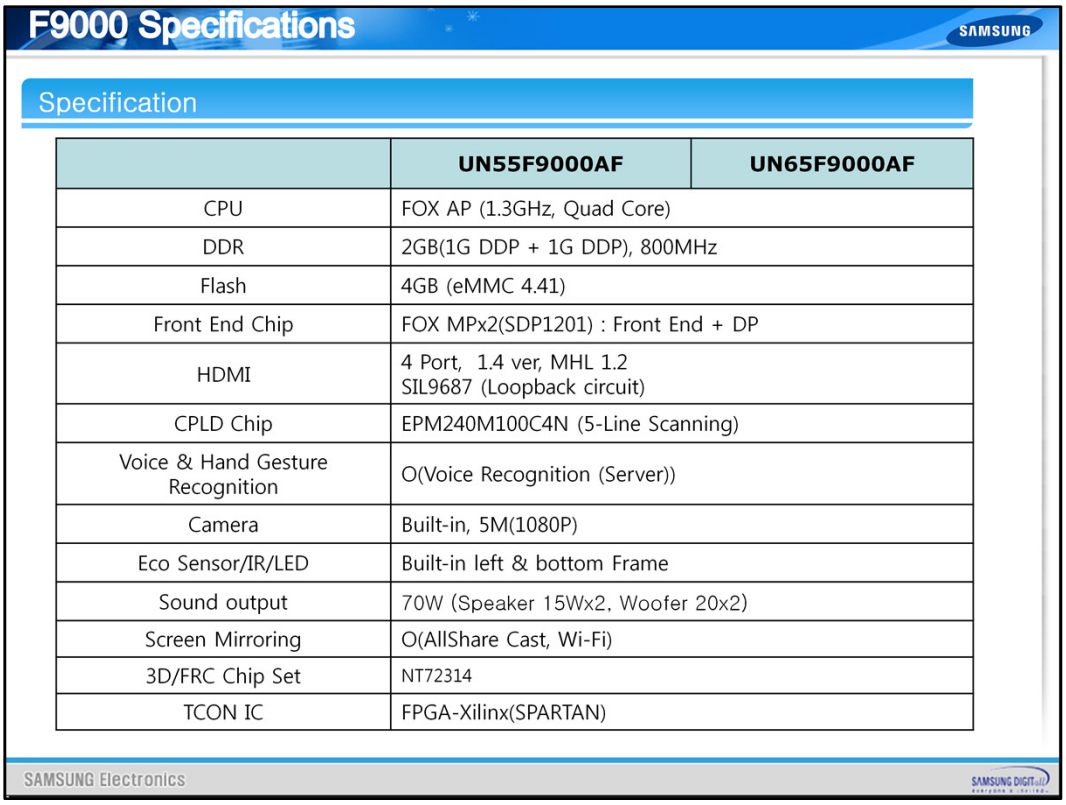
UF9000 Overview is shown including 2160P Ultra HD, Smart Hub, and the external "One Connect Box" used for Samsung UF 9000 series TV Models.



F9000 Specifications

SAMSUNG

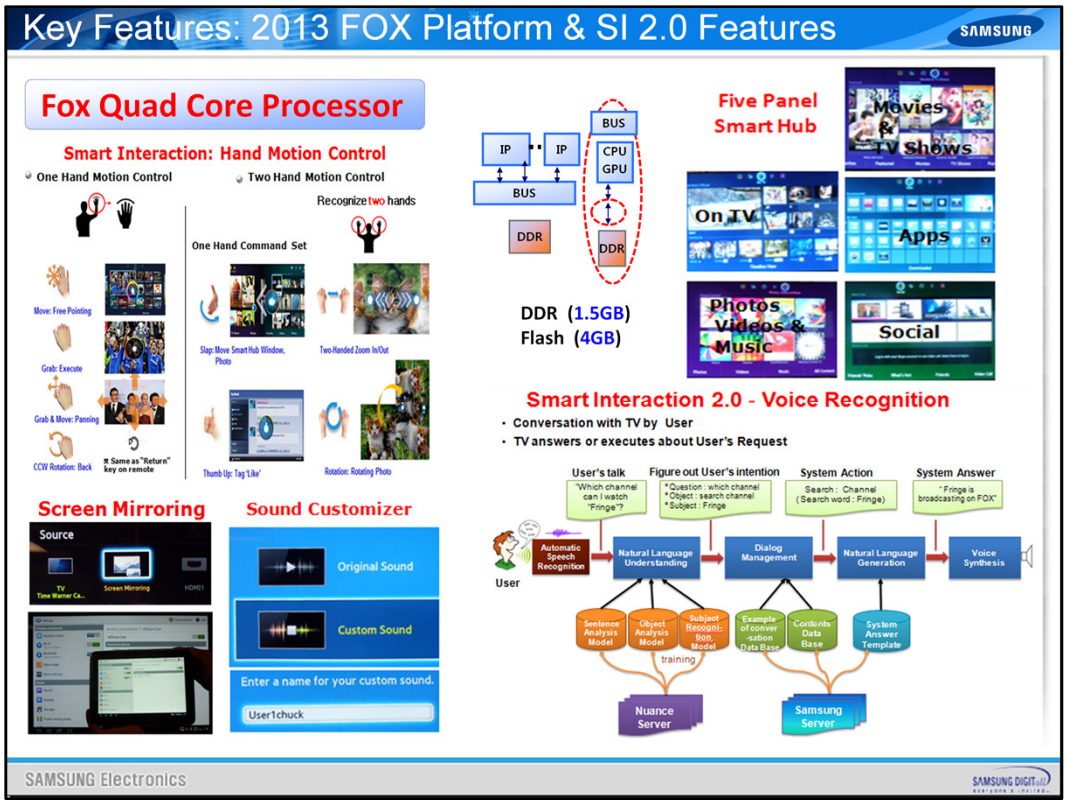
Specification

	UN55F9000AF	UN65F9000AF
CPU	FOX AP (1.3GHz, Quad Core)	
DDR	2GB(1G DDP + 1G DDP), 800MHz	
Flash	4GB (eMMC 4.41)	
Front End Chip	FOX MPx2(SDP1201) : Front End + DP	
HDMI	4 Port, 1.4 ver, MHL 1.2 SIL9687 (Loopback circuit)	
CPLD Chip	EPM240M100C4N (5-Line Scanning)	
Voice & Hand Gesture Recognition	O(Voice Recognition (Server))	
Camera	Built-in, 5M(1080P)	
Eco Sensor/IR/LED	Built-in left & bottom Frame	
Sound output	70W (Speaker 15Wx2, Woofer 20x2)	
Screen Mirroring	O(AllShare Cast, Wi-Fi)	
3D/FRC Chip Set	NT72314	
TCON IC	FPGA-Xilinx(SPARTAN)	

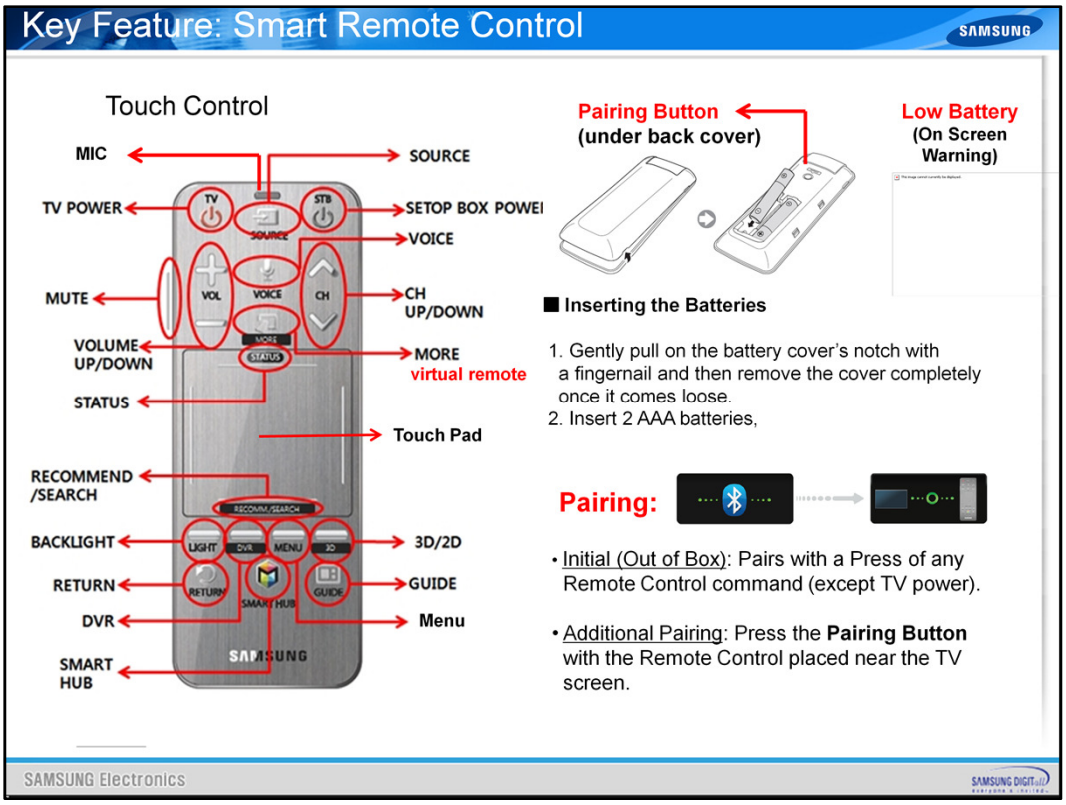
SAMSUNG Electronics

SAMSUNG DIGIT

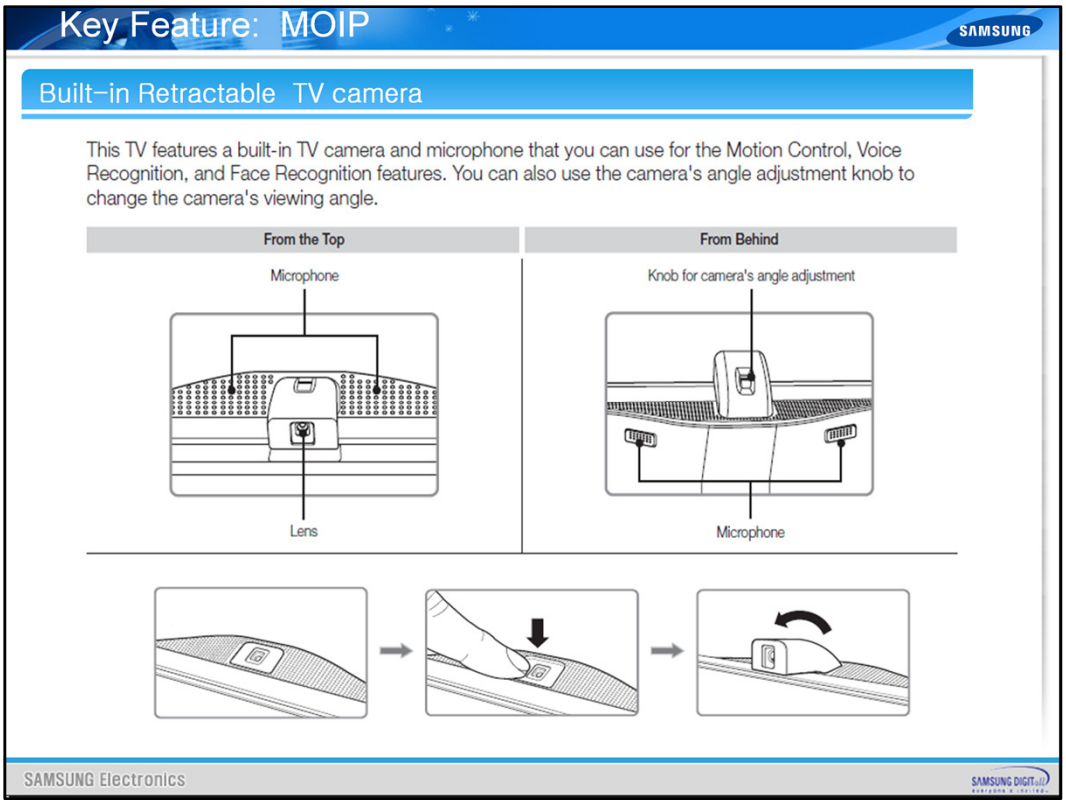
Specifications listed include Fox CPU, and built in MOIP 5 Mega Pixel Camera.



Key Features are listed and include 2013 Fox Platform Smart Interaction 2.0. Also the Fox Quad Core Processor, Five Panel Smart Hub, Screen Mirroring, and Sound Customizer.

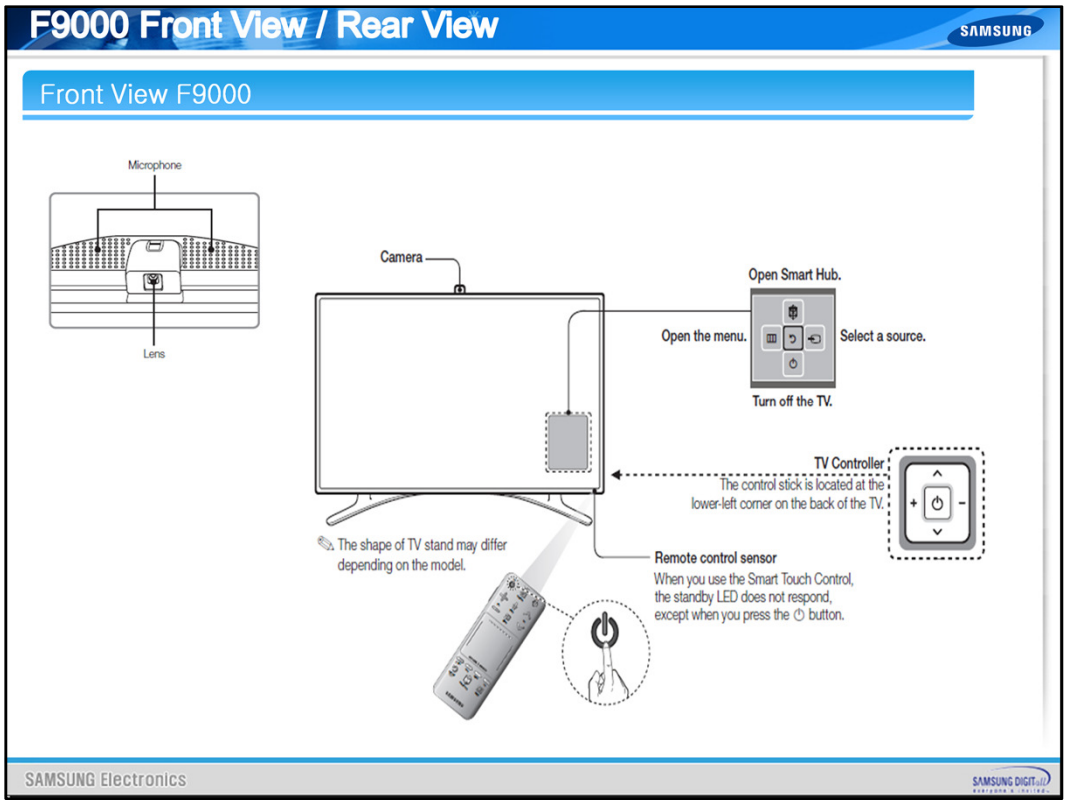


2013 Smart Remote Control operation is seen on the left. TV Power command is IR while the rest operate by Bluetooth. The pairing for initial out of the Box is triggered by pressing any command other than TV power. Manual pairing requires removing the rear cover, pressing the Pairing button for about 5 sec within 2 feet of the TV aimed at the IR detector. New TV screen confirmation includes battery status. It will re-appear on the TV when it becomes too low.

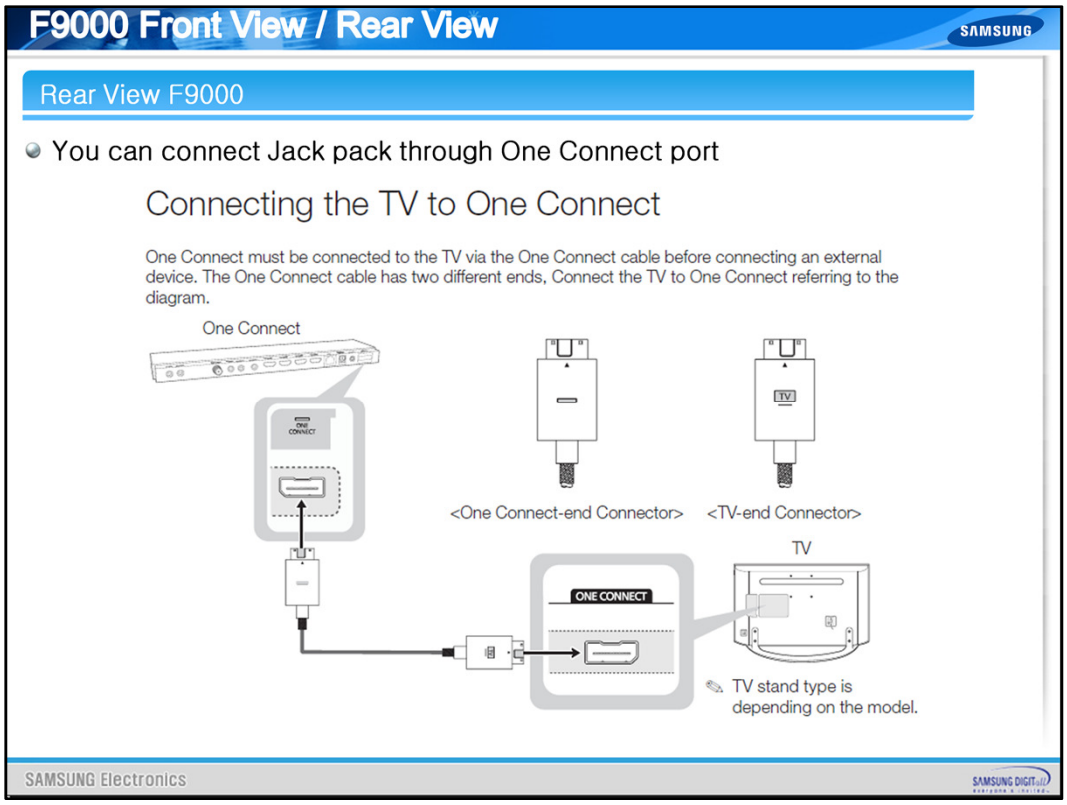


Built In Retractable Camera is located at the top center of the TV and it's operation is seen here.

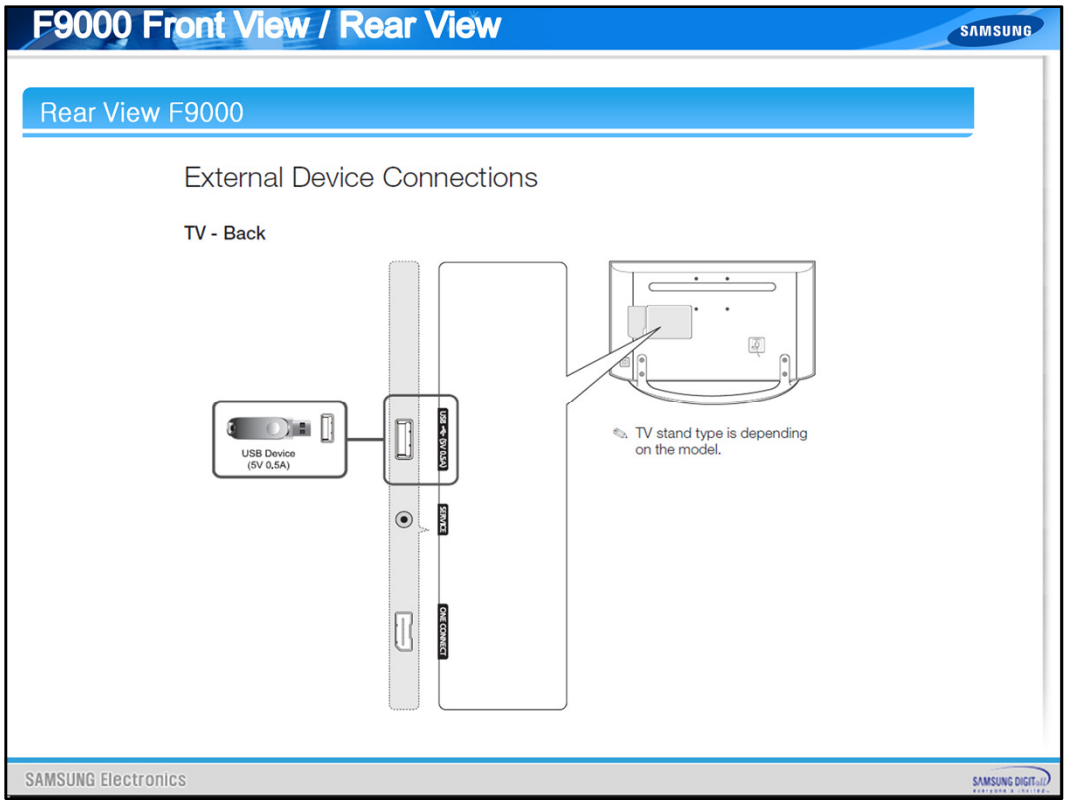
The Front View is seen with the TV and One Connect Box at the top and detailed are the MOIP at the top center and Jog Function Control located in the back left.



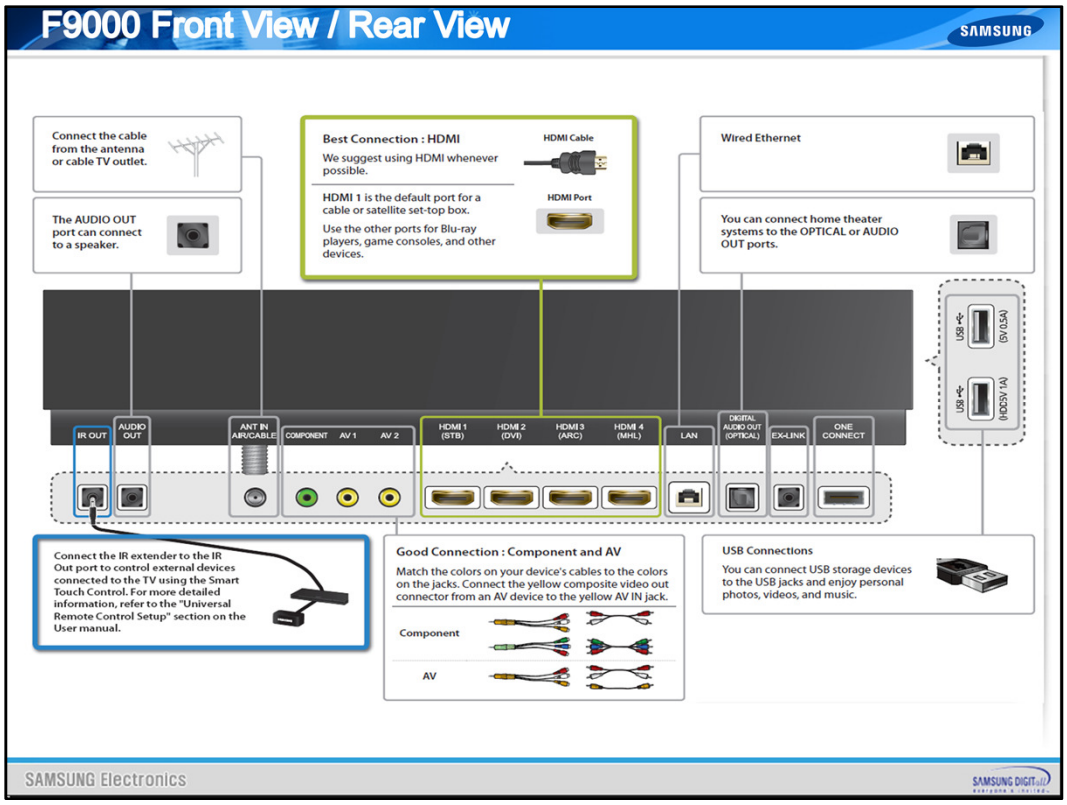
The front view shown here includes the locations of the MOIP Camera, Remote control sensor, and TV Jog Function controller.



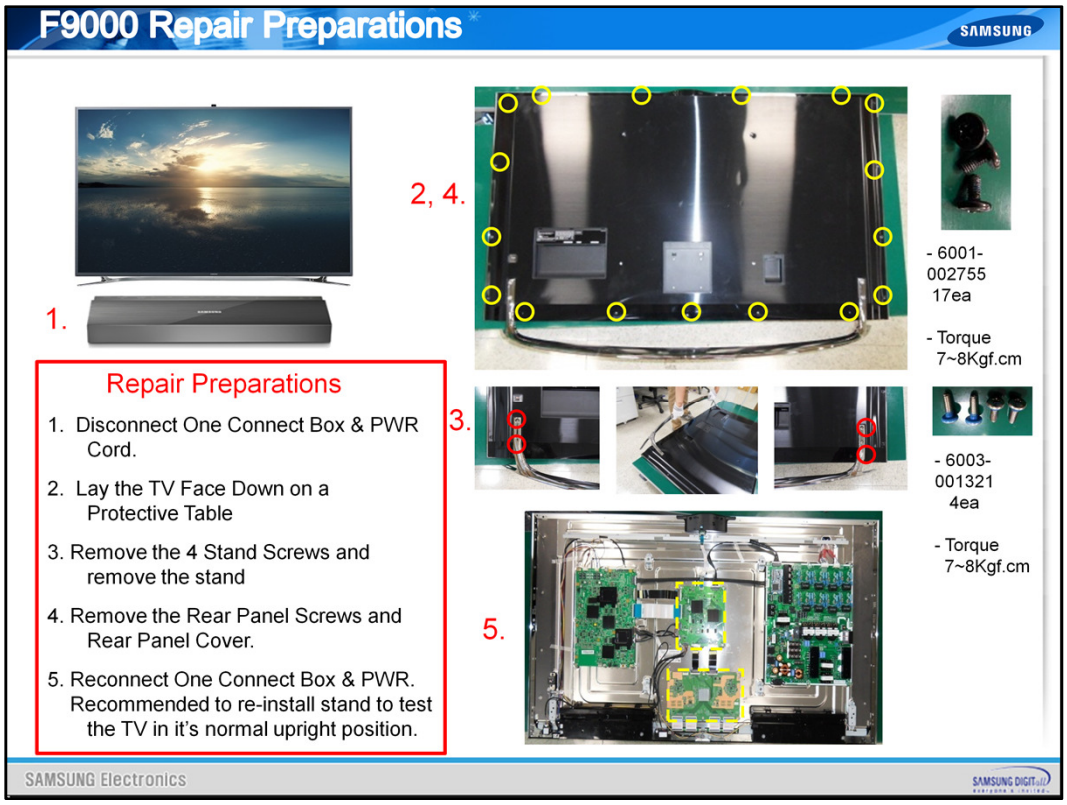
The external One Connect Box is illustrated with it's one connection to the TV seen on the upper left. All sources connect to the One Connect Box. The single One Connect Cable connects to the TV along with the TV AC Power Cable. The One connect Box gets its operating power from the TV through the one connection cable. The One Connect cable is keyed on both ends along with icons representing the TV end and the One connect Box end. The cable is 3 meters and specific for the Samsung One Connect Box. It's important to use the correct One Connect Box and Cable for the specific model. Other Samsung One Connect Box models may not be compatible and actually cause screen errors or damage to the TV or Box. If the TV is powered on without the One Connect Box a special disconnect Icon will appear on the TV and no TV functions will operate.



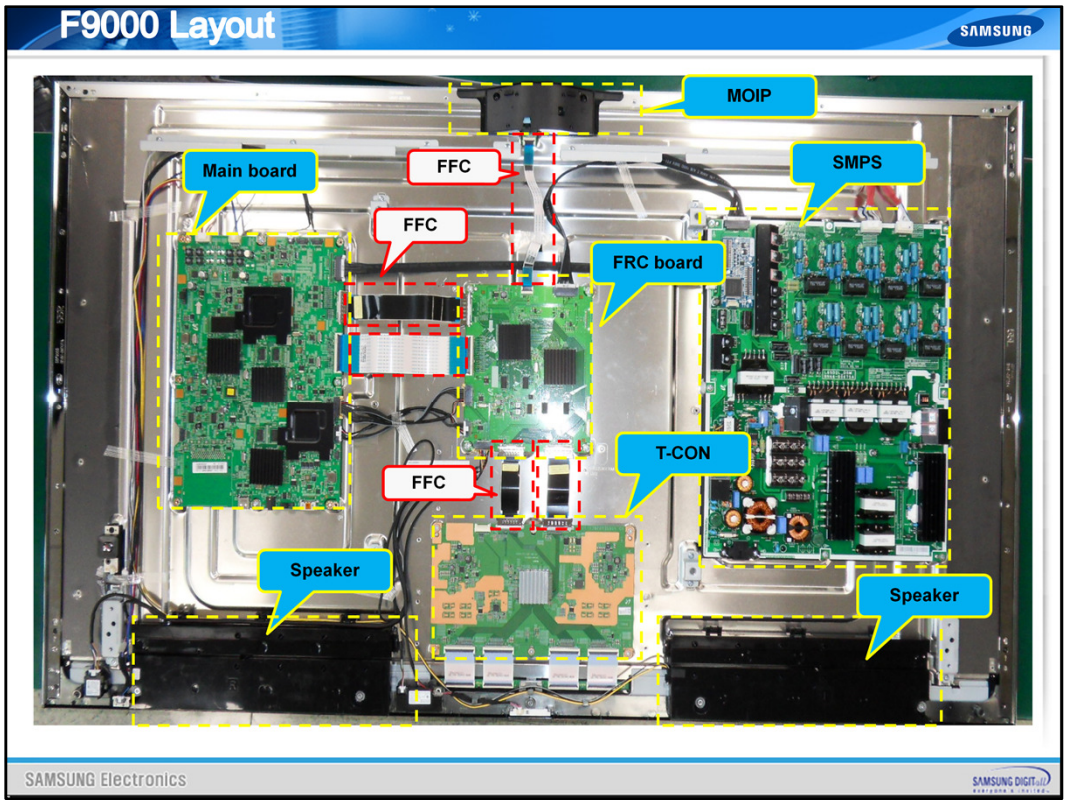
An external USB can be connected directly to the TV but the One Connect Box still needs to be connected for it to be operational. The other connector is for service by Samsung factory only.



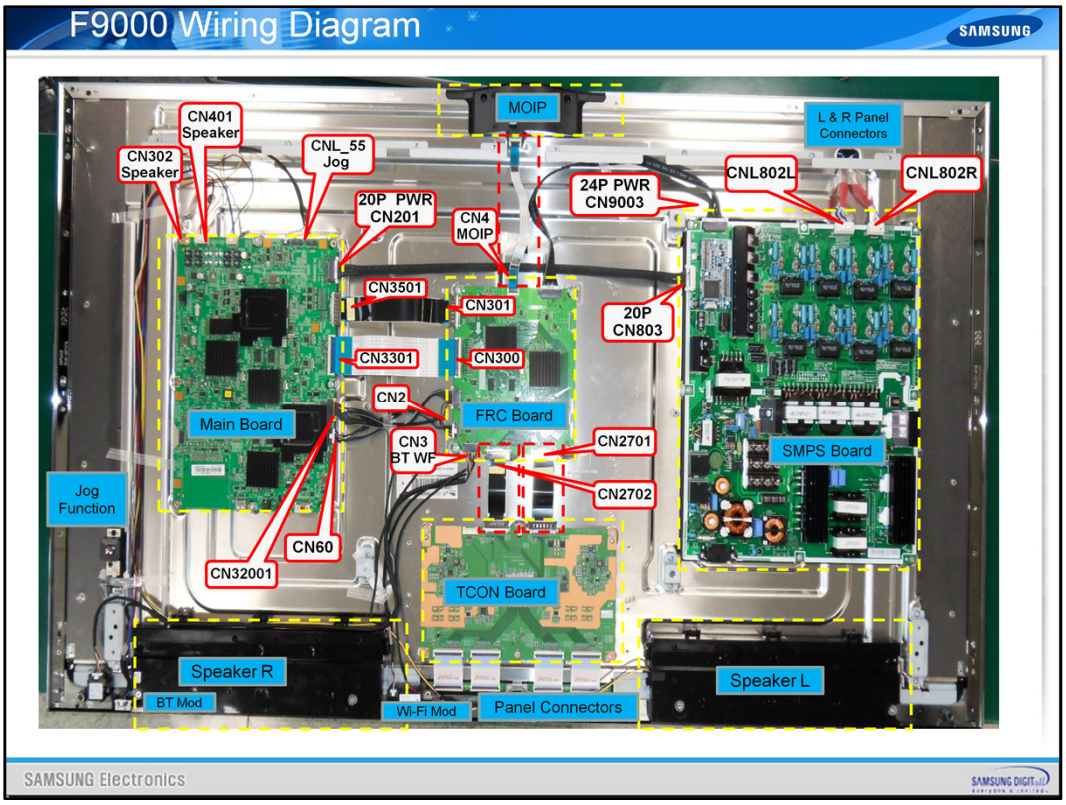
The One Connect Box seen here includes IR Out, Audio Out, Antenna In, Component and AV Inputs, 4 HDMI Inputs, LAN, Optical Digital Audio Out, Ex Link, and the important One Connect Cable connector. Two USB connectors on the side of the box and one USB located on the rear of the TV.



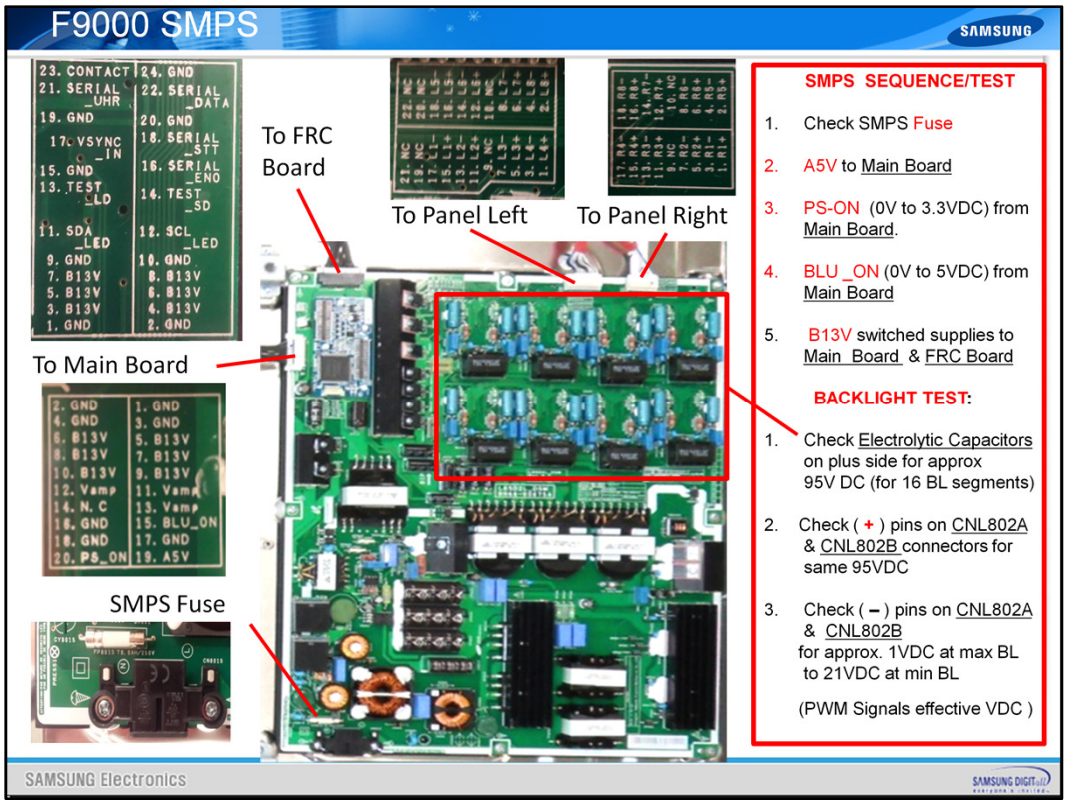
Important Repair Preparations are listed.



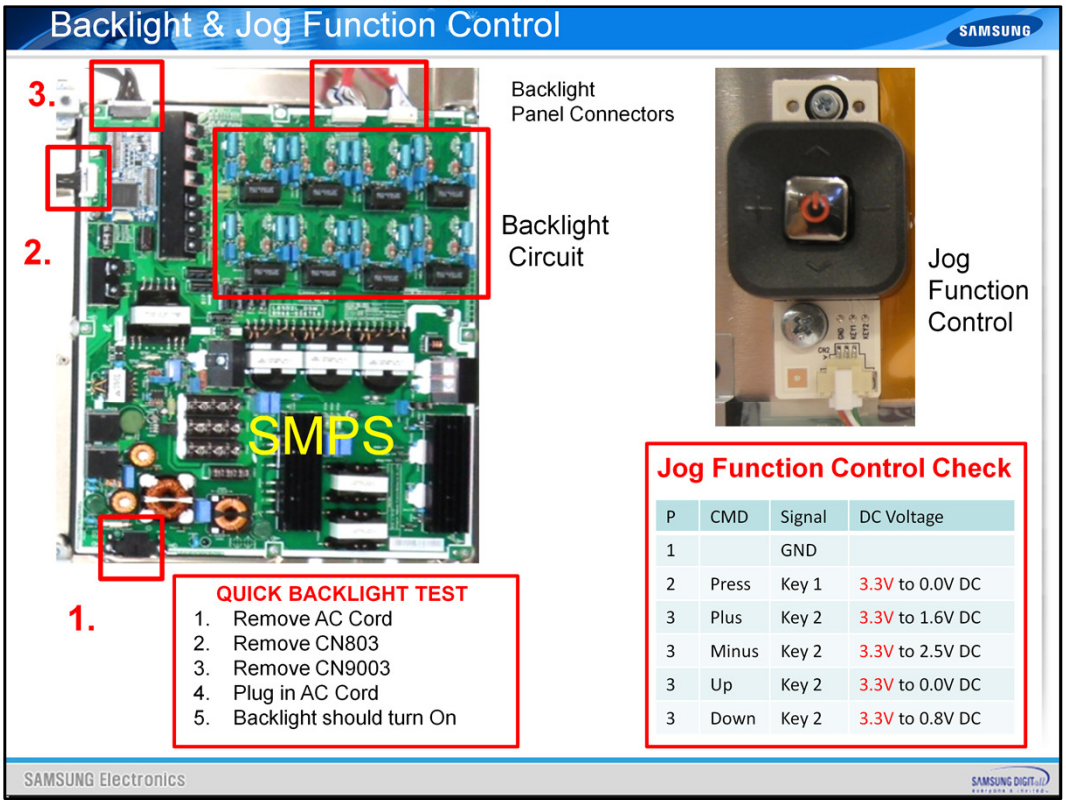
The Layout for the UF9000 is seen here and includes the SMPS Board, Main Board, FRC Board, SMPS, T-CON Board, MOIP Camera Mic Module, Jog Function Board, Wi-Fi & Bluetooth Modules, and Left & Right Speakers.



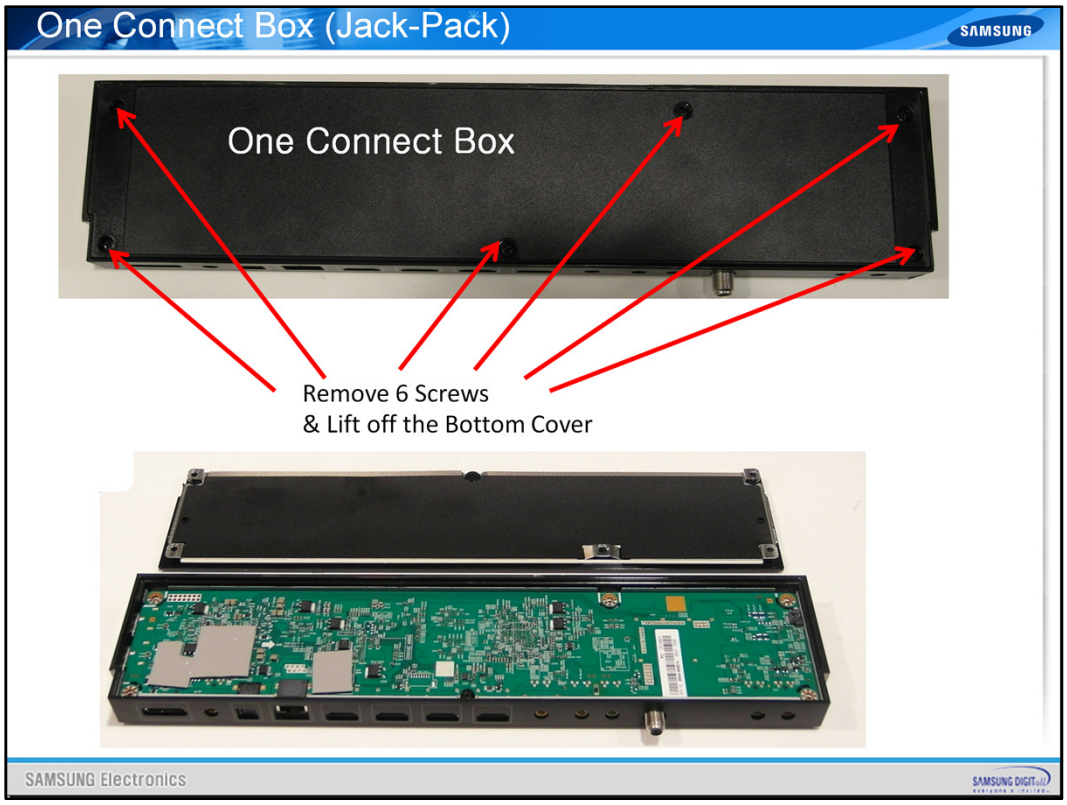
The Wiring Diagram, Layout with connector numbers, include the SMPS to the Main board and the FRC Board. The SMPS to the Left and Right Panel Connectors. The Main Board through two LVDS type Cables to the FRC Board. The Main Board also to the MOIP, Bluetooth and Wi Fi Modules, Jog Function Control, and speakers. The FRC Board sends the important UHD Video Data signal through two LVDS Cables to the T-CON Board. The T-Con Board sends final Drive Signals through 4 Ribbon Connectors to the Panel.



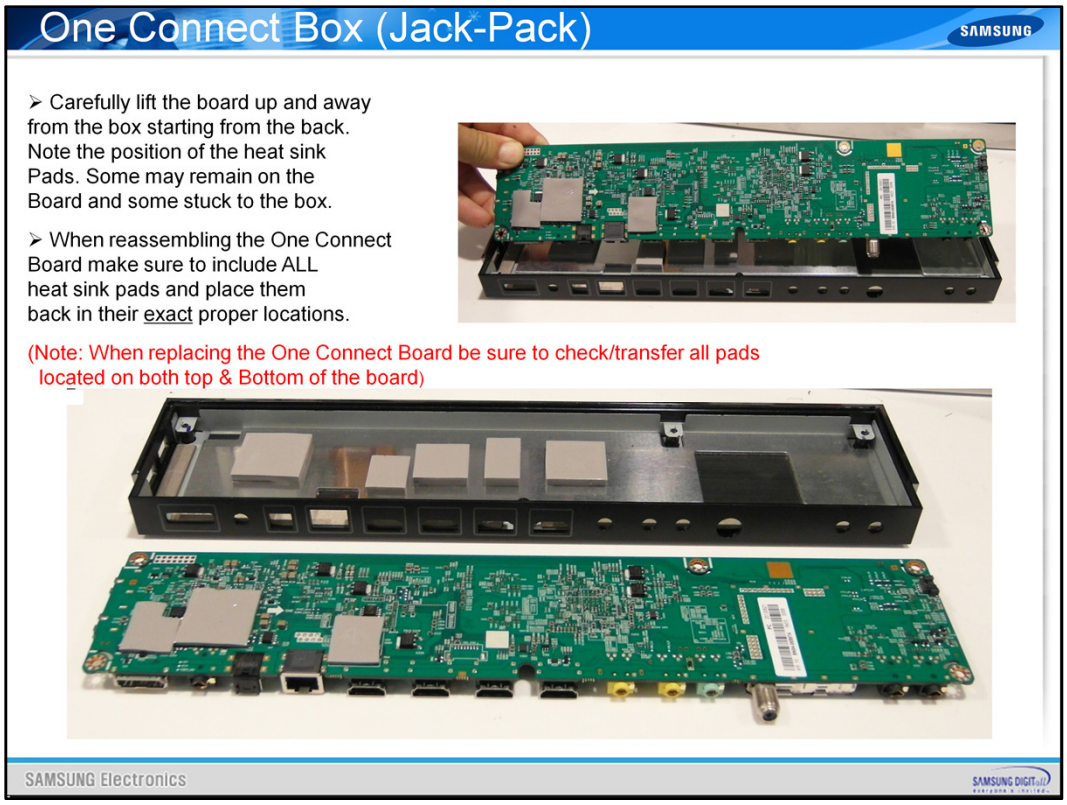
The SMPS includes a 24 pin connector to the FRC Board providing switched 13 Volts DC and receiving Backlight Control. The SMPS also includes a 20 pin connection to the Main Board providing voltages and receiving power on sequence commands.
Testing and sequence detail operation are included in steps.



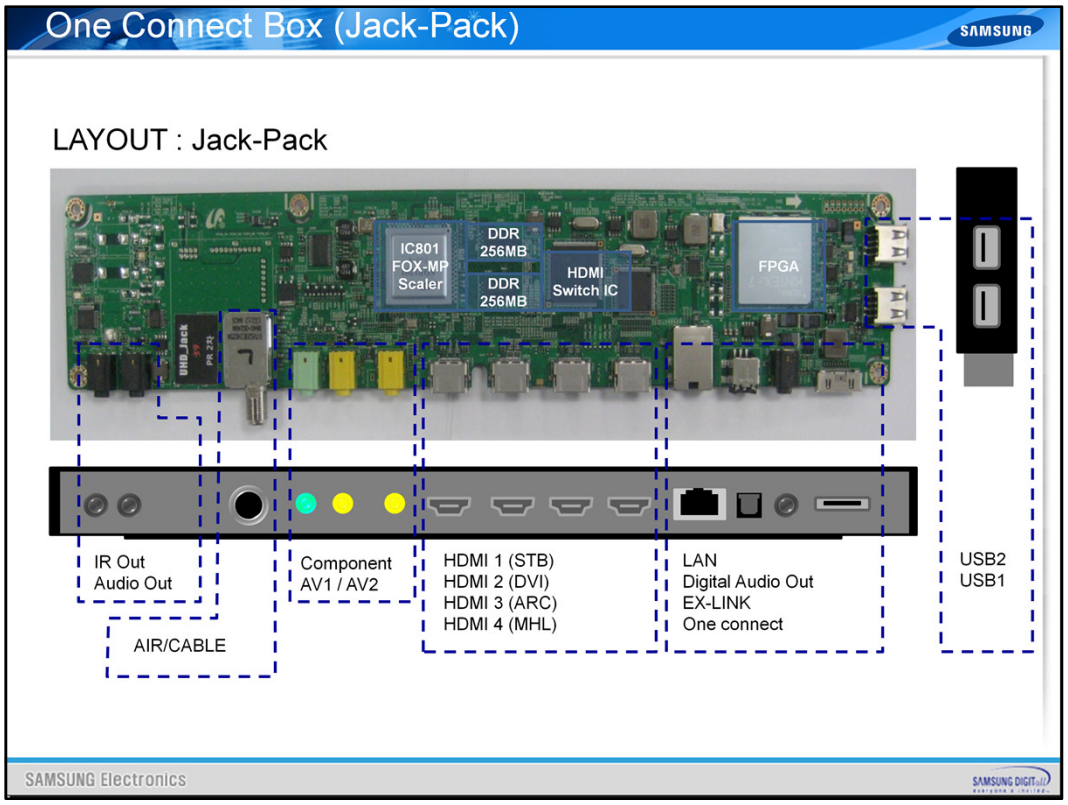
Proceed to check Backlights and operating voltages. If any of the sixteen individual Backlight Plus Supplies read very high voltage, near 150 Volts, a string of panel Backlight LEDS are open. If any read low, disconnect the Panel connector, if it stays low the SMPS is defective, if it goes high a string of Backlight LEDs are shorted. The Jog Function Control Chart pin outs and operating voltages are also listed and can be checked with the same procedure used in other models, already discussed, for proper operation.



To prepare the One Connect Box for servicing, remove the 6 screws and lift off the bottom cover.



➢Carefully lift the board up and away from the box starting from the back. It be may take some very careful prying upward because of the pads.
Note the position of the heat sink Pads. Some may remain on the Board and some stuck to the box.
➢ When reassembling the One Connect Board make sure to include ALL heat sink pads and place them back in their exact proper locations on both the top and bottom of the board.



The Layout of the One Connect box includes important IC Locations including the Fox MP Scaler. Connections include IR & Audio Out, Component AV outputs, 4 HDMI connectors, LAN, Digital Audio Out, Ex-Link, the Important One Connect connector, and 2 USBs.

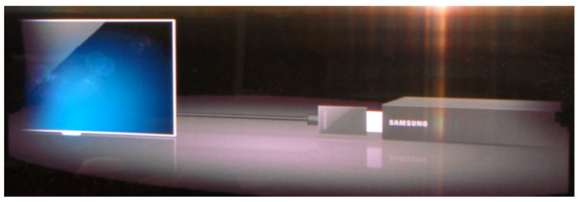
One Connect Box (Jack-Pack)

SAMSUNG

- TROUBLESHOOTING: **ONE CONNECT BOX**

SYMPTOM: TV Power's On with no on screen video or menu:

1. Power the TV "Off"
2. Unplug One Connect Cable to the TV.
3. Power the TV "ON"

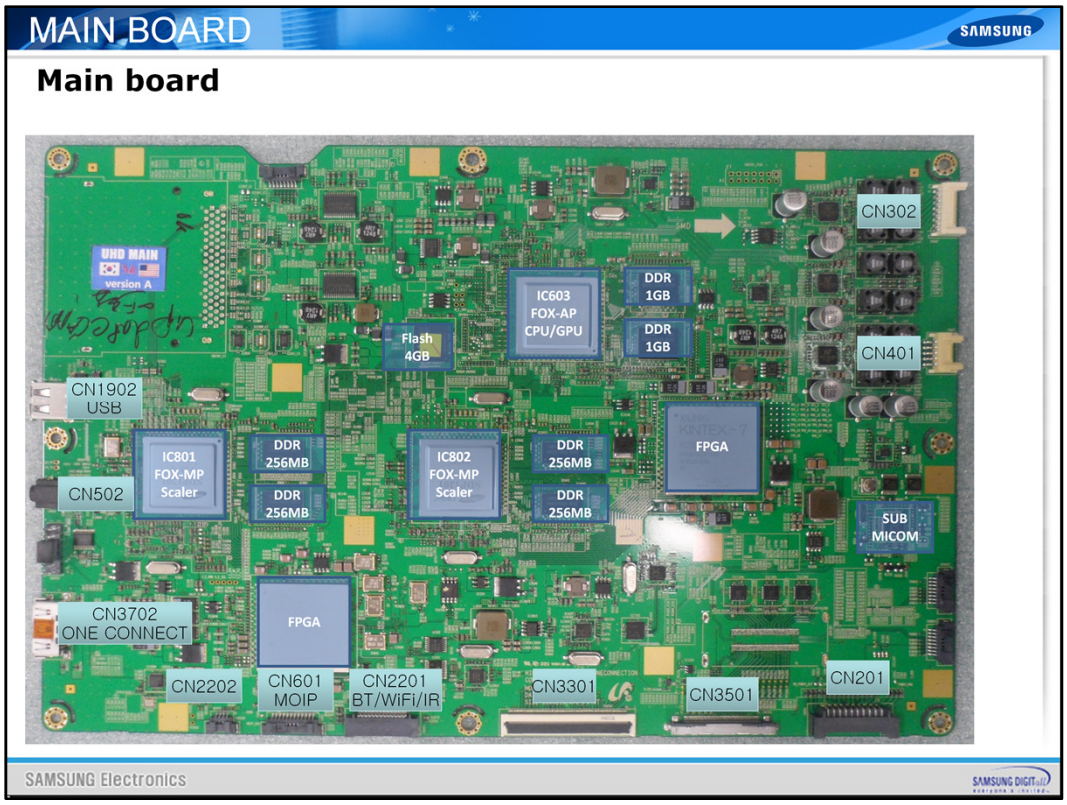


One Connect Box (Jack pack) disconnect banner will appear.

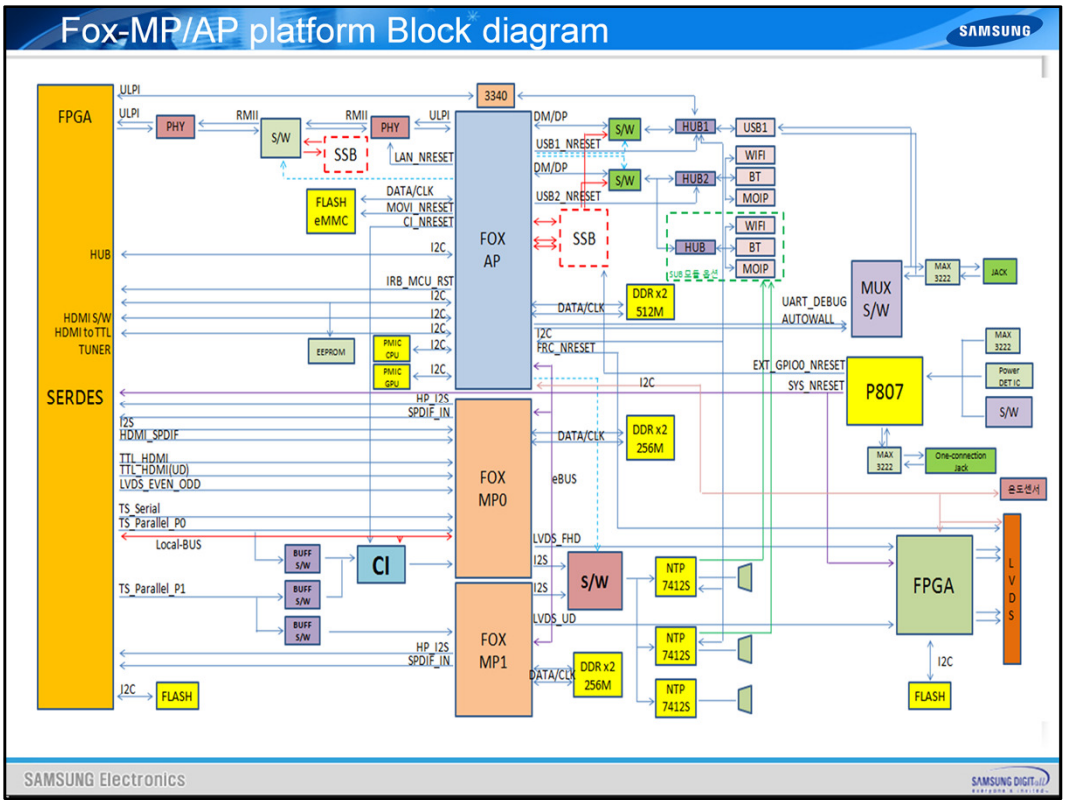
4. If there is a problem in the One Connect Box and the TV Panel is OK the disconnect banner will appear.
5. Replace defective One Connect Board.

SAMSUNG Electronics

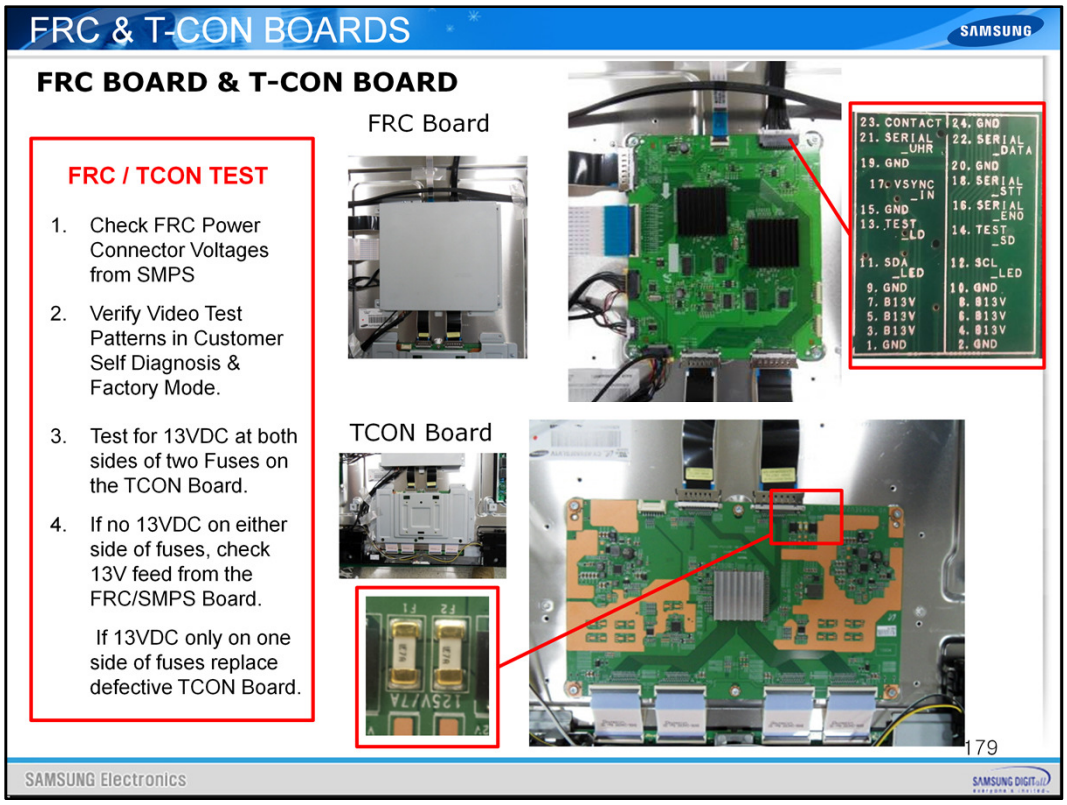
Follow these steps for troubleshooting the One-Connect Box. A typical symptom may be that the TV Power's On with no on screen video or menu:



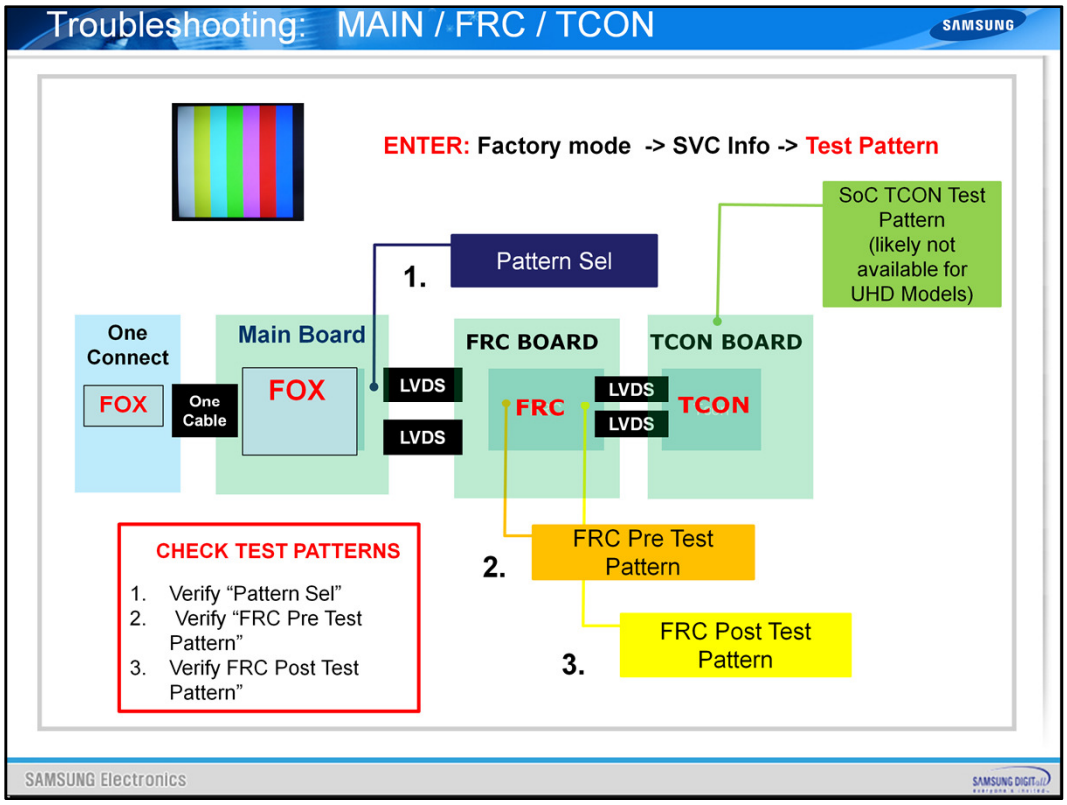
Important IC's of the Main Board include the FOX-MP Scaler and Fox-AP Micro Processor. The Connectors seen on the left include the USB and important One Connect. Along the bottom, left to right, are the MOIP, CN 201's BT Wi Fi IR, and important connectors.



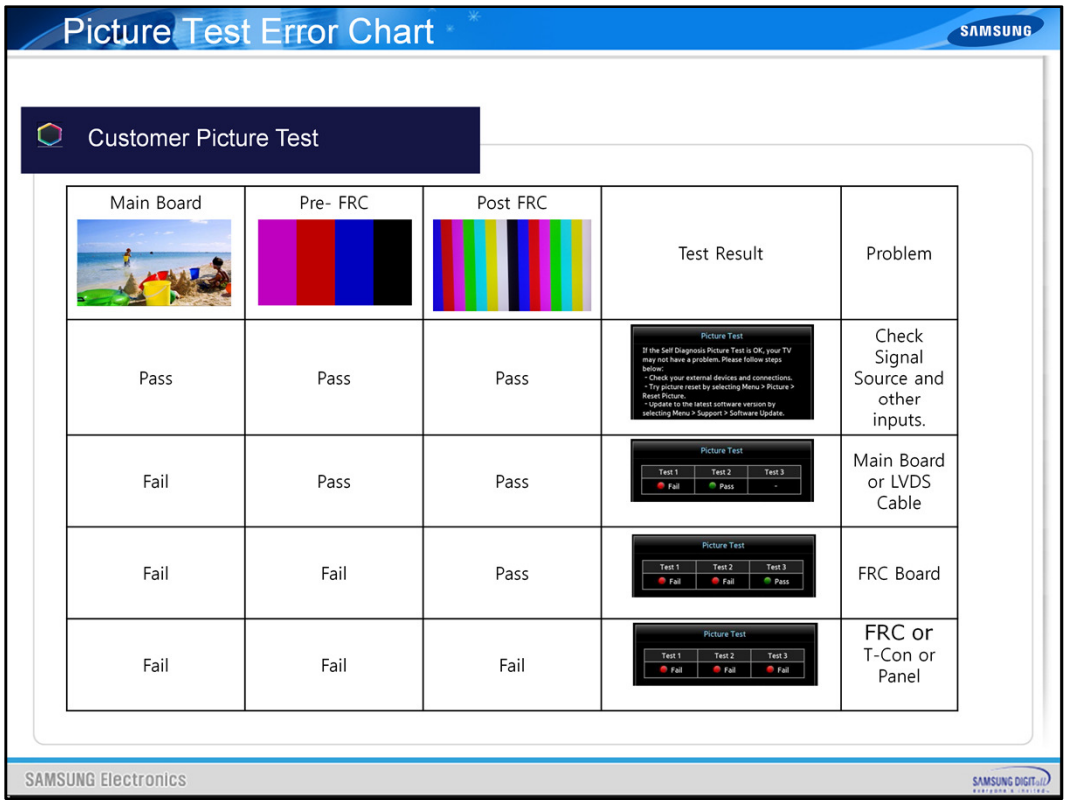
The input signals from the One Connect Box are called SERDES. This stands for Serial to De-Serial Data information. In order for the signals to travel in the One Connect cable they have to be changed to a Serial Data format at the One Connect Box. When they are received by the Main Board the signals have to be returned to their usable format by using the SERDES circuit. All the signals from the one connect box are than processed normally by the Fox Platform circuitry. The final video signal is passed to the FPGA, FRC Board, through 4 LVDS Cables to the Panel.



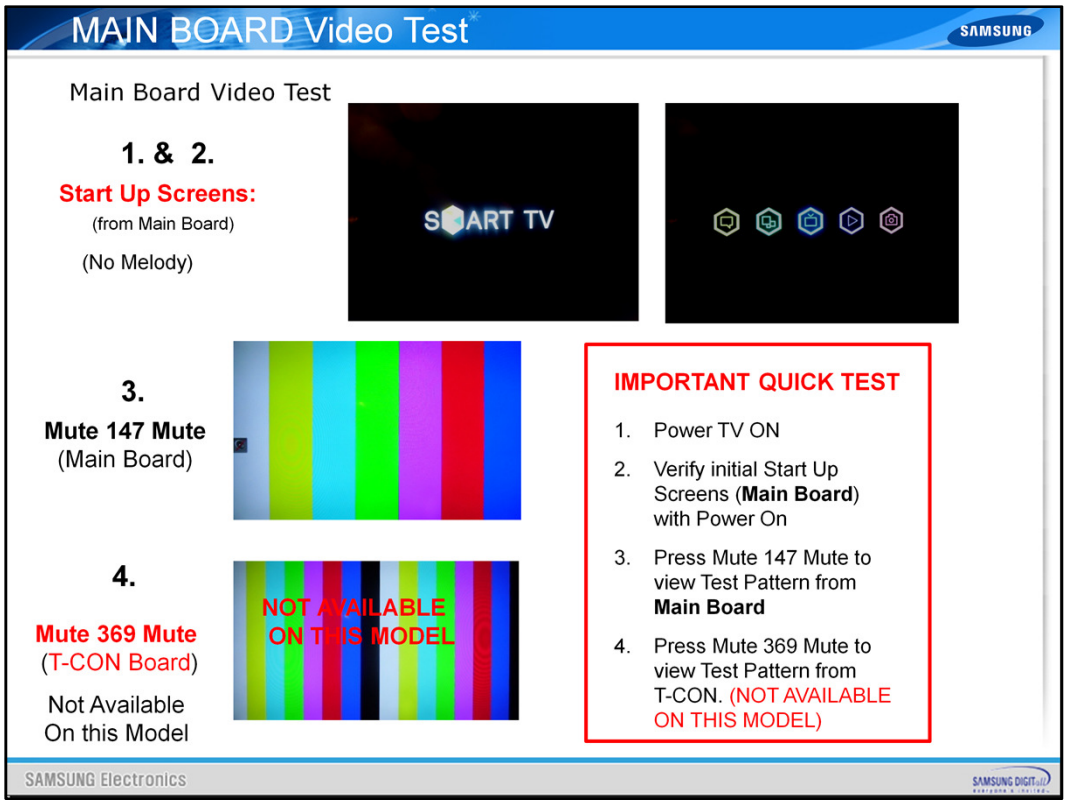
This model includes a separate FRC Board and T-CON Board. To troubleshoot:



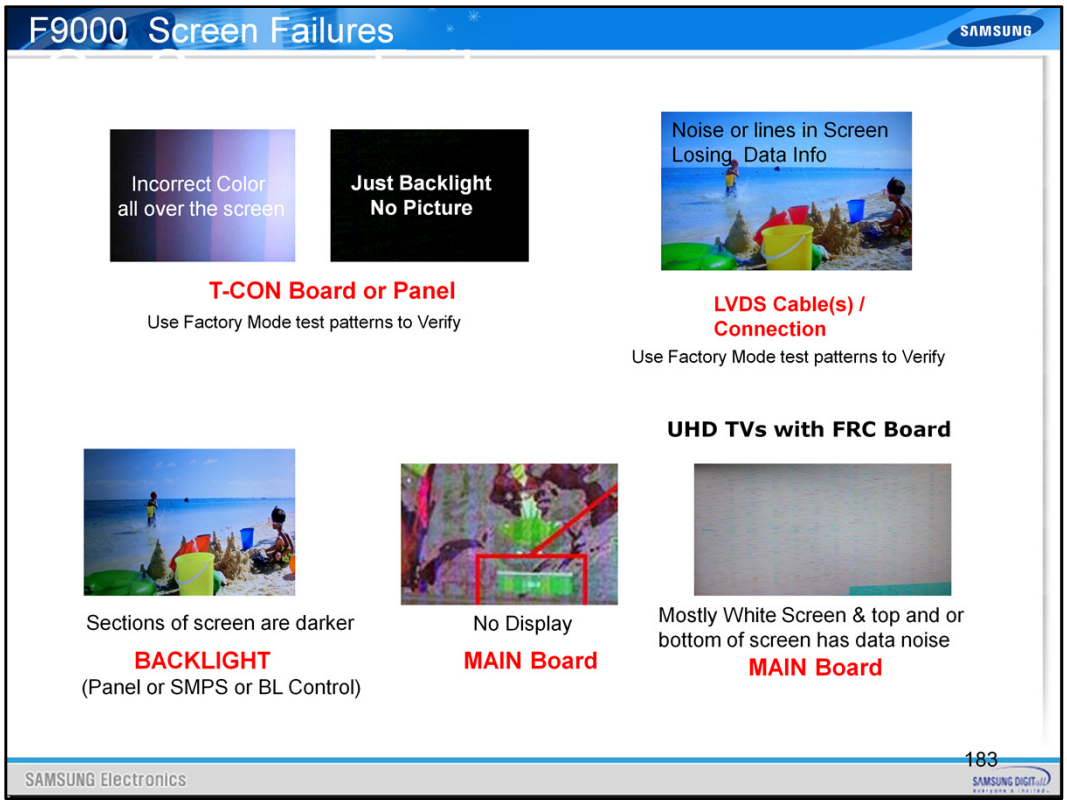
Troubleshooting begins with understanding the video path flow:
The One Connect Box sends the special SERDES Data Signal through the Once Connect Cable to the TV's Main Board. The Main Board processes the signal and sends the UHD Video Data Signal through two LVDS Cables to the FRC Board. The FRC Board then further processes the UHD signal and outputs it through 2 LVDS Cables to the T Con Board. The T-Con Board outputs final panel drive through 4 Ribbon Cables to the Panel.
Testing: Use steps listed



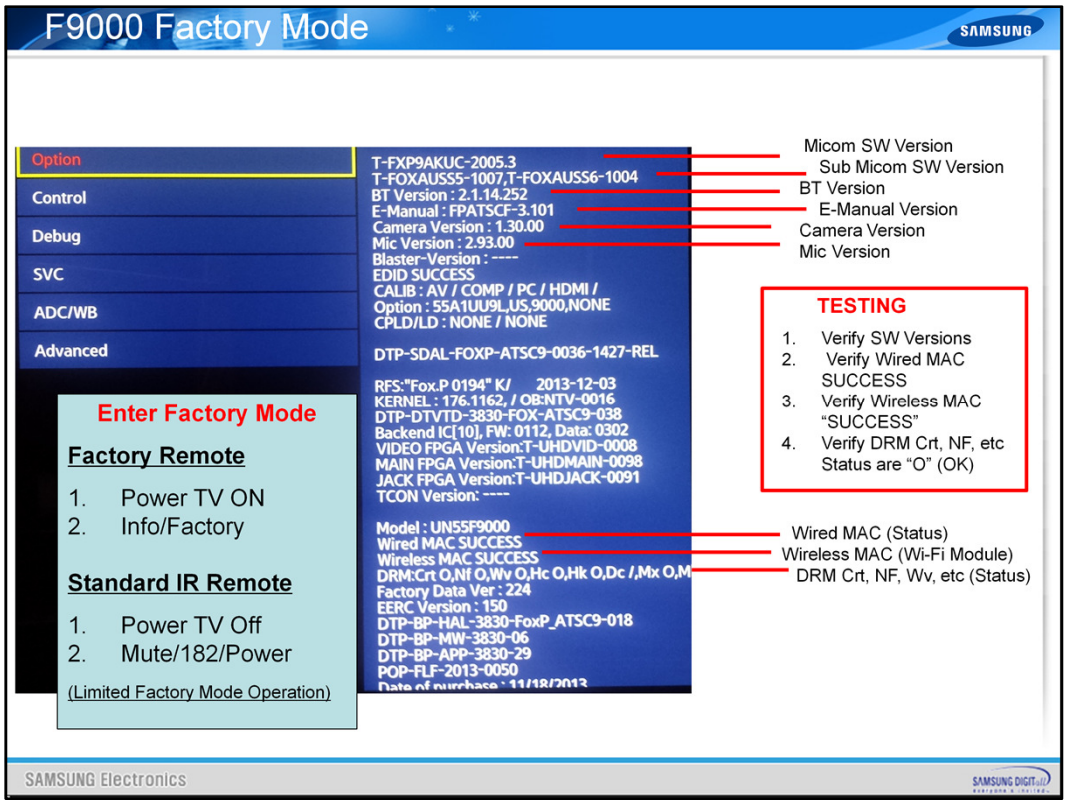
Once again the Customer Picture Test is similar procedure for other LED TVs, however the resulting Problems seen here, is specific for this 2013 UF9000 TV models.
The first photo signal is generated on the Main Board in the TV. The next two are generated from the FRC circuit on the TV's FRC Board in the Panel. If the first test fails and the other two are OK than the Main Board or LVDS Cables are at fault and requires replacing. The other failures would be related to the TV's FRC Board or Panel.



The Quick Test can also be performed for this model but with limitations:

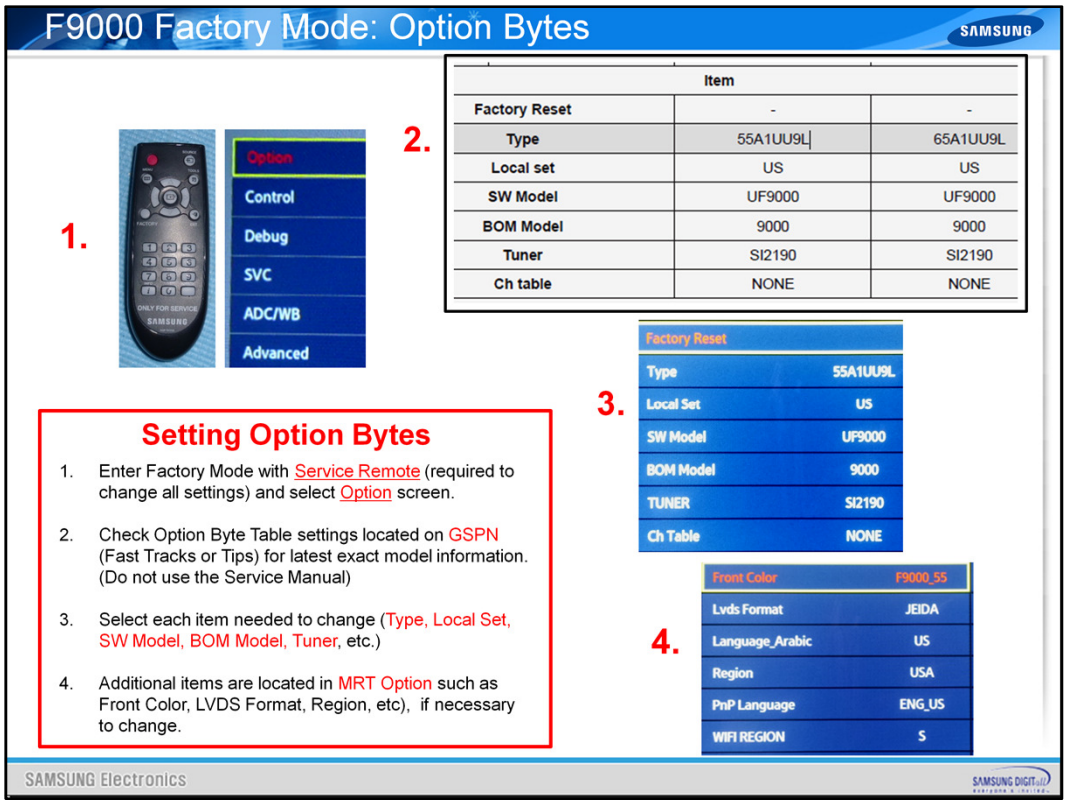


Screen errors are shown for the UF9000 Models.
Typical T-Con Board or Panel Failures are shown in the top left two errors displayed. LVDS Cables or connections errors in the top right. Backlight errors in the bottom left screen. These failures are common to LED TVs. Seen on the bottom right two screens are the Main Board failures including errors in the On Screen Display and a Main Board failure causing "Mostly White Screen with significant data noise on the top and bottom of the screen".



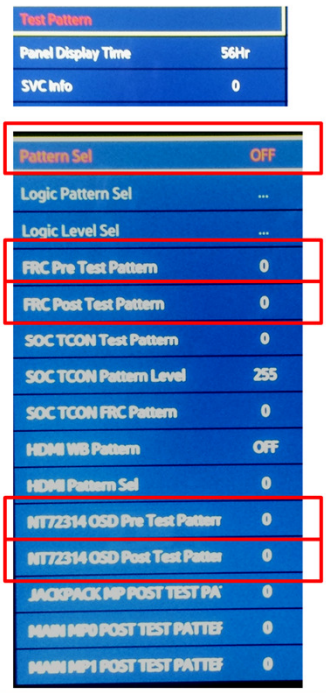
The initial Factory Service Mode Screen is shown.
Factory Mode can be entered two ways but Must use a Factory Remote to get full operation and screens.
TESTING & OBSERVATION from this screen include:
Check Model & Serial numbers

1. Verify SW Versions of each item
2. Verify Wired MAC Addresses SUCCESS
3. Verify Wireless MAC Address "SUCCESS"
4. Verify DRM Crt, NF, etc Status is "O"



The Important Option Byte Settings must be verified and set after any Main Board replacement. The Factory Remote is required for these changes. The TV will not allow changes when using Mute 182 Power for Service Mode activation. The information for the F9000 is displayed here. The procedure listed is the same as other Samsung LED TVs already examined.

Special F9000 Video Testing

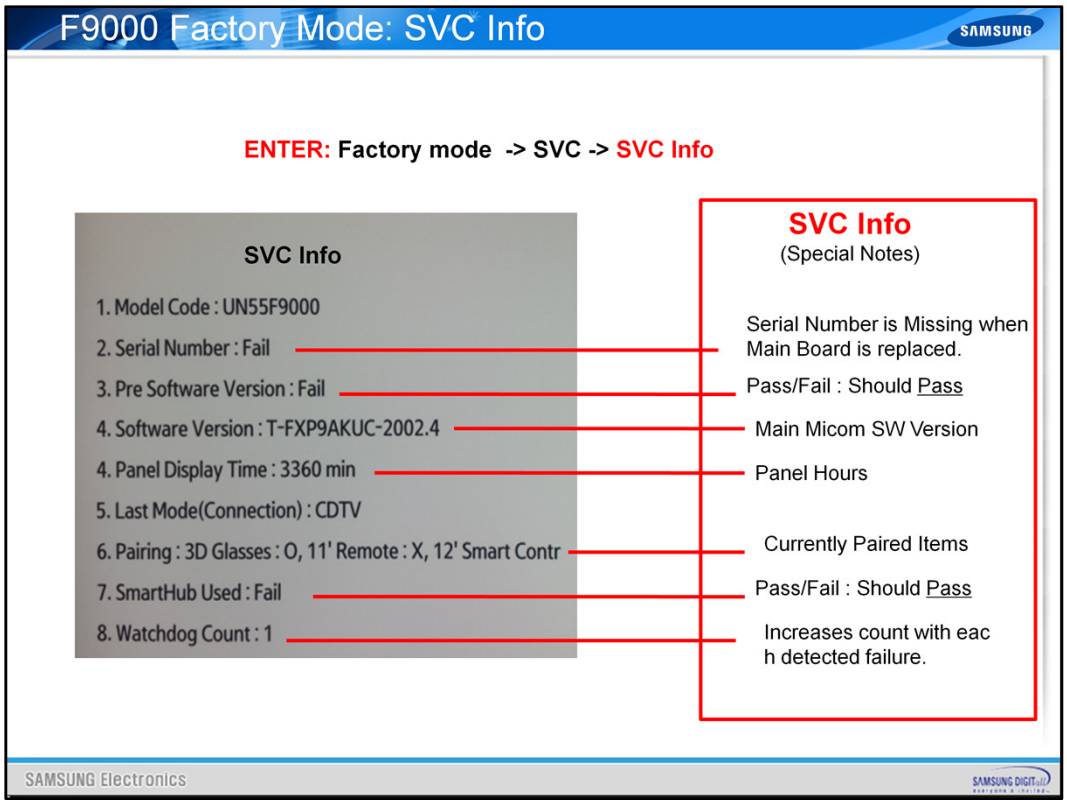


ENTER: Factory mode -> SVC Info -> Test Pattern

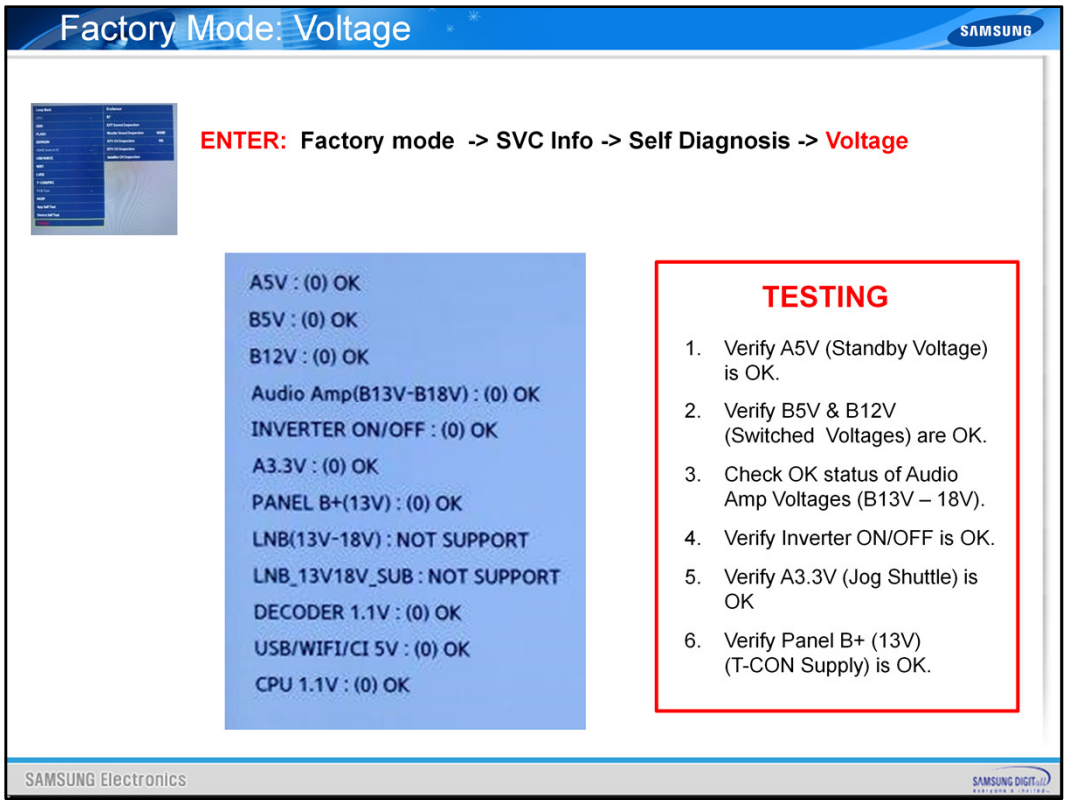
TESTING

Pattern Sel	FRC Pre	FRC POST	NT72314 OSD Pre	NT72314 OSD Post	Problem
OK	OK	OK	OK	OK	Main Board or Signal Input Source (check signal source & source cables)
NG	OK	OK	OK	OK	Main Board
NG	NG	OK	OK	OK	Main Board, LVDS, or FRC (FRC likely)
NG	NG	NG	OK	OK	Main Board, LVDS, or FRC (FRC likely)
NG	NG	NG	NG	OK	Main Board, LVDS, or FRC (FRC likely)
NG	NG	NG	NG	NG	Main Board, LVDS, FRC, T-CON, or Panel (T-CON or Panel Likely)

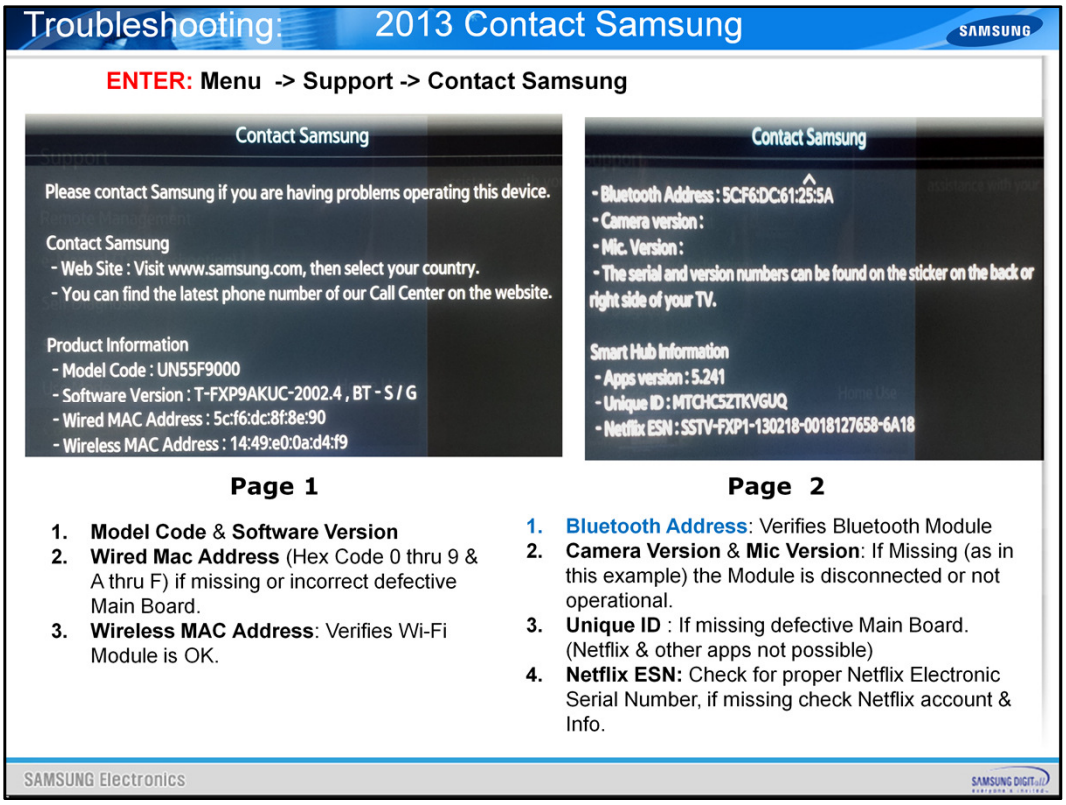
"SOC TCON Test Pattern" are good for testing LED HD TVs not available for UHD Models



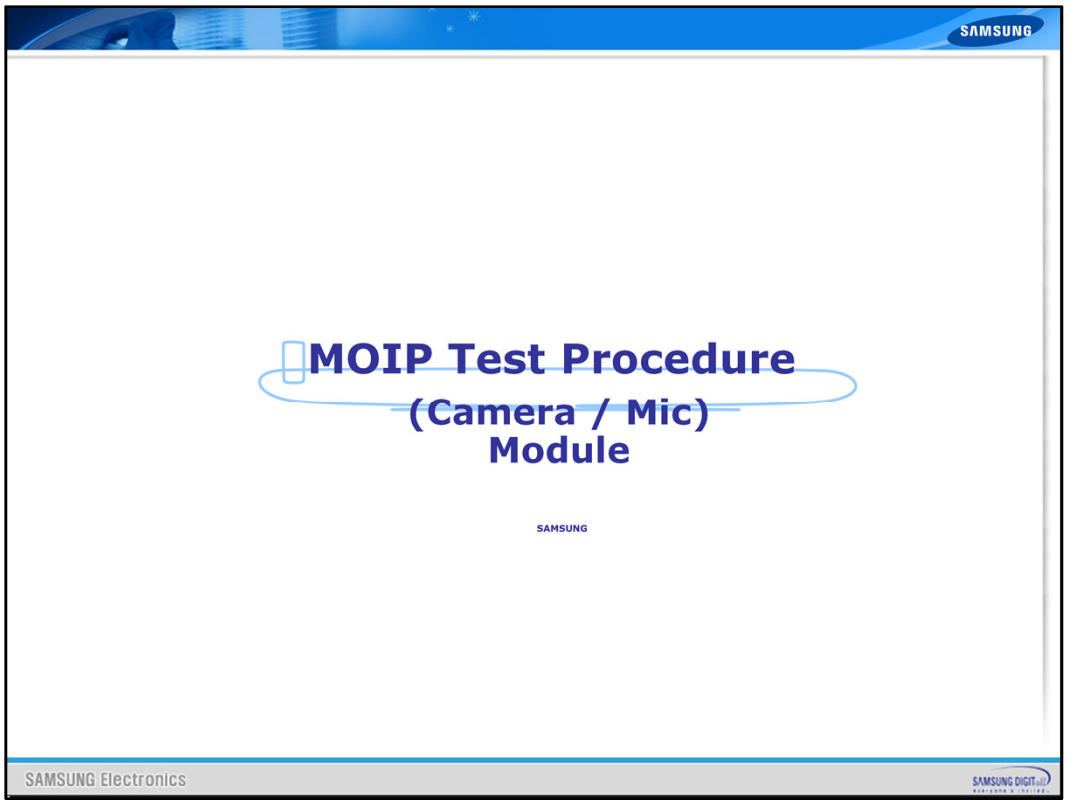
Important Service Information can be viewed from SVC Info and is specific for each TV. Seen here is the SVC Info for the UN55F9000. It's important information, including panel hours, software version, pairing information, Smart Hub, and Watchdog Count are listed.



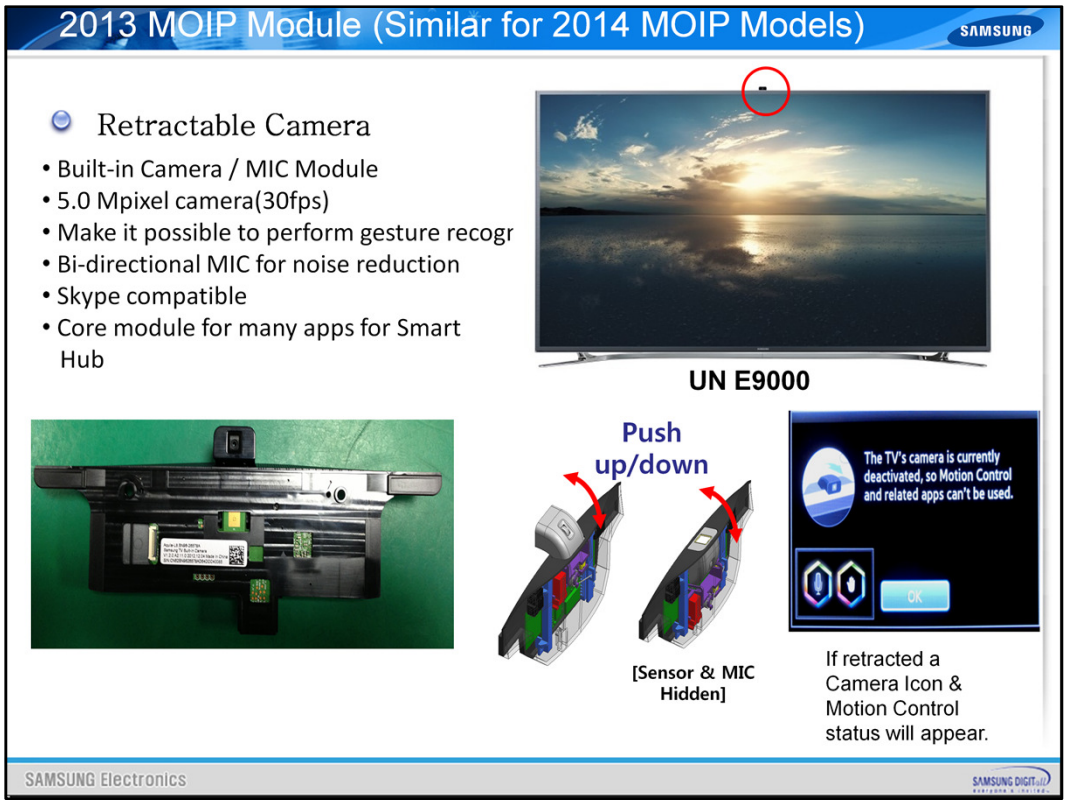
Important Voltage Status can also be selected from Self Diagnosis. It will display readings based on the specific type of TV and Model. For instance Panel B plus 13 V for LED TV's. Consult this important chart for the TV's operating status.



Customer Picture Test for UN55F9000.



The MOIP, Camera and Mike Module, Test Procedure is similar for all TVs with built in MOIP, including the UF9000 and HU9000 TV Models.



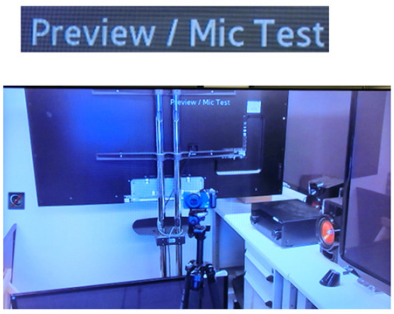
2013 MOIP includes a retractable 5.0 MPixel Camera and Bi Directional Mic.

If retracted a Camera Icon & Motion Control status will appear that motion control is currently deactivated.

MOIP Module Troubleshooting

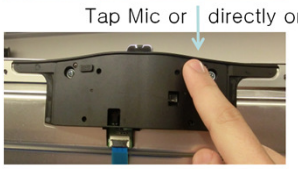
1. Enter **MOIP Test** Mode:
   - Set camera for operation position
   - TV Power On
   - Using Standard Remote Control
   - Press: **Mute, 569, Exit**
2. Verify Camera Activation & proper viewing operation
3. Speak and verify voice is echoed back. Adjust TV volume for best level results.
4. Tap Left & Right Mic on rear (shown) or directly above each mic on top surface of the frame.
5. Verify both are OK with sound from speakers.

Camera Test



Left Mic Test

Right Mic Test



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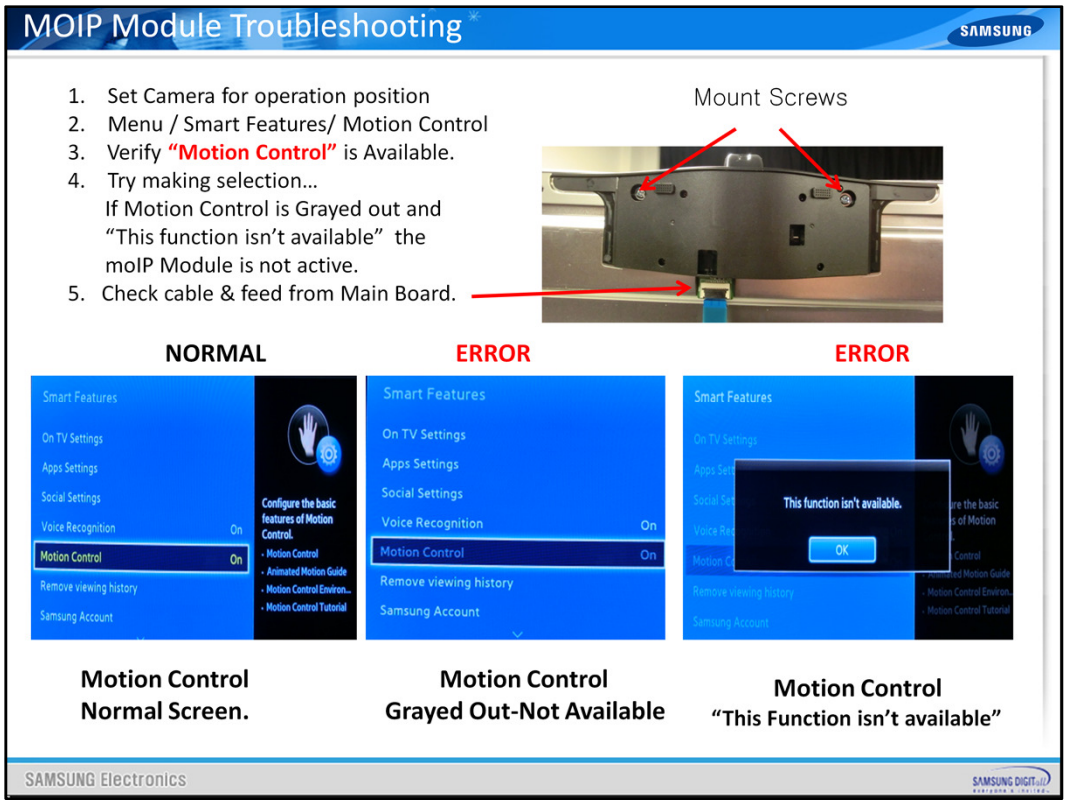
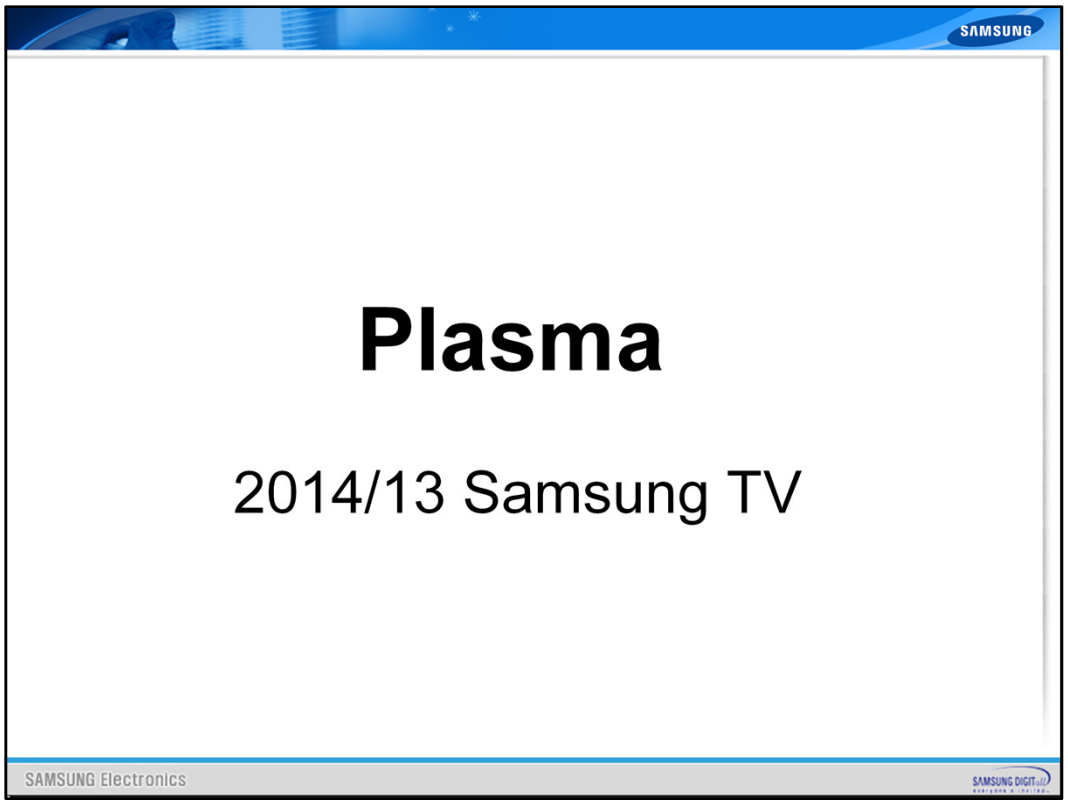
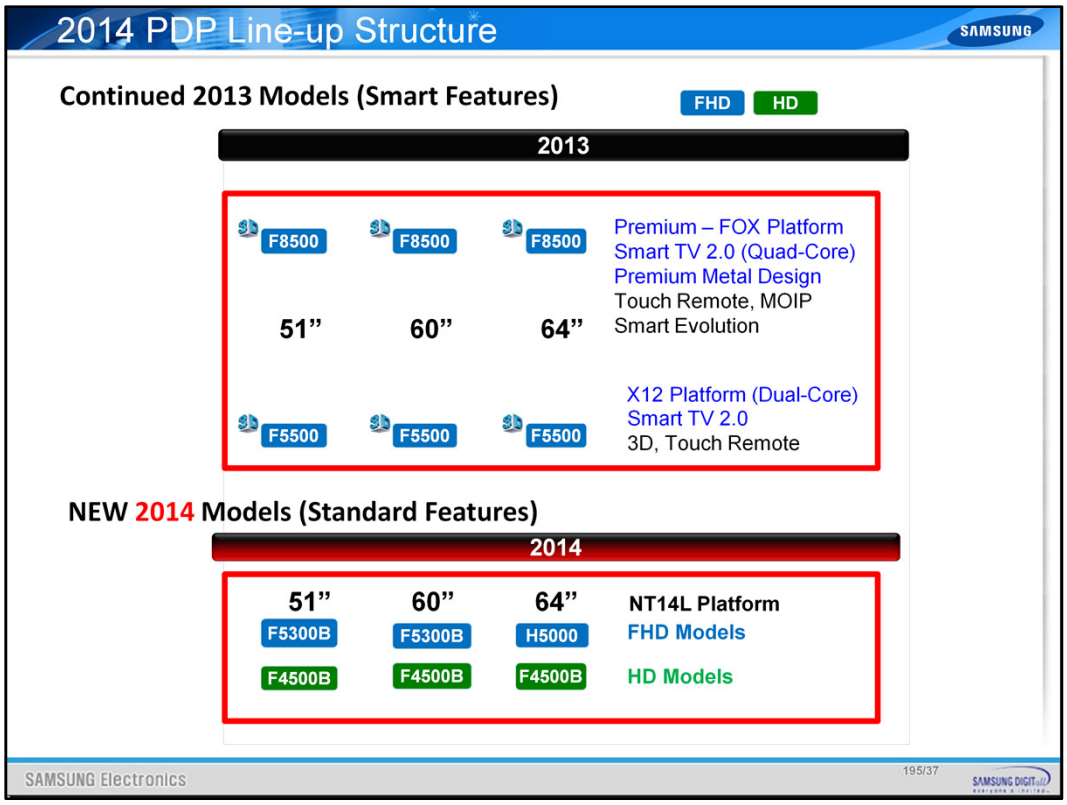
The MOIP is tested by following these steps…



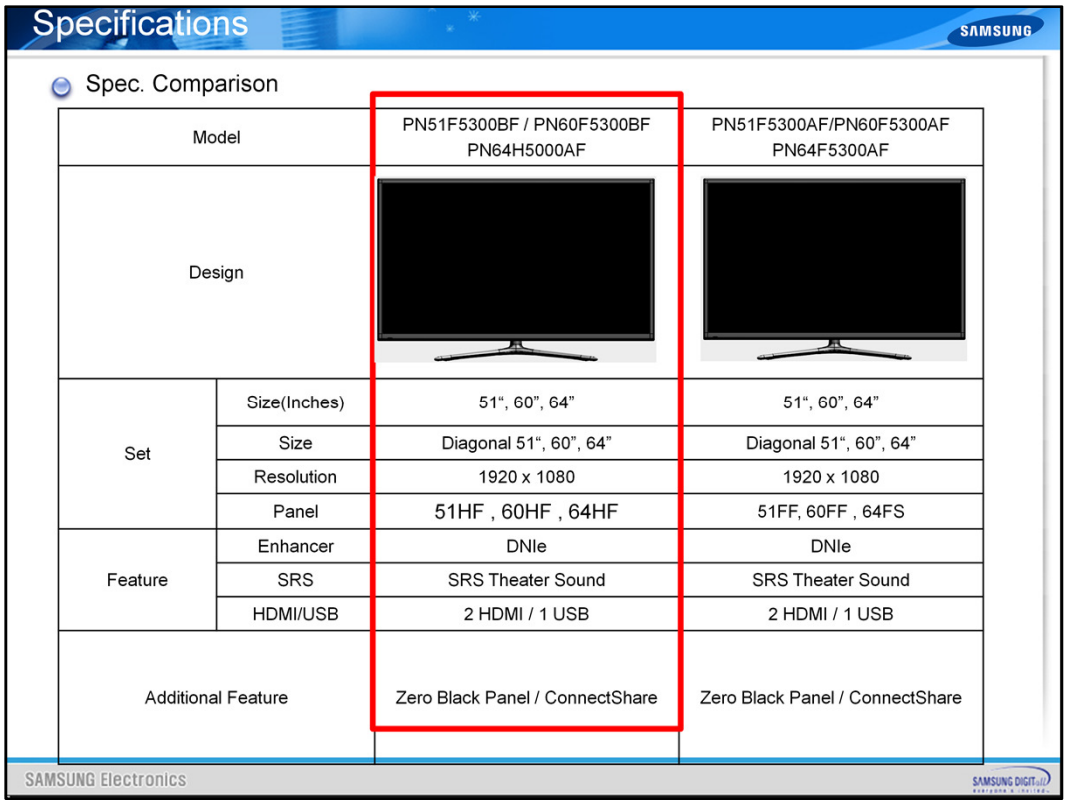
Additional MOIP testing from the menu are these simple steps:



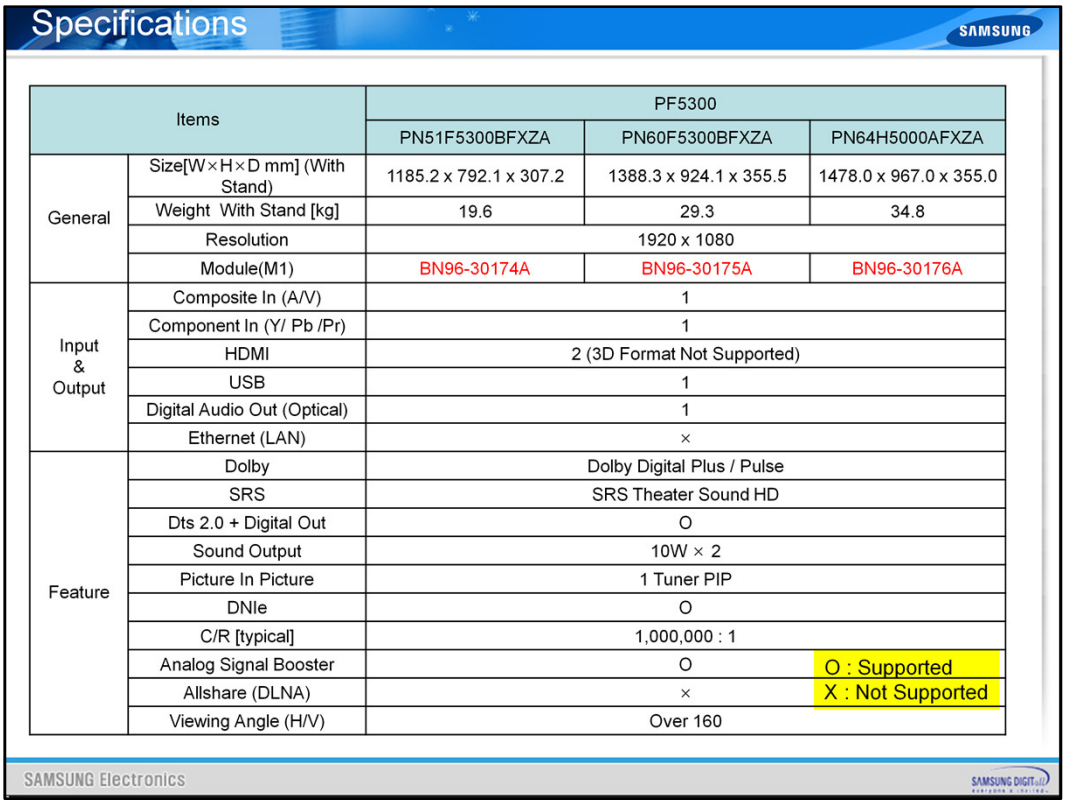


The 2014 PDP Line Up includes the new NT14L Novatek Platform with standard features. The F5300B, and H5000 64 inch FHD models, and the F4500B HD models. Continued from 2013 are the premium F8500 and the F5500 model Smart TVs.

The F5300B and the H5000A will be examined. The F4500B plasma model series is very similar to the F5300B.



Seen here are the specifications and comparison chart for the F5300B and H5000A series and 2013 related standard models. Resolution is 1080P FHD.



Specifications

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Items		PF5300		
		PN51F5300BFXZA	PN60F5300BFXZA	PN64H5000AFXZA
General	Size[W×H×D mm] (With Stand)	1185.2 x 792.1 x 307.2	1388.3 x 924.1 x 355.5	1478.0 x 967.0 x 355.0
	Weight With Stand [kg]	19.6	29.3	34.8
	Resolution	1920 x 1080		
	Module(M1)	BN96-30174A	BN96-30175A	BN96-30176A
Input & Output	Composite In (A/V)	1		
	Component In (Y/ Pb /Pr)	1		
	HDMI	2 (3D Format Not Supported)		
	USB	1		
	Digital Audio Out (Optical)	1		
	Ethernet (LAN)	×		
Feature	Dolby	Dolby Digital Plus / Pulse		
	SRS	SRS Theater Sound HD		
	Dts 2.0 + Digital Out	O		
	Sound Output	10W × 2		
	Picture In Picture	1 Tuner PIP		
	DNIe	O		
	C/R [typical]	1,000,000 : 1		
	Analog Signal Booster	O		O : Supported
	Allshare (DLNA)	×		X : Not Supported
	Viewing Angle (H/V)	Over 160		

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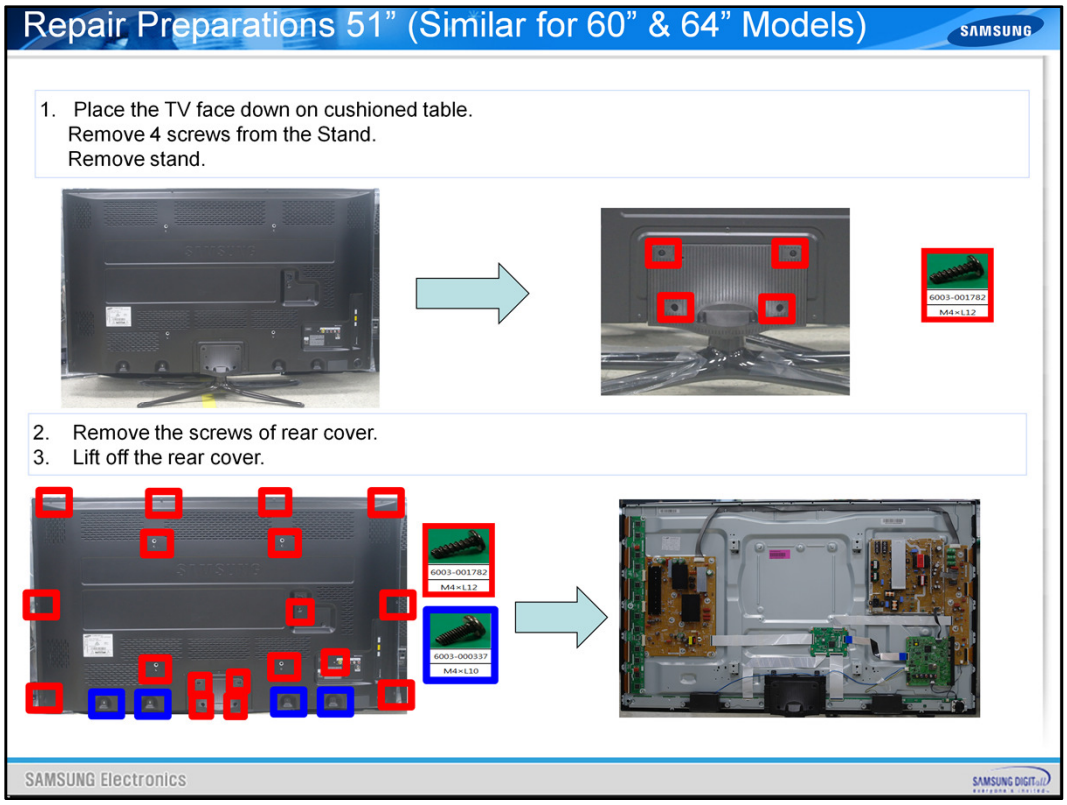
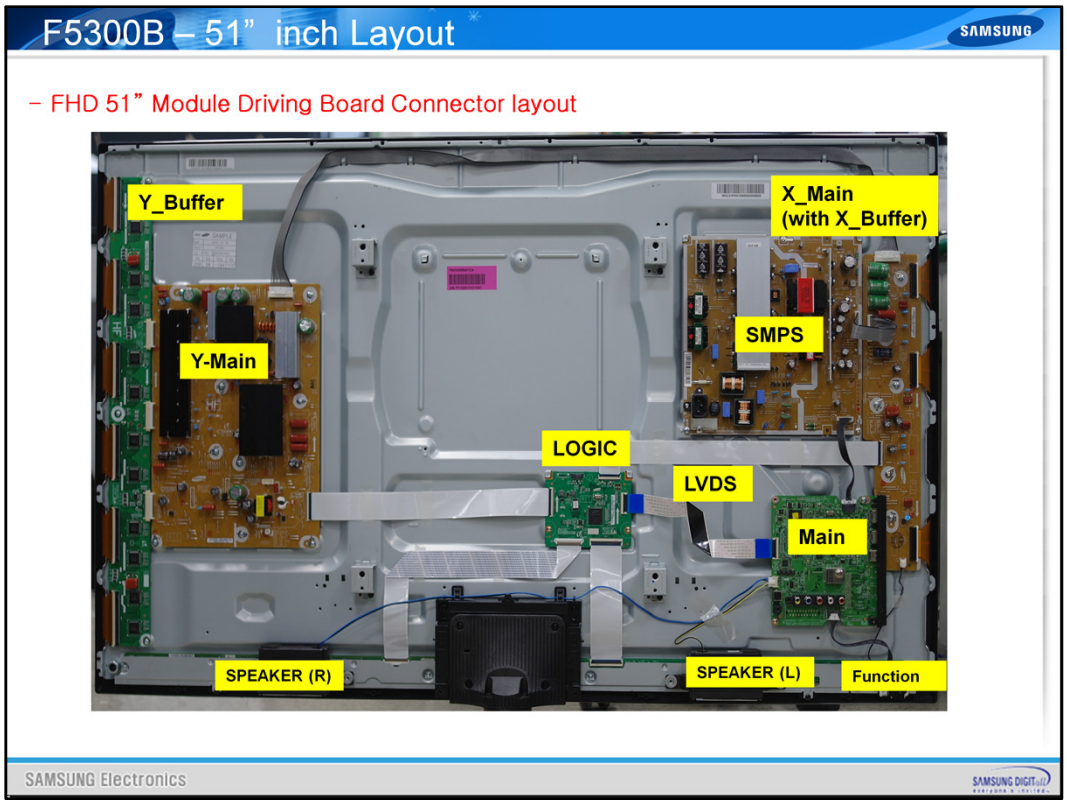
Additional Specifications seen here include the General Size, weight, Input and output connections, and features.

The TV front View, IR, function control, and speaker locations and the Rear View with input and output connections are seen here.

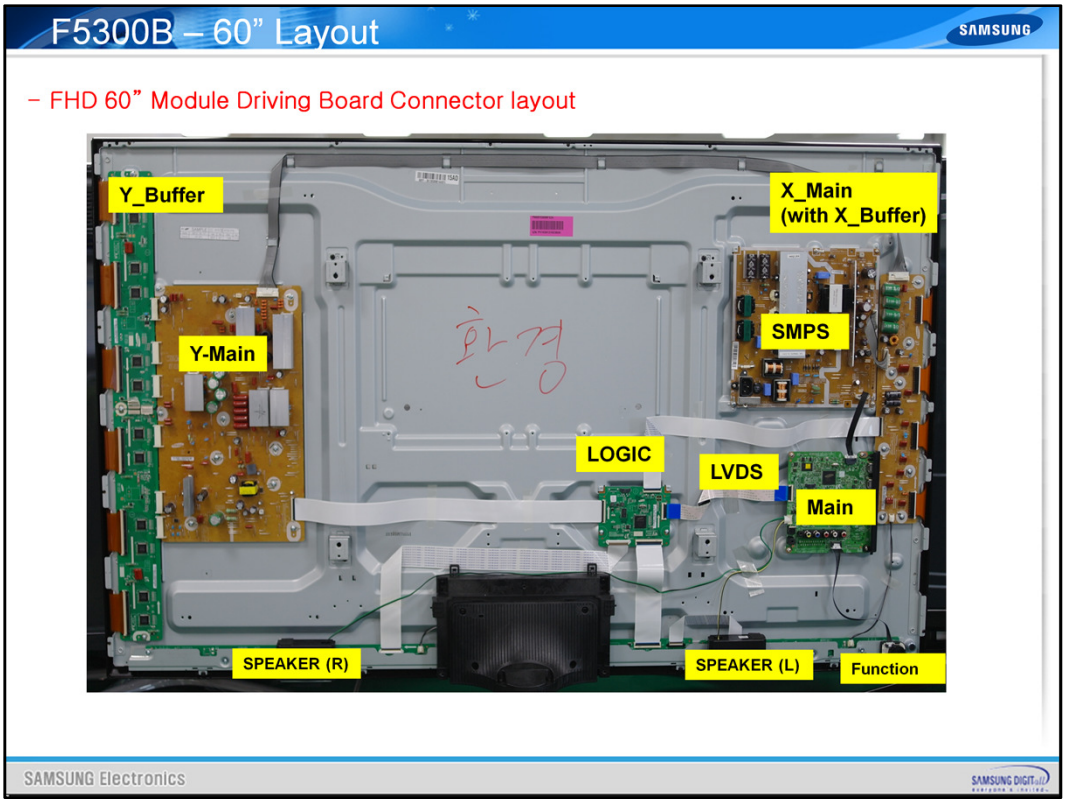


The repair preparations are seen here.

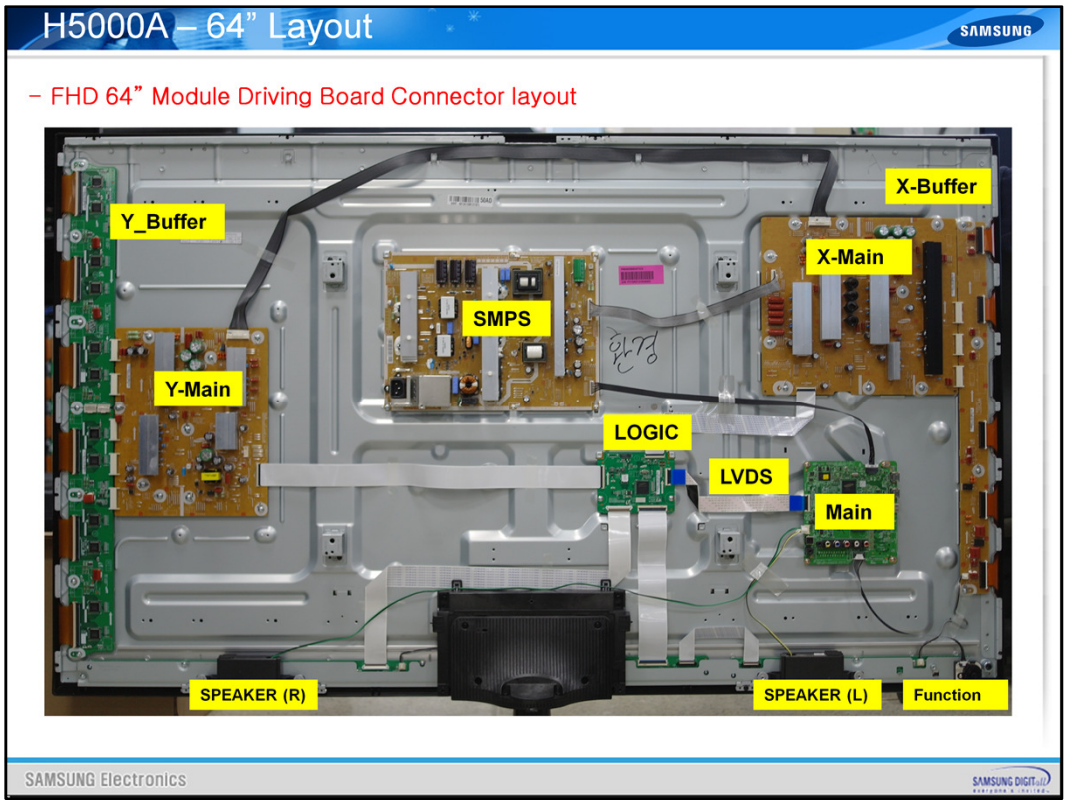
1. First place the TV face down on cushioned table and remove 4 screws from the Stand. Remove stand.
2. Remove the screws of rear cover.
3. Lift off the rear cover.



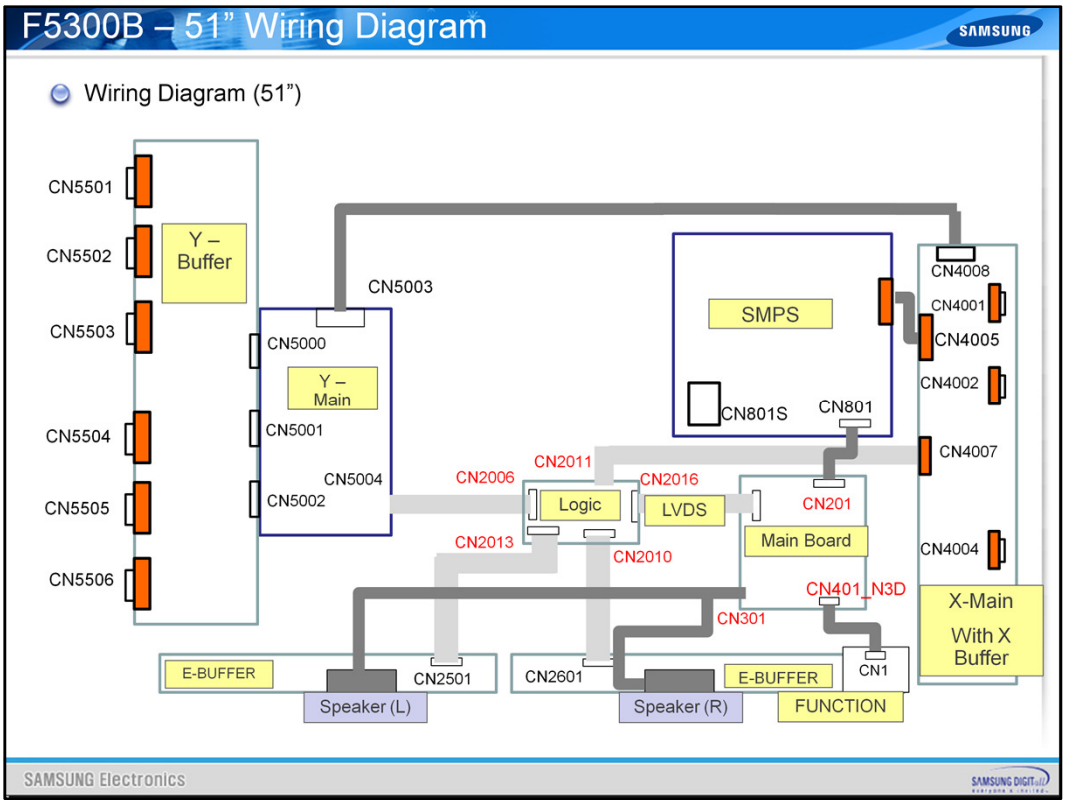
The Layout for the F5300B fifty one inch includes the SMPS Board. The Main Board and now a separate Logic Board. The LVDS cable that is now once again required. The Y Main Board that includes part of the X Main board along with the Y Buffer Board on the left. The X Main board that includes the X Buffer circuit is seen on the upper right. The left and right speakers and the Function Board are located at the bottom.



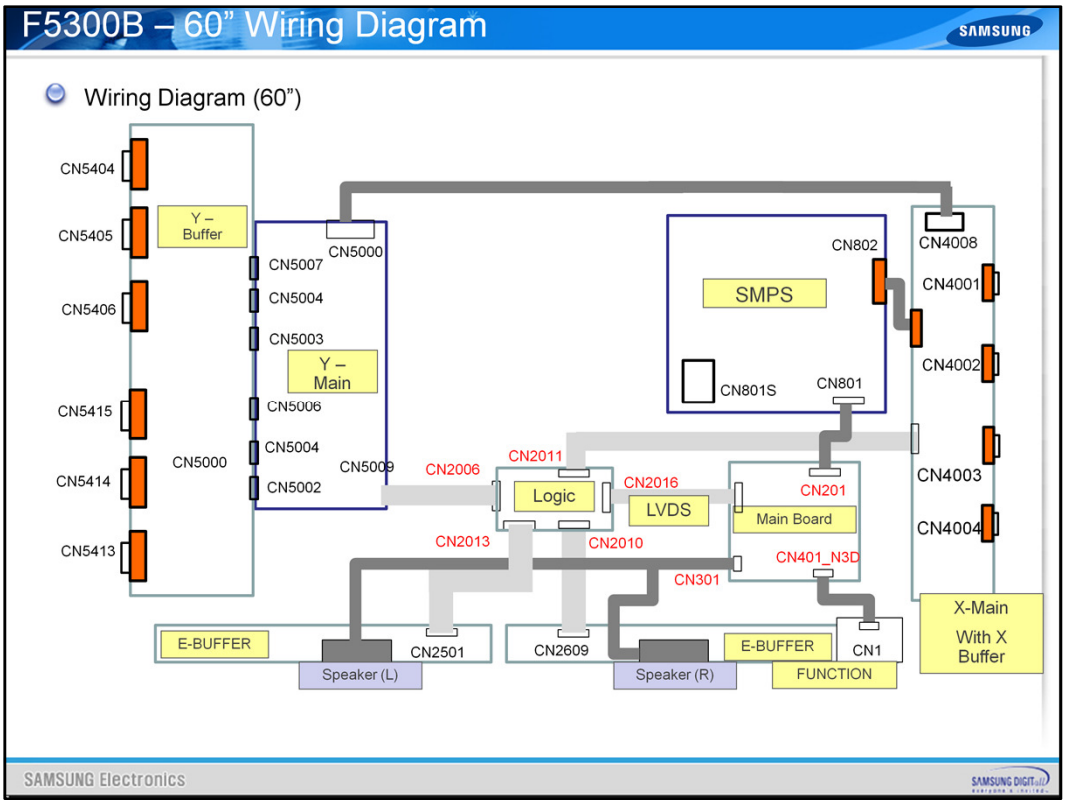
The 60 inch version seen here is almost identical to the 51 inch model.



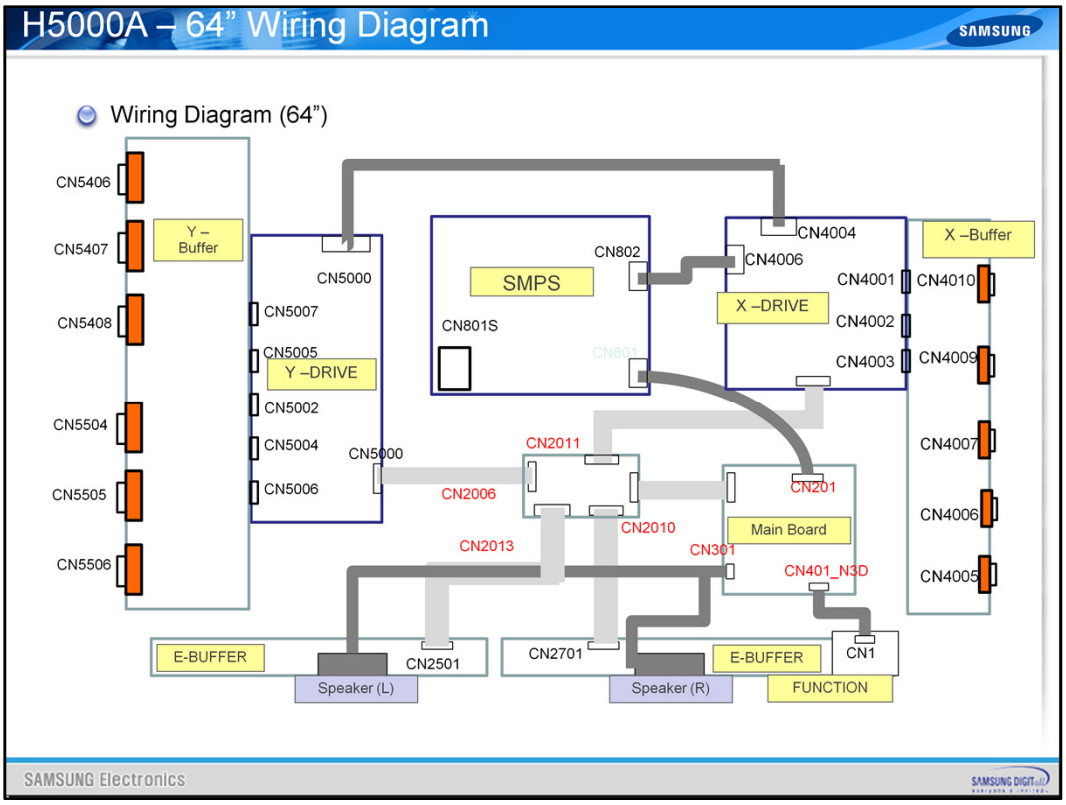
The H5000A seen here is only available in 64 inch size and includes all discrete boards. A separate X Buffer Board is seen on the right. The X Main Board is now larger to include all X Main circuitry and not shared with the Y Main Board as in the other 2014 TV models. Once again the Logic Board has been separated from the Main Board.



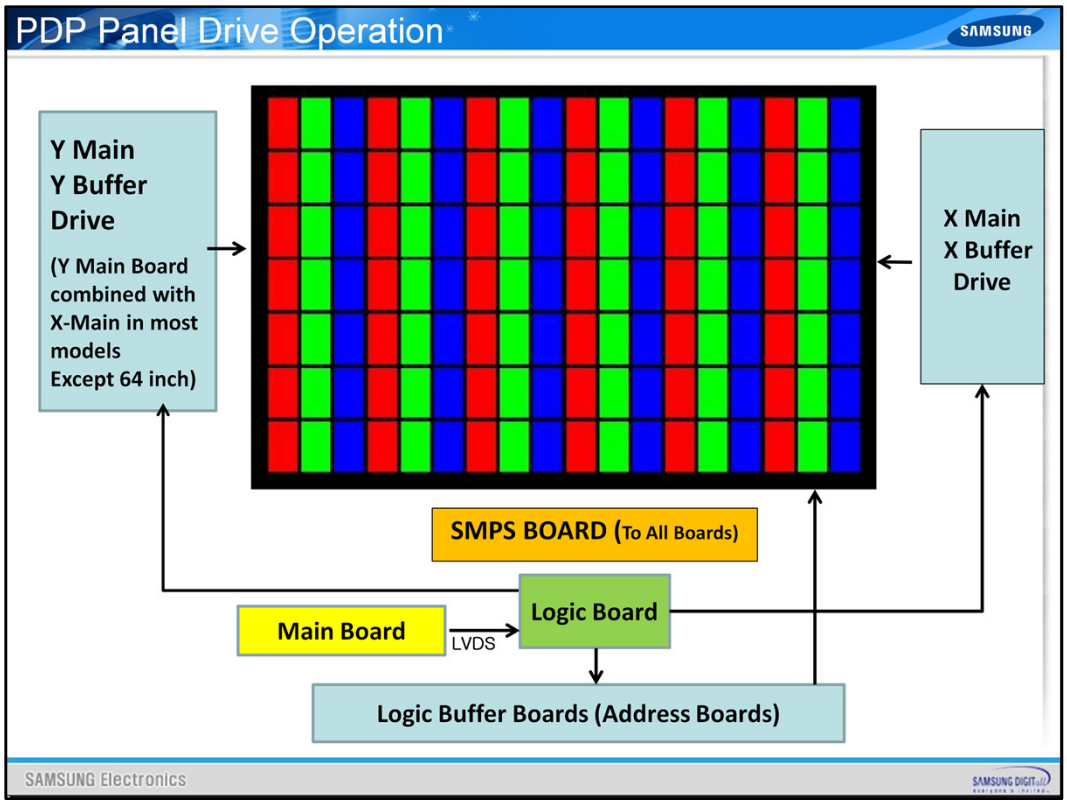
The wiring diagram for the 51 inch model includes connector 801 from the SMPS Board to the Main Board to supply low voltage and receive power on. The SMPS Board also goes to the X Main Board and then to the Y Main Board to provide V sustain voltage. The Main Board video signal goes through the LVDS cable to the Logic Board. The Main board also receives control from the Function Board and supplies audio to the speakers. The Logic Board provides data signal to the Y Main Board, X Main board and Logic Buffer Boards. The Y Main board provides Drive to the Y Buffer Board and the Y Buffer connects to the Panel. The X Main provides X Drive directly to the panel in this model.



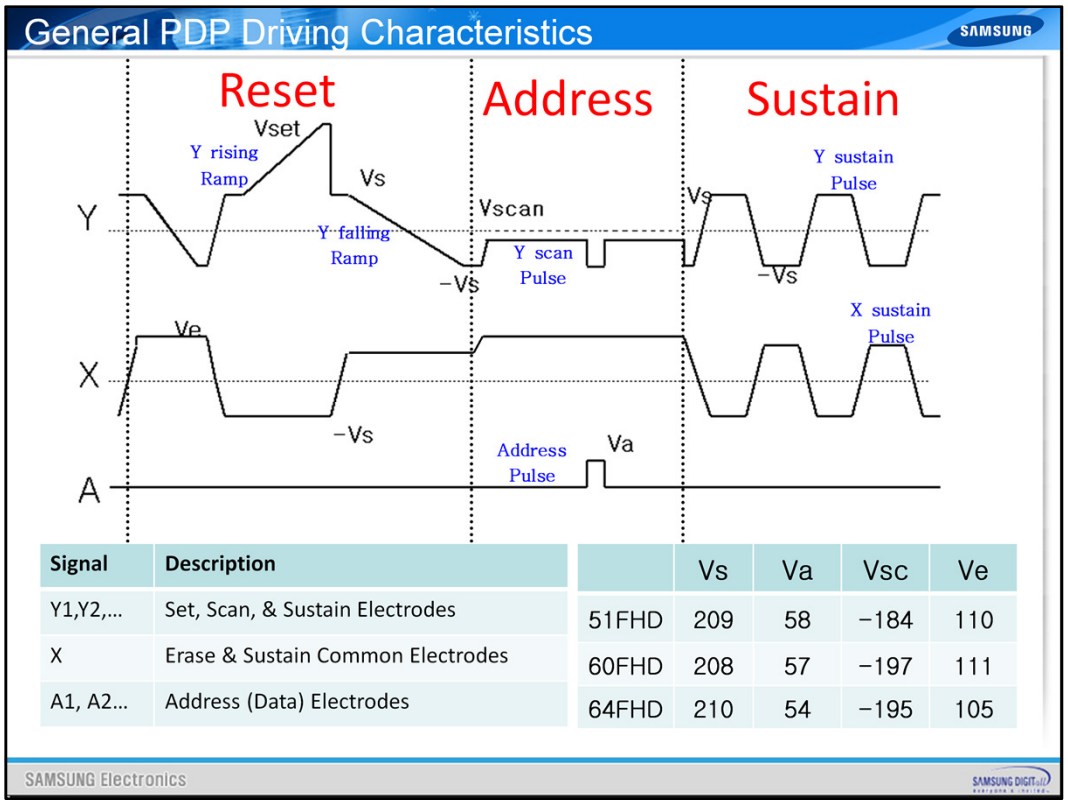
The wiring diagram is similar to the 51 inch model with the additions of more connections between the Y Main Drive and Y-Buffer Board and between the panel and the X-Main Board.



The Wiring diagram for the H5000 sixty for inch model includes a separate X Buffer Board that receives the X Drive signal from the X-Main Board and connects to the panel.



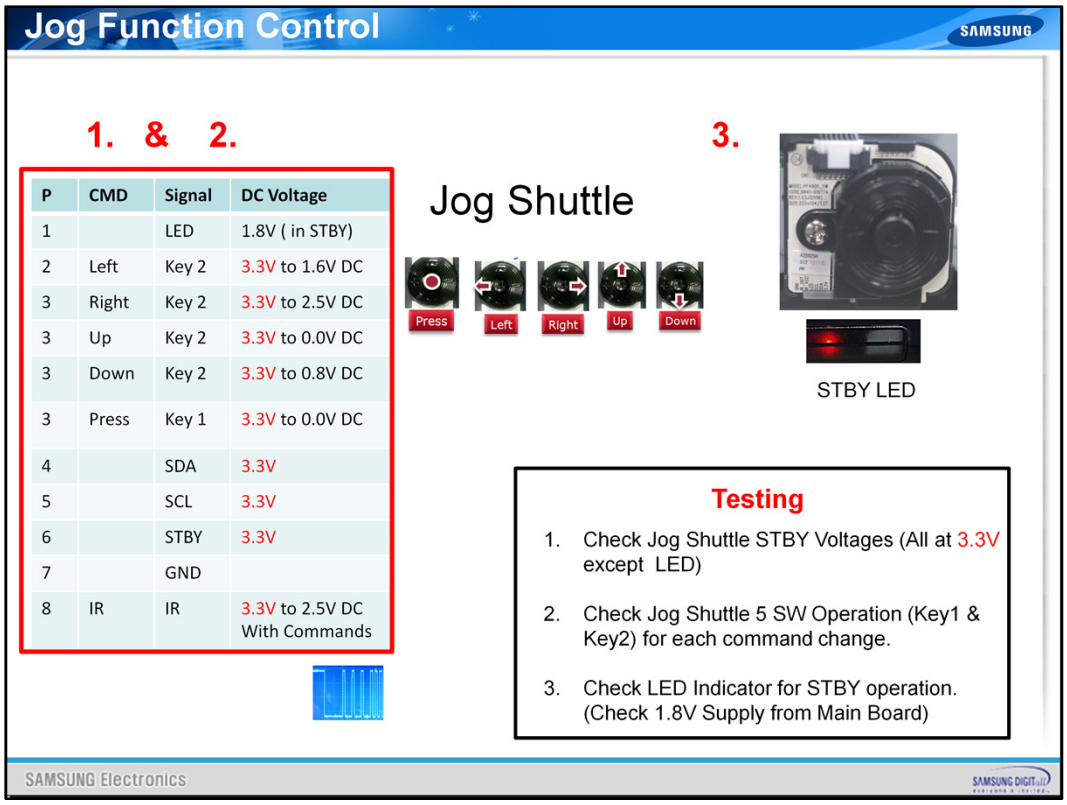
Panel Drive operation is similar in all plasma TVs. The Main Board sends video data signal through the LVDS Cable to the Logic. The Logic Board provides Scan, Set and Sustain control signals to the Y Main and Y Buffer Boards… and erase and Sustain control signals to the X Main and X Buffer Boards. The SMPS provides necessary operating voltages to all the boards.



The drive sequence also remains the same for all plasma TVs and is created and monitored by the Logic Board.

1: VE Erase signal to X-Board
2. V Set Pulse to Y-Board and Y Buffer Board
3. V Scan to Y-Board and Y-Buffer
3: VA Address to Logic Buffer Boards
4: V Sustain to X and Y Boards

IMPORTANT Panel label in each TV includes the V address, V scan, V sustain, and V erase voltages specific for that panel.

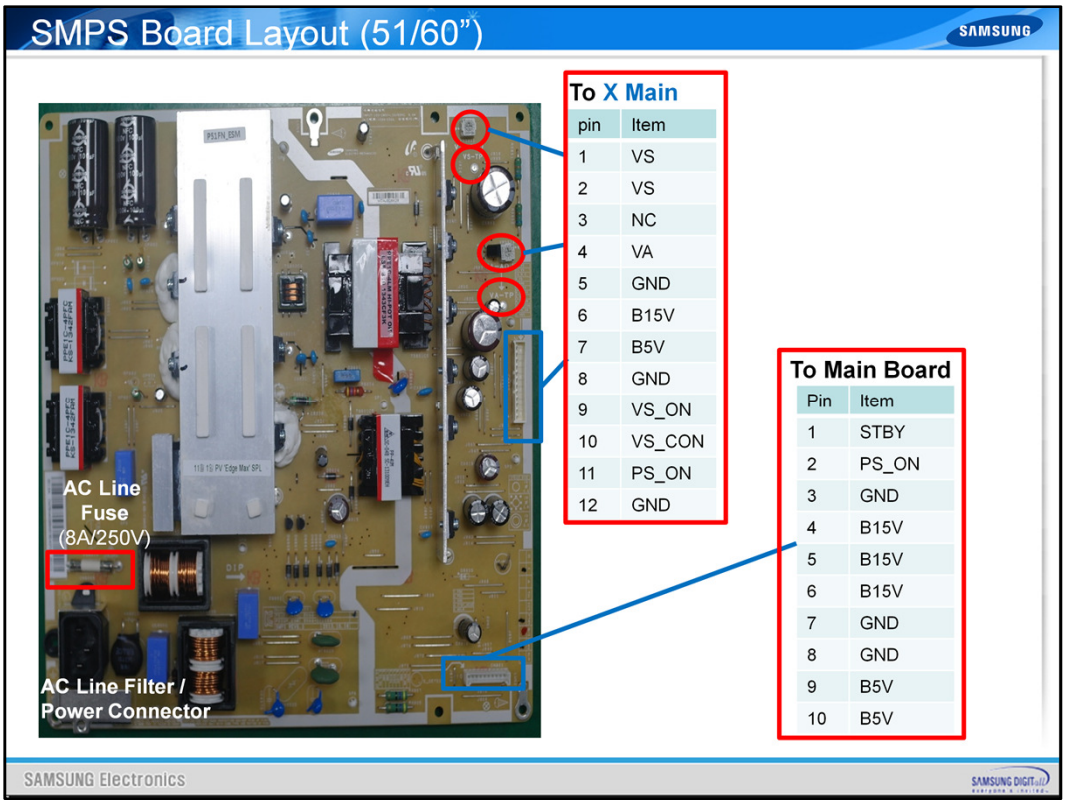


P	CMD	Signal	DC Voltage
1		LED	1.8V (in STBY)
2	Left	Key 2	3.3V to 1.6V DC
3	Right	Key 2	3.3V to 2.5V DC
3	Up	Key 2	3.3V to 0.0V DC
3	Down	Key 2	3.3V to 0.8V DC
3	Press	Key 1	3.3V to 0.0V DC
4		SDA	3.3V
5		SCL	3.3V
6		STBY	3.3V
7		GND	
8	IR	IR	3.3V to 2.5V DC With Commands

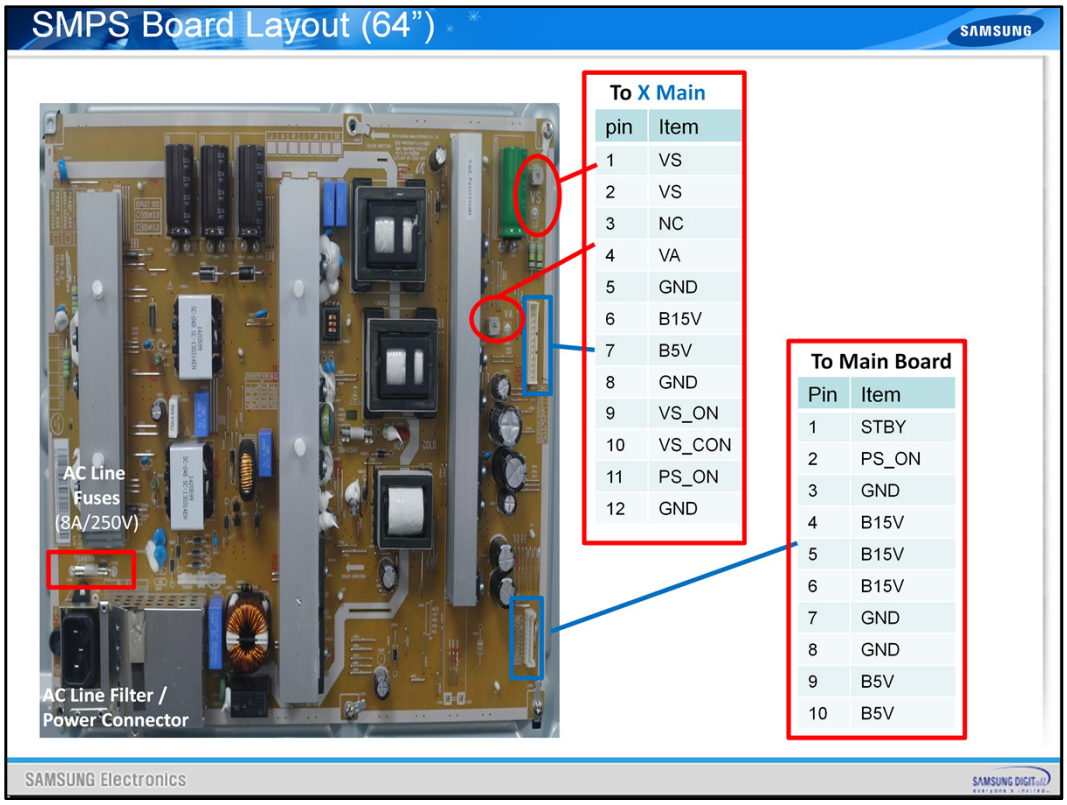
The Jog Function control remains the same for 2014 models

To Test:

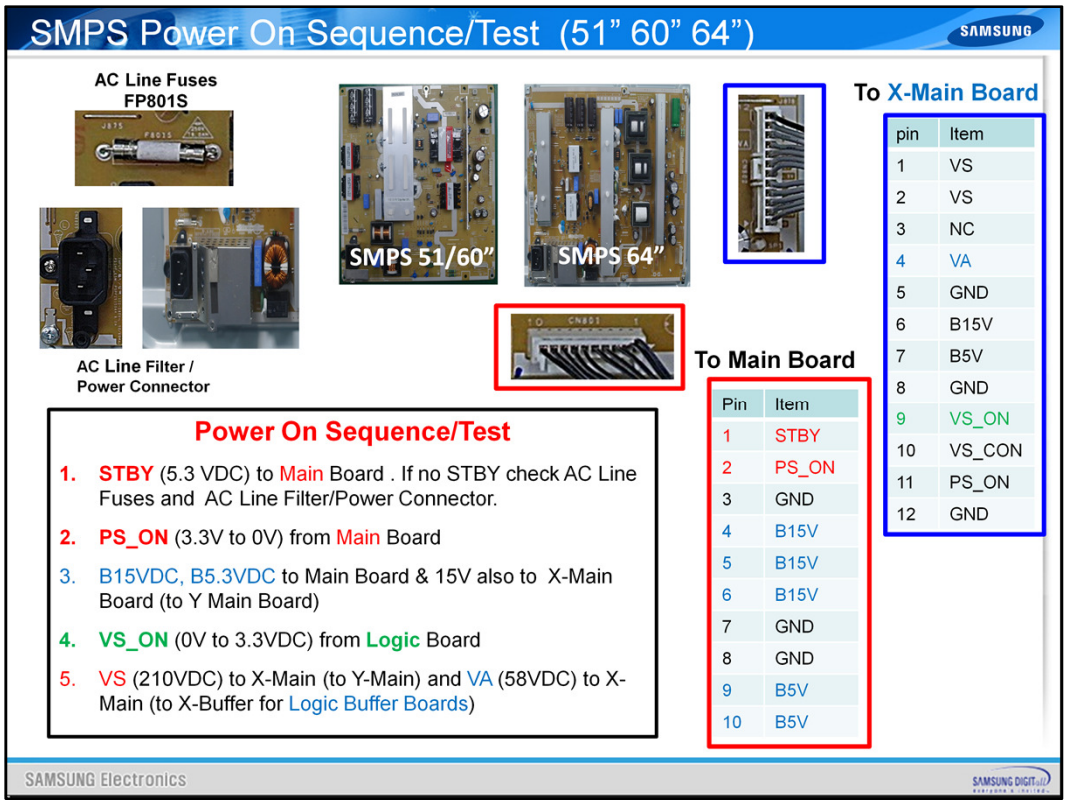
1. Check the Jog Shuttle STBY Voltages. All should be at 3.3V, except the LED.
2. Check the Jog Shuttle 5 Switch Operation, Key 1 and Key 2. Check each command change against the chart listed.
3. Check the LED Indicator for proper Standby operation. Check 1.8 Volts Supply from the Main Board.



The SMPS Board Layout for 51 inch and 60 inch models includes The AC Line Filter and Power Connector along with the AC Line fuse seen at the bottom left of the board. The X Main Board is sent important voltages for the X Main, Y Main, and Logic Buffer Boards from the middle right side connector. They include V S Sustain Voltage, V A Address Voltage, switched B 15 Volts and B 5 Volts supplies, V S ON and P S On commands.
The Bottom right connectors is sent to the Main Board and includes Standby, P S On, Switched B 15 Volts and B 5 Volts.
Circled in Red are the V S and V A adjustments and test points.

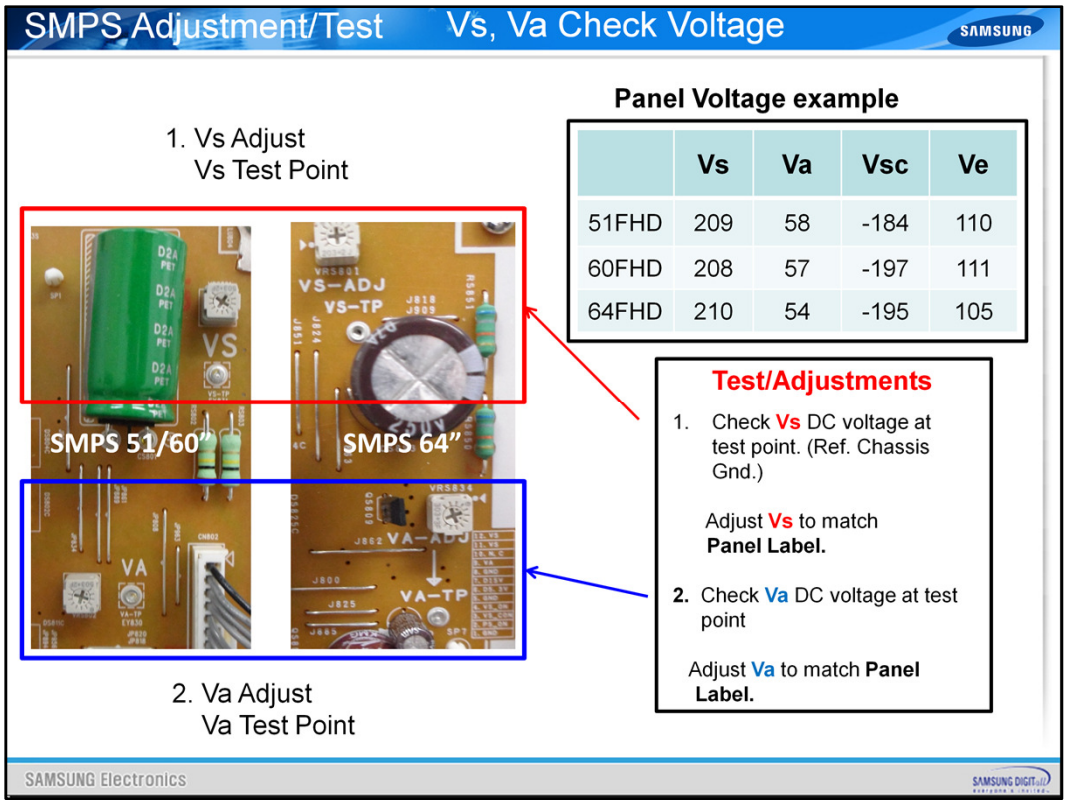


The Layout and pin configuration is identical for the 64 inch H 5000 model.
Circled in Red are the V S and V A adjustments and test points for this model.



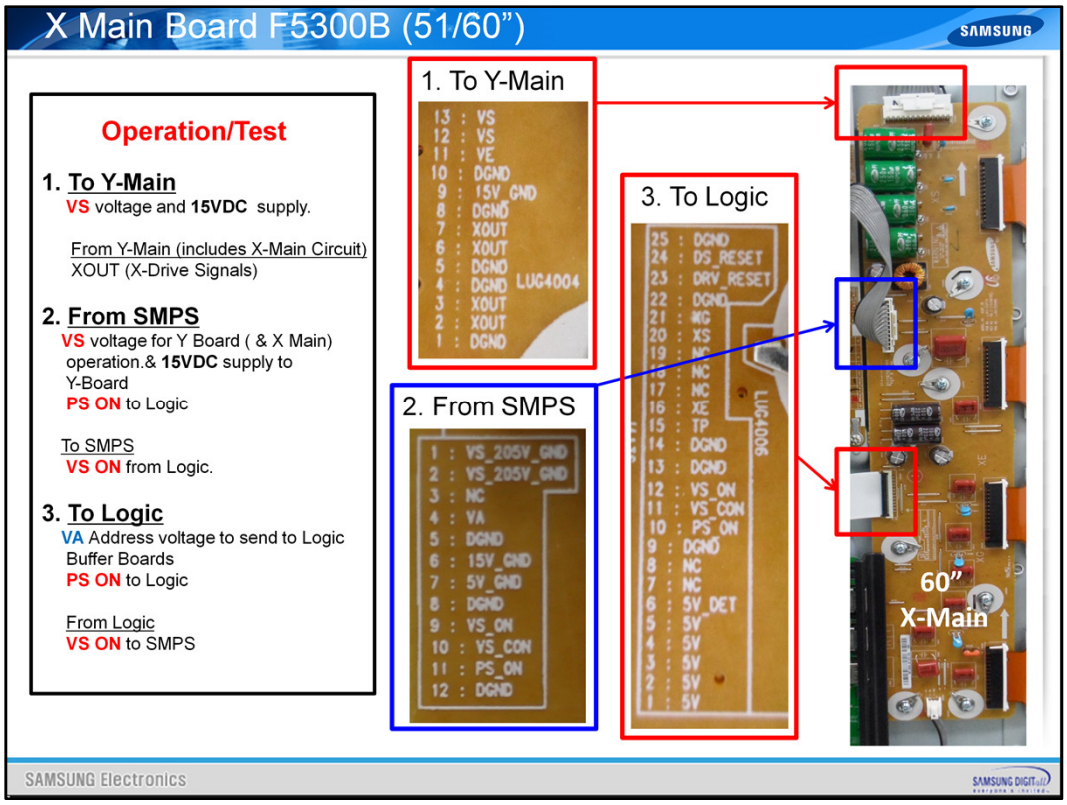
Follow this step by step procedure to understand and test the Power On Sequence for the TV

1. **Standby** 5.3 Volts D C to the Main Board . If no Standby check the AC Line Fuses and the AC Line Filter and Power Connector.
2. **P S ON** 3.3Volts to 0 Volts from the Main Board
3. Switched B 15Volts D C, B 5.3Volts DC to the Main Board & 15 Volts also to X Main Board then to the Y Main Board
4. **V S ON** 0 Volts to 3.3 Volts D C from the **Logic** Board
5. V S 210 Volts D C to X Main to the Y Main and V A 58 Volts D C to the X-Main to the X-Buffer for the Logic Buffer Boards



It's important to test and adjust the V sustain and V Address voltages for proper operation of the power supply.

1. Check **V S** D C voltage at test point. At Reference Chassis Ground
   Adjust **V S** to match **the Panel Label.**
2. Check **V A** D C voltage at test point
   Adjust **V A** to match the **Panel Label**



To check and test the X Main Board Operation follow the steps listed in the chart:

1. Connector to the Y-Main

V S voltage and **15 Volts D C** supply.
From the Y Main which includes part of the X Main Circuit
X OUT which are the X-Drive Signals

2. From the SMPS

V S voltage for the Y Board & the X Main operation and a **15Volts D C** supply to the Y Board.
PS ON for sending to the Logic Board

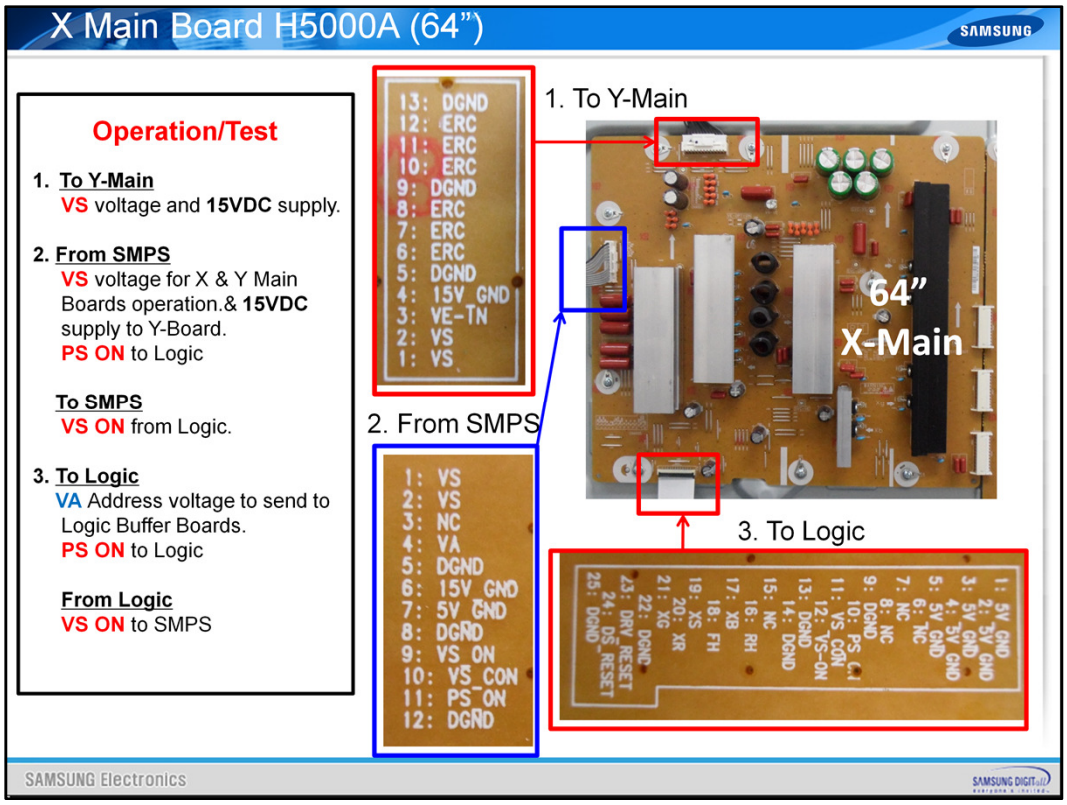
To SMPS
VS ON back from the Logic to turn on the SMPS V S and V A.

3. To Logic

VA Address voltage to send to Logic Buffer Boards

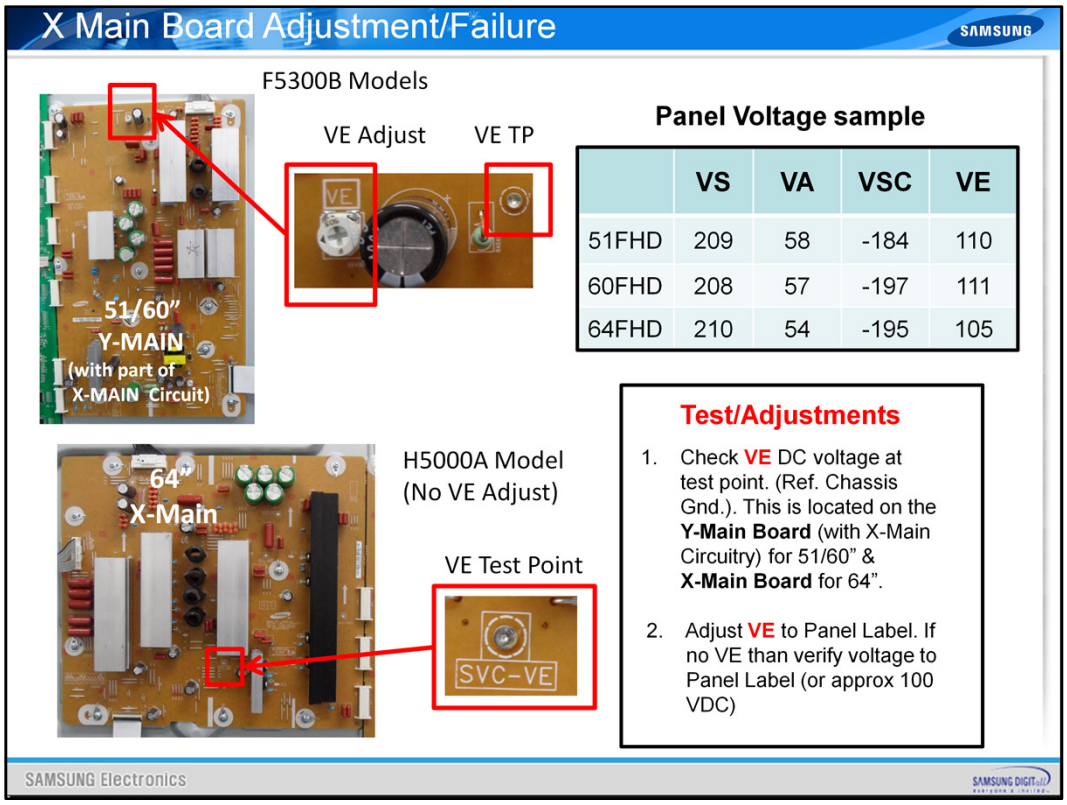
PS ON to Logic

From Logic
VS ON to SMPS



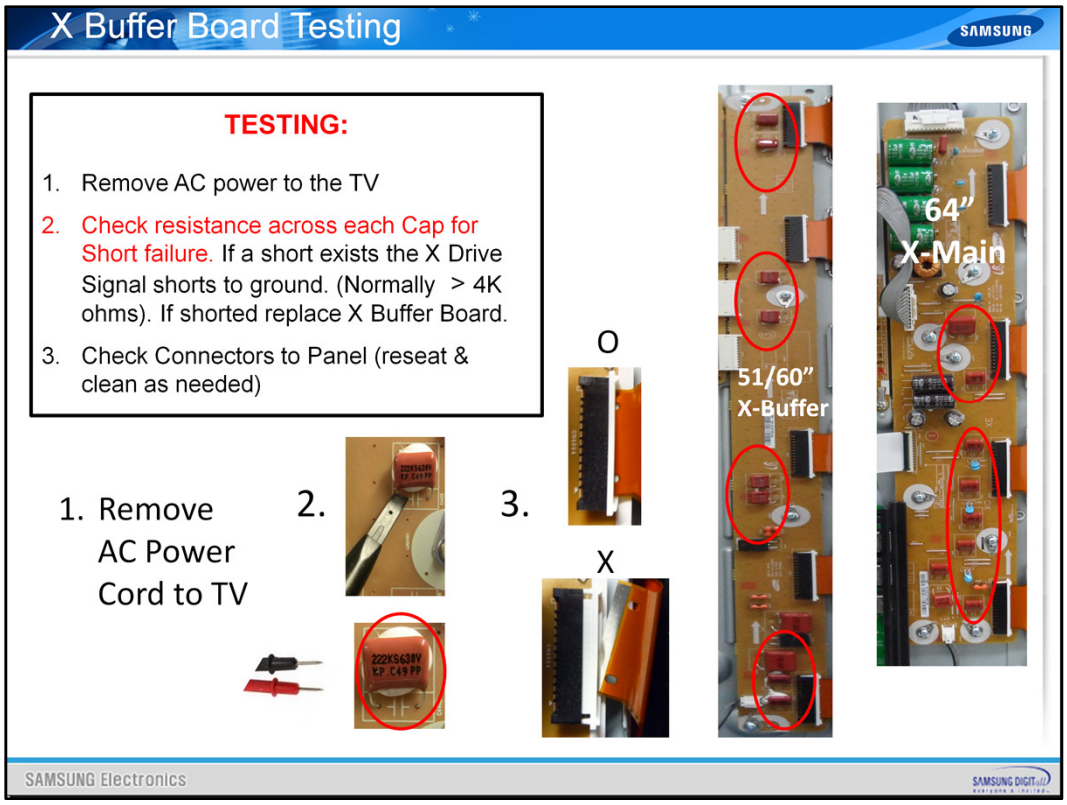
To check and test the X Main Board Operation for the H5000A TVs follow the steps listed in this chart:

1. **To the Y-Main**
   V S voltage and **15 Volts DC** supply.
2. **From the SMPS Board**
   V S voltage for X & Y Main Boards operation.& **15 Volts D C** supply to Y-Board.
   Power Supply ON command to the Logic Board
   To SMPS
   V S ON from the Logic Board
3. **To Logic**
   V A Address voltage to send to the Logic Buffer Boards.
   PS ON to the Logic Board
   From Logic
   VS ON to SMPS



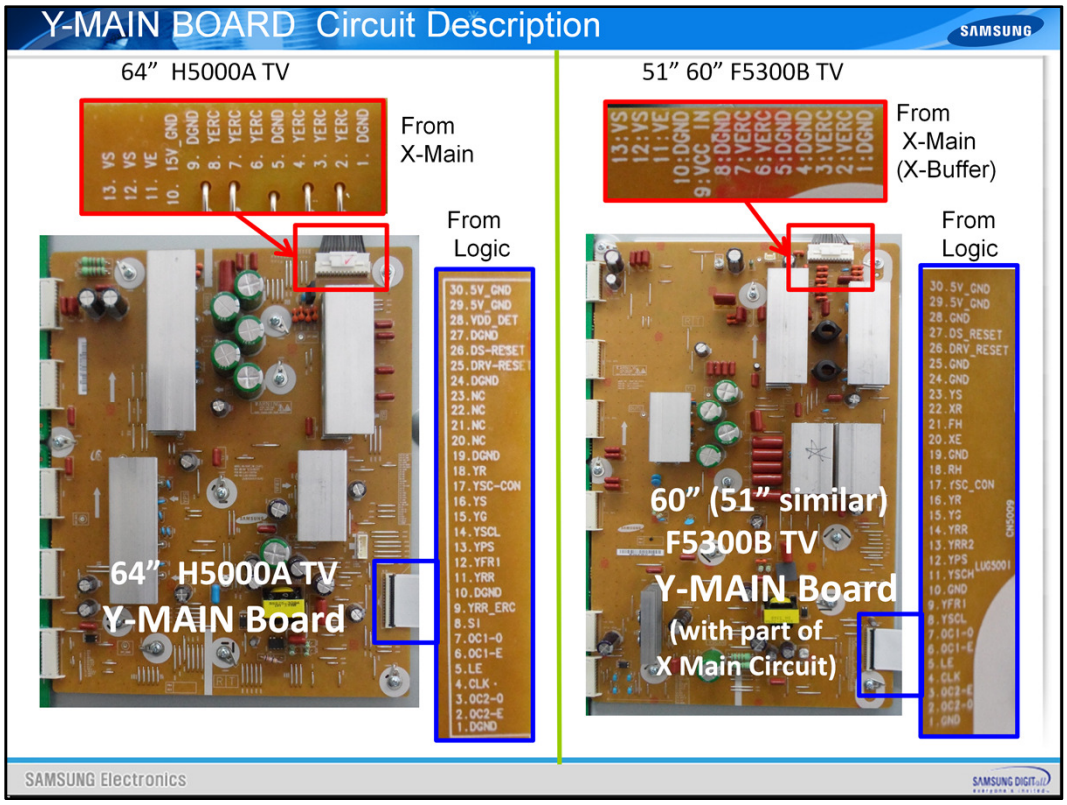
To perform test and adjustment of the X Main Board (or X Main Circuitry on the Y Main Board) for the steps in the chart:

1. Check the **VE** DC voltage at test point. (Ref. Chassis Gnd.). This is located on the **Y-Main Board** (with X-Main Circuitry) for 51 and 60 inch models and the **X-Main Board** for the 64 inch H5000A model.
2. Adjust **VE** to Panel Label. If no VE Adjustment than verify the voltage to Panel Label (or approximately 100 Volts DC)

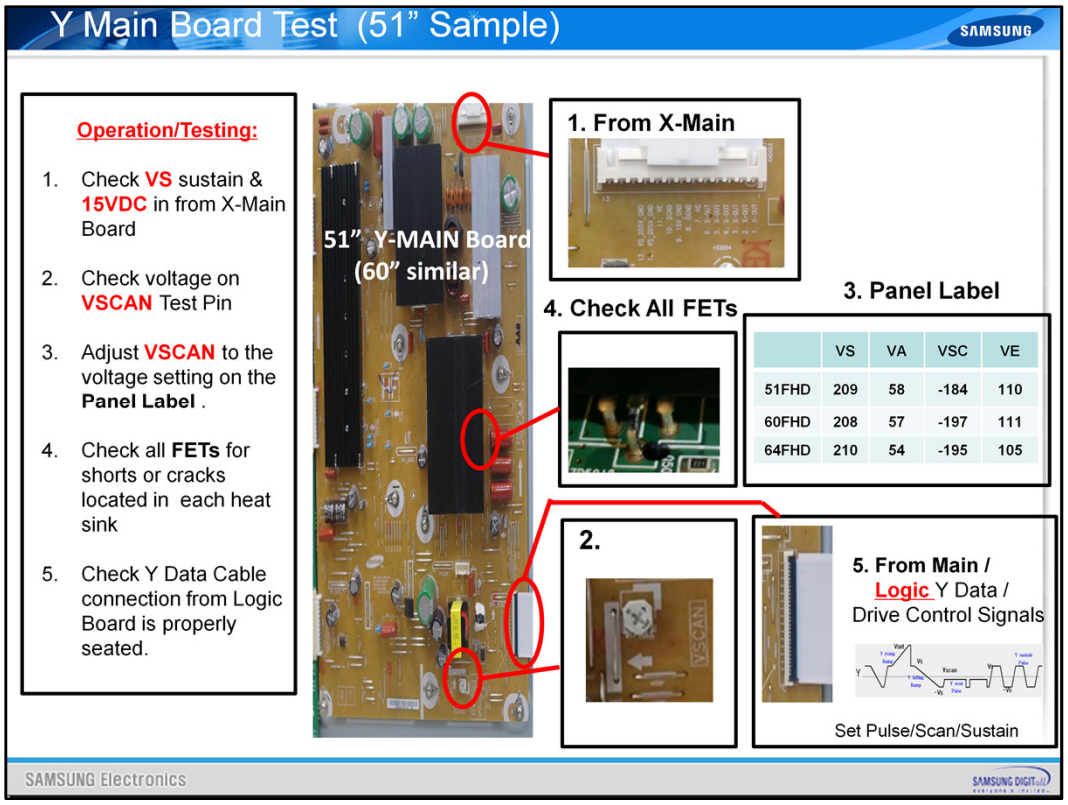


To test the X Buffer board:

1. Remove AC power to the TV
2. Check resistance across each Cap for a Short failure. If a short exists the X Drive Signal shorts to ground. (Normally > 4K ohms). If shorted replace the X Buffer Board.
3. Check the Connectors to the Panel (reseat & clean as needed)

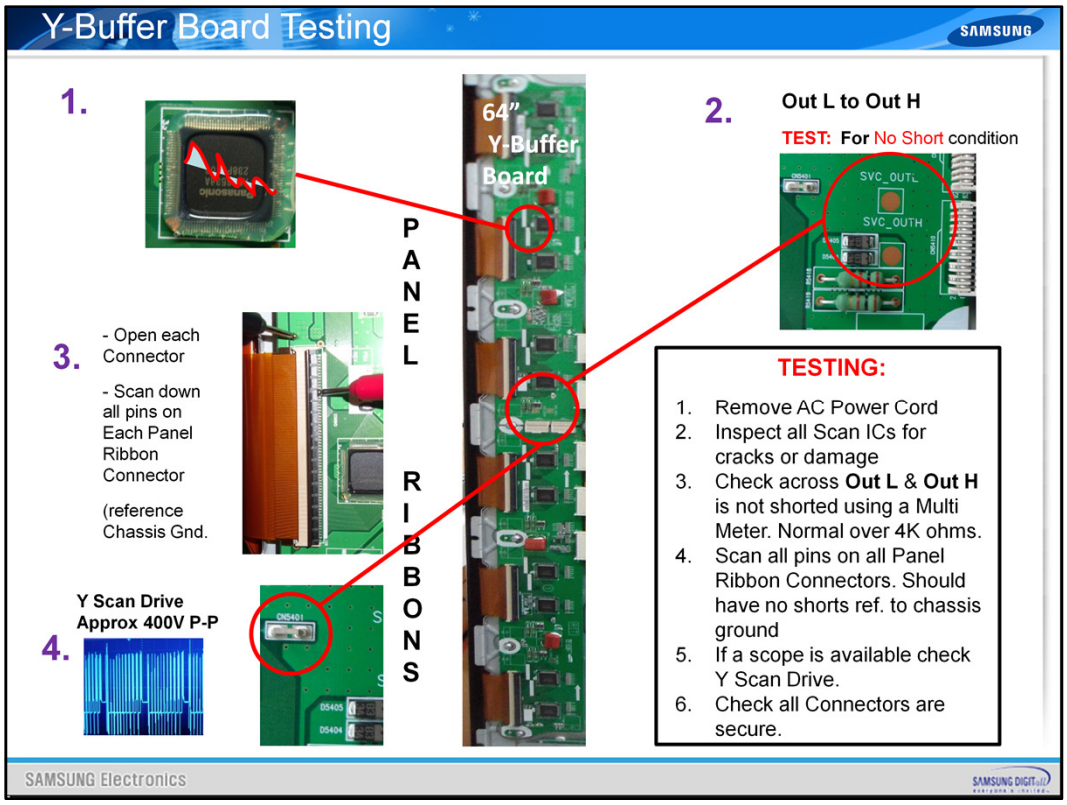


The Y-Main Boards are seen here for the two type TVs. Seen on the top left the Y Main receives important VS & 15VDC from the X-Main Board generated from the Power Supply. It also receives important Y drive and control signals from the Logic Board.
The Y-Main Board seen on the right actually includes X Main circuitry. The top right connector receives important VS & 15VDC from the X-Main Board generated from the Power Supply but also supplies the X Main Drive signals to the X-Main/Buffer Board. It also receives important Y drive and control signals from the Logic Board.



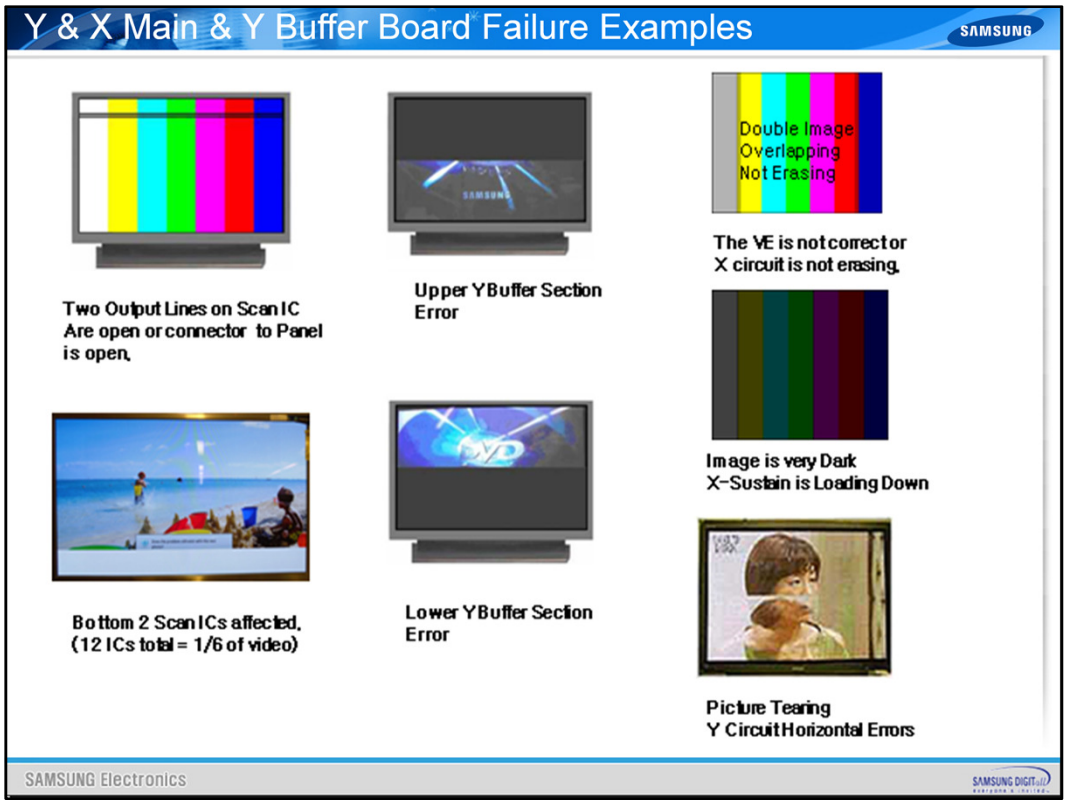
To check the Y Main Board operation, testing and adjustment:

1. Check **VS** sustain & **15VDC** in from X-Main Board
2. Check voltage on **VSCAN** Test Pin
3. Adjust **VSCAN** to the voltage setting on the **Panel Label** .
4. Check all **FETs** for shorts or cracks located in each heat sink
5. Check Y Data Cable connection from Logic Board is properly seated.

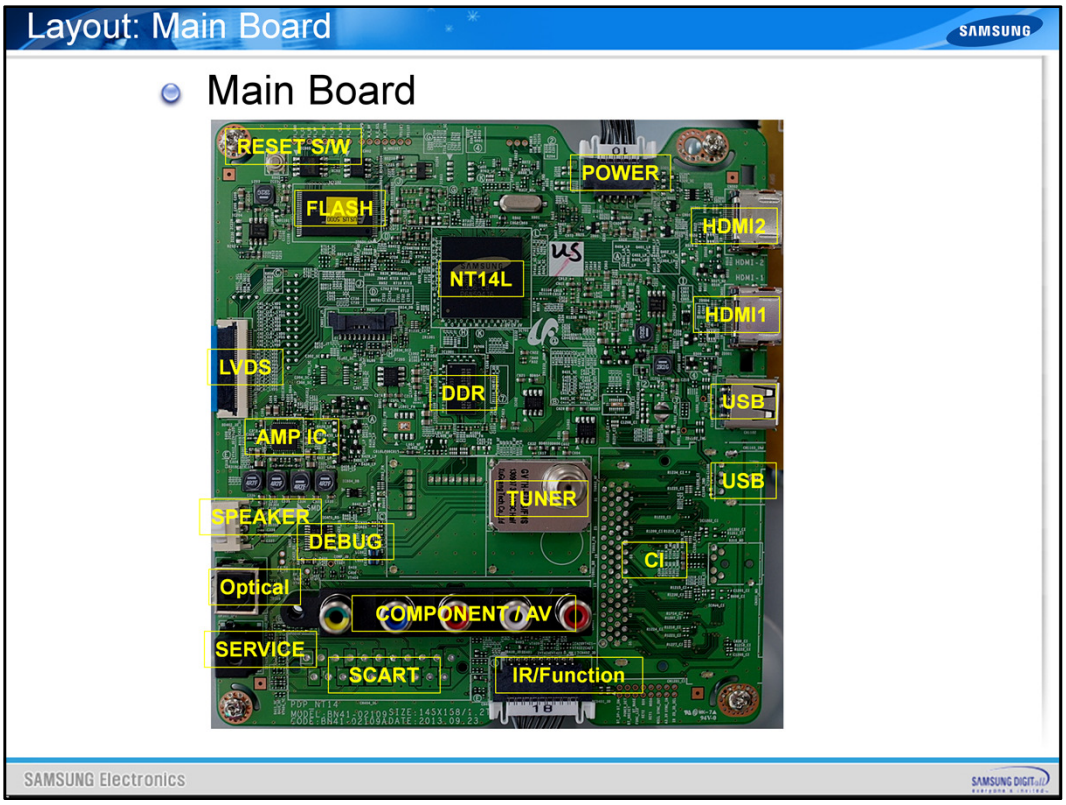


testing the Y Buffer Section includes: (1 thru 6)

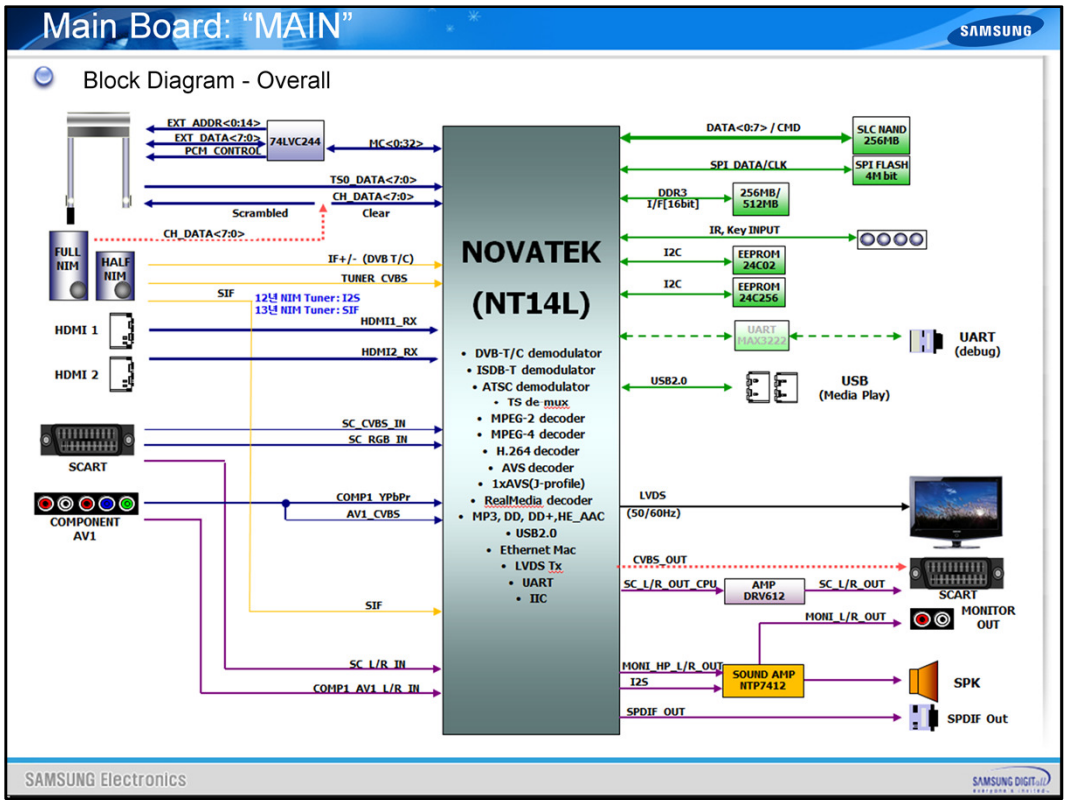
1. Remove the TV AC Power Cord to the TV
2. Inspect all Scan ICs for cracks or damage
3. Check across **Out L** & **Out H** is not shorted using a Multi Meter. Normal over 4K ohms.
4. Carefully open and Scan all pins on all Panel Ribbon Connectors. Should have no shorts with ref. to chassis ground
5. If a scope is available check Y Scan Drive.
6. Check that all Connectors are secure.



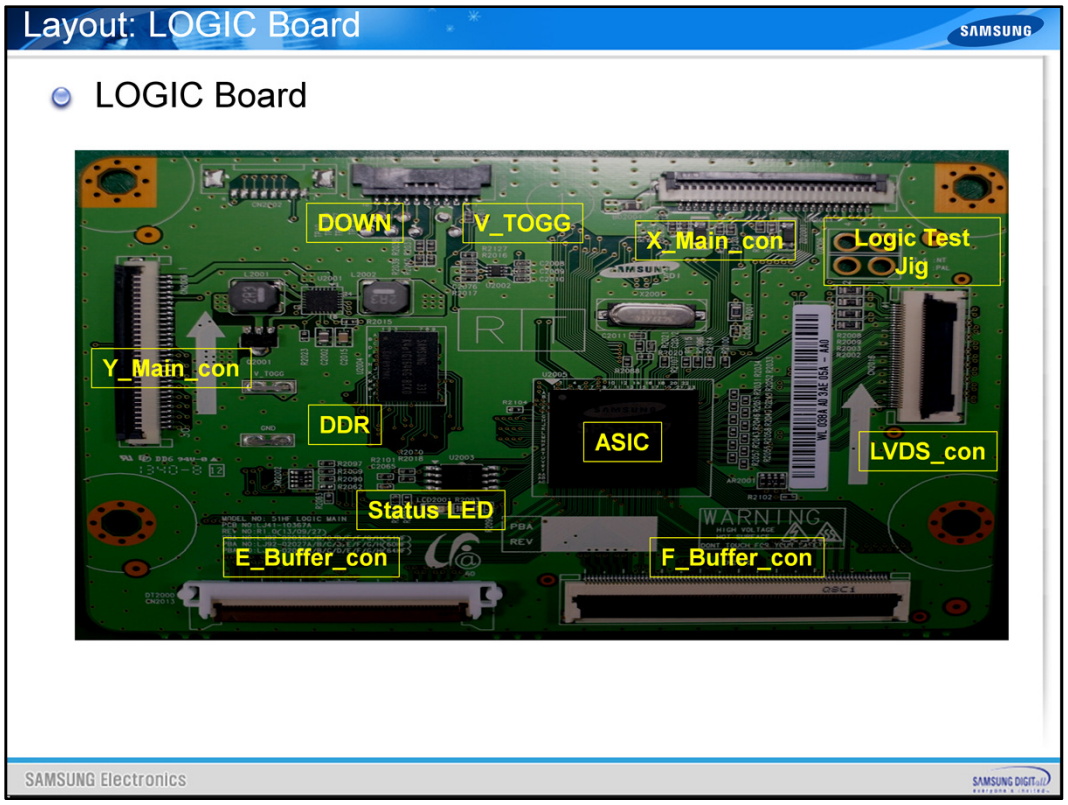
Typical Y & X Main & Y Buffer Board Failures examples include two single scan lines, upper left, are open with likely connection problem to the panel. Top center and lower center shows typical Y Buffer Board failure. Upper right shows overlapping images not erasing signifying an X Main Board Problem (Y-Main if they have combined circuitry). The bottom left horizontal bar error shows damaged Scan Ics and requires Y-Buffer Board replacement. The middle right screen shows very dark image, likely cause is the X Main Board. The bottom right shows horizontal picture tearing with likely cause being the Y Main Board. If you get a Black screen with full power, check for VA voltage to Logic Buffer Boards or open fuse on Logic Buffer Board.



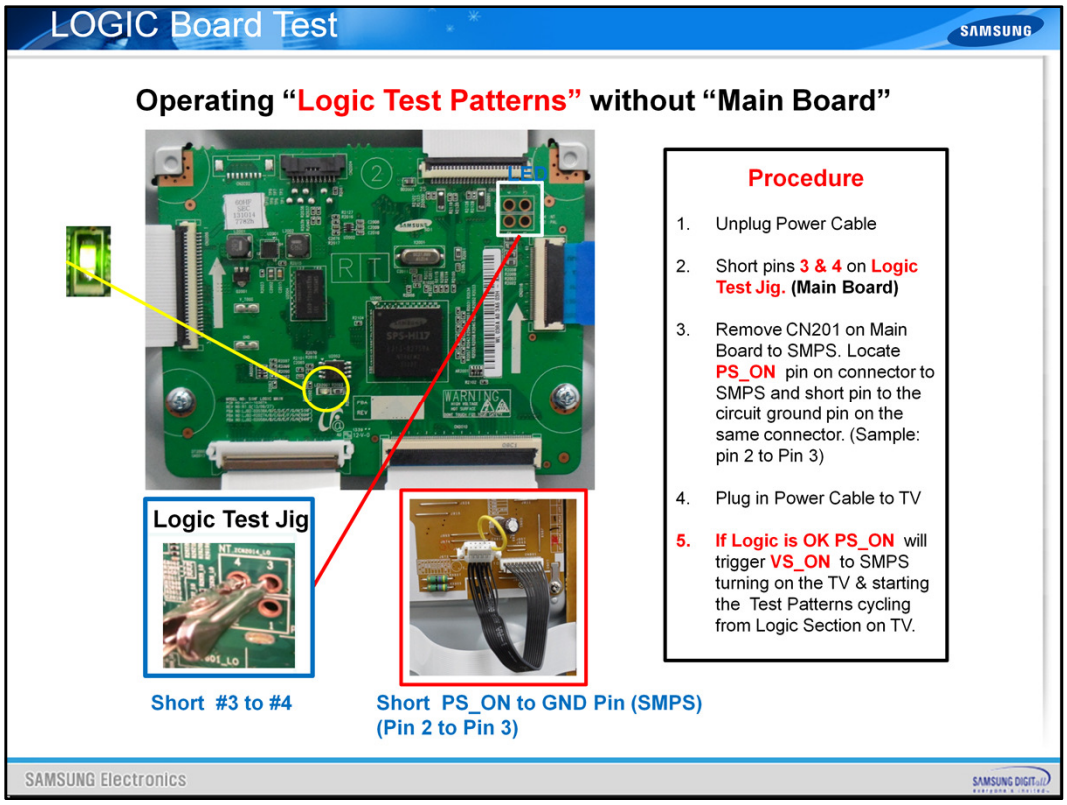
The Main Board Layout for the F 5003 B and the H 5000 plasma TVs is seen here. Highlighted and labeled are the important connectors and I C locations.



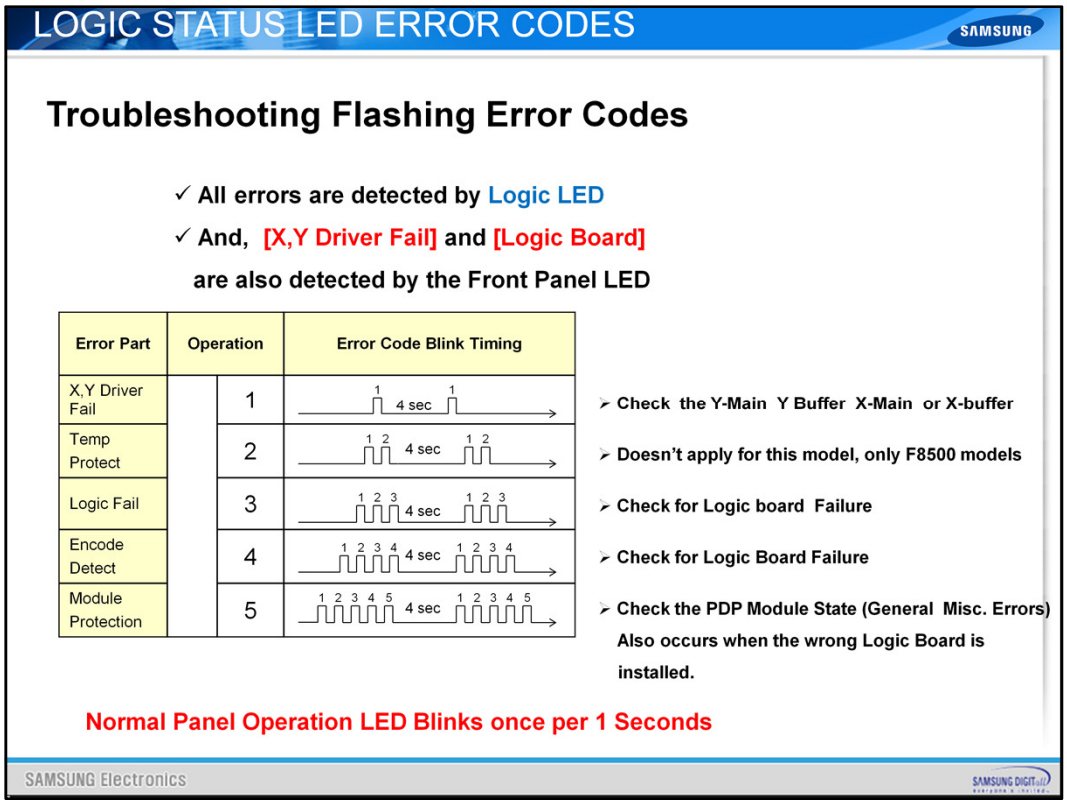
The F5300B and H5000 series plasma TVs both use the Novatek NT14L Platform. This is the standard and only new TV model series for 2014.
This one chip CPU processor receives the inputs shown on the left, which include the tuner, HDMI, component video and left & Right Audio inputs. These are processed and outputted through LVDS to the Logic Board in the TV. The L & R Audio are sent to the sound amp on the Main Board and then to the speakers. Monitor out and SPDIF are also provided.



The Logic Board layout and connectors and key components are shown here. Once again the Logic board has been separated from the Main Board. The Y-Main connector is on the left. The E and F Logic Buffer Board connectors on the bottom. The LVDS connector on the right outputs the 10 bit video data signal to the Main Board. The X Main Board connector is on the upper right. And the upper left connector is not used in these models. The important Logic Status LED is located near the bottom left side and the Logic Test Jig on the upper right.



The important procedure for activating Logic Test Patterns with the Main Board disconnected is shown. The procedure is similar to 2012 models and older having a separate Main and Logic board.



The Logic Status LED Troubleshooting Flashing error codes are listed. They were expanded in 2013.

When the TV is operating normally the Status Indicator flashes once every half second. When the Logic Board detects an error from the TV the indicator will flash based on the failure and continues to repeat the error:

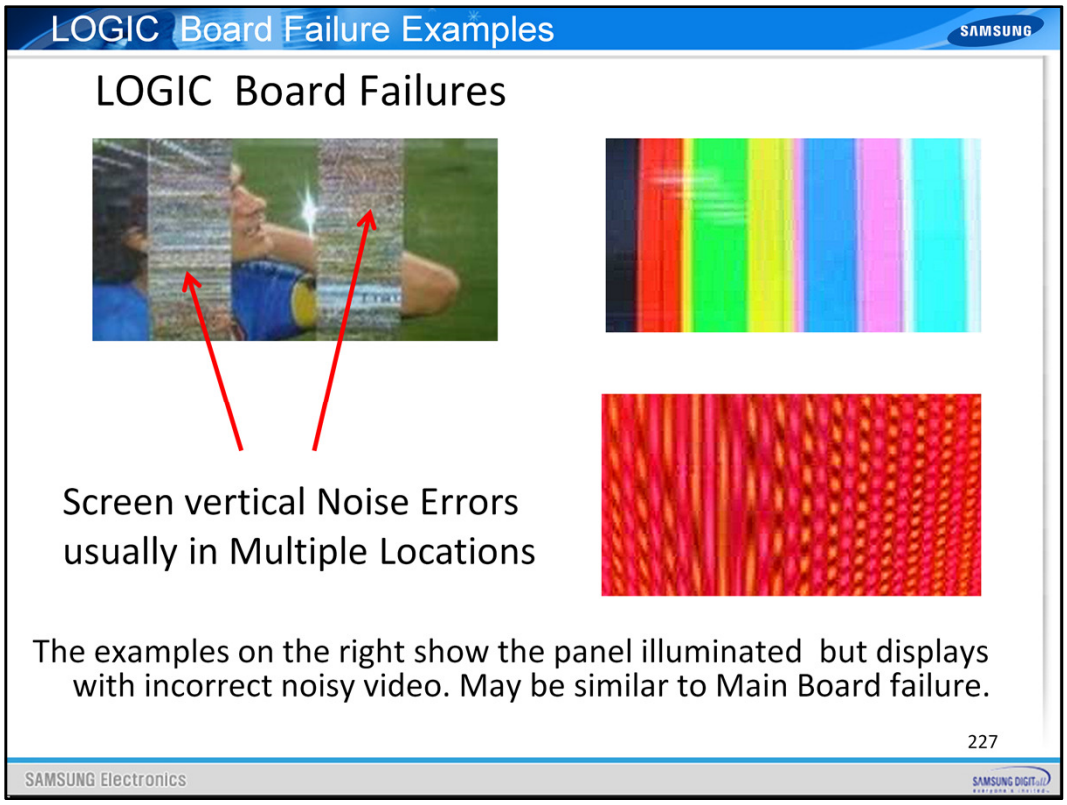
1 flash every 4 seconds: Check the Y-Main Y Buffer X-Main or X-buffer

2 quick flashes followed by 4 second delay is a panel temperature error detected for F8500 models only.

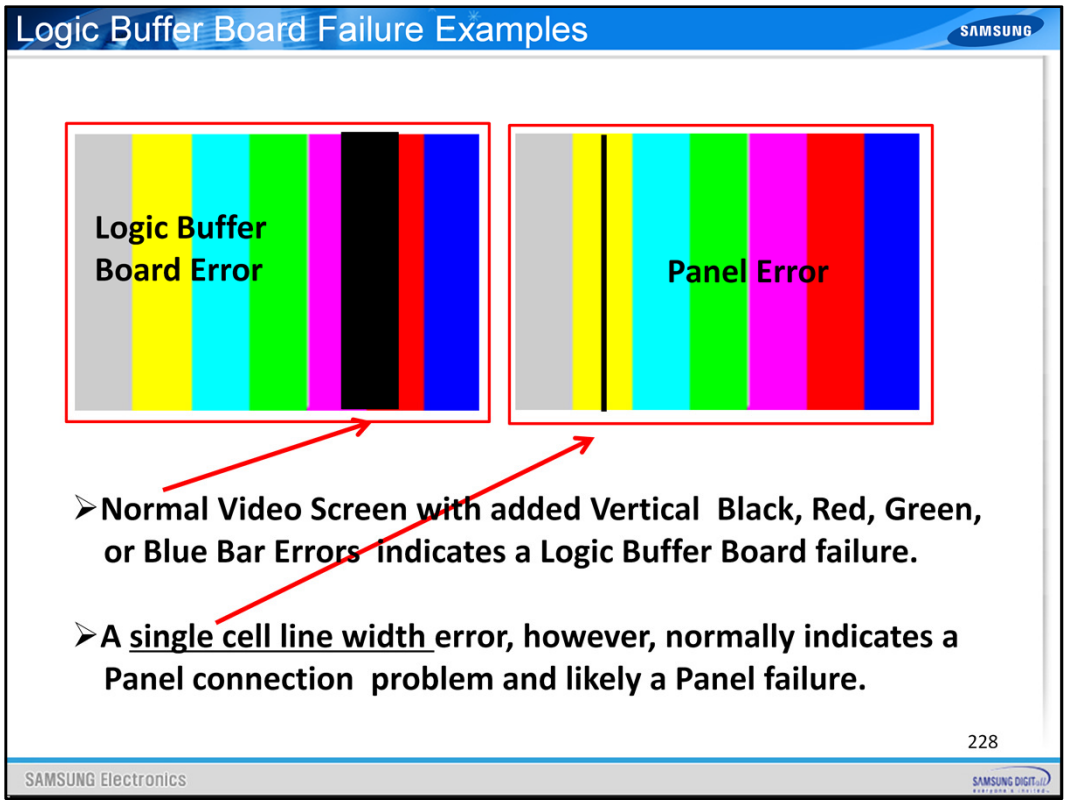
3 or 4 quick flashes followed by 4 second delay is a Logic Board Failure

5 quick flashes followed by 4 second delay is a general error. Troubleshoot all areas. It can also indicate that the wrong Logic Board is installed.

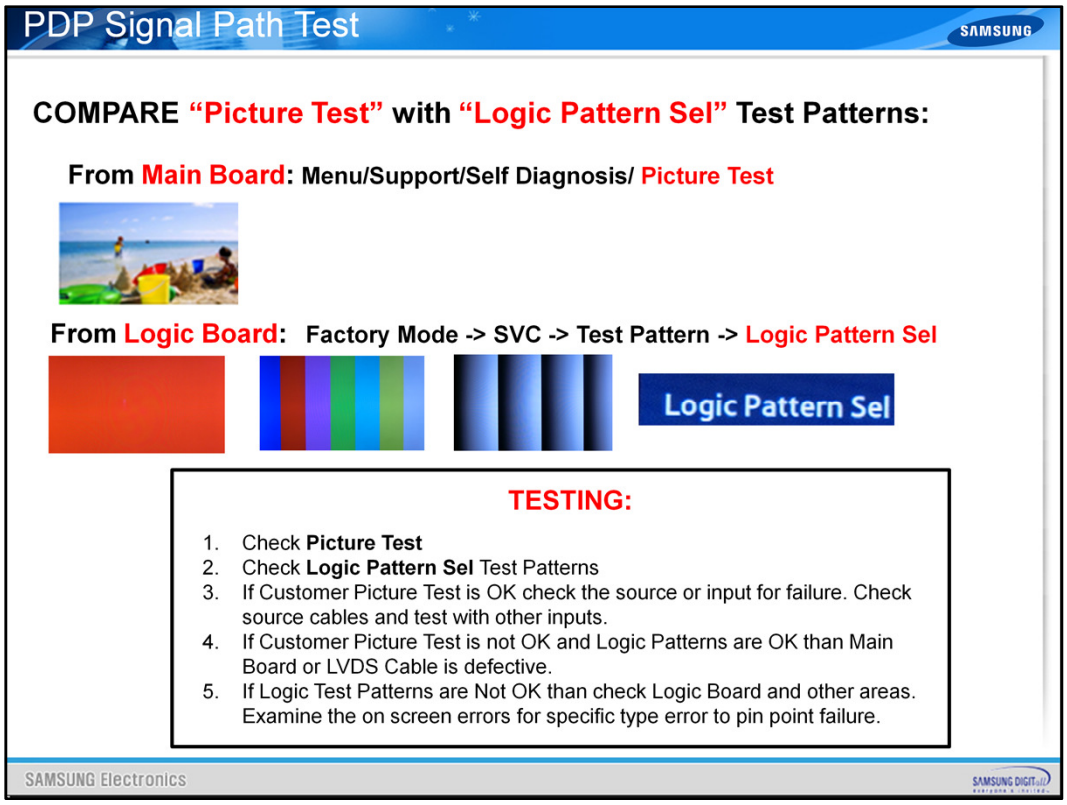
The 1 and 3 flashing error codes will also flash on the front power indicator of the TV. A good troubleshooting indication on the TV for the customer to report. It will time out after approximately 2 minutes.



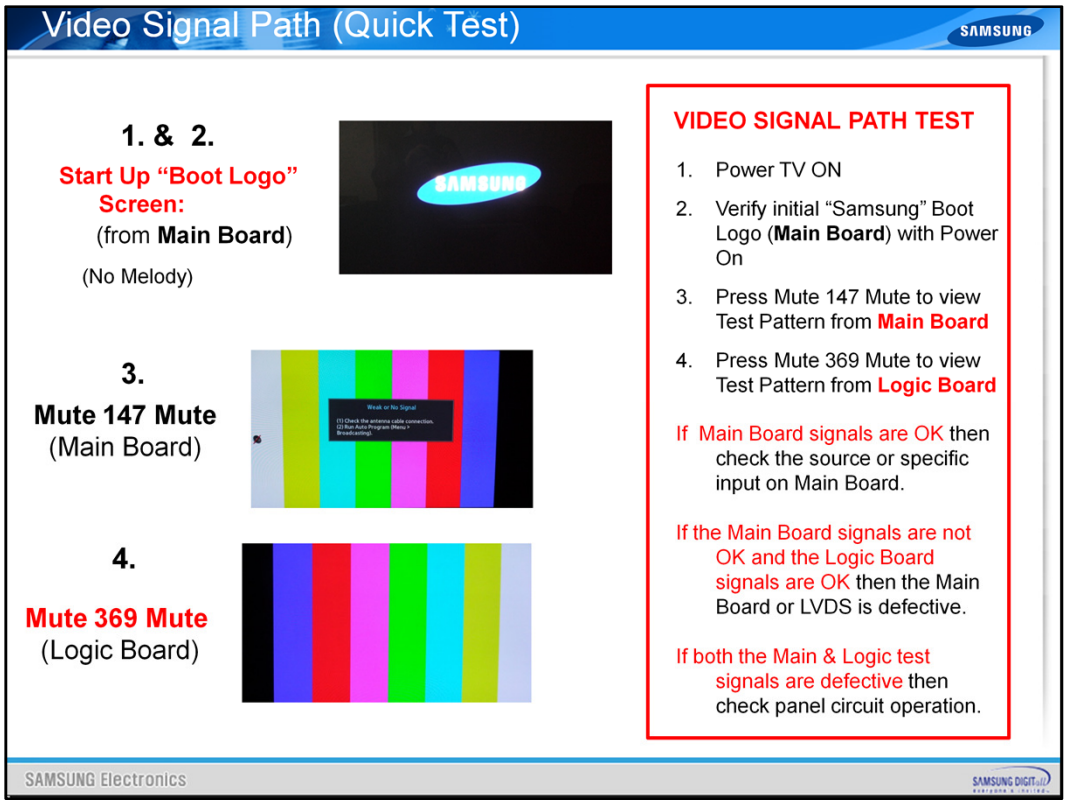
Logic section failure samples are shown… Pictured on the left the Logic section failure may show vertical noise errors in multiple locations. Pictured on the right are Logic Errors that can appear as a Main Board Failure.



Logic Buffer (Address) Board failures likely create vertical Black, Red, Green, or Blue Bar Errors. These errors normally run top to bottom of the screen. The rest of the video is usually normal.
If there is only a single cell wide vertical line it is most likely the
Connection to the panel and a panel would need replacement. If there are multiple lines or a bar, try replacing the Logic Buffer Board in that area. Always try cleaning and reseating connectors before making any replacements.

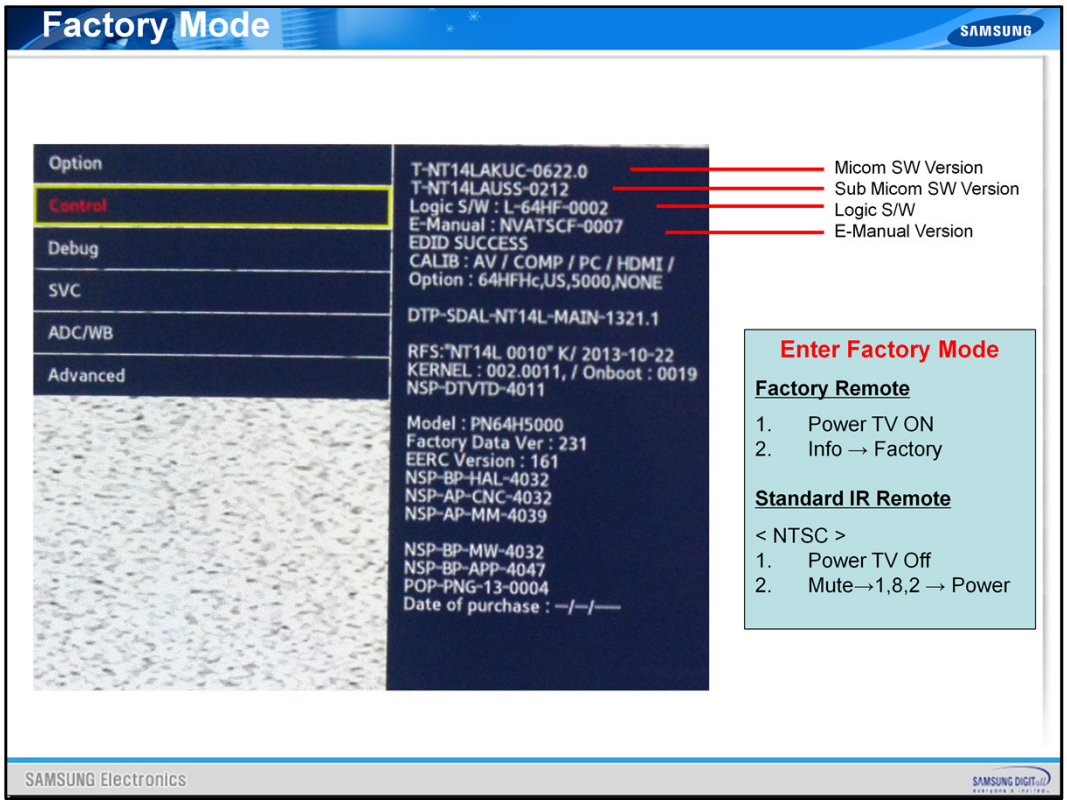


One method of testing the PDP Signal Path is to use both "Picture Test" in customer self diagnosis and the "Logic Pattern Sel" in Factory Mode.
Follow the 5 steps listed. This will give you a full set of Logic Test Patterns to compare. Next slide shows an easy Quick Test method.



For Important Video Troubleshooting use this quick method of observing Main & Logic Board Video Processing Status.
This is especially useful for TVs that have hard to see display errors

1. Power the TV ON
2. Verify initial Start Up Screens (**Main Board**) with Power On
3. Press Mute 147 Mute to view Test Pattern from **Main Board**
4. Press Mute 369 Mute to view Test Pattern from **Logic Board.**



Factory Mode screen sample for the PN64H5000 is shown. The other models are similar.
Enter Factory Mode using the Factory Remote will allow you to access all Factory Mode functions.
Use standard remote method only when necessary.

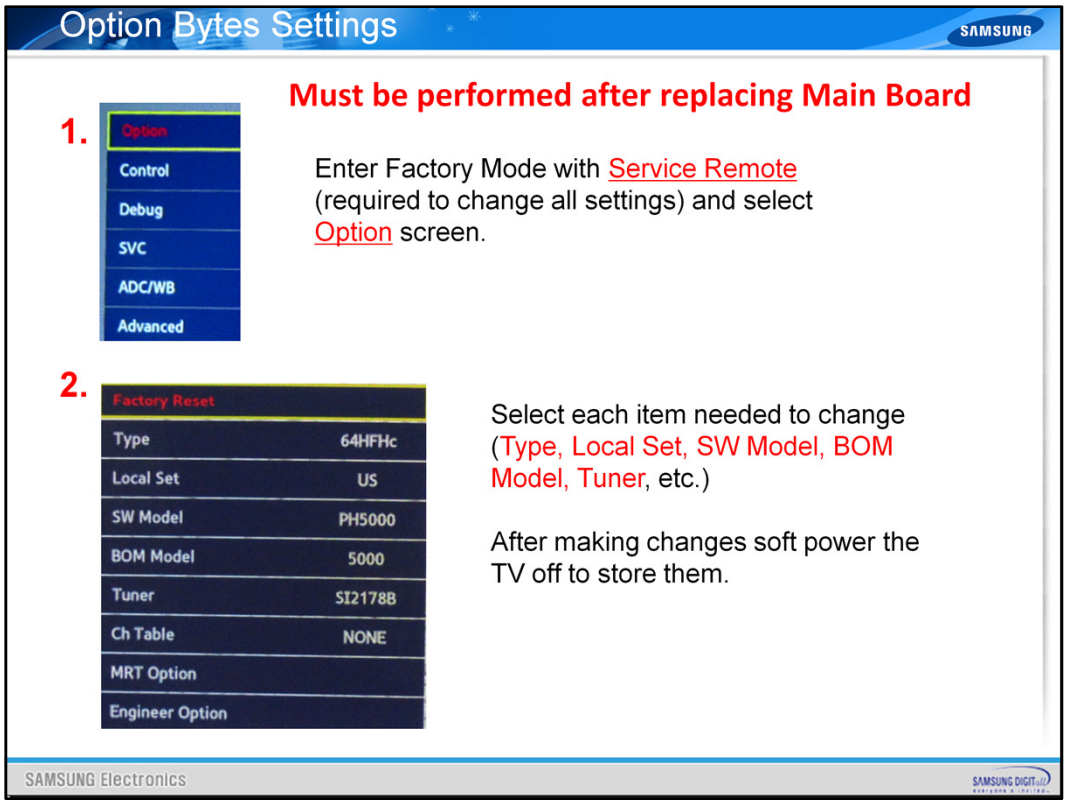
Factory Remote

1. Power TV ON
2. Info → Factory

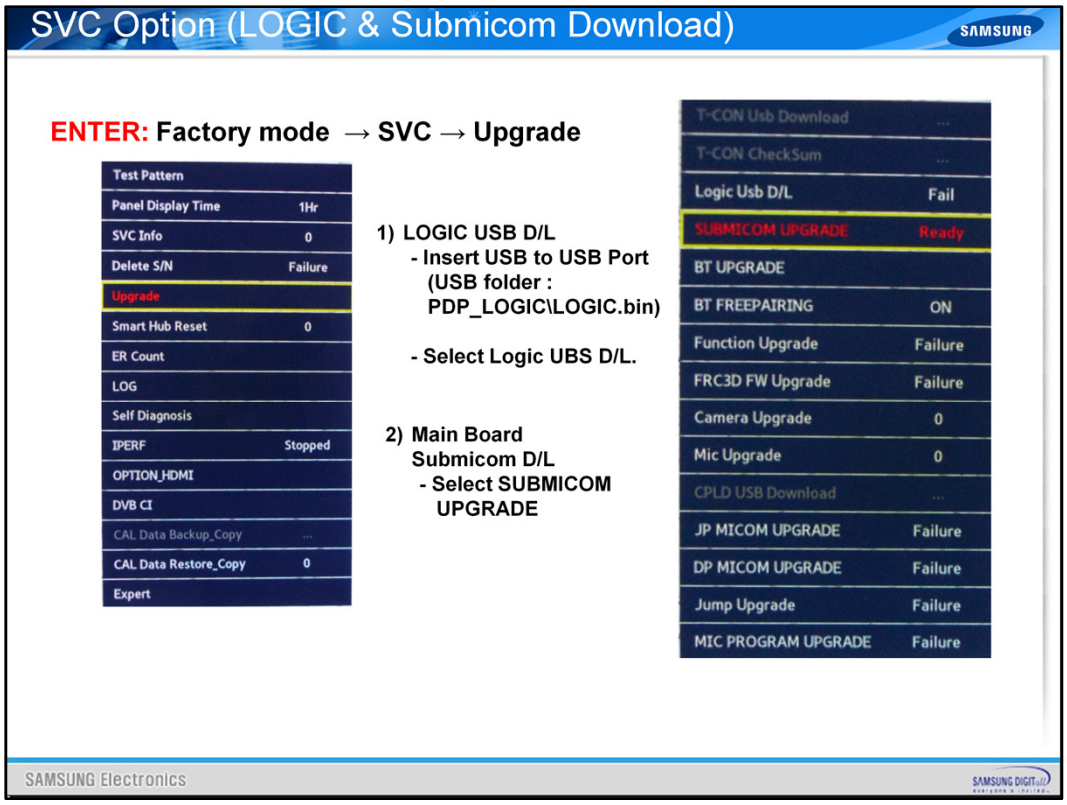
Standard IR Remote

< NTSC >

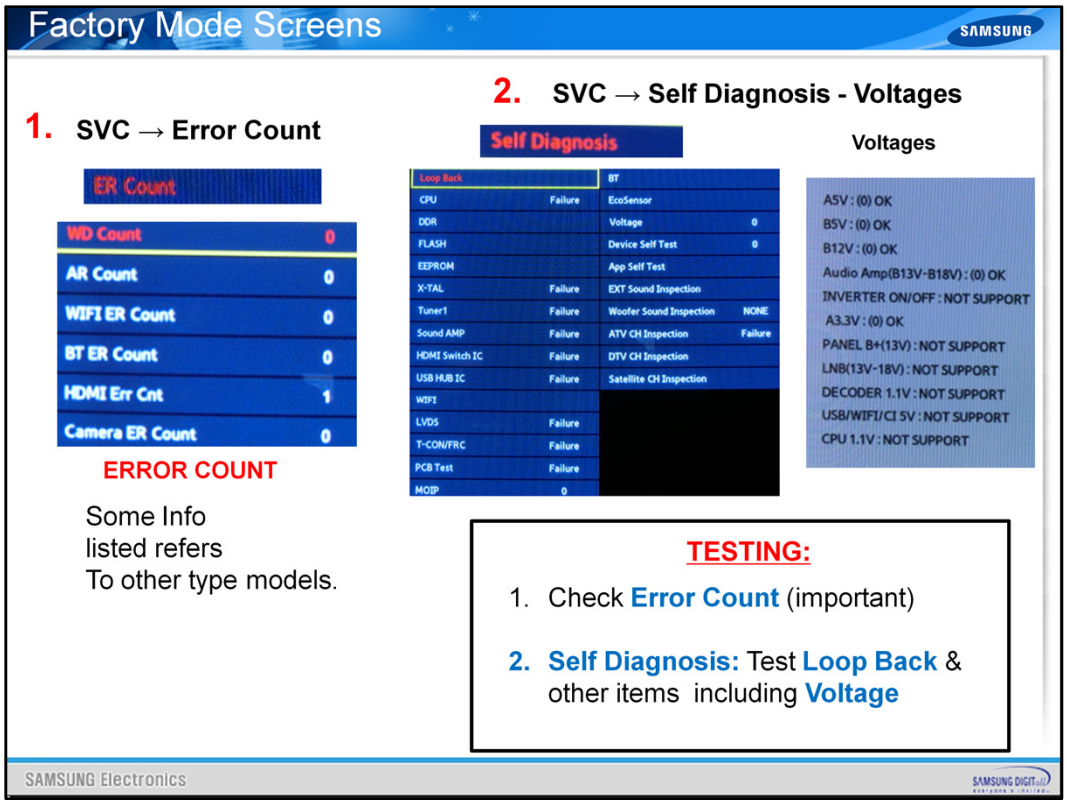
1. Power TV Off
2. Mute→1,8,2 → Power



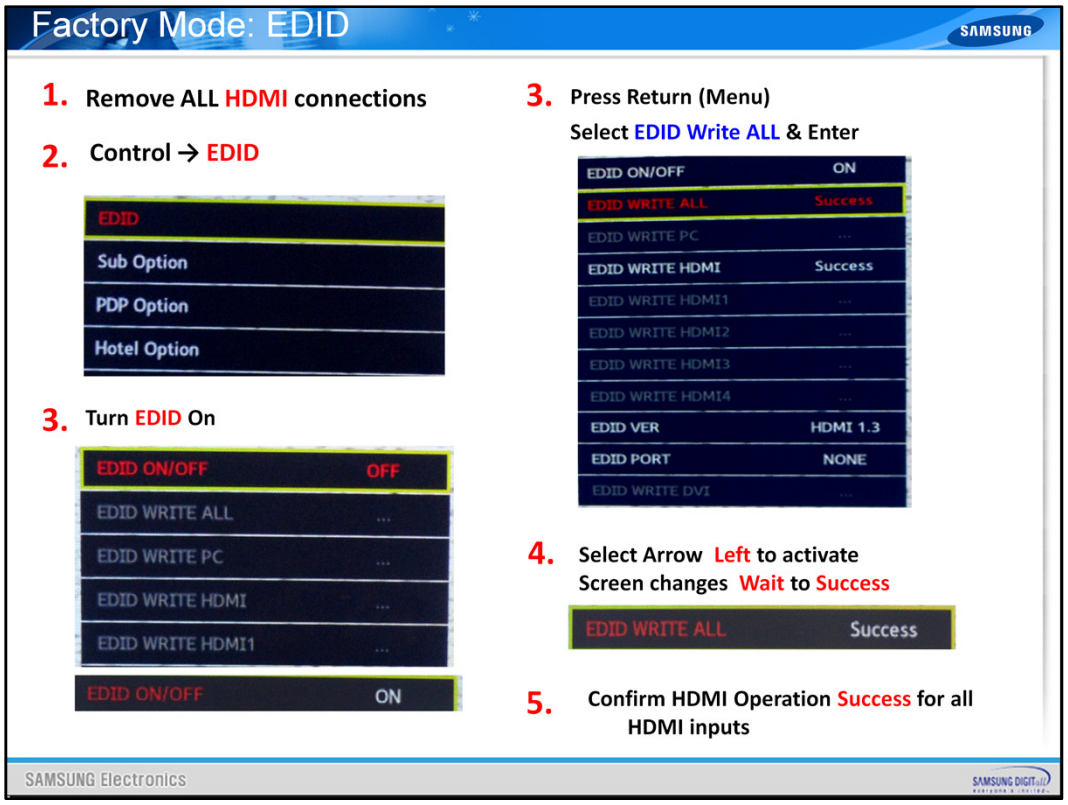
Perform important Option Byte Settings for every Main Board replacement.



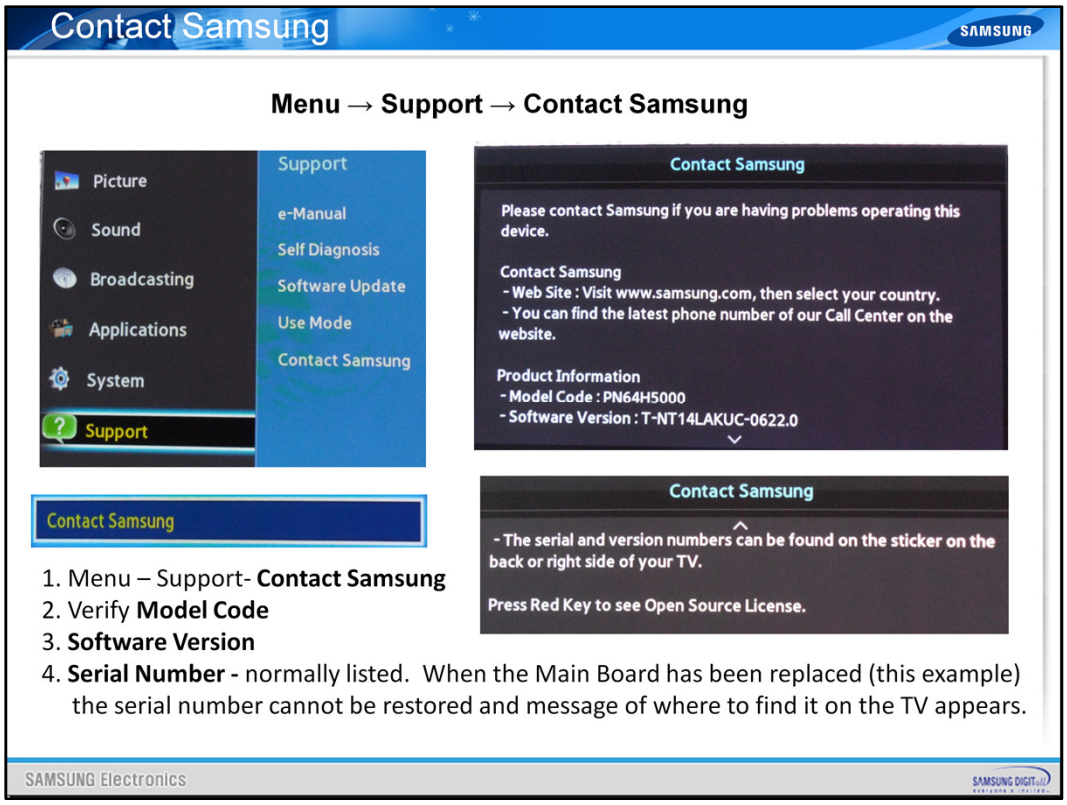
Special downloads for the Logic or Sub Micom in Factory Mode may be required for repairs. These are normally bulletin related and require first dowloading to USB and then performing update to the TV following instruction.



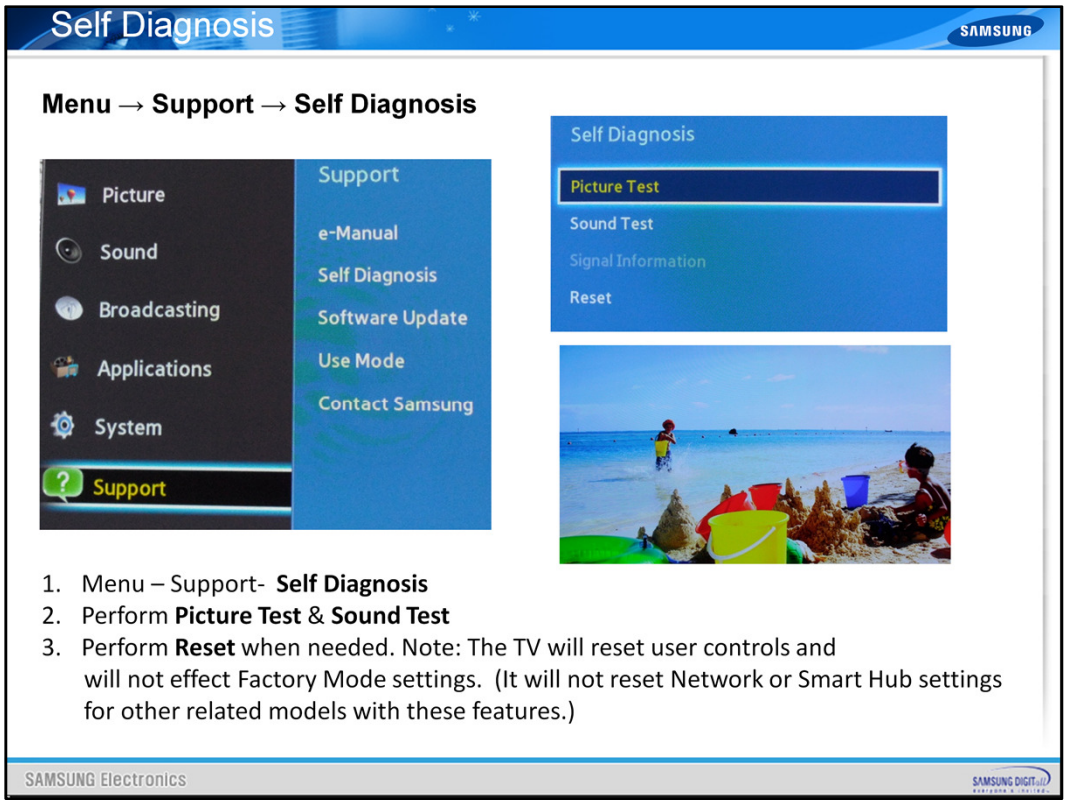
1. Check the important **Error Counts including Watch Dog for hardware failures , AR for software related errors and other items listed. Wi-Fi error and Bluetooth error doesn't apply to these models.**
2. **Also Check the new Self Diagnosis** Screens including Loop Back & other items including voltages shown here.



Important EDID rewrite procedure is shown. This can restore HDMI inputs that are no longer working or have audio or video missing.
Follow steps 1 through 5.

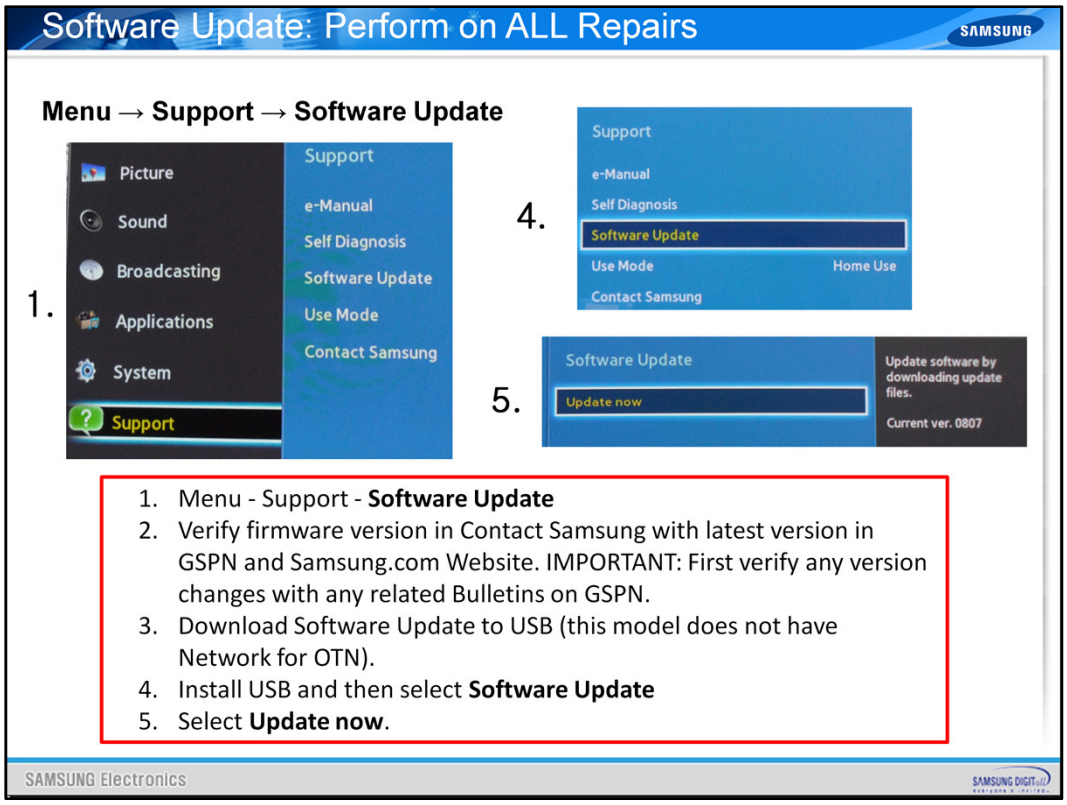


The important Contact Samsung Menu Screens for the PN64H5000 TVs are shown here. Follow 4 steps listed and note information.

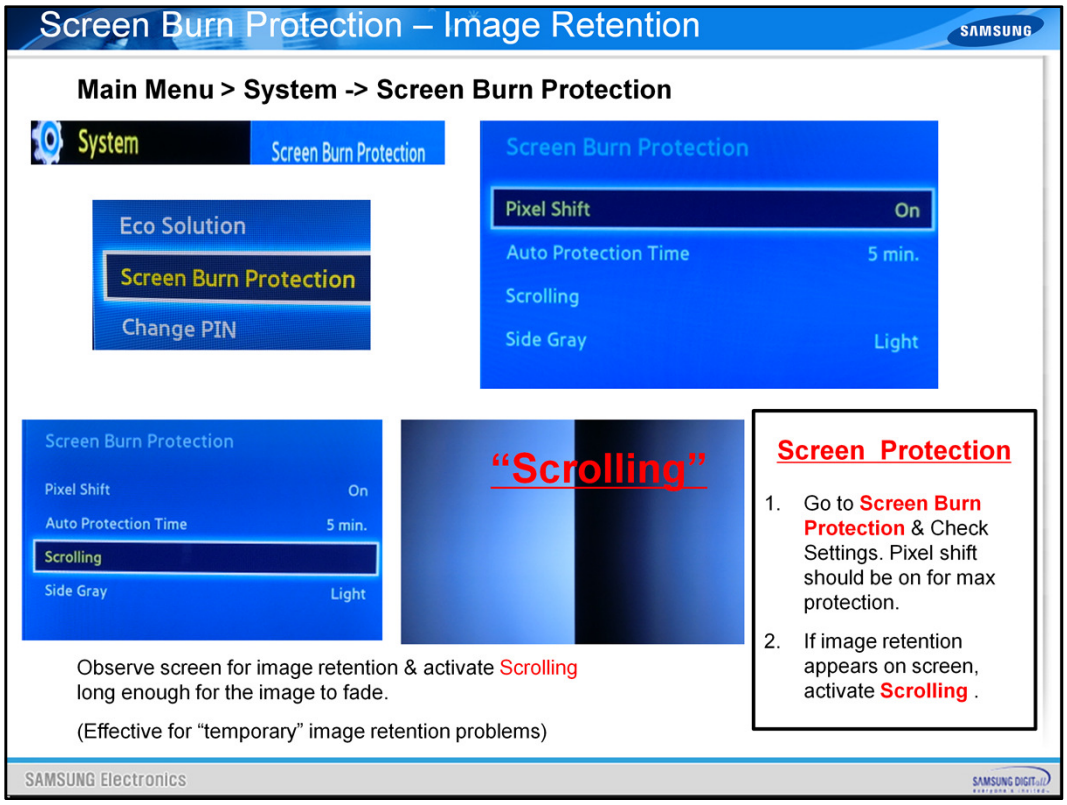


Self Diagnosis:

1. Menu – Support- **Self Diagnosis**
2. Perform **Picture Test** & **Sound Test**
3. Perform **Reset** when needed. Note: The TV will reset user controls and will not effect Factory Mode settings. (It will not reset Network or Smart Hub settings for other related models with these features.)



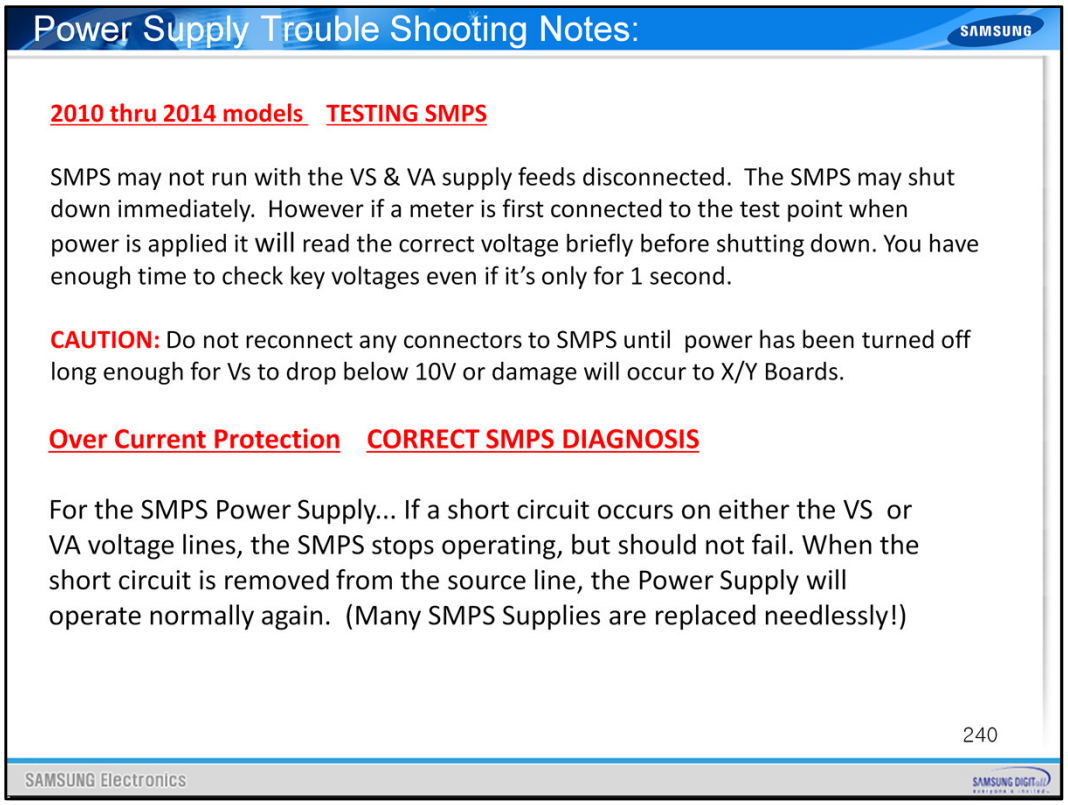
Updating Software for these models : Steps 1 through 5



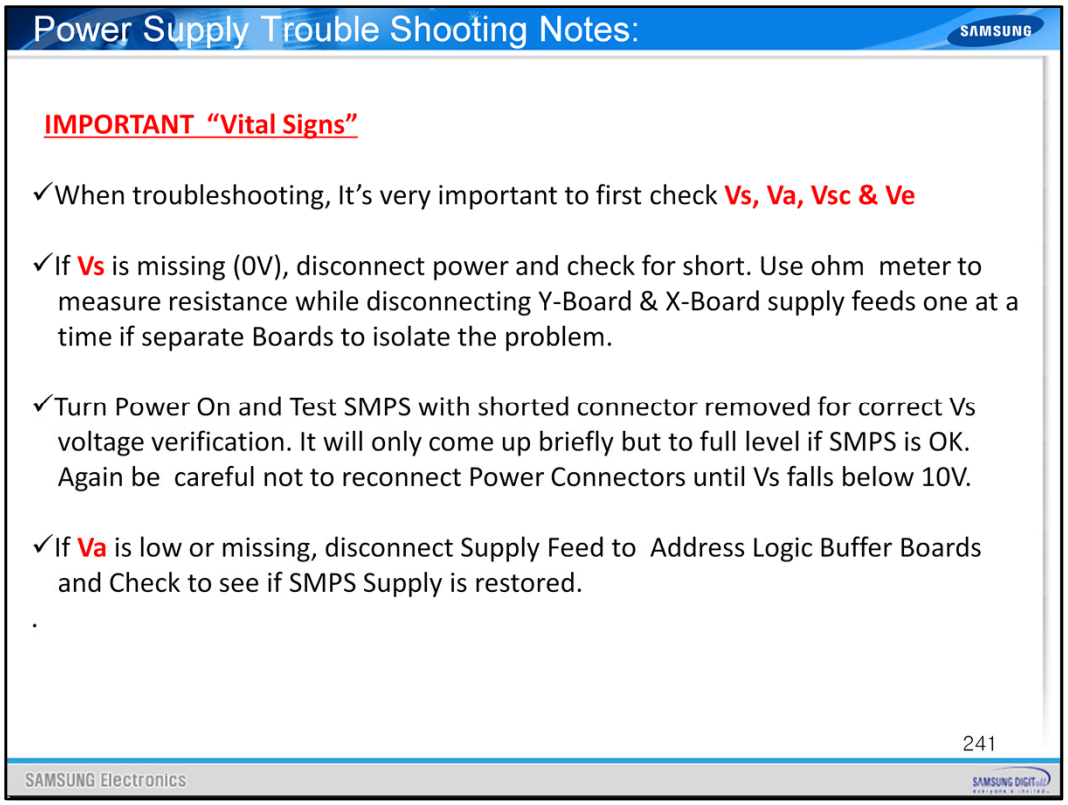
Screen Burn Protection is very important for plasma TVs and related troubleshooting and repairs.

1. Go to **Screen Burn Protection** & Check Settings. Pixel shift should be on for max protection.
2. If image retention appears on screen, activate **Scrolling**

Note that image retention in most cases can be removed or reduced. The scrolling time will depend on the degree of image retention. In some cases a permanent image may be burned into the phosphor which cannot be removed by this procedure. In this case the panel would have to be replaced. This is not, however, a warranty issue since the customer is responsible and warned to avoid still images creating this occurrence.



Some special Power Supply Troubleshooting notes for Plasma TVs…



Important Vital Signs!

Power Supply Trouble Shooting Notes:

. **"Vital Signs" (continued)**

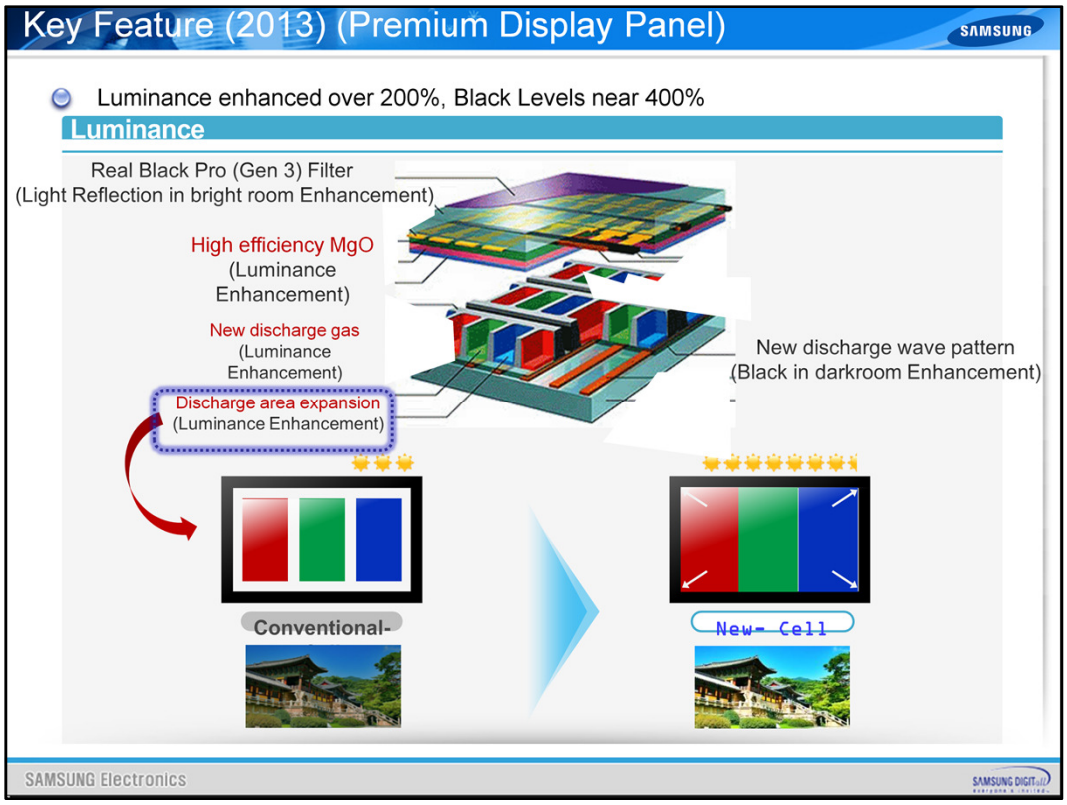
✓If **Vsc** is low or missing and Vs was OK, the failure is with the **Y-Board (or new combination X/Y /Y-Buffer Board)** since the Y-Board generates the Vsc voltage from the Vs supplied by the SMPS.

✓If **Ve** is low or missing and Vs is OK, the failure is with the **X-Board (or new combination X/Y / Y-Buffer Board)** since the Ve is generated by the X-Board from the Vs supplied by the SMPS.

Other SMPS Voltages:

✓Check Low Voltage feeds to the Main Board and other supplied Assemblies.

The PNF8500 along with the PNF5500 model series have been continued for 2014. The related 2013 Training information therefore has been added for your review. The certification exam will include these models. These slides have also been recently updated as well as throughout last year.



New Panel and cell structure includes the additional “Real Black Pro Filter” and the RGB Cells filling nearly the complete area of each cell and RGB Pixel. Resulting in 200% enhanced Luminance and 400% improved Black Levels when compared to other Samsung plasma TVs.

Specification

Model		PDP F8500
Design		
Set	Size(Inches)	51“, 60”, 64”
	Size	Diagonal 51”, 60”, 64”
	Resolution	1920 x 1080
	Panel	51FP, 60FP, 64FP
Feature	Enhancer	DNIe(Fox-P Samsung)
	SRS	SRS Theater Sound
	HDMI	HDMI 1.4A (4 port)
Additional Feature		Premium Display Panel Outstanding premium SMART HUB (Golden Bridge) Quad-Core Processor Smart Evolution

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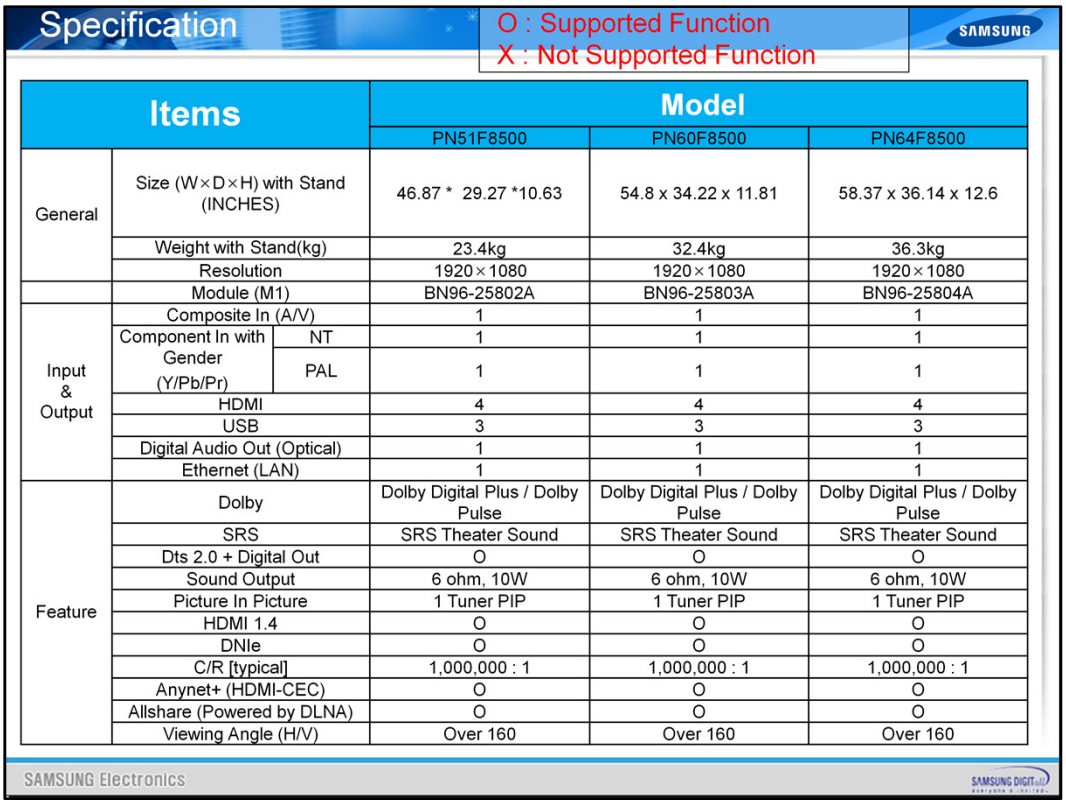
F8500 Plasma Specifications including the Smart Features and Fox Platform



Specification

O : Supported Function
X : Not Supported Function

SAMSUNG

Items			Model		
			PN51F8500	PN60F8500	PN64F8500
General	Size (W×D×H) with Stand (INCHES)		46.87 * 29.27 *10.63	54.8 x 34.22 x 11.81	58.37 x 36.14 x 12.6
	Weight with Stand(kg)		23.4kg	32.4kg	36.3kg
	Resolution		1920×1080	1920×1080	1920×1080
	Module (M1)		BN96-25802A	BN96-25803A	BN96-25804A
Input & Output	Composite In (A/V)		1	1	1
	Component In with Gender (Y/Pb/Pr)	NT	1	1	1
		PAL	1	1	1
	HDMI		4	4	4
	USB		3	3	3
	Digital Audio Out (Optical)		1	1	1
	Ethernet (LAN)		1	1	1
Feature	Dolby		Dolby Digital Plus / Dolby Pulse	Dolby Digital Plus / Dolby Pulse	Dolby Digital Plus / Dolby Pulse
	SRS		SRS Theater Sound	SRS Theater Sound	SRS Theater Sound
	Dts 2.0 + Digital Out		O	O	O
	Sound Output		6 ohm, 10W	6 ohm, 10W	6 ohm, 10W
	Picture In Picture		1 Tuner PIP	1 Tuner PIP	1 Tuner PIP
	HDMI 1.4		O	O	O
	DNIe		O	O	O
	C/R [typical]		1,000,000 : 1	1,000,000 : 1	1,000,000 : 1
	Anynet+ (HDMI-CEC)		O	O	O
	Allshare (Powered by DLNA)		O	O	O
	Viewing Angle (H/V)		Over 160	Over 160	Over 160

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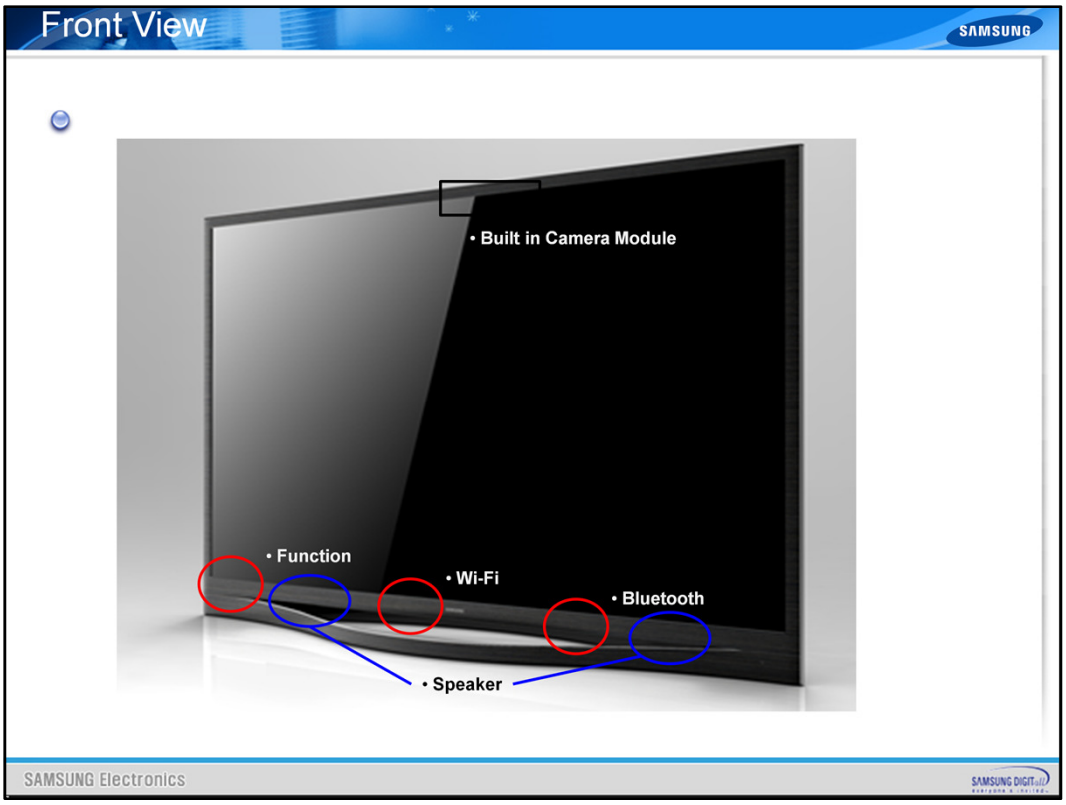
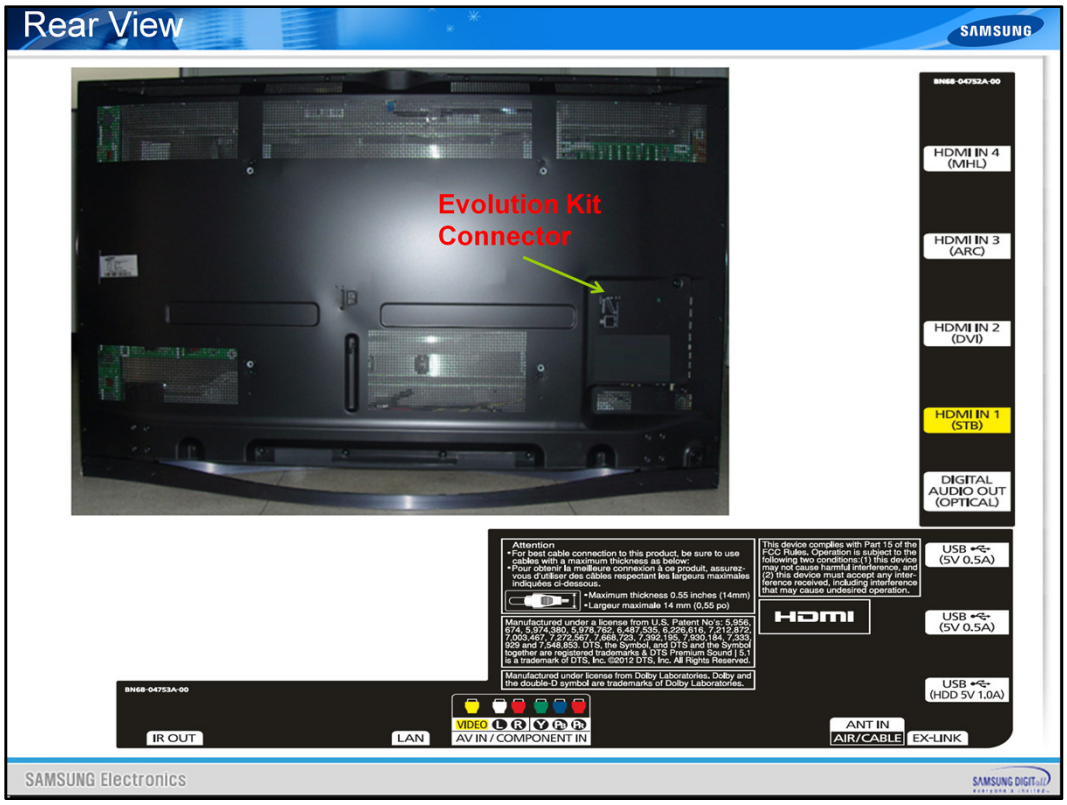
SAMSUNG DIGIT

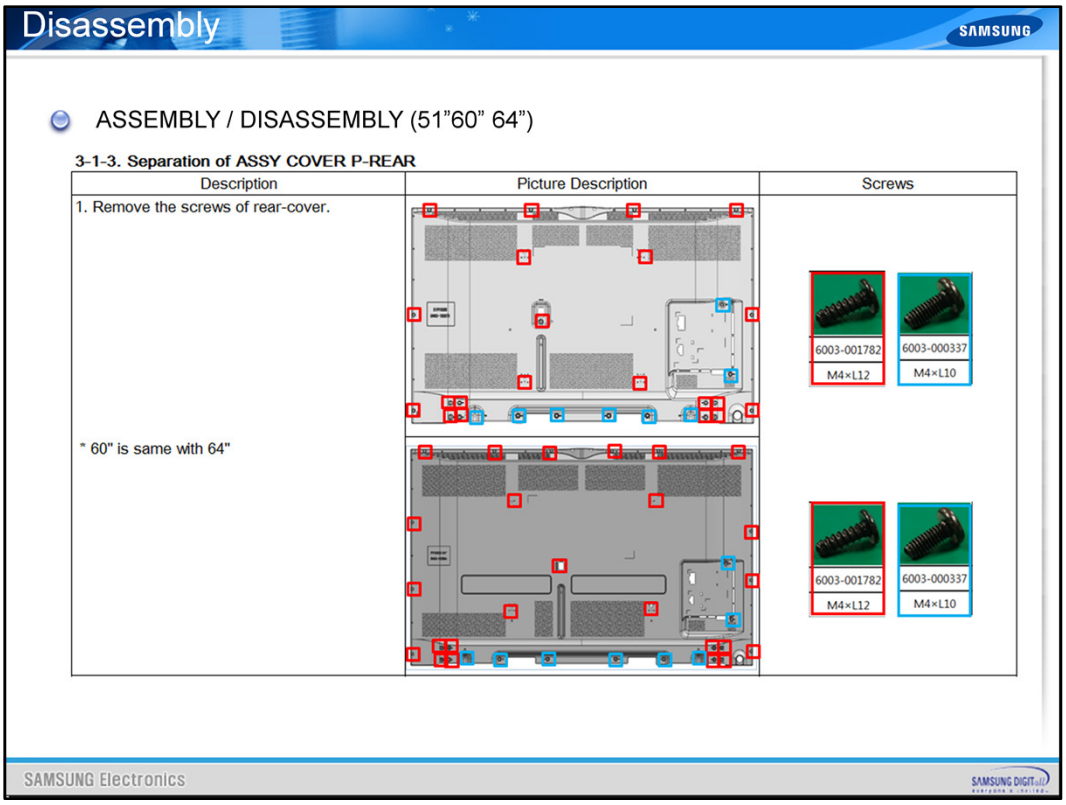
8500 Specifications for each size. (51, 60 & 64 inch) are listed.



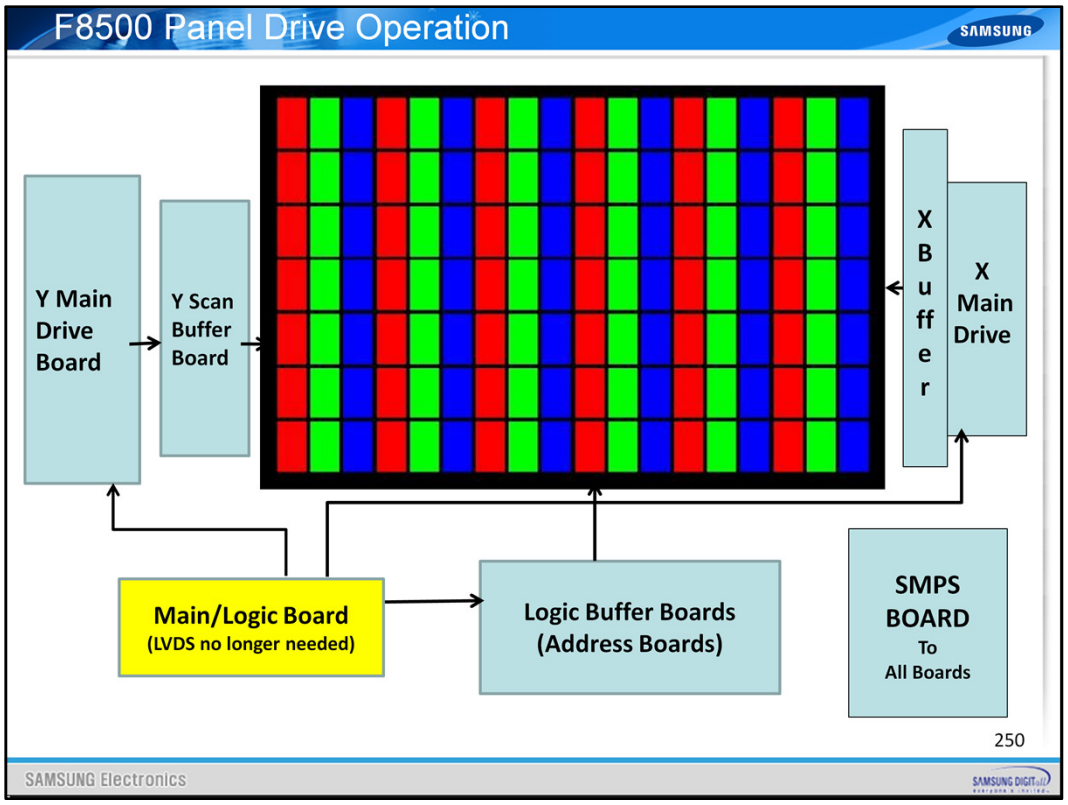
The Front View includes special style Stand and MOIP at the Top with Retractable Camera, Jog Function in left rear location as well as Wi-Fi, Bluetooth and Speakers.



Rear View shows input location. The boards on the rear can be seen with the rear cover being grilled for important heat dissipation.
This might be a concern for possible environment contamination. Inspect the TV carefully.

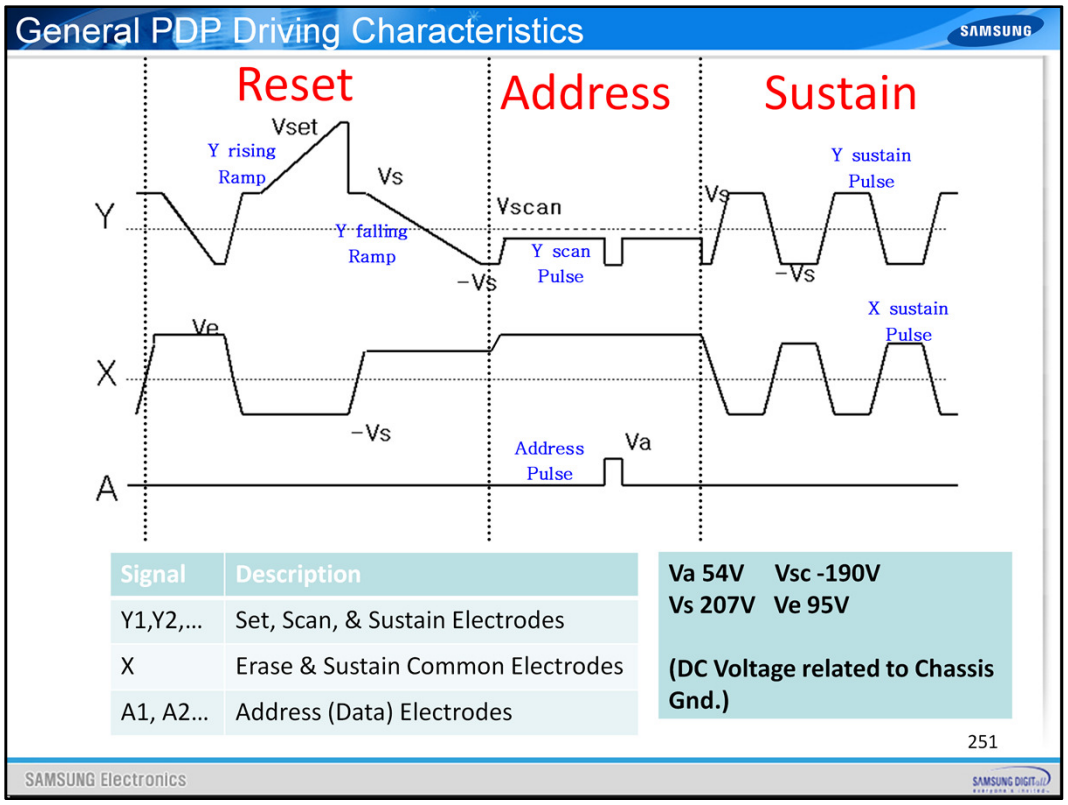


The rear cover can be removed without removing the stand. It’s best to service the TV in it’s normal operating position when possible. Carefully protect the screen whenever replacing the panel or removing the stand.



Panel Drive Operation includes a combined Main/Logic Board but with little operation changes: .

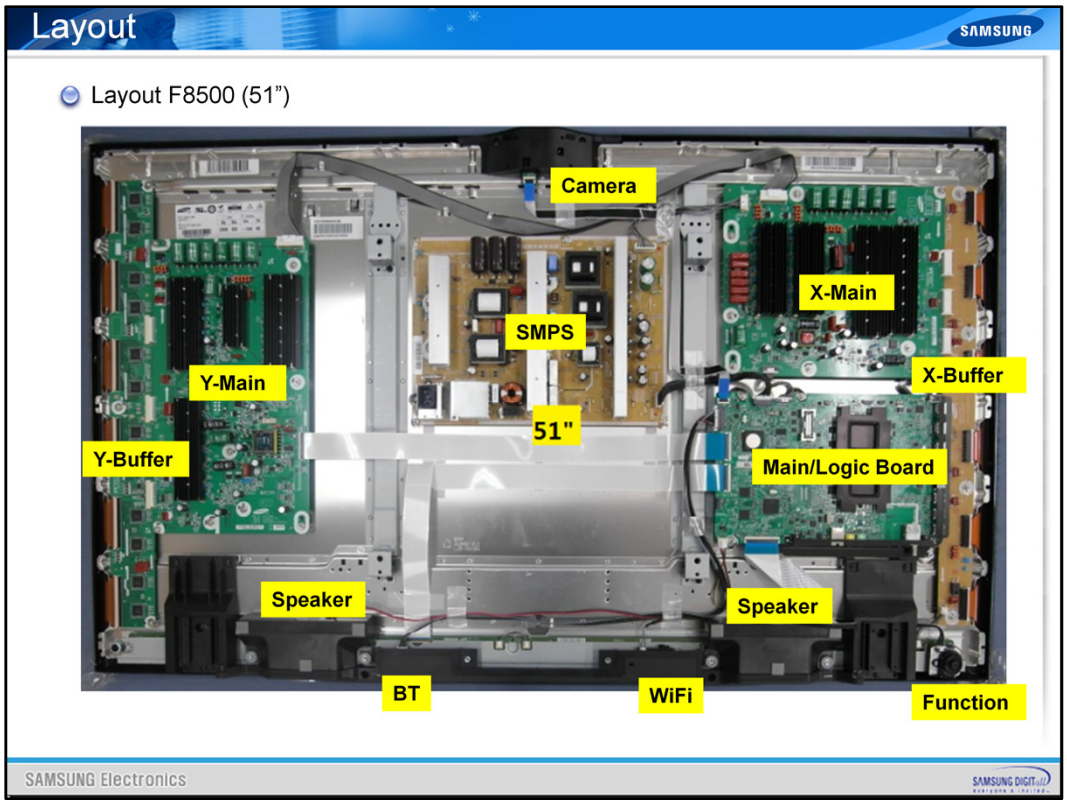
The Main section of the combined Main/Logic Board feeds a 10 Bit video data signal internally to the Logic section of the same Main/Logic Board. The LVDS Cable is no longer needed in 2013 models. The Logic section of the Board sends data to the Logic Buffer Boards to the Panel. Logic also sends data drive signals to the Y-Drive Main Board thru the Y Scan Buffer Boards to the Panel. The Logic also sends data drive signals to the X-Drive Main Board, to the X Buffer, to the panel & finally the SMPS (Switch Mode Power Supply) supplies power to all boards.



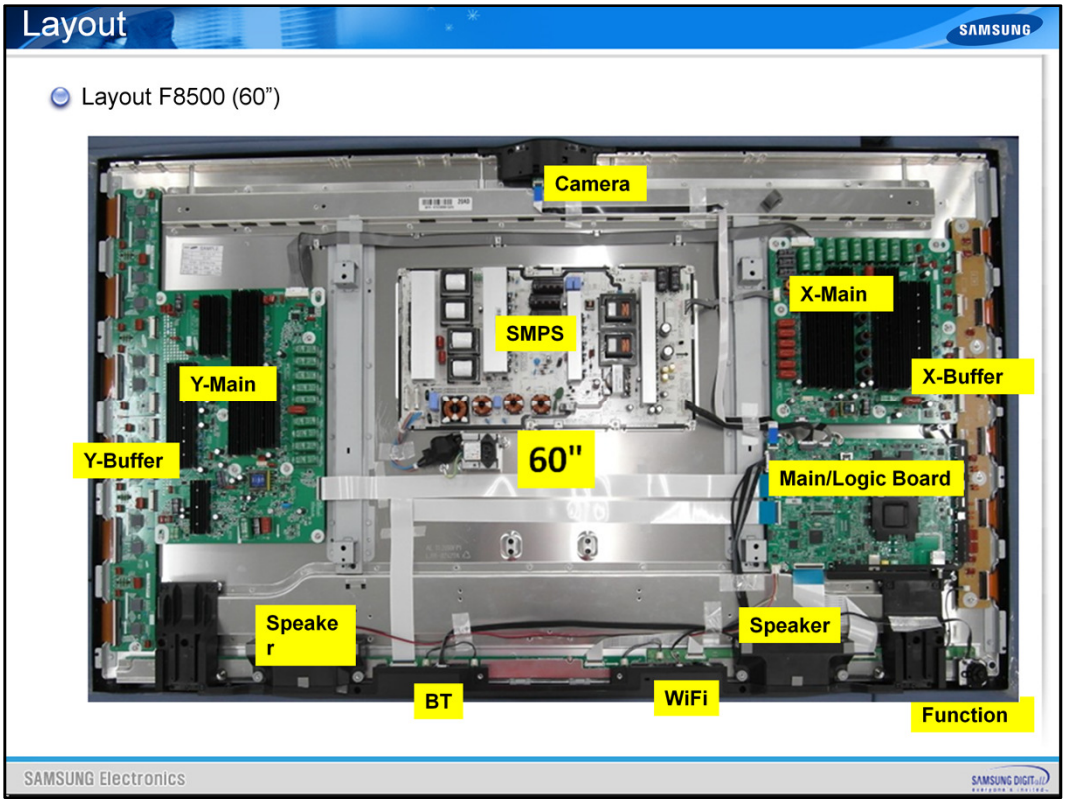
The drive sequence remains the same for all plasma TVs and is created and monitored by the Logic Section of the Main/Logic Board.

1: V E Erase signal to X-Board
2. V Set Pulse to Y-Board Y Buffer
3. V Scan to Y-Board Y-Buffer
3: VA Address to Logic Buffer Boards
4: V Sustain to X & Y Boards

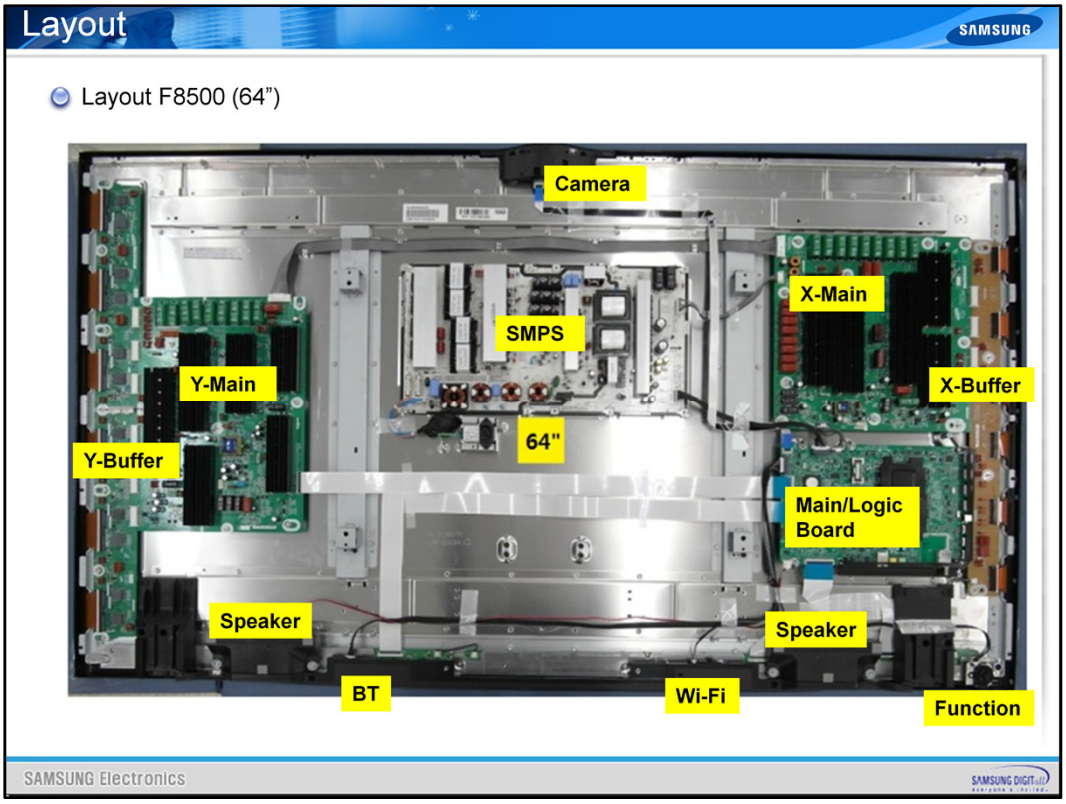
IMPORTANT Panel label in each TV includes the V address, V scan, V sustain, and V erase voltages specific for that panel.



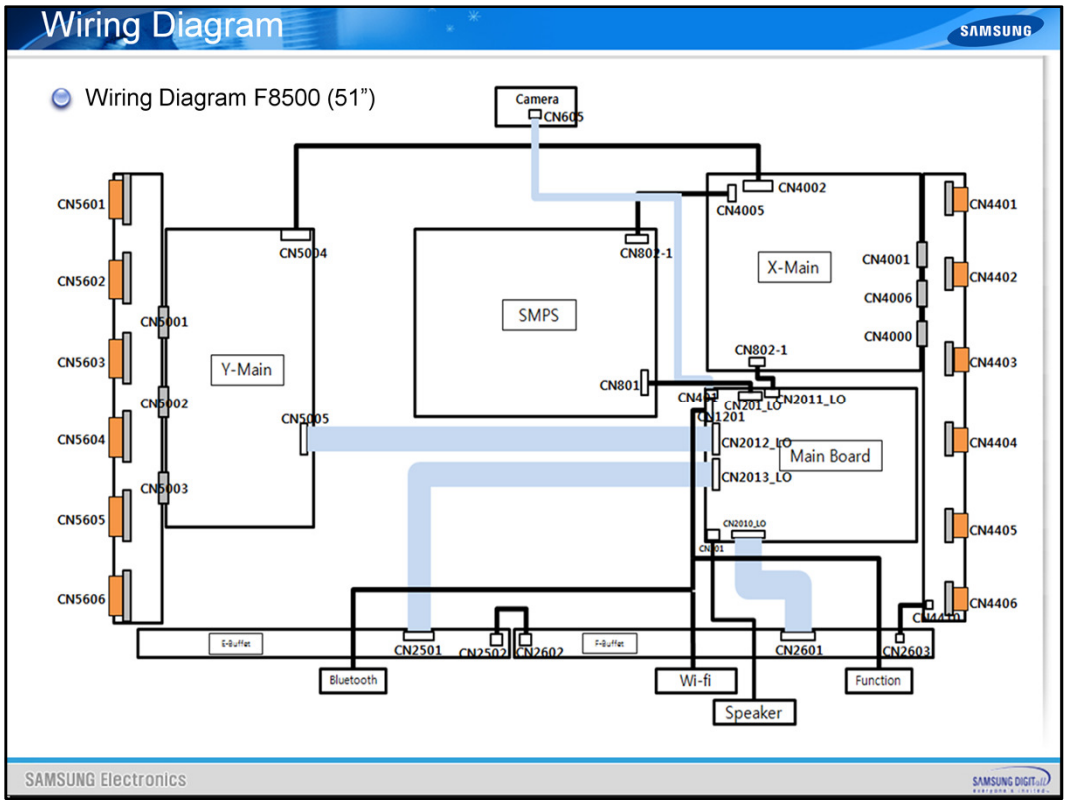
Layout for 51 inch F8500 includes the MOIP Camera & dual mikes at the top, SMPS, Y Buffer, Y Main, X Main, X Buffer, the new Main Logic Board, Speakers, the Bluetooth and Wi fi Modules and Jog Function Control.



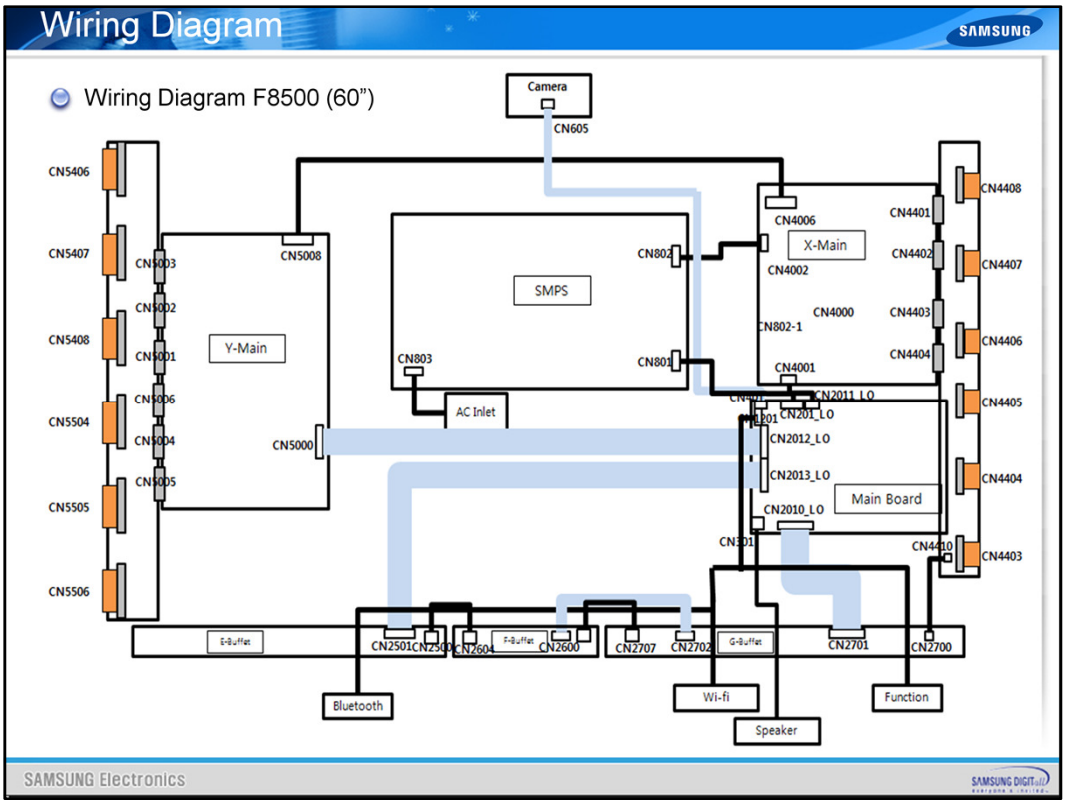
Layout for the 60 inch F8500 is similar to the 51 inch F8500 with the addition of a larger SMPS and an external AC Filter board and upper & Lower Y Buffer Boards.



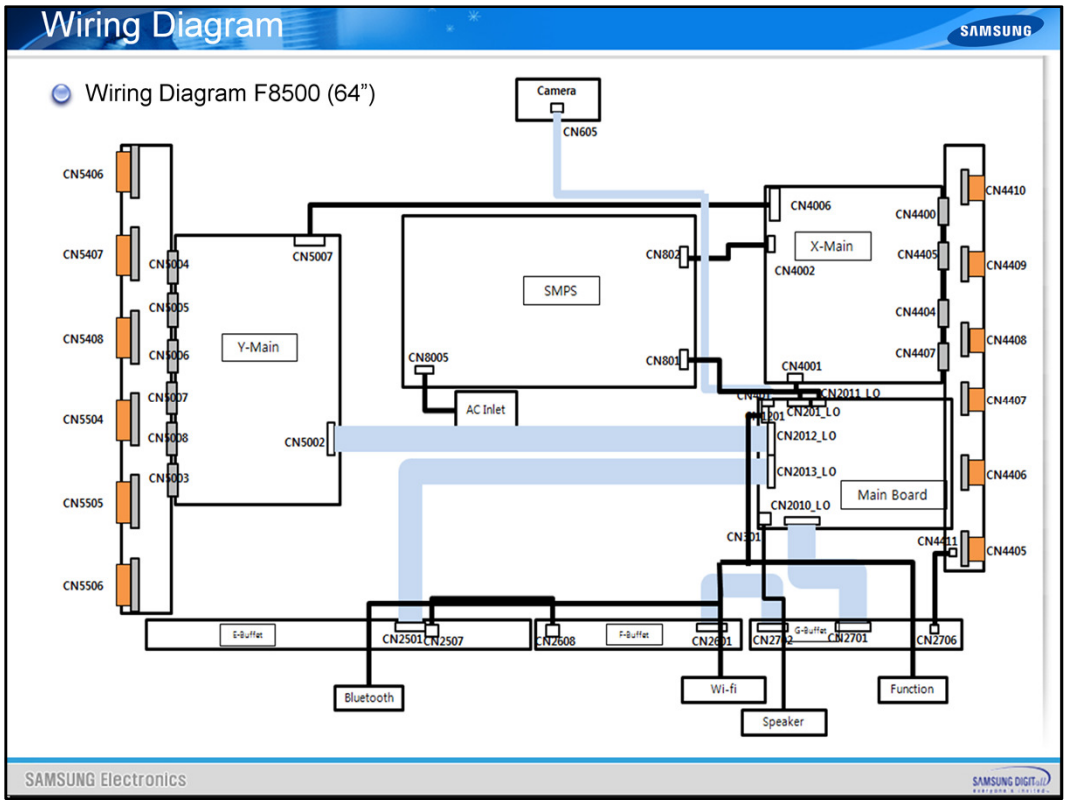
Layout for the 64 inch F8500 is similar to the 60 inch F8500



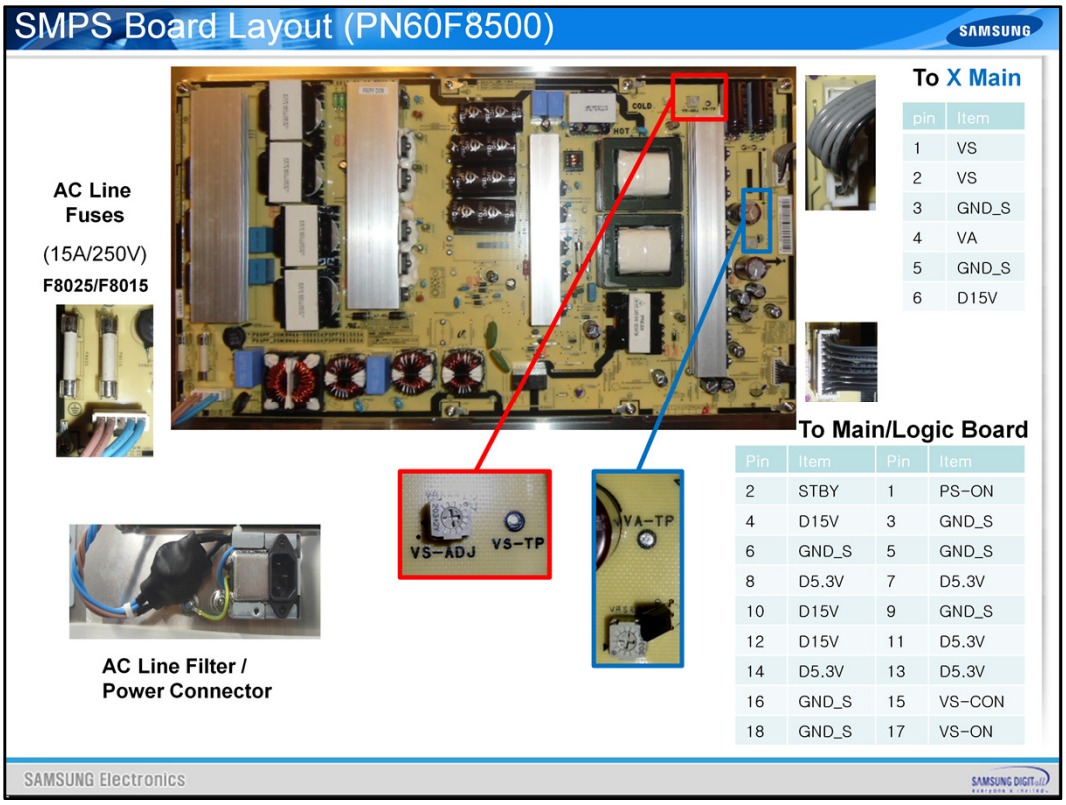
Wiring diagram includes the SMPS connections to the X Main Board and new Main/Logic Board. The X Main is connected to the Y-Main providing SMPS DC supply. The X Main also connects to the X Buffer Board. The Main section of the Main/Logic Board connects to the MOIP, Jog Function Board, Bluetooth & Wi-Fi Modules. Both the Main section and Logic Section connect to the SMPS. The Logic section of the Main/Logic Board connects to the X-Main, Y-Main & Logic Buffer Boards.



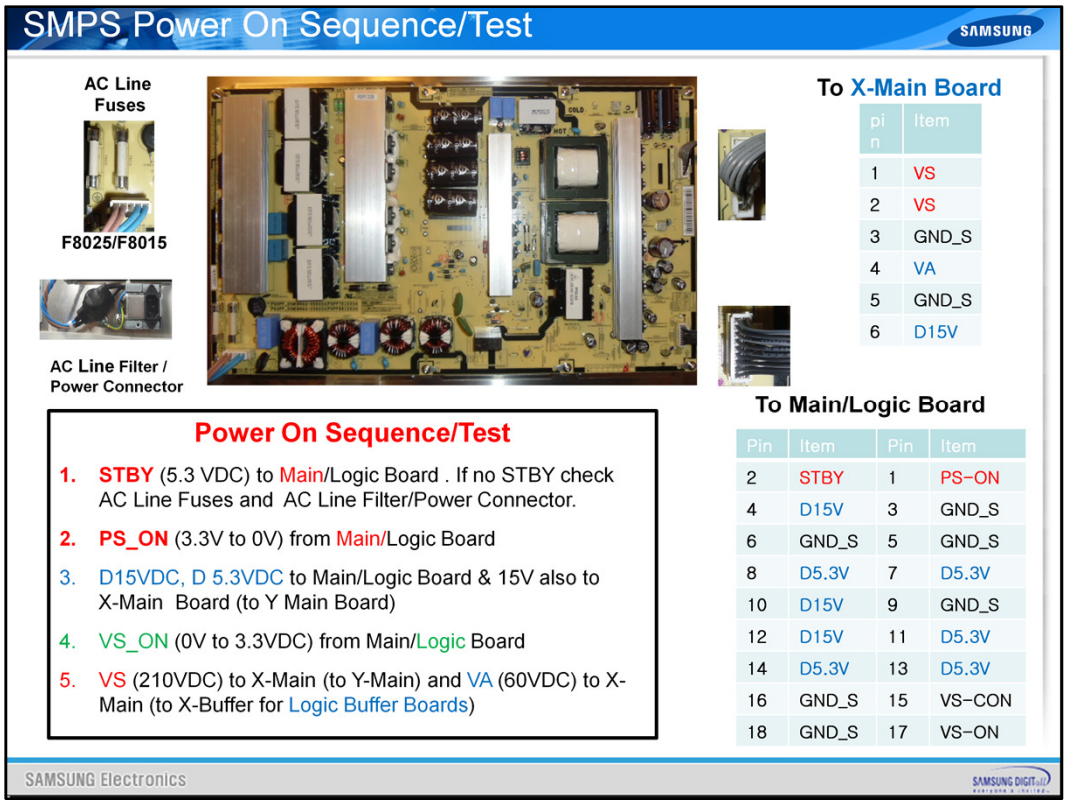
The 60 inch wiring Diagram is similar to the 51 inch F8500 wit the exception of the AC inlet filter and connector numbers.



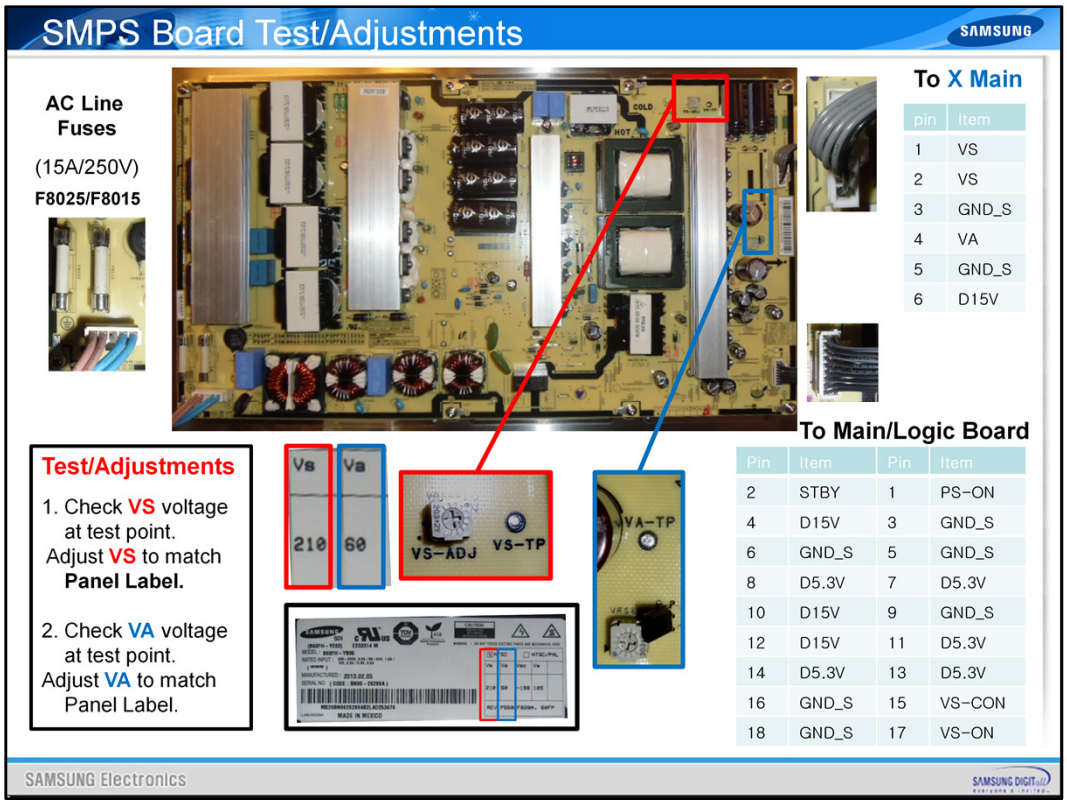
The 64 inch wiring Diagram is similar to the 60 inch F8500 Plasma TV with the exception of some of the connector numbers.



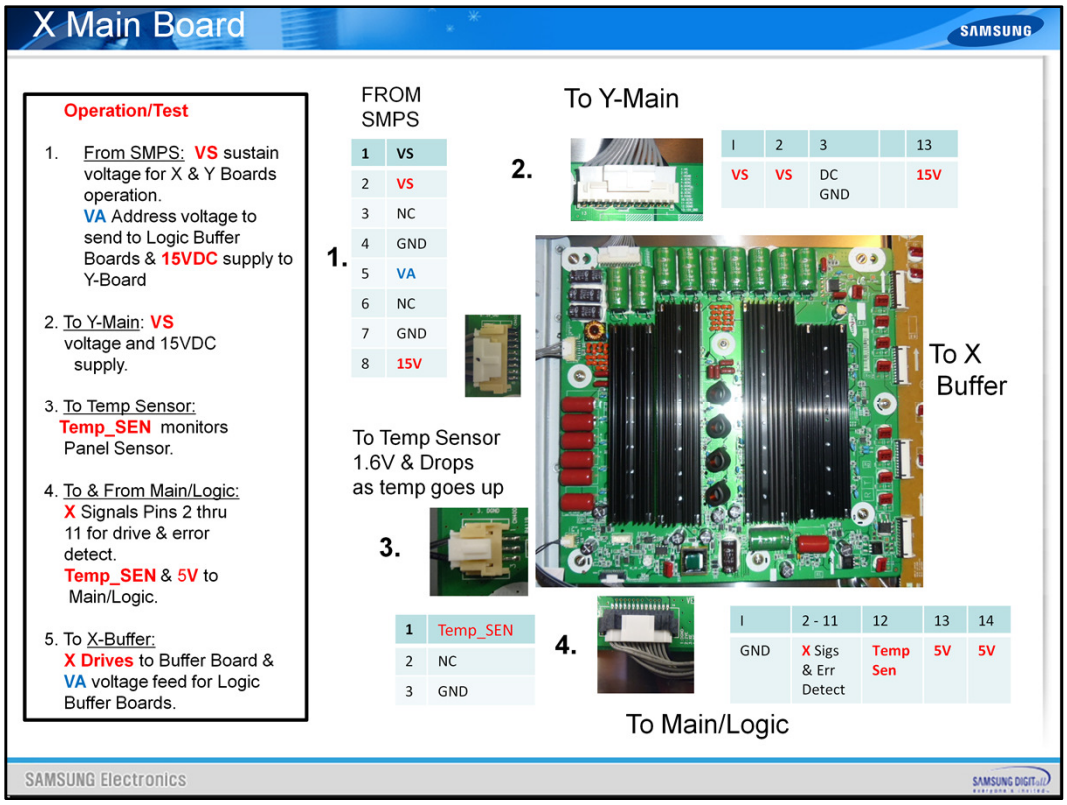
The SMPS Board Layout for F8500 is similar to previous plasma TVs with the addition of higher current requirements to meet the new panel operation. An external AC Line Filter Board along with two AC Line fuses on the SMPS Board are added for 60 & 64 inch sizes. Standby and switched supply voltages along with VA & VS supply voltages are sent to the new Main/Logic Board and X-Main Board connectors.



The Power On Sequence is similar to all Plasma TVs with the exception of the combined Main/Logic Board.
(1 thru 5)



To Test and Adjust VS & VA: (1 & 2)



The X Main includes

1st **receiving** from SMPS the VS sustain voltage for X & Y Main Board operation. VA Address voltage to send to the Logic Buffer Boards and 15 VDC supply also to the Y Board.

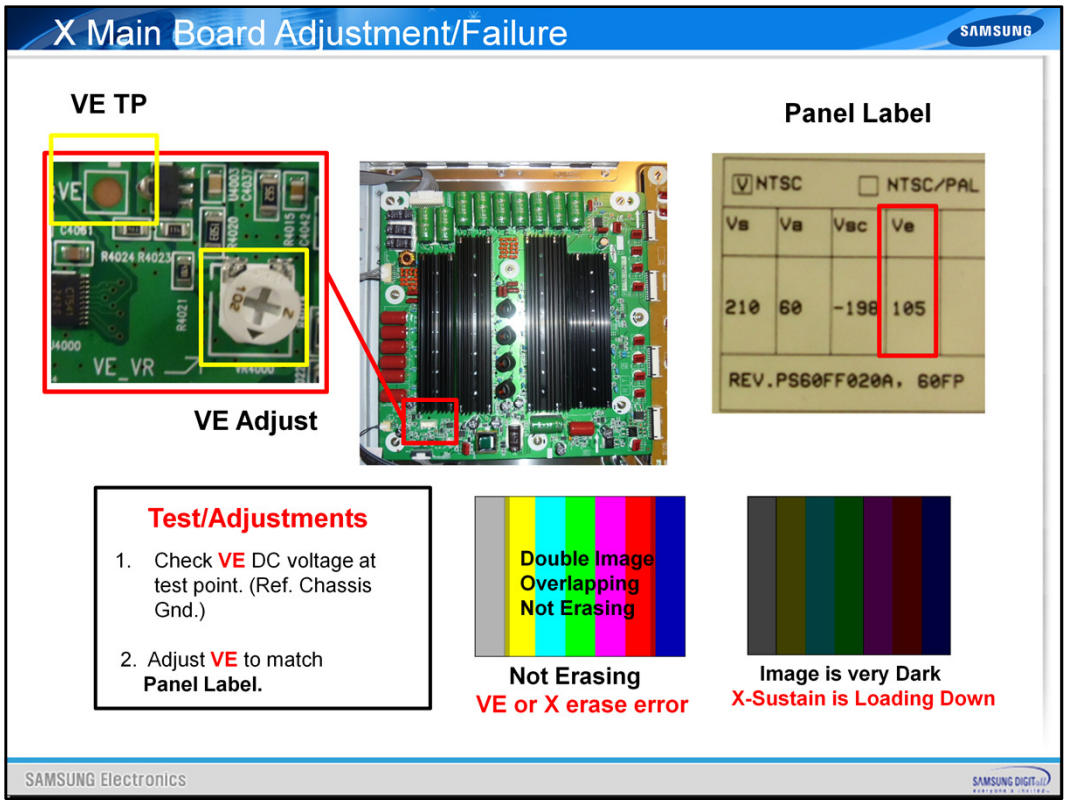
2nd The VS and 15V DC supply are sent out this connector to the Y Board.

3rd The new Temperature Sensor is connected to the X Main and its status information Temp_SEN received.

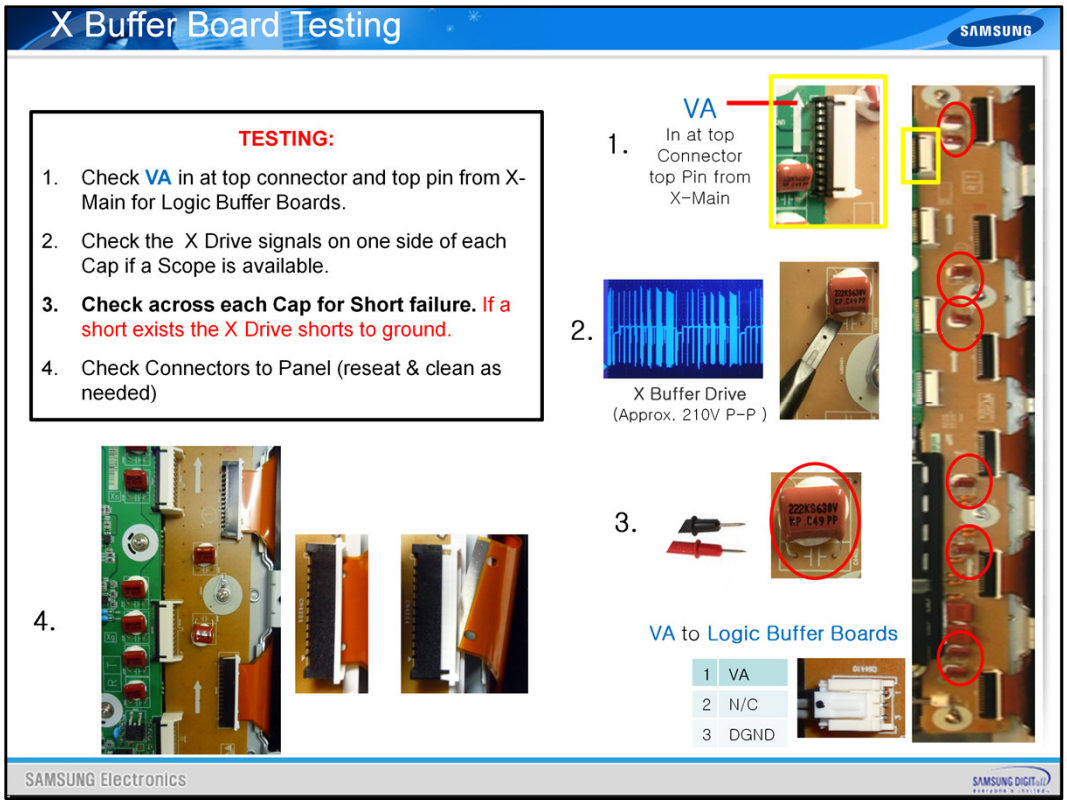
4th X Signals pins 2 thru 11 are sent to Logic Section of Main/Logic Board for error detections.

Temp_SEN & **5V** are sent to the the Main Section of the Main/Logic.

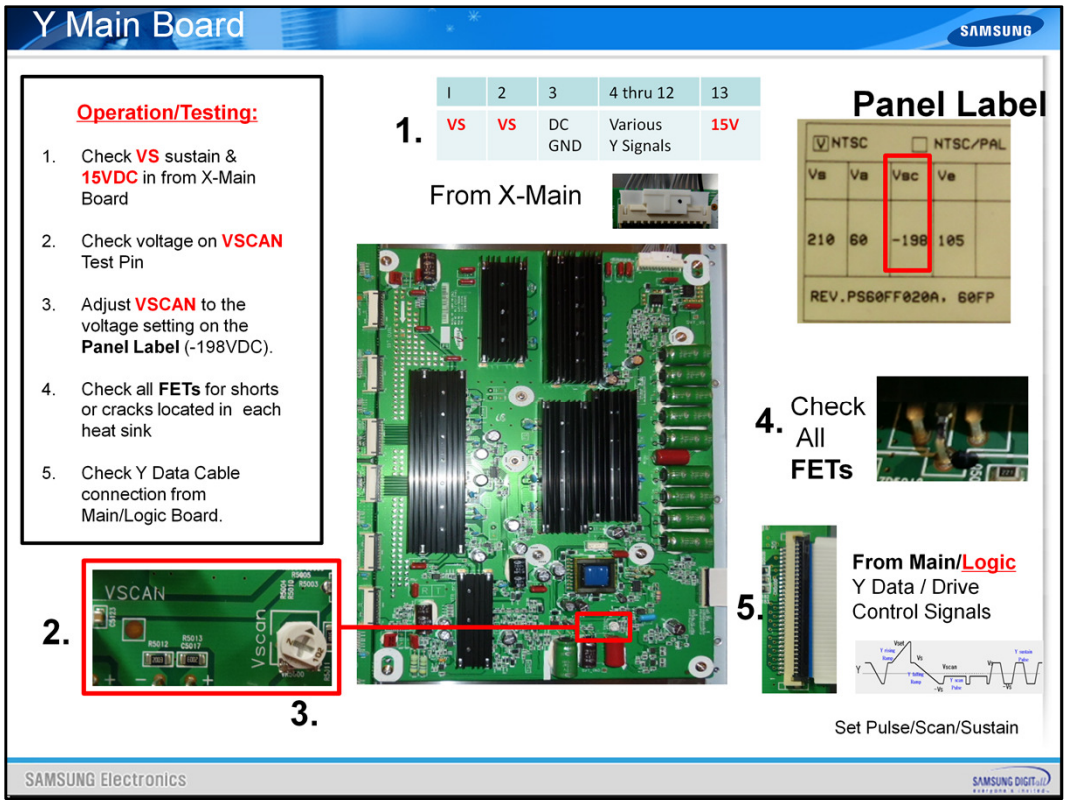
5th **X Drives are sent to the X** Buffer Board as well as the **VA** voltage feeds to send to the Logic Buffer Boards.



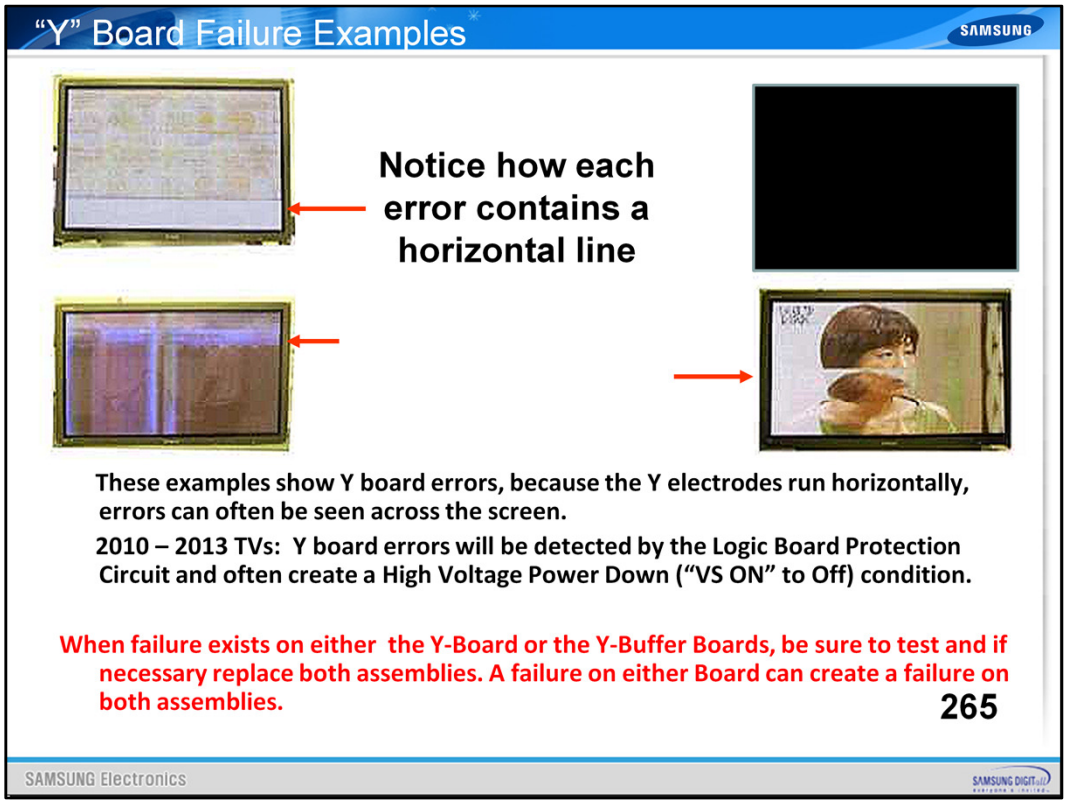
Test and adjustment of X Main include (1 & 2). On screen errors may appear as Overlapping image, not erasing (created by a VE or X circuit erase error as shown in the left screen or a very Dark image pictured on the right when the X Sustain signal is Loaded down.



X Buffer Board consists mainly of filter caps for this model. The Board also relays the VA supply voltage down to the Logic Buffer Boards. To test: (1 thru 4)



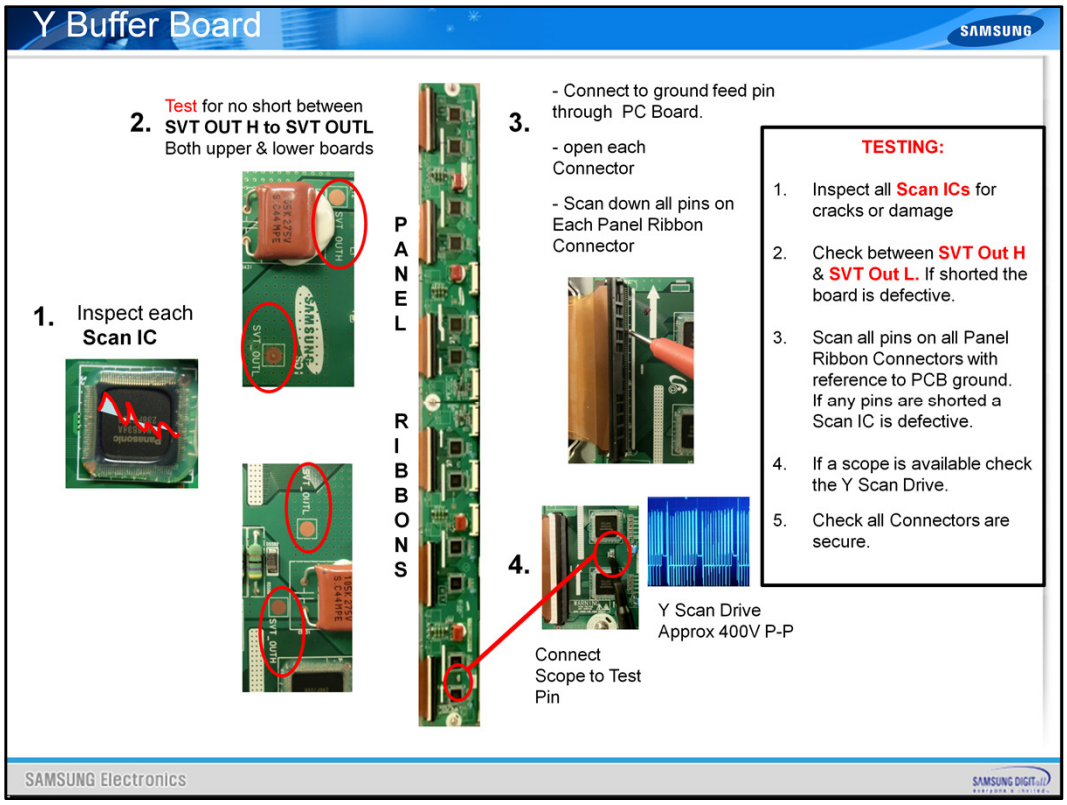
Y Main consists of receiving the supply voltages VS & 15V from the X Main, & the set, sustain, and scan signals from the Logic section of the Main/Logic Board. For operation & Test (1 thru 5)



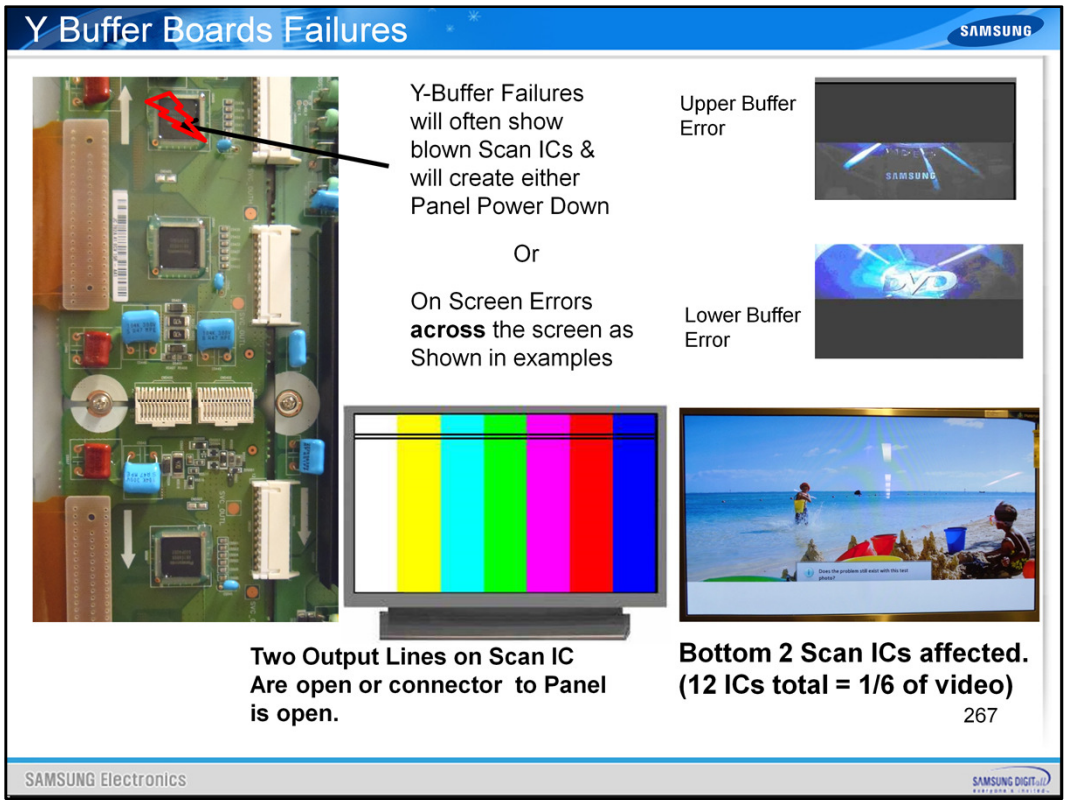
These examples show on screen Y board errors, because the Y electrodes run horizontally, errors can often be seen across the screen and have a horizontal related error. Y-Board Failures since 210 models often cause the Logic Board to detect the error and Power the TV off, **VS ON** to off condition, usually within 2 seconds.

The FETs on the Y-Main can also overheat and should be inspected for cracks and measured for shorts when determining failures. FET failures often cause VS to short to ground from the SMPS. Testing the source of the short can be verified by disconnecting the SMPS VS feed. If the Y-Board feeds Vs to the X-Board, also be sure to test the VS feed to the X-Board as well.

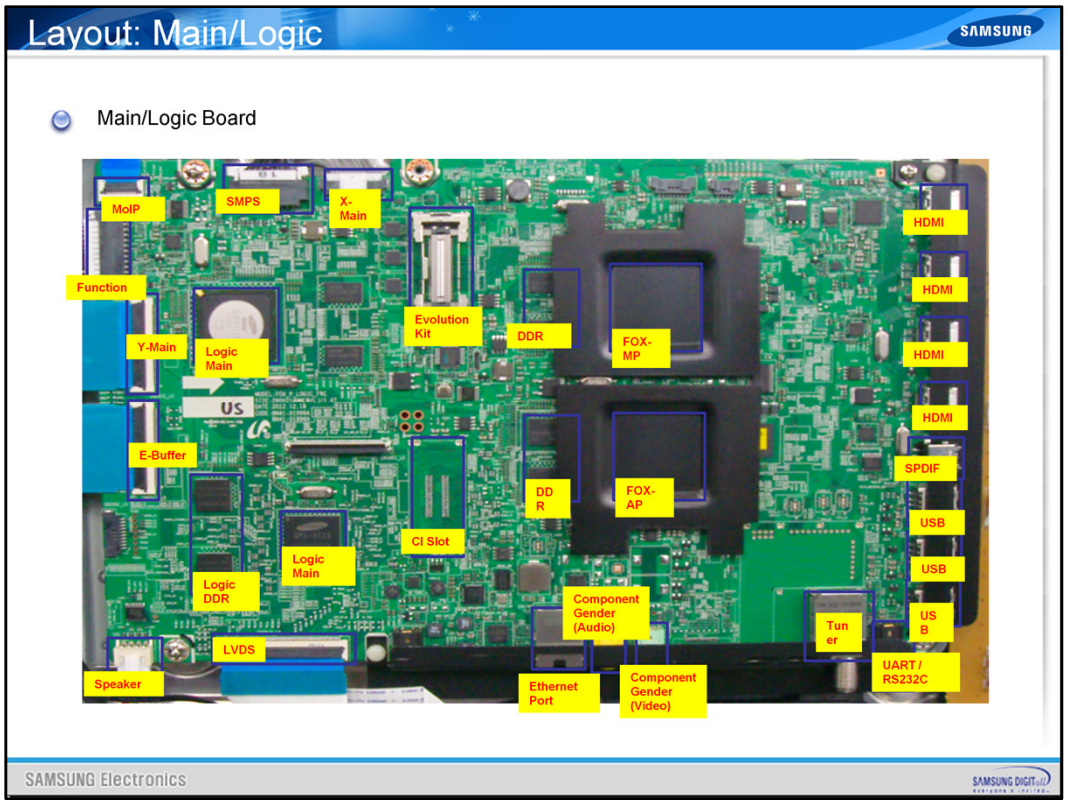
When failure exists on either the Y-Board or the Y-Buffer Boards, be sure to test and if necessary replace both assemblies. A failure on either Board can create a failure on both assemblies .



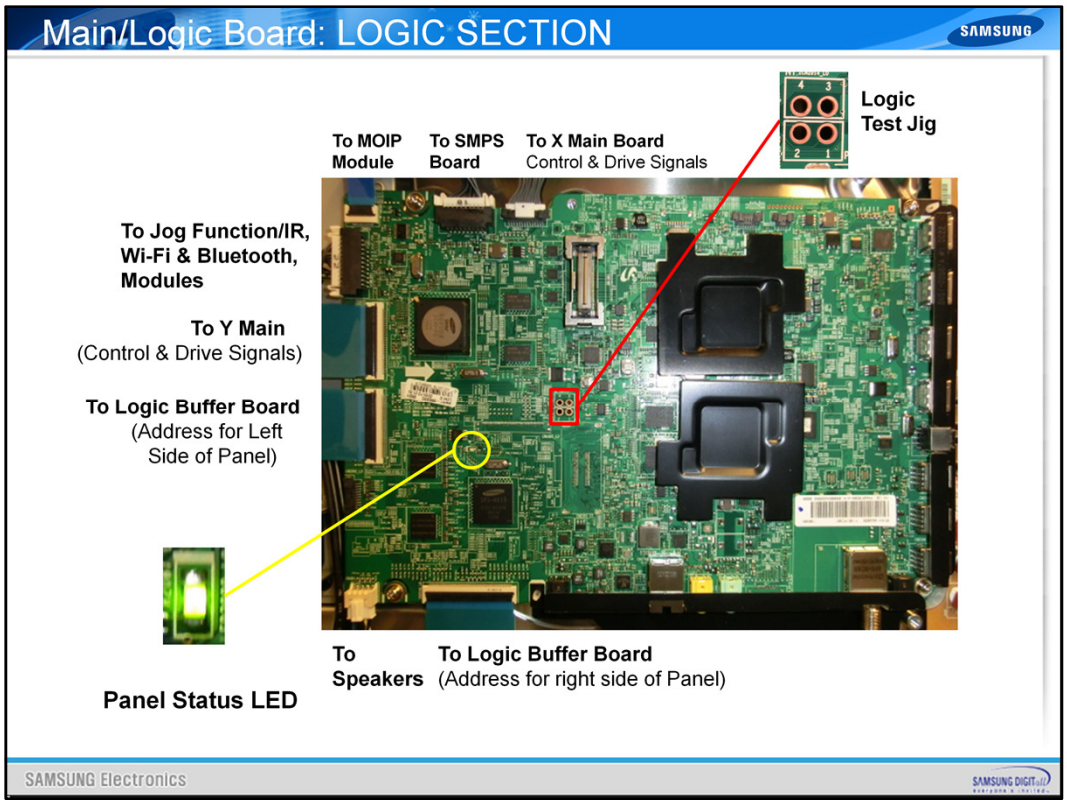
Y Buffer Board receives connections and drive signals from the Y Main Board and provides scan drive signals to the Panel. To test the Y Buffer Board: (1 thru 5)



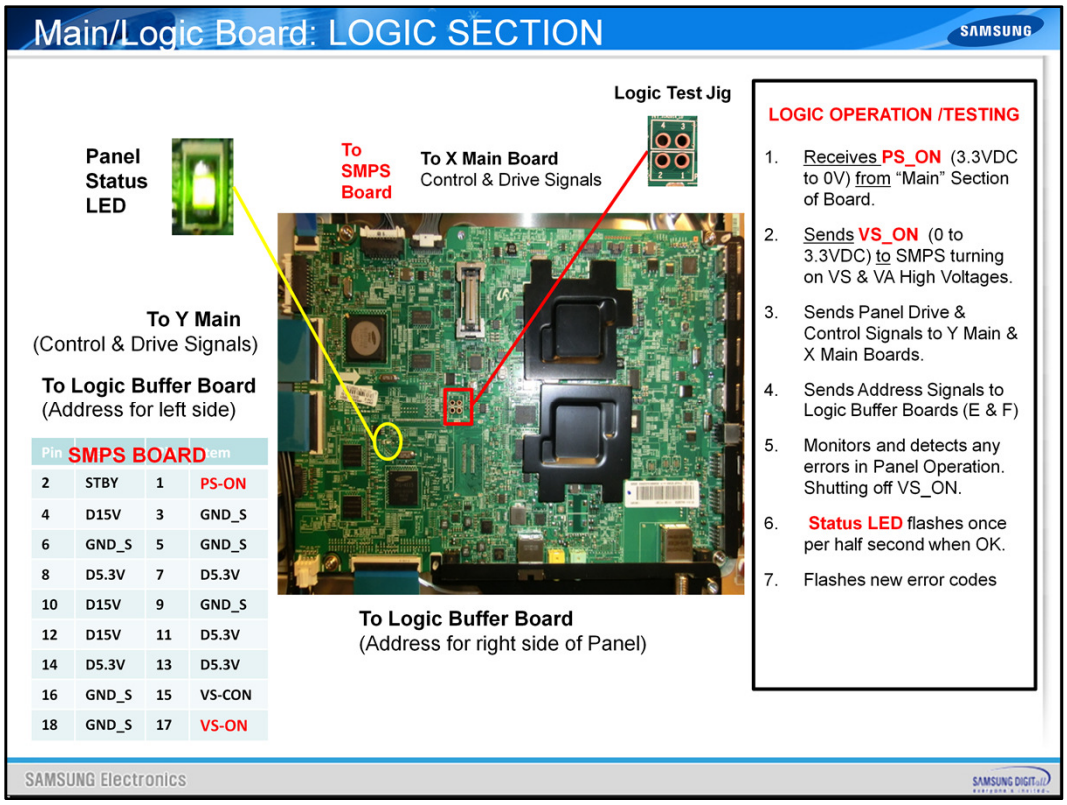
Typical Buffer Board related failures are illustrated and include Horizontal Lines or sections. When a Scan IC fails it often cracks, so the physical condition of each IC should be inspected. After replacing the related Y-Buffer Board, It is important to test the ICs for proper operating temperature. A Digital Laser Temperature Meter is ideal. If any IC is operating unusually hot and remains hot after replacing that Y-Buffer Board, the panel has an internal short and requires replacement. Full Top half and bottom half failures are often the Y-Buffer Board. A single line across the screen is often caused by either the connector at the Logic Buffer Board not being secured completely or the connection at the panel. First try re-connecting the related connector at the Logic Buffer Board. If it is the connection at the panel the panel would have to be replaced. A white bar effecting the bottom 1/6th of the screen or Black bars of similar nature which are more common are created by a defective Y-Buffer Board.



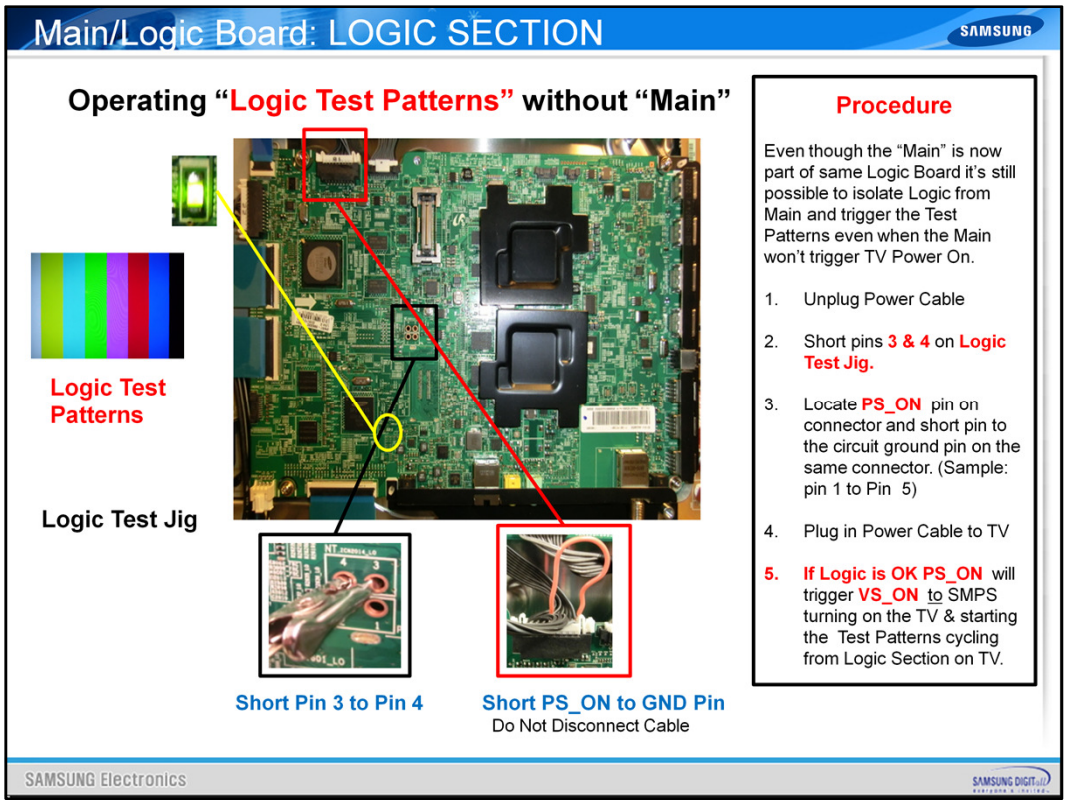
The new Main/ Logic Board is seen and includes both the Main & Logic Operation ICs The new FOX MP & FOX AP are heat sinked. All input connectors including HDMIs, USBs MOIP, Jog Function and speakers go to the Main section. The Logic related connectors go to the X Main & Y Main & Logic Buffer Boards. The Logic Processor & DDR are also in the Logic Section. The Evolution Kit connector is also included to the Main section of the Main/Logic Board.



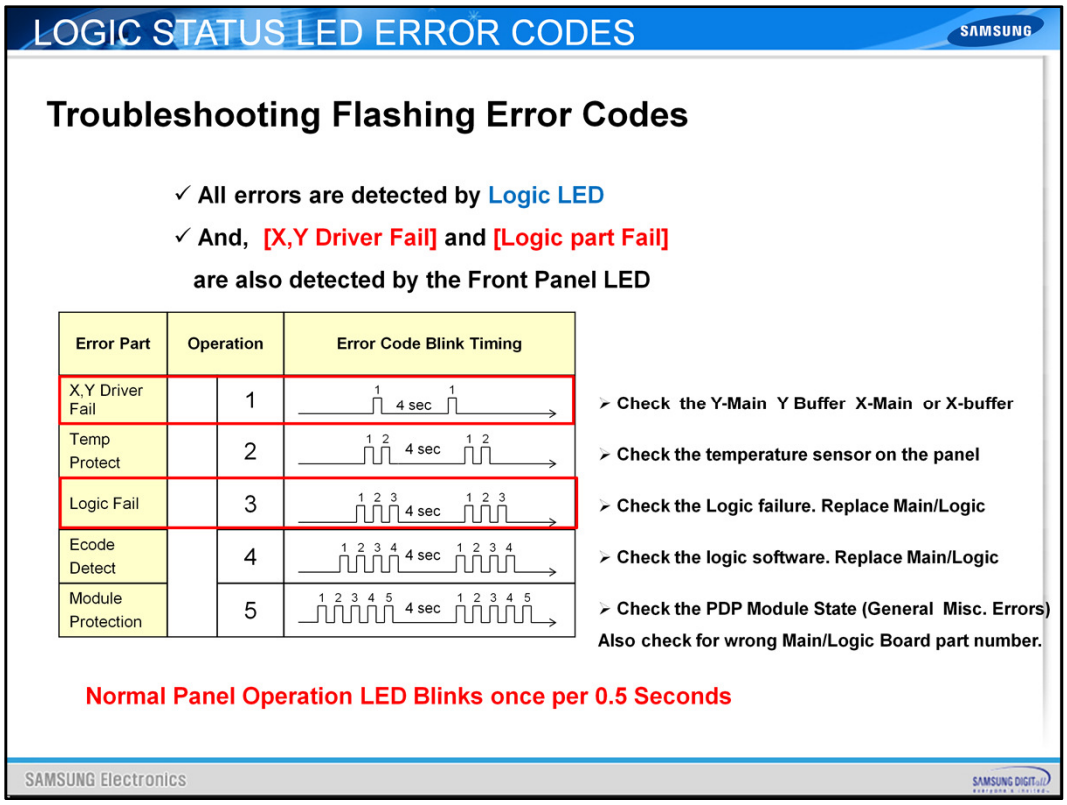
New combination of Main & Logic Board includes both areas of operation. The SMPS connector at the top is used for both Main & Logic Section operation.
Cable Connectors to the Y & X Main and Logic Buffer Boards are from the Logic Section for Y/X Drive signals and Logic Buffer Board's Cell Addressing.
Cable to the Jog Function Board, MOIP, Wi-Fi & Bluetooth Modules are used by the Main Section.
The Logic Status LED and Logic Test Jig is also part of the Logic Section.



Operation and testing of the Logic section includes: (1 thru 7)



Even though the "Main" is now part of same Main/Logic Board it's still possible to isolate Logic from Main and trigger the Test Patterns even when the Main won't trigger TV Power On. (1-5)



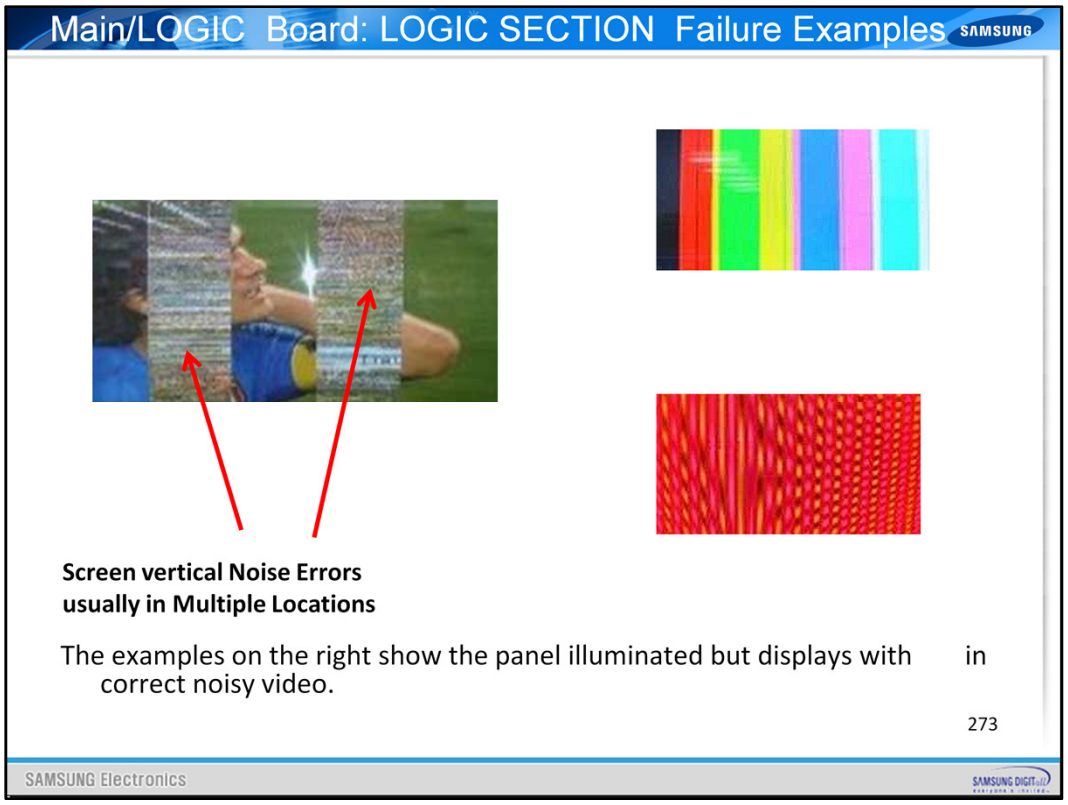
Additional 5 Troubleshooting Flashing Error Codes have been added beginning with 2013 Plasma

The five possible errors are listed…

The errors are detected by the Logic Board and all 5 possibilities are flashed on the Logic Status LED.

Normal operation status is at once per half second.

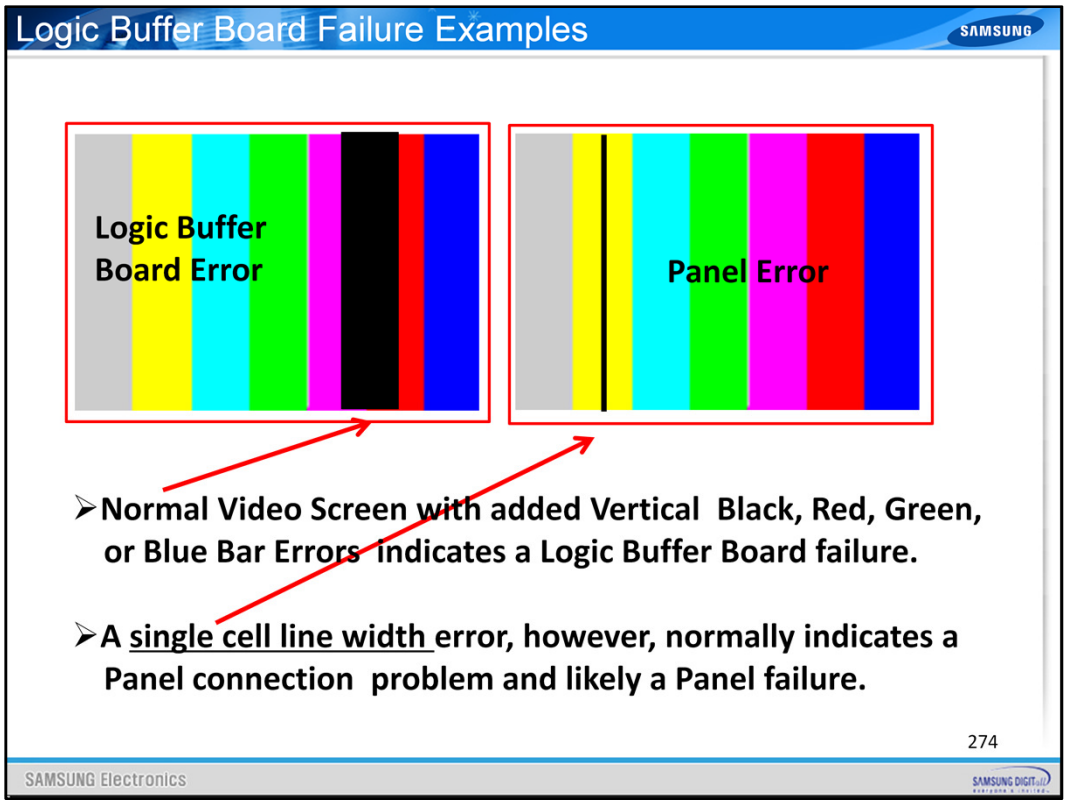
The front panel's power indicator will also flash for two of the errors detected. Once for Y/X Drive Failures and three times for Logic error.



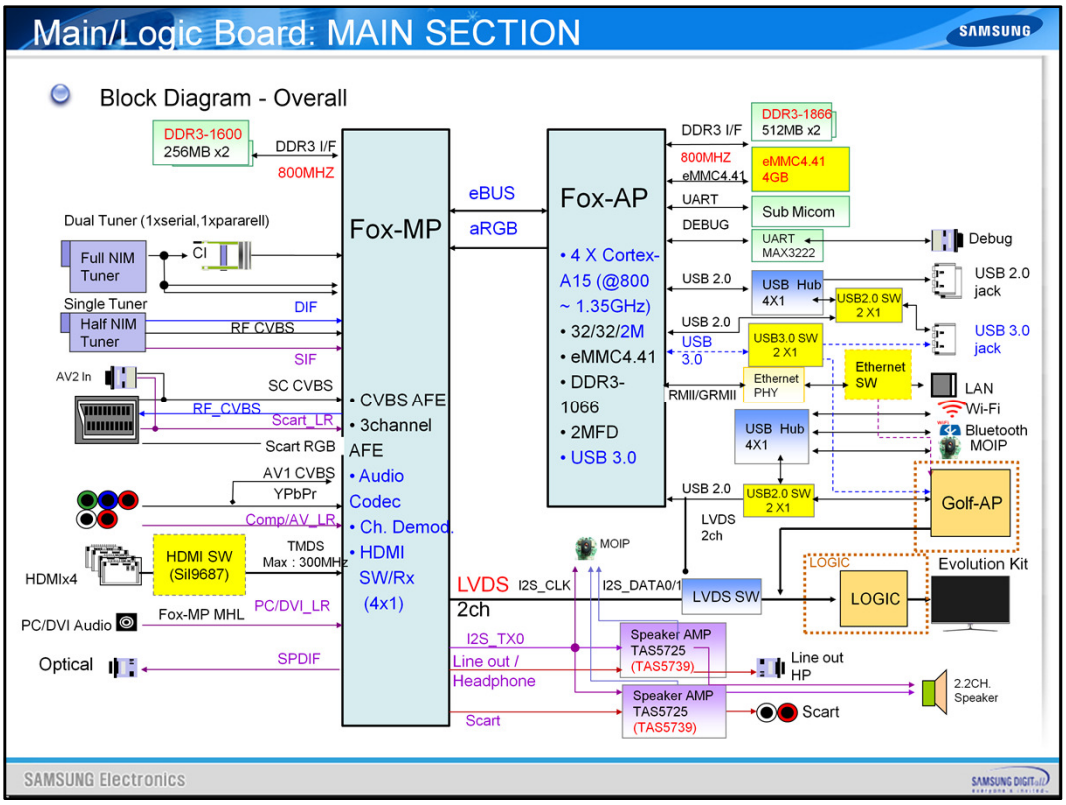
Logic section failure samples are shown… Pictured on the left the Logic section failure may show vertical noise errors in multiple locations. Pictured on the right are Logic Errors that can appear as Main section Errors of the Main/Logic Board. Even though they are now combined their operation is independent.

For Troubleshooting
View the Logic Board Test patterns. If they are normal, the Main Board or LVDS Cable is suspect. If the Logic Test Patterns are still noisy, as on the right the failure is with the Logic Board or Y or X Boards. Care to trouble shoot the Y-Board and X-Board needs to be made to eliminate these Boards as well. Logic Board Failures are much more rare than Drive Boards.

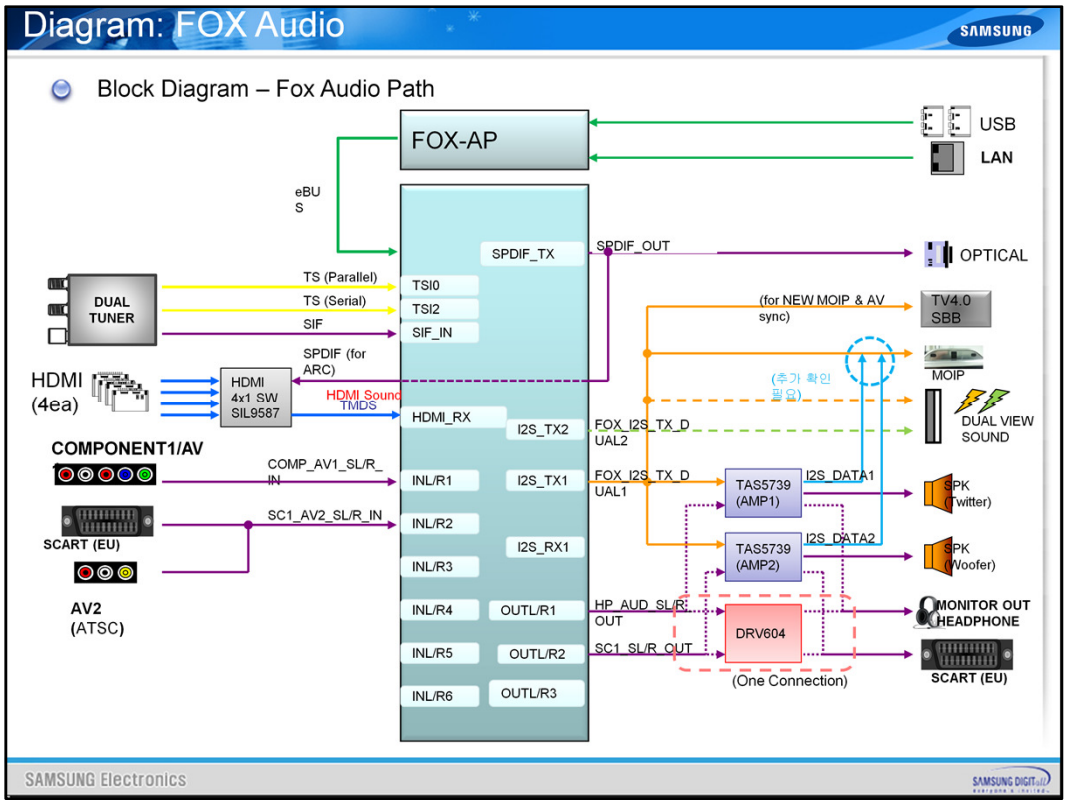
POWER ON failure can also be due to **no VS ON to the SMPS** from the Logic Board. If POWER ON and low voltage is provided to the Logic Board and no VS-ON appears, this would indicate a Logic Board failure.



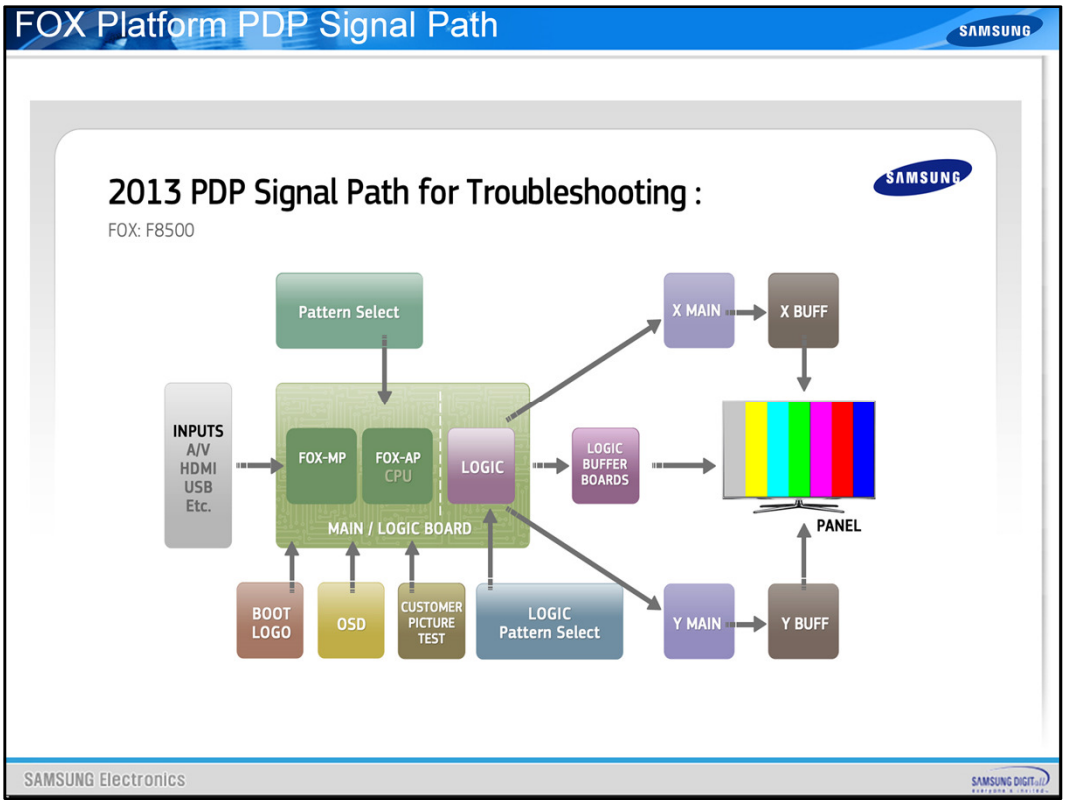
Logic Buffer (Address) Board failures likely create vertical Black, Red, Green, or Blue Bar Errors. These errors normally run top to bottom of the screen. The rest of the video is usually normal.
If there is only a single cell wide vertical line it is most likely the
Connection to the panel and a panel would need replacement. If there are multiple lines or a bar, try replacing the Logic Buffer Board in that area. Always try cleaning and reseating connectors before making any replacements.



The Main section of the Main/Logic Board Block Diagram is shown… the Tuner, HDMI, Audio & Video Inputs are sent to the FOX-MP. Fox AP receives USB, Wi-Fi, & Bluetooth information sending info to the Fox MP as well as shared communications… Fox MP sends the audio out to the amps also on the Main Board and 10 Bit Video Data Signals (labeled LVDS) pass thru internal LVDS (the external LVDS is no longer needed) to the Logic Section of the Main/Logic Board and out to the Logic Buffer Boards, the supporting Y & X Main Boards and to the Panel.

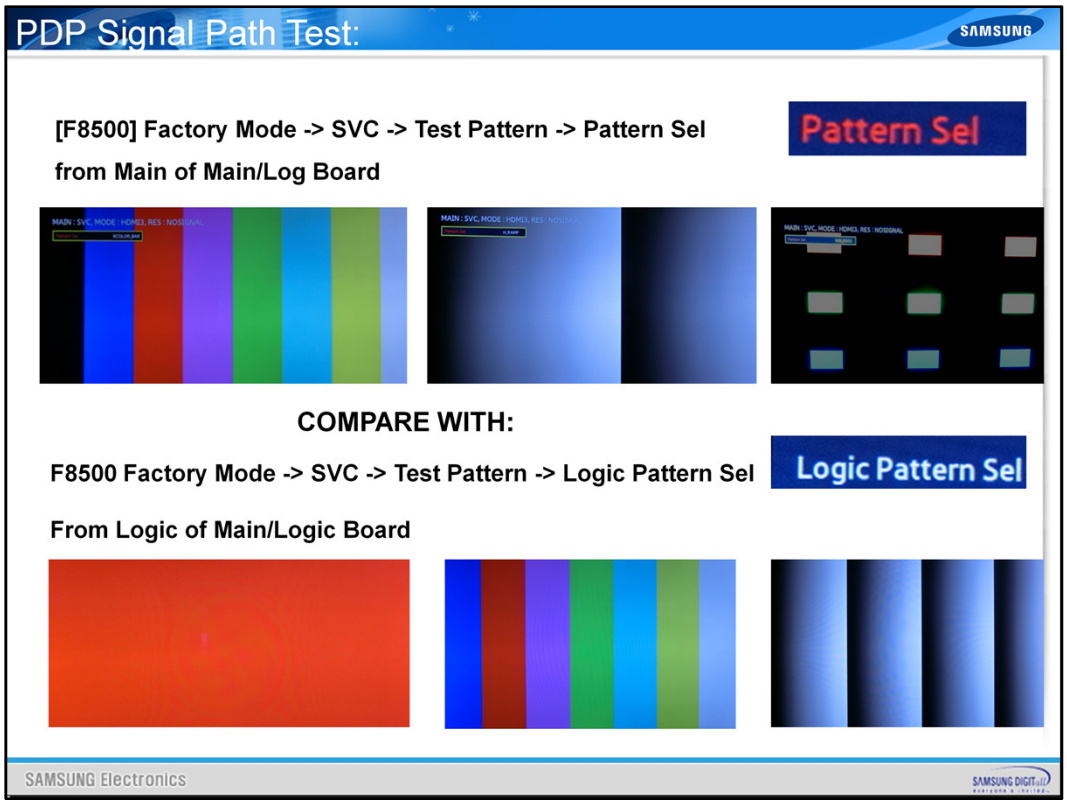


Audio Path includes all input feeds to Fox-MP for processing with L&R Audio out signals to Amp 1 & Amp 2 on Main Section of the Main/Logic Board. SPDIF Audio Optical Out and MO IP Audio & Video signals are Processed as well by the Fox MP.

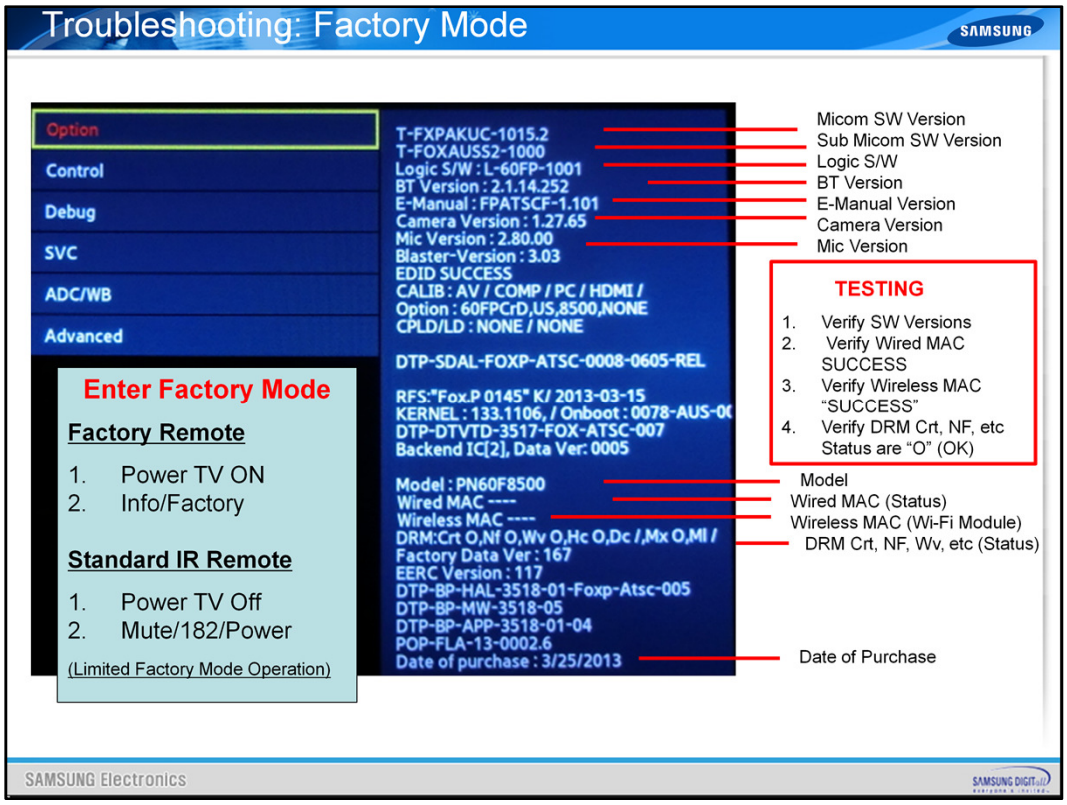


The signal path is shown for the FOX Platform…
Input signals enter the Main section of the Main/Logic Board. Boot Logo, OSD, Customer Picture Test are available for testing in the main menu. The Pattern Select from Factory Service Mode is also available.

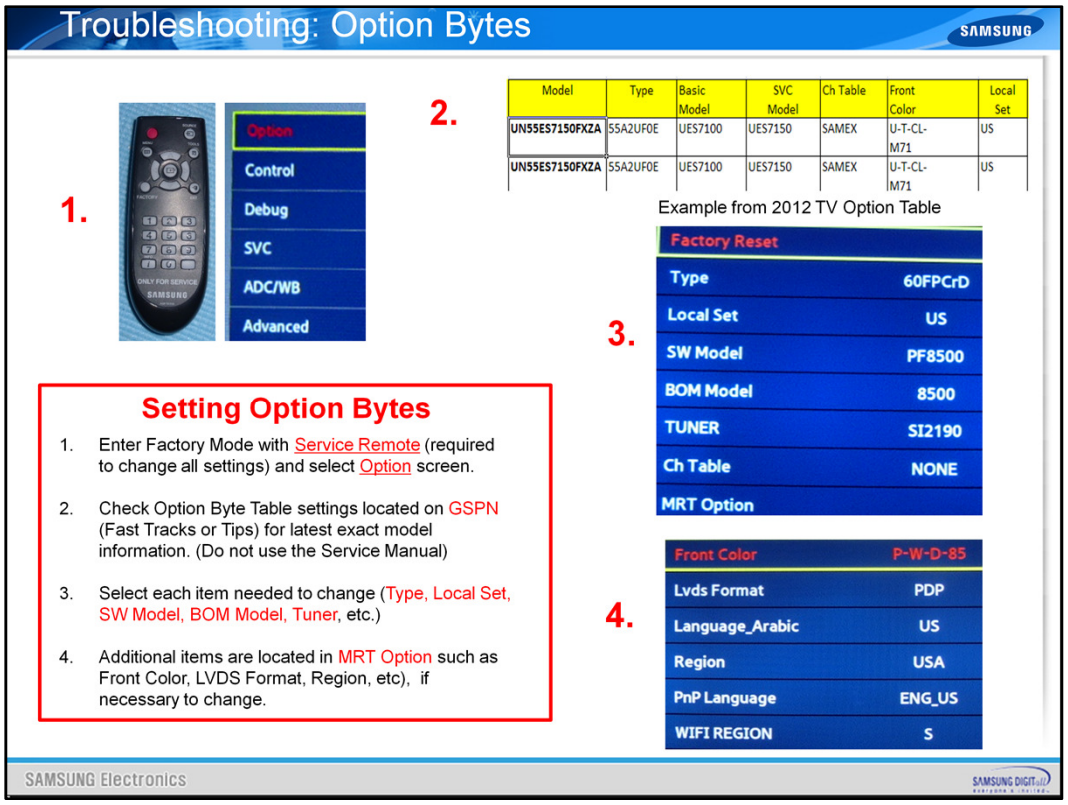
The signal passes directly to the Logic Section since the LVDS cable is no longer necessary!, Logic Pattern Select is available in Factory Service Mode for testing. The Logic section sends the Video Data signal to the Logic Buffer Boards for the Panel's cell addressing operation. The control & driving signals are also sent by the Logic section of Main/Logic Board to the Y Main Board thru the Y Buffer Board and X Main Board thru the X Buffer Board and to the Panel.



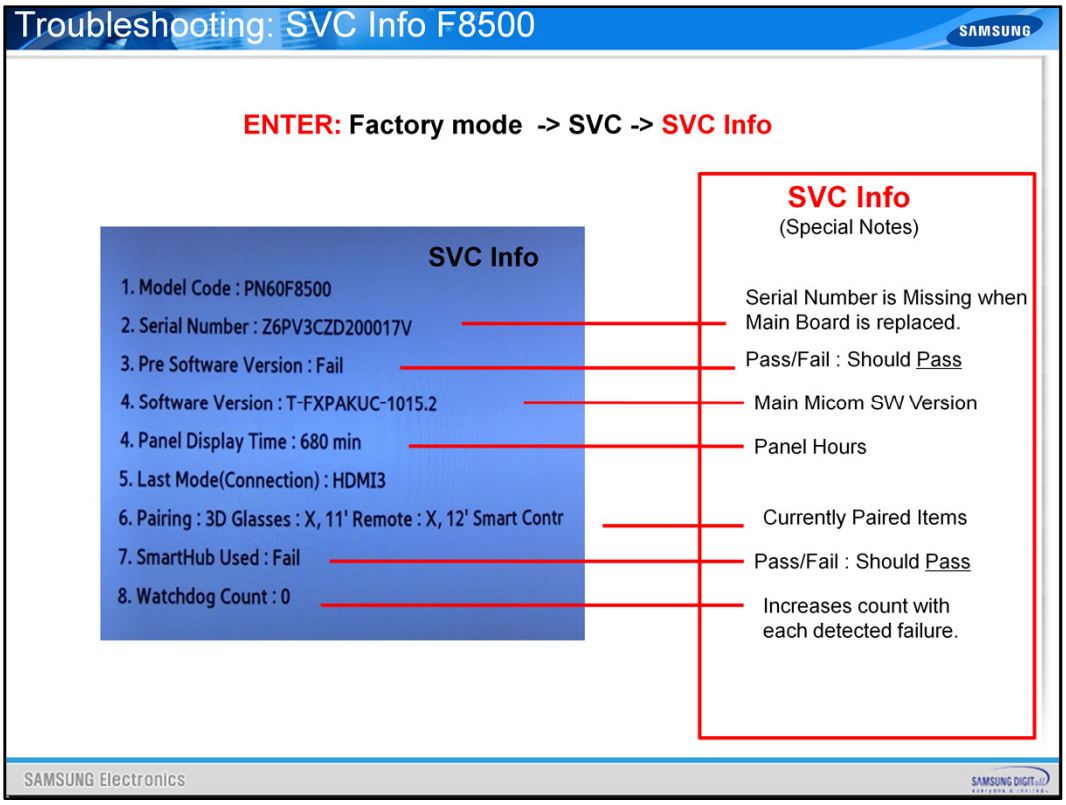
The **Pattern Sel** test Patterns from the Main section of the Main/Logic Board along with the **Logic Pattern select** test patterns from the Logic Section of the Main/Logic Board are valuable for testing, however, You can also use mute 147 mute to produce a test pattern from the Main section and mute 369 mute from the Logic section of the Main/Logic Board.



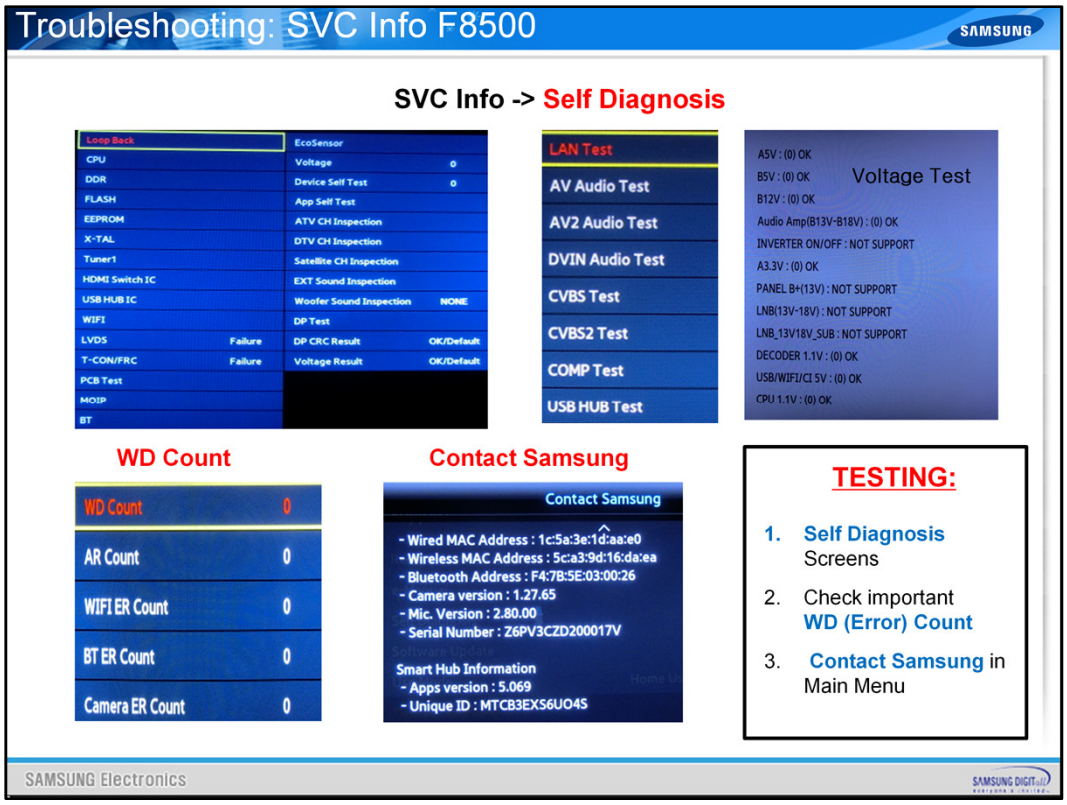
It's important to enter Factory Mode with a Service Remote for full accessibility and changes… The first screen in service mode fro the F8500 shows important Micom & Sub Micom information as well as important S/W versions for all items. Model & MAC info for Wired & Wireless are also included along with DRM CRT and other important information.



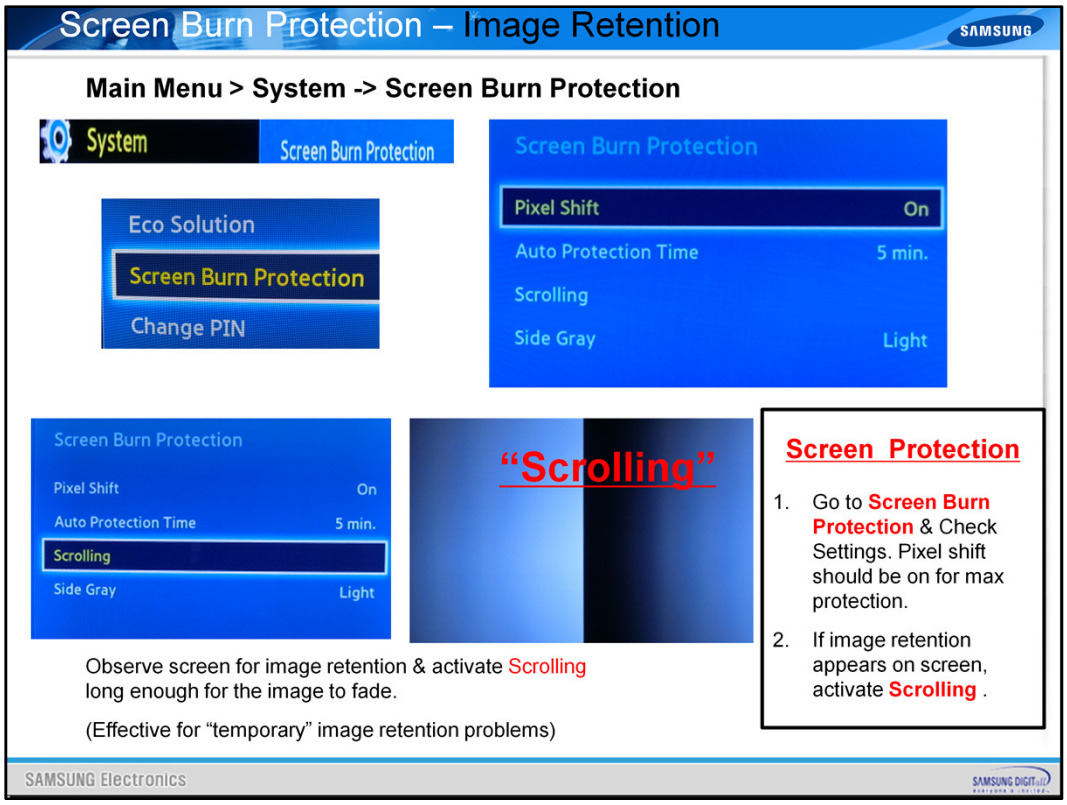
Important Option setting procedure is shown for the F8500 and must be performed for every Main/Logic Board replacement. A factory remote is required.



New SVC Information screen is shown.



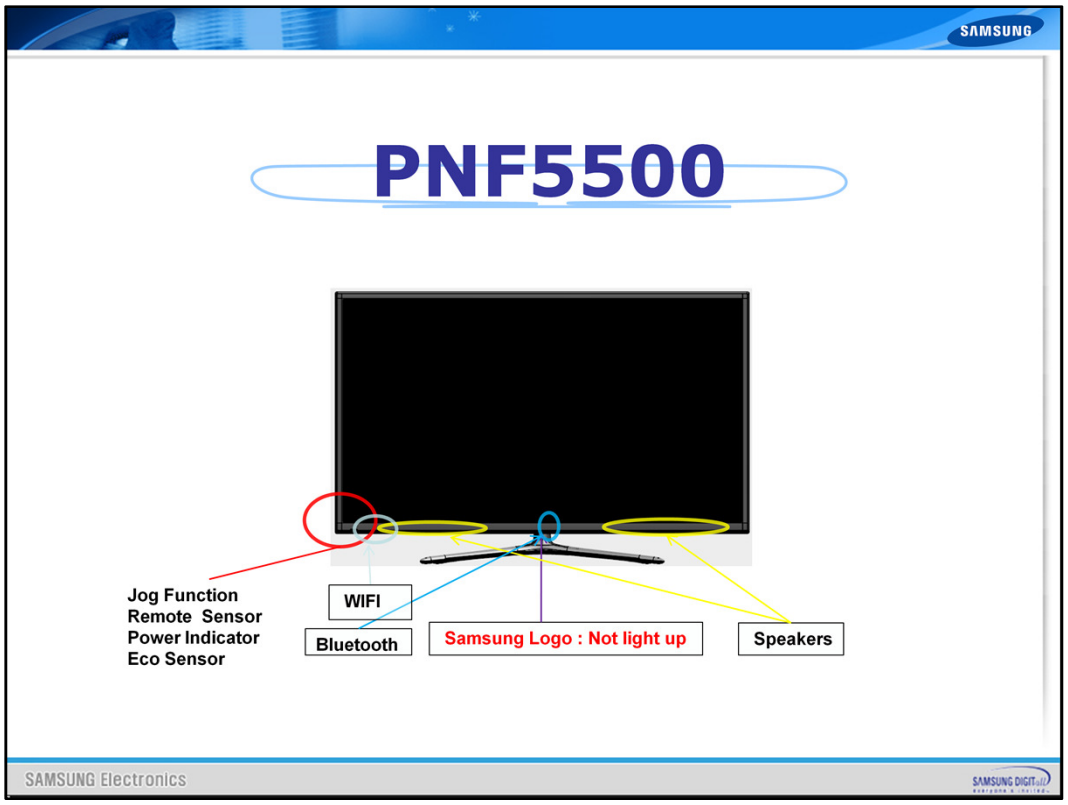
Other important Self Diagnosis Screens include Loop Back Testing, Error Count, and Contact Samsung information already examined.



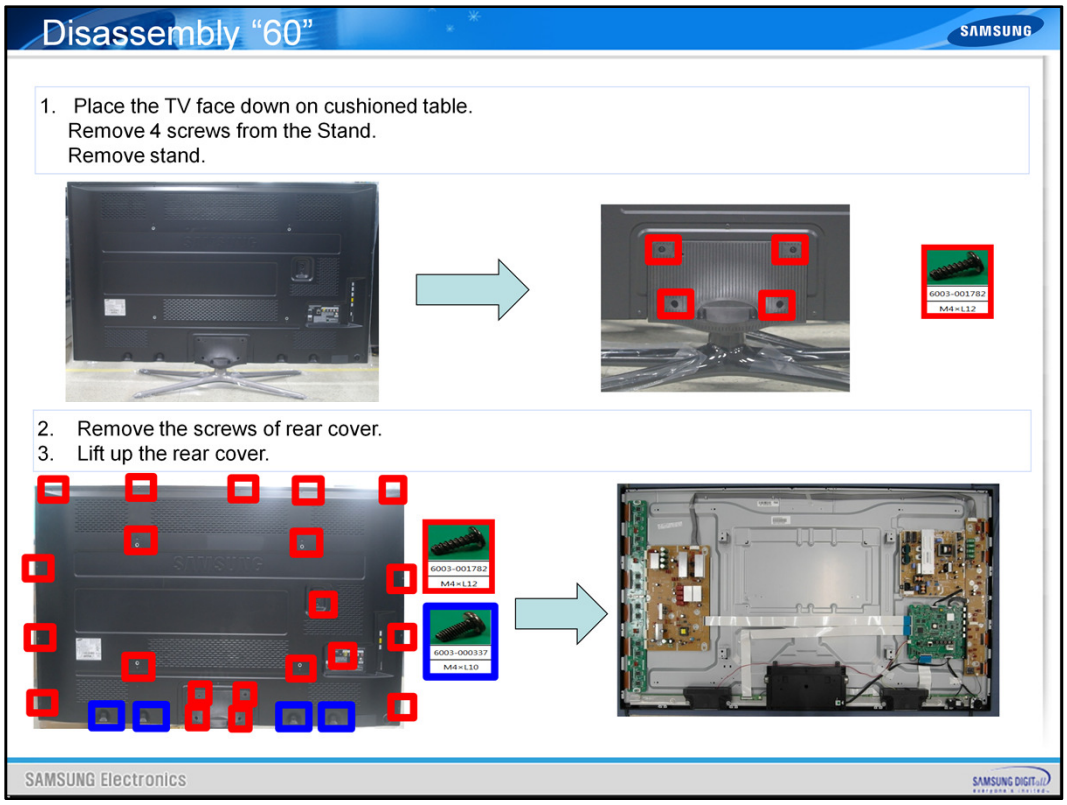
Screen Burn Protection is very important for plasma TVs and related troubleshooting and repairs.

1. Go to **Screen Burn Protection** & Check Settings. Pixel shift should be on for max protection.
2. If image retention appears on screen, activate **Scrolling**

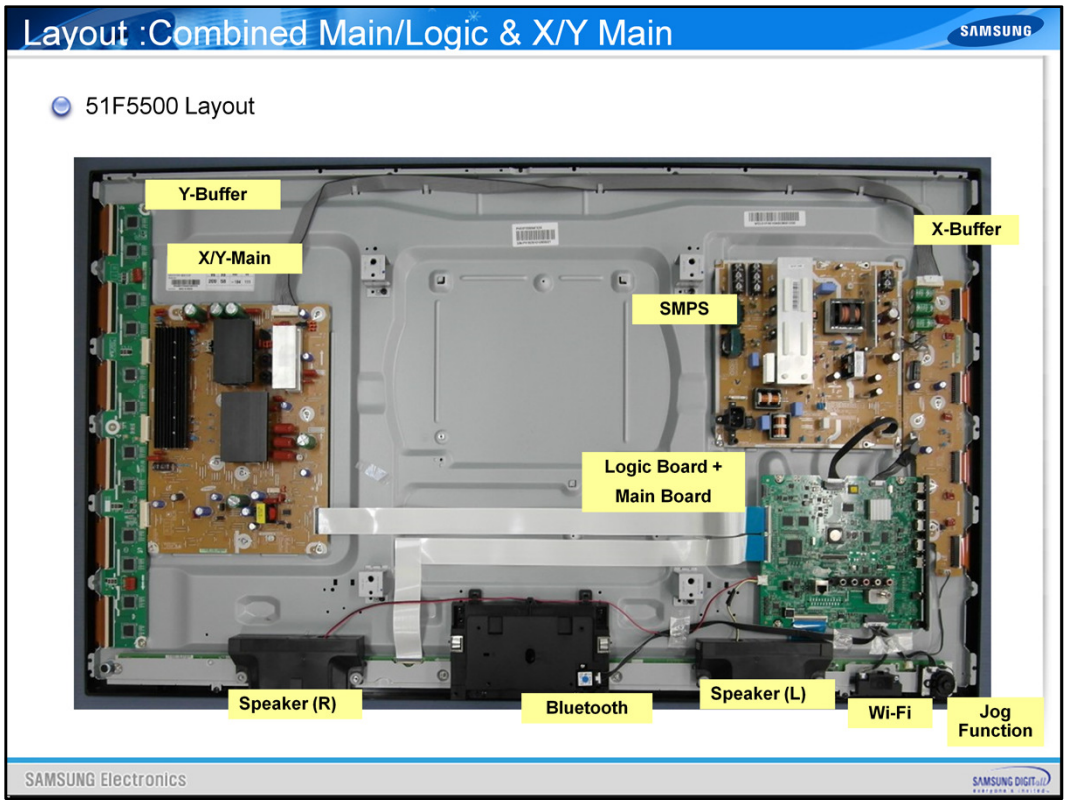
Note that image retention in most cases can be removed or reduced. The scrolling time will depend on the degree of image retention. In some cases a permanent image may be burned into the phosphor which cannot be removed by this procedure. In this case the panel would have to be replaced. This is not, however, a warranty issue since the customer is responsible and warned to avoid still images creating this occurrence.



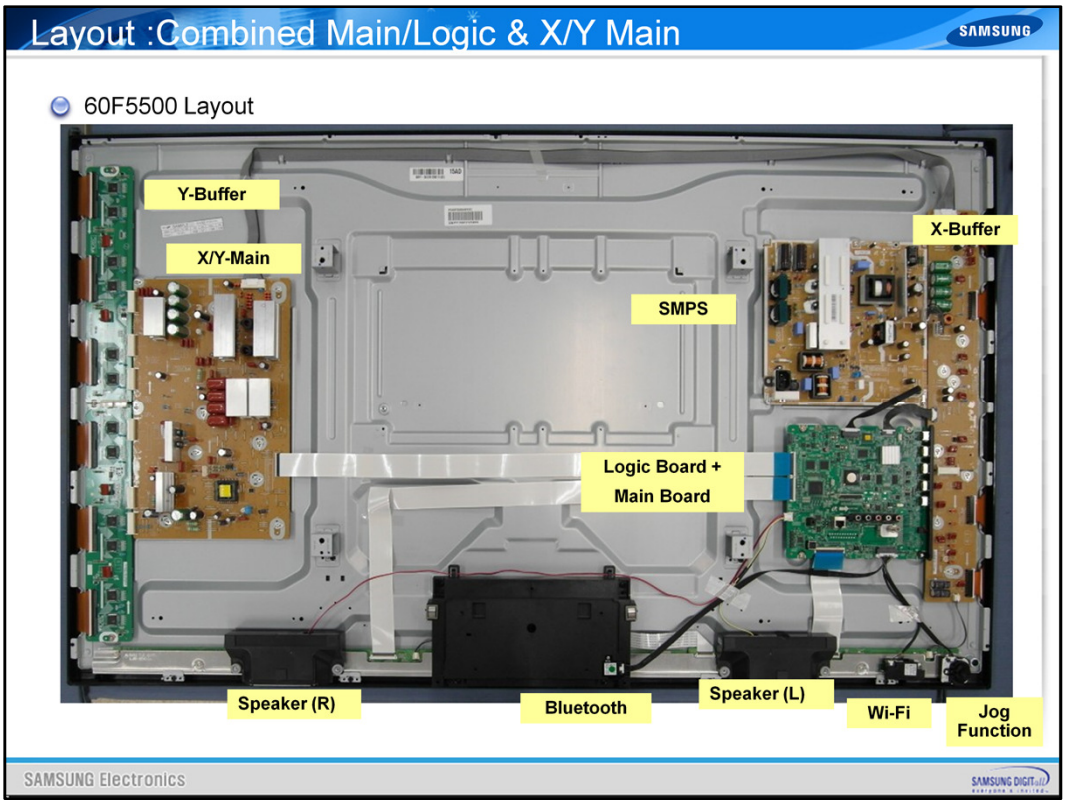
The Plasma F5500 TVs includes Jog Function Control, Wi-Fi & Bluetooth Modules and speakers. The Samsung Logo is not powered for lighting.



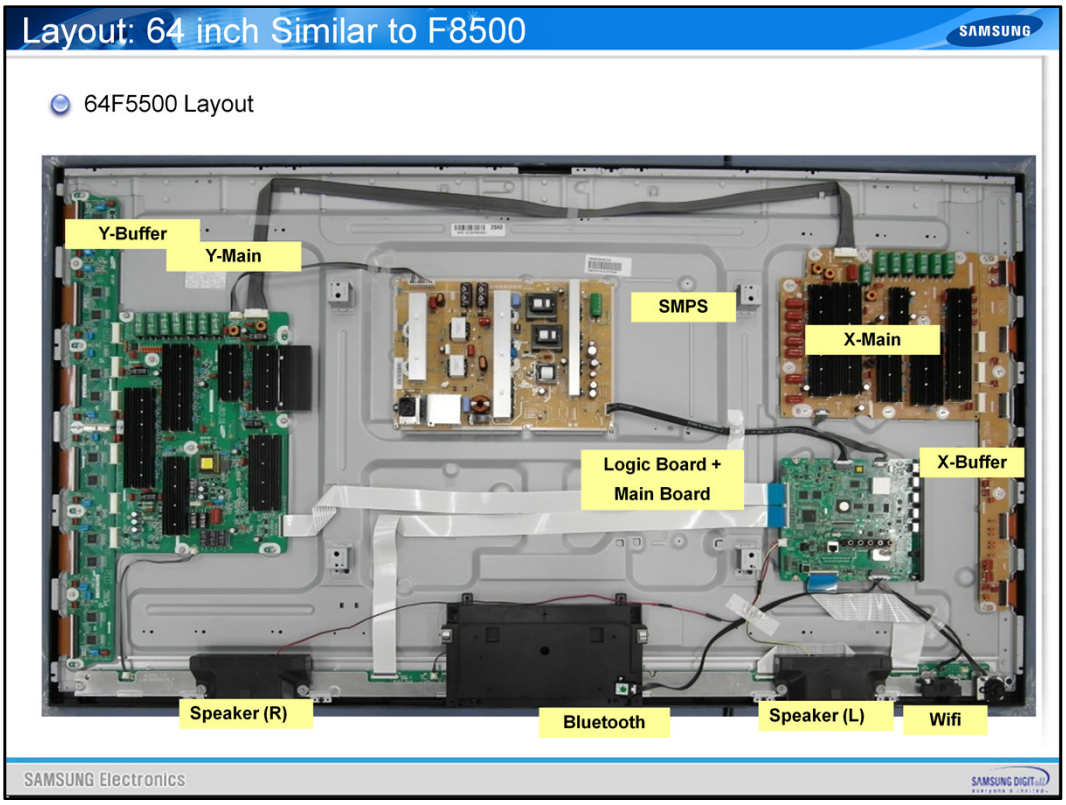
Dissasembly procedure is shown for the 60 inch model F5500. The back can be removed without removing the stand.



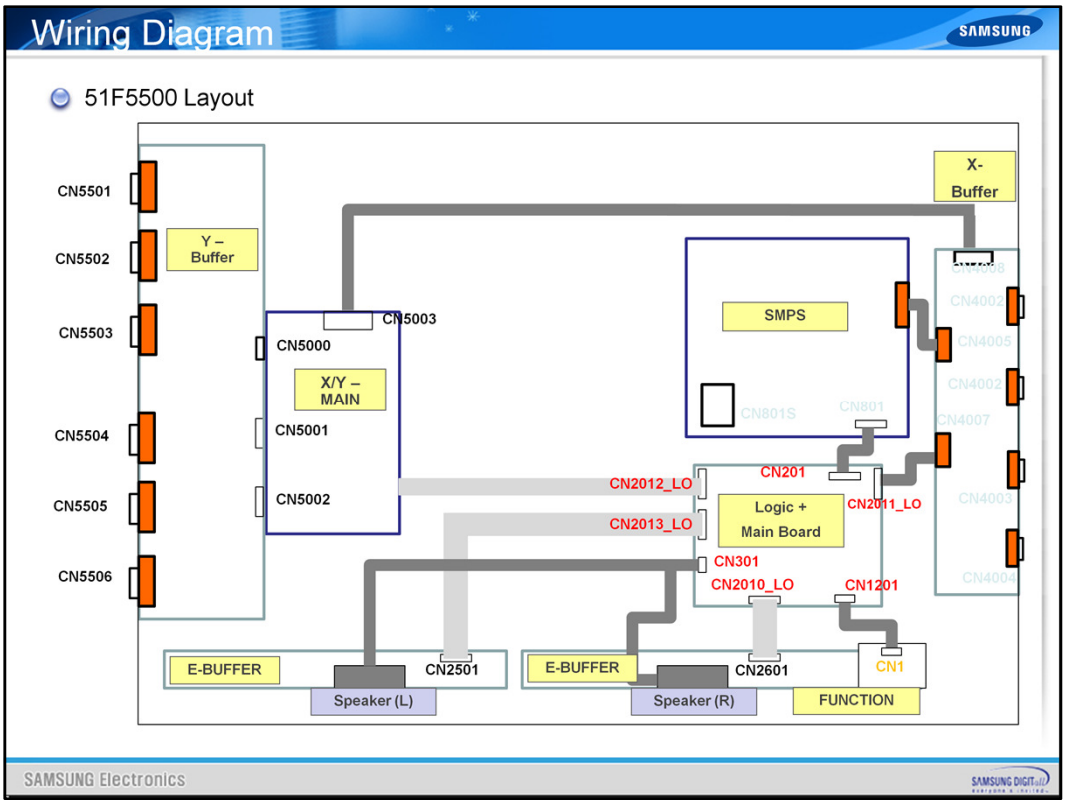
The 51 inch F5500 includes the combined Main/Logic Board, SMPS, X/Y Main Board combination, as well as Y-Buffer Board and X-Buffer Board. Speakers left & Right, Bluetooth & Wi-Fi Modules and Jog Shuttle are included.



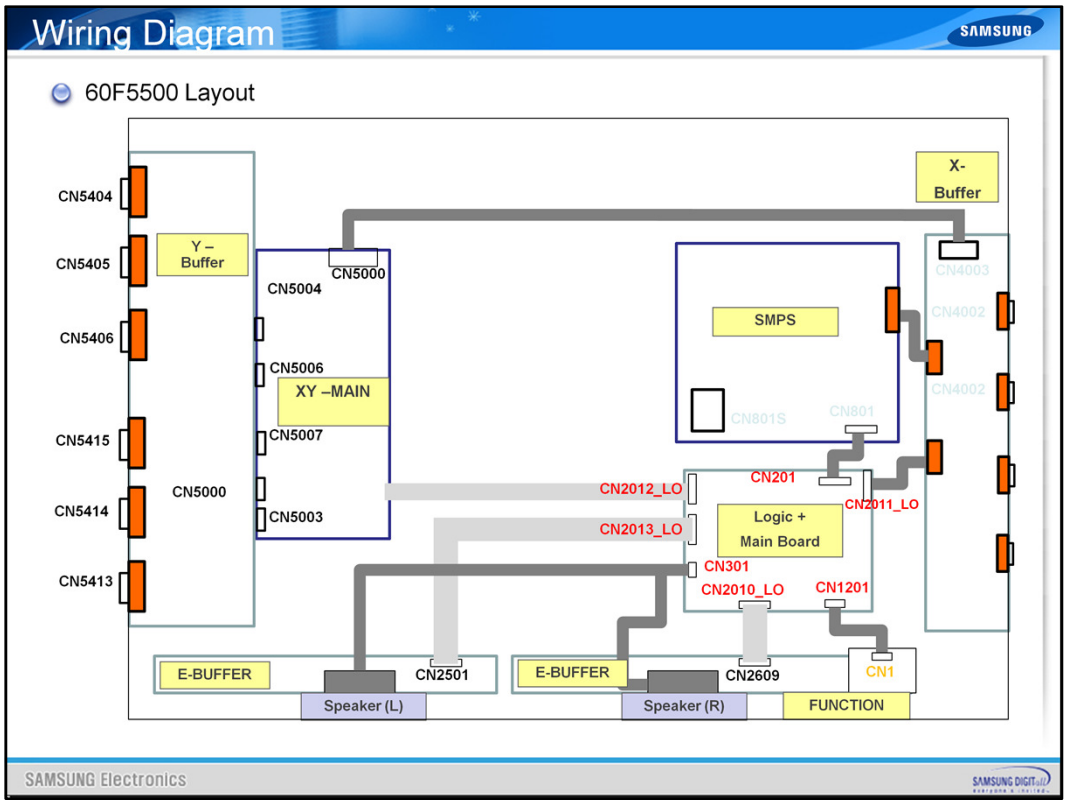
The 60 inch F5500 Layout with combined X/Y Main Board and combined Main/Logic Board is similar to the 51 inch F5500.



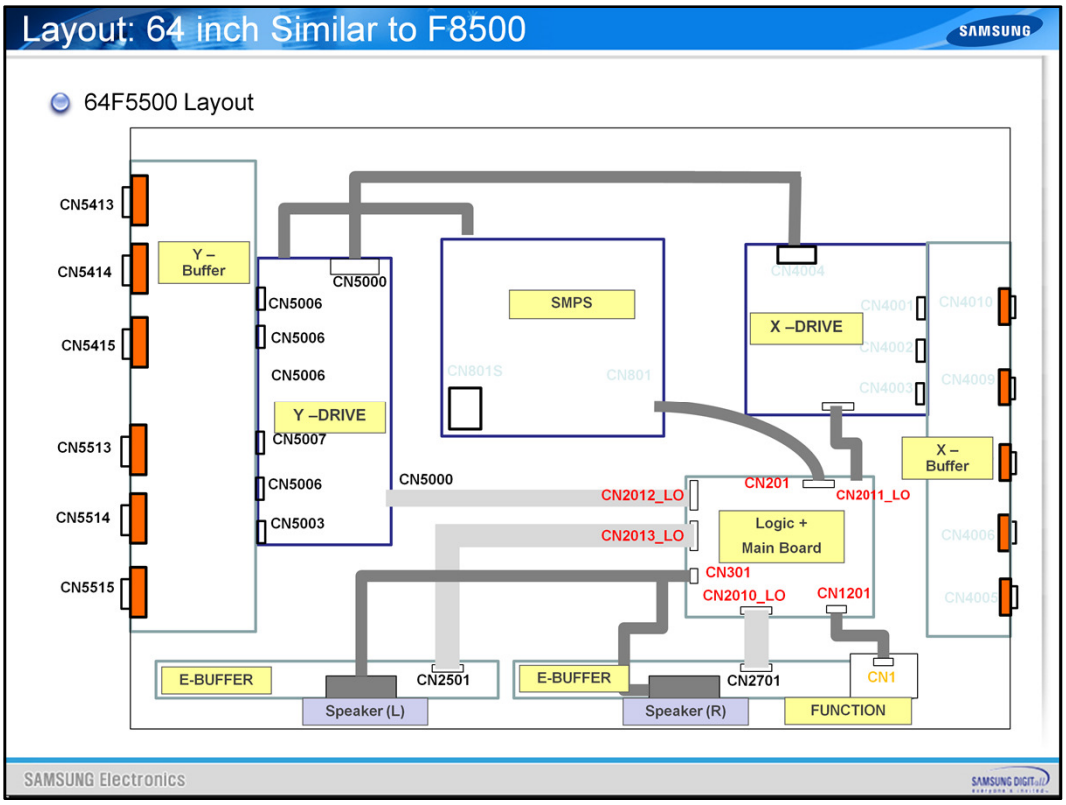
The 64 inch F5500 includes the new Main/Logic Board, SMPS, Y Main Board and Y-Buffer Board , X Main Board X-Buffer Board, Speakers, Bluetooth & Wi-Fi Modules and Jog Function Control. The Y-Main Board & X Main board are separate and not combined as in the 51 inch and 60 inch models.



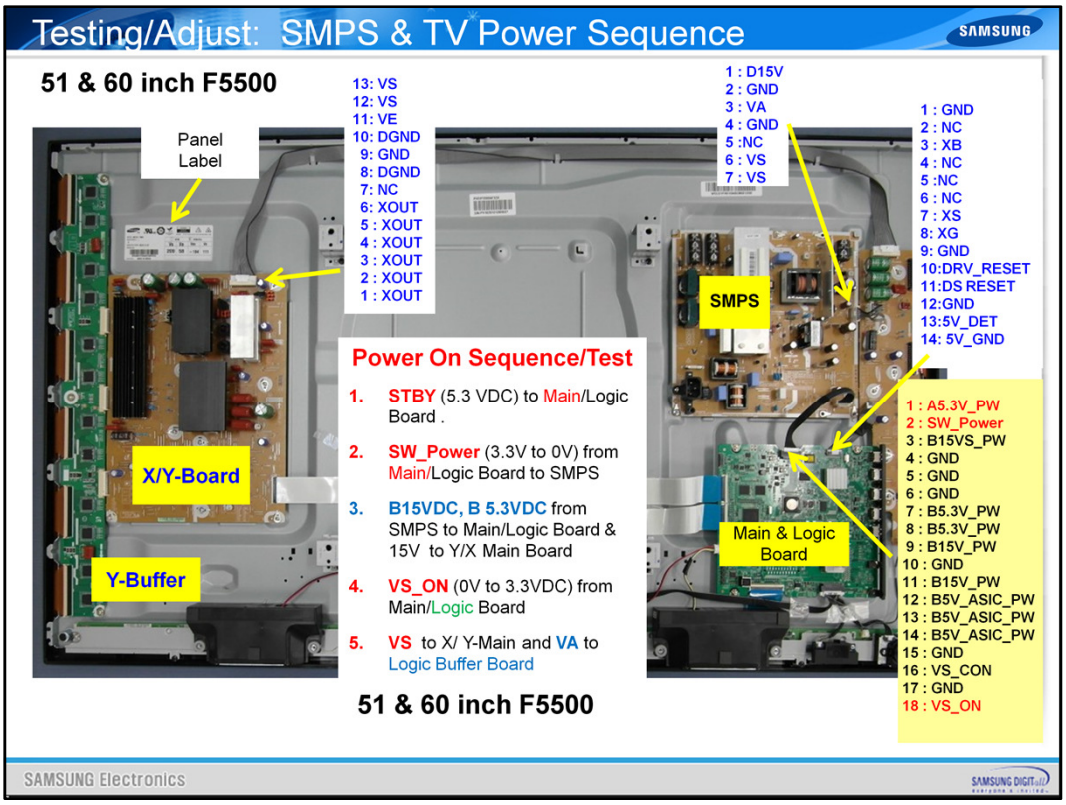
Wiring diagram includes the SMPS connections to the X Buffer Board and new Main/Logic Board. The X Buffer Board is connected to the X/Y-Main Board providing SMPS DC supply and receives X Drive. The X Buffer Board also connects to the Main/Logic Board. The Main section of the Main/Logic Board connects to Jog Function Board, Bluetooth & Wi-Fi Modules. Both the Main section and Logic Section connect to the SMPS. The Logic section of the Main/Logic Board connects to the X/Y Main Board & Logic Buffer Boards.



F5500 Wiring Diagram for the 60 inch Model is similar to the 51 inch model with the exception of the connector numbers.

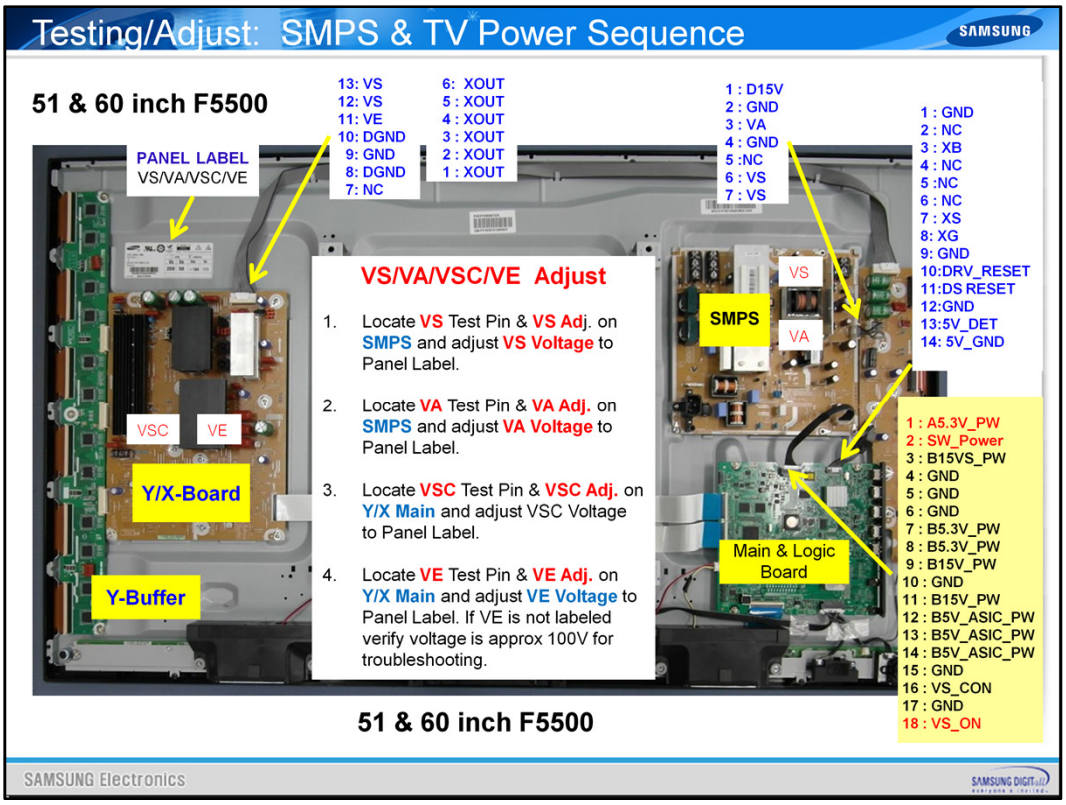


Wiring diagram includes the SMPS connections to the Y Main Board and new Main/Logic Board. The Y Main is connected to the X-Main providing SMPS DC supply. The Main section of the Main/Logic Board connects to the Jog Function Board, Bluetooth & Wi-Fi Modules. Both the Main section and Logic Section connect to the SMPS. The Logic section of the Main/Logic Board connects to the X-Main, Y-Main & Logic Buffer Boards. The Y-Main connects to the Y-Buffer Board and the X Main connects to the X Buffer Board.

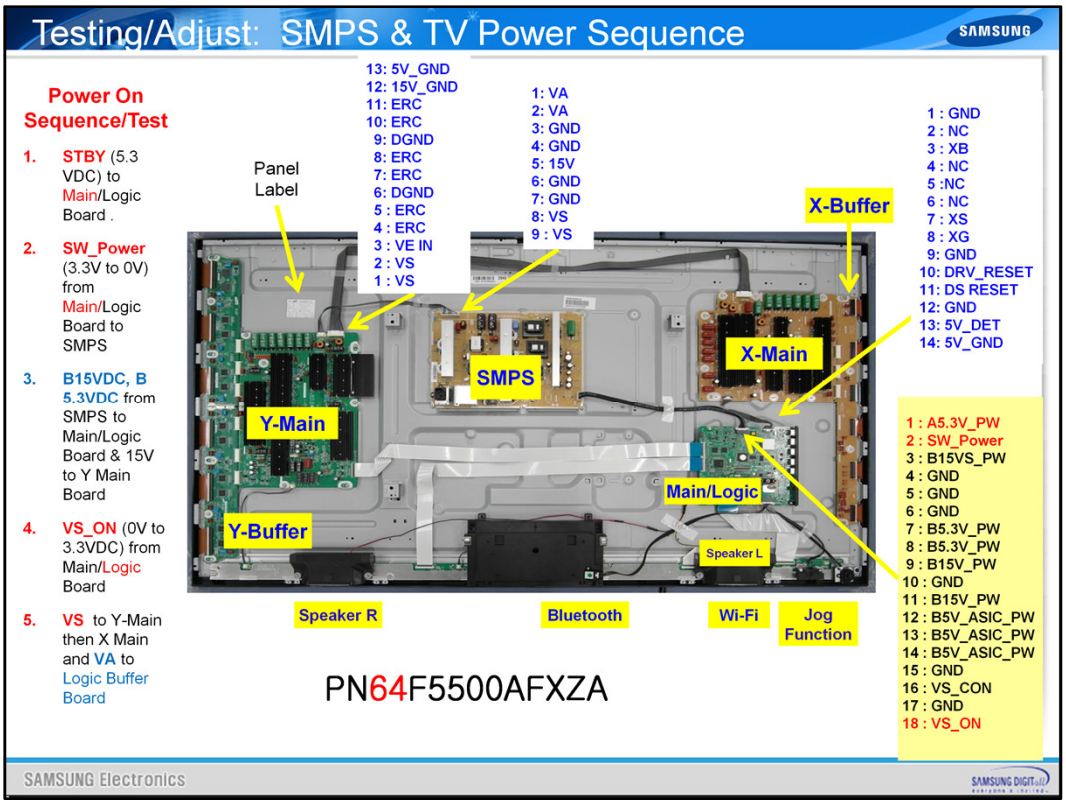


Power On Sequence/Test

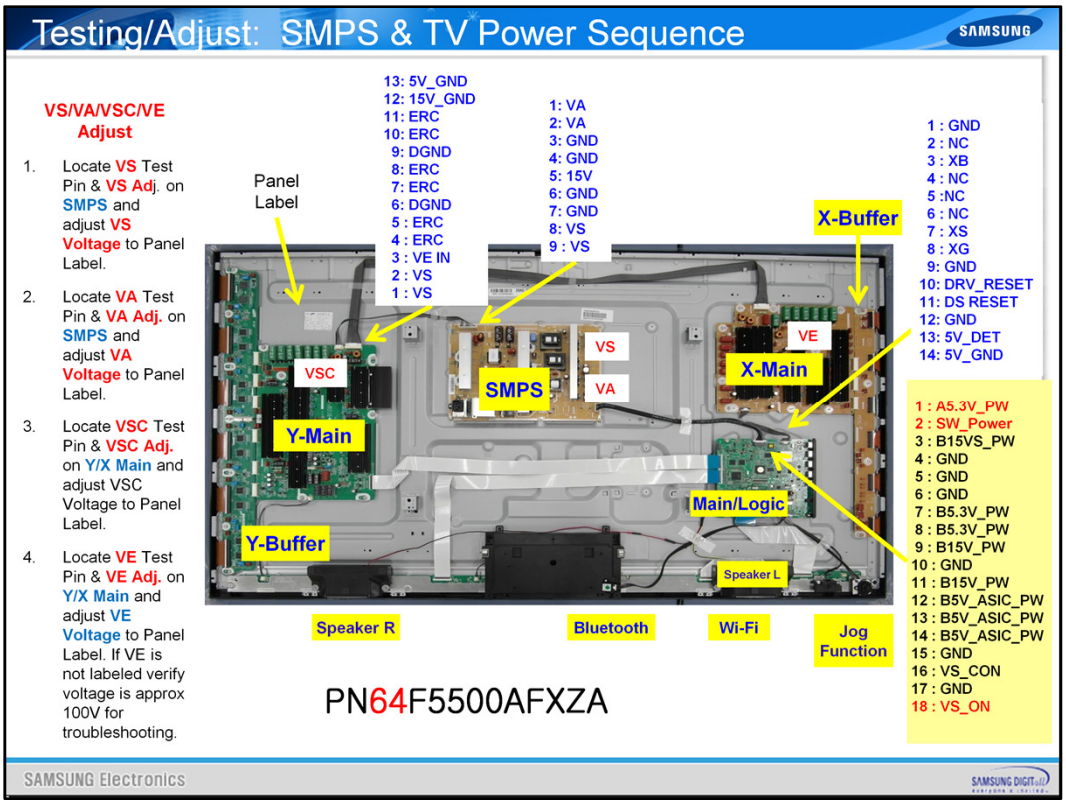
1. **STBY** (5.3 VDC) to Main/Logic Board .
2. **S W Power** (3.3V to 0V) from Main/Logic Board to SMPS
3. **B15 Volts D C, B 5.3 Volts D C** from S M P S to Main Logic Board & 15V to Y X Main Board
4. **VS ON** (0V to 3.3VDC) from Main/Logic Board
5. **VS** to X/ Y-Main and **VA** to Logic Buffer Board



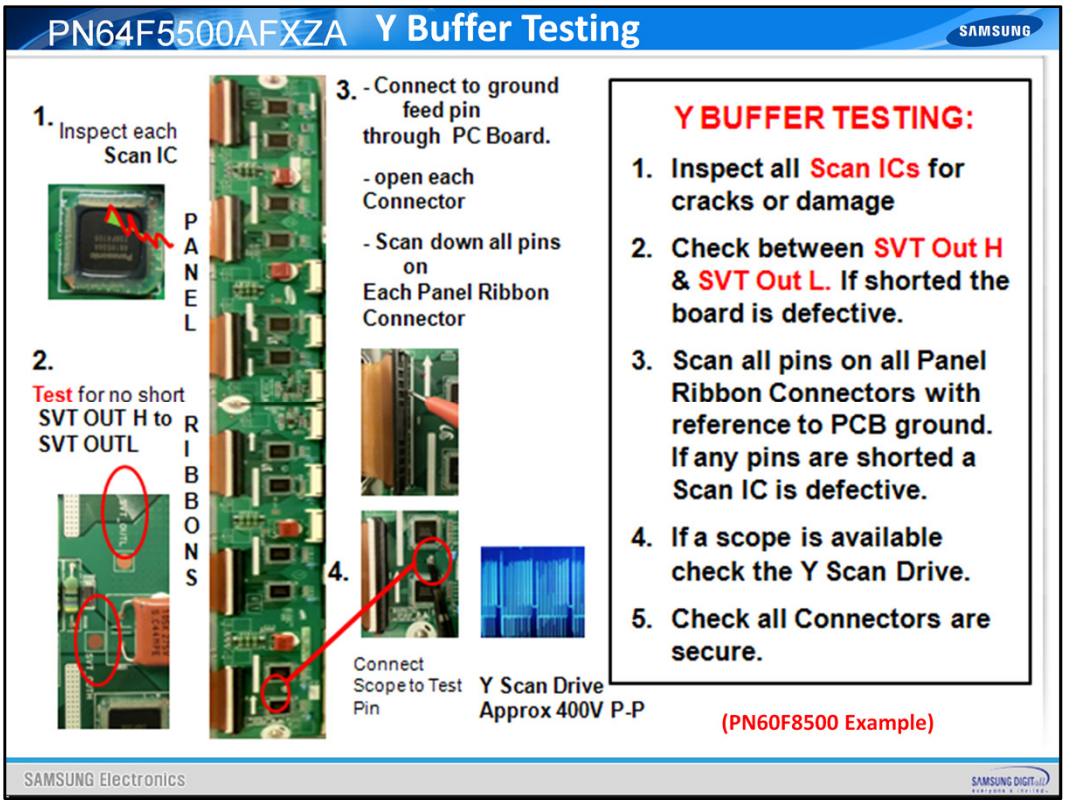
Testing and Adjustment procedure is listed fro the 51 & 60 inch F5500 models. Follow the 4 steps provided.



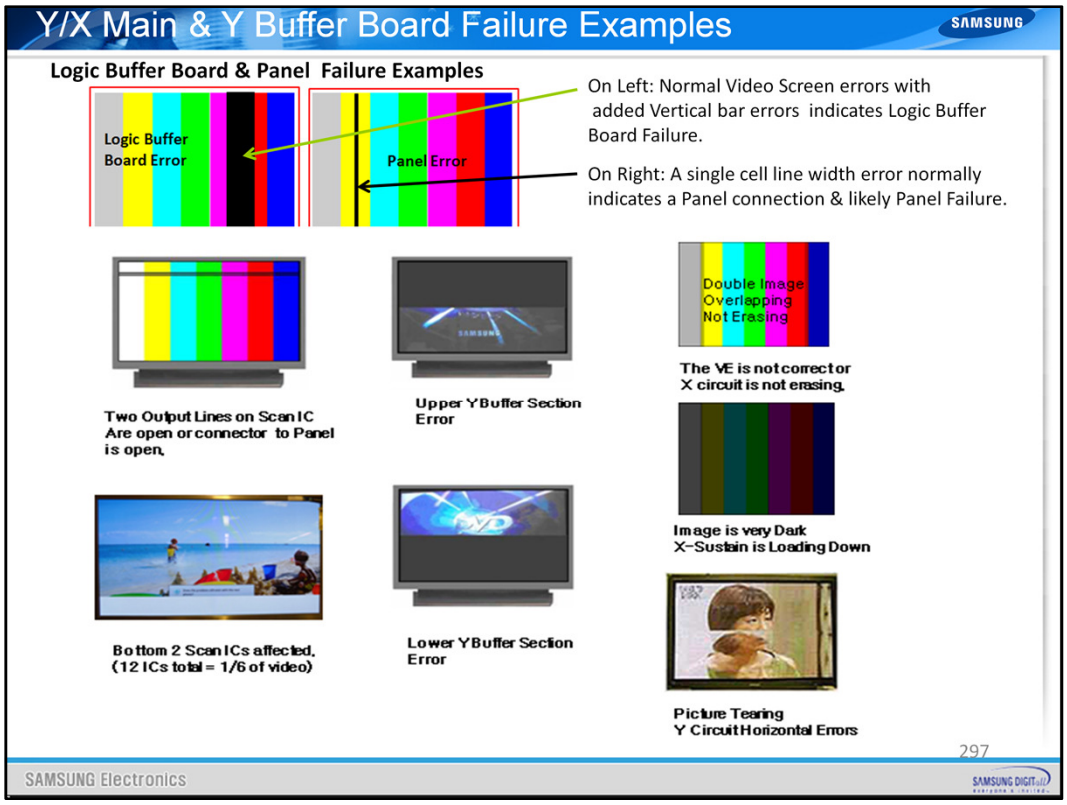
The procedure for the 64 inch model is shown.



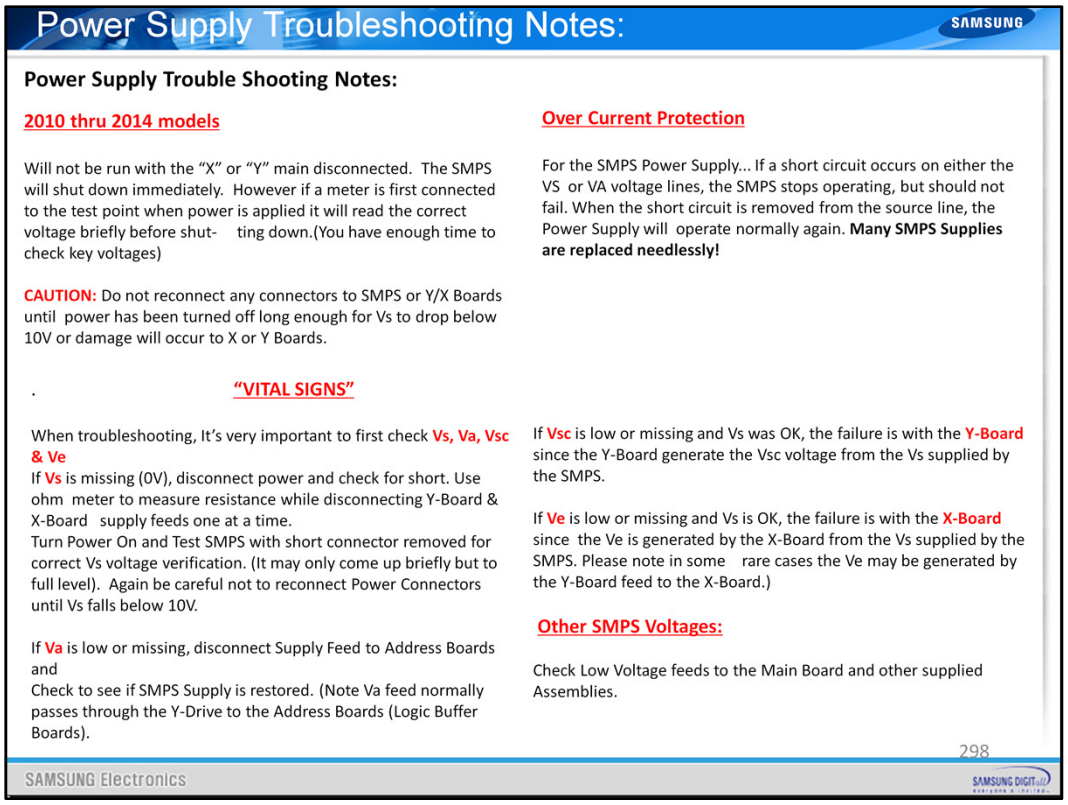
This 64 inch model has separate Y Main & X Main Boards related to their adjustments and test points locations.



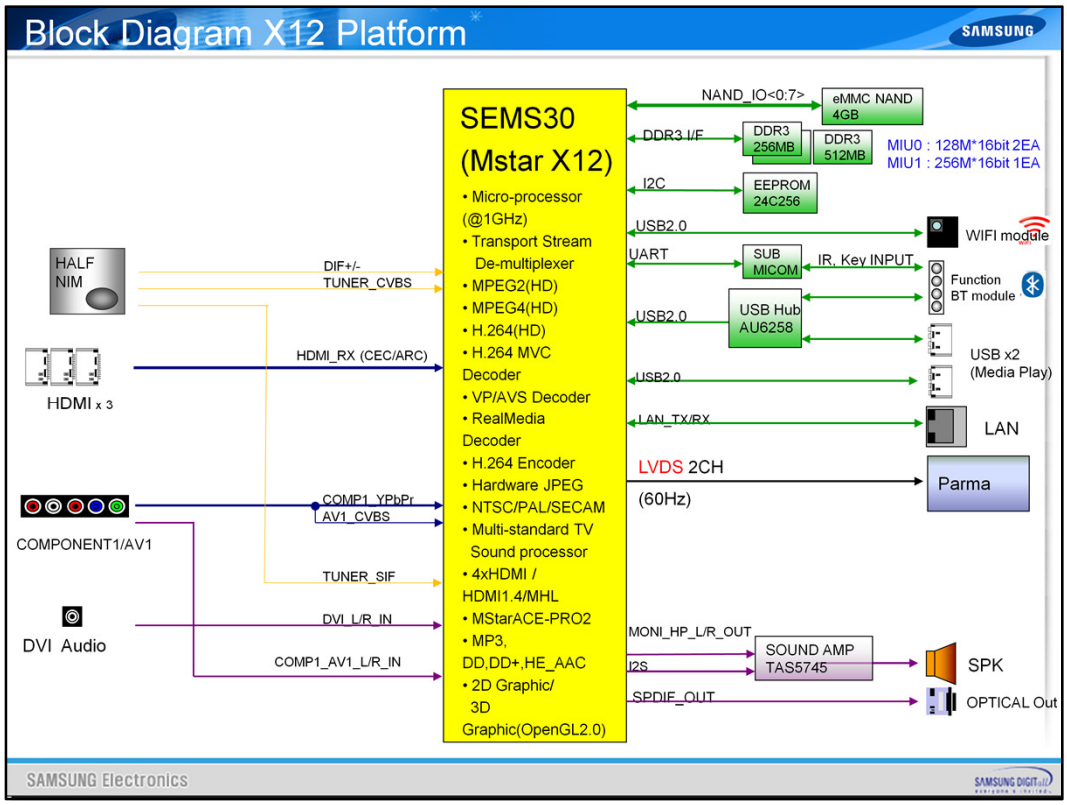
Follow the 5 steps listed for Y-Buffer Board Testing, already discussed for previous models.



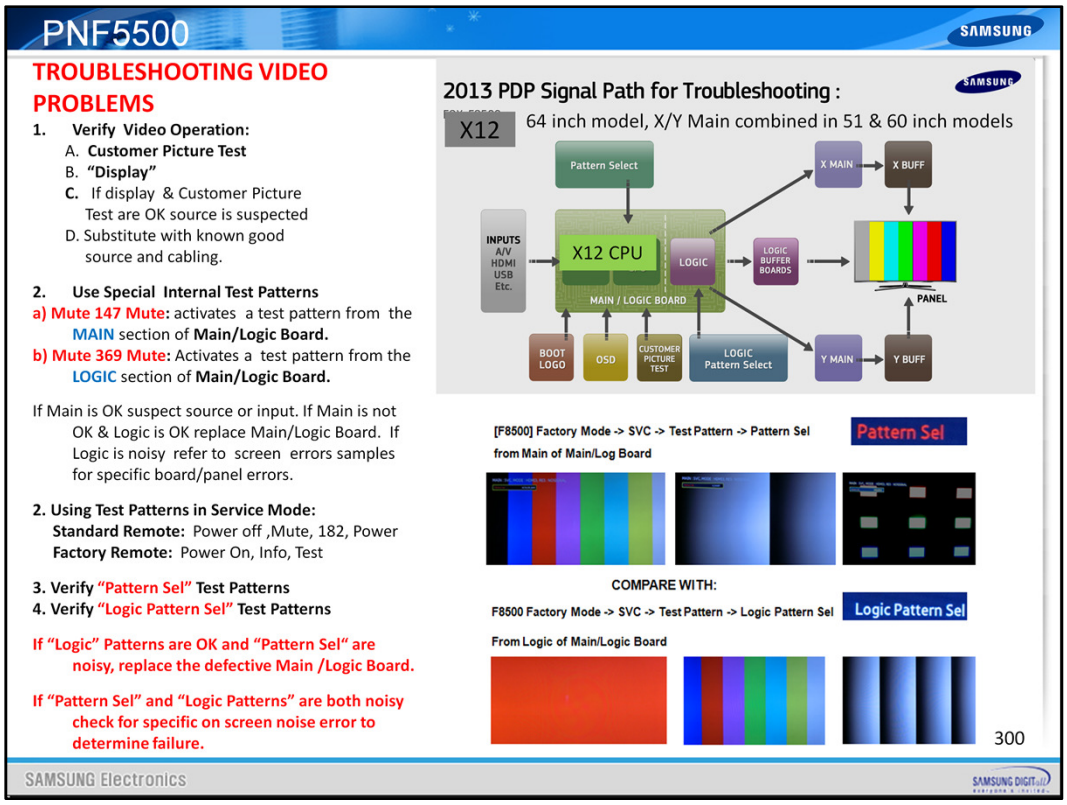
Typical screen errors for Y Main & X Main & Y Buffer Board failures.



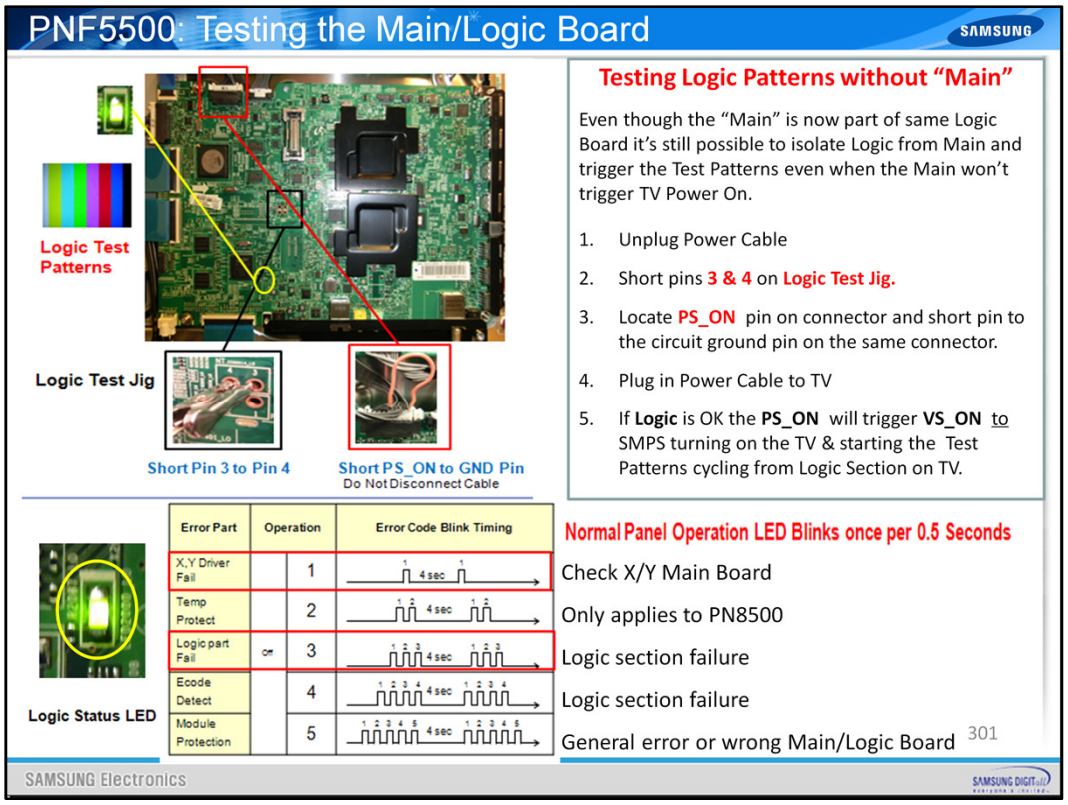
Power Supply Troubleshooting notes are listed.



The X12 one chip Processor is used for the F5500 Plasma Series (same platform as the F6400 LED discussed)
It receives inputs from Tuner, HDMI, Component, USB, and Wi-Fi & Bluetooth Modules. It provides audio out to the sound amp on the Main/Logic Board and then to the speakers. It provides final video 10 bit data signal to the Logic Section of the Main/Logic Board. The Logic Section of the Main Logic Board then outputs address cell control information to the Logic Buffer Boards and Panel drive signals to the X Main thru X Buffer and Y Main thru Y Buffer to the panel.



Troubleshooting Video Problems for the PNF5500 is listed and similar to F8500 discussed.



Testing the Main/Logic Board is similar to F8500. Logic Status indicator operation and Error Code Chart is included and identical to F8500 already discussed.

ALIGNMENTS & UPDATES: PNF5500

SAMSUNG

1. **Check/Adj. VS, VA, VE, & VSC according to Panel Label**

2. **Check/Set Option Bytes:**

(Must be performed after replacing a Main/Logic Board)

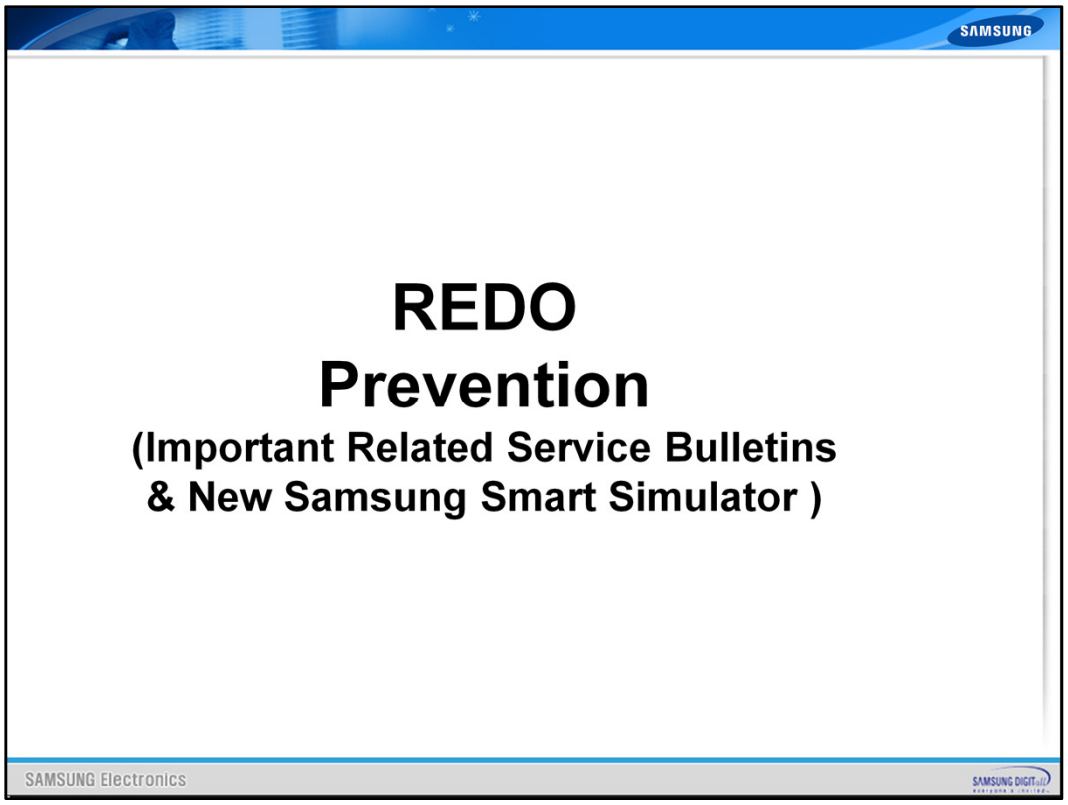
a) Check Option Byte Table on GSPN

Type	51FFHcD	60FFHcD	64FFHcD
Local set	US		
SW Model	PF5500		
BOM Model	-		
Tuner	SI_ADI		
Ch table	NONE		
Country	-		
Front Color	P-W-D-55		

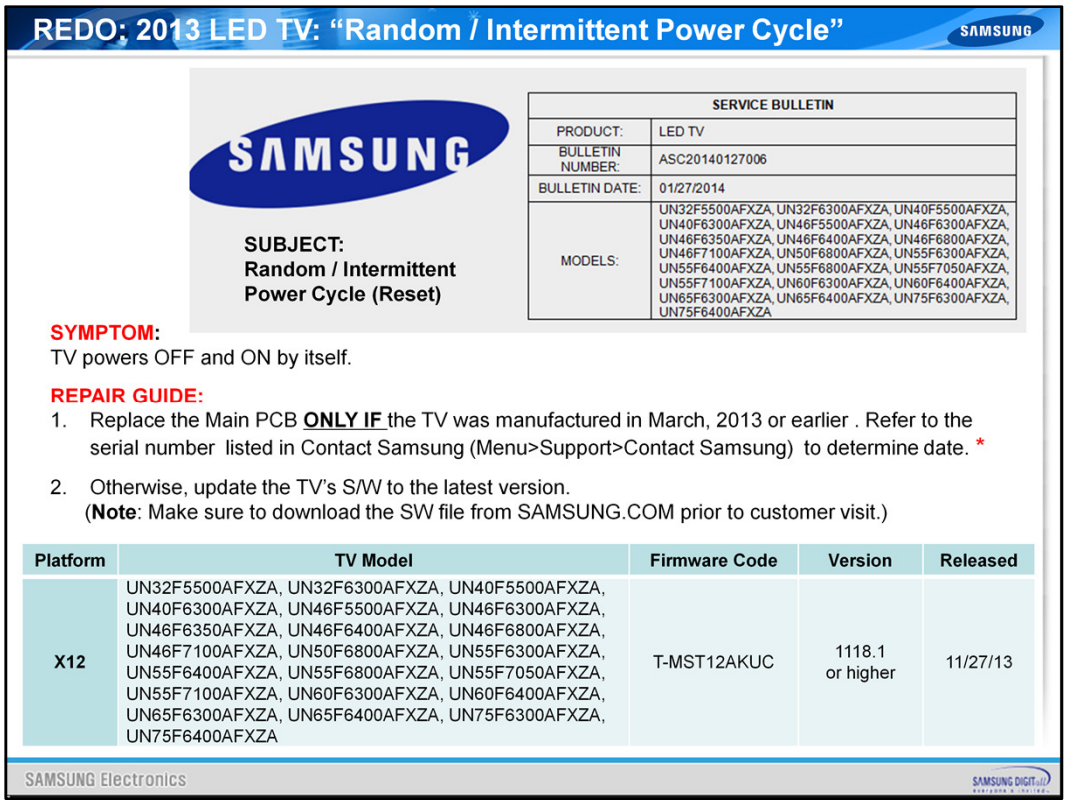
b) ENTER SERVICE MODE –By Factory Remote ONLY
- With TV Power On: **Info > Factory**

3. **Check and perform Bulletins on GSPN and latest S/W on Samsung.com.**

Final alignments and important updates check list is shown.



REDO PREVENTION



REDO: 2013 LED TV: "Random / Intermittent Power Cycle"

SAMSUNG

SUBJECT:
Random / Intermittent Power Cycle (Reset)

SERVICE BULLETIN	
PRODUCT:	LED TV
BULLETIN NUMBER:	ASC20140127006
BULLETIN DATE:	01/27/2014
MODELS:	UN32F5500AFXZA, UN32F6300AFXZA, UN40F5500AFXZA, UN40F6300AFXZA, UN46F5500AFXZA, UN46F6300AFXZA, UN46F6350AFXZA, UN46F6400AFXZA, UN46F6800AFXZA, UN46F7100AFXZA, UN50F6800AFXZA, UN55F6300AFXZA, UN55F6400AFXZA, UN55F6800AFXZA, UN55F7050AFXZA, UN55F7100AFXZA, UN60F6300AFXZA, UN60F6400AFXZA, UN65F6300AFXZA, UN65F6400AFXZA, UN75F6300AFXZA, UN75F6400AFXZA

SYMPTOM:
TV powers OFF and ON by itself.

REPAIR GUIDE:
1. Replace the Main PCB **ONLY IF** the TV was manufactured in March, 2013 or earlier . Refer to the serial number listed in Contact Samsung (Menu>Support>Contact Samsung) to determine date. *
2. Otherwise, update the TV's S/W to the latest version.
(**Note**: Make sure to download the SW file from SAMSUNG.COM prior to customer visit.)

Platform	TV Model	Firmware Code	Version	Released
X12	UN32F5500AFXZA, UN32F6300AFXZA, UN40F5500AFXZA, UN40F6300AFXZA, UN46F5500AFXZA, UN46F6300AFXZA, UN46F6350AFXZA, UN46F6400AFXZA, UN46F6800AFXZA, UN46F7100AFXZA, UN50F6800AFXZA, UN55F6300AFXZA, UN55F6400AFXZA, UN55F6800AFXZA, UN55F7050AFXZA, UN55F7100AFXZA, UN60F6300AFXZA, UN60F6400AFXZA, UN65F6300AFXZA, UN65F6400AFXZA, UN75F6300AFXZA, UN75F6400AFXZA	T-MST12AKUC	1118.1 or higher	11/27/13

SAMSUNG Electronics

The first Service Bulletin subject is the Random and Intermittent Power Cycle, Reset, for 2013 Model LED TVs listed in the chart from UN32F5500 through the UN75F6400. The related X12 Platform model TVs.

REDO: 2013 LED TV: "Random / Intermittent Power Cycle"

SAMSUNG

3. Replace the lead cable (power) between the Main board and SMPS
   - Note: Make sure to confirm the part number in GSPN
   - UN60F6400 only: BN39-01475H

Screen Size	32 Inch	40 Inch	46 Inch	50~55 Inch	60~65 Inch	75 Inch
Part Number	BN39-01652S	BN39-01652T	BN39-01475C	BN39-01475X	BN39-01652E	BN39-01475Y

* To determine date by Serial number (from step 1) : Production Year and Month:

✓ Production Year (8th digit of Serial No.)

Year	2003	2004	2005	2006 Jan	2006 Feb-Dec	2007	2008	2009	2010	2011	2012	2013	2014
Symbol	W	X	Y	A	L	P	Q	S	Z	B	C	D	E

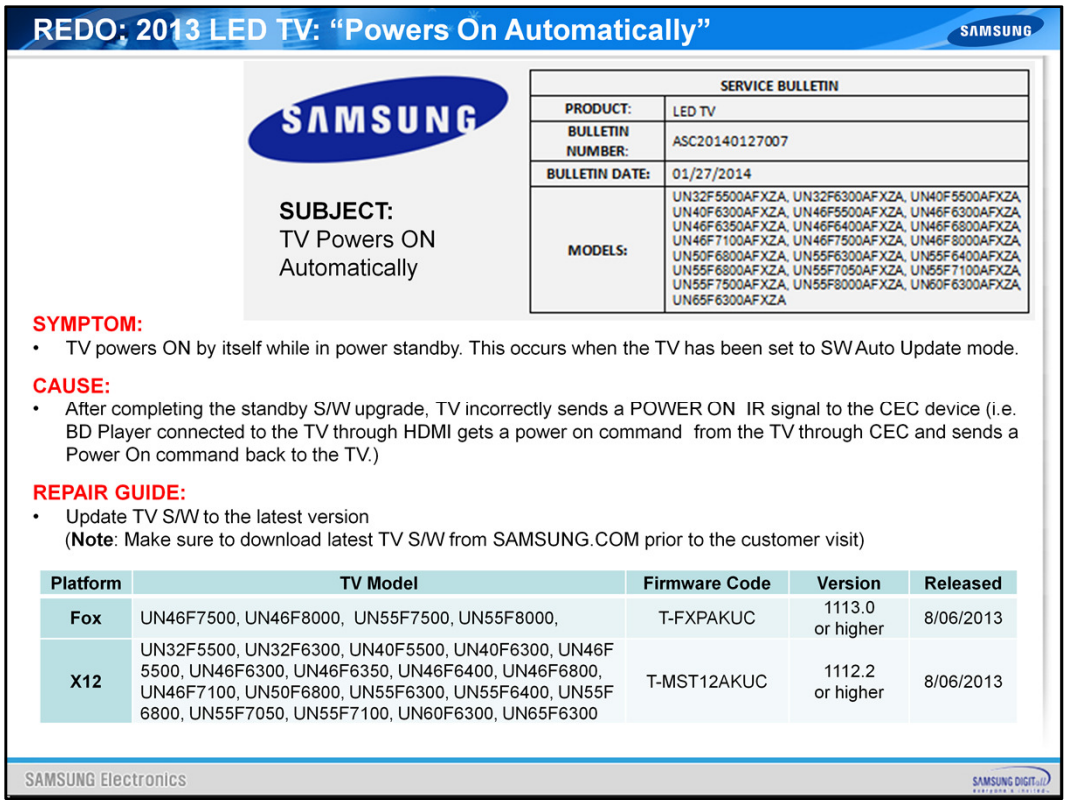
✓ Production Month (9th digit of Serial No.)

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Symbol	1	2	3	4	5	6	7	8	9	A	B	C

✓ Serial No. on Menu: Support → Contact Samsung

SAMSUNG Electronics

The SUBJECT for this Service Bulletin is "The TV Powers ON Automatically" for 2013 TV Models listed that include both Fox and X12 Platform model TVs.



REDO: 2013 LED TV: "Powers On Automatically"

SAMSUNG

SUBJECT:
TV Powers ON Automatically

SERVICE BULLETIN	
PRODUCT:	LED TV
BULLETIN NUMBER:	ASC20140127007
BULLETIN DATE:	01/27/2014
MODELS:	UN32F5500AFXZA, UN32F6300AFXZA, UN40F5500AFXZA, UN40F6300AFXZA, UN46F5500AFXZA, UN46F6300AFXZA, UN46F6350AFXZA, UN46F6400AFXZA, UN46F6800AFXZA, UN46F7100AFXZA, UN46F7500AFXZA, UN46F8000AFXZA, UN50F6800AFXZA, UN55F6300AFXZA, UN55F6400AFXZA, UN55F6800AFXZA, UN55F7050AFXZA, UN55F7100AFXZA, UN55F7500AFXZA, UN55F8000AFXZA, UN60F6300AFXZA, UN65F6300AFXZA

SYMPTOM:

- TV powers ON by itself while in power standby. This occurs when the TV has been set to SW Auto Update mode.

CAUSE:

- After completing the standby S/W upgrade, TV incorrectly sends a POWER ON IR signal to the CEC device (i.e. BD Player connected to the TV through HDMI gets a power on command from the TV through CEC and sends a Power On command back to the TV.)

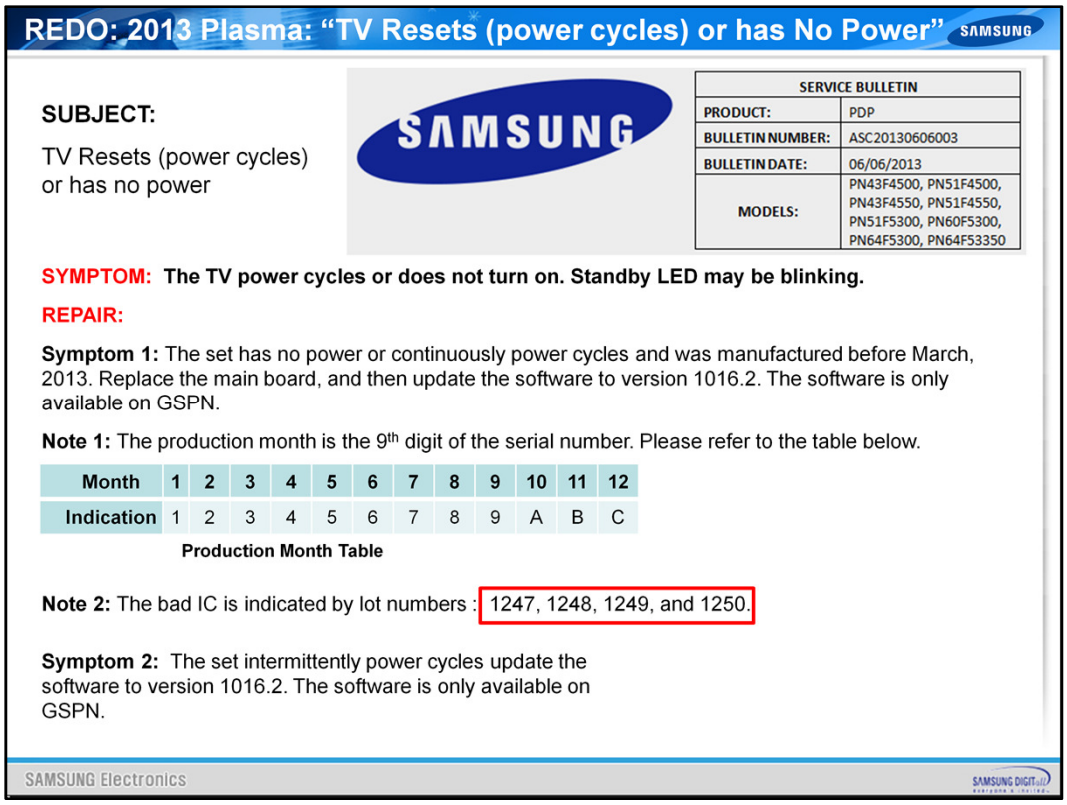
REPAIR GUIDE:

- Update TV S/W to the latest version
  (**Note**: Make sure to download latest TV S/W from SAMSUNG.COM prior to the customer visit)

Platform	TV Model	Firmware Code	Version	Released
Fox	UN46F7500, UN46F8000, UN55F7500, UN55F8000,	T-FXPAKUC	1113.0 or higher	8/06/2013
X12	UN32F5500, UN32F6300, UN40F5500, UN40F6300, UN46F5500, UN46F6300, UN46F6350, UN46F6400, UN46F6800, UN46F7100, UN50F6800, UN55F6300, UN55F6400, UN55F6800, UN55F7050, UN55F7100, UN60F6300, UN65F6300	T-MST12AKUC	1112.2 or higher	8/06/2013

SAMSUNG Electronics

The SUBJECT for this Service Bulletin is "The TV Powers ON Automatically" for 2013 TV Models listed that include both Fox and X12 Platform model TVs.



REDO: 2013 Plasma: "TV Resets (power cycles) or has No Power"

SAMSUNG

SUBJECT:

TV Resets (power cycles) or has no power

SAMSUNG

SERVICE BULLETIN	
PRODUCT:	PDP
BULLETIN NUMBER:	ASC20130606003
BULLETIN DATE:	06/06/2013
MODELS:	PN43F4500, PN51F4500, PN43F4550, PN51F4550, PN51F5300, PN60F5300, PN64F5300, PN64F53350

SYMPTOM: The TV power cycles or does not turn on. Standby LED may be blinking.

REPAIR:

Symptom 1: The set has no power or continuously power cycles and was manufactured before March, 2013. Replace the main board, and then update the software to version 1016.2. The software is only available on GSPN.

Note 1: The production month is the 9th digit of the serial number. Please refer to the table below.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Indication	1	2	3	4	5	6	7	8	9	A	B	C

Production Month Table

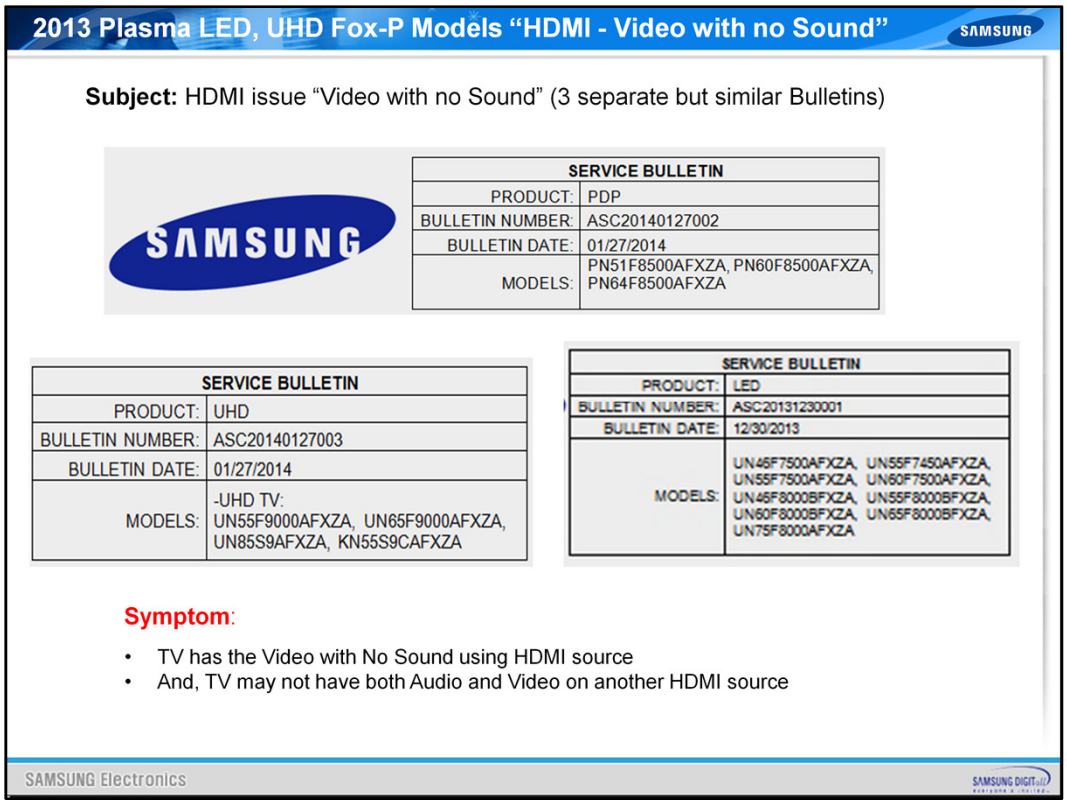
Note 2: The bad IC is indicated by lot numbers : 1247, 1248, 1249, and 1250.

Symptom 2: The set intermittently power cycles update the software to version 1016.2. The software is only available on GSPN.

SAMSUNG Electronics

SAMSUNG DIGIT

The SUBJECT for this Service Bulletin, "TV Resets, power cycles, or has no power" are for specific 2013 Plasma Model TVs listed, including some of the PNF 4500 and PNF 5300 model series.



The Subject for this Service Bulletin HDMI issue is "Video with no Sound". Three separate bulletins have been issued and are seen here for this same symptom for the 2013 models listed. They include the high end F8500 Fox Platform Plasma TVs, F7500 & F8000 LED TVs, and 2013 UHD and OLED TVs.

REDO: 2013 LED & Plasma Fox-P Models “HDMI - Video with no Sound”

Subject: HDMI issue “Video with no Sound”

Repair:

- Firmware update will correct issue for Video with No Sound using HDMI

(Note: Make sure to download the latest TV S/W from Samsung.com prior to customer visit)

Plasma

Platform	TV Model	SW Ver.
Fox-P (2013)	PN51F8500AFXZA, PN60F8500AFXZA, PN64F8500AFXZA	1116.1 or higher

LED

Platform	TV Model	SW Ver.
Fox-P (2013)	UN46F7500AFXZA, UN55F7450AFXZA, UN55F7500AFXZA, UN60F7500AFXZA, UN46F8000BFXZA, UN55F8000BFXZA, UN60F8000BFXZA, UN65F8000BFXZA, UN75F8000AFXZA	1116.1 or higher

UHD

Platform	TV Model	SW Ver.
Fox-P (2013)	UN55F9000AFXZA, UN65F9000AFXZA, UN85S9AFXZA, KN55S9CAFXZA	2005.3 or higher

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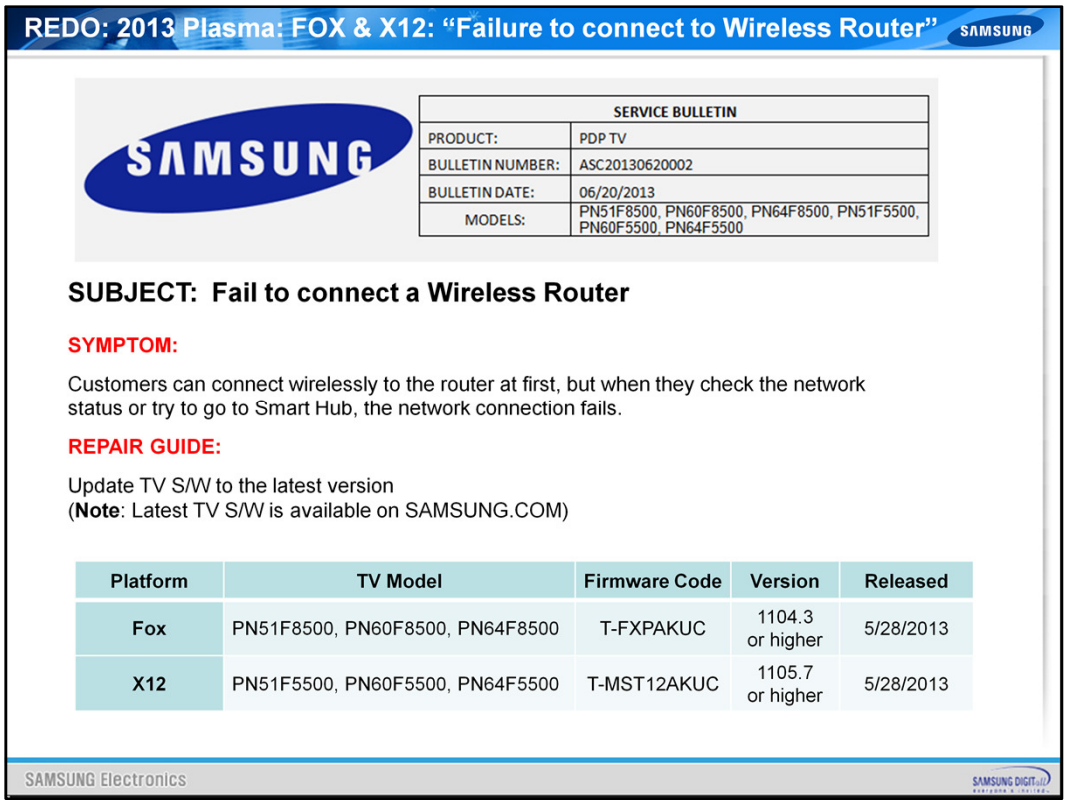
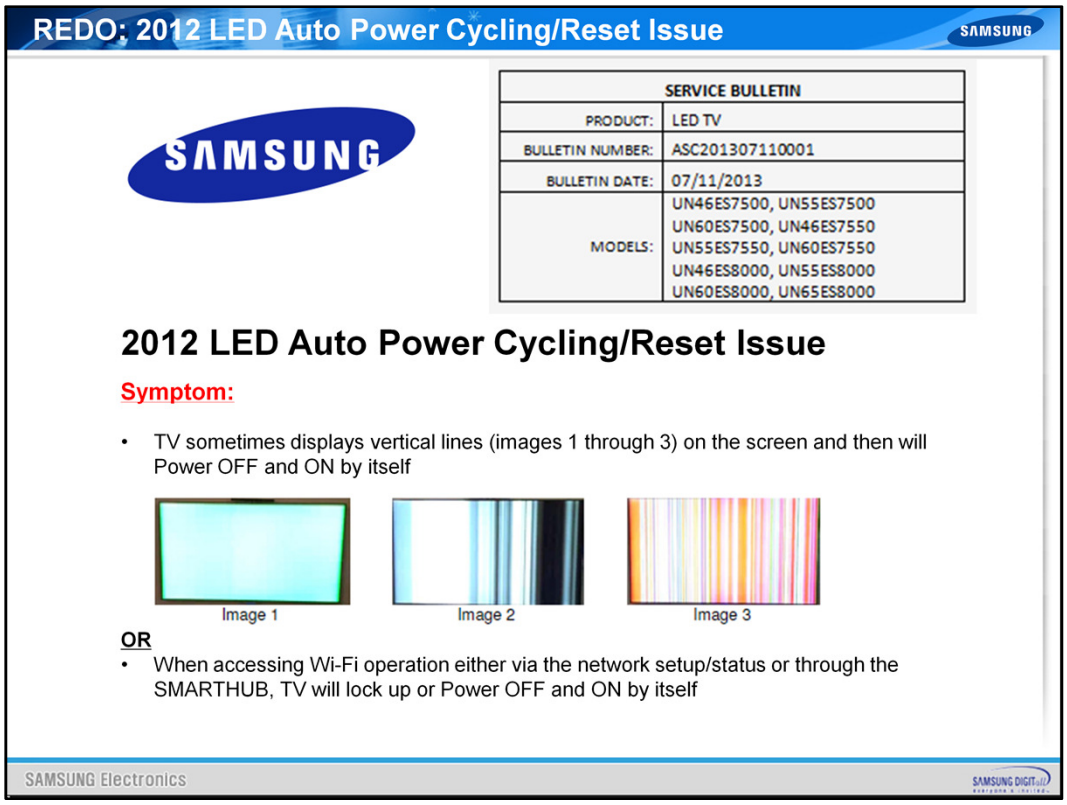


The SUBJECT for this Service Bulletin is "Fail to connect a Wireless Router" for the 2013 Fox and X12 Model Plasma TVs listed.



The Subject for this Service Bulletin is "**2012 LED Auto Power Cycling/Reset Issue**"

REDO: 2012 LED Auto Power Cycling/Reset Issue

Troubleshooting and Service:

First, check the software version. Make sure it has the latest version available (refer to GSPN)
Next check the error codes in the service menu as this issue can be caused by any of the following three issues

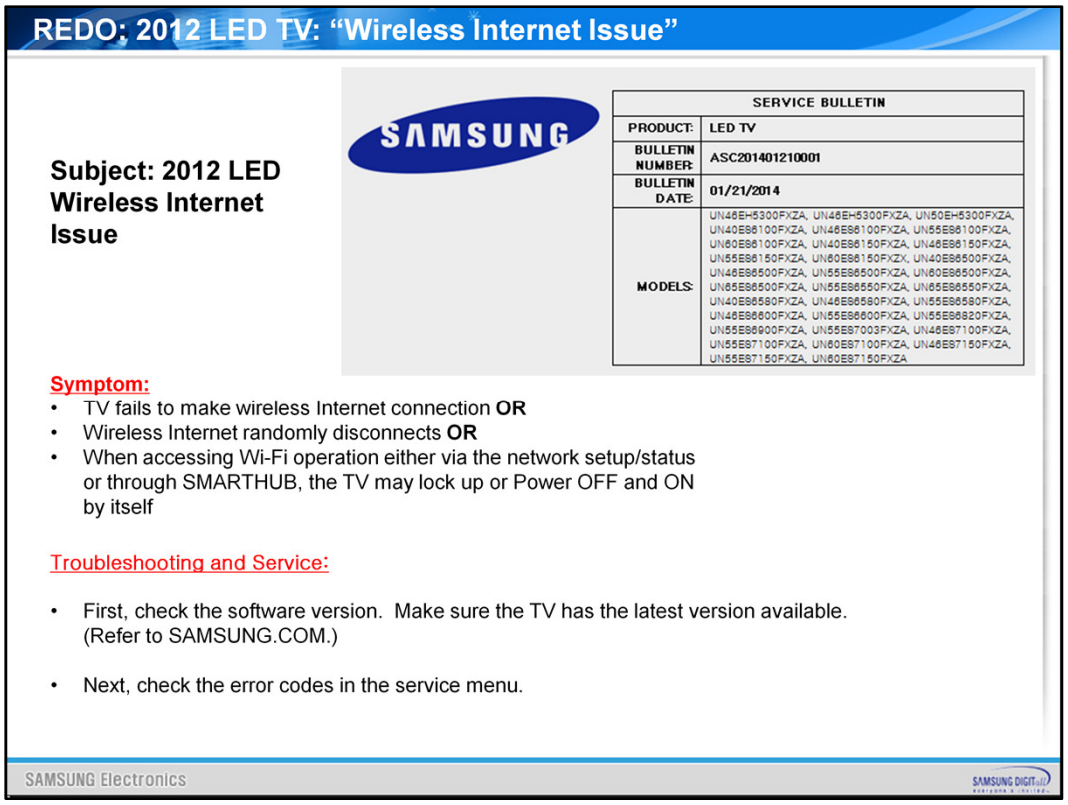
If: WD Count (Service Menu>Control>Sub Option) is higher than 0

- Check the connection on the SMPS and cabling (refer to Image 4)
  If discolored (check closely, the discoloration maybe very minor. Image 4 shows an extreme case); replace the SMPS and the cable between the SMPS and main board.
- Next check the T-Con board connector lot number (refer to Image 5).
  If the first 6 digits of the Lot number are lower than **120531** replace both the LVDS cable and T-Con board
- Next check the AR (Service Menu>Control>Sub Option) and Wi-Fi (Service Menu>SVC) error count. If both are higher than 0 or if the Wireless Mac address displays "Failure" (refer to Image 6) in the service menu, replace the Wi-Fi module

Image 4

Image 5

Image 6



The Subject for this Service Bulletin is **2012 LED Wireless Internet Issue.** It refers to 2012 LED Wi Fi models listed.

REDO: 2012 LED TV: "Wireless Internet Issue"

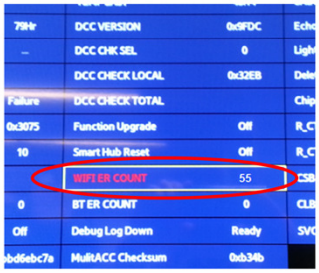
If:

- The wireless Mac address displays "Failure" in the service menu. (Image 1)
- The AR Count (Service Menu>Control>Sub Option) and Wi-Fi error count (Service Menu>SVC) are higher than '0.' (Images 2 and 3)

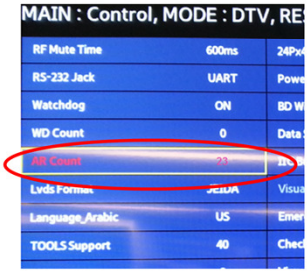
Replace the Wi-Fi module. The new module should be version E03 or E04 as shown on right.

Wi-Fi Module

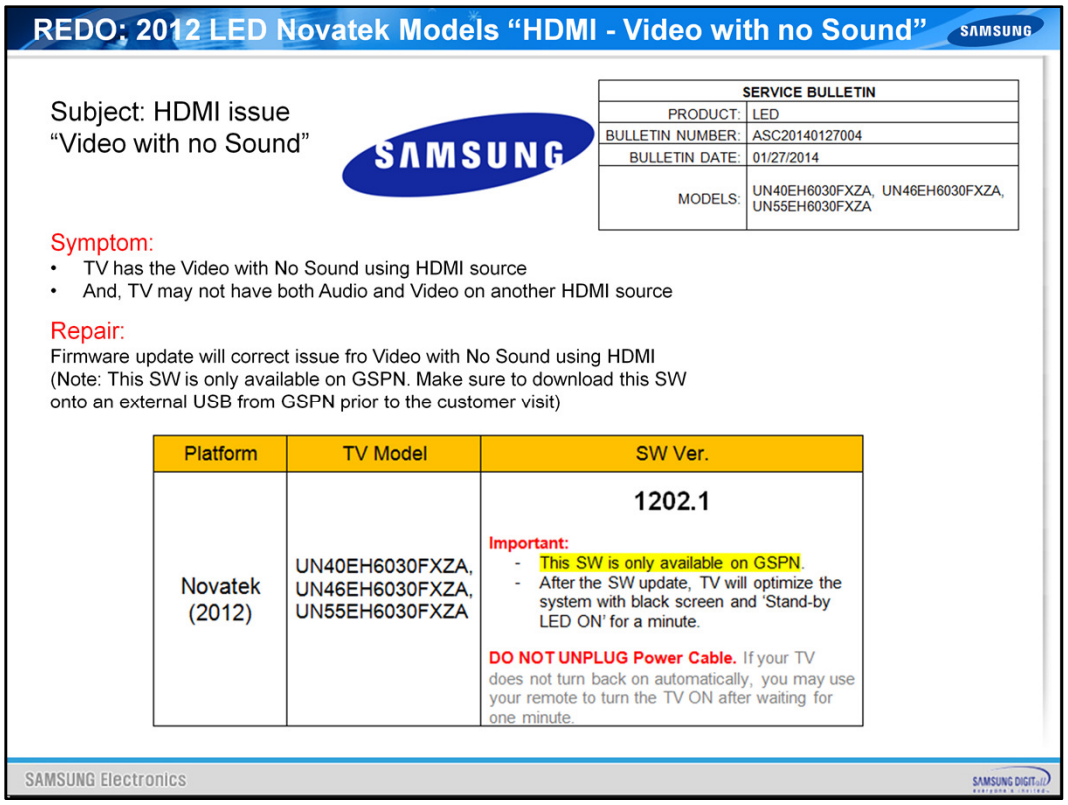
Wireless Mac Address
Image 1



Wi-Fi Error Count
Image 2



AR (Error) Count
Image 3



REDO: 2012 LED Novatek Models "HDMI - Video with no Sound"

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Subject: HDMI issue
"Video with no Sound"

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SERVICE BULLETIN	
PRODUCT:	LED
BULLETIN NUMBER:	ASC20140127004
BULLETIN DATE:	01/27/2014
MODELS:	UN40EH6030FXZA, UN46EH6030FXZA, UN55EH6030FXZA

Symptom:

- TV has the Video with No Sound using HDMI source
- And, TV may not have both Audio and Video on another HDMI source

Repair:

Firmware update will correct issue fro Video with No Sound using HDMI
(Note: This SW is only available on GSPN. Make sure to download this SW onto an external USB from GSPN prior to the customer visit)

Platform	TV Model	SW Ver.
Novatek (2012)	UN40EH6030FXZA, UN46EH6030FXZA, UN55EH6030FXZA	1202.1 Important: - This SW is only available on GSPN. - After the SW update, TV will optimize the system with black screen and 'Stand-by LED ON' for a minute. DO NOT UNPLUG Power Cable. If your TV does not turn back on automatically, you may use your remote to turn the TV ON after waiting for one minute.

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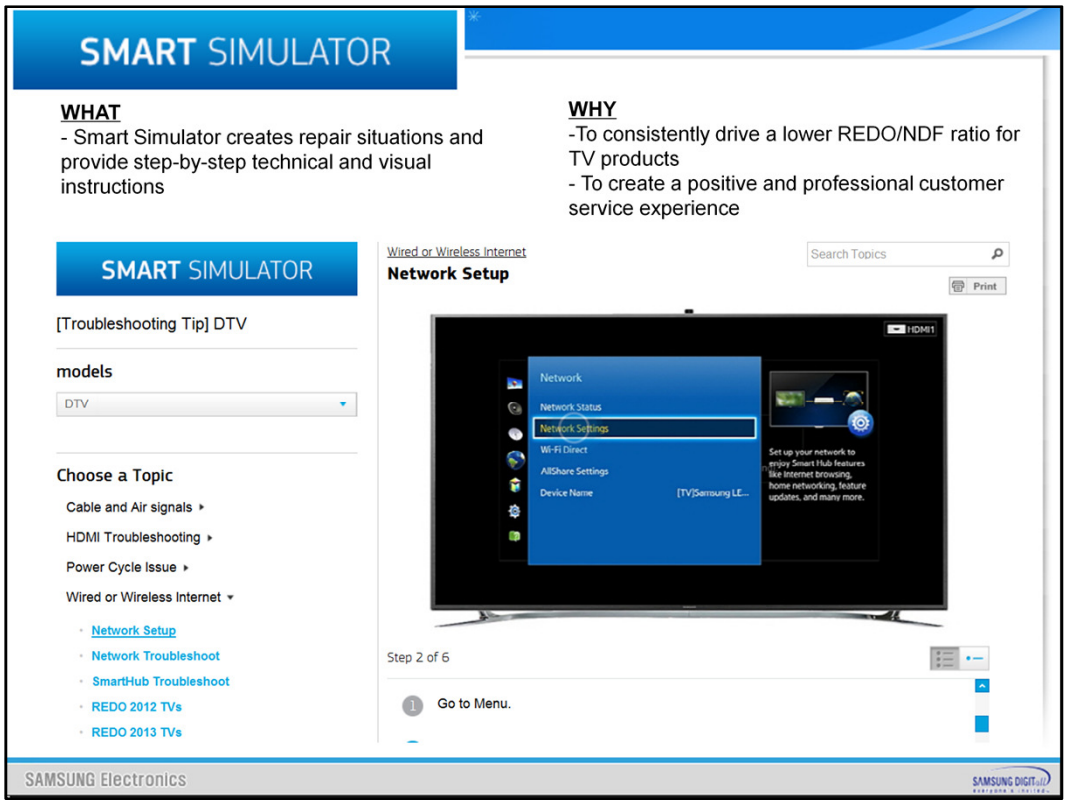
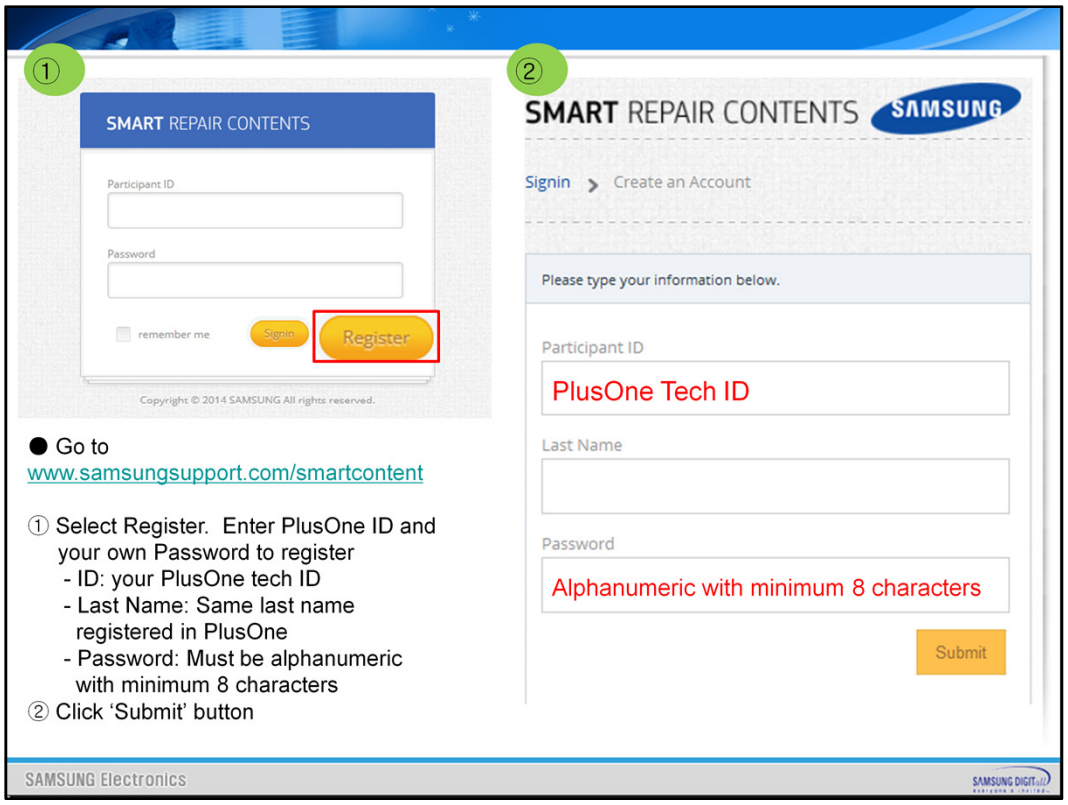
This Service Bulletin Subject is again for HDMI issue "Video with no Sound" for the 2012 LED Novatek Platform Models listed.



Samsung's new **Smart Simulator**!

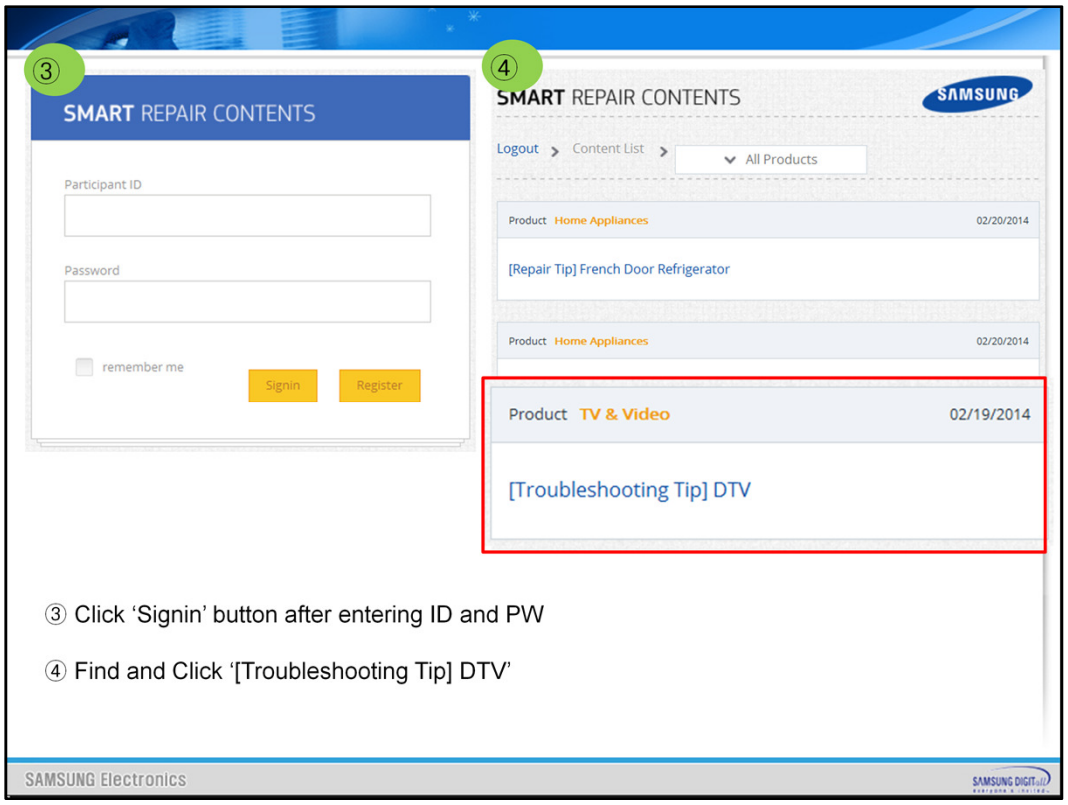
The Smart Simulator creates repair situations and provide step-by-step technical and visual instructions.



A step by step registration procedure is shown.

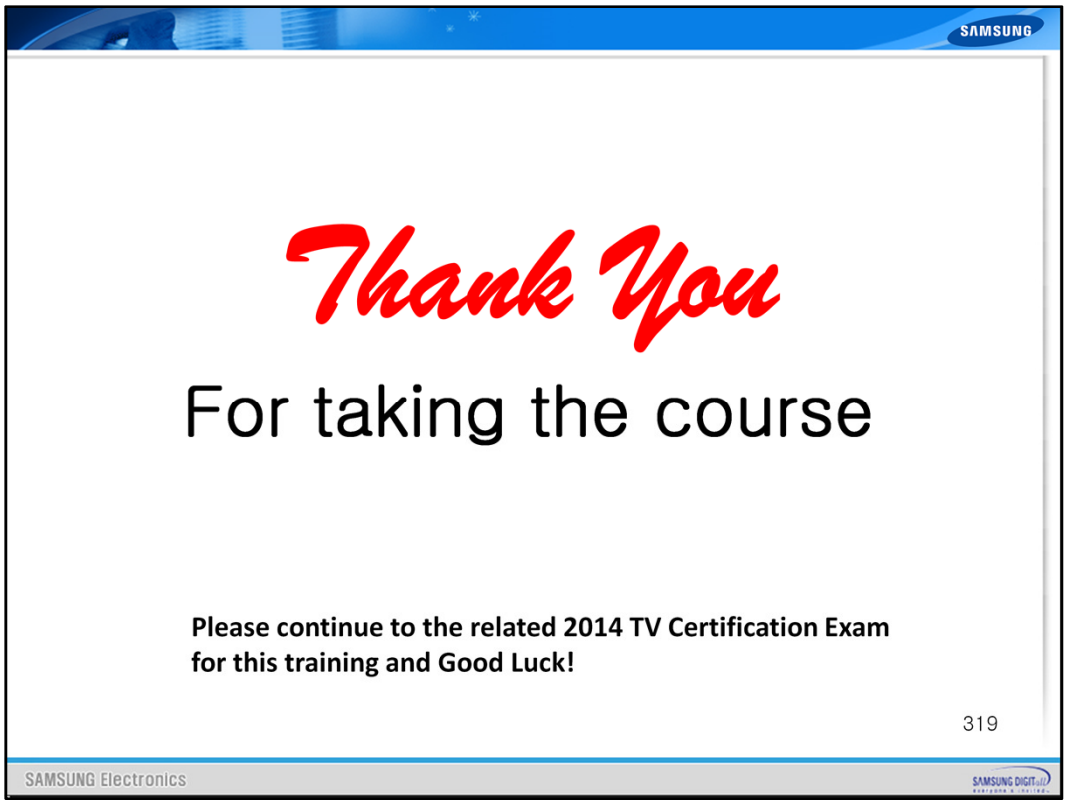
Go to www.samsungsupport.com/smartcontent

1. Select Register. Enter PlusOne ID and your own Password to register, The ID is your PlusOne tech ID. Enter Last Name, Same last name registered in PlusOne. Enter a Password, Must be alphanumeric with a minimum 8 characters.
2. Click 'Submit' button.



3. Click Sign in button after entering I D and Pass Word.
4. Find and Click Troubleshooting Tip D T V.

The Smart Simulator will continue to expand with additional content throughout 2014. We invite you to begin using this new and important troubleshooting and training tool.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Thank You
For taking the course
Please continue to the related 2014 TV Certification Exam
for this training and Good Luck!
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