4. Troubleshooting

4-1. Troubleshooting

4-1-1. Previous Check

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

4-1-2. No Power

Symptom	 The LEDs on the front panel do not work w The SMPS relay does not work when connormal terms appears to be dead. 	hen connecti ecting the po	ng the power cord. wer cord.
Major Check points	 The IP relay or the LEDs on the front panel doe cables are improperly connected or the Main B the following: Check the internal cable connection status Check the fuses of each part. Check the output voltage of SMPS. Replace the Main Board. 	es not work w oard or SMP inside the un	when connecting the power cord if the S is not functioning. In this case, check it.
	Lamp (Backlight) Off, power indicator LED off?	No	Change the 14p power cable.
	Lamp (Backlight) Off, power indicator LED on?	No	Change INVERTER / BALANCE Board.
	¥es Does proper Stand-By DC A5 V appear at VIA - A5 V_PW?	No	
Diagnostics	¥es Does proper Main DC B13 V, B5 V appear at VIA - B13 V_PW, B5 V_PW?	No	
	Ves Does proper DC A3.3 V appear at VIA - A3.3 V_PW?	No	Change the Main Assy.
	Ves Does proper B3.3 V, B1.5 V appear at VIA - B3.3 V_PW, B1.5 V_PW?	No	
	Ves Does proper DC B13 V appear at LVDS connector Pin #1∼5 of T-con board?	No 🔸	Change the LVDS cable.
	Yes Does proper DC B13 V appear at F1 of T-con board?	No 🔸	Change the T-con board.
	Yes	No	Check a other function
Caution	Make sure to disconnect the power before wor	king on the IF	P board.





4. Troubleshooting



LD450 19" 22" The LEDs on the front panel do not work when connecting the power cord. Symptom The SMPS relay does not work when connecting the power cord. The units appears to be dead. The IP relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following: **Major Check** Check the internal cable connection status inside the unit. points Check the fuses of each part. _ _ Check the output voltage of SMPS. _ Replace the Main Board. Lamp (Backlight) Off, No Change the 9p power cable. power indicator LED off? Yes Lamp (Backlight) Off, No Change INVERTER / power indicator LED on? BALANCE Board. Yes Does proper Stand-By DC A13 V, A5 V No appear at VIA - A13 V_PW, A5 V_PW? Diagnostics Yes Does proper Main DC B13 V, B5 V appear No at VIA - B13 V PW, B5 V PW? Yes Change the Main Assy. Does proper DC A3.3 V appear at VIA -No A3.3 V PW? Yes Does proper B3.3 V, B1.5 V appear at VIA No - B3.3 V PW, B1.5 V DDR PW? Yes Does proper DC B13 V appear at LVDS No Change the LVDS cable. connector Pin #1~5 of Panel? Yes Check a other function No A power is supplied to set? (No picture part) Replace a LCD Panel. Caution Make sure to disconnect the power before working on the IP board.







4-1-3. No Video (Analog PC Signal)

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the PC source Check the Arsenal, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
	Power indicator LED is off. Lamp (Backlight) on, no video?
	Yes
Diagnostics	Check the PC source and check the connection of D-SUB?
	v Yes
	Does the signal appear at PIN - R, G, B, HS, VS (R, G, B, H, V)? No Check CN401, PC cable. Change the Main Assy.
	YYes
	Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-? No Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.
	Yes
	Check the LVDS cable? Check the T-Con Board? Replace the LCD panel?
Caution	Make sure to disconnect the power before working on the IP board.
	· • •





LD450_19" 22"

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the PC source Check the Arsenal, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
	Power indicator LED is off. Lamp (Backlight) on, no video?
	Yes
Diagnostics	Check the PC source and check the connection of D-SUB?
	Yes
	Does the signal appear at PIN - R, G, B, No Check CN401, PC cable. Change the Main Assy.
	Yes
	 Does the digital data appear at TP-E_ TXCLK+, E_TXCLK-, O_TXCLK+, O_ TXCLK-? No Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.
	Yes
	Check the LVDS cable? Check the Connector of Panel? Replace the LCD panel?
Caution	Make sure to disconnect the power before working on the IP board.





WA + 2008/12/08 23:30:28 cl 2.009 Nam: 5:5 M	Normal 0.2.95%/s 11Position 0.7280.div 10ms/div(sms/div) 0.2001 20000 20001 20000 20001	YOKOGAWA - 2006/12/06 22:24:30 Stopped 1	Normal IntP 12503/s Zir/2514 Zir/dv Copy to
Zoom	OFF ON V_sync V_sync V_sync H_sync Auto Scroll Setup		R/G/B data File Format FEG Color Format FEG Color Format FEG Color Auto Name Nu_sync Auto Name Nuterion
имяли Full To U 1 1 1 1 1 1 1 1 1 1	V_sync Patterni/Mark Off CN Zeity DC Off #	011(#8401) DC Full 2.00 V/dv 10:1 10:1	Edge S SDinW DC OFF
2 LVDS output	Rer mal bit/ 250% 2008/div FRC_HSYNC FRC_HSYNC File Fromat JPCG		
	Data_Clk True Color 200mj/dir FRC_HSYNC File Path Auto Rame Pambering		

4-1-4. No Video (HDMI1, 2, 3, 4 - Digital Signal)

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the HDMI source. Check the HDMI switch, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
	Power indicator LED is off. Lamp (Backlight) on, no video?
	Yes
Diagnostics	Check the HDMI source and check the connection of HDMI cable?
	Yes
	Does the signal appear at CN601_H1 (Pin#12, #7) (HDMI1) CN604_H2 (Pin#12, #7) (HDMI2) CN602_H3 (Pin#12, #7) (HDMI3) CN603_H4 (Pin#12, #7) (HDMI3) CN603_H4 (Pin#12, #7) (HDMI4) (HDMI RX_Clk, RX_Data)? No Check CN601_H1,CN604_H2 CN602_H3,CN603_H4 Check HDMI cable Change the Main Assy.
	Yes
	Does the digital data appear at TP-E_ TXCLK+, E_TXCLK-, O_TXCLK+, O_ TXCLK-?
	Yes
	Check the LVDS cable? Check the T-Con Board? Replace the LCD panel?
Caution	Make sure to disconnect the power before working on the IP board.



Symptom _ Audio is normal but no picture is displayed on the screen. _ Check the HDMI source. **Major Check** Check the HDMI switch, Check the Chelsea. _ points This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected. Power indicator LED is off. No Check a set in the 'Stand-by mode'. Lamp (Backlight) on, no video? Yes Diagnostics Check the HDMI source and check the No Input the HDMI signal properly. connection of HDMI cable? Yes Does the signal appear at CN601_H1 Check CN601 H1 No 3 (Pin#12, #7) (HDMI1) Check HDMI cable (HDMI RX Clk, RX Data)? Change the Main Assy. Yes Does the digital data appear at No Check IC1111 (X5) / IC1001 (X9). 2 TP-E TXCLK+, E TXCLK-, Change the Main Assy. O_TXCLK+, O_TXCLK-? Yes Check the LVDS cable? No Check the Connector of Panel? Please, Contact Tech support. Replace the LCD panel? Caution Make sure to disconnect the power before working on the IP board.

HDMI1 Digital Signal LD450_19" 22"



3	HDMI Input (RX_Data, RX_CIk)
YCKOGAWA 2008/ Stopped	2/09/22:13:52 15 22:500 20rs/dr 20rs/dr 20rs/dr RX_Data
	HV H V H V H V H V H V H V H V H
Contractor 10:11 access Contractor 10:11 10:12	LVDS Output
YOKOGAWA + 2008/ Stopped	2/09/19:24:21 4 15 15 15 15 15 15 15 15 15 15
L L L L L L L L L L L L L L L L L L L	n 200m/dV FRC_HSYNC Data_clk
CH11 INPUT DC Full 5.00 V/div 10:1	Control Contr

4-1-5. No Video (Tuner_CVBS)

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the Tuner CVBS source. Check the Tuner, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	disconnected.
	Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-? Ves Ves
	Check the LVDS cable? Check the T-Con Board? Replace the LCD panel?
Caution	Make sure to disconnect the power before working on the IP board.





LD450_19" 22"

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the Tuner CVBS source. Check the Tuner, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
	Power indicator LED is off. Lamp (Backlight) on, no video?
Diagnostics	Check the RE source and check the No
	connection of RF cable?
	Yes
	Does the DC B5V_TU_PW, B33V_TU_No Change the Main Assy.
	Yes
	Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-? No Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.
	Yes
	Check the LVDS cable? Check the Connector of Panel? Replace the LCD panel? No Please, Contact Tech support.
Caution	Make sure to disconnect the power before working on the IP board.





LVDS Output				
OGAWA → 2008/12/09 19:24:21		Normal		
pped 4	Mar 5 M	IntP_25GS/s 20us/div PRINT		
	FRC			
		Format JPEG		
		Data_clk		
Zoom	Z1 : 50 k	200ns/div		
	FRC	LHSYNC		
ц т		Auto Name		
		Numbering		
CAT INPOT		Edge		
DC Full DC Full 5.00 V/div 500mV/div 10.1		2.20 V DC OFF		

4-1-6. No Video (Tuner DTV)

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the DTV source. Check the Tuner, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
	Power indicator LED is off. Lamp (Backlight) on, no video?
	Yes
Diagnostics	Check the connection of RF cable? No Input the RF source properly.
	Yes
	Check the 'signal strength' in Self No Check the D-TV source.
	Yes
	Does the DC B5V_TU_PW, B33V_TU_ No PW appear at #3, #5 Pin of Tuner? Change the Main Assy.
	Yes
	Does the digital data appear at No Check IC1111 (X5) / IC1001 (X9). Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.
	Yes
	Check the LVDS cable? Check the T-Con Board? Replace the LCD panel? No Please, Contact Tech support.
Caution	Make sure to disconnect the power before working on the IP board.





4. Troubleshooting

LD450_19" 22"

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the DTV source. Check the Tuner, Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
	Power indicator LED is off. Lamp (Backlight) on, no video?
	Yes
Diagnostics	Check the connection of RF cable? No Input the RF source properly.
	Yes
	Check the 'signal strength' in Self No Check the D-TV source.
	Yes
	Does the DC B5V_TU_PW, B33V_TU_ No Change the Main Assy.
	Yes
	Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-? No Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.
	Yes
	Check the LVDS cable? Check the Connector of Panel? Replace the LCD panel? No Please, Contact Tech support.
Caution	Make sure to disconnect the power before working on the IP board.





2	LVDS Output	
YOKOGAWA 🔶 2008/1	2/09 19:24:21	Normal O
Stopped	Mar 5 M	ERC HSYNC
		Fire Format JPEG
		Data_cik
Zoom		FRC_HSYNC
T. ÷		Auto Name Numbering
CHI INPOT DC Full		Data_clk
5.00 V/div 10:1	500mV/div 10:1	2.20 V DC OFF A

4-1-7. No Video (Video CVBS)

Symptom	 Audio is normal but no picture is displayed on the screen.
Major Check points	 Check the Video CVBS source Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	Power indicator LED is off. Lamp (Backlight) on, no video?
	Yes
	Check the video source and check the connection of video cable?
	Yes
	Does the CVBS data appear at PIN - COMP1_Y_CVBS, COMP2_Y_ CVBS? CVBS? CVBS
	Yes
	Does the digital data appear at No Check IC1111 (X5) / IC1001 (X9). TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-? Check IC1111 (X5) / IC1001 (X9).
	Yes
	Check the LVDS cable? Check the T-Con Board? Replace the LCD panel?
Caution	Make sure to disconnect the power before working on the IP board.




LD450_19" 22"

Symptom	 Audio is normal but no picture is displayed on the screen. 					
Major Check points	 Check the Video CVBS source Check the Chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected. 					
	Power indicator LED is off. Lamp (Backlight) on, no video?					
Diagnostics	Check the video source and check the connection of video cable?					
	✓ Yes Does the CVBS data appear at PIN - COMP1_Y_CVBS, COMP2_Y_CVBS? No CVBS? CVBS? CVBS					
	Yes					
	Check the LVDS cable? Check the Connector of Panel? Replace the LCD panel? No Please, Contact Tech support.					
Caution	Make sure to disconnect the power before working on the IP board.					





■ WAVEFORMS

4 CVBS OUT (G	rey Bar)
VCH2GAWA © 2006/12/00 23:52:27 Stopped 1 H	Normal table looks Image: solution in the soluti
2 LVDS Output	
VOICCOMMA 2000/12/001/9-24/21 Stopped	Normal Juff 25G/s Juff 25G/s FRC_HSYNC FRC_HSYNC Data_clk From t JVEG 2 20 b 2 20 b FRC_HSYNC File Path FRC_HSYNC File Path Image: State of the path Image: State of the path Image: State of the path Image: State of the path Image: State of the path Image: State of the path Image: State of the path Image: State of the path
DE MORSE DE	

4-1-8. No Video (Component)

LD550_LD450_26" 32" 37" 40" 46"

Symptom	 Audio is normal but no picture is displayed on the screen. 					
Major Check points	 Check the Component source Check the chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected. 					
	Power indicator LED is off. Lamp (Backlight) on, no video?					
	YYes					
Diagnostics	Check the component source and check the connection of component cables (Y,Pb,Pr)?					
	Yes					
	Does the component data appear at PIN - COMP2_Y_CVBS, COMP2_PB, COMP2_PR? No Check CN501_EU, CN502_NEU Change the Main Assy.					
	Yes					
	Does the digital data appear at TP-E_TXCLK+, E_TXCLK-, O_TXCLK+, O_TXCLK-? No Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.					
	Yes					
	Check the LVDS cable? Check the T-Con Board? Replace the LCD panel?					
Caution	Make sure to disconnect the power before working on the IP board.					





4. Troubleshooting

LD450_19" 22"

Symptom	 Audio is normal but no picture is displayed on the screen. 					
Major Check points	 Check the Component source Check the chelsea. This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected. 					
	Power indicator LED is off. Lamp (Backlight) on, no video? No Check a set in the 'Stand-by mode					
Diagnostics	Yes Check the component source and check the connection of component cables (Y,Pb,Pr)?					
	Yes Does the component data appear at PIN - COMP2_Y_CVBS, COMP2_PB, COMP2_PR?					
	Yes Does the digital data appear at TP-E_TXCLK+, E_TXCLK+, O_TXCLK+, O_TXCLK-? Ves Check IC1111 (X5) / IC1001 (X9). Change the Main Assy.					
	YYes					
	Check the LVDS cable? Check the Connector of Panel? Replace the LCD panel? No Please, Contact Tech support.					
Caution	Make sure to disconnect the power before working on the IP board.					





■ WAVEFORMS

5 Compnent_Y (Gray scale) / Pb / Pr (Color	bar)
VCKOGAWA 2008/12/10 00:18:13 Stopped 152 13 To To To To Coupling AC DC Hysterests AC TC Coupling AC DC Hysterests AC TC Hysterests AC TC Hyste	VCHC/GMMA 2008/12/10 00:20:35 Storped 167 Ti 1 Comp_Pb Comp_Pb Comp_Pb Retrict Retrict Storped Comp_Pb Retrict Retrict Storped Comp_Pb Retrict Retrict Retrict Storped Retrict
2 LVDS Output	
VOXCOGAVA 2008/12/09 19:24:21 Straged 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5	

4-1-9. No Sound

LD550_LD450_26" 32" 37" 40" 46"

Symptom	 Video is normal but there is no sound 				
Major Check points	 When the speaker connectors are disconnected or damaged. When the sound processing part of the Main Board is not functioning. Speaker defect. 				
Diagnostics	Check the source and check the connection of sound cable (Comp/AV/PC/DVI to HDMI)? Ves Does the sound data appear at PIN- SC_COMP1_AV1_SL_IN, SC_COMP1_ AV1_SR_IN, PIN - COMP2_AV2_SL_IN, COMP2_AV2_SR_IN, VIA - PC_L, PC_R (PC/DVI)? Ves Does the DC B12VS appear at CN201 PIN 7, 9 - B12_18VS_PW? Ves Does the sound data appear at (PC/DVI)? Ves Does the sound data appear at CN201 PIN 7, 9 - B12_18VS_PW? Ves Does the sound data appear at TP- SPK_L+, SPK_R-, SPK_ Replace speaker. No Please, Contact Tech support.				
Caution	Make sure to disconnect the power before working on the IP board.				





LD450_19" 22"

Symptom	 Video is normal but there is no sound 					
Major Check points	When the speaker connectors are disconnected or damaged. When the sound processing part of the Main Board is not functioning. Speaker defect					
	Check the source and					
	check the connection of sound cable (Comp/AV/PC/DVI to HDMI)?					
Diagnostics	↓ Yes Does the sound data appear at PIN - SC_COMP1_AV1_SL_IN, SC_COMP1_ AV1_SR_IN, PIN - COMP2_AV2_SL_IN, COMP2_AV2_SR_IN, VIA - PC_L, PC_R (PC/DVI)?					
	Yes Does the DC A18V appear at CN201 No PIN 8 - A18V_PW? Change the Main Assy.					
	Yes Does the sound data appear at TP - SPK No Check IC1111 (X5) / IC1001 (X9). L-, SPK_L+, SPK_R-, SPK_R+? Check IC1401_WF (Sound AMP).					
	Yes Replace speaker. No → Please, Contact Tech support.					
Caution	Make sure to disconnect the power before working on the IP board.					





■ WAVEFORMS

Speaker Out





4-2. Alignments and Adjustments

4-2-1. General Alignment Instuction

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

4-3. Factory Mode Adjustments

4-3-1. Entering Factory Mode

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

- If you do not have Factory remote - control



4-3-2. How to Access Service Mode

Using the Customer Remote

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

Option	T-MST ♠ D ♠ ♠ C-XXXX	٨	OF	PTION (Option-Model)
Control	T-MST ♠ D ♠ ♠ S-XXXX	5	X6-TV	UD5500 / UD5700
SVC	E-Manual: XXXXXXXXXXXXXXXXXXXXX	4	X5-TV / X9-TV	LD400/LD450/LD480/LD550/ LD570/LD580/UD4000/ UD4010/UD5000
Expert		M	X5-MEM	TA350 / TA550
ADC/WB	HDCP SUCCESS			
Advanced	CALIB: AV / COMP / PC / HDMI /	* *	OP1	ION (Option-Local Set)
	Option: XXXX XXXX	EU	EU/E	U_*/NORDIG/CIS_*/AD_*
	T-MSXDXX-XXXX	AA		EA_*/ED_*
	SDAL-X.XX.X.X			
	RFS: "Mstar-X5 XXXX"			
	20XX-XX-XX			
	FUNC-TAG-ERR			
	Type: XXXXXXXX			
	Model: XXXXXXXX			
	Wired MAC SUCCESS (or Not Available)			
	CIP SUCCESS LOCK X			
	Factory Data Ver: XX			
	EERC Version: XXX			
	DTP-AP-COMP-XXX			
	DTP-BP-HAL-XXXX			
	DTP-BP-XXXX-XX			
	Date Of Purchase: XX/XX/XXXX			

How to enter the hidden factory mode.

- into the factory mode
- move the tap to Advanced
- key input: 0 + 0 + 0 + 0
- hidden menu: Advanced
- 6. Buttons operations withn Service Mode

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

4-3-3. Factory Data

Option				
Factory Name	Data	Range	Use	
Factory Reset				
Туре		19A6TH0C/19I6TH0C/22D6TF0C/22I6TF0C/26A 6AH0C/26D6AH0C/26L6AH0C/32A6AF0C/32A6 AH0C/32D6AF0C/32L6AH0C/37L6AF0C/40A6AF 0C/40D6AF0C/40L6AF0C/46A6AF0C/46D6AF0C /19A6TH0E/19L6TH0E/22D6TF0E/22L6TF0E/23 A6TF0E/24L6TF0E/27A6TF0E/32A6AH0E/32A6 UF0E/32P6AH0E/32P6UF0E/32L6UF0E/32L6AH 0E/37P6UF0E/40A6UF0E/40P6UF0E/40H6UF0E /46A6UF0E/46P6UF0E/43DHHcD/51DFHcD/51D HHcD/51DSArD/51DSCrD/59DFHcD/59DSArD/5 9DSCrD/64DFHcD/64DSCrD	Select Panel Type 2: inch : vendor : refresh : POL : resolution : multi : BLU	
Local Set	EU	EU/EU_ITALY/EU_GER/EU_FRANCE/EU_ BENELUX/EU_UK/EU_ARMENIA/NORDIG/ AD_AU/AD_NZ/AD_SINGAPOL/CIS_RUSIA/ CIS_UKRINA/CIS_KAZAKH/EU_TURKEY/ EU_AFRICA/EU_MOROCO/EA_VIET/EA_THAI/ EA_INA/EA_CHINA/EA_INDIA/EA_SRILANKA/ EA_NEPAL/EA_BANGLA/EA_IRAN/EA_ISRAEL/ EA_EGYPT/EA_LIBYA/EA_CIS/EA_M_ASIA/ EA_IRAQ/EA_ARAB/EA_SAUDI/EA_PAKISTAN/ EA_E_ASIA/EA_AFRICA/EA_S_AFRICA/ EA_MAL/EA_PHI/ED_IRAN/ED_VIET/ED_INA/ ED_ISRAEL/COLOMBIA/TAIWAN	Select Area	
Model	LD550	LD400/LD450/LD480/LD550/LD570/LD580/ UD4000/UD4010/UD5000/UD5500/UD5550/ UD5700/PD450/PD451/PD460/PD490/PD491/ PD540/PD541/PD550/PD551/PD560/PD570/ PD6400/PD6500/PD6600/PD6900/PD7000/ LD460H/LD463H/LD467H/LD468H/LD560H/ LD568H/LD580H/UD4000H/UD5000H/UD5500H	Select Model	
TUNER	SEC_ TC	SEC_ATSC/SEC_TC/ALPS_TC/SI_TCS/SI_T2/ SEC_ISDB/SEC_ATC/SI_ATC/SI_TW	EU/AU (DVB-TC/DVB-T): SEC_TC Satellite (DVB-TCS): SI_TCS UK T2 (DVB-T2C): SI_T2 Ready: SEC_ATC	
Ch Table		PBA/SUWON/SESK/SEH/SERK/SDMA_AU/ SDMA_NZ/SDMA_SG/SEIN/SAVINA/SIEL_C/ SIEL_N/TTSEC/TSED/TSE/IRAN/SESK-T2/ SUWON-T2/INL		
Front Color		P-S-C-BK/P-S-R-BK/P-S-BK/P-S-B-BK/P-T-R- BK/P-T-C-BK/P-T-W-Bn/P-T-W-Gy/P-T-M-Bn/P- T-C-Gy/P-T-R-Gy/P-W-Milk/P-W-M-Wt/P-W-D- Gy/P-W-Vio/L-S-C-BK/L-S-R-BK/L-S-B- BK/L-T-R-BK/L-TC-BK/L-T-W-Bn/L-T-W-Gy/L-T- M-Bn/L-T-C-Gy/L-T-R-Gy/L-W-Milk/L-W-M-Wt/L- W-D-Gy/L-W-Vio/U-S-C-BK/U-S-R-BK/U-S-BK/U- S-B-BK/U-T-R-BK/U-T-C-BK/U-T-W-Bn/U-T-W- Gy/U-T-M-Bn/U-T-C-Gy/U-T-R-Gy/U-T-BL-M/U- T-BK-M/U-TC-L-M/U-W-Milk/U-W-M-Wt/U-W-D- Gy/U-W-Vio	LD4**: L-S-R-BK LD5**: L-T-C-BK UD40**: U-S-BK UD50**: U-T-C-BK UD55**/UD57**: U-T-R-BK	

Control			
Factory menu Name			
EDID			
Sub Option			
Shop Option			
Sound			
Factory Name	Data	Range	Use
EDID			
EDID ON/OFF	OFF		
EDID WRITE ALL		Download EDID data to EEPROM.	
EDID WRITE PC		1. Set "ON" of EDID ON/OFF	
EDID WRITE HDMI		2. Go EDID WRITE ALL and Push	
EDID WRITE HDMI1		3. 3. If You See Success message.	
EDID WRITE HDMI2		SET "OFF" of EDID ON/OFF	
EDID WRITE HDMI3			
EDID WRITE HDMI4		1. Go EDID VER and Set HDMI 1.2	
EDID VER		2. Go EDID PORT and Select HDMI	
EDID PORT		port	
EDID WRITE DVI			
Sub Option			
RS-232 Jack	UART	Debug/Logic/UART	Select Setting of UART port. Initial value is "UART"
Watchdog	ON	ON/OFF	Select Watchdog. Initial value is "ON"
WD Count	0	255	Watchdog Count. Read Only.
Dimm Type	EXT	fixed	Select Dimming Type. Initial value is "EXT"
Lvds Format	JEIDA	JEIDA/VESA/19INCH	Select LVDS format. 19/22/27inch:"VESA" other inch:"JEIDA"
OTN Server Type	operating	operating/development	
OTN Test Server	OFF	OFF/ A/B/C/D/E Zone	
OTN Support	ON	ON/OFF	
OTN Reset		not modifyed	
OTN Duration	OFF	ON/OFF	
OTN Fail Test	OFF	ON/OFF	
View Log		not modifyed	
KEY SENSITIVITY	36	0~255	LD400: 72 LD45*/LD48*/LD5**: 36 UD40**: 38 UD50**: 41 UD55**/UD57**:36 TA350: 32 TA550: 34

Control				
Factory Name	Data	Range	Use	
			Local Set	WiFi
			EU	E
			EU_Italy	E
			EU_Germany	E
			EU_France	E
			EU_Benelux	E
			EU_UK	E
			EU_Armenia	A
			NORDIG	E
			AD_Au	E
			AD_NZ	H
			AD_Singapol	F
			CIS_Rusia	С
			CIS_Ukraina	В
			CIS_Kazakhstan	С
			EU_Turkey	A
			EU_Africa	H
			EU_Moroco	Α
			EA_Vietnam	F
			EA_Thai	В
			EA_INA	N
	_		EA_China	N
WIFI REGION	E	A~V	EA_India	F
			EA_Srilanka	R
			EA_Nepal	
			EA_Bangladesh	F
			EA_Iran	M
			EA_Israel	н г
			EA_Egypt	F
			EA_CIS	A
			EA_IviluAsia	A A
			EA_Iraq	F
			EA Saudi	0
			EA Pakistan	 M
			EA FastAsia	Δ
			FA Africa	Δ
			EA S Africa	F
			EA Malavsia	0
			EA PHI	B
			ED Iran	 M
			ED Vietnam	F
			ED INA	N
			ED_Israel	Н

Control						
Factory Name	Data	Range	Use			
Hotel Option			1			
Hotel Hospitality	OFF					
Shop Option						
Shop Mode	OFF	ON/OFF				
Shop Mode	OFF	ON/OFF				
Exhibition Mode	OFF	ON/OFF				
Sound		1	1			
High Devi	OFF	ON/OFF				
Carrier_Mute	OFF	ON/OFF				
Speaker Delay Normal	10	0~255	Audio delay for Lipsync			
Pilot Level High Thld	0x28h	0x00~0xff	Control for ATV sound of stereo /multiplex			
Pilot Level Low Thld	0x10h	0x00~0xff	Control for ATV sound of stereo /multiplex			
Speaker EQ	ON	ON/OFF	Control for sound precision			
SVC		1	-			
Factory menu Name	Data	Range	Use			
Test Pattern						
Panel Auto Setting						
Panel Display Time	0Hr					
Logic Usb D/L	off					
Tuner Status						
T-CON Usb Download						
MICOM UPGRADE	off		Set ON→Sub micom upgrade, after upgrade Main Micom (over 5 minutes)			
BT ADDRESS	0					
BT UPGRADE						
SVC Reset						
Factory Name	Data	Range	Use			
Test Pattern						
Pattern Sel	OFF	OFF/White/Black/Red/Green/Blue/ Cross/OneDot/ColorBar/GrayStep	"Test for Input of Scaler. If you can see pattern well, there is problem at input of Scaler."			
Logic Pattern Sel		Not modified				
Logic Level Sel		Not modified				
TUNER STATUS						
DVB						
ISDB-T						
DVB						
DVB						
SNR		Not modified				

SVC					
Factory menu Name	Data	Range	Use		
BER		Not modified			
Singal Strength		Not modified			
Bandwidth		Not modified			
Frequency		Not modified			
LNA Status		Not modified			
FFT		Not modified			
Modulation		Not modified			
Code Rate		Not modified			
GI		Not modified			
Hier Modulation		Not modified			
Frequency Offset		Not modified			
Timing Offset		Not modified			
AGC		Not modified			
UCB		Not modified			
PLL Type		Not modified			
DEMOD Type		Not modified			
TPS LOCK		Not modified			
RS Lock		Not modified			
SSI		Not modified			
SQI		Not modified			
ISDB-T					
FFT Size_1		Not modified			
Guard Interval_1		Not modified			
Freq. Offset_1		Not modified			
SNR_1		Not modified			
IF AGC_1		Not modified			
TMCC Lock_1		Not modified			
TS Packet_1		Not modified			
Master Lock_1		Not modified			
A_Modulation_1		Not modified			
A_Code Rate_1		Not modified			
A_Timer InterLeave_1		Not modified			
A_Segments Num_1		Not modified			
A_Ber_1		Not modified			
B_Modulation_!		Not modified			
B_Code Rate_1		Not modified			
B_Timer InterLeave_1		Not modified			
B_Segments Num_1		Not modified			

SVC				
Factory menu Name	Data	Range	Use	
B_BER_1		Not modified		
C_Modulation_1		Not modified		
C_Code Rate_1		Not modified		
C_Timer InterLeave_1		Not modified		
C_Segments Num_1		Not modified		
C_BER_1		Not modified		

ADC WB						
Factory Menu Name	Factory Menu Name					
ADC						
ADC Target						
ADC RESULT						
WB						
Factory Name	Data	Range	Use			
ADC						
AV Calibration	Success	Success / Failure				
Comp Calibration	Success	Success / Failure				
PC Calibration	Success	Success / Failure				
HDMI Calibration	Success	Success / Failure				
ADC Target						
1st_AV_Low	64	0 ~1020				
1st_AV_High	880	0 ~1020				
1st_AV_Delta	2	0~7				
1st_COMP_Y_Low	64	0 ~1020				
1st_COMP_Cb_Low	512	0 ~1020				
1st_COMP_Cr_Low	512	0 ~1020				
1st_COMP_Y_High	940	0 ~1020				
1st_COMP_Cb_High	512	0 ~1020				
1st_COMP_Cr_High	512	0 ~1020				
1st_COMP_Delta	2	0 ~ 7				
1st_PC_Low	4	0 ~1020				
1st_PC_High	1004	0 ~1020				
1st_PC_Delta	2	0 ~ 7				
2nd_ACH_Low	4	0 ~124				
2nd_ACH_High	940	0 ~1020				
Factory Name	Data	Range	Use			
2nd_PC_Low	4	0~124				
2nd_PC_High	940	0~1020				

4. Troubleshooting

ADC WB					
Factory Menu Name					
2nd_Delta	2	0~7			
ADC RESULT					
1st_Y_GH	0	0~511			
1st_Y_GL	0	0 ~ 255			
1st_Cb_BH	0	0~511			
1st_Cb_BL	0	0 ~ 255			
1st_Cr_RH	0	0 ~ 511			
1st_Cr_RL	0	0 ~ 255			
2nd_R_L	0	0 ~ 255			
2nd_G_L	0	0 ~ 255			
2nd_B_L	0	0 ~ 255			
2nd_R_H	0	0 ~ 255			
2nd_G_H	0	0 ~ 255			
2nd_B_H	0	0 ~ 255			
WB	Mode				
Sub Brightness	128	0 ~ 255			
R_Offset	128	0 ~ 255			
G_Offset	128	0 ~ 255			
B_Offset	128	0 ~ 255			
Sub Contrast	128	0 ~ 255			
R_Gain	128	0 ~ 255			
G_Gain	128	0 ~ 255			
B_Gain	128	0 ~ 255			
Movie R Offset	512	0 ~ 1023			
Movie B Offset	512	0 ~ 1023			
Movie R Gain	512	0 ~ 1023			
Movie B Gain	512	0 ~ 1023			

4-4. White Balance - Calibration

4-4-1. White Balance -Calibration

1. Calibration	\rightarrow	AV Calibration
	J	Comp Calibration
		PC Calibration
		HDMI Calibration

4-4-2. White Balance - Adjustment

		(low light)	(hight light)
3 .W / B] →	Sub Bright R offset G offset B offset	Sub Contrast R gain G gain B gain

(W/B adjustment Condition refer next page)

4-5. White Ratio (Balance) Adjustment

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

 \rightarrow

- Equipment: CS-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time: 60 min T
- Calibration and Manual setting for WB adjustment.
- HDMI: Calibration at #24 Chessboard Pattern
- COMP: Calibration at #24 Chessboard Pattern \rightarrow CVBS: Calibration at #24 Chessboard Pattern
- Manual adjustment #92 pattern (720p)
- Manual adjustment at #92 pattern (720p)
- Manual adjustment at #92 pattern (PAL)
- If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.
- White Balance Manual Adjustment

P Mode	Adjustment Coordinate				
P-WOUE		х	У	Y (Luminance)	T (K) + MPCD
CVBS	H/L	272	278	- (Sub_CT: 130)	12,000 (±0)
(PAL)	L/L	272	278	12.6cd/m2 (3.7 Ft)	12,000 (±0)
COMP	H/L	272	278	- (Sub_CT: 130)	12,000 (±0)
(720P)	L/L	272	278	13.0cd/m2 (3.8 Ft)	12,000 (±0)
HDMI	H/L	272	278	- (Sub_CT: 130)	12,000 (±0)
(720P)	L/L	272	278	13.0cd/m2 (3.8 Ft)	12,000 (±0)

- Adjustment Specification
 - White Balance: High light (±1), Low light (±3)
 - Luminance: High light (Don't care), Low light (±0.2 Ft/L)



4-6. Servicing Information

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

Samsung may offer upgrades for TV's firmware in the future. Upgrades will be possible by connecting a USB drive to the USB port located on your TV.

- Insert a USB drive containing the firmware (T-MST4DEUC (X5) / T-MSV4DEUC (X9) upgrade into the USB port on the rear of the TV.
- 2. Press the "MENU" button to display the menu. Press the "▲" or "▼" button to select "Support", then press the ENTER button.
- Press the "▲" or "▼" button to select "Software Upgrade", then press the "ENTER" button to select "By USB". The message "Scanning for USB. It may take up to 1 minute." is displayed.
- The message "Upgrade version XXXX to version XXXX? The system will be reset after upgrade." is displayed. Press the "◄" or "▶" to select the "OK", then press the "ENTER" button.

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



4-7. How To Upgrade Sub Micom

4-7-1. Sub S/W (with DDC Manager)

Order	Description	Description						
1	Connect DDC MANAGER to the TV Set with D-SUB cable. And Power on. (USB type: MTI-2510 / parallel type: MTI-2059)							
2	Open the DDC tool. (Parallel type & USB type) Image: Comparison of the setting of the setting. Image: Compute Setting of the set	R Martlet US3 22 WinSP DN Wire EDD Multi-Wilter EEPROM Wire IR Transmitter System Ubgrade About LoadFie Service type and External Memory Size. Auto-Program Pre-transmitter System Ubgrade About Pre-transmitter Unit Dence type and External Memory Size. Pre-transmitter System Ubgrade About Pre-transmitter Pre-transmitter Unit Dence type and External Memory Size. Pre-transmitter Unit Dence type and External Memory Size. Pre-transmitter Pre-transmitter Dence type Pre-transmitter Dence type						
3	Load the sub micom program file.	DOC Manager by Martich US3 UMINEP EDD Writer EDD Multi-Wilter EEPROM Wilter R1 Transmitter System Upgrade About UminEP EDD Writer EDD Multi-Wilter EEPROM Wilter R1 Transmitter System Upgrade About UminEP EDD Writer EDD Multi-Wilter EEPROM Wilter R1 Transmitter System Upgrade About UminEP EDD Writer EEPROM Wilter R1 Transmitter System Upgrade About UminEP EDD Writer EDD Multi-Wilter EEPROM Wilter R1 Transmitter System Upgrade About UminEP EDD Writer EDD Multi-Wilter Big R100 UminEP EDD Writer EEPROM Wilter EEPROM Wilter Big R100 UminEP EDD Writer EEPROM Wilter Big R100 UminEP EDD Writer EEPROM Wilter EEPROM Wilter Big R100 UminEP EDD Writer EEPROM Wilter EEPROM Wilter Big R100 UminEP EDD Writer EEPROM WILter EEPROM Wilter EEPROM WILter Big R100 UminEP EDD Writer EEPROM WILter EEPROM WILter Big R100 UminEP EDD Writer EEPROM WILter EE						

4. Troubleshooting

Order	Description	
4	Push the "Auto Program" Button. (It takes about 15 seconds.)	DOC Marager by Masterio USS WirSP [DDD Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM Whiter [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrade [About] Image: Doc Witer [EDD Multi-White] EEEPHOM White [B Transmiter [System Upgrad [About] Image: Doc
5	If update completes, TV set will booting automatically. Disconnect the JIG.	

4-7-2. Sub S/W (in Factory Mode)

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

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

4-8. Mechanical Diagram

LD450



► LD450_Middle

		LE26D45*G*W LE32D45*G*W		LE32D45*G*W
		Plastic	Plastic (CIS)	Press (EU)
Size	Set with Stand (W x D x H)	660.7 x 222.1 x 482.8	795.5 x 251.7 x 571.1	795.5 x 251.7 x 571.1
[mm]	Set without Stand (W x D x H1)	660.7 x 78.6 x 435.0	795.5 x 80.4 x 510.3	795.5 x 77.8 x 510.3
Weight	Set with Stand	6.7	10.85	11.05
[Kg]	Set without Stand	6.2	8.6	8.8

► LD450_Small

		LE19D45*G*W	LE22D45*G*W	
		Plastic	Plastic	
Size	Set with Stand (W x D x H)	476.5 x 160.7 x 356.1	543.4 x 171.6 x 395.9	
[mm] Set wi (W	Set without Stand (W x D x H1)	476.5 x 63.3 x 315.7	543.4 x 61.9 x 353.5	
Weight	Set with Stand	4.2	5.2	
[Kg]	Set without Stand	4	5	

LD550_LD570_LD580

-		LE32D55*K*W	LE32D55*K*W LE32D57*K*S LE32D58*K*K	
		Plastic (CIS)	Press (EU)	
Size [mm]	Set with Stand (W x D x H)	804.7 x 240.0 x 563.7	804.7 x 240.0 x 563.7	
	Set without Stand (W x D x H1)	804.7 x 80.3 x 507.4	804.7 x 77.8 x 507.4	
Weight [Kg]	Set with Stand	11.8	12	
	Set without Stand	9.1	9.3	

		LE37D55*K*W LE37D57*K*S LE37D58*K*K	LE40D55*K*W LE40D57*K*S LE40D58*K*K	LE46D55*K*W LE46D57*K*S LE46D58*K*K
		Press	Press	Press
Size [mm]	Set with Stand (W x D x H)	923.5 x 255.0 x 629.2	992.1 x 255.0 x 667.2	1124.1 x 275.0 x 742.8
	Set without Stand (W x D x H1)	923.5 x 78.5 x 573.2	992.1 x 80.4 x 611.0	1124.1 x 80.4 x 686.1
Weight [Kg]	Set with Stand	15.8	16.5	21.7
	Set without Stand	12.55	13.25	18.1
4-9. PCB Diagram

PCB Layout_X5







Main Top_X5



Main Inner (2)_X5



Main Inner (3)_X5



Main Bottom_X5



PCB Layout_X9



U56A -26" / 32" / 37" / 40" / 46" 2 AT 0 100000 0000000000 and a U56B - 19" / 22" £Ο 0.0.0.0.0.0.0.0 0 0 00000000000 0 000 0 State State

Main Top_X9

Main Inner (2)_X9



Main Inner (3)_X9



Main Bottom_X9



SMPS

Model / Inch	CODE	P/N
LD450 / 19"	BN44-00436A	I19HD_BPN



Model / Inch	CODE	P/N
LD450 / 22"	BN44-00437A	I22HD_BSM



4. Troubleshooting

Model / Inch	CODE	P/N
LD450 / 26" LD5xx / 32"	BN44-00438C	I2632F1_BDY



Model / Inch	CODE	P/N
LD450 / 32"	BN44-00438A	I2632F1_BSM



Model / Inch	CODE	P/N
LD5xx / 37"	BN44-00439B	I37F1_BDY



Model / Inch	CODE	P/N
LD5xx / 40"	BN44-00440A	I40F1_BSM



4. Troubleshooting

Model / Inch	CODE	P/N
LD5xx / 46"	BN44-00441A	I46F1_BHS

