

SAMSUNG

TFT-LCD TV/MONITOR

Chassis
NF26EO

Model
LW26A33W

SERVICE *Manual*

TFT-LCD TV/MONITOR



CONTENTS

1. Precautions
2. Product Specifications
3. Disassembly & Reassembly
4. Alignment & Adjustments
5. Troubleshooting
6. Exploded View & Parts List
7. Parts List
8. Block Diagram
9. Wiring Diagram
10. PCB Layout
11. Schematic Diagrams
12. Panel Description



* This Service Manual is a property of Samsung Electronics Co., Ltd.
Any unauthorized use of Manual can be punished under applicable International and/or domestic law.

Samsung Electronics Co.,Ltd.

416, Maetan-3Dong, Yeongtong-Gu, Suwon City, Kyungki-Do, Korea, 443-742

Printed in Korea

P/N : BN82-00109M-00

URL : <http://itself.sec.samsung.co.kr/>

1 Precautions

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

1-1 Safety Precautions

1-1-1 Warnings

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

1-1-2 Servicing the LCD TV

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

1-1-3 Fire and Shock Hazard

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

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

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

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

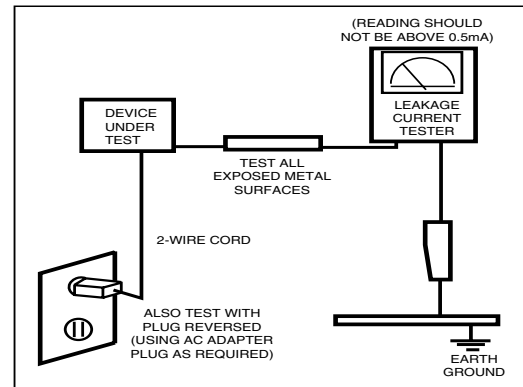


Figure 1-1. Leakage Current Test Circuit

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

1-1-4 Product Safety Notices

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

1-2 Servicing Precautions

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

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

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

1-2-1 General Servicing Precautions

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

1-3 Electrostatically Sensitive Devices (ESD) Precautions

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

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

2 Product Specifications

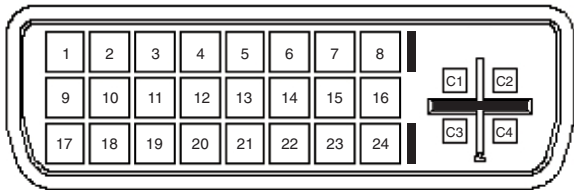
2-1 Specifications

Item	Description	
LCD Panel	TFT-LCD Panel, RGB vertical stripe, normaly Black, 26-Inch viewable, 0.537 mm pixel pitch	
Scanning Frequency	Horizontal : 30 kHz ~ 68 kHz (Automatic) Vertical : 56 Hz ~ 85 Hz (Automatic)	
Display Colors	16.7 Million colors	
Maximum Resolution	Horizontal : 1280 Pixels Vertical : 768 Pixel	
Input Video Signal	Positive at 75 Ω	
Input Sync Signal	Type : Seperate H/V Level : TTL level	
Maximum Pixel Clock rate	80 MHz	
Active Display Horizontal/Vertical	687.36 mm / 412.42 mm	
AC power voltage & Frequency	AC 100 ~ 264 Volts, 50~60 Hz \pm 3 Hz	
Power Consumption	130 W	
Dimensions (W x D x H) Set Package	29.17 x 10.89 x 20.70 Inches (741.0 X 276.8 X 526.0 mm) State of stand installed 29.17 x 4.68 x 16.92 Inches (741.0 X 119.0 X 498.5 mm) State of stand disassembled 34.49 x 13.35 x 28.11 Inches (876.0 X 339.0 X 714.0 mm)	
Weight Set / Package	15.0 kg (33.07 lbs) / 16.8 kg (37.04 lbs)	
Environmental Considerations	Operating Temperature : 50 °F ~ 104 °F (10 °C ~ 40 °C) Operating Humidity : 10 % ~ 80 % Storage Temperature : -4 °F ~ 113 °F (-20 °C ~ 45 °C) Storage Humidity : 5 % ~ 95 %	
TV System	Tunning	Frequency Synthesize
	System	PAL/SECAM-B/G/I/D/K/L/L : NTSC (AV)
	Sound	STEREO
Antenna Input	75 Ω	
Sound Characteristic	– MAX Internal speaker Out : Right => 5W Left => 5W	
	– BASS Control Range : -8 dB ~ + 8dB – TREBLE Control Range : -8 dB ~ +8 dB – Headphone Out : 10mW MAX – Output Frequency : RF : 80 Hz ~ 15 kHz A/V : 80 Hz ~ 20 kHz	

2-2 Pin Assignments

2-2-1 DVI-D

Ref) DVI-D : Digital only
D-SUB : Analog only



DVI-I Receptacle Connector Front View

Pin No.	Signal Assignment	Pin No.	Signal Assignment	Pin No.	Signal Assignment
1	RX2-	11	GND	21	NC
2	RX2+	12	NC	22	GND
3	GND	13	NC	23	RXC+
4	NC	14	DDC Input Power(+5V)	24	RXC-
5	NC	15	IDENT_PC		
6	DDC Clock (SCL)	16	5V		
7	DDC Data (SDA)	17	RX0-		
8	Analog Vertical Sync.	18	RX0+		
9	RX1-	19	GND		
10	RX1+	20	NC		

2-2-2 SCART 1

Pin	Separate	Pin	Separate
1	SC1 RED OUT	12	N/C
2	SC1 RED IN	13	GND
3	SC1 LEFT OUT	14	GND
4	GND	15	SC1 RED
5	GND	16	GND
6	SC1 LEFT IN	17	SC1 FAST BLANKING
7	SC1 BLUE	18	GND
8	SC1 SWITCHING	19	SC1 CVBS OUT
9	GND	20	SC1 CVBS IN
10	N/C	21	GND
11	SC1 GREEN		

2-2-3 SCART 2

Pin	Separate	Pin	Separate
1	SC2 RED OUT	12	N/C
2	SC2 RED IN	13	GND
3	SC2 LEFT OUT	14	GND
4	GND	15	N/C
5	GND	16	N/C
6	SC2 LEFT IN	17	GND
7	N/C	18	GND
8	SC2 SWITCHING	19	SC2 CVBS OUT
9	GND	20	SC2 CVBS IN
10	N/C	21	GND
11	N/C		

2-2-4 S-Video

Pin	Separate
1	GND
2	Y
3	C
4	GND
5	GND

2-2-5 A/V

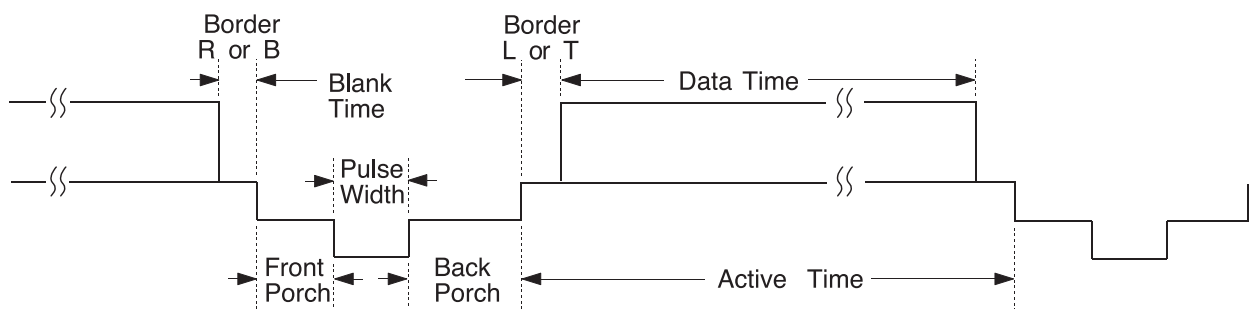
RCA Yellow	CVBS
RCA White	Audio L
	GND
RCA Red	Audio R
	GND

2-3 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

2-3-1 LCD Panel Mode1 mode

Timing No.	
Originator	VESA DTV
Mode Name	1280/60Hz
Resolution (HxV)	1280x720
HORIZONTAL	
Frequency	45 kHz
Total time	22.200 μs
Active time	17.239 μs
Blank time	4.984 μs
Border(L / R)	0.000 μs
Data time	17.239 μs
Front porch	0.943 μs
Sync. width	0.539 μs
Back porch	3.502 μs
Sync. polarity	Negative
VERTICAL	
Frequency	60Hz
Total time	16.000 ms
Active time	16.000 ms
Blank time	1.222 ms
Border(T / B)	0.000 ms
Data time	16.000 ms
Front porch	0.667 ms
Sync. width	0.111 ms
Back porch	0.444 ms
Sync. polarity	Positive
Dot Clock	74.25 MHz
Sync. Type	Separate
Scan Type*	N/I



2-3-1 Supported Modes (1)

Timing No.	2	3	11	17	32
Originator	IBM	IBM	VESA	VESA	MAC
Mode Name	VGA2	VGA3	640/72Hz	640/75Hz	640/67Hz
Resolution (HxV)	720x400	640x480	640x480	640x480	640x480
HORIZONTAL					
Frequency	31.469kHz	31.469kHz	37.861kHz	37.500kHz	35.000kHz
Total time	31.777μs	31.778μs	26.413μs	26.667μs	28.571μs
Active time	26.058μs	26.058μs	20.825μs	20.317μs	21.164μs
Blank time	5.720μs	5.720μs	5.588μs	6.350μs	7.407μs
Border(L / R)	0.318μs	0.318μs	0.254μs	0.000μs	0.000μs
Data time	25.422μs	25.422μs	20.317μs	20.317μs	21.164μs
Front porch	0.318μs	0.318μs	0.508μs	0.508μs	2.116μs
Sync. width	3.813μs	3.813μs	1.270μs	2.032μs	2.116μs
Back porch	1.589μs	1.589μs	3.810μs	3.810μs	3.175μs
Sync. polarity	Negative	Negative	Negative	Negative	Negative
VERTICAL					
Frequency	70.087Hz	59.940Hz	72.809Hz	75.000Hz	66.667Hz
Total time	14.268ms	16.683ms	13.735ms	13.333ms	15.000ms
Active time	13.155ms	15.761ms	13.100ms	12.800ms	13.714ms
Blank time	1.113ms	0.922ms	0.635ms	0.533ms	1.286ms
Border(T / B)	0.222ms	0.254ms	0.211ms	0.000ms	0.000ms
Data time	12.711ms	15.253ms	12.678ms	12.800ms	13.714ms
Front porch	0.191ms	0.064ms	0.026ms	0.027ms	0.086ms
Sync. width	0.064ms	0.064ms	0.079ms	0.080ms	0.086ms
Back porch	0.858ms	0.794ms	0.528ms	0.427ms	1.114ms
Sync polarity	Positive	Negative	Negative	Negative	Negative
Dot Clock	28.322MHz	25.175MHz	31.500MHz	31.500MHz	30.240MHz
Sync. Type	Separate	Separate	Separate	Separate	Separate
Scan Type	N/I	N/I	N/I	N/I	N/I

2-3-1 Supported Modes (2)

Timing No.	13	14	18	33
Originator	VESA	VESA	VESA	MAC
Mode Name	800/60Hz	800/72Hz	800/75Hz	832/75Hz
Resolution (HxV)	800x600	800x600	800x600	832x624
HORIZONTAL				
Frequency	37.879kHz	48.077kHz	46.875kHz	49.726kHz
Total time	26.400 μ s	20.800 μ s	21.333 μ s	20.110 μ s
Active time	20.000 μ s	16.000 μ s	16.162 μ s	14.524 μ s
Blank time	6.400 μ s	4.800 μ s	5.171 μ s	5.586 μ s
Border(L / R)	0.000 μ s	0.000 μ s	0.000 μ s	0.000 μ s
Data time	20.000 μ s	16.000 μ s	16.162 μ s	14.524 μ s
Front porch	1.000 μ s	1.120 μ s	0.323 μ s	0.559 μ s
Sync. width	3.200 μ s	2.400 μ s	1.616 μ s	1.117 μ s
Back porch	2.200 μ s	1.280 μ s	3.232 μ s	3.910 μ s
Sync. polarity	Positive	Positive	Positive	Negative
VERTICAL				
Frequency	60.317Hz	72.188Hz	75.000Hz	74.551Hz
Total time	16.579ms	13.853ms	13.333ms	13.414ms
Active time	15.840ms	12.480ms	12.800ms	12.549ms
Blank time	0.739ms	1.373ms	0.533ms	0.865ms
Border(T / B)	0.000ms	0.000ms	0.000ms	0.000ms
Data time	15.840ms	12.480ms	12.800ms	12.549ms
Front porch	0.026ms	0.770ms	0.021ms	0.020ms
Sync. width	0.106ms	0.125ms	0.064ms	0.060ms
Back porch	0.607ms	0.478ms	0.448ms	0.784ms
Sync polarity	Positive	Positive	Positive	Negative
Dot Clock	40.000MHz	50.000MHz	49.500MHz	57.284MHz
Sync. Type	Separate	Separate	Separate	Separate Composite Sync.- on-G
Scan Type	N/I	N/I	N/I	N/I

2-3-1 Supported Modes (3)

Timing No.	15	16	19	
Originator	VESA	VESA	VESA	VESA
Mode Name	1024/60Hz	1024/70Hz	1024/75Hz	1280/60Hz
Resolution (HxV)	1024x768	1024x768	1024x768	1280x768
HORIZONTAL				
Frequency	48.363kHz	56.476kHz	60.023kHz	47.700kHz
Total time	20.677 μ s	17.707 μ s	16.660 μ s	20.964 μ s
Activetime	15.754 μ s	13.653 μ s	13.003 μ s	15.973 μ s
Blank time	4.923 μ s	4.053 μ s	3.777 μ s	4.992 μ s
Border(L / R)	0.000 μ s	0.000 μ s	0.000 μ s	0.000 μ s
Data time	15.754 μ s	13.653 μ s	13.003 μ s	15.964 μ s
Front porch	0.369 μ s	0.320 μ s	0.323 μ s	0.799 μ s
Sync. width	2.092 μ s	1.813 μ s	1.219 μ s	1.697 μ s
Back porch	2.462 μ s	1.920 μ s	2.235 μ s	2.496 μ s
Sync. polarity	Negative	Negative	Positive	Negative
VERTICAL				
Frequency	60.004Hz	70.069Hz	75.029Hz	60.000Hz
Total time	16.666ms	14.272ms	13.328ms	16.667ms
Active time	15.880ms	13.599ms	12.795ms	16.101ms
Blank time	0.786ms	0.672ms	0.533ms	0.566ms
Border(T / B)	0.000ms	0.000ms	0.000ms	0.000ms
Data time	15.880ms	13.599ms	12.795ms	16.101ms
Front porch	0.062ms	0.053ms	0.017ms	20.964ms
Sync. width	0.124ms	0.106ms	0.050ms	62.893ms
Back porch	0.600ms	0.513ms	0.466ms	482.180
Sync polarity	Negative	Negative	Positive	Positive
Dot Clock	65.000MHz	75.000MHz	78.750MHz	80.136MHz
Sync. Type	Separate	Separate	Separate	Separate
Scan Type	N/I	N/I	N/I	N/I

Memo

3 Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the LW26A33W monitor.

WARNING: This monitor contains electrostatically sensitive devices. Use caution when handling these components.

3-1 Disassembly

Cautions: 1. Disconnect the monitor from the power source before disassembly.

2. Follow these directions carefully; never use any metal instrument except provided jig to separate the cabinet.

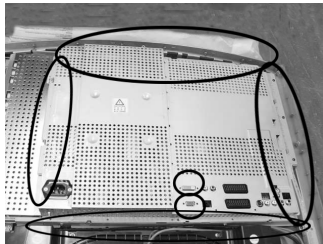
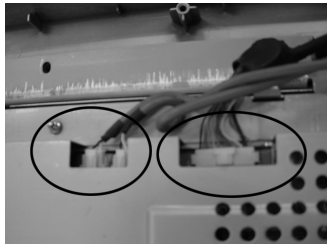
3. R/Cover opening jig : BH81-00001A



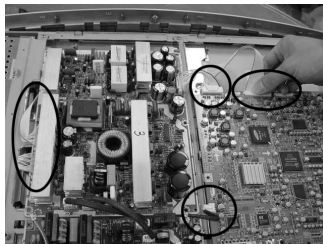
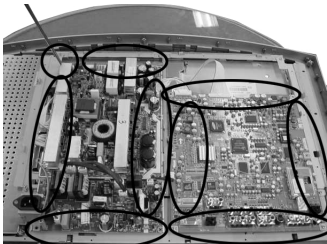
1. Place monitor face down on cushioned table. Remove 4 screws from grip on the stand and remove the stand.



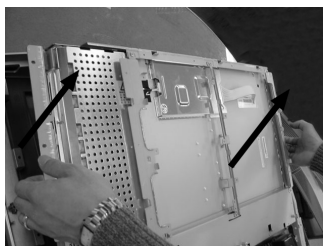
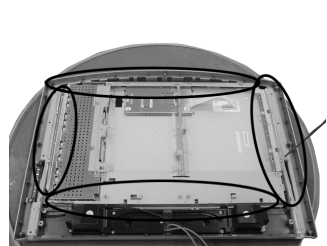
2. Remove 9 screws from the rear cover and lift up the rear cover.



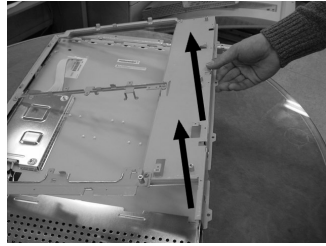
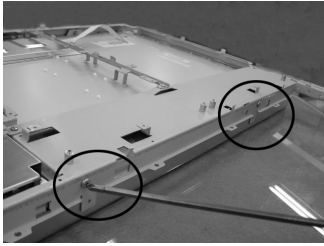
3. Disconnect speaker cable, function cable from the shield and remove 19 screws from the shield.



4. Remove 18 screws from the boards and disconnect LVDS cable, inverter cable from the boards.



5. Remove 18 screws from the cabinet BRKT and lift up the panel.



6. Remove 4 screws from the panel BRKT.
(Top/Bottom)
Disconnect BRKT from the panel.



7. Remove 4 screws from the panel BRKT.
(Left/Right)
Disconnect BRKT from the panel.

3-2 Reassembly

Reassembly procedures are in the reverse order of disassembly procedures.

4 Alignments and Adjustments

4-1 General Alignment Instruction

1. Usually, a color TV-VCR 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 transform.

4-2 Factory Mode Adjustments

4-2-1 Entering Factory Mode

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

- If you do not have Factory remote - control



- If you have Factory remote - control



- The buttons are active in the service mode.

- Remote - Control Key : Power, Arrow Up, Arrow Down, Arrow Left
Arrow Right, Menu, Enter, Number Key(0~9)
- Function - Control Key : Power, CH +, CH -, VOL +, VOL -,
Menu, SOURCE(Enter)

4-2-2 Factory Mode Tree

1. PC Calibration		
2. Option Table 2C34 0050	10. Checksum	0000
3. Color Control	11. Adjust	
4. PW565	12. Reset	
5. VPC3230-MAIN		
6. ADC		
7. DNle		
8. MDIN- 150		
9. Test Pattern		
T_NPL26PEU_0130 03/08/2004 18:34:23		

1. PC Calibration	10. Checksum	0000
2. Option Table 2C34 0050		
3. Color Control	11. Adjust	
4. PW565	12. Reset	
5. VPC3230-MAIN		
6. ADC		
7. DNle		
8. MDIN- 150		
9. Test Pattern		
T_NPL26PEU_0130 03/08/2004 18:34:23		



2. Option Table 2C34 0050			
Flesh Tone	Off	Area	CW
LNA	Off	DebugExpress	Off
Language	English	High Deviation	Off
Melody Volume	5	TXt Group	Osd Language
TTX List	Flop	DNle Demo	On
TTX TOP	Off	TTX Page	200page
Auto FM	On	Bus Stop	Off
		DDC Write	Off
		EMI	On
Panel Life Time : 3Day 15h 18m			
T_NPL26PEU_0130 03/08/2004 18:34:23			

- | | | |
|---------------------------|---------------|------|
| 1. PC Callbration | 10. Check sum | 0000 |
| 2. Option Table 2C34 0050 | 11. Adjust | |
| 3. Color Control | 12. Reset | |
| 4. PW565 | | |
| 5. VPC3230-MAIN | | |
| 6. ADC | | |
| 7. DNle | | |
| 8. MDIN - 150 | | |
| 9. Test Pattern | | |

T_NPL26PEU_0130 03/08/2004 18:34:23

3. Color Control

Pw565 White Balance
Dnie White Balance

3. Color Control

Pw565 White Balance

Sub- Brightness(DNle)	127	Sub- Contrast	155
Red Offset	128	Red Gain	128
Green Offset	128	Green Gain	128
Blue Offset	128	Blue Gain	128
Brightness	45	TTX-Bright	100

3. Color Control

Dnie White Balance

Sub - Brightness(PW565)	125	Sub- Contrast	127
Red Offset	129	Red Gain	124
Green Offset	128	Green Gain	128
Blue Offset	131	Blue Gain	113

1. PC Calibration	10. Check sum	0000	➔					
2. Option Table 2C34 0050	11. Adjust							
3. Color Control	12. Reset							
4. PW565								
5. VPC3230-MAIN								
6. ADC								
7. DNle								
8. MDIN - 150								
9. Test Pattern								
T_NPL26PEU_0130 03/08/2004 18:34:23								

1. PC Calibration	10. Check sum	0000	➔	5. VPC3230-MAIN					
2. Option Table 2C34 0050	11. Adjust			CT	2F	CIPCT	2A	KILVL	07
3. Color Control	12. Reset			BR	90	PFS	02	PKCOR	01
4. PW565				ACC_SAT	80	PK	01	FB_GAIN	22
5. VPC3230-MAIN				TINT	32	VPK	00		
6. ADC				SATCb	24	LPF2	00		
7. DN1e				SATCr	2B	CBW2	00		
8. MDIN - 150				CIPTNT	21	CBW	03		
9. Test Pattern				CIPBR	C5	IFC	00		
				T_NPL26PEU_0130					
T_NPL26PEU_0130	03/08/2004	18:34:23							

1. PC Calibration

2. Option Table 2C34 0050

3. Color Control

4. PW565

5. VPC3230-MAIN

6. ADC

7. DN1e

8. MDIN - 150

9. Test Pattern

10. Check sum 0000

11. Adjust

12. Reset

➔

6. ADC

Red Gain8CPr GainA0

Green Gain8CY GainA0

Blue Gain8CPb GainA0

Red Offset80Pr Offset43

Green Offset80Y Offset45

Blue Offset80Pb Offset42

Current05TTX Phase768

VCO02TTX Contrast00

T_NPL26PEU_0130

03/08/2004 18:34:23

1. PC Calibration

2. Option Table 2C34 0050

3. Color Control

4. PW565

5. VPC3230-MAIN

6. ADC

7. DNle

8. M DIN - 150

9. Test Pattern

10. Check sum 0000

11. Adjust

12. Reset

T_NPL26PEU_0130

03/08/2004 18:34:23

➡

7. DNle

TV

Pattern_SEL0Y_TH_HPF4DCE_Adap_SEL2

NR_Limit Y128Y_TH_EDGE4BS_Tilt80

NR_Limit C129DEP_Gain 1_X3BS_Gain Max330

NR_SEL2DEP_Gain 1_Y3NE_Core3

SCALEMAX_Y32DEP_Gain 2_X3NE_RTH 23

SCALEMAX_C32DEP_Gain 2_Y3CTE_H_min60

SCALEMIN_Y16DEP_Scale_R50Coring TH31

SCALEMIN_C16DEP_Sup_Scale THI3Coring TH332

SCALENOISE_Y72DEP_Sup_Scale THF107Offset_CR128

SCALENOISE_C100WTE_MCCT_FAC150Offset_CB128

- | | | |
|---------------------------|---------------|------|
| 1. PC Calibration | 10. Check sum | 0000 |
| 2. Option Table 2C34 0050 | 11. Adjust | |
| 3. Color Control | 12. Reset | |
| 4. PW565 | | |
| 5. VPC3230-MAIN | | |
| 6. ADC | | |
| 7. DNle | | |
| 8. MDIN-150 | | |
| 9. Test Pattern | | |

T_NPL26PEU_0130 03/08/2004 18:34:23



8. MDIN-150

Front Noise Reduction Filter
Horizontal Peaking Filter
Edge Enhancement Filter
Input Test Pattern
Output Test Pattern
Deinterlace Control

8. MDIN-150

Front Noise Reduction Filter

Noise_Reduction_Flt0	256	Noise_Reduction_Flt_On	0
Noise_Reduction_Flt1	0	Noise_Reduction_Flt_Difference	0
Noise_Reduction_Flt2	0	Median_Flt_On	0
Noise_Reduction_Flt3	0	Median_Flt_Difference	0
Noise_Reduction_Flt4	0	Noise_Reduction_Flt_Diff_Sel	0
Noise_Reduction_Flt5	0		
Noise_Reduction_Flt6	0		
Noise_Reduction_Flt7	0		

8. MDIN-150

Horizontal Peaking Filter

H_Peaking_Flt0	256	H_Peaking_Flt7	0
H_Peaking_Flt1	0	H_Peaking_Flt_Enable	1
H_Peaking_Flt2	896	H_Peaking_Flt_Gain	10
H_Peaking_Flt3	0	H_Peaking_No_Sum	0
H_Peaking_Flt4	0	H_Peaking_Inverse	0
H_Peaking_Flt5	0		
H_Peaking_Flt6	0		

8. MDIN-150

Edge Enhancement Filter

Edge_Cor_Offset	8
Edge_Enh_Level	2
Edge_Enh_2D_Flt_Enable	1

8. MDIN-150

Input Test Pattern

In_Test_RGB	0
In_Test_Ptrn	0
In_Test_Format	0

8. MDIN- 150

Output Test Pattern

Out_Test_Ptrn 0
 Out_Dark_Scrn_Main 0

8. MDIN- 150

Deinterlace Control

Deint_Mode	1	Deint_Edge_En	2	Deint_Film_Min	0
Deint_C_Delay_Sel	0	Deint_Edge_Thres	255	Film_Mode_Thres	5
Median_Tap	0	Film_Invaild_Lines	8	Bad_Edit_En	1
Expander_Tap	1	Film32_Mo_Thres	160	Caption_Mode	3
Deint_Thres	24	Film_Mode	5	D_Caption_V_Pos	160
Fast_Mode	1	D_Film_Slide_Cnt	0	Deint_Disp_Color	5
N_Median_Tap	1	D_Film_Slide_Cor	40	Deint_Disp_Mode	0
D_Fast_Mode_Thres	4	Deint_Film_Plus	1	Motion_Factor	1
N_Deint_Thres	32	Deint_Film_Minus	3		
Very_Fast_En	1	Deint_Film_Max	3		

- | | | |
|-------------------|---------------|------|
| 1. PC Callbration | 10. Check sum | 0000 |
| 2. Option Table | 11. Adjust | |
| 3. Color Control | 12. Reset | |
| 4. PW565 | | |
| 5. VPC3230-MAIN | | |
| 6. ADC | | |
| 7. DNle | | |
| 8. MDIN- 150 | | |

9. Test Pattern

T_NPL26PEU_0130 03/08/2004 18:34:23

9. Test Pattern

1. Luma Ramp (16 Step)
2. Luma Ramp (128 Step)
3. White 16
4. White 240
5. Color Bar
6. RGB Ramp (32 Step)

1. PC Calibration	10. Check sum	0000
2. Option Table	11. Adjust	
3. Color Control	12. Reset	
4. PW565		
5. VPC3230-MAIN		
6. ADC		
7. DNLe		
8. MDIN - 150		
9. Test Pattern		
T_NPL26PEU_0130 03/08/2004 18:34:23		

1. PC Calibration	10. Check sum	0000
2. Option Table	11. Adjust	
3. Color Control	12. Reset	
4. PW565		
5. VPC3230-MAIN		
6. ADC		
7. DNLe		
8. MDIN - 150		
9. Test Pattern		
T_NPL26PEU_0130 03/08/2004 18:34:23		



11. Adjust						
TTX-Brightness	20	Movie	70 47 50 50	LD av secam		9
TTX-Contrast	20	LD rf pal-b/g	9	LD av ntsc 3.57		9
TTX-Sharpness	55	LD rf pal-d/k	10	LD av ntsc 4.43		9
CarrierMute	42	LD rf pal-i	10	LD av pal 60		9
Pilot High	14	LD rf secam-b/g	9	ValidLockCnt		2
Pilot Low	7	LD rf secam-d/k	9	PWM Dim		0
Dynamic	100 45 65 65	LD rf secam-l/i	9	Analog Dim		0
Standard	85 45 60 60	LD rf ntsc4.43	9	RF_dB-1		
		LD av pal	10	RF_dB-2		
				RF_dB-3		

1. PC Calibration	10. Check sum	0000
2. Option Table	11. Adjust	
3. Color Control	12. Reset	
4. PW565		
5. VPC3230-MAIN		
6. ADC		
7. DNLe		
8. MDIN - 150		
9. Test Pattern		
T_NPL26PEU_0130 03/08/2004 18:34:23		

* Unless otherwise specified, do not adjust data in Factory Mode.

* Data may be changed for display improvement.

4-3 White Balance Adjustment

1. In factory mode (1, 3, 6), you can adjust the white balance.
2. As the adjustment and data values differ depending on input sources, different adjustments are required for RF, PC/DVI modes.
3. Optimum condition data for each mode are saved as default values. (Refer to Table 2, 3)
4. As the RF mode is applied with the same vlaues as for VIDEO and S-VIDEO, adjustment can be made in any of RF, VIDEO and S-VIDEO modes.

Table 4-1. White Balance Setting Conditions

Mode	High Light			Low Light		
	"x"	"y"	Y	"x"	"y"	Y
RF	285	295	44fL	289	287	1.5fL
PC	275	275	26fL	275	275	0.7fL
DVI-Digital	285	295	44fL	285	295	1fL

Table 4-2. Color Control Default Vlaue <Dnie White Balance>

Mode	RF	DTV	PC	Mode	RF	DTV	PC
Sub-Brightness(PW565)	127	147	141	Sub-Contrast	127	124	113
Red Offset	129	126	125	Red Gain	124	125	128
Green Offset	128	128	128	Green Gain	128	128	128
Blue Offset	131	128	126	Blue Gain	113	116	127

Table 4-3. Color Control Default Vlaue

Mode	PC	Mode	DTV
Red Gain	8C	Pr Gain	A0
Green Gain	8C	Y Gain	A0
Blue Gain	8C	Pb Gain	A0
Red Offset	80	Pr Offset	43
Green Offset	80	Y Offset	45
Blue Offset	80	Pb Offset	42
Current	05	TTX Phase	768
VCO	02	TTX Contrast	00

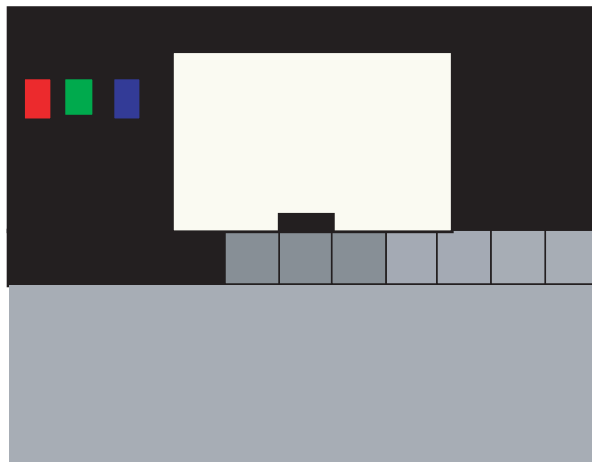
4-3-1 Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
 - INPUT SIGNAL GENERATOR : MSPG-925LTH
 - * Mode NO 2 : 750X480@60 Hz
 - NO 6 : 1280X720@60 Hz
 - NO 21 : 1024X768@60 Hz
 - * Pattern NO 85 : 16 Color Bar Pattern
 - NO 16 : Toshiba ABL Pattern
2. Optical measuring device : CA210 (FL)
 - Please use the MSPG-925 LTH generator for model LW26A33W.

4-3-2 Method of Adjustment

1. Adjust the basic level of DTV and PC input signals.
 - a) Set the input to the mode in which the adjustment will be made (PC).
 - * Input signal - PC Mode : Model #21 (1024*768 Mode), Pattern #16 (Picture 4-1)
 - b) Enter factory Calibration, confirm the ADC data (PC Mode Only).
 - * ADC default value : Table 4-3.

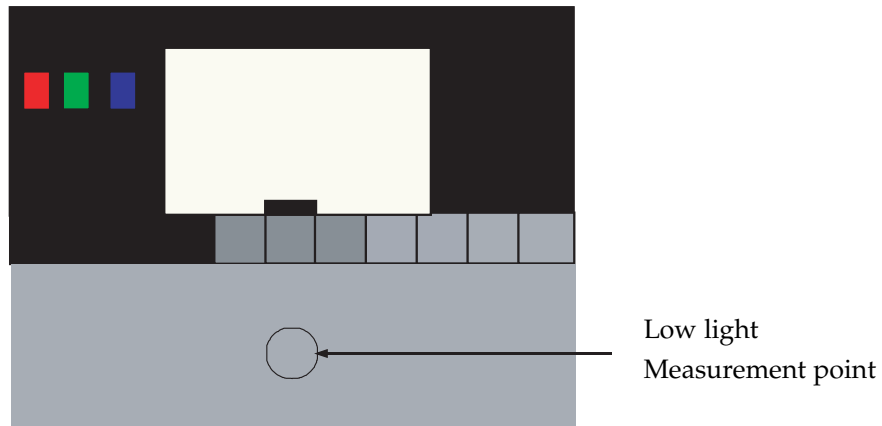
Picture 4-1 Toshiba ABL Pattern



2. Adjust the white balance of RF, DTV and PC Modes.
 - a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC).
 - * Input signal - VIDEO Mode : Model #1 (750*480 Mode), Pattern #16
 - PC Mode : Model #21 (1024*768 Mode), Pattern #16
 - b) Enter factory color control, confirm the data.

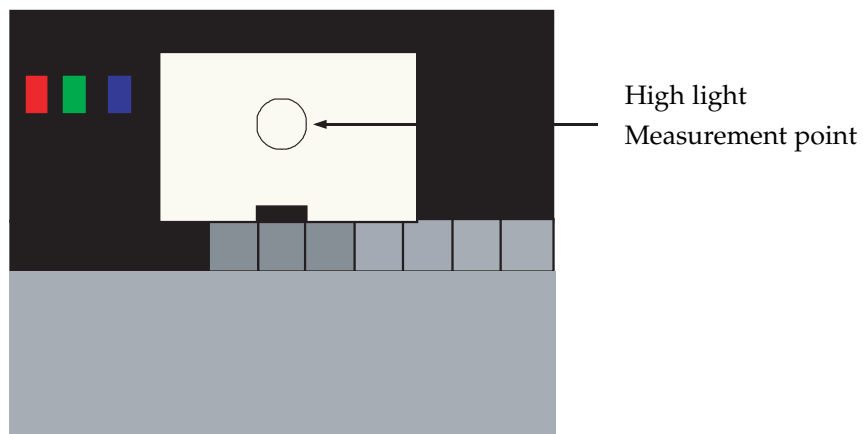
- c) Adjust the low light. (Refer to table 1, 2 in adjustment position by mode)
- Adjust sub - Brightness to set the 'Y' value.
 - Adjust red offset ('x') and blue offset ('y') to the color coordinates.
- * Do not adjust green offset data.

Picture 4-2 Toshiba ABL Pattern



- d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)
- Adjust red gain ('x') and blue gain ('y') to the color coordinates.
- * Do not adjust the green gain and sub-contrast (Y) data.

Picture 4-3 Toshiba ABL Pattern



4-3-3 Option Table

Option Table		2C340028	
Flesh Tone	Off	Area	CW
LNA	Off	Debug Express	Off
Language	English	High Deviation	Off
Melody Volume	5	TXT Group	Osd Language
TTX List	Flop	DNle Demo	On
TTX TOP	Off	TTX Page	200Page
Auto FM	On	Bus Stop	Off
12C MOFS	0	DDC Write	Off
		EMI	On

* The default settings are most recommended for Option Data. Each data may be adjusted.

4-3-4 PW565

* Below figures are for contrast adjustment of PW565 (IC602). Do not change the data.

Mode	Data
Red Gain	140
Green Gain	140
Blue Gain	140
Red Offset	140
Green Offset	140
Blue Offset	140

4-3-5 VPC 3230-MAIN

* Data may be adjusted.

MODE	Data	MODE	Data
CT	2F	PK	01
BR	90	VPK	00
ACC_SAT	80	LPF2	00
TINT	32	CBW2	00
SATCb	24	CBW	03
SATCr	2B	IFC	00
CIPTNT	20	KILVL	07
CIPBR	C5	PKCOR	01
CIPCT	2A	FB_GAIN	22
PFS	02		

4-3-6 ADC

*Adjust the R(Pr), G(Y), B(Pb) gain and offset to the basic level of DTV and PC Input signals.

Mbde	PC	Mbde	DTV
Red Gai n	8C →Adj ust	Pr Gai n	A0 →Adj ust
Green Gai n	8C →Adj ust	Y Gai n	A0 →Adj ust
Bl ue Gai n	8C →Adj ust	Pb Gai n	A0 →Adj ust
Red Off set	80 →Adj ust	Pr Off set	43 →Adj ust
Green Off set	80 →Adj ust	Y Off set	45 →Adj ust
Bl ue Off set	80 →Adj ust	Pb Off set	42 →Adj ust
Current	04		
VCO	02		

4-3-7 DNle

- * Control the specify item that a output signals of scalar (PW565).
- * This data can be changed without notice.

7. DNle		TV			
Pattern_SEL	0	Y_TH_HPF	4	DCE_Adap_SEL	2
NR_Limit Y	128	Y_TH_EDGE	4	BS_Tilt	80
NR_Limit C	129	DEP_Gain 1_X	3	BS_Gain Max	330
NR_SEL	2	DEP_Gain 1_Y	3	NE_Core	3
SCALEMAX_Y	32	DEP_Gain 2_X	3	NE_RTH 2	3
SCALEMAX_C	32	DEP_Gain 2_Y	3	CTE_H_min	60
SCALEMIN_Y	16	DEP_Scale_R	50	Coring TH3	1
SCALEMIN_C	16	DEP_Sup_Scale THI	3	Coring TH3	32
SCALENOISE_Y	72	DEP_Sup_Scale THF	107	Offset_CR	128
SCALENOISE_C	100	WTE_MCCT_FAC	150	Offset_CB	128

4-3-8 MDIN-150

- * Control the specify item that a output signals (RF, CVBS, S-VHS Modes) of MDIN-150 (IC405).
- * This data can be changed without notice.

4-3-9 Test Pattern

- * Use below test patters to demonstrate the image display of PW565 (IC602).
- 1) Luma Ramp (16 step)
- 2) Luma Ramp (128 Step)
- 3) White 16
- 4) White 240
- 5) Color Bar
- 6) RGB Ramp (32 Step)

4-3-10 Check sum

- * XXXX : Displays the current check sum size of the MICOM.
(Varies depending on program update)

4-3-11 Reset

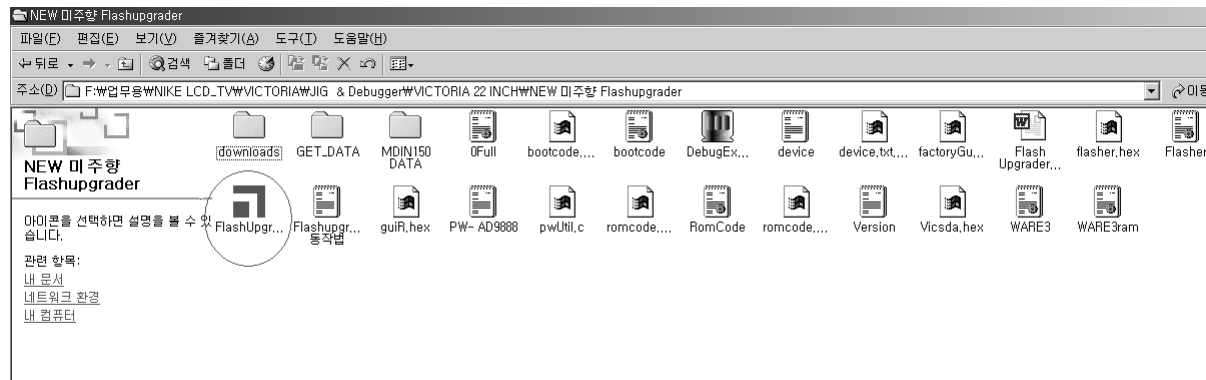
- * Initializes the data in the MICOM. (Set to default value)
- Use 'Reset' to restore adjustmints made in Factory Mode to the original settings.

4-3-12 T_NPL26PEU_0130 03/08/2004 18:34:23

- * Displays the MICOM program version

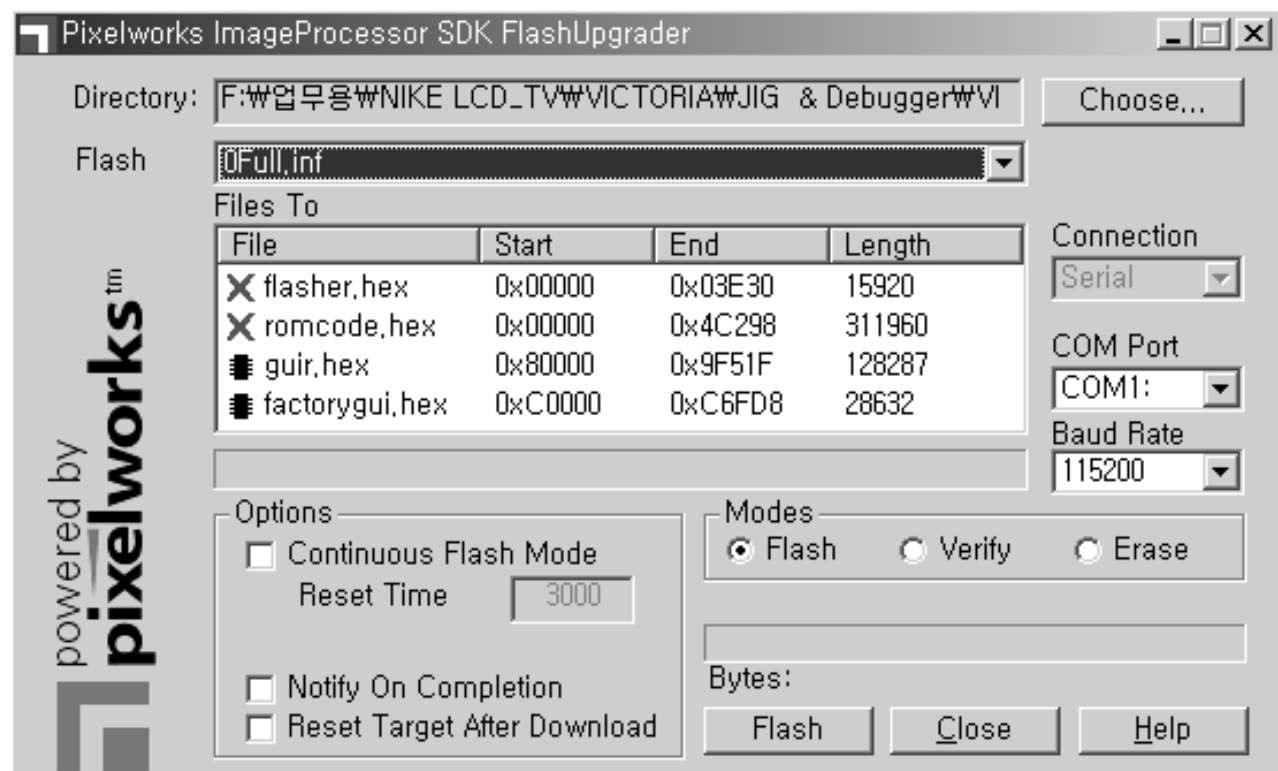
4-4 How to use SW(FlashupgradNT) for LW26A33W Set program update

1. Store program practice file in new folder.
2. Connect Set and Jig Cable to execute Program Update.
(Refer to the Picture 4-4 attachment)
3. After completing the JIG Cable connection, store Update practice program (hex file 3EA) in new folder.
(guiR, romcode, factoryGui).
4. Click FlashupgradNT.exe icon 2 times and execute it.
(Upgrader OSD screen is marked)



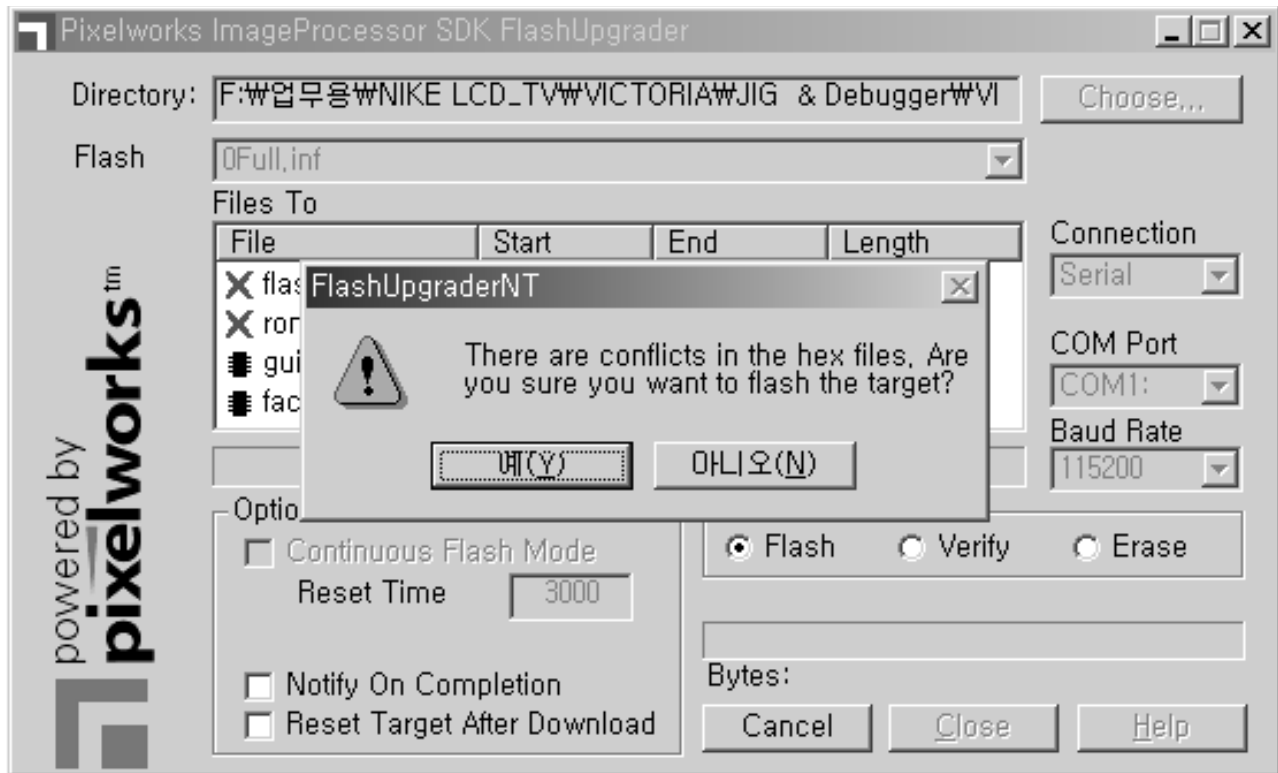
Picture 4-4

5. Select OFull.inf in Flash.
(flaher, romcode, guir, factorygui items look in Files To)



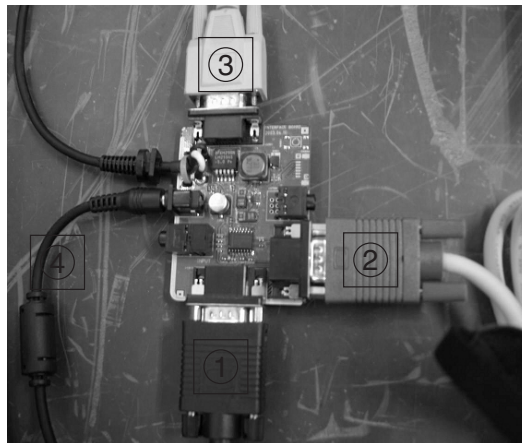
Picture 4-5

6. Click the “Flash” that is under right of OSD screen.
(if warning message comes out, Click the “Yes”(Y).)



Picture 4-6

7. After acting No.6, extract Set's Power Cable and connect it again.
8. During acting No.7, program Update sledding is marked sequentially on OSD screen.
9. After Program Update completion, act NO.7 again.
10. Program Update is completed.



Picture 4-7

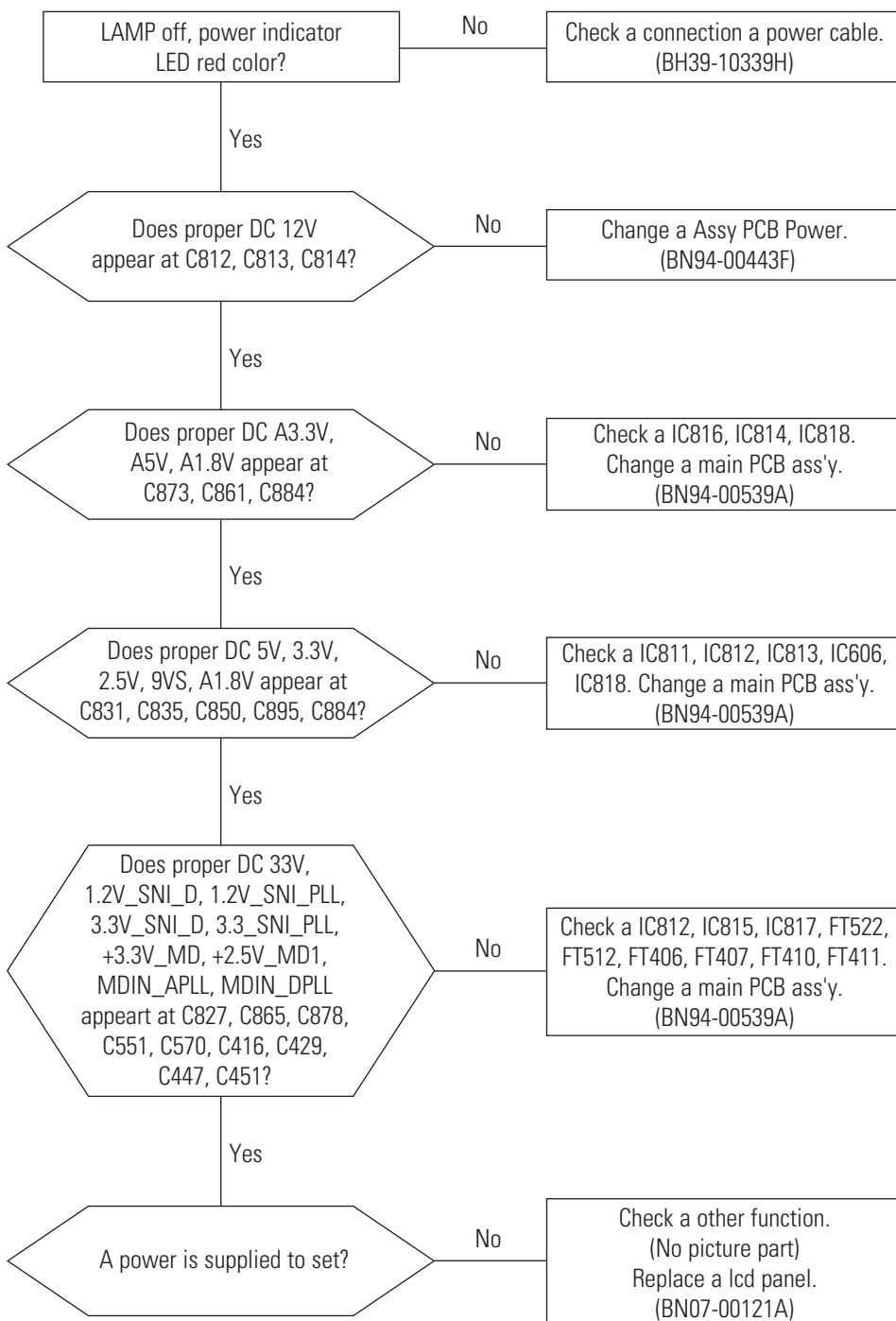
<Attachment Picture 4-7 : JIG Cable Connection Explain>

1. Connect with PC Pattern Generator's output.
(Connect only when you want to see PC screen.)
2. Connect with JIG Output (15 pins) and PC Input (PC/DVI 24 pins) terminal.
3. Connect with COM Port1 of PC (9 Pins).
4. Connect 14V 4.5A Adaptor Cable.

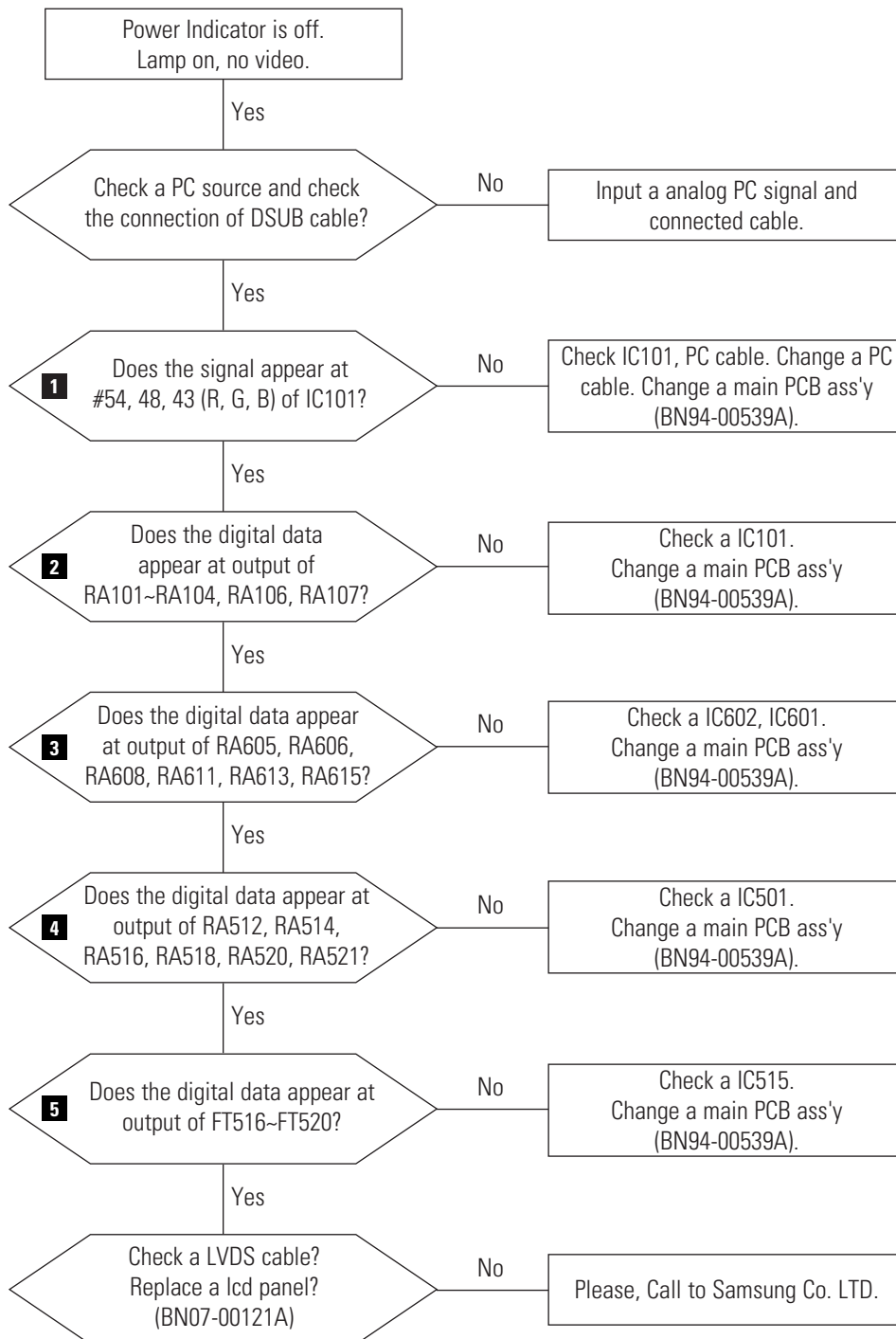
Memo

5 Troubleshooting

5-1 No Power

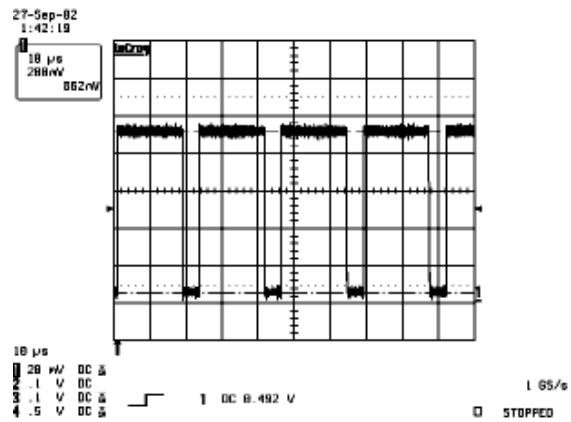


5-2 No Video (Analog PC Signal)

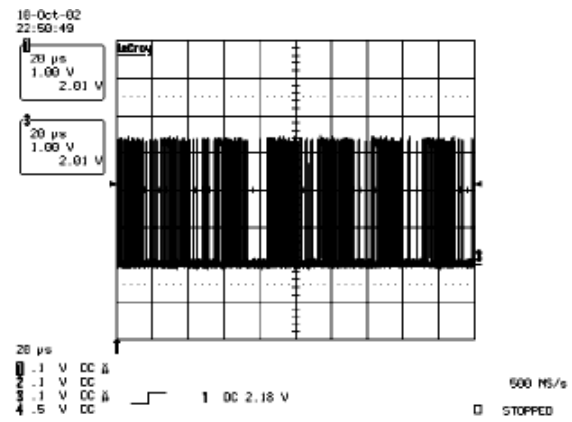


WAVEFORMS

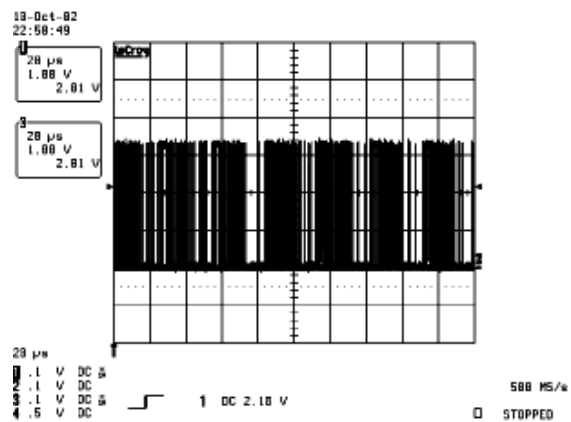
1 R,G,B Output Signal (#54, 48, 43) Of IC101



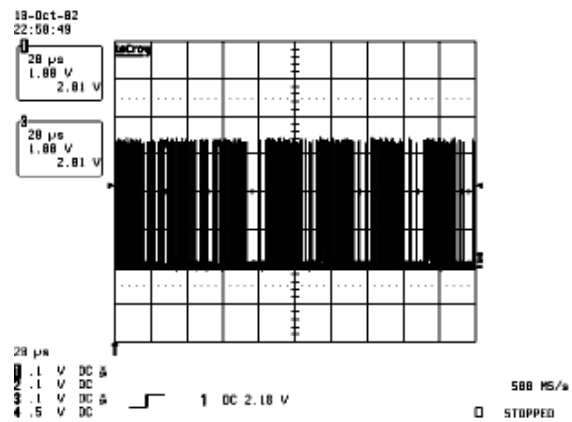
2 R,G,B Output Signal Of IC101



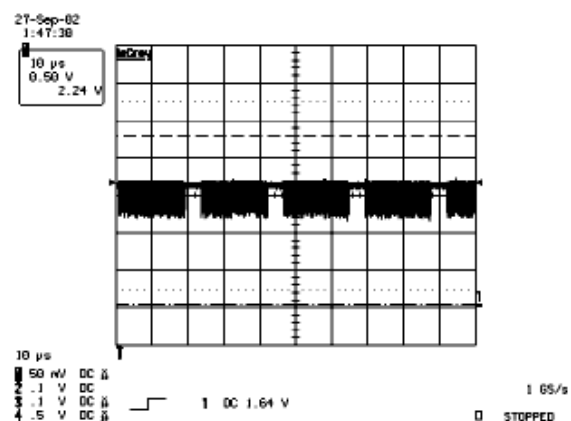
3 Output Digital Signal of IC602



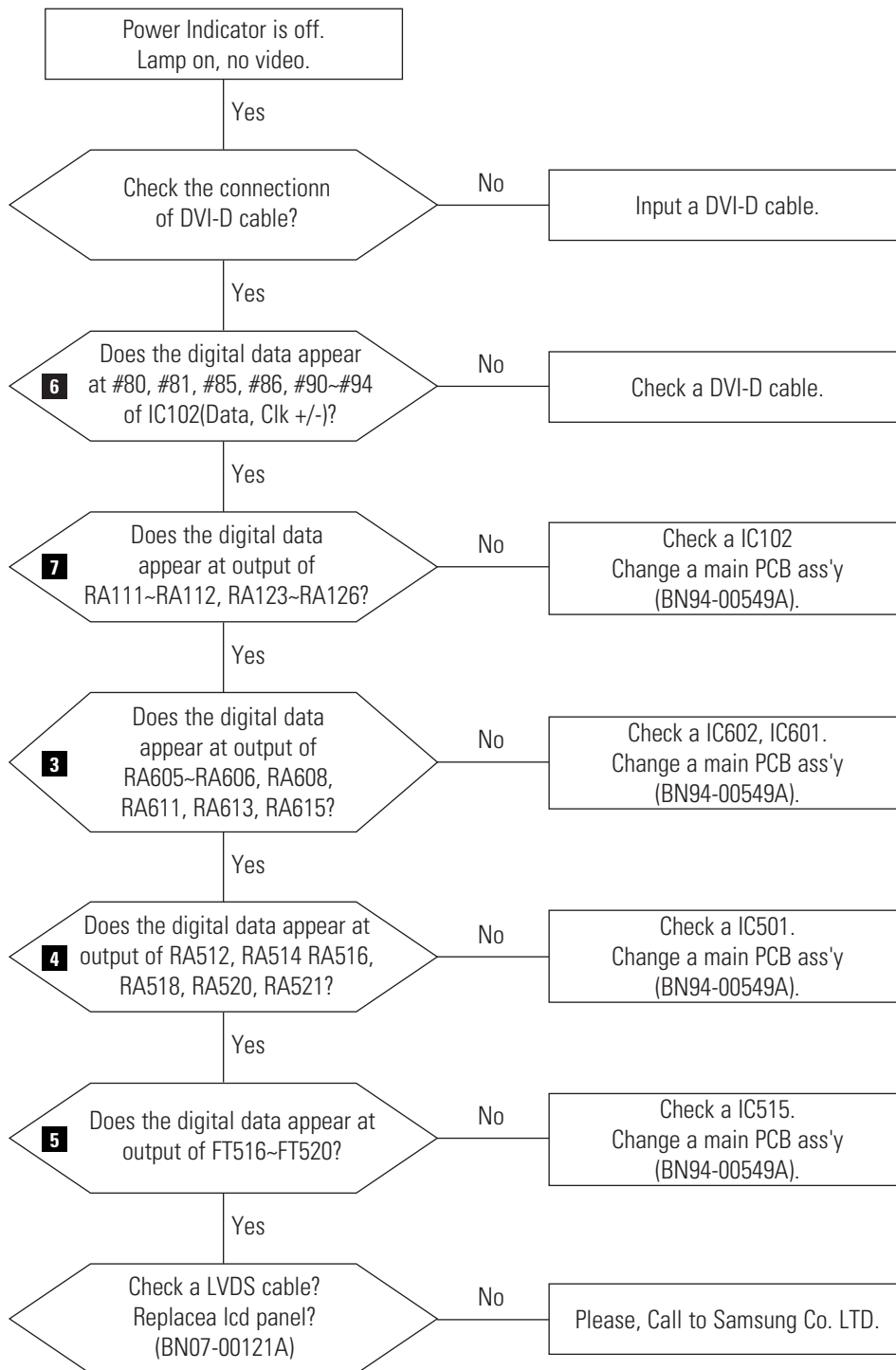
4 Output Digital Signal of IC501



5 Digital Output Data of IC515

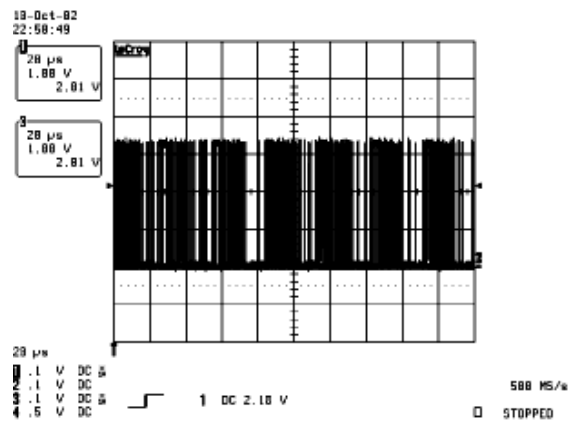


5-3 No Video (DVI-Digital Signal)

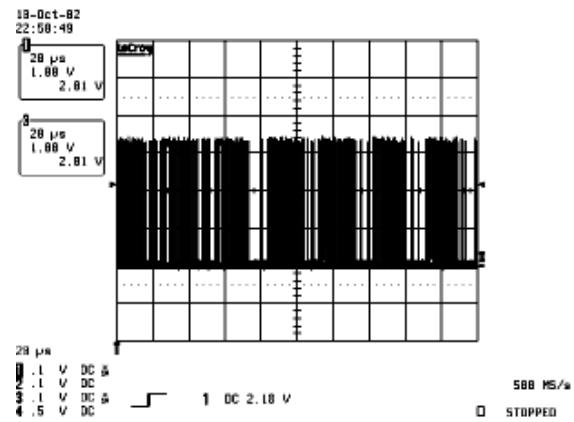


WAVEFORMS

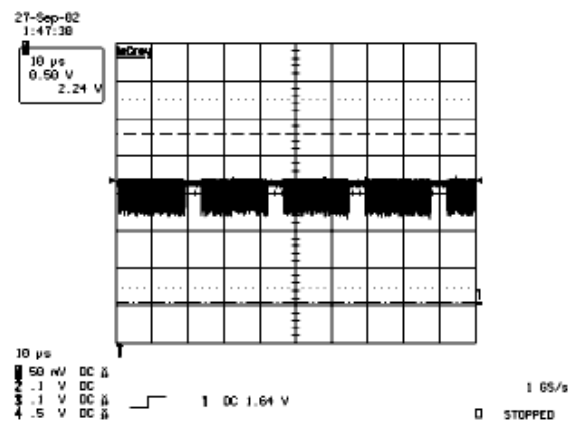
3 Output Digital Signal of IC602



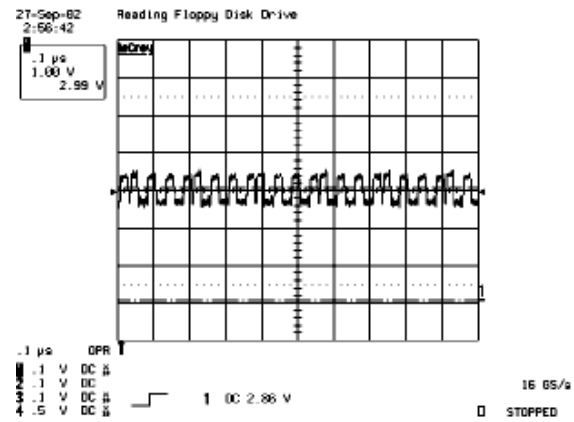
4 Output Digital Signal of I501



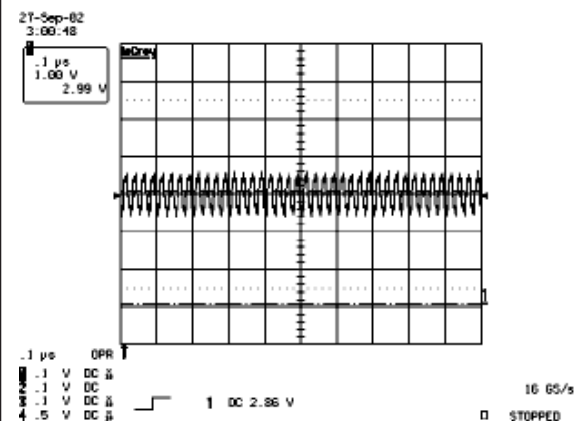
5 Digital Output Data of IC515



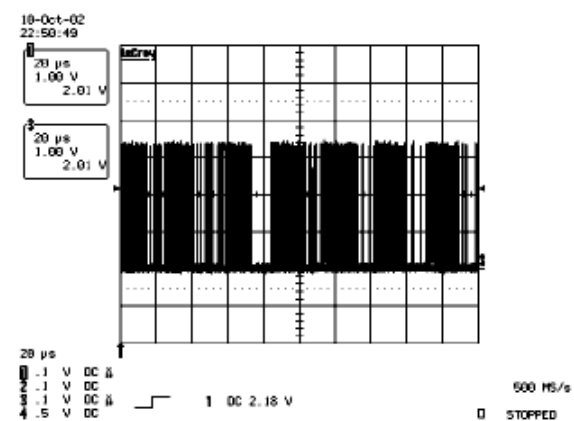
6 Signal of DVI_RX 0~2 (Data)

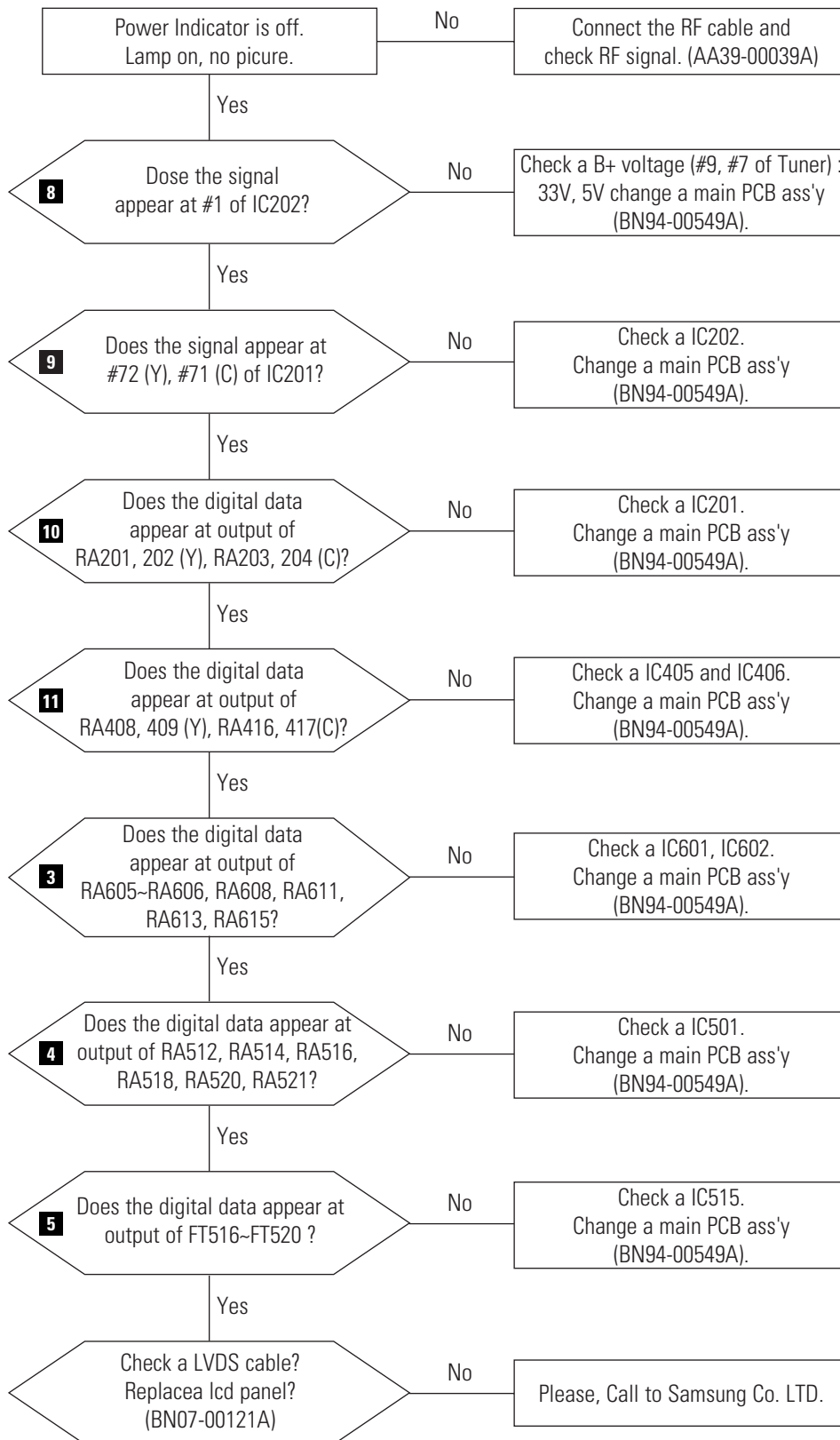


6-1 Signal of DVI_RXC (CLK)



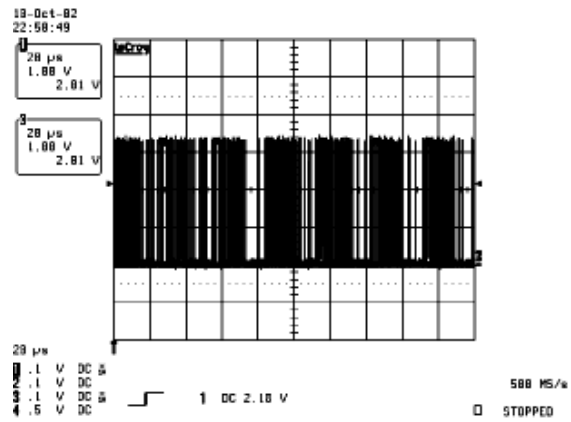
7 Digital Output Signal Of IC102



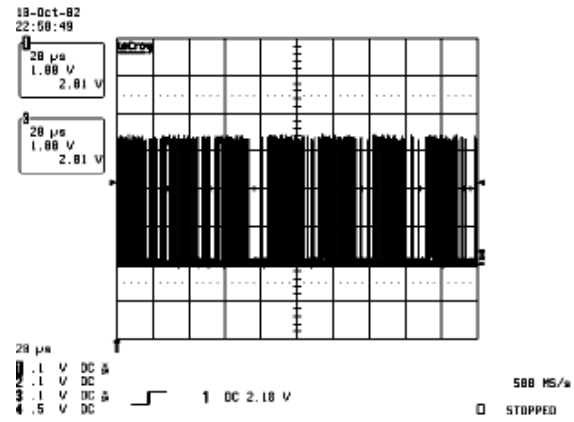
5-4 No Picture (Tuner_CVBS)

WAVEFORMS

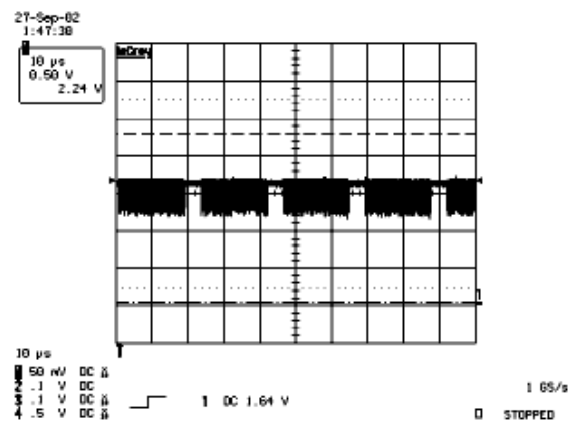
3 Output Digital Signal of IC602



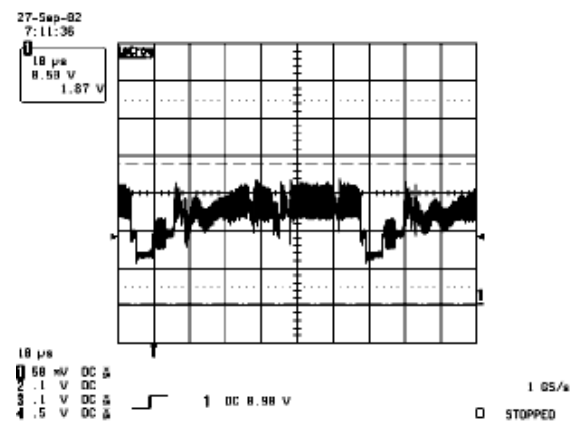
4 Output Digital Signal of IC501



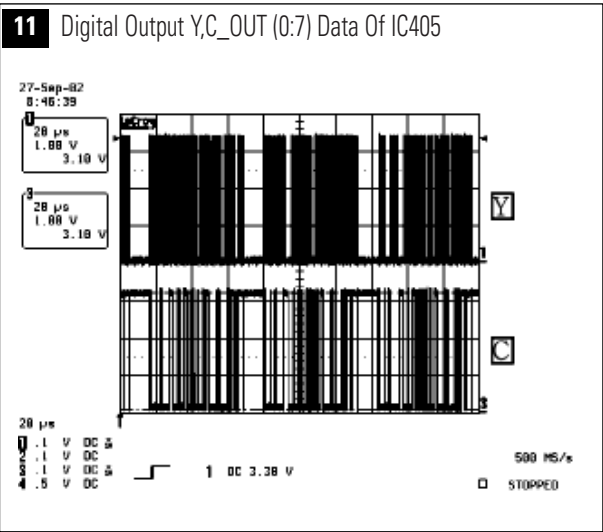
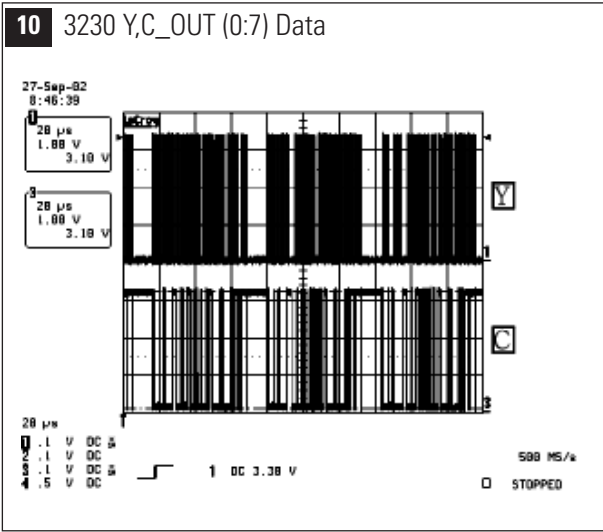
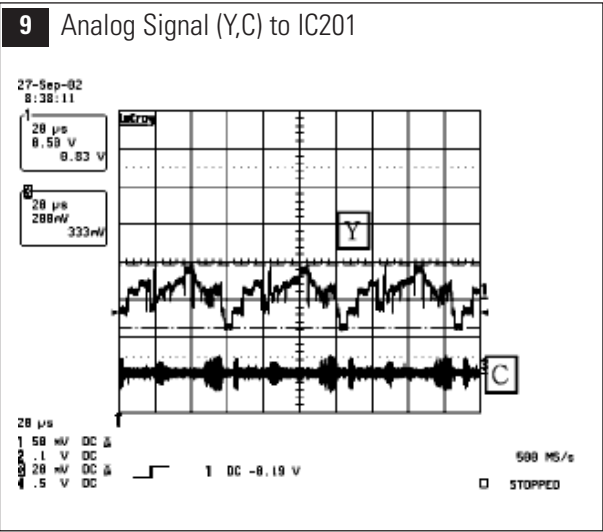
5 Digital Output Data of IC515



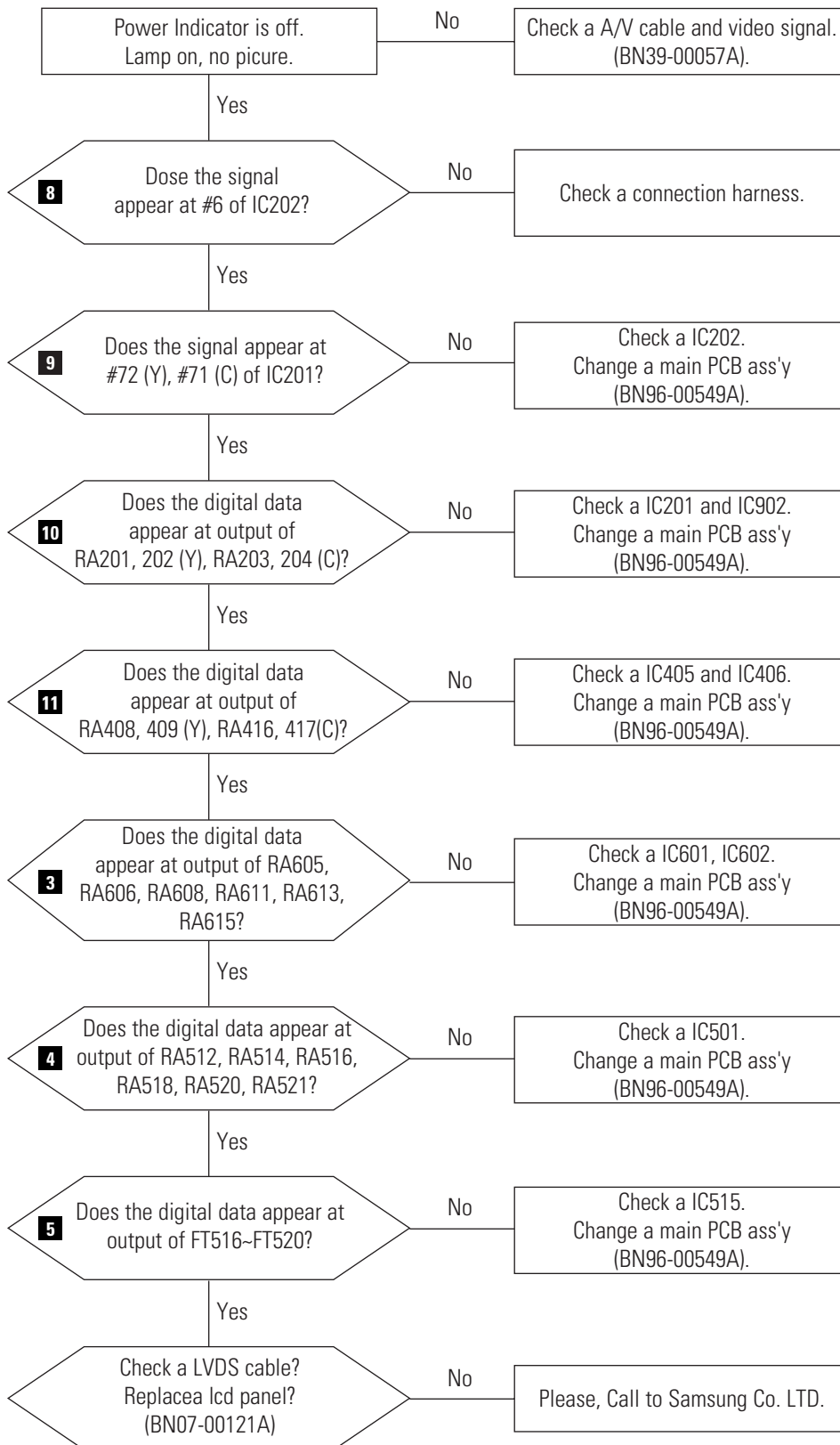
8 Tuner_CVBS Output Signal



WAVEFORMS

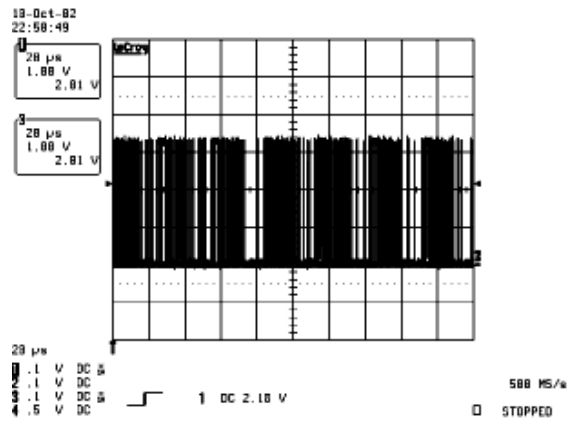


5-5 No Picture (Video_CVBS)

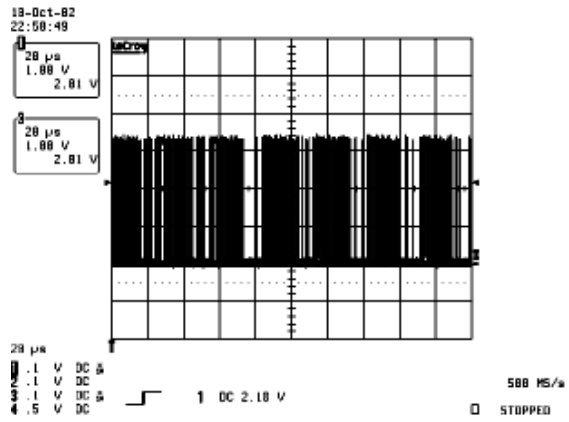


WAVEFORMS

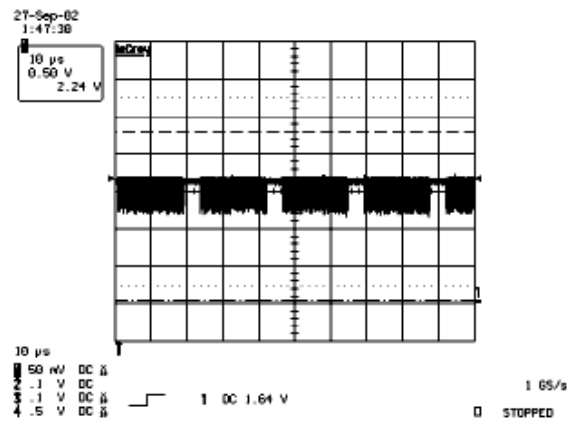
3 Output Digital Signal of IC602



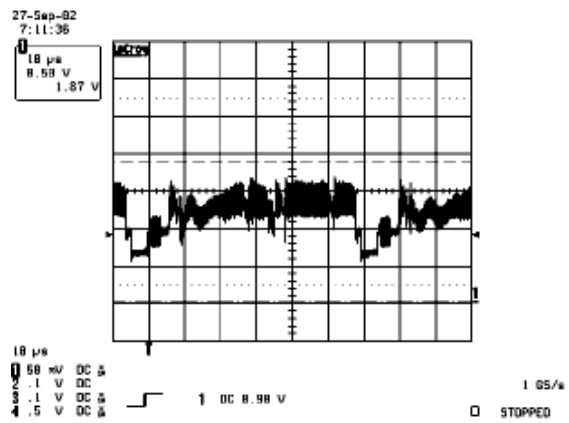
4 Output Digital Signal of IC501



5 Digital Output Data of IC515

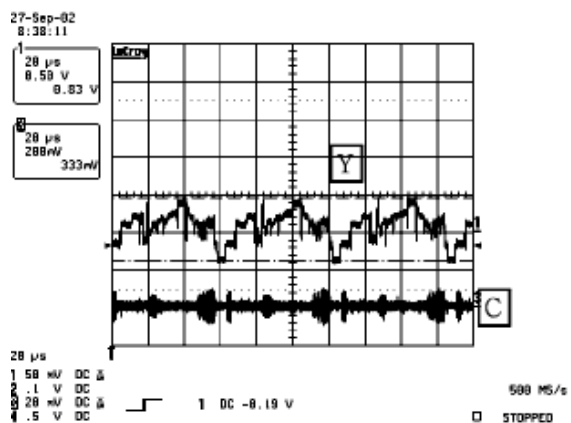


8 Tuner_CVBS Output Signal

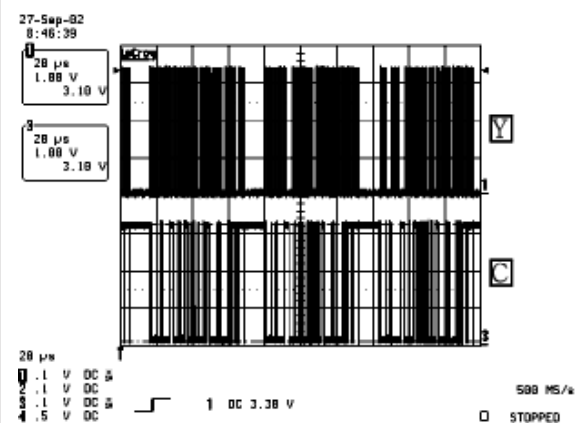


WAVEFORMS

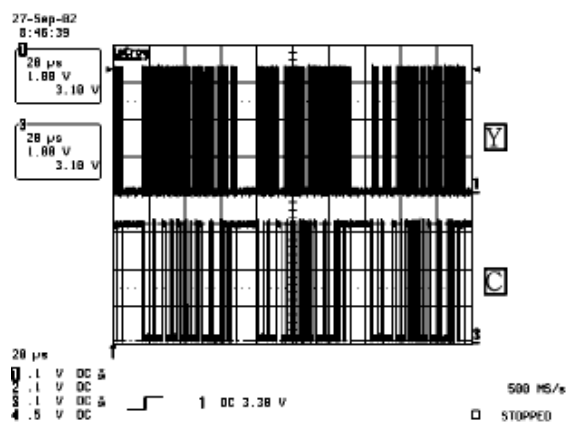
9 Analog Signal (Y,C) to IC201

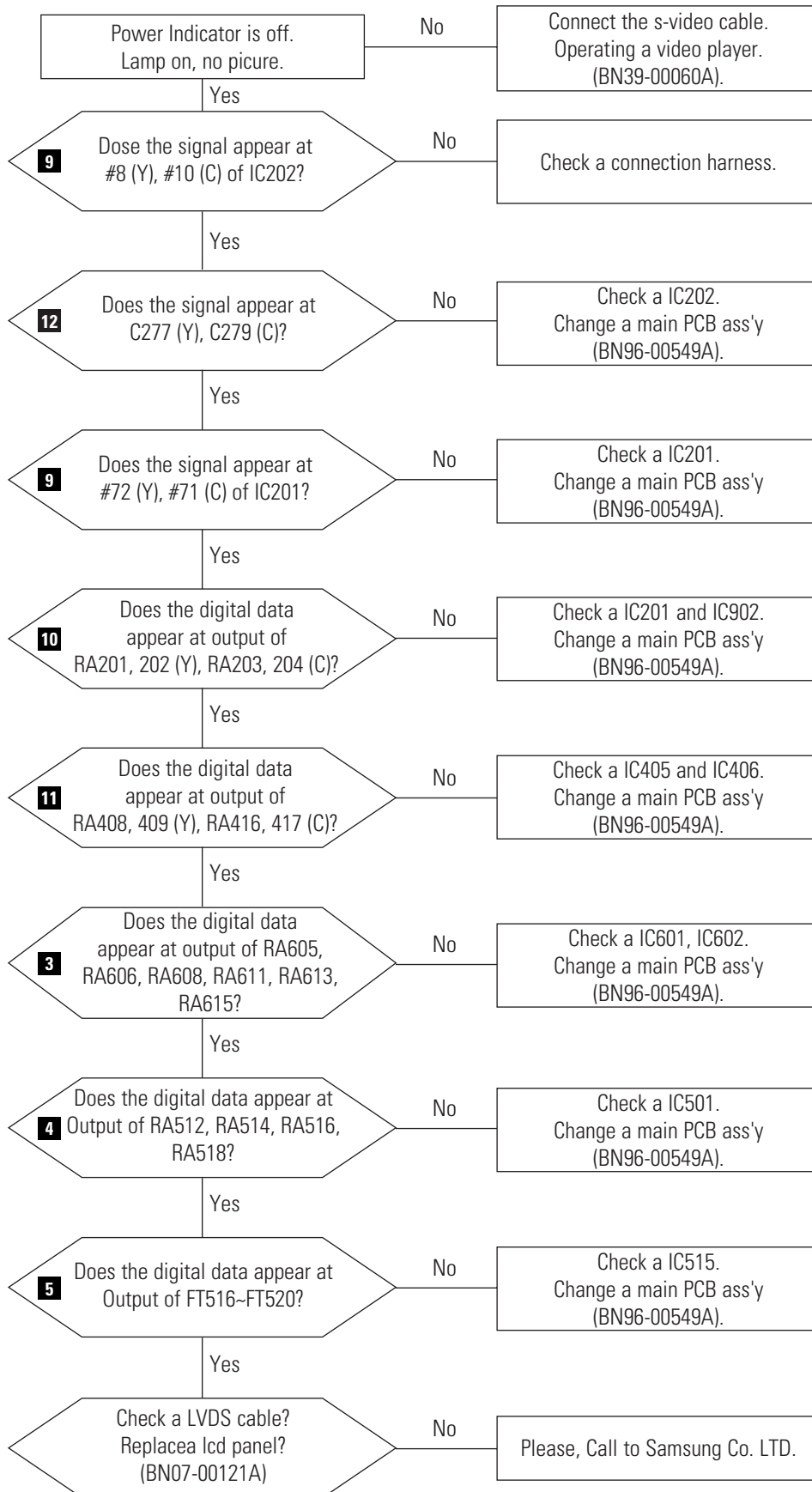


10 3230 Y,C_OUT (0:7) Data



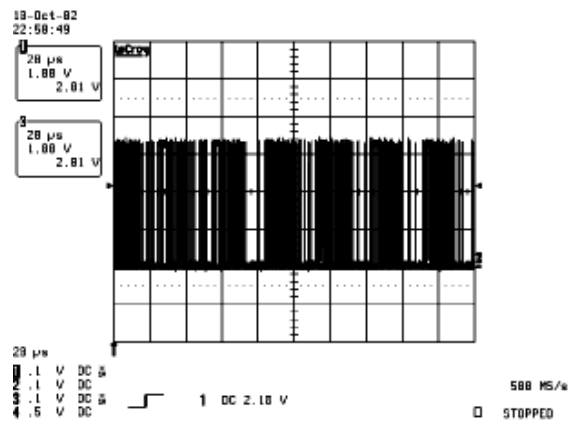
11 Digital Output Y,C_OUT (0:7) Data Of IC405



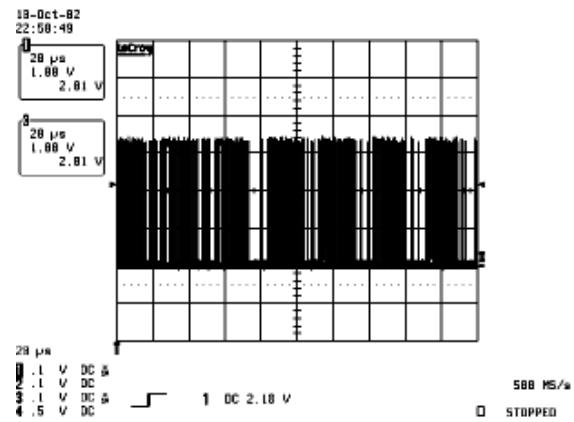
5-6 No Picture (S-VIDEO_Y,C)

WAVEFORMS

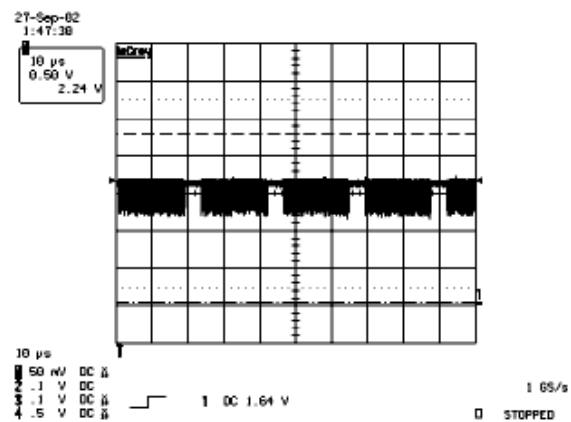
3 Output Digital Signal of IC602



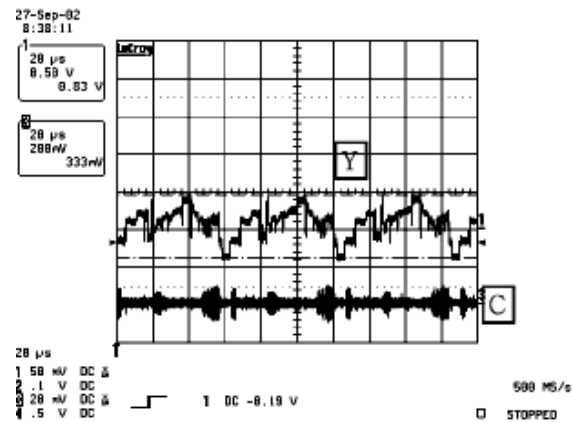
4 Output Digital Signal of IC501



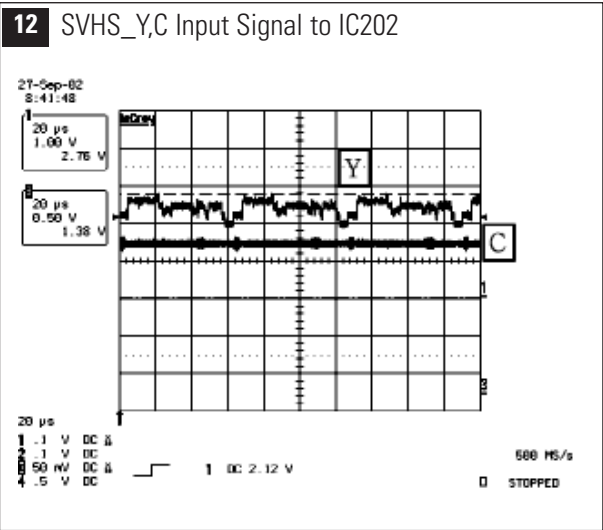
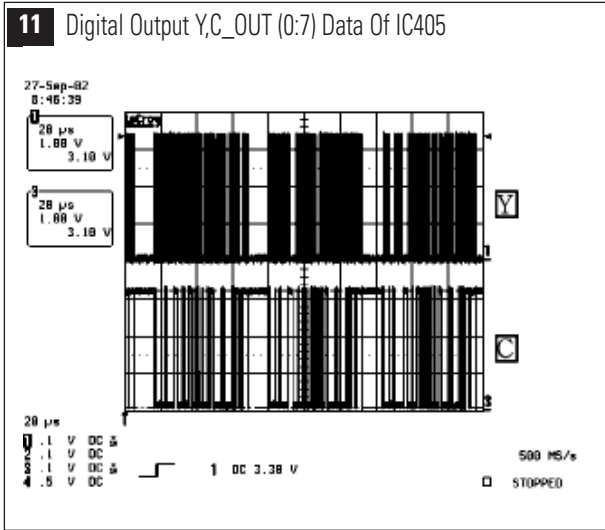
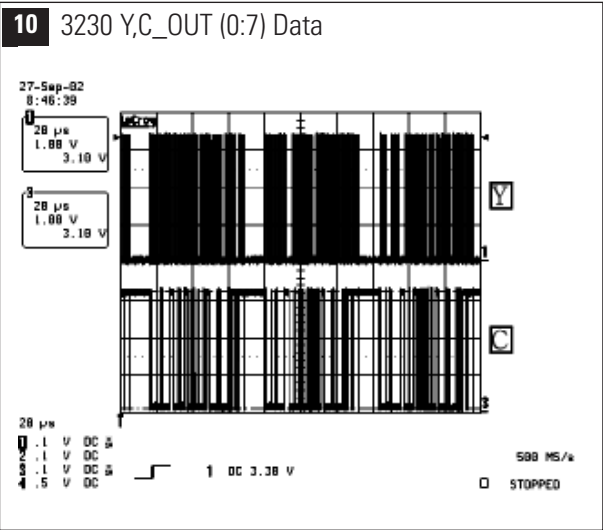
5 Digital Output Data of IC515



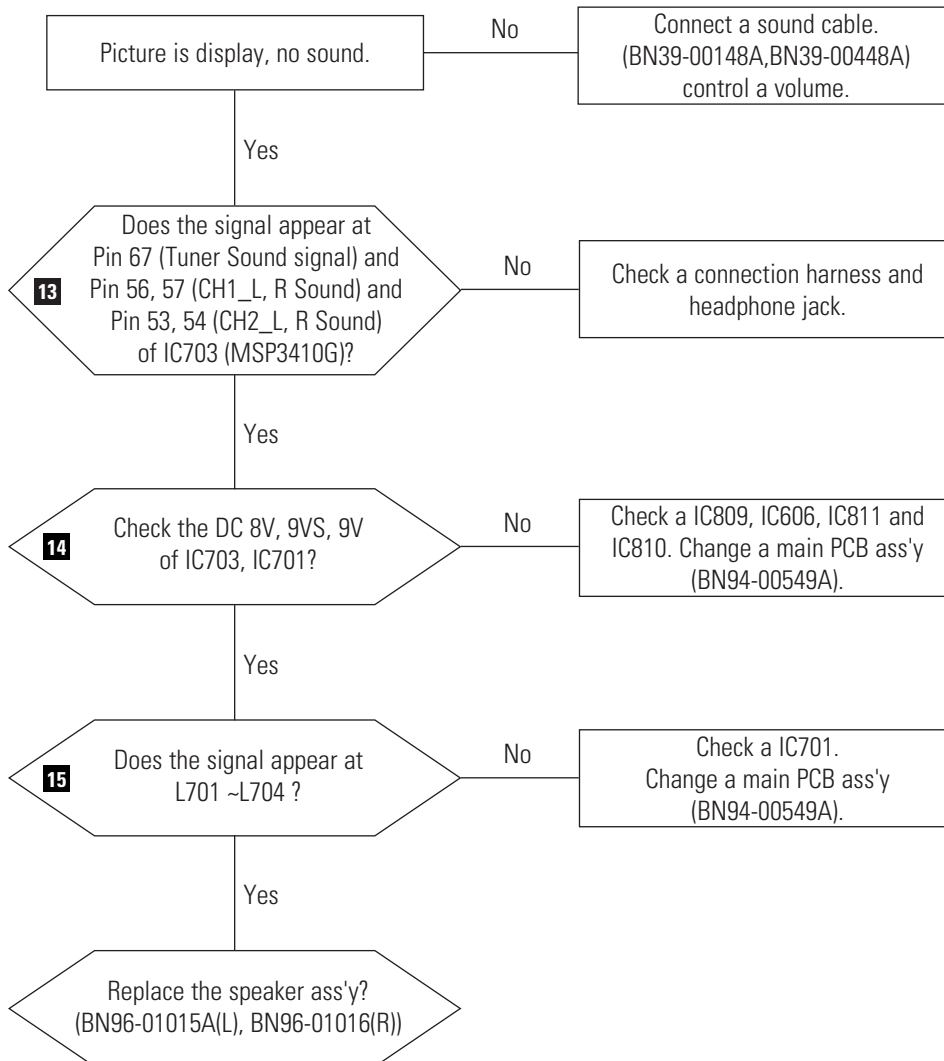
9 Analog Signal (Y,C) to IC201



WAVEFORMS

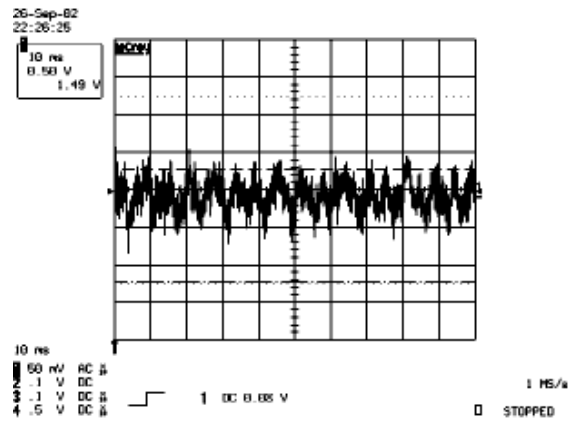


5-7 No Sound

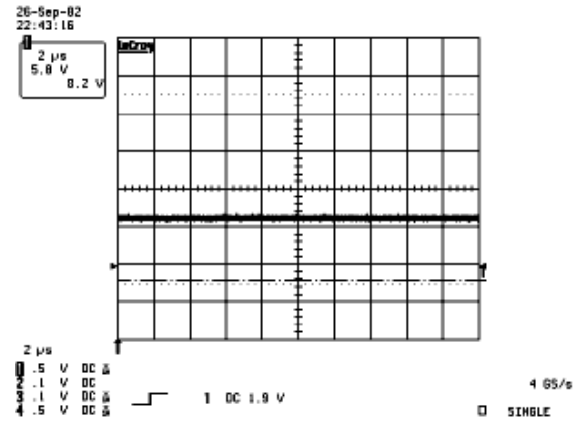


WAVEFORMS

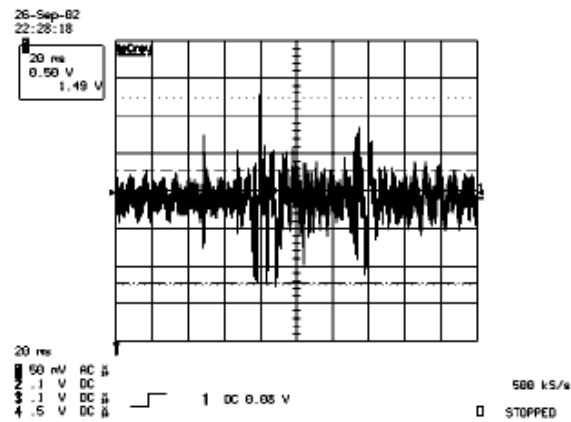
13 The Signal are Inputed to IC703



14 DC +8V

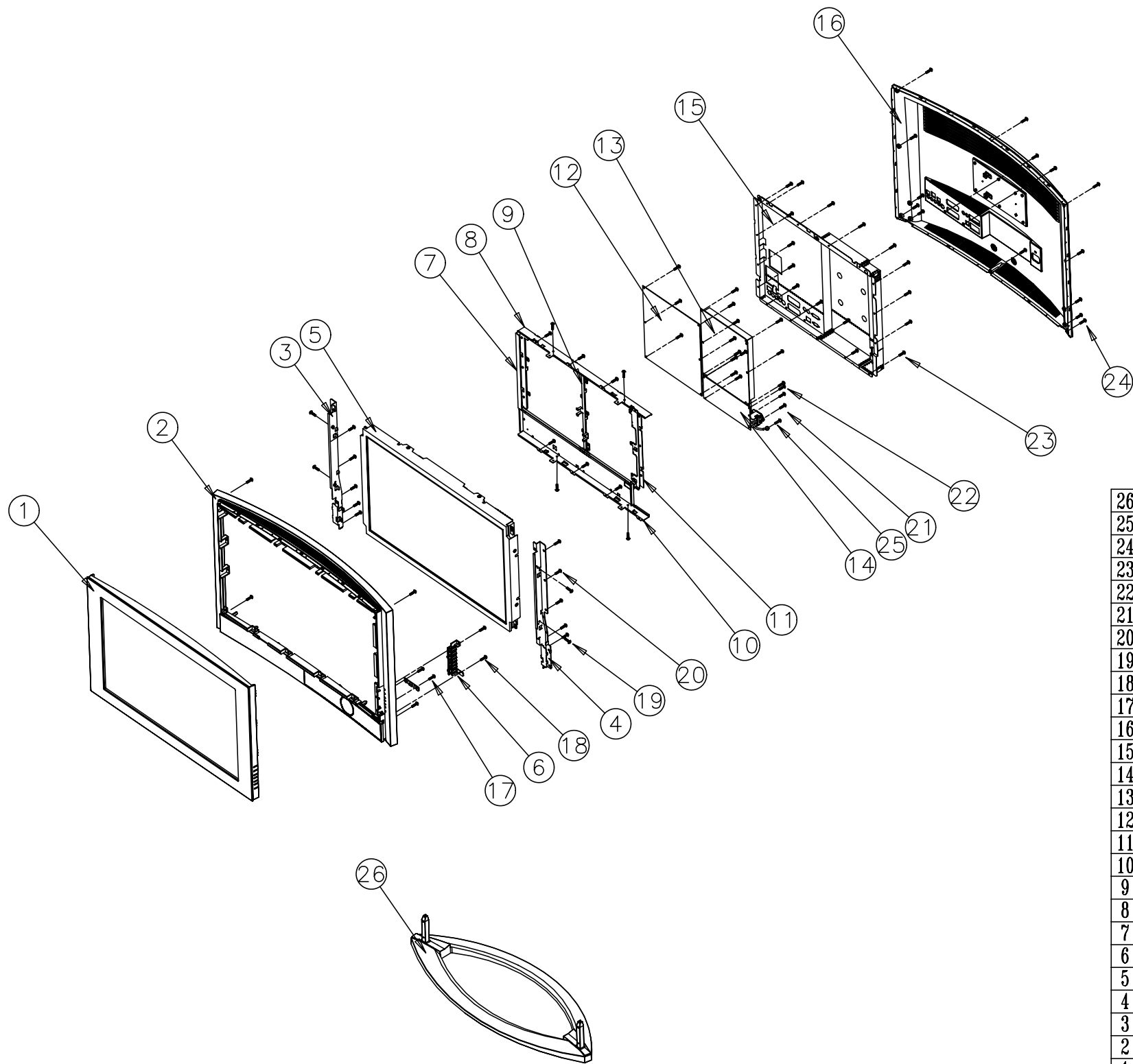


15 Output WaveForm



6 Exploded View and Parts List

※ You can search for updated part codes through ITSELF web site.
URL : <http://itself.sec.samsung.co.kr/>



26	UNIT,STAND	BN96-01128A	1	ABS HB GR503 SPRAY	SA
25	SCREW-MACHINE	6006-000245	1	WSP,+,PH,M4,L8,ZPC(YEL)	SA
24	SCREW-TAPTITE	6003-001323	14	BH,+,B,M4,L12,N1 PLT	SA
23	SCREW-TAPTITE	6003-000117	16	BH,+,B,M3,L6,ZPC(YEL)	SA
22	SCREW-TAPTITE	6003-000256	2	BWH,+,B,M3,L10(YEL)	SA
21	SCREW-TAPTITE	6003-000117	15	BH,+,B,M3,L6,ZPC(YEL)	SA
20	SCREW-TAPTITE	6002-000514	16	RH,+,2,M4,L15,ZPC(BLK)	SA
19	SCREW-MACHINE	6001-000157	8	BH,+,M4,L8,ZPC(YEL)	SA
18	SCREW-TAPTITE	6003-000122	6	BH,+,B,M4,L12,ZPC(YEL)	SA
17	SCREW-TAPTITE	6003-000276	2	BH,+,B,M3,L10(BLK)	SA
16	UNIT,C/REAR	BN96-01127A	1	ABS HB GR503 SPRAY	SA
15	UNIT,SHIELD/PCB	BN96-01129A	1	SECC T0.5	SNA
14	POWER SUB BOARD	-	1	NF26**	SNA
13	POWER BOARD	-	1	NF26**	SA
12	MAIN BOARD	-	1	NF26**	SA
11	BRKT-POWER/SUB	BN61-01152A	1	SECC T1.2	SNA
10	BRKT-BOTTOM	BN61-01149A	1	SECC T1.2	SNA
9	BRKT-POWER	BN61-01151A	1	SECC T1.2	SNA
8	BRKT-TOP	BN61-01148A	1	SECC T1.2	SNA
7	BRKT-MAIN	BN61-01150A	1	SECC T1.2	SNA
6	UNIT,K/FUNCTION	BN96-01186A	1	NF26**	SNA
5	26" PANEL	-	1	26" PANEL	SA
4	UNIT,B/SIDE-R	BN96-01179A	1	SECC T1.6	SNA
3	UNIT,B/SIDE-L	BN96-01180A	1	SECC T1.6	SNA
2	UNIT,C/MIDDLE	BN96-01126A	1	ABS HB GR503 SPRAY	SNA
1	UNIT,C/FRONT	BN96-01125A	1	ABS HB GR503 SPRAY	SA
NO	PART NAME	CODE NO	Q'TY	SPEC.	REMARK

Memo

7 Parts List

* You can search for updated part codes through ITSELF web site.

URL : <http://itself.sec.samsung.co.kr/>

7-1 Part Lists

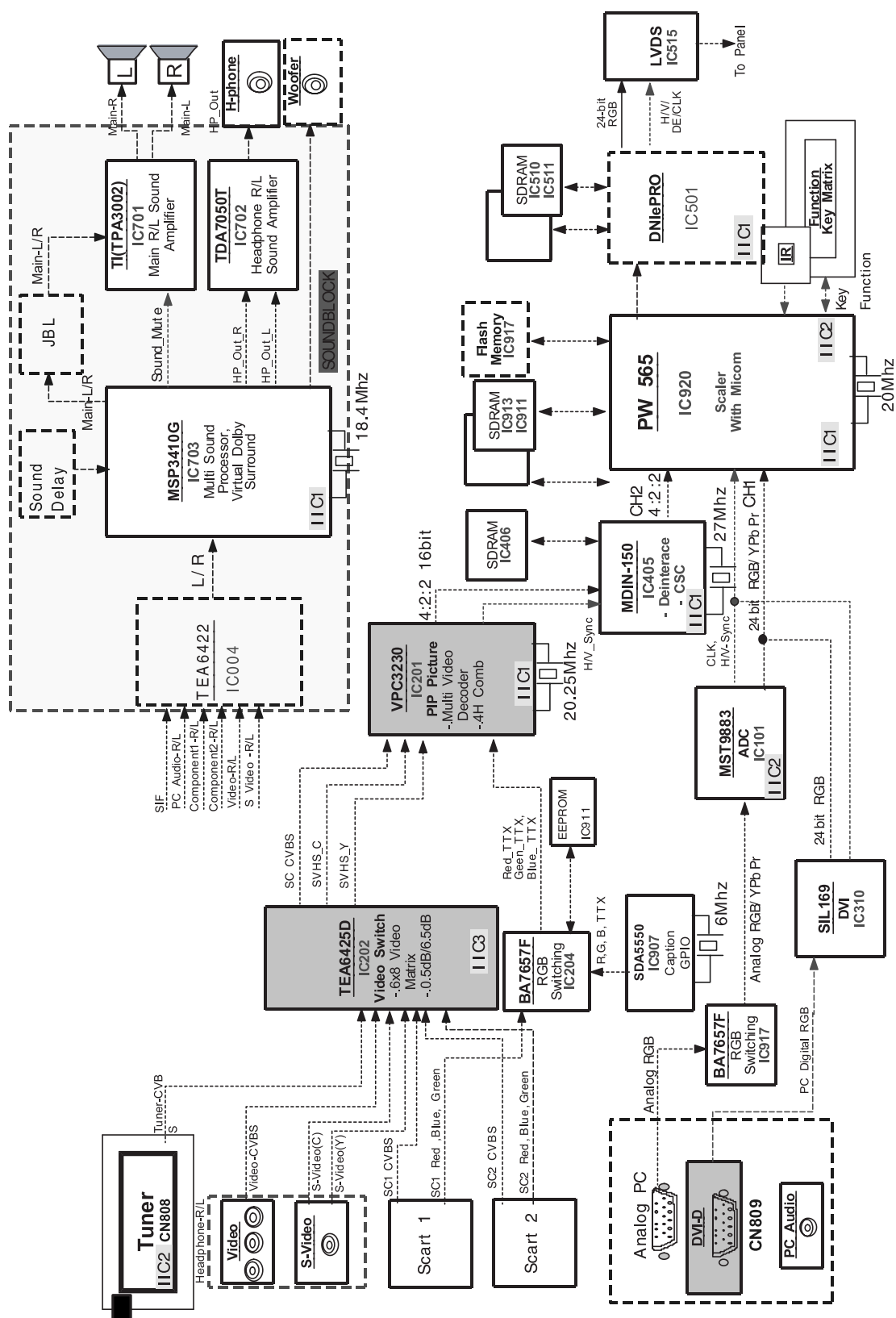
Description	Code No.
ASSY PCB MAIN	BN94 - 00539N
ASSY COVER FRONT	BN90 - 00640R
ASSY COVER REAR	BN90 - 00641J
LCD-PANEL	BN07 - 00121A
ASSY CHASSIS	BN91 - 00784Z
ASSY SHIELD	BN91 - 00785K
ASSY BOX	BN92 - 01043H
ASSY LABEL	BN92 - 01044C
REMOCON	BN59 - 00412A
ASSY ACCESSORY	BN92 - 01042E
ASSY ACCESSORY	BN92 - 00702H
ASSY PCB POWER_CH	BN94 - 00443F
ASSY PCB POWER_SUB PCB	BN94 - 00444N

<OPTION PART LIST>	
IF Cable	: AA39-00039A
A/V Cable	: BN39-00057A
S-Video Cable	: BN39-00060A
SOUND Cable(R, L)	: BN39-00148A
DVI(D) Cable	: BN39-00246F
DVI AUDIO Cable	: BN81-00120A
STEREO Cable	: BN39-00448A
DSUB Cable	: BN39-00244B

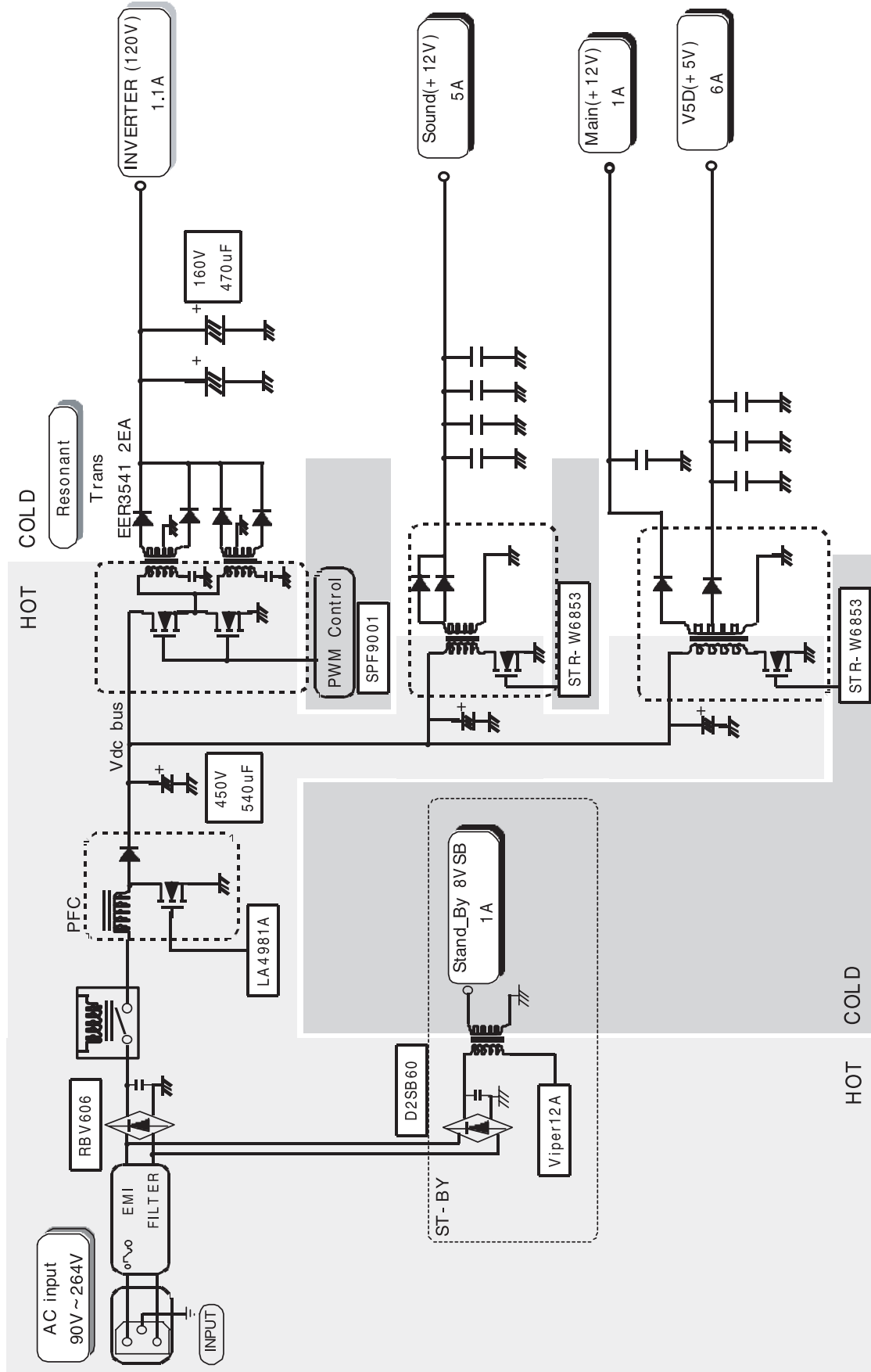
Memo

✱ This Document can not be used without Samsung's authorization.

8-1 Main Block diagram

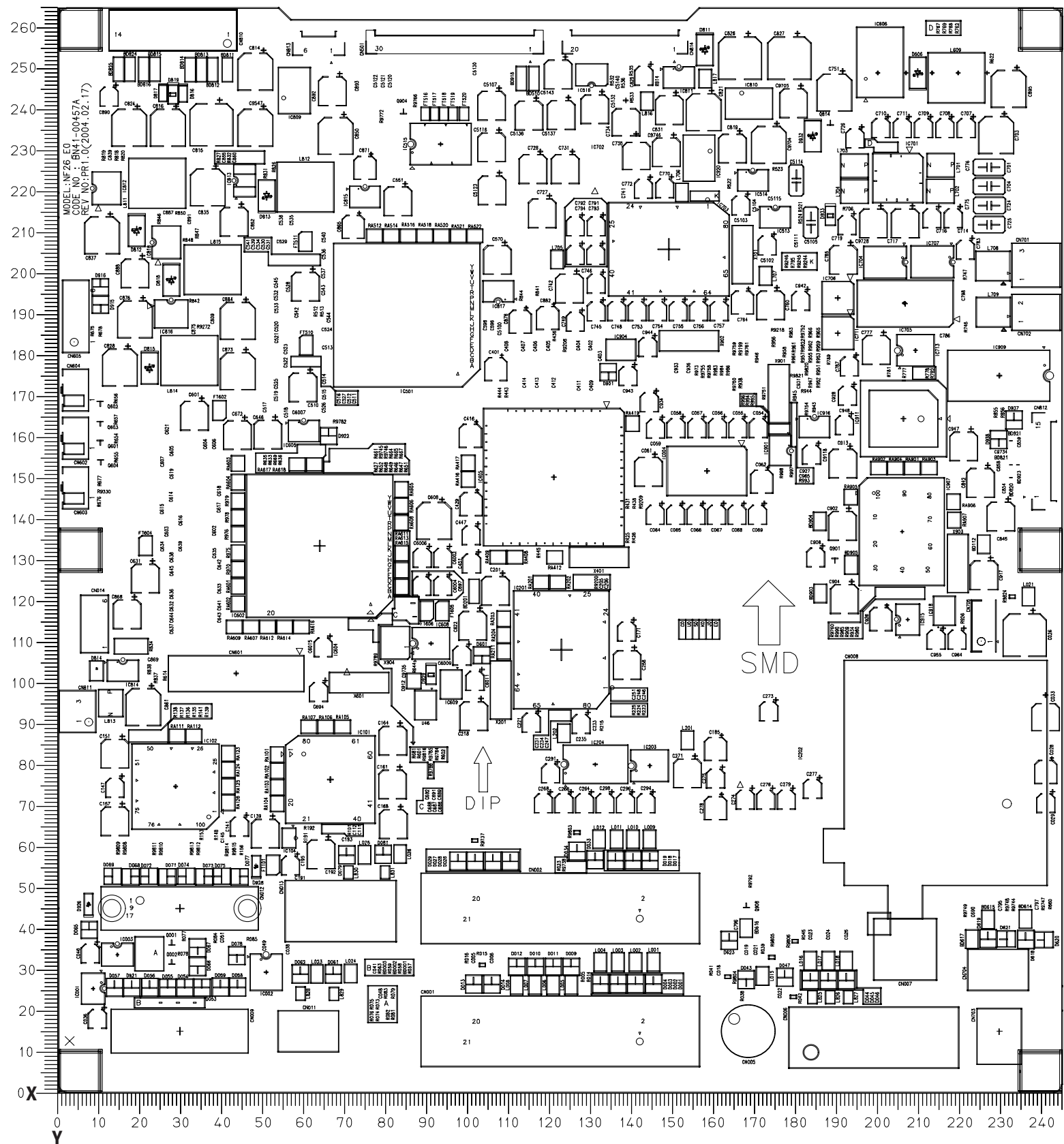


8-2 Power Block diagram



10 PCB Layout

10-1 Main PCB Layout



Loc. No.	Description	X	Y
DIODE			
D001	DIODE-ZENER	142.3	26.5
D002	DIODE-ZENER	138.0	26.5
D003	DIODE-ZENER	133.8	26.5
D004	DIODE-ZENER	129.6	26.5
D005	DIODE-ZENER	142.3	26.5
D006	DIODE-ZENER	138.0	26.5
D007	DIODE-ZENER	133.8	26.5
D008	DIODE-ZENER	129.6	26.5
D009	DIODE-SWITCHING	122.6	30.8
D010	DIODE-SWITCHING	114.0	30.8
D011	DIODE-SWITCHING	118.3	30.8
D012	DIODE-SWITCHING	109.6	30.8
D013	DIODE-ZENER	99.3	26.4
D014	DIODE-ZENER	103.6	26.4
D015	DIODE-ZENER	103.6	26.4
D016	DIODE-ZENER	99.3	26.4
D017	DIODE-ZENER	141.4	56.7
D018	DIODE-ZENER	137.4	56.7
D019	DIODE-ZENER	133.2	56.7
D022	DIODE-ZENER	141.4	56.7
D023	DIODE-ZENER	137.4	56.7
D024	DIODE-ZENER	133.2	56.7
D025	DIODE-ZENER	129.0	56.7
D026	DIODE-ZENER	108.0	56.5
D027	DIODE-ZENER	99.6	56.5
D028	DIODE-ZENER	103.9	56.5
D029	DIODE-ZENER	95.5	56.5
D033	DIODE-ZENER	128.3	56.8
D034	DIODE-ZENER	124.0	58.9
D043	DIODE-ZENER	164.5	27.7
D044	DIODE-ZENER	179.8	27.4
D045	DIODE-ZENER	184.1	27.4
D046	DIODE-ZENER	188.4	27.4
D047	DIODE-ZENER	173.7	28.1
D048	DIODE-ZENER	179.8	27.4
D049	DIODE-ZENER	184.1	27.4
D051	DIODE-ZENER	188.4	27.4
D052	DIODE-ARRAY	7.7	25.6
D053	DIODE-SWITCHING	34.3	25.7
D054	DIODE-SWITCHING	30.2	25.7
D055	DIODE-SWITCHING	26.1	25.7

Loc. No.	Description	X	Y
D056	DIODE-ZENER	21.8	25.6
D057	DIODE-ZENER	13.4	25.6
D058	DIODE-ZENER	42.8	25.7
D059	DIODE-ZENER	38.7	25.7
D061	DIODE-ZENER	65.7	28.9
D062	DIODE-ZENER	57.8	28.9
D063	DIODE-ZENER	57.8	28.9
D064	DIODE-ZENER	65.7	28.9
D065	DIODE-ARRAY	7.3	39.8
D066	DIODE-ZENER	33.3	30.9
D067	DIODE-ZENER	33.3	35.5
D068	DIODE-SWITCHING	17.3	52.8
D069	DIODE-SWITCHING	12.9	52.8
D071	DIODE-SWITCHING	26.0	52.8
D072	DIODE-SWITCHING	21.6	52.8
D073	DIODE-SWITCHING	34.9	52.8
D074	DIODE-SWITCHING	30.5	52.8
D075	DIODE-SWITCHING	39.0	52.8
D077	DIODE-SWITCHING	43.4	52.8
D078	DIODE-ZENER	42.7	33.6
D079	DIODE-ZENER	68.9	58.0
D081	DIODE-ZENER	77.6	58.1
D082	DIODE-ZENER	68.9	58.0
D083	DIODE-ZENER	77.6	58.1
D105	DIODE-SWITCHING	45.7	62.0
D106	DIODE-ZENER	39.2	64.6
D601	DIODE-SWITCHING	101.3	106.8
D606	DIODE-RECTIFIER	205.5	249.2
D618	DIODE-ZENER	231.3	37.3
D619	DIODE-ZENER	222.3	37.5
D620	DIODE-ZENER	235.8	37.3
D621	DIODE-ZENER	226.8	37.5
D622	DIODE-ZENER	160.4	37.1
D623	DIODE-ZENER	160.4	37.1
D701	DIODE-ZENER	119.1	217.9
D702	DIODE-SWITCHING	114.5	217.7
D703	DIODE-ZENER	134.5	237.6
D704	DIODE-ZENER	138.4	229.9
D705	DIODE-ZENER	119.5	197.5
D706	DIODE-ZENER	148.3	221.8
D707	DIODE-ZENER	166.9	194.0
D811	DIODE-RECTIFIER	154.6	254.8

Loc. No.	Description	X	Y
D812	DIODE-RECTIFIER	18.7	210.6
D813	DIODE-RECTIFIER	49.8	219.2
D814	DIODE-SCHOTTKY	9.1	102.9
D815	DIODE-RECTIFIER	21.8	177.0
D816	DIODE-ZENER	29.8	244.1
D817	DIODE-ZENER	25.0	244.2
D818	DIODE-RECTIFIER	27.0	198.5
D819	DIODE-ZENER	27.4	243.9
D901	DIODE-SWITCHING	131.6	176.1
D906	DIODE-ZENER	201.0	133.2
D907	DIODE-ZENER	196.9	133.2
D912	DIODE-ZENER	85.0	100.5
D915	DIODE-SWITCHING	10.1	192.5
D916	DIODE-SWITCHING	10.0	196.9
D921	DIODE-ZENER	17.5	25.6
D922	DIODE-SWITCHING	64.6	160.5
D924	DIODE-SWITCHING	194.2	212.7
D926	DIODE-ZENER	7.2	46.0
D927	DIODE-ZENER	20.1	31.7
D928	DIODE-ZENER	47.3	55.3
D929	DIODE-ZENER	89.1	102.1
D930	DIODE-ZENER	149.5	64.5
D931	DIODE-ZENER	149.7	78.4
D933	DIODE-ZENER	184.6	214.3
D935	DIODE-ZENER	154.8	28.0
D936	DIODE-ZENER	159.1	27.7
D937	DIODE-ZENER	228.5	164.3
D938	DIODE-ZENER	224.9	159.7
D939	DIODE-ZENER	227.3	147.0
D940	DIODE-ZENER	231.0	154.3
IC			
IC001	IC-EEPROM	8.3	25.4
IC002	IC-CMOS LOGIC	49.7	29.4
IC003	IC-EEPROM	14.1	33.7
IC004	IC-AUDIO SWITCH	155.1	151.9
IC101	IC-A/D CONVERTER	65.0	76.5
IC102	IC-RECEIVER	28.0	74.8
IC103	IC-VOL. DETECTOR	45.6	68.1
IC104	IC-POSIFIXED REG.	55.2	62.2
IC201	IC-VIDEO PROCESS	120.3	108.2
IC202	IC-VIDEO SWITCH	168.8	82.8

Loc. No.	Description	X	Y
IC203	IC-ANALOG SWITCH	141.4	79.9
IC204	IC-VIDEO SWITCH	128.4	80.2
IC405	IC-VIDEO PROCESS	118.5	150.4
IC406	IC-DRAM	119.4	176.4
IC501	IC-VIDEO PROCESS	83.3	190.0
IC510	IC-DRAM	58.9	176.2
IC511	IC-DRAM	58.9	200.5
IC513	IC-TIMER	171.4	213.9
IC514	IC-TIMER	166.1	222.9
IC515	IC-TRANSMITTER	91.4	231.8
IC516	FET-SILICON	127.5	248.6
IC601	IC-FLASH MEMORY	40.8	102.0
IC602	IC-LCD CONTROLLER	62.5	133.6
IC604	IC-MODULATOR	70.9	108.2
IC605	IC-EEPROM	58.7	161.8
IC606	IC-DC/DC CONVERTER	196.5	252.3
IC607	IC-DRAM	31.6	148.4
IC608	IC-CMOS LOGIC	89.1	109.8
IC609	IC-VOL. DETECTOR	93.9	99.6
IC612	IC-DRAM	31.6	124.7
IC613	IC-OP AMP	196.0	249.2
IC614	IC-OP AMP	202.7	249.2
IC616	IC-OP AMP	208.9	249.2
IC617	IC-OP AMP	215.2	249.2
IC618	IC-OP AMP	222.1	249.2
IC701	IC-AUDIO AMP	200.8	223.5
IC702	IC-AUDIO AMP	130.2	225.7
IC703	IC-SOUND PROCESSOR	146.0	206.1
IC704	IC-TTL	197.7	202.9
IC705	IC-SRAM	202.5	192.8
IC706	IC-CMOS LOGIC	186.4	194.2
IC707	IC-TTL	209.0	203.0
IC708	IC-TTL	214.8	186.1
IC709	IC-TTL	214.8	197.4
IC711	IC-CMOS LOGIC	186.4	185.6
IC712	IC-TTL	202.4	193.0
IC713	IC-TTL	205.0	181.4
IC809	IC-POSIFIXED REG.	56.4	245.3
IC810	IC-POSIFIXED REG.	165.6	241.7
IC811	IC-SWITCH REG.	148.4	248.2
IC812	IC-SWITCH VOL. REG.	11.5	221.0
IC813	IC-DC/DC CONVERTER	44.5	222.9

Loc. No.	Description	X	Y
IC814	IC-DC/DC CONVERTER	15.4	103.2
IC815	IC-POSIAJUST REG.	73.3	218.9
IC816	IC-SWITCH VOL. REG.	27.0	190.3
IC817	IC-POSIAJUST REG.	105.2	195.8
IC818	IC-SWITCH VOL. REG.	25.8	207.8
IC901	IC-RESET	172.7	156.9
IC902	IC MICOM	177.6	178.4
IC903	IC MICOM	157.3	178.1
IC904	IC-VOL. DETECTOR	134.4	181.5
IC907	IC-DECODER	201.8	137.1
IC909	IC-SRAM	225.0	175.2
IC911	IC-EPROM	202.1	164.7
IC915	IC-EEPROM	203.1	115.6
IC916	IC-OP AMP	180.8	162.7
IC919	IC-MODULATOR	75.7	108.9
IC920	IC-POSIFIXED REG.	153.2	227.9
TRANSISTOR			
Q001	FET-SILICON	27.1	36.1
Q002	FET-SILICON	27.1	31.4
Q177	TR-SMALL SIGNAL	156.3	68.6
Q178	TR-SMALL SIGNAL	156.3	83.0
Q510	TR-SMALL SIGNAL	137.7	243.2
Q511	TR-SMALL SIGNAL	136.0	248.0
Q601	FET-SILICON	10.0	159.4
Q602	FET-SILICON	10.0	168.9
Q603	FET-SILICON	10.0	164.0
Q604	FET-SILICON	10.1	154.6
Q611	TR-SMALL SIGNAL	127.0	187.9
Q612	TR-SMALL SIGNAL	134.7	186.4
Q701	TR-SMALL SIGNAL	122.3	227.5
Q703	TR-SMALL SIGNAL	202.4	215.1
Q810	TR-SMALL SIGNAL	226.6	158.0
Q811	TR-SMALL SIGNAL	224.9	165.2
Q812	TR-SMALL SIGNAL	13.1	240.7
Q814	TR-SMALL SIGNAL	184.6	236.5
Q901	TR-SMALL SIGNAL	185.7	130.5
Q904	TR-SMALL SIGNAL	82.5	239.2
Q905	TR-SMALL SIGNAL	10.1	32.0
Q906	TR-SMALL SIGNAL	16.2	30.2
Q907	TR-SMALL SIGNAL	190.2	215.1
Q908	TR-SMALL SIGNAL	164.5	45.2

9 Wiring Diagram



1

GND

2

Audio_R

3

Audio_R

4

GND

5

Audio_L

6

Audio_L

CN013

1

SC2 RED OUT

2

SC2 RED IN

3

SC2 LEFT OUT

4

GND

5

GND

6

SC2 LEFT IN

7

N/C

8

SC2 SWIT CHING

9

GND

10

N/C

11

N/C

12

N/C

13

GND

14

GND

15

N/C

16

N/C

17

GND

18

GND

19

SC2 CVBS OUT

20

SC2 CVBS IN

21

GND

CN002

1

GND

2

Video_CVBS

3

Video_CVBS

4

GND

5

Audio_L

6

Audio_L

7

GND

8

Audio_R

9

Audio_R

CN006

1

S_Video_C

2

S_Video_y

3

GND

4

GND

5

GND

6

NC

CN005

1

GND

2

Sub_Woofe_Audio

3

Sub_Woofe_Audio

CN703

1

TMDS Data 2-

2

TMDS Data 2+

3

TMDS Data 2/4 Shield

4

TMDS Data 4-

5

TMDS Data 4+

6

DDC CLOCK

7

DDC Data

8

NC

9

TMDS Data 1-

10

TMDS Data 1+

11

TMDS Data 1/3 Shield

12

TMDS Data 3-

13

TMDS Data 3+

14

+5V Power

15

GND (for +5V)

16

Hot Plug Detect

17

TMDS Data 0-

18

TMDS Data 0+

19

TMDS Data 0/5 Shield

20

TMDS Data 5-

21

TMDS Data 5+

22

TMDS Data Clock Shield

23

TMDS Data Clock Shield +

24

TMDS Data Clock Shield -

CN012

1

A8V

2

A8V

3

SW_SMPS

CN811

1

GND

2

VCC5I

3

VCC5P

4

VCC5P

5

VCC5P

6

VCC5P

7

GND

8

GND

9

GND

10

NC

11

NC

12

PANEL_SYNC_EN

13

GND

14

TXOUT3+

15

TXOUT3-

16

GND

17

TXCLKOUT1+

18

TXCLKOUT1-

19

GND

20

TXCLKOUT2+

21

TXCLKOUT2-

22

GND

23

TXCLKOUT1+

24

TXCLKOUT1-

25

GND

26

TXCLKOUT0+

27

TXCLKOUT0-

28

SW_INVETIER

29

ANA_DIMMING

30

DWM_DIMMING

CN501

1

12V

2

GND

3

5V

4

5V

5

5V

6

GND

7

GND

8

GND

9

12VS

10

12VS

11

12VS

12

GND

13

GND

14

GND

CN810

1

SPKOUT R+

2

NC

3

SPKOUT R-

CN701

1

SPKOUT L+

2

SPKOUT L-

CN702

1

Tuner

CN008

1

A5V

2

GND

3

A5V

4

NC

5

Key_Input1

6

Key_Input2

7

GND

8

NC

9

IR

10

NC

11

A3.3V

12

A3.3V

13

GND

14

SDA2

15

SCL2

CN812

1

GND

2

HP_Audio_R

3

HP_Audio_L

4

HP_Audio_L

5

HP_Audio_R

6

Ident_HP

CN704

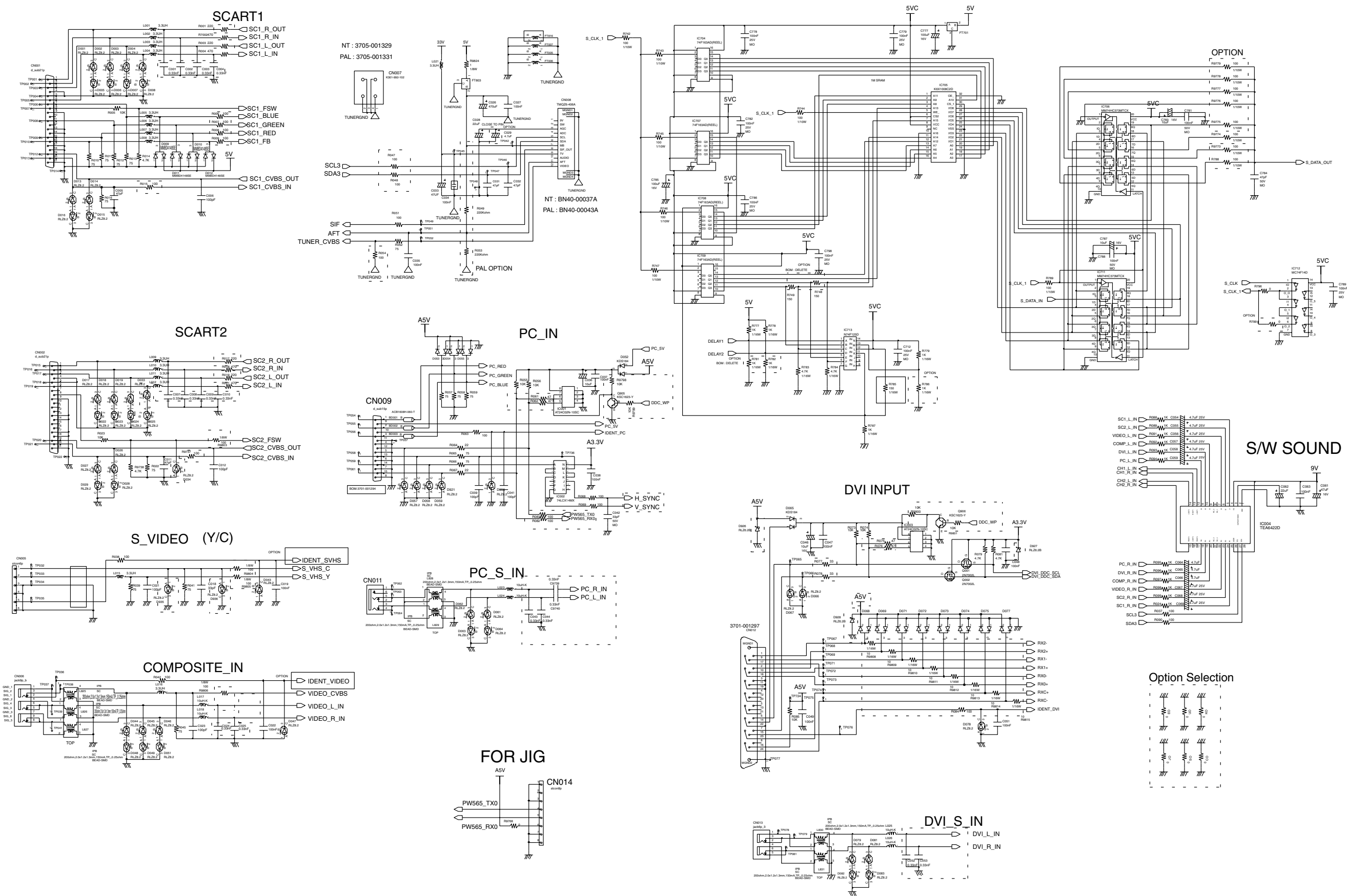
MAIN BOARD

Memo

11 Schematic Diagrams

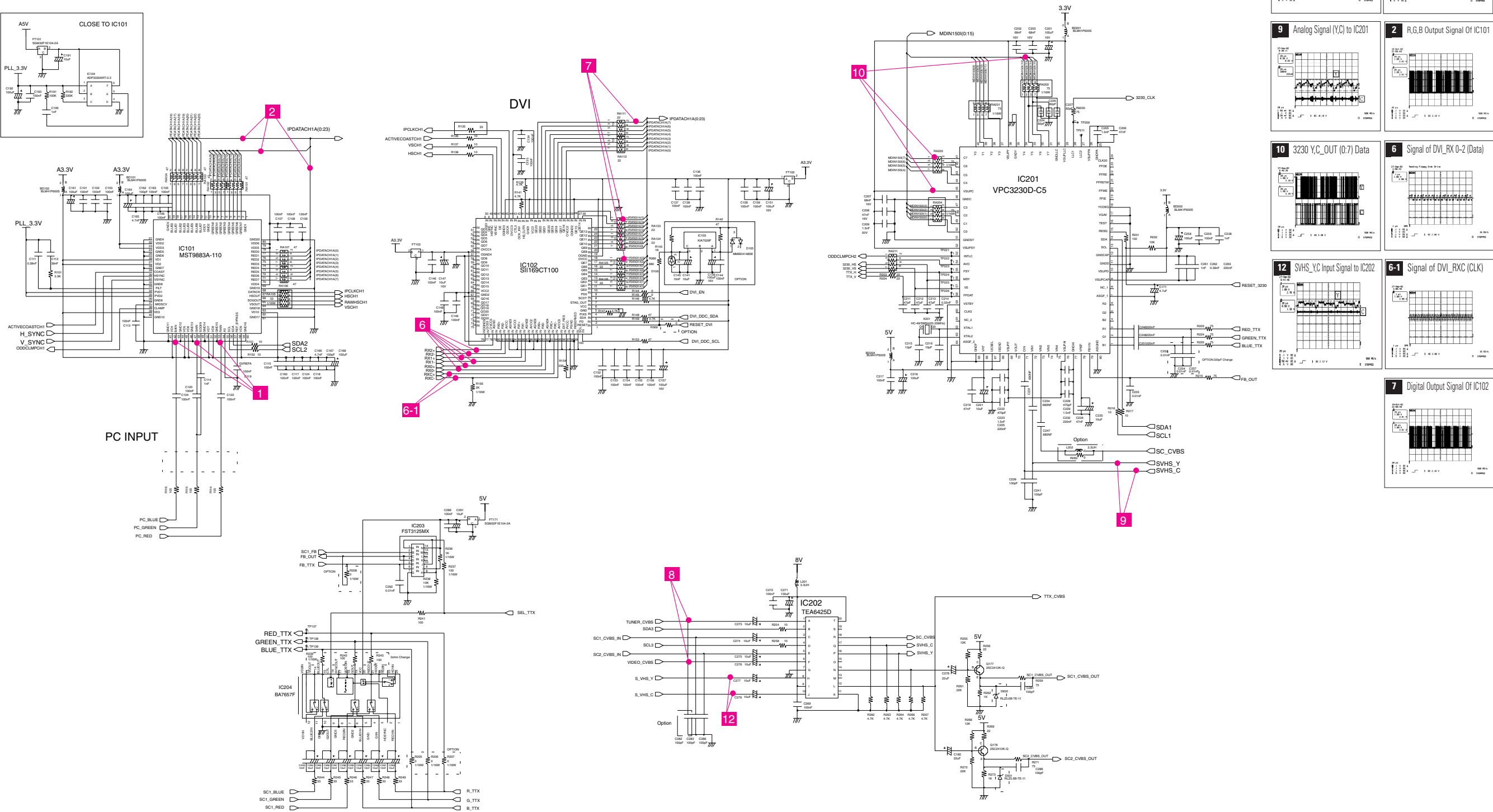
* This Document can not be used without Samsung's authorization.

11-1 AV INOUT SOUND DELAY Schematic Diagram



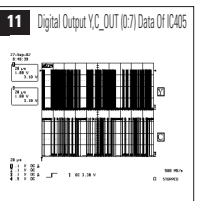
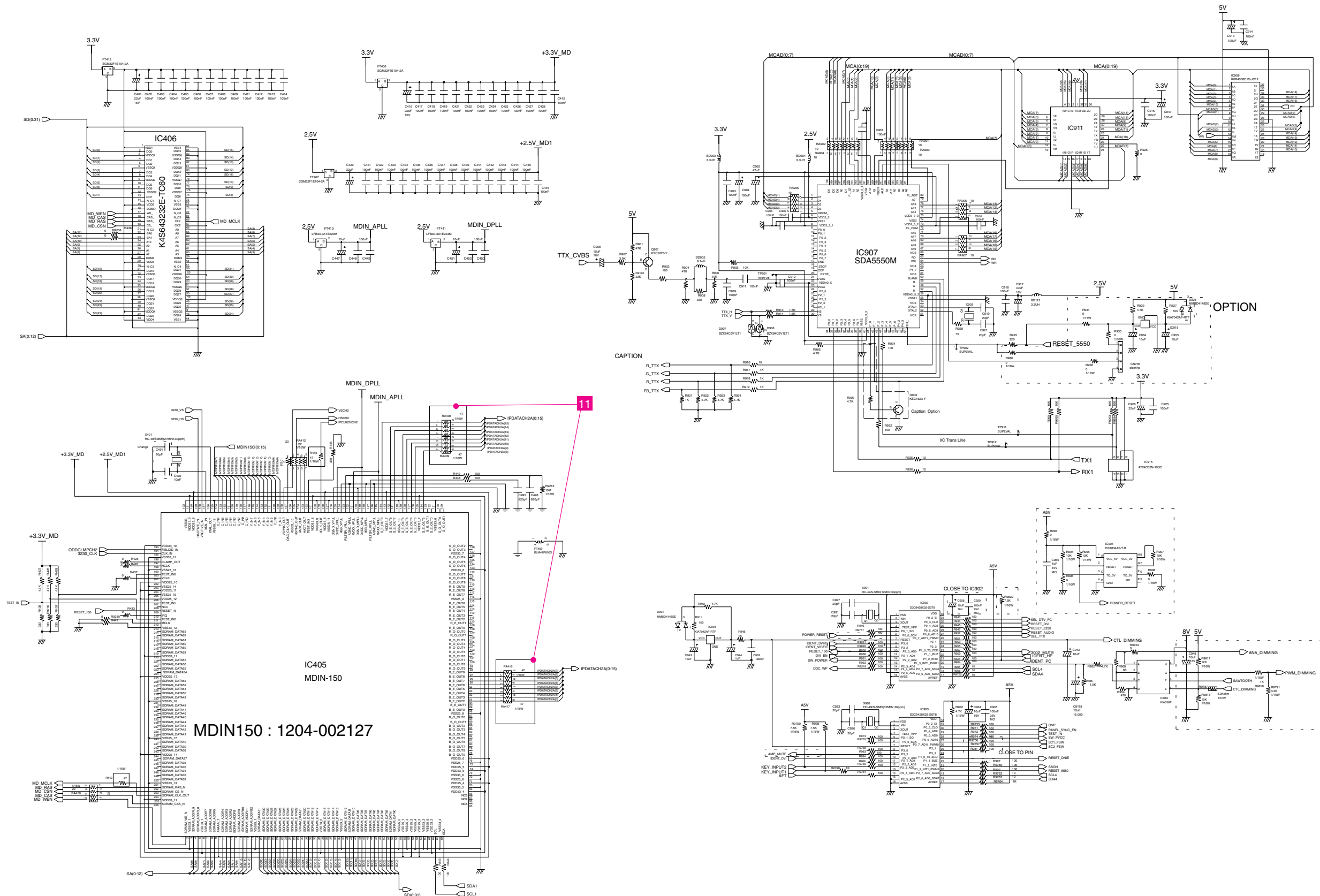
* This Document can not be used without Samsung's authorization.

11-2 ADC DVI VIDEO Schematic Diagram



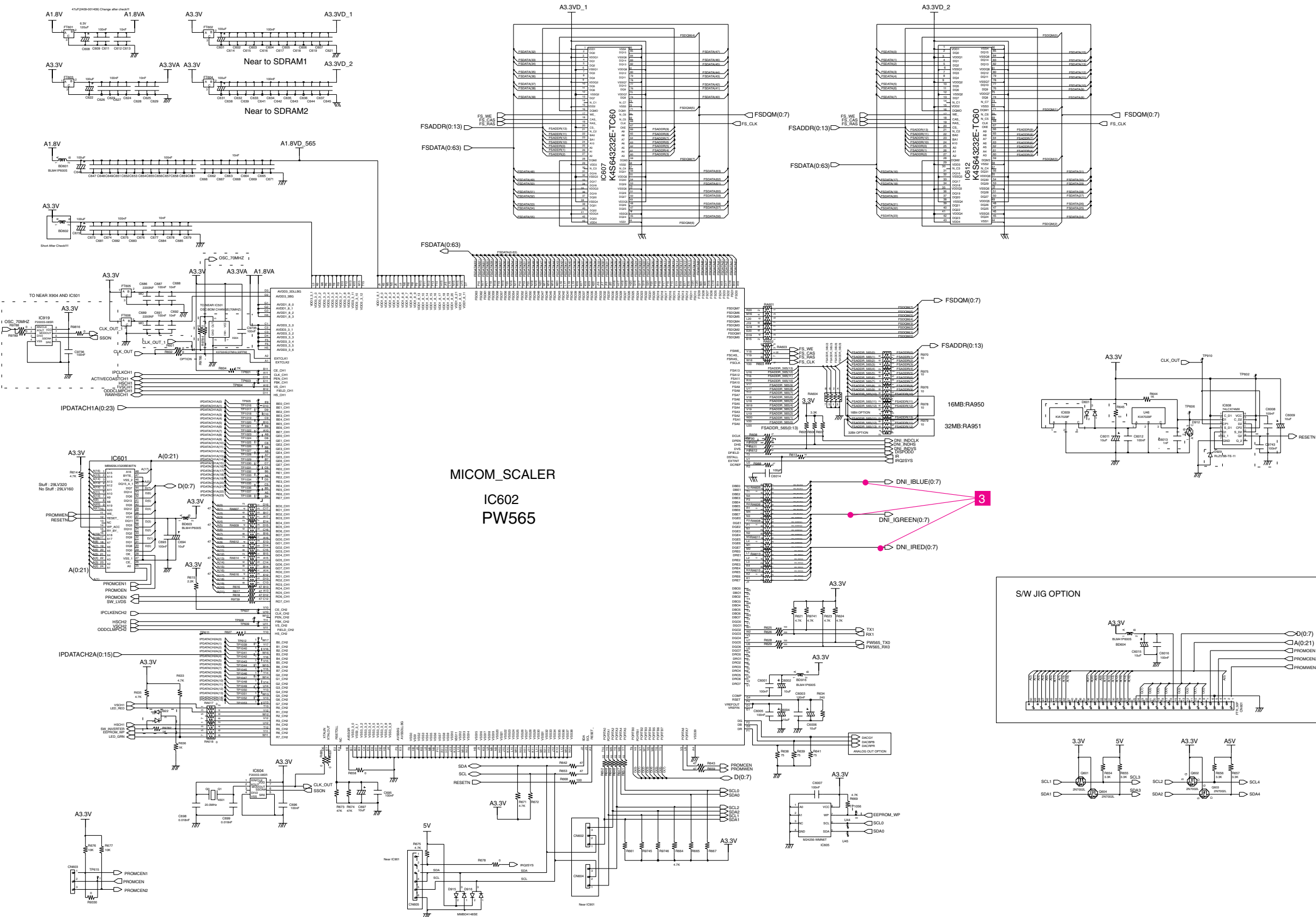
* This Document can not be used without Samsung's authorization.

11-3 CAPTION, TTX DEINTERLACER, SUB_MICOM Schematic Diagram



* This Document can not be used without Samsung's authorization.

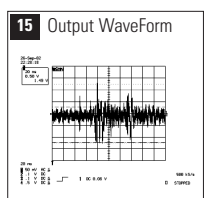
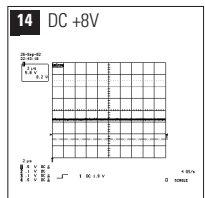
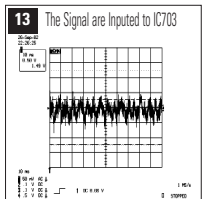
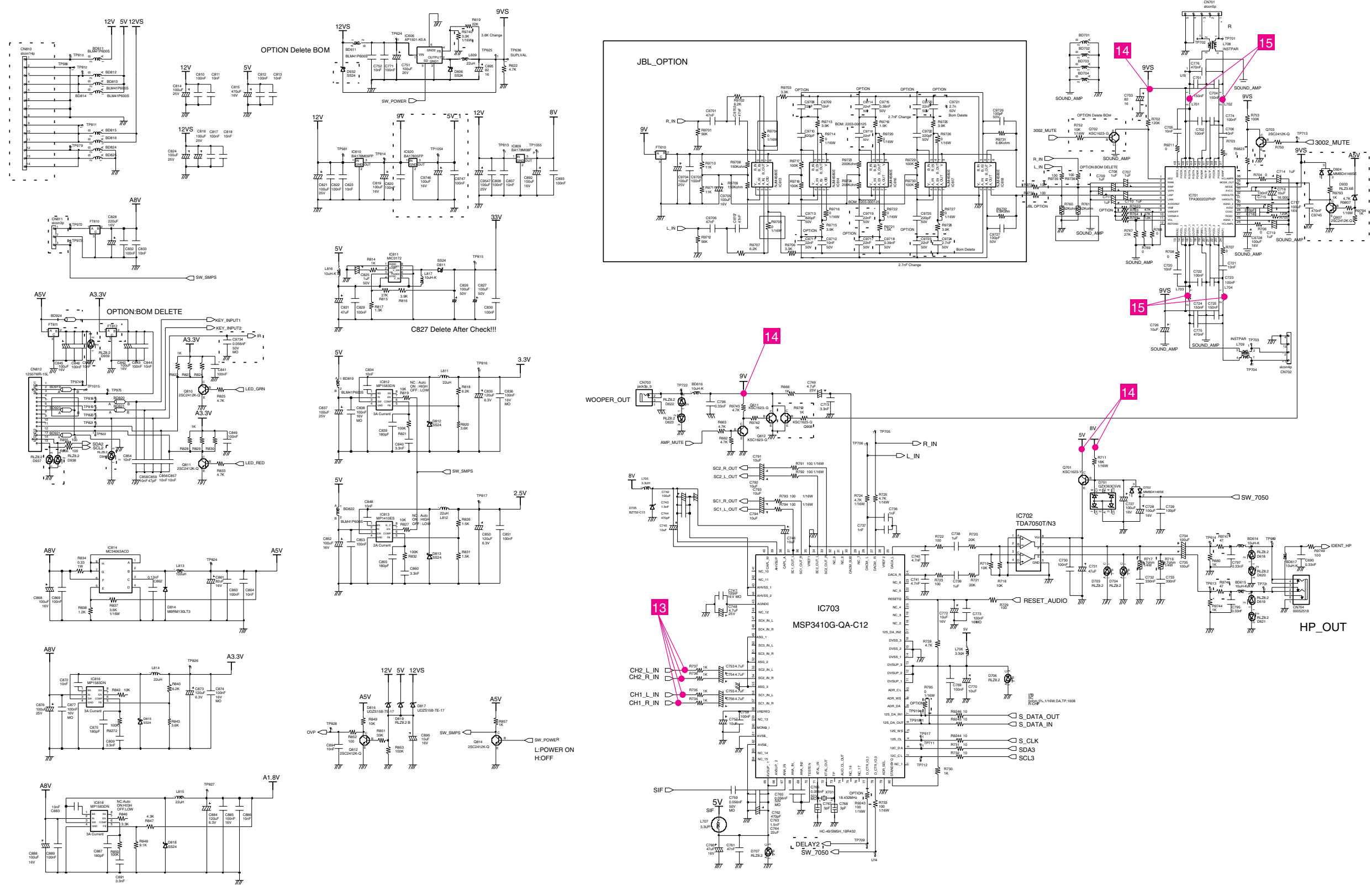
11-4 PW565_SCALER Schematic Diagram



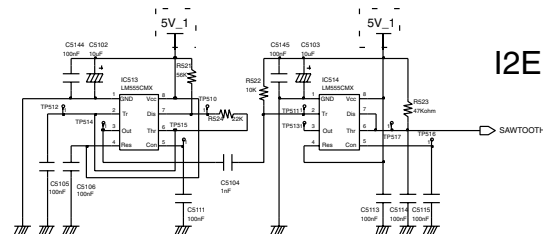
* This Document can not be used without Samsung's authorization.

11-5 POWER SOUND PROCESS Schematic Diagram

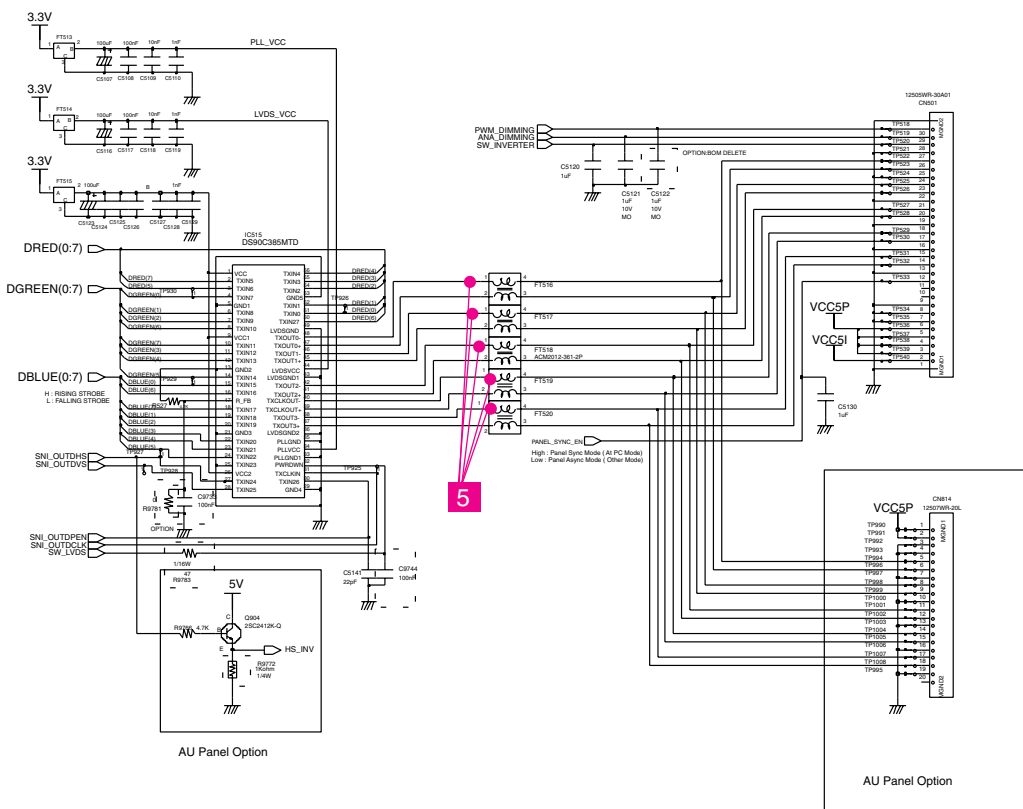
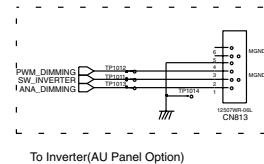
POWER



The figure shows two schematic diagrams of memory modules. The left module is labeled ICS10 K4S6432SE-TG60 and the right module is labeled ICS11 K4S6432SE-TC60. Both modules are connected to a 3.3V power supply through a network of capacitors (100µF, 10µF) and resistors (FTS10, FTS11). The modules have multiple pins for address (SNI_ADDR), data (SNI_DQ), bank enable (SNI_BANK), and chip select (SNI_CS) signals. The ICS10 module has pins for SNI_DQM, SNI_WIE, SNI_NCAS, and SNI_NRAS. The ICS11 module has pins for SNI_DQM, SNI_WIE, SNI_NCAS, and SNI_NRAS. The modules are also connected to ground.



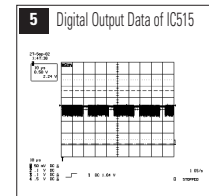
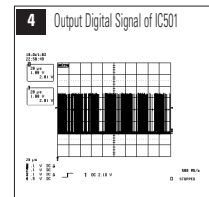
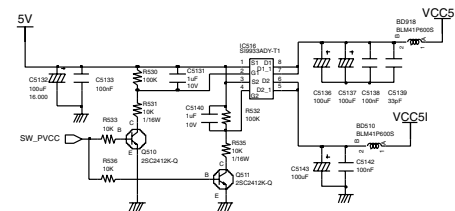
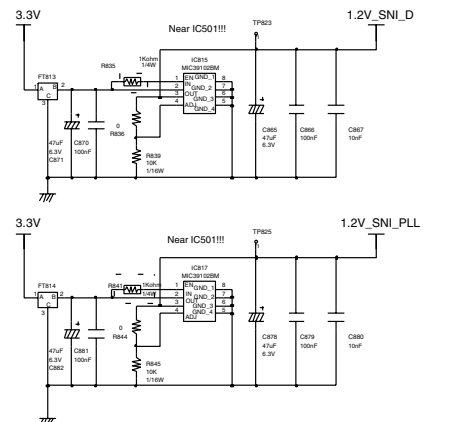
12E



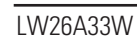
5

AU Panel Option

AU Panel Option



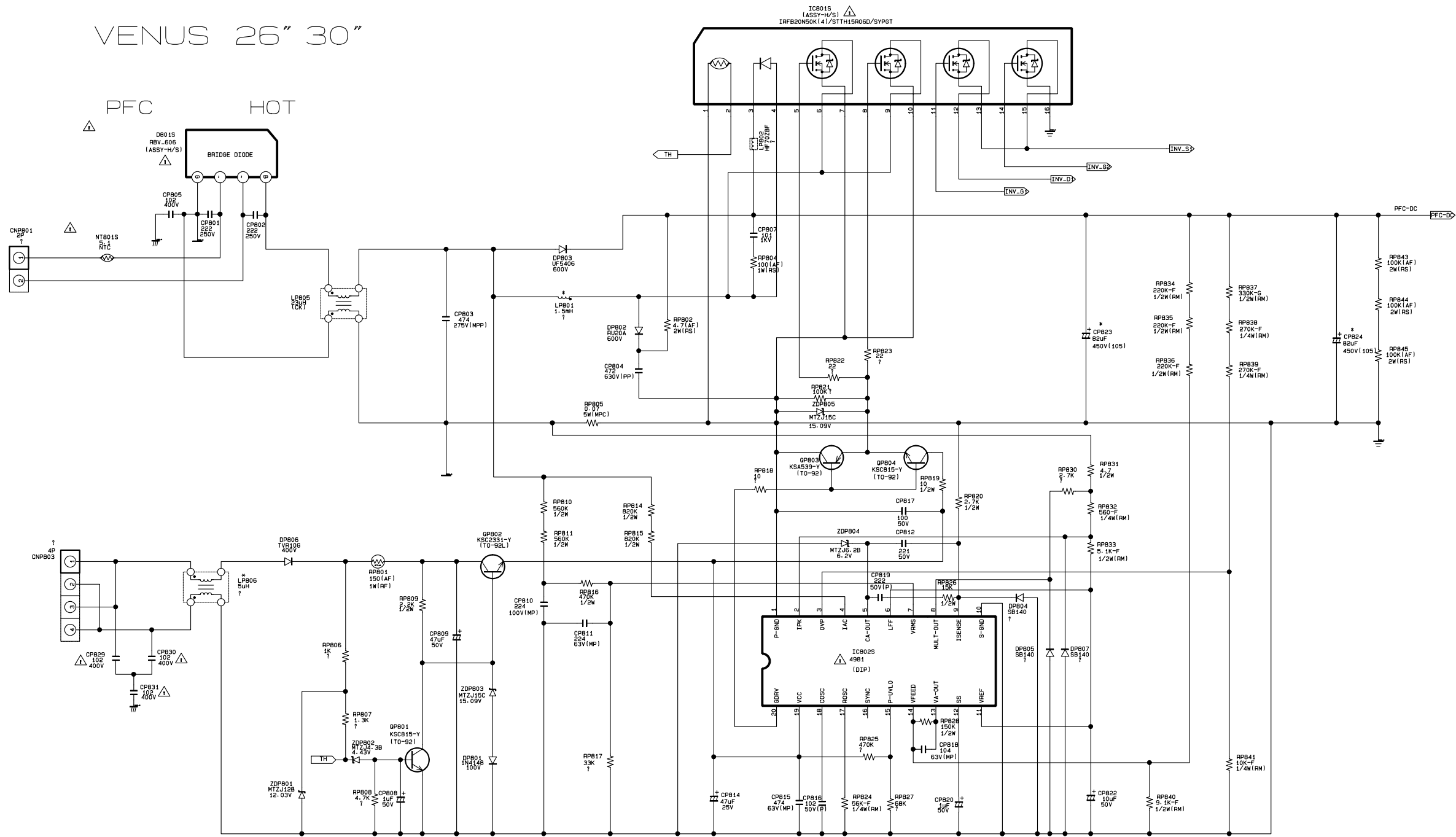
Last Modified Date : 2003.01.03
 Samsung Elec.Co.LTD
 Visual Display Division
 Advanced Development Group



* This Document can not be used without Samsung's authorization.

11-8 MAIN POWER 2_PFC Schematic Diagram

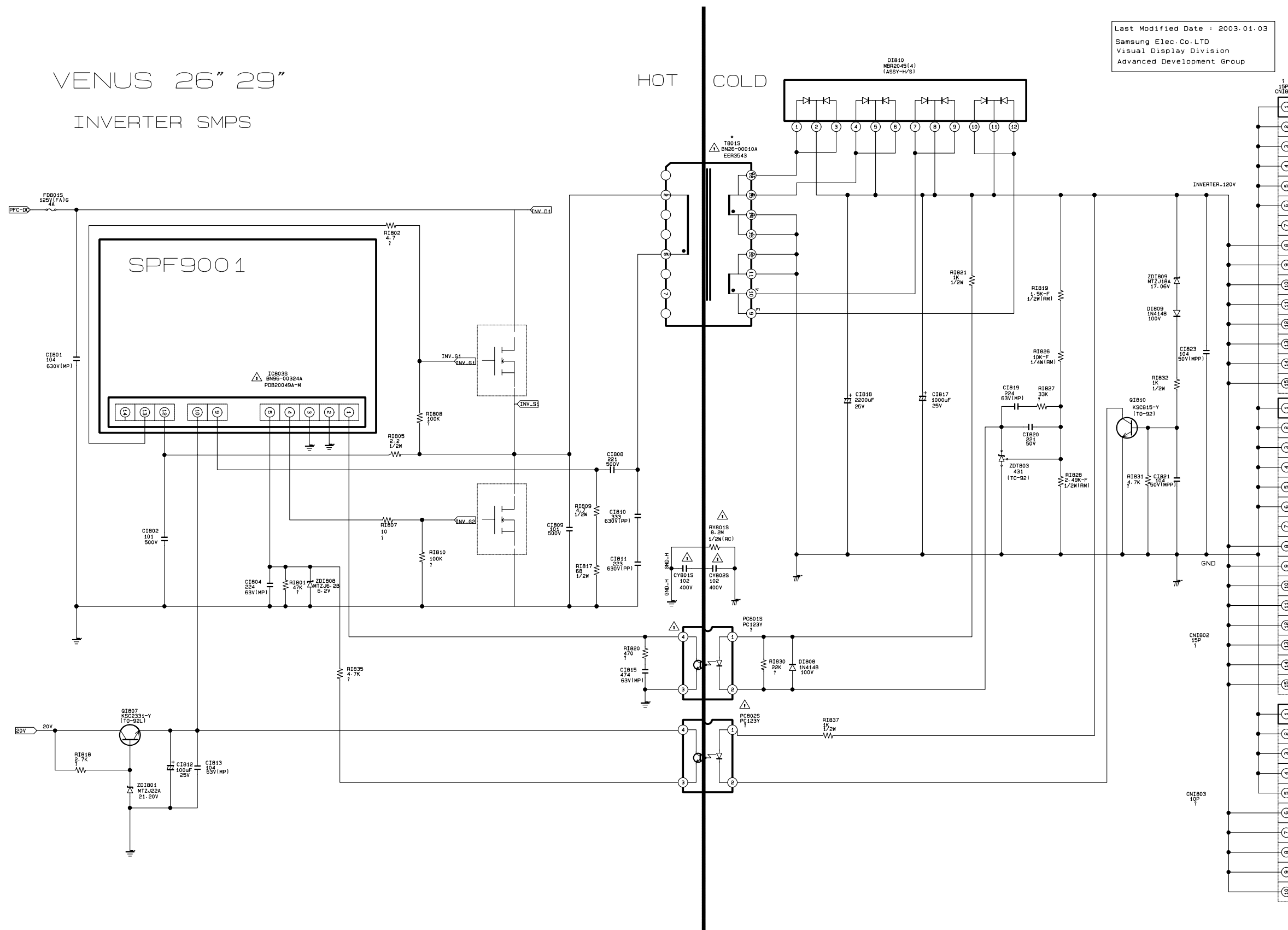
This drawing is property of SEC.
Use or copy of this drawing without proper permission from the appropriate
technical-document managing department is prohibited.



Last Modified Date : 2003.01.03
Samsung Elec.Co.LTD
Visual Display Division
Advanced Development Group

* This Document can not be used without Samsung's authorization.

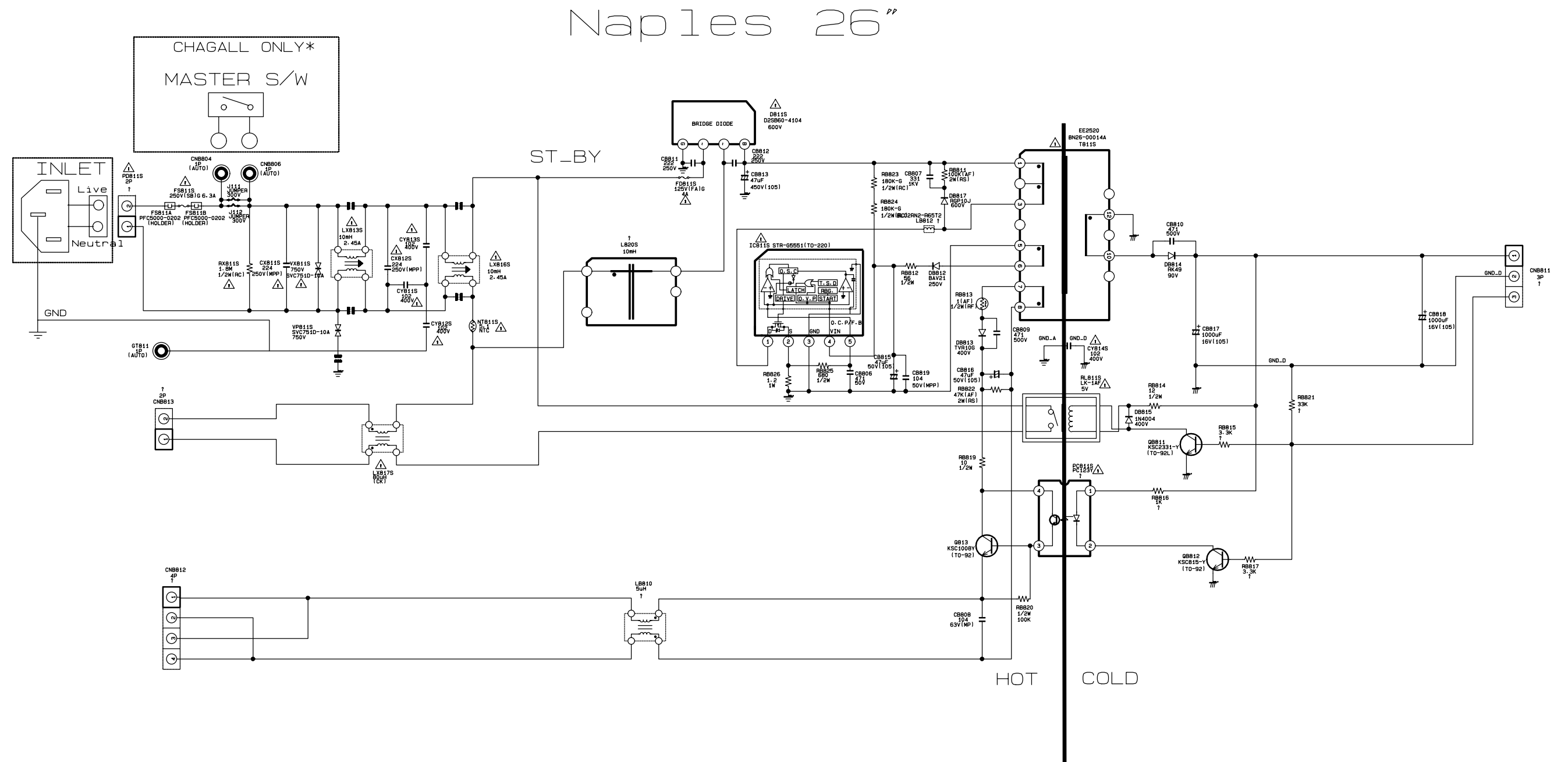
11-9 MAIN POWER 3_MULTI Schematic Diagram



* This Document can not be used without Samsung's authorization.

11-10 SUB POWER Schematic Diagram

This drawing is property of SEC
Use or copy of this drawing without proper permission from the appropriate
technical-document managing department is prohibited.



Last Modified Date 2003.08.12
Samsung Elec.Co.LTD
Visual Display Division
Advanced Development Group