

SAMSUNG

TFT-LCD TV/MONITOR

Chassis
VR17JO

Model
LT17N23W

SERVICE *Manual*

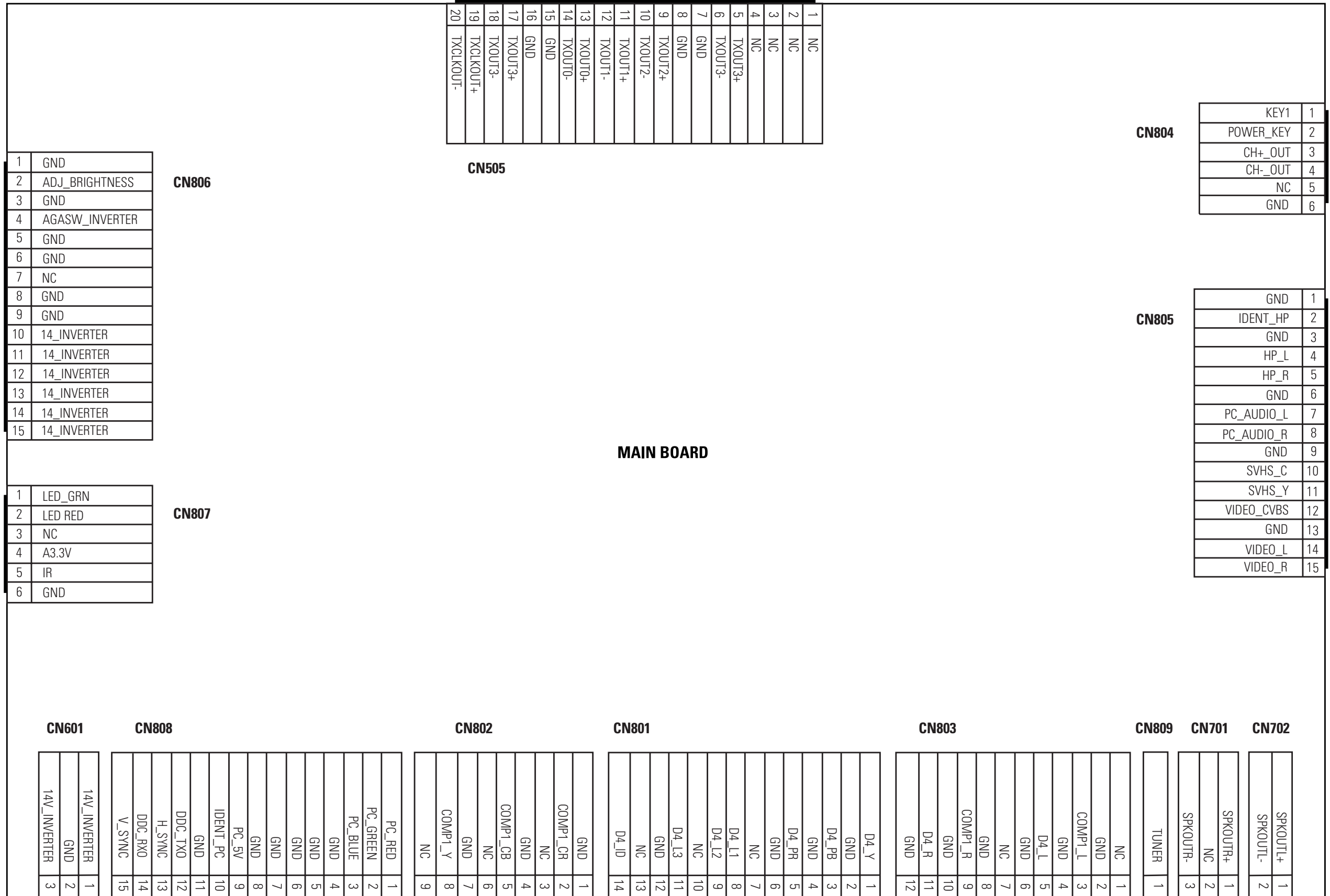
TFT-LCD TV/MONITOR



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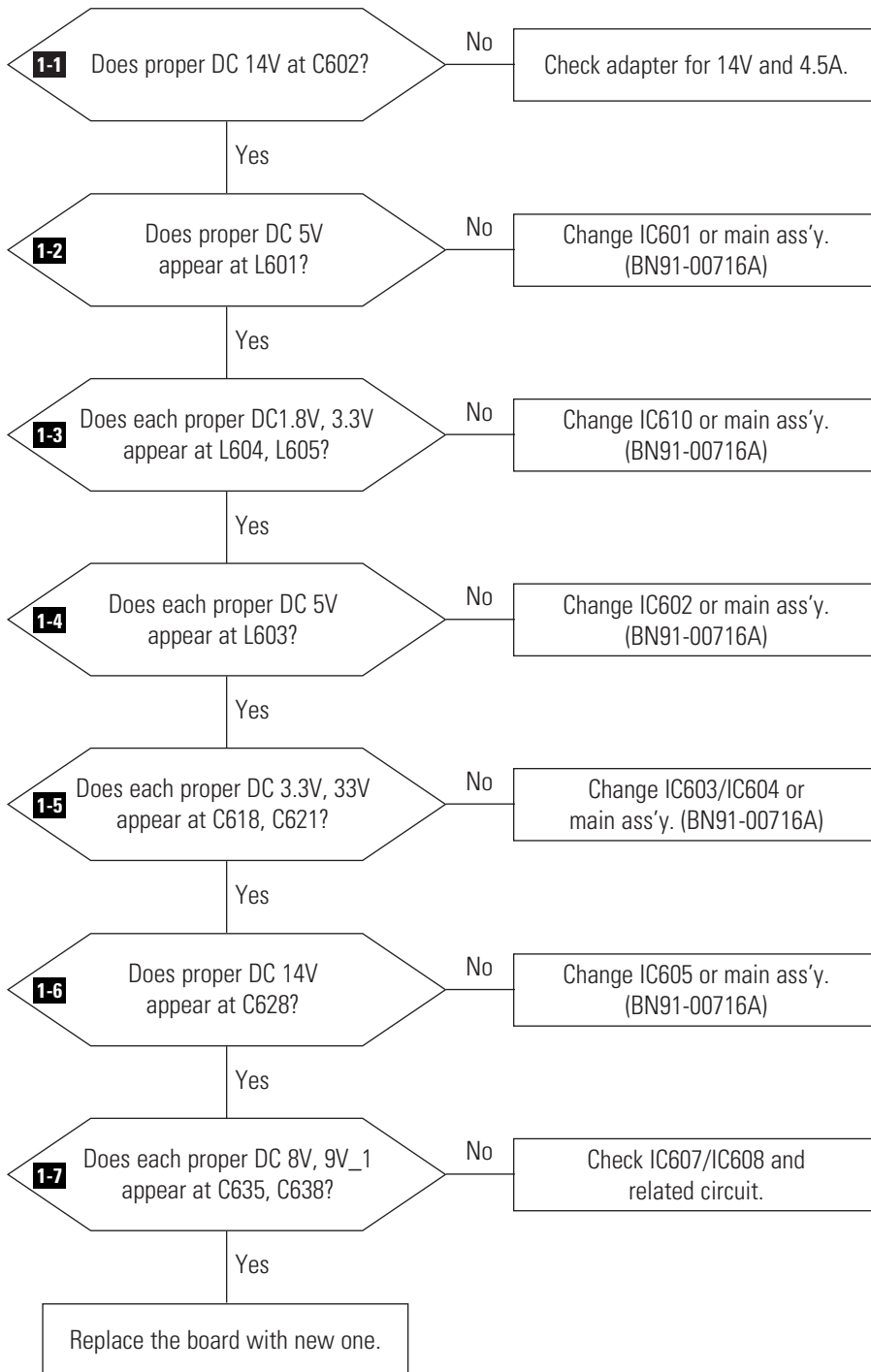
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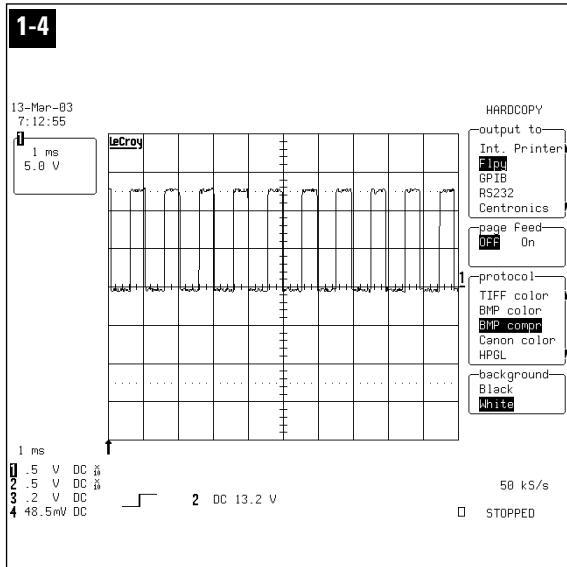
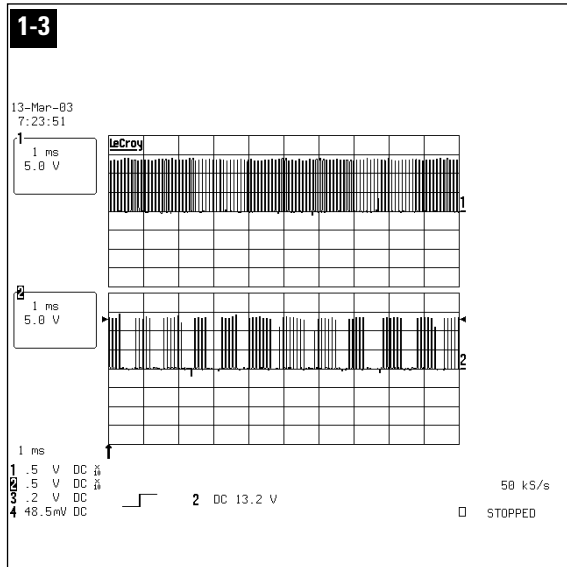
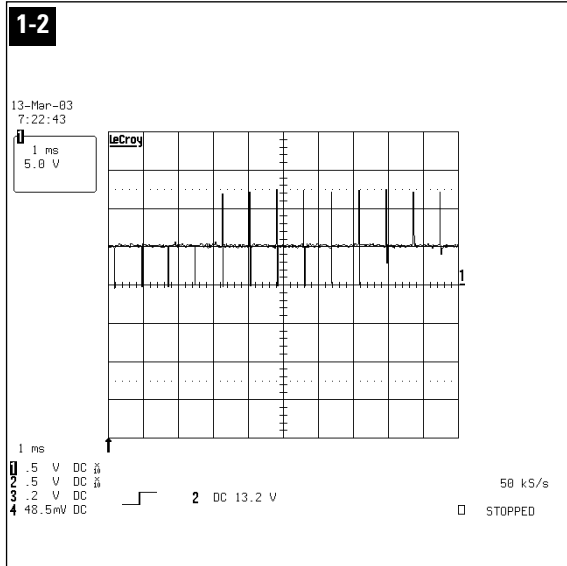
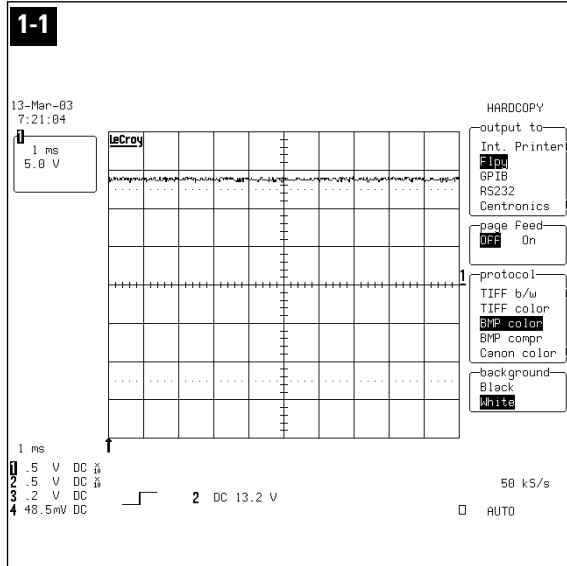


5 Troubleshooting

5-1 No Power

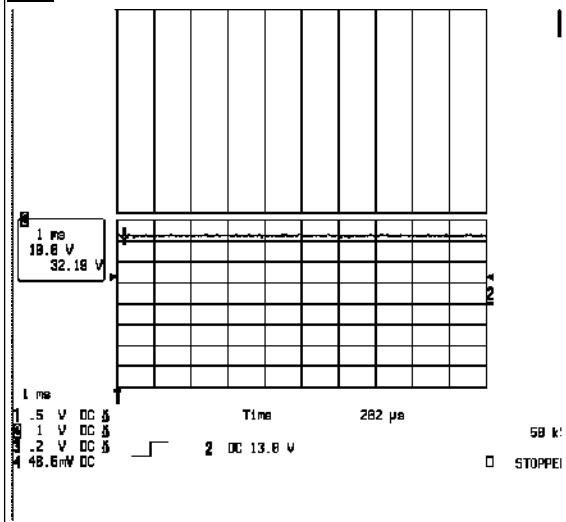


WAVEFORMS

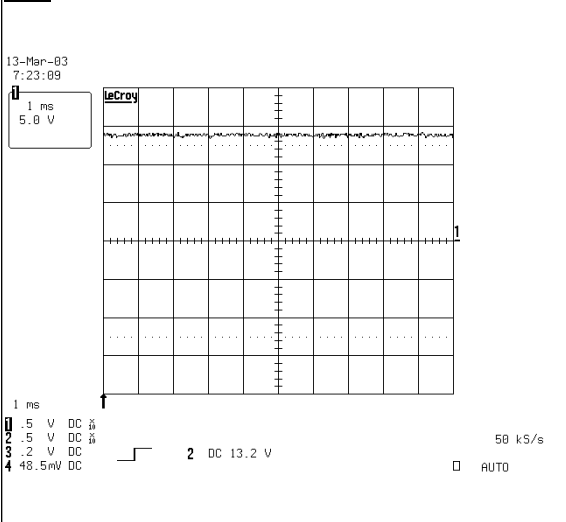


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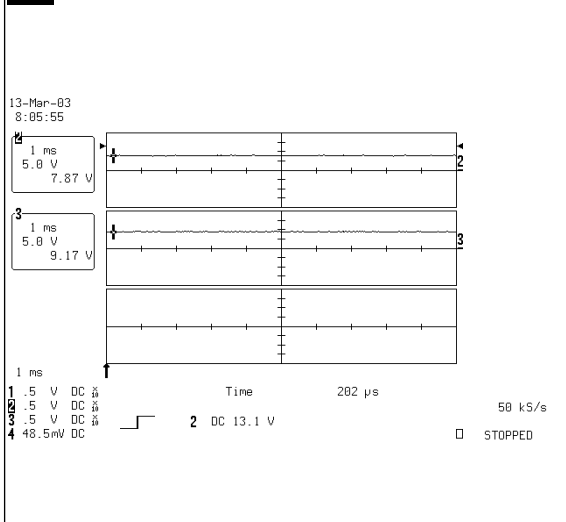
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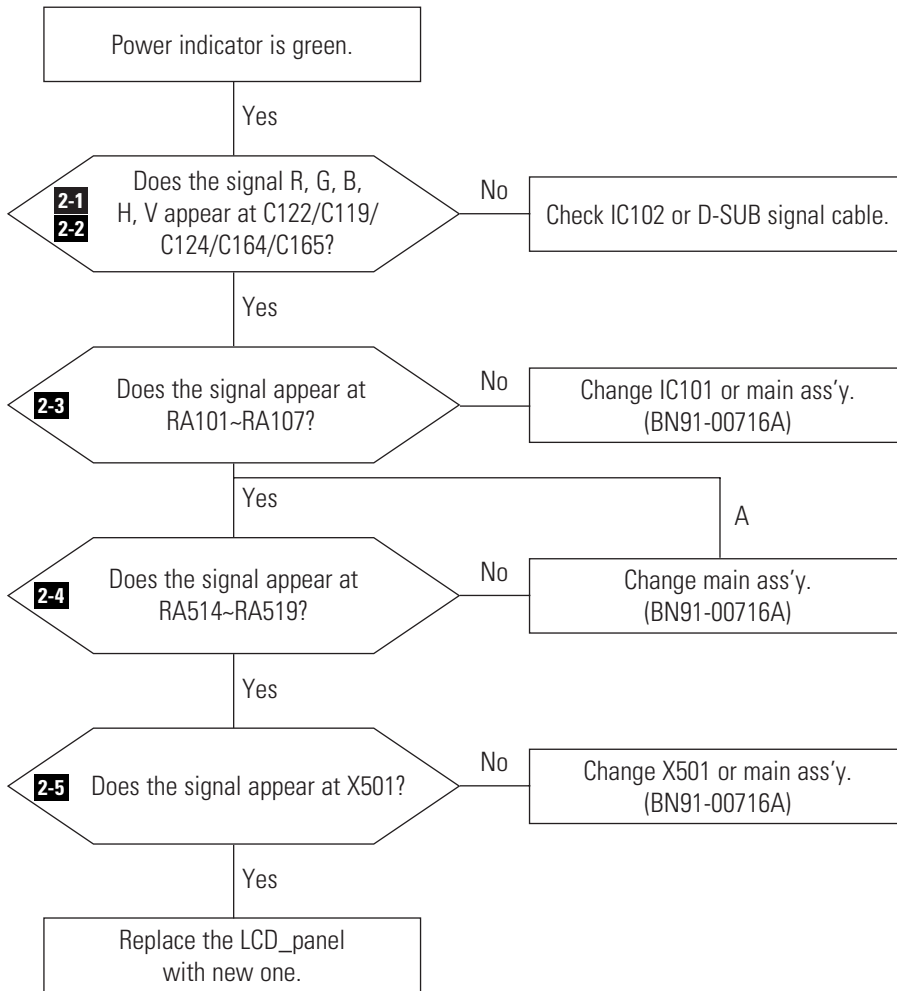
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1-7

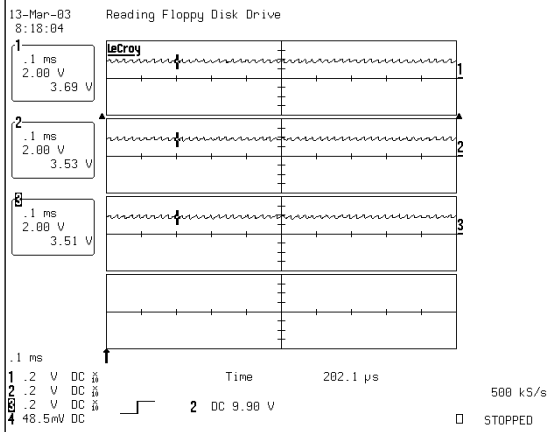


5-2 No PC Signal

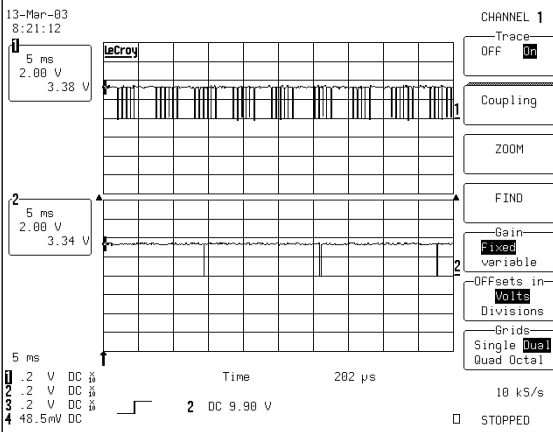


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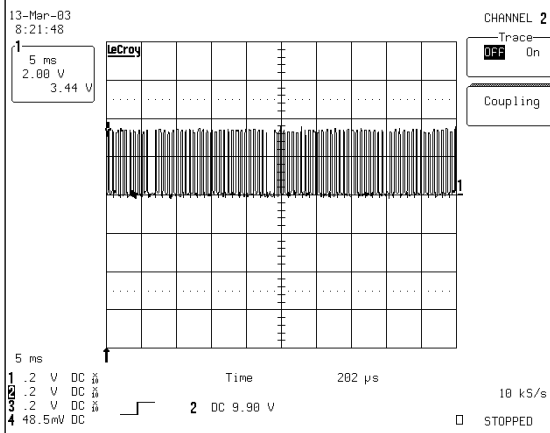
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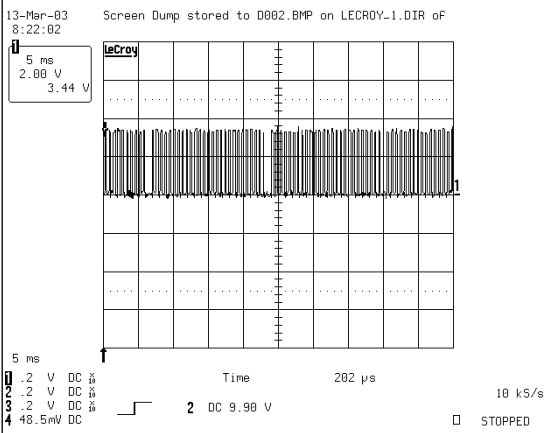
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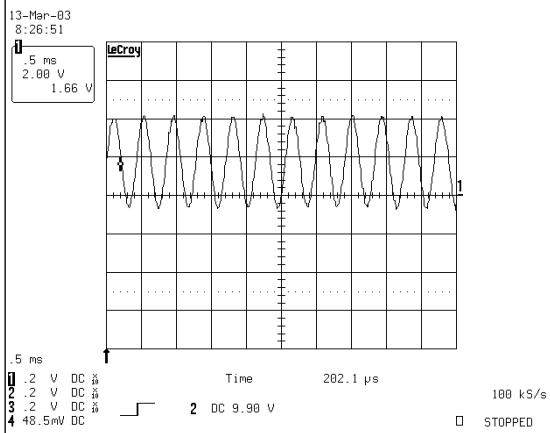
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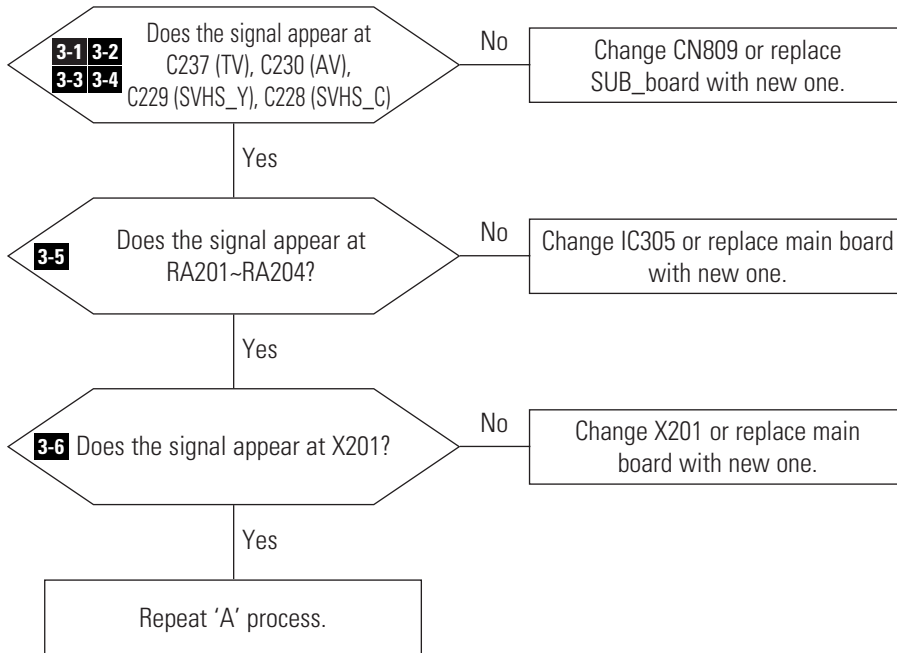
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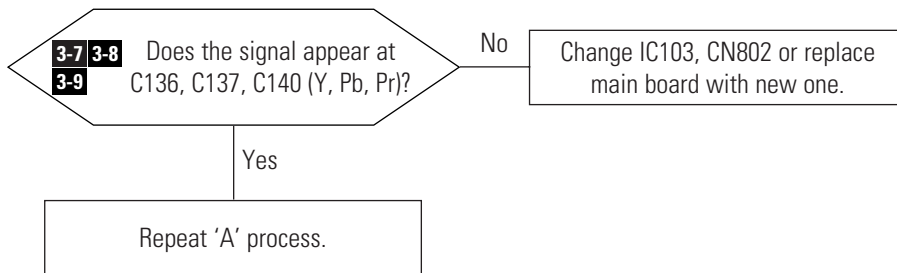
2-5



5-3-1 No Video (Tuner, AV CVBS, S-Video)



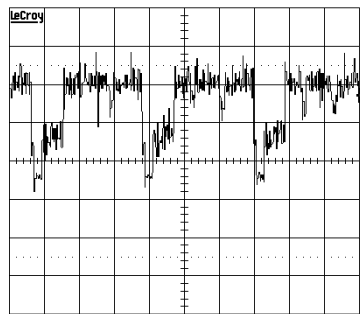
5-3-2 No Video (Component 1, D Connector Input [408i, 480p, 720p, 1080i])



WAVEFORMS

3-1

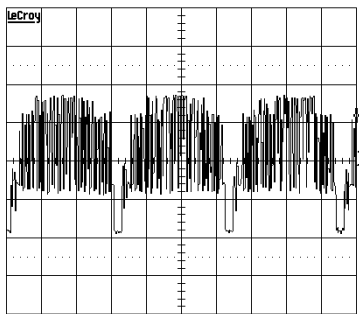
13-Mar-03
9:10:31
1 20 μ s
0.50 V
1.869 V



20 μ s
1 50 mV DC
2 .2 V DC
3 .2 V DC
4 48.5mV DC
Time 200.0 μ s
2.5 MS/s
2 DC 9.90 V
STOPPED

3-2

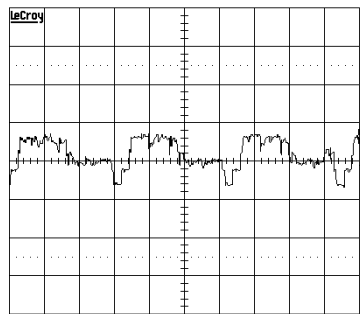
13-Mar-03
9:11:13
1 20 μ s
0.50 V
649mV



20 μ s
1 50 mV DC
2 .2 V DC
3 .2 V DC
4 48.5mV DC
Time 200.0 μ s
2.5 MS/s
2 DC 9.90 V
STOPPED

3-3

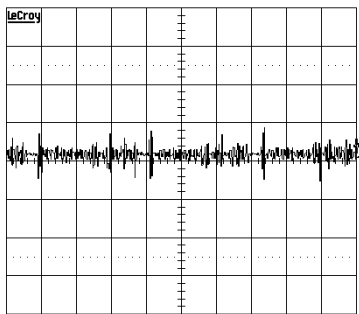
13-Mar-03
9:12:36
1 20 μ s
0.50 V
383mV



20 μ s
1 50 mV DC
2 .2 V DC
3 .2 V DC
4 48.5mV DC
Time 200.0 μ s
2.5 MS/s
2 DC 9.90 V
STOPPED

3-4

13-Mar-03
9:02:41
1 20 μ s
200mV
61mV

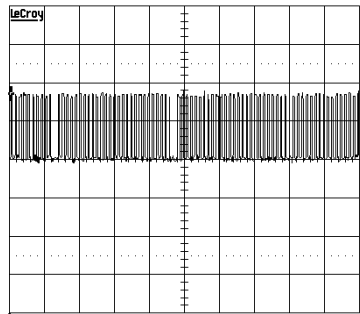


20 μ s
1 20 mV DC
2 .2 V DC
3 .2 V DC
4 48.5mV DC
Time 200.0 μ s
2.5 MS/s
2 DC 9.90 V
STOPPED

3-5

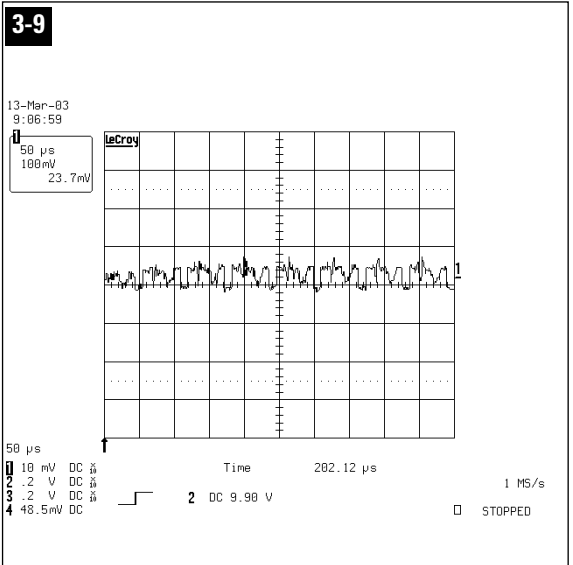
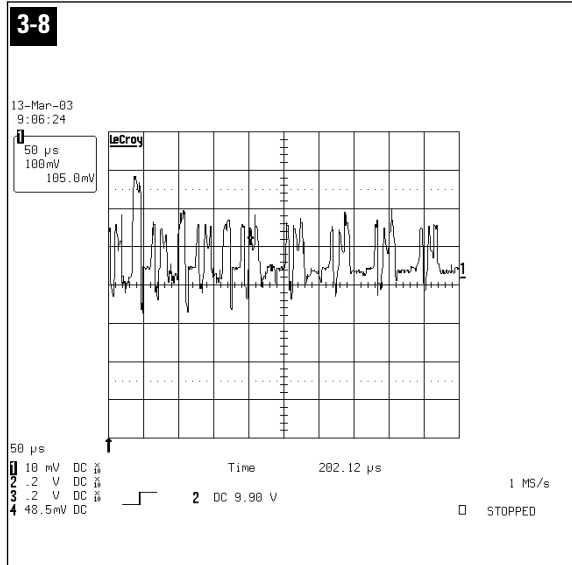
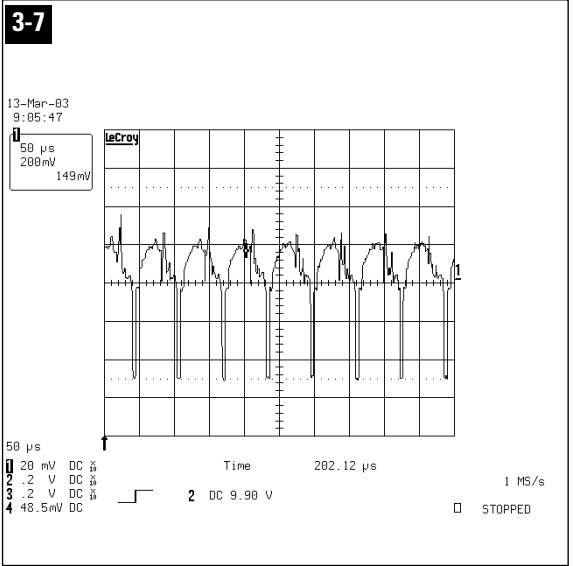
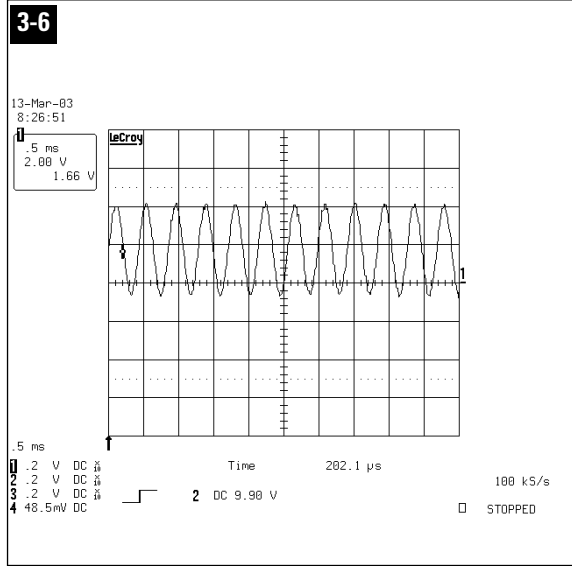
13-Mar-03
8:22:02
Screen Dump stored to D002.BMP on LECROY-1.DIR of

1 5 ms
2.00 V
3.44 V

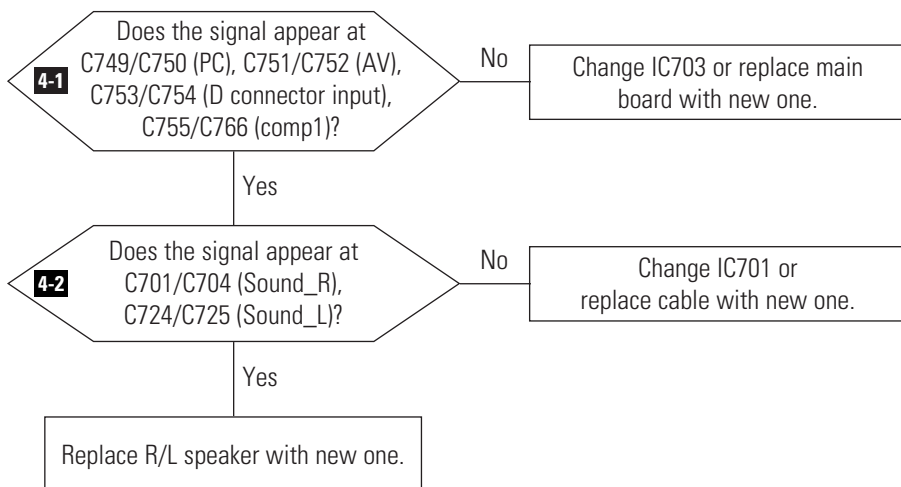


5 ms
1 .2 V DC
2 .2 V DC
3 .2 V DC
4 48.5mV DC
Time 202 μ s
10 kS/s
2 DC 9.90 V
STOPPED

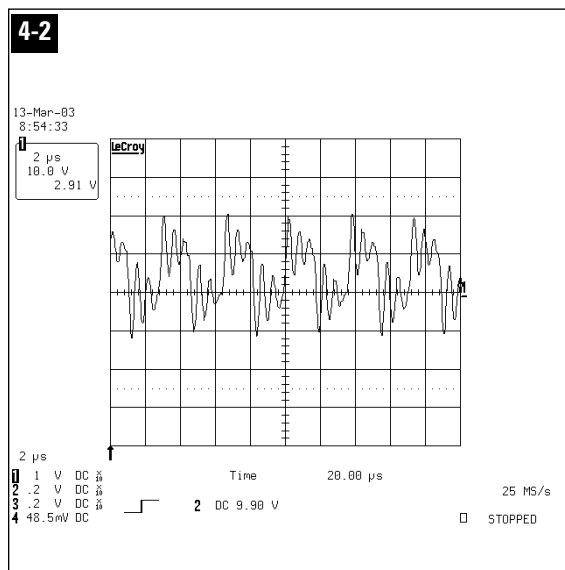
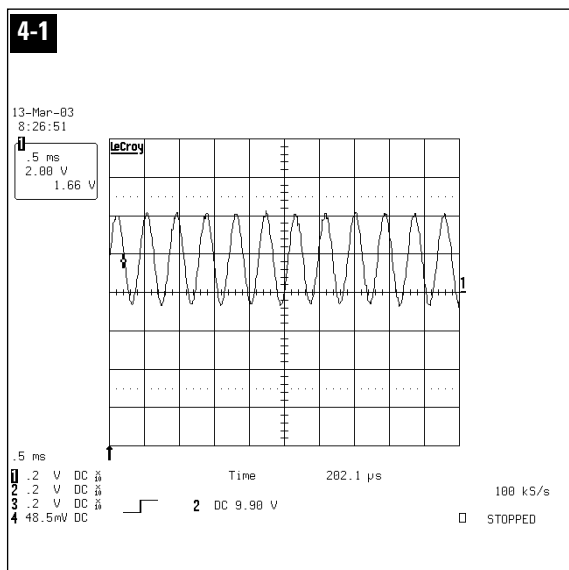
WAVEFORMS



5-4 No Sound



WAVEFORMS



4 Alignments and Adjustments

4-1 General Alignment Instruction

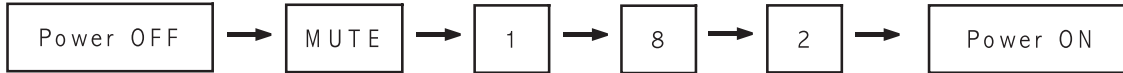
1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation. Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from 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 transformer.

4-2 Factory Mode Adjustments

4-2-1 Entering Factory Mode

1. 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



4-2-2 Factory Mode Tree

1. Calibration	9. Service Adjust
2. Option Table 0A00	10. Reset
3. Color Control	
4. PW565	
5. VPC3230- MAIN	
6. ADC	
7. Test Pattern	
8. Check sum 0000	
T_VIC17NJP_1018 07/05/2003 18:12:26	



1. Calibration
DTV Calibration
PC Calibration

1. Calibration	9. Service Adjust
2. Option Table 0A00	10. Reset
3. Color Control	
4. PW565	
5. VPC3230- MAIN	
6. ADC	
7. Test Pattern	
8. Check sum 0000	
T_VIC17NJP_1018 07/05/2003 18:12:26	



2. Option Table	0A00
LNA	OFF
Melody Volume	10
Panel Life Time	3Day 21h 20m

1. Calibration 9. Service Adjust
 2. Option Table 0A00 10. Reset
3. Color Control
 4. PW565
 5. VPC3230- MAIN
 6. ADC
 7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

3. Color Control

Sub-Brightness	128	Sub-Contrast	109
Red Offset	128	Red Gain	128
Green Offset	128	Green Gain	128
Blue Offset	128	Blue Gain	128
Brightness	45	Contrast	100

1. Calibration 9. Service Adjust
 2. Option Table 0A00 10. Reset
 3. Color Control
4. PW565
 5. VPC3230- MAIN
 6. ADC
 7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

4. PW565

Red Gain	140
Green Gain	140
Blue Gain	140
Red Offset	140
Green Offset	140
Blue Offset	140

1. Calibration 9. Service Adjust
 2. Option Table 0A00 10. Reset
 3. Color Control
 4. PW565
5. VPC3230- MAIN
 6. ADC
 7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

5. VPC3230- MAIN

CT	33	CIPCT	0D	KILVL	0B
BR	95	PFS	01	LDLY	07
ACC_SAT	8A	PK	02	PKCOR	01
TINT	32	VPK	07		
SATCb	3F	LPF2	01		
SATCr	1F	CBW2	00		
CIPTNT	17	CBW	02		
CIPBR	C1	IFC	00		

1. Calibration 9. Service Adjust
 2. Option Table 0A00 10. Reset
 3. Color Control
 4. PW565
 5. VPC3230- MAIN
6. ADC
 7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

6. ADC

Red Gain	8C	Pr Gain	A0
Green Gain	8C	Y Gain	A0
Blue Gain	8C	Pb Gain	A0
Red Offset	46	Pr Offset	43
Green Offset	46	Y Offset	45
Blue Offset	46	Pb Offset	42
Current	00		
VCO	00		

1. Calibration 9. Service Adjust
 2. Option Table 0A00 10. Reset
 3. Color Control
 4. PW565
 5. VPC3230- MAIN
 6. ADC
7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

7. 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. Calibration 9. Service Adjust
 2. Option Table 0A00 10. Reset
 3. Color Control
 4. PW565
 5. VPC3230- MAIN
 6. ADC
 7. Test Pattern
8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

1. Calibration **9. Service Adjust**
 2. Option Table 0A00 10. Reset
 3. Color Control
 4. PW565
 5. VPC3230- MAIN
 6. ADC
 7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

9. Service Adjust

Pilot High	16
Pilot Low	10

1. Calibration 9. Service Adjust
 2. Option Table 0A00 **10. Reset**
 3. Color Control
 4. PW565
 5. VPC3230- MAIN
 6. ADC
 7. Test Pattern
 8. Check sum 0000
T_VIC17NJP_1018 07/05/2003 18:12:26

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, DTV (Component 1, D4) and PC 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 values 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	255	260	Fix	270	260	0.45fL
DTV	255	260	Fix	270	260	0.7fL
PC	255	260	Fix	270	260	1.4fL

Table 4-2. Color Control Default Value

Mode	RF	DTV	PC	Mode	RF	DTV	PC
Sub-Brightness	128	116	128	Sub-Contrast	109	131	95
Red Offset	128	128	128	Red Gain	128	128	128
Green Offset	128(FIX)	128(FIX)	128(FIX)	Green Gain	128(FIX)	128(FIX)	128(FIX)
Blue Offset	128	128	128	Blue Gain	128	128	128
Brightness	45	45	60	Contrast	100	100	75

Table 4-3. Color Control Default Value

Mode	PC	Mode	DTV
Red Gain	8C	Pr Gain	A0
Green Gain	8C	Y Gain	A0
Blue Gain	8C	Pb Gain	A0
Red Offset	46	Pr Offset	43
Green Offset	46	Y Offset	45
Blue Offset	46	Pb Offset	42
Current	05		04
VCO	01		02

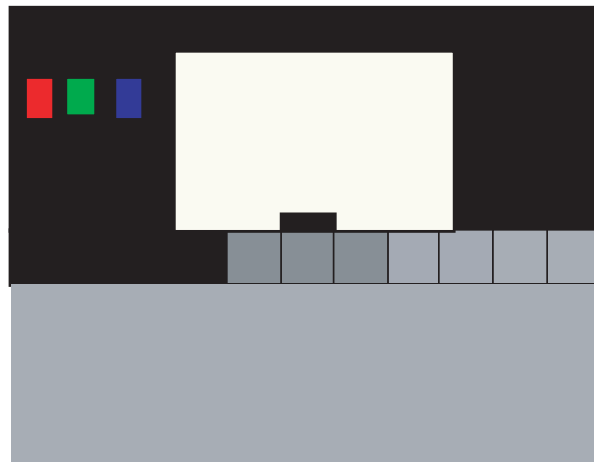
4-3-1 Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
- INPUT SIGNAL GENERATOR : MSPG-925LTH
2. Optical measuring device : CA210 (FL)

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 (DTV → PC).
 - * Input signal - DTV Mode : Model #6 (1280*720 Mode), Pattern #36
 - PC Mode : Model #21 (1024*768 Mode), Pattern #16 (Picture 4-1)
 - b) Enter factory Calibration, confirm the ADC data (DTV, PC Mode Only).
 - * ADC default value : Table 4-3.

Picture 4-1 Toshiba ABL Pattern

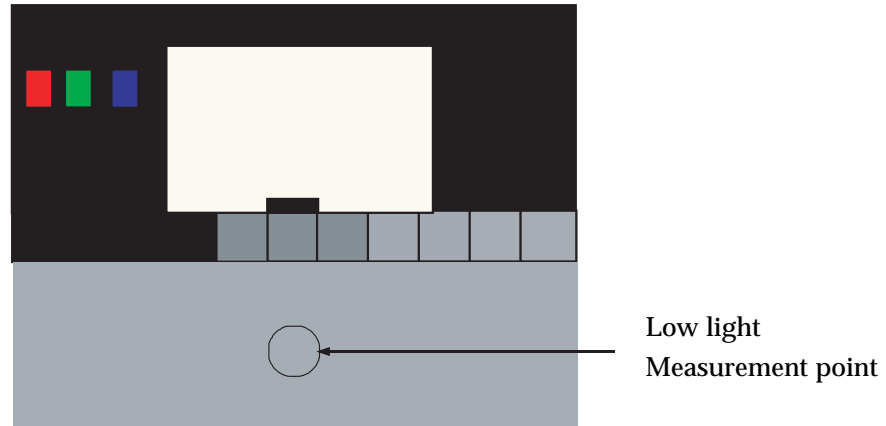


2. Adjust the white balance of RF, DTV and PC Modes.
 - a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC).
 - * Input signal - VIDEO Mode : Model #1 (750*480 Mode), Pattern #16
 - DTV Mode : Model #6 (1280*720 Mode), Pattern #16
 - PC Mode : Model #21 (1024*768 Mode), 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.
- * The green offset is fixed to the default and is not adjusted.

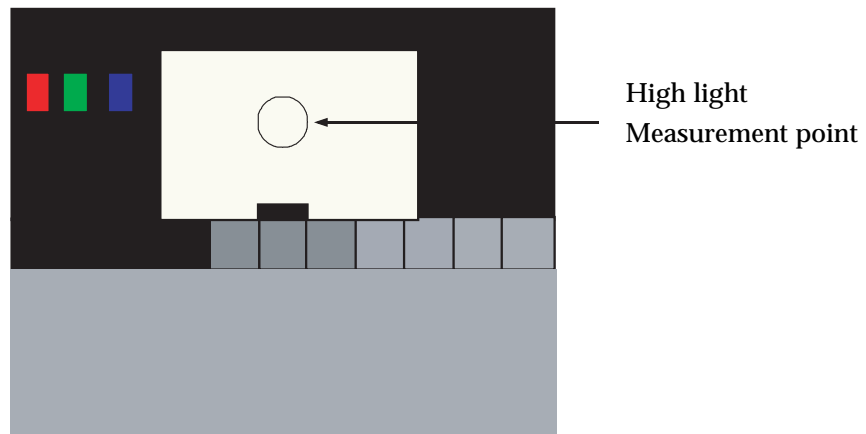
Picture 4-2 Toshiba ABL Pattern



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.
- * The green gain and sub - Contrast ('Y') are fixed to the default and are not adjusted.

Picture 4-3 Toshiba ABL Pattern



4-3-3 Option Table

NO	Option	Default	Remark
1	LNA	Off (FIX)	-
2	Melody Volume	10	* Range : 0 ~ 19
DATA		0A00	* 0000 ~ 1300

4-3-4 PW565

* The PW565 output data are fixed to the default and are not adjusted.

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

* The Data are fixed to the default and are not adjusted.

MODE	Data	MODE	Data
CT	32	PK	02
BR	95	VPK	07
ACC_SAT	8A	LPF2	01
TINT	32	CBW2	00
SATCb	3F	CBW	02
SATCr	1F	IFC	00
CIPTNT	17	LILVL	0B
CIPBR	C1	LDLY	07
CIPCT	0D	PKCOR	01
PFS	01		

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 Gain	8C →Adjust	Pr Gain	A0 →Adjust
Green Gain	8C →Adjust	Y Gain	A0 →Adjust
Blue Gain	8C →Adjust	Pb Gain	A0 →Adjust
Red Offset	46 →Adjust	Pr Offset	43 →Adjust
Green Offset	46 →Adjust	Y Offset	45 →Adjust
Blue Offset	46 →Adjust	Pb Offset	42 →Adjust
Current	05		04
VCO	01		02

4-3-7 Test Pattern

* It is only displayed to a signal of the PW565 data.

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

4-3-8 Check sum

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

4-3-9 Service Adjustement

- * Used where it is difficult to receive stereo sound.
- * Adjust the 'Pilot High' and/or 'Pilot Low' data to vary voltage receiving stereo sound.
- * Pilot High : 16 (default)
- Pilot Low : 10 (default)

4-3-10 Reset

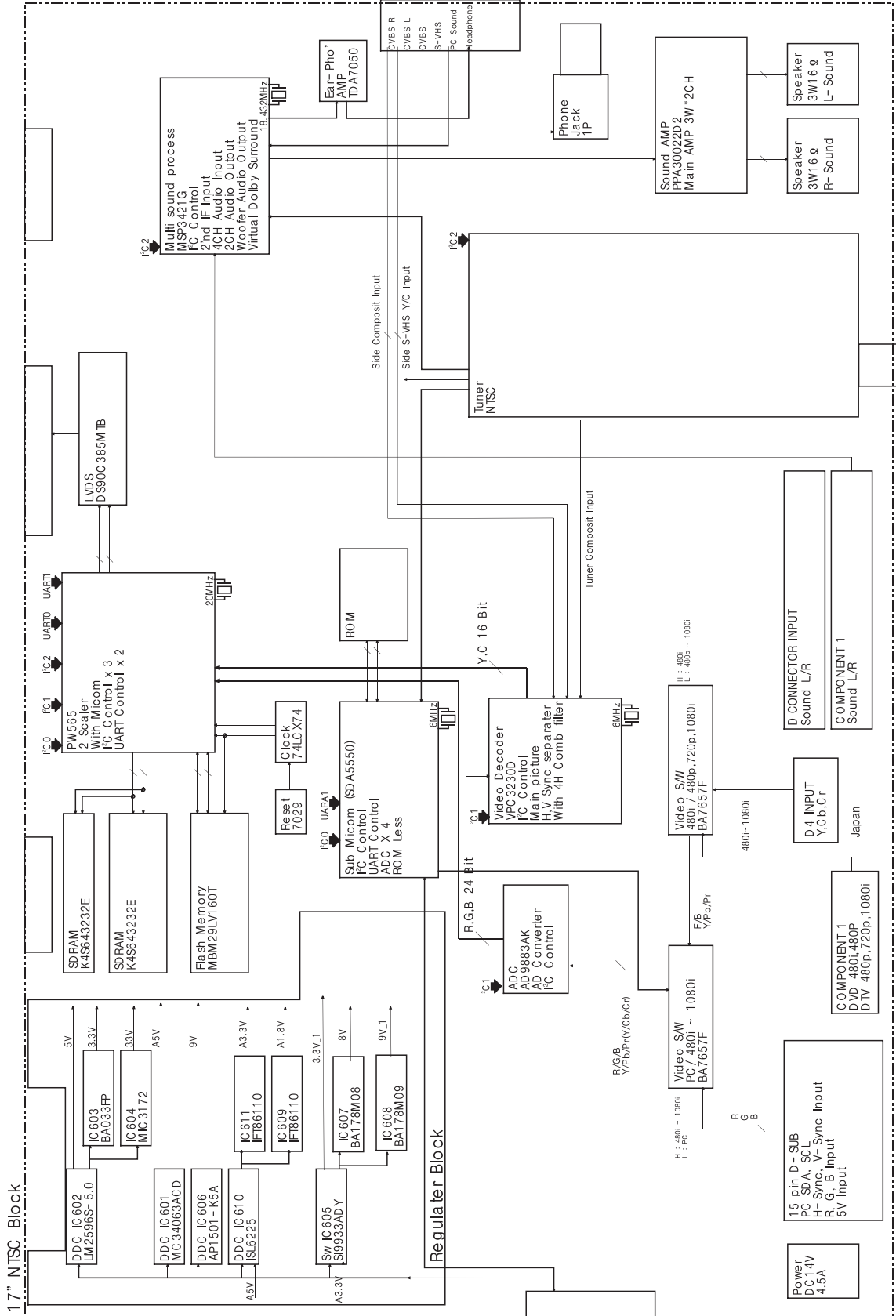
- * Initializes the data in the MICOM. (Set to default value)
- The values set in factory mode remain unchanged.

4-3-11 T_VIC17NUS_1018 07/05/2003 18:12:26

- * Displays the MICOM program version

8 Block Diagram

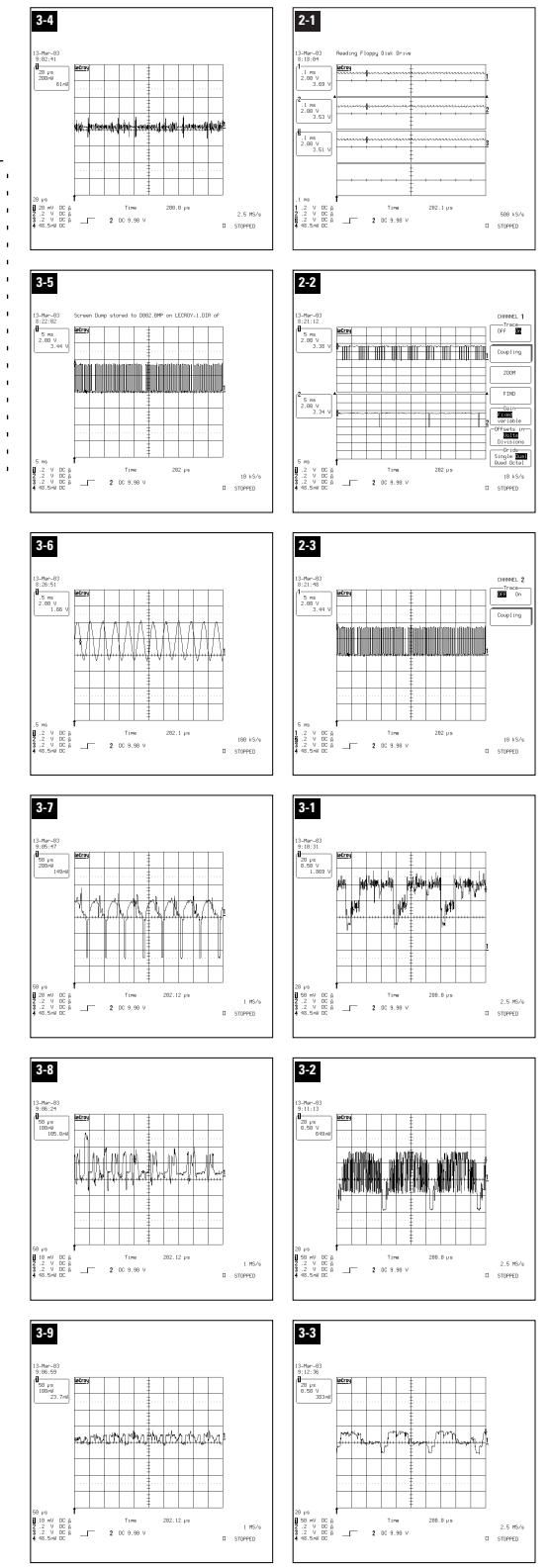
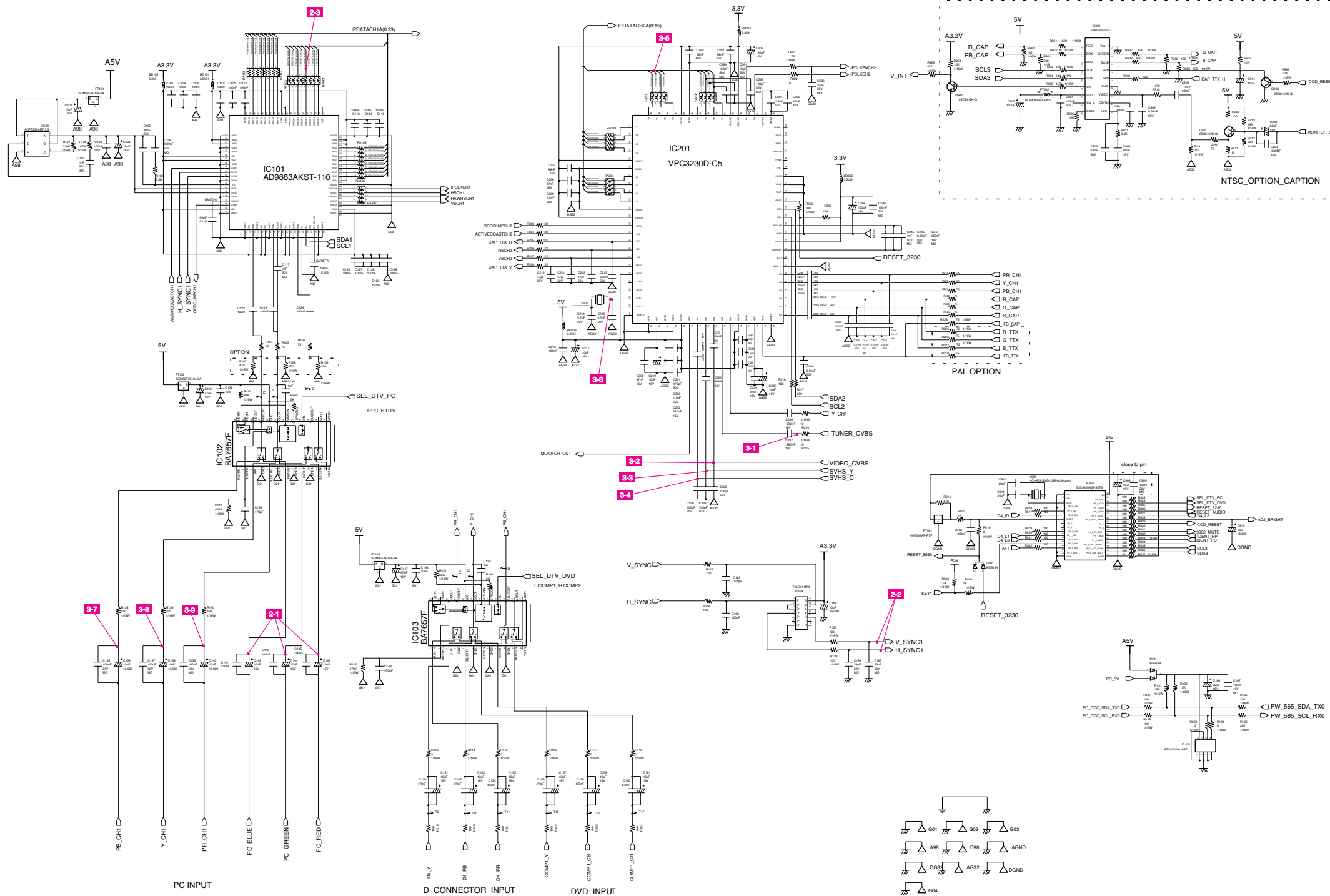
* This Document can not be used without Samsung's authorization.



11 Schematic Diagrams

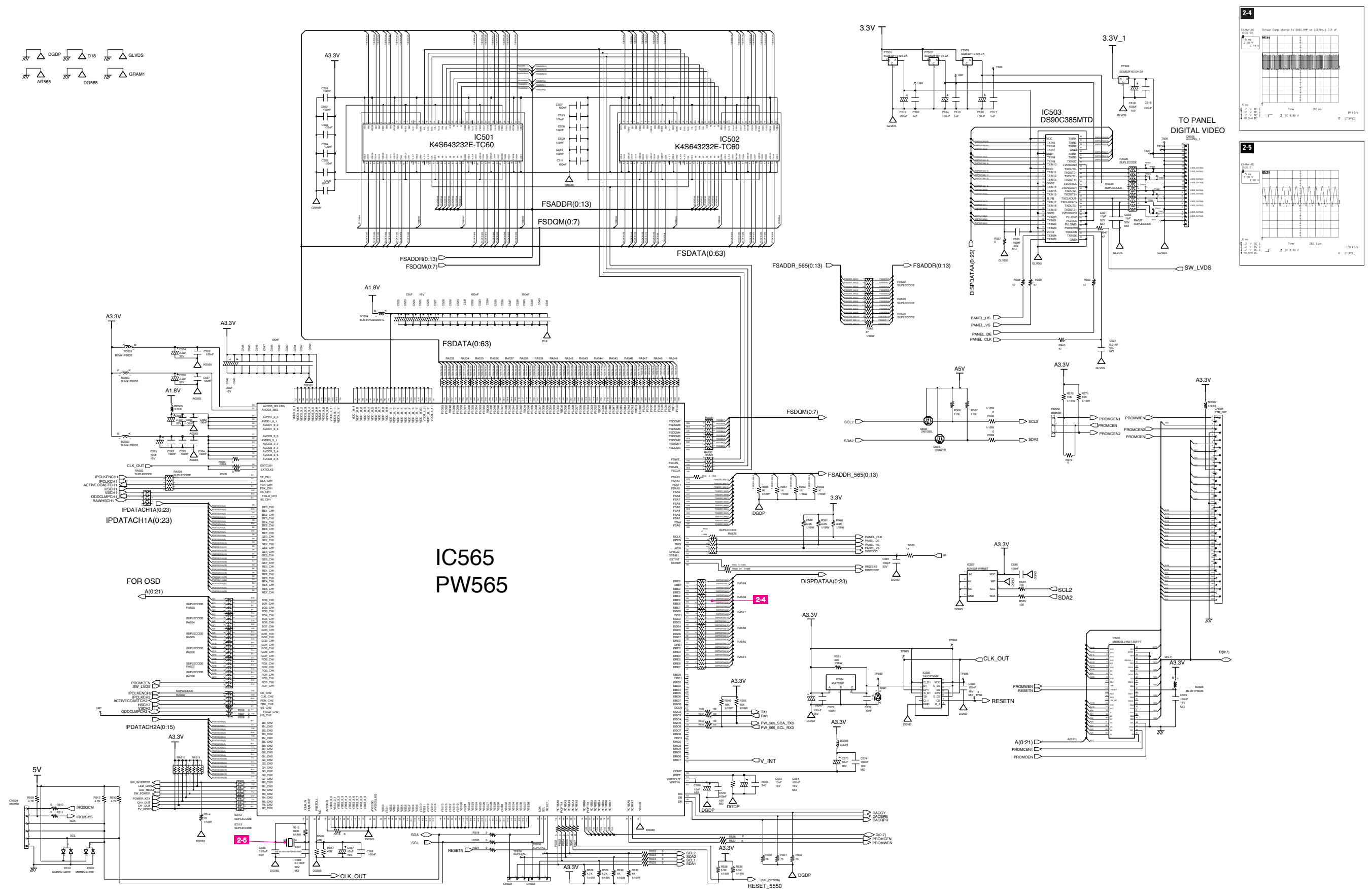
* This Document can not be used without Samsung's authorization.

11-1 Schematic Diagram



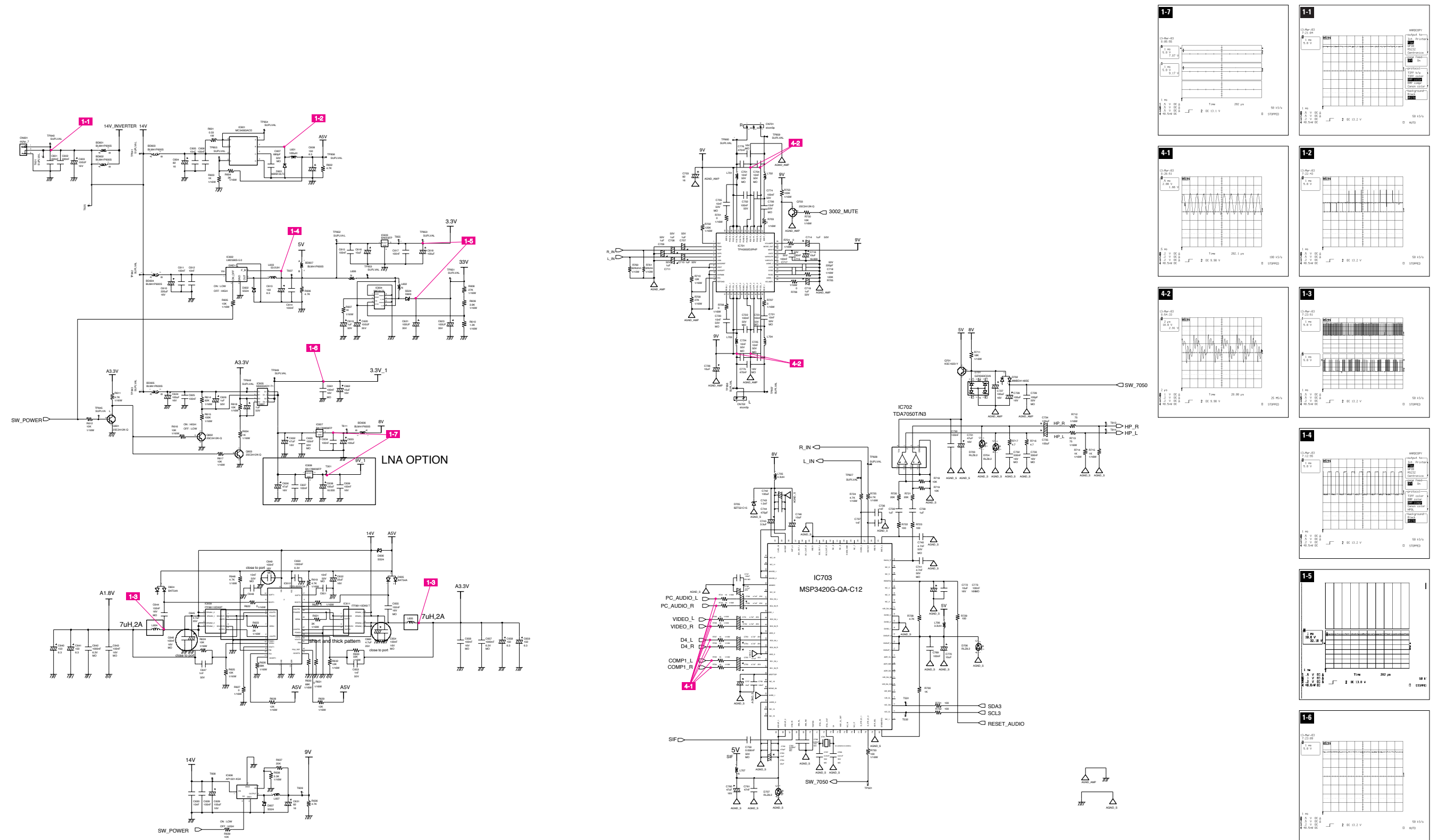
* This Document can not be used without Samsung's authorization.

11-2 Schematic Diagram



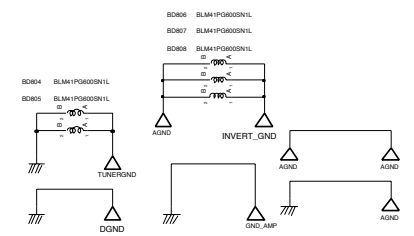
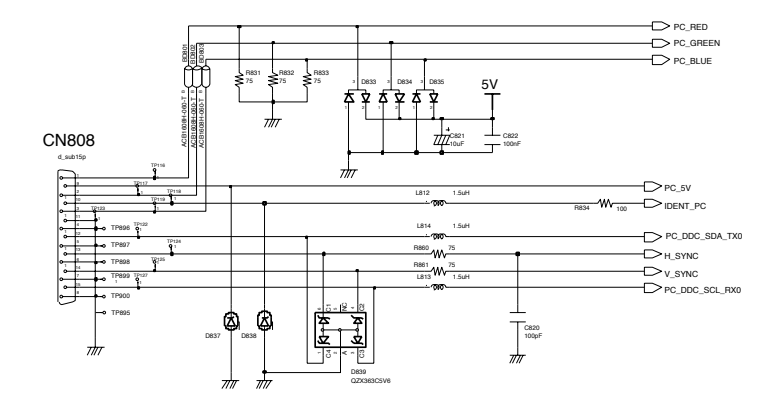
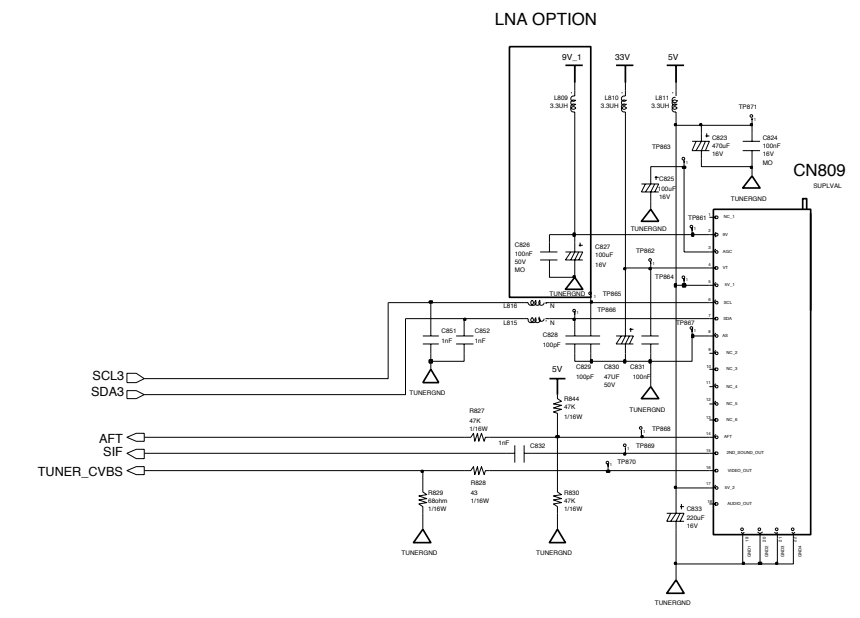
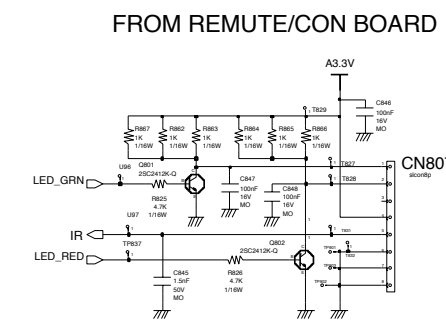
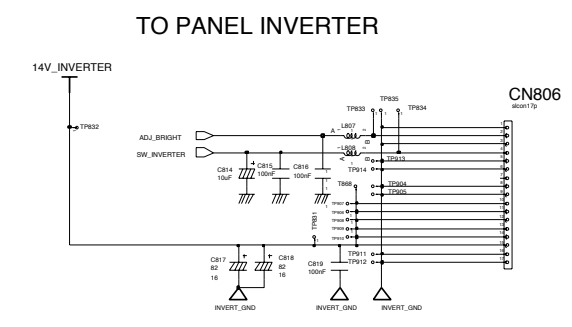
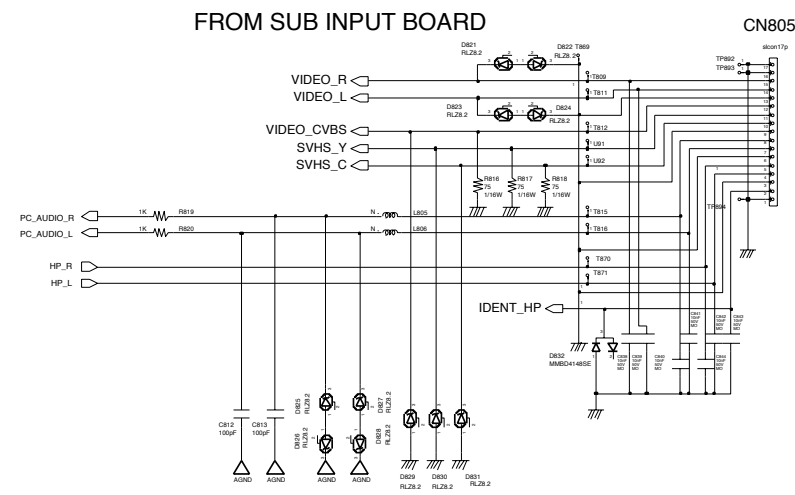
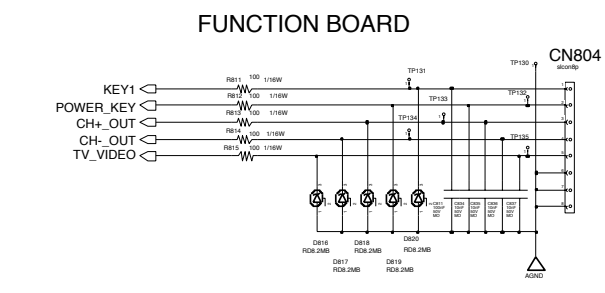
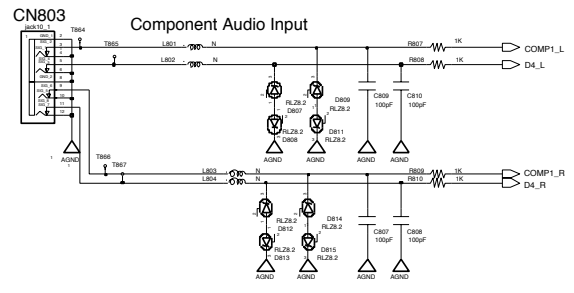
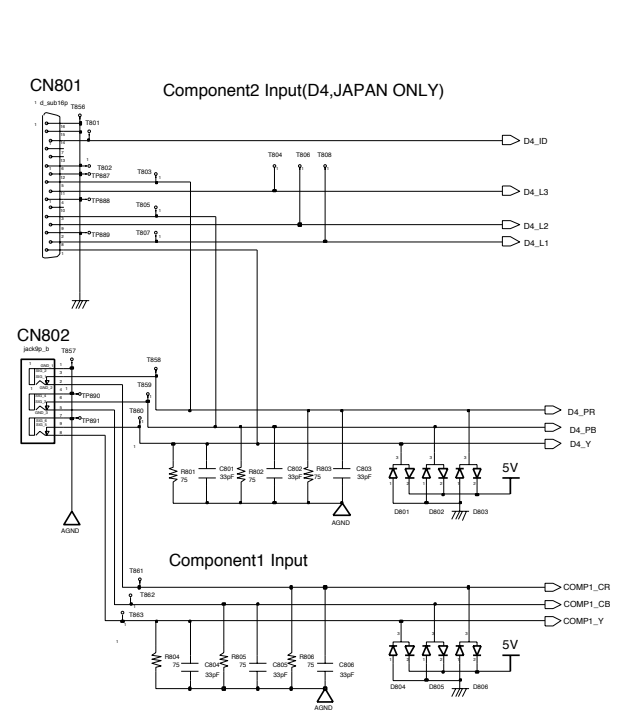
* This Document can not be used without Samsung's authorization.

11-3 Schematic Diagram



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

11-4 Schematic Diagram



7 Parts List

* You can search for updated part codes through CMS web site.
URL : <http://ecms.samsungelectronics.com/>

7-1 Part Lists

Description	Code No.
ASSY PCB MAIN	BN94-00492A
ASSY COVER FRONT	BN90-00585A
ASSY COVER REAR	BN90-00587A
LCD-PANEL	BN07 - 00119A
ADATOR	BN44-00074B
ASSY CHASSIS	BN91-00716A
ASSY SHIELD	BN91-00718A
ASSY BOARD P-AV/JACK	BN96 - 00503A
ASSY BOX	BN92-00927A
ASSY LABEL	BN92-00929A
REMOCON	BN59-00374A
ASSY ACCESSORY	BN96-00580Z, BN96-00619W