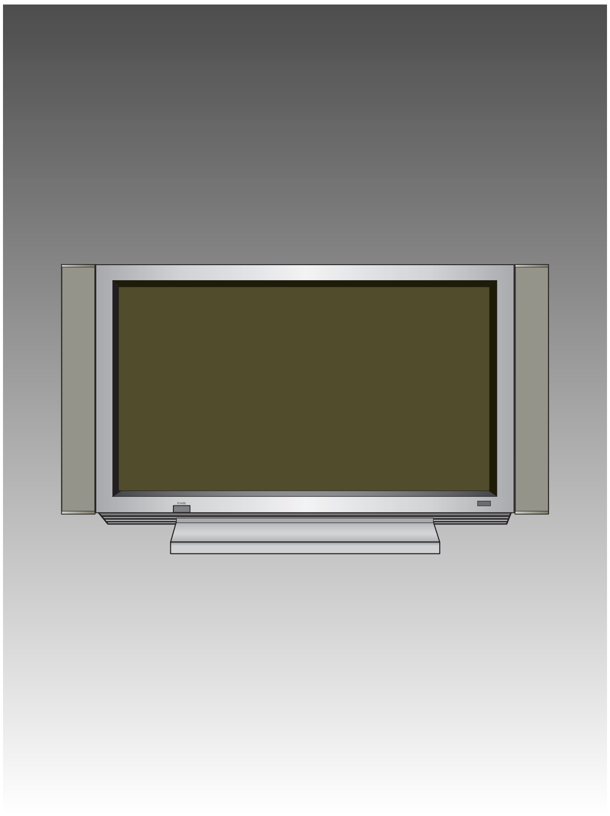
SAMSUNG

PLASMA DISPLAY TV

Chassis : D53A
Model: SPL4225X/XAA

SERVICE Manual

PLASMA DIAPLAY TV



CONTENTS

ELECTRONICS

Printed in Korea
AA82-

1. Precautions

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

1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people—particularly children—might insert fingers and contact dangerous voltages. Such openings include the spacing between fornt cabinet and back cabinet, excessively wide cabinet ventilation slots, and improperly fitted back covers.

4. 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 UL1950.5.2).

5. With the unit completely reassembled, plug the AC line cord directly into the power 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: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 3.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

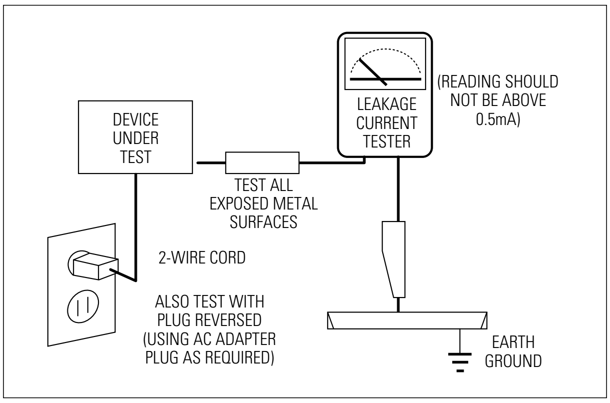


Fig. 1-1 AC Leakage Test

6. Antenna Cold Check:
With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.

7. High Voltage Limits:
High voltage must be measured each time servicing is done on the B+, horizontal deflection or high voltage circuits.

1-2 Safety Precautions (Continued)

8. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.
9. Design Alteration Warning:
   Never alter or add to the mechanical or electrical design of this unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

10. Hot Chassis Warning:
    Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord. If an isolation transformer is not used, these units may be safely serviced only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC source.

    To confirm that the AC power plug is inserted correctly, do the following: Using an AC voltmeter, measure the voltage between the chassis and a known earth ground. If the reading is greater than 1.0V, remove the AC power plug, reverse its polarity and reinsert. Re-measure the voltage between the chassis and ground.

11. Some TV chassis are designed to operate with 85 volts AC between chassis and ground, regardless of the AC plug polarity. These units can be safely serviced only if an isolation transformer inserted between the receiver and the power source.

12. Some TV chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.

13. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.

14. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.

15. Product Safety Notice:
    Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.

    Components that are critical for safety are indicated in the circuit diagram by shading, (⚠) or (⚠).
    Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications.
    A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1-3 Servicing Precautions

Warning 1 : First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.
Warning 2 : An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet. Follow them.

2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3. 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.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).

6. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

7. 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.

8. Plasma display panels have partial afterimages when a same picture continues to be displayed for a certain time. This happens due to the degradation of brightness caused by a scale-down effect.
   To prevent such afterimages when displaying a same picture for a certain time, be sure to reduce the level of brightness and contrast.
   ex) Contrast : 50 or 75, Brightness : 25

9. Plasma display is an array of pixels(cells). Therefore, if at least 99.9% pixels keep normal, the appropriate panel is judged as 'approved product.' Even though some of pixels keep luminescent or always light off, do not worry because the panel is approved.

1-4 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

2. Immediately before handling any semicon ductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power—this is an electric shock precaution.)

3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static"; these can accumulate sufficient electrical charge to damage ESDs.

7. 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.

8. 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.

9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

2. Reference Information

2-1 Tables of Abbreviations and Acronyms

Table 2-1 Abbreviations

A	Ampere	MV	Megavolt
Ah	Ampere-hour	MW	Megawatt
Å	Angstrom	MΩ	Megohm
dB	Decibel	m	Meter
dBm	Decibel Referenced to One Milliwatt	μA	Microampere
		μF	Microfarad
°C	Degree Celsius	μH	Microhenry
°F	Degree Fahrenheit	μm	Micrometer
°K	degree Kelvin	μs	Microsecond
F	Farad	μW	Microwatt
G	Gauss	mA	Milliampere
GHz	Gigahertz	mg	Milligram
g	Gram	mH	Millihenry
H	Henry	ml	Milliliter
Hz	Hertz	mm	Millimeter
h	Hour	ms	Millisecond
ips	Inches Per Second	mV	Millivolt
kWh	Kilowatt-hour	nF	Nanofarad
kg	Kilogram	Ω	Ohm
kHz	Kilohertz	pF	Picofarad
kΩ	Kilohm	lb	Pound
km	Kilometer	rpm	Revolutions Per Minute
km/h	Kilometer Per Hour	rps	Revolutions Per Second
kV	Kilovolt	s	Second (Time)
kVA	Kilovolt-ampere	V	Volt
kW	Kilowatt	VA	Volt-ampere
l	Liter	W	Watt
MHz	Megahertz	Wh	Watt-hour

Table 2-2 Table of Acronyms

ABL	Automatic Brightness Limiter
AC	Alternating Current
ACC	Automatic Chroma Control
AF	Audio Frequency
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AM	Amplitude Modulation
ANSI	American National Standards Institute
APC	Automatic Phase Control
APC	Automatic Picture Control
A/V	Audio-Video
AVC	Automatic Volume Control
BAL	Balance
BPF	Bandpass Filter
B-Y	Blue-Y
CATV	Community Antenna Television (Cable TV)
CB	Citizens Band
CCD	Charge Coupled Device
CCTV	Closed Circuit Television
Ch	Channel
CRT	Cathode Ray Tube
CW	Continuous Wave
DC	Direct Current
DVM	Digital Volt Meter
EIA	Electronics Industries Association
ESD	Electrostatic Discharge
ESD	Electrostatically Sensitive Device
FBP	Feedback Pulse
FBT	Flyback Transformer
FF	Flip-Flop
FM	Frequency Modulation
FS	Fail Safe
GND	Ground
G-Y	Green-Y
H	High
HF	High-Frequency
HI-FI	High Fidelity
IC	Inductance-Capacitance
IC	Integrated Circuit
IF	Intermediate Frequency
I/O	Input/output
L	Left
L	Low
LED	Light Emitting Diode
LF	Low Frequency
MOSFET	Metal-Oxide-Semiconductor-Field-Effect-Tr
MTS	Multi-channel Television Sound
NAB	National Association of Broadcasters
NEC	National Electric Code
NTSC	National Television Systems Committee
OSD	On Screen Display
PCB	Printed Circuit Board
PLL	Phase-Locked Loop
PWM	Pulse Width Modulation
QIF	Quadrature Intermediate Frequency
R	Right
RC	Resistor & Capacitor
RF	Radio Frequency
R-Y	Red-Y
SAP	Second Audio Program
SAW	Surface Acoustic Wave(Filter)
SIF	Sound Intermediate Frequency
SMPS	Switching Mode Power Supply
S/N	Signal/Noise
SW	Switch
TP	Test Point
TTL	Transistor Transistor Logic
TV	Television
UHF	Ultra High Frequency
UL	Underwriters Laboratories
UV	Ultraviolet
VCD	Variable-Capacitance Diode
VCO	Voltage Controlled Oscillator
VCXO	Voltage Controlled Crystal Oscillator
VHF	Very High Frequency
VIF	Video Intermediate Frequency
VR	Variable Resistor
VTR	Video Tape Recorder
VTVM	Vacuum Tube Voltmeter
TR	Transistor

3. Specifications

3-1 Display(PDP Monitor)

MODEL		SPL4225
Dimensions (mm/inch)	Display	1038.8(W) x 89(D) x 635(H)mm / 40.9(W) x 3.5(D) x 25(H) Inches
	Remote Control	54(W) x 31.5(D) x 220(H)mm / 2.13(W) x 1.24(D) x 8.66(H) Inches
Weight	Display	32Kg / 70.55ℓbs
	Remote Control	150g (Including batteries) / 0.33ℓbs
Voltage		AC 100-240V, 50/60Hz
Power Consumption		310 Watts
Number of Pixels		852(H) X 480(V)
Screen Size		106Cm / 42 Inches
AUDIO Input		VIDEO / S-VIDEO COMPONENT 1 COMPONENT 2 PC (RGB)
AUDIO Output		7W + 7W (8Ω)
VIDEO Input		VIDEO S-VIDEO COMPONETN 1 -480i / 480p COMPONETN 2 -480p~1080i PC (RGB)

MENO

4. Alignment and Adjustments

4-1 Service Mode

4-1-1 SERVICE MODE ENTRY METHOD (General Transmitter)

1. Turn off the power to make the SET STAND-BY mode.
2. In order to enter the Service Mode, select MUTE-1-8-2-POWER.

S In case entry into SERVICE MODE is unsuccessful, repeat the procedures above.

4-1-2 Initial DISPLAY State in times of SERVICE MODE Switch overs

4-1-2(A) OSD DISPLAY

MENU

1. PWS364 - Video
2. SDA9280 - Video
3. VPC3230 - Video
4. SDA9400 - Video
5. CXA2101 - Video /HSComponent
6. AD9884
7. OSD Position
8. Option
9. Reset
10. Aging

Release Time :

4-1-2(B) BUTTONS OPERATIONS WITHIN SERVICE MODE

Menu	Entire menu display
Joystick UP / DOWN	Cursor move to select items
Joystick (LEFT / RIGHT)	Enable to increase and decrease the data of the selected items

 # Notice

1. In case of no signal in ALL MODE. entry into the FACTORY MODE cannot be made.

4-1-3 Details of Control

4-1-3(A) PW364

No	OSD	Range	Default of MODE				
			VIDEO / S-VHS /DVD	1080i	720p	480p	PC
1	Horizontal Size	0 ~ 255	2	148 (Fix)	69	80	DO NOT ENTER
2	Vertical Size	0 ~ 255	51	45	46	42	DO NOT ENTER
3	Horizontal Pos	0 ~ 255	185	148 (Fix)	188	121	DO NOT ENTER
4	Vertical Pos	0 ~ 255	24	11	13	29	DO NOT ENTER

4-1-3(B) SDA9280

No	OSD	Range	Default of MODE		
			VIDEO / S-VHS /DVD	DTV	PC
1	CTI THRESH	0 ~ 15	8	-	DO NOT ENTER
2	CTI TRAWID	0 ~ 12	1	-	DO NOT ENTER
3	Y-DELAY	0 ~ 15	8	-	DO NOT ENTER
4	LPF GAIN	0 ~ 7	7	-	DO NOT ENTER
5	BPF GAIN	0 ~ 15	10	-	DO NOT ENTER
6	HPF GAIN	0 ~ 15	8	-	DO NOT ENTER
7	PHACOM	0 ~ 2	2	-	DO NOT ENTER
8	COR	0 , 1	1	-	DO NOT ENTER

4-1-3(C) VPC3230

No	OSD	Range	Default of MODE		
			VIDEO / S-VHS /DVD	DTV	PC
1	Bright YUV	0 ~ 255	195	-	DO NOT ENTER
2	Cont YUV	0 ~ 63	29	-	DO NOT ENTER
3	IF Comp	0 ~ 3	0	-	DO NOT ENTER
4	Chroma band	0 ~ 3	3	-	DO NOT ENTER
5	Luma LPF	0 , 1	1	-	DO NOT ENTER
6	HPLL Speed	0 ~ 3	1	-	DO NOT ENTER
7	Luma Delay	0 ~ 8	8	-	DO NOT ENTER
8	3230 Bright	0 ~ 255	146	-	DO NOT ENTER
9	3230 Contrast	0 ~ 63	42	-	DO NOT ENTER
10	H LPF Y/C	0 ~ 3	0	-	DO NOT ENTER
11	H LPF Chroma	0 , 1	0	-	DO NOT ENTER
12	H Peak Filter	0 ~ 2	2	-	DO NOT ENTER
13	Peaking Gain	0 ~ 7	4	-	DO NOT ENTER
14	Coaring Off/On	0 , 1	1	-	DO NOT ENTER

4-1-3(D) SDP9400

No	OSD	Range	Default of MODE		
			VIDEO / S-VHS /DVD	DTV	PC
1	OUT DELAY	0 ~ 255	10	-	DO NOT ENTER
2	TNRCLY	0 ~ 15	0	-	DO NOT ENTER
3	TNRCNC	0 ~ 15	10	-	DO NOT ENTER
4	STOP MODE	0 ~ 7	3	-	DO NOT ENTER

4-1-3(E) CXA2101

No	OSD	Range	Default of MODE		Remarks	No	OSD	Range	Default of MODE		Remarks
			VIDEO	DTV					VIDEO	DTV	
1	Limit Level	0 ~ 3	0	0		18	Sub Bright	-	38	40	DO NOT ENTER
2	System	0 ~ 3	2	3		19	Sub Cont	0 ~ 15	9	8	
3	D-Color	0 ~ 63	31	31		20	Sub Color	0 ~ 15	9	10	
4	R Drive	0 ~ 63	31	31		21	Sub Hue	0 ~ 15	5	5	
5	G Drive	0 ~ 63	31	31		22	Sub SHP	0 ~ 3	2	3	
6	B Drive	0 ~ 63	31	31		23	R-Y/R	0 ~ 15	8	4	
7	R CutOff	0 ~ 63	31	31		24	R-Y/B	0 ~ 15	12	9	
8	G CutOff	0 ~ 63	31	31		25	G-Y/R	0 ~ 15	7	5	
9	B CutOff	0 ~ 63	31	31		26	G-Y/B	0 ~ 15	4	7	
10	ABL Mode	0 ~ 3	0	0		27	PABL Level	0 ~ 15	6	6	
11	ABL TH	0 ~ 3	0	0		28	SHP F0	0 ~ 3	3	3	
12	H Sep Sel.	0 , 1	0	0		29	Pre/over	0 ~ 3	0	2	
13	Contrast	0 ~ 63	9	9		30	CTI Level	0 ~ 3	1	1	
14	Bright	0 ~ 3	52	52		31	LTI Level	0 ~ 3	0	0	
15	Cr Offset1	0 ~ 15	7	7		32	DC-Tran	0 ~ 3	1	1	
16	CB Offset1	0 ~ 15	7	7		33	D-Pic	0 ~ 3	2	1	
17	Drive	-	-	-	DO NOT ENTER						

4-1-3(F) AD9884

No	OSD	Range	Default of MODE				
			VIDEO / S-VHS /DVD	1080i	720p	480p	PC
1	Red Gain	0 ~ 255	134	142		134	135
2	Green Gain	0 ~ 255	130 (Fix)	130 (Fix)		130 (Fix)	130 (Fix)
3	Blue Gain	0 ~ 255	141	136		141	150
4	Red Offset	0 ~ 255	125	125		125	124
5	Green Offset	0 ~ 255	128 (Fix)	128 (Fix)		128 (Fix)	128 (Fix)
6	Blue Offset	0 ~ 255	113	119		113	132
7	Gain Drive	0 ~ 255	DO NOT ENTER	DO NOT ENTER			50
8	Offset Drive	0 ~ 255	DO NOT ENTER	DO NOT ENTER			150
9	V Contrast	0 ~ 63	30	36		30	DO NOT ENTER
10	V Bright	0 ~ 63	42	38		42	DO NOT ENTER
11	Phase	0 ~ 31	15	15		15	0 (Fix)
12	Charge Pump	0 ~ 7	0	3	2	0	0 (Fix)

4-1-3(G) OSD POSITION

No	OSD	Item	Range	Default	Description
1	Horiz	Horiz (Left,Right)	-128 ~ +128	40	Move 8 by 8 (Total: 33 Step), Fixed
2	Vert	Vert (Up,Down)	-24 ~ +24	16	Move 8 by 8 (Total: 7 Step), Fixed

4-1-3(H) OPTION

No	OSD	Range	Default of MODE			
			VIDEO / S-VHS /DVD	DTV		PC
				720p	1080i	
1	Back Ground Color	BLUE1 ↔ GREEN	BLUE1	-	-	-
2	Shift Pixel	0 ~ 8	4	-	-	-
3	Pixel Shift Min	0 Min ~ 59 Min	4 Min	-	-	-
4	Pixel Shift SEC	0 Sec ~ 59 Sec	0 Sec	-	-	-
5	Fan Protect	Off ↔ On	Off	-	-	-
6	Temp Protect	Off ↔ On	On	-	-	-
7	Sharpness	0 ~ 15	5	5	8	7
8	Base Language	English → Espania → France → Korea → English	English	English	English	English

4-1-4 White Balance Adjust Method

1. Press MUTE-1-8-2-POWER to enter the factory mode.
2. Enter "6. AD9884"
3. Adjust LOW coordinates as R,B OFFSET and HIGH coordinates as R,B GAIN. (GREEN is fixed)
4. In VIDEO,DTV mode, Adjust LOW light as "V BRIGHT".
5. In PC mode, Adjust LOW light as "OFFSET DRIVE".
6. In VIDEO,DTV mode, Adjust HIGH light as "V CONTRAST".
7. In PC mode, Adjust HIGH light as "GAIN DRIVE".

- W/B Adjustment SPEC(Suwon Factory Toshiba PATTERN)

▶ VIDEO MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 279 y : 283 Y : 28.4[fℓ]	± : 3 ± : 3 ± : 3
L-LIGHT	x : 297 y : 252 Y : 0.53[fℓ]	± : 5 ± : 5 ± : 0.1

▶ DTV MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 274 y : 275 Y : 30.8[fℓ]	± : 3 ± : 3 ± : 3
L-LIGHT	x : 313 y : 275 Y : 0.59[fℓ]	± : 5 ± : 5 ± : 0.1

► PC MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 280 y : 278 Y : 16.4[fℓ]	± : 3 ± : 3 ± : 2
L-LIGHT	x : 298 y : 244 Y : 1.19[fℓ]	± : 5 ± : 5 ± : 0.1

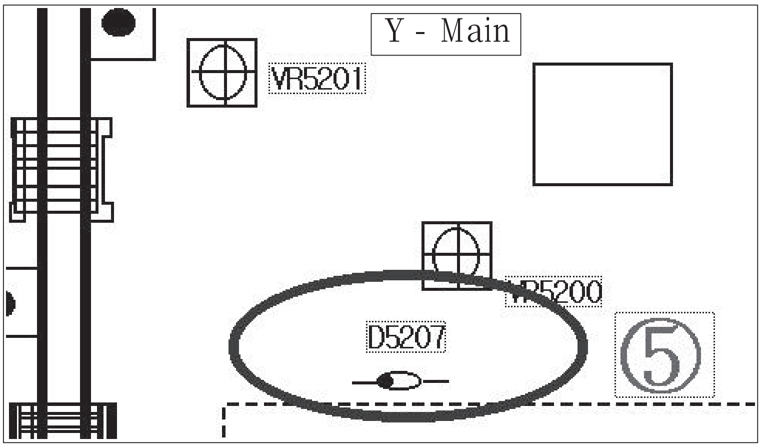
4-2 SPL4225 PC Input Mode

NO	HRes	VRes	HFreqSes	VTotal	H_P	V_P	Dot_c	HS1Period	HFreqSec	f0(Hz)	CLOCK/ PHASE	Factory HP/VP/P	USER V-Position
1	720	400	31.777	449	0	1	28.232	31.777u/10.1n=3146.2	/99=31.777	70.1	125/22/0/0	125/22/0/0	
2	640	350	31.777	449	1	0	25.175	31.777u/10.1n=3146.2	/99=31.777	70.0	125/16/0/0	125/16/0/0	
3	640	480	23.111	509	0	0	36.0	=2288.21	=23.111	85	125/8/0/1	125/8/0/1	
4	640	480	26.667	500	0	0	31.5	=2640.29	=26.666	75	124/31/0/0	124/31/0/0	
5	640	480	26.413	520	0	0	31.5	=2615.14	=26.414	72.8	125/31/0/0	125/31/0/0	
6	640	480	31.777	525	0	0	25.175	=3146.23	=31.777	59.9	125/2/0/0	125/2/0/0	
7	800	600	18.631	631	1	1	56.25	=1844.65	=18.626	85.1	125/9/1/2	125/9/1/2	
8	800	600	21.333	625	1	1	49.5	=2112.17	=21.333	75	125/0/0/1	125/0/0/1	
9	800	600	20.800	666	1	1	50.0	=2059.4	=20.797	72.2	125/31/0/2	125/31/0/2	
10	800	600	26.400	628	1	1	40.0	=2613.86	=26.393	60.3	125/15/0/1	125/15/0/1	
11	800	600	28.444	625			36.0	=2816.23	=28.444	56.3	126/1/0/1	126/1/0/1	
12	1024	768	14.561	808	1	1	94.5	=1441.68	=14.555	85	126/14/2/3	126/14/2/3	
13	1024	768	16.660	800	1	1	78.75	=1649.50	=16.656	75	125/20/1/3	125/20/1/3	
14	1024	768	17.707	806	0	0	75.000	=1753.16	=17.707	70.1	125/21/1/3	125/21/1/3	
15	1024	768	20.677	806	0	0	65.000	=2047.22	=20.676	60	125/16/1/2	125/16/1/2	

4-3 Discharge Voltage Adjustment Method (Monitor) in Times of ASS'Y Repair and Replacement

-All VR (Variable Resistor), except for VR for Vs, voltage goes down when turned counterclockwise.

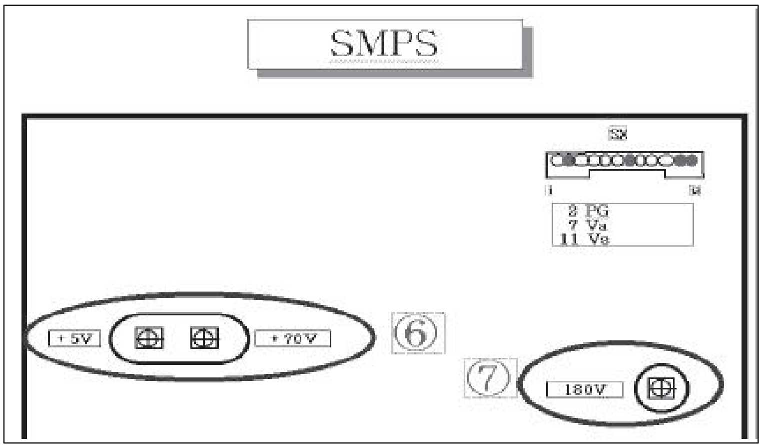
l **Vsc and Vy Adjustment Method**



n Vsc is the voltage of the left terminal for D5207
n Voltage adjustment is made for Vsc by using VR5201
n Standard voltage for Vsc is –55V±10V

n Vy is the voltage of the right terminal for D5207
n Voltage adjustment is made for Vy by using VR5200
n Standard voltage for Vy is 132V±10V

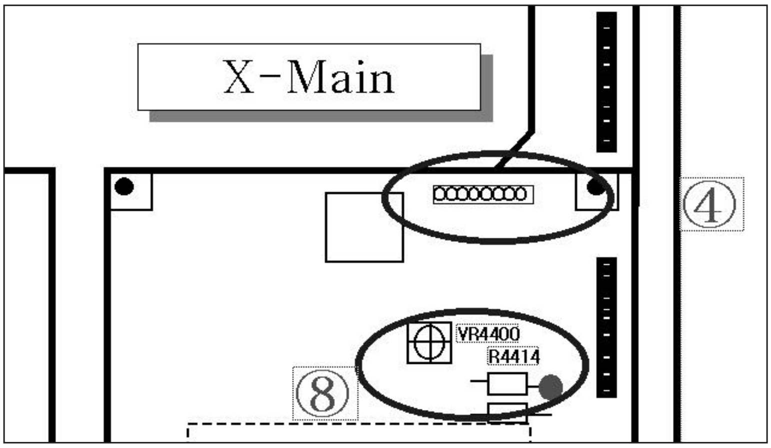
l **Vs and Va Adjustment Method**



n Vs is the voltage of the no.11 PIN of SX Connector.
n Voltage adjustment is made for Vs by using VR in 7
n Vs is 175±5V

n Va is the voltage of the no.7 PIN of SX Connector.
n Voltage adjustment is made for Va by using right VR in 6
n Va is 75±5V

l **Vw Adjustment Method**



n Vw is the voltage of the right terminal for R4414

n Voltage adjustment is made for Vw by using VR4400

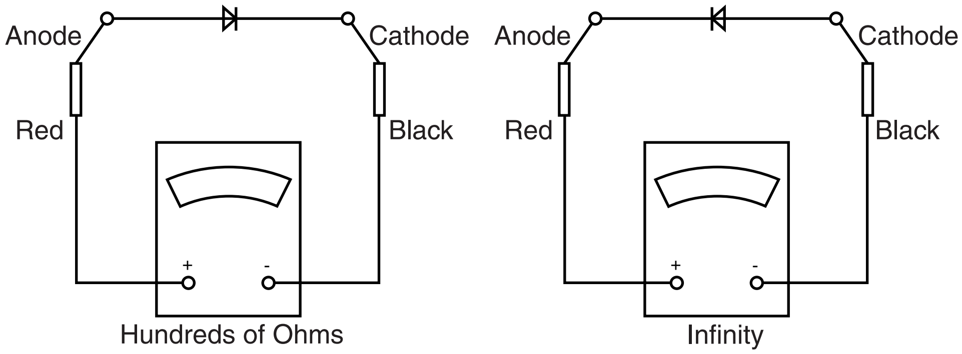
n Standard voltage for Vw is 175V±5V

Alignment and Adjustments

4-4 Fault Finding Using MULTI METER

Parts defects can be found for DIODE TRANSISTOR IC, using MULTI TEST including Forward / Reverse direction Multi Test. Of course, in case resistance of several ohms and COIL are connected in parallel circuit, the lock out circuit parallel connected to part must be severed.

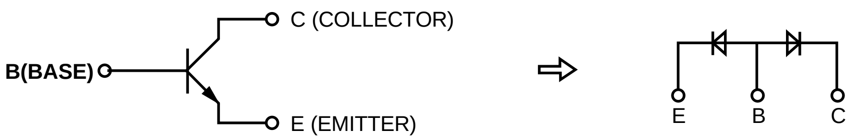
1.DIODE



	Forward Direction	Reverse Direction
Between Anode and Cathode	Hundreds of ohms	Infinity

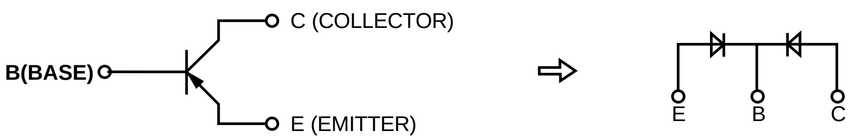
2. TRANSISTOR

l For NPN(KSC815-Y, 2SC2068, 2SC2331-Y)



	Forward Direction	Reverse Direction
Between B and E	Hundreds of ohms	Infinity
Between B and C	Hundreds of ohms	Infinity
Between E and C	Infinity	Infinity

l For PNP(KSA539-Y)



	Forward Direction	Reverse Direction
Between B and E	Hundreds of ohms	Infinity
Between B and C	Hundreds of ohms	Infinity
Between E and C	Infinity	Infinity

Alignment and Adjustments

3. IC (INTEGRATED CIRCUIT)

IC has built in DIODE against overvoltage in PIN. Generally, except for internal circuit defects, IC defects can be found, by measuring the DIODE.

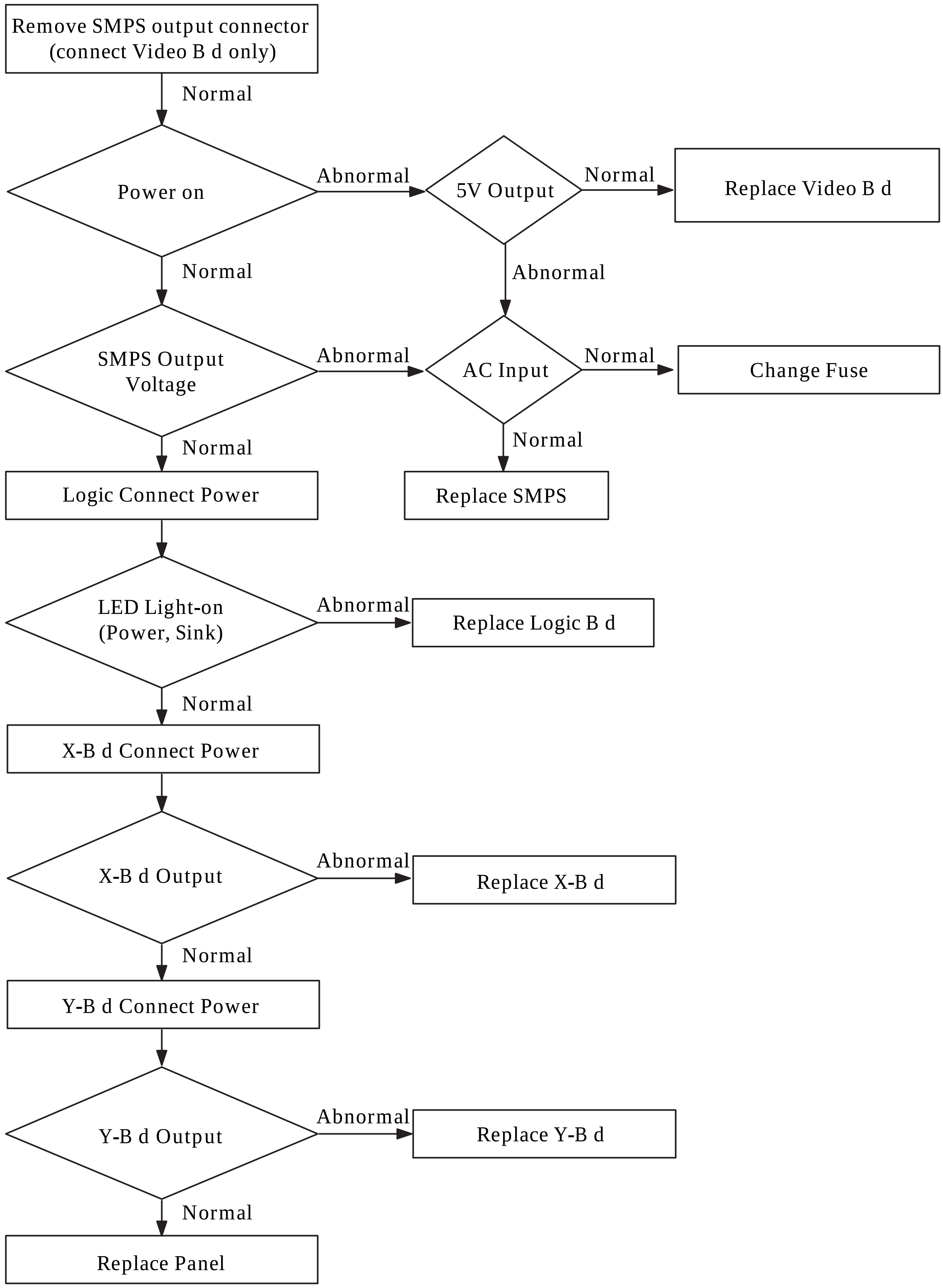
Forward Direction	Hundreds of ohms
Reverse Direction	Varying depending on IC but generally normal
	Infinity in DIODE TEST MODE

› Defects have SHORT(0 ohm) for both forward and reverse direction.

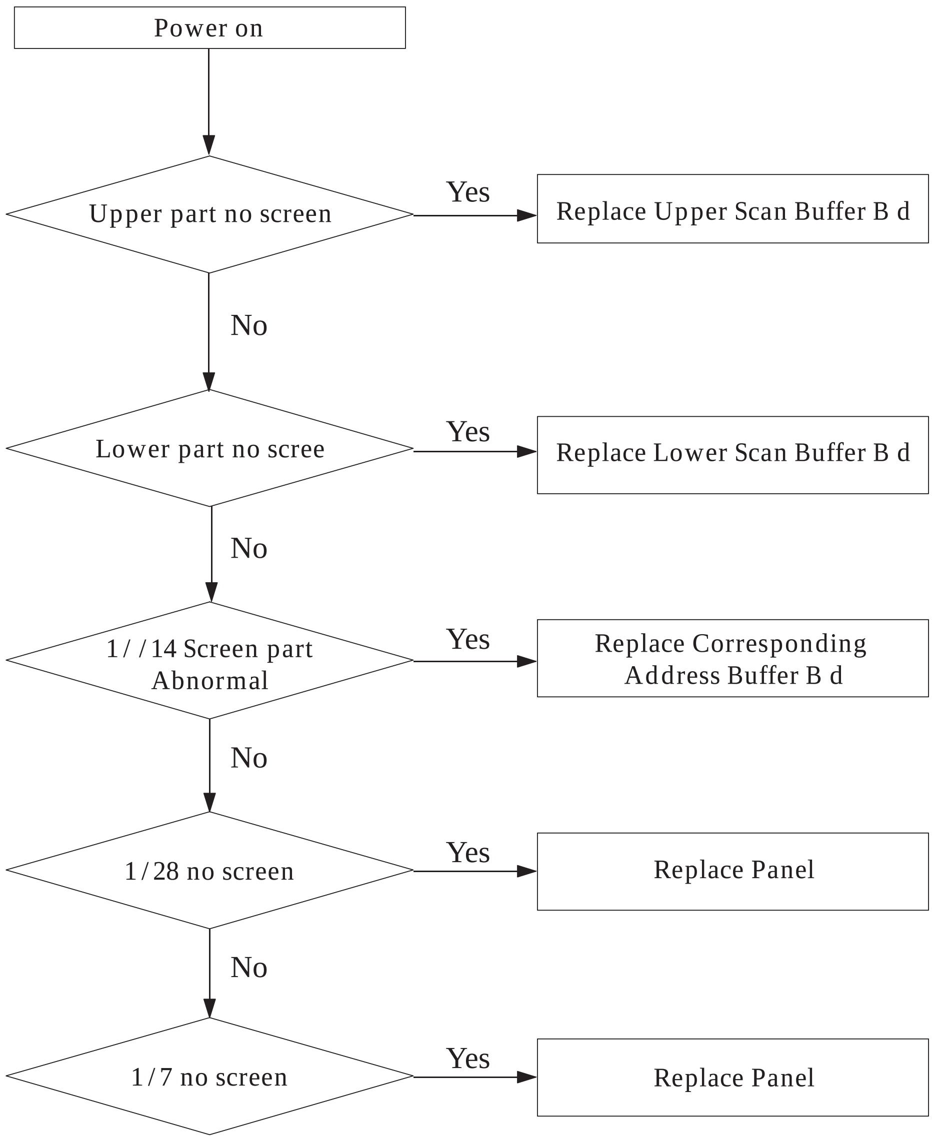
MEMO

6. Troubleshooting

6-1 Entirely no screen



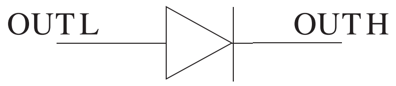
6-2 Partly no screen



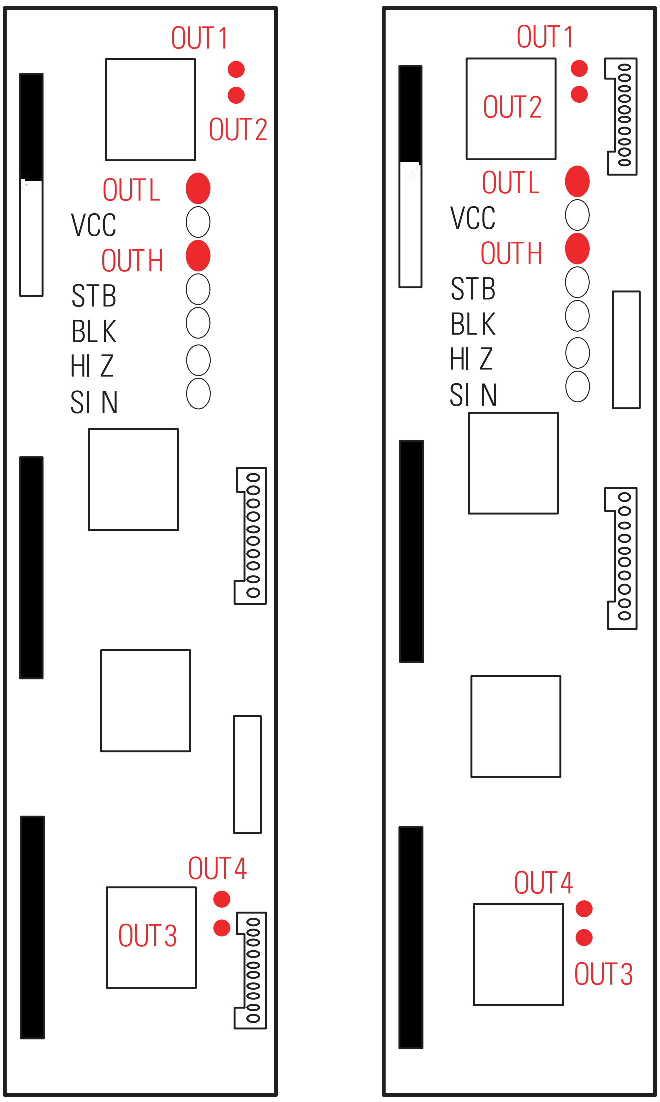
6-3 Checking the Board (Unit)

6-3-1 Y buffer

- To check the main board, you have to check the Y buffer first.
- After separating Y Main and Y buffer board,
- Check the Diode between OUTL and OUTH, and make sure that the forward voltage drop is between 0.4 and 0.5V.

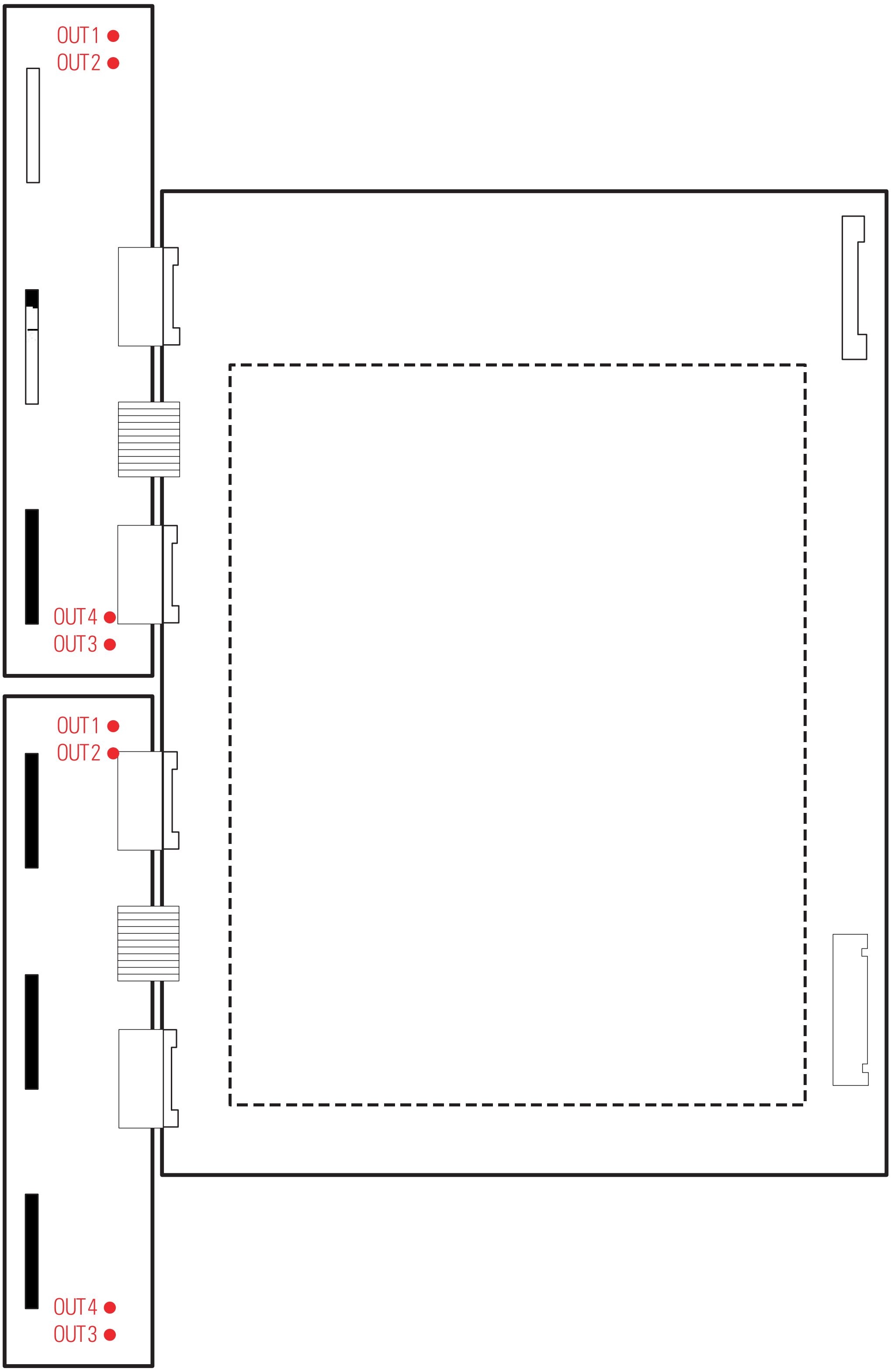


- Check that the resistance between the two terminals is more than several kW.



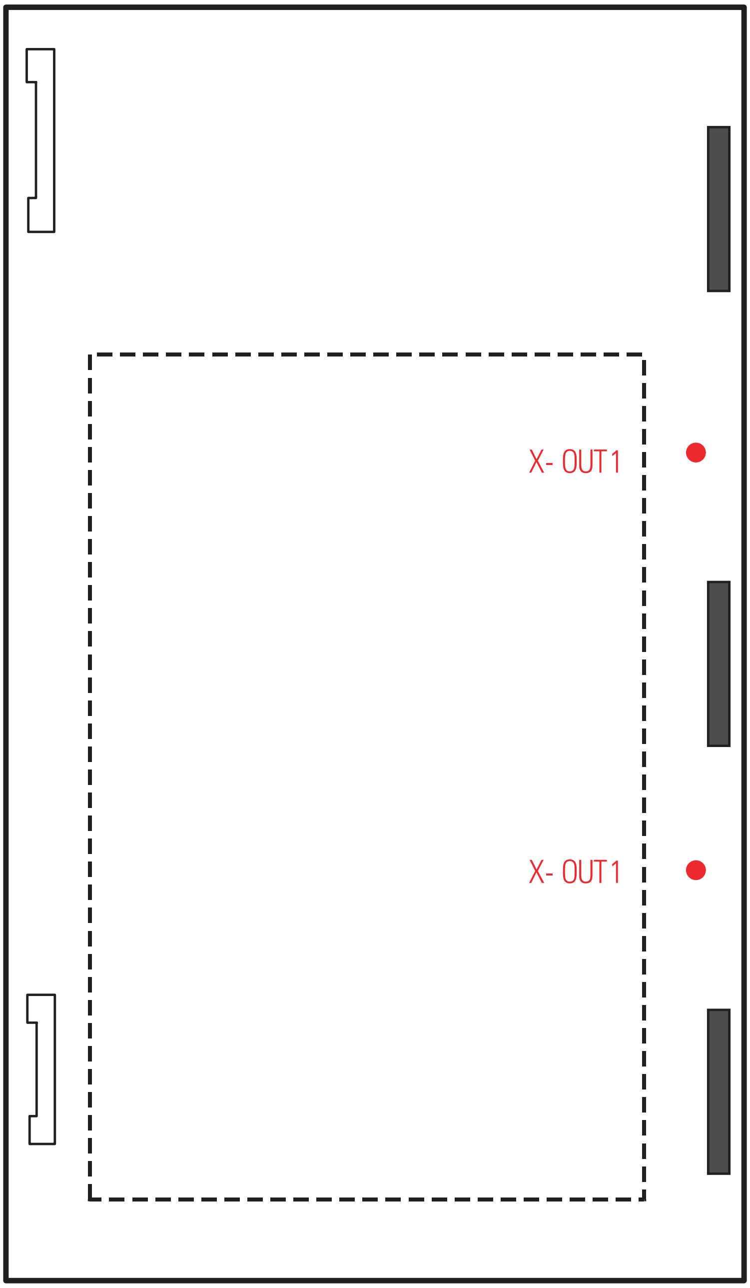
6-3-2 Y Main

- After connecting Y main and Y buffer board, check that one of the output waveforms from OUT 1, 2, 3 or 4 is the same as that of the appendix 1 when power is supplied.



6-3-3 X Board

- Check that one of the output waveforms from X-OUT 1 or 2 is the same as that of the appendix 2 when power is supplied.



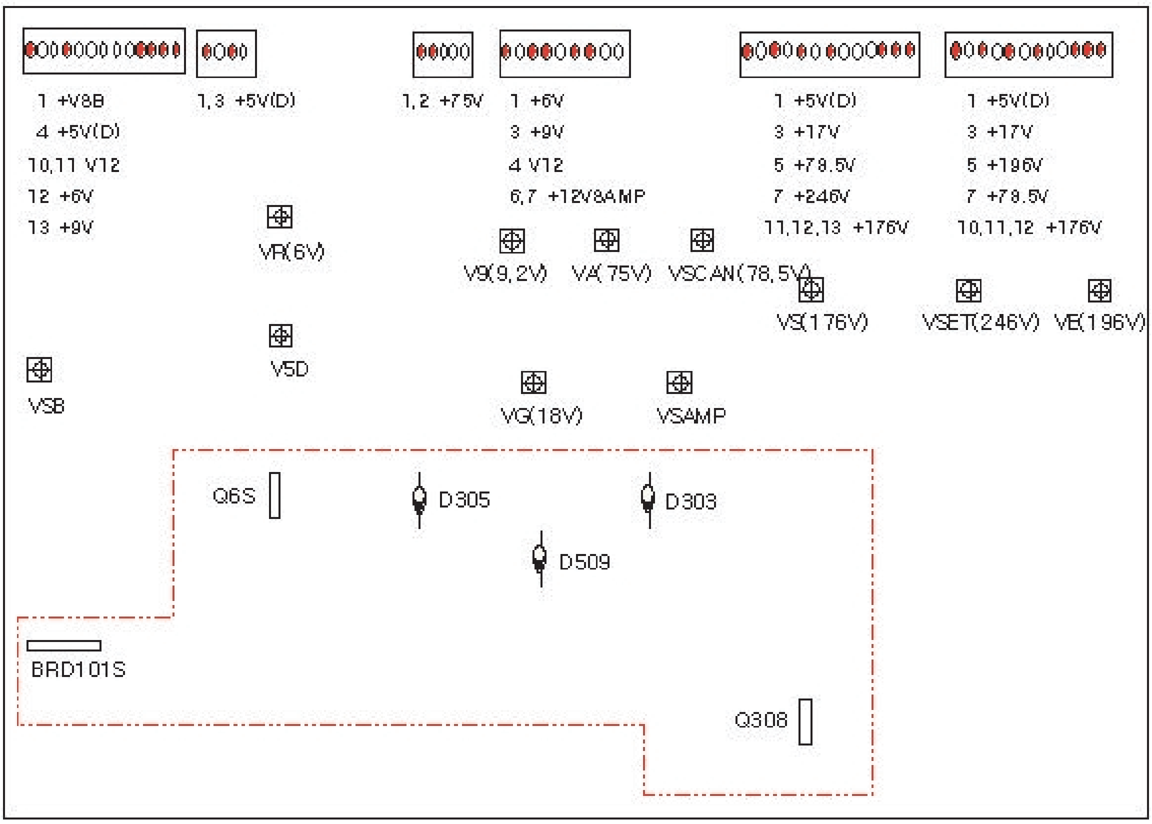
6-3-4 SMPS

- Check output voltage.

- If output voltage is not detected, check the following lists:

(1) Check fuse
(2) In case of +5V(D), check that D305 is short
(3) In case of VSAMP, check that D506 is short
(4) In case of VA, check that D303 is short
(5) In case of VS, check that pin 2 and 3 of Q303 are short
(6) In case of Q6S, check that pin 2 and 3 are short
(7) Check that BRD101S is short

SMPS



6-3-5 Scaler Borad

1. PW364A Input Clock

(1) MCKEXT
Check IC406(IC502) pin 5.
Power on : MCKEXT = 97.5MHz
Standby : MCKEXT = 48.75MHz

(2) MCKEXT, DCKEXT
Check IC407(ICS502) pin 25. DCKEXT = 65MHz

(3) VCLK
Check IC203(SDA9400) pin 26. VCLK = 27MHz

(4) GCLK
Check IC401(AD9884) pin 115(TP404).
GCLK is differently seen according to PC input signal format(VGA, SVGA, XGA)
GCLK = 15MHz ~ 50MHz(This value is apparently half of the clock frequency of the relevant PC input signal format.

2. VPC3230

- Check power is supplied(5V, 3.3V).
- Check Reset(pin 15) is high.
- Check I^2C-bus(pins 13, 14)
- Check the signal input to Y signal(pin73), C signal(pin 71), PLL DVD-Y signal (pin 72).
- Check the output clocks LLC1(pin 28), LLC2(pin 27). (LLC1 = 13.5MHz, LLC2 = 27MHz)
- Check the output H sync(pin 56) and check V sync(pin 57) is output.
- Check output digital data.

3. SDA9400

- Check power is supplied(3.3V).
- Check Reset(pin 30) is high.
- Check I^2C-bus(pins 20, 21)
- Check clock is input.(pins 28, 54 : 27MHz. pin 29 : 13.5MHz)
- Check digital data input.
- Check the input H sync (pin 23) = 15.75MHz, V sync (pin 22) = 60Hz
- Check digital data input.
- Check the output H sync (pin 60) = 31.5KHz, V sync (pin 61) = 60Hz, VCLK (pin 26) = 27MHz

4. AD9884(IC101)

- Check power is supplied(3.3V)
- Check I^2C-bus(pins 29, 30)
- Check PC signal, HD-component signal is input.
- Check the input signal GREF (pin 40). The GREF signal applies to a fixed form of the input H sync signal.
- Check the output signal GFBK (pin 117). The GFBK signal applies to a fixed form of PLLD H sync signal.
- Check the output signal GCLK (pin 115). The GCLK is differently seen according to the PC input signal format(VGA, SVGA, XGA).
  GCLK = 15MHz ~ 50MHz This value is apparently half of the clock frequency of the relevant PC input signal format.
- Check digital data output.

5. PW364 Reset

- When the Reset switch is pressed. if OTP01(29LV160T) pin 28(TP151) undergoes ransition.
  PW364 operates and OTP01 also does. Unless transition happens, it means PW364A is not operating.

6. PW364A Communication

- Operate the PC hyper terminal Settings are as follows :

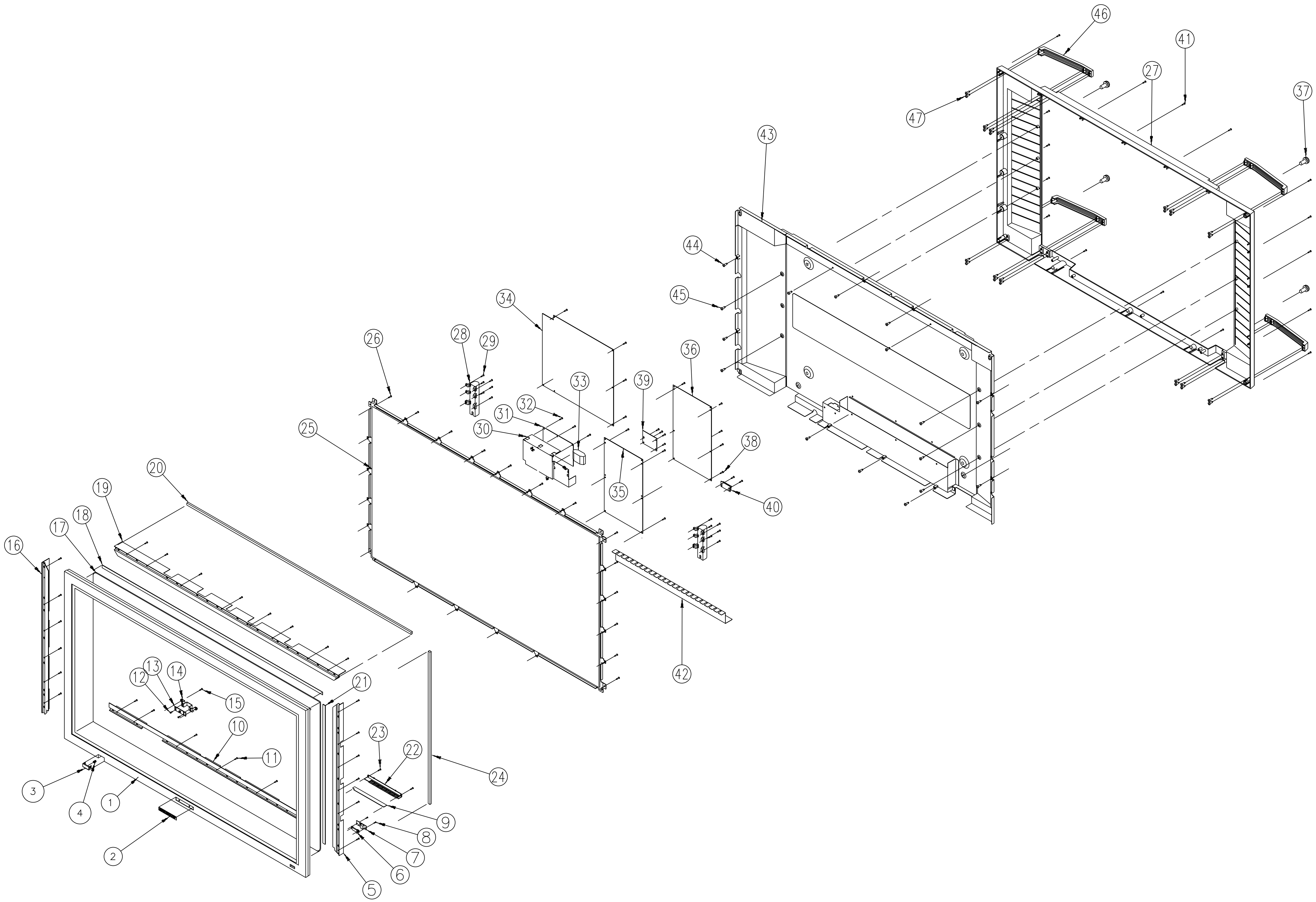
  Model Selection : Direct connect to com1
  No. of Bit per second : 115200
  Data Bit : 8
  Parity : None
  Stop Bit : 1
  Flow Control : None

- Whenever the Reset switch is pressed, the following is displayed on the PC hyper terminal screen.

  CBooter V1.5 & 2000.01.26
  CBooter V1.5 & 2000.01.26
  CBooter V1.5 & 2000.01.26

7. Exploded View & Parts List

7-1 SPL4225X/XAA



NO	PART DESCRIPTION	CODE NO	SPEC.	Q'Ty	REMARK
1	CABINT-FRONT	A64-01799E	42P2,HIPS V0,G4309,LG807P+WP1000 MIJU	1	
2	BADGE-BRAND	A64-01560D	PDP,AL FCRGING,L68(45)SILVER,LF807PS	1	
3	KNOB-MASTER	A64-01566E	PDP,ABS,HC,BLK,LG807P NO SILK	1	
4	SPRING-CS	AA61-60003J	-,SUS304,-,-,OD6,N7,OD6,-,-,-,-	1	
5	BRACKET-FILTER SIDE L, ASSY	AA61-01061A	AL 6063 EXT,42P2,T1.2	1	
6	WINDOW-RMC	AA64-01549B	PDP,ACRYL VIOLET,20.1	1	
7	ASSY SUB PCB, REMOCON	AA95-01837F	SPD-42P2S,D51A,AA95-01560A	1	
8	SCREW-TAPTITE	6003-000333	RH,+,2S,M3,L10,ZPC(YEL),SWRCHI	2	
9	ASSY SUB-PCB CONTROL	AA95-01751D	PS42P2S,D53A,AA95-01582A	1	
10	BRACKET-FILTER BOT, ASSY	AA61-01062A	AL 6063 EXT,42P2,T1.2	1	
11	SCREW-TAPTITE	6003-001020	RH,+MB,M4,L10,ZPC(YEL),SWRCH18	28	
12	SCREW-MACHINE	6001-000578	TH,+,M3,L8,ZPC(YEL),SWRCH10A,FP,-	2	
13	ASSY SUB-PCB, POWER ON/OFF	AA95-01833D	SPD-42P2S,D51A,A95-01561A	1	
14	RACKET-POWER	AA61-00716B	,SECC,T1.0	1	
15	SCREW-TAPTITE	6003-001026	RH,+,B,M4,L15,ZPC(BLK),SWRCH18	2	
16	BRACKET-FILTER SIDE R, ASSY	AA61-01060A	SL 6063 EXT,42P2,T1.2	1	
17	MIRROR-GLASS	A67-00112A	42PDP,MESH,9840*584,56%,T3.0,VS =922.2*518.4,0.15OHM	1	
18	SPONGE-EMI, FILTER	AA72-00017A	42P2,SHIELD-FORM,T1.2,D10,L980	2	
19	BRACKEET-FILTER TOP, ASSY	AA61-01059A	SL,42P2,T1.2	1	
20	SPACER-FILTER	AA60-00110C	42P2,P/U V0,L,BLK	2	
21	SPONGE-EMI, FILTER	AA72-00018A	42P2,SHIELD-FORM,T1.2 D10,L560	2	
22	KNOB-CONTROL	AA64-01565B	PDP,ABS HB,BLK,SILVER	1	
23	SCREW-TAPTITE	6006-001026	RH,+,B,M4,L15,ZPC(BLK),SWRCH18	2	
24	SPACER-FILTER	AA60-00110D	42P2,P/U V0,L,BLK	2	
25	ASSY-PANEL, PDP, SVC	A98-00200A	,SPD-42P2S,D51A,300X350X430,DP 42SD04A	1	
26	SCREW-TAPTITE	6003-001026	RH,+,B,M4,L15,ZPC(BLK),SWRCH18	26	
27	CABINET BACK	AA64-01802C	42P2,HIPS V0, CLK,WP1000	1	
28	GUIDE-STAND	AA61-00584B	SPD-50P2H,AL,DIEVASTING	2	
29	SCREW-ASS'Y MACH	6006-001039	WSP,PH,+,M4,L12,ZPC(YEL),SM0C	12	
30	BRACKET-LINE, FILTER	AA61-00582C	SPD-42P2H,SPC,T1.0,NI	1	
31	ASSY PCB POWER	AA94-07568A	SPD-42P2S,D51A,DOM	1	

NO	PART DESCRIPTION	CODE NO	SPEC.	Q'Ty	REMARK
32	SCREW-ASS'Y MACH	6006-001035	WSP,PH,+,M3,L8,ZPC(YEL),SM0C	6	
33	FILTER-EMI AC LINE	2901-001222	25V,10A,UL,CSA,D,S,FI, ,2200 0PF,24X50X62.3MM,BK,HARNESS	1	
34	ASSY-PBA, SMPS	AA98-00188A	,SPD-42P2S,D51A,42SD,90~26V ,47/63HZ,SEM	1	
35	ASSY PDP P-PBA-MAIN	BN96-00074A	,S42SD,D51A,D53A,42INCH,1F2A, SDI CODE LJ92-000573A	1	
36	ASSY PCB MISC-SCALER	BN94-00293A	SPL4225X/XAA,D53A	1	
37	SCREW-ASS'Y MACH	6006-001112	WP,PH,+,M8,L16,ZPC(BLK),SWRCH 18A	4	
38	SCREW-ASS'Y MACH	6006-001035	WSP,PH,+,M3,L8,ZPC(YEL),SM0C	6	
39	ASSY PCB MISC-SOUD	BN94-00294A	SPL4225X/XAA,D53A	1	
40	ASSY SUB PCB TERMINAL	AA95-01770A	PS42P2S,D52A,AA95-01632A	1	
41	SCREW-TAPPING	AA60-10050T	-,SWRCH18A,M4,L20,RH,+,2S,- ,ZPC(BLK),-	16	
42	COVER-TERMINAL	AA63-00481E	42P2,SUS,T0.3,MIJU(TV)	1	
43	COVER-BACK, ASSY	AA63-00232C	42P2S,AL5052,T1.2,MIJU(SPL4225)	1	
44	SCREW-TAPPING	6003-001019	RH,+,B,M4,L12,ZPC(BLK),SWECH18	13	
45	SCREW-TAPPING	6003-001020	RH,+,B,M4,L10,ZPC(YEL),SWRCH18	6	
46	HANDLE-SET	AA64-01551B	PDP,ABS,HB,BLK	4	
47	SCREW-TAPPING	6003-001026	RH,+,B,M4,L15,ZPC(BLK),SWRCH18	24	

8. Electrical Parts List

8-1 PARTS LIST FOR SERVICE

NO	Description	CODE NO.	Specification
1	ASSY PDP P-MODULE	BN96-00078A	M3,1F2A,42P2S,D51A,S1.0,1019.2X616X56MM,SD,NTSC,42INCH,DEPTH 89MM
2	ASSY-PANEL, PDP, SVC	AA98-00200A	, SPD-42P2S,D51A,300X350X430,DP42SD04A
3	ASSY-PBA, X-MAIN	AA98-00206A	, 42SD,D51A,LJ41-00782A,SD42-XM-1.0,SDI,S1.0
4	ASSY-PBA, Y-MAIN	AA98-00209A	,42SD,D51A,LJ41-00781A,SD42-YM-1.0,SDI,S1.0
5	ASSY PDP PBA,L-MAIN	BN96-00074A	,S42SD,D51A,D53A,42INCH,1F2A,SDI CODE LJ92-000573A
6	ASSY-PBA, BUFF(UP)	AA98-00213A	,42SD,D51A,LJ41-00783A,SD42-YK-1.0,SDI,S1.0
7	ASSY-PBA, BUFF(DOWN)	AA98-00215A	,42SD,D51A,LJ41-00783B,SD42-YL-1.0,SDI,S1.0
8	ASSY-PBA, L-BUFF(E)	AA98-00218A	,42SD,D51A,LJ41-00779A,SD42-LE-1.0,SDI,S1.0
9	ASSY-PBA, L-BUFF(F)	AA98-00221A	,42SD,D51A,LJ41-00780A,SD42-LF-1.0,SDI,S1.0
10	ASSY-PBA, SMPS	AA98-00188A	SPD-42P2S,D51A,42SD,90+~264V,47/63HZ,SEM
11	ASSY PCB MISC-SCALER	BN94-00293A	SPL4225X/XAA,D53A
12	ASSY-PBA, AC-FILTER	AA94-07568A	SPD-42P2S,D51A.DOM
13	ASSY SUB-PCB, REMOCON	AA95-01837F	SPD-42P2S,D51A,AA95-001560A
14	ASSY SUB-PCB, POWER ON/OFF	AA95-01833D	SPD-42P2S,D51A,AA95-01561A
15	ASSY SUB-PCB, TERMINAL	AA95-01770A	PS42P2S,D53A,AA95-01632A
16	ASSY SUB-PCB, CONTROL	AA95-01751D	PS42P2S,D53A,AA95-01582A
17	ASSY PCB MISC-SOUND	BN94-00294A	SPL4225X/XAA,D53A
18	REMOCON	AA59-00222B	,TM63,PDP,48,G6671B,SPK4215M
19	POWER-CORD	AA39-00233A	SPD50P2HM,VM0289S/VM0266S,SVT 3X 18AWG,AC125V,6A,2000MM ,EP3/VES,BLK,UL,CSA
20	MIRROR-GLASS	AA67-00112A	42INCH,P1S,MESH,55% 1.15OHM
21	MANUAL USERS	AA68-02142A	SPD-42P2S,KOR,S/W120,S/W100(G),4,A4,D51A,88P
22	RS232C CABLE	AA39-00311A	PDP,9P/1P,UL2851 # 28,5000MM,UL2851,BLK,DSUB/STEREO PLUG,2C,SJ01-01-296

8-1 PARTS LIST FOR SERVICE

ASSY MISC-PDP PBA

Level	Loc. No	Code No.	Description ; Specification	Remark
1	*	BN91-00382A	ASSY MISC-PDP PBA;SPL4225X/XAA	S.N.A
..2		AA39-00301A	LEAD CONNECTOR ASSY;PS-42P2S,UL1007#26,U	
..2		AA39-00114F	CBF HARNESS;,12P,35155-1200,S,100MM,1007	
..2		AA63-00491E	COVER-TERMINAL;42P2,SUS,T0.3,MIJU(TV)	
..2		BN94-00294A	ASSY PCB MISC-SOUND;SPL4225X/XAA,D53A	
...3	CN601	3711-003974	CONNECTOR-HEADER;BOX,12P,1R,2.5mm,STRAIG	
...3	CN602	3711-003046	CONNECTOR-HEADER;BOX,9P,1R,2.5mm,STRAIGH	
...3	CN603	3711-003043	CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGH	
...3	JA03	3722-000143	JACK-PHONE;1P(VER),3.4PI,AG,BLK,NO	
...3	JA3	3722-001791	JACK-PIN;4P,-,NI,WHT/RED/WHT/RED,-	
...3	JA4	3722-001791	JACK-PIN;4P,-,NI,WHT/RED/WHT/RED,-	
...3	L682	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L683	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L684	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3	L685	AA27-00119A	COIL CHOKE;10uH,-,10uH,10%,0.07,0.1ohm M	
...3		BN97-00087C	ASSY AUTO-SOUND;SPL4225X/XAA,D53A	
....4	C601	2401-000426	C-AL;10uF,20%,16V,GP,TP,3.5x5,5	
....4	C602	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C603	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C604	2301-000445	C-FILM,PEF;4.7nF,5%,50V,TP,5.5x7x3mm,5mm	
....4	C605	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C606	2301-000104	C-FILM,PEF;1.2NF,5%,50V,TP,6.5X3.0X5.5MM	
....4	C607	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C608	2305-001023	C-FILM,MPEF;680nF,10%,63V,TP,7.5x5.5x14.	
....4	C609	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C610	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C611	2401-000647	C-AL;2.2uF,20%,50V,BP,TP,5x11,5	
....4	C612	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C613	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C614	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C615	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C616	2305-000665	C-FILM,MPEF;100nF,5%,63V,TP,7.5x4.0x5.0m	
....4	C617	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C618	2301-000395	C-FILM,PEF;18NF,5%,50V,TP,6.5X12.5X3.5MM	
....4	C619	2301-000224	C-FILM,PEF;22nF,5%,50V,TP,7.4x3.9x13mm,5	
....4	C620	2301-000395	C-FILM,PEF;18NF,5%,50V,TP,6.5X12.5X3.5MM	
....4	C621	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C622	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C623	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C624	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C625	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C626	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C627	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C628	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C630	2301-000289	C-FILM,PEF;5.6nF,5%,50V,TP,7x6x3,5	
....4	C632	2401-001840	C-AL;100uF,20%,16V,GP,TP,6.3x11,5	
....4	C662	2401-000689	C-AL;2200uF,20%,16V,GP,TP,13x25,5	
....4	C664	2401-002463	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
....4	C667	2401-000603	C-AL;1uF,20%,50V,GP,TP,5x11,5	
....4	C668	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C669	2401-000667	C-AL;2.2uF,20%,50V,WT,TP,5x11,5	
....4	C681	2401-000603	C-AL;1uF,20%,50V,GP,TP,5x11,5	
....4	C691	2401-002009	C-AL;100uF,20%,16V,GP,TP,6.3x7,5	
....4	L602	2702-001094	INDUCTOR-RADIAL;10uH,10%,6x4mm	
....4	L681	2702-001094	INDUCTOR-RADIAL;10uH,10%,6x4mm	
....4	R600	2003-000664	R-METAL OXIDE(S);33ohm,5%,2W,AF,TP,4x12m	
....4		BN97-00088C	ASSY SMD-SOUND;SPL4225X/XAA,D53A	
.....5	C629	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C631	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C661	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C663	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C665	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C666	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C670	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C682	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C683	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5	C685	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C686	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5	C687	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5	C690	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C692	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5	C694	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
.....5	C695	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5	C696	2203-005809	C-CERAMIC,CHIP;1000nF,10%,16V,X7R,TP,201	
.....5	C698	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5	C699	2203-000239	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,2012	
.....5	DZ681	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5	DZ682	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5	DZ683	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5	DZ684	0403-001117	DIODE-ZENER;RLZ12B,5%,500mW,LL-34,TP	
.....5	IC602	1201-001681	IC-AUDIO AMP;1101,SOP,30P,433MIL,-,-,PLA	
.....5	IC603	1204-001958	IC-AUDIO PROCESSOR;TDA7429T,LQFP,44P,-,P	S.N.A
.....5	PCB	AA41-00608A	PCB-SOUND;SPD-42P2S1,FR-4,2L,A,1.6T,245X	S.N.A
.....5	R601	2007-000981	R-CHIP;5.6KOHM,5%,1/10W,DA,TP,2012	
.....5	R602	2007-000981	R-CHIP;5.6KOHM,5%,1/10W,DA,TP,2012	
.....5	R603	2007-000518	R-CHIP;2.7KOHM,5%,1/10W,DA,TP,2012	
.....5	R604	2007-000518	R-CHIP;2.7KOHM,5%,1/10W,DA,TP,2012	
.....5	R605	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R606	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R607	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R608	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R609	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R610	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R611	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R612	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R613	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R614	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R615	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R616	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
.....5	R617	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R618	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R619	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R620	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
.....5	R621	2007-000572	R-CHIP;220OHM,5%,1/10W,DA,TP,2012	
.....5	R622	2007-000572	R-CHIP;220OHM,5%,1/10W,DA,TP,2012	
.....5	R623	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5	R624	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5	R661	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	
.....5	R662	2007-000546	R-CHIP;20KOHM,5%,1/10W,DA,TP,2012	
.....5	R663	2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
.....5	R664	2007-000546	R-CHIP;20KOHM,5%,1/10W,DA,TP,2012	
.....5	R665	2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
.....5	R666	2007-000210	R-CHIP;1.1KOHM,5%,1/10W,DA,TP,2012	
.....5	R682	2007-000308	R-CHIP;10OHM,5%,1/10W,DA,TP,2012	
.....5	R683	2007-000308	R-CHIP;10OHM,5%,1/10W,DA,TP,2012	
..2		AA63-00343B	SHIELD-CASE,A;SPD42P1S,SPTE,0.5,-,-,-,-	S.N.A
..2		3301-001326	CORE-FERRITE;AE,12X53X2.5MM,-,-	
..2		BN96-00078A	ASSY PDP P-MODULE;M3,1F2A,42P2S,D51A,S1.	
...3		BN96-00074A	ASSY PDP P-PBA,L-MAIN;,S42SD,D51A,D53A,4	
...3		AA98-00221A	ASSY-PBA,L-BUFF(F);,42SD,D51A,LJ41-00780	
...3		AA98-00218A	ASSY-PBA,L-BUFF(E);,42SD,D51A,LJ41-00779	
...3		AA98-00215A	ASSY-PBA,BUFF(DOWN);,42SD,D51A,LJ41-0078	
...3		AA98-00213A	ASSY-PBA,BUFF(UP);,42SD,D51A,LJ41-00783A	
...3		AA98-00209A	ASSY-PBA,Y-MAIN;,42SD,D51A,LJ41-00781A,S	
...3		AA98-00206A	ASSY-PBA,X-MAIN;,42SD,D51A,LJ41-00782A,S	
...3		AA98-00200A	ASSY-PANEL,PDP,SVC;,SPD-42P2S,D51A,300X3	S.N.A
..2		AA60-00026B	SPACER-SPONGE;42P2,EVA SPONGE	
..2		AA63-00345B	SHIELD-CASE,T/L;SPD42P1S,SPTE,T0.5,-,-,-	S.N.A
..2		AA63-00344B	SHIELD-CASE,T/A;SPD42P1S,SPTE,T0.5,-,-,-	S.N.A
..2		AA94-07568A	ASSY PCB POWER;SPD-42P2S,D51A,DOM	
...3	BLF+LF	6001-000516	SCREW-MACHINE;PH,+,M3,L10,ZPC(YEL),SM20C	
...3	CN812	3711-000203	CONNECTOR-HEADER;1WALL,3P,1R,3.96MM,STRA	
⚠ ...3	CX811S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CX812S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CX813S	2306-000321	C-FILM,MPPF;470NF,5%,275V,TP,-,22.5	
⚠ ...3	CY811S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY812S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY813S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY814S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY815S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
⚠ ...3	CY816S	2201-000446	C-CERAMIC,DISC;3.3nF,20%,400V,Y5U,TP,15x	
...3	FS811A	3602-000149	FUSE-CLIP;125V,30A,0.004ohm	
...3	FS811B	3602-000149	FUSE-CLIP;125V,30A,0.004ohm	

Level	Loc. No.	Code No.	Description ; Specification	Remark
⚠ ...3	FS811S	3601-001275	FUSE-CARTRIDGE;250V,8A,TIME-LAG,CERAMIC,	
...3	LINPWR	AA39-00264A	LEAD CONNECTOR ASSY;,UL1617#18,UL/CSA,3(	
⚠ ...3	LS812S	AA27-00189A	COIL CHOKE;-,HPL5025M,20UH,10%,0.03OHM,7	
⚠ ...3	LS813S	AA27-00189A	COIL CHOKE;-,HPL5025M,20UH,10%,0.03OHM,7	
⚠ ...3	LX811S	AA29-00017A	FILTER LINE NOISE;,25-4MH 7A,0.1OHM,1.5K	
⚠ ...3	LX812S	AA29-00017A	FILTER LINE NOISE;,25-4MH 7A,0.1OHM,1.5K	
...3	PCB+BL	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
⚠ ...3	PD811S	3711-000203	CONNECTOR-HEADER;1WALL,3P,1R,3.96MM,STRA	
⚠ ...3	RX811S	2002-001021	R-COMPOSITION;560KOHM,10%,1/2W,AA,TP,3.7	
⚠ ...3	VX811S	1405-000152	VARISTOR;560V,2500A,14x8.5mm,TP	
...3		AA61-00582C	BRACKET-LINE,FILTER;SPD-42P2H,SPC,T1.0,N	
...3		AA64-02554A	INLAY-SHIELD;50P2H,PS SHEET V0,T1.0,BLK	
...3		AA97-05555A	ASSY AUTO-SUB;SPD-42P2S,D51A,KOREA	S.N.A
....4	EL819	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL820	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL827	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EL828	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EY811	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY812	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY813	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY814	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY815	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY816	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY817	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY818	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY819	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EY820	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EY821	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY822	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY823	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY824	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY825	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY826	AA60-40011A	EYELET;ID2.0,OD2.8,-,-,BST,-	S.N.A
....4	EY827	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	EY828	AA60-40011B	EYELET;ID2.2,OD3.2,-,-,BSP,-	S.N.A
....4	PCB	AA41-00391A	PCB-LINE FILTER;SPD-50P2HM,CEM-1,1L,A,1.	S.N.A
...3		6021-000222	NUT-HEXAGON;2C,M3,ZPC(YEL),SM20C 1	
...3		2901-001222	FILTER-EMI AC LINE;250V,10A,UL,CSA,D,N,S	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		AA67-00112A	MIRROR-GLASS;42PDP,MESH,984*584,56%,T3.0	
..2		AA39-00274B	LEAD CONNECTOR ASSY;PS-42P2SM,UL2835#28,	
..2		AA39-00267B	LEAD CONNECTOR ASSY;PS-42P2SM,UL1007#26,	
..2		AA95-01751D	ASSY SUB-PCB CONTROL;PS42P2S,D53A,AA95-0	S.N.A
...3	CN11	AA39-00273B	LEAD CONNECTOR ASSY;PS-42P2SM,UL1007#26,	
...3	SW11	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW12	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW13	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW14	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW15	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW16	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW17	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3		AA97-05597A	ASSY AUTO-SUB;PS42P2S,D53A	S.N.A
....4	PCB	AA41-00370A	PCB-CONTROL;SPD-50P2HM,FR-1,1L,A,1.6T,-,	S.N.A
....4	R11	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R12	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R13	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R14	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		BN94-00293A	ASSY PCB MISC-SCALER;SPL4225X/XAA,D53A	
...3	B601	4301-000108	BATTERY-LI;3V,220mAH,BUTTON,20x3.2mm,NO	
...3	CN301	3711-002645	CONNECTOR-HEADER;BOX,6P,1R,2.5mm,STRAIGH	
...3	CN302	3711-002642	CONNECTOR-HEADER;BOX,3P,1R,2.5mm,STRAIGH	
...3	CN401	3711-003272	CONNECTOR-HEADER;BOX,10P,2R,2.54mm,STRAI	
...3	CN601	3711-003047	CONNECTOR-HEADER;BOX,13P,1R,2.5MM,STRAIG	
...3	CN606	3711-002644	CONNECTOR-HEADER;BOX,5P,1R,2.5mm,STRAIGH	
...3	CN609	3711-003974	CONNECTOR-HEADER;BOX,12P,1R,2.5mm,STRAIG	
...3	DZ602	0403-001373	DIODE-ZENER;MTZJ5.1A,4.81V-5.07V,500mW,D	
...3	EF602	2901-000172	FILTER-EMI ON BOARD;50V,10A,-,-,12x11x13	
...3	EF603	2901-000172	FILTER-EMI ON BOARD;50V,10A,-,-,12x11x13	
...3	IC508	0801-000284	IC-CMOS LOGIC;4528,MULTIVIBRATOR,DIP,16P	
...3	IC509	1204-001510	IC-SEPARATOR;EL4583CN,DIP,16P,-,PLASTIC,	
...3	IC604	0909-001029	IC-REAL TIME CLOCK;8563,-,DIP,8P,300MIL,	
...3	JA501	3722-001178	JACK-PIN;1P,3.4mm,SN,YEL,#16-22	
...3	JA502	3722-001163	JACK-VHS;4P,12mm,AU,BLK,N	
...3	JA503	3722-001810	JACK-PIN;6P(6P),8.3MM,NI,GN/BL/RD/GN/BL/	
...3	JA505	3701-001129	CONNECTOR-DSUB;15P,3R,FEMALE,ANGLE,AUF	
...3	LD01	2702-001095	INDUCTOR-RADIAL;18uH,10%,6x4mm	

Level	Loc. No.	Code No.	Description ; Specification	Remark
...3	LD03	2702-001095	INDUCTOR-RADIAL;18uH,10%,6x4mm	
...3	LD05	2702-001096	INDUCTOR-RADIAL;33uH,10%,6x4mm	
...3	LD06	2702-001095	INDUCTOR-RADIAL;18uH,10%,6x4mm	
...3	LD07	2901-000297	FILTER-EMI ON BOARD;-,3A,-,-,3.5x5,TP,-	
...3	SW501	3404-000176	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	SW601	3404-000176	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
...3	X601	2801-003224	CRYSTAL-UNIT;32.768KHz,20ppm,28-AAY,12.5	
...3	XTAL01	2801-000199	CRYSTAL-UNIT;20MHz,50ppm,28-AAA,16pF,50o	
...3		4309-001012	BATERRY-HOLDER;CELL,PIN,20.2mm,24.2x22.2	
...3		BN97-00088B	ASSY SMD-SCALER;SPL4225X/XAA,D53A	
....4	C101	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C102	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C103	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C104	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C105	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C106	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C107	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
....4	C108	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
....4	C109	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
....4	C110	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
....4	C111	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C112	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C113	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C114	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C115	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C116	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
....4	C117	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
....4	C118	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
....4	C119	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C120	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C121	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C122	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C123	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C124	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C125	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C126	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C127	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C128	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C129	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C130	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C131	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C132	2203-000844	C-CERAMIC,CHIP;39nF,10%,50V,X7R,TP,2012,	
....4	C133	2203-000727	C-CERAMIC,CHIP;3.9nF,10%,50V,X7R,TP,2012	
....4	C134	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C135	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C136	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C137	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C138	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C139	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C201	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C202	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C207	2203-000661	C-CERAMIC,CHIP;0.27nF,5%,50V,NP0,TP,2012	
....4	C208	2203-000661	C-CERAMIC,CHIP;0.27nF,5%,50V,NP0,TP,2012	
....4	C209	2203-000661	C-CERAMIC,CHIP;0.27nF,5%,50V,NP0,TP,2012	
....4	C210	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	
....4	C211	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C212	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C213	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C214	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C216	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	
....4	C219	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C220	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C221	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C222	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	
....4	C223	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	
....4	C224	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	
....4	C225	2203-000142	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,2012	
....4	C226	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C227	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C228	2203-000142	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,2012	
....4	C229	2203-000839	C-CERAMIC,CHIP;0.39nF,5%,50V,NP0,TP,2012	
....4	C230	2203-001083	C-CERAMIC,CHIP;0.005nF,0.1pF,50V,NP0,TP,	
....4	C231	2203-001083	C-CERAMIC,CHIP;0.005nF,0.1pF,50V,NP0,TP,	
....4	C232	2203-000661	C-CERAMIC,CHIP;0.27nF,5%,50V,NP0,TP,2012	
....4	C233	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
....4	C234	2203-000839	C-CERAMIC,CHIP;0.39nF,5%,50V,NP0,TP,2012	
....4	C236	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	

Level	Loc. No	Code No.	Description ; Specification	Remark
....4	C237	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	
....4	C238	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C239	2203-000761	C-CERAMIC,CHIP;330nF,10%,16V,X7R,TP,2012	
....4	C240	2203-000575	C-CERAMIC,CHIP;220NF,10%,25V,X7R,TP,2012	
....4	C241	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C242	2203-000140	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,1608	
....4	C243	2203-000838	C-CERAMIC,CHIP;0.39nF,5%,50V,NP0,TP,1608	
....4	C244	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C245	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
....4	C246	2203-000140	C-CERAMIC,CHIP;1.5nF,10%,50V,X7R,TP,1608	
....4	C247	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C248	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C250	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C252	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C253	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C254	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C255	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C256	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C257	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C258	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C259	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C260	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C261	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C262	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C263	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C264	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C265	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C266	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
....4	C298	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C299	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
....4	C301	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C302	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C306	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C307	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C308	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C309	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C310	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C311	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C312	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C313	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C314	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C315	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C316	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C317	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C318	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C319	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C320	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C321	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C322	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C323	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C324	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C325	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C326	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C327	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C328	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C329	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C330	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C331	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C332	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C333	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C334	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C335	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C336	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C337	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C338	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C339	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C340	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C341	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C342	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C343	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C344	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C345	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C346	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C347	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
....4	C348	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C349	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
....4	C350	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	

Level	Loc. No.	Code No.	Description ; Specification	Remark
....4	C351	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
....4	C352	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C353	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C354	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C355	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C356	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C357	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C401	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C402	2203-001656	C-CERAMIC,CHIP;0.47nF,5%,50V,NP0,TP,1608	
....4	C403	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C404	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C405	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C406	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C407	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C408	2203-000815	C-CERAMIC,CHIP;0.033nF,5%,50V,NP0,TP,160	
....4	C409	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C410	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C411	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C412	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C413	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C414	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C415	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C416	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C417	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C418	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C419	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C420	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C421	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C422	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C423	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C424	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C425	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C426	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C427	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C428	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C429	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C430	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C431	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C432	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C433	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C434	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C435	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C436	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C437	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C438	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C439	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C440	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C441	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C442	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C443	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C444	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C445	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C446	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C447	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C448	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C449	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C450	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C451	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C452	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C453	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C454	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C455	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C456	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C457	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C458	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C459	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C460	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C461	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C462	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C463	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5V,TP,	
....4	C464	2203-000681	C-CERAMIC,CHIP;0.027nF,5%,50V,NP0,TP,160	
....4	C465	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C467	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C501	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C504	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C505	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C506	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	

Level	Loc. No.	Code No.	Description ; Specification	Remark
....4	C507	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C509	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C510	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C511	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C512	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C513	2203-001656	C-CERAMIC,CHIP;0.47nF,5%,50V,NP0,TP,1608	
....4	C514	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C515	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C516	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C517	2404-000465	C-TA,CHIP;22uF,10%,16V,GP,TP,6032,-	
....4	C518	2404-000465	C-TA,CHIP;22uF,10%,16V,GP,TP,6032,-	
....4	C519	2404-000465	C-TA,CHIP;22uF,10%,16V,GP,TP,6032,-	
....4	C520	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C521	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C522	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C523	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C525	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C526	2203-000236	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1608	
....4	C527	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C529	2203-000236	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1608	
....4	C530	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C533	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C534	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C535	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C536	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C537	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C538	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C539	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C540	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C541	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C542	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C543	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C544	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C545	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C546	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C547	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C548	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C549	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C550	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C551	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C552	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C553	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C554	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C555	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C556	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C557	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C558	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C559	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C560	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C561	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C562	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C563	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C564	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C565	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C566	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C567	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C568	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C569	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C570	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C571	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C572	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C573	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C574	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C575	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C576	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C577	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C578	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C581	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C582	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C583	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C584	2203-000236	C-CERAMIC,CHIP;0.1nF,5%,50V,NP0,TP,1608	
....4	C585	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C586	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C587	2203-000661	C-CERAMIC,CHIP;0.27nF,5%,50V,NP0,TP,2012	
....4	C588	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C590	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C591	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	

Level	Loc. No.	Code No.	Description ; Specification	Remark
....4	C592	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C593	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C594	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C595	2203-000257	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,1608	
....4	C596	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C597	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	
....4	C598	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C599	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C601	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C602	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C603	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C604	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C605	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C606	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
....4	C607	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
....4	C608	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
....4	C609	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C610	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C611	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C613	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C614	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
....4	C615	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
....4	C616	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C617	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C618	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C619	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C620	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C621	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C622	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C623	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C624	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C625	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C626	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C627	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C628	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C629	2203-000552	C-CERAMIC,CHIP;0.02nF,5%,50V,NP0,TP,1608	
....4	C630	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C631	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C632	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C633	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C634	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C635	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	
....4	C636	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C637	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C638	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C763	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	C767	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C768	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C769	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C772	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C773	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C776	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C777	2203-000041	C-CERAMIC,CHIP;0.01nF,0.25pF,50V,NP0,TP,	
....4	C779	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C780	2203-000374	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,2012	
....4	C782	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C783	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C784	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C785	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C786	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C787	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C788	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	C789	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	C790	2203-000555	C-CERAMIC,CHIP;0.02nF,5%,50V,NP0,TP,2012	
....4	C791	2203-000555	C-CERAMIC,CHIP;0.02nF,5%,50V,NP0,TP,2012	
....4	C792	2203-000555	C-CERAMIC,CHIP;0.02nF,5%,50V,NP0,TP,2012	
....4	CA00	2203-000998	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,160	
....4	CA01	2203-000998	C-CERAMIC,CHIP;0.047nF,5%,50V,NP0,TP,160	
....4	CD10	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD11	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD12	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD20	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD21	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD22	2203-001034	C-CERAMIC,CHIP;5.6nF,10%,50V,X7R,TP,1608	
....4	CD23	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	
....4	CD24	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	CD41	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	

Level	Loc. No	Code No.	Description ; Specification	Remark
....4	CD42	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD43	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD44	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD45	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	CD46	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD47	2402-001049	C-AL,CHIP;10uF,20%,16V,GP,TP,3.3x3.3x5.4	
....4	CD50	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD51	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD52	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD53	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD54	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD55	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD56	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD57	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD58	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD59	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD60	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD62	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD63	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD64	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD66	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD67	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD68	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD69	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD71	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
....4	CD72	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD74	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD75	2203-000626	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,160	
....4	CD80	2203-000357	C-CERAMIC,CHIP;0.15nF,5%,50V,NP0,TP,1608	
....4	CD81	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD84	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD85	2203-000838	C-CERAMIC,CHIP;0.39nF,5%,50V,NP0,TP,1608	
....4	CD86	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD87	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD88	2203-000626	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,160	
....4	CD89	2203-000626	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,160	
....4	CD90	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CD91	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	
....4	CN503	3711-004130	CONNECTOR-HEADER;BOX,31P,2R,0.625mm,SMD-	
....4	D301	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D302	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D303	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D304	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D401	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	D402	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	D403	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	D502	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D503	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D504	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D505	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D506	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D507	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D508	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D509	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D510	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D511	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D512	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D513	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D514	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D515	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D516	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D517	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D519	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,SOT-23,	
....4	D601	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	D602	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	D603	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	D604	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	DD01	0403-001016	DIODE-ZENER;RLZ6.2B,6.2V,5.96-6.27V,400m	
....4	DD02	0403-001016	DIODE-ZENER;RLZ6.2B,6.2V,5.96-6.27V,400m	
....4	DD03	0401-000133	DIODE-SWITCHING;RLS4148,100V,200MA,SOD-8	
....4	DZ501	0403-000314	DIODE-ZENER;RLZJ9.1B,9.1V,8.80-9.30V,400	
....4	DZ502	0403-000314	DIODE-ZENER;RLZJ9.1B,9.1V,8.80-9.30V,400	
....4	EF101	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF102	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF201	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF204	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF205	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF206	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF301	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF302	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF401	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF402	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF403	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF404	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF501	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF504	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF505	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF506	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF507	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF512	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF516	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF517	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF518	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF519	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF520	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF521	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF522	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF523	2901-000226	FILTER-EMI SMD;25V,0.3A,-,100pF,3.2x1.25	
....4	EF601	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF604	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF605	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF606	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF607	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF608	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF704	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF705	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF706	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	EF707	2901-001114	FILTER-EMI SMD;25VDC,2.0ADC,-,100nF,3.2x	
....4	FD01	2909-001051	FILTER-LC;6MHz,6MHz,0.8dB,TP,5dB/6MHz,30	
....4	FD02	2909-001052	FILTER-LC;3.58MHz,3MHz,1.5dB,TP,11dB/1.0	
....4	FD03	2909-001051	FILTER-LC;6MHz,6MHz,0.8dB,TP,5dB/6MHz,30	
....4	IC01	1204-001556	IC-SEPARATOR;UPD64082GF,QFP,100P,-,PLAST	
....4	IC02	1105-001334	IC-DRAM;4E151612,1Mx16Bit,TSOP,44P,400MI	
....4	IC04	1203-001419	IC-VOLTAGE REGULATOR;4931,TO-252,3P,6.6x	
....4	IC101	1002-001179	IC-A/D CONVERTER;AD9884,8BIT,QFP,128P,-,	
....4	IC102	1203-001419	IC-VOLTAGE REGULATOR;4931,TO-252,3P,6.6x	
....4	IC201	1204-001598	IC-VIDEO PROCESS;VPC3230D-B2,QFP,80P,-,P	
....4	IC202	1204-001623	IC-VERTICAL PROCESSO;SDA9400,QFP,64P,-,P	
....4	IC301	1003-001365	IC-LCD CONTROLLER;PW364A,BGA,352P,1377MI	
....4	IC302	1103-000180	IC-EEPROM;24C16,2Kx8Bit,SOP,8P,150MIL,10	
....4	IC303	2804-001411	OSCILLATOR-CLOCK;26MHZ,50PPM,30PF,TP,3.3	
....4	IC304	2804-001485	OSCILLATOR-CLOCK;130MHZ,100PPM,30PF,BK,3	
⚠ 4	IC401	AA13-00084A	IC-ASIC;-,M4LV-32/32-12VC48,TQFP,48P,-	
⚠ 4	IC402	1204-001550	IC-VIDEO PROCESS;CXA2101AQ,QFP,80P,-,PLA	
⚠ 4	IC403	0801-002319	IC-CMOS LOGIC;74HCT221,MULTIVIBRATOR,SOP	
⚠ 4	IC404	0801-000901	IC-CMOS LOGIC;74HC04,INVERTER,SOP,14P,15	
....4	IC501	1001-001082	IC-VIDEO SWITCH;BA7657F,-,SOP,24P,300MIL	
....4	IC502	0801-002267	IC-CMOS LOGIC;74LCX14,-,SOIC,14P,150MIL,	
....4	IC503	1205-001740	IC-TRANSMITTER;DS90C385,TSSOP,56P,240MIL	
....4	IC505	1002-001048	IC-A/D&D/A CONVERTER;PCF8591T,8BIT,SOP,1	
....4	IC506	1103-001164	IC-EEPROM;24LC21A,128X8BIT,SOP,8P,150MIL	
....4	IC510	1203-002603	IC-RESET;ADM809JART,SOT-23,3P,2.92X1.3MM	
....4	IC602	1106-001420	IC-SRAM;K6T4016V3C,256KX16BIT,TSOP(II)-F	
....4	IC603	1006-001076	IC-DRIVER/RECEIVER;232,SOP,16P,300MIL,DU	
....4	IC605	0801-002394	IC-CMOS LOGIC;74LCX32,OR GATE,SOIC,14P,1	
....4	IC608	1203-001359	IC-POSI.FIXED REG.;1086,TO-263,3P,15.8MM	
....4	IC609	1203-002074	IC-POSI.FIXED REG.;MIC39150,TO-263,3P,-,	
....4	IC610	1203-001419	IC-VOLTAGE REGULATOR;4931,TO-252,3P,6.6x	
....4	IC611	1203-001359	IC-POSI.FIXED REG.;1086,TO-263,3P,15.8MM	
....4	IC703	1002-001045	IC-D/A CONVERTER;9280,8BIT,PLCC,68P,-,-,	
....4	JD04	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	L504	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L505	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L506	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L507	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L508	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L509	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L510	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L511	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L512	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	L513	3301-000319	CORE-FERRITE BEAD;AB,26ohm,2x1.25x0.9mm,	
....4	LD09	2703-000271	INDUCTOR-SMD;4.7uH,10%,2x1.25x1.25mm	
....4	LD10	3301-001186	CORE-FERRITE BEAD;AB,600ohm,3.2x1.6x1.3m	
....4	OTP01	1107-001087	IC-FLASH MEMORY;29LV160,1Mx16BIT,SOP,48P	

Level	Loc. No.	Code No.	Description ; Specification	Remark
....4	PCB	AA41-00603A	PCB-MONITOR SCALER;SPD-42P2S1,FR-4,6L,A,	S.N.A
....4	Q101	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q102	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q401	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q402	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q403	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q404	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	Q501	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q502	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q503	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q504	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q505	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q506	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q507	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q508	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q509	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q510	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q511	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q512	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q601	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q602	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	Q603	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD10	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD11	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD12	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD13	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD16	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD17	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD18	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD19	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD20	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD21	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD22	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD23	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD24	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD25	0501-000280	TR-SMALL SIGNAL;KSA1182,PNP,150mW,SOT-23	
....4	QD26	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	QD27	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
....4	R101	2007-000757	R-CHIP;330KOHM,5%,1/10W,DA,TP,2012	
....4	R102	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
....4	R103	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R104	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R105	2007-000882	R-CHIP;4.7ohm,5%,1/16W,DA,TP,1608	
....4	R106	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
....4	R107	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R108	2007-000539	R-CHIP;200ohm,5%,1/16W,DA,TP,1608	
....4	R109	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R110	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R201	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R202	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R203	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R204	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R215	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
....4	R216	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R217	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R218	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R219	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R220	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R221	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R222	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R223	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R224	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R225	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R226	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R227	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R228	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R230	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R302	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R303	2007-001157	R-CHIP;750ohm,5%,1/16W,DA,TP,1608	
....4	R304	2007-001157	R-CHIP;750ohm,5%,1/16W,DA,TP,1608	
....4	R305	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
....4	R306	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
....4	R307	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
....4	R308	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R309	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R310	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R311	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R312	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R313	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R314	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R315	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
....4	R316	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R317	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R318	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R319	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R320	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
....4	R321	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
....4	R322	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R323	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R324	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
....4	R325	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R326	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R328	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R329	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
....4	R331	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R333	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R334	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R335	2007-000120	R-CHIP;680ohm,5%,1/16W,DA,TP,1608	
....4	R336	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R344	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R401	2007-001179	R-CHIP;8.2Kohm,5%,1/16W,DA,TP,1608	
....4	R402	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R403	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R404	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
....4	R405	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R406	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R407	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R408	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R409	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R410	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R411	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R412	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R413	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R414	2007-001196	R-CHIP;820Kohm,5%,1/16W,DA,TP,1608	
....4	R415	2007-000643	R-CHIP;270ohm,5%,1/16W,DA,TP,1608	
....4	R416	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
....4	R417	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R418	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R419	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R420	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R421	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
....4	R422	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R423	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R424	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R425	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R426	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
....4	R427	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R428	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R429	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
....4	R430	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R431	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R432	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R433	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R435	2007-000691	R-CHIP;3.3Mohm,5%,1/16W,DA,TP,1608	
....4	R436	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R437	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R438	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R439	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R440	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R441	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R442	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R443	2007-000856	R-CHIP;4.3KOHM,1%,1/10W,DA,TP,2012	
....4	R444	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R445	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R446	2007-000615	R-CHIP;24KOHM,5%,1/10W,DA,TP,2012	
....4	R447	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R448	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R449	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R450	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R451	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R452	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R453	2007-000118	R-CHIP;390ohm,5%,1/16W,DA,TP,1608	
....4	R460	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R461	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	

Level	Loc. No	Code No.	Description ; Specification	Remark
....4	R501	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R502	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R503	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R504	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R505	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R506	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R507	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R508	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R509	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R510	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R511	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R512	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R513	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R514	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R515	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R516	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R517	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R518	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R519	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R520	2007-000096	R-CHIP;30Kohm,5%,1/16W,DA,TP,1608	
....4	R521	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R522	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
....4	R523	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R524	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R525	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R526	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R527	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R528	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R529	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R530	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R531	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R532	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R533	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R534	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R535	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R536	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R537	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R538	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R539	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R540	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R541	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R542	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R543	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R546	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R547	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	
....4	R548	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R549	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
....4	R550	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R551	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R552	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R553	2007-000100	R-CHIP;68Kohm,5%,1/16W,DA,TP,1608	
....4	R554	2007-000080	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	
....4	R555	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R556	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R557	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R558	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R559	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R560	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R561	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R562	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R563	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R564	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R565	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R569	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R570	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R571	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R572	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R573	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R574	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R576	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R577	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R578	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	R580	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R581	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R582	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R583	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R584	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R585	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R586	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R587	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R588	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R589	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R590	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R591	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R592	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R593	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R594	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R595	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R596	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R597	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	R598	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R599	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R600	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R601	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
....4	R602	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
....4	R603	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
....4	R604	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
....4	R605	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R606	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R607	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R608	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	
....4	R609	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R610	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R611	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R612	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	R613	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R614	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R615	2007-000539	R-CHIP;200ohm,5%,1/16W,DA,TP,1608	
....4	R616	2007-000539	R-CHIP;200ohm,5%,1/16W,DA,TP,1608	
....4	R617	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R618	2007-000539	R-CHIP;200ohm,5%,1/16W,DA,TP,1608	
....4	R619	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R620	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R621	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
....4	R622	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R623	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R624	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R625	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R626	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R627	2007-000355	R-CHIP;12KOHM,5%,1/10W,DA,TP,2012	
....4	R629	2007-000079	R-CHIP;1.8Kohm,5%,1/16W,DA,TP,1608	
....4	R630	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R631	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R632	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	R713	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R714	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R715	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	R717	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	R720	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R721	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R722	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R723	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R724	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R725	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R726	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	R728	2007-001167	R-CHIP;75ohm,5%,1/16W,DA,TP,1608	
....4	R734	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	
....4	R737	2007-000402	R-CHIP;150ohm,5%,1/16W,DA,TP,1608	
....4	R738	2007-000381	R-CHIP;13Kohm,5%,1/16W,DA,TP,1608	
....4	R739	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	
....4	R740	2007-000090	R-CHIP;10KOHM,5%,1/16W,DA,TP,1608	
....4	R748	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	RD00	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD01	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD11	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD12	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	
....4	RD13	2007-000088	R-CHIP;7.5Kohm,5%,1/16W,DA,TP,1608	
....4	RD14	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
....4	RD15	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	RD16	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
....4	RD17	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
....4	RD18	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD19	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
....4	RD20	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	

Level	Loc. No.	Code No.	Description ; Specification	Remark
....4	RD21	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	
....4	RD22	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	RD23	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
....4	RD24	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	
....4	RD25	2007-000106	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	
....4	RD26	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD27	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	
....4	RD50	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD51	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	RD59	2007-000102	R-CHIP;100Kohm,5%,1/16W,DA,TP,1608	
....4	RD62	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
....4	RD63	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
....4	RD64	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	RD65	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	RD66	2007-000096	R-CHIP;30Kohm,5%,1/16W,DA,TP,1608	
....4	RD67	2007-000125	R-CHIP;3.9Kohm,5%,1/16W,DA,TP,1608	
....4	RD68	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
....4	RD69	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD70	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD71	2007-000234	R-CHIP;1.3Kohm,5%,1/16W,DA,TP,1608	
....4	RD72	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD73	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD74	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD75	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD76	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD77	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD78	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD79	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD82	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	
....4	RD83	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	
....4	RD84	2007-000119	R-CHIP;560ohm,5%,1/16W,DA,TP,1608	
....4	RD85	2007-000086	R-CHIP;5.6Kohm,5%,1/16W,DA,TP,1608	
....4	RD86	2007-000539	R-CHIP;200ohm,5%,1/16W,DA,TP,1608	
....4	RD87	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD88	2007-000118	R-CHIP;390ohm,5%,1/16W,DA,TP,1608	
....4	RD89	2007-000113	R-CHIP;33ohm,5%,1/16W,DA,TP,1608	
....4	RD90	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD91	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD92	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	
....4	RD93	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	RD94	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	RD95	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	
....4	RD96	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD97	2007-000077	R-CHIP;470ohm,5%,1/16W,DA,TP,1608	
....4	RD98	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	
....4	RW101	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW102	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW103	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW104	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW105	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW106	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW107	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW108	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW109	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW110	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW111	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW112	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW201	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW202	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW203	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW204	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW205	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW206	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW207	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW208	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW501	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW502	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW503	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW504	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW505	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW506	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW705	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW706	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW707	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	RW708	2011-000002	R-NETWORK;22ohm,5%,63mW,L,CHIP,8P,TP	
....4	X201	2801-004004	CRYSTAL-SMD;20.25MHz,20ppm,28-AAN,13pF,2	
..2		AA98-00188A	ASSY-PBA,SMPS;,SPD-42P2S,D51A,42SD,90~26	S.N.A
..2		AA95-01837F	ASSY SUB-PCB,REMOCON;SPD-42P2S,D51A,AA95	S.N.A
...3	C21	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
...3	CN21	AA39-00275A	LEAD CONNECTOR ASSY;PDP,UL1007,2547#26,U	
...3	D21	0601-001381	LED;ROUND,RED/GRN,5.0MM,650/563NM	
...3	MD21	AA32-00012A	MODULE REMOCON;ORC-50HF2,38KHZ,940NM,MES	
...3		AA61-00583B	HOLDER-LED;SPD-50P2H,ABS,BLK	S.N.A
...3		AA97-05596A	ASSY AUTO-SUB;SPD-42P2S,D51A	S.N.A
....4	PCB	AA41-00371A	PCB-REMOCON;SPD-50P2HM,FR-4,2L,A,1.6T,24	S.N.A
....4	R21	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	R22	2001-000793	R-CARBON;47OHM,5%,1/8W,AA,TP,1.8X3.2MM	
....4	ZD1	0403-000510	DIODE-ZENER;MTZJ6.2B,6.2V,5.96-6.27V,500	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2		AA95-01833D	ASSY SUB-PCB,POWER ON/OFF;SPD-42P2S,D51A	S.N.A
...3	CN01	AA39-20468F	LEAD CONNECTOR ASSY;PDP,UL2547#26,UL/CSA	
...3	PCB	AA41-00494A	PCB-POWER S/W;HPL5025M,FR-4,2L,A,1.6T,24	S.N.A
...3	PCB+BP	6001-000578	SCREW-MACHINE;TH,+,M3,L8,ZPC(YEL),SWRCH1	
...3	R01	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
...3	SW01	3404-001006	SWITCH-TACT;12V,50mA,160gf,6x6mm,SPST	
...3		AA61-00716B	BRACKET-POWER;,SECC,T1.0	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
...3		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	
..2		AA95-01770A	ASSY SUB-PCB TERMINAL;PS42P2S,D53A,AA95-	S.N.A
...3	CN603A	3711-003043	CONNECTOR-HEADER;BOX,4P,1R,2.5mm,STRAIGH	
...3	JK603	AA63-40258A	TERMINAL-SPEAKER;4P,ABS,4,-,-,-,BLK	S.N.A
...3	PCB	AA41-00373A	PCB-SPK TERMINAL;SPD-50P2HM,CEM-1,1L,A,1	S.N.A
...3	SPK	AA39-00294A	LEAD CONNECTOR ASSY;PDP,UL1007#22,UL/CSA	
...3		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A

ASSY COVER FRONT

Level	Loc. No.	Code No.	Description ; Specification	Remark
1	*	BN90-00284A	ASSY COVER FRONT;SPL4225X/XAA	
..2	BFB+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BFS+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BFT+CF	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
..2	BLFCHB	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BM+CHB	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	BP+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	
..2	CB+CF	AA60-10050T	SCREW-TAPPING;-,SWRCH18A,M4,L20,RH,+,2S,	
..2	CHB+CF	6003-001026	SCREW-TAPTITE;RH,+,B,M4,L15,ZPC(BLK),SWR	
..2	COB+CB	6006-001112	SCREW-ASS'Y MACH;WP,PH,+,M8,L16,ZPC(BLK)	
..2	COB+CT	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	COB+LF	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	COT+SJ	6003-000333	SCREW-TAPTITE;RH,+,2S,M3,L10,ZPC(YEL),SW	S.N.A
..2	COT+SP	6003-000333	SCREW-TAPTITE;RH,+,2S,M3,L10,ZPC(YEL),SW	S.N.A
..2	GS+CHB	6006-001039	SCREW-ASS'Y MACH;WSP,PH,+,M4,L12,ZPC(YEL	
..2	PCB+CF	6003-000333	SCREW-TAPTITE;RH,+,2S,M3,L10,ZPC(YEL),SW	S.N.A
..2	SB+CHB	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	SMPSCH	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	SNDCHB	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2	SPKCHB	6006-001035	SCREW-ASS'Y MACH;WSP,PH,+,M3,L8,ZPC(YEL)	S.N.A
..2		AA61-00340A	GUIDE-STAND ASSY;42P2S,AL DIECASTING	
...3		AA61-00584B	GUIDE-STAND;SPD-50P2H,AL,DIECASTING	
...3		AA72-00007A	SPONGE-EMI;PDP,SHELD FROM,D10,T2,L50	S.N.A
..2		AA73-00005B	RUBBER-CAP;FLAT,PRJ,SILICONE RUBBER,WHIT	
..2		BN72-00316A	SPONGE-EMI,BOT(L);PDP,SHELD FROM	
..2		BN61-00170A	BRACKET-FILTER SIDE R,ASSY;AL 6063,42P2S	
...3		BN61-00090A	BRACKET-FINGER;SPD50P2H,42P2S,BE-CO,T0.1	
...3		AA72-00018A	SPONGE-EMI,FILTER;42P2,SHIELD-FORM,T1.2,	
...3		AA63-60122C	SPACER-FELT;42P2,FELT,BLK,T0.5,530*9	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01052A	BRACKET-FILTER,SIDE R;42P2,AL 5051,T1.5	
..2		BN61-00171A	BRACKET-FILTER SIDE L,ASSY;AL 6063,42P2S	
...3		BN61-00090A	BRACKET-FINGER;SPD50P2H,42P2S,BE-CO,T0.1	
...3		AA72-00018A	SPONGE-EMI,FILTER;42P2,SHIELD-FORM,T1.2,	
...3		AA63-60122C	SPACER-FELT;42P2,FELT,BLK,T0.5,530*9	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01051A	BRACKET-FILTER,SIDE L;42P2,AL 5051,T1.5	
..2		AA61-00829A	BRACKET-PLATE;SPD-42P1S,PBS,T0.2,PRESS	S.N.A
..2		AA60-00110C	SPACER-FILTER;42P2,P/U V0,L,BLK	
..2		AA60-00110D	SPACER-FILTER;42P2,P/U V0,L,BLK	
..2		AA61-01059A	BRACKET-FILTER TOP,ASSY;AL ,42P2,T1.2	

Level	Loc. No	Code No.	Description ; Specification	Remark
...3		BN61-00090A	BRACKET-FINGER;SPD50P2H,42P2S,BE-CO,T0.1	
...3		AA72-00017A	SPONGE-EMI,FILTER;42P2,SHIELD-FORM,T1.2,	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01053A	BRACKET-FILTER,TOP;42P2,AL 5051,T1.5	
..2		AA61-01062A	BRACKET-FILTER BOT,ASSY;AL 6063 EXT,42P2	
...3		BN61-00090A	BRACKET-FINGER;SPD50P2H,42P2S,BE-CO,T0.1	
...3		AA72-00017A	SPONGE-EMI,FILTER;42P2,SHIELD-FORM,T1.2,	
...3		AA63-00406B	GROMMET-PANEL;PDP,PBT,T0.2	
...3		AA61-01064A	BRACKET-EMI,FILTER;PDP,SPTE,T0.3,L62.6,	
...3		AA61-01001B	BRACKET-FILTER BOT;AL 6063 EXT,42P2,T1.2	
..2		AA61-11012A	BRACKET-SHIELD ASSY;42P2S,PBS,T0.2	S.N.A
...3		AA61-01006A	BRACKET-MODULE,BOT;42P2,PBS,T0.2	
...3		AA63-00141A	SPACER-FELT;42P2S,FELT,L110,T0.5,D20	S.N.A
..2		AA64-01565B	KNOB-CONTROL;PDP,ABS HB,BLK,SILVER	
..2		AA91-00859D	ASSY CABINET FRONT;,42P2,LG807P+WP1000 M	
...3		AA64-01560D	BADGE-BRAND;PDP,AL FORGING,L68(45),SILVE	
...3		AA64-01799E	CABINET-FRONT;42P2,HIPS V0,G4309,LG807P+	
...3		AA64-01566E	KNOB-MASTER;PDP,ABS,HB,BLK,LG807P NO SIL	
...3		AA64-01549B	WINDOW-RMC;PDP,ACRYL VIOLET,20:1	
...3		AA61-60003J	SPRING-CS;-,SUS304,-,-,OD6,N7,OD6,-,-,-,	S.N.A
..2		BN72-00315A	SPONGE-EMI,BOT(R);PDP,SHELD FROM	

ASSY COVER REAR

Level	Loc. No	Code No.	Description ; Specification	Remark
1	*	BN90-00285A	ASSY COVER REAR;SPL4225X/XAA	S.N.A
..2		AA91-01611D	ASSY-CABINET,BACK;MIJU,HIPS V0 BLK,SPL42	
...3	COB+CB	6003-001020	SCREW-TAPTITE;RH,+,B,M4,L10,ZPC(YEL),SWR	S.N.A
...3	COB+CB	6003-001019	SCREW-TAPTITE;RH,+,B,M4,L12,ZPC(BLK),SWR	S.N.A
...3		AA65-00003A	CABLE-CLAMP;SIR-T100,PE BLACK,-,-,-,-	S.N.A
...3		AA64-01802C	CABINET BACK;42P2,HIPS V0,BLK,WP1000	
...3		AA64-01551B	HANDLE-SET;PDP,ABS,HB,BLK	
...3		AA63-00232C	COVER-BACK,ASSY;42P2S,AL5052,T1.2,MIJU(S	
....4		AA63-00432D	COVER-BACK;42P2(TV),AL,T1.2,MIJU(SPL4225	
....4		AA63-00433A	COVER-BACK,BOT;42P2,AL,T1.2	S.N.A

ASSY P/MATERIA

Level	Loc. No.	Code No.	Description ; Specification	Remark
1	*	BN92-00390A	ASSY P/MATERIAL;SPL4225X/XAA	
..2		AA61-20285A	HOLDER-BOX;3456,PP,-,-,-,WHT,VO	S.N.A
..2		AA60-40006A	PIN-STAPLE;-,-,H18,33X17.8X2.4,-,AUTO	S.N.A

ASSY BOX

Level	Loc. No.	Code No.	Description ; Specification	Remark
1	*	BN92-00389A	ASSY BOX;SPL4225X/XAA	

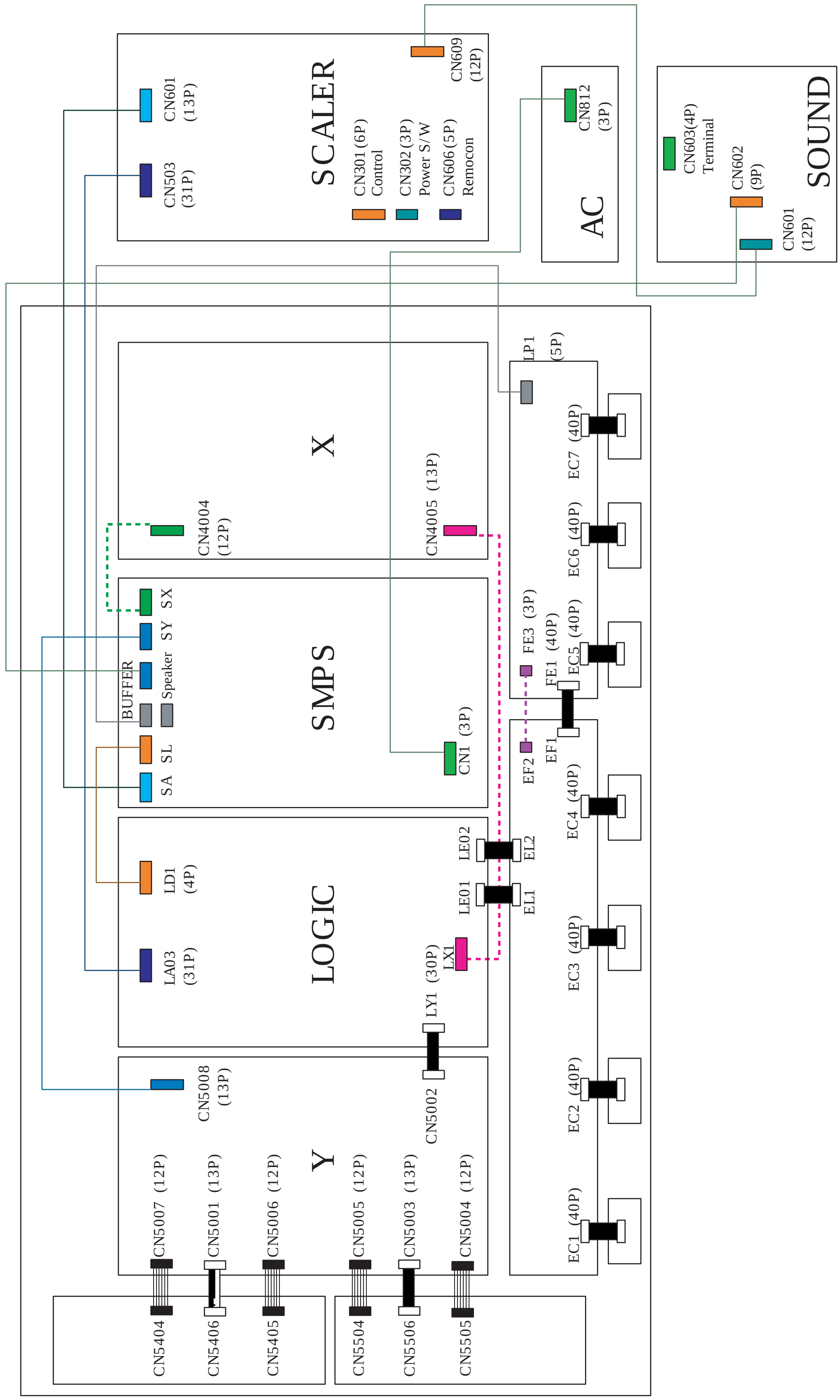
ASSY LABEL

Level	Loc. No.	Code No.	Description ; Specification	Remark
1	*	BN92-00386A	ASSY LABEL;SPL4225X/XAA,SPL4225,U.S.A	

ASSY ACCESSORY

Level	Loc. No.	Code No.	Description ; Specification	Remark
1	*	BN92-00388A	ASSY ACCESSORY;SPL4225X/XAA,SPL4225,ENG	
..2		AA39-00033A	CABLE-RCA;,2500MM	
..2		AA39-00300A	CABLE RCA;PS42P2S,NON-UL,1P/1P,YEL,RCA,R	
..2		AA39-00034B	CABLE RCA;PS42P2S,NON-UL,2P/2P,RED/WHT,R	
..2		BN68-00262A	MANUAL USERS;SPL4225,ENG,USA,S/W100G,D52	
..2		3301-001110	CORE-FERRITE;ZZ,35x19.5x9.0mm,-,-	
⚠ ..2		AA39-00233A	POWER CORD;SPD50P2HM,VM0289S/VM0266S,SVT	
..2		4301-000103	BATTERY-ALKALINE;1.5V,750mAH,AAA,10.5x44	S.N.A
..2		AA39-00288A	CBF SIGNAL;HPL5025M,15P/15P,2990,1830MM,	
..2		AA39-40001E	CABLE-S.VHS;,1500MM	
..2		AA59-00222B	REMOCON;,TM63,PDP,48,G6671B,SPK4215M	

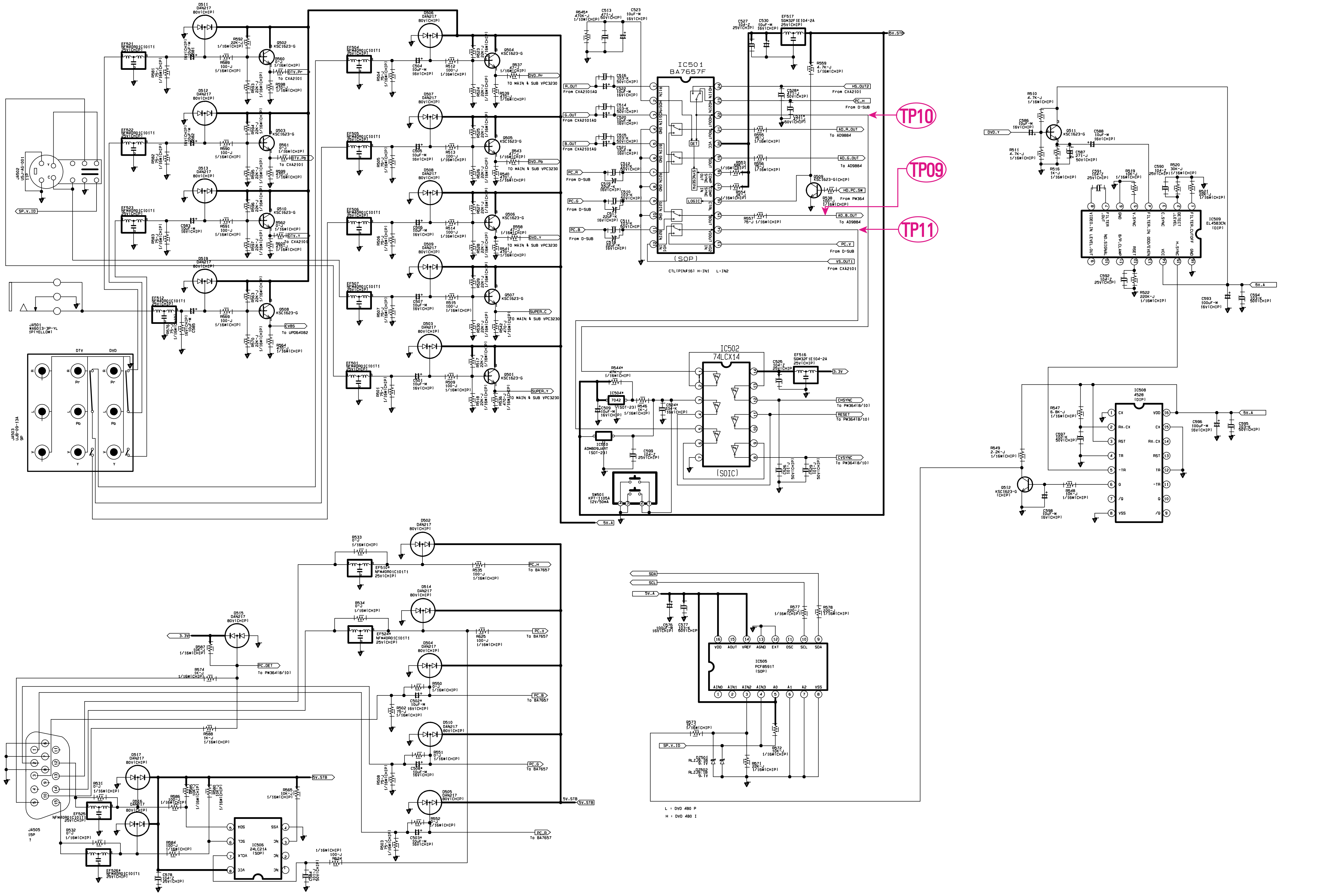
11. Wirng Diagram



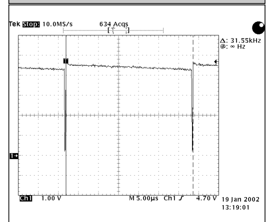
MENO

12. Schematic Diagrams

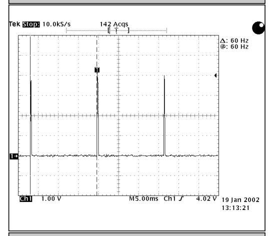
12-1 SCALER1 SIGNAL INPUT, LVDS OUTPUT



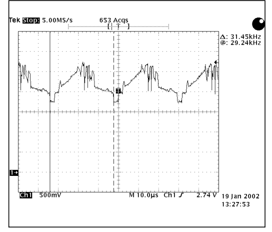
TP09 DTV/PC H-SYNC



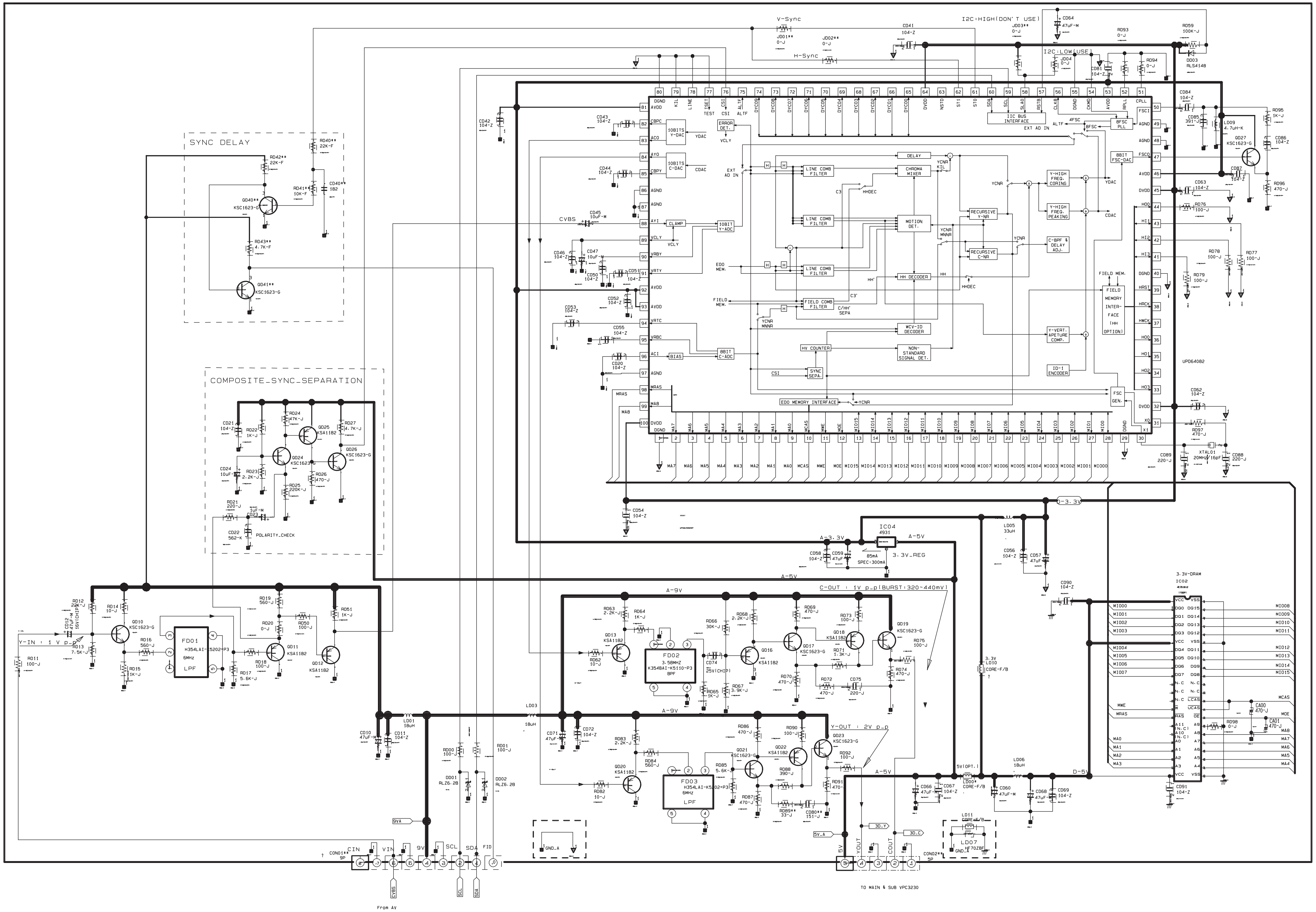
TP10 DTV/PC V-SYNC



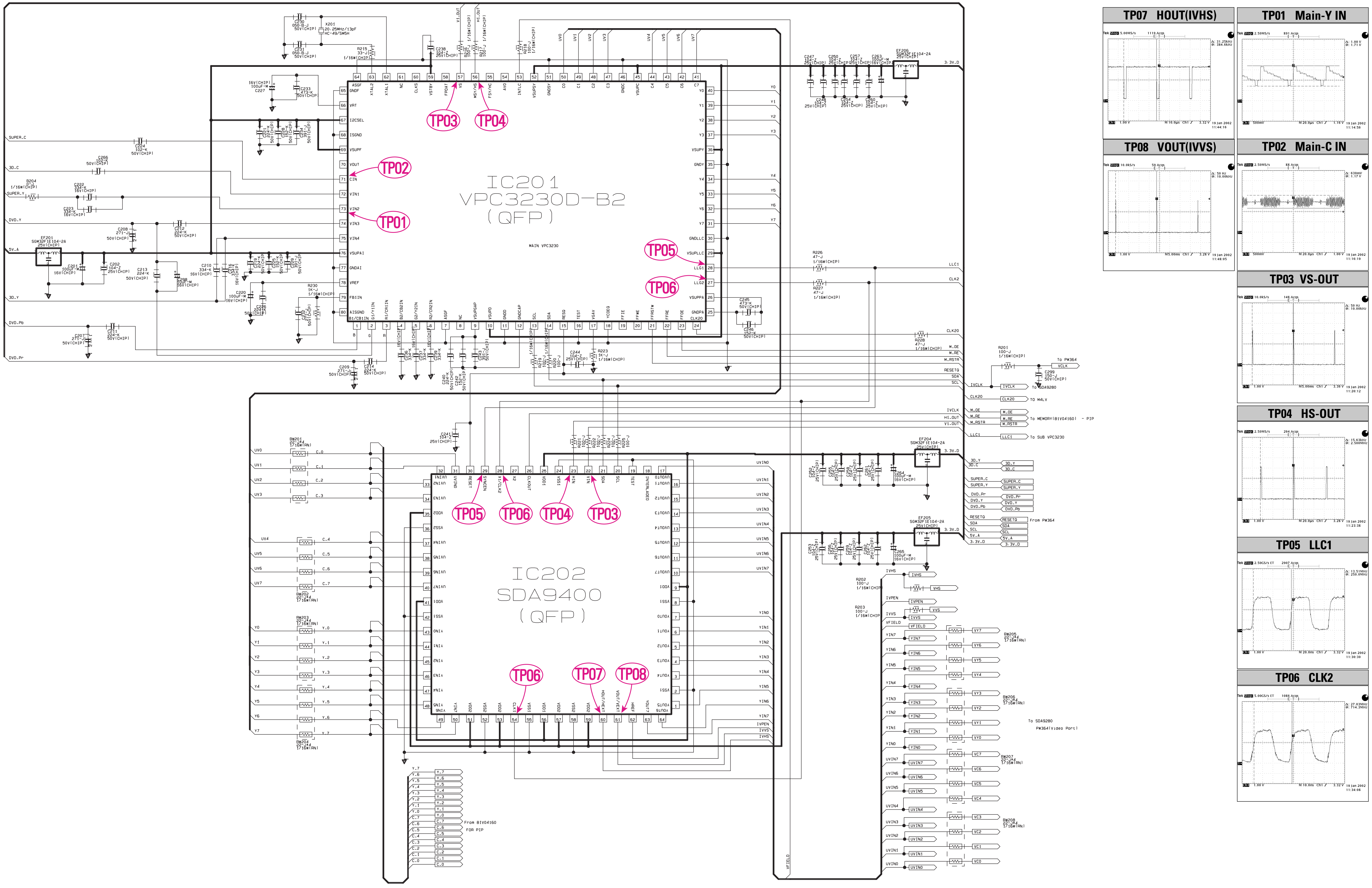
TP11 DTV/PC B-OUT



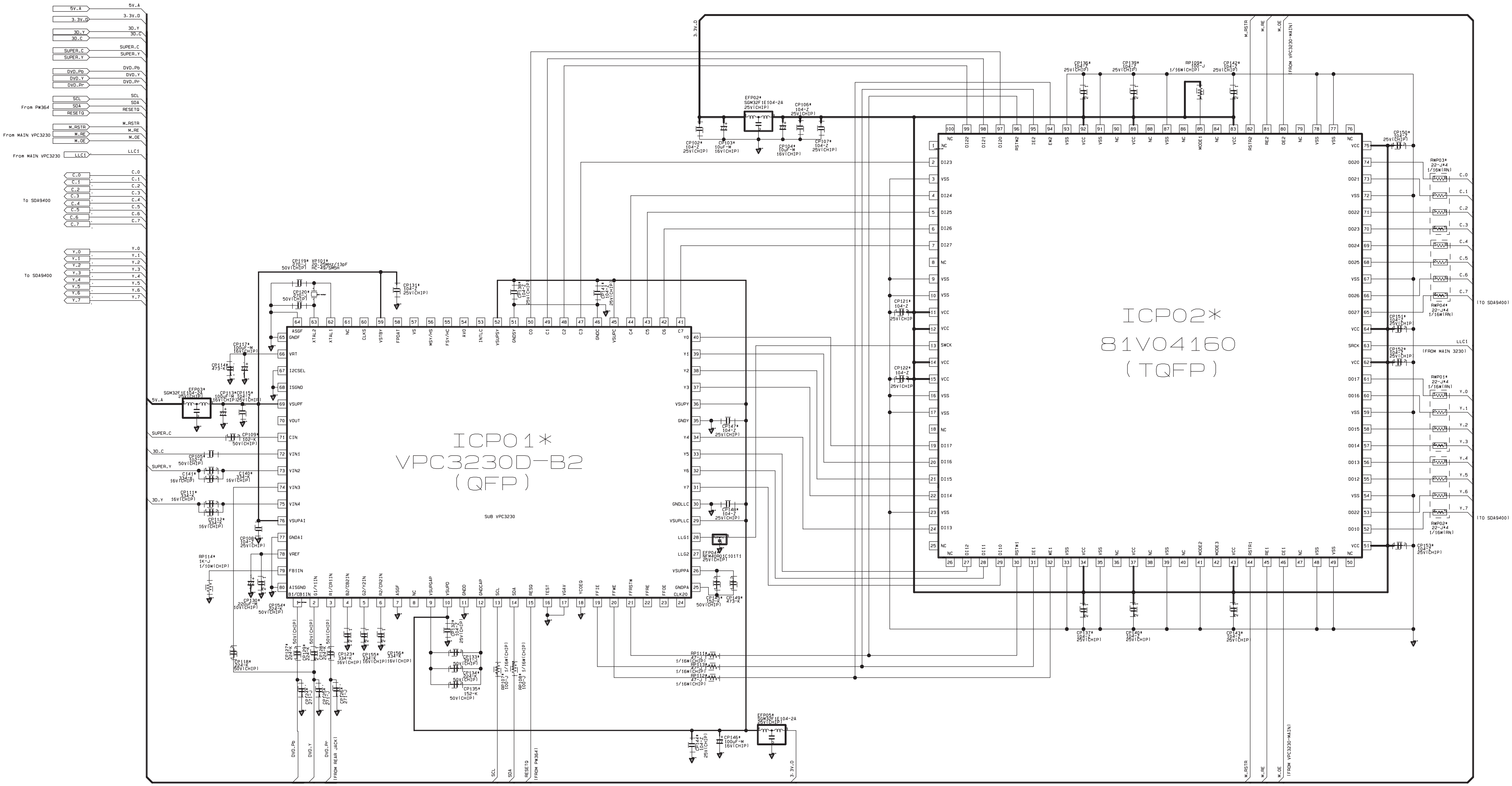
12-2 3D- COMB FILTER



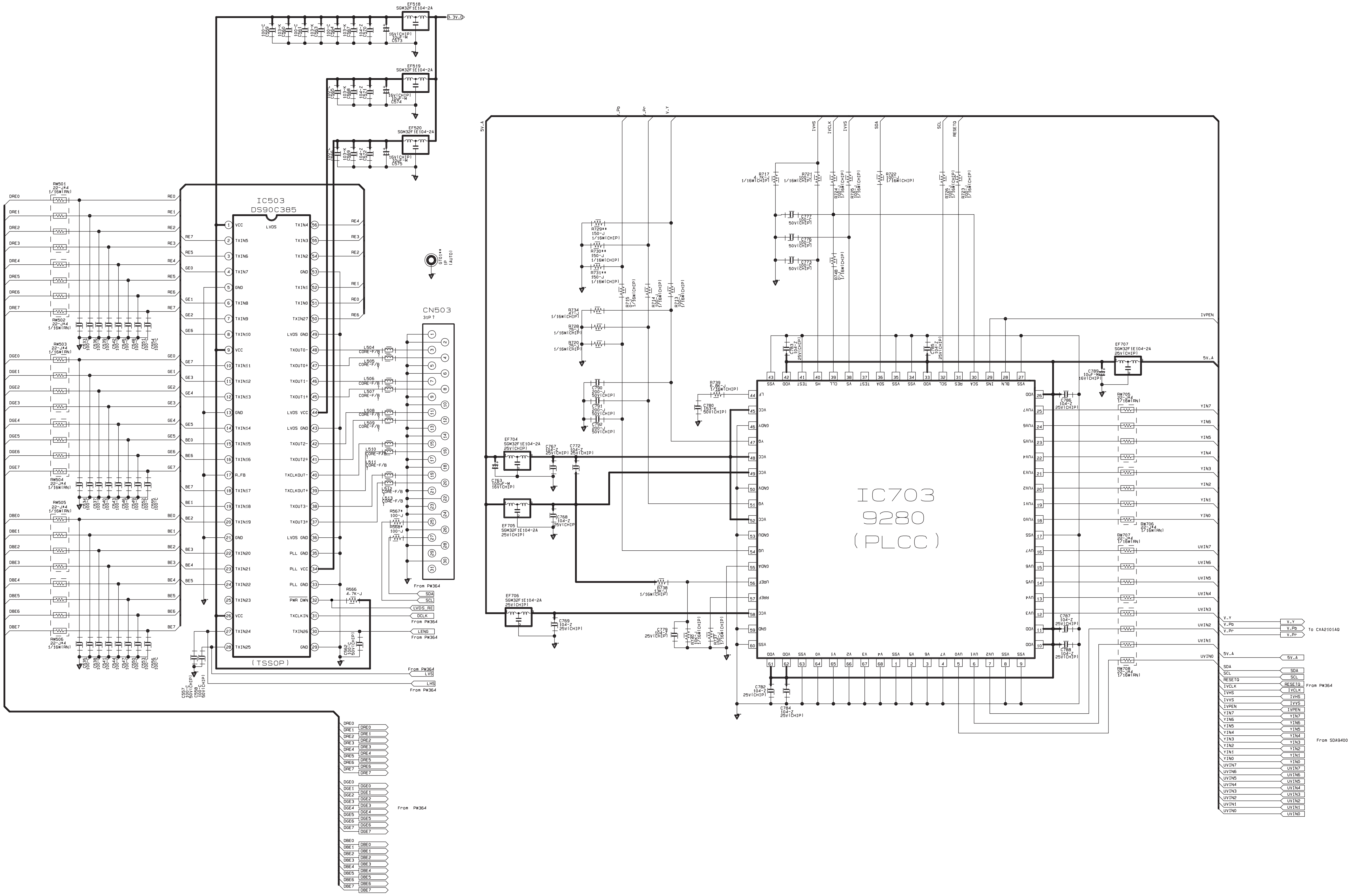
12-3 SCALER2 VIDEO DECODER MAIN, PROGRESSIVE CON.



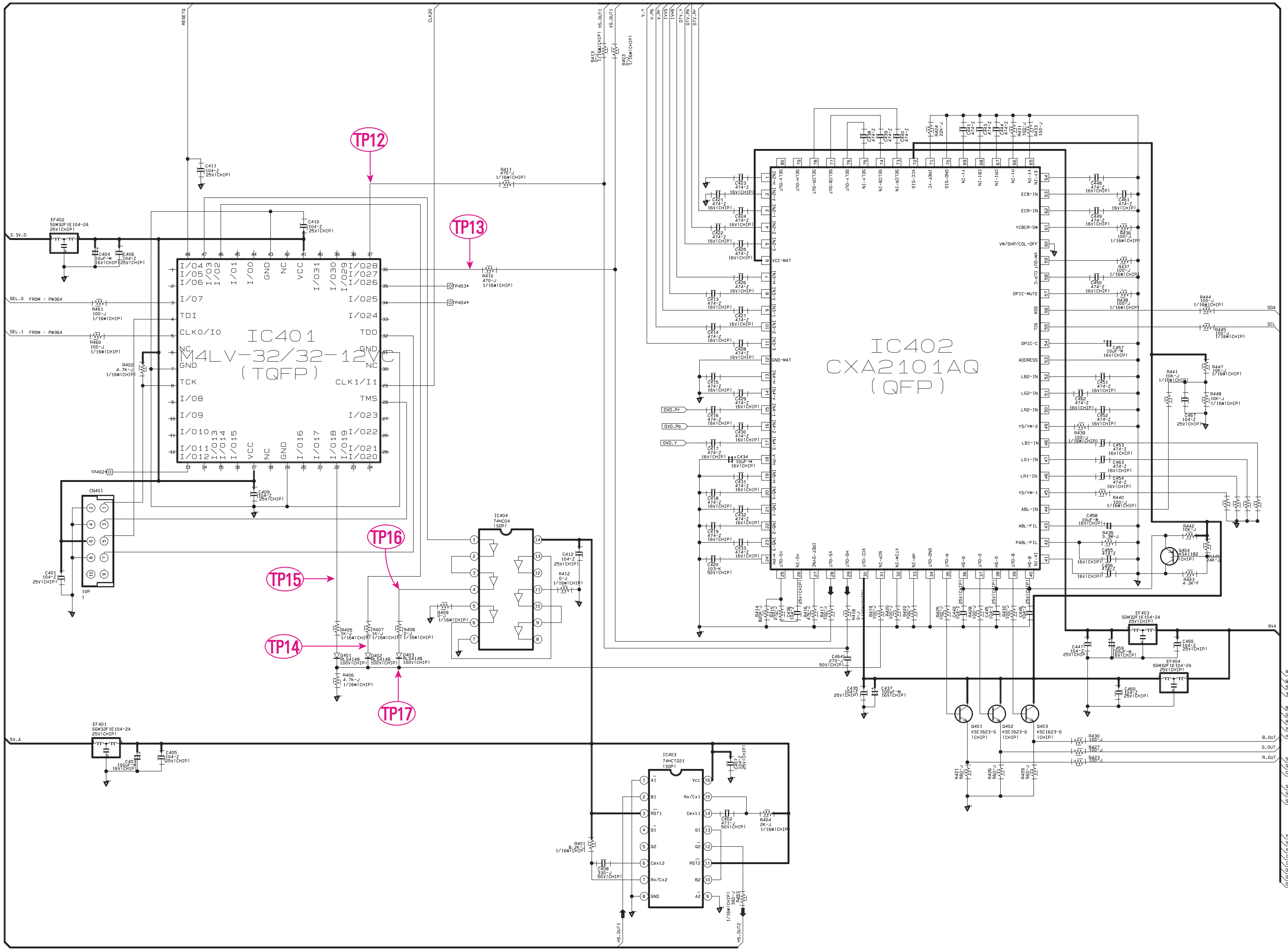
12-4 SCALER3 VIDEO DECODER PIP, FIRST IN/OUTPUT



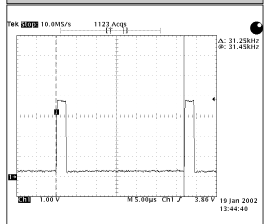
12-5 SCALER4 VIDEO DA CON.



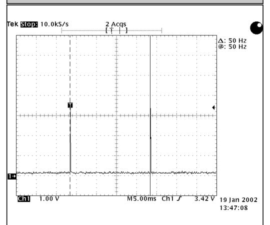
12-6 SCALER5 VIDEO PROCESSOR, SAND CASTLE PULSE GEN.



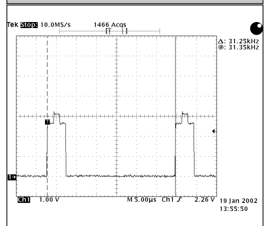
TP12 HS-OUT



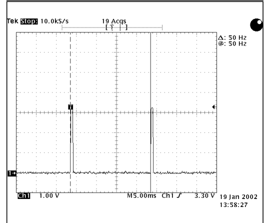
TP13 VS-OUT



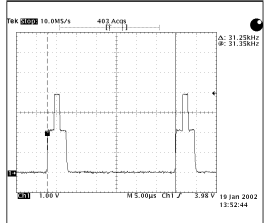
TP14 SCP H-BLK



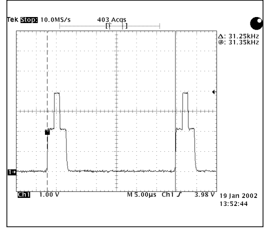
TP15 SCP V-BLK



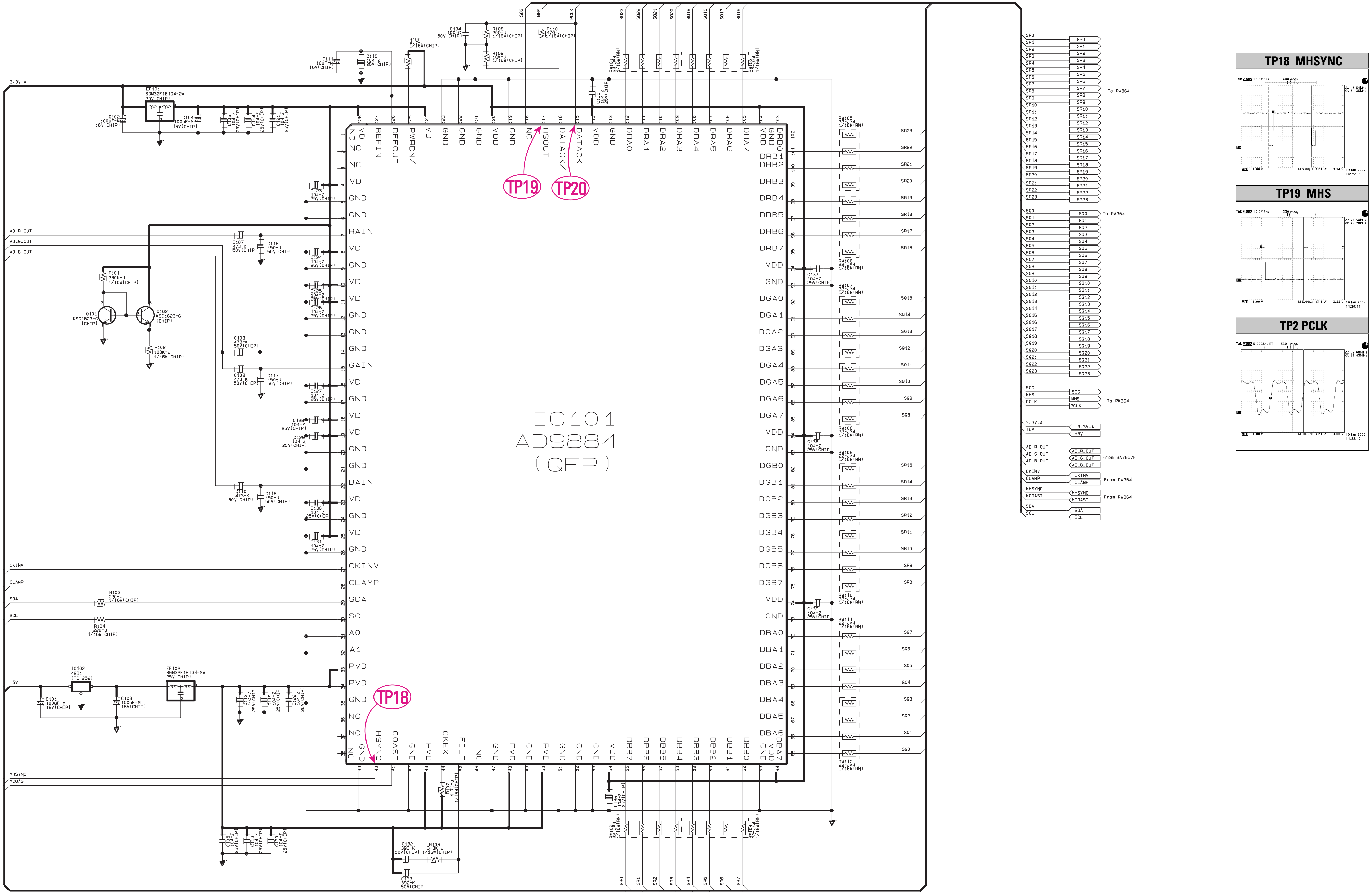
TP16 SCP CLAMPER



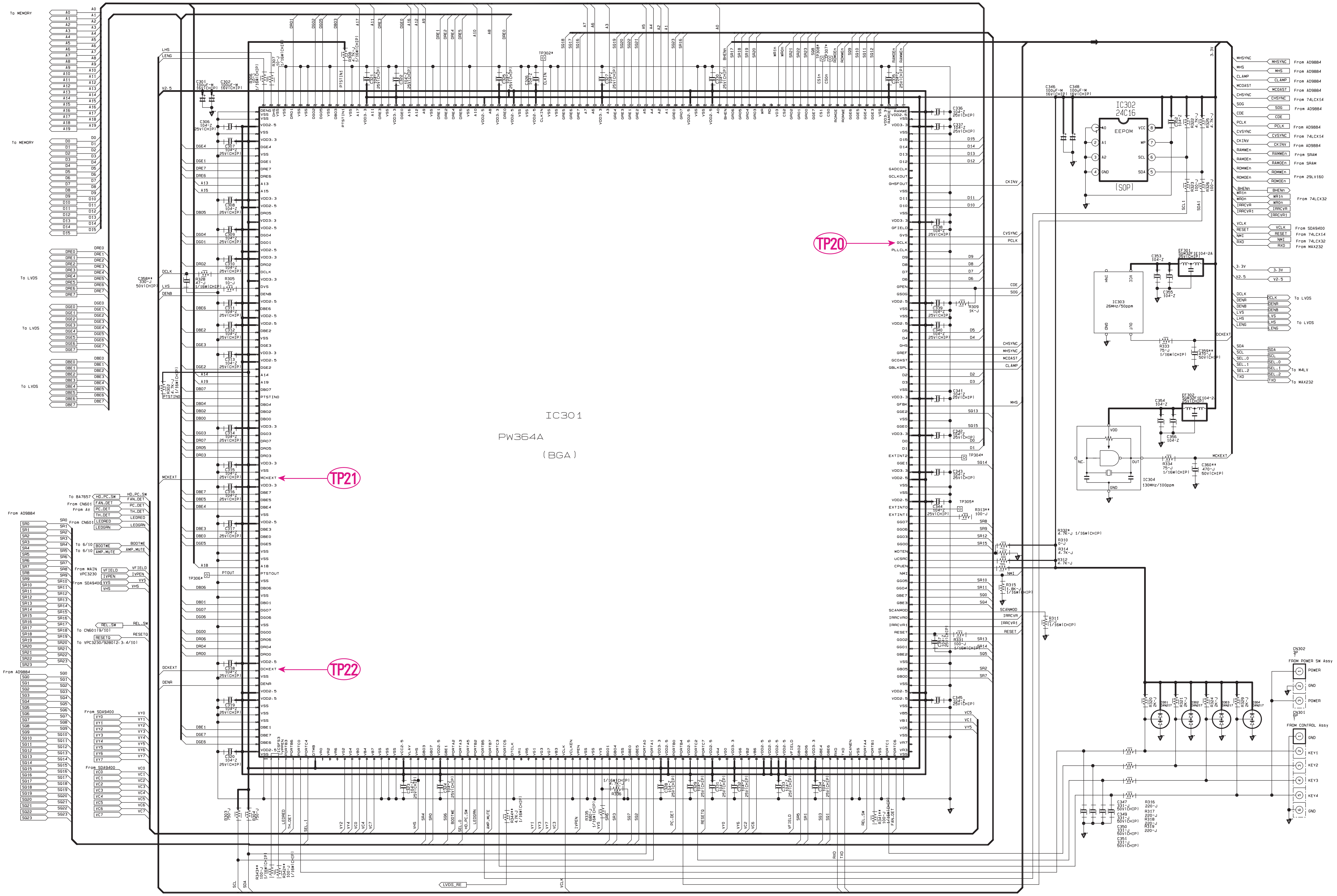
TP17 SCP



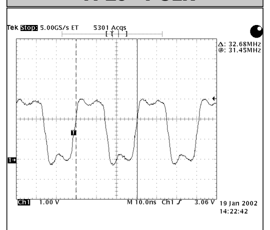
12-7 SCALER7 ADC(PC)



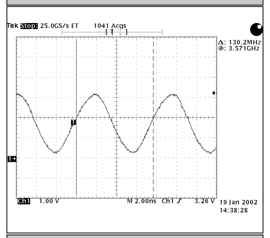
12-8 SCALER8 PW364



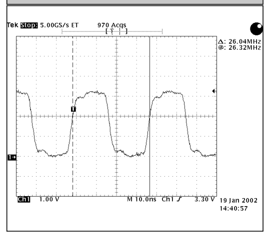
TP20 PCLK



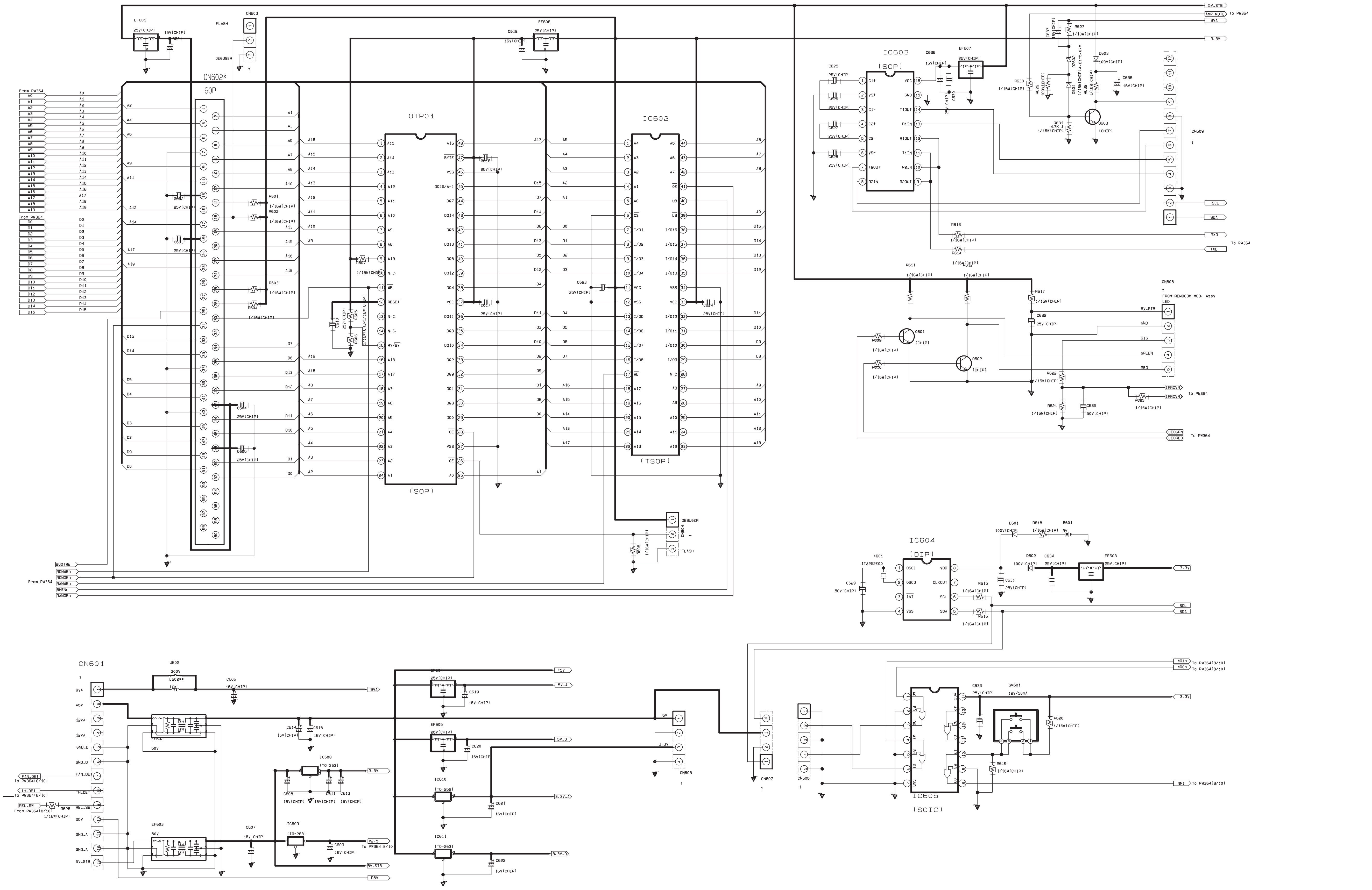
TP21 MCKEXT



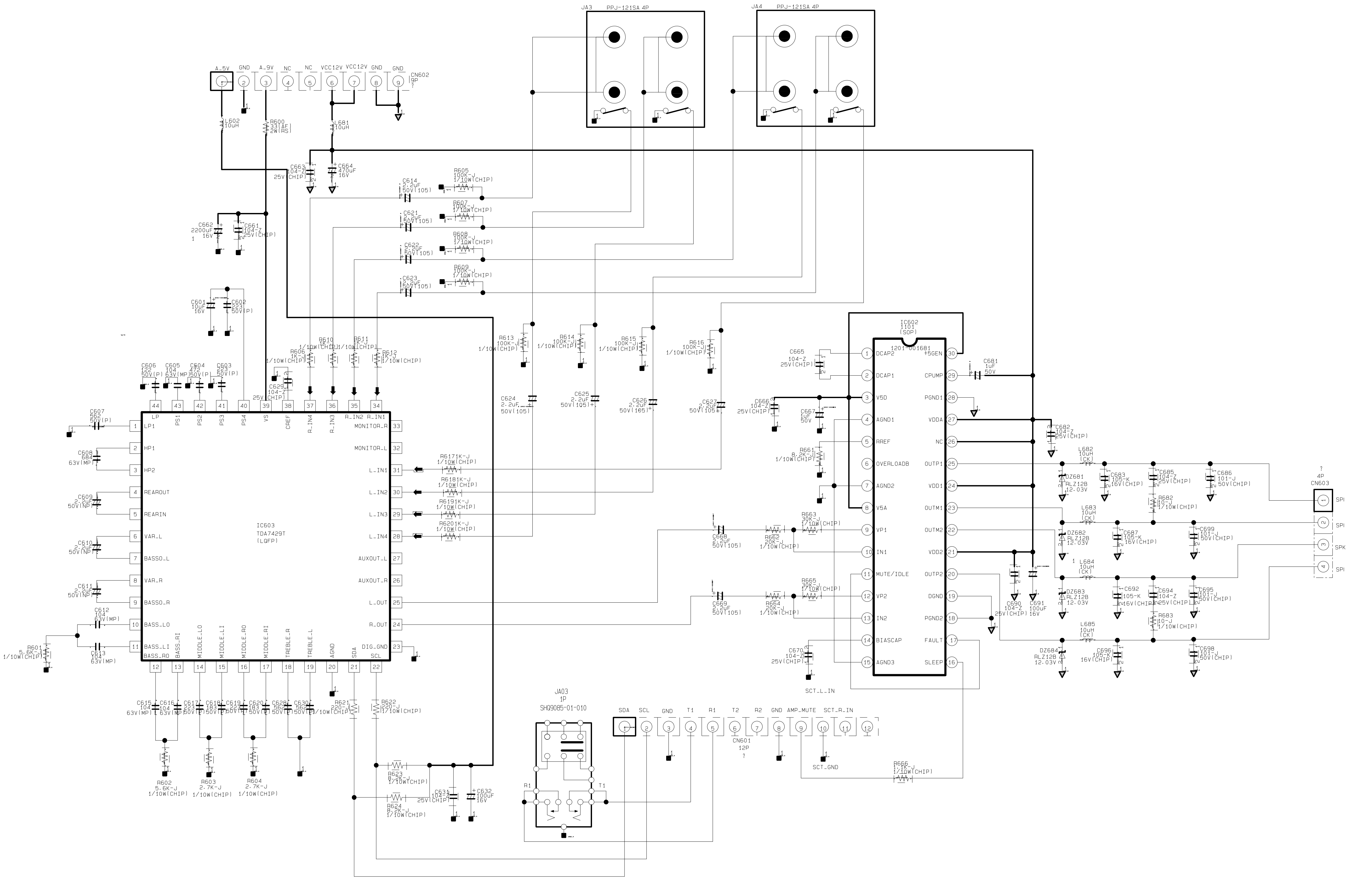
TP22 DCKEXT



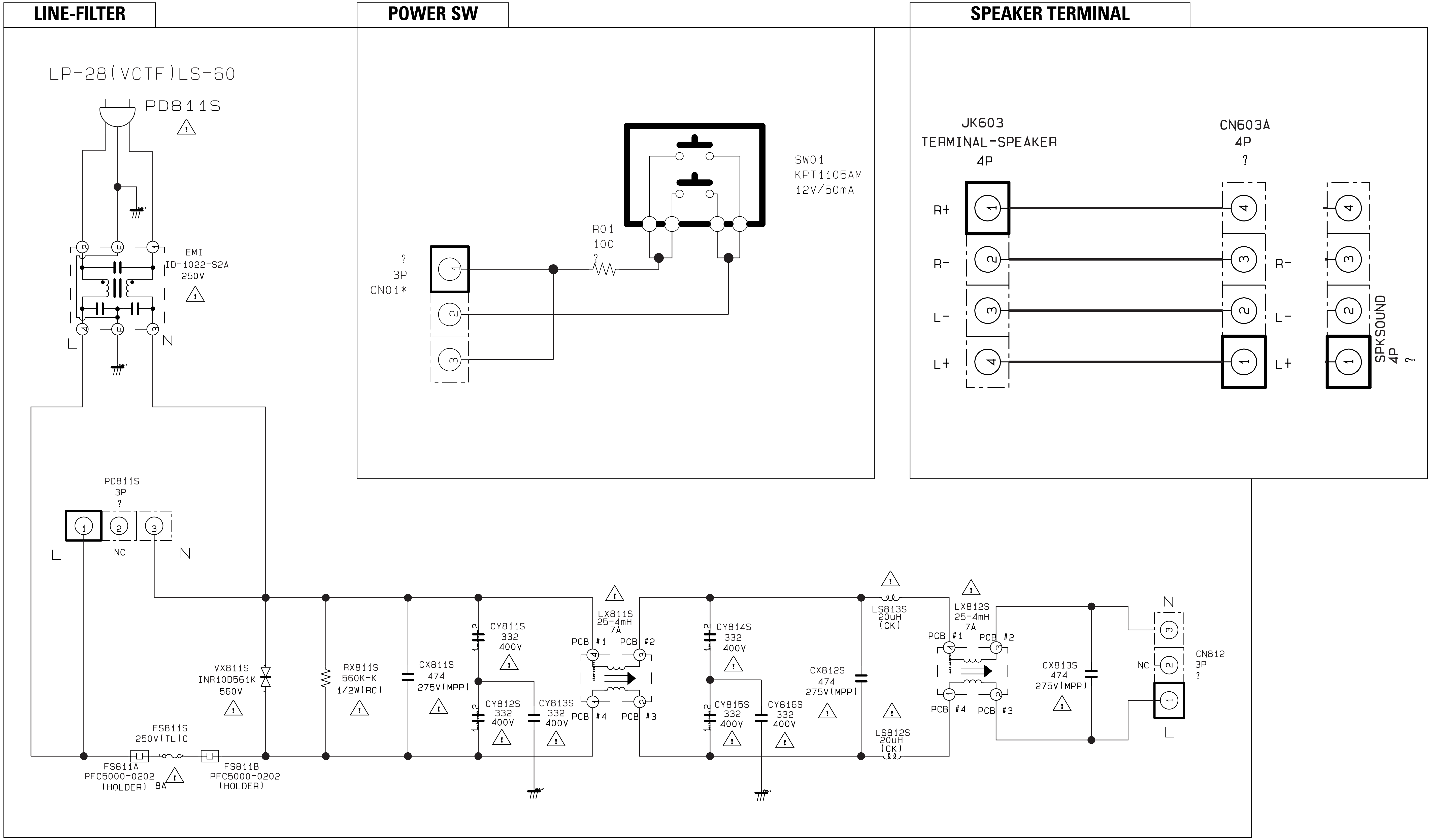
12-9 SCALER9 POWER, DEGUGER, MEMORY, REMOCON, RS232, RTC



12-10 SOUND

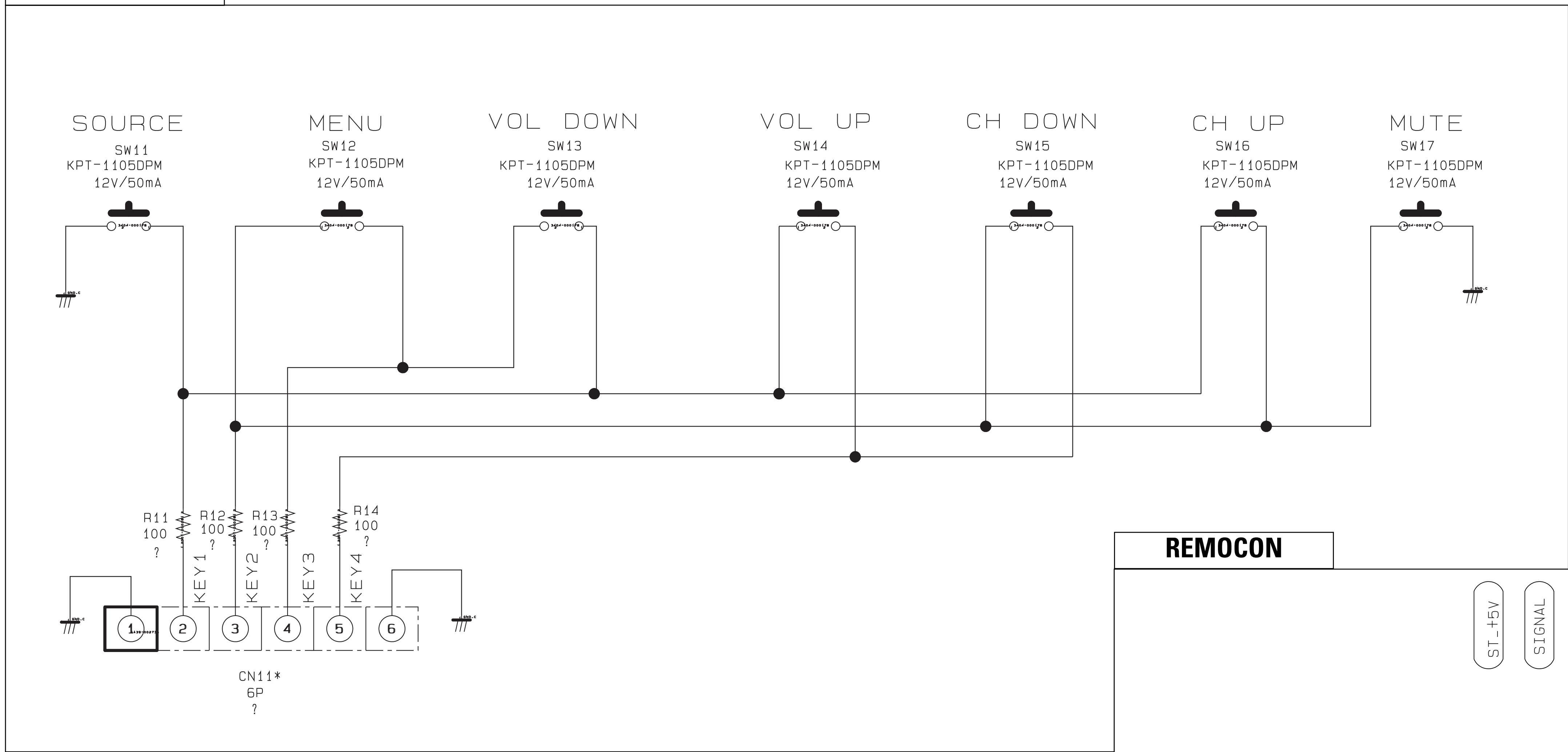


12-11 LINE-FILTER, POWER SW, SPEAKER TERMINAL

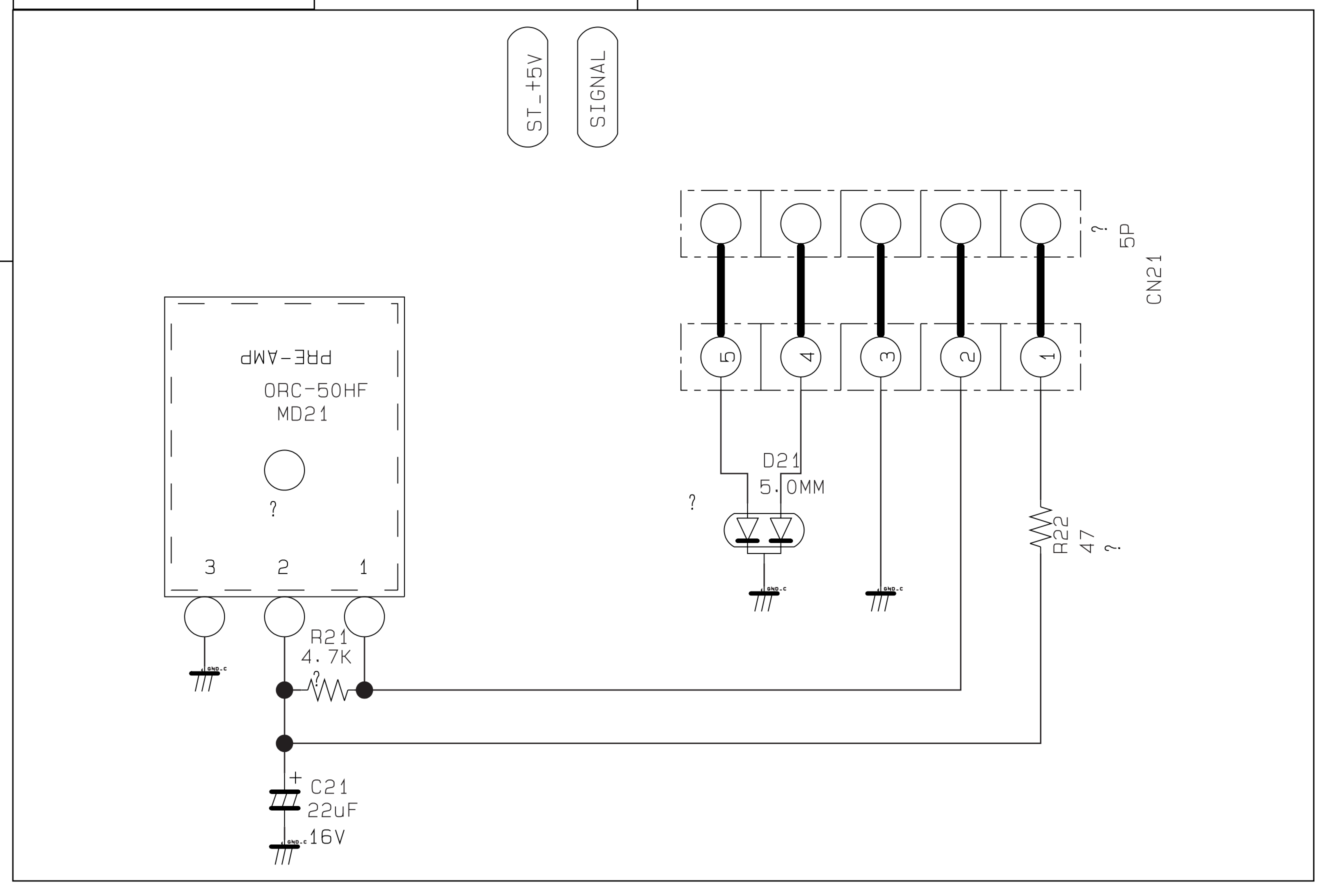


12-12 CONTROL, REMOCON

CONTROL



REMOCON



5. Circuit Description

5-1 Power supply

5-1-1 Outline(PDP SMPS)

Considering various related conditions, the switching regulator with good efficiency and allowing for its small size and lightweight was used as the power supply for PDP. Most of the power supply components used forward converter, and Vsamp and Vsb used simple flyback converter.
To comply with the international harmonics standards and improve the power factor, active PFC (Power Factor Correction) was used to rectify AC input into +400V DC output, which in turns used as input to the switching regulator.

5-1-2 42"SD SMPS SPECIFICATION

5-1-2(A) INPUT

PDP-42PS board is designed so that input power can be used within AC 90 VAC to 264 VAC with 50 / 60Hz ± 3Hz.

5-1-2(B) OUTPUT

PDP-42PS board provides 13 output switching power supplies for PDP 50inch (+165Vs, +220Set, +185Ve, +75Va, +80Scan, +18Vg, +5Vsb, +5V(D), +5V(A), +12V. +9V, +12Vfan, and +12Vsamp). The output voltage, and current requirements for continuous operation are stated below (Table 3).

Table1. Specifications of Output Power Supplies for PDP SMPS

Output Name	Output Voltage	Output Current	Using in PDP driving
Vs	+165V	1.4A	Sustain Voltage of Drive Board
Va	+75V	0.5A	Address Voltage of Drive Board
Vscan	+80V	0.05A	
Vset	+220V	0.05A	
Ve	+185V	0.05A	
Vg	+18.3V	0.3A	
Vfan	+12V	0.8A	
V9	+9V	0.3A	
V5(A)	+5V	1.0A	Analog IC Drive Voltage of Video Board
V5(D)	+5.3V	3.5A	IC Drive Voltage of Logic Board
Vsb	+5V	0.4	Stand-by for Remote Control
V12	+12V	1.2A	
Vsamp	+12V	1.5A	

Table 2. Specifications to Protect PDP SMPS

Division	OCP Current	OVP Voltage	Short Circuit
Vs	5A	195V	O.K
Va	2A	90V	O.K
+5V	10A	6.2V	O.K

5-1-2(C) FUNCTION OF BOARD

(1) Remote control
Using 250V/ 10A relay, the board makes remote control available.

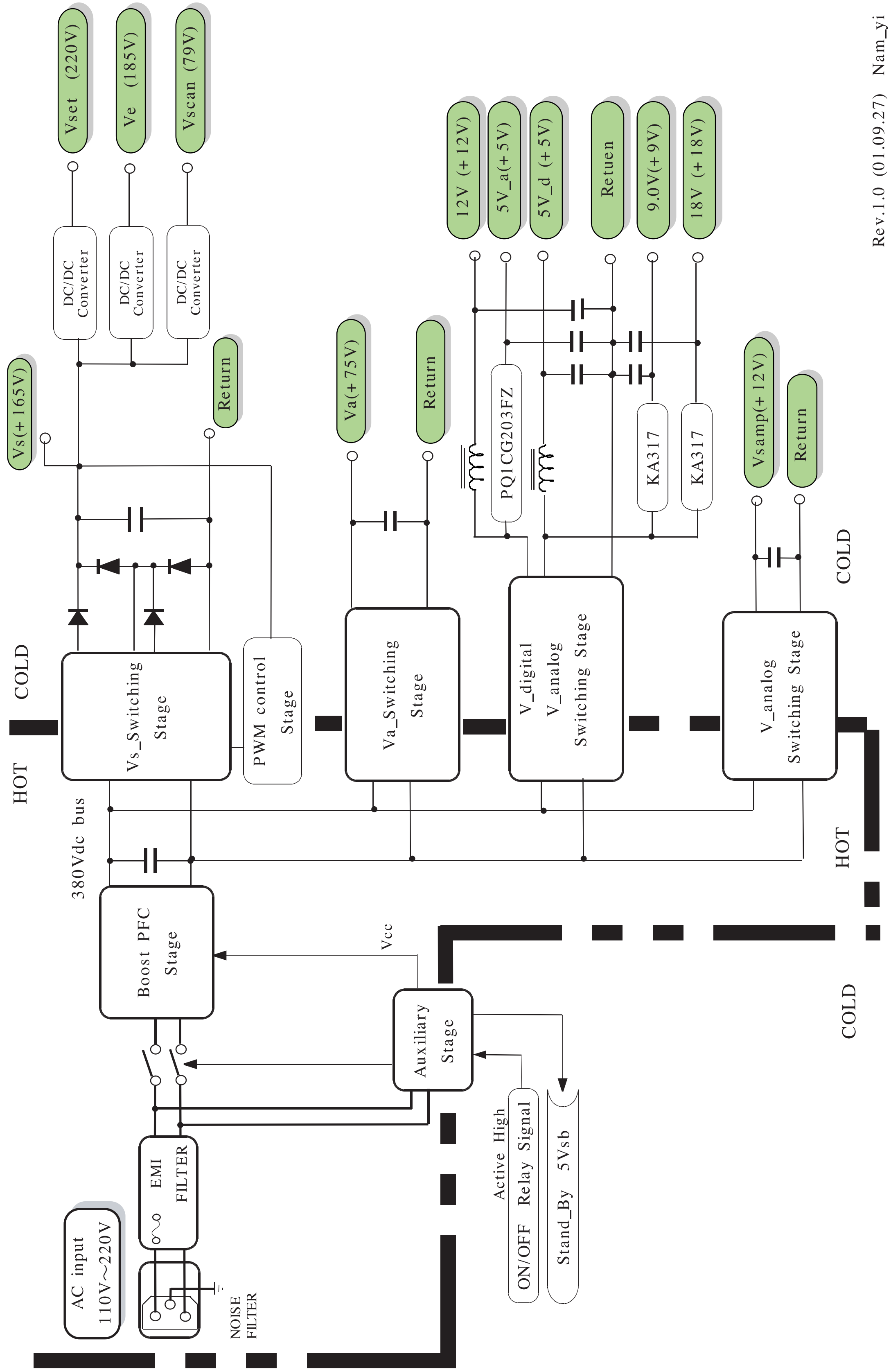
(2) Free voltage
The board designed so that input voltage can be used within 90 VAC to 264VAC.

(3) Embedded thermal sensor
The board is equipped with thermal sensor to detect the internal temperature of the unit, and to short relay when the internal temperature is higher than specified temperature so as to shutdown the unit.

(4) Improvement of power factor
The board is designed using PFC circuit so that PF (Power Factor) can be over 0.95, because low PF can be a problem in high voltage power.

(5) Protection
The OCP (Over Current Protection), the OVP (Over voltage Protection), and the Short Circuit Protection functions are added against system malfunction.

5-1-2(D) PDP-PS-42 BLOCK DIAGRAM



(1) AC-DC Converter
PDP-42PS outputs +400V DC from the common AC power supply using the active PFC booster converter. This converter is designed for improving the power factor and preventing the noise with high frequency and finally becomes the input power system for the switching regulator on the output side.

(2) Auxiliary Power Supply
The auxiliary power supply is a block generating power of •Ï-com for remote controlling. Once the power plug is inserted, this block always comes into operation, causing •Ï-com to get into the stand-by state for the output. Thus, this output is called the stand-by voltage. And with the relay ON signal inputted through the remote controller, this block turns the mechanical switch of relay to ON for driving the main power supply.

(3) Implementation of Sustain Voltage
As the main part of a SMPS for PDP, sustain voltage must supply a high power, +165V / 1.4A. It is designed using forward converter basically. At the output stage two 90V converters are connected serially for high efficiency and reduction of system size against a single 180V converter.

(4) Implementation of Small Power Output (Va, V(D), V(A), Vfan, V9, Vsamp, Ve, Vset, Vscan, V12, and Vg)Vset, Ve, and Vscan used DC-DC module. V(D), Va, V12, and Vfan used forward converter, and Vsamp used flyback converter. V(A), V9, and Vg are simply implemented using switching regulator.

5-1-3 Requirements of PDP SMPS

Since SMPS does not operate alone, but it operates with the load of the whole system, it should be designed carefully considering the load of the system. In addition, it should be designed considering emerging issues such as EMC, and protection against heat as well as system stability especially.

5-1-3(A) SAFETY AND REMOTE CONTROL CAPABILITY

Stability is one of the most important requirements for SMPS. SMPS should be designed to prevent abnormal status due to abnormal load variation so as to keep the system stable, and guarantee customer safety.
The protection circuits of SMPS include over-current protection (OCP), over voltage protection (OVP), and under voltage lock-out (UVLO), and short circuit protection circuit. Although each circuit can be implemented by various procedures, the most popular is implementing with comparator that compares current value with that of standard and determine abnormality of the circuit.
In addition, surge current protection, insulation management, and static electricity protection circuit should be added, because it uses commercial power source as an input.
PDP SMPS should be designed using auxiliary power and relay to provide remote control capability.

5-1-3(B) THE RELATION BETWEEN POWER CONSUMPTION AND POWER CONVERSION Efficiency

The power consumption and the power conversion efficiency of SMPS affect protection against heat and system operation much.

[If the power conversion efficiency of 100W SMPS is 70%, is the power loss of internal circuit 30W?]

Output power consumption Po is determined by the multiplication of DC output voltage Vo and output current Io. Input power consumption Pi is determined by the addition of output power consumption Po and internal power loss of SMPS Pl.

Provided that the power conversion efficiency is _,

$$P_i = P_o + P_L$$

$$h = \frac{P_o}{P_i} \qquad \text{- - - - - - - - - - - - - - - - - Equation (1)}$$

$$P_L = (\frac{1}{h} - 1) \cdot P_o$$

If the power conversion efficiency of 100W SMPS is 70%, the internal power loss is about 42.8W by Equation (1). If the power conversion efficiency of 400W SMPS for 42"SD is 82%, the internal power loss is 87.8W by Equation (1). Table 4 shows internal power loss as a function of output power for various power conversion efficiencies.

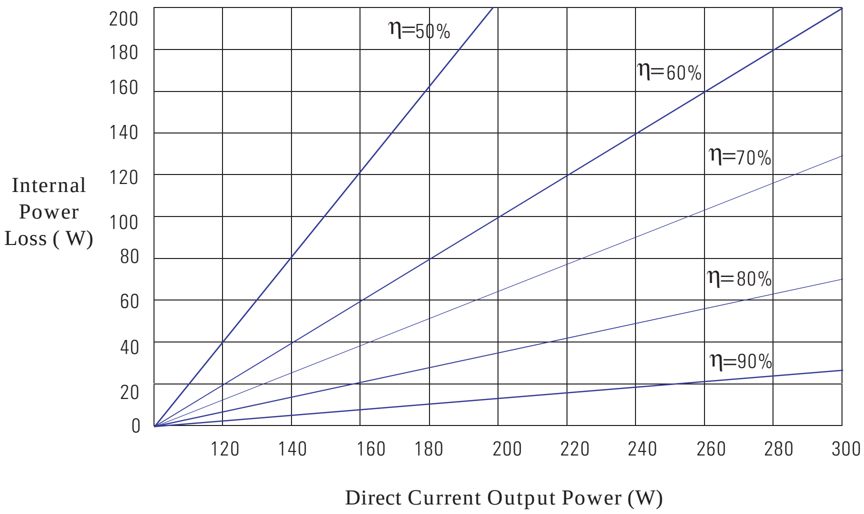


Table 4. Power Conversion Efficiency vs. Internal Power Loss

5-1-3(C) PFC (Power Factor Correction) Circuit Descriptions

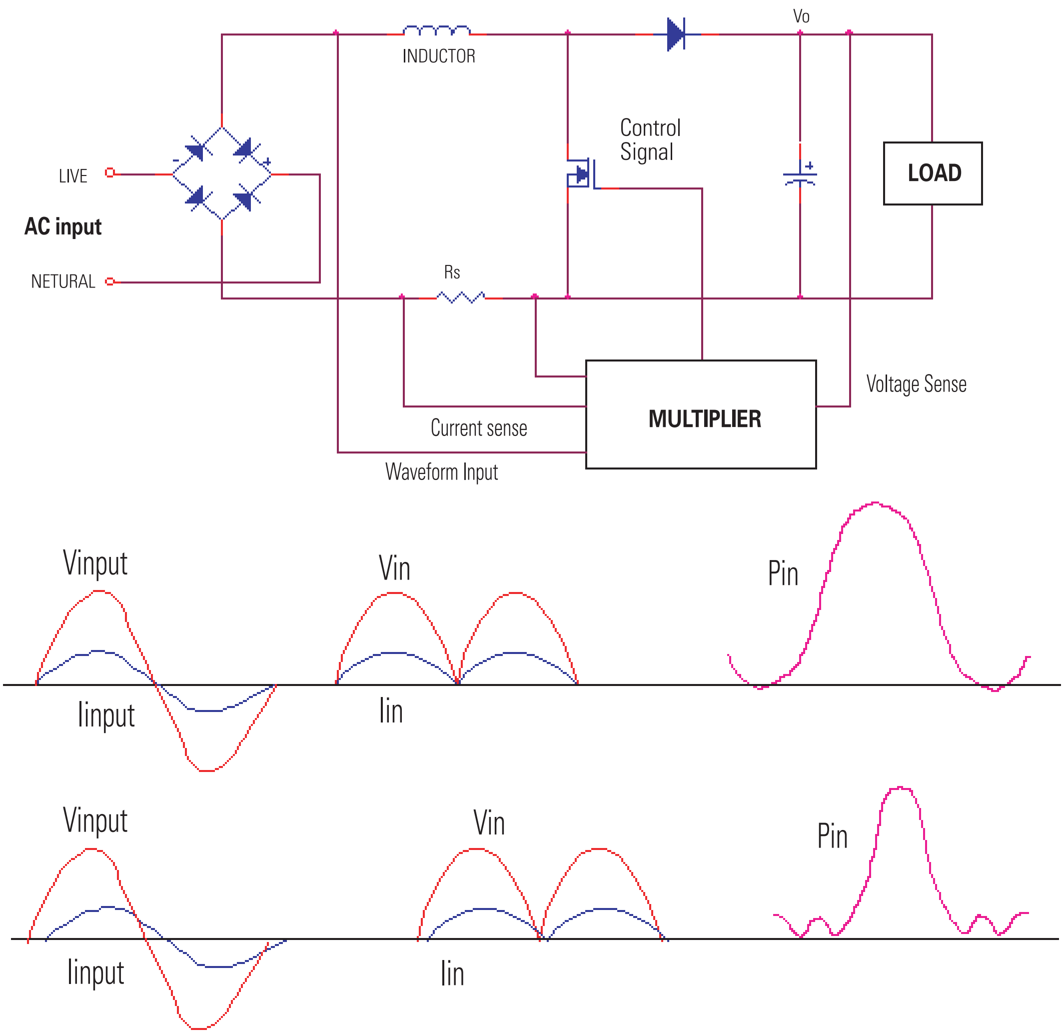
The current electric devices use DC power supply and require a rectifier circuit converting AC into DC. As most rectifier circuits apply a capacitor input type, the rectifier circuit becomes the core of the occurrence of harmonics with lower reverse rate.If various electronic and electric devices are connected to a power system, high-frequency current will occur due to a power rectifier circuit, a phase control circuit with power input current of non-sine wave, or components with non-linear load characteristics, such as capacitor, inductor, etc. As the result, the disturbance of voltage occurs, and finally a power capacitor or a transformer generates heat, fire or noise occurs, controls malfunction, or the accessed devices abnormally operate or their lives are shortened.To prevent those symptoms, IEC (International Electrotechnical Commission) regulated standards for Power Supply Harmonics.
(Refer to IEC 1000-3-2.)Figure 8 shows the basic structure of Active Boost PFC and waveforms.

Standards for Power Supply Harmonics

Scale: Devices accessed to 220V / 380V, 230V / 400V, 240V / 425V and lower than 16A (IEC 100-3-2)
Devices with AC 230V and lower than 16A (IEC 555-2)

Applied Classes :
¤ Class A : Devices not included in another class
¤ Class B : Portable tools
¤ Class C : Lighting devices
¤ Class D : Devices with special current waveforms

Application Schedule : Except the devices less than rating input of 75W (1996~1999)
Except the devices less than rating input of 50W (2000 and after)



The architecture and the pulse of active boost PFC

5-1-3(D) CONCLUSION

Although SMPS (Switching Mode Power Supply) enables small lightweight high-power consumption power design, it is hard to be used when stability and precise control are required. Power stage for PDP can be designed using the lightweight SMPS feature. It is important to design SMPS considering system load, stability, and related international standards.

5-2 Driver Circuit

5-2-1 Driver Circuit Overview

5-2-1(A) WHAT IS THE DEFINITION OF DRIVE CIRCUIT?

It is a circuit generating an appropriate pulse (High voltage pulse) and then driving the panel to implement images in the external terminals (X electrode group, Y electrode group and address electrode), and this high voltage switching pulse is generated by a combination of MOSFET's.

5-2-1(B) PANEL DRIVING PRINCIPLES

In PDP, images are implemented by impressing voltage on the X electrode, Y electrode and address electrode, components of each pixel on the panel, under appropriate conditions. Currently, ADS (Address & Display Separate: Driving is made by separating address and sustaining sections) is most widely used to generate the drive pulse. Discharges conducted within PDP pixels using this method can largely be classified into 3 types, as follows:

(1) Address discharge : This functions to generate wall voltage within pixels to be lighted by addressing information to them (i.e., impressing data voltage)

(2) Sustain discharge : This means a display section where only pixels with wall voltage by the address discharge display self-sustaining discharge by the support of such wall voltage. (Optic outputs realizing images are generated.)

(3) Erase discharge : To have address discharge occur selectively in pixels, all pixels in the panel must have the same conditions (i.e., the same state of wall and space electric discharges). The ramp reset discharge section, therefore, is important to secure the drive margin, and methods most widely used to date include wall voltage controlling by ramp pulse.

5-2-1(C) TYPES AND DETAILED EXPLANATION OF DRIVE DISCHARGES

(1) Sustaining discharge

Sustaining discharge means a self-sustaining discharge generated by the total of the sustaining pulse voltage (usually, 160~170V) alternately given to X and Y electrodes during the sustaining period and the wall voltage that varies depending upon pixels' previous discharge status. It is operated by the memory function (through this, the current status is defined by previous operation conditions) AC PDP basically possesses. That is, when there is existing wall voltage in pixels (in other words, when pixels remain ON), the total of wall voltage and a sustaining voltage to be impressed subsequently impresses a voltage equal to or above the discharge start voltage, thereby generating discharge again, but when there is no existing wall voltage in pixels (in other words, when pixels remain OFF), the sustaining voltage only does not reach the discharge start voltage, thus causing no discharge. The sustaining discharge is a section generating actual optic outputs used in displaying images.

(2) Address discharge

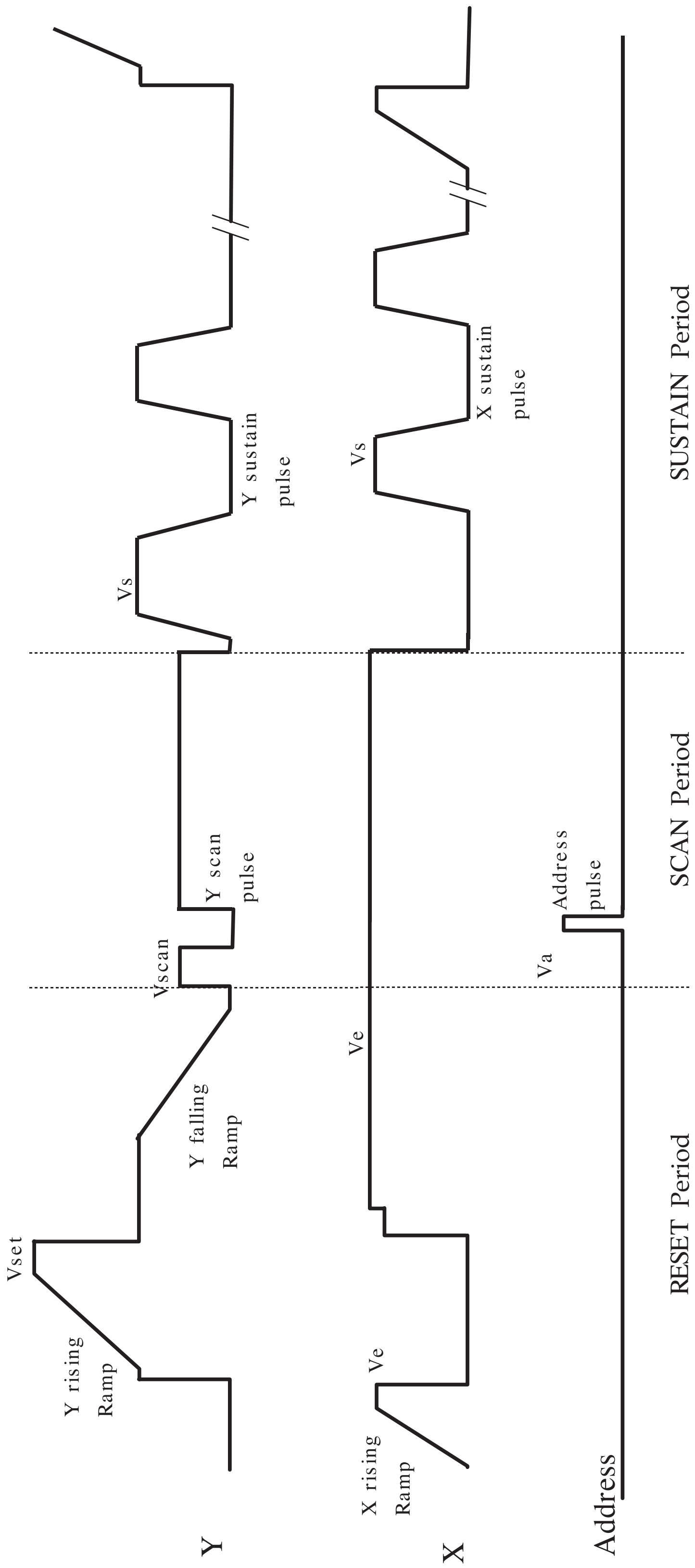
This means a discharge type generated by the difference between positive voltage of the address electrode (normally 70~75V determined by supplied Va voltage + positive wall charge) and the negative potential of Y electrode (supplied GND level voltage + negative wall charge). The address discharge serves to generate wall voltage in pixels where images are to be displayed (that is, discharge is to be generated) prior to the sustaining discharge section. Namely, pixels with wall voltage by the address discharge will generate sustaining discharge by the following sustaining pulses.

(3) Erase discharge

The purpose of resetting or erase discharge is to make even wall voltage in all pixels on the panel. Wall voltage, which may vary depending upon the previous sustaining discharge status, must be made even. That is, wall voltage generated by the sustaining discharge must surely be removed, by making discharges and then supplying ions or electrons. Wall voltage can be removed by making discharges and then setting a limitation on time for opposite polarity charging of the wall voltage or generating weak discharge (Low voltage erasing) to supply an appropriate quantity of ions or electrons and keep polarities from being charged oppositely. The weak discharge (Low voltage erasing) methods, which have been known to date, can largely be into two types: 1) the log pulse adopted by most companies including F Company, and 2) the ramp pulse adopted by Matsushita. In both two methods, impression is made with a slow rising slope of the erasing pulse. Because the total of the existing wall voltage and a voltage on the rising pulse must be at least the drive start voltage to generate discharges, external impressed voltage is adjusted based on the difference in wall voltage between pixels. And, weak discharge is generated because of a small impressed voltage.

5-2-2 SPECIFICATION OF DRIVE PULSES

5-2-2(A) DRIVE PULSES



Vs	160~170V	Ve	190V~200V
Vset	210~225V	Va	70~75V
Vscan	70~75V		

A1, 2.	Address (=Data) Electrode
X	Common & Sustain Electrode
Y1, 2. . . .	Scan & Sustain Electrode

5-2-2(B) FUNCTIONS OF PULSES

(1) X rising ramp pulse
Just before X rising ramp pulse is impressed, the last Y electrode sustain pulse of previous sub field is impressed. The pulse causes sustain discharge. Consequently, positive wall charge is accumulated in X electrode, and negative wall charge is accumulated in Y electrode. X rising ramp erases wall charge produced by the last sustain discharge pulse using weak-discharge.

(2) Y rising ramp pulse
During Y rising ramp period, weak-discharge begins when external voltage of about 390V~400V is impressed to Y electrode, and each gap voltage is equal to discharge start voltage. Sustaining the weak-discharge, positive wall charge is accumulated in X electrode and address electrode, and negative wall charge is accumulated in Y electrode of the entire panel.

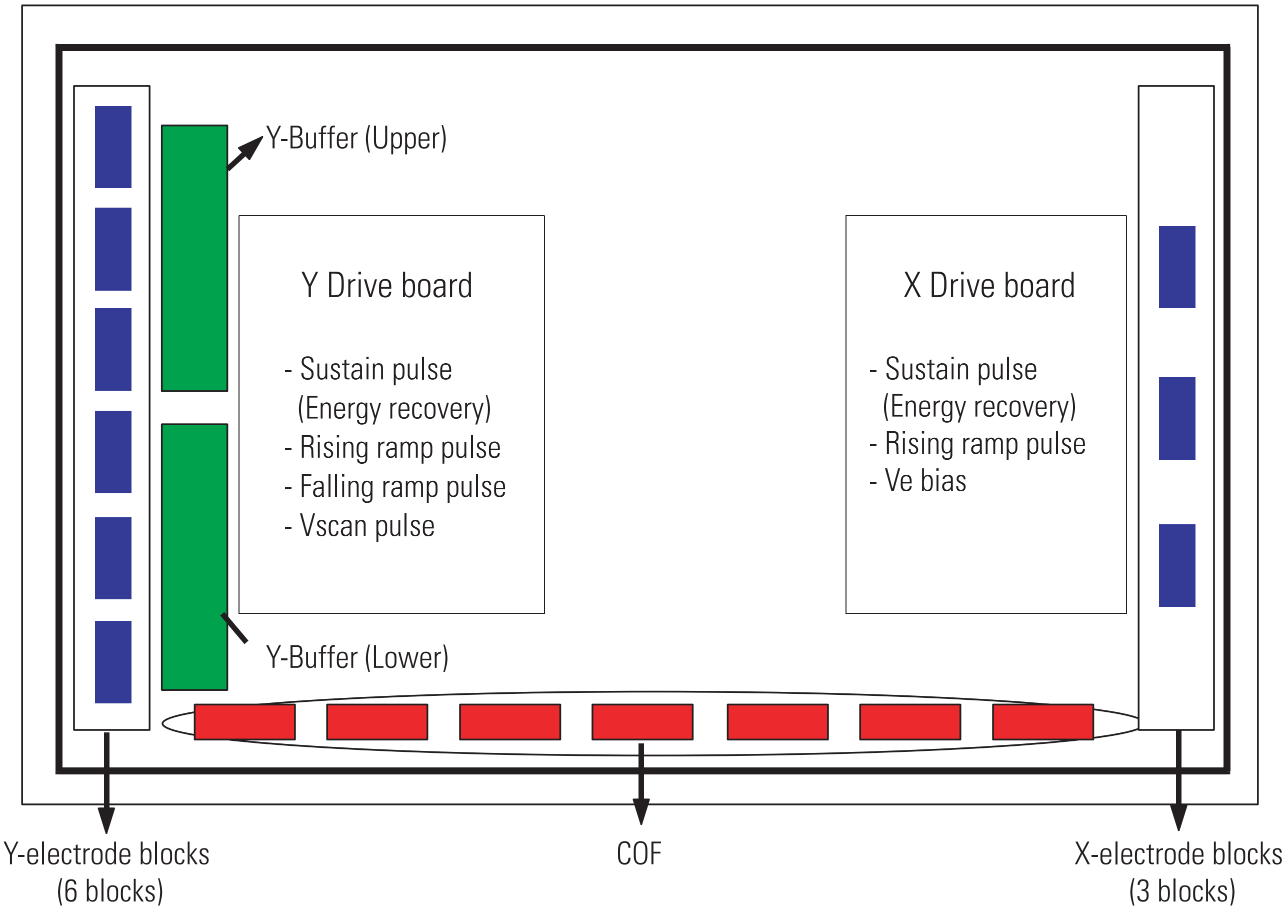
(3) Y falling ramp pulse
During Y falling ramp period, the negative wall charge in Y electrode accumulated by 200V of X bias is used to erase positive wall charge in X electrode. Address electrode (0V) sustains most of the positive electric charge accumulated during rising ramp period so that it can maintain wall charge distribution beneficial to the upcoming address discharge.

(4) Y scan pulse
This is called the scan pulse, selecting each of Y electrodes on a one-line-at-a-time basis. In this case, Vscan means the scan bias voltage. About 70 V (Vscan) voltage is impressed on the selected electrode lines, while 0 V (GND) voltage is impressed on the other lines.
In the cells the address pulse (70V~75V) is impressed on, address discharge is occurred because negative wall charge is accumulated in Y electrode, positive wall charge is accumulated in address electrode by the applied ramp pulse, and the sum of impressed voltage is greater than discharge start voltage. Thus, because scan pulse and data pulse are impressed line by line, very long time is taken for PDP addressing.

(5) 1st sustain pulse
The sustaining pulse always begins with the Y electrode. This is because when address discharge is generated, positive wall voltage is generated on the Y electrodes. Because wall electric charge generated by address discharge is generally smaller than wall voltage generated by sustaining discharge, initial discharges have small discharge strength, and stabilization is usually obtained after 5~6 times discharges, subject to variations depending on the structure and environment of electrodes. The purpose of impressing the initial sustaining pulses long is to obtain stable initial discharges and generate wall electric charges as much as possible.

5-2-3 Configuration and Operation Principles of Driver Circuit

5-2-3(A) FUNCTIONS OF EACH BOARD



(1) X board
X board is connected to the panel's X-electrode blocks, 1) generates sustain voltage pulse (including ERC), 2) generates X rising ramp pulse, and 3) sustains Ve bias during scan period.

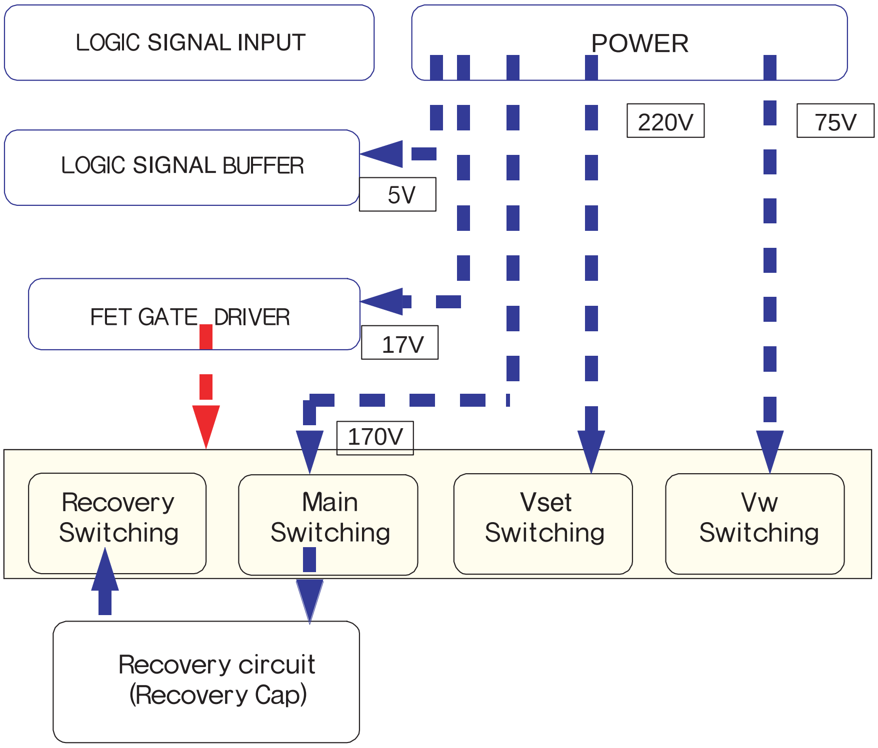
(2) Y board
Y board is connected to the Y-electrode blocks of panel, 1) generates sustain voltage pulse (including ERC), 2) generates Y rising and falling ramp pulse, and 3) sustains Vscan bias.

(3) Y buffer board (upper and lower)
Y buffer board impresses scan pulse to Y electrodes, and consists of upper and lower sub-boards. In case of SD class, one board is equipped with 4 scan driver IC's (STMicroelectronics STV7617 with 64 or 65 outputs).

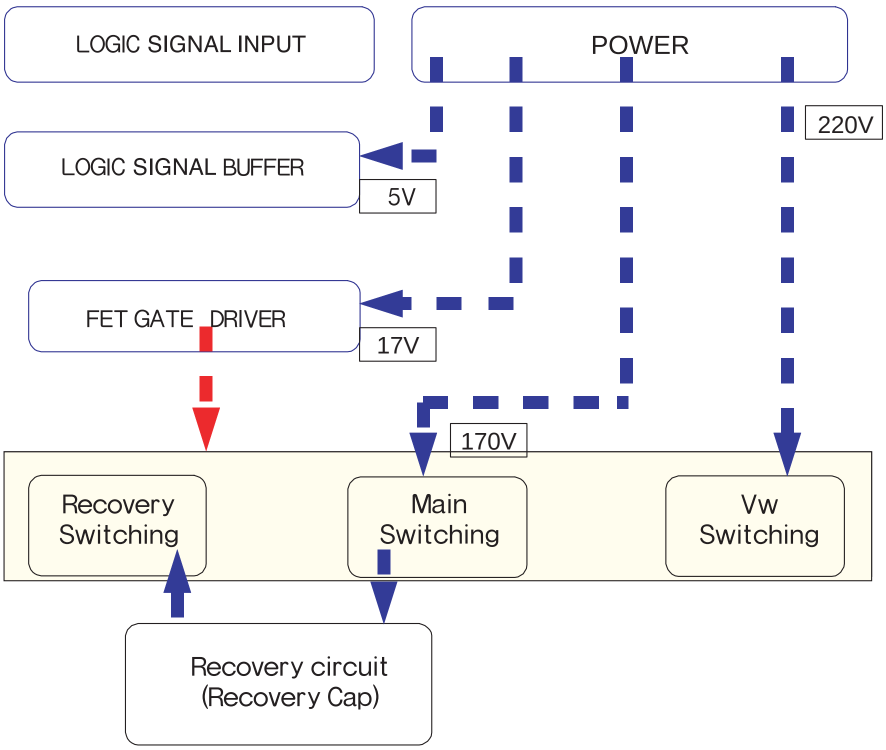
(4) COF
Impresses Va pulse on address electrodes in the address section and generates address discharge based on a difference between such Va pulse and scan pulse impressed on Y electrodes. It is in the form of COF, and a COF is equipped with 4 data drive IC's (STMicroelectronics STV7610A with 96 outputs). For a single scan, 7 COF's are required.

5-2-3(B) DRIVING BOARD'S BLOCK DIAGRAM

(1) Y



(2) X



4 Components of driving board's operations

1. Power supply
   1) Supplied from the power supply board
      - For sustaining discharge: 180V;
      - For logic signaling buffer: 5V; and
      - For gate driver IC: 15V.

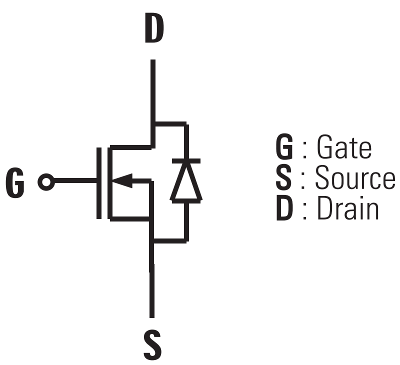
   2) Generated by the internal DC/DC part
      - For generating Vw pulse: 180V.

2. Logic signal
   1) Supplied from the logic board
      - Gate signals for FETs.

5-2-3(C) PRINCIPLES OF FET’S OPERATION AND HIGH VOLTAGE SWITCHIng

u FET’s operation principles

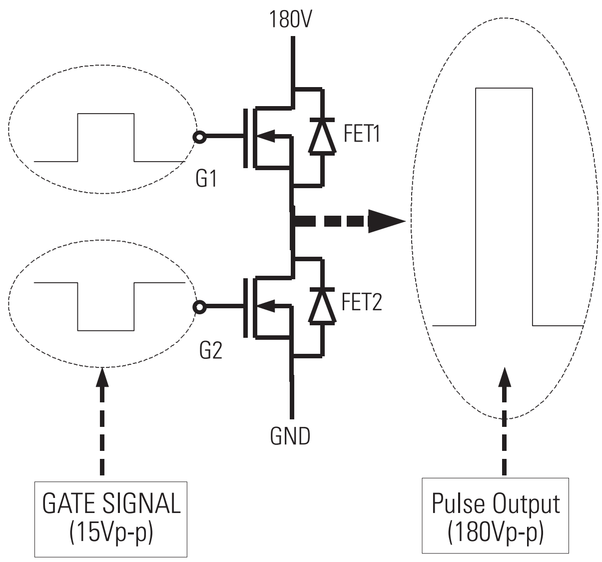
■ FET's operation principles



(1) With signal impressed on the gate (Positive voltage), FET gets short-circuited (a conducting wire of zero (0) resistance); and

(2) With no signal impressed on the gate (GND), FET gets open-circuited (a non-conducting wire of ∞ resistance).

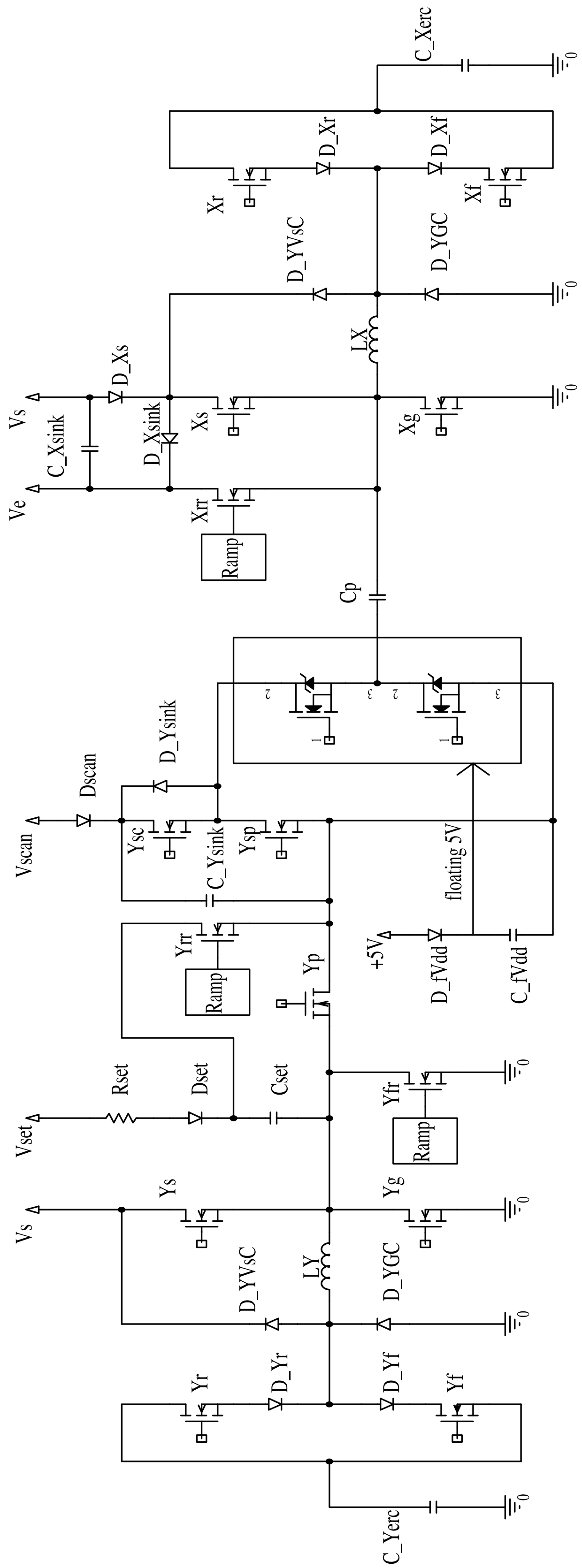
u FET’s high voltage switching principles



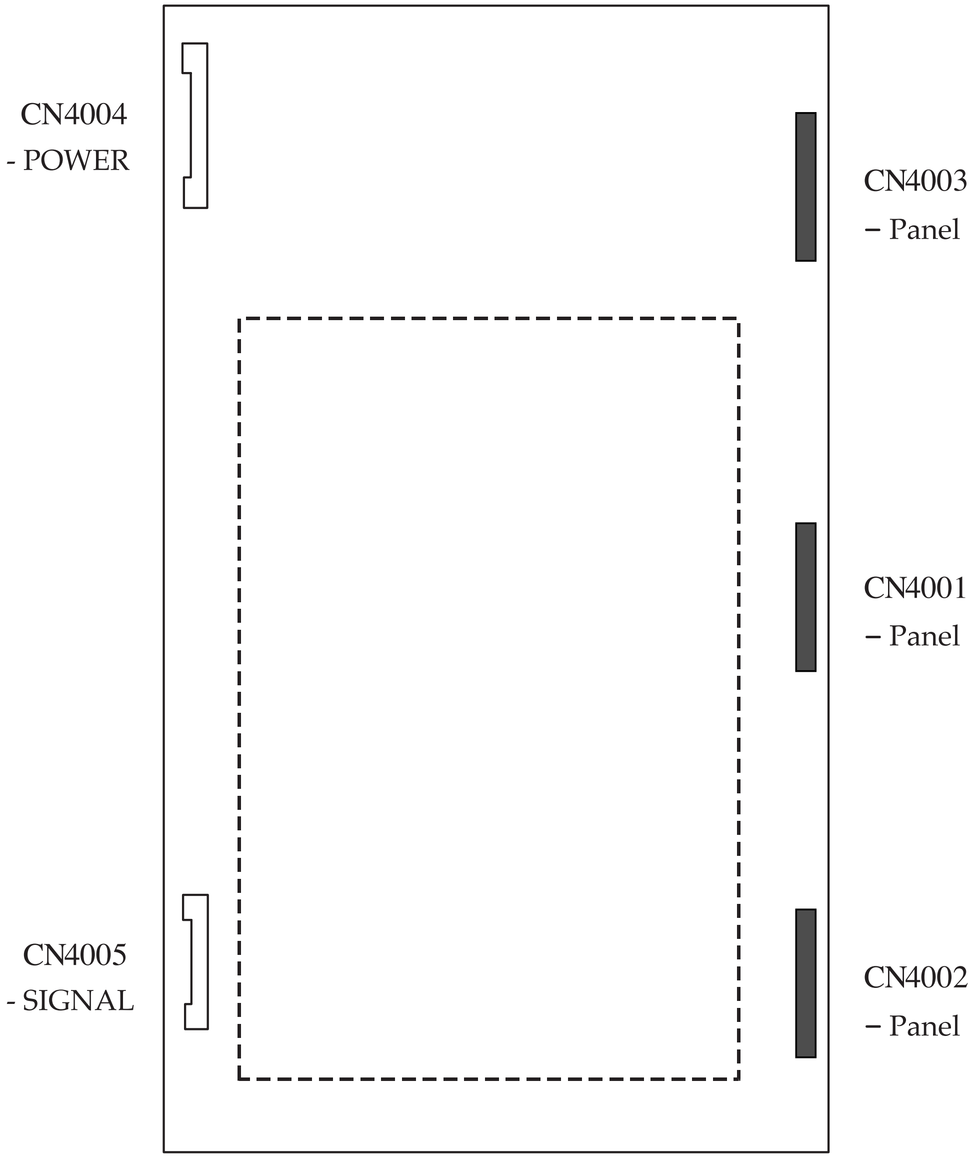
(1) With no signal impressed on G1, FET1 gets open-circuited, and with signal impressed on G2, FET2 gets short-circuited, thereby causing GND to be outputted to output terminals.

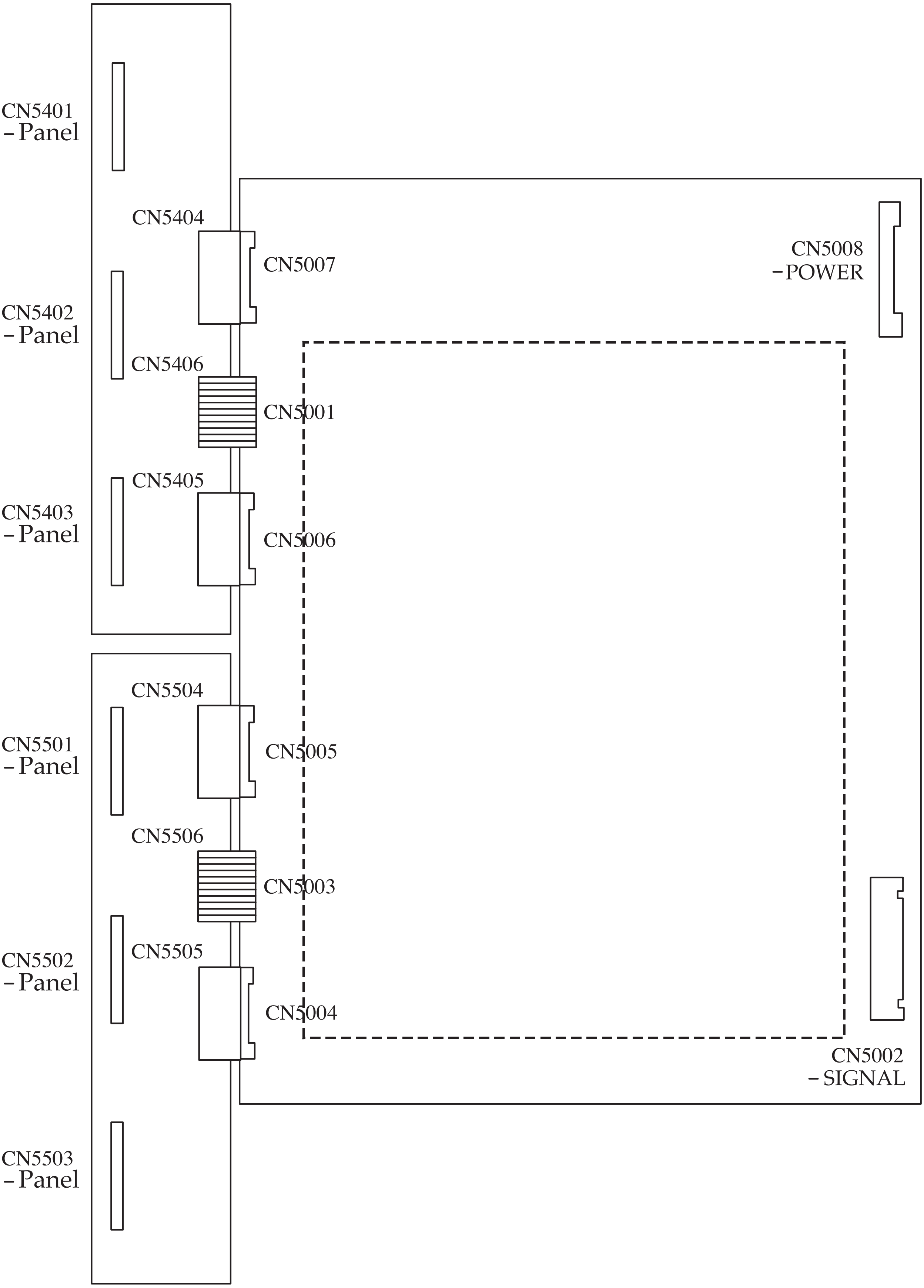
(2) With signal impressed on G1, FET1 gets short-circuited, and with no signal impressed on G2, FET2 gets open-circuited, thereby causing 180V to be outputted to output terminals.

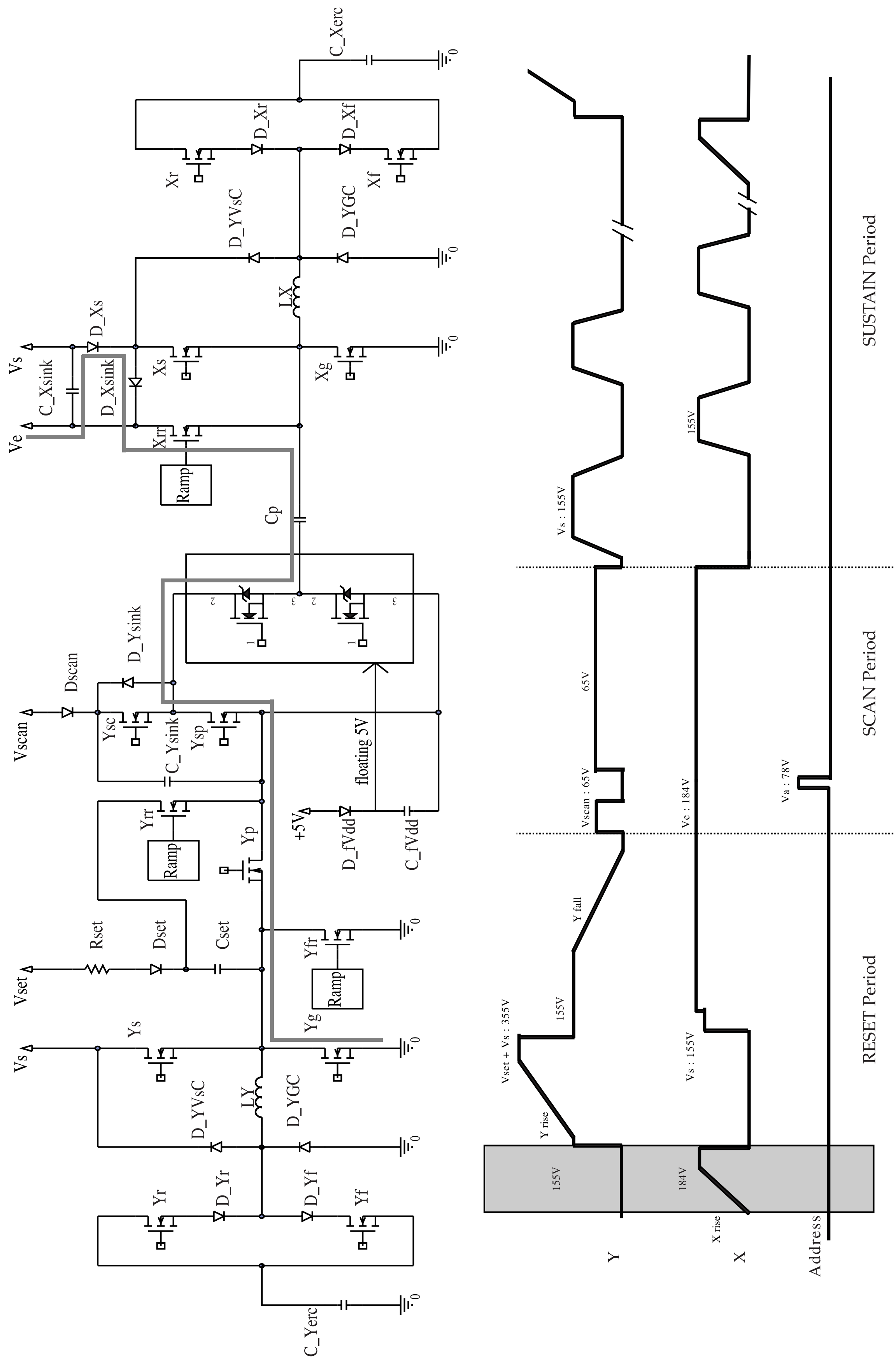
5-2-3 (D) DRIVER CIRCUIT DIAGRAM

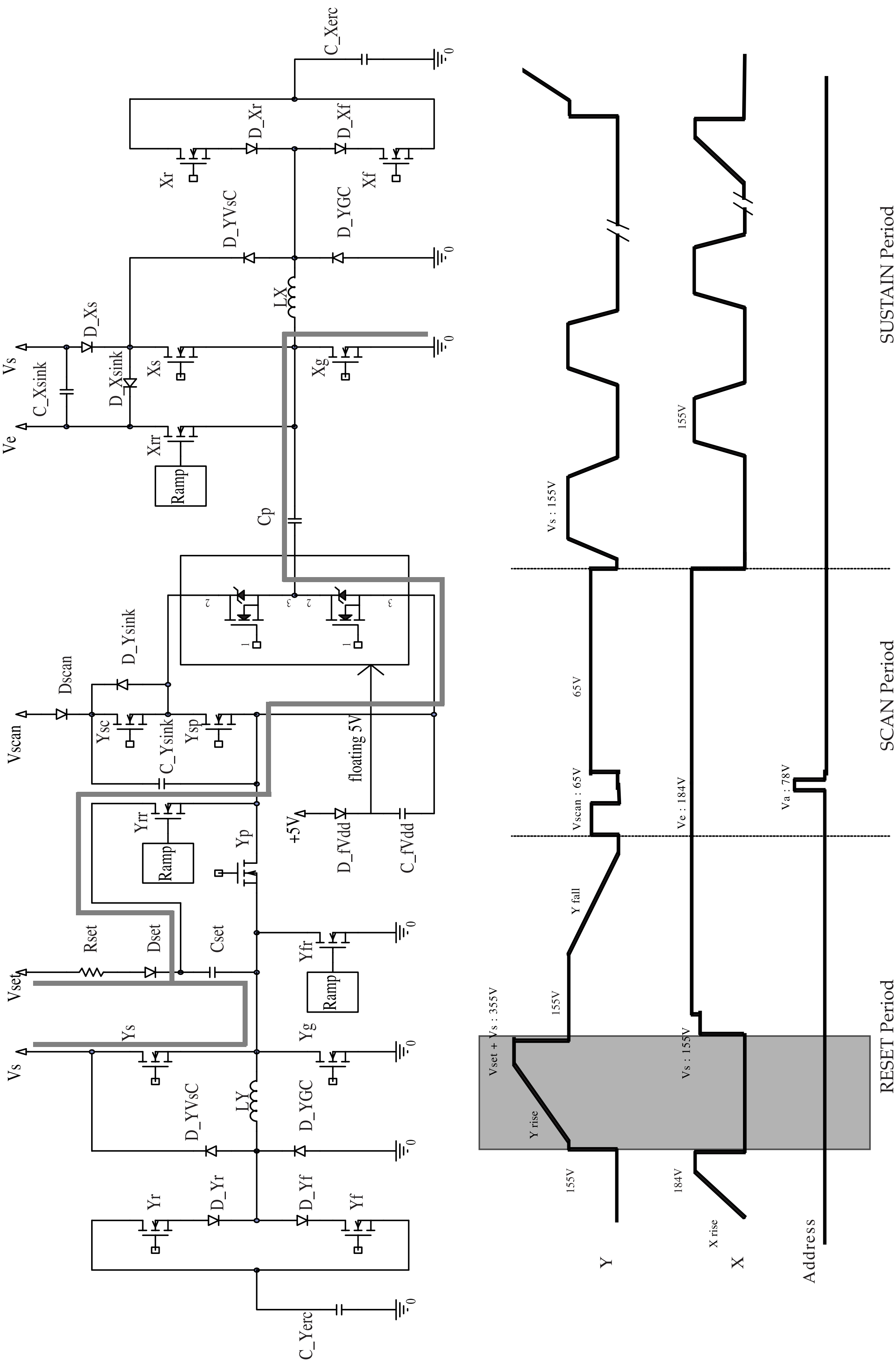


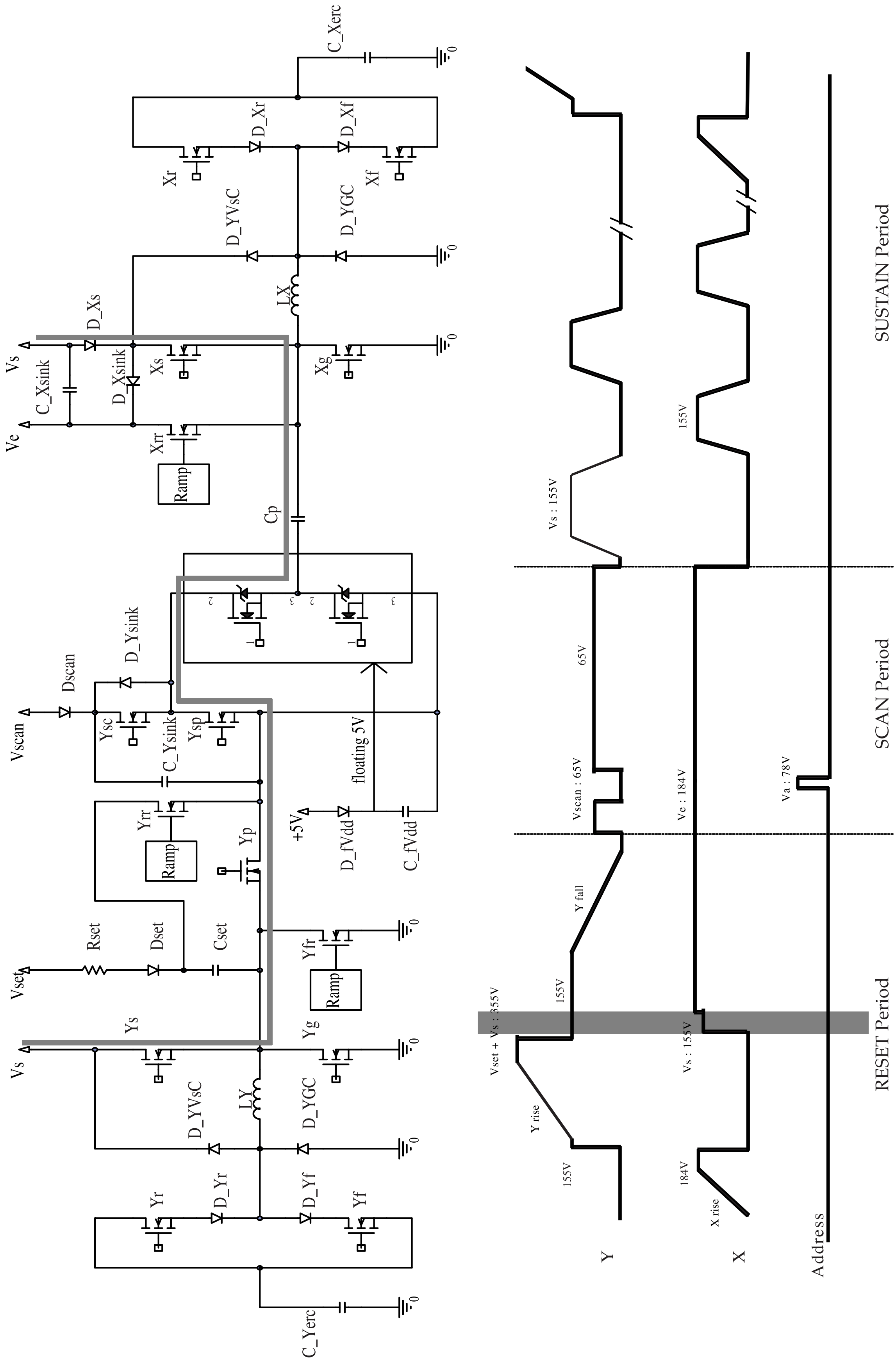
5-2-3(E) DRIVER BOARD CONNECTOR LAYOUT



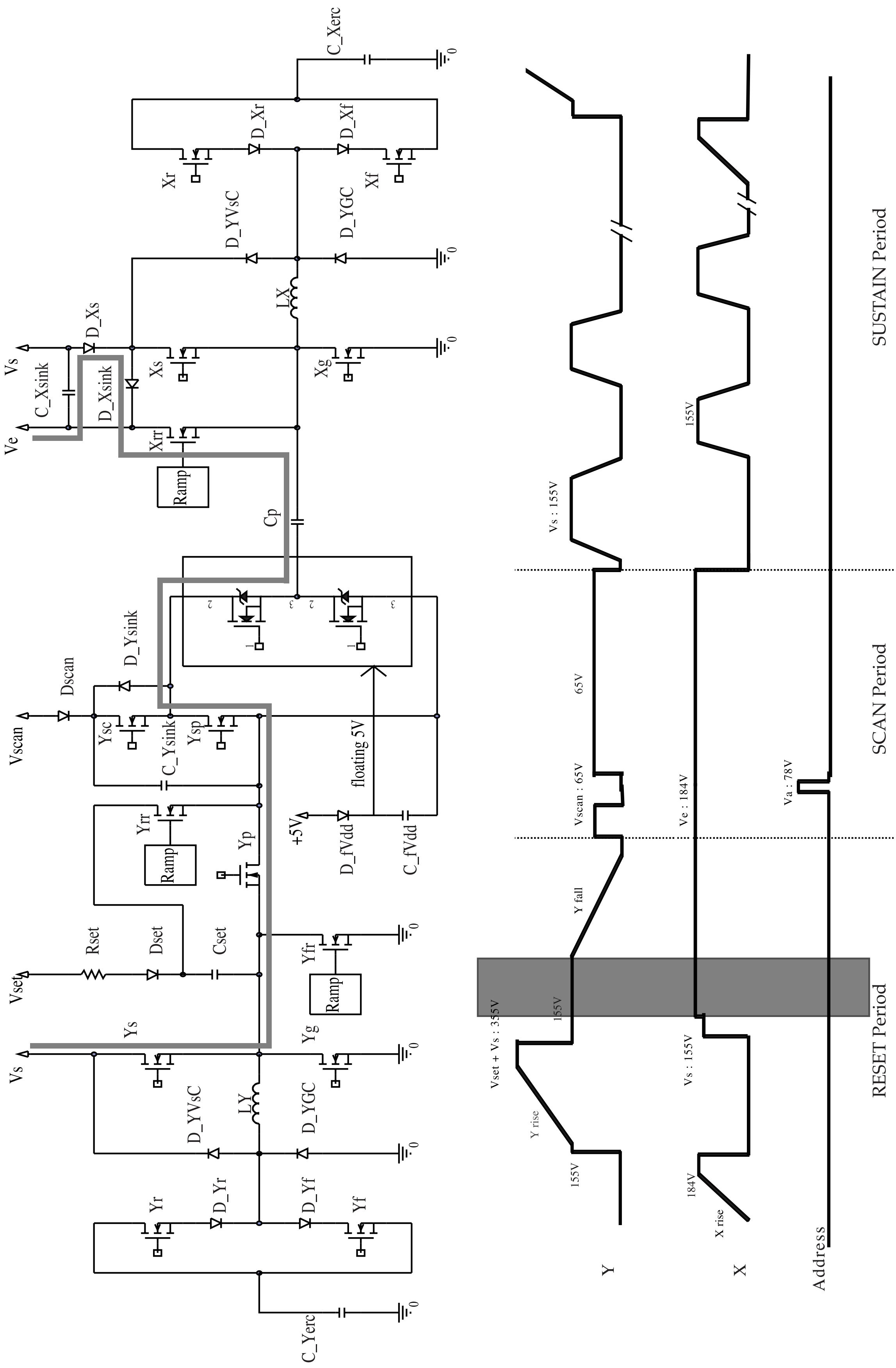

CN5401
-Panel
CN5404
CN5007
CN5008
-POWER
CN5402
-Panel
CN5406
CN5001
CN5405
CN5403
-Panel
CN5006
CN5504
CN5501
-Panel
CN5005
CN5506
CN5003
CN5502
-Panel
CN5505
CN5004
CN5002
-SIGNAL
CN5503
-Panel

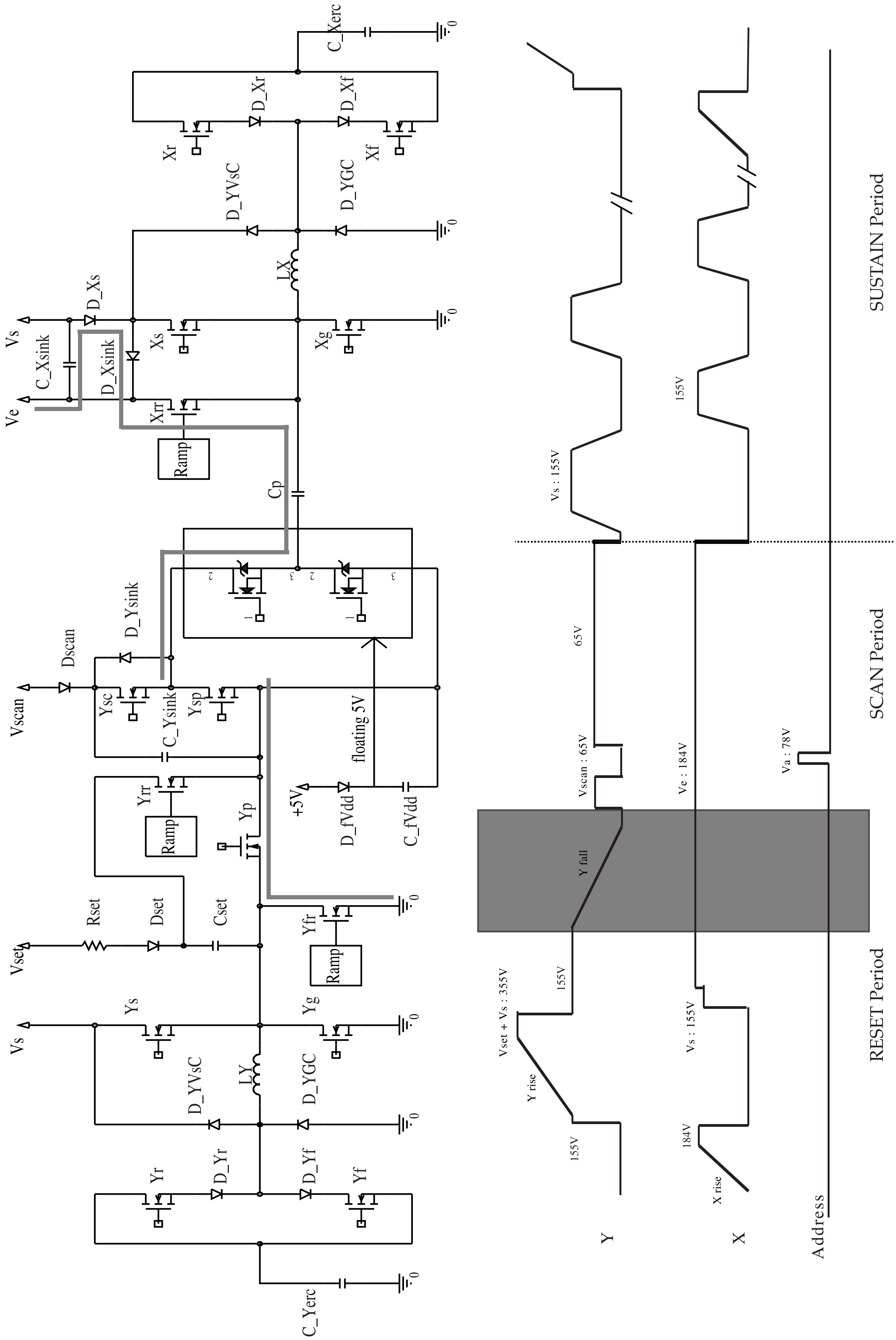

C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
D_Xs
Vs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
Yrr
Yp
+5V
D_fVdd
C_fVdd
Rset
Dset
Cset
Vset
Yfr
Yg
Ys
LY
D_YGC
D_YVsC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vset + Vs : 355V
155V
Y rise
Y fall
Vscan : 65V
65V
Vs : 155V
Ve : 184V
184V
X rise
Va : 78V
Y
X
Address
RESET Period
SCAN Period
SUSTAIN Period

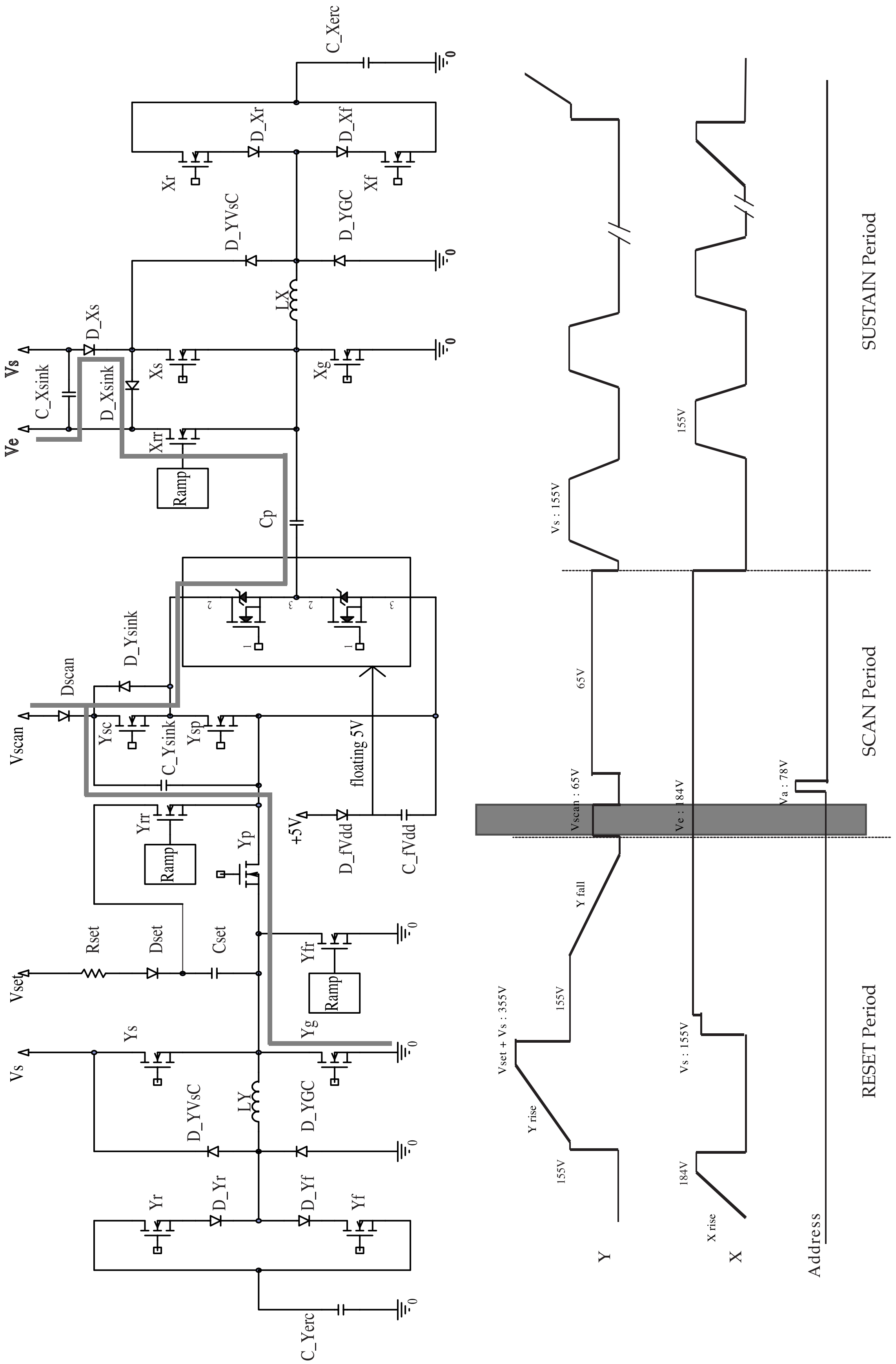

C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
Vs
D_Xs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
155V
Vset + Vs : 355V
Vs : 155V
Y rise
155V
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period

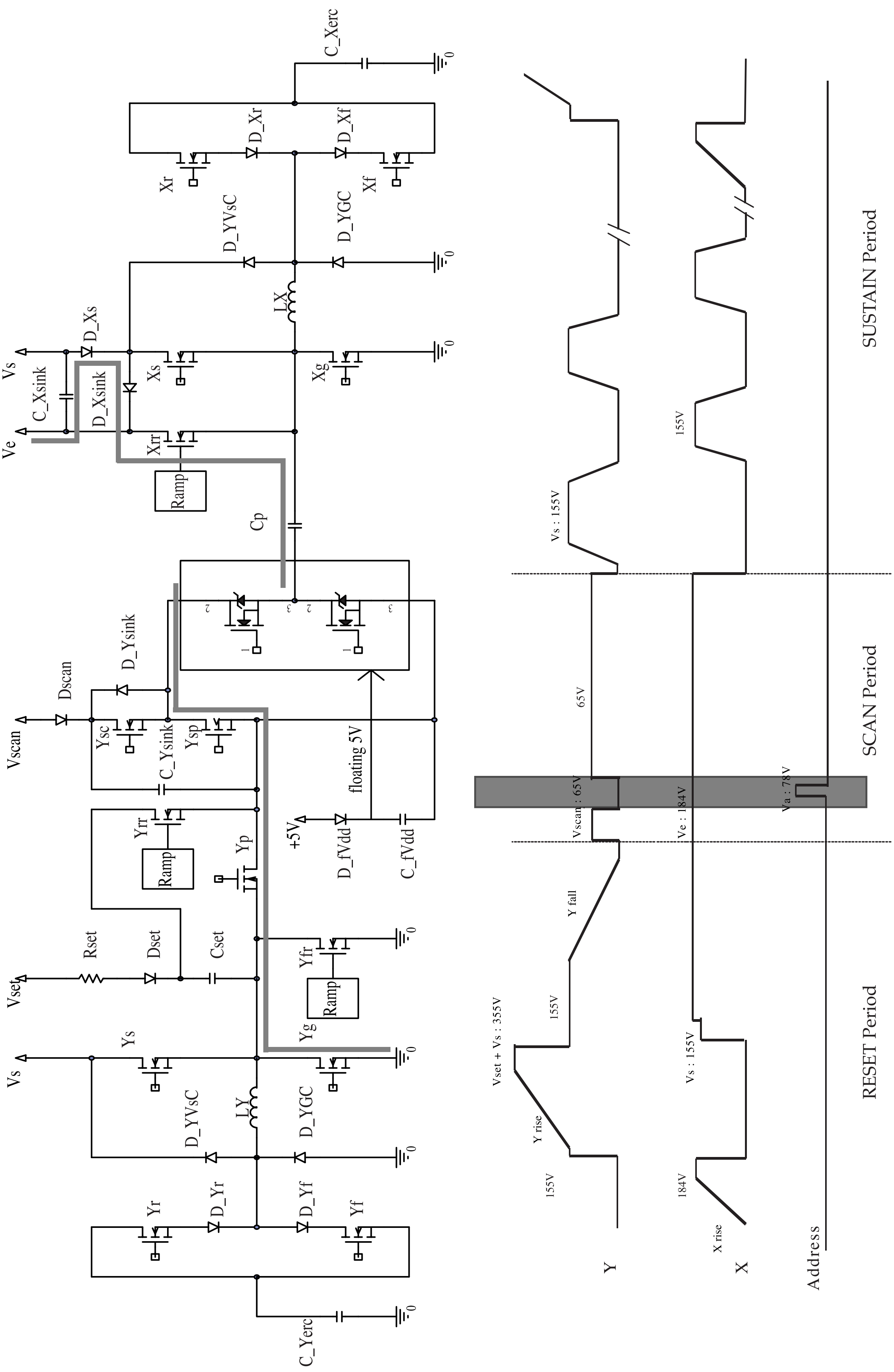


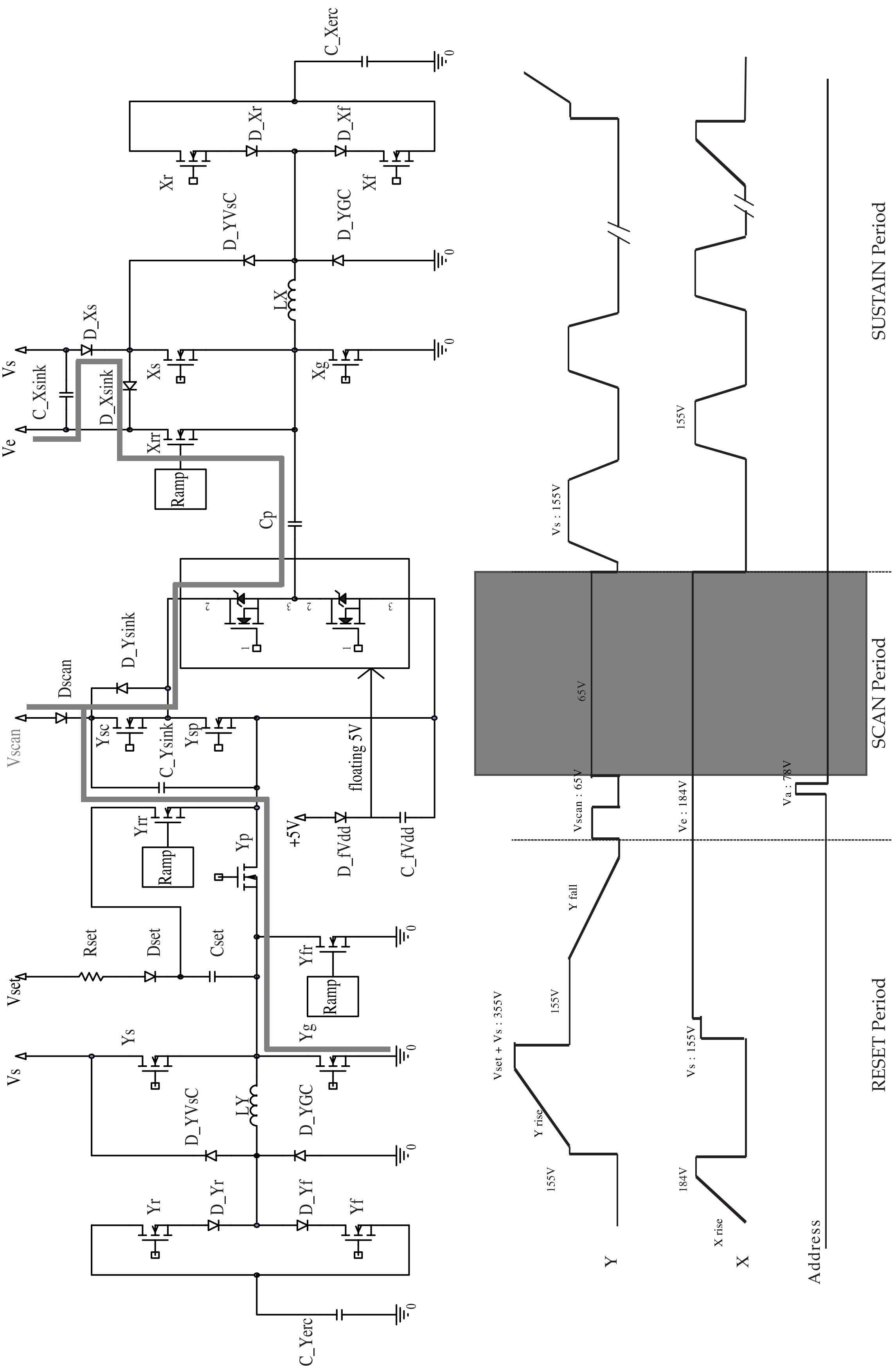
C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
D_Xs
Vs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
65V
Vscan : 65V
Y fall
155V
Vset + Vs : 355V
Y rise
155V
155V
Ve : 184V
Vs : 155V
184V
X rise
Va : 78V
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period

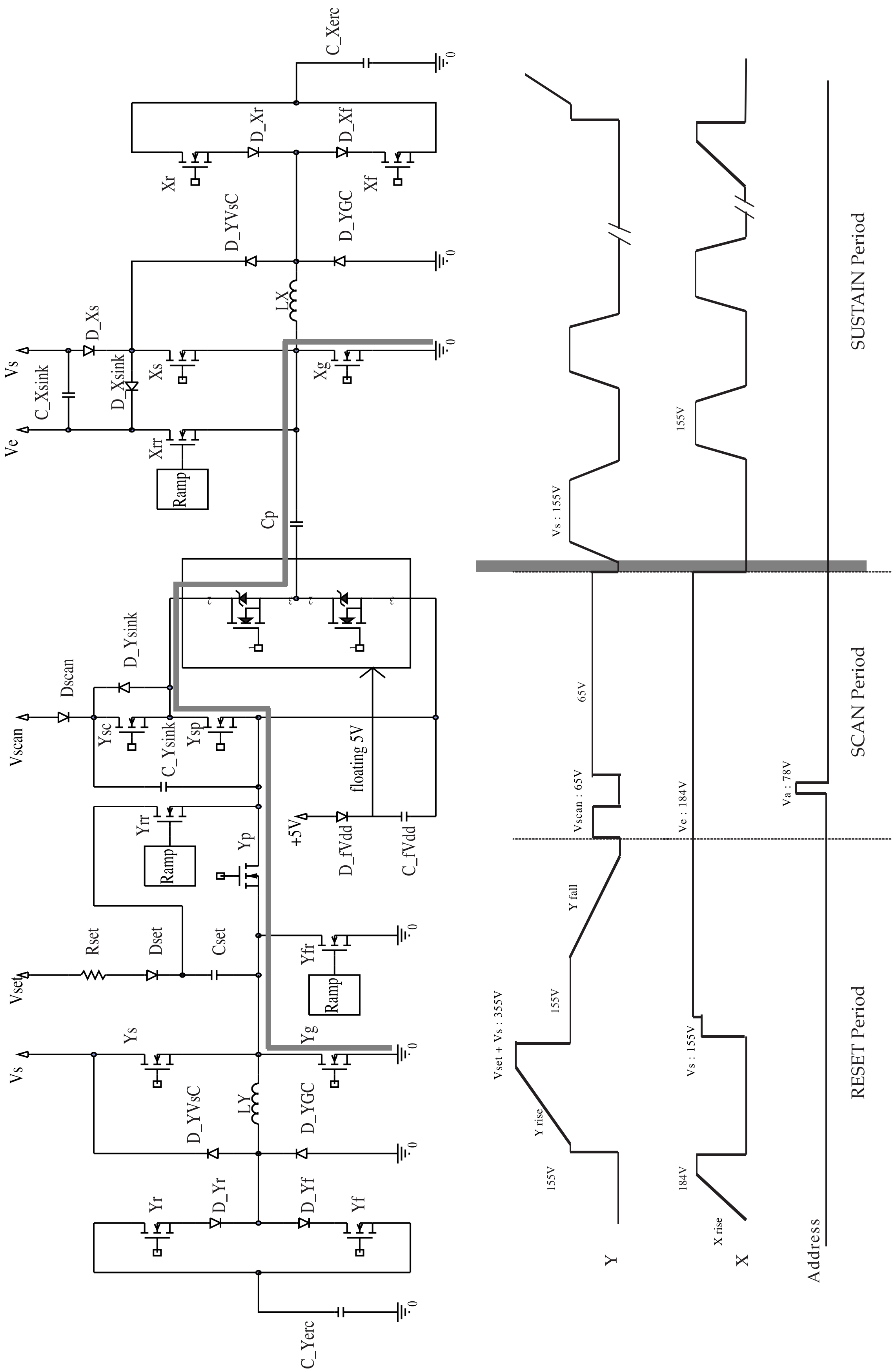

C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
D_Xs
Vs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
D_YVsC
LY
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
Vset + Vs : 355V
155V
Vs : 155V
Y rise
155V
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period

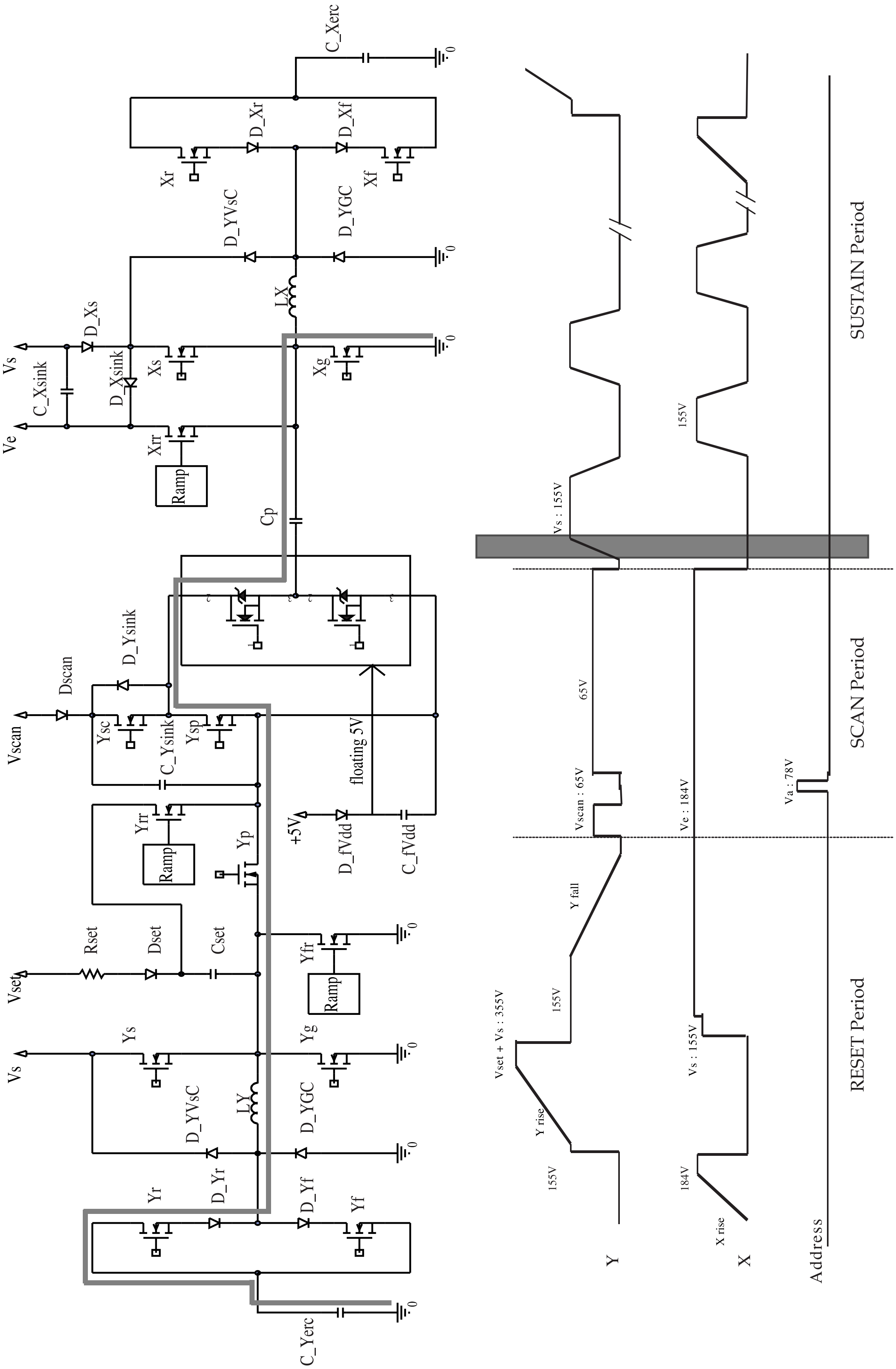

C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
Vs
D_Xs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
Dscan
D_Ysink
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Y
X
Address
155V
Y rise
Vset + Vs : 355V
155V
Y fall
Vscan : 65V
65V
Vs : 155V
184V
X rise
Vs : 155V
Ve : 184V
155V
Va : 78V
RESET Period
SCAN Period
SUSTAIN Period

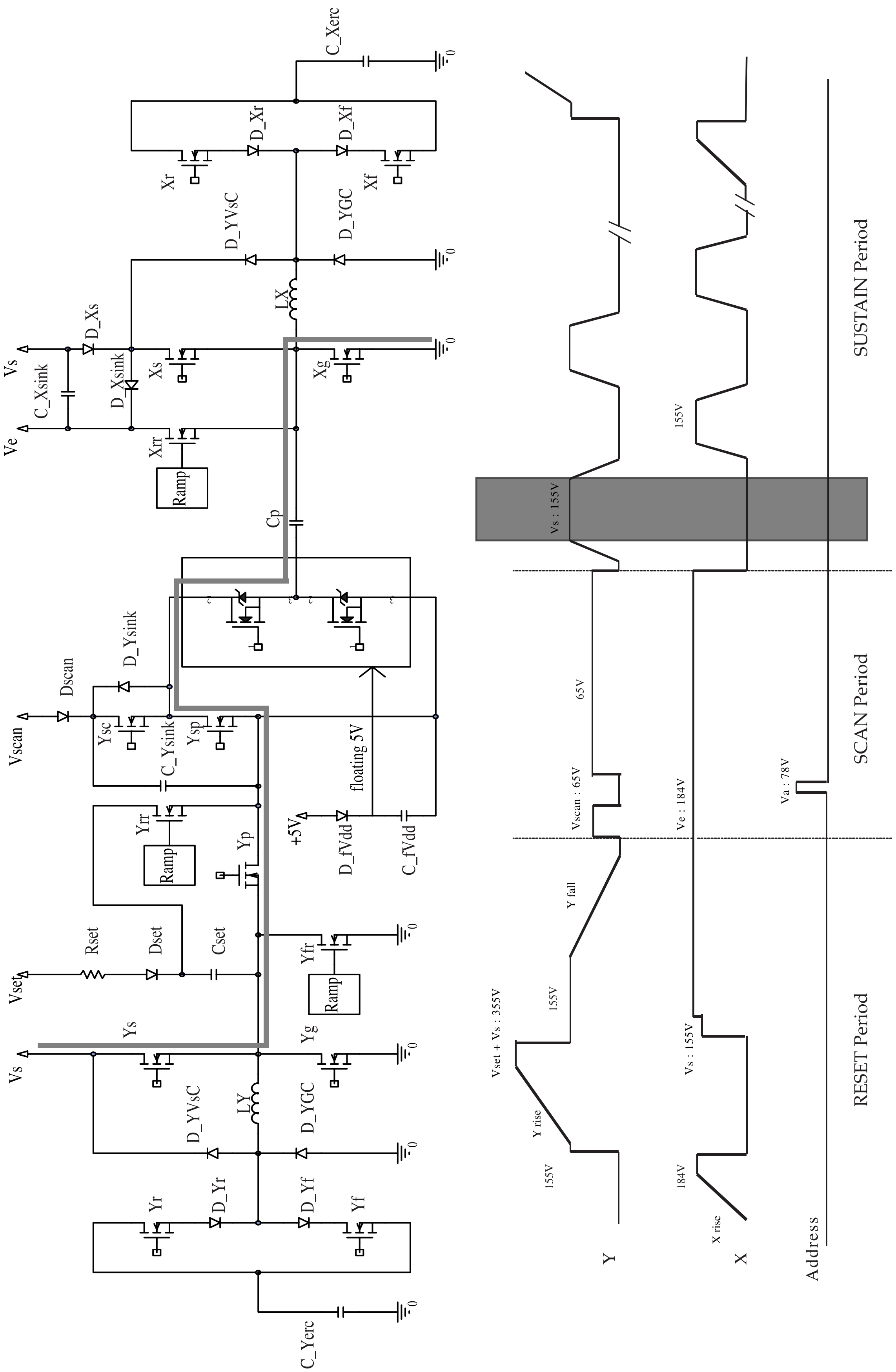

C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
D_Xs
Vs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Yp
Rset
Dset
Cset
Vset
Yfr
Yg
Ys
LY
D_Yr
D_Yf
Yr
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
Vset + Vs : 355V
Y rise
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period

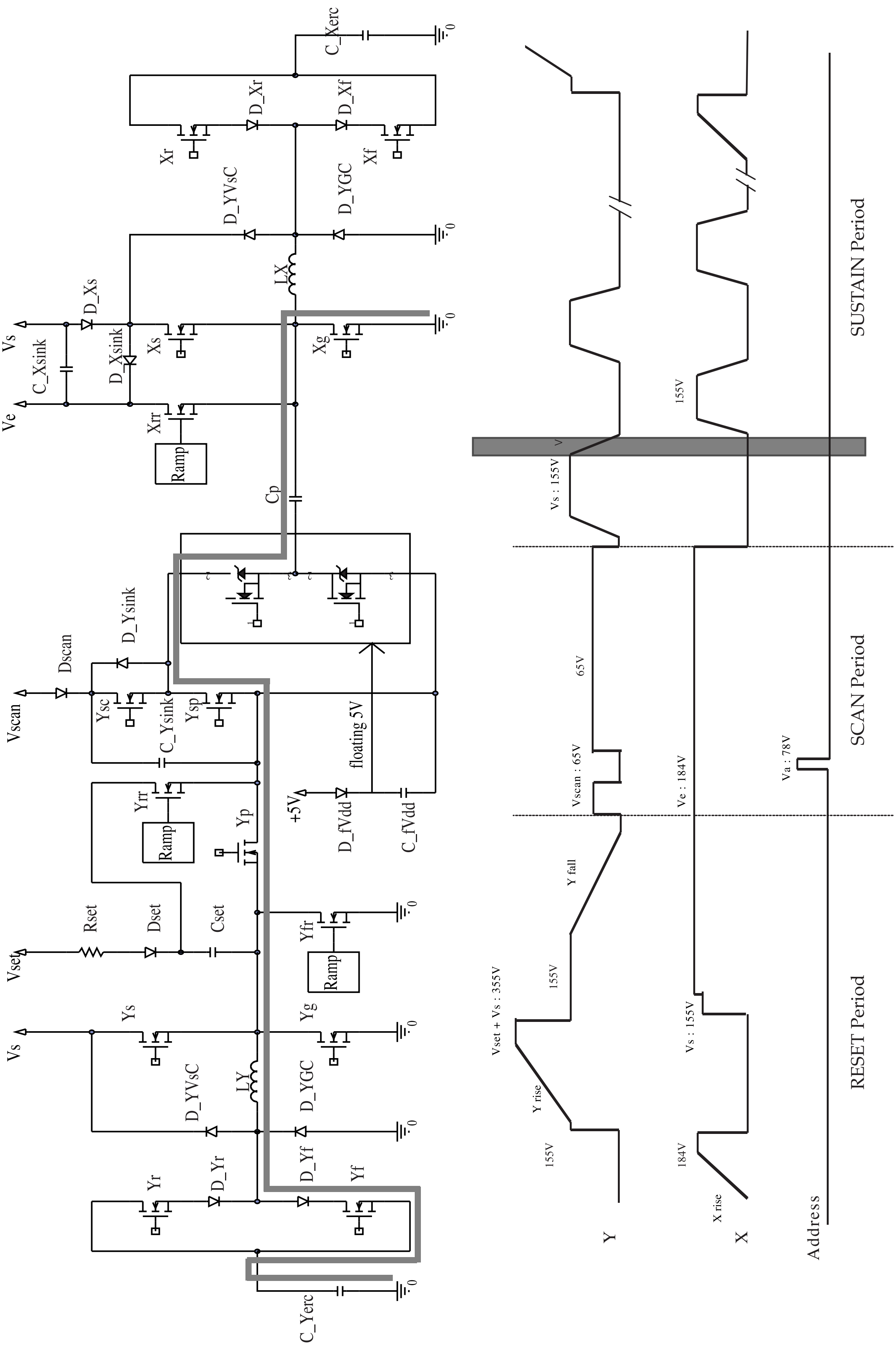

C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
Vs
D_Xs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Rset
Dset
Cset
Vset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
155V
Vset + Vs : 355V
Y rise
155V
Vs : 155V
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period


C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
Vs
D_Xs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
Yrr
Ramp
Yp
+5V
D_fVdd
C_fVdd
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
Vset + Vs : 355V
155V
Vs : 155V
Y rise
155V
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period


C_Xerc
Xr
D_Xr
D_Xf
Xf
D_YVsC
D_YGC
D_Xs
LX
Vs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
Yrr
Ramp
Yp
+5V
D_fVdd
C_fVdd
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
155V
Vset + Vs : 355V
Vs : 155V
Y rise
155V
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period

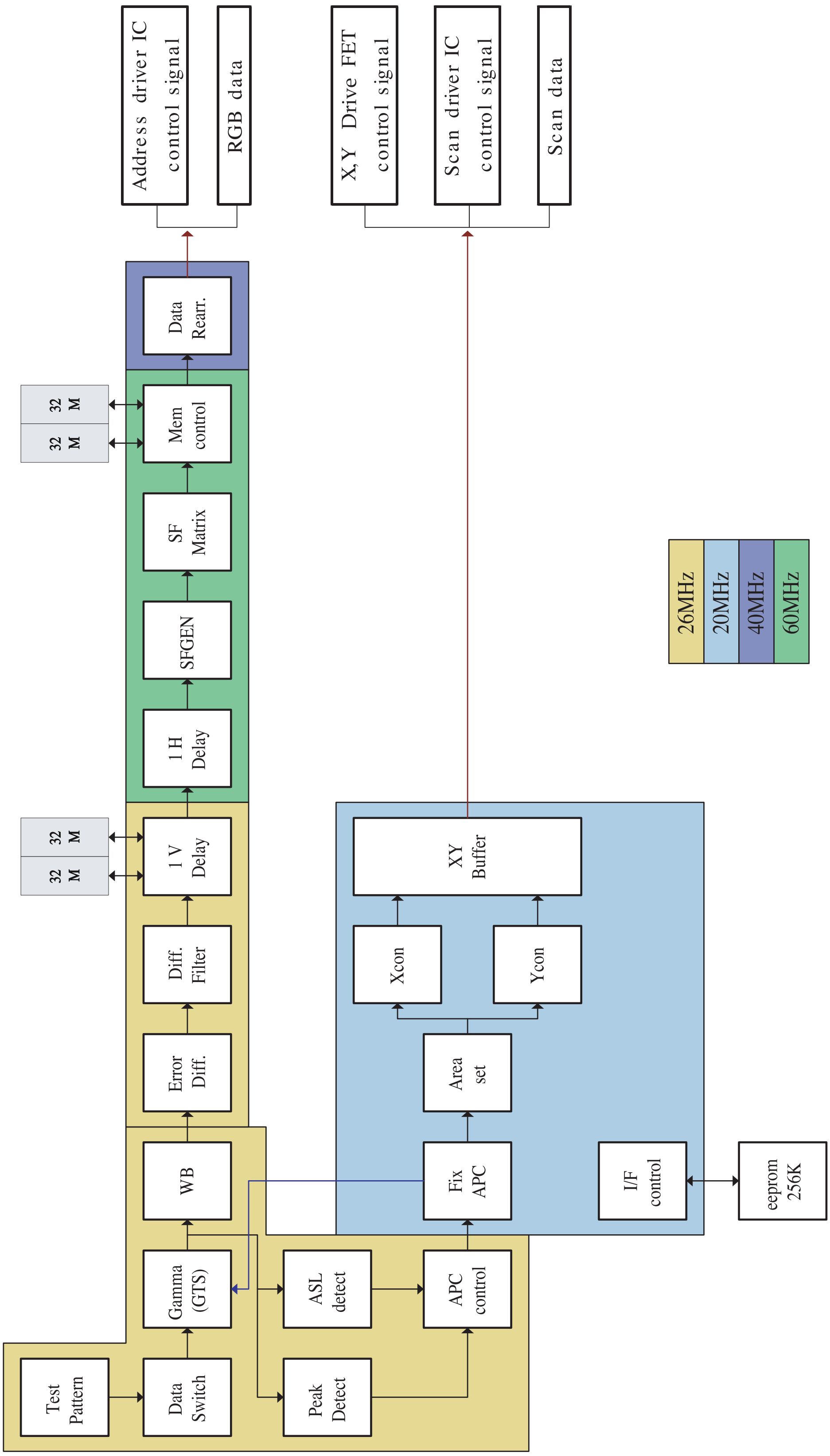

C_Xerc
Xr
D_Xr
D_Xf
Xf
D_YVsC
D_YGC
LX
Vs
Ve
C_Xsink
D_Xs
D_Xsink
Xs
Xg
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
LY
D_YVsC
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vs : 155V
155V
65V
Vscan : 65V
Ve : 184V
Va : 78V
Y fall
155V
Vset + Vs : 355V
Vs : 155V
Y rise
155V
184V
X rise
Y
X
Address
SUSTAIN Period
SCAN Period
RESET Period


C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
Vs
D_Xs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Ys
Yg
Vs
D_YVsC
LY
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Y
X
Address
X rise
184V
155V
Y rise
Vset + Vs : 355V
155V
Y fall
Vs : 155V
Ve : 184V
Vscan : 65V
65V
Va : 78V
Vs : 155V
155V
RESET Period
SCAN Period
SUSTAIN Period


C_Xerc
D_Xr
D_Xf
Xr
Xf
D_YVsC
D_YGC
LX
Vs
D_Xs
C_Xsink
D_Xsink
Xs
Xg
Ve
Xrr
Ramp
Cp
D_Ysink
Dscan
Vscan
Ysc
C_Ysink
Ysp
floating 5V
+5V
D_fVdd
C_fVdd
Yrr
Ramp
Yp
Vset
Rset
Dset
Cset
Yfr
Ramp
Vs
Ys
Yg
D_YVsC
LY
D_YGC
Yr
D_Yr
D_Yf
Yf
C_Yerc
Vset + Vs : 355V
155V
Y rise
155V
Y fall
Vscan : 65V
65V
Vs : 155V
155V
Vs : 155V
184V
X rise
Ve : 184V
Va : 78V
Y
X
Address
RESET Period
SCAN Period
SUSTAIN Period

5-3 Logic part

5-3-1 Logic Board Block diagram

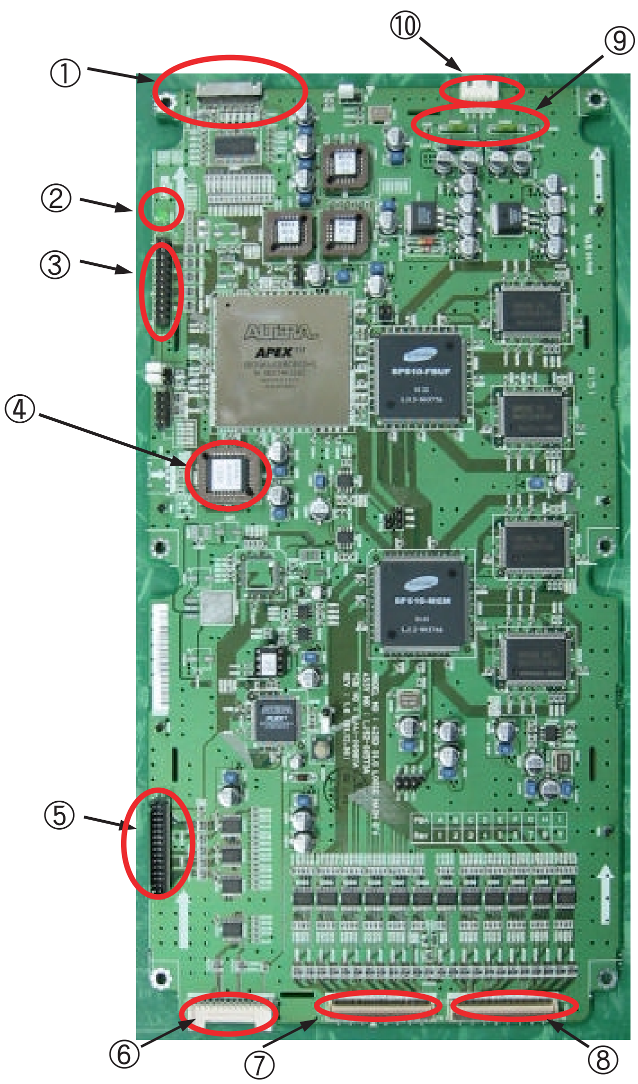


5-3-1(A) TDESCRIPTION OF LOGIC BOARD

The logic board consists of the logic main board and the buffer board. The logic main board processes video signal, and then generates and outputs address driver output signal as well as XY drive signal. The buffer board buffers address driver output signal, and sends it to the address driver IC (COF module).

Logic Board		Function
Login Main		- Processes Video signal (W/L, Error diffusion, APC). - Outputs address drive control signal and data signal to buffer board. - Outputs XY drive board control signal.
Buffer board	E Buffer board	Sends data signal and control signal to left-bottom COF.
	F Buffer board	Sends data signal and control signal to right-bottom COF.

5-3-1 (B) NAMES AND DESCRIPTION OF THE MAIN COMPONENTS OF THE LOGIC BOARD



NO	Name	Function
1	LVDS Connector	An input connector to receive LVDS encoded RGB, H, V, DATAEN, and DCLK signal from the video board.
2	Operation LED	Shows the logic board properly receives Sync and clock signal. (Normal: Blinks at 1 second interval)
3	Key-Scan Connector	A connector to connect key scan board checking and adjusting 24C16 data.
3	256k	An EEPROM to save gamma table, APC table, drive signal timing and other options.
4	Y Connector	A connector to output Y drive board control signal.
5	X Connector	A connector to output X drive board control signal.
6	LE01 (Address Buffer Connector)	A connector to output address data and control signal to the E, F buffer board.
7	LE02 (Address Buffer Connector)	A connector to output address data and control signal to the E, F buffer board.
8	Power Fuse	A fuse connected to the power source (5V) input to the logic board.
9	Power Connector	A connector to supply power (5V) with the logic board.

5-3-1(C) WAVEFORMS IN NORMAL OPERATION

If the PDP unit and the logic board are operating properly, the operation LED in the figure will blink at about 1 second interval.
If the set doesn’t operate normally, first check the status of the operation LED through eye-inspection, and then replace the board. To check and troubleshoot, follow the logic board test procedures attached in appendix.

4 Troubleshooting for 42” SD s1.0 logic main board

Required test equipment : - Oscilloscope (digital 400 MHz 3 channel or more)
- Multi meter

Other equipment : - DC power supply (5V: 1EA)
- Sub-PCB ASS'Y for JIG: 1 EA

① First, perform eye-inspection and short circuit inspection on the power stage of the logic board to examine. If no problem is found, perform the following examinations on the board in order.
② Replace IC2017(256K EEPROM) of the logic board with Test EERPOM. Change the clock setting of the logic board to internal. (Refer to the setting procedures described on the next page.)
  ﬂ If there is no available Test EEPROM, you can use PG 00 for Windows NT systems, or PG 40 for NT/PAL compatible systems by setting address 20 to 81, 22 to 00, 23 to 00,and 70 to 01.
③ Connect power(5V) to LD1, and check that LED(LD2000) on the left top of the board blinks at about 1 second interval.
④ If the logic board doesn’t operate normally, the LED will blink too fast or not be lighted on.
⑤ If no problem is found in the above examination, connect sub-PCB for logic output check, measure output waveform, and then compare the waveform with the appended waveform in normal operation. Record either OK or NG after examination.
⑥ Check the drive Y s/w, the drive X s/w, and the address signal in order.
⑦ Set probe 1 of oscilloscope to trigger signal and connect it to the TP31 of the logic board.
⑧ Set the oscilloscope to 2ms/div. After adjusting probe 2 to 5V/div, check the output signal.
⑨ After troubleshooting is complete, turn off the power supply and disconnect connector.

1) Layout and Appearance of the board

(1) Layout of the logic main board

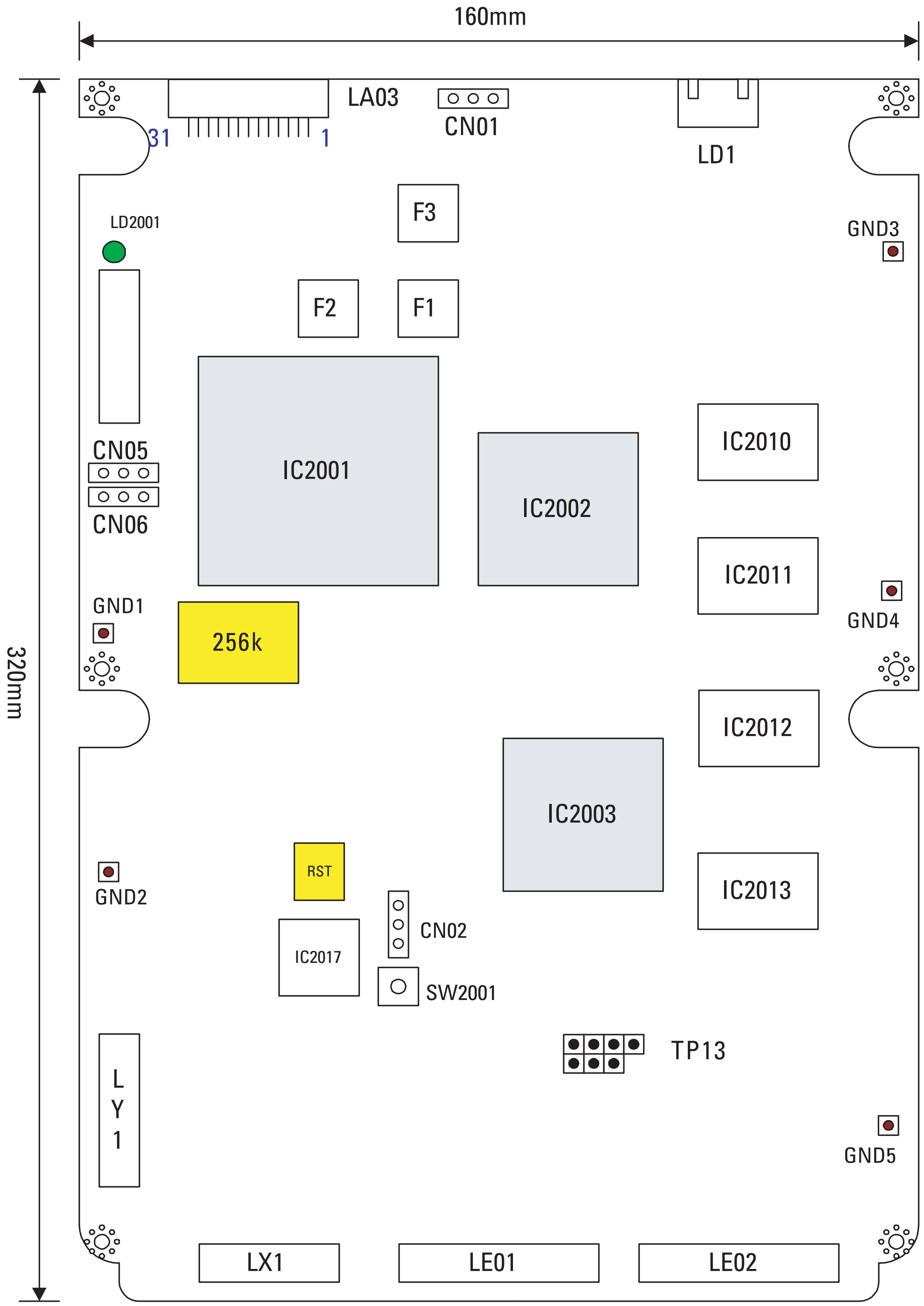


Figure 1. Layout of the logic main board

(2) Appearance and indication of connector

Basically, it is depicted on the PCB exactly same as the real one.

2) Jumper setting to select internal clock or external clock (CN01)

On the top of the logic main board, there is an option jumper, CN01 that allows switching between internal and external clocks. (Refer to Figure 1.) While troubleshooting, set it to internal clock as Figure 2 shows.

ﬂ The jumper will be stocked set to external clock. Set it to internal clock during troubleshooting, and reset to external clock after examination.

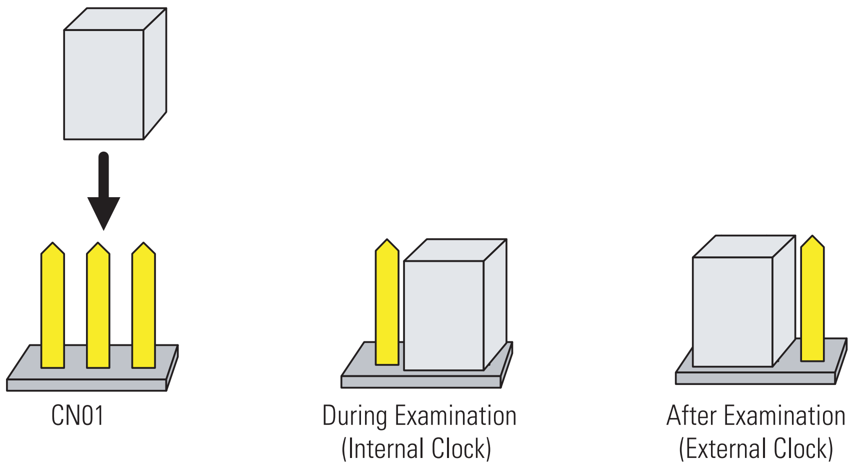


Figure 2. Jumper setting to select internal clock or external clock

3) Reset jumper setting (CN02)

The CN02 connector of the logic main board should be set to Reset signal as the following figure shows. It is default setting and should not be changed.

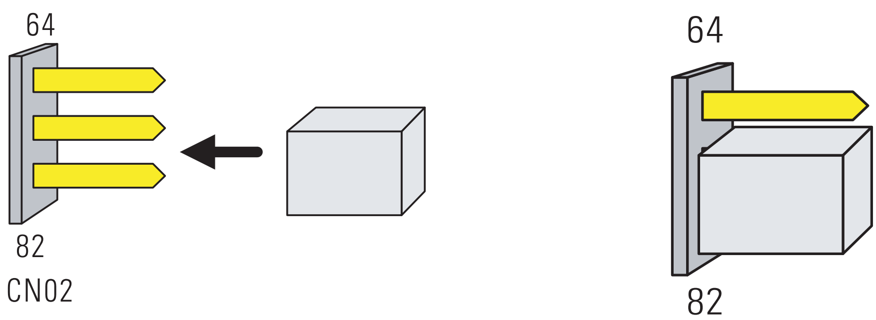


Figure 3. RESET JUMPER SETTING

4) Setting to select Internal pattern or external pattern (CN05)
Default setting is external pattern.

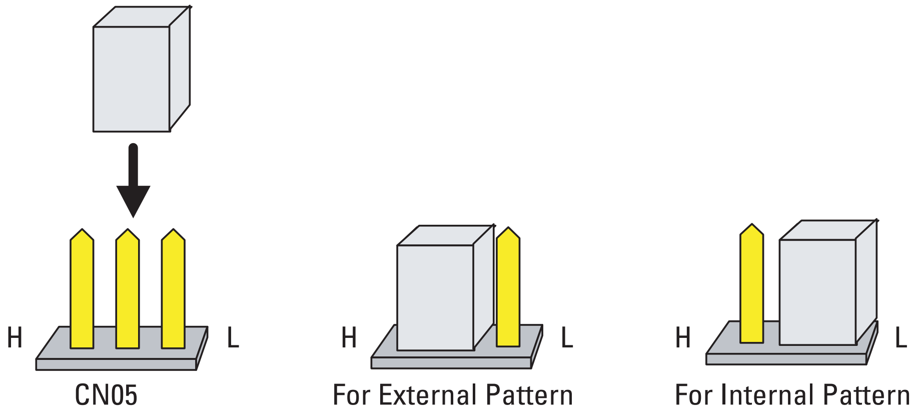


Figure 4. Jumper setting to select internal or external pattern

5) Jumper setting to select NTSC or PAL when internal pattern is selected (CN06)
Switching between NTSC and PAL as following figure shows only works in internal pattern setting.
Default setting is PAL mode.

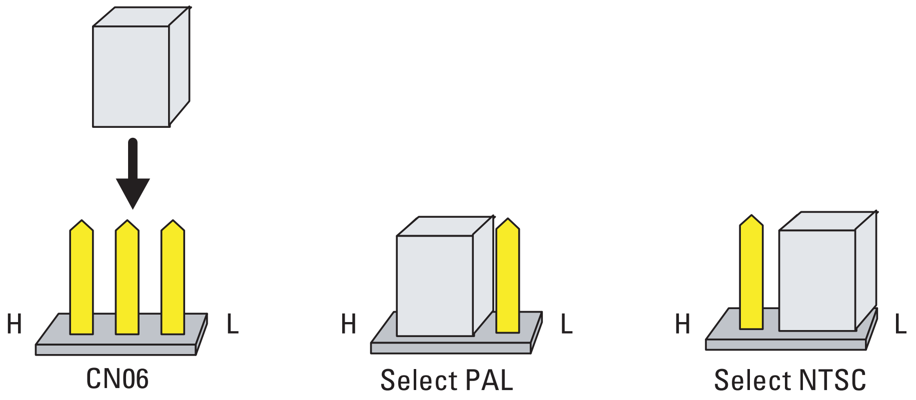


Figure 4. Jumper setting to select internal or external pattern

6) Using ASS'Y examination system

(1) Setting

① Preadjust the output voltage to 5V when using the linear power supply.
Also, check if the output voltage is 5V when using SMPS.

② Install the TEST PROM 256K, RST, F1, F2, and F3 on the logic main board.
To prevent misinsertion, make sure that the pin 1 of the PROM is inserted in the proper location marked on the PCB.

③ As shown in Figure 6, connect the logic main board and the JIG board for examination using the cables connecting LX1(13P), LY1(30P), LE01, and LE02(80P).

④ Set the oscilloscope to 5ms / div, 2V / div.
Connect the probe 1 as Figure 7 shows and set it to a trigger.

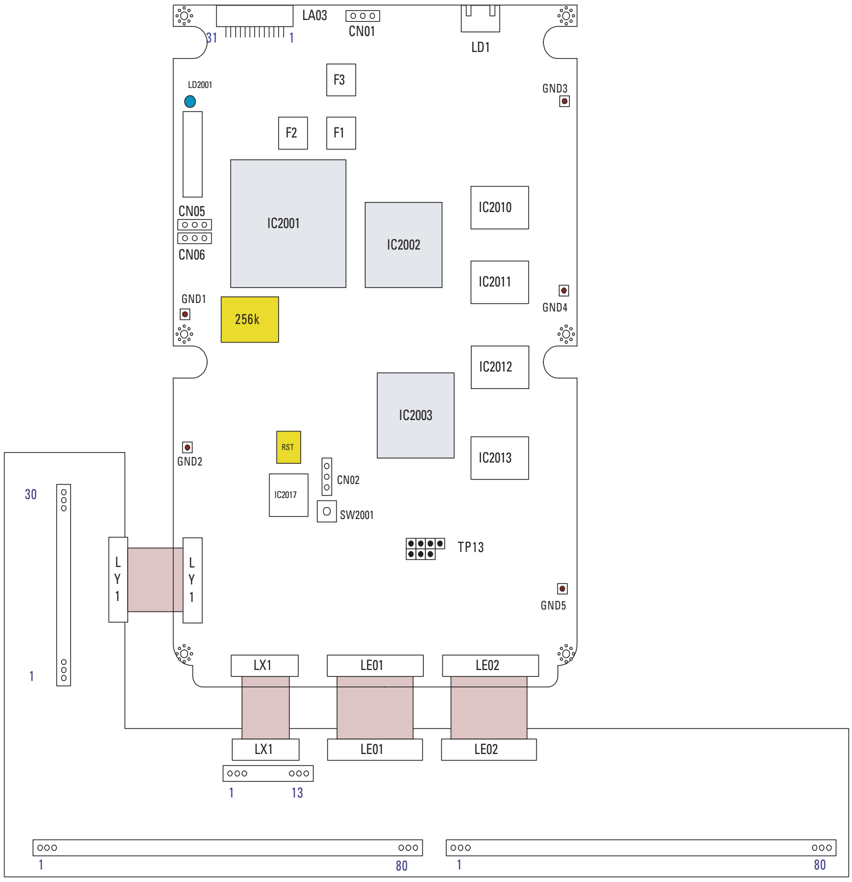


Figure 6. Connecting between the logic main board and the JIG board for examination

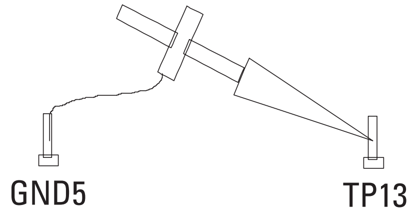


Figure 7. Connecting probe 1 of the oscilloscope

(2) Logic main board

① Set the logic main board as Figure 6 shows.

ﬂ Check for the test PROM installation status and clock jumper setting.

② Connect a 4-pin connector cable between LD01 of the logic main board and the linear power supply. (or SMPS).

ﬂ Connect while the linear power supply (or SMPS) is turned off.

③ Turn the linear power supply on and supply 5V power to the logic main board.
Check if LED, LD2000 on the left top of the board blinks at about 1 second interval. If the logic board doesn’t operate normally, the LED will blink too fast or not be lighted on.

④ Measure the waveform of each test point on the board, and then compare them with the appended waveforms.
<u>You should examine the waveforms of all test points.</u>
If the waveform of a test point is different from the appended waveform, or the voltage level is low, do not proceed to the next examination step and check other abnormal test points.

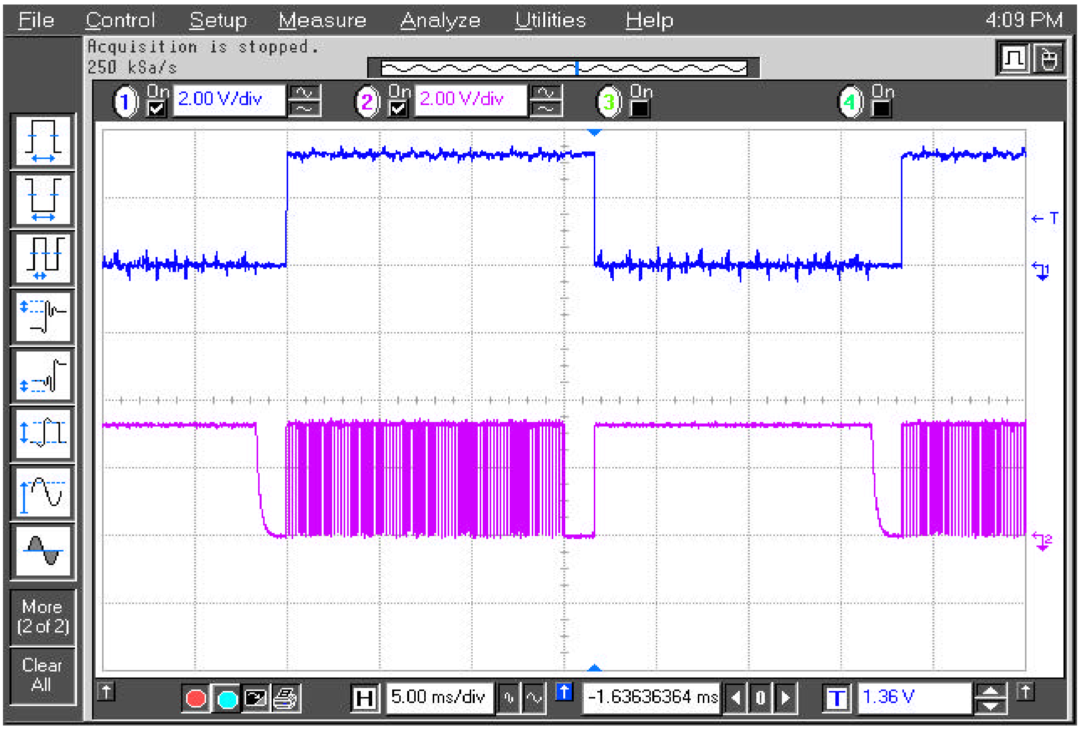
⑤ Perform RESET examination.
Press and hold SW2001 reset switch for 5 seconds to turn the LE2000 of the logic main board off. Release the switch after 5 seconds and check that LD2000 blinks. If no problem is found, finish the examination.

⑥ If the waveforms of all test points are output properly and RESET examination is complete, turn off the linear power supply (or SMPS) to finish examination.

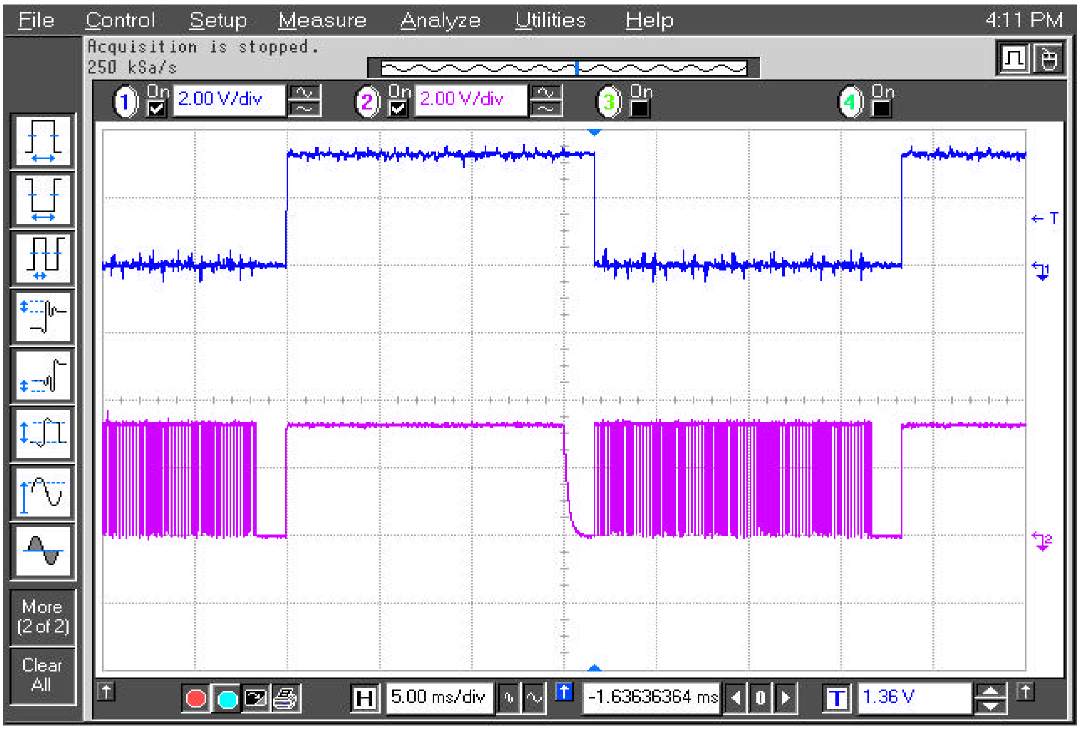
⑦ After all examinations are complete, perform as follows.
- Reset the clock jumper to external clock.
- Reset the internal / external pattern jumper to external pattern.
- Reset the NTSC / PAL mode jumper to PAL mode.

Board Waveform Test

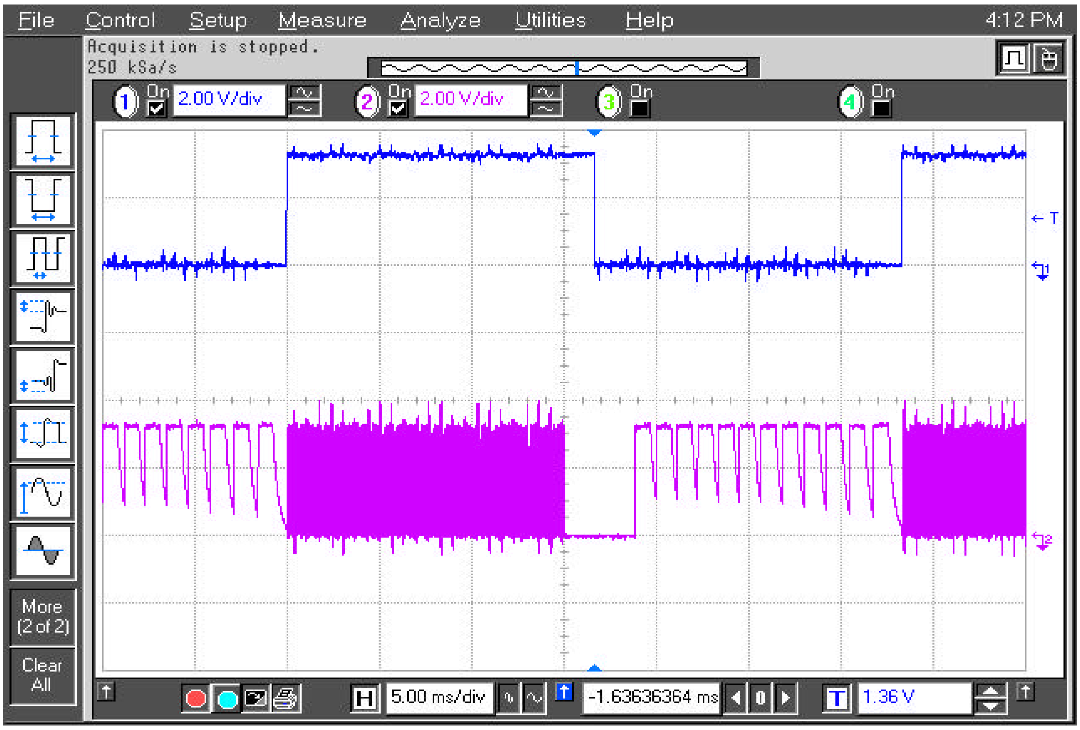
1. Check the waveform after pointing Probe2 at IC2005 pins 1, 72.



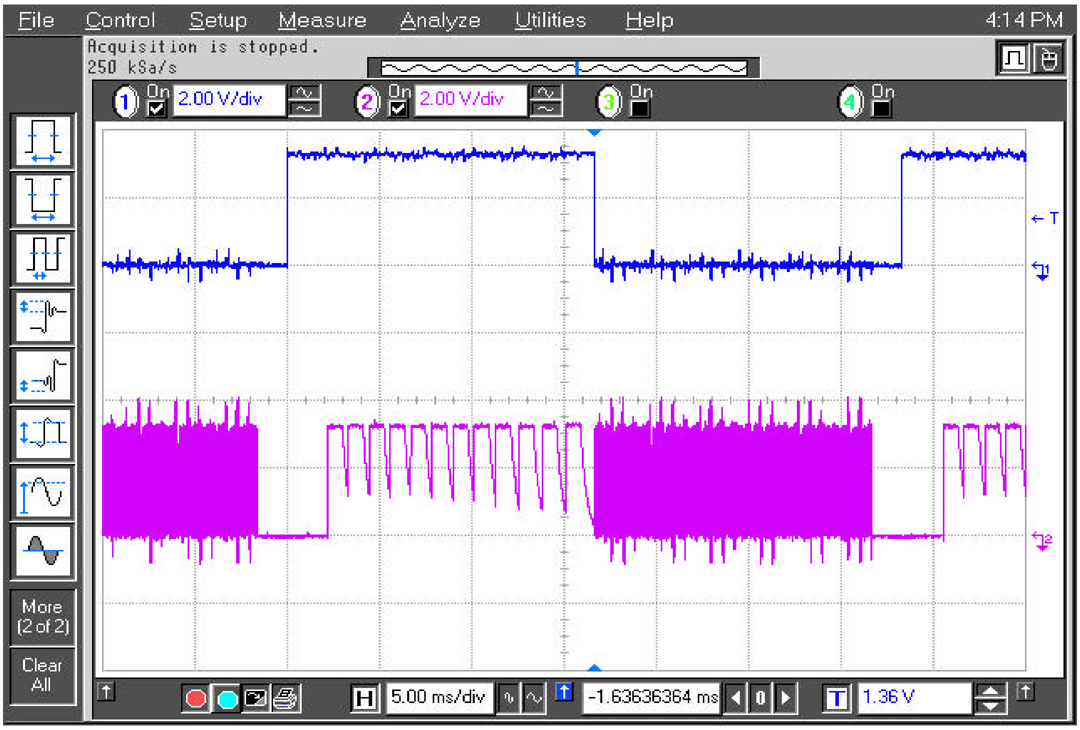
2. Check the waveform after pointing Probe2 at IC2006 pins 1, 72.



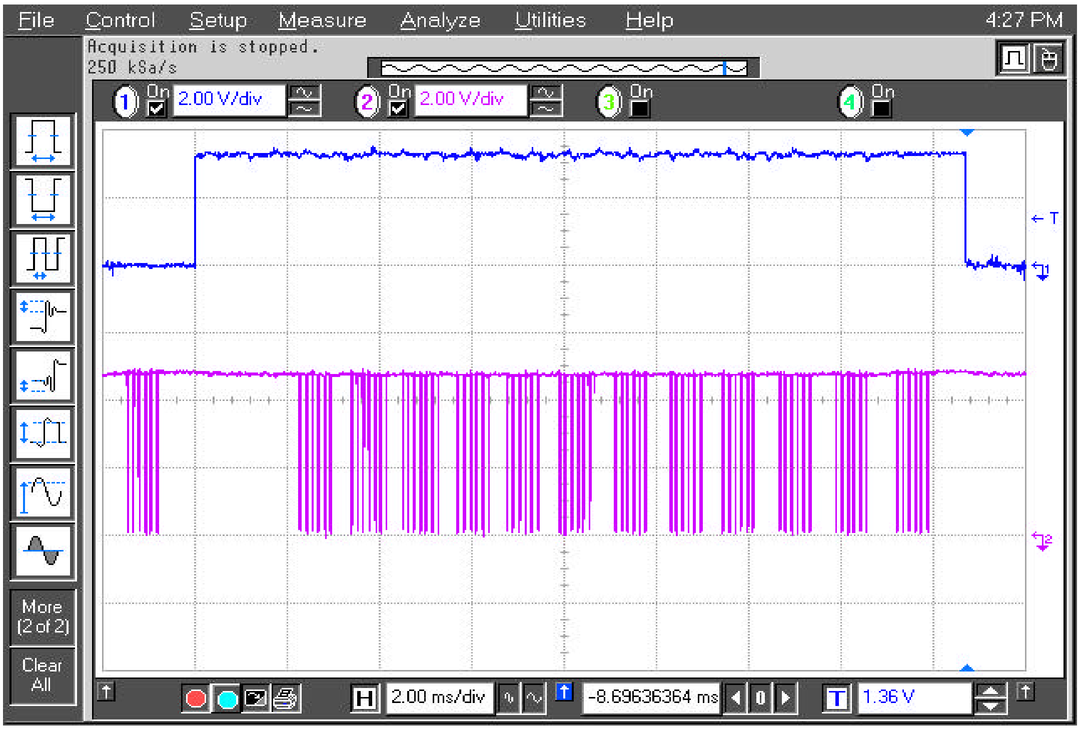
3. Check the waveform after pointing Probe2 at IC2007 pins 1, 81.



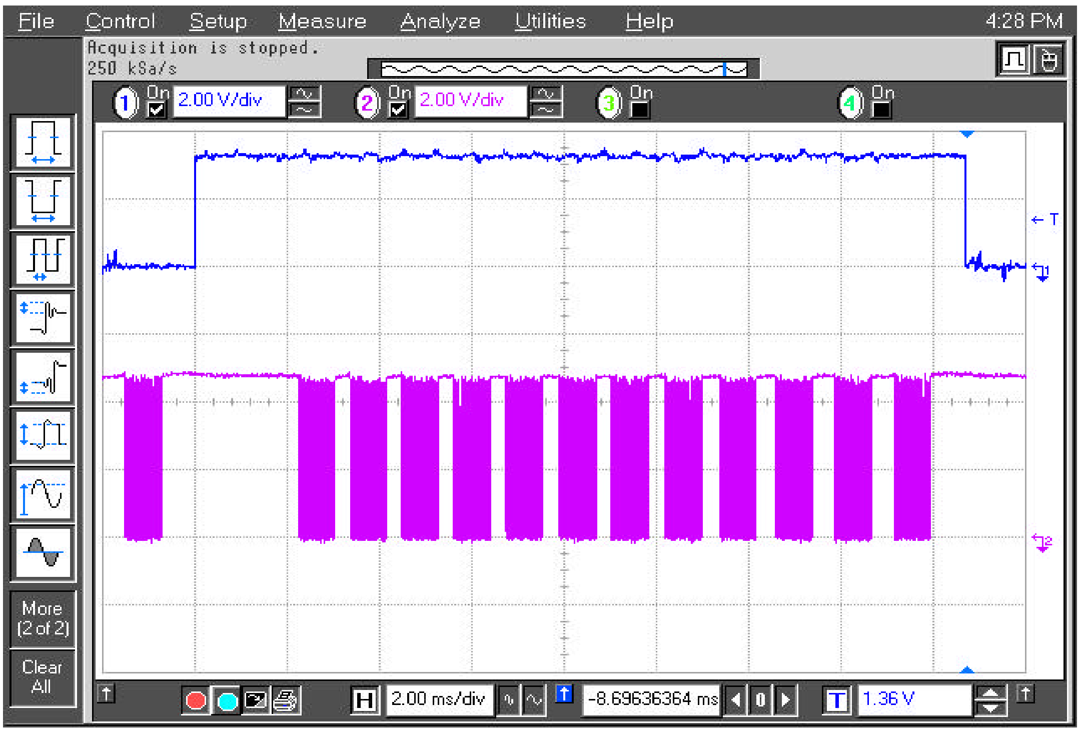
4. Check the waveform after pointing Probe2 at IC2008 pins 1, 81.



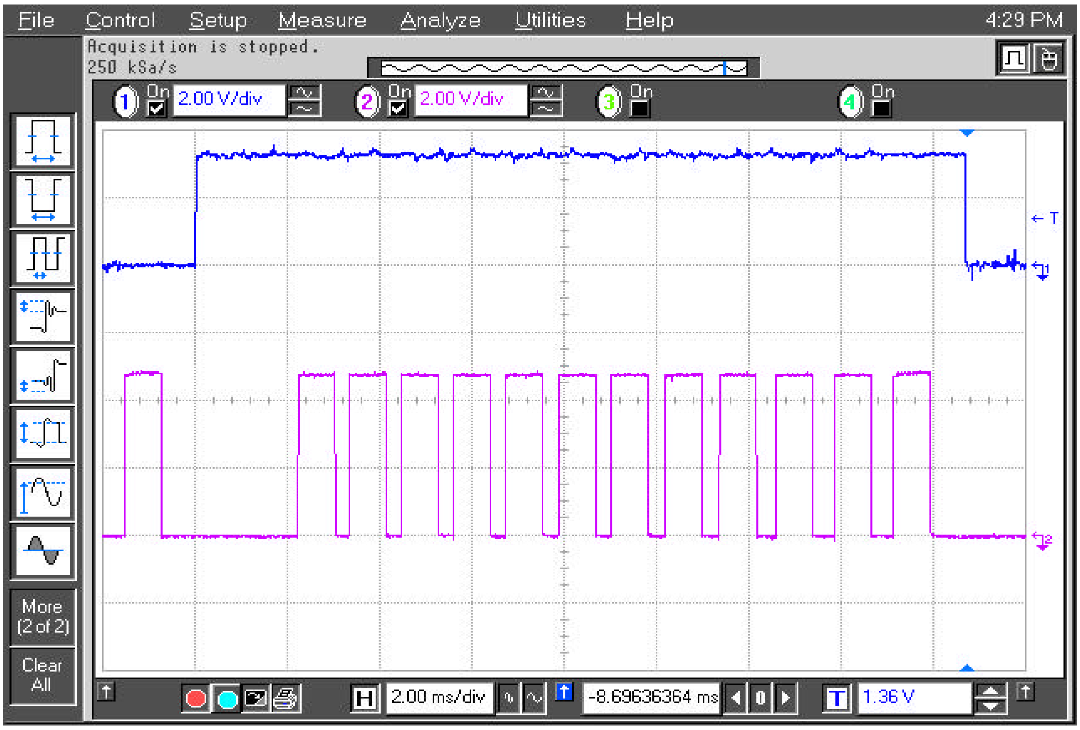
5. Point Probe2 at LY1 pin30 (F2016 pin8 (LE-Y) on the logic main board) on the jig board. (F2016: Array resistor)



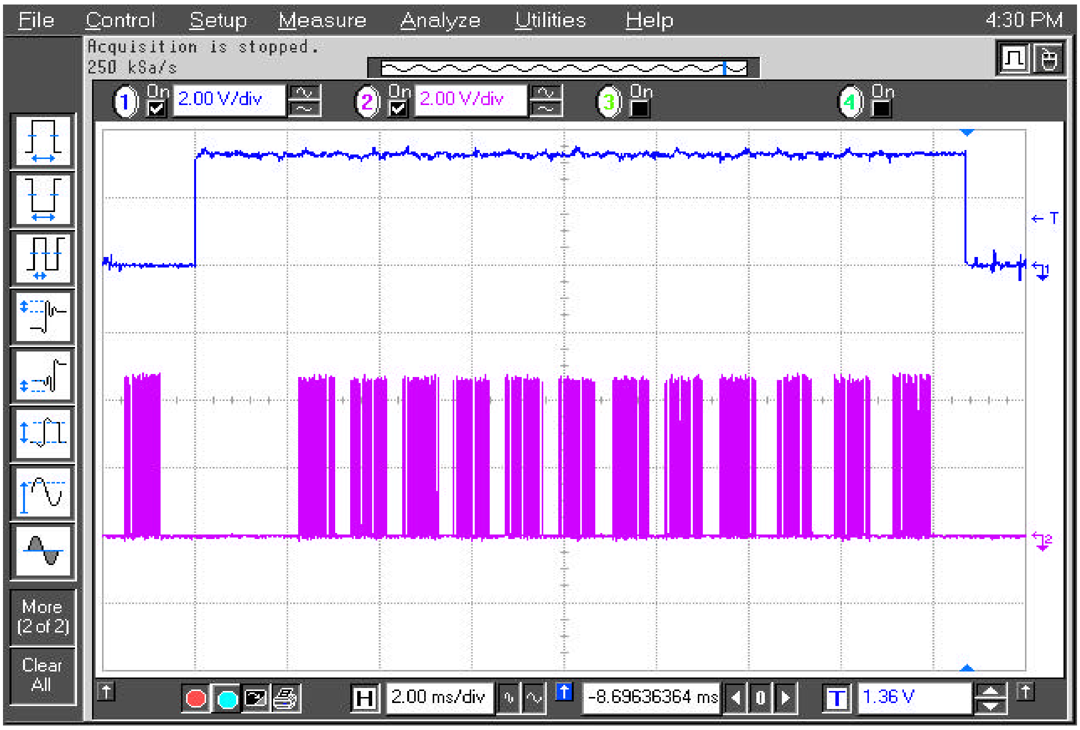
6. Point Probe2 at LY1 pin28 (F2016 pin7 (STB-Y) on the logic main board) on the jig board.



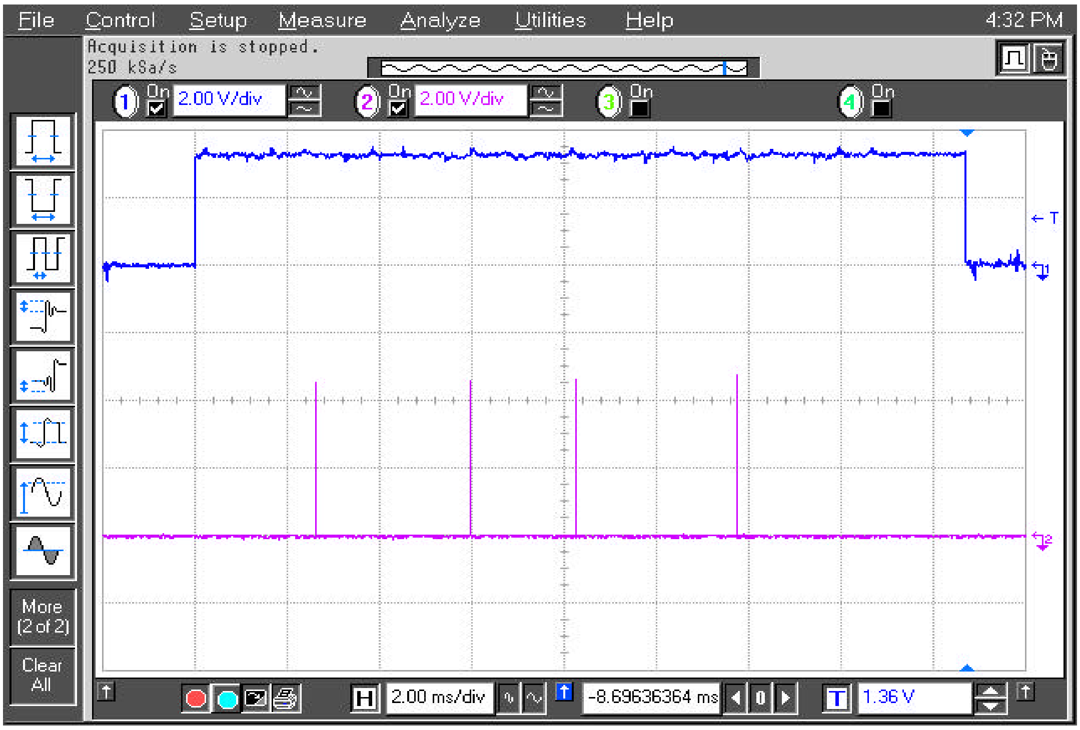
7. Point Probe2 at LY1 pin25 (F2016 pin6 (TCS-Y) on the logic main board) on the jig board.



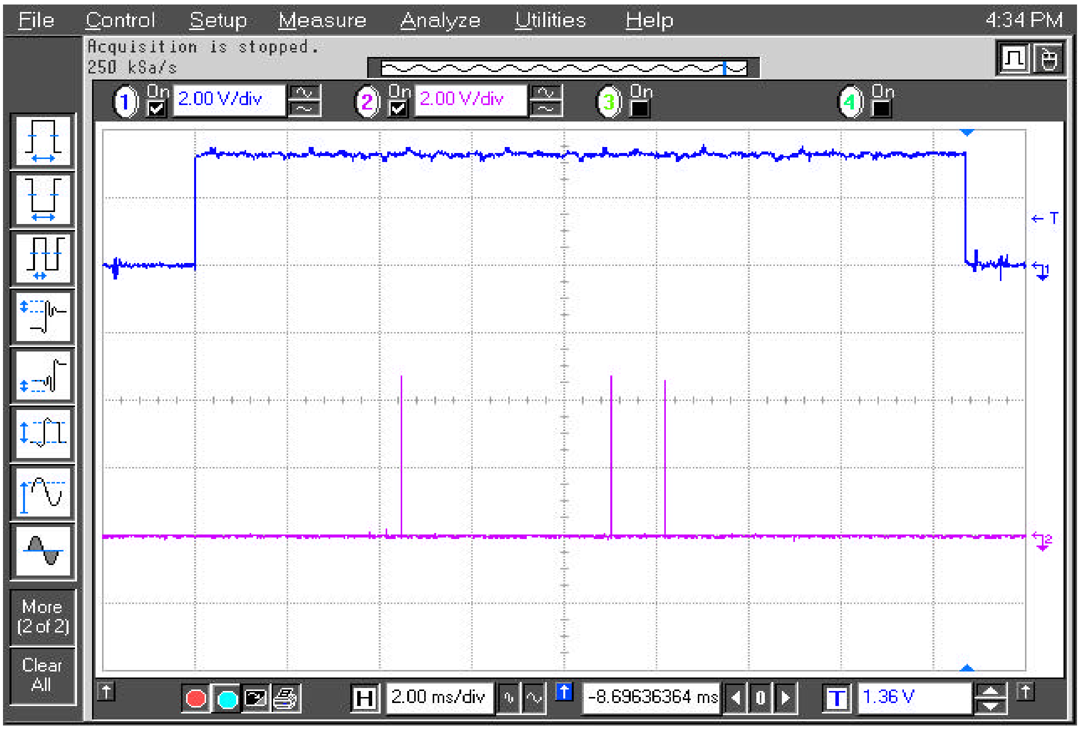
8. Point Probe2 at LY1 pin24 (F2016 pin5 (CLK-Y) on the logic main board) on the jig board.



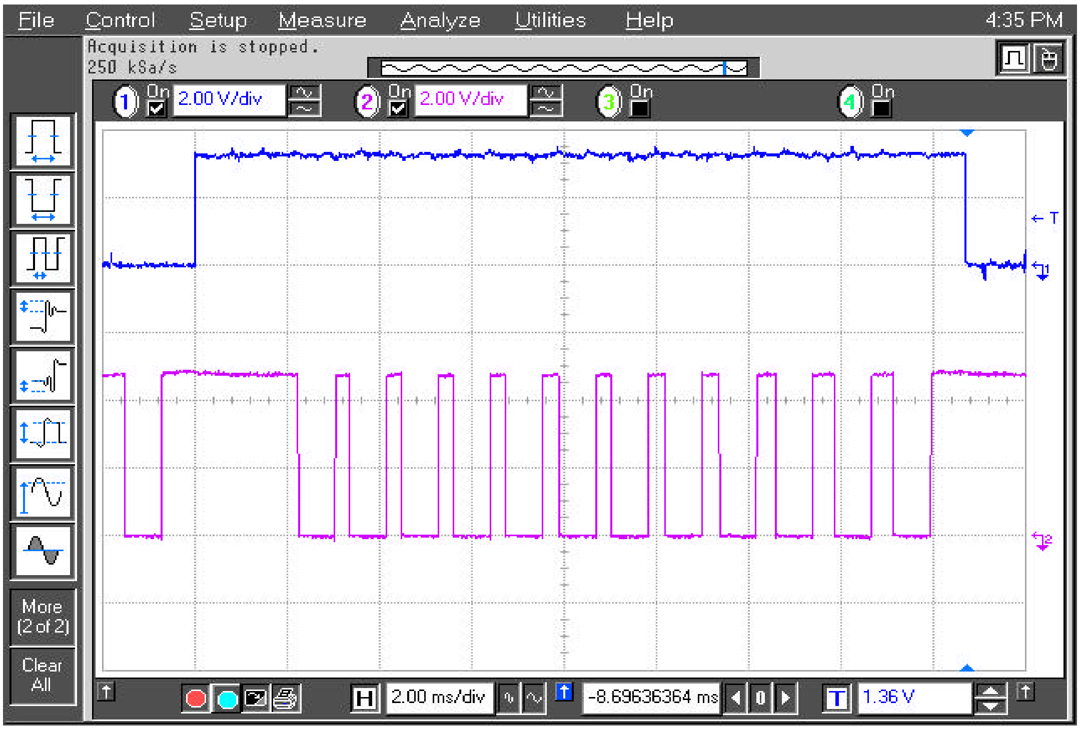
9. Point Probe2 at LY1 pin21 (F2012 pin8 (SIB) on the logic main board) on the jig board.



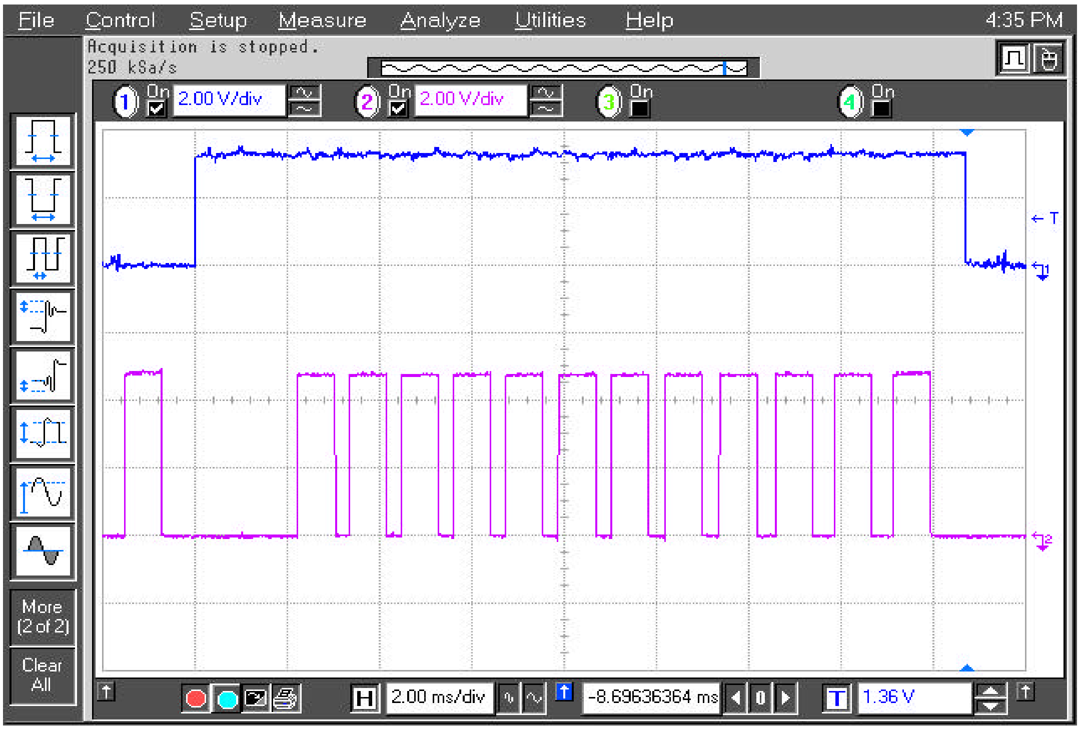
10. Point Probe2 at LY1 pin20 (F2012 pin7 (SIA) on the logic main board) on the jig board.



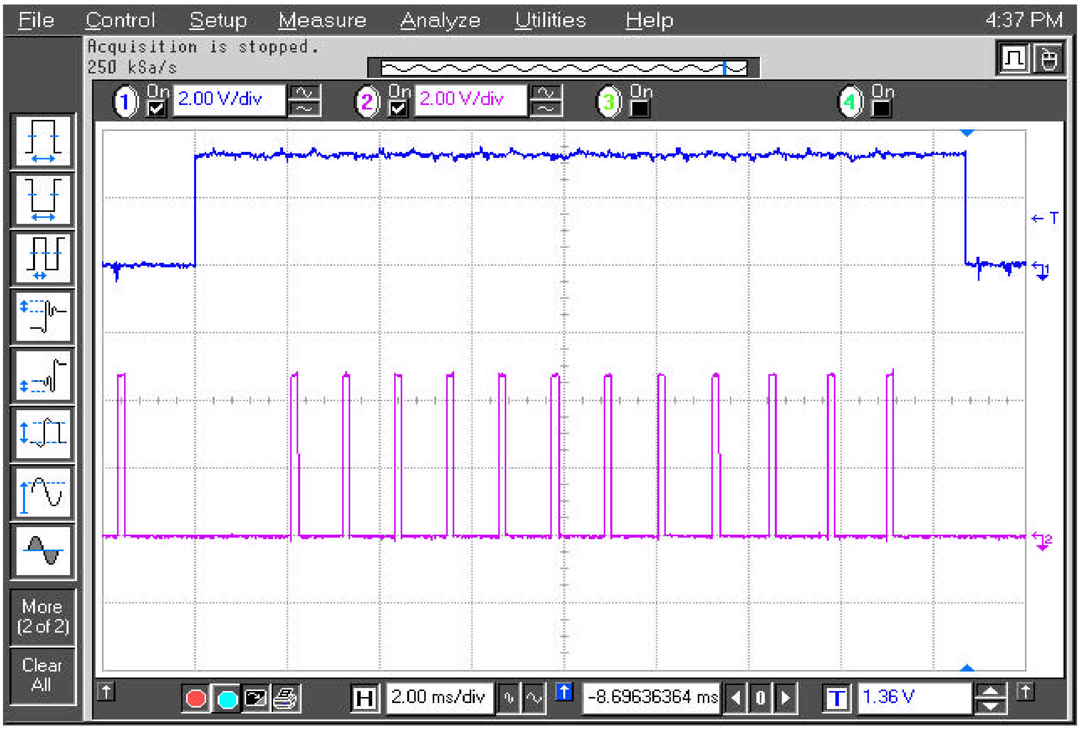
10. Point Probe2 at LY1 pin20 (F2012 pin7 (SIA) on the logic main board) on the jig board.



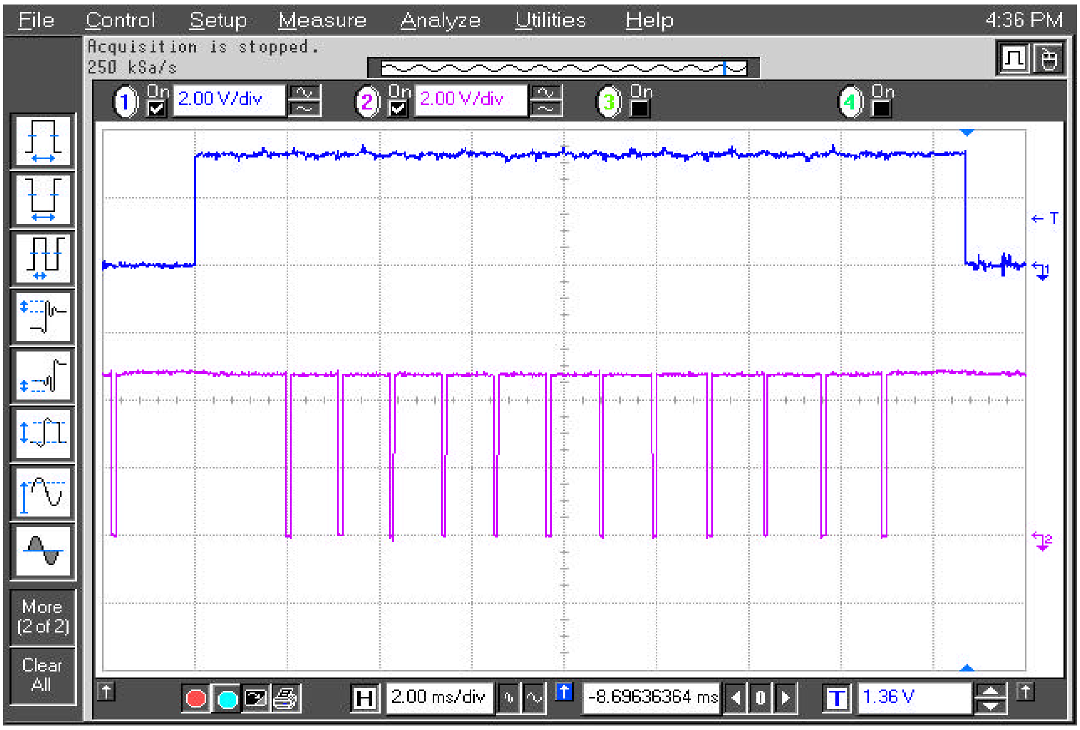
10. Point Probe2 at LY1 pin20 (F2012 pin7 (SIA) on the logic main board) on the jig board.



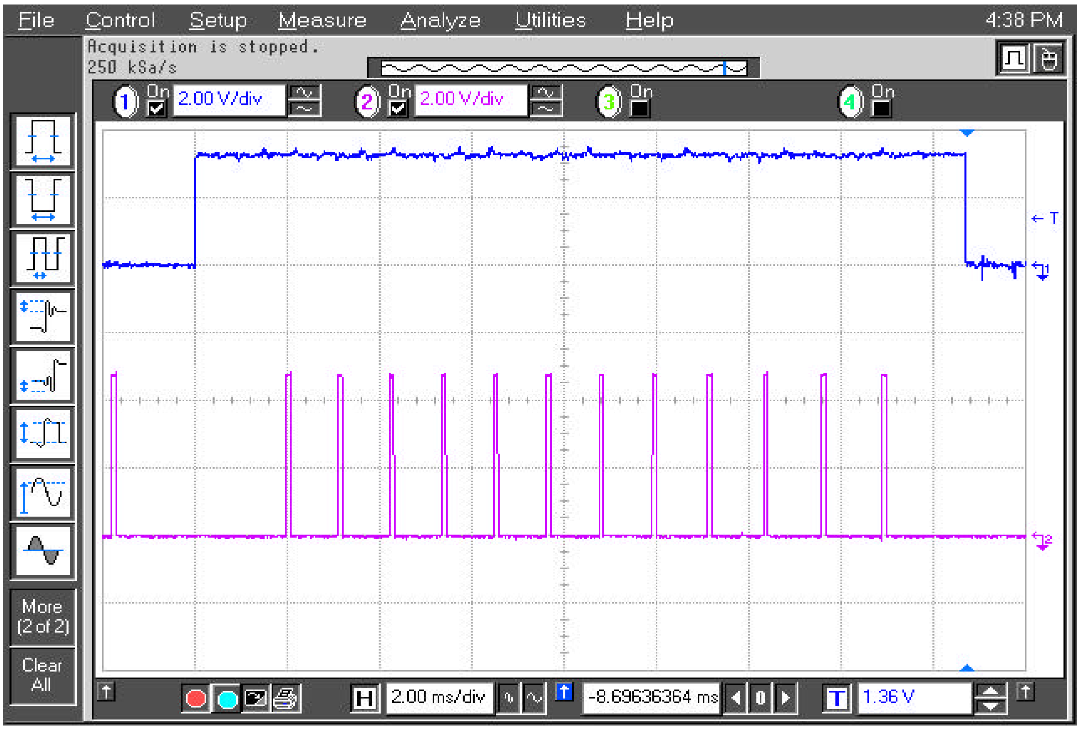
13. Point Probe2 at LY1 pin10 (F2010 pin7 (YFR) on the logic main board) on the jig board.



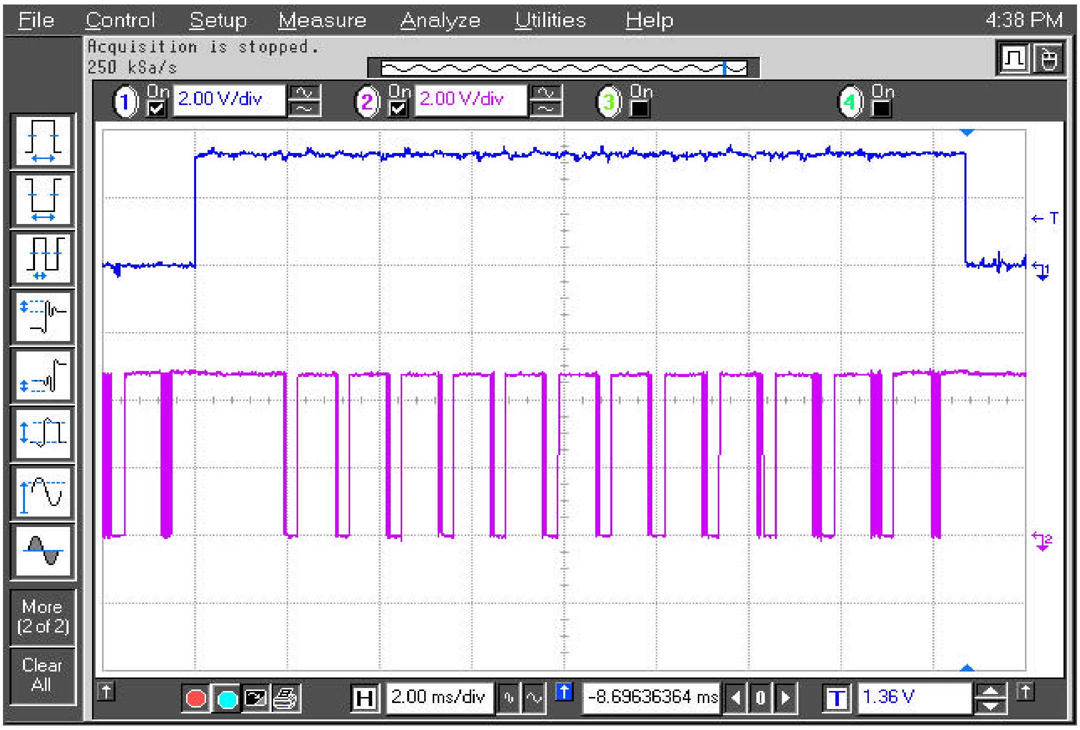
14. Point Probe2 at LY1 pin9 (F2010 pin8 (YP) on the logic main board) on the jig board.



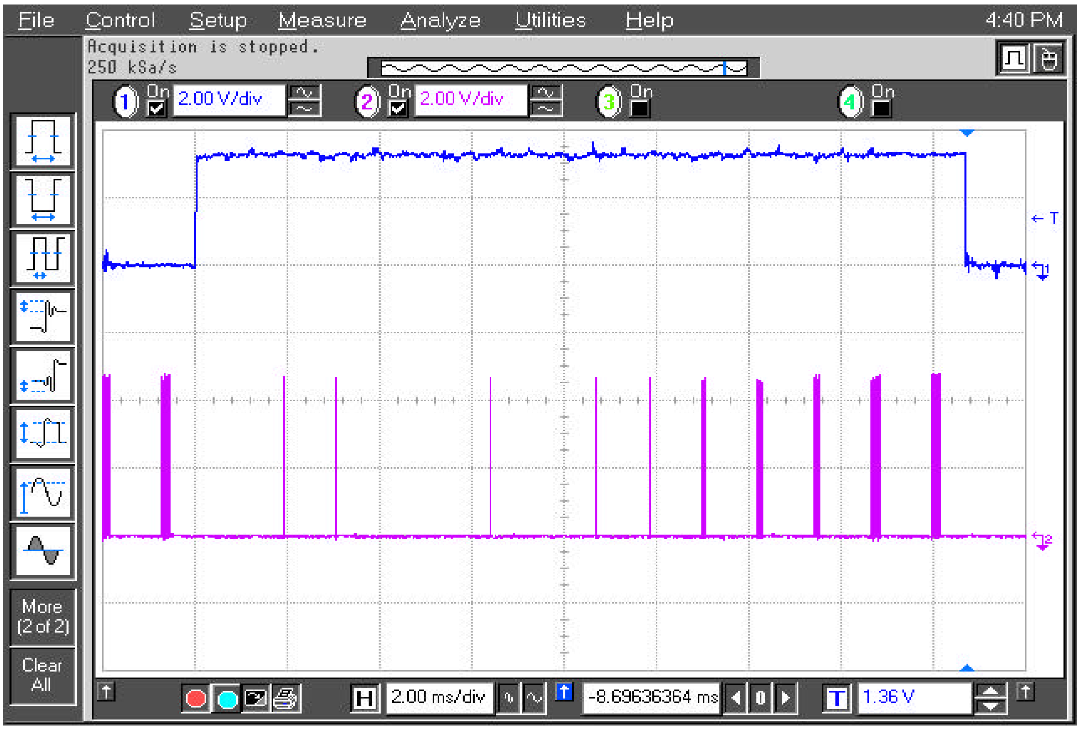
15. Point Probe2 at LY1 pin8 (F2010 pin6 (YRR) on the logic main board) on the jig board.



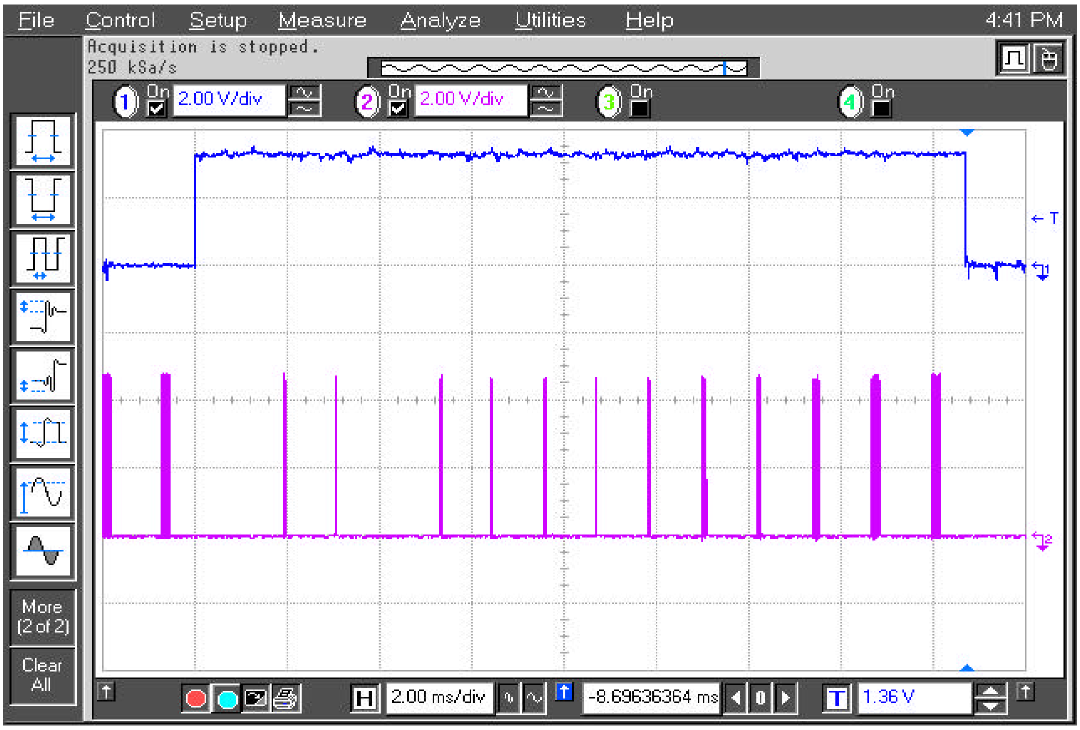
16. Point Probe2 at LY1 pin5 (F2010 pin5 (YG) on the logic main board) on the jig board.



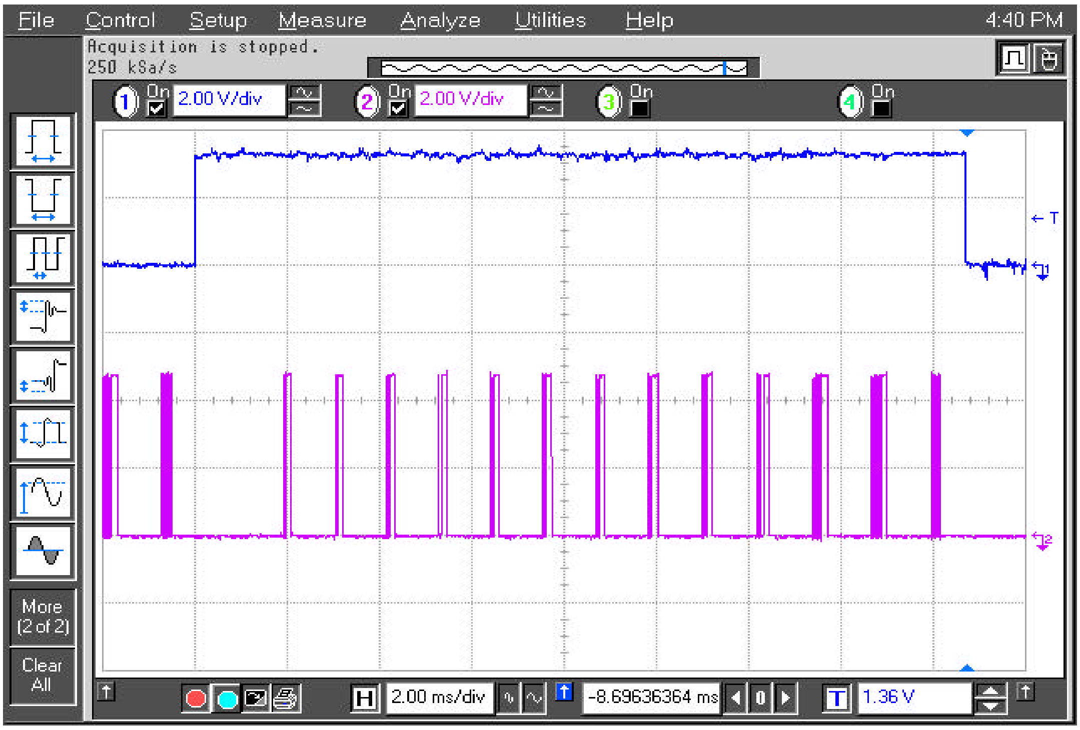
17. Point Probe2 at LY1 pin4 (F2011 pin8 (YF) on the logic main board) on the jig board.



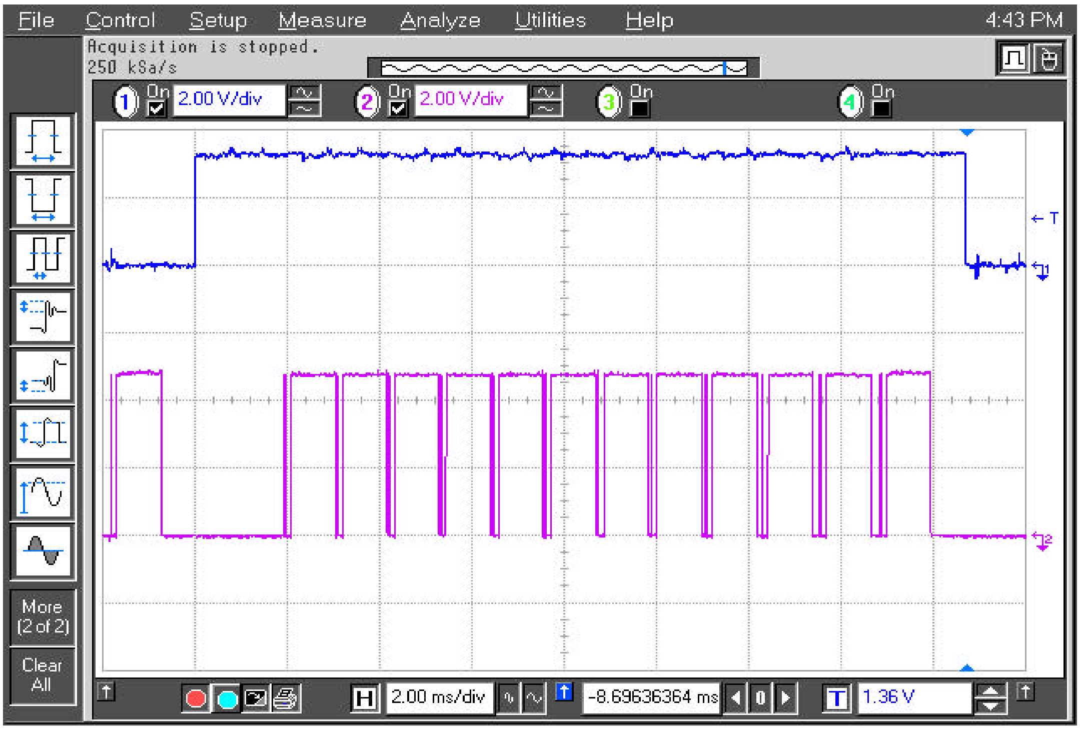
18. Point Probe2 at LY1 pin2 (F2011 pin7 (YR) on the logic main board) on the jig board.



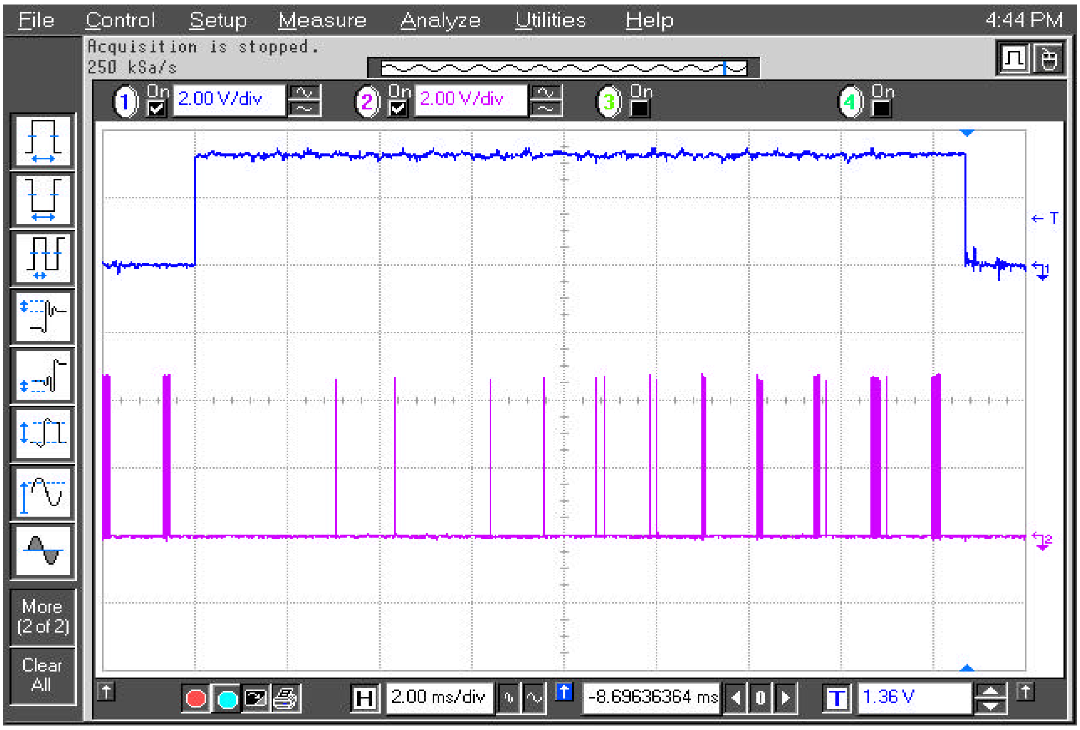
19. Point Probe2 at LY1 pin1 (F2011 pin7 (YS) on the logic main board) on the jig board.



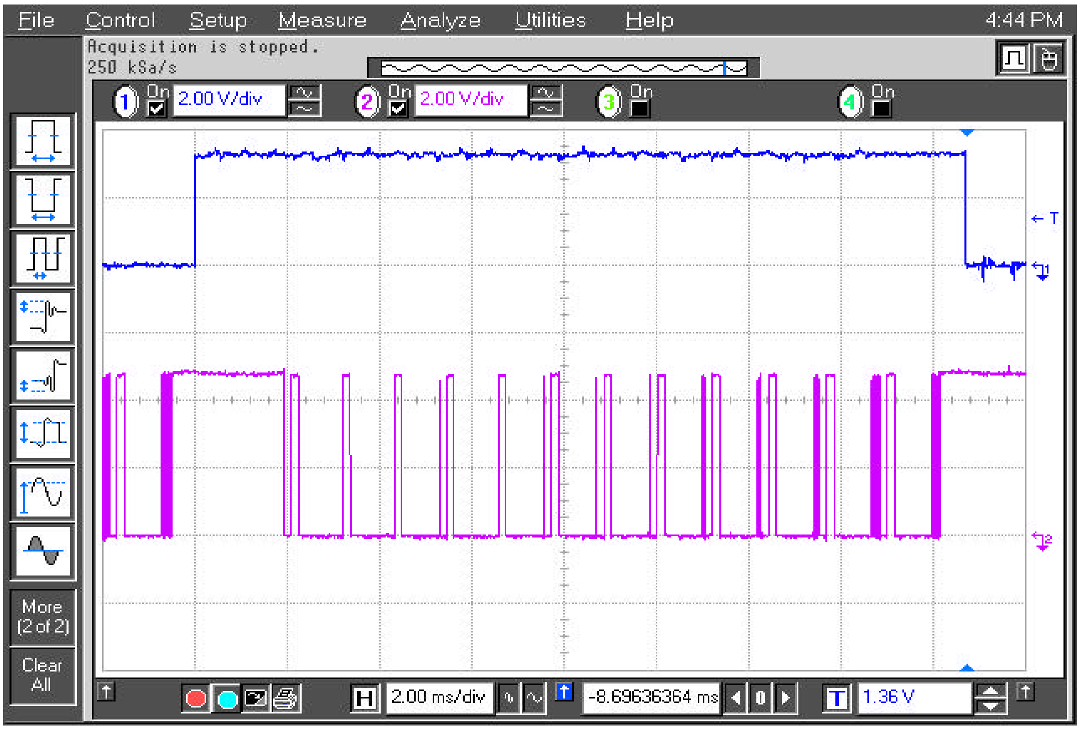
20. Point Probe2 at LX1 pin2 (F2015 pin6 (XRR) on the logic main board) on the jig board.



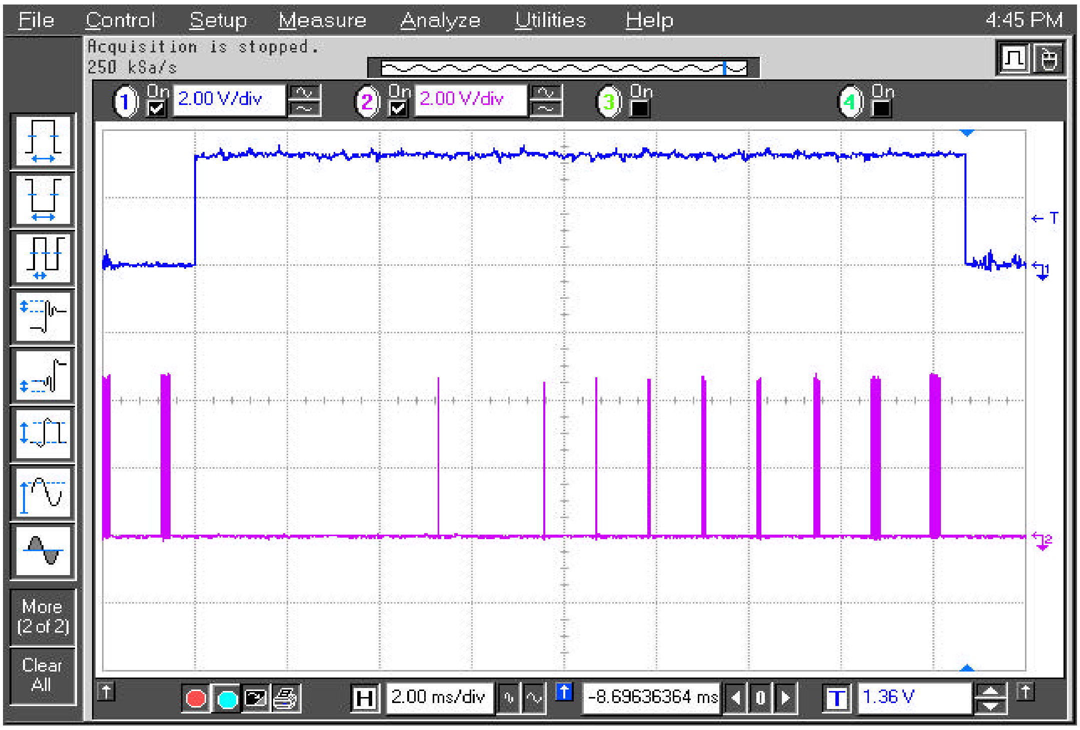
21. Point Probe2 at LX1 pin4 (F2015 pin7 (XR) on the logic main board) on the jig board.



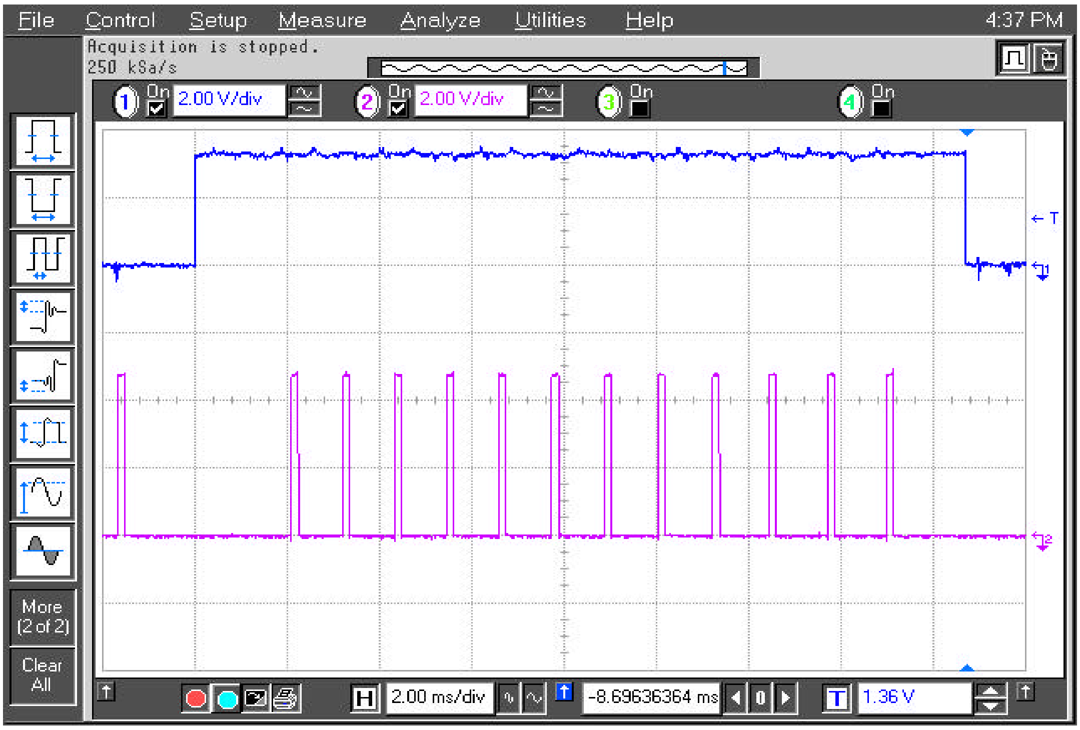
22. Point Probe2 at LX1 pin6 (F2015 pin8 (XS) on the logic main board) on the jig board.



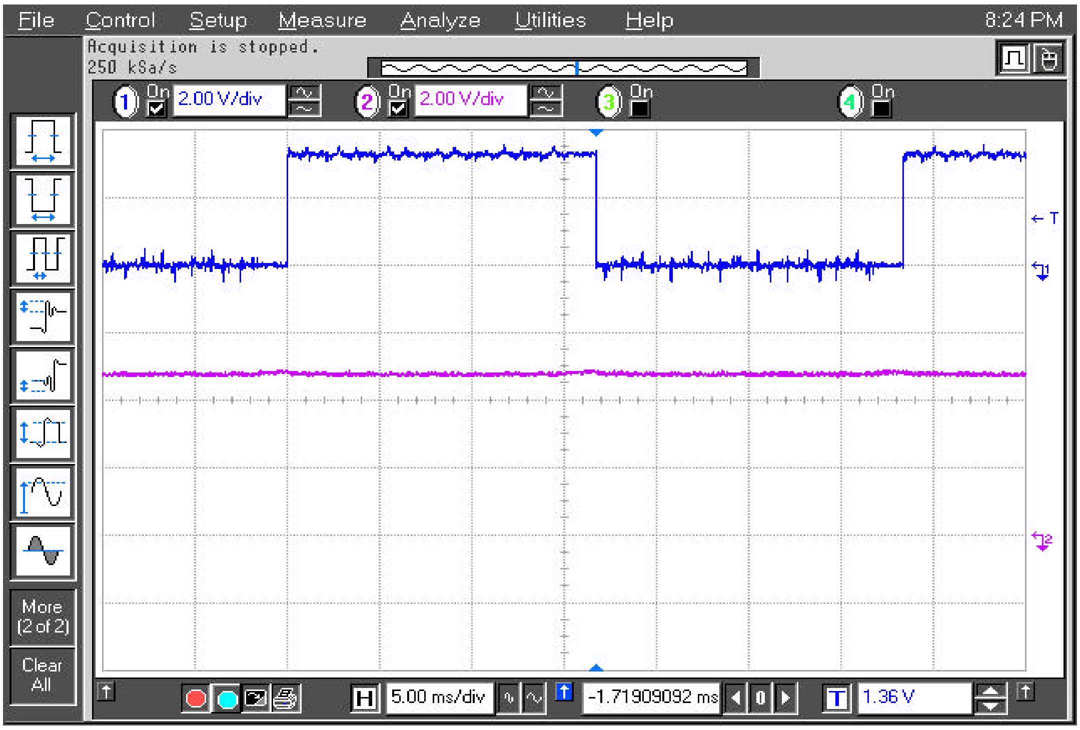
23. Point Probe2 at LX1 pin8 (F2014 pin5 (XF) on the logic main board) on the jig board.



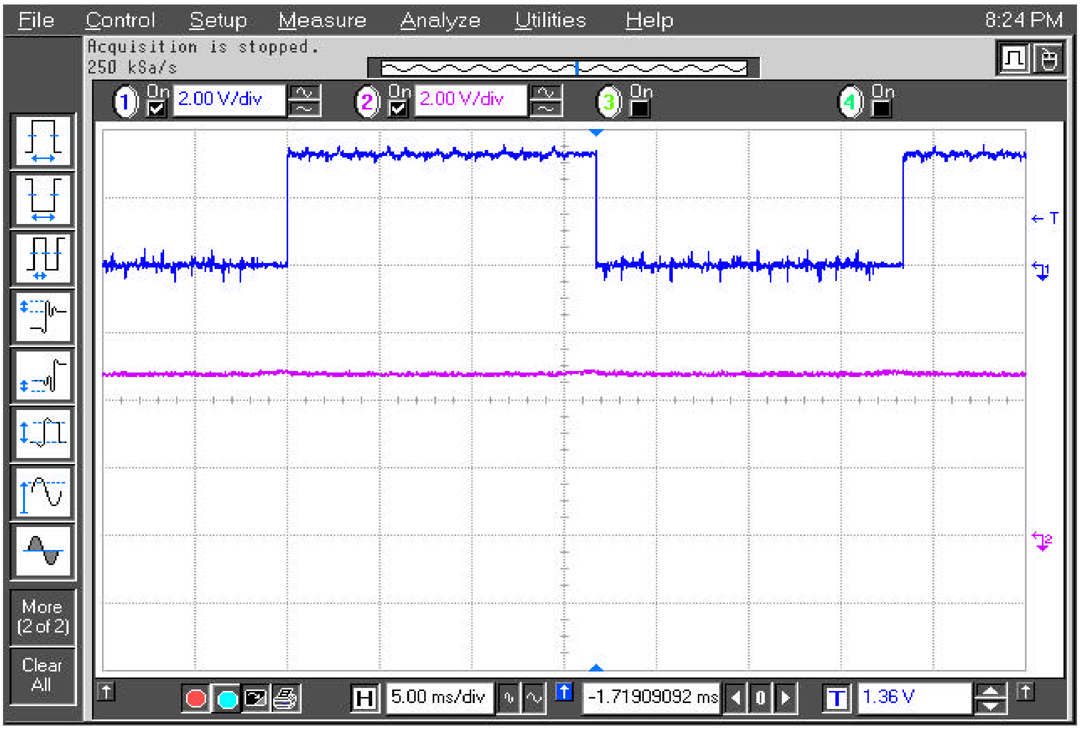
24. Point Probe2 at LX1 pin10 (F2014 pin6 (XG) on the logic main board) on the jig board.



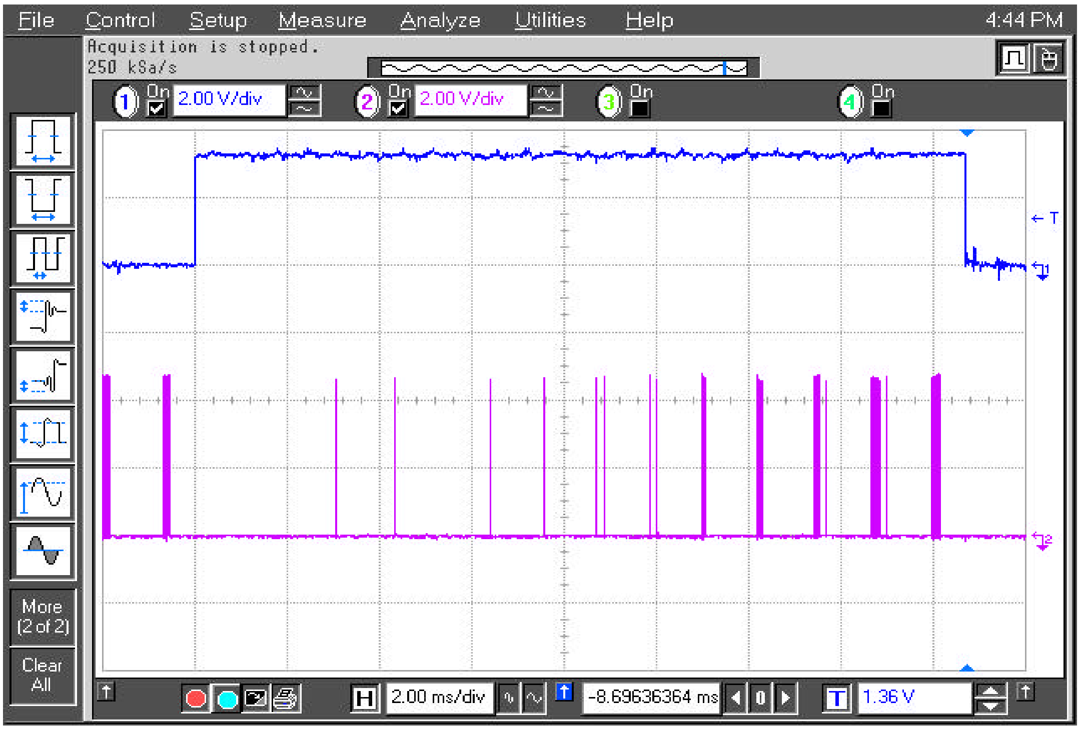
25. Jig board U1 (LE01)
Pins 6 ~ 11, 14 ~ 19, 22 ~ 27, 30 ~ 32, 49 ~ 51, 54 ~ 59, 62 ~ 67, 70 ~ 75



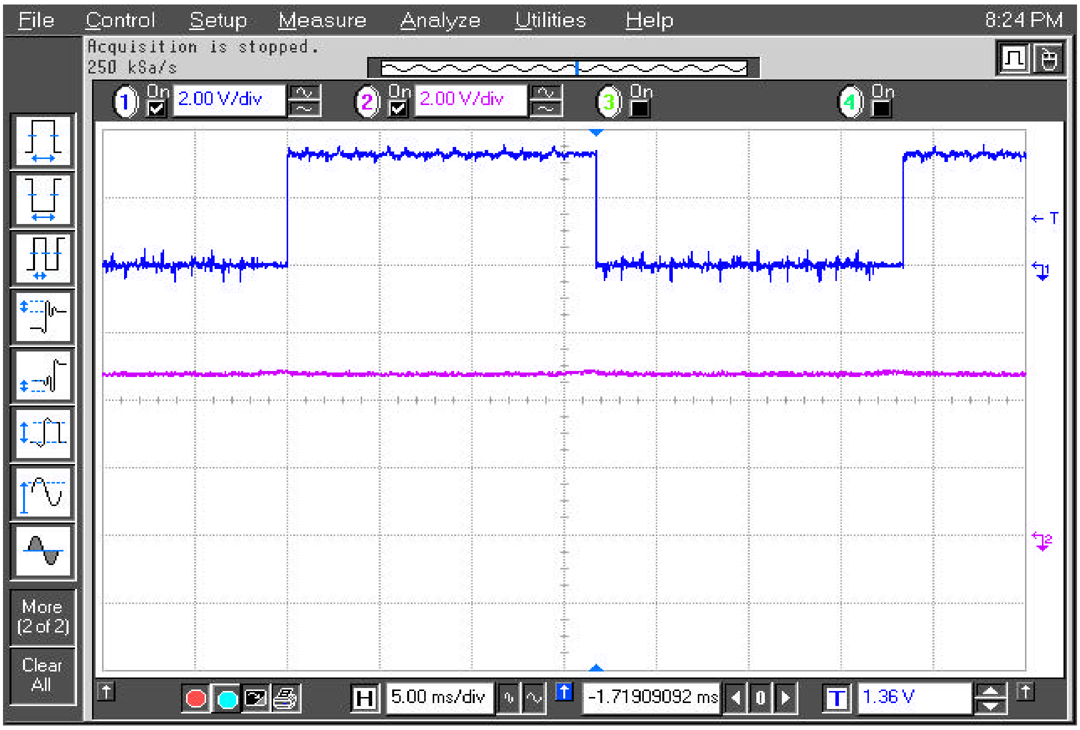
26. Jig board U2 (LE02)
Pins 6 ~ 11, 14 ~ 19, 22 ~ 27, 30 ~ 32, 49 ~ 51, 54 ~ 59, 62 ~ 67, 70 ~ 75



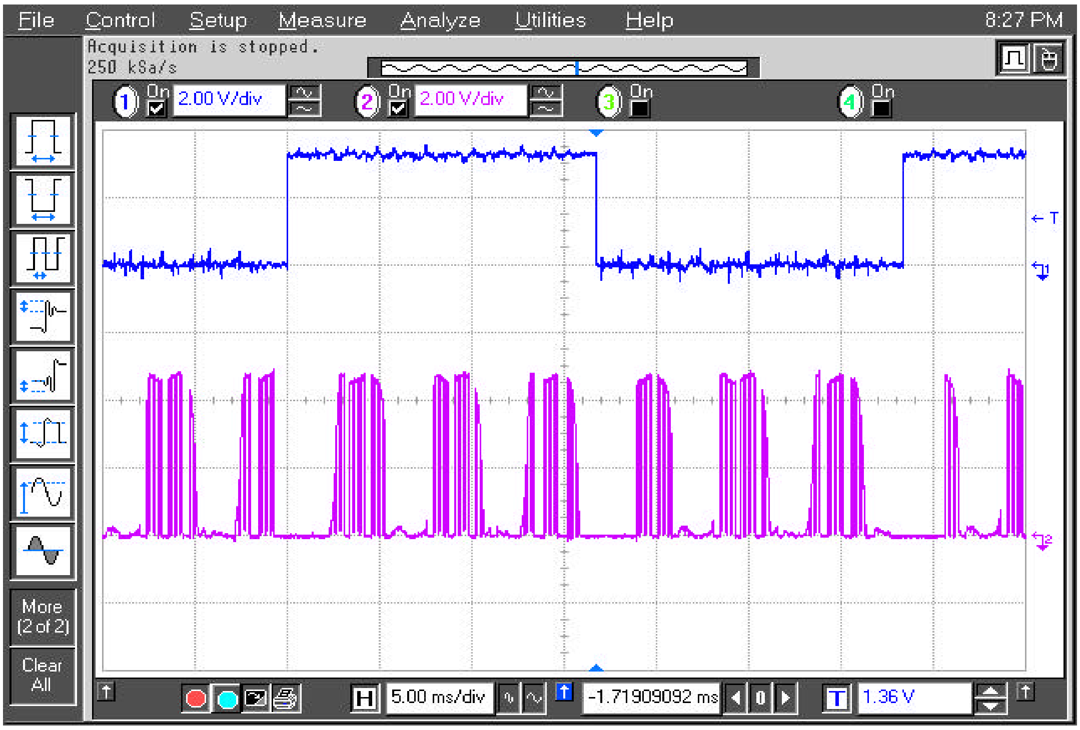
27. Jig board U1 (LE01)
Pins 39, 40, 41, 42



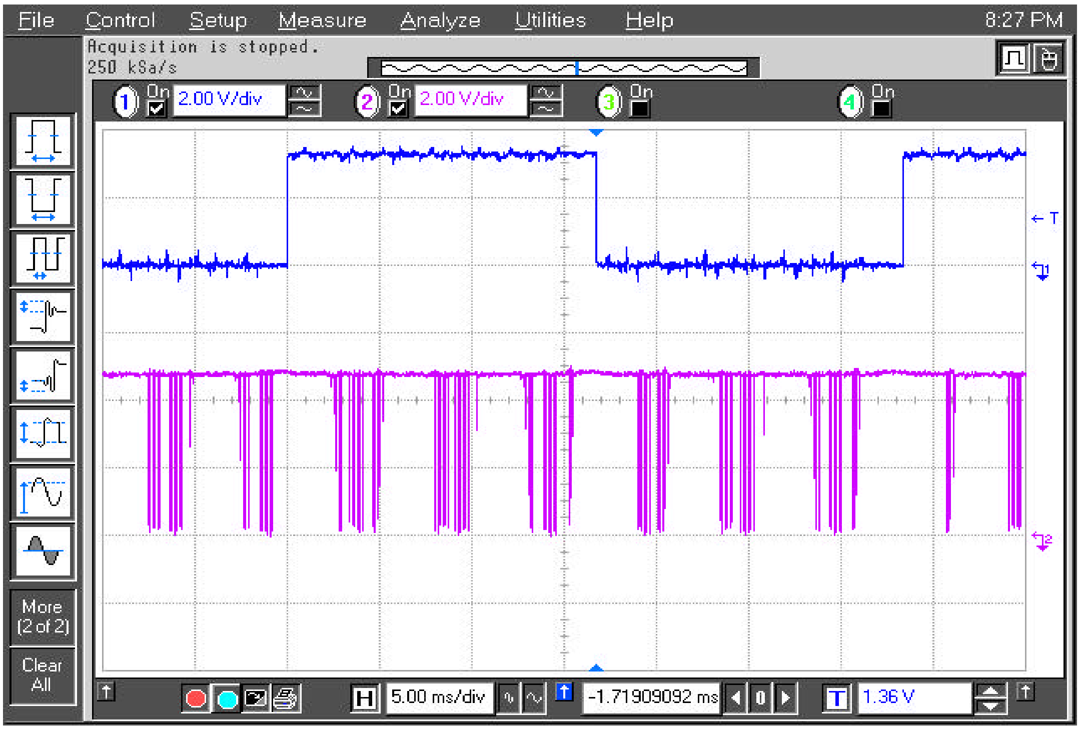
28. Jig board U2 (LE02)
Pins 39, 40, 41, 42



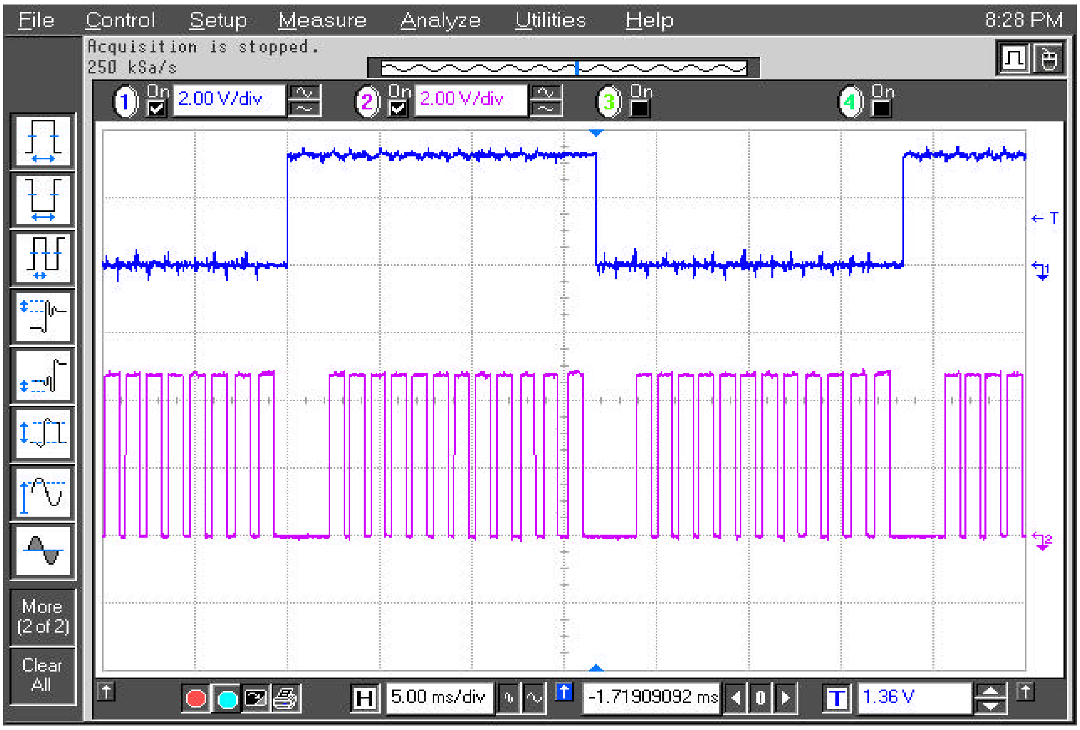
29. Jig board U1 (LE01) pin35



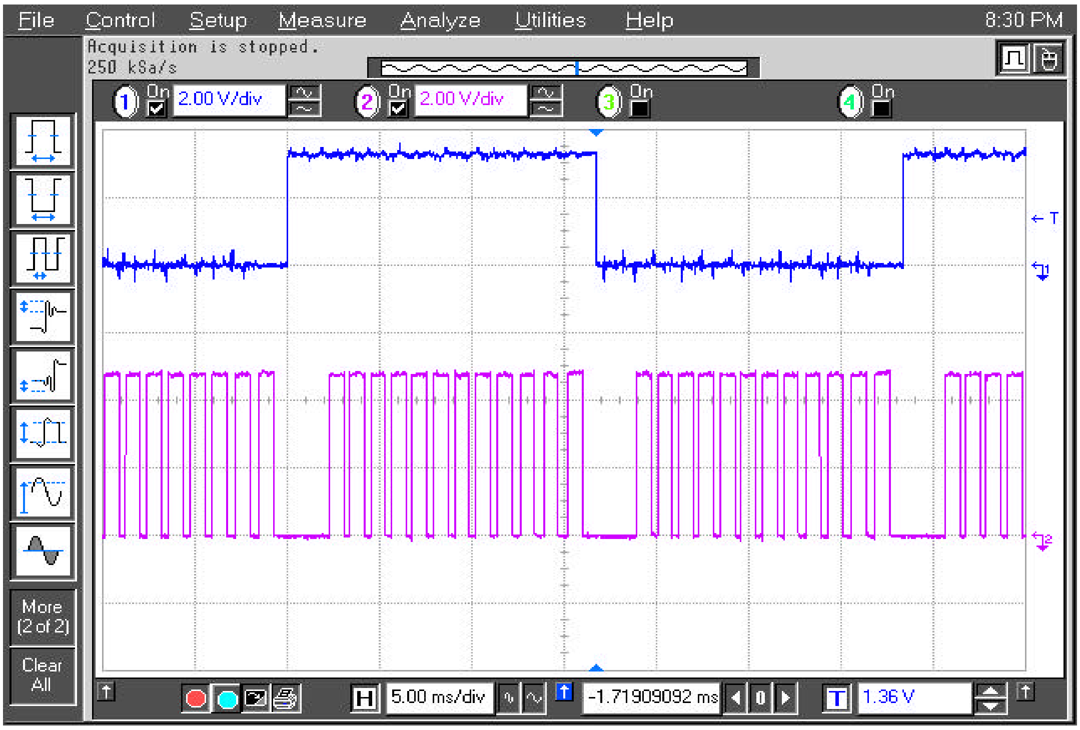
30. Jig board U1 (LE01) pin46



31. Jig board U2 (LE02) pin35

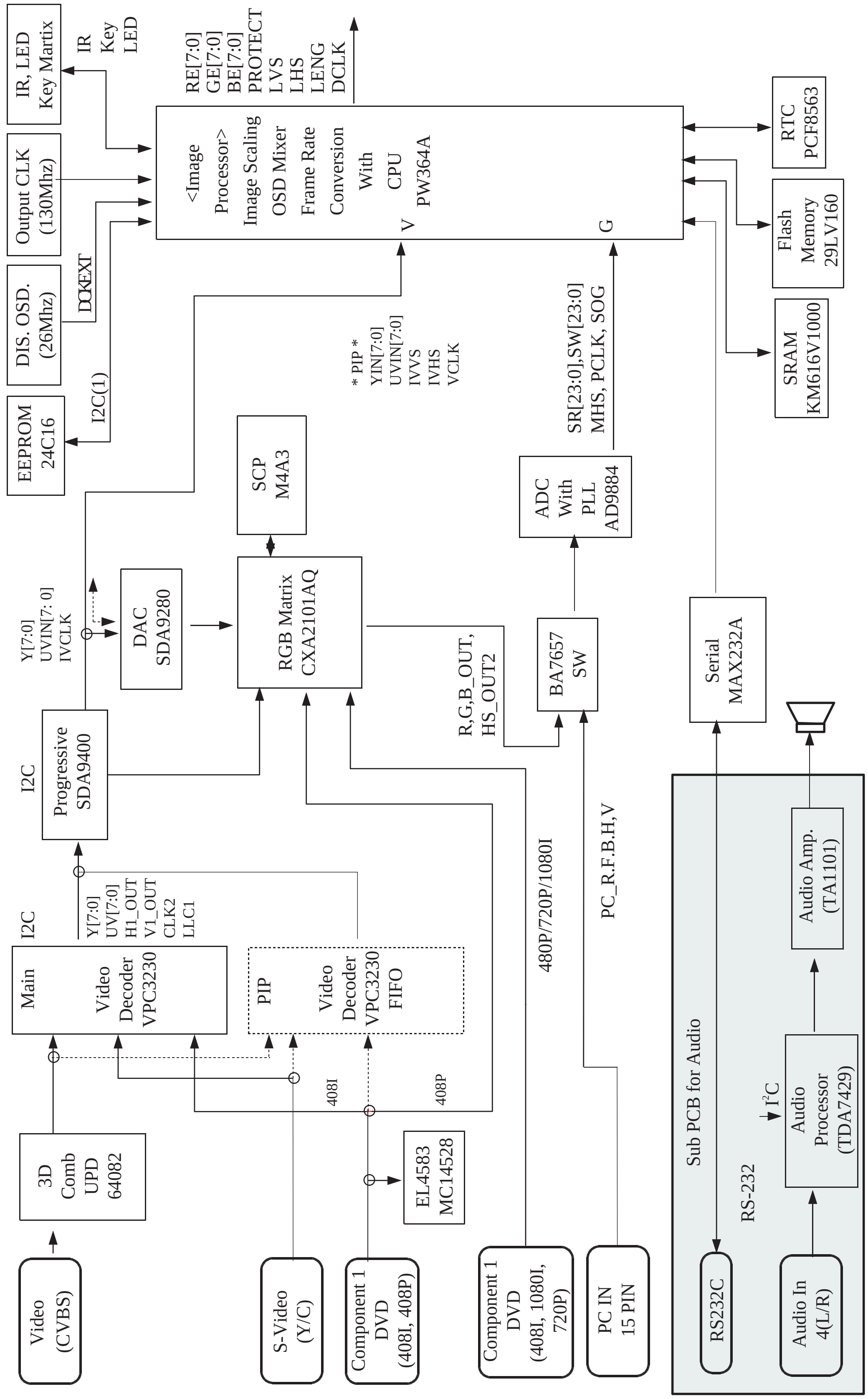


32. Jig board U2 (LE02) pin46



5-4 Block Diagram

5-4-1 42" Monitor Scaler Block Diagram



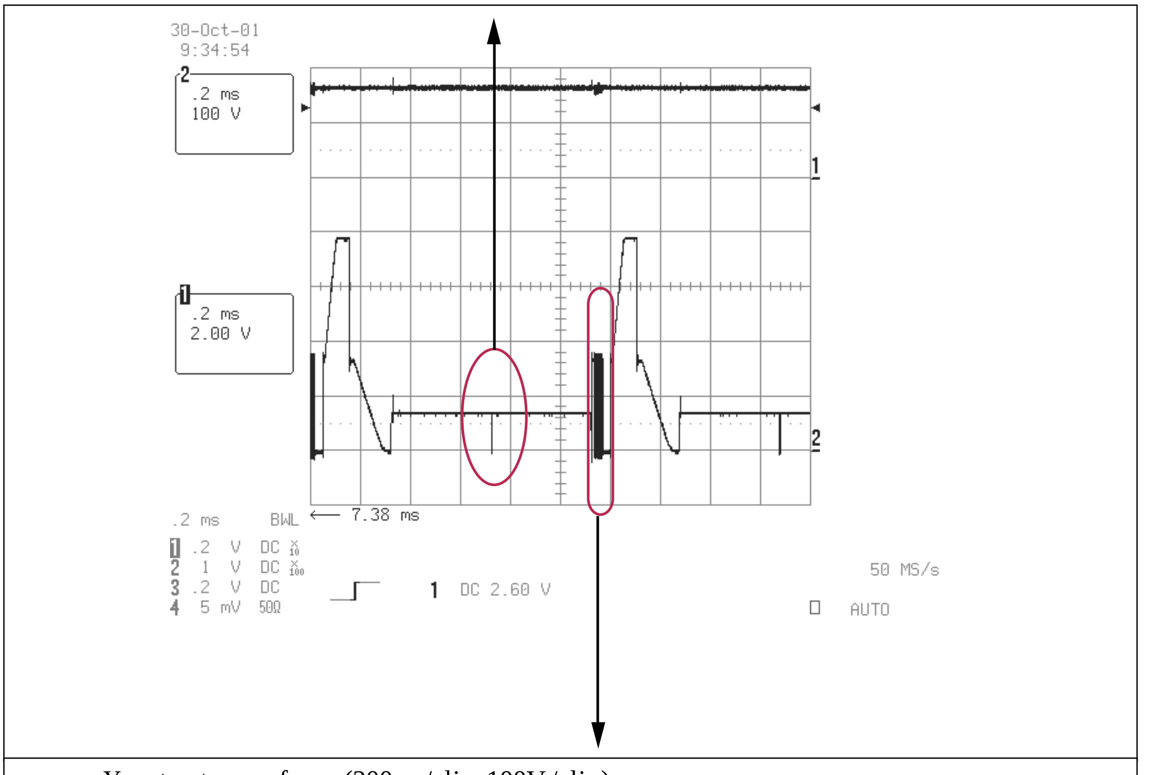
5-5 Major In/Out Signal Waveforms and Voltages of the Unit

5-5-1 In/Out Waveforms

r Y output waveform

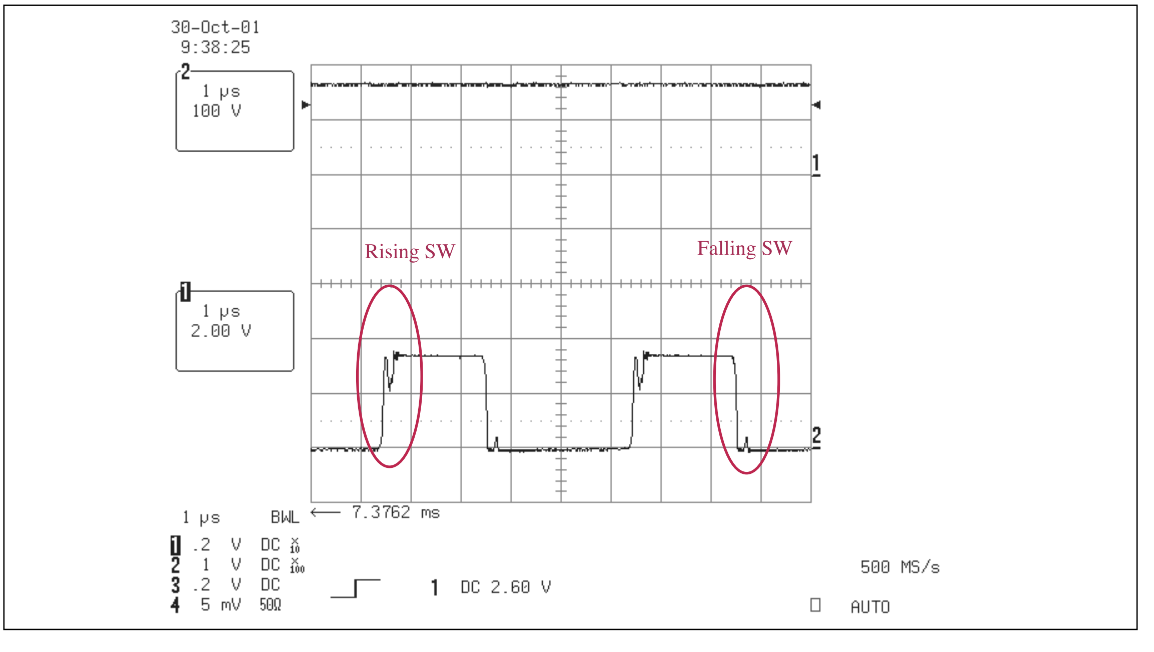
- It is the waveform when it is not connected to the panel.

* You should check that a single scan waveform is outputted!!!



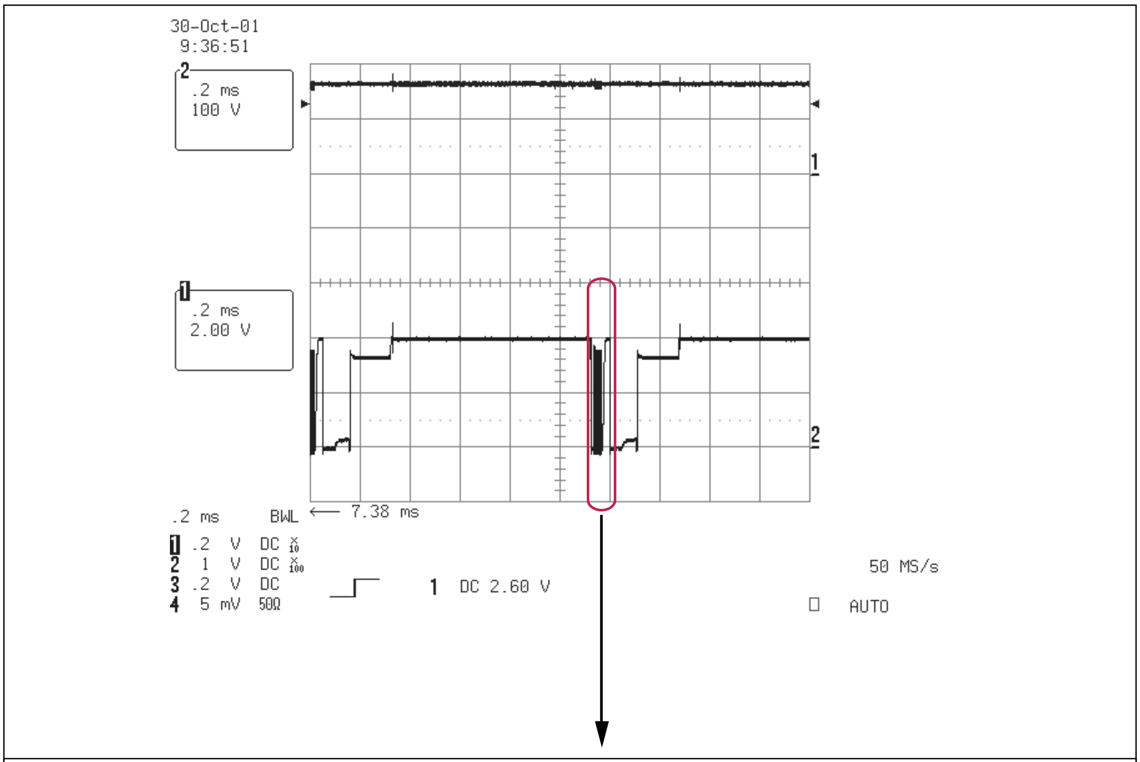
Y output waveform (200us / div, 100V / div)

* You should check that energy recovery software is in operation!!!



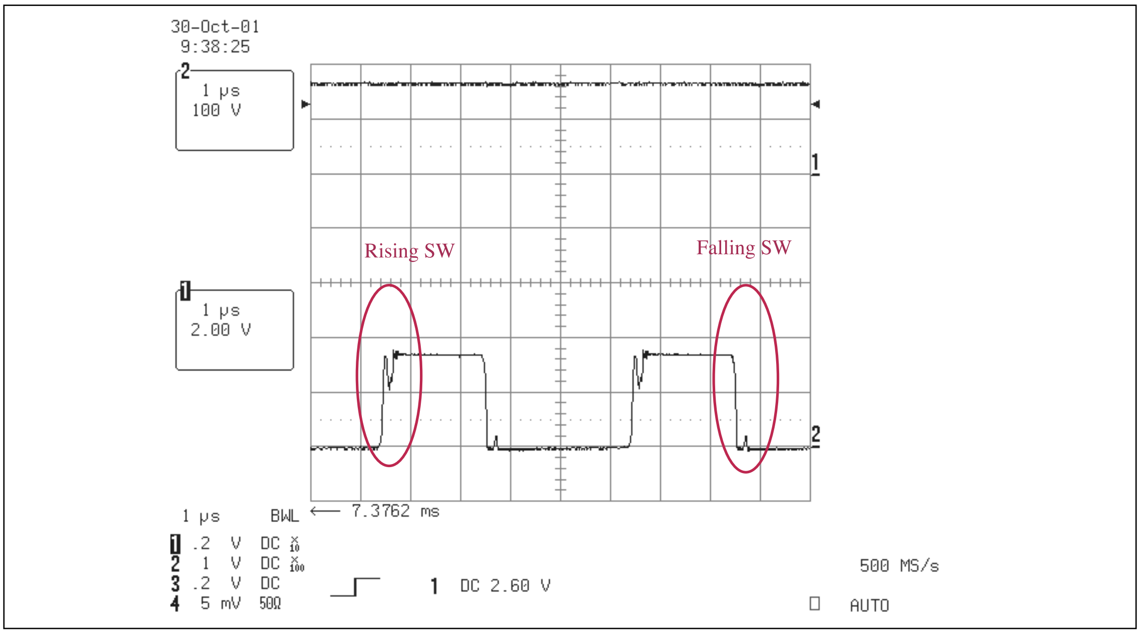
r X output waveform

- It is the waveform when it is not connected to the panel.



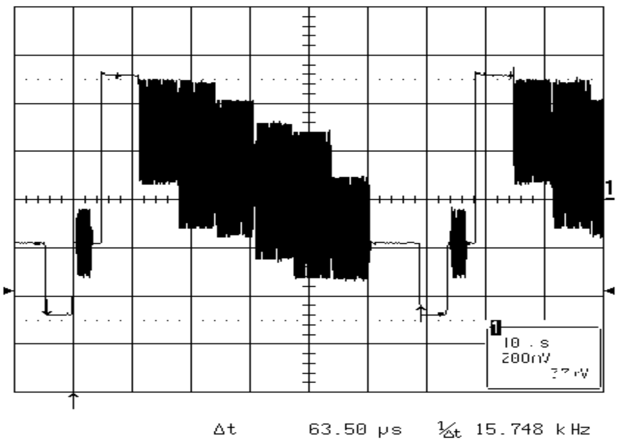
X output waveform (200us / div, 100V / div)

* You should check that energy recovery software is in operation!!!

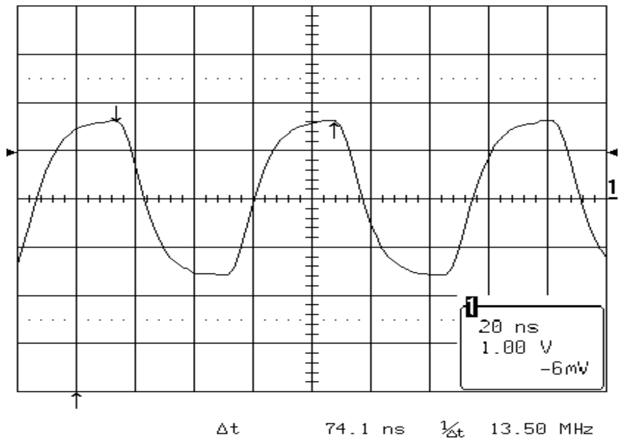


5-6 Main I/O signal pules and voltages

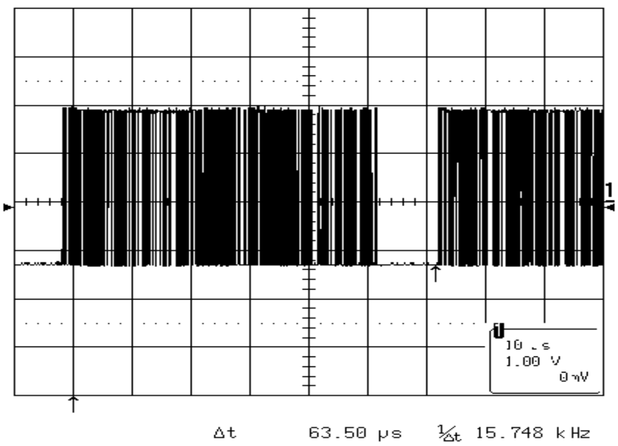
5-6-1 Signal Pulses of Image Board(Input Signal Conditions : 7 Color bar)



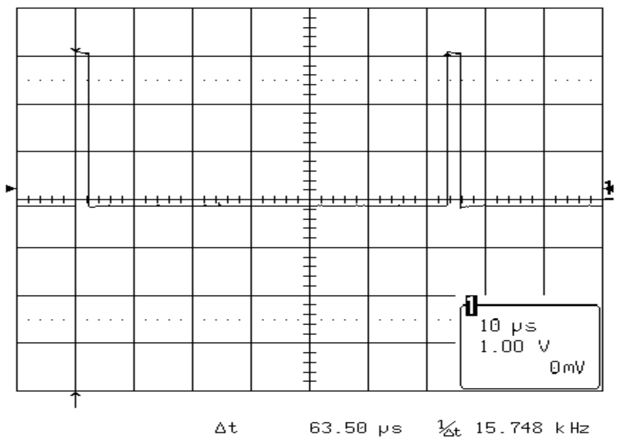
* VIN VIDEO INPUT(CVBS Input)



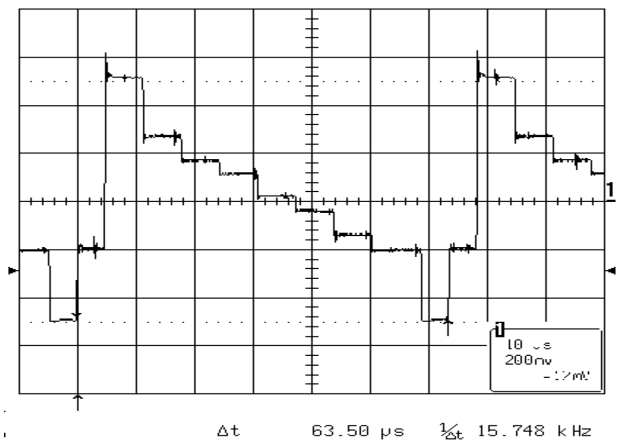
* IC201(VPC3230 MAIN) PIN28 LLC1_OUT



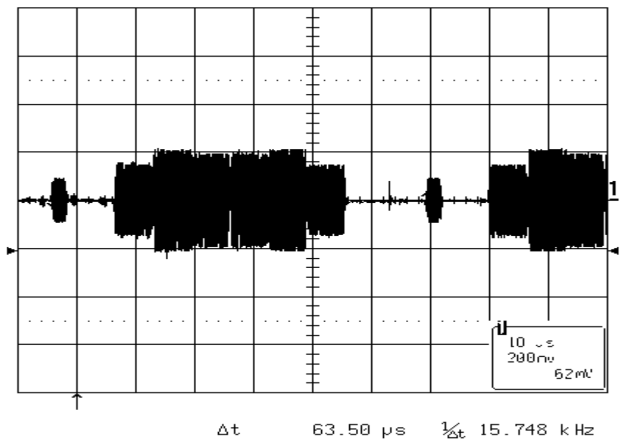
* IC201(VPC3230 MAIN) PIN40 Yo_OUT



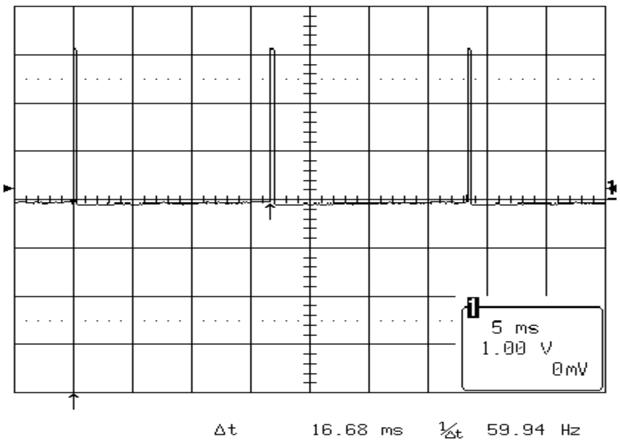
* IC201(VPC3230 MAIN) PIN56 HS_OUT



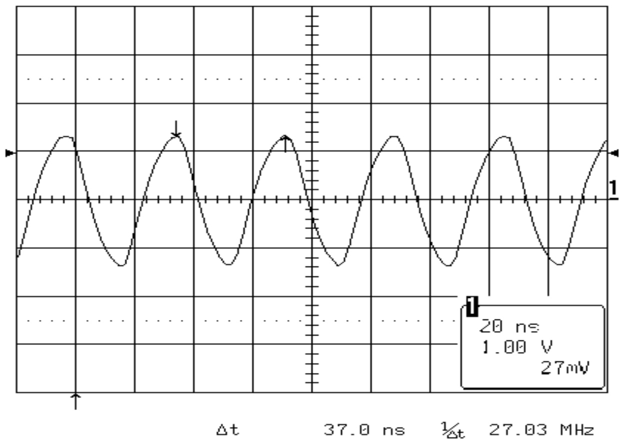
* IC201 (VPC3230 MAIN) PIN75 Y_IN



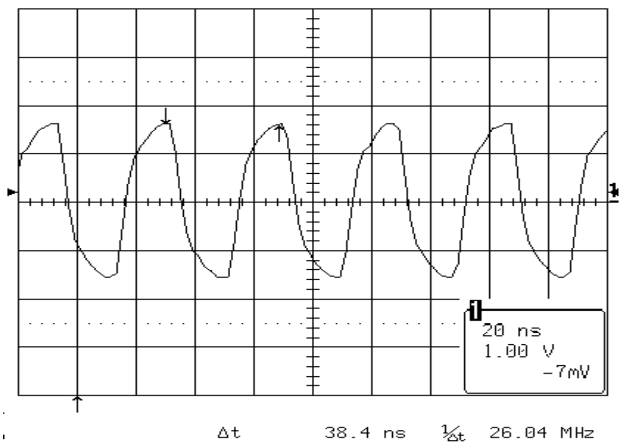
* IC201 (VPC3230 MAIN) PIN72 C_IN



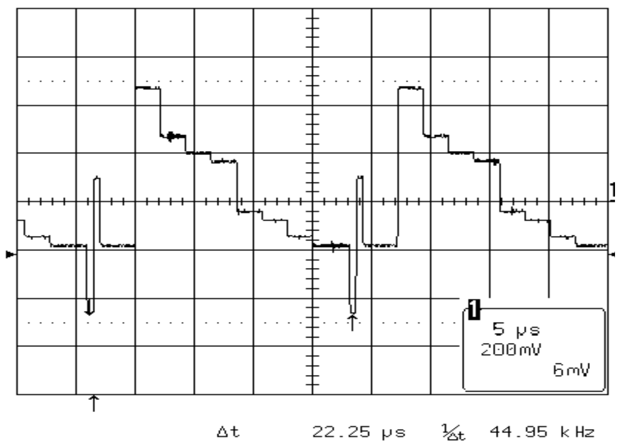
* IC201 (VPC3230 MAIN) PIN57 VS_OUT



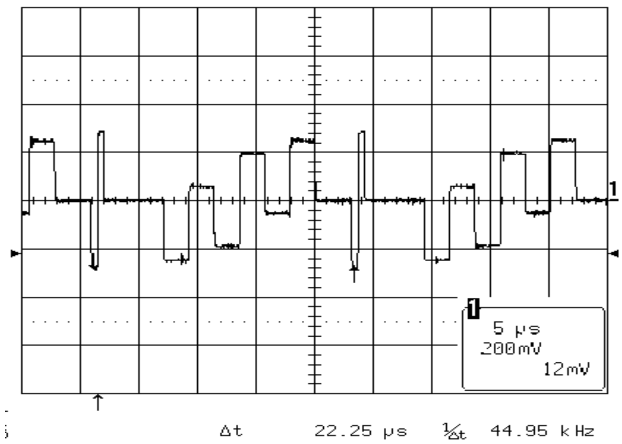
* IC201 (VPC3230 MAIN) PIN27 LLC2_OUT



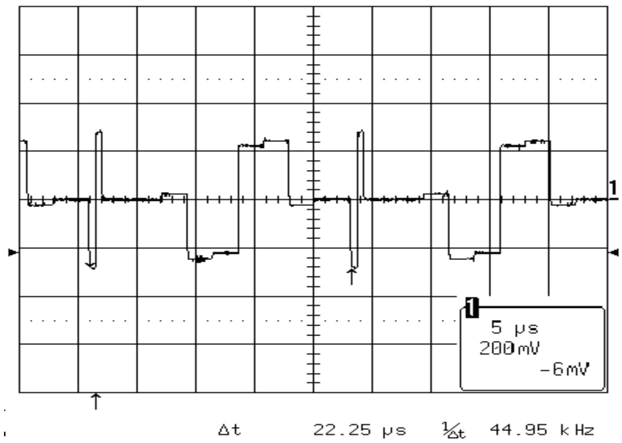
* IC301(PW364) PIN:AD13 DCLK_OUT



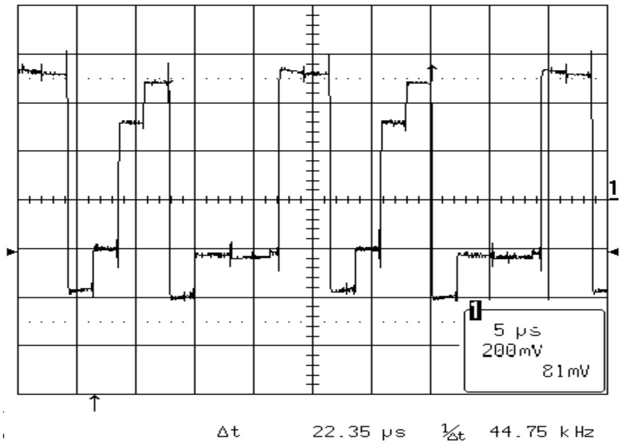
* IC402 (CXA2101AQ) PIN5 DTV.Y_IN



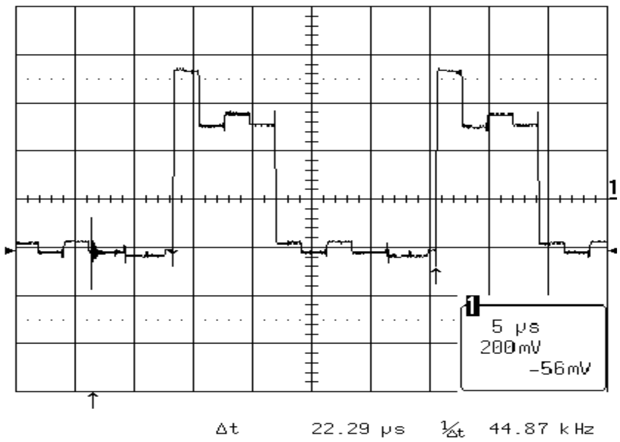
* IC402 (CXA2101AQ) PIN4 DTV.Pb_IN



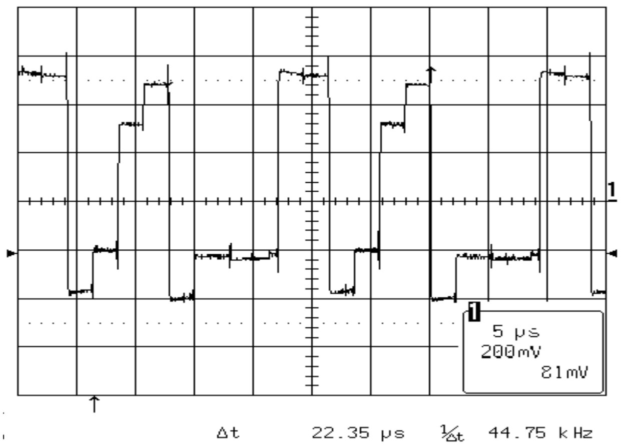
* IC402 (CXA2101AQ) PIN3 DTV.Pr_IN



* IC402 (CXA2101AQ) PIN35 DTV.R_OUT



* IC402 (CXA2101AQ) PIN37 DTV.G_OUT



* IC402 (CXA2101AQ) PIN39 DTV.B_OUT

MEMO

10. Glossary

AC PDP :
Plasma display driven by alternating current plasma electric discharge.

Address discharge(Reference : scan and data) :
Term with two meanings that can be used for both scan and data (write or erase) discharge.

Address Electrode(Reference : scan and data electrode) :
Term with two meanings that can be used for both scan and data electrodes.

Address pulse(Reference : scan and data pulse) :
Address drive wave form

Address voltage(reference; scan and data voltage) :
Address drive amplitude of vibration

Addressing :
Process that gives authorization to cells to allow for turning on and off by drive wave form.

Addressing speed :
Time necessary for writing and erasing.

ADS, address display separation :
Drive tech that separates address pulse temporarily from sustained voltage.

Aging :
The change of operation expectancy- for example, operation voltage change and luminance decline-related characteristics.

Angular distribution :
Characteristics which change as function of angles between perpendicularity and surface.
referring to dependency on angles of, for example, luminance or chromaticity.

Aperture ratio :
Referring to the ratio of an element activation area to the gross area.

Area luminance :
Luminance measured in relatively large area.

Aspect ratio :
The ratio of screen width to height.

Auto power control :
Circuit means for controlling panel's average or maximum power.
Auxillary anode :
Anode where discharge of DC panel has little contribution to light output power.

Back ground luminance :
Referring to the panel luminance in off mode or black screen, in other words, luminance in the vicinity of the screen.

Barrier rib :
barriers that cross all the gaps of wafers dividing the cells in panel.

Black stripe :
black substance located in between the fluorescent areas to bring about improvement in contrast by reflection ratio decline. Generally, this is striped.

Bright defect :
defects that occur when the image is rather bright than accurate.

Brightness(Reference : luminance) :
visible and subjective quality, for example, how bright matters look or how much visible rays are perceived.
Notice) Do not get confused luminance with brightness because those two are not the same. Brightness is subjective while luminance is objective.

Brun in :
element's initial operation section that takes place until the element stabilizes or the initial expectancy expiration is detected.

Bus electrode :
aggregate of sustained electrodes that are bussed together.

Cathode electrode :
cathode electrified electrode that releases electrode from element. In AC plasma panel, polarity switches in every half a cycle.

Cell :
capacity corresponding to each electric discharge. In general, it is defined by the shape of substrates and electrodes but can be defined by partitions.

Cell gap :
measurements identifying the gaps between substrates.

Cell pitch :
measurement that identifies the cells from the surface of substrates. It varies depending on the direction of rows and columns.

Charge transfer curves :
curves expressing the quantity of electric charge that is transferred, as the function of drive wave form characteristics.(for example, voltage, time and others)

Color arrangement(in other words, sub-pixel arrangement) :
term expressing the location of one pixel consisted of sub color pixels.

Color coordinates, CIE 1931 :
Color image expressing method in color dimension, originated from CIE standard of 1931, expressed by X, Y and Z. Among those three, Y element corresponds to luminous flux that is expressed as lumen while X and Y are values that express red and purple element of luminous flux. Colors of matter are expressed as color coordinates pair (x, y). Here x=X / (X+Y+Z), y=Y / (X+Y+Z).
Method for colors, known as (u, v), where image colors are expressed in more even color dimension. Colors of matter are expressed as color coordinates pair (u, v). Here, u=4X / (X+15Y+3Z), y=6Y / (X+15Y+3Z).

Color coordinates, CIE 1960 :
Method for colors, known as (u, v), where image colors are expressed in more even color dimension. colors of matter are expressed as color coordinates pair(u, v). Here, u=4X(X+15Y+32), y=6Y / (X+15Y+32Z).

Color coordinates, CIE 1976
Method for colors, known as (u', v'), where revised image colors are expressed in more even color dimension. v' is 1.5-fold of recommended v value of 1960. The color of matter is expressed as color coordinates pair (u', v'). Here, u'=4X / (X+15Y+3Z) , v'= 9Y / (X+15Y+3Z).

Color coordinates, CIE 1976 CIELUV and CIELAB :
Three dimensional parameters expressing with u' and v' including Ω√∞®º∫ against chromaticity and luminance of standard white light in display. Among the parameters, only CIELUV gets to have proper color space where additional two blend light appears in line segment. (refer to CIE Publication 15.2, Colorimetry 1st edition 1976, 2nd edition 1986)

Color depth :
The number of digital bit alocated to each major color.

Color gamut :
Physically realizable color space area.

Color reproducibility (Refer to color gamut) :
The expression of realizable colors limited by color information distinction or fluorescent substance chromaticity.

Color temperature, correlated (symbol CCT) :
Seemingly temperature expressed with absolute temperature of black body radiation with the closest chromaticity. This can be expressed as CCT, in the form of C. S. McCamy. CCT=437N3+3601n2+5517, n=(x-0.3320) / (0.1858-y) and x, y=color coordinates of CIE 1931.

Columm electrode :
Vertically successive electrodes. It generally refers to data electrodes. When panel is installed along the photograph, this can be arranged along the horizontal direction.

Concurrent driving method :
Driving method to disperse address pulse and scan pulse at equal distance.

Contrast ratio Columm electrode :
Ratio of white luminance to black luminance of image. This measurement has many parameters, so measurers are required to explain the consideration for measurement to make understood the meaning of the measurement. The parameters of contrast ratio are as follows.

- CA - ratio of center luminance in all white screen to center luminance of all black screen on the condition of light being spreading around.
- CG - ratio of white luminance to black luminance in successive arrangement of white and black lines at equal distance.
- CL - ratio of white luminance to black luminance in white line against black screen of black line against white screen.
- CR - the ratio of white luminance to black luminance.

- n Cm - Michelson contrast or contrast modulation:
  Here, Lw is the luminance of the color white while Lb is the luminance of the color black.
- n CT - Threshold contrast ratio: the minimum contrast ratio that is permissive, in general.

Chip on board(COB) :
PCB with IC on substrate.

Dark defect :
Defects in the brighter image realization than normal one.

Data electrode :
Electrodes allowed for controlling electric discharge by changing the cell's state to switch on from off (and vise versa) in AC plasma panel.

Data electrode driver :
Driving circuit to be attached to dada electrode.

Data write pulse :
Wave form for data electrode that switches from off to on.

Data erase pulse :
Wave form for data electrode that switches from on to off.

DC PDP :
Display panel whose plasma discharge is driven by direct current.

Decay time :
Time required for parameters to drop from certain level to another. It can be time necessary for dropping from 90% to 10%, or to e-1 level of the initial value, or to certain irreversibility.

Dielectric layer :
Dielectric layer with larger sustained electric constant.

Discharge :
1. neutralization of electric charge (for example, voltage decrease of capacitor)
2. electric current flow in dielectric media such as gas.

Discharge current :
Discharge electric current.

Discharge electrode :
Another term for sustained electrode.

Discharge efficiency :
Another term for gloss efficiency

Discharge gap :
The gap among sustained electrodes in discharge space of three-electrode plasma panel.

Discharge slit :
(Refer to discharge gap)

Displacement current :
Electric current flow through capacitor that includes atomic rearrangement of discharge within electric matter.

Display color number (color number possible to be displayed with other words.) :
displayable individual color’s number.

Display Diagonal :
Diagonal size of display contour

Display efficiency :
The ratio of gloss output divided by the entire display power.

Display height :
Height of display contour

Display scan electrode :
(Refer to scan electrode)

Display width :
Width of display contour

Displayed color :
Refer to displayed color number.

Displayed color number :
Color numbers that can be made by display.

Dot (Refer to cell, pixel and subpixel) :
The term is hard to be defined because it is not clear if the term refers to full color pixel or subpixel. The term is used when referring to color related elements that make up full color pixel or subpixel.

Dot pitch :
(Ambiguous expression. Refer to dot, cell pitch, pixel pitch and subpixel pitch.)

Driving waveform :
Expressing ∞ÊΩ√ change of driving signal voltage.

Driving scheme :
Expressing the thought applying driving voltage to display.

Effcacy :
Refer to luminous efficacy.

Energy recovery circuit :
Circuit degauss caught after reusing the power that drove AC plasma panel.

Erase :
Process where cells are erased from AC plasma panel.

Erase pulse :
Cell erasing waveform

Erase voltage :
Erase pulse voltage required for erasing cells from AC plasma panel.[symbol : Ve]

Evacuating (Interchangeable terms : evacuation, exhaust) :
Process where unwanted gas is rid from device.

Exhaust tubulation (Interchangeable terms: exhaust tube, exhaust pipe) :
Tube shaped hole in device connected to external vacuum pump, for controlling the initiation from device during process. This is usually glass tube that prevents with flannelet after filling proper gas

Filling gas (Refer to gas mixture) :
After removing air, plasma panel goes through filling with proper electric and optical gas. Therefore, panel gas composition is commonly called "filling gas".

Firing voltage :
Minimum voltage where triggers discharge in plasma device[symbol : Vf]

Flicker :
Fast and instant changes in luminance, perceivable in almost regular luminance experiment pattern.

Front substrate :
Substrates closer to the viewers, made of transparent material such as glass

Full color display :
Full color image (for example, image with more than 8 bit color tone) realizable display

Fpc(Flexible Printed Curcuit) :
Flexible substrates with circuited copper foil on polyimide

Gas mixing ratio (Interchangeable terms: gas mixture, gas composition) :
Gas composition within plasma device. It is usually expressed with ratio of the constituent gas.

Gas voltage (Interchangeable terms: gas break down voltage) :
Voltage where electrode and ion within plasma device can generate additional electrodes and ions.
-Thus, increasing the electric current within the device sharply. (break down or overflowing)

Glass substrate :
Substrates consisted of glass

Glow discharge :
Plasma discharge taking place under pressure of tens of millimeter. This is defined by ionization generated by activated electrons in discharge space and electron release in cathode by ion bombardment.

Gradation :
Gradual change in characteristics such as luminance and chromaticity

Gray scale :
The range of luminance acquired when displayed from black to white.

High strain point glass :
Glass of which strain point (temperature with viscosity of 1014.5 poise) is relatively high

Image retention :
Continuous existence of image after the stimulation is removed.

Image sticking :
(Refer to Image retention.)

Interconnect pad groups :
A group of connection terminals that attach to individual connector. (also referred to as terminal block.)

Interconnect pad pitch :
Mutual measurements for individual of interconnect pad group.

Interconnect pad spacing :
The size of non-electric conductive area between individual terminal.

Inter-electrode gap :
In Three electrodes plasma panel, the measurement of sustained voltage separated from outside discharge space.

Ion bombardment :
The bombardment of energetic ions in the surface of solid matter. The transfer of kinetic energy toward surface from ions can cause electron release, ion or neutron release and temperature change in surface.

Life time :
Time during device exerts its function. Commonly known as mean time failure (MTTF).

Low melting point glass :
Glass of which melting point (temperature with viscosity of 1014.5 poise) is relatively low.
Since glass is non- crystalline, the word melting is not appropriate, but it gets more fluid as it becomes hot.

Luminance :
Colloquial term for measurement of brightness of display.
It also refers to display related CIE Y constituent. it is expressed by cd / m2.

Luminance efficacy :
It refers to gloss output against the total display consumption power. It is calculated by the value generated through dividing gloss output of ∞ÌªÛ white substance with gross consumption power. It is expressed as lumen / watt.

Luminance efficiency :
Gloss output value according to consumption power increase, calculated by the value generated through dividing gloss output of ∞ÌªÛ white substance with white screen power consumption increase against black screen. It is expressed as lumen / watt.

Luminance loading :
Luminance decline that takes place when white square luminance increases into full size all white square.

Matrix(type) PDP :
Plasma display panel made up of matrix with rows and columns.

Matrix type :
Refer to matrix PDP
Maximum firing voltage :
Voltage value required for triggering discharge in all cells.

Maximum sustain voltage :
Maximum drive voltage required not to turn off the cells.

Memory margin :
The disparity between the maximum sustained voltage for keeping discharge and the sustained voltage for turning off the cells

Memory type PDP :
Refer to AC Plasma Panel that has memory. PDP made up of cells that keep turned on or off until switch occurs.

MgO layer :
In bombardment of electrons and ions, MgO's high electron release rate, like cathode application, makes it easier to release electrons.

MgO protecting layer (Refer MgO layer) :
MgO layer on fluorescent material has secondary benefit that prevents fluorescent degradation by ion bombardment.

Minimum firing voltage :
Minimum voltage that can turn on any cells.[symbol : V1]

Minimum sustain voltage :
Minimum sustain voltage that keeps turned on cell on.[symbol : Vsm1]

Monochrome display Minimum sustain voltage :
Display that only expresses a limited color such as white, green and amber.

Multi-color display :
Display that can express multiple colors .if not all colors.

Non-discharge slit :
(Refer to inter electrode gap)

Operating margin :
AC PDP voltage range that keeps cells turned on or off. Generally, its value gets less than memory margin because of additional factors such as temperature effect, gloss ionization effect and waveform change.

Operating window :
Actual voltage range that keeps cells turned on or off in any drive levels and surrounding environment.

Operating window degradation :
Gradual decline in operating window, according to operating time.

Opposed discharge :
Traditional two-electrode plasma panel structure where discharge occurs between the two sustained electrodes across from each other.

Opposed discharge PDP :
(Refer to opposed discharge.)

Peak luminance :
Maximum luminance generated in one pixel in panel.

Peak luminance enhancement :
Circuit and drive technology that accommodates increasing peak luminance.

Phosphor degradation :
Gradual decline in fluorescence efficiency according to operating expectancy.

Phosphor layer :
Thin layer made up of phosphor. Fluorescenc**Pl**e substance must be thick enough to optimize transferring the ultraviolet rays from plasma discharge to visible light

Pixel, picture element :
The smallest unit that can display the entire range of luminance and chromaticity. Generally, pixel consists of sub pixels (or dots).

Pixel arrangement :
Expression of sub pixels within a pixel.

Pixel count :
The number of pixels that make up a display. It is described as the number of column pixels against the number of row pixels.

Pixel pitch :
The distance between the centers of the two closest pixels. Move as far as the pitch and reach the identical location.

Plasma display :
Electrically driven display device for causing electric discharge in gas within device. Electric energy generates light with atomic light release or from proper colored fluorescence substance.

Positive column discharge :
The plasma area for long glow discharge. This area is a low electric field but relatively electric conductive plasma area.

Pre discharge :
Cell's state where pre discharge is taking place. In this case, cell's state becomes electric conductive due to formation of discharge generated by ionization process of gas.

Priming :
The stage where ions are generated for forming discharge. Generally, this is required for injection.

Priming pulse :
Electric waveform to define the proper conditions for the next cell discharge.[symbol : Pp]

Priming voltage :
Voltage of priming pulse.[symbol : Vp]

Protecting layer :
The layers applied to the device function constituents (for example, fluorescence, electrode and glass layers).

Quantum efficiency :
Substrates farther from the viewers. These can be opaque.

Rear substrate :
Efficiency measurement that is directly expressed with the number of output particles against the number of input particles. In case of plasma panel, the number of photons in visible area, generated from photons in ultraviolet area

Reset :
(Refer to erase.)

Reset discharge, Reset pulse :
(Refer to erase.)

Resolution :
Display's ability to enable to distinguish the matters close to each other. It is confusing with addressibility that generates pattern undistinguishable to the eyes.

Row electrodes :
Horizontally successive electrodes. In terms of traditional drive concept, these are the sustained electrodes. If the panel is installed toward portrait, these row electrodes can be arranged horizontally.

Sand discharge :
Process where grinding of surface occurs. It is used for making three dimensional surface in lithography or silt in sheet.

Scan discharge :
Discharge injected along the pair of sustained electrodes.

Scan electrode :
Electrodes of the pair of sustained electrodes that inject discharge downward along the panel columns.

Scan pulse :
Waveform that injects discharge with new columns.
Optic defects where scratches display over certain size.

Seal :
Combining the substrates or substrate with ventilation tube.

Seal layer :
Material layer that provides the connection of substrates. This can be a single layer of solder glass (frit) or the combination of solder glass and ring.

Sealing :
Process where free electrons that get out of the surface by extracting static electricity field when energetic electrons or ions are limited to a surface.

Secondary electron emission :
Process where drags discharged cell to certain waveform. This could occur before ionization offset when cell voltage decreases.

Self erase :
Plasma display in the form where stimulating discharge occurs for discharge process precedes below panel.

Self-scan type PDP :
Plasma display in the form where stimulating discharge occurs for discharge process precedes below panel.

Self-shift type PDP :
Process of combining substrates. High temperature process that melts solder glass combining substrates.

Space charge :
Mutual repulsion caused by accumulation of electric charge of similar signal.

Stripe rib :
Stripe shaped partition structure. It follows panel column direction.

Sub frame :
(Refer to sub field)

Sub field :
A part of panel

Surface charge :
It refers to the location of discharge in AS plasma panel where sustained electrodes are on the same surface.

Surface charge PDP :
AS plasma panel where sustained electrodes are on the same surface.

Sustain :
Discharge in AC plasma panel that keeps on or off until the cell is erased or written. Sustained electrodes are divided into bus (common electrodes) and addressable electrodes.

Sustain driver :
Circuit that drives sustained electrodes.

Sustain electrode :
Electrodes driven by AC voltage that provides plasma with energy major parts. This electrode is driven by enough waveform to keep discharge of turned on state. In turned off cell, trigger discharge does not takes place.

Sustain magin :
The disparity between sustained voltage that keeps turned on cells and sustained voltage that can turn off cells.

Sustain pulse :
Sustained drive waveform[symbol : Ps]

Sustain vlotage :
Voltage level of sustained waveform
Thermal compaction :
Substrates successive density increase observed by substrates pattern contraction.

Thermal radiation :
Radiation in infrared rays over 800nm.

Three electrode type :
Modern AC panel has three electrodes for each cell and a pair of thermal electrodes provide cells with AC power. Data electrodes in opposite substrates provide unique writing and erasing signals to each cell

Time modulation driving method (Other terms: time division multiplex method) :
Modulation method in proportion to certain time applied to stimulation with regular output. Output strength is changed according to input time.

Tip pipe :
(Refer to exhaust turbulation.)

Townsend discharge :
Self sustained plasma discharge expressed by Townsend in 1901. This discharge requires 200v voltage.

Transparent electrode :
Electrode made up of transparent electric conductive matter such as ITO.

Two eledtrode type :
Original AC plasma panel used two electrodes that provide not only sustained waveform but also write and erase waveform.

Ultraviolet ray :
Ultraviolet light below 380nm in spectrum.

Vacuum ultraviolet :
Ultraviolet ray of wavelength below 200nm.

Viewing angle :
Vertical angle that can display the image. It is normally limited by the change in luminance and chromaticity.

Viewrable screen diagonal :
Releasable screen diagonal length measured between outmost pixel edges

Viewrabel screen height :
Releasable screen height measured between outmost pixel edges

Viewrable screen width :
Releasable screen width measured between outmost pixel edges.

Visible defect :
Imperfection that prevents displaying with proper image.

Wall charge :
Pure accumulation of positive and negative charges in cell wall.

Wall charge erase pulse :
Pulse that neutralizes wall charge

Wall charge transfer curve :
Curve related to wall charge pulse parameters and the changes in wall charge.

Wall voltage transfer curve :
Curve expressed with wall transfer that is caused by any changes in electric charges including wall charges and wall charge pulse related parameters.

White back :
White coating for minimize absorbing valid gloss, located black contrast improvement layer and fluorescent material.

Write electrode :
(Refer to data electrode.)

Write electrode :
(Refer to data electrode)[symbol : Pw]

Write electrode :
(Refer to data electrode)[symbol : Vw]

MEMO

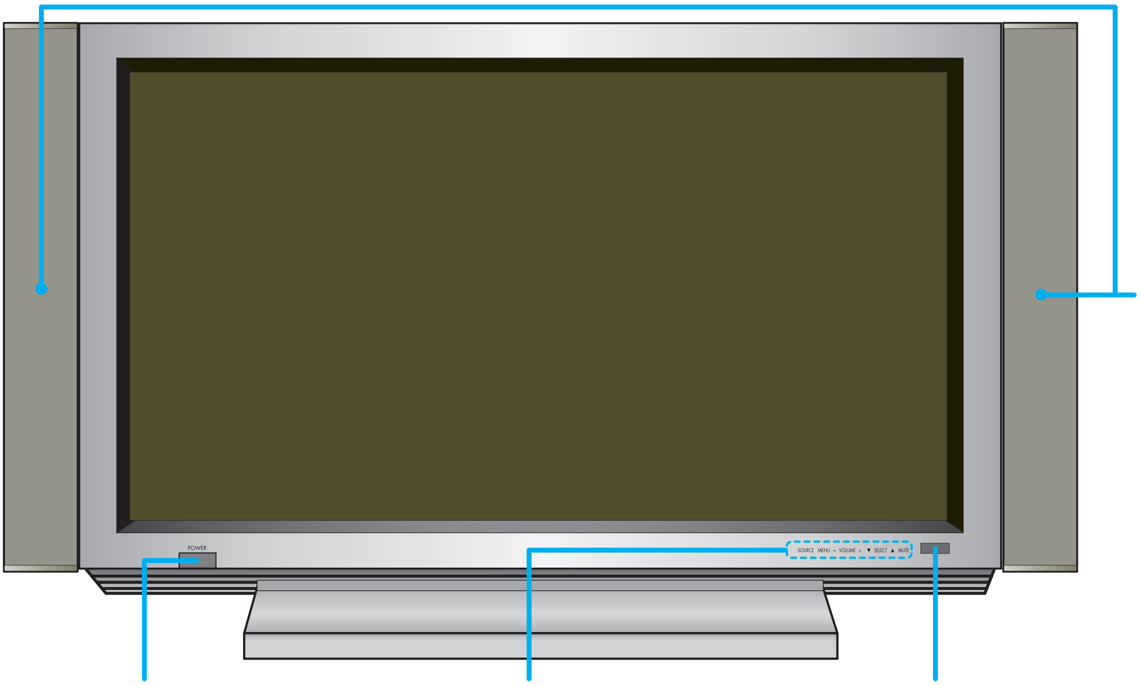
9. Handling Description

9-1 Basic Description

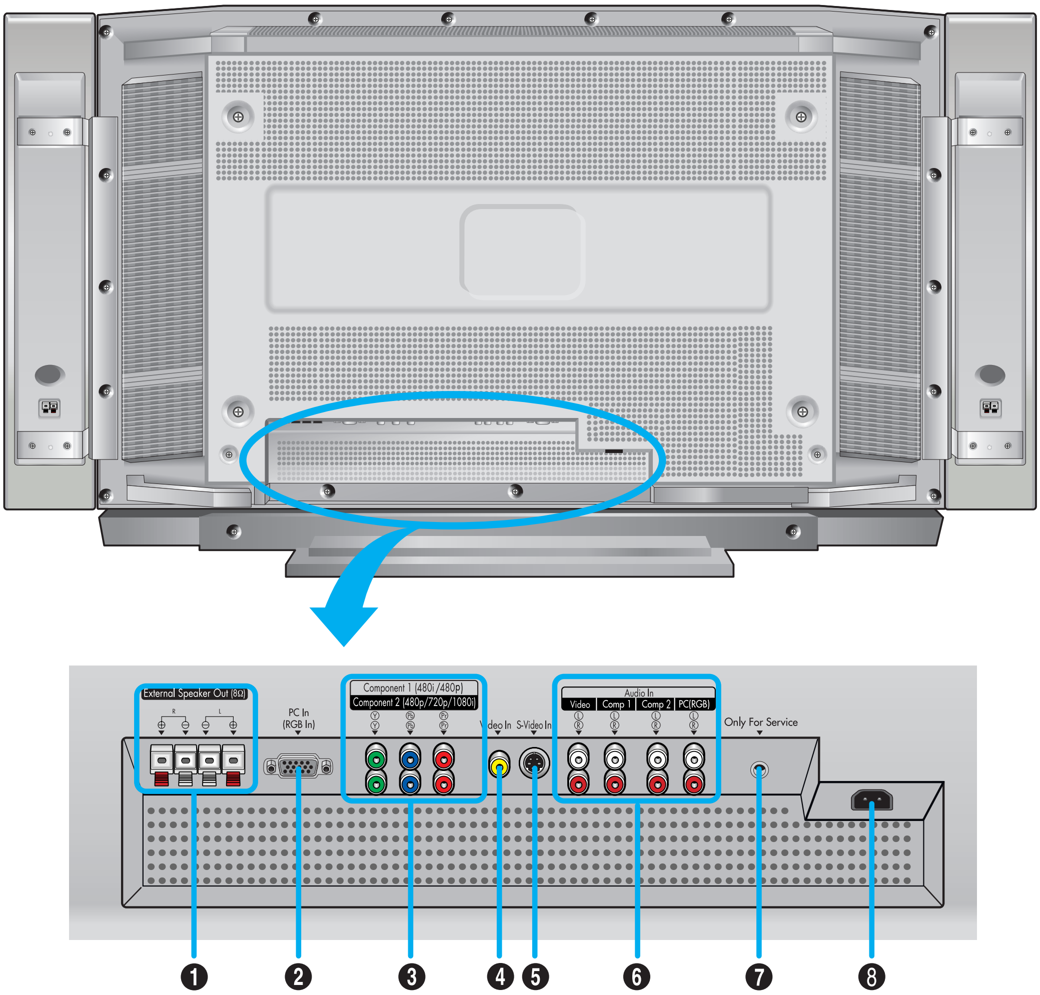
9-1-1 The Name of Each Part

9-1-1(A) PDP(Plasma Disply Panel)

Front Panel



Rear Panel



❶ External Speaker Out jacks
Connect external speakers.

❷ PC(RGB) Input jack (15pin)
Connect to the video output jack on your PC.

❸ Component Video Input jacks (Y / P_b / P_r)
Connect a component signal from external sources like DVD players or DTV receivers.

❹ Video Input jack
Connect a video signal from external sources like VCRs or DVD players.

❺ S-Video Input jack
Connect a S-Video signal from an S-VHS VCRs or DVD players.

❻ Audio Input (Video / Component1 / 2 / PC(RGB)) jacks
Connect a audio signal from external sources like VCRs, PC or DVD players.

❼ Service Jack
Only for service.

❽ Power Input jack
Connect the included power cord.

9-1-1(B) REMOTE CONTROL

Remote Control

Flip the cover open
in the arrow direction.

❶ Power button
Turns the PDP on and off.

❷ Number buttons

❸ Display button
Press to display information on the PDP screen.

❹ Menu button
Displays the main on-screen menu.

❺ CH (Channel) and VOL (Volume) buttons
Channel and Volume buttons are used for selecting menu item in menu mode.

❻ Mute button
Press to mute the PDP sound.

❼ P.Mode button
Adjust the PDP picture by selecting on of the preset factory settings (or select your personal, customized picture settings.)

❽ Aspect button
Press to change the screen size.

❾ Mode button
Selects a target device to be controlled by the samsung remote control (ie., VCR, Cable, or DVD players).

❿ Clock Display button
Press to display clock on the PDP screen.

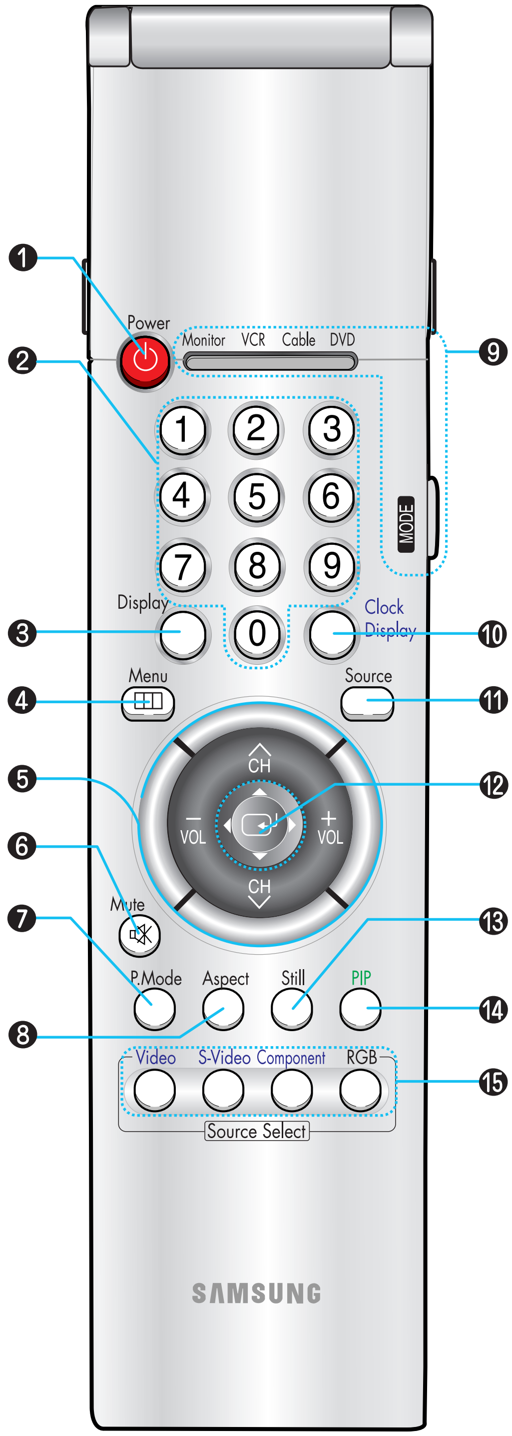
⓫ Source button
Press to display all of the available video sources (ie., Video, S-Video, Component1, Component2, PC(RGB)).

⓬ Joystick button
Use to highlight on-screen menu items and change menu values.

⓭ Still button
Press to pause the current screen.

⓮ PIP button
Activates picture in picture.

⓯ Source selection buttons
Press to directly select Video, S-Video, Component1, Component2 or PC(RGB).



⑯ VCR control buttons

Controls VCR tape functions: Stop, Rewind, Play / Pause, Fast Forward.

⑰ SET button

Use during setting up of this remote control, so that it will work compatibly with other devices. (VCR, cable box, DVD, etc.)

⑱ Clock set button

Press to clock setting.

⑲ PIP control buttons

Source : Press to select one of the available signal sources for the PIP window.
S.Sel : Press to select the Audio (PIP or Main).
Locate : Press to move the PIP window to any of the screen.

⑳ PC control buttons

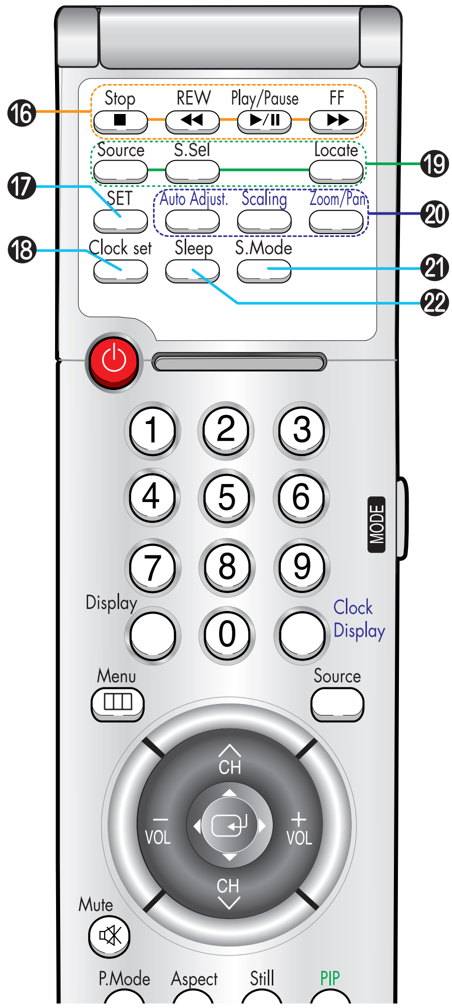
Auto Adjust
Scaling
Zoom / Pan

㉑ S.Mode button

Adjust the PDP sound by selecting one of the preset factory settings (or select your personal, customized sound settings.)

㉒ Sleep button

Press to select a preset time interval for automatic shutoff.



9-2 Wall Mount

9-2-1 Notice for installing

1. Do not install the PDP on any place other than veritical walls.

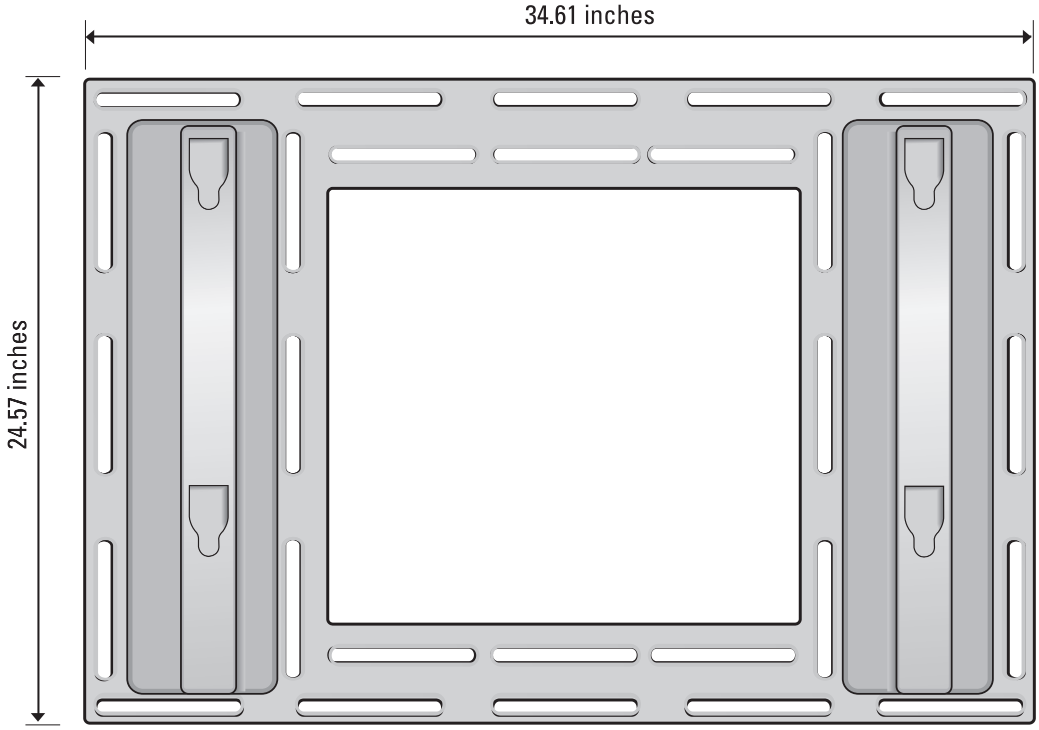
2. To protect the performance of the PDP and prevent problems, avoid the following place :

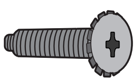
   - Next to spring coloer detectors.
   - Places subject to vibration or shock.
   - Near high voltage cables.
   - Around heating apparatus.

3. Install the PDP considering the construction of the wall.

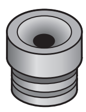
4. Use only recommended parts and components for installation.

9-2-2 Parts(wall attachment panel is sold separately.)





Fixing bolt

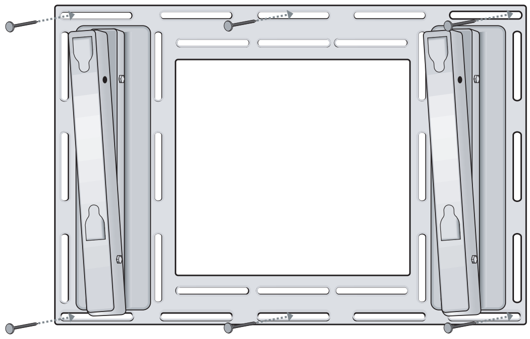


Insulation rubber

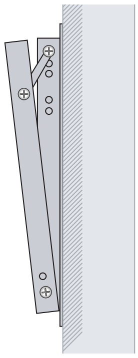
9-2-3 Installing the Display on the Wall Attachment Panel :

1. Check for the stability of the wall where the PDP is to be installed. If the wall is not enough strong to support the PDP, strengthen the wall before installation.

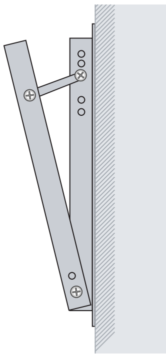
2. Fix the wall attachment panel on the wall using bolts as shown in the figure: Fixing bolts must protrude from the wall appox. 0.6 inches.



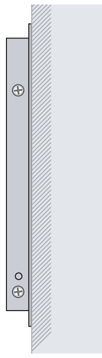
3. Using the wall attachment panel, you may adjust the angle of the display from 0 to 20 degrees. The angle can be set in 5 stages with 5 degrees of distance each using the angle control holes on the sides of the panel.



When the angle has been set to 5 degrees.

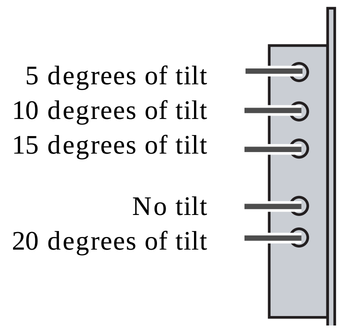


When the angle has been set to15 degrees.

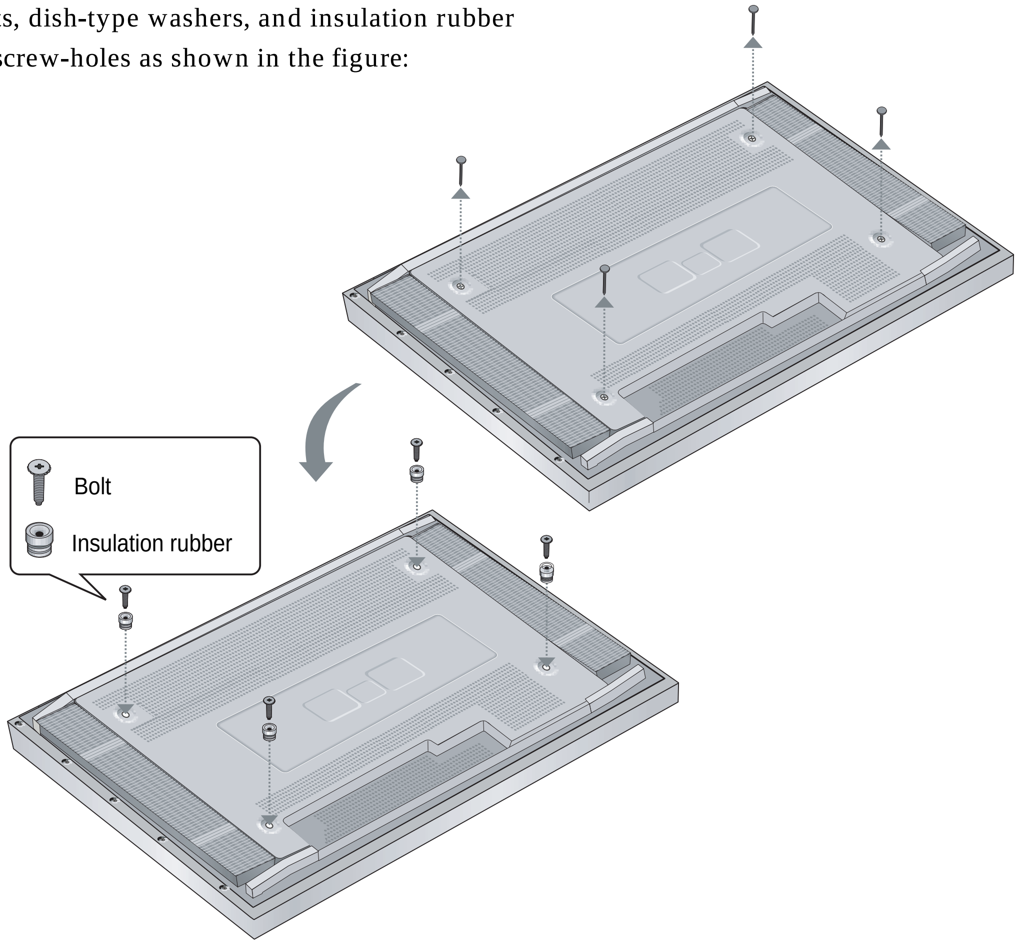


When the panel hasn't been tilted.

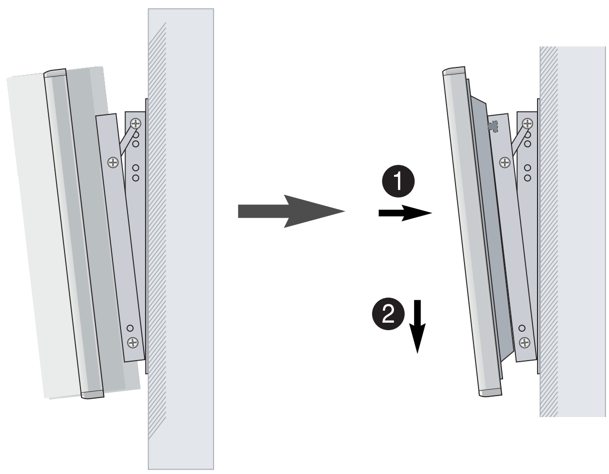
Angle control holes



4. Remove four large screws from the rear side of the display. Insert the bolts, dish-type washers, and insulation rubber into the four screw-holes as shown in the figure:



5. Put the insulation rubber point protruding from the rear top of the display in the groove on the top of the wall attachment panel. Lift up the display a little bit so that the insulation rubber point at the bottom of the rear side of the display is put to the groove at the bottom of the wall attachment panel. (Do not lift the display with any pressure. The insulation rubber at the top may be taken off.)v



9-2-4 Separating the Display from the Wall Attachment Panel :

Remove the fixing bolts from both sides(left and right) of the wall attachment panel. Lift and pull the-bottom of the display a small amount, to separate the insulation rubber point from the bottom of the wall attachment panel.
Lift the display and separate the insulation rubber point from the groove on top of the wall attachment panel.