SERVICE MANUAL

Model:

PDP4216M Monitor

This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

Safety Precaution

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

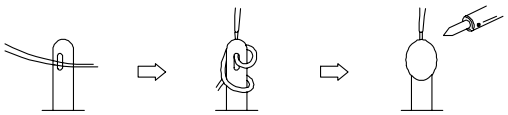
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclo sure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

PRECAUTIONS DURING SERVICING

1. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selection switches, RF cables, noise-blocking capacitors, noise-blocking filters, etc.
2. Use specified internal Wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
3. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulating Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulating sheets for transistors
   5) Plastic screws for fixing micro switches
4. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



5. Make sure that wires do not contact heat generating parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
6. Check if replaced wires do not contact sharply edged or pointed parts.
7. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot.

WARNING:

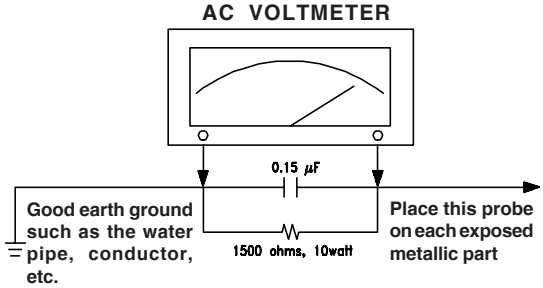
Before servicing this TV receiver, read the SAFETY INSTRUCTION and PRODUCT SAFETY NOTICE.

SAFETY INSTRUCTION

The service should not be attempted by anyone unfamiliar with the necessary instructions on this apparatus. The following are the necessary instructions to be observed before servicing.

1. An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.
2. Comply with all caution and safety related provided on the back of the cabinet, inside the cabinet, on the chassis or picture tube.
3. To avoid a shock hazard, always discharge the picture tube's anode to the chassis ground before removing the anode cap.
4. Completely discharge the high potential voltage of the picture tube before handling. The picture tube is a vacuum and if broken, the glass will explode.

5. When replacing a MAIN PCB in the cabinet, always be certain that all protective are installed properly such as control knobs, adjustment covers or shields, barriers, isolation resistor networks etc.
6. When servicing is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area.
7. Keep wires away from high voltage or high tempera ture components.
8. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads,metal overlay, control shafts, etc., to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly to the AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5K ohms volt sensitivity or more in the following manner.
   Connect a 1.5K ohm 10 watt resistor paralleled by a 0.15μF AC type capacitor, between a good earth ground (water pipe, conductor etc.,) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of the 1.5K ohm resistor and 0.15 uF capacitor. Reverse the AC plug at the AC outlet and repeat the AC voltage measurements for each exposed metallic part.
   The measured voltage must not exceed 0.3V RMS.
   This corresponds to 0.5mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.
   The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch "ON". The resistance should be more than 6M ohms.



AC Leakage Current Check

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this apparatus have special safety-related characteristics.

These characteristics are offer passed unnoticed by visual spection and the protection afforded by them cannot necessarily be obtained by using replacement components rates for a higher voltage, wattage, etc.

The replacement parts which have these special safety characteristics are identified by ⚠ marks on the schematic diagram and on the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

9. Must be sure that the ground wire of the AC inlet is connected with the ground of the apparatus properly.

Technical Specifications	MODEL : *PDP4216M Monitor* 42" Plasma Display			
DATE FIRST ISSUED	ISSUE 1	RAISED BY	CHECKED BY	NUMBER OF PAGE 10

RAISED BY :

DATE		
R & D DEPARTMENT	.....	.....
COMMERCIAL DEPARTMENT	.....	.....
PRODUCTION DEPARTMENT	.....	.....
Q/A DEPARTMENT	.....	.....
CUSTOMER	.....	.....
	.....	.....

SIGNATURE : DATE :

NOTE : Only documents stamped "Controlled Document" to be used for manufacture of production parts.

1. Standard Test Conditions

All tests shall be performed under the following conditions, unless otherwise specified.

1.1 Ambient light : 150ux (When measuring I_B, the ambient luminance $\leqq 0.1Cd/m^2$)

1.2 Viewing distance : 50cm in front of PDP

1.3 Warm up time : 30 minutes

1.4 PDP Panel facing : no restricted

1.5 Measuring Equipment : PC, Chroma 2225 signal generator (with Chroma digital additional card) or equivalent, Minolta CA100 photometer

1.6 Magnetic field : no restricted

1.7 Control settings : Brightness, Contrast, Tint, Color set at Center(50)

1.8 Power input : 100~120Vac 60Hz

1.9 Ambient temperature : 20°C ± 5°C (68°F ± 9°F)

1.10 Display mode : Resolution 1024 x 768

1.11 Other conditions :

1.11.1 With image sticking protection of PDP module, the luminance will descend by time on a same still screen and rapidly go down in 5 minutes. When measuring the color tracking and luminance of a same still screen, be sure t o accomplish the measurement in one minute to ensure its accuracy.

1.11.2 Due to the structure of PDP, the extra-high-bright same screen should not hold over 5 minutes for fear of branding on the panel.

ELECTRICAL CHARACTERISTICS

2. Power Input

2.1	Voltage	:	100 ~120VAC 60Hz
2.2	Input Current	:	5.0 /2.5A
2.3	Maximum Inrush Current	:	<30 A (FOR AC110V ONLY)
	Test condition	:	Measured when switched off for at least 20 mins
2.4	Frequency	:	50Hz to 60Hz(±3Hz)
2.5	Power Consumption	:	330W Typical
	Test condition	:	full white display with maximum brightness and contrast
2.6	Power Factor	:	Meets IEC1000-3-2
2.7	Withstanding voltage	:	1.5kVac or 2.2kVdc for 1 sec

3. Display

3.1	Screen Size	:	42” Plasma display
3.2	Aspect Ratio	:	16:9
3.3	Pixel Resolution	:	1024x768
3.4	Peak Brightness	:	1000 cd/m² (Typical, Panel only)
3.5	Contrast Ratio (Dark room)	:	5000:1 (Ratio, Typical, in a dark room, Panel only)
3.6	Viewing Angle	:	Over 160°
3.7	OSD language	:	English,Spanish,French

4. Signal

4.1 AV & Graphic input

4.1.1 Composite signal	:	CVBS
4.1.2 Y,C Signal	:	S-Video
4.1.3 Component signal	:	YPbPr x 2, HDMI,VGA compatible
4.1.4 Graphic I/P	:	Analog: D-sub 15pin detachable cable Digital:HDMI
4.1.5EDID compatibility	:	DDC 1.3
4.1.6 I/P frequency	:	f_H: 31.5kHz to 60kHz/f_V: 56.25Hz to 75Hz(1024x768 recommended)

4.2 Audio input VGA(D-Sub 15 Pin Type)×1
D-Sub 9 Pin (RS-232 Input) × 1
HDMI (Ver. 1.1) connector × 1
S-Video (Mini Din 4 Pin) × 1
CVB Input (RCA Type) × 1
YPbPr × 2
Stereo/Audio × 6

4.3 Audio output Audio&Video Output (RCA Type) × 1 SPDIF (Optical) × 1

PIP/POP/PBP, Picture size, Picture Still, Sound mode,Last memory, Timer, MTS

5. Environment

5.1 Operating environment

5.1.1 Temperature : 5º to 33°C
5.1.2 Relative humidity: 20% to 85%(non-condensing)

5.2 Storage and Transport

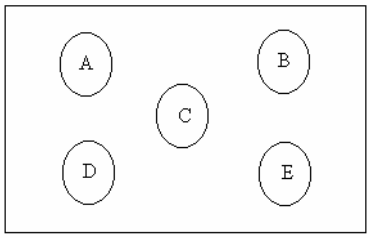
5.2.1 Temperature : -20°C to 60°C(-4º to 140°F)
5.2.2 Relative humidity: 5% to 95%

6. Panel Characteristics

6.1 Type : LGX2A
6.2 Size : 42",1106.5mm(W)X622.1mm(H) (W/Ostand)
6.3 Aspect ratio : 16:9
6.4 Viewing angle : Over 160°
6.5 Resolution : 1024X768
6.6 Weight : 22.0kg ±0.5 kg (Net)
6.7 Color : 16.7 millions of colors (R/G/B each 256 scales)
6.8 Contrast : Average 60:1 (In a bright room with 150Lux at center)
Typical 5000:1 (In a dark room 1/100 White Window pattern at center).
6.9 Peak brightness : Typical 1000cd/㎡ (1/25 White Window)

6.10 Color Coordinate Uniformity : Contrast; Brightness and Color control at normal setting

Test Pattern : Full white pattern



Average of point A,B,C,D and E +/- 0.01

6.11 Color temperature : Contrast at center (50); Brightness center (50);
Color temperature set at Natural
x=0.285±0.02
y=0.290±0.02

6.12 Cell Defect Specifications
Subject to Panel supplier specification as appends.

7. Front Panel Control Button

7.1 SEL. Up / Down Button : Push the key to select Item up or down.
When selecting the item on OSD menu.

VOL. Left/Right Button : Push the key to increase the volume left or right.
When selecting the adjusting item on OSD menu
increase or decrease the data-bar.

MENU Button : Display or Exit the OSD menu.

Source Select Button : Press this button and use up/down button to sellect the signal sources. AV, S-Video, YPbPr1,YPbPr2 VGA or HDMI.

7.2 STANDBY Button : Switch on main power, or switch off to enter power Saving modes.

7.3 Main Power Switch : Turn on or off the unit.

8. OSD Function

8.1 Picture : Brightness; Contrast; Saturation; Phase; Frequency;
Picture Mode (Normal, Bright, Cinema, User);
Color Temp (Warm, Normal, Cool); etc.

8.2 Window : Image Size (Fill All, Force 4:3, Letter Box, Wide, Anamorphic, etc);
H Position; V Position; Freeze Window (Off, On)

8.3 Audio : Balance; Audio Mode (SRS TSXT, Cinema, Music, News, User)
Speaker (Internal, External); AVC (Off, On)
Equalizer (120Hz, 200Hz, 500Hz, 1.2kHz, 3kHz, 7.5kHz, 12kHz)

8.4 Options : Osd Timeout (5 Sec, 15 Sec, 60 Sec); Menu Background (Opaque, Translucent); Language (English, French, Spanish); Default Setting; Close Caption Mode (CC1, CC2, T1, T2, Xds); Close Caption (Off, On, On Mute); Content Blocking; Timer

8.5 Layout : Full Screen; PIP; Split Screen

9. Agency Approvals

Safety	UL/FCC/cUL
Emissions	FCC class B

10. Reliability

11.1 MTBF : 20,000 hours(Use moving picture signal at 25°C ambient)

11. Accessories : User manual x1, Remote control x1,
Stand x 1, Battery x 2, AC Cable x 1

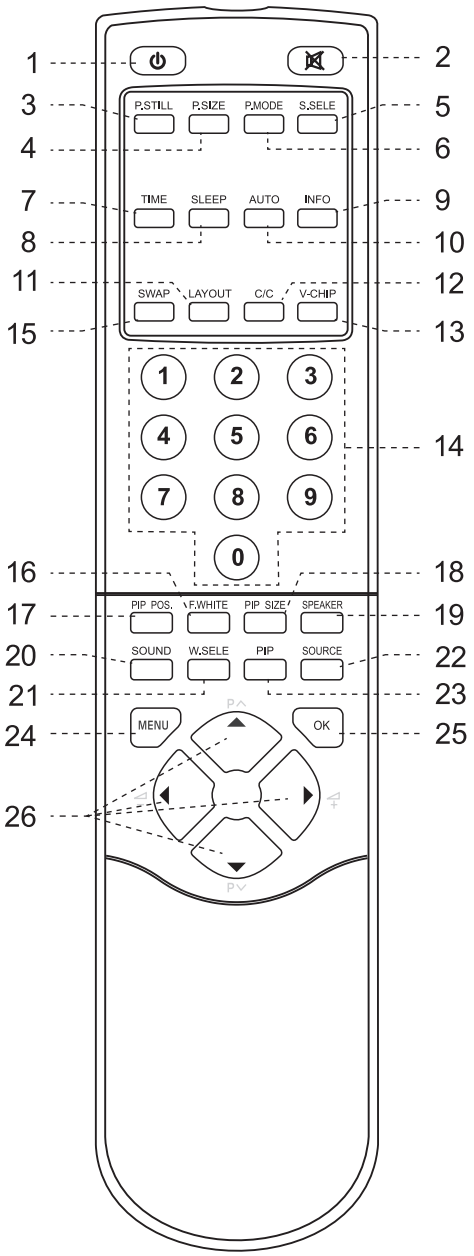
12. Support the Signal Mode

A. HDMI Mode / D-Sub Mode (VGA or DVI) / HDTV Mode (YpbPr1 or YpbPr2)

No	Mode		Resolution	Horizontal Frequency (KHz)	Vertical Frequency (KHz)	Dot Clock Frequency (MHz)
1	HDMI Mode	D-Sub Mode (VGA or DVI)	640x400	31.47	70.08	25.17
2			640x480	31.50	60.00	25.18
3			640x480	35.00	67.00	30.24
4			640x480	37.50	75.00	31.50
5			640x480	37.86	72.81	31.50
6			720x400	31.47	70.08	28.32
7			800x600	31.56	56.25	36.00
8			800x600	37.90	60.32	40.00
9			800x600	46.90	75.00	49.50
10			800x600	48.08	72.19	50.00
11			832x624	49.00	74.00	57.27
12			1024x768	48.84	60.00	65.00
13			1024x768	56.50	70.00	75.00
14			1024x768	60.00	75.00	78.75
15			1152x864	54.53	61.13	80.37
16			1152x864	63.86	70.02	94.51
17			1152x864	67.52	75.02	108.03
18			1280x960	60.02	60.02	108.04
19			1280x1024	64.00	60.01	108.00
20		HDTV Mode (YpbPr1/ YpbPr2)	1080i (1920x1080)	33.75	60.00	74.25
21			1080i (1920x1080)	28.125	50.00	74.25
22			720P (1280x720)	45.00	60.00	74.25
23			720P (1280x720)	37.50	50.00	74.25
24			576p (720x576)	31.25	50.00	27.00
25			480p (720x480)	31.468	59.94	27.00
26			576i	15.625	50.00	13.50
27			480i	15.734	59.94	13.50

4.4 Remote Control

1 **POWER(⏻):** Press this button to turn off to standby and turn on from standby.
2 **MUTE(🔇):** Press this button to quiet the sound system. Press again to reactivate the sound system.
3 **P.STILL:** Press this button to hold on the screen. Press again to normal.
4 **P.SIZE:** When the input source is YPbPr 1, YPbPr 2, VGA or HDMI, press this button, the picture will change according to Fill All, Force 4:3, Letter Box, Wide or Anamorphic. When the input source is AV or S-Video, press this button, the picture will change according to Fill All, 4:3, Letter Box, Wide or Anamorphic.
5 **S.SELE:** Press this button to select the sound output from Main Window or Sub Window.
6 **P.MODE :** Press the button to select different picture effect.
7 **TIME:** Press this button to pop up the “Clock Set” menu.
8 **SLEEP:** Press this button to select the sleep time.
9 **INFO:** Press the button to display the source information.
10 **AUTO:** The Display automatically adjusts the phase, vertical / horizontal position when pressing this button in VGA mode.
11 **LAYOUT:** Press this button to pop up Layout menu.
12 **C/C:** Press this button to enter the Closed Caption Function. (Only for AV or S-Video)
13 **V-CHIP:** Press this button to enter the V-Chip Function. (Only for AV or S-Video)
14 **Number buttons:** Use these buttons to enter the password.



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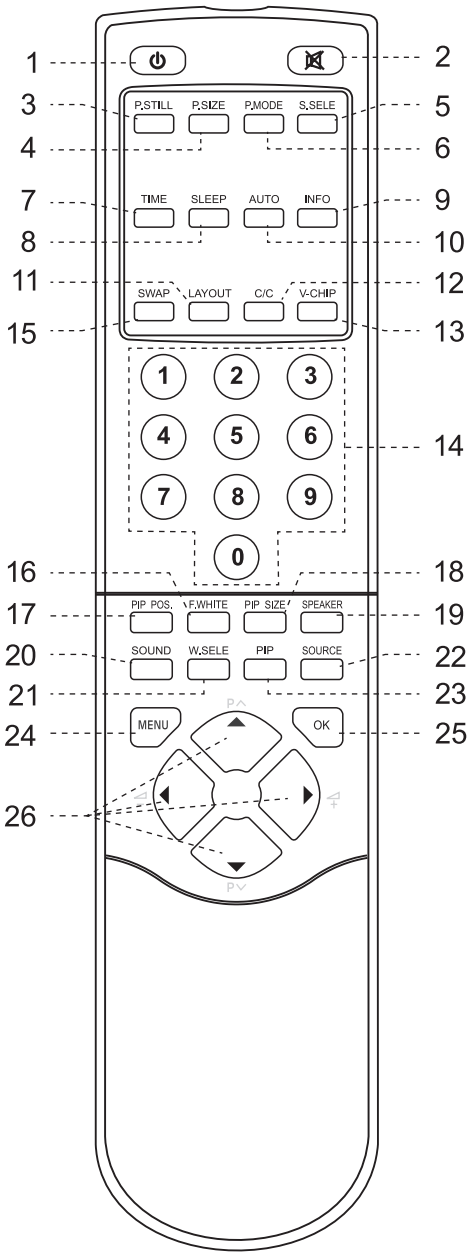
15 **SWAP:** Press this button to switch the Main window or Sub window pictures in PIP and Split Screen.
16 **F.WHITE:** Press this button to show a full white picture.
17 **PIP POS. :** Press the button to select different Image Position in PIP Mode.
18 **PIP SIZE :** Press the button to select different Image Size in PIP Mode.
19 **SPEAKER:** Press this button to pop up the "Speaker" menu, use the ◀ / ▶ button to select "Internal" or "External".
20 **SOUND:** Press the button to select different sound effect.
21 **W.SELE:** Press this button to select the Main Window or Sub Window.
22 **SOURCE:** Press this button and use ▲ / ▼ button to select the signal sources. AV, S-Video, YPbPr 1, YPbPr 2, VGA or HDMI.
23 **PIP**: Press this button to change different Picture Mode.
24 **MENU:** Press this button to pop up the OSD Menu and press it again to exit the OSD Menu.
25 **OK :** Press to enter or confirm.
26 **◀ / ▶ :** They are used as ◀ / ▶ buttons in the OSD Menu screen and they can be used for the adjustment of volume when the OSD Menu is not shown on the screen.
▲ / ▼ : They are used as ▲ / ▼ buttons in the OSD Menu screen.
They also can be used for the selection of the program when the OSD Menu is not shown on the screen, but only for the Model with Tuner.



PHYSICAL CHARACTERISTICS

14. Power Cord

Length : 1.8m nominal

Type : optional

15. Cabinet

15.1 Color : black colour as defined by colour plaque reference number

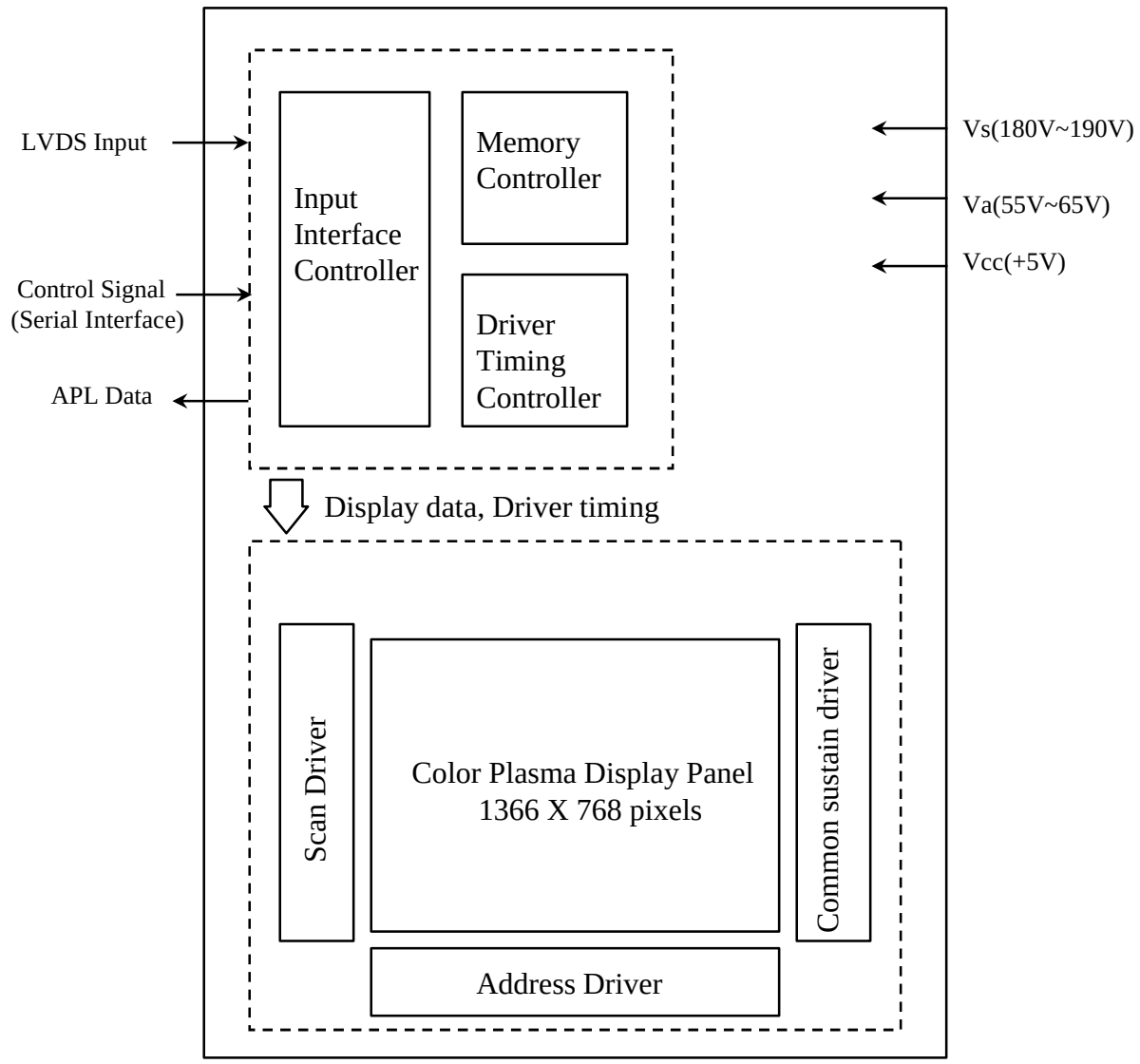
15.2 Weight(W/Ostand)

Net weight : 34kg
Gross weight :

15.3 Dimensions (W/O stand&speak)

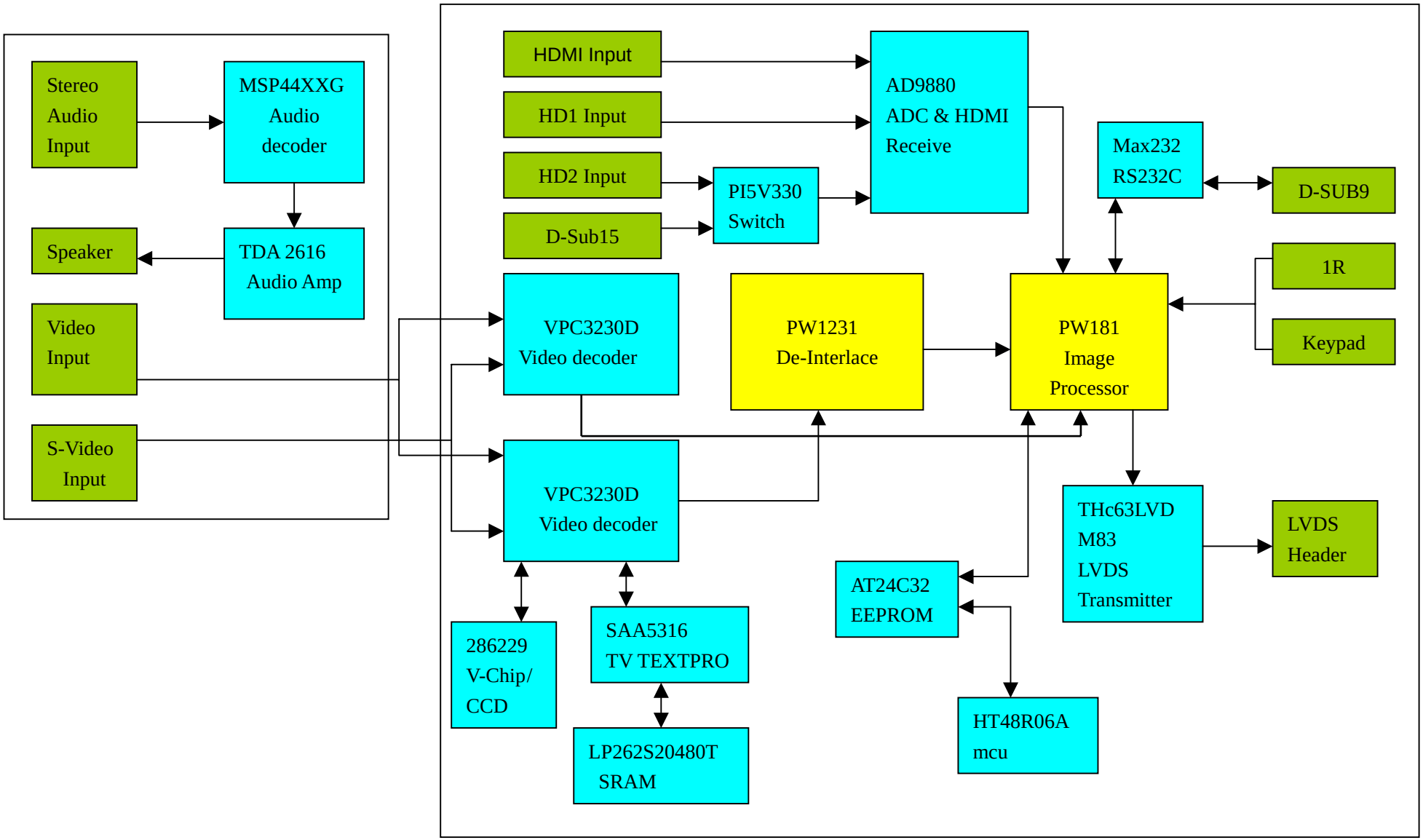
Width : 1024mm
Height : 692mm
Depth : 286mm

Block Diagram



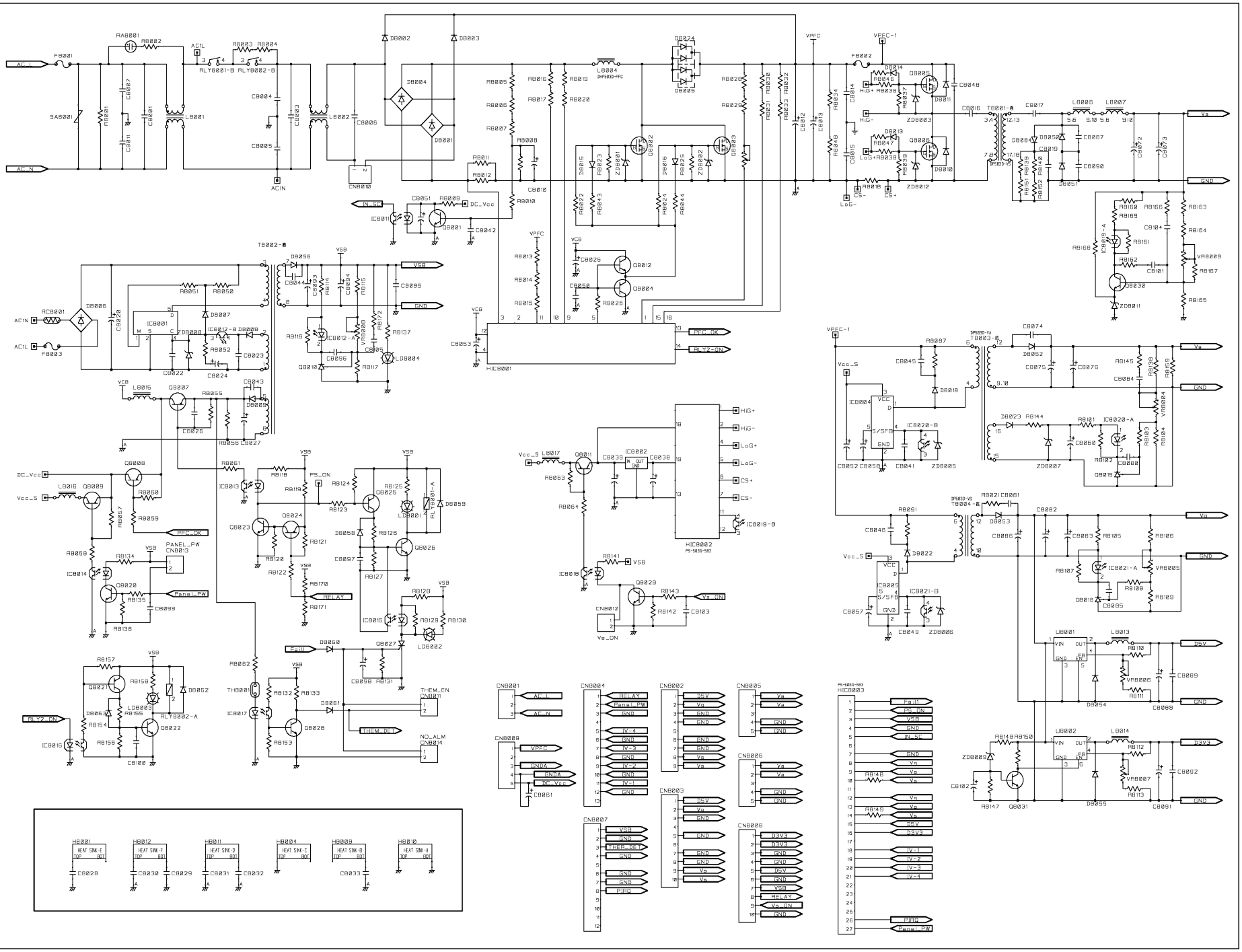
☞ Applied Voltage level is specified at the time when Full-White pattern is displayed on the panel.

Block Diagram



Circuit Diagram

- Power supply board of Audio Amplifier, MPT012A
- Main (Video) board
- Audio/Tuner board
- Keypad board
- Remote control receiver board
- Remote control board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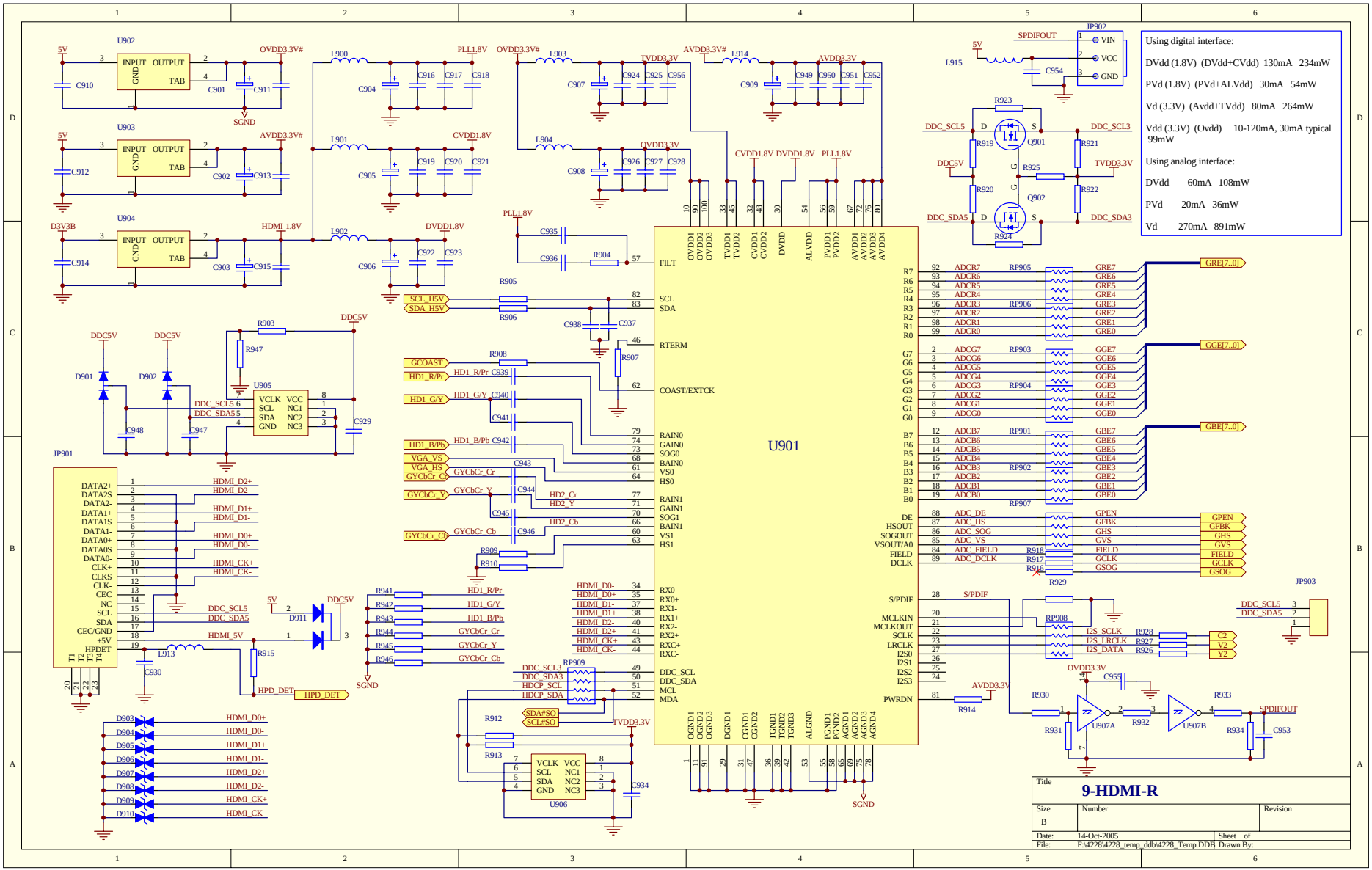
HEAT SINK-B
HEAT SINK-C
HEAT SINK-D
HEAT SINK-E
HEAT SINK-F
TOP
BOT
CNB001
CNB002
CNB003
CNB004
CNB005
CNB006
CNB007
CNB008
CNB009
CNB010
CNB011
CNB012
CNB013
CNB014
IN_SC
DC_Vcc
VCC
VSB
GND
PFC_OK
RLY2_ON
RELAY
PANEL_PW
Panel_PW
THEM_EN
THEM_DET
NO_ALM
PS_ON
Fault
Vs_ON
HiG+
HiG-
LoG+
LoG-
CS+
CS-
Vcc_S
D5V
D3V3
Vs
IV-1
IV-2
IV-3
IV-4
PIBO


U901
U902
U903
U904
U905
U906
JP901
JP902
JP903
Using digital interface:
DVdd (1.8V) (DVdd+CVdd) 130mA 234mW
PVd (1.8V) (PVd+ALVdd) 30mA 54mW
Vd (3.3V) (Avdd+TVdd) 80mA 264mW
Vdd (3.3V) (Ovdd) 10-120mA, 30mA typical 99mW
Using analog interface:
DVdd 60mA 108mW
PVd 20mA 36mW
Vd 270mA 891mW
Title
9-HDMI-R
Size B
Number
Revision
Date: 14-Oct-2005
Sheet of
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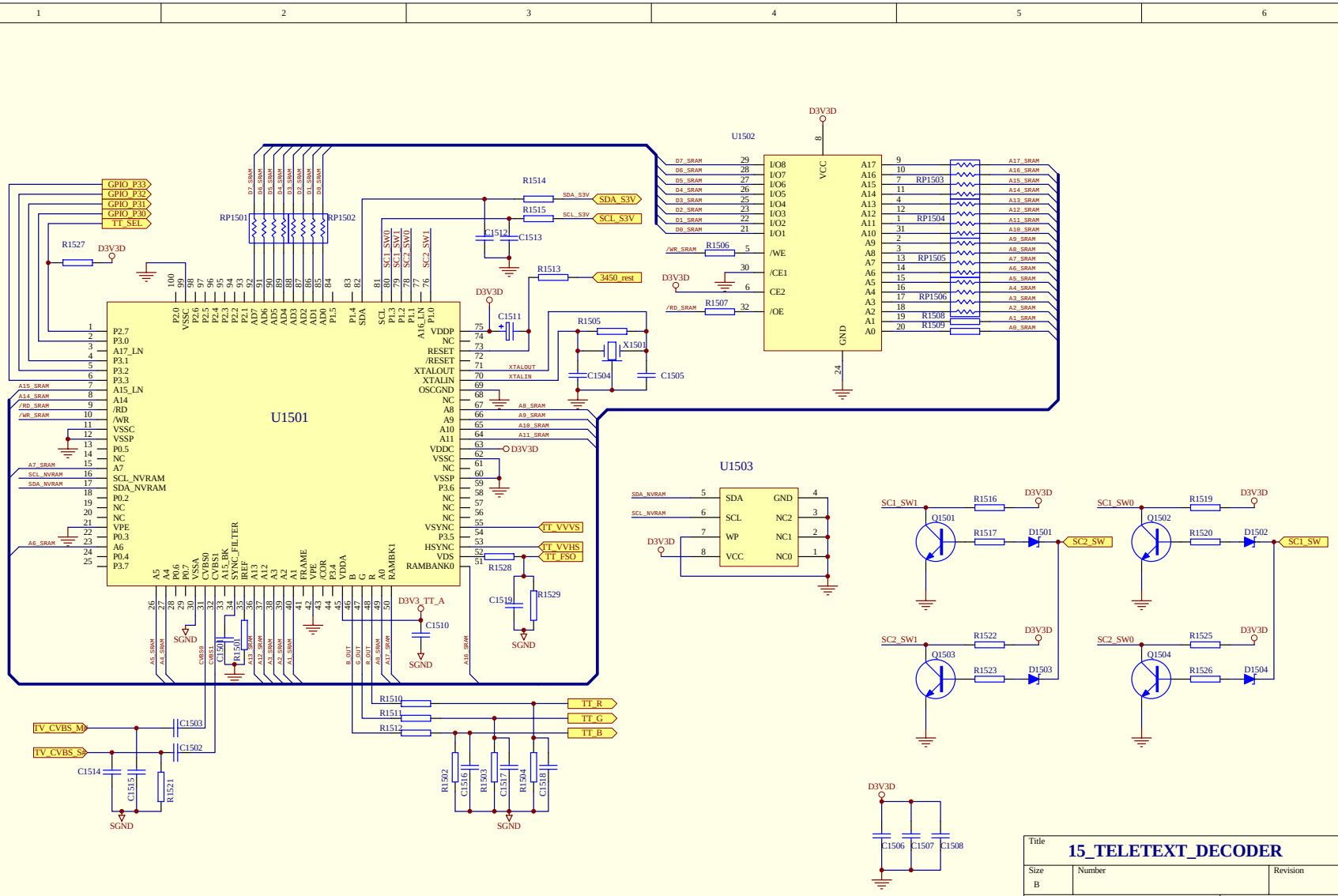
Drawn By:


U1501
U1502
U1503
GPIO_P33
GPIO_P32
GPIO_P31
GPIO_P30
TT_SEL
D3V3D
SDA_S3V
SCL_S3V
3450_rest
XTALOUT
XTALIN
TT_VVVS
TT_VVHS
TT_FSO
D3V3_TT_A
SGND
TV_CVBS_M
TV_CVBS_S
TT_R
TT_G
TT_B
SC1_SW1
SC1_SW0
SC2_SW1
SC2_SW0
SC2_SW
SC1_SW
Q1501
Q1502
Q1503
Q1504
D1501
D1502
D1503
D1504
RP1501
RP1502
RP1503
RP1504
RP1505
RP1506
X1501
Title
15_TELETEXT_DECODER
Size
B
Number
Revision
Date: 14-Oct-2005
Sheet of
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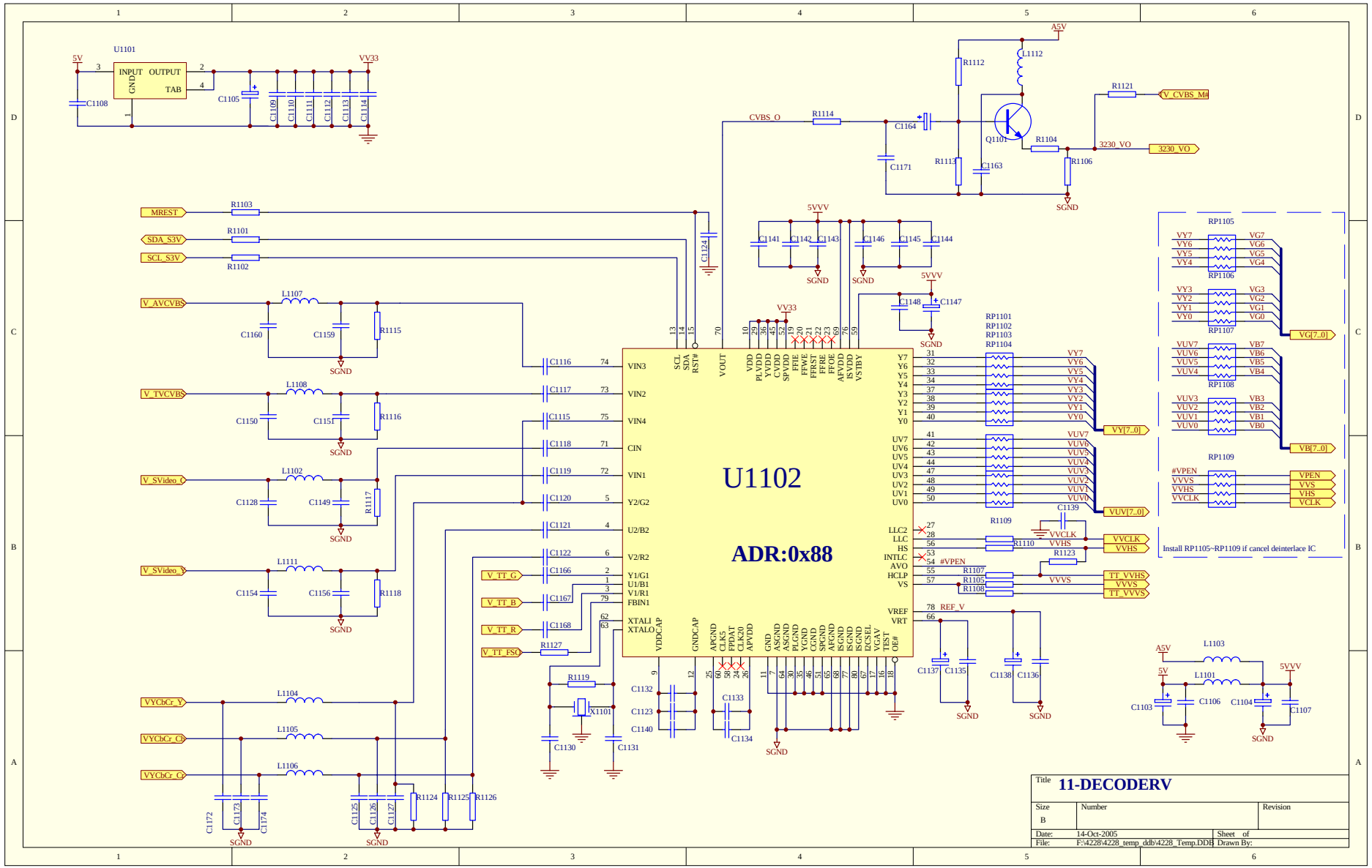
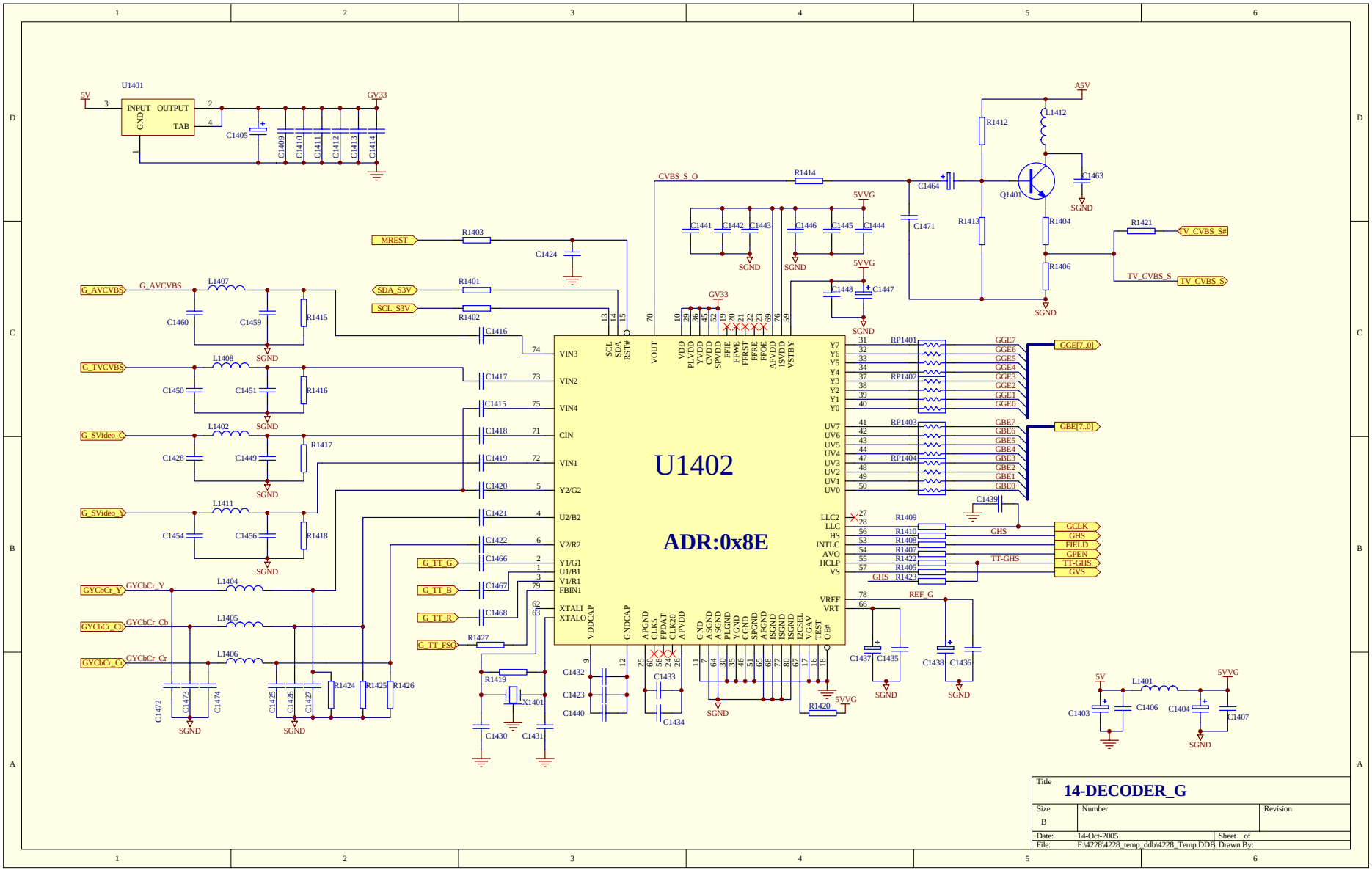
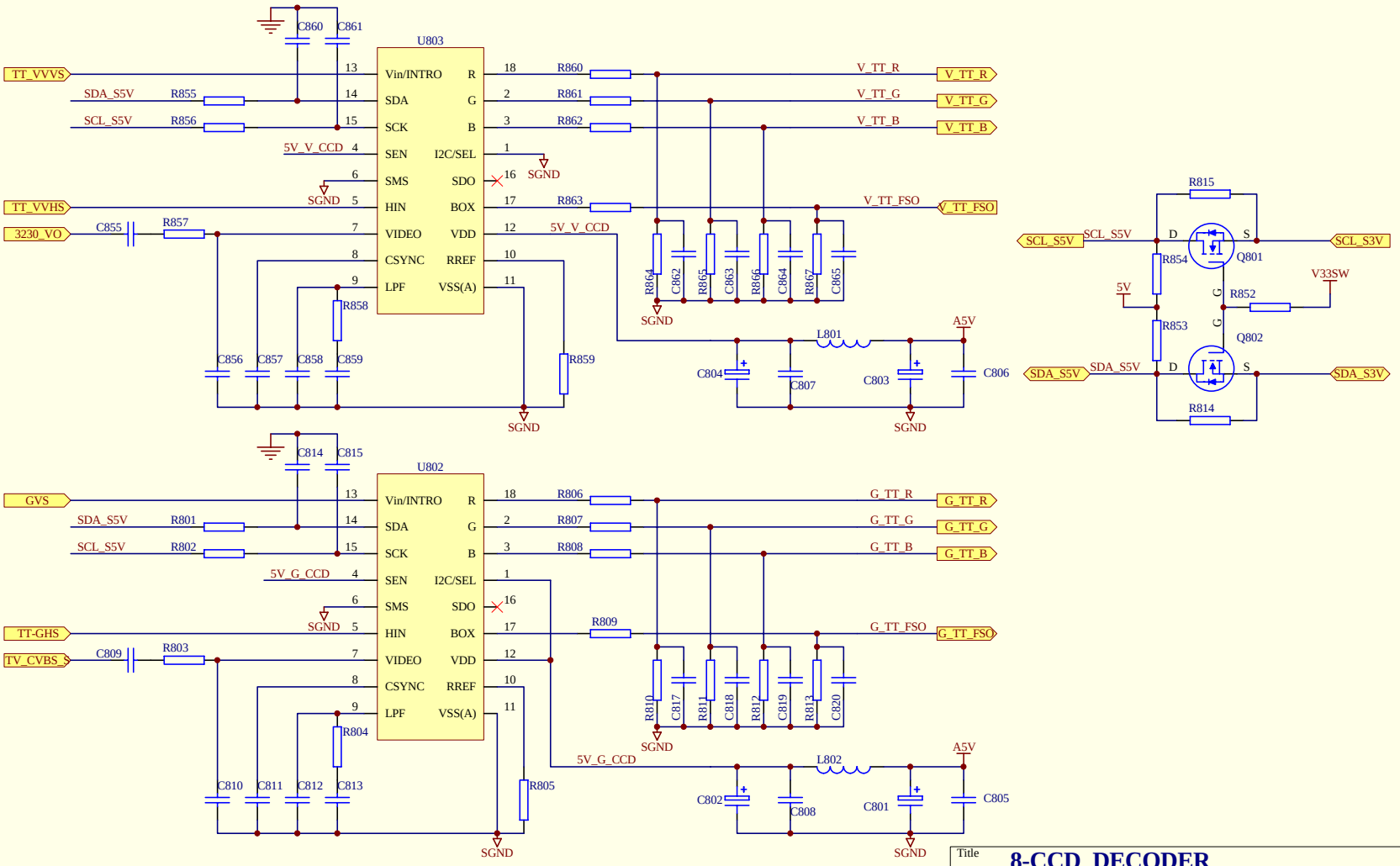
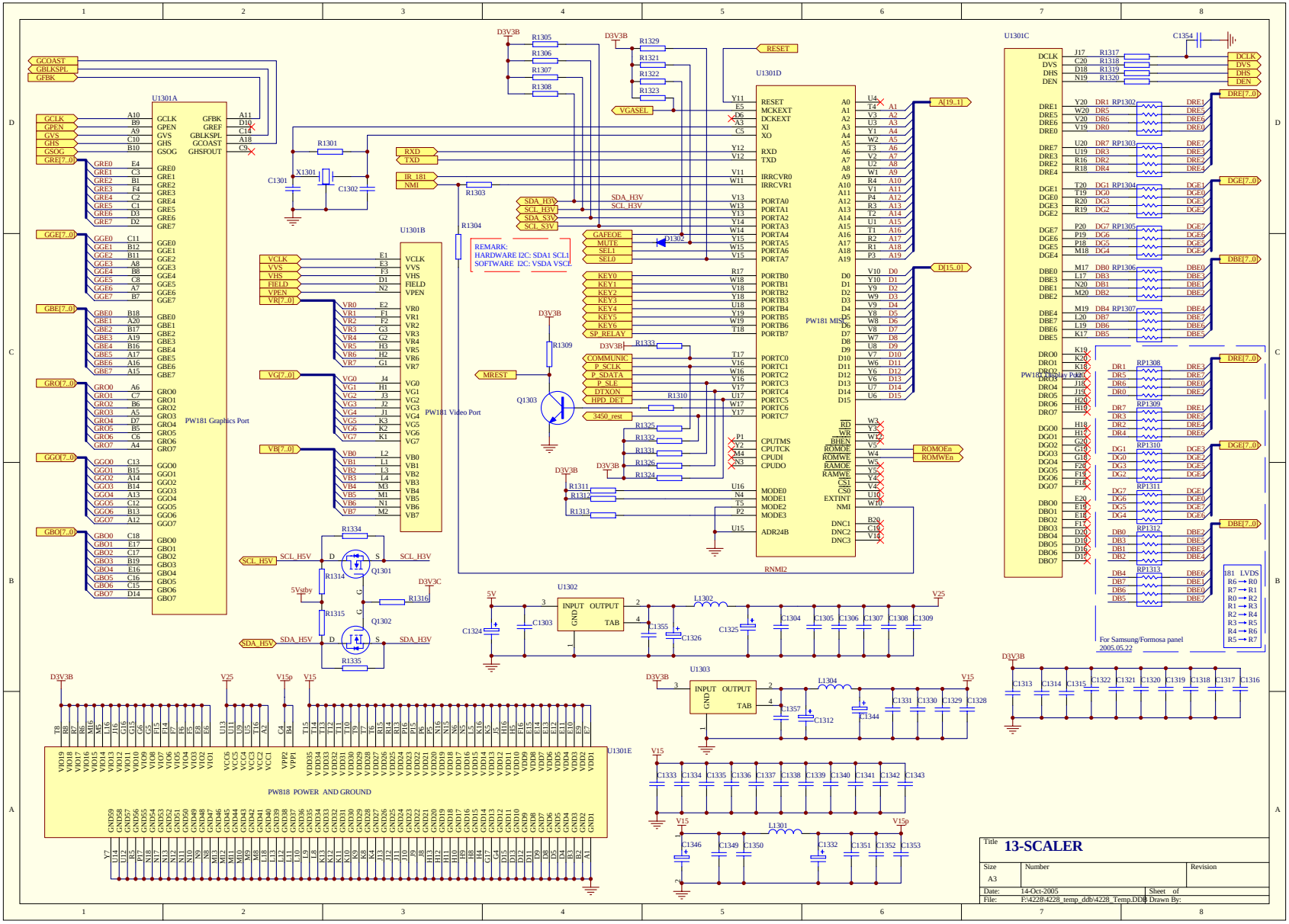
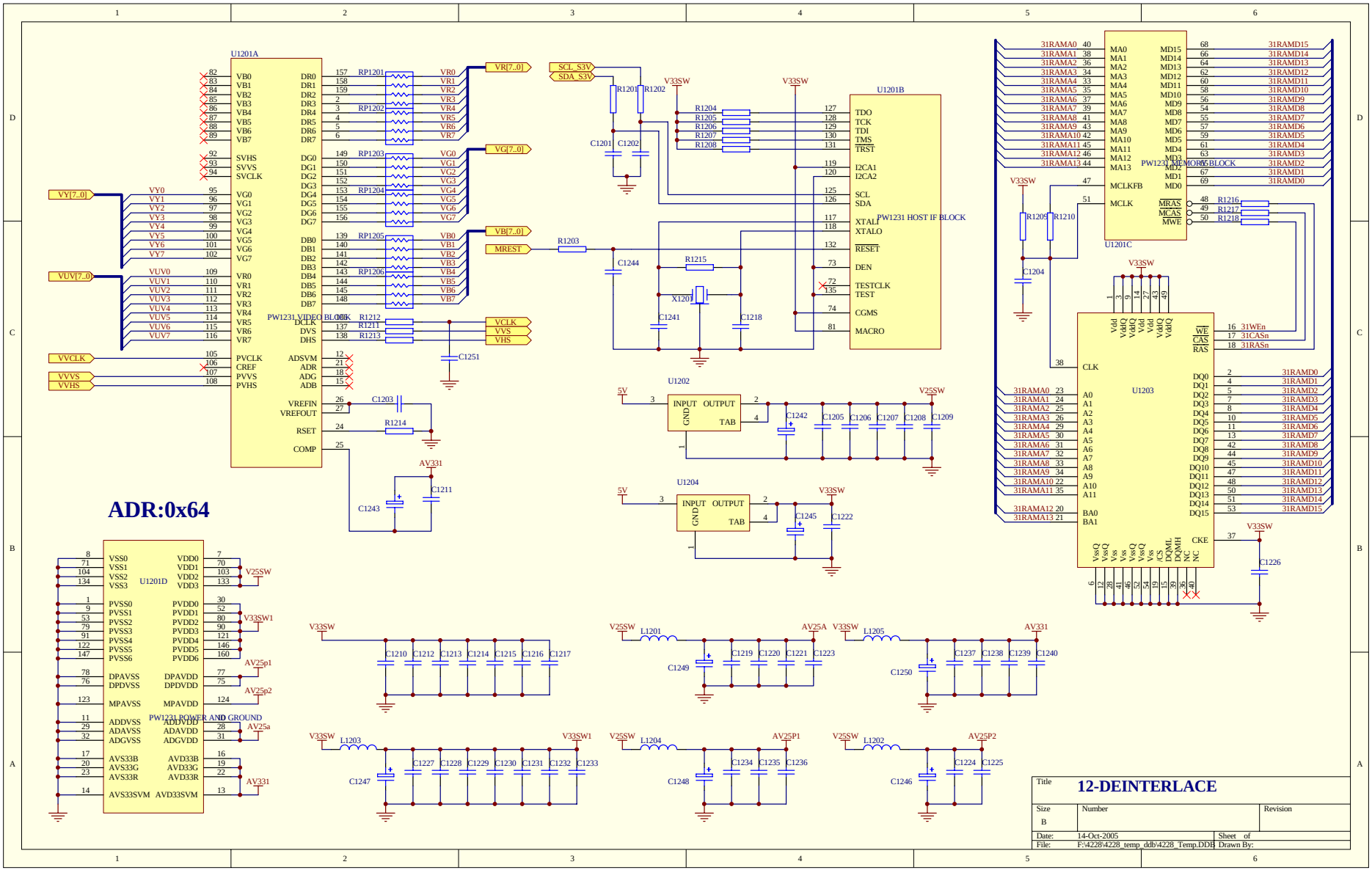
Drawn By:

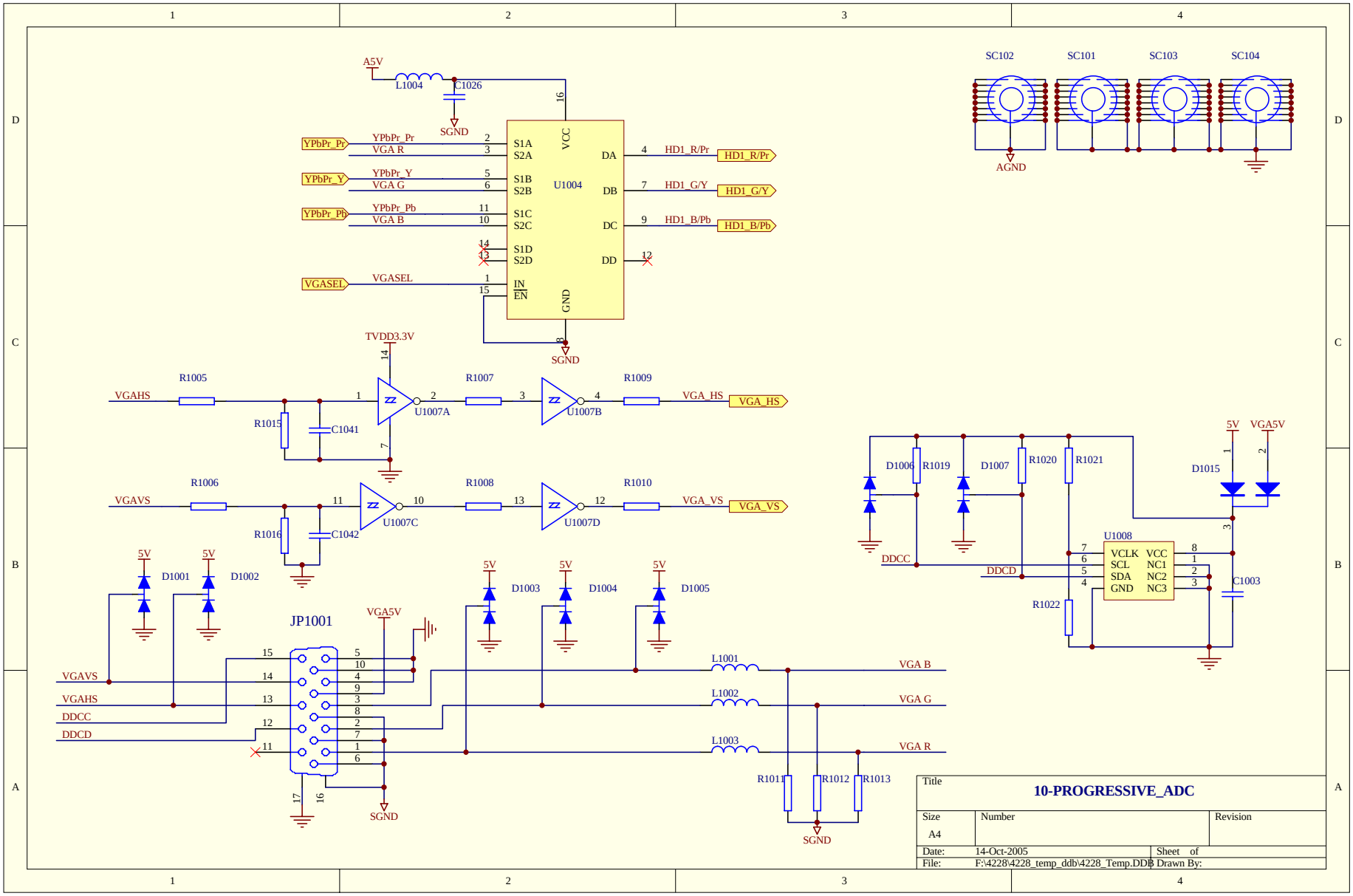

U1102
ADR:0x88
U1101
INPUT
OUTPUT
GND
TAB
5V
VV33
A5V
5VVV
CVBS_O
V_CVBS_M
3230_VO
MREST
SDA_S3V
SCL_S3V
V_AVCVBS
V_TVCVBS
V_SVideo_C
V_SVideo_Y
VYCbCr_Y
VYCbCr_Cb
VYCbCr_Cr
V_TT_G
V_TT_B
V_TT_R
V_TT_FSC
REF_V
#VPEN
VVCLK
VVHS
VVVS
TT_VVHS
TT_VVVS
VY[7..0]
VUV[7..0]
VG[7..0]
VB[7..0]
Install RP1105~RP1109 if cancel deinterlace IC
SGND
Title
11-DECODERV
Size
B
Number
Revision
Date:
14-Oct-2005
Sheet of
File:
F:\4228\4228_temp_ddb\4228_Temp.DDB
Drawn By:


U1402
ADR:0x8E
U1401
INPUT
OUTPUT
GND
TAB
5V
GV33
A5V
5VVG
SGND
MREST
SDA_S3V
SCL_S3V
CVBS_S_O
G_AVCVBS
G_TVCBS
G_SVideo_C
G_SVideo_Y
GYCbCr_Y
GYCbCr_Cb
GYCbCr_Cr
G_TT_G
G_TT_B
G_TT_R
G_TT_FSC
TV_CVBS_S#
TV_CVBS_S
GGE[7..0]
GBE[7..0]
GCLK
GHS
FIELD
GPEN
TT-GHS
GVS
REF_G
X1401
Q1401
Title
14-DECODER_G
Size
B
Number
Revision
Date:
14-Oct-2005
Sheet of
File:
F:\4228\4228_temp_ddb\4228_Temp.DDB
Drawn By:

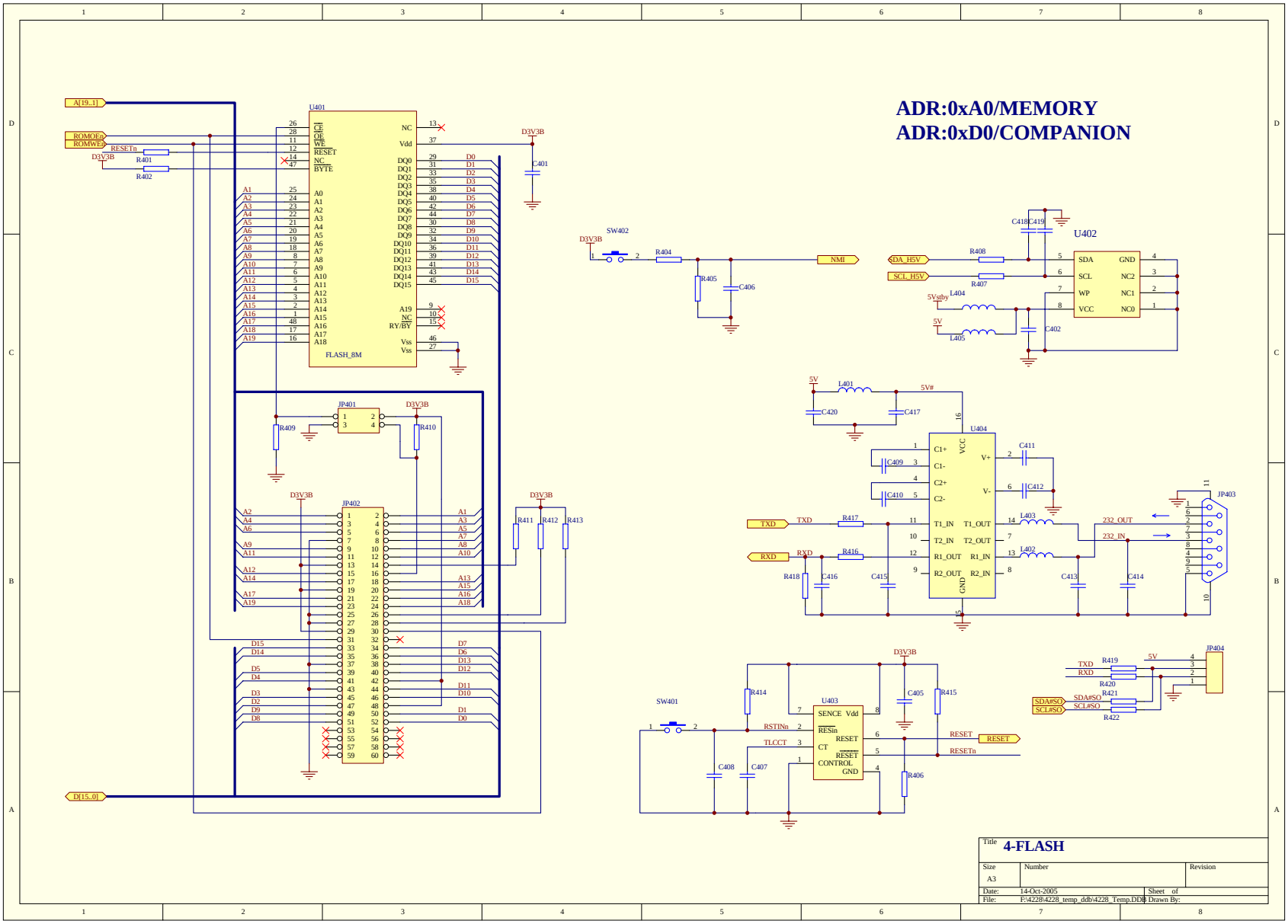

U803
Vin/INTRO
SDA
SCK
SEN
SMS
HIN
VIDEO
CSYNC
LPF
R
G
B
I2C/SEL
SDO
BOX
VDD
RREF
VSS(A)
TT_VVVS
SDA_S5V
SCL_S5V
5V_V_CCD
TT_VVHS
3230_VO
V_TT_R
V_TT_G
V_TT_B
V_TT_FSO
SGND
A5V
L801
C804
C807
C803
C806
U802
GVS
TT-GHS
TV_CVBS_S
5V_G_CCD
G_TT_R
G_TT_G
G_TT_B
G_TT_FSO
L802
C802
C808
C801
C805
R815
R854
R852
R853
R814
Q801
Q802
V33SW
5V
SCL_S3V
SDA_S3V
Title
8-CCD_DECODER
Size
A4
Number
Revision
Date:
14-Oct-2005
Sheet of
File:
F:\4228\4228_temp_ddb\4228_Temp.DDB
Drawn By:


U1301A
PW181 Graphics Port
U1301B
PW181 Video Port
U1301D
PW181 MISC
U1301C
PW181 Display Port
U1301E
PW818 POWER AND GROUND
RNMI2
REMARK:
HARDWARE I2C: SDA1 SCL1
SOFTWARE I2C: VSDA VSCL
U1302
U1303
Q1301
Q1302
Q1303
For Samsung/Formosa panel
2005.05.22
Title
13-SCALER
Size
A3
Number
Revision
Date: 14-Oct-2005
Sheet of
File: F:\4228\4228_temp_ddb\4228_Temp.DDB
Drawn By:

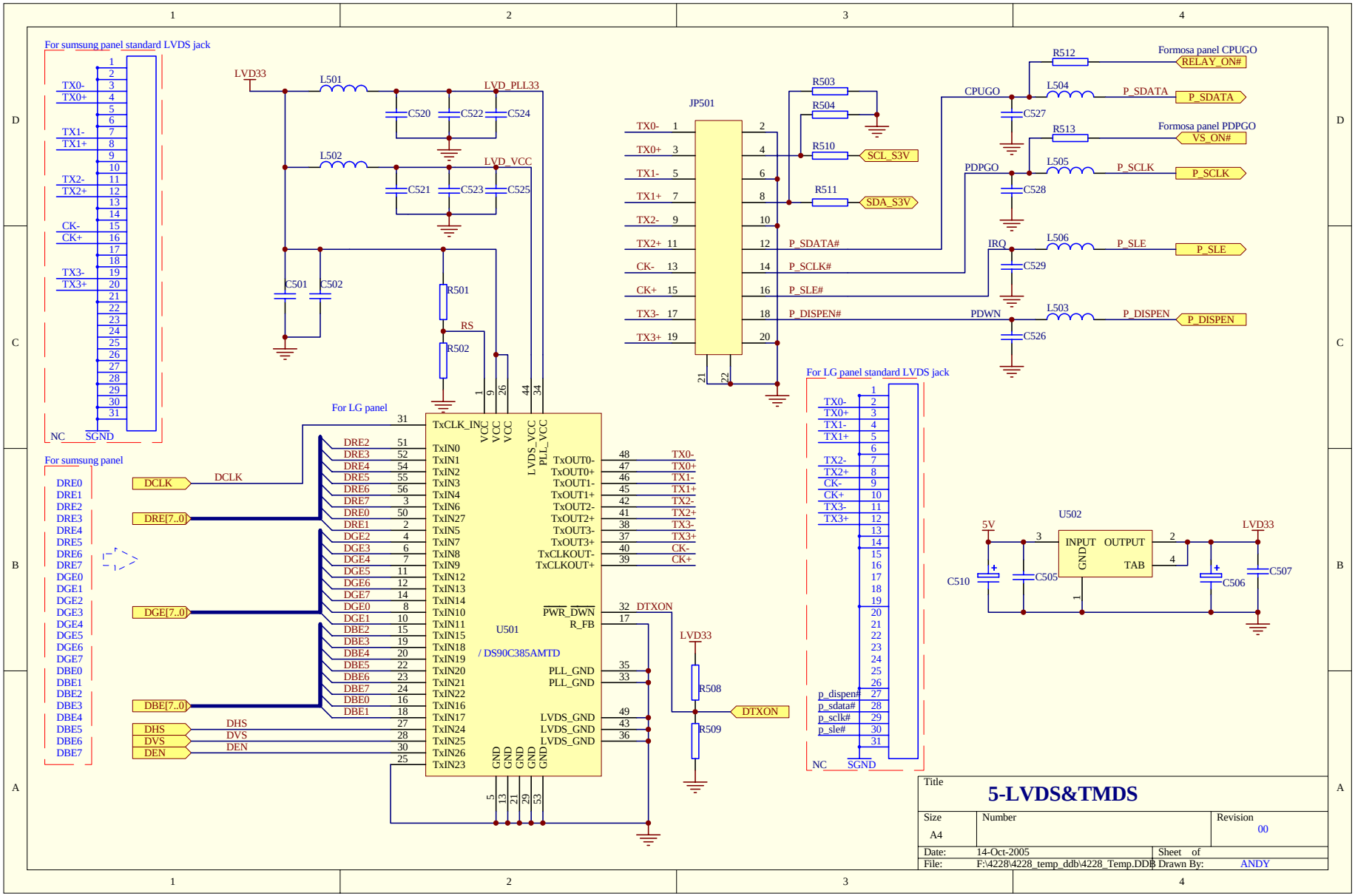

U1201A
PW1231 VIDEO BLOCK
U1201B
PW1231 HOST IF BLOCK
U1201C
PW1231 MEMORY BLOCK
U1201D
PW1231 POWER AND GROUND
U1202
U1203
U1204
ADR:0x64
12-DEINTERLACE
Title
Size
B
Number
Revision
Date: 14-Oct-2005
Sheet of
File: F:\4228\4228_temp_ddb\4228_Temp.DDB
Drawn By:



Title	**10-PROGRESSIVE_ADC**	
Size: A4	Number	Revision
Date: 14-Oct-2005	Sheet of	
File: F:\4228\4228_temp_ddb\4228_Temp.DDB	Drawn By:	



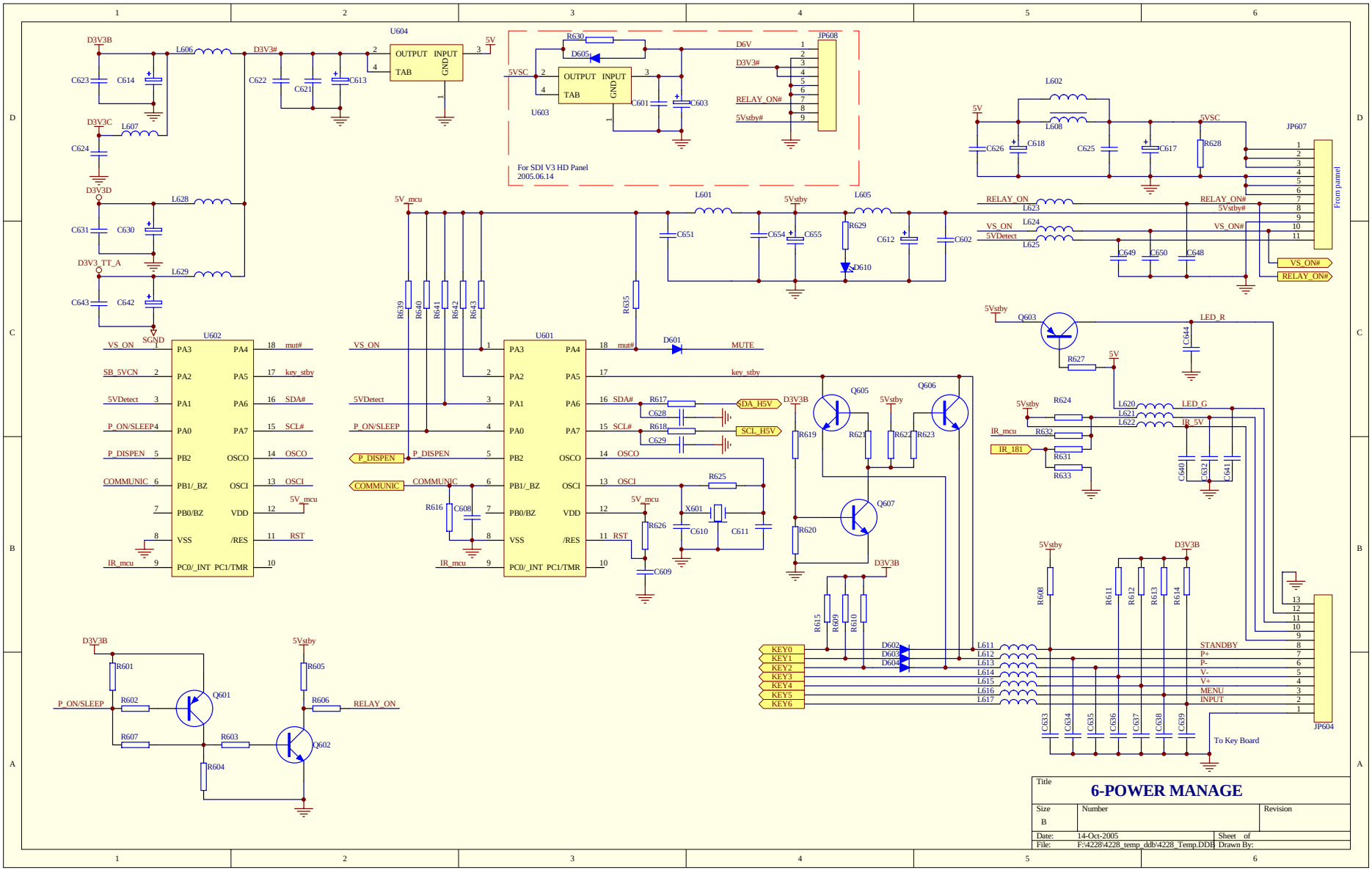
Title	4-FLASH	
Size: A3	Number	Revision
Date: 14-Oct-2005	Sheet of	
File: F:\4228\4228_temp_ddb\4228_Temp.DDB	Drawn By:	



Title: **5-LVDS&TMDS**

Size	Number	Revision
A4		00

Date:	14-Oct-2005	Sheet of	
File:	F:\4228\4228_temp_ddb\4228_Temp.DDB	Drawn By:	ANDY


U604
OUTPUT INPUT
TAB GND
U603
JP608
For SDI V3 HD Panel
2005.06.14
JP607
From pannel
U602
U601
MUTE
key_stby
SDA_H5V
SCL_H5V
P_DISPEN
VS_ON
RELAY_ON
STANDBY
P+
P-
V-
V+
MENU
INPUT
KEY0
KEY1
KEY2
KEY3
KEY4
KEY5
KEY6
To Key Board
JP604
Title
6-POWER MANAGE
Size
B
Number
Revision
Date: 14-Oct-2005
Sheet of
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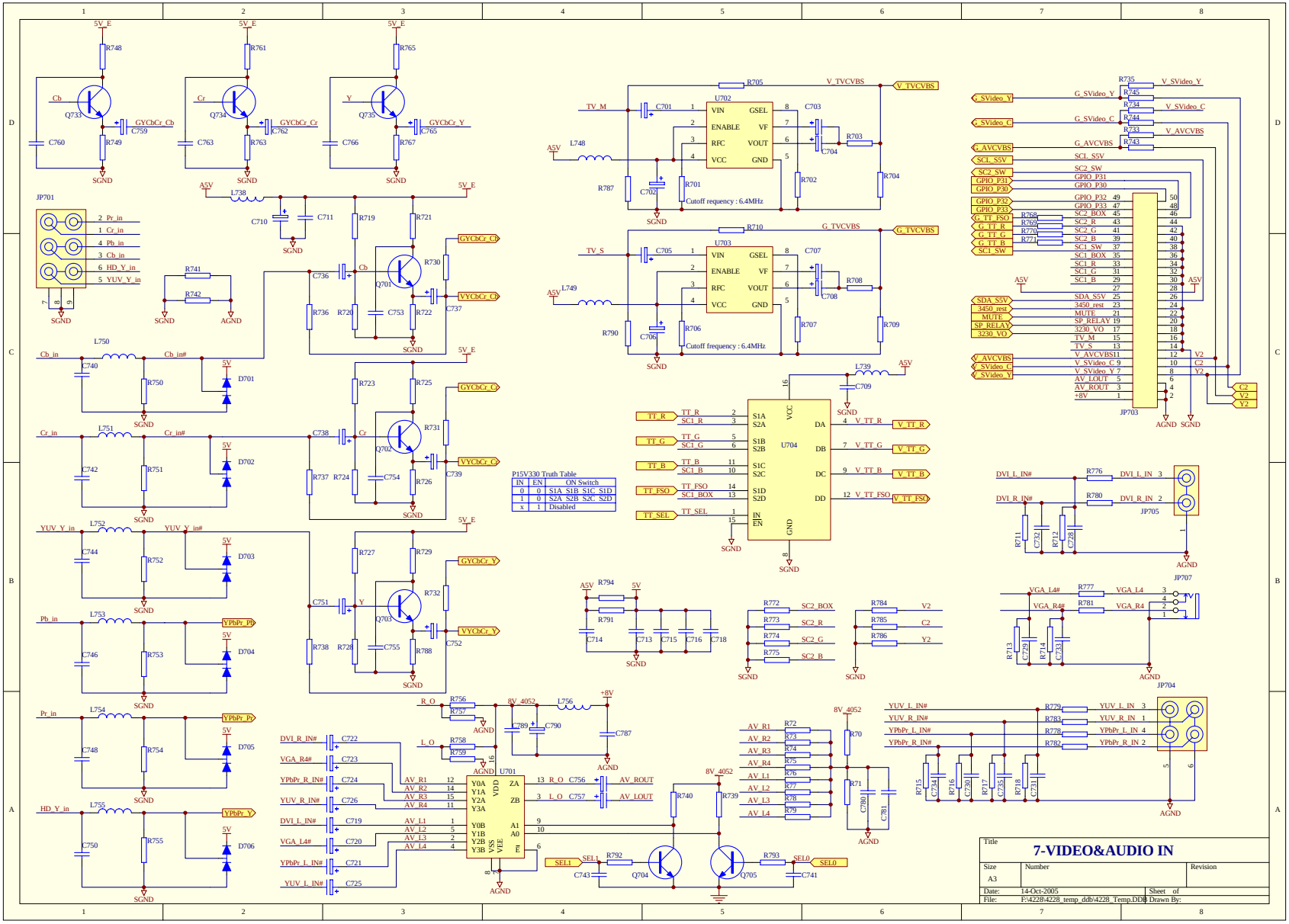
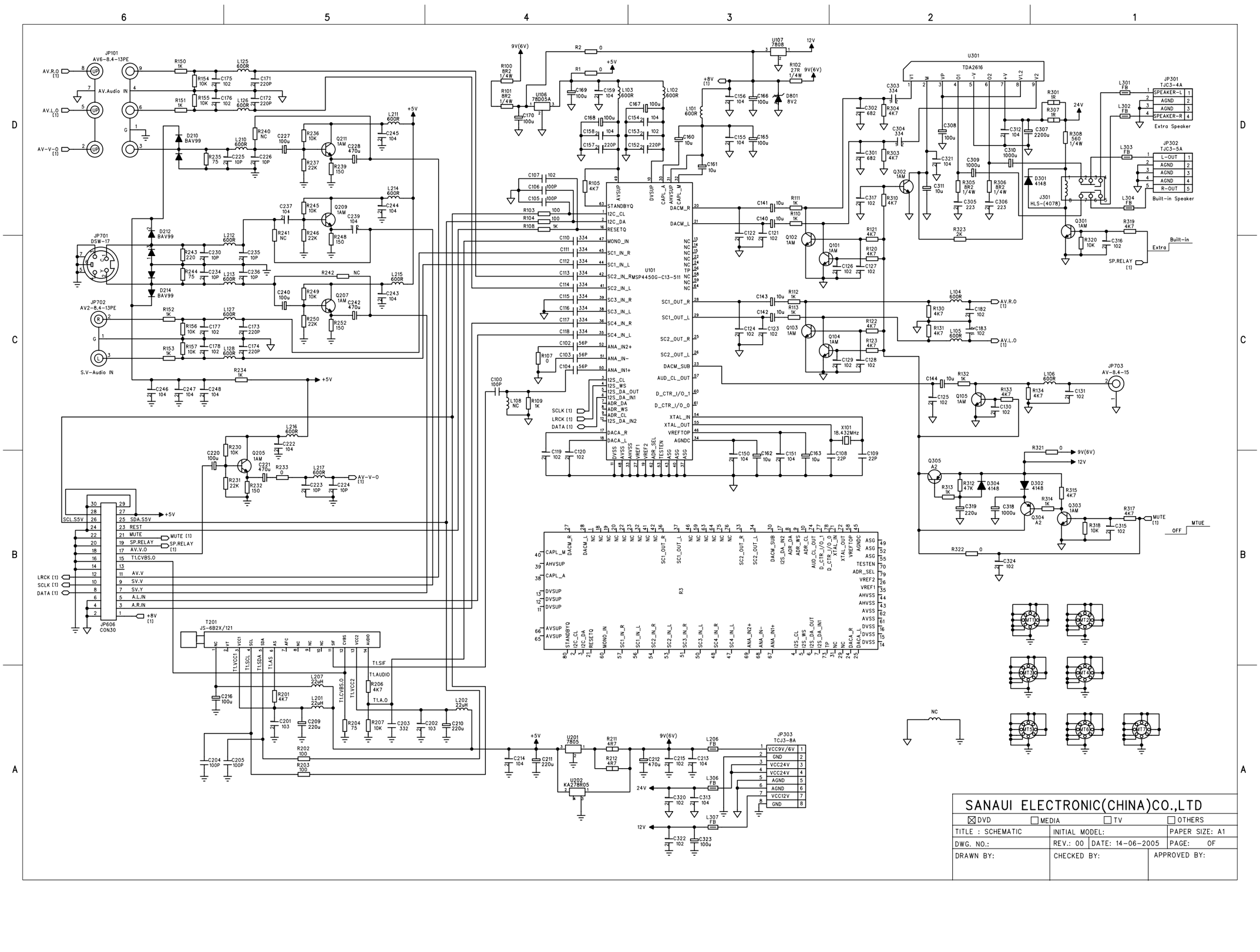
Drawn By:

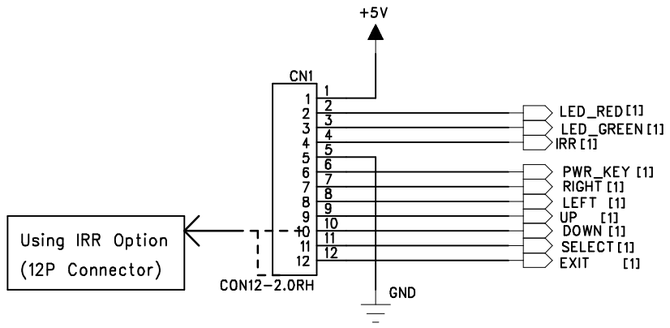

P15V330 Truth Table
IN | EN | ON Switch
0 | 0 | S1A S1B S1C S1D
1 | 0 | S2A S2B S2C S2D
x | 1 | Disabled
Cutoff requency : 6.4MHz
Cutoff frequency : 6.4MHz
7-VIDEO&AUDIO IN
Size A3
Number
Revision
Date: 14-Oct-2005
Sheet of
File: F:\4228\4228_temp_ddb\4228_Temp.DDB
Drawn By:

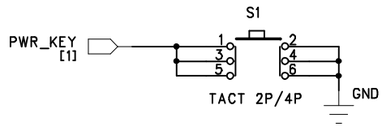


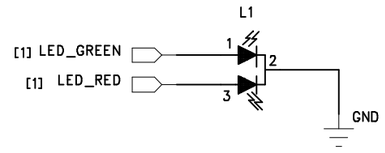
SANAUI ELECTRONIC(CHINA)CO.,LTD			
☒DVD ☐MEDIA ☐TV ☐OTHERS			
TITLE : SCHEMATIC	INITIAL MODEL:		PAPER SIZE: A1
DWG. NO.:	REV.: 00	DATE: 14-06-2005	PAGE: OF
DRAWN BY:	CHECKED BY:		APPROVED BY:

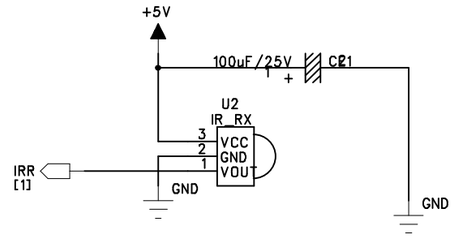
DUBHE OSD

6-Key OSD

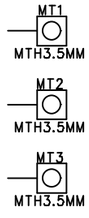


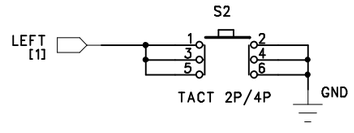


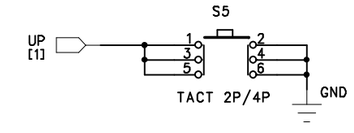


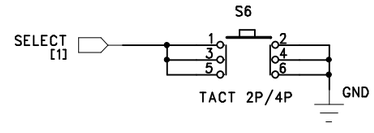


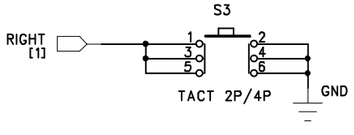
OSD I/F Connector

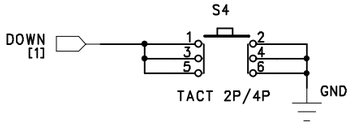


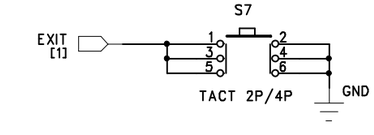






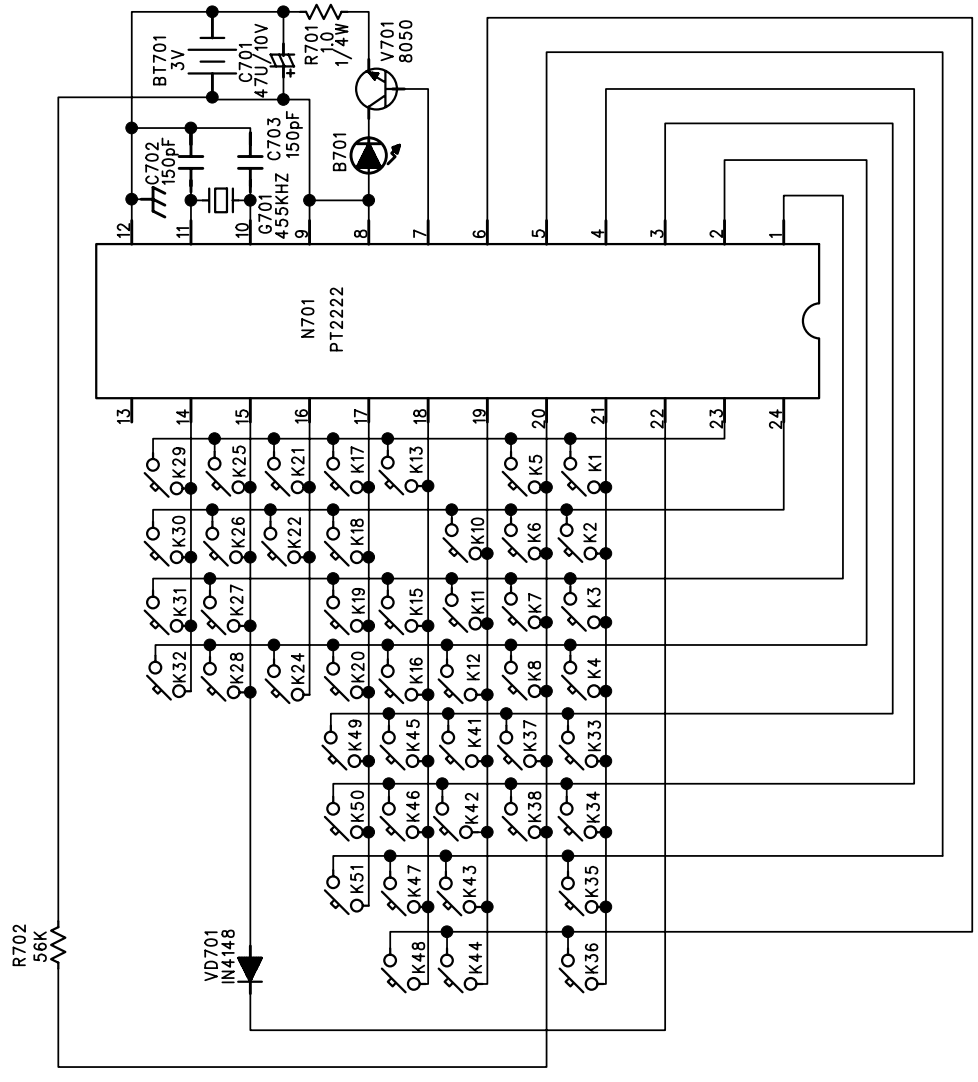






	Project: Project Name	Rev: 1.2
	Title: DUBHE OSD	
	Date: June. 15,2004	Sheet: xx of xx

REMOTE PCB



REMOTE CONTROL CODE ASSIGNMENT

KEY NO.	KEY NAME	DATA CODE	KEY NO.	KEY NAME	DATA CODE
K1	POWER	00	K33	dumb	40
K2	1	01	K34	dumb	41
K3	2	02	K35	dumb	42
K4	3	03	K36	dumb	43
K5	P.MODE	04	K37	MUTE	44
K6	4	05	K38	INFO	45
K7	5	06	K39	nil	46
K8	6	07	K40	nil	47
K9	nil	08	K41	100	48
K10	7	09	K42	PREV	49
K11	8	0A	K43	P.STILL	4A
K12	9	0B	K44	SOUND	4B
K13	MTS	0C	K45	SLEEP	4C
K14	nil	0D	K46	TIME	4D
K15	S.SELE	0E	K47	Picture	4E
K16	OK	0F	K48	CH Erase	4F
K17	CH.+	10	K49	CH Save	50
K18	VOL.+	11	K50	C/C	51
K19	VOL.-	12	K51	V-CHIP	52
K20	CH.-	13	K52	nil	53
K21	MENU	14	K53	nil	54
K22	Source	15	K54	nil	55
K23	nil	16	K55	nil	56
K24	P.SIZE	17	K56	nil	57
K25	0	18	K57	nil	58
K26	F.White	19	K58	nil	59
K27	PIP Source	1A	K59	nil	5A
K28	EXIT	1B	K60	nil	5B
K29	PIP	1C	K61	nil	5C
K30	SWAP	1D	K62	nil	5D
K31	PIP CH-	1E	K63	nil	5E
K32	PIP CH+	1F	K64	nil	5F

CUSTOM CODE: 20DD

FOR NTSC

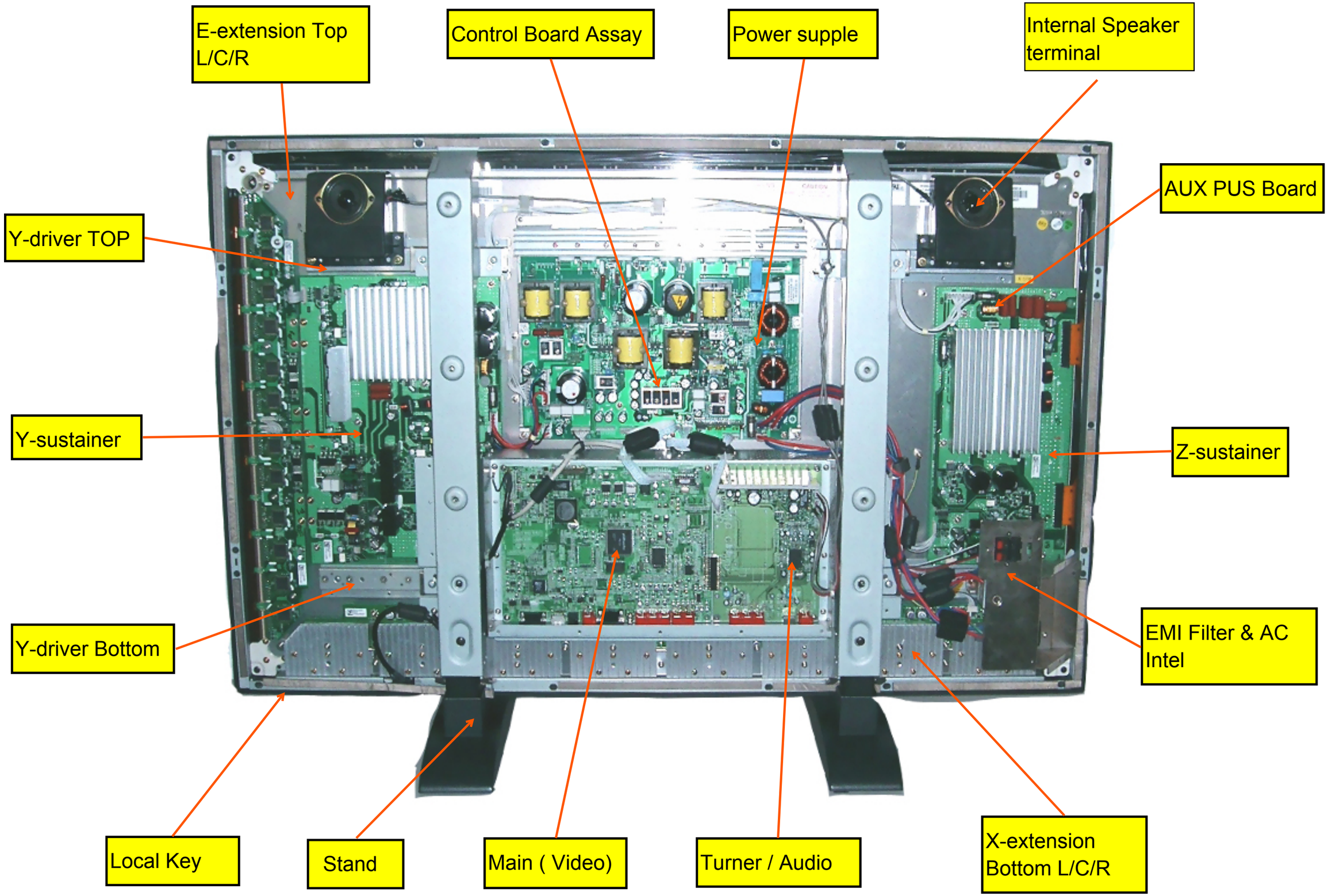
Basic Operations & Circuit Description

MODULE

There are 1 pc. panel and 12 pc.s PCB including 2 pc.s Y/Z Sustainer board, 2 pc.s Y Drive board, 6 pc.s X Extension boards, 1 pc. Control (Signal Input) and 1 pc. Power board in the Module.

SET

There are 6 pc.s PCBs including 1 pc. AUX. PSU Board, 1 pc. Keypad board, 1 pc. Remote Control Receiver board, 1 pc. L/R Speakers and 1 pc. Main (Video) board in the SET.


E-extension Top L/C/R
Control Board Assay
Power supple
Internal Speaker terminal
AUX PUS Board
Y-driver TOP
Y-sustainer
Z-sustainer
Y-driver Bottom
EMI Filter & AC Intel
Local Key
Stand
Main (Video)
Turner / Audio
X-extension Bottom L/C/R

PCB function

1. **Power:**
   (1). Input voltage: AC 100V~120V, 45Hz~60Hz.
   Input range: AC 90V(Min)~265V(Max) auto regulation.
   (2). To provide power for PCBs.
2. **Main (Video InterFace) board: To converter TV signals, S signals, AV signals, Y Pb/Cb Pr/Cr signals, DVI signals and D-SUB signals to digital ones and to transmit to Control board.**
3. **Control board: Dealing with the digital signal for output to panel.**
4. **Y-Sustainer / Z-Sustainer board:**
   (1). Receiving the signals from Control and high voltage supply.
   (2). Output scanning waveform for Module.
5. **Y-Drive board: Receive signal from Y sustainer, output horizontal scanning waveform to the panel.**
6. **X extension board (6pcs): Output addressing signals.**
7. **Tuner/Audio Board：Process and Amplifying the audio signal to speakers and convert TV RF signal to video/audio signal and send to Main board.**

PCB failure analysis

1. CONTROL : a. Abnormal noise on screen. b. No picture.
2. MAIN (video) : a. Lacking color, Bad color scale.
   b. No voice.
   c. No picture but with signals output, OSD and back light.
   d. Abnormal noise on screen.
3. POWER : No picture, no power output.
4. Z - Sustainer : a. No picture.
   b. Color not enough.
   c. Flash on screen.
5. Y - Sustainer : Darker picture with signals.

6. X - Extension : Abormal vertical noise on screen.
7. Audio Board or AUX PSU: a. No voice. (Make sure Mute/OFF) .
   b. Noise.

Basic operation of Plasma Display

1. After turning on power switch, power board sends 5Vst-by Volt to Micro Processor

2. The micro Processor memorize the last state of Power, When the last state of power is on or receive power on signal from local Key or Remote control, Micro Processor will send on control signal to power. Then Power sends (5Vsc, 9Vsc, 24V and RLYON, Vs ON) to PCBs working. This time VIF will send signals to display Image, OSD on the panel and start to search available signal sources.
   If the audio signals input, them will be amplified by Audio AMP and transmitted to Speakers.

3. If some abnormal signals are detected (for example: over volts, over current, over temperature and under volts), the system will be shut down by Power off.

Main IC Specifications

- PW181 Image Processor, Scaler
- PW1231 Digital Video Signal Processor
- VPC 323XD Comb-filter Video Processor
- Z86229 NTSC Line 21 CCD decorder
- MSP34x0G Multistandard Sound Processor
-AD9880 Analog/HDMI Dual Display Interface
-PI5V330 Wideband/Video Quad 2-Channel MUX/DEMUX
-SM5304AV Video Buffer with Built-in Analog LPF
-TDA2616 2 X 12 W hi-fi audio power amplifier with mute
-SAA5360 Multi page intelligent teletext decoder
-AT24C32 Z-Wire Serial EEPROM
-HT48R06A-1 8-Bit Cost-Effective I/O Type MCU

PW181

Product Specification

General Description

The PW181 ImageProcessor is a highly integrated "system-on-a-chip" that interfaces computer graphics and video inputs in virtually any format to a fixed-frequency flat panel display.

Computer and video images from NTSC/PAL to WUXGA at virtually any refresh rate can be resized to fit on a fixed-frequency target display device with any resolution up to WUXGA. Video data from 4:3 aspect ratio NTSC or PAL and 16:9 aspect ratio HDTV or SDTV is supported. Multi-region, nonlinear scaling allows these inputs to be resized optimally for the native resolution of the display.

Advanced scaling techniques are supported, such as format conversion using multiple programmable regions. Three independent image scalers coupled with frame locking circuitry and dual programmable color lookup tables create sharp images in multiple windows, without user intervention.

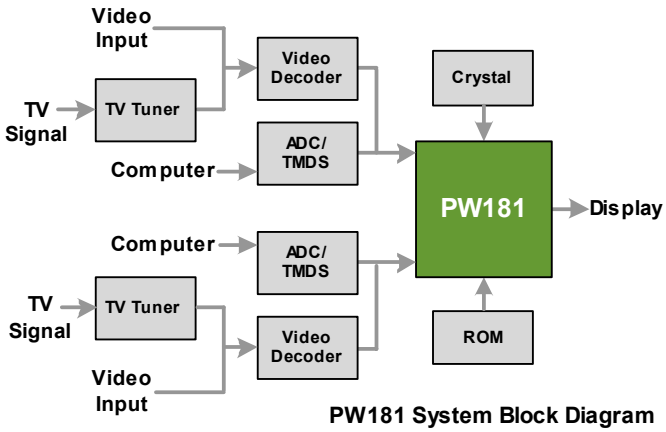
Embedded SDRAM frame buffers and memory controllers perform frame rate conversion and enhanced video processing completely on-chip. A separate memory is dedicated to storage of on-screen display images and CPU general purpose use.

Advanced video processing techniques are supported using the internal frame buffer, including motion adaptive, temporal deinterlacing with film mode detection. When used in combination with the new third-generation scaler, this advanced video processing technology delivers the highest quality video for advanced displays.

Both input ports support integrated DVI 1.0 content protection using standard DVI receivers.

A new advanced OSD Generator with more colors and larger sizes supports more demanding OSD applications, such as on-screen programming guides. When coupled with the new, faster, integrated microprocessor, this OSD Generator supports advanced OSD animation techniques.

Programmable features include the user interface, custom start-up screen, all automatic imaging features, and special screen effects.



PW181 System Block Diagram

Features

- Third-generation, two-dimensional filtering techniques
- Third-generation, advanced scaling techniques
- Second-generation Automatic Image Optimization
- Frame rate conversion
- Video processing
- On-Screen Display (OSD)
- On-chip microprocessor
- JTAG debugger and boundary scan
- Picture-in-picture (PIP)
- Multi-region, non-linear scaling
- Hardware 2-wire serial bus support

Applications

- Multimedia Displays
- Plasma Displays
- Digital Television

Device	Application	Package
PW181-10V	Up to XGA Displays	352 PBGA
PW181-20V	Up to UXGA Displays	

pixelworks

8100 SW Nyberg Road
Tualatin, OR 97062 USA
Telephone: 503.454.1750
FAX: 503.612.0848
www.pixelworks.com

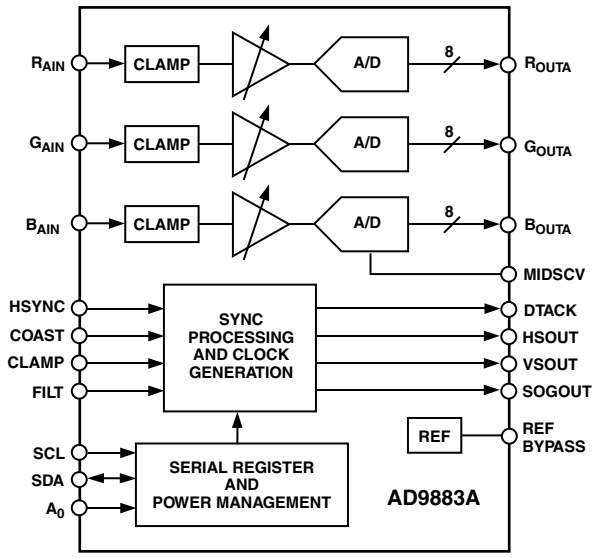
110 MSPS/140 MSPS Analog Interface for Flat Panel Displays

AD9883A

FEATURES
140 MSPS Maximum Conversion Rate
300 MHz Analog Bandwidth
0.5 V to 1.0 V Analog Input Range
500 ps p-p PLL Clock Jitter at 110 MSPS
3.3 V Power Supply
Full Sync Processing
Sync Detect for "Hot Plugging"
Midscale Clamping
Power-Down Mode
Low Power: 500 mW Typical
4:2:2 Output Format Mode

APPLICATIONS
RGB Graphics Processing
LCD Monitors and Projectors
Plasma Display Panels
Scan Converters
Microdisplays
Digital TV

FUNCTIONAL BLOCK DIAGRAM



GENERAL DESCRIPTION

The AD9883A is a complete 8-bit, 140 MSPS monolithic analog interface optimized for capturing RGB graphics signals from personal computers and workstations. Its 140 MSPS encode rate capability and full power analog bandwidth of 300 MHz supports resolutions up to SXGA (1280 × 1024 at 75 Hz).

The AD9883A includes a 140 MHz triple ADC with internal 1.25 V reference, a PLL, and programmable gain, offset, and clamp control. The user provides only a 3.3 V power supply, analog input, and Hsync and COAST signals. Three-state CMOS outputs may be powered from 2.5 V to 3.3 V.

The AD9883A's on-chip PLL generates a pixel clock from the Hsync input. Pixel clock output frequencies range from 12 MHz to 140 MHz. PLL clock jitter is 500 ps p-p typical at 140 MSPS. When the COAST signal is presented, the PLL maintains its output frequency in the absence of Hsync. A sampling phase adjustment is provided. Data, Hsync, and clock output phase relationships are maintained. The AD9883A also offers full sync processing for composite sync and sync-on-green applications.

A clamp signal is generated internally or may be provided by the user through the CLAMP input pin. This interface is fully programmable via a 2-wire serial interface.

Fabricated in an advanced CMOS process, the AD9883A is provided in a space-saving 80-lead LQFP surface-mount plastic package and is specified over the 0°C to 70°C temperature range.

REV. A

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel:
Fax:

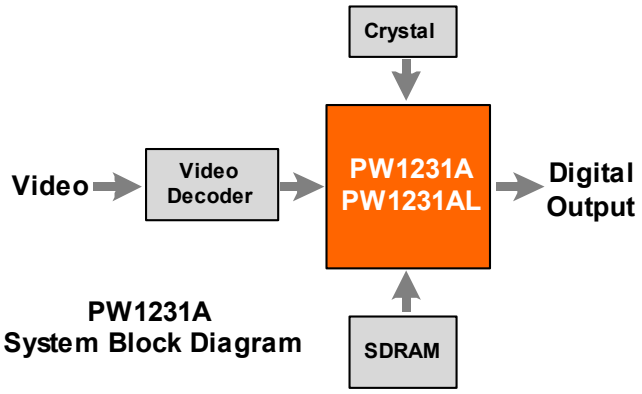
PW1231A

Product Specification

General

The PW1231A is a high-quality, digital video signal processor that incorporates Pixelworks' patented deinterlacing, scaling, and video enhancement algorithms. The PW1231A accepts industry-standard video formats and resolutions, and converts the input into many desired output formats.The highly efficient video algorithms result in excellent quality video.

The PW1231A combines many functions into a single device, including a memory controller, auto-configuration, and others. This high level of integration enables simple, flexible, cost-effective solutions that require fewer components.



PW1231A
System Block Diagram

Features

- Built-In Memory Controller
- Motion-Adaptive Deinterlace Processor
- Intelligent Edge Deinterlacing
- Digital Color/Luminance Transient Improvement (DCTI/DLTI)
- Interlaced Video Input Options, including NTSC and PAL
- Independent horizontal and vertical scaling
- Copy Protection
- Two-Wire Serial Interface

Applications:
For use with Digital Displays

- Flat-Panel (LCD, DLP) TVs
- Rear Projection TVs
- Plasma Displays
- LCD Multimedia Monitors
- Multimedia Projectors

Device	Application	Package
PW1231A PW1231AL	Up to XGA	160-pin PQF

NOTE: "L" denotes lead (Pb) free

8100 SW Nyberg Road
Tualatin, OR 97062 USA
Telephone: 503.612.6700
FAX: 503.612.6713
www.pixelworks.com

P/N 001-0097-00 Rev B
July 2003

PRELIMINARY—CONFIDENTIAL

Analog/HDMI Dual Display Interface

Preliminary Datasheet 3/26/2004 AD9880

FEATURES

- **Analog/HDMI Dual Interface**
- **Supports High-Bandwidth Digital Content Protection**
- **RGB to YCbCr two-way color conversion**
- **Automated clamping level adjustment**
- **1.8/3.3V Power Supply**
- **100-pin LQFP Pb-Free Package**
- **RGB and YCbCr Output Formats**

Analog Interface

- **8-bit Triple Analog to Digital Converters**
- **150 MSPS Maximum Conversion Rate**
- **Macrovision Detection**
- **2:1 Input Mux**
- **Full Sync Processing**
- **Sync Detect for "Hot Plugging"**
- **Mid-Scale Clamping**

Digital Video Interface

- **HDMI 1.0, DVI 1.0**
- **150 MHz HDMI Receiver**
- **Supports High-Bandwidth Digital Content Protection (HDCP 1.1)**

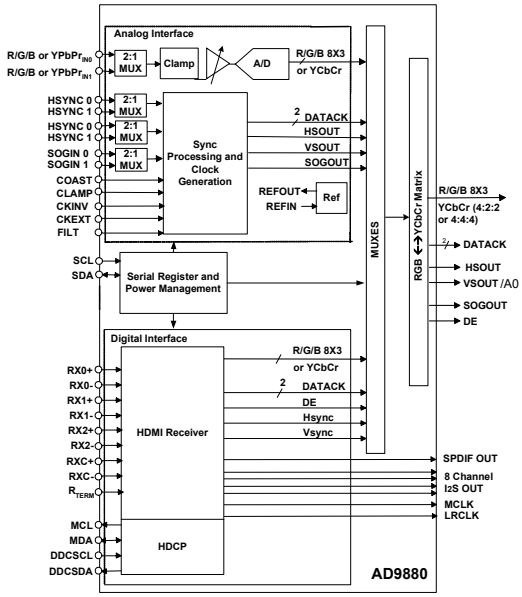
Digital Audio Interface

- **HDMI 1.0 compatible audio interface**
- **S/PDIF (IEC90658 compatible) digital audio output**
- **Multi-channel I^2S audio output (up to 8 channels)**

APPLICATIONS

- **Advanced TV**
- **HDTV**
- **Projectors**
- **LCD Monitor**

FUNCTIONAL BLOCK DIAGRAM



GENERAL DESCRIPTION

The AD9880 offers designers the flexibility of an analog interface and High-Definition Multimedia Interface (HDMI) receiver integrated on a single chip. Also included is support for High bandwidth Digital Content Protection (HDCP).

Analog Interface

The AD9880 is a complete 8-bit 150 MSPS monolithic analog interface optimized for capturing Component Video (YPbPr) and RGB graphics signals. Its 150 MSPS encode rate capability and full power analog bandwidth of 300 MHz supports all HDTV formats (up to 1080p) and FPD resolutions up to SXGA (1280 x 1024 at 75 Hz).

The analog interface includes a 150 MHz triple ADC with internal 1.25V reference, a Phase Locked Loop (PLL), and programmable gain, offset, and clamp control. The user provides only 1.8V and 3.3V power supply, analog input, and Hsync. Three-state CMOS outputs may be powered from 1.8V to 3.3V. The AD9880's on-chip PLL generates a pixel clock from Hsync. Pixel clock output frequencies range from 12 MHz to 150 MHz. PLL clock jitter is typically less than 500 ps p-p at 150 MHz. The AD9880 also offers full sync processing for composite sync and Sync-on-Green (SOG) applications.

Digital Interface

The AD9880 contains a HDMI 1.0 compatible receiver and supports all HDTV formats (up to 1080p) and display resolutions up to SXGA (1280 x 1024 at 75 Hz). The receiver features an intra-pair skew tolerance of up to one full clock cycle. With the inclusion of HDCP, displays may now receive encrypted video content. The AD9880 allows for authentication of a video receiver, decryption of encoded data at the receiver, and renewability of that authentication during transmission as specified by the HDCP 1.1 protocol.

Fabricated in an advanced CMOS process, the AD9880 is provided in a space-saving 100-lead LQFP surface-mount plastic package and is specified over the 0 ºC to 70 ºC temperature range.

One Technology Way, P.O Box 9106, Norwood, MA 02062–9106, USA
Tel: 617/329–4700 Fax: 617–326–8703

Comb Filter Video Processor

1. Introduction

The VPC 323xD is a high-quality, single-chip video front-end, which is targeted for 4:3 and 16:9, 50/60-Hz and 100/120 Hz TV sets. It can be combined with other members of the DIGIT3000 IC family (such as DDP 331x) and/or it can be used with 3rd-party products.

The main features of the VPC 323xD are

- high-performance adaptive 4H comb filter Y/C separator with adjustable vertical peaking
- multi-standard color decoder PAL/NTSC/SECAM including all substandards
- four CVBS, one S-VHS input, one CVBS output
- two RGB/YC_rC_b component inputs, one Fast Blank (FB) input
- integrated high-quality A/D converters and associated clamp and AGC circuits
- multi-standard sync processing
- linear horizontal scaling (0.25 ... 4), as well as non-linear horizontal scaling ‘Panoramavision’
- PAL+ preprocessing
- line-locked clock, data and sync, or 656-output interface
- peaking, contrast, brightness, color saturation and tint for RGB/YC_rC_b and CVBS/S-VHS
- high-quality soft mixer controlled by Fast Blank
- PIP processing for four picture sizes ($\frac{1}{4}$, $\frac{1}{9}$, $\frac{1}{16}$, or $\frac{1}{36}$ of normal size) with 8-bit resolution
- 15 predefined PIP display configurations and expert mode (fully programmable)
- control interface for external field memory
- I^2C-bus interface
- one 20.25-MHz crystal, few external components
- 80-pin PQFP package

1.1. System Architecture

Fig.1–1 shows the block diagram of the video processor

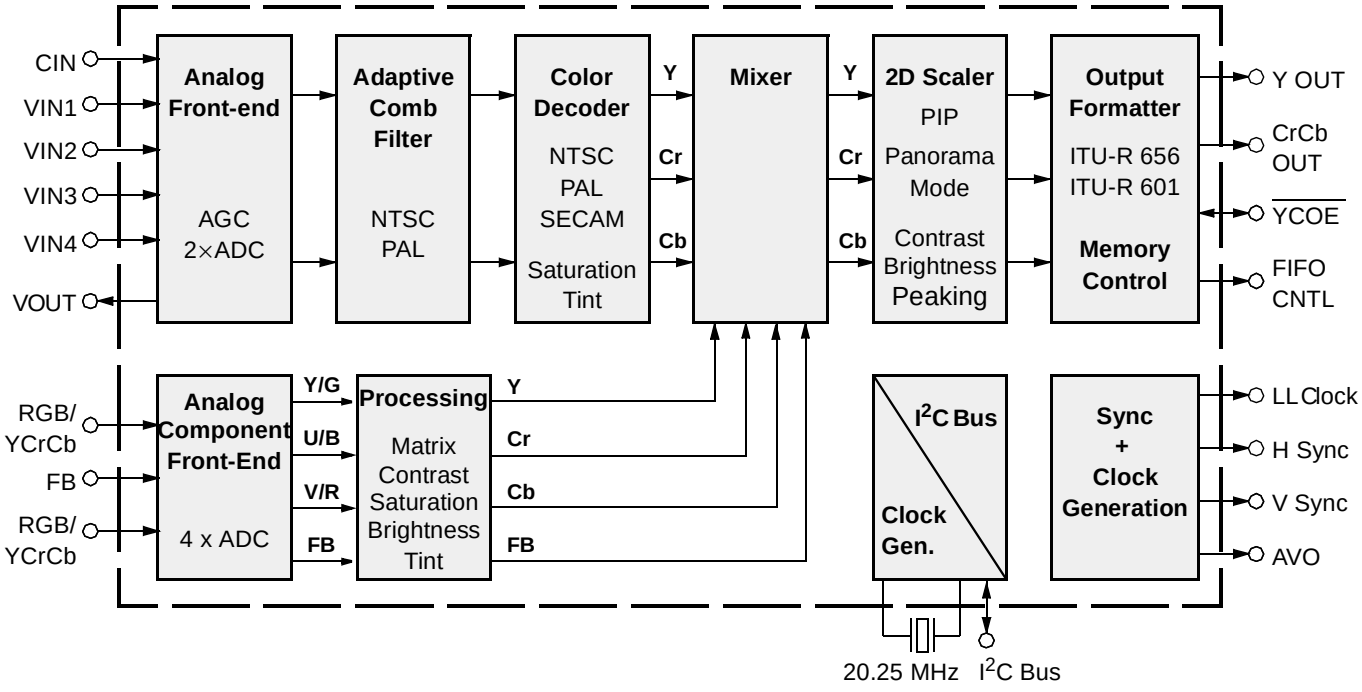


Fig. 1–1: Block diagram of the VPC 323xD

ZiLOG

Totally Logical

Z86229

NTSC LINE 21 CCD DECODER

FEATURES

Devices	Speed (MHz)	Pin Count/ Package Types	Standard Temp. Range	On-Screen Display & Closed Captioning	Automatic Data Extraction: Program Rating	Automatic Data Extraction: Time of Day
Z86229	12	18-Pin DIP, SOIC	0°C to +70°C	Yes	Yes	Yes

- Complete Stand-Alone Line 21 Decoder for Closed-Captioned and Extended Data Services (XDS)
- Preprogrammed to Provide Full Compliance with EIA–608 Specifications for Extended Data Services
- Automatic Extraction and Serial Output of Special XDS Packets (Time of Day, Local Time Zone, and Program Blocking)
- Programmable XDS Filter for a Specific XDS Packet
- Cost-Effective Solution for NTSC Violence Blocking inside Picture-in-Picture (PiP) Windows
- Minimal Communications and Control Overhead Provide Simple Implementation of Violence Blocking, Closed Captioning, and Auto Clock Set Features
- Programmable, On-Screen Display (OSD) for Creating Full Screen OSD or Captions inside a Picture-in-Picture (PiP) Window
- User-Programmable Horizontal Display Position for easy OSD Centering and Adjustment
- I^2C Serial Data and Control Communication
- Supports 2 Selectable I^2C Addresses

GENERAL DESCRIPTION

Capable of processing Vertical Blanking Interval (VBI) data from both fields of the video frame in data, the Z86229 Line 21 Decoder offers a feature-rich solution for any television or set-top application. The robust nature of the Z86229 helps the device conform to the transmission format defined in the Television Decoder Circuits Act of 1990, and in accordance with the Electronics Industry Association specification 608 (EIA–608).

The Line 21 data stream can consist of data from several data channels multiplexed together. Field 1 consists of four data channels: two Captions and two Texts. Field 2 consists of five additional data channels: two Captions, two Texts, and Extended Data Services (XDS). The XDS data structure is defined in EIA–608. The Z86229 can recover and display data transmitted on any of these nine data channels.

The Z86229 can recover and output to a host processor via the I^2C serial bus. The recovered XDS data packet is further defined in the EIA–608 specification. The on-chip XDS filters in the Z86229 are fully programmable, enabling recovery of only those XDS data packets selected by the user. This functionality allows the device to extract the required XDS information with proper XDS filter setup for compatibility in a variety of TVs, VCRs, and Set-Top boxes.

In addition, the Z86229 is ideally suited to monitor Line 21 video displayed in a PiP window for violence blocking, CCD, and other XDS data services. A block diagram of the Z86229 is illustrated in Figure 1.

Multistandard Sound Processor Family

Release Note: Revision bars indicate significant changes to the previous edition. The hardware and software description in this document is valid for the MSP 34x0G version B8 and following versions.

1. Introduction

The MSP 34x0G family of single-chip Multistandard Sound Processors covers the sound processing of all analog TV-Standards worldwide, as well as the NICAM digital sound standards. The full TV sound processing, starting with analog sound IF signal-in, down to processed analog AF-out, is performed on a single chip. Figure 1–1 shows a simplified functional block diagram of the MSP 34x0G.

This new generation of TV sound processing ICs now includes versions for processing the multichannel television sound (MTS) signal conforming to the standard recommended by the Broadcast Television Systems Committee (BTSC). The DBX noise reduction, or alternatively, Micronas Noise Reduction (MNR) is performed alignment free.

Other processed standards are the Japanese FM-FM multiplex standard (EIA-J) and the FM Stereo Radio standard.

Current ICs have to perform adjustment procedures in order to achieve good stereo separation for BTSC and EIA-J. The MSP 34x0G has optimum stereo performance without any adjustments.

All MSP 34xxG versions are pin compatible to the MSP 34xxD. Only minor modifications are necessary to adapt a MSP 34xxD controlling software to the MSP 34xxG. The MSP 34x0G further simplifies controlling software. Standard selection requires a single I^2C transmission only.

The MSP 34x0G has built-in automatic functions: The IC is able to detect the actual sound standard automatically (Automatic Standard Detection). Furthermore, pilot levels and identification signals can be evaluated internally with subsequent switching between mono/stereo/bilingual; no I^2C interaction is necessary (Automatic Sound Selection).

The MSP 34x0G can handle very high FM deviations even in conjunction with NICAM processing. This is especially important for the introduction of NICAM in China.

The ICs are produced in submicron CMOS technology. The MSP 34x0G is available in the following packages: PLCC68 (not intended for new design), PSDIP64, PSDIP52, PQFP80, and PLQFP64.

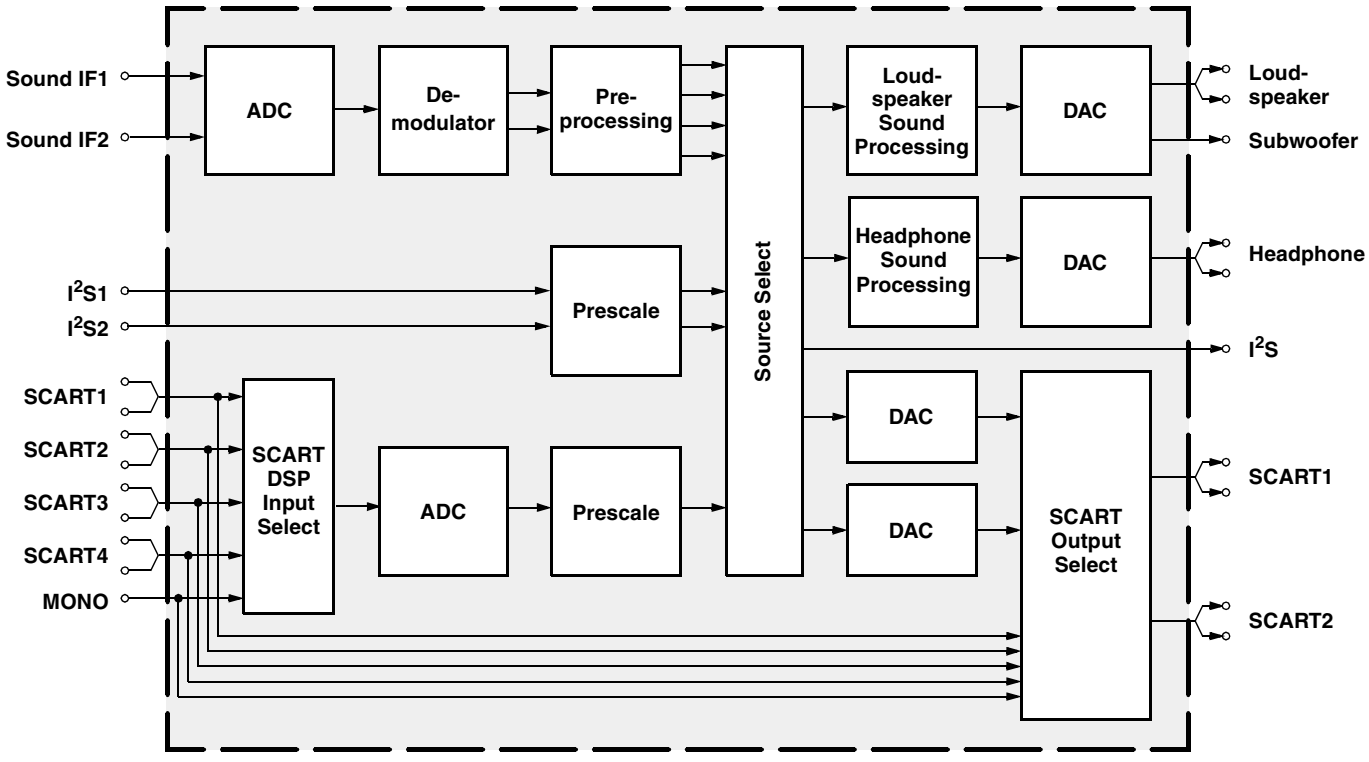


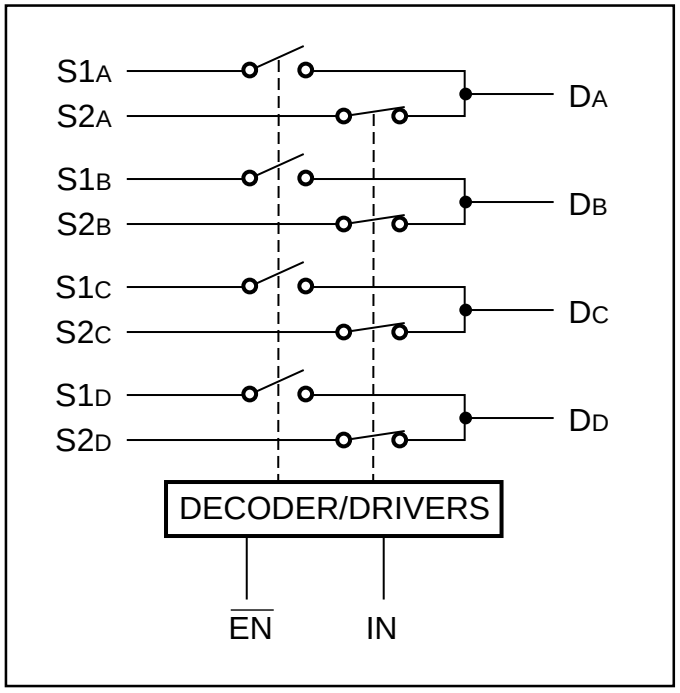
Fig. 1–1: Simplified functional block diagram of the MSP 34x0G

Low ON Resistance Wideband/Video Quad 2-Channel MUX/DEMUX

Product Features:

- High-performance, low-cost solution to switch between video sources
- Wide bandwidth: 200 MHz
- Low ON-resistance: 3Ω
- Low crosstalk at 10 MHz: –58 dB
- Ultra-low quiescent power (0.1 µA typical)
- Single supply operation: +5.0V
- Fast switching: 10 ns
- High-current output: 100 mA
- Packages available:
  - 16-pin 300-mil wide plastic SOIC (S)
  - 16-pin 150-mil wide plastic SOIC (W)
  - 16-pin 150-mil wide plastic QSOP (Q)

Functional Block Diagram



Truth Table

$\overline{EN}$	IN	ON Switch
0	0	$S1_A$, $S1_B$, $S1_C$, $S1_D$
0	1	$S2_A$, $S2_B$, $S2_C$, $S2_D$
1	X	Disabled

Product Description:

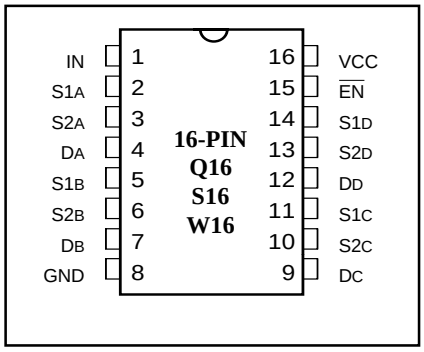
Pericom Semiconductor's PI5V series of mixed signal video circuits are produced in the Company's advanced CMOS low-power technology, achieving industry leading performance.

The PI5V330 is a true bidirectional Quad 2-channel multiplexer/demultiplexer that is recommended for both RGB and composite video switching applications. The VideoSwitch™ can be driven from a current output RAMDAC or voltage output composite video source.

Low ON-resistance and wide bandwidth make it ideal for video and other applications. Also this device has exceptionally high current capability which is far greater than most analog switches offered today. A single 5V supply is all that is required for operation.

The PI5V330 offers a high-performance, low-cost solution to switch between video sources. The application section describes the PI5V330 replacing the HC4053 multiplier and buffer/amplifier.

16-Pin Product Configuration



Product Pin Description

Pin Name	Description
$S1_A$, $S2_A$ $S1_B$, $S2_B$ $S1_C$, $S2_C$ $S1_D$, $S2_D$	Analog Video I/O
IN	Select Input
$\overline{EN}$	Enable
D_A, D_B, D_C, D_D	Analog Video I/O
GND	Ground
V_{CC}	Power

NIPPON PRECISION CIRCUITS INC.

SM5304AV

Video Buffer with Built-in Analog LPF

OVERVIEW

The SM5304AV is a 75Ω terminating resistance drive video buffer with built-in analog filter. The filter cutoff frequency, controlled by the resistance connected to RFC pin, can be set to match any system resolution. The output buffer can be selected 0dB, 6dB, and 12dB. The feedback point occurs after the external coupling capacitors, and the coupling capacitances can be reduced.

FEATURES

- 5V ± 10% supply voltage
- Adjustable cutoff frequency using external resistor
- 0dB, 6dB, 12dB selectable gain using logic signal
- ± 0.5dB output gain error
- Two systems (two load resistances) can be driven
- 0.7% output signal harmonic distortion
- Sag compensation circuit built-in
- Package: 8-pin VSOP (Pb free)

APPLICATIONS

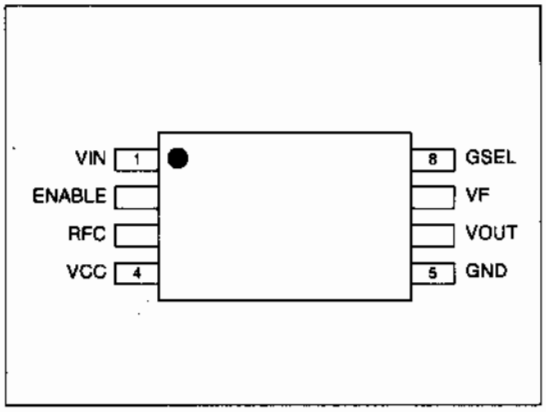
- DVD
- Digital still camera
- Digital VHS

ORDERING INFORMATION

Device	Package
SM5304AV	8-pin VSOP

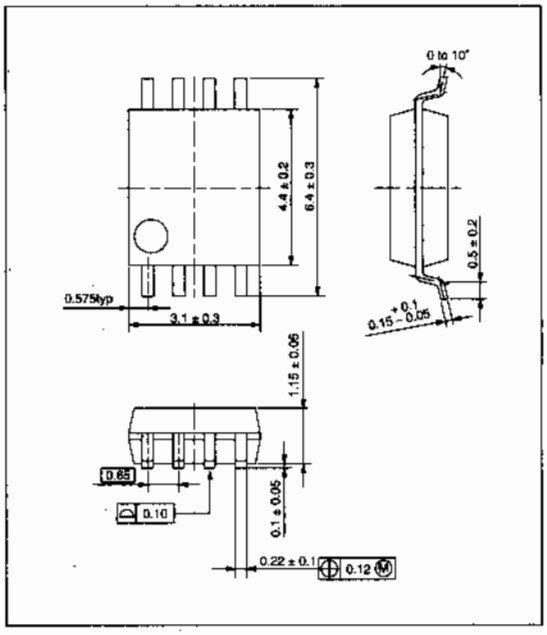
PINOUT

(Top view)

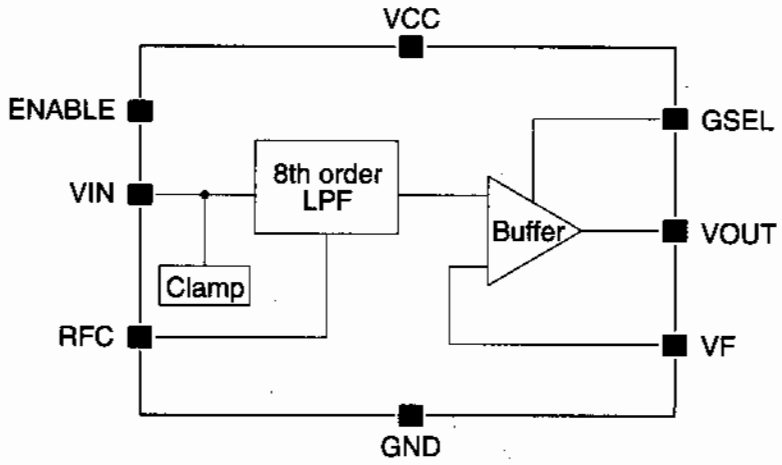


PACKAGE DIMENSIONS

(Unit: mm)
Weight: 0.04g



BLOCK DIAGRAM



PIN DESCRIPTION

Number	Name	I/O[1]	A/D[2]	Description
1	VIN	I	A	Input signal pin
2	ENABLE	I	D	Enable signal input pin (with pull-down resistor)
3	RFC	O	A	LPF cutoff frequency set pin
4	VCC	–	–	5V supply pin
5	GND	–	–	Ground pin
6	VOUT	O	A	Output signal pin
7	VF	I	A	Output signal feedback pin for sag compensation circuit
8	GSEL	I	D	Gain set signal input pin

1. I: input, O: output
2. A: analog, D: digital

2 x 12 W hi-fi audio power amplifiers with mute

TDA2616/TDA2616Q

FEATURES

- Requires very few external components
- No switch-on/switch-off clicks
- Input mute during switch-on and switch-off
- Low offset voltage between output and ground
- Excellent gain balance of both amplifiers
- Hi-fi in accordance with IEC 268 and DIN 45500
- Short-circuit proof and thermal protected
- Mute possibility.

GENERAL DESCRIPTION

The TDA2616 and TDA2616Q are dual power amplifiers. The TDA2616 is supplied in a 9-lead single-in-line (SIL9) plastic power package (SOT131), while the TDA2616Q is supplied in a 9-lead SIL-bent-to-DIL plastic power package (SOT157). They have been especially designed for mains fed applications, such as stereo radio and stereo TV.

QUICK REFERENCE DATA

Stereo application

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$\pm V_P$	supply voltage range		7.5	–	21	V
P_O	output power	V_P = ±16 V; THD = 0.5%	–	12	–	W
G_v	internal voltage gain		–	30	–	dB
$\lvert G_v \rvert$	channel unbalance		–	0.2	–	dB
α	channel separation		–	70	–	dB
SVRR	supply voltage ripple rejection		–	60	–	dB
V_{no}	noise output voltage		–	70	–	μV

ORDERING INFORMATION

EXTENDED TYPE NUMBER	PACKAGE			
	PINS	PIN POSITION	MATERIAL	CODE
TDA2616	9	SIL	plastic	SOT131[1]
TDA2616Q	9	SIL-bent-to-DIL	plastic	SOT157[2]

Notes

1. SOT131-2; 1996 August 27.
2. SOT157-2; 1996 August 27.

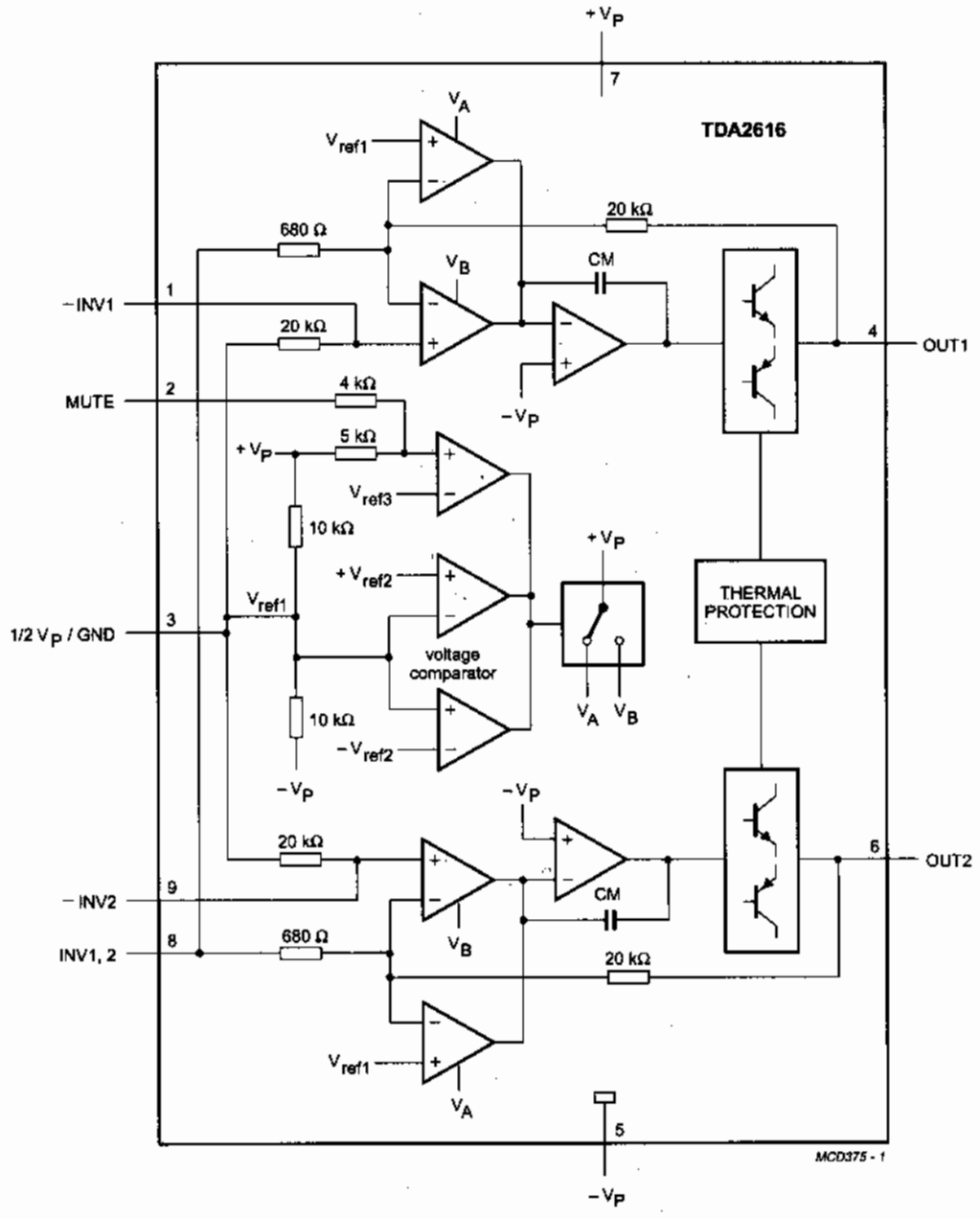


Fig.1 Block diagram.

Multi page intelligent teletext decoder SAA5360; SAA5361

1 FEATURES

- Support for 50 or 60 and 100 or 120 Hz and progressive scan display modes
- Complete 625 line teletext decoder in one chip reduces printed-circuit board area and cost
- Automatic detection of transmitted fastext links or service information (packet 8/30)
- On-Screen Display (OSD) for user interface menus using teletext and dedicated menu icons
- Video Programming System (VPS) decoding
- Wide Screen Signalling (WSS) decoding
- Pan-European, Cyrillic, Greek, Turkish, Arabic and Iranian character sets in each chip
- High-level command interface via I²C-bus gives easy control with a low software overhead
- High-level command interface is backward compatible to Stand-Alone Fastext And Remote Interface (SAFARI)
- 625 and 525 line display
- RGB interface to standard colour decoder ICs; current source
- Versatile 8-bit open-drain Input/Output (I/O) expander; 5 V tolerant
- Single 12 MHz crystal oscillator
- Single power supply: from 3.0 V to 3.6 V
- Operating temperature: −20 to +70 °C
- Automatic detection of transmitted pages to be selected by page up and page down
- 8 page fastext decoder
- Table Of Pages (TOP) decoder with Basic Top Table (BTT) and Additional Information Tables (AITs)
- 4 page user-defined list mode.

2 GENERAL DESCRIPTION

The SAA5360; SAA5361 is a single-chip multi page 625 line world system teletext decoder with a high-level command interface, and is SAFARI compatible.

The device is designed to minimize the overall system cost, due to the high-level command interface offering the benefit of a low software overhead in the TV microcontroller.

The SAA5360 incorporates the following functions:

- 10 page teletext decoder with OSD, fastext, TOP, default and list acquisition modes
- Automatic channel installation support.

The functionality of the SAA5361 is similar to the SAA5360, but offers the capability to store up to 250 additional pages of teletext in an external SRAM.

3 QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{DD}	all supply voltages	referenced to V_{SS}	3.0	3.3	3.6	V
I_{DDP}	periphery supply current	note 1	1	–	–	mA
I_{DDC}	core supply current	normal mode	–	15	18	mA
		idle mode	–	4.6	6	mA
I_{DDA}	analog supply current	normal mode	–	45	48	mA
		idle mode	–	0.87	1	mA
$f_{xtal(nom)}$	nominal crystal frequency	fundamental mode	–	12	–	MHz
T_{amb}	ambient temperature		−20	–	+70	°C
T_{stg}	storage temperature		−55	–	+125	°C

Note

1. Periphery supply current is dependent on external components and I/O voltage levels.

4 ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
SAA5360HL	LQFP100	plastic low profile quad flat package; 100 leads; body 14 × 14 × 1.4 mm	SOT407-1
SAA5361HL	LQFP100	plastic low profile quad flat package; 100 leads; body 14 × 14 × 1.4 mm	SOT407-1

5 BLOCK DIAGRAM

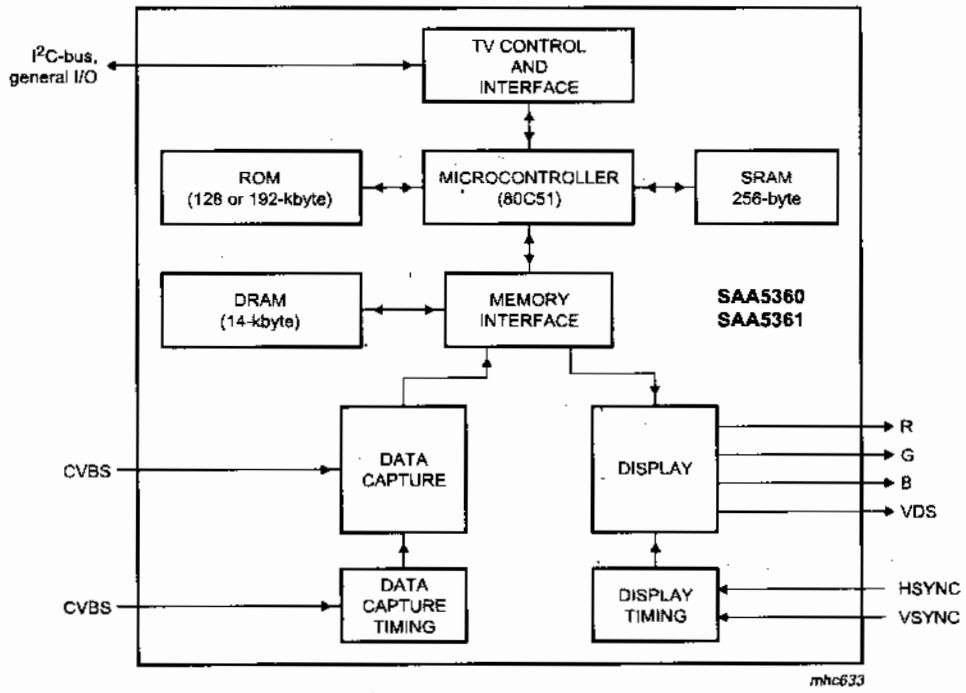


Fig.1 Block diagram.

Features

- **Low-Voltage and Standard-Voltage Operation**
  - **5.0 (V_{CC} = 4.5V to 5.5V)**
  - **2.7 (V_{CC} = 2.7V to 5.5V)**
  - **2.5 (V_{CC} = 2.5V to 5.5V)**
  - **1.8 (V_{CC} = 1.8V to 5.5V)**
- **Low-Power Devices (I_{SB} = 2 µA @ 5.5V) Available**
- **Internally Organized 4096 x 8, 8192 x 8**
- **2-Wire Serial Interface**
- **Schmitt Trigger, Filtered Inputs for Noise Suppression**
- **Bidirectional Data Transfer Protocol**
- **100 kHz (1.8V, 2.5V, 2.7V) and 400 kHz (5V) Clock Rate**
- **Write Protect Pin for Hardware Data Protection**
- **32-Byte Page Write Mode (Partial Page Writes Allowed)**
- **Self-Timed Write Cycle (10 ms max)**
- **High Reliability**
  - **Endurance: 1 Million Write Cycles**
  - **Data Retention: 100 Years**
  - **ESD Protection: >3,000V**
- **Automotive Grade and Extended Temperature Devices Available**
- **8-Pin JEDEC PDIP, 8-Pin JEDEC SOIC, 8-Pin EIAJ SOIC, and 8-pin TSSOP Packages**

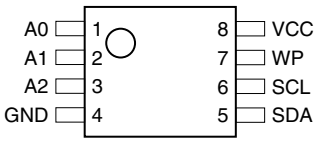
Description

The AT24C32/64 provides 32,768/65,536 bits of serial electrically erasable and programmable read only memory (EEPROM) organized as 4096/8192 words of 8 bits each. The device's cascadable feature allows up to 8 devices to share a common 2-wire bus. The device is optimized for use in many industrial and commercial applications where low power and low voltage operation are essential. The AT24C32/64 is available in space saving 8-pin JEDEC PDIP, 8-pin JEDEC SOIC, 8-pin EIAJ SOIC, and 8-pin TSSOP (AT24C64) packages and is accessed via a 2-wire serial interface. In addition, the entire family is available in 5.0V (4.5V to 5.5V), 2.7V (2.7V to 5.5V), 2.5V (2.5V to 5.5V) and 1.8V (1.8V to 5.5V) versions.

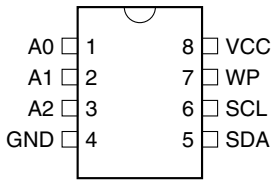
Pin Configurations

Pin Name	Function
A0 - A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock Input
WP	Write Protect

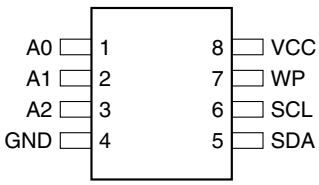
8-Pin TSSOP



8-Pin PDIP



8-Pin SOIC



2-Wire Serial EEPROM

32K (4096 x 8)

64K (8192 x 8)

AT24C32
AT24C64

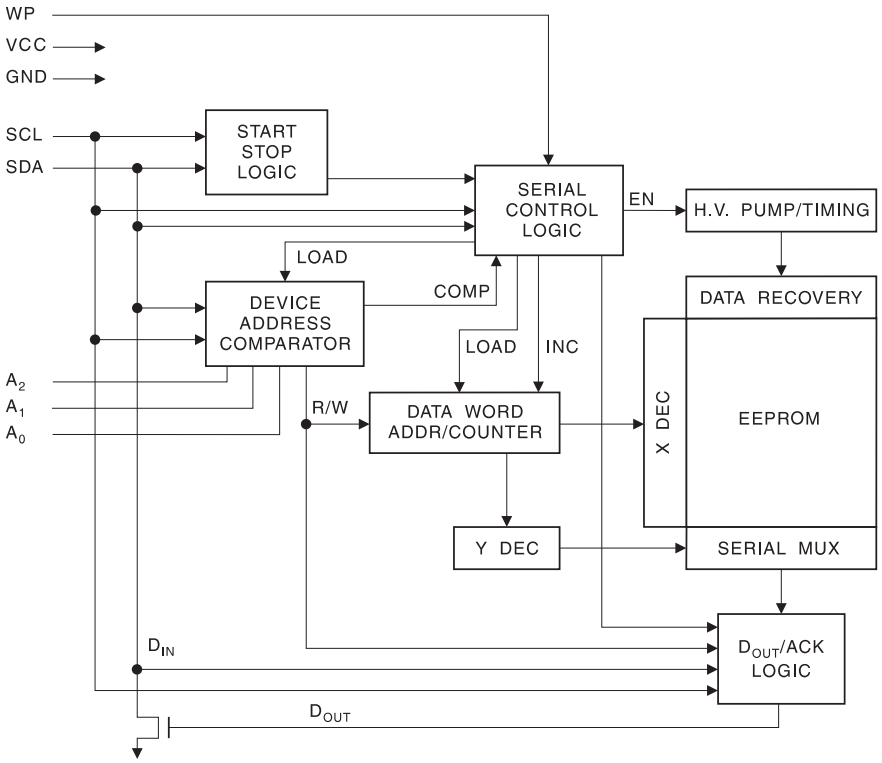
Rev. 0336G–04/01

Absolute Maximum Ratings*

Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +150°C
Voltage on Any Pin with Respect to Ground	-1.0V to +7.0V
Maximum Operating Voltage	6.25V
DC Output Current	5.0 mA

*NOTICE: Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Block Diagram



Pin Description

SERIAL CLOCK (SCL): The SCL input is used to positive edge clock data into each EEPROM device and negative edge clock data out of each device.

SERIAL DATA (SDA): The SDA pin is bidirectional for serial data transfer. This pin is open-drain driven and may be wire-ORed with any number of other open-drain or open collector devices.

DEVICE/PAGE ADDRESSES (A2, A1, A0): The A2, A1 and A0 pins are device address inputs that are hard wired or left not connected for hardware compatibility with AT24C16. When the pins are hardwired, as many as eight 32K/64K devices may be addressed on a single bus system (device addressing is discussed in detail under the Device Addressing section). When the pins are not hardwired, the default A_2, A_1, and A_0 are zero.

WRITE PROTECT (WP): The write protect input, when tied to GND, allows normal write operations. When WP is tied high to V_{CC}, all write operations to the upper quandrant (8/16K bits) of memory are inhibited. If left unconnected, WP is internally pulled down to GND.

Memory Organization

AT24C32/64, 32K/64K SERIAL EEPROM: The 32K/64K is internally organized as 256 pages of 32 bytes each. Random word addressing requires a 12/13 bit data word address.

HT48R06A-1/HT48C06

8-Bit Cost-Effective I/O Type MCU

Features

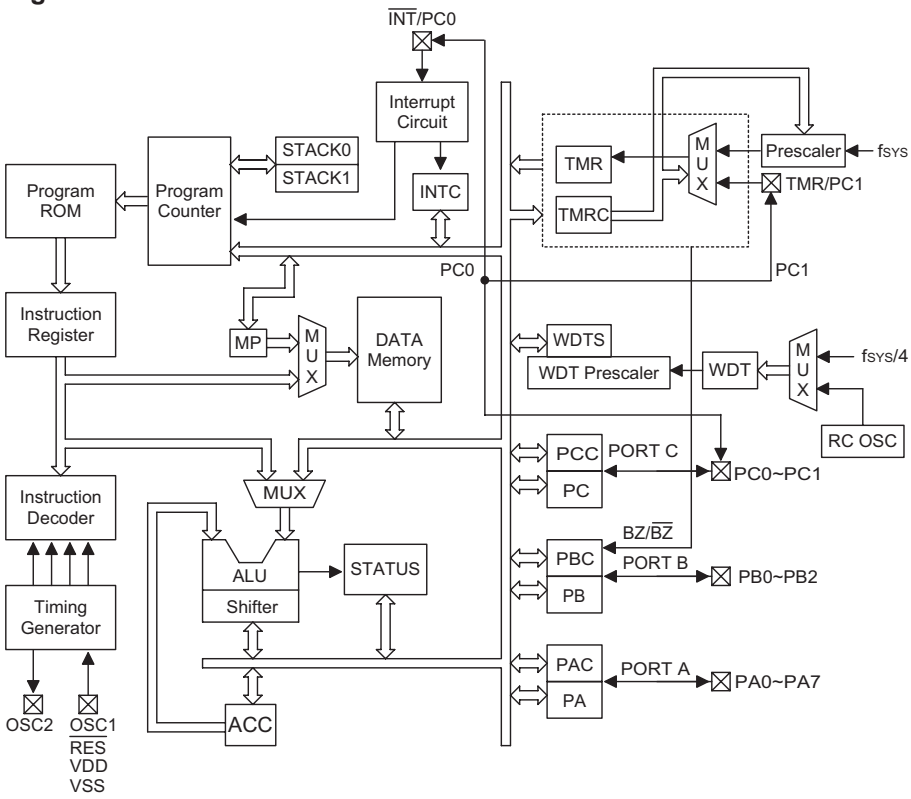
- Operating voltage:
  f_{SYS}=4MHz: 2.2V~5.5V
  f_{SYS}=8MHz: 3.3V~5.5V
- 13 bidirectional I/O lines
- An interrupt input shared with an I/O line
- 8-bit programmable timer/event counter with overflow interrupt and 8-stage prescaler
- On-chip crystal and RC oscillator
- Watchdog Timer
- 1024×14 program memory ROM
- 64×8 data memory RAM
- Buzzer driving pair and PFD supported
- HALT function and wake-up feature reduce power consumption
- Up to 0.5μs instruction cycle with 8MHz system clock at V_{DD}=5V
- All instructions in one or two machine cycles
- 14-bit table read instruction
- Two-level subroutine nesting
- Bit manipulation instruction
- 63 powerful instructions
- Low voltage reset function
- 16-pin SSOP package
  18-pin DIP/SOP package

General Description

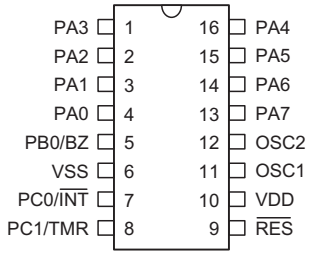
The HT48R06A-1/HT48C06 are 8-bit high performance, RISC architecture microcontroller devices specifically designed for cost-effective multiple I/O control product applications. The mask version HT48C06 is fully pin and functionally compatible with the OTP version HT48R06A-1 device.

The advantages of low power consumption, I/O flexibility, timer functions, oscillator options, HALT and wake-up functions, watchdog timer, buzzer driver, as well as low cost, enhance the versatility of these devices to suit a wide range of application possibilities such as industrial control, consumer products, subsystem controllers, etc.

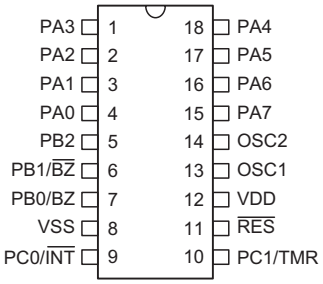
Block Diagram



Pin Assignment



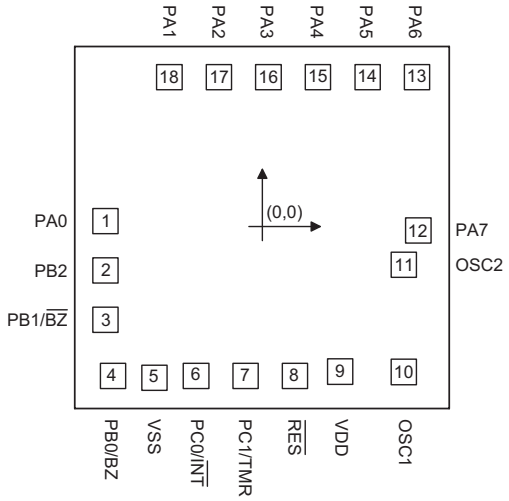
HT48R06A-1/HT48C06
– 16 SSOP-A



HT48R06A-1/HT48C06
– 18 DIP-A/SOP-A

Pad Assignment

HT48C06



* The IC substrate should be connected to VSS in the PCB layout artwork.

Pad Description

Pad Name	I/O	Options	Description
PA0~PA7	I/O	Pull-high* Wake-up	Bidirectional 8-bit input/output port. Each bit can be configured as wake-up input by options. Software instructions determine the CMOS output or Schmitt trigger input with a pull-high resistor (determined by pull-high options).
PB0/$\overline{BZ}$ PB1/$\overline{BZ}$ PB2	I/O	Pull-high* I/O or BZ/$\overline{BZ}$	Bidirectional 3-bit input/output port. Software instructions determine the CMOS output or Schmitt trigger input with a pull-high resistor (determined by pull-high options). The PB0 and PB1 are pin-shared with the BZ and $\overline{BZ}$, respectively. Once the PB0 and PB1 are selected as buzzer driving outputs, the output signals come from an internal PFD generator (shared with a timer/event counter).
VSS	—	—	Negative power supply, ground
PC0/$\overline{INT}$ PC1/TMR	I/O	Pull-high*	Bidirectional I/O lines. Software instructions determine the CMOS output or Schmitt trigger input with a pull-high resistor (determined by pull-high options). The external interrupt and timer input are pin-shared with the PC0 and PC1, respectively. The external interrupt input is activated on a high to low transition.
$\overline{RES}$	I	—	Schmitt trigger reset input. Active low
VDD	—	—	Positive power supply
OSC1 OSC2	I O	Crystal or RC	OSC1, OSC2 are connected to an RC network or Crystal (determined by options) for the internal system clock. In the case of RC operation, OSC2 is the output terminal for 1/4 system clock.

* All pull-high resistors are controlled by an option bit.

Absolute Maximum Ratings

Supply Voltage ..... V_{SS}–0.3V to V_{SS}+6.0V

Input Voltage ..... V_{SS}–0.3V to V_{DD}+0.3V

Storage Temperature ..... –50°C to 125°C

Operating Temperature ..... –40°C to 85°C

Note: These are stress ratings only. Stresses exceeding the range specified under "Absolute Maximum Ratings" may cause substantial damage to the device. Functional operation of this device at other conditions beyond those listed in the specification is not implied and prolonged exposure to extreme conditions may affect device reliability.

D.C. Characteristics

Ta=25°C

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
		V_{DD}	Conditions				
V_{DD}	Operating Voltage	—	f_{SYS}=4MHz	2.2	—	5.5	V
		—	f_{SYS}=8MHz	3.3	—	5.5	V
I_{DD1}	Operating Current (Crystal OSC)	3V	No load, f_{SYS}=4MHz	—	0.6	1.5	mA
		5V		—	2	4	mA
I_{DD2}	Operating Current (RC OSC)	3V	No load, f_{SYS}=4MHz	—	0.8	1.5	mA
		5V		—	2.5	4	mA
I_{DD3}	Operating Current (Crystal OSC)	5V	No load, f_{SYS}=8MHz	—	3	5	mA
I_{STB1}	Standby Current (WDT Enabled)	3V	No load, system HALT	—	—	5	μA
		5V		—	—	10	μA
I_{STB2}	Standby Current (WDT Disabled)	3V	No load, system HALT	—	—	1	μA
		5V		—	—	2	μA
V_{IL1}	Input Low Voltage for I/O Ports, TMR and $\overline{INT}$	—	—	0	—	$0.3V_{DD}$	V
V_{IH1}	Input High Voltage for I/O Ports, TMR and $\overline{INT}$	—	—	$0.7V_{DD}$	—	V_{DD}	V
V_{IL2}	Input Low Voltage ($\overline{RES}$)	—	—	0	—	$0.4V_{DD}$	V
V_{IH2}	Input High Voltage ($\overline{RES}$)	—	—	$0.9V_{DD}$	—	V_{DD}	V
V_{LVR}	Low Voltage Reset	—	LVR enabled	2.7	3.0	3.3	V
I_{OL}	I/O Port Sink Current	3V	V_{OL}=$0.1V_{DD}$	4	8	—	mA
		5V		10	20	—	mA
I_{OH}	I/O Port Source Current	3V	V_{OH}=$0.9V_{DD}$	–2	–4	—	mA
		5V		–5	–10	—	mA
R_{PH}	Pull-high Resistance	3V	—	40	60	80	kΩ
		5V	—	10	30	50	kΩ

AKAI

PDP PANEL

MODEL : PDP42X2####

CAUTION

1. BEFORE SERVICING THE PDP MODULE,
   READ THE SAFETY PRECAUTIONS IN THIS MANUAL.
2. WHEN REPLACEMENT PARTS ARE REQUIRED, BE SURE TO USE
   REPLACEMENT PARTS SPECIFIED BY THE MANUFACTURER..

AKAI

SPECIFICATION
FOR
APPROVAL

(●) Preliminary Specification
( ) Final Specification

Title	PDP42X2#### (42” PDP MODULE)

Customer	NAKS
Model Name	
Part No.	

Signature		Date
Approved by		
Reviewed by		
Prepared by		

Supplier	LG Electronics Inc.
Model Name	PDP42X2#000
Part No.	

Signature			Date
Approved by G.S. Lim/G.Manager			
Reviewed by J.S. Lee		/	Agreed by J.Y.Kim
Reviewed by Ted. Lee		/	
Prepared by J.H.Yeom		/	/

PDP Engineering Department
PDP Division LG Electronics Inc.

☞ Please return 1 copy with your signature and comments for our confirmation.

AKAI

1. GENERAL DESCRIPTION

❑ DESCRIPTION

The PDP42X2#### 42-inch 16:9 color plasma display module with resolution of 1024(H) × 768(V) pixels.
This is the display device which offers vivid colors with adopting AC plasma technology by LG Electronics Inc.

❑ FEARURES

High peak brightness (1000cd/m^2 Typical) and high contrast ratio (5000:1 Typical) enables user to create high performance PDP SETs.

❑ APPLICATIONS

✓ General television systems
✓ Public information display
✓ Video conference systems
✓ Education and training systems

❑ ELECTRICAL INTERFACE OF PLASMA DISPLAY

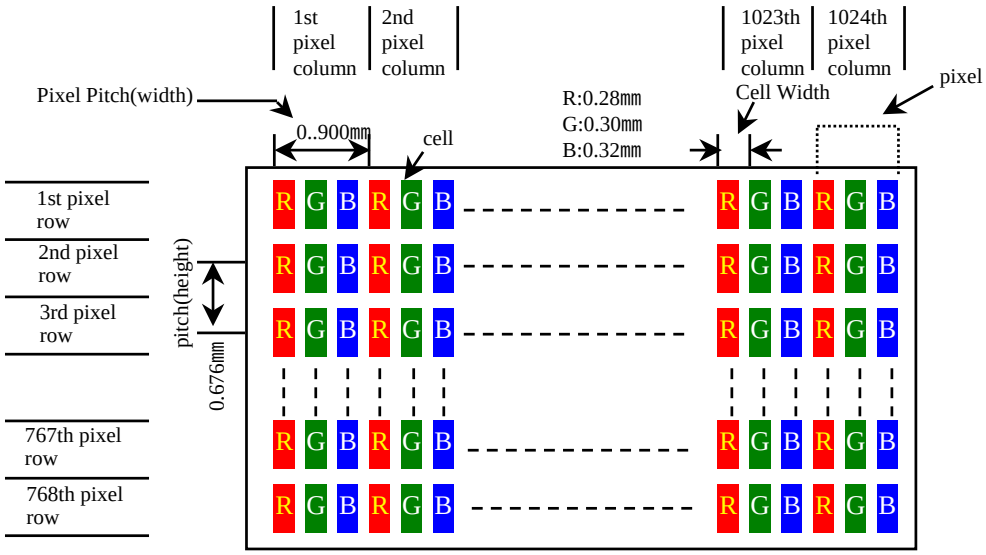
The PDP42X2#### requires 8bits or 10bits of digital video signals for each RGB color.
In addition to the video signals, six different DC voltages are required to operate the display.
The PDP42X2#### is equipped with P-CUBE function which analyzes display signals to optimize system control factor for showing the best display performance.

❑ GENERAL SPECFICATIONS

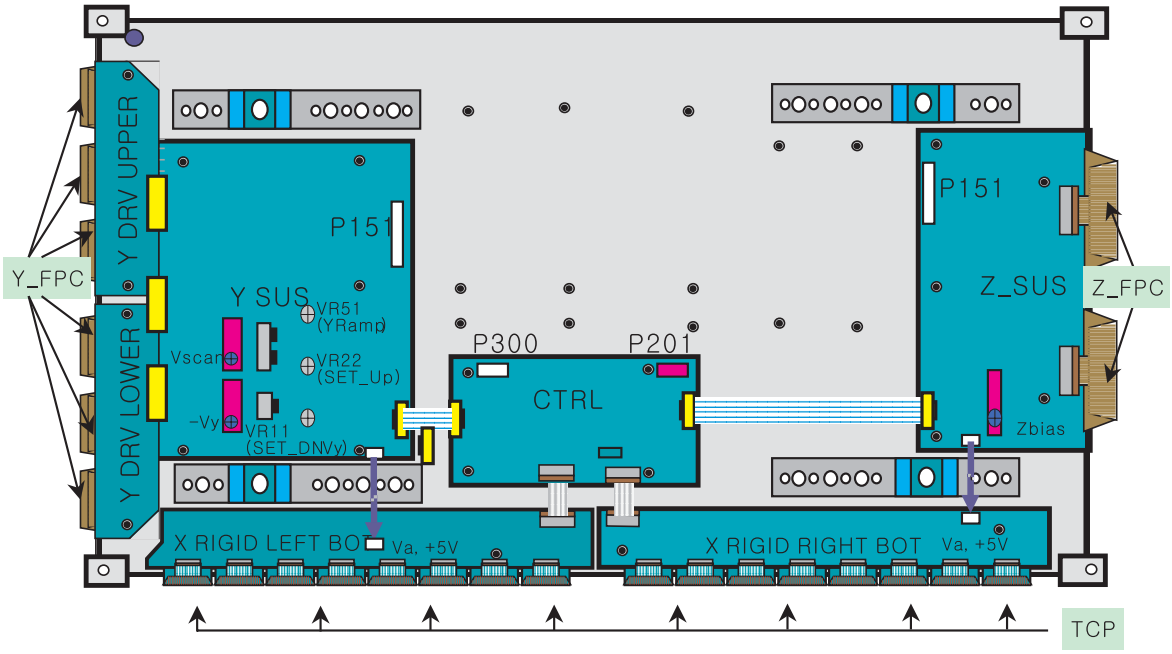
✓ Model Name	: PDP42X2#### (42X2#### Model)
✓ Number of Pixels	: 1024(H) × 768(V) (1pixel=3 RGB cells)
✓ Pixel Pitch	: 900㎛ (H) × 676㎛ (V)
✓ Cell Pitch	: 300㎛ (H) × 676㎛ (V) (Green Cell basis)
✓ Display Area	: 920.1(H) × 518.4(V) ±0.5mm
✓ Outline Dimension	: 1005(H) × 597(V) × 61.2(D)±1mm
✓ Pixel Type	: RGB Closed type
✓ Number of Gradations	: (R)1024 × (G)1024 × (B)1024
✓ Weight	: 16.1 Kg ± 0.5 Kg (Net 1EA)
	109 Kg ± 5 Kg (5EA/1BOX)
✓ Aspect Ratio	: 16:9
✓ Peak Brightness	: Typical 1000cd/㎡ (1/100 White Window)
✓ Contrast Ratio	: Average 60:1 (In a bright room with 150Lux at center)
	: Typical 5000:1 (In a dark room 1/100 White Window pattern at center)
✓ Power Consumption	: Typical 300 W (Full White), Max.330W
✓ Expected Life-time	: more than 60,000 Hours of continuous operation

☞ Life-time is defined as the time when the brightness level becomes half of its initial value.

✓ Display Dot Diagram



Formation and Specification of Module



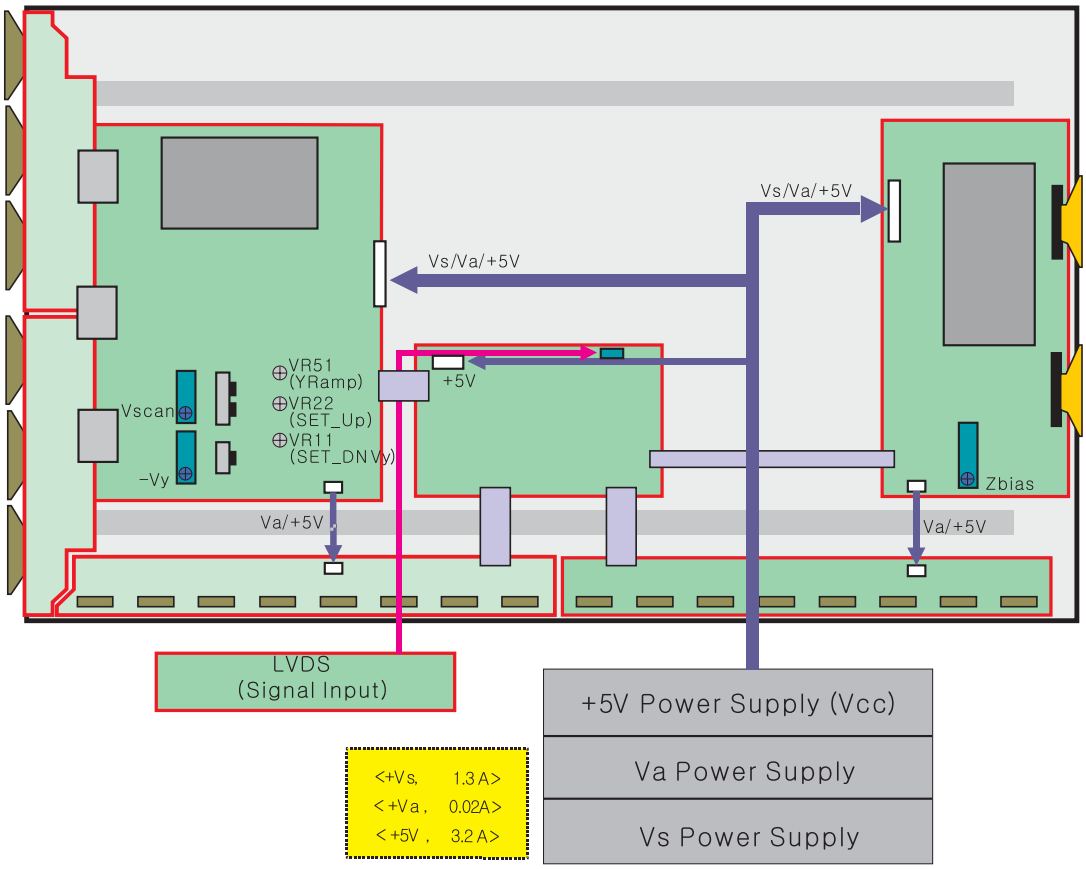
External Cable Connection

NO	Connector	Input Voltage & Signal
1	P151[Z SUS B/D]	5V, Va, Vs
2	P151[Y SUS B/D]	5V, Va, Vs
3	P300[CTRL B/D]	5V
4	P201[CTRL B/D]	Video Signal

NO	Part No.		Description
①	6871QCH038A	PWB(PCB) ASSY	LVDS CTRL B/D ASSY
②	6871QDH068A	PWB(PCB) ASSY	Y DRV UPPER B/D ASSY
③	6871QDH069A	PWB(PCB) ASSY	Y DRV LOWER B/D ASSY
④	6871QYH030A	PWB(PCB) ASSY	Y SUS B/D ASSY
⑤	6871QZH034A	PWB(PCB) ASSY	Z SUS B/D ASSY
⑥	6871QLH037A	PWB(PCB) ASSY	X LEFT B/D ASSY
⑦	6871QRH043A	PWB(PCB) ASSY	X RIGHT B/D ASSY

Block Diagram

Input Signal: Full White
Current(typ.): rms



External Power Supply (5V, Va , Vs)

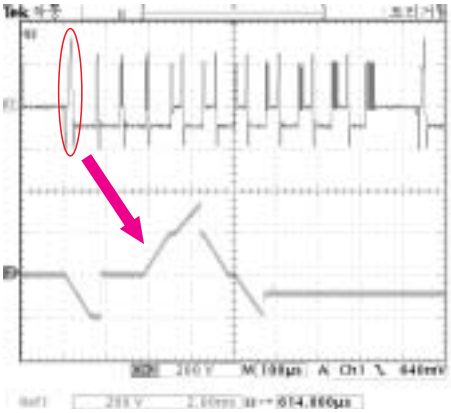
Trouble Shooting

1. Checking for no Picture

A screen doesn't display at all and condition of black pattern or power off.

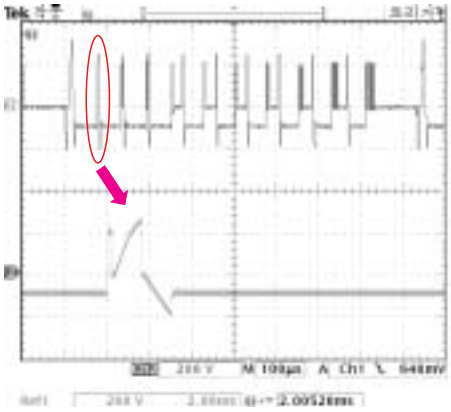
(1) Check whether the CTRL B/D LED(D1, D14) is turned on or not.
(2) Check the power and signal cable of CTRL B/D.
(3) X B/D, Y B/D, Z B/D is well plugged in.
(4) Check the connection of X B/D, Y B/D and Z B/D to CTRL B/D.
(5) Measure the output wave of X, Y, Z B/D with oscilloscope(more than 200MHz)
and find the trouble of B/D by comparing the output wave with below figure.
- Measure Point fo Y B/D : TP(Bead B1)
- Measure Point fo Z B/D : TP(Bead B1)

(6) Check the SCAN(Y side) IC
(7) Check the DATA(X side) TCP IC
(8) Replace the CTRL B/D.



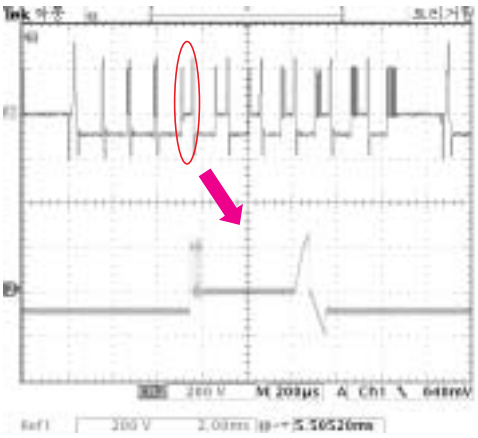
<A: Y B/D Output wave - 1 FRAME>

<B: Y B/D Output wave - 1 SF>



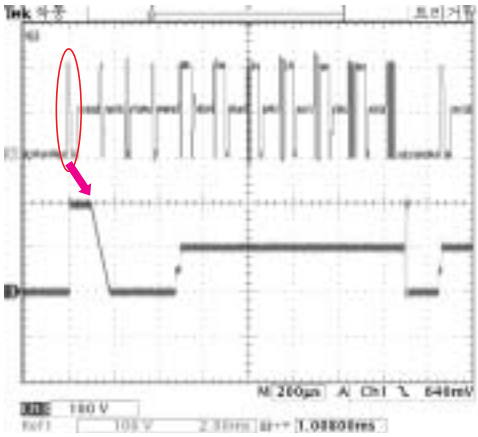
<A: Y B/D Output wave - 1 FRAME>

<B: Y B/D Output wave - 2, 3, 4 SF>



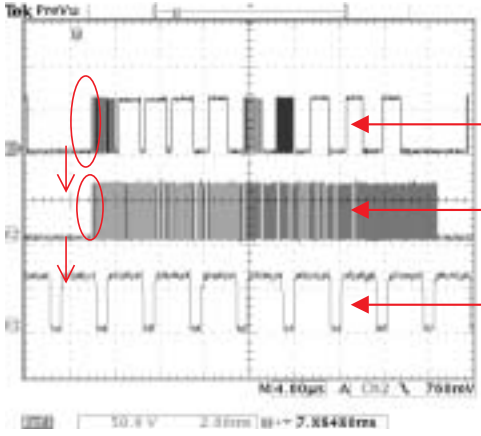
<A: Y B/D Output wave - 1Frame>

<B: Y B/D Output wave - 5~10 SF>



<A: Z B/D Output wave - 1Frame>

<B: Z B/D Output wave - 1~10 SF>



<X B/D Output wave - 1 FRAME>

<X B/D Output wave - 1 SF>

<X B/D Output wave - Enlargement>

2. Hitch Diagnosis Following Display Condition

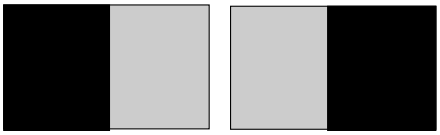
2-1. 1/2 of the screen is not turned on

(1) Confirm the power connection of X B/D is well plugged in which is correspond to not showing screen.
(2) Confirm the power connector that is connected between CTRL B/D and X B/D correspond to not showing part.
(3) Replace relevant X B/D. When replace X B/D, TCP should have been connected accurately, it confirms certainly.

⁕ Relationship between screen and X B/D

Screen			X B/D
Left of the Screen	1/2	<-->	Right X B/D
Right of the Screen	1/2	<-->	Left X B/D

⁕ Screen Display Form



Left of the Screen(1/2) Right of the Screen(1/2)

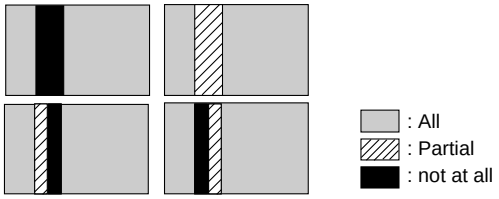
2-2. The screen doesn't be shown as Data TCP

(Include not be shown part of Data COF quantity or a part)

(1) Replace the cable between the CTRL B/D and X B/D, when there is not change, replace the CTRL B/D.
(2) Check the Data TCP of point screen does not come out is fail and when it is not problem, connect again with correspondence TCP.
(3) In case of fail the correspondence Data TCP, replace the Module.

⁕ Example of the screen display form

(Anything of the 16 Data TCP can be shown beside below pictures)



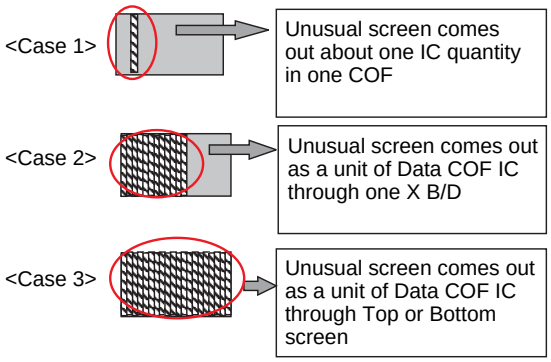
⁕ 1/4 of the screen doesn't be shown

Equality with 2-1

2-3. It Generates Unusual Pattern of Data TCP IC unit

(1) In case of line shape or dotted line occurs, check the screw on X B/D and make sure it is tight. When the there is not change, replace the X B/D.
(2) In case of <case 1>
- confirm the connection of Data TCP connector
- Replace relevant XB/D or CTRL B/D
(3) In case of <case 2, 3>
- confirm the connector that is connected from CTRL B/D to relevant X B/D
- Replace relevant XB/D or CTRL B/D

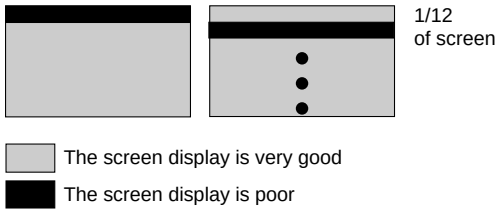
⁕ Screen Display Form



2-4. The screen display has a problem for Scan FPC.

(1) It may be a problem between Scan FPC and Y DRVB/D.
(2) Check the connection of Y DRV B/D and Scan FPC.
(3) If the Scan IC is failed, replace the Y DRV B/D.
(Check the compatibility)

⁕ Screen Display Form



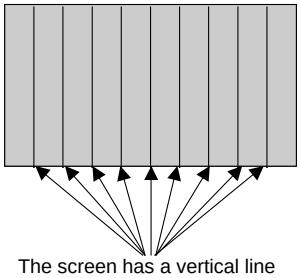
⁕ Check a method of SCAN IC

Change the Vpp Pin into ANODE and GND Pin into CATHOD and then test the Diode with forward or reverse direction.

2-5. The screen has a vertical line with regular gap. (A vertical stripe flash at especial color)

(1) This problem comes from Control B/D.
(2) Replace Control B/D.

※ Screen Display Form



The screen has a vertical line with regular gap

2-6. A data copy is happened into vertical direction

(1) In this case, it's due to incorrect marking of scan wave.
(2) Replace a Y DRV B/D or Y SUS B/D.

※ Screen Display Form

<Display Pattern>

<Case 1 : Entire Copy>

<Case 2 : Top Copy>

<Case 3 : Bottom Copy>

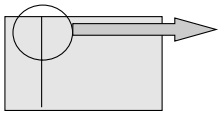
<Case 4 : Entire Copy>

2-7. The screen has one or several vertical line

(1) In this case, It isn't a problem about controller B/D or X B/D.
(2) It may cause followings.
- It's out of order a panel
- Open or short of DATA TCP FPC attached panel
- DATA TCP attached on panel is out of order

(3) Replace Module.

※ Screen Display Form



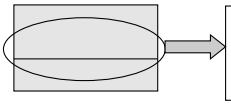
It may show several vertical lines in a quarter or other division part of screen including left case.

2- 8. The screen has one or several horizontal line

(1) In this case, it isn't a problem about controller B/D or X B/D.
(2) It may cause followings.
- It's out of order a panel
- Open or short of SCAN FPC attached panel
- SCAN FPC attached on panel is out of order.

(3) Replace Module.

※ Screen Display Form



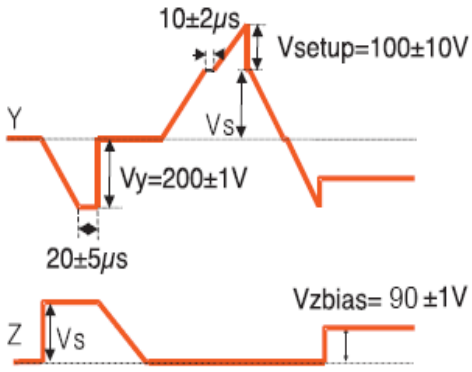
It may be shown on several horizontal lines including left case.

2-9. The screen displays input signal pattern but the brightness is dark

(1) In this case, Z B/D operation isn't complete.
(2) Check the power cord of Z B/D.
(3) Check the connector of Z B/D and Controller B/D.
(4) Replace the Controller B/D or Z B/D.

2-10. The screen displays other color partially on full white screen or happens discharge partially on full black screen.

(1) Check the slope of Y B/D ramp, set up, set down waveform.
(2) Measure each output waveform with oscilloscope(more than 200MHz) and compare the data with (figure 2) data.
Adjust the Y B/D ramp/set up/set down slope and Y B/D -Vy/Vscan, Z B/D Vzb voltage by changing VR51/VR22 /VR11/PS101, PS102/PS101 to be on the label data.
- Measuring Point of Y B/D : B1
- Measuring Point of Z B/D : B1



※Vsetup = 80±1V @42X2##2# Module

2-11. It doesn't display a specified brightness at specified color

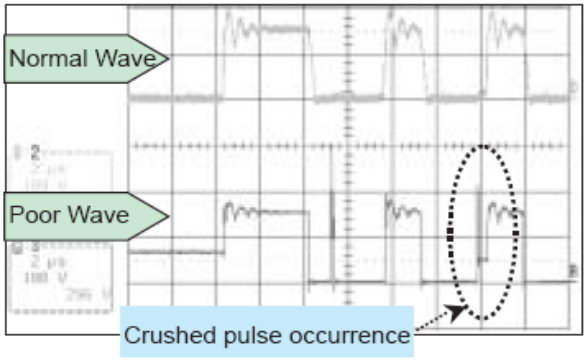
(1) Check the connector of CTRL B/D input signal.
(2) Replace the CTRL B/D.

3. Checking for component damage

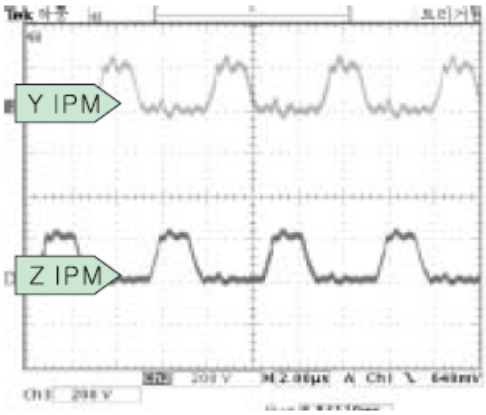
3-1. Y IPM(IC81) or Z IPM(IC81) damage

(1) When the internal Sustain_FET of Y IPM or Z IPM is damaged, screen doesn't be shown or electric discharge is generated.
- Test Point: GND~B1(Y B/D), GND~B1(Z B/D)
- Waveform state: B1(Y B/D) or B1(Z B/D) has no wave output

(2) When the internal ER_FET of Y IPM or Z IPM is damaged, Y IPM or Z IPM temperature is increased.
- Test Point: GND~B1(Y B/D), GND~B1(Z B/D)
- Waveform state: As shown (Fig. 1)



(Fig. 1) When the ER_FET is damaged

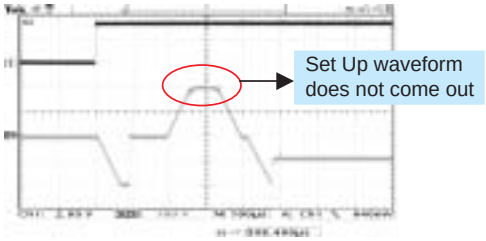


<IPM Normal Output Wave >

- Measurement position: Enlarge sustain section after measuring B1 waveform of Y B/D and B1 waveform of Z B/D. (Full White Pattern)

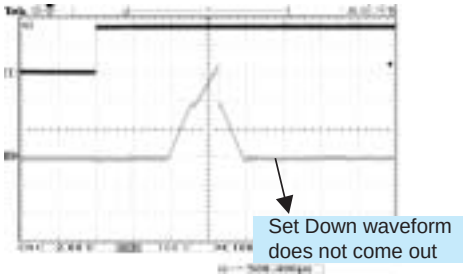
3-2. FET Ass'y(Y B/D: HS11, 51, 91) damage

(1) When Set_Up FET is damaged, screen doesn't be shown
- Test Point: Enlarge the after measuring GND~B1(Y B/D)
- Waveform state: As shown (Fig. 2)



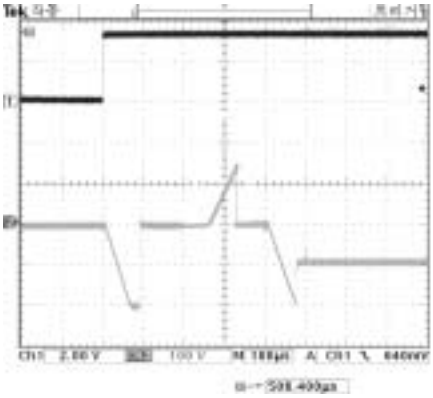
(Fig. 2) When the Set_Up FET is damaged

(2) When Set_Down FET/Pass_Top FET is damaged, mis discharge of entire screen is generated.
- Test Point: Enlarge the after measuring GND~B1(Y B/D)
- Waveform state: As shown (Fig. 3)

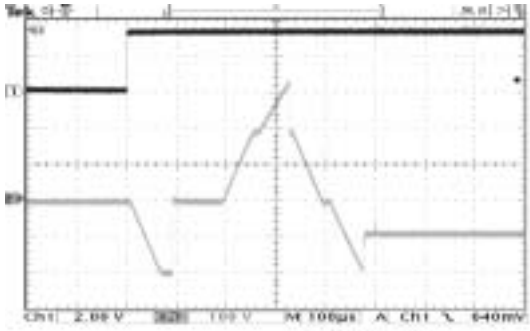


(Fig. 3) When the Set_Down FET is damaged

(3) When Ramp FET is damaged
- Test Point: Enlarge the after measuring GND~B1(Y B/D)
- Waveform state: As shown (Fig. 4)



(Fig. 4) When the Ramp FET is damaged

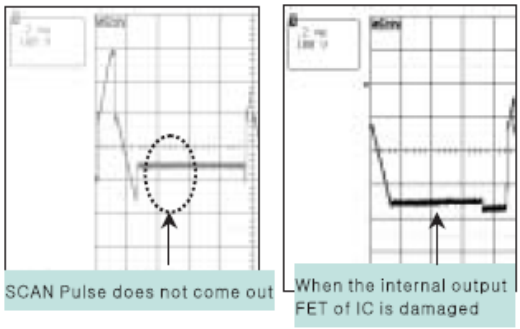


<FET Ass'y Normal Output Waveform >

- Measurement position: Reset section enlargement wave of TP B1(Y B/D) (Full White Pattern)

3-3. SCAN IC(Y drv B/D: IC1~12) damage

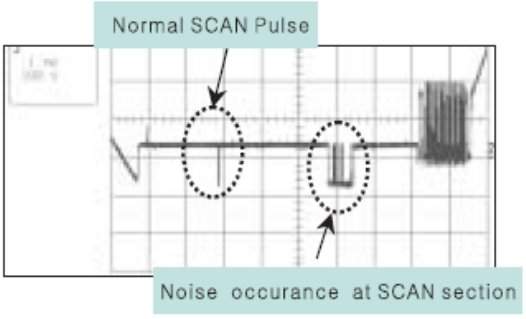
(1) In case of SCAN IC bad, one horizontal line may open at screen.
- Test Point: ICT measurance of GND~Y drive B/D output
- Waveform state: As shown (Fig. 5)



(Fig. 5) When SCAN IC is bad

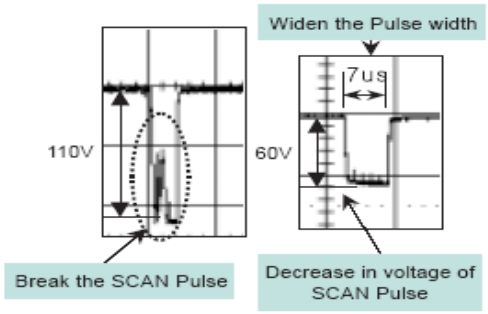
(2) Screen may not be shown when SCAN IC is damaged by bad SCAN IC or external electricity or spark.
- Test Point: ICT measurance of GND~Y drive B/D output
- Waveform state: Output wave format is not shown (You can see the damage of Y drive B/D Top or Bottom's SCAN IC)

(3) Screen shaked horizontally when Y drv B/D Top and Bottom cable is bad
- Test Point: ICT measurance of GND~Y drive B/D output
- Waveform state: As shown (Fig. 6)

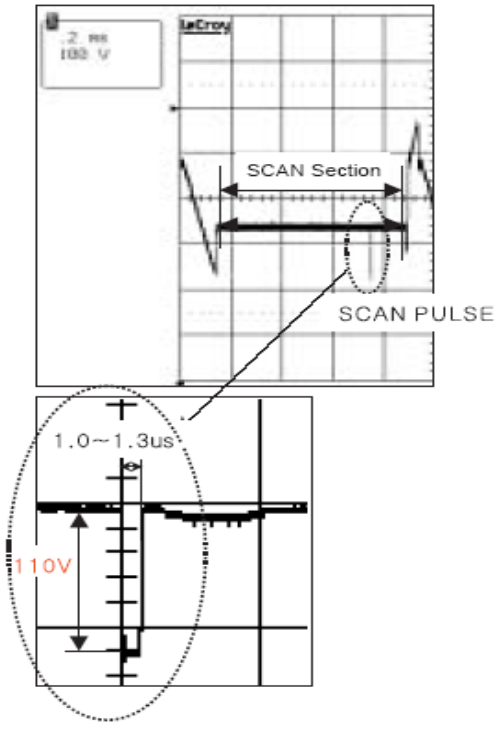


(Fig. 6) When Y drv B/D Top and Bottom cable is bad

(4) In case of shorting the SCAN IC output by a dust, foreign substance, it may overlap two horizontal lines on screen.
- Test Point: ICT measurance of GND~Y drive B/D output
- Waveform state: As shown (Fig. 7)



(Fig. 7) When SCAN IC output is short



<SCAN IC Normal Output Wave >

- Measurement position: SCAN section enlarge the after measuring output ICT of Y drive B/D. (Full White Pattern)

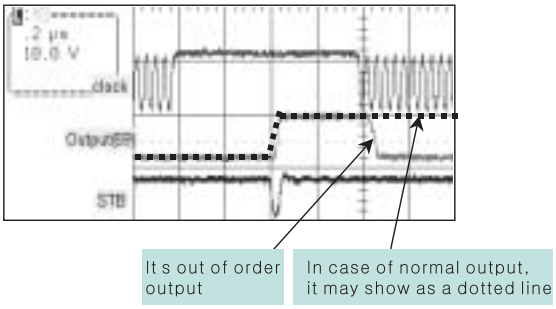
※Vsc = 120V @ 42X2##2# Moduel

3-4. TCP damage

(1) In case of shorting or opening of IC output of TCP several vertical lines occured.
- Test Point: Enlarge the after measuring output TP of GND~TCP.
- Waveform state: As shown Output of (Fig. 8)

  In case of normal wave output, when STB signal is applied, STB signal remains High. And when STB signal is applied again, it must be fall Low.

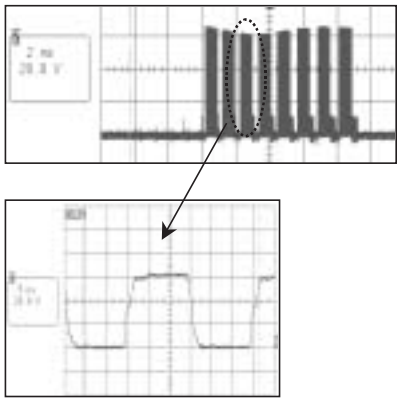
  But when TCP IC is bad, even STB signal is not generated, Output falls to Low.



(Fig. 8) When IC output of TCP is poor

※ Since the output TP of TCP is covered with SR, when measurement is needed, remove the SR, measures. And after measuring insulates TCP leads with insulation tape.

(2) In case of being damaged on TCP IC, the screen doesn't be shown or happens discharge partially. When IC fail occurs, it will be able to discover the trace which is burned.
- Test Point: Enlarge the after measuring output TP of GND~TCP
- Waveform state: Output wave doesn't come out



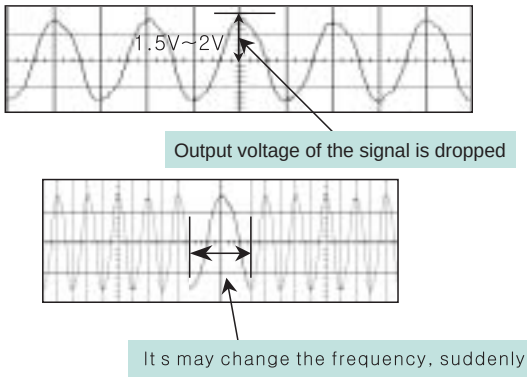
<TCP Normal Output Wave >

- Measurement position: Enlarge the after measuring output TP of TCP (Full White Pattern)

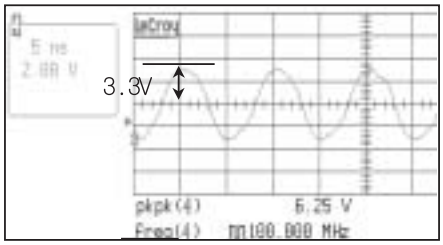
3-5. Crystal(CTRL B/D: X2) damage

(1) When Crystal is damaged, the screen doesn't be turned on.
- Test Point: Measuring 3pin of GND~Crystal(Ctrl B/D: X2)
- Waveform state: Output wave doesn't come out

(2) In case of unusual launch of the Crystal, it may blink the screen.
- Waveform state: As shown (Fig. 9)



(Fig. 9) When Crystal is bad



<Crystal Normal Output Waveform >

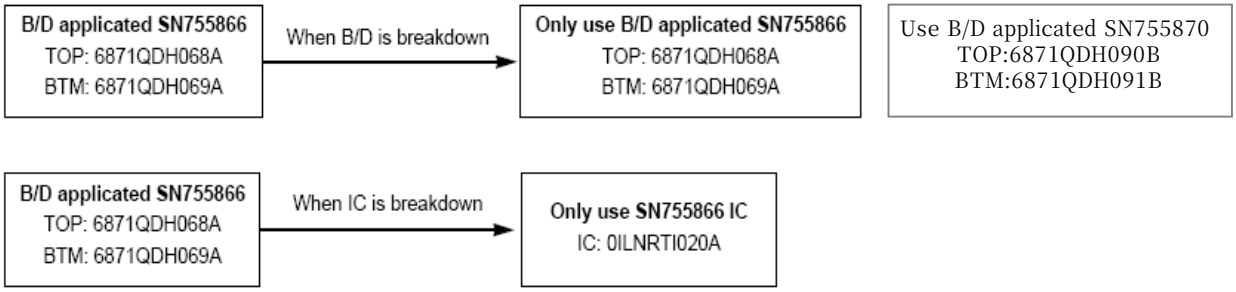
- Measurement position: Measuring output 3pin of Crystal(X2: 100MHz) on Ctrl B/D (Full White Pattern)

4. Shift breakdown component compatibility consideration

4-1. Scan IC follows in application, compatibility of Y DRV Top, Bottom B/D

(1) When B/D applicated SN755866 is breakdown, you must mutually only replace Top B/D and Bottom B/D applicated SN755866.

(2) When IC of B/D applicated SN755866 IC is breakdown, you must only replace SN755866 IC.
Different IC application being not right

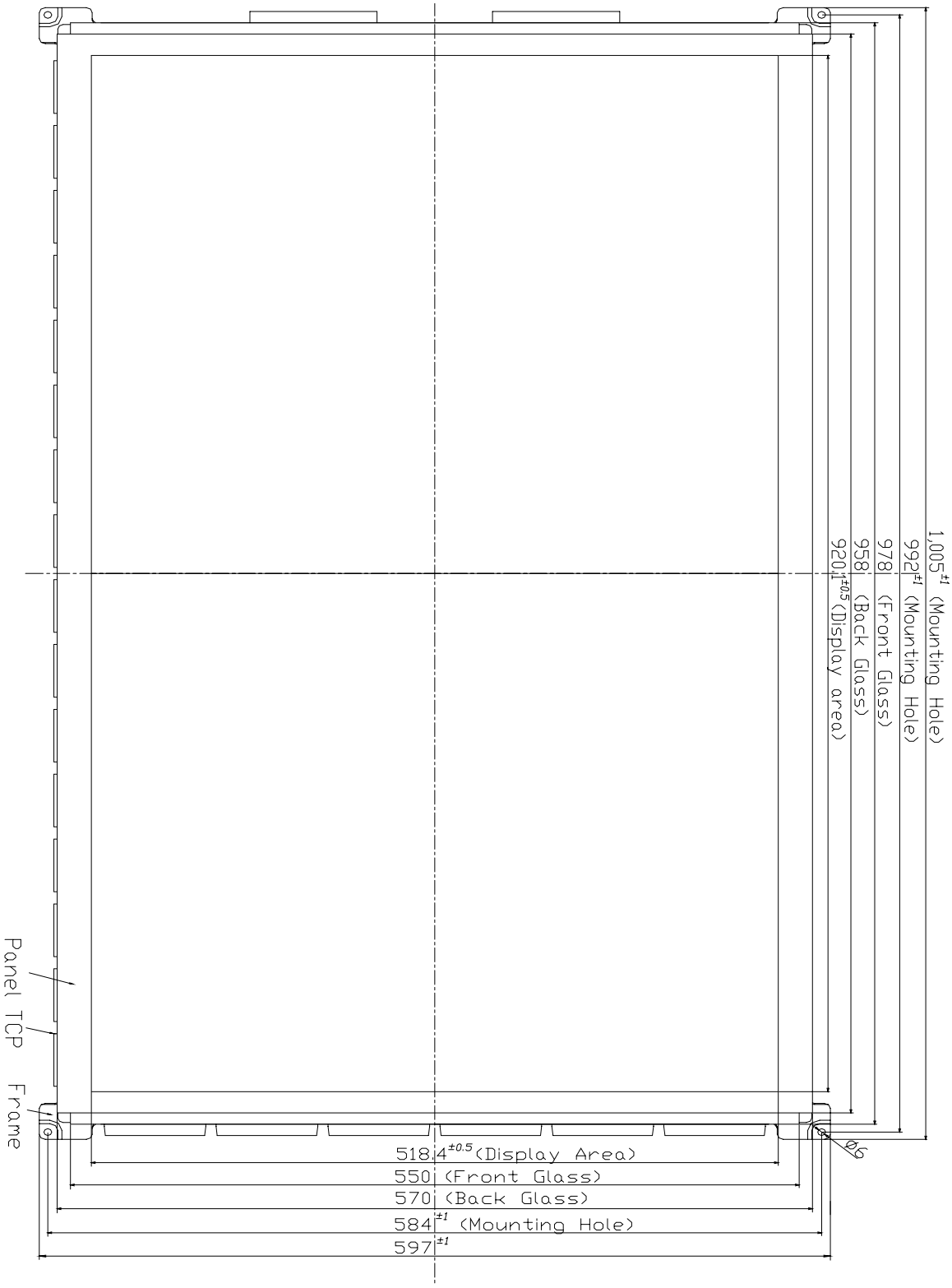


* When replacing the IC, notice
To prevent dust, fix the same IC after removing the silicon and then it again stick the IC.

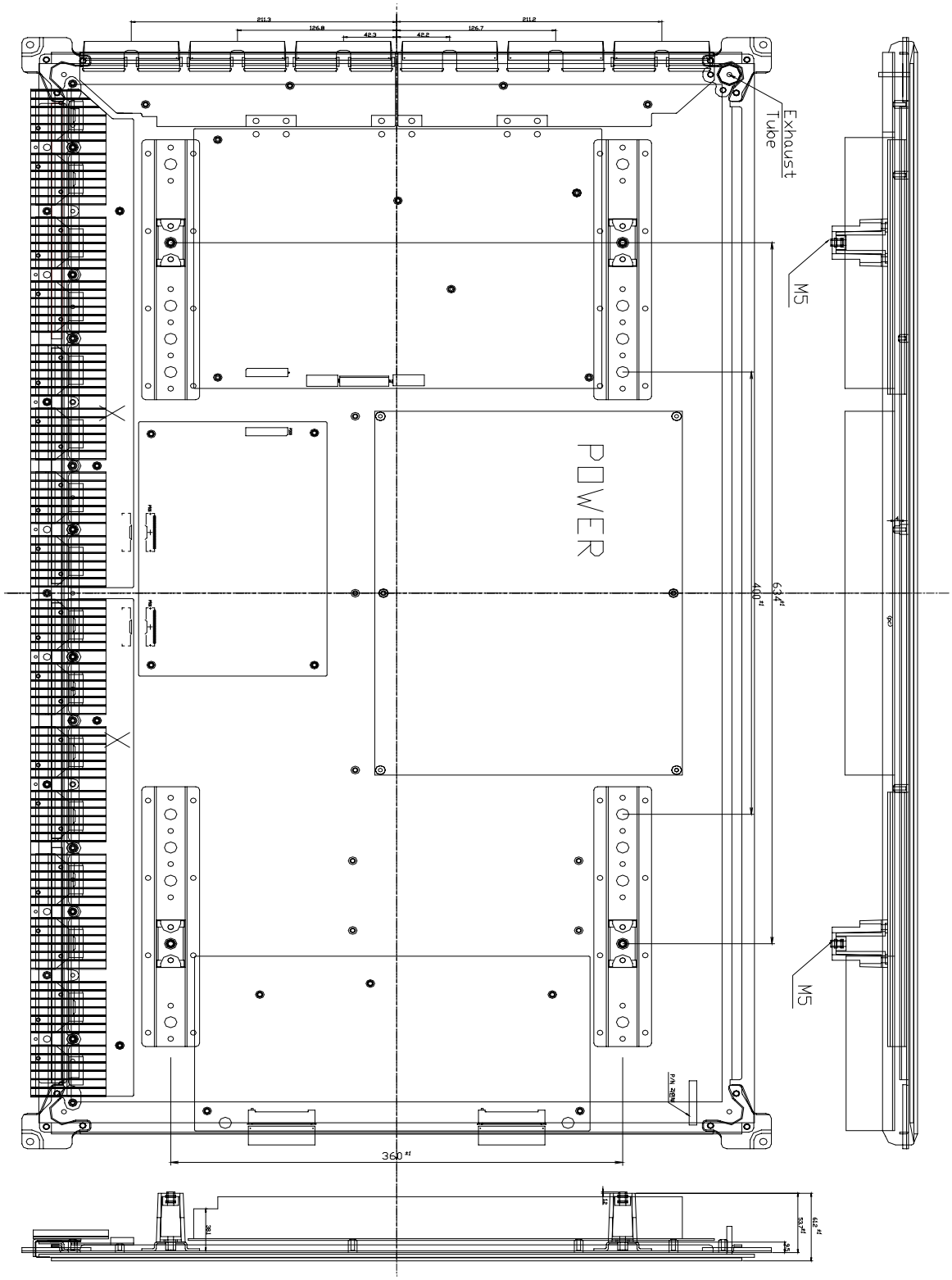
Silicon Part No.: 7254Q00002A(Tube Type)
7254Q00002B(Can Type)

6. OUTLINE DRAWING

❑ **Front View**



❑ Rear View


211.3
126.8
42.3
42.2
126.7
211.2
Exhaust Tube
M5
POWER
633.4
450
360
M5

Records of Revision for Boards,components and ROM DATA

1. Boards

No.	Date	Board	Part Number	Note
1	2004.06.17	CTRL B/D ASSY(LVDS)	6871QCH038A	Initial Product
2	2004.06.17	YDRV UPPER B/D ASSY	6871QDH068A	Initial Product
3	2004.06.17	YDRV LOWER B/D ASSY	6871QDH069A	Initial Product
4	2004.06.17	Y SUS B/D ASSY	6871QYH030A	Initial Product
5	2004.06.17	Z B/D ASSY	6871QZH034A	Initial Product
6	2004.06.17	X RIGHT B/D ASSY	6871QRH043A	Initial Product
7	2004.06.17	X LEFT B/D ASSY	6871QGH037A	Initial Product
8	2004.12.05	YDRV UPPER B/D ASSY	6871QDH068B	To improve the Scan Noise
9	2004.12.05	Y SUS B/D ASSY	6871QYH030C	To improve the EMI
10	2004.12.05	Z B/D ASSY	6871QZH034C	To improve the EMI
11	2005.01.18	CTRL B/D ASSY(LVDS)	6871QCH060B	PDP42X2##2# 42X2A initial Product
12	2005.03.07	YDRV UPPER B/D ASSY	6871QDH090B	PDP42X2##2# 42X2A initial Product
13	2005.03.07	YDRV LOWER B/D ASSY	6871QDH091B	PDP42X2##2# 42X2A initial Product
14	2005.03.07	Y SUS B/D ASSY	6871QYH042B	PDP42X2##2# 42X2A initial Product
15	2005.03.07	Z B/D ASSY	6871QZH047B	PDP42X2##2# 42X2A initial Product
16	2005.05.25	Y SUS B/D ASSY	6871QYH042C	PDP42X2##4# For gap+pad apply Model
17	2005.05.25	Z B/D ASSY	6871QZH047C	PDP42X2##4# For gap+pad apply Model
18	2005.06.22	CTRL B/D ASSY(LVDS Out)	6871QZH071C	PDP42X2##3# For Ctrl LVDS out Model

2. Component

No.	Date	Component	Part Number	Note
1	2004.06.17	Y IPM (IC81)	4921QP1027A	Initial Product
2	2004.06.17	Z IPM (IC81)	4921QP1028A	Initial Product
3	2004.06.17	Y Path FET Ass'y(HS91)	4921QF3002A	Initial Product
4	2004.06.17	Scan IC	0ILNRTI020A	Initial Product
5	2004.06.17	Crystal	0ILNRDI001A	Initial Product
6	2004.06.17	TCP	6007QD0007A	Initial Product
7	2005.05.17	Y Path FET Ass'y(HS91)	4921QF3005A	Apply to 42X2A Model
8	2005.05.17	Y Setdn Fet Assy(HS11)	4921QF1009B	Apply to 42X2A Model
9	2005.05.17	Y Vsetup Fet Assy(HS51)	4921QF2002B	Apply to 42X2A Model
10	2005.06.22	Y IPM (IC81)	4921QP1027P	For Pb_free
11	2005.06.22	Z IPM (IC81)	4921QP1028P	For Pb_free
12	2005.06.22	TCP_13Pf(NEC160300)	6007QD0018B	Apply to 42X2A Model
13	2005.06.22	Scan IC(SN755870)	0ILNRTI020B	Apply to 42X2A Model

3. ROM DATA

No.	Date	ROM data Version	Contents
1	2004.06.30	42X2DN01	initial ROM Data (42X2####. 42X2)
2	2004.07.07	42X2DN01A	Temporary ROM to improve the afterglow in Peak P/T (42X2####, 42X2)
3	2004.07.23	42X2DN02	ROM to improve the EMI,contournoise(42X2####, 42X2)
4	2004.07.28	42X2DN02A	Temporary ROM to improve high&low Temp. miswriting(42X2####, 42X2)
5	2004.08.10	42X2DN02B	Temporary ROM to improve miswriting(for July)(42X2####, 42X2)
6	2004.08.10	42X2DN03	ROM to improve the Flicker, afterglow and miswriting (42X2####, 42X2)
7	2004.09.08	42X2DN03A	ROM to improve high temp. miswriting(after august) (42X2####, 42X2)
8	2004.09.08	42X2DN03B	ROM to improve miswriting (after august)(42X2####, 42X2)
9	2004.10.04	42X2DN03C	ROM to improve miswriting & afterglow (after august)(42X2####, 42X2)
10	2004.10.04	42X2DN03D	ROM to improve white_blinking (after august) (42X2####, 42X2)
11	2004.11.18	42X2DN03E	Temporary ROM to improve R-miswriting (for october,november) (42X2####, 42X2)
12	2004.12.01	42X2DN03G	ROM to improve R_margin(for november) (42X2####, 42X2)
13	2004.12.27	42X2DN03L	Temporary ROM to improve white_blinking-afterglow (42X2####, 42X2)
14	2004.12.27	42X2DN03M	Temporary ROM to improve white_blinking-afterglow (42X2####, 42X2)
15	2004.12.31	42X2DN03P	Rom to improve contrast_ratio (to january for defect_module) (42X2####, 42X2)

B_Dielec. : Blue dielectric Substance

T_Dielec : Transparency dielectric Substance

No.	Date	ROM data Version	Contents
16	2005.01.05	42X2_DN03N	ROM to improve high temp. miswriting(to january for defect module)(42X2####, 42X2)
17	2005.01.24	42X2_DN03R	ROM to improve Data_Noise & Peaking (42X2####, 42X2)
18	2005.02.22	42X2DN03T	Temporary ROM to improve white_blinking(for february & march) (42X2####. 42X2)
19	2005.03.02	42X2DN04A	ROM to improve afterglow & white_blinking (42X2####, 42X2)
20	2005.03.16	42X2A_DNA03	42X2A initial ROM DATA (42X2##2#,42X2A B_Dielec.)
21	2005.04.28	42X2DN04B	Temporary ROM to improve white_blinking(April,May) (42X2####, 42X2)
22	2005.04.28	42X2A_DNA06	Temporary ROM to improve high temp. miswriting (April) (42X2##22, 42X2A B_Dielec)
23	2005.04.27	42X2A_DNA06A	ROM to improve 50Hz Peak Brightness (42X2##22, 42X2A B_Dielec)
24	2005.05.11	42X2A_TD02B	42X2A Initial ROM for T_Dielec (42X2#522, 42X2A T_Dielec)
25	2005.05.28	42X2A_TD02C	ROM to improve Low Temp. Miswriting&White_Blinking (42X2#522, 42X2A T_Dielec)
26	2005.07.01	42X2A_DNA7A	ROM to improve afterglow-white-blinking (42X2##22, 42X2A B_Dilect)
27	2005.07.14	42X2A_TD03	ROM to improve afterglow-white-blinking (42X2#522, 42X2A T_Dielec)
28	2005.07.28	42X2A_TD03A	ROM to improve High Temp. miswriting (42X2#522, 42X2A T_Dielec)
29	2005.07.29	42X2DN05B	ROM to improve afterglow-white-blinking (42X2####, 42X2)

PD42HAASUSXS1-A01 AKAI R&D SA PDP4216M

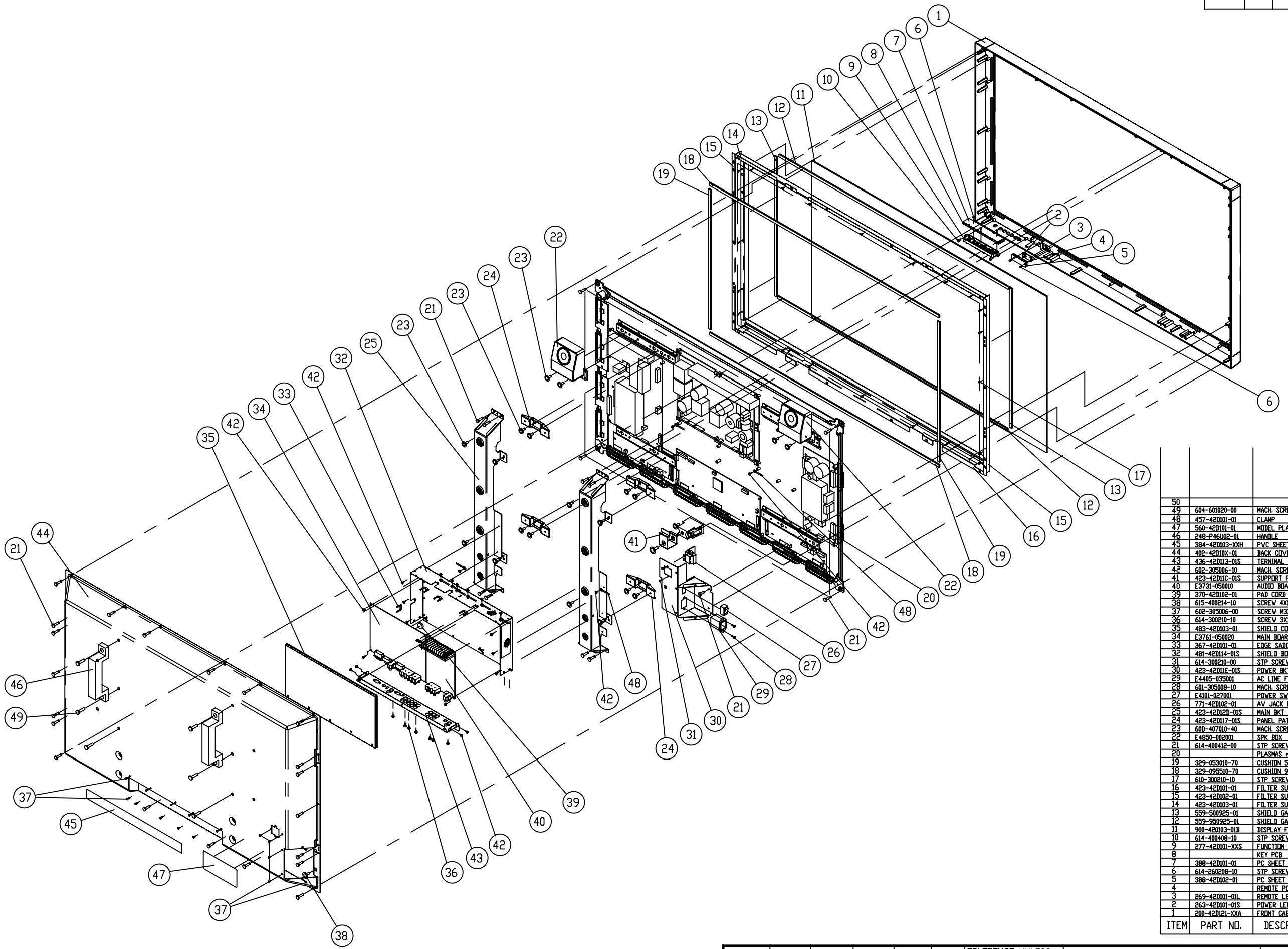
Item	Component	Description/Country Origin	Unit	Quantity
一, ELECT PART				
1	771-42AB01-01	KEY PCB ASSY	SET	1
2	771-42AB01-05	SPK JACK PCB ASSY	SET	1
3	771-42D110-01	IR RECEIVE PCB ASSY	SET	1
4	771E42AA02-01	MAIN PCB ASSY	SET	1
5	771L42AA01-01	AUDIO PCB ASSY	SET	1
6	774P42AB01-01	POWER ASSY	SET	1
7	77M42D103-02	MECH CHASSIS ASSY	SET	1
8	786-SPA103-01	INT. SPK ASSY	SET	1
9	E3403-004001	TUBE SUMITUBE D5.0 BLK 600V	M	0.35
10	E3421-926007	WIRE ASSY 1H2.5-2H2.5 L330 31P (LV	PCS	1
11	E3421-926045	WIRE ASSY 6P/4P+2P 2.54MM L=200MM	PCS	1
12	E3421-926046	WIRE ASSY 2.54MM 11P/12P+7P L=220MM	PCS	1
13	E6205-001004	DISPLAY PDP 42" LG-42X2 (XGA) 107CM	PCS	1.00006
二, MECH PART				
1	200-42D121-25A	CABINET FRONT BLACK AKAI PD42HAA USA	PCS	1
2	244-34B811-01	GIFT BOX HANDLE 34B8	PCS	2
3	248-46D201-01	HANDLE FOR PLASMA	PCS	2
4	263-42D101-01S	POWER LENS 42D1	PCS	1
5	269-42D101-01L	REMOTE LENS 42D1	PCS	1
6	329-053010-70	SPONGE 530X10X7.0MM W/ADHESIVE	PCS	2
7	329-095510-70	SPONGE 955X10X7.0MM W/ADHESIVE	PCS	2
8	361-101261-01	CABLE TIE	PCS	24
9	384-42D103-08H	PVC SHEET FOR AKAI PCB PD42HAA USA	PCS	1
10	387-42D101-13H	MODEL PLATE AKAI ENG PD42HAA USA H	PCS	1
11	388-42D102-01	PC SHEET FOR REMOTE PCB42D1 94V0 0.3	PCS	1
12	388-42D103-01H	CAUTION PLATE ENG 42D1 H	PCS	1
13	388-42SB04-01H	POWER PLATE SANSUI 42SB	PCS	1
14	388-50AD01-01H	SPEAKER PLATE FOR PDP50HAD	PCS	1
15	402-42D114-01S	BACK COVER W/O SWITCH HOLE S	PCS	1
16	423-42D117-01S	PANEL PATCH V6 42D1	PCS	4
17	423-42D11C-01S	SUPPORT FOR PW BKT 42D1 S	PCS	1
18	423-42D11E-01S	POWER BKT FOR E-ROOM 42D1 S	PCS	1
19	423-42D122-01S	FILTER SUPPORT L&R 42D1	PCS	2
20	423-42D12D-01S	MAIN BKT FOR HOME CHASSIS 42D1 S	PCS	2
21	423-42SD12-01S	FILTER SUPPORT TOP 42SD	PCS	1
22	423-42SD21-01S	FILTER SUPPORT BOTTOM 42SD	PCS	1
23	457-42D101-01	CLAMP ID=4.3MM L=46MM	PCS	7
24	553-002007-40A	SHIELD GASKET 20X7X4.0MM W/CONDUCTIV	PCS	4
25	553-002509-25A	SHIELD GASKET 25X9X2.5MM W/CONDUCTIV	PCS	2

26	553-004009-40A	SHIELD GASKET 40X9X4.0MM W/CONDUCTIV	PCS	1
27	553-005009-25A	SHIELD GASKET 50X9X2.5MM W/CONDUCTIV	PCS	1
28	553-012509-40A	SHIELD GASKET 125X9X4.0MM W/CONDUCTI	PCS	11
29	553-020009-40A	SHIELD GASKET 200X9X4.0MM W/CONDUCTI	PCS	4
30	553-024509-40A	SHIELD GASKET 245X9X4.0MM W/CONDUCTI	PCS	2
31	553-056009-40A	SHIELD GASKET 560X9X4.0 W/CONDUCTIVE	PCS	2
32	553-095009-40A	SHIELD GASKET 950X9X4.0 W/CONDUCTIVE	PCS	2
33	554-080030-01	SHIELD CLOTH 80X30MM W/CONDUCTIVE AD	PCS	1
34	563-119-	SERIAL NO. LABEL	PCS	1
35	568-P46T02-02	WARNING LB ENG 42SF NIL	PCS	1
36	579-42D102-09	SERIAL NO/BAR CODE LABEL 42D1	PCS	1
37	579-42D102-16	BAR CODE LABEL AKAI PD42HAA USA	PCS	2
38	579-42D103-02	ON/OFF LB ENG 42D1 NIL	PCS	1
39	579-42D105-01	PROTECTIVE EARTH LABEL FOR ESA 42TD1	PCS	1
40	580-P42AAHS-MU01L	IB E FOR AKAI PD42HAA MONITOR LGX2A	PCS	1
41	590-42D101-07	WARRANTY CARD AKAI PD42HAA USA	PCS	1
42	593-42D101-01	INSERTION CARD AKAI PDP4216M MONITOR	PCS	1
43	599-BM0902-01	IB SHEET E OF TEARDOWN FOR BM09 42AA	PCS	1
44	601-305008-00	MACH.SCREW CTS 3X8 BZN +	PCS	2
45	602-305006-00	MACH. SCREW PAN-WASHER 3X6 B ZNP +H	PCS	16
46	602-305006-10	MACH.SCREW WHR 3X6 NIP +	PCS	11
47	604-601020-00	MACHINE SCREW BINDING M6X1.0PX20MM B	PCS	6
48	60D-407010-40	MACH. SCREW W/SPRING WASHER M4.0X0.7	PCS	21
49	610-300210-00	S-TAP.SCREW RND 3X10 A BZN +	PCS	2
50	614-260208-10	S-TAP.SCREW BID 2.6X8 A NIP +	PCS	2
51	614-400408-10	S-TAP.SCREW BID 4X8 D NIP +	PCS	2
52	614-400412-00	S-TAP.SCREW BID 4X12 T BZN +	PCS	34
53	615-400214-00	SELF-TAPPING SCREW W/BIG WASHER	PCS	1
54	619-300210-10	SPECIAL SCREW 3X10 NP "+"	PCS	23
55	634-100050-20	PLANE WASHER 10X5.0X2.0MM	PCS	4
56	734-BM0903-01	STAND BM09	PCS	1
57	790-002517-A1	REMOTE CONTROL 0025	PCS	1
58	844-42D101-01	WOODEN PALLET 1160X940X104	PCS	0.1428
59	844-42D102-01	WOODEN PALLET 1160X1250X104	PCS	0.1428
60	900-420103-01B	DISPLAY FILTER 42" OPTIMAX FOR LG (9	PCS	1
三, PACKING				
1	300-42D105-02C	POLYFAM FOR MAIN UNIT+BM09 BTM	PCS	1
2	300-42D106-02C	POLYFOAM FOR MAIN UNIT+BM09 TOP	PCS	1
3	300-42D107-01C	POLYFOAM SHEET 42D1	PCS	2
4	300-42D118-01C	POLYFOAM LEFT 42TD1	PCS	1
5	310-111404-07V	POLYBAG 11"X14"X0.04	PCS	1
6	310-504004-01	POLYBAG EPF 50"X40"X0.04	PCS	1
7	510-42D101-20K	GIFT BOX AKAI ENG PD42HAA USA K	PCS	1
8	511-42D111-01K	BOTTOM BOX 42D1	PCS	1
9	512-42D101-01	SHEET 1160X1160 42D1	PCS	0.2857

10	512-42D102-01	SHEET 1160X1480 42D1	PCS	0.2857
11	E3404-157004	AC CORD UL 1.88M (YY-3/ST3 YUNBIAO)	PCS	1
12	E7301-011002	BATTERY AA R6P1.5V <2>	PCS	2

NOTE : THIS RELEASED DRAWING WAS PRODUCED BY COMPUTER , DO NOT UPDATE MASTER MANUALLY

DWG. REV.	ZONE	DESCRIPTION	DATE	REVISOR



ITEM	PART NO.	DESCRIPTION	QTY	REMARK
50				
49	604-601020-00	MACH. SCREW M6X20	6	
48	457-42D101-01	CLAMP	11	
47	560-42D101-01	MODEL PLATE	1	
46	248-P46U02-01	HANDLE	2	
45	384-42D103-XXH	PVC SHEET FOR MAIN BOARD	1	
44	402-42D10X-01	BACK COVER	1	
43	436-42D113-01S	TERMINAL SHEET	1	
42	602-305006-10	MACH. SCREW 3X6	27	
41	423-42D11C-01S	SUPPORT FOR PV BKT	1	
40	E3731-050010	AUDIO BOARD	1	
39	370-42D102-01	PAD CORD	1	
38	615-400214-10	SCREW 4X14	1	
37	602-305006-00	SCREW M3X5	16	
36	614-300210-10	SCREW 3X10	7	
35	483-42D103-01	SHIELD COVER e-room	1	
34	E3761-050020	MAIN BOARD	1	
33	367-42D101-01	EDGE SADDLE 14MM	4	
32	481-42D114-01S	SHIELD BOX SANAUI	1	
31	614-300210-00	STP SCREW 3X10	2	
30	423-42D11E-01S	POWER BKT FOR V5/V6	1	
29	E4405-035001	AC LINE FILTER	1	
28	601-305008-10	MACH. SCREW 3X8	2	
27	E4101-027001	POWER SWITCH	1	
26	771-42D102-01	AV JACK PCB	1	
25	423-42D12D-01S	MAIN BKT FOR V6/FORMOSA	2	
24	423-42D117-01S	PANEL PATCH FOR V6	4	
23	601-407010-40	MACH. SCREW W/SP WASHER 4X10	20	
22	E4850-002001	SPK BOX	1	
21	614-400412-00	STP SCREW 4X12	34	
20		PLASMAS module LG 42X2	1	
19	329-053010-70	CUSHION 530X10X7MM	2	
18	329-095510-70	CUSHION 955X10X7MM	2	
17	610-300210-10	STP SCREW 3X10	22	
16	423-42D101-01	FILTER SUPPORT BTM	1	
15	423-42D102-01	FILTER SUPPORT L&R	2	
14	423-42D103-01	FILTER SUPPORT TOP	1	
13	559-500925-01	SHIELD GASKET 500X9X2.5MM	2	
12	559-950925-01	SHIELD GASKET 950X9X2.5MM	2	
11	900-420103-01B	DISPLAY FILTER GLASS	1	
10	614-400408-10	STP SCREW 4X8	2	
9	277-42D101-XXS	FUNCTION KNOB	1	
8		KEY PCB	1	
7	388-42D101-01	PC SHEET FOR KEY PCB	1	
6	614-260208-10	STP SCREW 2.6X8	5	
5	388-42D102-01	PC SHEET FOR REMOTE PCB	1	
4		REMOTE PCB	1	
3	269-42D101-01L	REMOTE LENS	1	
2	263-42D101-01S	POWER LEN	1	
1	200-42D121-XXA	FRONT CABINET	1	

DRAWN.						
CHECKED						
APPRD.						
3rd ANGLE PROJECTION						

TOLERENCE UNLESS OTHERWISE SPECIFIED

0 MM~8 MM	± 0.1
8 MM~25MM	± 0.15
25MM~80MM	± 0.2
80MM~250MM	± 0.3
250MM~ABOVE	± 0.6
ANGULAR:	± 1°

KAWA ELECTRONIC R & D CENTRE

MATL.

FINISH

TITLE PD42HAALUSXS1-A01

MODEL NO. 42TD1

A2	PART NO.	DWG. NO.
	EXP-42D104-01	42D1EXP4

SCALE NIL | QTY. | SHEET 1 OF 1

If you forget your V-Chip Password

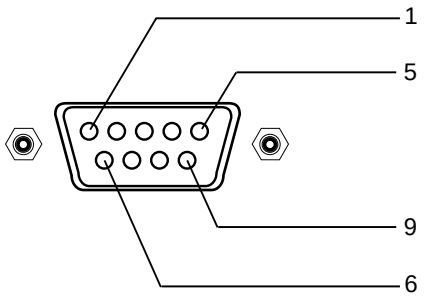
- Omnipotence V-Chip Password: **5898.**
- Press **MENU** button.
- Press **Up, Down** and CH+, CH-buttons to highlight "V-Chip" Control.
- Press OK button to pop up "INPUT PASSWORD".
- Use the Number buttons (0~9) to enter the omnipotence Password 1234.
- Press Down to highlight "Password change" Control.
- Press **OK** button to confirm and will pop up "Password Change" item.
- Change to your familiar Password again.

Software upgrade

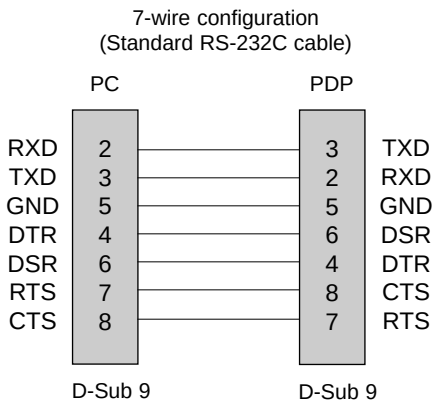
- Connect the RS-232C input jack to an external control device (such as a computer) and software upgrade.

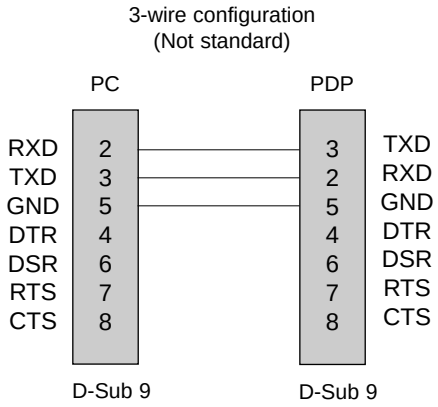
Type of connector; D-Sub 9-pin male

No.	Pin name
1	No connection
2	RXD (Receive data)
3	TXD (Transmit data)
4	DTR (DTE side ready)
5	GND
6	DSR (DCE side ready)
7	RTS (Ready to send)
8	CTS (Clear to send)
9	No Connection



RS-232C configurations





Software upgrade Process

- Power Switch OFF.
- Connect the serial port of the control device to the RS-232 jack on the PDP back panel.
  RS-232C connection cables are not supplied with the PDP.
- Power Switch ON. The power indicator on the front of the panel should now display red, means that the PDP is in standby mode.
- Copy the software (Flash Upgrader) to the computer.
- Open the software (Flash Upgrader.exe)
- Point "Flash" on the interface of the Flash Upgrader.exe.
- Press STANDBY button on the front panel or POWER button of Remote control, Power indicator green, the PDP is in power ON mode, software start upgrader immediately.
- Waiting for the upgrader programing, when it is finished, the PDP will auto power on.
- After the upgrader is finished, shut down the power switch, take out the RS-232C connection after the power indicator is extinguished.

Note: The computer and PDP must be keep **Power ON** in the software upgrade processing.