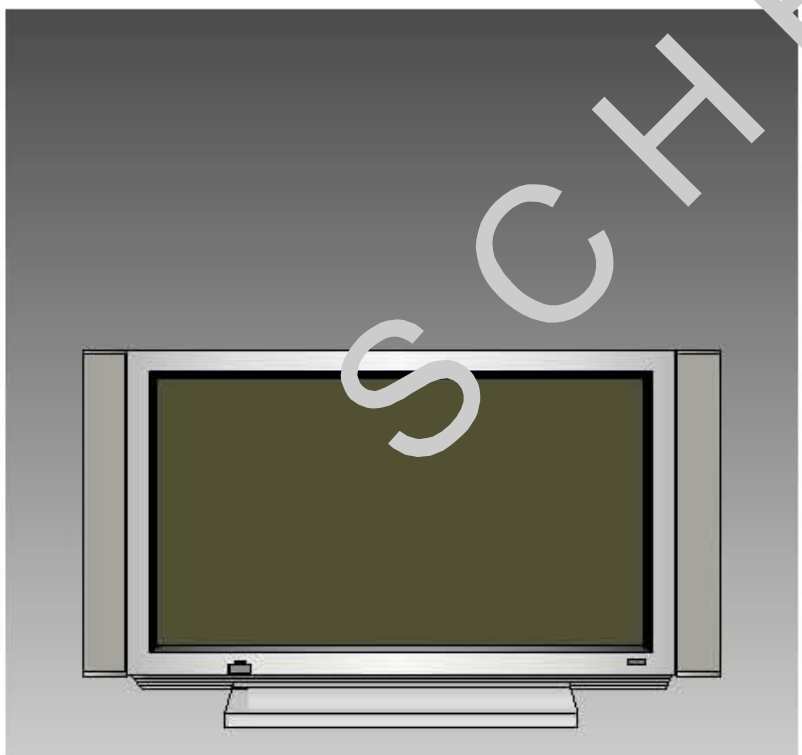
SAMSUNG

PLASMA DISPLAY TV

Chassis : D53A(P)_42" TTX
Model: PS42P2STX/SAP
PS42P2STX/XEE
PS42P2STX/XHK

SERVICE Manual

PLASMA DIAPLAY TV



CONTENTS

10. Glossary

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

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

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

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

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

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

Addressing speed :
Time necessary for writing and erasing.

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

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

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

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

Area luminance :
Luminance measured in relatively large area.

Aspect ratio :
The ratio of screen width to height.

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

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

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

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

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

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

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

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

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

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

Cell gap :
measurements identifying the gaps between substrates.

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

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

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

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

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

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

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

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

Color gamut :
Physically realizable color space area.

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

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

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

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

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

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

- Cm - Michelson contrast or contrast modulation:
  Here, Lw is the luminance of the color white while Lb is the luminance of the color black.

- CT - Threshold contrast ratio: the minimum contrast ratio that is permissive, in general.

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

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

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

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

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

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

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

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

Dielectric layer :
Dielectric layer with larger sustained electric constant.

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

Discharge current :
Discharge electric current.

Discharge electrode :
Another term for sustained electrode.

Discharge efficiency :
Another term for gloss efficiency

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

Discharge slit :
(Refer to discharge gap)

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

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

Display Diagonal :
Diagonal size of display contour

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

Display height :
Height of display contour

Display scan electrode :
(Refer to scan electrode)

Display width :
Width of display contour

Displayed color :
Refer to displayed color number.

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

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

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

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

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

Effcacy :
Refer to luminous efficacy.

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

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

Erase pulse :
Cell erasing waveform

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

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

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

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

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

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

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

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

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

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

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

Glass substrate :
Substrates consisted of glass

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

Gradation :
Gradual change in characteristics such as luminance and chromaticity

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

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

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

Image sticking :
(Refer to Image retention.)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Opposed discharge PDP :
(Refer to opposed discharge.)

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

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

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

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

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

Pixel arrangement :
Expression of sub pixels within a pixel.

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

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

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

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

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

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

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

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

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

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

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

Reset :
(Refer to erase.)

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

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

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

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

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

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

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

Seal :
Combining the substrates or substrate with ventilation tube.

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

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

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

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

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

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

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

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

Sub frame :
(Refer to sub field)

Sub field :
A part of panel

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

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

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

Sustain driver :
Circuit that drives sustained electrodes.

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

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

Sustain pulse :
Sustained drive waveform[symbol : Ps]

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

Thermal radiation :
Radiation in infrared rays over 800nm.

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

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

Tip pipe :
(Refer to exhaust turbulation.)

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

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

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

Ultraviolet ray :
Ultraviolet light below 380nm in spectrum.

Vacuum ultraviolet :
Ultraviolet ray of wavelength below 200nm.

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

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

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

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

Visible defect :
Imperfection that prevents displaying with proper image.

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

Wall charge erase pulse :
Pulse that neutralizes wall charge

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

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

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

Write electrode :
(Refer to data electrode.)

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

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

4. Alignment and Adjustments

4-1 Service Mode

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

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

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

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

4-1-2(A) OSD DISPLAY

1. PW364A	9. CXA2101Q-2
2. VPC3230	10. PinP Control
3. SDA9400	11. OSD Position
4. SDA9280	12. Test Position
5. AD9884-Video	13. Option Table
6. AD9884-PC	14.Reset
7. AD9884-DTV	
8. CXA2101Q-1	
Release Time :	

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

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

4-1-3 Details of Control

-. Varies according to color system
-. Varies according to input mode
-. Varies according to Scart/RCA

4-1-3(A) PW364A

No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	Remark
1	H Position	35				Different input signal		
2	V Position	34						
3	Red Gain	140				120	120	Mode 1 : AV1(Video)
4	Green Gain	140				120	120	AV2(S-Video)
5	Blue Gain	140				120	120	AV2
6	Red offset	90				140	140	Component1
7	Green offset	90				140	140	Mode 2 : Component2
8	Blue offset	90				140	140	Mode 3 : PC
9	APL on/off	1				1	1	
10	High Light	140				120	120	
11	Low Light	90				140	140	
12	Shift Pixel	On				On	Off	Doesn't operate in PC Mode
13	Test	0				0	0	
14	Pixel Number	4				4	4	
15	Shift Line	4				4	4	
16	Time	4				4	4	

❊ White Balance, High Light, Low Light must be separately adjusted according to three modes shown below and be saved to the data of each mode.
- ❏ Mode 1 (adjust AD9884 to Video): AV1(Video), AV1(S-Video), AV2, Component1 identical Data
- ❏ Mode 2 (adjust AD9884 to DTV): Component2
- ❏ Mode 3 (adjust AD9884 to PC): PC

❊ Pixel Shift: Off=>On (When entering the Factory mode or PC mode, the pixel shift doesn't happen (always Pixel Off).

4-1-3(B) VPC3230

No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	Remark
1	CIP Bright	195						Operate only in Component1
2	CIP Cont	27						
3	IF Comp	2						
4	Chroma Band	3						
5	Ena Luma	1						
6	HPLL Speed	1						
7	Luma Delay	See attachment below						Different system and input mode
8	3230 Bright	168						
9	3230 Contrast	36						
10	H LPF Y/C	0						
11	H LPF Chroma	0						
12	H peaking	2						
13	Coaring Off/On	1						
14	CIP Sat Cb	23(Scart Model) 42(RCA Model)						Operate only in Component1
15	CIP Sat Cr	29(Scart Model) 42(RCA Model)						
16	CIP Tint	36						

❊ Attachment: Initial data by Luma Delay Color System and input mode

	AV1(Video)	AV1(S-Video)	AV2	Component1	Component2	PC
PAL	5	5	5	-. Calls the data created before switching to the above mode -. As the above mode signals don't pass through the VPC3230 Luma Delay loot, they are not affected by the value of Luma Delay.		
SECAM	6	5	6			
NTSC4.43	6	7	4			
NTSC3.58	6	7	4			
PAL-M	6	7	4			
PAL-N	5	5	5			

4-1-3(C) SDA9400

No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	Remark
1	SNR On	1						Same in all modes
2	VCSNR On	1						
3	HCSNR On	0						
4	DTNR On	1						
5	TNRCLY	5						
6	TNRCNC	5						

4-1-3(D) SDA9280

No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	Remark
1	CTI Thresh	0						Same in all modes
2	CTI Trawid	0						
3	Y-Delay	9						Scart = 11(Fix)
4	LPF Gain	4						Same in all modes
5	BPF Gain	8						
6	HPF Gain	8						
7	Phacom	0						
8	Cor	1						

❊ Y-Delay :
❏ Scart model : 11(Fix) ❏ RCA model : 9 (Fix)

4-1-3(E) AD9884

		AD9884-Video				AD9884-DTV	AD9884-PC	Remark
No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	
		Scart/RCA	Scart/RCA	Scart Only	RCA Only	RCA Only	Scart Only	Scart=Europe, RCA =South & East Asia
1	Red Gain	120				120	120	
2	Green Gain	120				120	120	
3	Blue Gain	120				120	120	
4	Red Offset	30				30	30	
5	Green Offset	30				30	30	
6	Blue Offset	30				30	30	
7	Current	1				0/3/4	-	480P/720P/1080i

4-1-3(F) CXA2101-1

No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	Remark
1	Sub Bright	51				55	51	Component2 is separate
2	Limit Level	0				0	0	
3	System	1				1	1	
4	D-Color	1				1	1	
5	R Drive	32				32	32	
6	G Drive	32				32	32	Fixed after setting picture quality
7	B Drive	32				32	32	
8	R CutOff	32				32	32	
9	G CutOff	32				32	32	
10	B CutOff	32				32	32	
11	ABL Mode	0				0	0	
12	ABL TH	0				0	0	
13	H Sep Sel.	0				0	0	
14	Fix Sync.	0				0	0	
15	V Time Con	1				1	1	
16	H Width	1				1	1	
17	HHD timi Con	0				0	0	

❊ Items that must be separately saved according to mode: Sub Bright, R Drive, G Drive, B Drive, R Cutoff, G Cutoff, B Cutoff
❊ The items must be separately adjusted according to two modes shown below and be saved to the data of each mode.
(The initial value is fixed after setting picture quality.)
- ❏ Mode 1 : AV1(Video), AV1(S-Video), AV2, Component1, PC
- ❏ Mode 2 : Component2

4-1-3(G) CXA2101-2

No	OSD	AV1(S-Video)	AV2(S-Video)	AV2	Component1	Component2	PC	Remark
1	HS Mask	1				1	1	
2	Sub Cont	6				0	6	Component2 is separate
3	Sub Color	8				8	8	
4	Sub Hue	8				8	8	
5	Sub SHP	3				3	3	
6	R-Y/R	See attachment below						Must be separately saved according to color system and input mode
7	R-Y/B							
8	G-Y/R							
9	G-Y/B							
10	PABL Level	8				8	8	
11	SHP FO	2				2	2	
12	Pre/over	3				3	3	
13	CTI Level	1				1	1	
14	LTI Level	0				0	0	
15	DC-Tran	1				1	1	Component2 is separate
16	D-Pic	1				1	1	
17	Cr-Offset1	7				7	7	Adjusts and operates only in Component2
18	Cb-offset1	7				7	7	

❊ Items that must be separately saved according to mode: Sub Cont, R-Y/R, R-Y/B, G-Y/R, G-Y/B

❊ The items must be separately adjusted according to three modes shown below and be saved to the data of each mode. (The initial value is fixed after setting picture quality.)

- ❏ Mode 1: AV1(Video), AV1(S-Video), AV2, PC
- ❏ Mode 2: Component1
- ❏ Mode 3: Component2

❊ Attachment : Items that must be separately saved according to Color System and Input Mode

	AV1(Video), AV1(S-Video), AV2, PC				Component1		Component2		Remark
	Scart		RCA		RCA Only		RCA Only		
	PAL	NT	PAL	NT	576i(PAL)	480i(NT)	50Hz(PAL)	60Hz(NT)	
R-Y/R	13	5	9	4	13	4	Later	3	Scart models will have the same data as RCA models
R-Y/B	15	15	15	15	15	15		11	
G-Y/R	8	8	15	11	15	11		8	
G-Y/B	4	8	4	3	4	3		4	

4-1-4 White Balance Adjust Method

1. Press MUTE-1-8-2-POWER to enter the factory mode.
2. Enter PW364.
3. Adjust LOW coordinates as R, G, OFFSET and HIGH coordinates as R, G, GAIN.(Blue is fixed)
4. Adjust LOW light as Center Offset.
5. Adjust HIGH light as Gain Max.
6. Adjust fine as B-Offset and B-Gain.

✣ **SCART MODEL :** W/B Adjustment SPEC(Suwon Factory Toshiba PATTERN)

➢ VIDEO MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 282 y : 296 Y : 24.5[fℓ]	± : 3 ± : 3 ± : 1
L-LIGHT	x : 282 y : 296 Y : 0.95[fℓ]	± : 5 ± : 5 ± : 0.1

➢ PC MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 282 y : 296 Y : 15[fℓ]	± : 3 ± : 3 ± : 1
L-LIGHT	x : 282 y : 296 Y : 0.33[fℓ]	± : 5 ± : 5 ± : 0.05

✥ **RCA0 MODEL :** W/B Adjustment SPEC(Suwon Factory Toshiba PATTERN)

➢ VIDEO MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 282 y : 296 Y : 25.5[fℓ]	± : 3 ± : 3 ± : 1
L-LIGHT	x : 282 y : 296 Y : 0.95[fℓ]	± : 5 ± : 5 ± : 0.1

➢ Component2(DTV) mode

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 273 y : 273 Y : 25.5[fℓ]	± : 3 ± : 3 ± : 1
L-LIGHT	x : 273 y : 273 Y : 0.95[fℓ]	± : 5 ± : 5 ± : 0.1

➢ PC MODE

Adjustment Coordinates	Coordinates Value	Adjustment Deviation
H-LIGHT	x : 283 y : 297 Y : 14.5[fℓ]	± : 3 ± : 3 ± : 1
L-LIGHT	x : 283 y : 297 Y : 0.75[fℓ]	± : 5 ± : 5 ± : 0.05

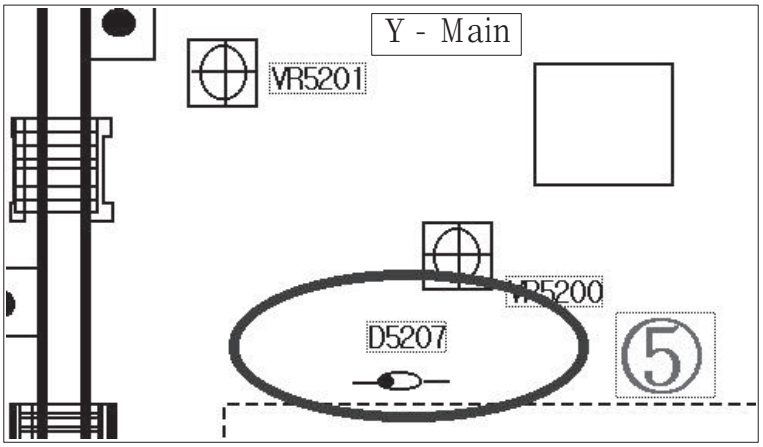
PS42P2ST

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

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

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

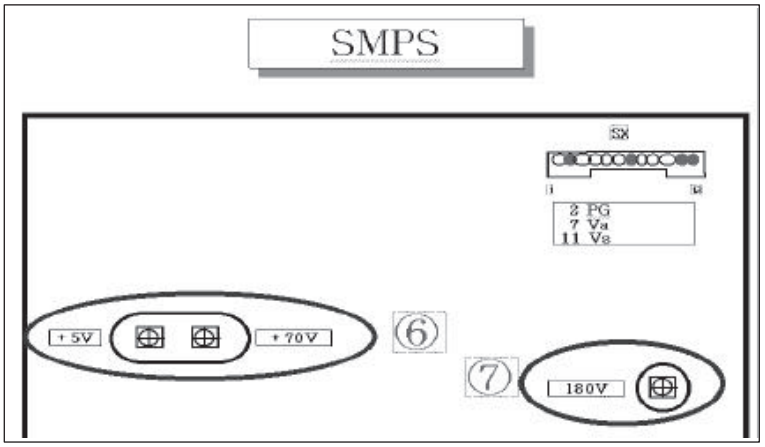
● **Vsc and Vy Adjustment Method**



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

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

● **Vs and Va Adjustment Method**



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

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