General Information

1993
Chassis: MX
CRT: A59EAK252X11 - 25"
A66EAK252X11 - 28"
Remote Control:
RM-C871-E
Main Power Button:
CM35643-A01
Sub Button: CM35641-B01
Side Door: CM12388-002-E
Door Latch: CM47638-00A
Battery Cover:
103RRC-027-01UR

Matrix

Item	See Model
Safety Notes	JVC AV-21H1 EK
AV Select Diagram	JVC AV-25S1 EK

Specifications

TV RF System:	CCIR (1)
Colour System:	PAL/NTSC (only in EXT mode)
Teletext System:	FLOF (UK system), TOP (W. German system)
Stereo System:	NICAM
No. of Program Channel:	00 (AV), 01 - 99
Receiving Channel & Frequency:	UHF: E21 - E69, 470 MHz - 826 MHz
Intermediate Frequency:	VIF Carrier: 39.5 MHz, SIF Carrier: 33.5 MHz
Colour Sub Carrier Frequency:	PAL: 4.43 MHz NTSC: 3.58 MHz/4.43 MHz
Aerial Input Terminal:	75 W unbalanced, Coaxial
Power Input:	AC 220 240v, 50 Hz
Power Consumption.	
	25": 170W (max), 115W (avg), 6.5W (standby)
	28": 175W (max), 125W (avg), 6.5W (standby)
Picture Tube:	
	25": (visible size: 59cm) diagonally measured.
	28": (visible size: 66cm) diagonally measured
	25"/28": FST (flat square tube)
Viewable Picture Size:	
	25": 48cm (W) x 36cm (H)
	28": 545cm (W) x 41cm (H)
High Voltage:	25": 28kV ± 1kV
(zero beam current)	28": 28kV ± 1kV
Focus Voltage:	25": approx. 8.7kV
	28": approx. 8.7kV
Speaker:	10cm round type, 8 W x 2 (Main)
	13cm round type, 8 W x 1 (Hyper Bass)
Audio Output:	Music Power: 6w + 6w + 11W
	Audio Power: 5W + 5W + 8W
Remote Control Unit:	RM-C871

Service Adjustments

Replacements

Replacement of Memory ICs

The TV contains several EEP-ROM ICs. If these ICs are replaced, data must be re-input. IC704 and IC707 on the Main PWB Ass'y store setting of video, deflection and sound. If they are replaced with new ones, they do not contain data and correct images cannot be displayed.

IC704 (CAT35C104HP) on the MAIN PWB ASS'Y

This IC is mainly data of the items listed in tables 1 and 2.

Symptom after IC replacement:
Pictures and sound are produced but the broadcasts cannot be received because no real channel is pre-set.

Replacement Procedure:
1: Before replacing the IC, receive a broadcast and write down the values of the items listed in the Table 1.
2: Switch the power off and unplug the power cord.
3: Replace IC704.
4: Plug the power cord in and switch the power on.
5: Set the values written down in step 1 with the remote control unit.

Data Setting:
1: First, "PR channel" to receive broadcast (see the Operating Instructions).
2: Set the "Menu Language" (see the Operating Instructions).
3: Set the "VSM-STD (0)" (see "Setting and Adjustment in the Pre-set Mode).
4: The other items can be set in any order, set each of them.

* Table 1 lists the items set by the user. Select and set each of the items on the Menu screen (see Operating Instructions).

* Table 2 lists the items set by the service-man. Select and set each of the items on the Pre-set Mode screen (see "Setting and Adjustment in the Pre-set Mode).

Menu	User Setting Mode: Item to be set in TV mode	User Setting Mode: Item to be set in EXT mode
Set Up		
Program	O	X
Language	O	O
Options	O	X
PR Summary	O	X
EXT Setting	X	O
Picture		
VSM 1	O	O
VSM 2	O	O
VSM 3	O	O
VNR	O	O
Sound		
Hyper Bass	O	O
Tone	O	O
MUte	O	O
Multi Sound	O	X
Features		
Set Clock	O	O
Locks	O	X
Auto Shut Off	O	X

Table 1.

Preset Mode	Serviceman Setting: Setting Item		
VSM STD (0)	TINT	COLOUR	BRIGHT
	CONTRAST	SHARP	
CINEMA	TINT	COLOUR	BRIGHT
	CONTRAST	SHARP	BASS
	TREBLE	BALANCE	HYPER BASS
SUB-VSM	TINT	COLOUR	SHARP
	(PAL	/NTSC3.58	/NTSC4.43)

Table 2.

IC707 (241A/P) on the MAIN PWB ASS'Y

This IC stores deflection adjustment values (see Table 3).

Symptom after IC Replacement
Pictures are not displayed correctly.

Replacement Procedure
1. Switch the power off and unplug the power cord.
2: Replace IC707.
3: Plug in the power cord and switch the power on.
4: Receive a TV broadcast.
5: Enter "Pre-set Mode".
6: Select "Deflection" and set each of the items listed in Table 3 (see "Setting and Adjustment in the Pre-set Mode").

Deflection Item	Variable Range
1. V-LIN	-16 ~ +15
2. V-SIZE	-32 ~ +31
3. H-SIZE	-32 ~ +31
4. EW-PIN	-32 ~ +31
5. TRAPEZ	-32 ~ +31
6. V-S. CR	0 ~ 31
7. V-EDGE	0 ~ 15
8. EW-COR	0 ~ 15

Table 3.

Electrical Adjustment

B1 Voltage Adjustment

Measuring Instrument:
DC Voltmeter
Test Point:
TP-91
Adjustment Part:
B1 ADJ. VR (R032) [Power]

Description:
1: Receive an entirely black signal.
2: Connect the DC voltmeter to TP-91.
3: Set 146 ± 0.5V DC with the B1 ADJ. VR.

Noise (RF AGC) Adjustment

Adjustment Part:
Noise VR (R012) [Main]
Description:

1: Receive a broadcast.
2: Turn the Noise VR so that noise appears on the display.
3: Turn the Noise VR until the noise disappears.
4: Change the channel and check that the display is normal.

Focus Adjustment

Measuring Instrument:
Signal Generator
Adjustment Part:
Focus VR [built-in FBT]

Description:
1: Receive a cross hatch signal.
2: Make the vertical and horizontal lines as thin and clear as possible. Turn the control as far as possible counter-clockwise (to decrease voltage).
3: Darken the screen and check the focus is correct.

Deflection System Adjustment

Description:
See the setting and adjustment in the Preset Mode).

White Balance (Low Light & High Light) Adjustment

Adjustment Part:
R Cut Off VR (R108), G Cut Off VR (R107), B Cut Off VR (R109), R Drive VR (R114), G Drive VR (R113) [CRT Socket].
Service SW (S401) [Main]
Screen VR [built-in FBT]
Description:

1: Receive a black and white broadcast.
2: Turn the R, G, and B cut Off VRs counter-clockwise.
3: Set the R and G Drive VRs to the centre positions.
4: Display one horizontal line (select the Service SW from N to S).
5: Turn the Screen VR slowly until one red, green or blue horizontal line appears faintly.
6: Turn the Cut-Off VR for the first colour that appears about 10 degrees clockwise, and adjust the Screen VR again so that this colour appears faintly.
7: Adjust the Cut Off VRs for the other two colours so that the colour has the same intensity as the colour of the horizontal line that appeared in step 6 and the three colours light faintly at the same level.
8: Return the horizontal line to the original state (select the Service SW from S to N).
9: Display a normal, bright white screen using the R and G Drive VRs.

Video Detection Output Level Adjustment

Measuring Instrument:
Signal Generator, Oscilloscope (H-rate)
Test Point:
Connector - 006 pin 6 [PIF] or (TP-VT1 AV Selector)
Adjustment Part:
V. DET. Level VR (R137) [PIF]
Description:

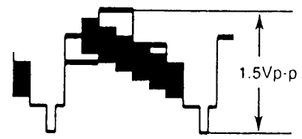


Fig 1.

1: Receive the PAL split colour bar signal (including 100% white).
2: connect the oscilloscope to pin 6 of the connector 006 (or TP-VTV 1).
3: Set the voltage from the synchronising signal to the white level to 1.5Vp-p with the V DET. Level VR.

Vertical Pulse Width Adjustment

Measuring Instrument:
Signal generator, Oscilloscope [H-rate]
Test Point:
TP-VP, TP-Y
Adjustment Part:
VP Width VR (R773)
[AV Selector]

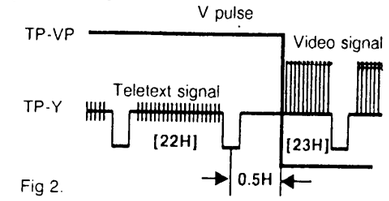


Fig 2.

Description:

1: receive the teletext signal.
2: connect the oscilloscope to TP-VP and TP-Y.
3: Set the period (DIV) of the TP-Y signal to 5ms/div on the oscilloscope, monitor the waveform near the teletext signal and Delay it.
4: Adjust VP Width VR so that the leading edge of the vertical pulse comes in place as shown in fig. 2.

Comb Filter Input Level Adjustment

Measuring Instrument:
Signal generator, Oscilloscope [H-rate]
Test Point:
TP-VTV1, TP-Y
Adjustment Part:
Comb F. Level VR (R507) [AV Selector]

Description:

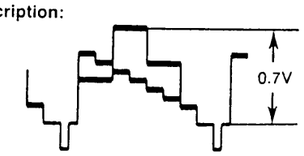


Fig 3.

Recommended Safety Parts

Item	Part No.	Description
	CE41603-001J1	CRT Socket
1	A59EAK252X11	Picture Tube V01 (AV - 25GS1EK)
1	A66EAK252X11	Picture Tube V01 (AV - 28GS1EK)
2	CELD019-002J2	Degaussing Coil (AV - 25GS1EK)
2	CELD020-002J2	Degaussing Coil (AV - 28GS1EK)
6	CE42295-00AJ1	HVT (Service)
8	QMP51G0-200JB	Power Cord
C1522	QFZ0117-1401S	MPP CAP. 1400 μ F 2000V ± 2.5%
C1523	QFZ0112-1382S	MPP CAP. 13800 μ F 2000V ± 3%
C1524	QFLC2AJ-104MZ	M CAP. 0.1 μ F 100V J
C2002	QFZ9036-104M	MF CAP. 0.1 μ F AC 250V M
C2006	QFZ9036-473M	MF CAP. 0.047 μ F AC 250V M
C2051, C2052	QCZ9036-472M	C CAP. 4700p F AC 125V M
C2053, C2054, C2055	QCZ9036-102M	C CAP. 1000p F AC 125V K
C9902	QFZ9035-474M	MM CAP. 0.47 μ F AC 250V M
CP901	ICP-N15-Y	I. C. Protect
D2001	D3SB60	Bridge Diode
F9901	QMF51D2-3R15J1	Fuse T3.15AH
FR 1560	QRZ0054-4R7M	F R 4.7 Ω 1/4W J
FR1466	QRZ0054-820M	F R 82 Ω 1/4W J
FR1541	QRH017J-100M	F R 10 Ω 1W J
FR1542	QRH027J-1R8M	F R 1.8 Ω 2W J
FR1543, FR1544,	QRH027J-1R0M	F R 1 Ω 2W J
FR1545	QRH017J-1R0M	F R 1 Ω 1W J
FR1547	QRZ0054-220M	F R 22 Ω 1/4W J
FR1743, FR711	QRZ0054-120M	F R 12 Ω 1/4W J
FR414	QRZ0054-100M	F R 10 Ω 1/4W J
IC2002	CNY17F-C1	I. C. (Ph Coupler)
LF2001	CE41890-001J2	Line Filter
LF9901	CE42209-00A	Line Filter
Q1521	BU508AFI	SI Transistor
R2051	QRZ0057-825	C R 8.2M Ω 1W J
R6815, R6838, FR335, FR460, FR615, FR653, FR719	QRZ0054-470M	F R 47 Ω 1/4W J
S9901	QSP2J21-C02	Push Switch Power
T1541	CE42295-001J1	H V Module
TH2001	CE41884-001J1	W - P Thermistor

Service Adjustments Cont'd.

1: Receive the PAL split colour bar signal (including 100% white).
2: Connect the oscilloscope to TP-VTV1 and confirm that the peak to peak voltage of the signal is 1.5Vp-p. If not perform "Video Detection Output Level" adjustment again.
3: Connect the oscilloscope to TP-Y.
4: Adjust the range from the pedestal level to the white level to 0.7V with the Comb F. Level VR.

Delay Line Matrix Adjustment

Measuring Instrument:
Signal generator
Test Point:
IC201 pin 14, IC201 pin 12, TP-B-Y
Adjustment Part:
DL Gain VR (R309), DL Phase Transformer (T301) [Main]

Description:

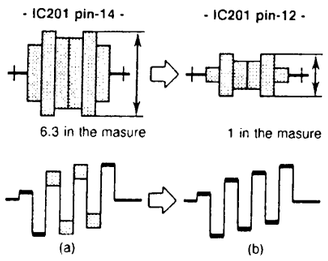


Fig 4.

1: Receive the PAL colour bar signal.
2: Connect the oscilloscope to IC201 pin 14.
3: Adjust the variable button of the oscilloscope so that the p-p value of the waveform (chroma signal) becomes 6.3 divisions on the screen of the oscilloscope.
4: While maintaining this state, connect the oscilloscope to IC201 pin 12.
5: Adjust DL Gain VR so that the p-p value of the waveform becomes 1 (-16dB) divisions on the screen of the oscilloscope.
6: Connect the oscilloscope to TP-B-Y.
7: Adjust the DL Phase transformer so that the waveform changes from (a) to (b) shown in fig. 4.
8: Repeat adjustment steps 2 and 7 as required.

Sub Bright Adjustment

Measuring Instrument:
Signal generator
Adjustment Part:
Sub Bright VR (R216) [Main]

Description:

* Check the White Balance is adjusted.
1: Receive an entirely black signal.
2: adjust the Sub Bright VR until the entire screen lights.

Sub Contrast Adjustment

Measuring Instrument:
Signal generator, Oscilloscope [H-rate]
Test Point:
TP-47B [CRT Socket]
Adjustment Part:
Sub Contrast VR (R207) [Main]

Description:

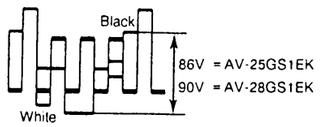


Fig 5.

* Check the Sub Bright is adjusted.
1: Receive the PAL split colour bar signal.
2: Adjust so that the best image appears on the screen with the Sub Contrast VR.

If measuring equipment is used:
1: Receive the PAL split colour bar signal.
2: Connect the oscilloscope to TP-47B.
3: Adjust to refer to figure the voltage between the white and black levels with the Sub Contrast VR.

PAL/NTSC Sub Colour Adjustment

Description:
See the setting and adjustment in the Pre-set Mode.

NTSC Sub Tint Adjustment

Measuring Instrument:
Signal generator, Oscilloscope [H-rate]
Test Point:
TP-47B [CRT Socket]
Adjustment Part:
Sub Tint VR (R305)[Main]

Description:

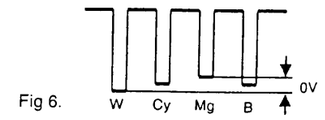


Fig 6.

* Check the Sub Colour is adjusted.
1: Input the NTSC (3.58 MHz) colour bar signal from the 21 pin external input connector (EXT 1 or EXT 2).
2: Change the input mode to the signal input connector (EXT 1 or EXT 2).
3: Adjust so that the best image appears on the screen with the Sub Tint VR.
4: If you cannot adjust correctly with the Sub Tint VR, select Sub VSM Tint and adjust it to the best value with the (-) and (+) keys on the remote control unit.
5: Use EXT 3 (S-Video input) fo input, and adjust in the same way.
6: Use the NTSC (4.43 MHz) signal, and perform steps 1 to 5 in the same way.

If measuring equipment is used:

1: Input the NTSC (3.58 MHz) colour bar signal from the 21 pin external input connector (EXT 1 or EXT 2).
2: Change the input mode to the signal input connector (EXT 1 or EXT 2).
3: Connect the oscilloscope to TP-47B.
4: Adjust so that there is no difference (0V) between white and magenta with the Sub Tint VR.
5: If you cannot adjust correctly with the Sub Tint VR, select Sub VSM Tint and adjust it to the best value with the (-) and (+) keys on the remote control unit.
6: Use EXT 3 (S-Video input) fo input, and adjust in the same way.
7: Use the NTSC (4.43 MHz) signal, and perform steps 1 to 6 in the same way.

Setting and Adjustment in the Pre-set Mode

Set the following four items in the Pre-set Mode:
1: VSM Standard.
2: Cinema.
3: Sub-VSM.
4: Deflection

* For the operations and detailed settings in the Pre-set Mode see items below.

Basic Operations in the Pre-set Mode

Entering the Pre-set Mode

1: Press the Display key and VSM Standard key on the remote control unit at the same time.
2: The Pre-set Mode menu screen (fig. 7) is displayed.

Adjustment Item Selection

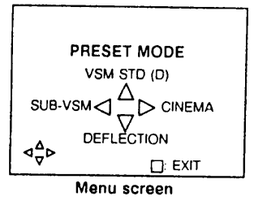


Fig 7.
Menu screen

1: To select an adjustment item, press the UP, DOWN, RIGHT or LEFT key on the remote control unit.
2: The sub-menu for the selected adjustment item (fig. 8.) is displayed.
3: Adjustment items are displayed on the Sub-menu screen, select an item by pressing the UP or DOWN key.

Adjustment and Setting

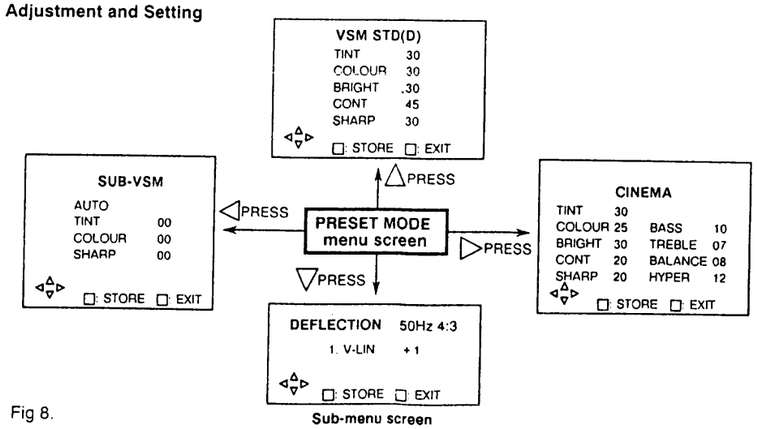


Fig 8.
Sub-menu screen

1: Enter the Pre-set Mode (see above).
2: Select an adjustment item (see above).
3: Press the L or R key and adjust the setting of the selected adjustment item.
4: If adjustment is continued, repeat steps 2 and 3.
5: If all adjustments are complete, press the OK (Store) key to store the adjustment values in memory.
6: Press the Exit key to return to the menu screen.

Pre-set Mode Termination

After adjustment is complete and the menu screen returns, press the Exit key again.

Note: The symbols for remote control unit keys in the text correspond to the keys listed in fig. 9.

VSM STD (0), Cinema, Sub-VSM

REPRESENTATION	KEY
DISPLAY	+
VSM STANDARD	VSM → · ←
OK, STORE, MEMORY	OK
EXIT	△
UP	△
DOWN	▽
-, L, LEFT	◁
+, R, RIGHT	▷

Fig 9.

Setting and Adjustment Method

VSM Standard Setting

Measuring Instrument:
Remote Control Unit
Description:

Adjustment Item	Setting Value
TINT	30
COLOUR	30
BRIGHT	30
CONT	45
SHARP	30

Table 4.

1: Display the Pre-set Mode menu on the screen and select VSM STD (0).
2: Select Tint and set its adjustment value to "30" with the (-) or (+) key.
3: Set other adjustment items to the values listed in table 4 in the same way.

Cinema Setting

Measuring Instrument:
Remote Control Unit
Description:

1: Display the Pre-set Mode menu on the screen and select Cinema.
2: Select Tint and set its adjustment value to "30" with the (-) or (+) key.
3: Set other adjustment items to the values listed in table 5 in the same way.

Sub-VSM Setting and Adjustment

Adjustment Item	Setting Value
TINT	30
COLOUR	25
BRIGHT	30
CONT	20
SHARP	20
BASS	10
TREBLE	07
BALANCE	08
HYPER	12

Table 5.

Measuring Instrument:
Remote Control Unit
Description:

Adjustment Item	PAL	NTSC 3.58	NTSC 4.43
(Comp. V)			
TINT	---	00	00
COLOUR	00	00 *2	00 *3
SHARP	00	+05	+15
(Sep. V)			
TINT	---	+03	00
COLOUR	00	(*2)	(*3)
SHARP	00	00	00

Table 6.

[Setting]
1: Receive the PAL split colour bar signal.
2: Display the Pre-set Mode menu on the screen and select Sub-VSM.
3: Select Colour and set its adjustment value to "+00" with the (-) or (+) key.
4: Select Sharp and set its adjustment value to "+00" with the (-) or (+) key.
5: Set the NTSC 3.58 and NTSC 4.43 in the same way. Receive each colour system signal and set it to the value listed in table 6.

* For Tint, adjust for both the composite video input (EXT 1 or EXT 2) and separated video input.
* If the EEP-ROM IC (IC704) is replaced, make sure you carry out this setting.
* If the screen becomes abnormal, or if a component associated with Colour is replaced, set the values listed in Table T06 (Sub-VSM Setting) and perform the PAL/NTSC Sub Colour adjustment.

PAL/NTSC Sub Colour Adjustment

Measuring Instrument:
Signal generator, Oscilloscope [H-rate],
Remote Control Unit
Test Point:
TP-47B [CRT Socket]
Adjustment Part:
PAL Sub Colour VR (R315) [Main]
Description:

[Adjustment]
* Check the Sub Contrast is adjusted.
1: Receive the PAL split colour bar signal.
2: Display the Pre-set Mode menu on the screen and select Sub-VSM.
3: Check the colour level is "+00". If not select Colour and set it to "+0" with the (-) or (+) key and store it in memory with the "OK" key.
4: Adjust the PAL Sub Colour VR and set the screen colour density to the best value.
5: Input the NTSC (3.58 MHz) colour bar signal from the 21 pin external input connector (EXT 1 or EXT 2).
6: Change the input mode to the signal input connector (EXT 1 or EXT 2).
7: Select Colour and set the screen colour density to the best value with the (-) or (+) key.
8: Input NTSC (4.43 MHz) colour bar signal and adjust in the same way.
9: Press the "OK" key to store the adjustment value in memory.

If measuring equipment is used:

1: Receive the PAL split colour bar signal.
2: Display the Pre-set Mode menu on the screen and select Sub-VSM.
3: Check the colour level is "+00". If not select Colour and set it to "+0" with the (-) or (+) key and store it in memory with the "OK" key.
4: Connect the oscilloscope to TP-47B.
5: Adjust so that the difference between white and blue is no difference (0V) with the PAL Sub Colour VR.
6: Input the NTSC (3.58 MHz) colour bar signal from the 21 pin external input connector (EXT 1 or EXT 2).
7: Change the input mode to the signal input connector (EXT 1 or EXT 2).
8: Select Colour and adjust so that there is no difference (0V) between white and blue.
9: Input the NTSC (4.43 MHz) colour bar signal and adjust in the same way.
10: Press the "OK" key to store the adjustment value in memory.

Deflection Adjustment Method

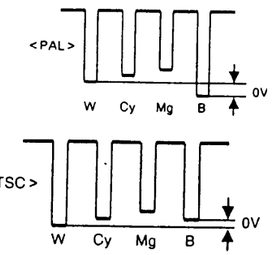


Fig 10.
Fig 11.

* Before this adjustment is conducted, confirm that the B1 Voltage, Noise (RF AGC) and Focus have been adjusted correctly.
* There are four adjustment modes according to the signals and aspect size. The screens are displayed in the following order:
1: 50 Hz 4:3 screen.
2: 50 Hz 16:9 screen.
3: 60 Hz 4:3 screen.
4: 60 Hz 16:9 screen.
* 50 Hz = PAL
60 Hz = NTSC (3.58/4.43)
* The basic mode is 1: 50 Hz 4:3 screen and the others are auxiliary. So perform adjustment 1: first and other adjustments if any item is incorrect.
* If the keys associated with the following operations are pressed before storing the adjustment value with the "OK" key, the value before adjustment returns. To prevent this do not press these keys.
* Power On/Off, EXIT, 16:9 Screen Switching, Input Selecting, Channel Selecting.
* Display of adjustment values in adjustments 2, 3 and 4
If the adjustment value is displayed in magenta, it is outside the adjustment range and overflows in the + or - direction. Adjustment data becomes the max. or min. value in that mode. So the actual adjustment data and screen are not changed until the adjusted data is within the adjustment range.

See Table 7 on next page.

Adjustment Procedure

Service Adjustments Cont'd.

Adjustment State	Adjustment Value display colour	Adjustment Data	Screen Change
Overflow	Magenta	Fixed (Maximum or minimum)	None
Within Adjustment range	Blue	Variable	Yes

Table 7.

Deflection System Adjustment

Description:

Adjustment Item	Adjustment name	Variable Range	AV-28GS1EK Reference adjustment value 50 4:3	50 16:9	60 4:3	60 16:9	AV-25GS1EK Reference adjustment value 50 4:3	50 16:9	60 4:3	60 16:9
1. V-LIN	Vertical linearity	-16 ~ +15	+7	+7	+6	+6	+5	+7	+3	+4
2. V-SIZE	Vertical height	-32 ~ +31	+8	-10	+8	-10	+5	-10	+5	-13
3. H-SIZE	Horizontal width	-32 ~ +31	-1	-1	-1	-1	-6	-6	-6	-6
4. EW-PIN	Side pin corection	-32 ~ +31	+5	-12	+6	-11	0	-14	+2	-15
5. TRAPEZ	Trapezoidal distortion correction	-32 ~ +31	-5	-5	-3	-3	-8	-8	-4	-3
6. V-S.CR	Vertical height correction	0 ~ 31	20	13	21	14	21	15	23	15
7. V-EDGE	Vertical height peripheral correction	0 ~ 15	15	11	15	11	15	12	15	12
8. EW-COR	Side pin four corner correction	0 ~ 15	9	5	9	5	11	6	11	5
9. V-COMP	Vertical high voltage variation control	0 ~ 15	4	4	4	4	4	4	4	4
10. H-COMP	Horizontal high voltage variation control	0 ~ 15	0	0	0	0	0	0	0	0

Table 8.

* Normally perform fine adjustment using the reference adjustment values listed in Table T08. Since they are reference values the set may not be set to the values listed in Table T08.
* Do not change 9: V COMP and 10: H COMP.

Measuring Instrument:
Signal generator, Remote Control Unit
Adjustment Part:
V. Centre SW (S441), H. Centre VR (R504) [Main]

Description:

1: receive the monoscope signal (if not available receive the cross hatch signal).
2: Display the Pre-set Mode menu on the screen and select Deflection.
3: Select 1 V-LIN and adjust it so that the upper and lower parts of the screen are balanced with the (-) or (+) key.
4: If the vertical centre is shifted change the V. Centre SW to the best position.
5: Select 2 V-Size and adjust it so the height of the display area is about 92% of the screen height with the (-) or (+) key. (see fig 12.)
6: Adjust the H. Centre VR so the right and left margins are equal (A=B) (see fig 13.)
7: Select 3 H-Size and adjust it so that the width of the display area is about 92% of the screen height with the (-) or (+) key.
8: Check the image is balanced vertically and horizontally. Repeat steps 3 to 7 if required.
9: Receive the cross hatch signal.
10: Select 4: EW-PIN and adjust so that the vertical lines at the right and left ends are curved with the (-) or (+) key. The second line from the right must be straight, (see fig 14.)
11: Select 5: Trapeze and adjust so that all vertical lines are parallel to each other with the (-) or (+) key. Especially pay attention to the intervals of the lines at the right and left ends and in the middle.
12: Check the screen and repeat steps 3 to 11 as required.

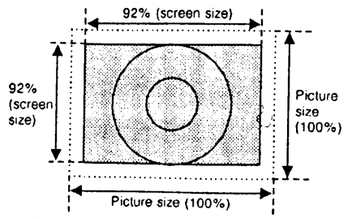


Fig 12.

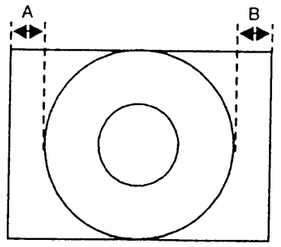


Fig 13.

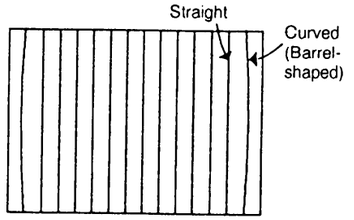
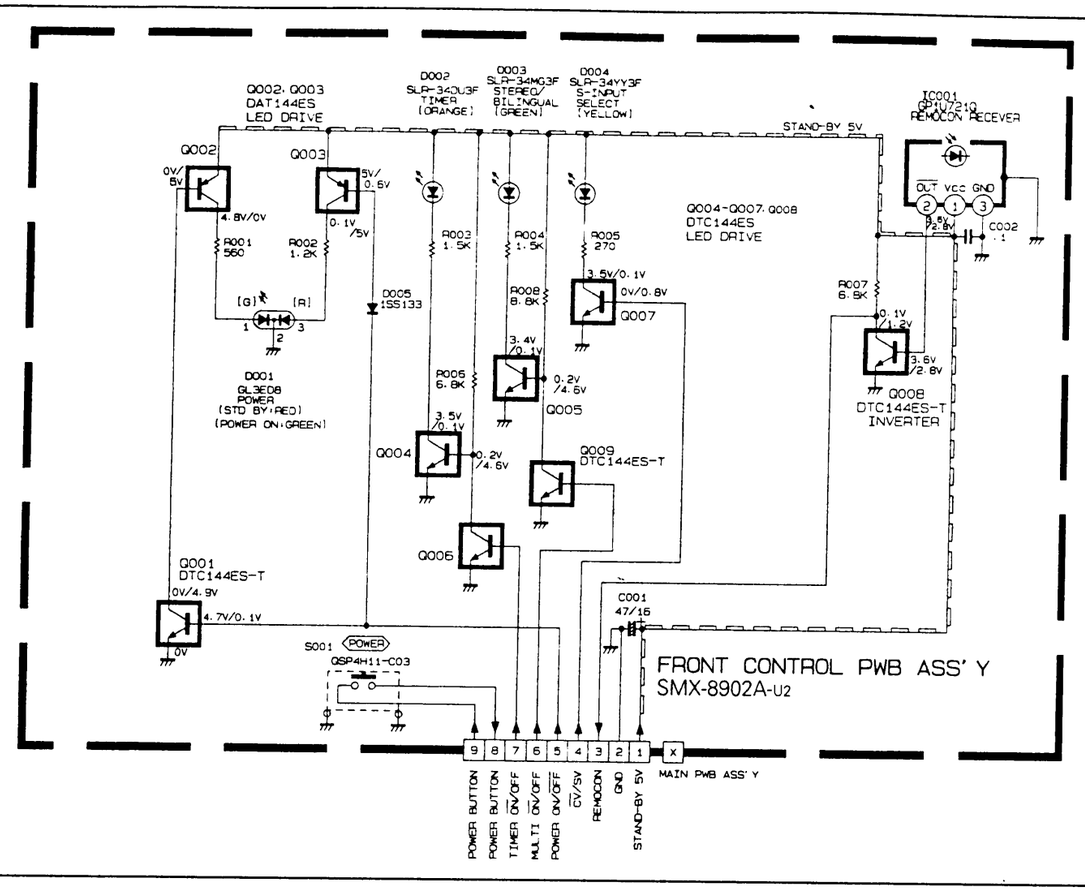


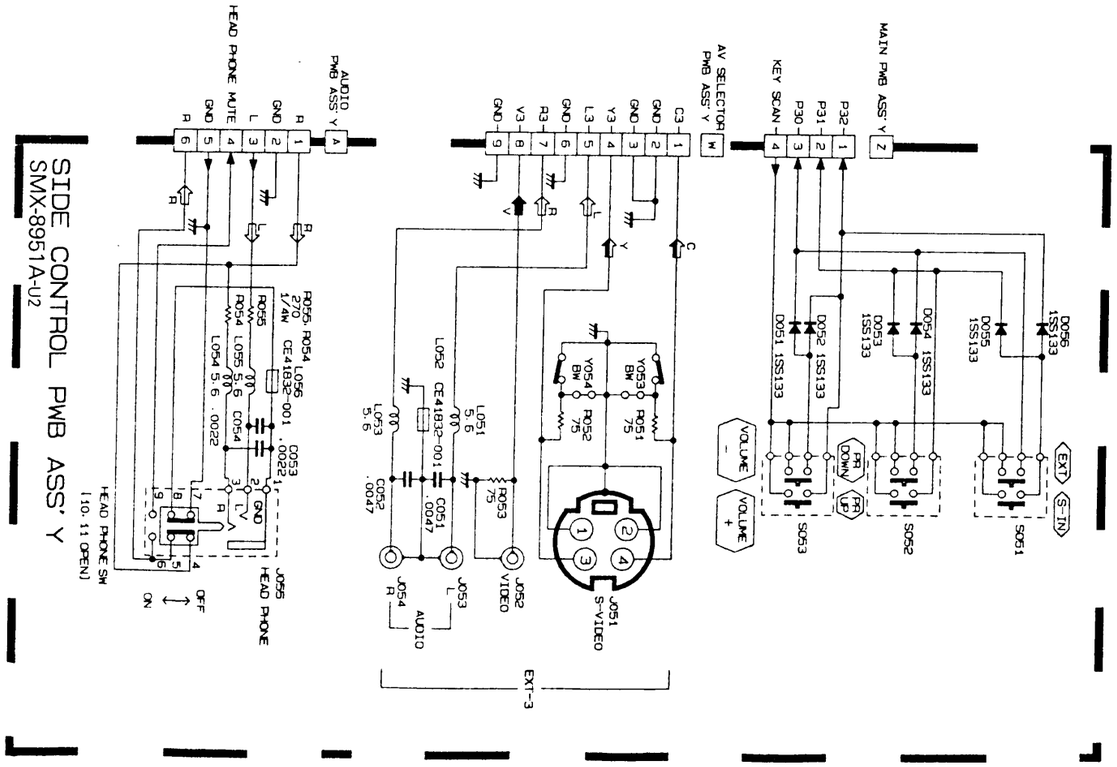
Fig 14.

* If the screen cannot be adjusted correctly by 1: V-LIN to 5: Trapeze, use 6: V-S CR, 7: V-EDGE and 8: EW-COR.
* When 1 50 Hz 4:3 adjustment ends, change the signal, screen size and input mode and check the 2 50 Hz 16:9, 3 60 Hz 4:3 and 4 60 Hz 16:9 modes. If adjustment is incorrect perform fine adjustment.

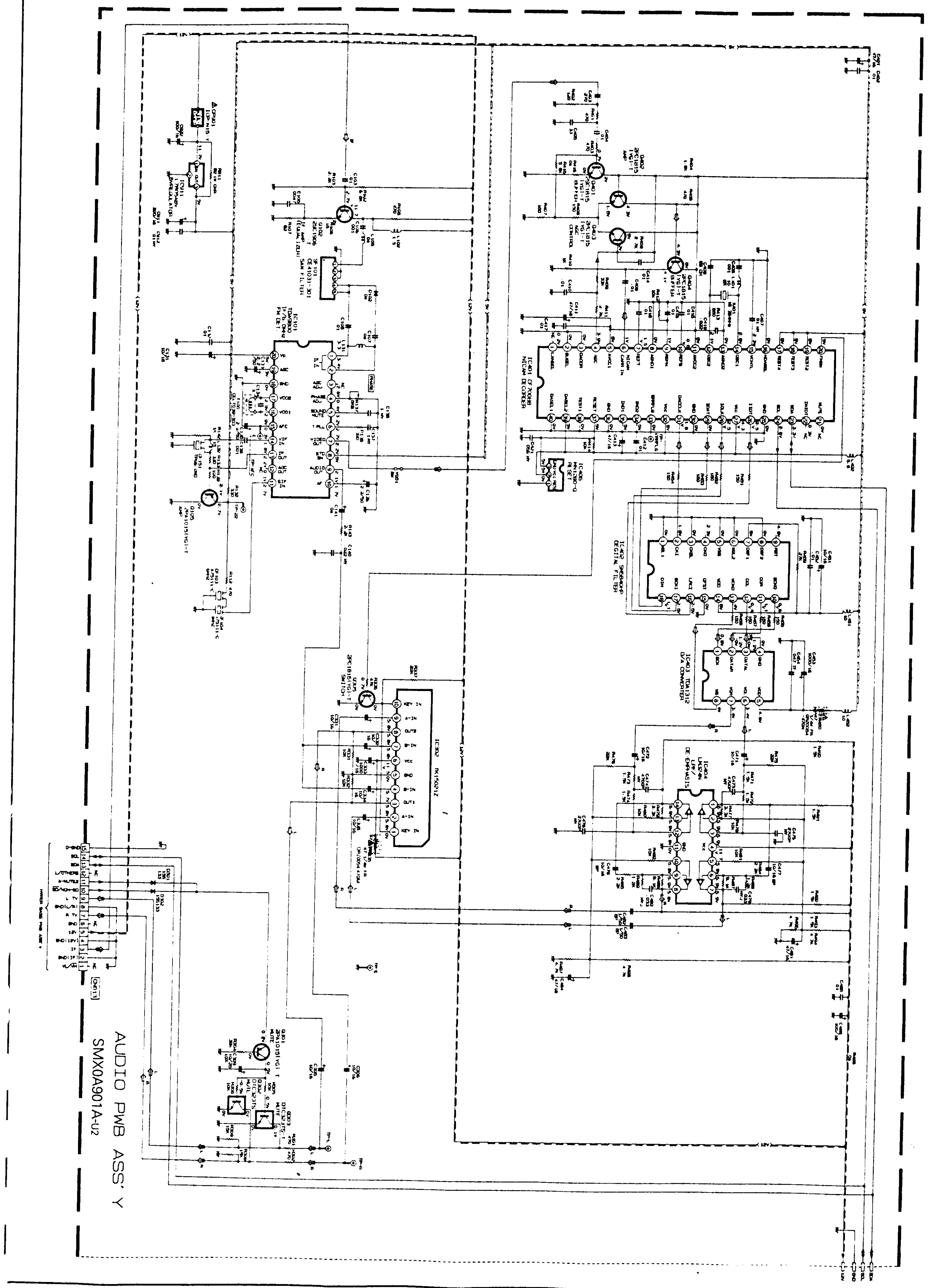
Control Diagram (Front)



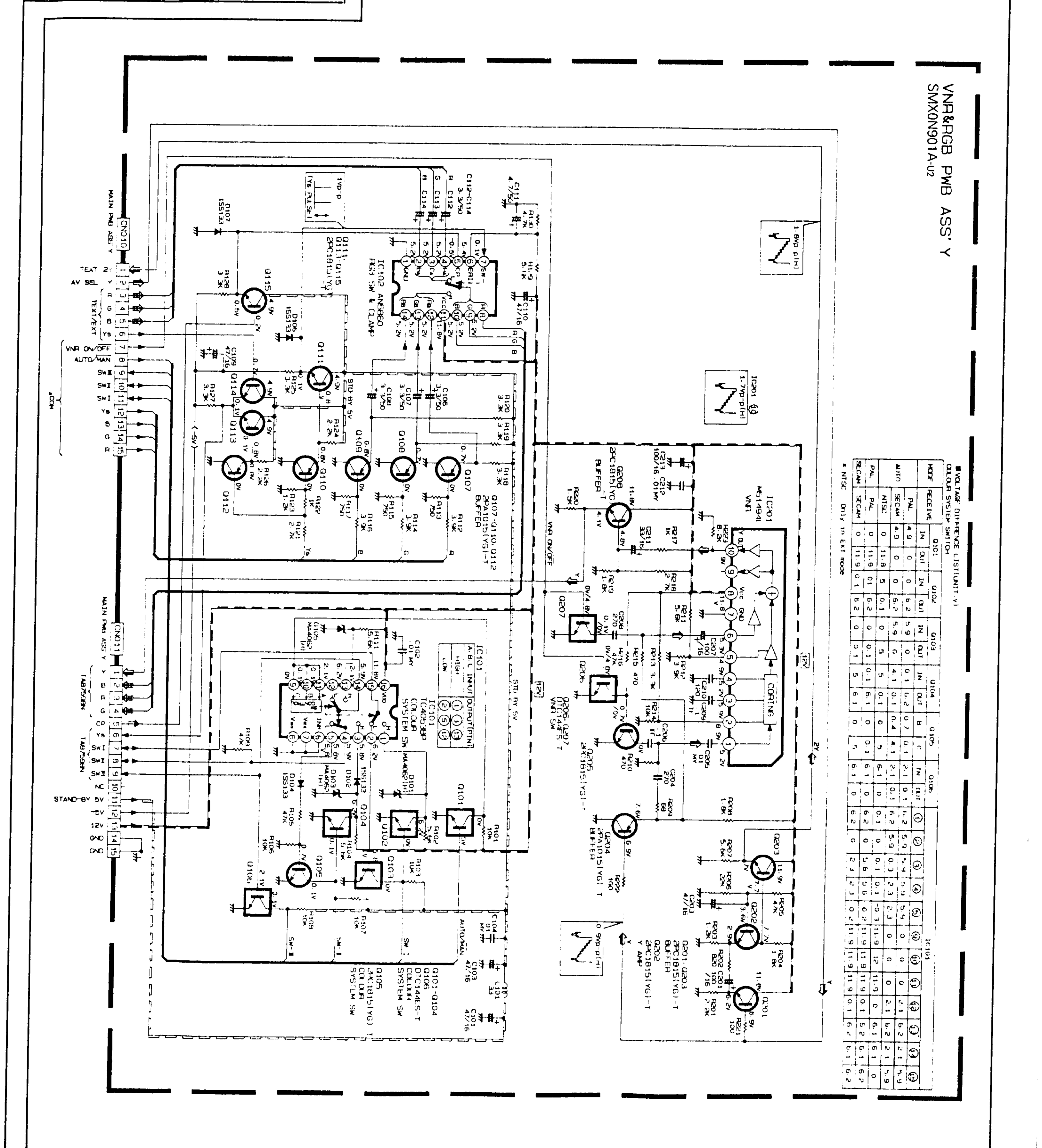
Control Diagram (Side)



Audio Diagram



VNR Diagram

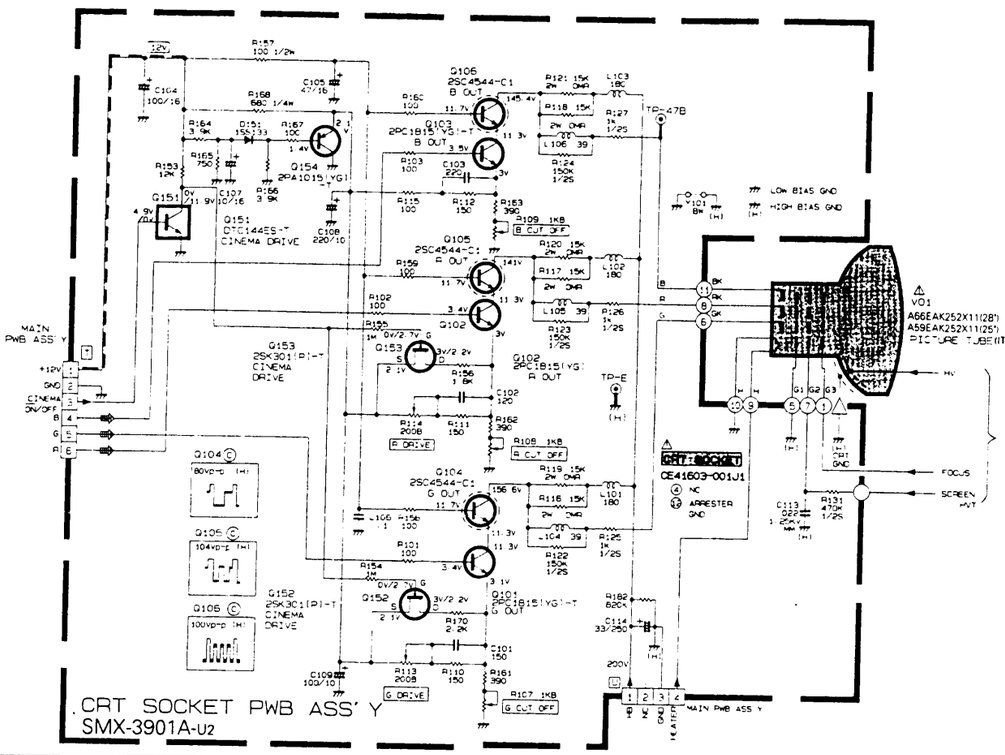


■VOLTAGE DIFFERENCE LIST(UNIT:V)
COLOUR SYSTEM SWITCH

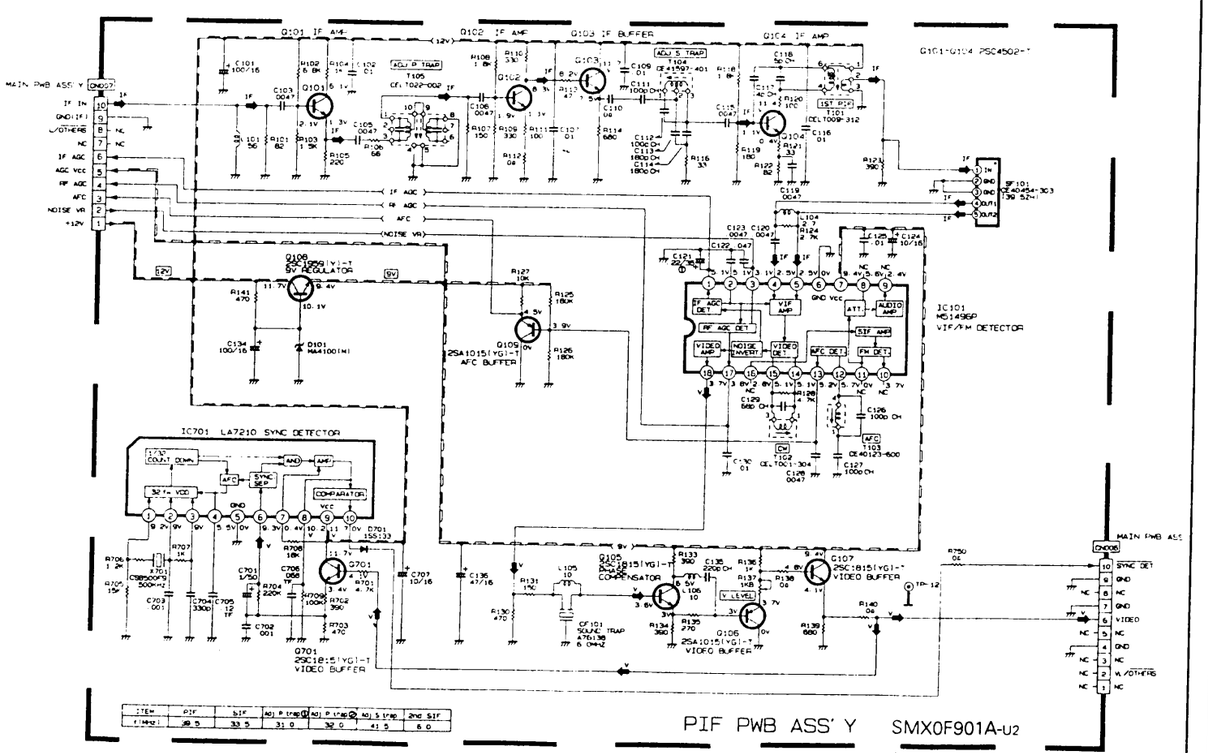
MODE	RECEIVE	Q101 IN	Q101 OUT	Q102 IN	Q102 OUT	Q103 IN	Q103 OUT	Q104 IN	Q104 OUT	Q105 B	Q105 C	Q106 IN	Q106 OUT	IC101 ①	IC101 ②	IC101 ③	IC101 ④	IC101 ⑤	IC101 ⑨	IC101 ⑩	IC101 ⑪	IC101 ⑫	IC101 ⑬	IC101 ⑭	IC101 ⑮
AUTO	PAL	4.9	0	0	6.2	5.9	0	0.1	6.2	0.7	0.1	2.1	0.1	6.2	5.9	5.4	5.9	5.4	0	0	0	2.1	6.2	2.1	5.9
	SECAM	4.9	0	0	6.2	5.9	0	4.1	0.1	0.4	4.1	2.1	0.1	6.2	5.9	0.3	2.3	2.3	0	0	0	2.1	6.2	2.1	5.9
	NTSC	0	11.8	5	0.1	0	5	5	0.1	0	5	6.1	0	0.1	0	0.1	0.1	-0.3	11.9	12	11.9	0	6.1	6.1	0
PAL	PAL	0	11.8	01	6.2	0	0.1	0.1	6.1	0	0.1	6.1	0	6.2	0	5.6	5.6	0.2	11.9	11.9	11.9	0.1	6.2	6.1	6.2
SECAM	SECAM	0	11.9	0.1	6.2	0	0.1	5	6.1	0	5	6.1	0	6.2	0	2.3	2.3	0.2	11.9	11.9	11.9	0.1	6.2	6.1	6.2

* NTSC : Only in EXT mode

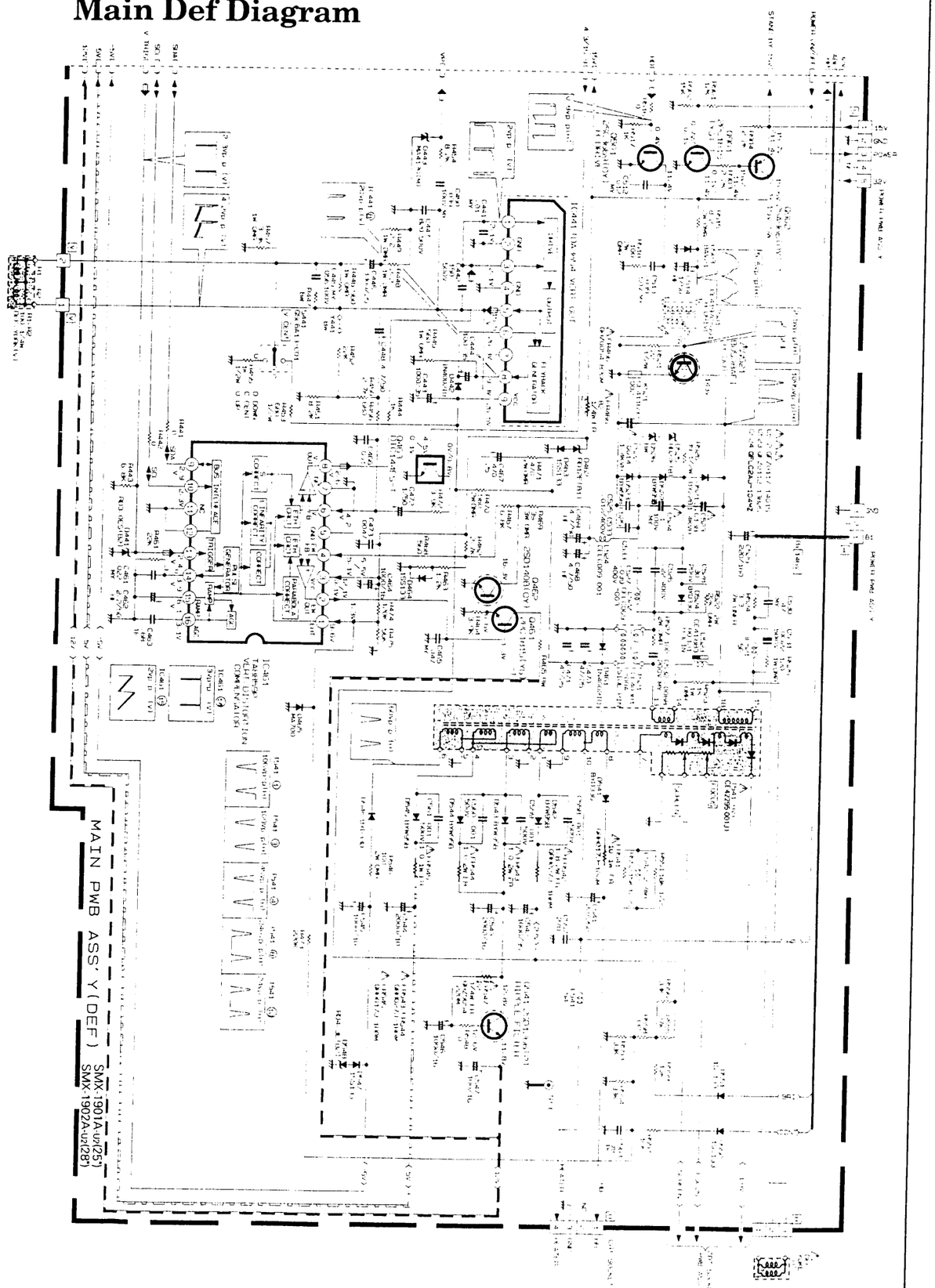
CRT Diagram



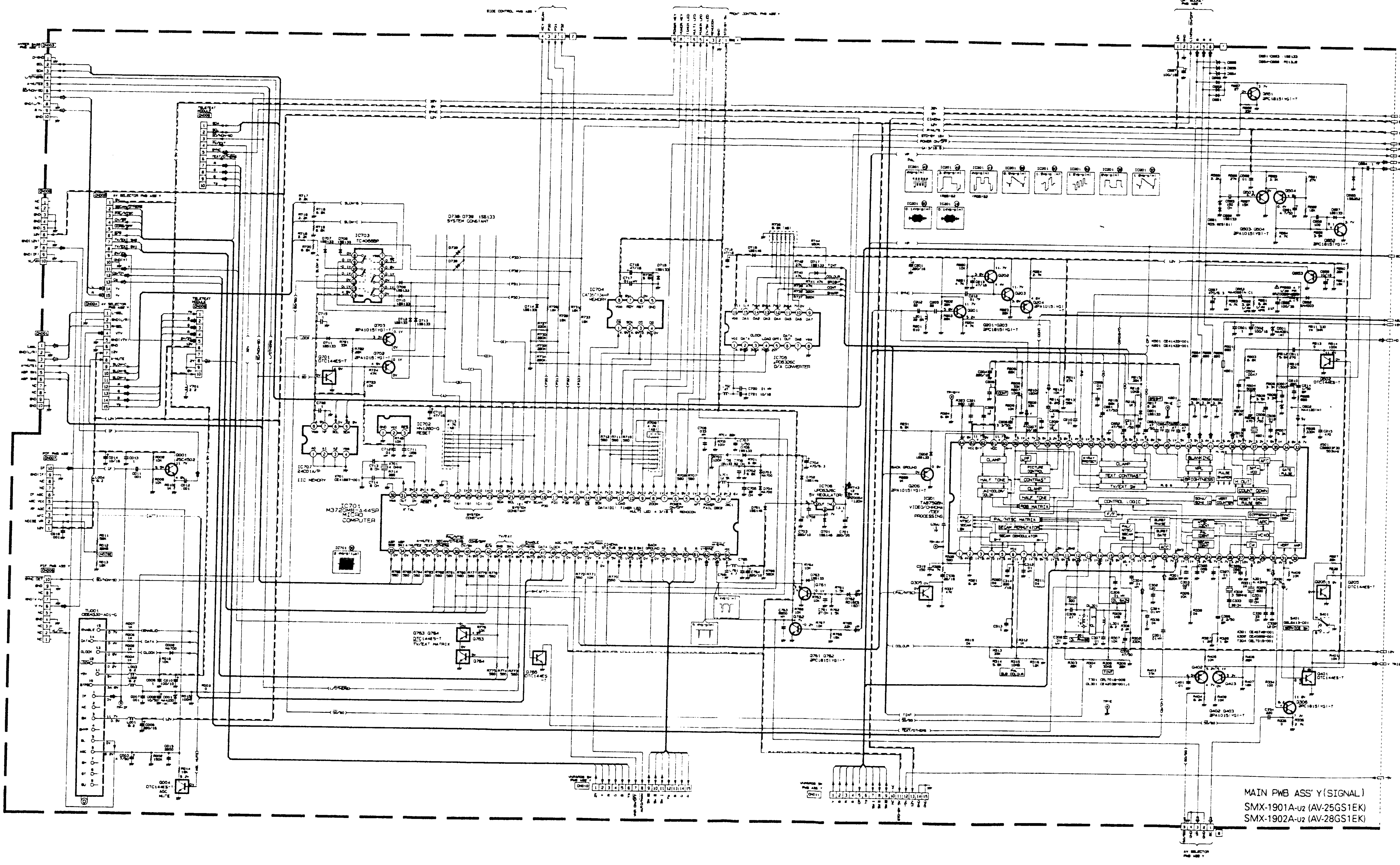
PIF Diagram



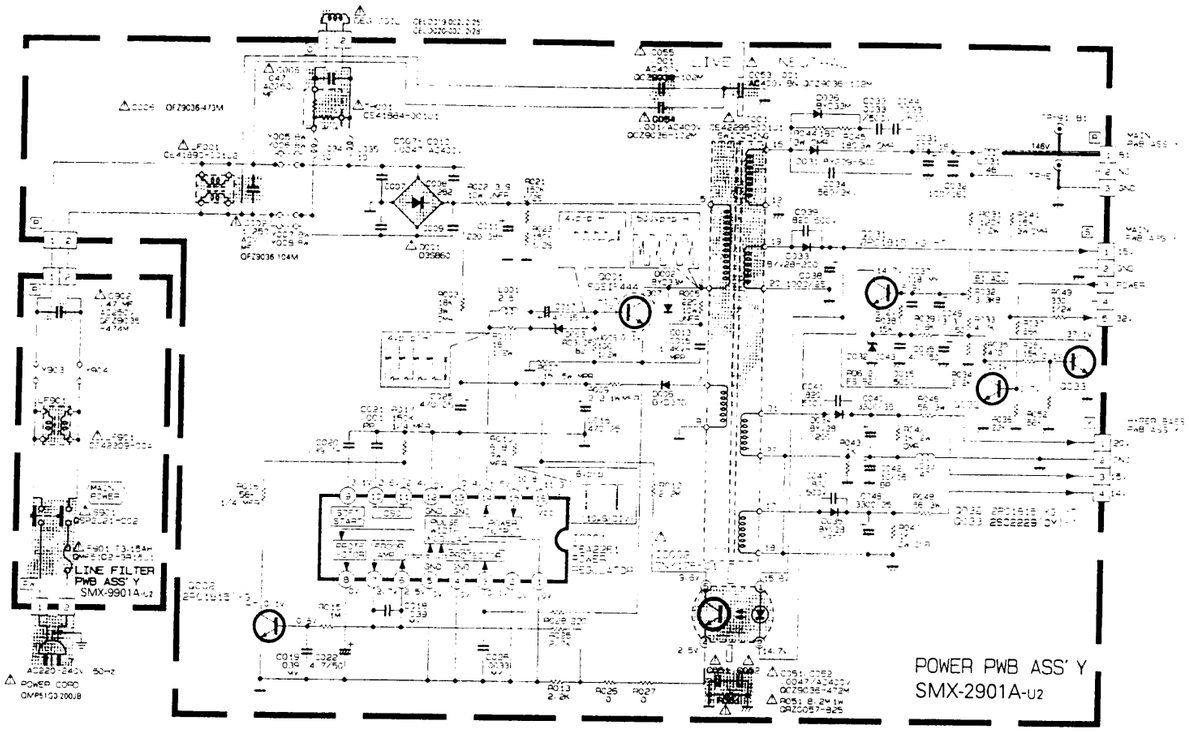
Main Def Diagram



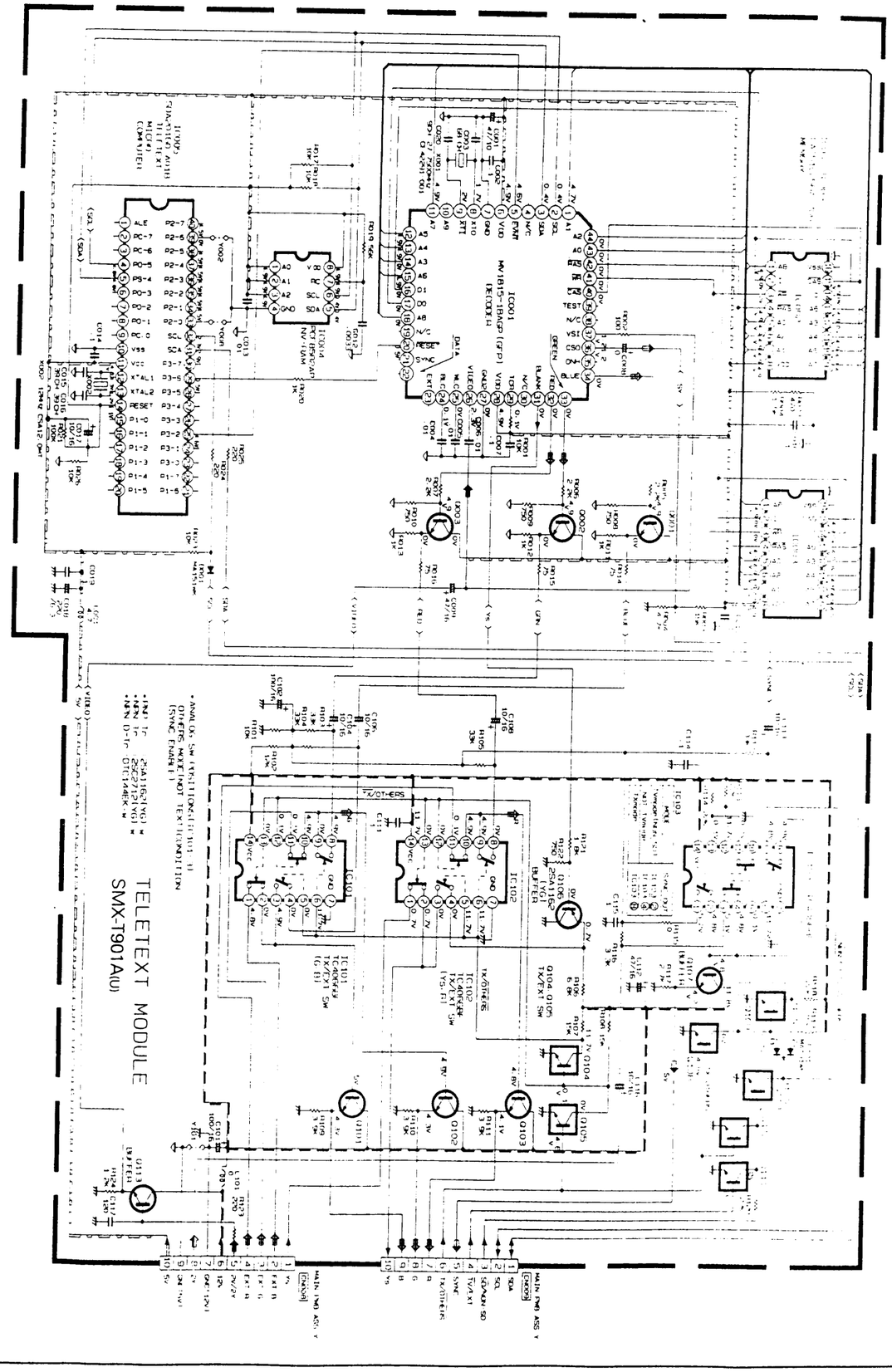
Main Signal Diagram

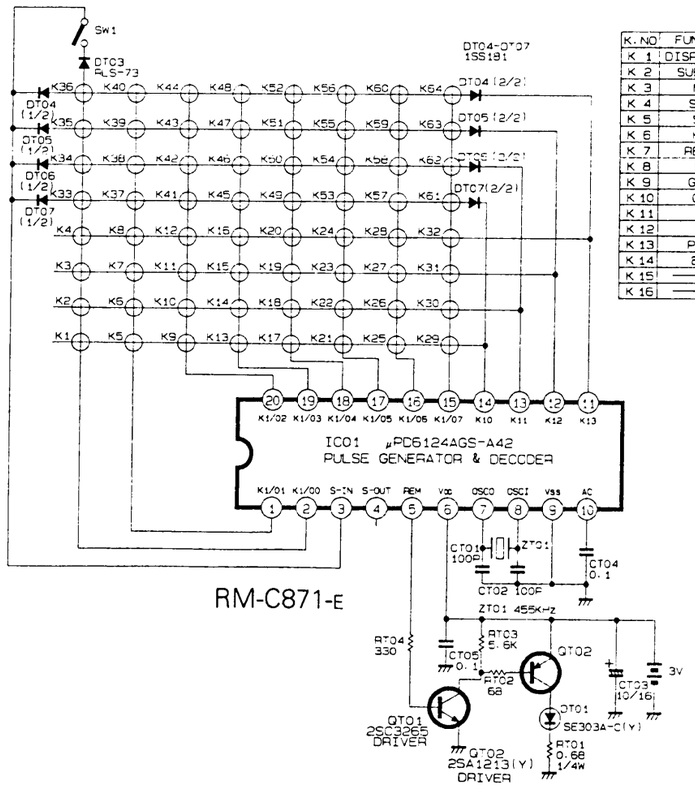


Power Supply Diagram



Text Diagram





K. NO	FUNCTION	K. NO	FUNCTION	K. NO	FUNCTION	K. NO	FUNCTION
K 1	DISP. CANCEL	K 17	MUTE	K 33	———	K 49	6
K 2	SUB PAGE	K 18	VOLUME −	K 34	———	K 50	CH RETURN
K 3	MODE	K 19	VOLUME +	K 35	———	K 51	7
K 4	STORE	K 20	MENU UP	K 36	———	K 52	8
K 5	SIZE	K 21	MENU −	K 37	HYPER BASS	K 53	9
K 6	HOLD	K 22	MENU +	K 38	S.IN	K 54	PR/CH/CG
K 7	REVEAL	K 23	MENU DOWN	K 39	P/S/N	K 55	0
K 8	RED	K 24	MENU OK	K 40	TV POWER	K 56	− / − −
K 9	GREEN	K 25	REC ●	K 41	SLEEP TIMER	K 57	———
K 10	CYAN	K 26	INDEX	K 42	CH PAGE −	K 58	———
K 11	TV	K 27	TV/TXT/MIX	K 43	CH PAGE +	K 59	———
K 12	EXT	K 28	———	K 44	1	K 60	———
K 13	POWER	K 29	YELLOW	K 45	2	K 61	———
K 14	EXIT	K 30	DISPLAY	K 46	3	K 62	———
K 15	———	K 31	———	K 47	4	K 63	———
K 16	———	K 32	———	K 48	5	K 64	———

Remote Control Diagram