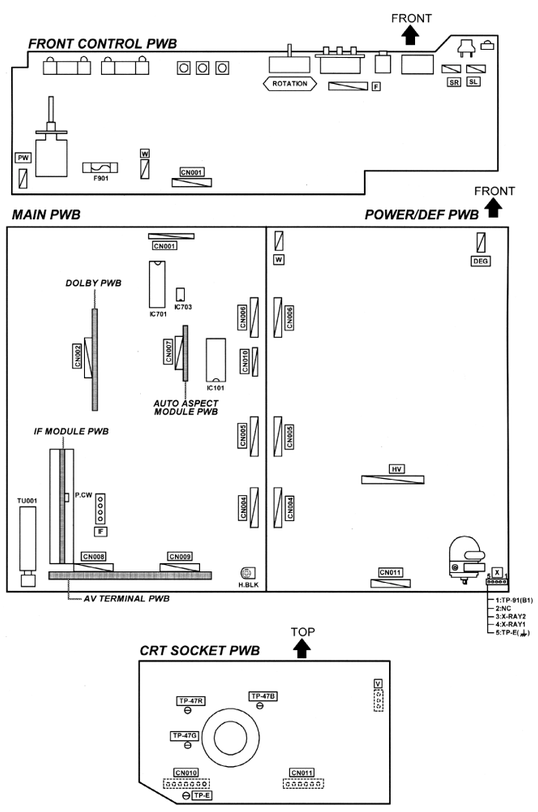
JVC AV-32WR4 EK

Recommended Safety Parts

Item	Part No.	Description			
V01	W76EGV023X115	CRT	Inc.DY,PC,WED		
L01	QQW0036-001	DEG COIL			
T2551	CETH019-00AJ1	H.V.TRANSF. (SERVICE)			
10	AEEMP003-185A	POWER CORD			
11	CM46618-A01-E	POWER CORD CLAMP			
12	CM12737-003-E	REAR COVER			
14	LC20091-007A-U	RATING LABEL			
R1252	QRZ9017-470	FUSI. RESISTOR	47 Ω 1/4W		
R2466	QRJS4RJ-2R2X	CR	2.2 Ω 1/4W		
R2991	QRZ0057-825	CR	8.2 AC3	SW	J
C2521	QFZ0122-242	MPP CAP.	2400pF	1.8kVH ±3%	
C2522	QF20117-1302	MPP CAP.	0.013uF	1.4kVH±2.5%	
C2523	QFP32G2-273	PP CAP.	0.0274F	400V	J
C2524-25	QFZ0119-624	MPP CAP.	0.62uF	200V ±3%	
C2529	CP20128-393	MPP CAP.	0.035uF	400V ±3%	
C2531	QFZ0119-224	MPP CAP.	0.22uF	200V ±3%	
C2532	QF20119-354	MPP CAP.	0.35uF	200V ±3%	
C2902	QCZ9086-472	C CAP.	4700pF	AC250V	M
C2903	QCZ9086-472	C CAP.	4700pF	AC250V	M
C2904	QCZ9086-472	C CAP.	4700pF	AC250V	M
C2905	QEZ0167-227	E CAP.	220uF	385V	M
C2907	QCB32HK-103	C CAP.	0.01uF	500V	K
C2934	QFZ9040-473	MM CAP.	0.047uF	AC250V	M
C2992	QCZ9041-472	C CAP.	470pF	AC400V	K
C2993	QC79041-332	C CAP.	3300pF	AC400V	M
T2901	CETS087-001J4	SW TRANSF.			
D2901	D3SBA60	DIODE BRIDGE			
Q2521	BU2508AX	POWER TRANSISTOR		H.OUT	
IC2902	TLP72DF(D4-GR)	IC. (PH.COUPLER)			
CP2952	ICP-N50-Y	I.C.PROTECT			
CP2953	ICP-N50-Y	I.C.PROTECT			
FR2551	QR19017-4R7	FUSI.RESISTOR	4.7 Ω	1/4	J
FR2552	QR79021-1R0	FUSI.RESISTOR	1 Ω	1W	J
FR2553	QR29021-1R0	FUSI.RESISTOR	1 Ω	1W	J
RY2901	CESK028-002	RELAY			
T829D1	CEKP002-003	W.P.THERMISTOR			
FR3319	QRZ9021-S61	FUSI.RESISTOR	560 Ω	1W	
SK3001	CE42446-D01	C.R.T. SOCKET			
R8905	QRZ0111-474	C R	470k Ω	1/2W	K
C8901	QFZ9040-474	MF CAP.	0.47uF	AC275V	M
F8901	QMF51D2-3R15J1	FUSE	3.15A		
LF8901	CELF012-001J7	LINE FILTER			
S8901	QSP4K21-C01	PUSH SWITCH	MAIN POWER		
11	LCT0409-001A-U	INST BOOK			

Adjustment Locations



Service Adjustments

BEFORE STARTING SERVICE ADJUSTMENT

1. There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.
2. The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
3. Turn on the power of the TV and measuring equipment for warming up for at least 30 minutes before starting adjustment.
4. Make sure that connection is correctly made to AC power source.
5. If the receive or input signal is not specified, use the most appropriate signal for adjustment.
6. Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.
7. Preparation for adjustment (presetting): Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT:

1) PICTURE MODE (VSM)
COOL
2) SLEEP TIMER
OFF
3) BALANCE
CENTRE
4) ECO
OFF
5) ZOOM
REGULAR
6) SURROUND
OFF
7) POWER BASS
OFF
8) HYPERSOUND
OFF

MEASUREMENT EQUIPMENT AND FIXTURES
1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL/NTSC]
4. Remote control unit

ADJUSTMENT ITEMS
- B1 power supply check
- FOCUS adjustment
- IF circuit adjustment
- VSM PRESET setting
- VIDEO / CHROMA circuit adjustment
- DEFLECTION circuit adjustment
- AUDIO circuit adjustment (Do not adjust)
- SETTING OF MAX VOLUME.

BASIC OPERATION OF SERVICE MENU

1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

2. SERVICE MENU ITEMS
With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

1) 1. IF
This mode adjusts the data of the IF circuit.
2) 2. V/C
This mode adjusts the data of the VIDEO / CHROMA circuit.
3) 3. AUDIO
This mode adjusts DETECTION LEVEL of the signal for IC of NICAM multiplex broadcast. (Do not adjust).
4) 4. DEF
This mode adjusts the data of DEFLECTION circuit for each aspect mode given.

REGULAR	(50 / 60Hz)
PANORAMIC	(50 / 60Hz)
14:9 ZOOM	(50 / 60Hz)
16:9 ZOOM	(50 / 60Hz)
16:9 ZOOM SUB TITLE	(50 / 60Hz)
FULL	(50 / 60Hz)

5) 5. VSM PRESET
This mode adjusts the initial setting values of COOL, NORMAL and WARM.
(VSM : Video Status Memory)
6) 6. VPS
This mode shows the monitor of the VPS and PDC. (Do not adjust). (VPS: Video Program System, PDC: Program Delivery Code)
7) 7. AUTO PROGRAM
By turning the powerswitch on, you can get the state of AUTO PROGRAM. (Do not adjust).
8) 8. MAX VOLUME
This mode adjusts the MAX VOLUME. (Do not adjust under normal condition).

3. BASIC OPERATION OF SERVICE MENU
1) How to enter SERVICE MENU
Press the INFORMATION and the MUTE key of the REMOTE CONTROL UNIT simultaneously and the SERVICE MENU screen of Fig.1 will be displayed.

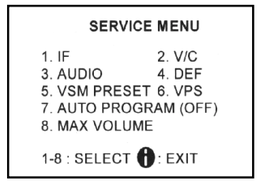


Fig. 1

2) Selection of SUB MENU SCREEN
1) Press one of the keys 1 - 8 of the REMOTE CONTROL UNIT, and select the SUB MENU SCREEN from the SERVICE MENU.

SERVICE MENU -> SUB MENU
1. IF
2. V/C
3. AUDIO
4. DEF.
5. VSM PRESET
6. VPS
7. AUTO PROGRAM
8. MAX VOLUME

REMOTE CONTROL KEYS

Names of key	key
INFORMATION	ⓘ
MUTING	🔇
MENU	OK
FUNCTION UP/DOWN	▲ ▼
FUNCTION -/+	◀ ▶

Fig. 2

3) Method of Setting
1) Method of Setting 1. IF
[1. VCO]
1) 1 Key. Select 1.IF.
2) 1 Key. Select 1.VCO.
3) The VCO (CW) screen will be displayed in yellow when the AFC voltage is at a certain level and in blue when it is at other levels.
4) INFORMATION Key. As you press this twice, you will return to the SERVICE MENU.

[2. DELAY POINT]
1) 1 Key. Select 1.IF.
2) 2 Key. Select 2.DELAY POINT.
3) FUNCTION -/+. Set (adjust) the setting values of the setting items.
4) MENU Key. Memorize the set value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON / OFF keys - it you do, the values will not be stored in memory.)
5) INFORMATION Key. When this is pressed twice, you will return to the SERVICE MENU.

2) Method of setting 2.V/C, 3. AUDIO, 4.DEF and 5.VSM PRESET.
1) 2 - 5 keys.
Select one from 2.V/C, 3. AUDIO, 4.DEF and 5.VSM PRESET.
2) FUNCTION UP/DOWN key.
Select setting items.
3) FUNCTION -/+ key.
Set (adjust) the setting values of the setting items.(When 1 CUT OFF of 2.V/C is selected, press the 1 key, and the whole screen will change to a faint horizontal line appearing in its center. Press the 2 key, and the screen will return to the original 1 CUTOFF screen.)
4) MENU Key.
Memorize the setting value.
(Before storing the setting values in memory, do not press the CH, TV, POWER ON/OFF key - if you do, the values will not be stored in memory.)
5) INFORMATION Key.
Return to the SERVICE MENU screen.

3) Method of setting 6.VPS and 7.AUTO PROGRAM.
6. VPS. This mode displayed monitor of VPS systems. Do not adjust
7. AUTO PROGRAM. When the MAIN POWER is turned on with the state of AUTO PROGRAM ON, you get a mode that initializes every existing set value including language selection. Because this mode is set at the factory upon completion of the adjustment, you need not to use it for service. (Do not adjust in this mode).

4) Method of setting 8. MAX VOLUME (Do not adjust in normal condition).
1) 8 key
Select 8. MAX VOLUME.
2) FUNCTION -/+ key
Set (adjust) the setting values of the setting items.
3) MENU Key.
Memorize the setting value.
4) INFORMATION Key.
Return to the SERVICE MENU screen.

4) Release of SERVICE MENU
1) After completing the setting, return to the SERVICE MENU, then again press the INFORMATION key.

Adjustments

Item
B1 power supply check

Measuring instrument
Signal generator
DC Voltmeter

Test point
TP-91
TP-E (⏚)
[X connector in MAIN PWB]

Description
1. Receive a whole black signal.
2. Connect a DC voltmeter to TP-91 and TP-E (⏚).
3. Make sure that the voltage is DC141.5V ± 2.0V.

FOCUS Adjustment

Item
FOCUS Adjustment

Measuring instrument
Signal generator

Adjustment part
FOCUS VR [In HVT]

Description
1. Receive a cross-hatch signal.
2. While watching the screen, adjust the FOCUS VR to make the vertical and horizontal lines as fine and sharp as possible.
3. Make sure that when the screen is darkened, the lines remain in good focus.

IF CIRCUIT ADJUSTMENT

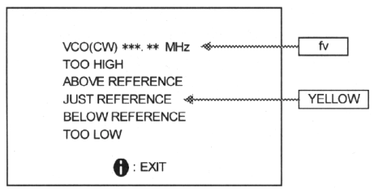
Item
Adjustment of VCO

Measuring instrument
Remote control unit

Adjustment part
P. CW TRANSF. [On IF IF MODULE PWB]

Description
- Under normal conditions no adjustment is required.

1. Select 1.IF from the SERVICE MENU.
2. Press 1 key and select 1.VCO.
3. Select a receivable broadcast channel with the CHANNEL key.
4. Turn the core of P. CW TRANSF. until the colour of the characters TOO HIGH displayed on the screen changes from blue to Yellow. (Step 1)
5. Turn the core of P. CW TRANSF. until the colour of the characters TOO LOW changes from blue to Yellow. (Step 2)
6. Then slowly turn back the core of P. CW TRANSF. until the colour of the characters JUST REFFERENCE changes from blue to Yellow. (Step 3)
7. Press the INFORMATION key three times to return to normal screen.
8. Perform CHANNEL PRESET again, and make sure that each broadcast is being received properly.



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Adjustments Cont'd

Screen display	Step 1	→ 2	→ 3
TOO HIGH	Yellow	Blue	Blue
ABOVE REFERENCE	Blue	Blue	Blue
JUST REFERENCE	Blue	Blue	Yellow
BELOW REFERENCE	Blue	Blue	Blue
TOO LOW	Blue	Yellow	Blue

Item
Adjustment of DELAY POINT

Measuring instrument
Remote control unit

Adjustment part
DELAY POINT (AGC TAKE-OVER)

Description
1. Receive a black and white signal (colour off).
2. Select 1 IF from the SERVICE MENU.
3. Select 2.DELAY POINT by pressing the 2 key on the remote control.
4. Adjust the FUNCTION - or + key until video noise disappears.
5. Press the MENU key and memorize the set value.
6. Turn to other channels and make sure that there are no irregularities.

Setting item (Adjustment item)
DELAY POINT (AGC TAKE-OVER)
Variable range: 0~63
Initial setting value: 30

Item
Setting of VSM PRESET ADJUST

Measuring instrument
Remote control unit

Adjustment part
1. BRIGHT
2. CONT.
3. COLOUR
4. SHARP
5. TINT
6. R DRIVE
7. B DRIVE
8. BASS
9. TREBLE

Description
1. Select 5.VSM PRESET from the SERVICE MENU.
2. Select COOL with the MENU key of the remote control unit.
3. Adjust the FUNCTION UP/DOWN and -/+ key to bring the set values of 1. BRIGHT ~ 9.TREBLE to the values shown in the table.
4. Press the MENU key and memorize the set value.
5. Respectively select the VSM PRESET mode for NORMAL and WARM, and make similar adjustment as in 3.
6. Press the MENU key and memorize the set value.

* Refer to OPERATING INSTRUCTIONS for the PICTURE MODE.

Setting item \ VSM preset mode	COOL	NORMAL	WARM
1. BRIGHT SETTING VALUE	+0	+0	+0
2. CONT. SETTING VALUE	+12	+10	+2
3. COLOUR SETTING VALUE	+6	+0	-2
4. SHARP SETTING VALUE	+0	+0	-2
5. TINT SETTING VALUE	+0	+0	+0
6. R DRIVE SETTING VALUE	-10	+15	+22
7. B DRIVE SETTING VALUE	-20	-25	-43
8. BASS SETTING VALUE	+0	+0	+0
9. TREBLE SETTING VALUE	+0	+0	+0

SETTING VALUES OF VSM PRESET

VIDEO/CHROMA CIRCUIT ADJUSTMENT
The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

Setting Item (Adjustment Item)		Initial setting value
1.CUTOFF	R	-100
	G	-100
	B	-100
2.DRIVE	R	+0
	B	+0
3.BRIGHT		+0
4.CONTRAST		+0

Setting item \ Colour system		Initial setting value PAL	NTSC 3.58 NTSC 4.43
5.COLOUR		+0	+0
6.TINT	Composite VIDEO	———	+0
	S VIDEO	———	+0
7.BLACK OFFSET (SECAM)	R-Y	+0	———
	B-Y	+0	———
8.SHARP		-10 (28") -12 (32")	———
9.TEXT CONT		+6 (28") +0 (32")	———

Item
Adjustment of WHITE BALANCE (Low Light)

Measuring instrument
Signal generator
Remote control unit

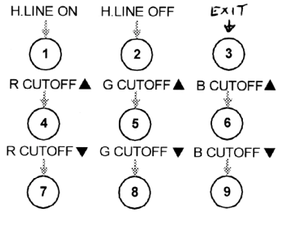
Adjustment part
1.CUT OFF
(R) * * *
(G) * * *
(B) * * *

SCREEN VR [In HVT]

Description
• Set the PICTURE MODE to COOL.

1. Receive a black and white signal(colour off).
2. Select 2. V/C from the SERVICE MENU.
3. Select 1 .CUT OFF with the FUNCTION UP/DOWN key.
4. Show one honzontal line with the 1 key. With the SCREEN VR, adjust so that the horizontal line will not be too bright.
5. Gradually turn the SCREEN VR from the left end to the right direction to bring one of the red, green or blue colour faintly visible.
6. Press 4~9 key, and bring out the other 2 colours and make one horizontal line visible in white.
7. Turn the SCREEN VR and bring one white horizontal line faintly visible.
8. Press 2 key, turn off 1.CUT OFF screen.
9.Press the MENU key and memorize the set value.

Remote Control Unit



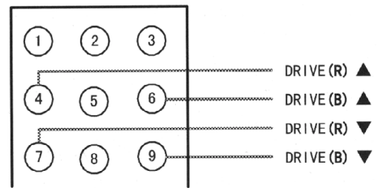
Item
Adjustment of WHITE BALANCE
(High Light)

Measuring instrument
Signal generator
Remote control unit

Adjustment part
2.DRIVE
(R) * * *
(B) * * *

Description
1. Receive a black and white signal (colour off).
2. Select 2.V/C from the SERVICE MENU.
3. Select 2.DRIVE with the FUNCTION UP/DOWN key.
4. Change the screen colour to white with 4 key or 7 key (Drive of Red), 6 key or 9 key (Drive of Blue).
5. Press the MENU key, and memorize the set values.

REMOTE CONTROL UNIT



Item
Adjustment of SUB BRIGHT

Measuring instrument
Remote control unit

Adjustment part
3.BRIGHT

Description
1. Receive any broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select 3.BRIGHT with the FUNCTION UP/DOWN key.
4. Set the initial setting value with the FUNCTION -/+ key.
5. If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness.
6. Press the MENU key and memorize the set value.

Item
Adjustment of SUB CONT.

Measuring instrument
Remote control unit

Adjustment part
4.CONT.

Description
1. Receive any broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select 4.CONT with the FUNCTION UP/DOWN key.
4. Set the initial setting value with the FUNCTION - or + key.
5. If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast.
6. Press the MENU key and memorize the set value.

Item
Adjustment of SUB COLOUR I

Measuring instrument
Remote control unit

Adjustment part
5.COLOUR (PAL~NTSC)

Description
[Method of adjustment without using measuring instrument]

Adjustment part
PAL COLOUR

Description
(PAL COLOUR)
1. Receive PAL broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select 5.COLOUR with the FUNCTION UP/DOWN key.
4. Set the initial setting value for PAL COLOUR with the FUNCTION - or + key.
5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour.
6. Press the MENU key and memorize the set value.

Adjustment part
NTSC COLOUR

Description
(NTSC 3.58 COLOUR)
1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal from the EXT terminal.
2. Make similar fine adjustment of NTSC 3.58 COLOUR in the same manner as for above.
(NTSC 4.43 COLOUR)
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item
Adjustment of SUB COLOUR II

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

Test Point
TP-47B
TP-E(⏚)
[CRT SOCKET PWB]

Adjustment part
5.COLOUR
(PAL~NTSC)

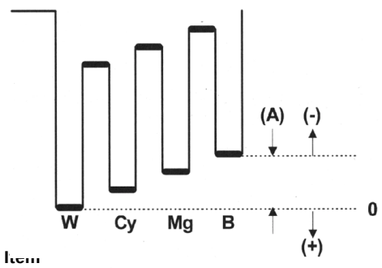
Description
[Method of adjustment using measuring instrument]

Adjustment part
PAL COLOUR

Description
(PAL COLOUR)
1. Receive a PAL full field colour bar signal (75% white).
2. Select 2.V/C from the SERVICE MENU.
3. Select 5.COLOUR with the FUNCTION UP/DOWN key.
4. Set the initial setting value of PAL COLOUR with the FUNCTION - or + key.
5. Connect the oscilloscope between TP-47B and TP-E(⏚).
6. Adjust PAL COLOUR and bring the value of (A) in the illustration to +3V (for 32") (+12V for 28WT4EK) (voltage difference between white (w) and blue (B)).
7. Press the MENU key and memorize the setting value.

Adjustment part
NTSC COLOUR

Description
(NTSC 3.58 COLOUR)
1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal.
2. Set the initial setting value of NTSC 3.58 COLOUR with the FUNCTION -/+ key.
3. Adjust NTSC 3.58 COLOUR and bring the value of (A) of the illustration to +8V (W~B).
4. Press the MENU key and memorize the setting value.
(NTSC 4.43 COLOUR)
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.



Item
Adjustment of SUBTINT I

Measuring instrument
Remote control unit

Adjustment part
6.TINT

Description
[Method of adjustment without using measuring instrument]

Adjustment part
NTSC 3.58 TINT

Description
[NTSC 3.58 TINT
1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal.
2. Select 2.V/C from the SERVICE MENU.
3. Select 6. TINT with the FUNCTION UP/DOWN key.
4. Set the initial setting value of NTSC 3.58 TINT with the FUNCTION -/+ key.
5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint.
6. Press the MENU key and memorize the set value.

Adjustment part
NTSC 4.43 TINT

Description
(NTSC 4.43 TINT]
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

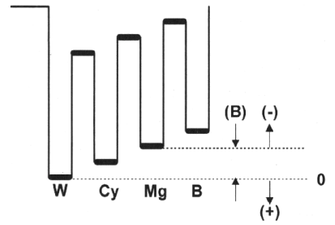
Item
Adjustment of SUB TINT II

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

Test Point
TP-47B
TP-E(⏚)
[CRT SOCKET PWB]

Adjustment part
6. TINT

Description
[Method of adjustment using measuring instrument]
[NTSC 3.58 TINT]
1. Input a NTSC 3.58MHz COMPOSITE VIDEO signal (full field colour bar with 75% white) from the EXT terminal.
2. Select 2.V/C from the SERVICE MENU.
3. Select 6.TINT with the FUNCTION UP/DOWN key.
4. Set the initial setting value of NTSC 3.58 TINT with the FUNCTION - or + key.
5. Connect the oscilloscope between TP-47B and TP-E(⏚).
6. Adjust NTSC 3.58 TINT to bring the value of (A) in the illustration to +3V (voltage difference between white (W) and magenta (Mg)).
7. Press the MENU key and memorize the setting value



Adjustment part
NTSC 4.43 TINT

Description
[NTSC 4.43 TINT]
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

[ONLY AV-24WT4EN/AV-28WT4ENS]

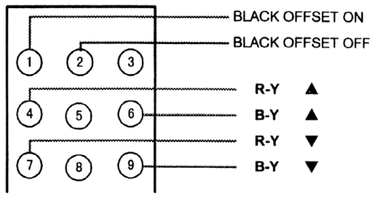
Item
Adjustment of BLACK OFFSET (SECAM) I

Measuring Instrument
Remote control unit

Adjustment part
7. BLACK OFFSET
(R-Y) ***
(B-Y) ***

Description
(Method of adjustment without measuring instrument]
1. Receive a SECAM broadcast.
2. Select 2. V/C from SERVICE MENU.
3. Select 7. BLACK OFFSET with the FUNCTION UP/DOWN key.
4. Set the initial setting value for BLACK OFFSET (R-Y) and (B-Y) with 4 and 7 or 6 and 9 keys of the remote control.
5. If the picture is not the best with the initial setting value, make fine adjustment until you get the best picture.
6. Press the MENU key and memorize the setting value.

REMOTE CONTROL UNIT



Item
Adjustment of BLACK OFFSET (SECAM) II

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

JVC AV-32WR4 EK

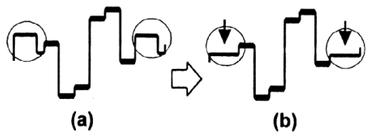
Adjustments Cont'd

Test point
35 PIN (R-Y)
36 PIN (B-Y)
IC-101 ON MAIN PWB

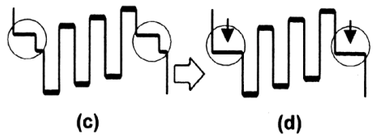
Adjustment part
7. BLACK OFFSET
(R-Y) ***
(B-Y) ***

Description
[Method of adjustment using measuring instrument]
1. Receive a SECAM COLOUR bar signal (full field colour bar 75% white).
2. Select 2. V/C from SERVICE MENU.
3. Seiect 7. BLACK OFFSET with the FUNCTION UP/DOWN key.
4. Connect the oscilloscope between 35 pin of IC-101 and TP-E (⏚).
5. By using 4 and 7 keys of the remote control, adjust the BLACK OFFSET (R-Y) so that it becomes the waveform changes from (a) to (b) shown in the figure.
6. Connect the oscilloscope between 36 pin of IC-101 and TP-E.
7. By using 6 and 9 keys of the remote control, adjust the BLACK OFFSET (B-Y) so that it becomes the waveform changes from (c) to (d) shown in the figure.
8. If the picture is not the best with the adjusted picture, make fine adjustment until you get the best picture.
9. Press the MENU key and memorize the setting value.

[R-Y]



[B-Y]



DEFLECTION CIRCUIT ADJUSTMENT
There are 7 modes of the adjustment

(1) 50Hz mode
1) PANORAMIC
2) FULL
3) REGULAR
4)14:9 ZOOM
5)16:9 ZOOM
6)16:9 ZOOM SUB TITLE

(2) 60Hz mode
(each aspect mode) depending upon the kind of signals (vertical frequency 50Hz / 60Hz).
When the 50Hz PANORAMIC mode has been established, the setting of other modes will be done automatically.
However, if the picture quality has not been optimized, adjust each mode again, respectively.
The adjustment using the remote control unit is made on the basis of the initial setting values.
The setting values which adjust the screen to the optimum condition can be different from the Initial setting values.

Initial setting value 1/2 (28")

Setting item	Adjustment name	Initial setting value (50Hz mode)			
		PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE
1.TRAPEZ	Trapezoidal distortion correction	-12	-1	-1	+2
2.V-SHIFT	Vertical center	+1	+0	-1	-16
3.V-SIZE	Vertical height	-10	+10	+25	+24
4.H-CENT	Horizontal center	-10	-10	-10	-10
5.H-SIZE	Horizontal width	+21	-13	-8	-7
6.EW-PIN	Side pin correction	-7	+0	+7	+2
7.V-S.CR	Vertical height correction	+5(Fixed)	-8(Fixed)	-15(Fixed)	-2(Fixed)
8.V-LIN	Vertical Linearity	+1	-1	-1	-7
9.V-EDGE	Vertical edge correction	+7	+0	+0	+0
10.EW-COR	Side pin four corner correction	+7	-1	-2	+1
11.ABL POINT	Auto beam limiter point	+0(Fixed)	+3(Fixed)	+0(Fixed)	+0(Fixed)
12.ABL GAIN	Auto beam limiter gain	+0(Fixed)	+2(Fixed)	+0(Fixed)	+0(Fixed)

Initial setting value 2/2 (28")

Setting item	Adjustment name	Initial setting value (50Hz mode)		60Hz mode
		FULL	REGULAR	PANORAMIC
1.TRAPEZ	Trapezoidal distortion correction	+1	+0	-1
2.V-SHIFT	Vertical center	+0	+2	+5
3.V-SIZE	Vertical height	-9	-7	-2
4.H-CENT	Horizontal center	-10	-10	-6
5.H-SIZE	Horizontal width	-7	-21	+0
6.EW-PIN	Side pin correction	-7	-8	-1
7.V-S.CR	Vertical height correction	-3(Fixed)	-3(Fixed)	+0(Fixed)
8.V-LIN	Vertical Linearity	-1	-1	+0
9.V-EDGE	Vertical edge correction	+0	+0	+0
10.EW-COR	Side pin four corner correction	-6	-4	-3
11.ABL POINT	Auto beam limiter point	+0(Fixed)	+3(Fixed)	+0(Fixed)
12.ABL GAIN	Auto beam limiter gain	+0(Fixed)	+2(Fixed)	+0(Fixed)

Initial setting value 1/2 (32")

Setting item	Adjustment name	Initial setting value (50Hz mode)			
		PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE
1.TRAPEZ	Trapezoidal distortion correction	-17	-1	-1	+1
2.V-SHIFT	Vertical center	-2	+0	-3	-14
3.V-SIZE	Vertical height	-15	+11	+25	+19
4.H-CENT	Horizontal center	-10	-10	-10	-10
5.H-SIZE	Horizontal width	+21	-13	-8	-8
6.EW-PIN	Side pin correction	-8	+1	+7	+2
7.V-S.CR	Vertical height correction	+5(Fixed)	-6(Fixed)	-12(Fixed)	-6(Fixed)
8.V-LIN	Vertical Linearity	+3	-1	+0	-6
9.V-EDGE	Vertical edge correction	+7	+0	-1	+0
10.EW-COR	Side pin four corner correction	+4	+1	+1	+1
11.ABL POINT	Auto beam limiter point	+0(Fixed)	+3(Fixed)	+0(Fixed)	+0(Fixed)
12.ABL GAIN	Auto beam limiter gain	+0(Fixed)	+2(Fixed)	+0(Fixed)	+0(Fixed)

Initial setting value 2/2 (32")

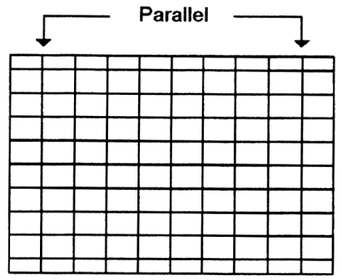
Setting item	Adjustment name	Initial setting value (50Hz mode)		60Hz mode
		FULL	REGULAR	PANORAMIC
1.TRAPEZ	Trapezoidal distortion correction	+1	+0	-2
2.V-SHIFT	Vertical center	+0	+1	+6
3.V-SIZE	Vertical height	-6	-4	-2
4.H-CENT	Horizontal center	-10	-10	+5
5.H-SIZE	Horizontal width	-7	-22	+0
6.EW-PIN	Side pin correction	-5	-7	-1
7.V-S.CR	Vertical height correction	+1(Fixed)	+1(Fixed)	+0(Fixed)
8.V-LIN	Vertical Linearity	-1	-1	+0
9.V-EDGE	Vertical edge correction	+0	+0	+0
10.EW-COR	Side pin four corner correction	+1	-1	-1
11.ABL POINT	Auto beam limiter point	+0(Fixed)	+3(Fixed)	+0(Fixed)
12.ABL GAIN	Auto beam limiter gain	+0(Fixed)	+2(Fixed)	+0(Fixed)

Item
Adjustment of TRAPEZ

Measuring Instrument
Signal generator
Remote control unit

Adjustment part
1.TRAPEZ

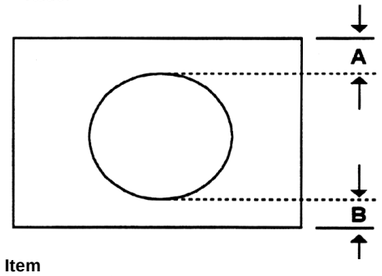
Description
[50Hz PANORAMIC mode]
1 Receive a cross-hatch signal of vertical frequency 50Hz.
2. Select 4.DEF from the SERVICE MENU.
3. Select 1 .TRAPEZ with the FUNCTION UP/DOWN key.
4. Set the initial setting value of TRAPEZ with the FUNCTION - or + key.
5. Adjust TRAPEZ and bring the VERTICAL lines at the right and left edges of the screen parallel.



Item
Adjustment of V-SHIFT

Adjustment part
2.V-SHIFT

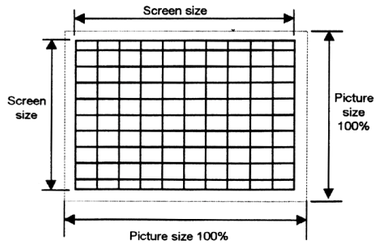
Description
6. Receive a circle pattern signal
7. Select 2.V-SHIFT and set the initial setting value.
8. Adjust V-SHIFT to make A = B.
9. Press the MENU key and memorize the set value.



Item
Adjustment of V-SIZE

Adjustment part
3.V. SIZE

Description
10.Receive a cross-hatch signal.
11.Select 3.V-SIZE and set the initial setting value.
12.Adjust V-SIZE and make sure that the vertical screen size of the picture size is in the table.
13.Press the MENU key and memorize the set value.
14.Input a NTSC VIDEO signal from the EXT terminal, and make sure that the vertical screen size of the RANORAMIC mode is in the table.
15.Press the MENU key and memorize the set value.



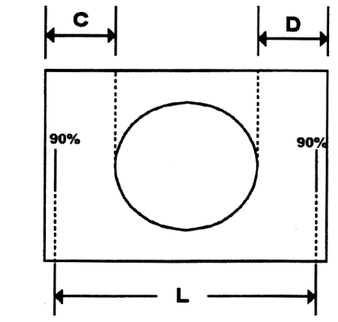
MODE	PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE	FULL	REGULAR
SCREEN TOP	87%	80%	70%	70%	92%	92%
SCREEN BOTTOM	87%	80%	70%	83%	92%	92%

[SCREEN SIZE]

Item
Adjustment of H.CENTER

Adjustment part
4.H-CENT.

Description
16.Receive a circle pattern signal.
17.Select 4.H-CENT and set the initial setting value.
18.Adjust H-CENT to make C=D.
19.Press the MENU key and memorize the set value.



Item
Adjustment of H.SIZE

Adjustment part
5.H-SIZE

Description
20.Receive a cross-hatch signal.
21.Select 5.H-SIZE and set the initial setting value.
22.Adjust H-SIZE and make sure that the horizontal screen size of the picture size is in the table.
23.Press the MENU key and memorize the set value. The numeric of the REGULAR and 14:9 ZOOM modes are shown the length of the 90% horizontal size position (L) as shown in the previous figure.
24.Input a NTSC VIDEO signal from the EXT terminal, and make sure that the horizoutal screen size of the PANORAMIC mode is in the following table.
25.Press the MENU key and memorize the set value.

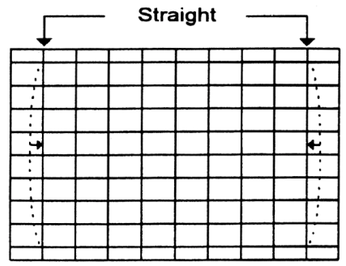
ASPECT MODE	PANORAMIC	14:9 ZOOM	16:9 ZOOM	16:9 ZOOM SUB TITLE	FULL	REGULAR
H SIZE	94%	L=570mm (32") L=495mm (28")	92%	92%	92%	L=500mm (32") L=440mm (28")

[SCREEN SIZE]

Item
Adjustment of EW-PIN

Adjustment part
6. EW-PIN

Description
26.Select 6.EW-PIN and set the initial setting value
27.Adjust EW-PIN and make the 2nd.vertical lines at the left and right edges of the screen straight. Also make sure that the 3rd vertical lines are straight.
28.Press the MENU key and memorize the set value.



Item
Adjustment of V-S.CR, V-LIN, V-EDGE

Adjustment part
7.V-S.CR
8.V-LIN
9.V-EDGE

Description
* No alignment, but adjust this mode if result of no alignment is too bad.
29.Select 7.V-S.CR, 8.V-LIN and 9.V-EDGE and set the initial setting value.
30.Adjust each item to get exact square of cross-hatch pattern.
31.Press the MENU key and memorize the set value.

Item
Adjustment of EW-COR

Adjustment part
10.EW-COR

Description
* No alignment, but adjust this mode if result of no alignment is too bad.
32.Select 10.EW-COR and set the initial setting value.
33.Adjust EW-COR and make the vertical lines at the four corners of the screen straight
34.Press the MENU key and memorize the set value.
At first the adjustment in 50Hz-PANORAMIC mode should be done, then the data for the other zoom mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 60Hz (NTSC EXT mode) PANORAMIC mode. If the adjustment in 50Hz each zoom mode has been done and stored, the data for the same aspect modes in 60Hz is corrected in the respective value. Only the data for the other aspect mode in 60Hz is corrected for itself.

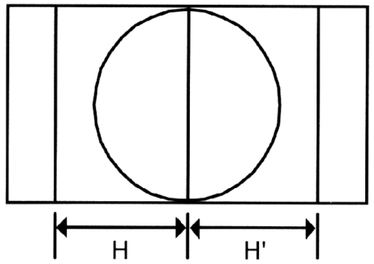
Item
Adjustment of H.BLANKING

Adjustment part
H.BLK Capacitor [On MAIN PWB]

Description
1. Receive the PAL circle pattern in REGULAR mode.
2. Adjust the H.BLK capacitor to equalize widths H and H' as figure.

JVC AV-32WR4 EK

Adjustments Cont'd



AUDIO CIRCUIT ADJUSTMENT

- Do not touch 3.AUDIO (1. CONC UMIT, 2. A2 ID THR) of the SERVICE MENU as it requires no adjustment.

3. AUDIO

Setting item: 1. CONC LIMIT (Do not adjust)
Variable range: 00H~FFH
Fixed value: 0AH

Setting item: 2. A2 ID THR (Do not adjust)
Variable range: 00H~FFH
Fixed value: 19H

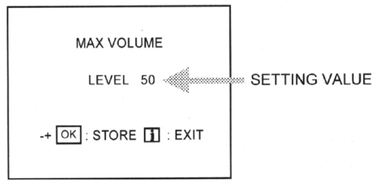
SETTING OF MAX VOLUME
This model has a function that can set MAX VOLUME in the SERVICE MENU. (Do not adjust them under normal condition).

Item
Setting of MAX VOLUME

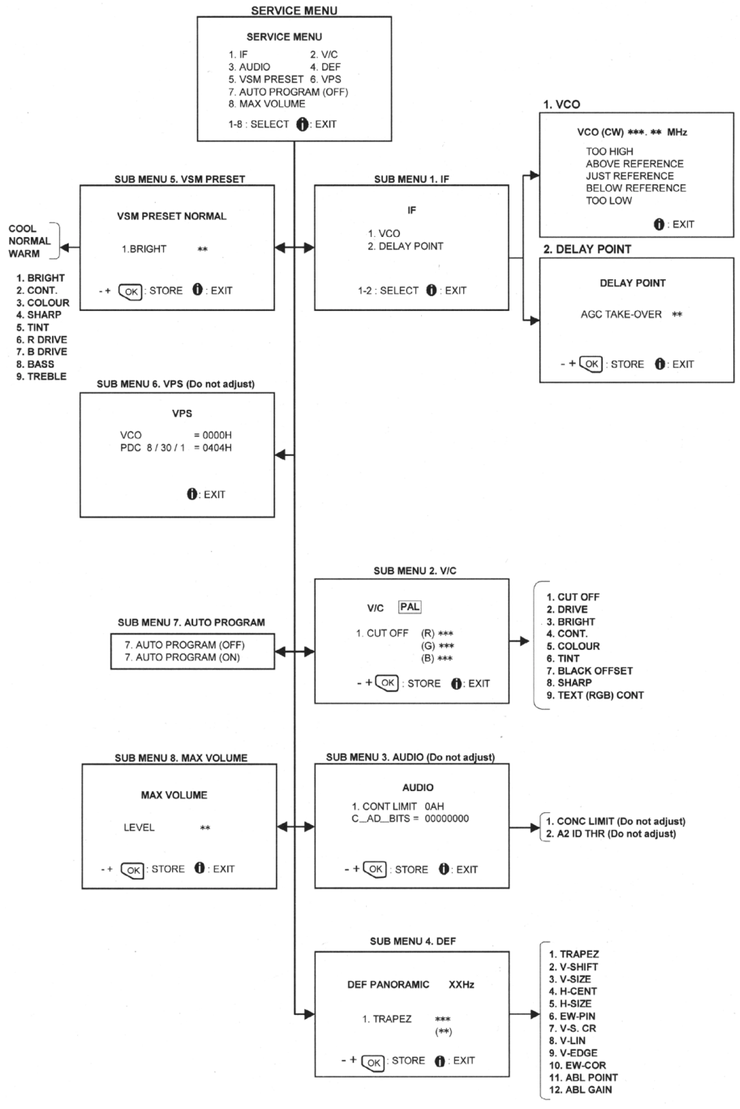
Measuring Instrument
Remote Control Unit

Adjustment Part
MAX VOLUME

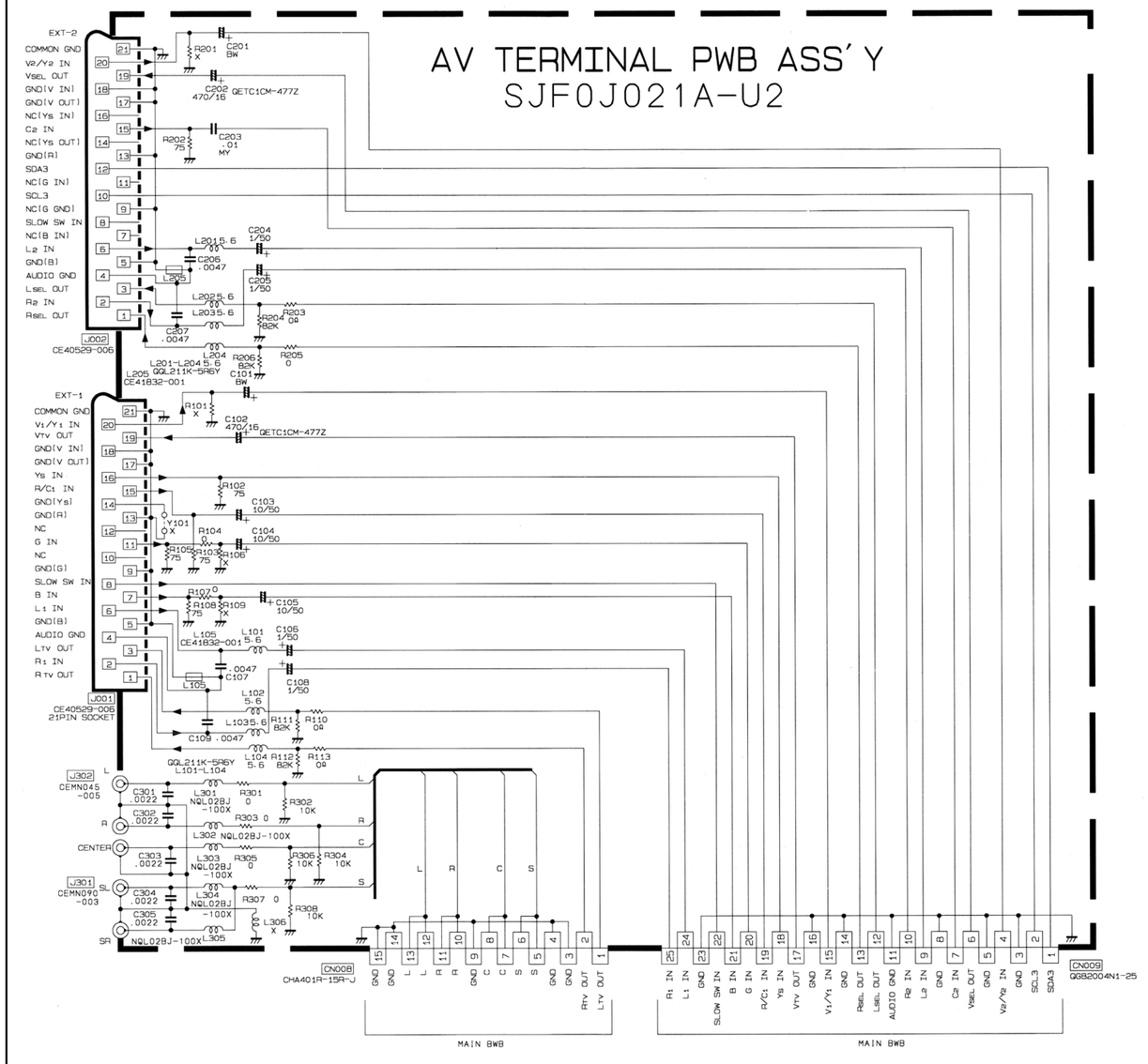
Description
1. Select 8. MAX VOLUME from the SERVICE MENU.
2. Set the setting value with the FUNCTION -/+ key.
3. Usually, set the value to LEVEL 50.



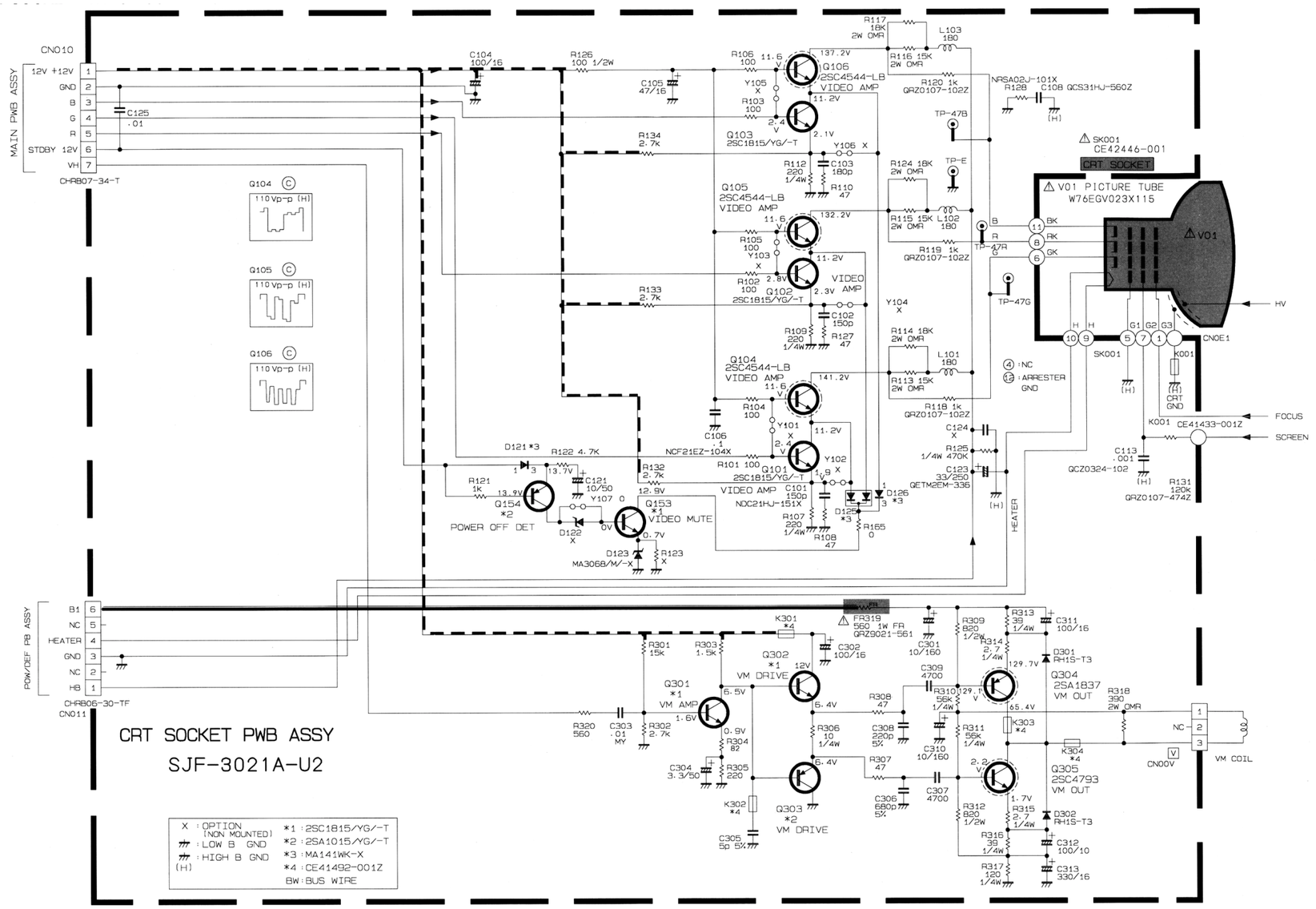
Sub Menu Screen



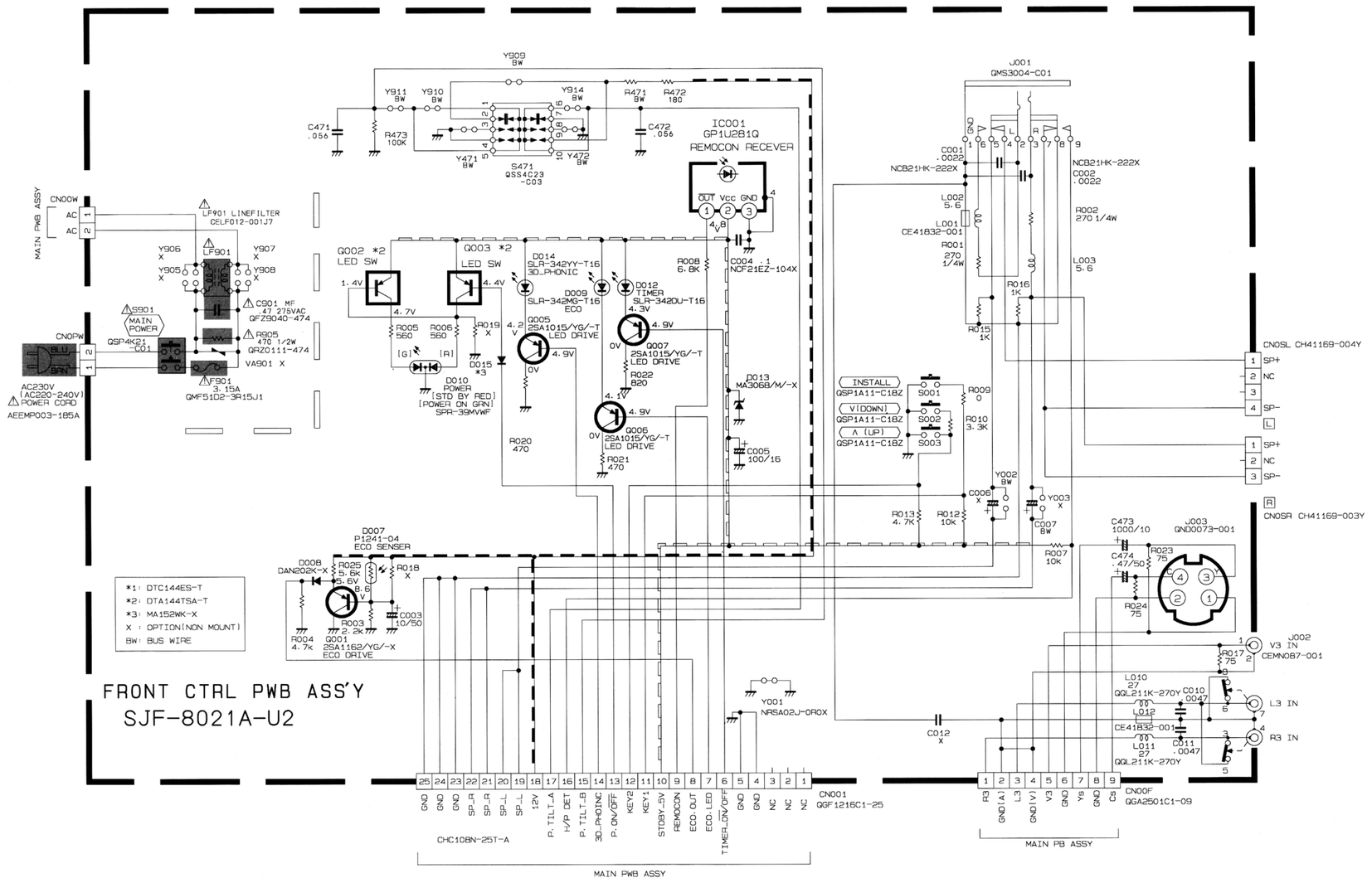
AV Terminal Diagram



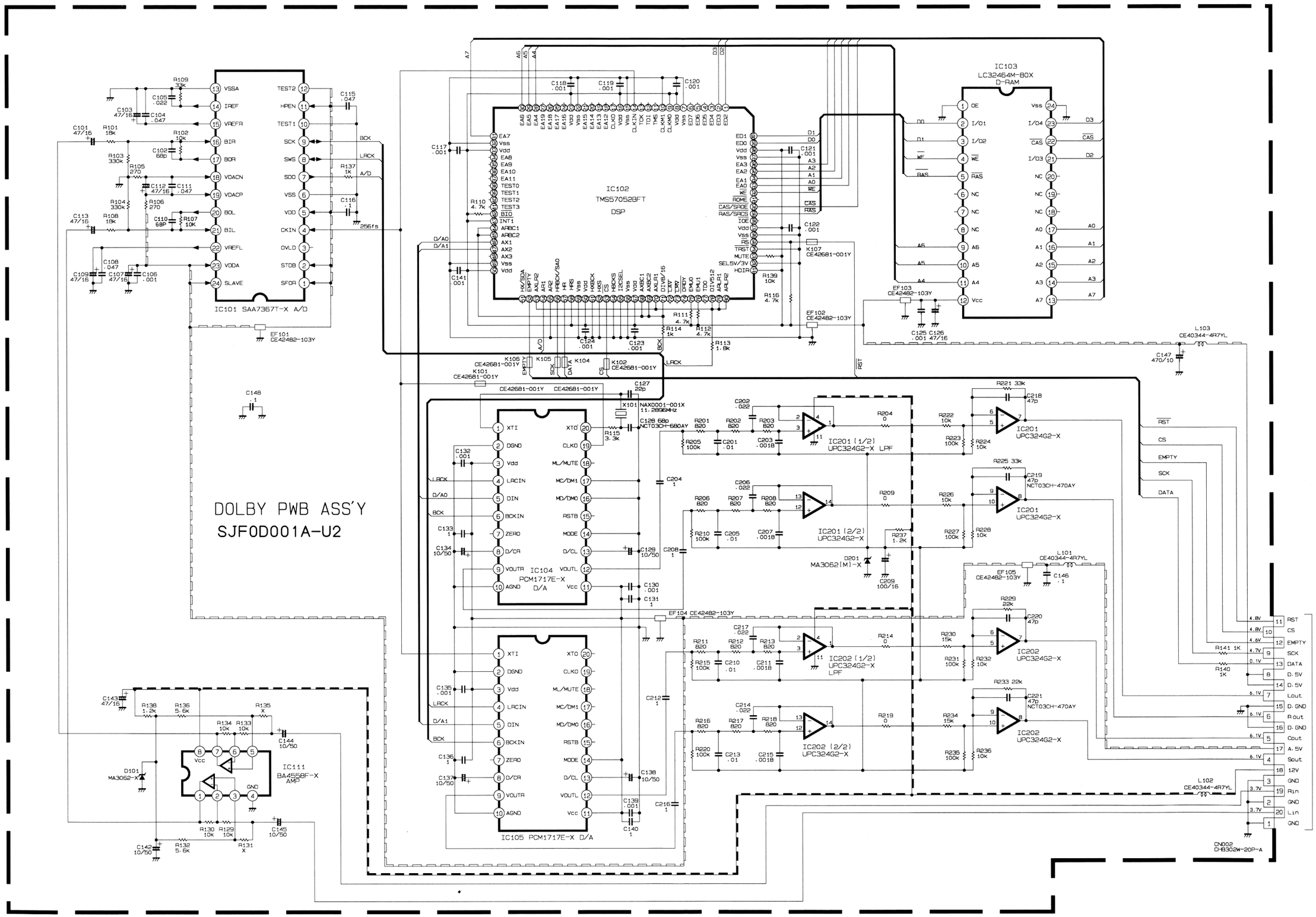
CRT Diagram


CN010
MAIN PWB ASSY
12V +12V
GND
B
G
R
STDBY 12V
VH
CHRB07-34-T
C125 .01
C104 100/16
R126 100 1/2W
C105 47/16
R105 100
Q106 2SC4544-LB VIDEO AMP
R103 100
Q103 2SC1815/YG/-T
R134 2.7K
R112 220 1/4W
C103 180p
R110 47
Q105 2SC4544-LB VIDEO AMP
R105 100
R102 100
Q102 2SC1815/YG/-T
R133 2.7K
R109 220 1/4W
C102 150p
R127 47
Q104 2SC4544-LB VIDEO AMP
R104 100
Y101 X
C106 .1
R132 2.7K
Q101 2SC1815/YG/-T VIDEO AMP
C101 150p NDC21HJ-151X
R107 220 1/4W
R108 47
D125 *3
D126 *3
D121*3
R122 4.7K
NCF21EZ-104X
R101 100
Y102 X
R121 1K
Q154 *2
POWER OFF DET
C121 10/50
Y107 0
D122 X
Q153 *1 VIDEO MUTE
D123 MA3068/M/-X
R123 X
R117 18K 2W OMR
L103 180
R116 15K 2W OMR
R120 1k QRZ0107-102Z
NRSA02J-101X
R128
C108 QCS31HJ-560Z
TP-47B
TP-E
R124 18K 2W OMR
R115 15K 2W OMR
L102 180
R119 1k QRZ0107-102Z
TP-47R
TP-47G
R114 18K 2W OMR
L101 180
R113 15K 2W OMR
R118 1k QRZ0107-102Z
C124 X
R125 1/4W 470K
C123 .33/250 QETM2EM-336
HEATER
④ :NC
GND :ARRESTER
SK001 CE42446-001
CRT SOCKET
V01 PICTURE TUBE W76EGV023X115
V01
BK
RK
GK
HV
H H G1 G2 G3
SK001
CN0E1
K001
CRT GND
K001 CE41433-001Z
FOCUS
SCREEN
C113 .001
QCZ0324-102
R131 120K QRZ0107-474Z
FR319 560 1W FR QRZ9021-561
K301 *4
C302 100/16
C301 10/160
R301 15K
R303 1.5K
Q302 *1 VM DRIVE
Q301 *1 VM AMP
R320 560
C303 .01 MY
R302 2.7K
R304 82
C304 3.3/50
R305 220
K302 *4
C305 5p 5%
Q303 *2 VM DRIVE
R306 10 1/4W
R307 47
C306 680p 5%
R308 47
C308 220p 5%
C307 4700
R309 820 1/2W
R314 2.7 1/4W
R310 56K 1/4W
R311 56K 1/4W
C309 4700
C310 10/160
K303 *4
K304 *4
Q304 2SA1837 VM OUT
Q305 2SC4793 VM OUT
R312 820 1/2W
R315 2.7 1/4W
R316 39 1/4W
R317 120 1/4W
D301 RH1S-T3
D302 RH1S-T3
C311 100/16
C312 100/10
C313 330/16
R313 39 1/4W
R318 390 2W OMR
NC
CN00V
VM COIL
ROW/DEF PB ASSY
B1
NC
HEATER
GND
NC
HB
CHRB06-30-TF
CN011
CRT SOCKET PWB ASSY
SJF-3021A-U2
X : OPTION (NON MOUNTED)
: LOW B GND
: HIGH B GND
(H)
*1 : 2SC1815/YG/-T
*2 : 2SA1015/YG/-T
*3 : MA141WK-X
*4 : CE41492-001Z
BW : BUS WIRE

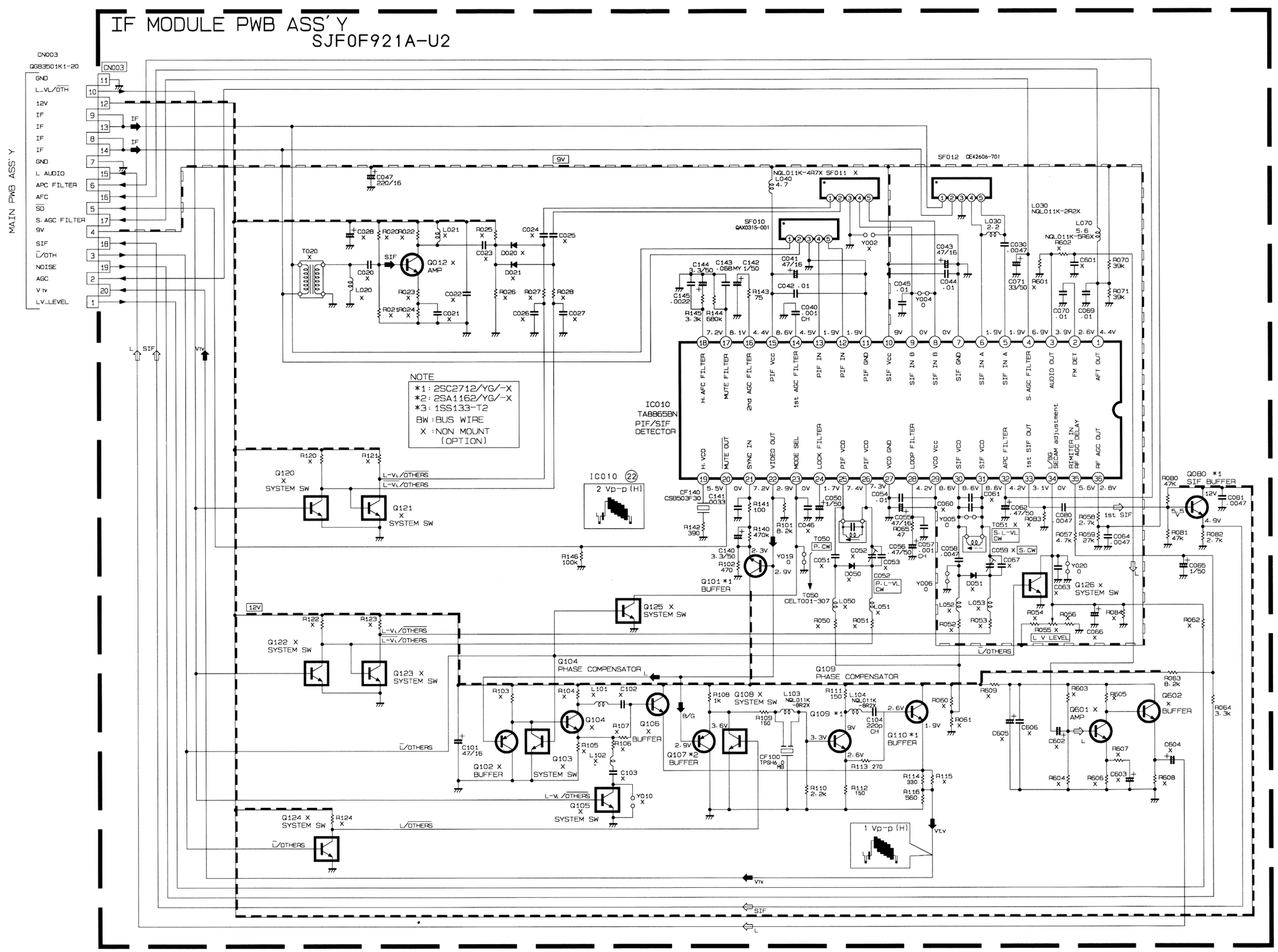
Front Control Diagram

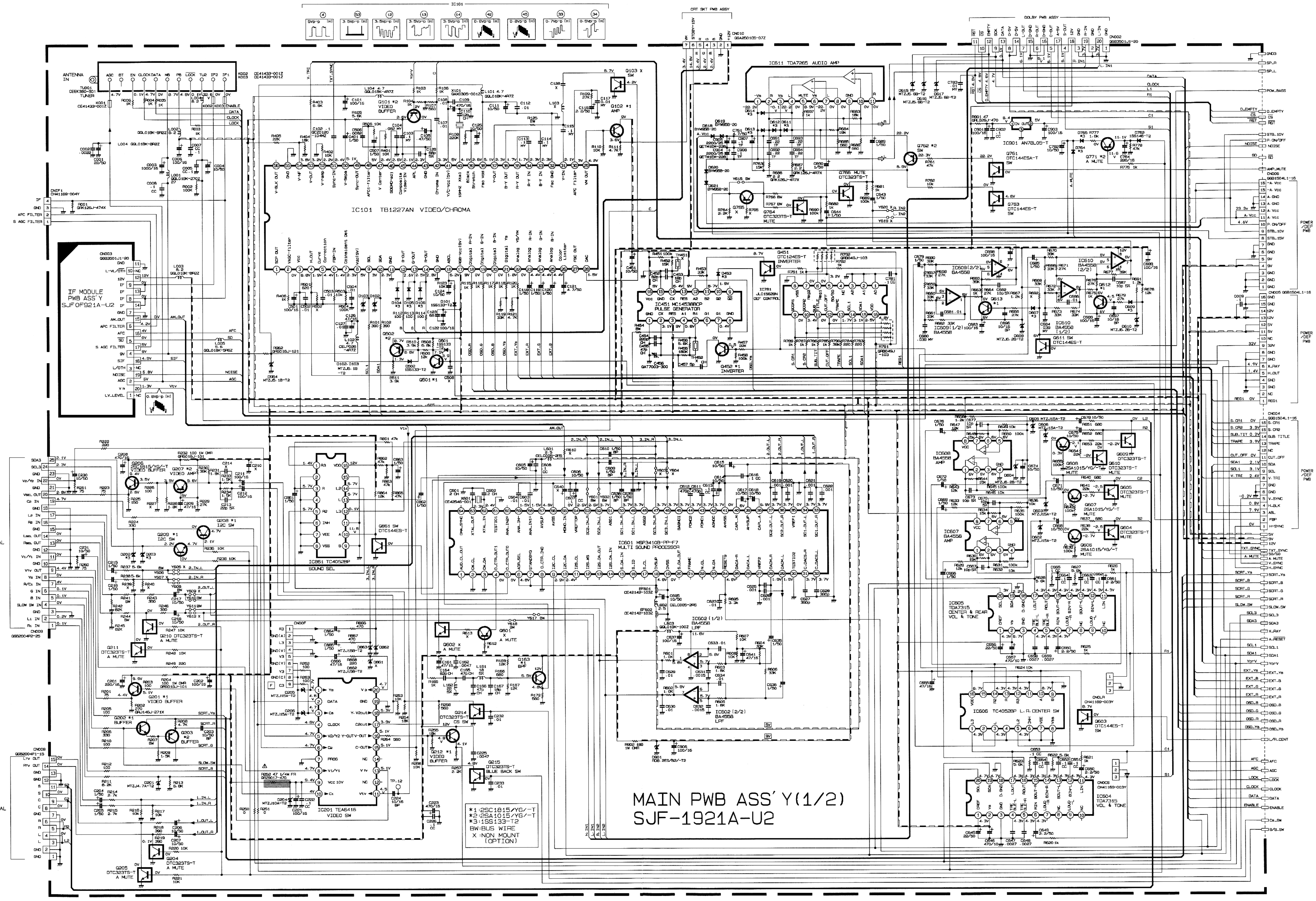


Dolby Diagram



IF Module Diagram




IC101
CRT SKT PWB ASSY
CN010 QGA2501C5-07Z
DOLBY PWB ASSY
CN002 QGB3501J1-20
ANTENNA IN
TU001 CEEK380-B01 TUNER
K001 CE41433-001Z
K002 K003 CE41433-001Z
CNIF1 CH41169-004Y
IF MODULE PWB ASS'Y SJF0F921A-U2
CN003 QGB3501J1-20
IC101 TB1227AN VIDEO/CHROMA
Q101 *2 VIDEO BUFFER
Q102 *1 AMP
Q103 X SW
IC611 TDA7265 AUDIO AMP
Q752 *2 SW
Q761 DTC144ESA-T SW
Q763 DTC144ES-T SW
Q764 DTC323TS-T MUTE
Q766 MUTE DTC323TS-T
Q771 *2 A MUTE
IC901 AN78L05-T
IC451 MC14538BCP PULSE GENERATOR
Q451 DTC124ES-T INVERTER
Q452 *1 INVERTER
IC781 JLC1562BN DEF CONTROL
IC609(2/2) BA4558
IC609(1/2) BA4558
IC610 BA4558 (2/2)
IC610 BA4558 (1/2)
Q611 SW DTC144ES-T
Q612 *1
Q613 *1
CN006 QGB1504L1-16
CN005 QGB1504L1-16
CN004 QGB1504L1-16
POWER /DEF PWB
AV TERMINAL PWB
CN009 QGB2004P2-25
CN008 QGB2004P1-15
Q206 2SC1815/YG/-T VIDEO BUFFER
Q207 *2 VIDEO AMP
Q208 *1 I2C SW
Q209 *1 I2C SW
Q210 DTC323TS-T A MUTE
Q211 DTC323TS-T A MUTE
Q201 *1 VIDEO BUFFER
Q202 *1 BUFFER
Q203 *2 BUFFER
Q204 DTC323TS-T A MUTE
Q205 DTC323TS-T A MUTE
IC861 TC4052BP SOUND SEL
Q861 SW DTC144ES-T
CN00F
IC201 TEA6416 VIDEO SW
R252 47 1/4W FR QRZ9017-470
Q601 X A MUTE
Q602 X A MUTE
Q163 *1 BPF
Q212 *1 VIDEO BUFFER
Q214 DTC323TS-T CS SW
Q215 DTC323TS-T BLUE BACK SW
IC601 MSP3410B-PP-F7 MULTI SOUND PROCESSOR
IC602 (1/2) BA4558 LPF
IC602 (2/2) BA4558 LPF
IC608 BA4558 AMP
IC607 BA4558 AMP
Q605 DTC323TS-T MUTE
Q604 DTC323TS-T MUTE
Q606 2SA1015/YG/-T MUTE
Q607 2SA1015/YG/-T MUTE
Q608 2SA1015/YG/-T MUTE
Q609 DTC323TS-T
Q610 DTC323TS-T MUTE
IC605 TDA7315 CENTER & REAR VOL & TONE
IC606 TC4052BP L.R.CENTER SW
CN0LR CH41169-003Y
Q603 DTC144ES-T SW
IC604 TDA7315 VOL & TONE
CN0CS CH41169-003Y
*1:2SC1815/YG/-T
*2:2SA1015/YG/-T
*3:1SS133-T2
BW:BUS WIRE
X :NON MOUNT (OPTION)
MAIN PWB ASS'Y(1/2)
SJF-1921A-U2

MAIN PWB ASS'Y(2/2) SJF-1921A-U2

AUTO ASPECT MODULE PWB SMC-W001A(U)

CN007 SMC-W001A — GND, 12V, GND, Y, V_SYNC, H_SYNC, AA_FBG, AA_SCL, AA_SDA, VERT30, 5V, GND

NOTE

*1:2SC1815/YG/-T
*2:2SA1015/YG/-T
*3:1SS133-T2
BW:BUS WIRE
X :NON MOUNT (OPTION)

IC803 CF72417 DATA SLICER

TSIG, SSIG, CSIG, AGND, OSC1, OSC2, AVcc, VREF, AGND, BIAS, SCAN_O, SYNC, DGND, WIND, DVcc, OSCOUT, DGND, TDATA, TCLK, TSTARB

IC802 CF70206 TELETEXT DECODERS

TEST5, SYNC, VIDEO, OVcc, RSTB, CLKIN, DGND, TEST1, TEST4, TDATA, TCLK, CSB, NC, GND, NC, REF, RGBSET, AGND, RED, GREEN, BLUE, BLANK, SDA, SCL, TEST3, WIND

IC801 TC4053BP/N/ RGB SW

R1, R0, G1, G, G0, INH, VEE, VSS, VDD, R, B1, B0, A, B, C

IC701 M37271MF-253SP MICRO PROCESSOR

IC703 EP ROM AT24C1528WR4EN

IC704 JLC1562SN

IC705 X

IC702 L78L05E-MA 5V REG/RESET

IN, cd, GND, RESET, OUT

Q807 *1 VIDEO BUFFER

Q808 *1 BUFGFER

Q801 *2 Ys BUFFER

Q802 DTC124ES-T Ys SW

Q701 *1 H SYNC INVERTER

Q702 *1 V SYNC INVERTER

G703 DTC144ESA-T SW

CN001 CHB219W-02P-S

GN001 QGF1216C1-25

FRONT CTRL PWB

GND, GND, GND, SP_R, SP_R, SP_L, SP_L, 12V (B2), P. TILT_B, M/P DET, P. TILT_A, 3D. LED, P. ON/OFF, KEY2, KEY1, REMOCON, EE. OUT, EE. LED, T. ON/OFF, STDBY_5V, ECO. OUT, ECO. LED, TIMER_ON/OFF, GND, GND, NC, NC, NC

IC701

1: 4Vp-p (H)
2: 5Vp-p (V)

GND, 12V, 8V, 5V, STB_10V, TXT_SYNC, Yor-V, EXT_Ys, EXT_B, EXT_G, EXT_R, NOISE, D_EMPTY, P. ON/OFF, POW_BASS, X_RAY, H_SYNC, V_SYNC, AFC, AGC, SO, LOCK, CLOCK, DATA, ENABLE, OSD_B, OSD_G, OSD_R, OSD_Ys, L/R_CENT, AMP_MUTE, CS, RST, Cn_SW, B/B_SW

A. MUTE, SCRT_Ys, SCRT_B, SCRT_G, SCRT_R, SLOW_SW, SCL3, SDA3, A. RESET, SCL1, SDA1

POWER/DEF PWB ASS'Y
SJF-2021A-U2

*1:2SC1815/YG/-T
*2:2SA1015/YG/-T
*3:1SS133-T2
BW:BUS WIRE
X :NON MOUNT (OPTION)

ISOLATED(⏚)

LIVE (⊥)

IC901 MC44604P POWER CONTROL

IC902 TL7721F(D4-GR) VOLTAGE FEED BACK

IC451 TA8739P EW CORRECTION

IC462 BA15218N V SCROLL CONTROL

IC401 LA7841 V.OUT

IC531 TLP621(B) S.CR1 SW

IC532 TLP621(B) S.CR2 SW

IC951 AN7812F 12V REG

IC952 AN7809F 9V REG

IC953 AN7805F 5V REG

IC954 SE135N ERROR AMP.

Q901 *1 STBY CTRL

Q902 *1 POWER ON/OFF

Q951 *1 STBY CTRL

Q952 2SC2240/GL/-T STBY CTRL

Q953 DTC124ES-T POWER ON/OFF

Q956 X POWER ON/OFF

Q981 *1 RELAY SW

Q982 *1 POWER ON/OFF

Q461 *1 V. AMP

Q462 *1 V. OUT PROTECTOR

Q463 *1 CUTOFF SW

Q464 *1 CUTOFF SW

Q465 *1 EW PIN COR.

Q466 2SD1408/QY/-LB EW PIN COR.

Q467 *1 V. OUT PROTECTOR

Q501 BS124 H. DRIVE

Q521 BU2508AX H. OUT

Q532 IRF620 ZOOM SW

Q533 DTC124ES-T INVERTER

Q534 DTC124ES-T INVERTER

Q535 DTC124ES-T INVERTER

Q537 DTC124ESA-T INVERTER

Q572 DTC124ESA-T FBT PRTCT

T501 CE42034-002

T551 HVT CETH019-00AJ1

T901 CETS097-001J4 SW TRANSF.

T951 HVT CETH019-00AJ1

CN005 QGB1504M1-16

CN004 QGB1504M1-16

CN005 QGB1504M1-16

CN005 CH42145-8G2T

CN004 CH42169-005Y

CN00V CHD802T-05N-J

CN01 CH42145-8G2T

CN01 GGA5C105-06Z

FOR TEST

CRT SKT PWB ASSY

MAIN PWB

REG1

B1 141.5V

TP-B1(B1)

TP-E