

Recommended Safety Parts

Item	Part No.	Description
(AV-29TS2EN)		
V01	A68ESF002X011	PICTURE TUBE(ITC)
L01	CELD020-00437	DEGAUSSING COIL
T1551	CETH019-00AJ1	H.V.TRANSF. (SERVICE)
1	CM12798-002-E	REAR COVER
10	AEEMP001-185	POWER CORD
11	CM47016-001-H	CORD CLAMP
12	CM23156-A01-E	RATING LABEL For GBR/GER/ITA
13	CM23157-001-E	RATING LABEL For GBR/ESP
R1466	QRD14CJ-2R2SX	C R 2.2 Ω 1/4W J
R1585	QRV141F-2941AY	MF R 2.94k Ω 1/4W F
R1586	QRV141F-1582AY	MF R 15.8k Ω 1/4W F
R1991	QRZ0057-825	CR 8.2M Ω 1W J
C1521	QFZ0117-4001L	MPP CAP. 400p F 1.5kVH±2.5%
C1522	QFZ0117-9501L	MPP CAP. 9500p F 1.5kVH±2.5%
C1523	QFP32GJ-223M	PP CAP. 0.022pF 400V J
C1525	QFZ0119-684S	MPP CAP. 0.68pF 200V ±3%
C1531	QFZ0119-154S	MPP CAP. 0.15 μF 200V ±3%
C1902	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1903	QCZ9034-472A	C CAP. 1/00 p F AC400V P
C1904	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1992	QCZ9041-471A	C CAP. 470 p F AC400V K
C1993	QCZ9041-332A	C CAP. 3300 p F AC400V M
T1901	CETS083-00137	SW TRANSF.
D1901	D3SBA60	DIODE BRIDGE
Q1521	BU2508AX	POWER TRANSISTOR H.OUT
IC1902	TLP721F(D4-GR)	I.C.(PH.COUPLER)
CP1952	ICP-N50-Y	I.C.PROTECT
CP1953	ICP-N50-Y	I.C.PROTECT
FR1551	QRZ0054-4R7M	F R 4.7 Ω 1/4W J
FR1552	QRH017J-1R0M	F R 1 Ω 1W J
FR1553	QRH0173-1R0M	F R 1 Ω 1W J
FR1954	QRH017K-R8ZM	F R 0.82 Ω 1W K
SK3001	CE42535-001J1	C.R.T. SOCKET
C8901	QFZ9040-474N	MF CAP. 0.47p F AC275V M
C8904	QFZ9040-473N	MM CAP. 0.047p F AC275V M
F8901	QMF51D2-3R15J1	FUSE 3.15A
LF8901	CE42144-00132	LINE FILTER
S8901	QSP4K21-C01	PUSH SWITCH MAIN POWER
TH8901	CEKP010-00102	W.P.THERMISTOR
R0403	QRZ0054-470M	F R 47 Ω 1/4W J
5	CQ40317-001-E	INST BOOK For GBR/GER/FRA/NED/ITA/ESP
6	CQ40318-001-E	INST BOOK For FIN/NOR/DEN/SWE/POR
(AV-29TS2EK)		
V01	A68ESF002X011	PICTURE TUBE (ITC)
L01	CELD020-00437	DEGAUSSING COIL
T1551	CETH019-00AJ1	H.V.TRANSF. (SERVICE)
1	CM12798-002-E	REAR COVER
10	AEENP003-185A	POWER CORD
11	CM47016-001-H	CORD CLAMP
12	CM22875-012-E	RATING LABEL
R1466	QRD14CJ-2R2SX	C R 2.2 Ω 1/4W J
R1585	QRV141F-2941AY	MF R 2.94k Ω 1/4W F
R1586	QRV141F-1582AY	MF R 15.8k Ω 1/4W F
R1991	QRZ0057-825	C R 8.2M Ω 1W J
C1521	QFZ0117-4001L	MPP CAP. 4000 p F 1.5kVH±2.5%
C1522	QFZ0117-9501L	MPP CAP. 9500 p F 1.5kVH±2.5%
C1523	QFP32GJ-223M	PP CAP. 0.022 μ F 400V J
C1525	QFZ0119-684S	MPP CAP. 0.68 μ F 200V ±3%
C1531	QFZ0110-154S	MPP CAP. 0.15 μ F 200V ±3%
C1902	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1903	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1904	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1992	QCZ9041-471A	C CAP. 470p F AC400V K
C1993	QCZ9041-332A	C CAP. 3300p F AC400V N
T1901	CETS083-001J7	SW TRANSF.
D1901	D3SBA60	DIODE BRIDGE
Q1521	BU2508AX	POWER TRANSISTOR H.OUT
IC1902	TLP721F(D4-GR)	I.C.(PH.COUPLER)
CP1952	ICP-N50-Y	I.C.PROTECT
CP1953	ICP-N50-Y	I.C.PROTECT
FR1551	QRZ0054-4R7M	F R 4.7 Ω 1/4W J
FR1552	QRH017J-1R0M	F R 1 Ω 1W J
FR1553	QRH017J-1R0M	F R 1 Ω 1W J
FR1954	QRH017K-R82M	F R 0.82 Ω 1W K
SK3001	CE42535-001J1	C.R.T. SOCKET
C8901	QFZ0040-474N	MF CAP. 0.47 μ F AC275V M

Recommended Safety Parts

Item	Part No.	Description
C8904	QFZ9040-473N	MM CAP. 0.047 μ F AC275V M
F8901	QMF51D2-3R15J1	FUSE 3.15A
LF8901	CE42144-00132	LINE FILTER
S8901	QSP4K21-C01	PUSH SWITCH MAIN POWER
TH8901	CEKP010-001J2	W.P. THERMISTOR
R0403	QRZ0054-470M	F R 47 Ω 1/4W J
5	CQ40319-001-E	INST.BOOK
(AV-29TS2PF)		
V01	A68ESF002X011	ITC TUBE(C)
L01	CELD020-004J7	DEGAUSSING COIL
T1551	CETH019-00A31	H.V. TRANSF.(SERVICE)
1	CM12798-002-E	REAR COVER
10	AEEMP001-185	POWER CORD
11	CM47016-001-H	CORD CLAMP
12	CM23159-001-E	RATING LABEL
R1466	QRD14CJ-2R2SX	C R 2.2 Ω 1/4W J
R1585	QRV141F-2941AY	MF R 2.94k Ω 1/4W F
R1586	QRV141F-1582AY	MF R 15.8k Ω 1/4W F
R1991	QRZ0057-825	C R 8.2M Ω 1W J
C1521	QFZ0117-4001L	MPP CAP. 4000 p F 1.5kVH±2.5%
C1522	QFZ0117-9501L	MPP CAP. 9500 p F 1.5kVH±2.5%
C1523	QFP32G3-223M	PP CAP. 0.022μF 400V J
C1525	QFZ0119-684S	MPP CAP. 0.68 μF 200V ±3%
C1531	QFZ0119-154S	MPP CAP. 0.15 p F 200V ±3%
C1902	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1903	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1904	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1992	QCZ9041-471A	C CAP. 470 p F AC400V K
C1993	QCZ9041-332A	C CAP. 3300 p F AC400V N
T1901	CETS083-001J7	SW TRANSF.
D1901	D3SBA60	DIODE BRIDGE
Q1521	BU2508AX	POWER TRANSISTOR H.OUT
IC1902	TLP721F(D4-GR)	I.C.(PH.COUPLER)
CP1952	ICP-N50-Y	I.C.PROTECT
CP1953	ICP-N50-Y	I.C.PROTECT
FR1551	QRZ0054-4R7M	F R 4.7 Ω 1/4W J
FR1552	QRH017J-1R0M	F R 1 Ω 1W J
FR1553	QRH017J-1R0M	F R 1 Ω 1W J
FR1954	QRH017K-R82M	F R 0.82 Ω 1W K
SK3001	CE42535-001J1	C.R.T. SOCKET
C8901	QFZ9040-474N	MF CAP. 0.47 μ F AC275V M
C8904	QFZ9040-473N	MM CAP. 0.047 p F AC275V M
F8901	QMF51D2-3R15J1	FUSE 3.15A
LF8901	CE42144-001J2	LINE FILTER
S8901	QSP4K21-C01	PUSH SWITCH MAIN POWER
TH8901	CEKP010-00132	W.P. THERMISTOR
R0609	QRZ0054-470M	F R 47 Ω 1/4W J
R0403	QRZ0054-470M	F R 47 Ω 1/4W J
5	CQ40321-001-E	INST.BOOK
(AV-21TS2EN)		
V01	A51EAL155X01	PICTURE TUBE(ITC)
L01	CELD018-005J7	DEGAUSSING COIL
T1551	QQH0018-001	FLYBACK TRNSF.
1	CM12774-A01-E	REAR COVER
10	AEEMP001-185	POWER CORD
11	CM46618-A01-E	POWER CORD CLAMP
12	CM23156-A04-E	RATING LABEL For GBR/GER/ITA
13	CM23158-002-E	RATING LABEL For GBR/ESP
R1585	QRV141F-2941AY	MF R 2.94k Ω 1/4W F
R1586	QRV141F-1582AY	MF R 15.8k Ω 1/4W F
R1991	QRZ0057-825	C R 8.2M Ω 1W J
C1521	QFZ0125-952N	MPP CAP. 9500 p F 2000V±2.5%
C1524	QFZ0119-254S	MPP CAP. 0.25 μ F 200V ±3%
C1531	QFZ0119-154S	MPP CAP. 0.15 μ F 200V ±3%
C1902	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1903	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1904	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1992	QCZ9041-471A	C CAP. 470 p F AC400V K
C1993	QCZ9041-332A	C CAP. 3300 p F AC400V M
T1551	QQH0018-001	FLYBACK TRANSF.
T1901	CETS085-001J4	SWITCH.TRANSF.
D1901	D3SBA60	DIODE BRIDGE
Q1521	BU2506DX	POWER TRANSISTOR H.OUT
IC1902	TLP721F(D4-GR)	I.C.(PH.COUPLER)
CP1952	ICP-N50-Y	I.C.PROTECT
CP1953	ICP-N50-Y	I.C.PROTECT
FR1551	QRZ0054-4R7M	F R 4.7 Ω 1/4W J
FR1552	QRH017J-1R0M	F R 1 Ω 1W J

Recommended Safety Parts

Item	Part No.	Description
FR1553	QRH017J-1R0M	F R 1 Ω 1W J
FR1954	QRH017J-1R2M	F R 1.2 Ω 1W J
FR1968	QRZ0054-331M	F R 330 Ω 1/4W J
SK3001	CE42535-001J1	C.R.T. SOCKET
C8901	QFZ9040-474N	MF CAP. 0.47 μ F AC275V M
C8904	QFZ0040-473N	MM CAP. 0.047 μ F AC275V M
F8901	QMF51D2-3R15J1	FUSE 3.15A
LF8901	AEELF002-001	LINE FILTER
S8901	QSP4K21-C01	PUSH SWITCH MAIN POWER
TH8901	CEKP010-001J2	W.P.THERMISTOR
R0403	QRZ0054-470M	F R 47 Ω 1/4W J
5	CQ40317-001-E	INST BOOK For GBR/GER/FRA/NED/ITA/ESP
6	CQ40318-001-E	INST BOOK For FIN/NOR/DEN/SWE/POR
(AV-21TS2EK)		
L01	CELD018-00537	DEGAUSSING COIL
T1551	QQH0018-001	FLYBACK TRANSF.
V01	A51EAL155X01	PICTURE TUBE(ITC)
1	CM12774-A01-E	REAR COVER
10	AEEMP003-185A	POWER CORD
11	CM46618-A01-E	POWER CORD CLAMP
12	CM22875-014-E	RATING LABEL
R1585	QRV141F-2941AY	MF R 2.94 k Ω 1/4W F
R1586	QRV141F-1582AY	MF R 15.8 k Ω 1/4W F
R1991	QRZ0057-825	C R 8.2M Ω 1W J
C1521	QFZ0125-952N	MPP CAP. 9500p F 2000V±2.5%
C1524	QFZ0119-254S	MPP CAP. 0.25 μ F 250V J
C1531	QFZ0119-154S	MPP CAP. 0.15 μ F 200V ±3%
C1902	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1903	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1904	QCZ9034-472A	C CAP. 4700 p F AC400V P
C1992	QCZ9041-471A	C CAP. 470 p F AC400V K
C1993	QCZ9041-332A	C CAP. 3300 p F AC400V N
T1551	QQH0018-001	FLYBACK TRANSF.
T1901	CETS085-001J4	SWITCH.TRANSF.
D1901	D3SBA60	DIODE BRIDGE
Q1521	BU2506DX	POWER TRANSISTOR H.OUT
IC1902	TLP721F(D4-GR)	I.C. (PH.COUPLER)
CP1952	ICP-N50-Y	I.C.PROTECT
CP1953	ICP-N50-Y	I.C.PROTECT
FR1551	QRZ0054-4R7M	F R 4.7 Ω 1/4W J
FR1552	QRH017J-1R0M	F R 1 Ω 1W J
FR1553	QRH0173-1R0M	F R 1 Ω 1W J
FR1954	QRH017J-1R2M	F R 1.2 Ω 1W J
FR1968	QRZ0054-331M	F R 330 Ω 1/4W J
SK3001	CE42535-001J1	C.R.T. SOCKET
C8901	QFZ9040-474N	MF CAP. 0.47 μ F AC275V M
C8904	QFZ9040-473N	MM CAP. 0.047 μ F AC275V M
F8901	QMF5102-3R15J1	FUSE 3.15A
LF8901	AEELF002-001	LINE FILTER
S8901	QSP4K21-C01	PUSH SWITCH MAIN POWER
TH8901	CEKP010-001J2	W.P. THERMISTOR
R0403	QRZ0054-470M	F R47 Ω 1/4W J
5	CQ40319-001-E	INST. BOOK

Safety Precautions

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts lists. Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list may cause shock, fire, or other hazards.
4. Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing. Some models power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⌚) side GND, the ISOLATED (NEUTRAL): (⌚) side GND and EARTH (⊕) side GND. Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time. If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturers replacement

- components.
9. Isolation Check
Safety for Electrical Shock Hazard
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) Dielectric Strength Test

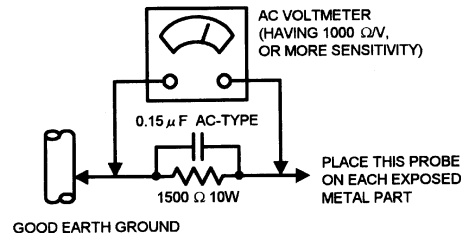
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second. (. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.) This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).



1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessary be

obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List. Electrical components having such features are identified by shading on the schematics and by (Δ) on the Parts List. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts Lists may cause shock, fire, or other hazards.

4. The leads in the products are routed and dressed with ties, clamps, tubing's, barriers and the like to be separated from live parts, high temperature parts, moving parts and / or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

Warning

The equipment has been designed and manufactured to meet international safety standards. It is the legal responsibility of the repairer to ensure that these safety standards are maintained. Repairs must be made in accordance with the relevant safety standards. It is essential that safety critical components are replaced by approved parts. If mains voltage selector is provided, check setting for local voltage.

COATING OF SILICON GREASE FOR ELECTRICAL

INSULATION ON THE CRT ANODE CAP SECTION.

Subsequent to replacement of the CRT and HV transformer or repair of the anode cap, etc. by dismantling them, be sure to coat silicon grease for electrical insulation as shown in Fig.4. Wipe around the anode button with clean and dry cloth. (Fig.4) Coat silicon grease on the section around the anode button. At this time, take care so that any silicon greases dose not stick to the anode button. (Fig. 5)

* Silicon grease product No. KS - 650N

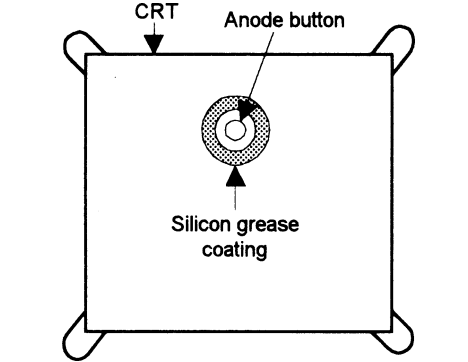


Fig. 4

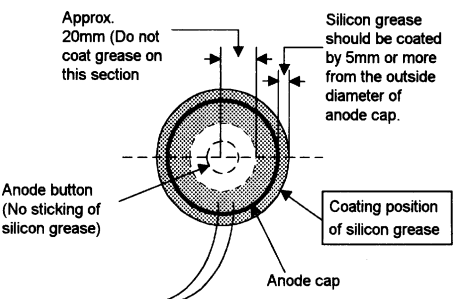


Fig. 5

REPLACEMENT OF MEMORY ICs

1. Memory ICs

This TV use memory ICs (EEP-ROM IC). In the memory ICs, there are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. Procedure for replacing memory ICs

PROCEDURE

(1) Power off

Switch the power off and unplug the power code from the outlet.

(2) Replace ICs.

Be sure to use memory Cs written with the initial data values.

(3) Power on

Plug the power code into the outlet and switch the power on.

(4) Check and set SYSTEM CONSTANT SET:

- 1) Press the INFORMATION key and the MUTE key of the REMOTE CONTROL UNIT simultaneously.
- 2) The SERVICE MENU screen of Fig. 1 will be displayed.
- 3) While the SERVICE MENU is displayed press the INFORMATION key and MUTE key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
- 4) Check the setting values of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the FUNCTION UP/DOWN key, and set the correct value with the FUNCTION +/- key.
- 5) Press the MENU key and memorize the setting value.
- 6) Press the INFORMATION key twice, and return to the normal screen.

(5) Setting of receive channels

Set the receive channel. For setting, refer to the OPERATING INSTRUCTIONS.

(6) User settings

Check the user setting values of Table 2, and if setting value is different, set the correct value. For setting, refer to the OPERATING INSTRUCTIONS.

7) Setting of SERVICE MENU

Verify the setting items of the SERVICE MENU of Table 3, and reset where necessary. For setting, refer to the SERVICE ADJUSTMENTS.

SERVICE MENU

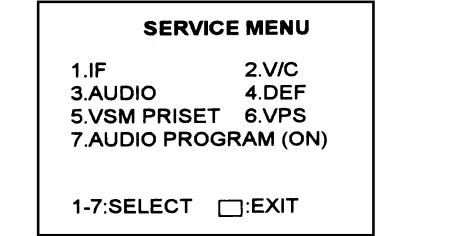


Fig.1

SYSTEM CONSTANT SET

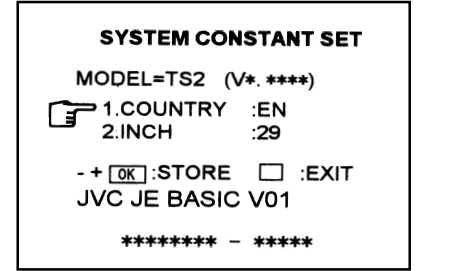


Fig.2

NAME OF REMOTE CONTROL KEY

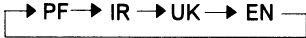
Names of key	key
INFORMATION	[I]
MUTE	[M]
MENU	[OK]
FUNCTION UP/DOWN	[UP/DOWN]
FUNCTION +/-	[+/-]

SETTING VALUES OF SYSTEM CONSTANT SET

Setting item

1. COUNTRY

Setting content



Setting value

AV-29TS2EN
EN

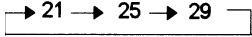
AV-29TS2EK
UK

AV-29TS2PF
PF

Setting item

2. INCH

Setting content



Setting value

AV-29TS2EN
29

AV-29TS2EK
29

AV-29TS2PF
29

USER SETTING VALUES

Setting Item	Value	Item	Value
SUB POWER	ON	COOL/NORMAL	COOL
CHANNEL	1 POSITION	SLEEP TIMER	OFF
CHANNEL PRESET	See: OPERATING	SPATIAL EFFECT	OFF
	INSTRUCTIONS	BLUE BACK	ON
VOLUME	Appropriate	ZOOM	REGULAR
	sound volume		
TV/EXT	TV	ECO	OFF
DISPLAY	CHANNEL DISPLAY	BALANCE	CENTER
P/S/N	TV/PAL	LANGUAGE	ENGLISH
HYPER SOUND	OFF	CHILD LOCK	ID No.*****

Table 2

SERVICE MENU SETTING ITEMS

Setting item

1. IF

Setting value

1. VCO
2. DELAY POINT
3. LV LEVEL (Only AV-29TS2PF)

Setting item

2. V/C

Setting value

1. CUTOFF
2. DRIVE
3. BRIGHT
4. CONT.
5. COLOUR (PAL/SECAM/NTSC)
6. TINT (NTSC)
7. BLACK OFFSET (SECAM)
8. SHARP (Do not adjust)
9. TEXT CONT (Do not adjust)
10. DC TRAN RATE (Do not adjust)
11. BLACK OFFSET (Do not adjust)
12. B.S.OFF (Do not adjust)

Setting item

3. AUDIO

Setting value

(Do not adjust)

1. CONC LIMIT
2. A2 ID THR

Setting item

4. DEF.

Setting value

1. TRAREZ
2. V-SHIFT
3. V-SIZE
4. H-CENT
5. H-SIZE
6. EW-PIN
7. V-S. CR (Fixed)
8. V-EDGE (Fixed)
9. EW-COR (Fixed)
10. ABL POINT (Do not adjust)
11. ABL GAIN (Do not adjust)

Setting item

- 5.VSM PRESET

Setting value

1. BRIGHT (COOL/NORMAL/WARM)
2. CONT.
3. COLOUR
4. SHARP
5. TINT
6. R DRIVE
7. B DRIVE
8. BASS
9. TREBLE

Setting item

6. VPS (Do not adjust)

Setting value

VPS

Setting item

7. AUTO PROGRAM (Do not adjust)

Setting value

ON/OFF

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 instrument 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.

Adjustments Cont'd

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)

2) SLEEP TIMER

3) HYPER SOUND

4) BALANCE

5) ECO

6) ZOOM
- COOL

OFF

OFF

CENTER

OFF

REGULAR

MEASURING INSTRUMENT AND FIXTURES

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

ADJUSTMENT ITEMS

Adjustment item	Adjustment item
B1 POWER SUPPLY	VIDEO/CHROMA CIRCUIT
CHECK	ADJUSTMENT
FOCUS ADJUSTMENT	DEFLECTION CIRCUIT ADJUSTMENT
IF CIRCUIT ADJUSTMENT	AUDIO CIRCUIT (Do not adjust.)
VSM PRESET	
ADJUST SETTING	

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 setting values of the IF circuit.

2) 2.VIC

This mode adjusts the setting values of the VIDEO / CHROMA circuit.

3) 3.AUDIO

This mode adjusts the setting values of the multiplicity SOUND circuit.

4) 4.DEF

This mode adjusts the setting values of the DEFLECTION circuit.

5) 5.VSM PRSET

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 power switch on, you can get the state of AUTO PROGRAM. (Do not adjust)

3. BASIC OPERATION OF SERVICE MENU

1) How to enter SERVICE MENU

Press the INFORMATION key and the MUTE key of the REMOTE CONTROL UNIT simultaneously, and the SERVICE MENU screen of Fig. 1 will be displayed.

2) Selection of SUB MENU SCREEN

Press one of keys 1~7 of the REMOTE CONTROL UNIT and select the SUB MENU SCREEN (See Fig. 3), form the SERVICE MENU.

SERVICE MENU > SUB MENU

1. IF
- 2.V/C
3. AUDIO
4. DEF.
5. VSM PRESET
6. VPS
7. AUTO PROGRAM

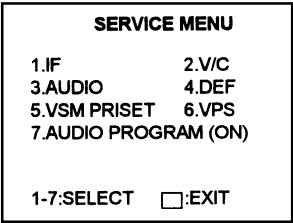


Fig. 1

NAME OF REMOTE CONTROL KEY

Names of key	key
INFORMATION	[i]
MUTE	[X]
MENU	[OK]
FUNCTION UP/DOWN	[Up/Down]
FUNCTION +/-	[Left/Right]

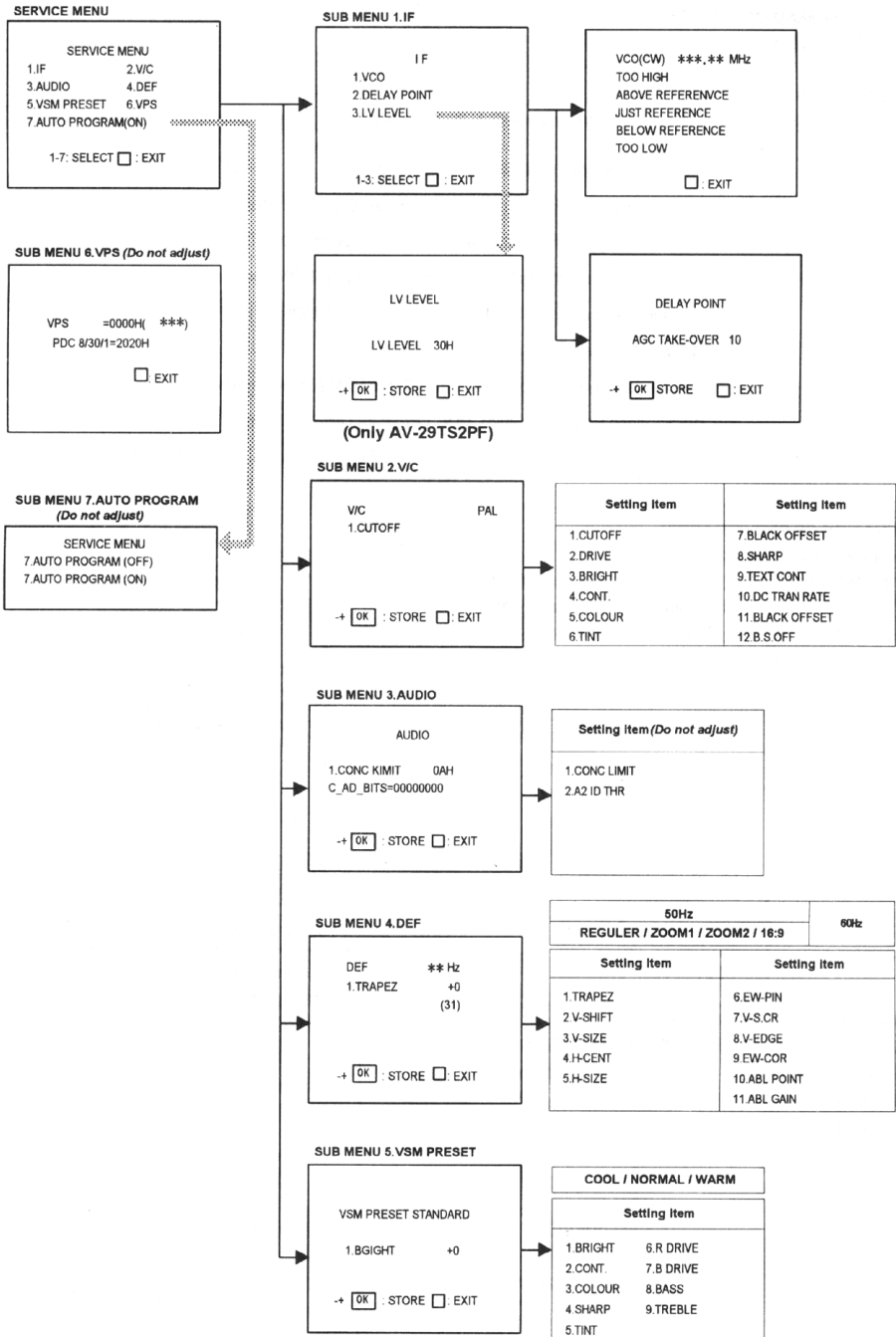


Fig. 3 SUB MENU SCREEN.

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 / VIDEO, DISPLAY, POWER ON / OFF keys - if 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.

[3. LV LEVEL] (Only AV-29TS2PF)

- 1) 1 Key. Select 1.IF.
- 2) 3 Key. Select 3.LV LEVEL
- 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 / VIDEO, DISPLAY, POWER ON / OFF keys - if 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, 5.VSM PRESET and 6.VPS.

- 1) 2~6 Key. Select one from 2. V/C, 3. AUDIO, 4. DEF, 5. VSM PRESET and 6. VPS.
- 2) FUNCTION UP/DOWN Key. Select setting items.
- 3) FUNCTION +/- Set (adjust) the setting values of the setting items. (When 1. CUTOFF of 2.V/ C is selected, press its "-" or "+" key, and the whole will change to a faint horizontal line appearing in its center. Press the same "-" or "+" key again, 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 / VIDEO, DISPLAY, POWER ON / OFF key - if you do, the values will not be stored in memory.)
- 5) DISPLAY Key. Return to the SERVICE MENU screen.

3) Method of setting 7.AUTO PROGRAM.

- 1) This mode initializes every existing set value collectively to the preset value at the time of shipment from the factory.

4) Release of Service Menu

- 1) After completing the setting, return to the SERVICE MENU, then press the display key.

POWER SUPPLY CHECK

Item

Check of B1 voltage

Measuring instrument

Signal generator DC voltmeter

Test point

TP-91(B1)

TP-E() [X connector in MAIN PWB]

Description

1. Receive a whole black signal.
2. Connect a DC voltmeter to TP-91 (B1) and TP-E ()

3. Make sure that the voltage is DC142.5±2V. (29") DC116.5±2V. (21")

FOCUS ADJUSTMENT

Item

Adjustment of FOCUS

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 (for AV-29TS2EN/ AV-29TS2EK)

Item

Adjustment of VCO

Measuring instrument

Remote control unit

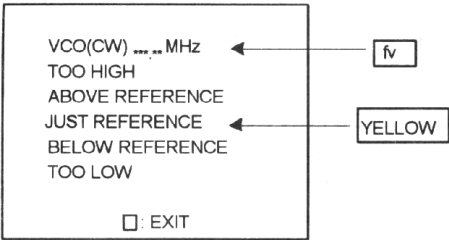
Adjustment part

P. CW TRANSF. [In IF PWB]

Description

Do not make any adjustment unless the adjustment is out of way and you cannot get correct PICTURE.

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.



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

DELAY POINT (AGC TAKE-OVER)

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

IF CIRCUIT ADJUSTMENT [FOR AV-29TS2PF]

Item

Adjustment of VCO

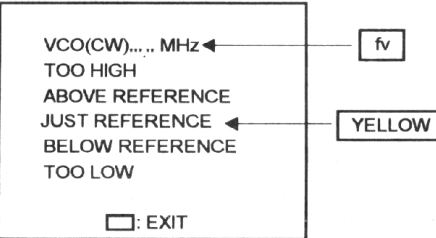
Measuring instrument

Remote control unit

Adjustment part

P.CW TRANSF

P.L-VL CW TRIM.C



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

Description

Do not make any adjustment unless the adjustment is out of way and you cannot get correct PICTURE.

1. Select 1 IF from the SERVICE MENU.
2. Press 1 key and select 1 .VCO.
3. Select a SECAM L or PAL broadcast channel with the CHANNEL key.
4. Turn the core of P.CW TRANSF. until the colour of the characters TOO HIGH displayea 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 REFERENCE changes from blue to Yellow. (Step 3)
7. In the district SECAM L' broadcast, can be received select a SECAM L broadcast channel with the CHANNEL key and adjust the P.L-VL CW TRIM.C in same manner as for above step. And as necessary, readjust P.CW TRANSF.
8. Press the INFORMATION key three times to return to normal screen.
9. Perform CHANNEL PRESET again, and make sure that each broadcast is being received properly.

Continues next page.

Adjustments Cont'd

Item
Adjustment of DELAY POINT (AGC)

Measuring instrument
Signal generator
Remote control unit

- DELAY POINT (AGC TAKE-OVER)**
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.

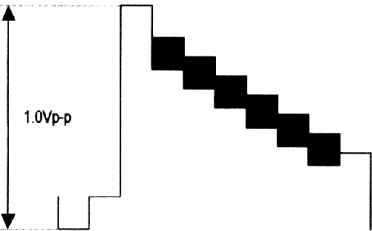
Setting item (Adjustment item)
DELAY POINT (AGC TAKE-OVER)
Variable range: 0~63
Initial setting value: 30

Item
Adjustment of L-DET. LEVEL

Measuring instrument
Signal generator
Oscilloscope [H-rate]
Remote control unit

Test point
EXT-1 (19) pin (TV OUT)

- Description**
1. Receive a SECAM-L full field colour bar signal (100% white).
2. Connect an oscilloscope terminated 75 Ω to EXT-1 terminal of (19) pin (TV out).
3. Select 1. IF from the SERVICE MENU.
4. Press 3 key and select 3. LV LEVEL.
5. Adjust the LV LEVEL by FUNCTION +/- key and make the wave detector output 1 .0Vp-p.
6. Press the MENU key and memorize the set value.



VSM PRESET ADJUST SETTING

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 PICTURE SETTING.
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 above.
6. Press the MENU key and memorize the set value.
* Refer to OPERATING INSTRUCTIONS for the PICTURE SETTING.

VSM preset mode		COOL	NORMAL	WARM
Setting Item				
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

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.
Items in () are automatically set to table

			Colour system	Variable range	Initial setting value			
Setting (adjustment) item			Setting (adjustment) item		PAL	SECAM	NTSC 3.58	NTSC 4.43
1.CUT OFF	R	-128~+127	5. COLOUR	-60~+67	+0	←	←	(+0)
	G	-128~+127	6.TINT	TV -64~+63	—	—	+0	(+0)
			7.BLACK OFF		R-Y -8~+7	+0	←	—
2.DRIVE	B	-128~+127		B-Y -8~+7	+0	←	—	—
	R	-31~+32	8.SHARP (Do not adjust)	-36~+27	-15 (Fixed)	←	+0 (Fixed)	(+0) (Fixed)
3.BRIGHT	B	-31~+32	9.TEXT CONT (Do not adjust)	-128~+127	-30 (Fixed)	←	—	—
			10.DC TRAN RATE (Do not adjust)	—	-8 (Fixed)	←	—	—
4.CONT			11.BLACK OFF SET (Do not adjust)	—	-1 (Fixed)	←	—	—
			12.B.S.OFF (Do not adjust)	—	OFF (Fixed)	←	—	—

			Colour system	Variable range	Initial setting value			
Setting (adjustment) item			Setting (adjustment) item		PAL	SECAM	NTSC 3.58	NTSC 4.43
1.CUT OFF	R	-128~+127	5. COLOUR	-60~+67	+0	←	←	(+0)
	G	-128~+127	6.TINT	TV -64~+63	—	—	+0	(+0)
			7.BLACK OFF SET		R-Y -8~+7	+0	←	—
2.DRIVE	B	-128~+127		B-Y -8~+7	+0	←	—	—
	R	-128~+127	8.SHARP (Do not adjust)	-36~+27	-15 (Fixed)	←	+0 (Fixed)	(+0) (Fixed)
3.BRIGHT	B	-128~+127	9.TEXT(RGB) CONT (Do not adjust)	-128~+127	-45 (Fixed)	←	—	—
			10.DC TRAN RATE (Do not adjust)	—	-08 (Fixed)	←	—	—
4.CONT			11.BLACK STRETCH (Do not adjust)	—	-01 (Fixed)	←	—	—
			12.B.S.OFF (Do not adjust)	—	OFF (Fixed)	←	—	—

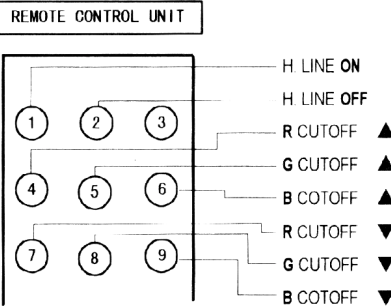
Item
Adjustment of WHITE BALANCE (Low Light)

Measuring instrument
Signal generator
Remote control unit

Test point

- Adjustment part**
1.CUT OFF
(R) ***
(G) ***
(B) ***
SCREEN VR [In HVT]

- Description**
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 horizontal line with the I 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 and 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



			Colour system	Variable range	Initial setting value			
Setting (adjustment) item			Setting (adjustment) item		PAL	SECAM	NTSC 3.58	NTSC 4.43
1.CUT OFF	R	-128~+127	5. COLOUR	-60~+67	+0	←	←	(+0)
	G	-128~+127	6.TINT	TV -64~+63	—	—	+0	(+0)
			7.BLACK OFF		R-Y -8~+7	+0	←	—
2.DRIVE	B	-128~+127		B-Y -8~+7	+0	←	—	—
	R	-31~+32	8.SHARP (Do not adjust)	-36~+27	-15 (Fixed)	←	+0 (Fixed)	(+0) (Fixed)
3.BRIGHT	B	-31~+32	9.TEXT CONT (Do not adjust)	-128~+127	-30 (Fixed)	←	—	—
			10.DC TRAN RATE (Do not adjust)	—	-8 (Fixed)	←	—	—
4.CONT			11.BLACK OFF SET (Do not adjust)	—	-1 (Fixed)	←	—	—
			12.B.S.OFF (Do not adjust)	—	OFF (Fixed)	←	—	—

			Colour system	Variable range	Initial setting value			
Setting (adjustment) item			Setting (adjustment) item		PAL	SECAM	NTSC 3.58	NTSC 4.43
1.CUT OFF	R	-128~+127	5. COLOUR	-60~+67	+0	←	←	(+0)
	G	-128~+127	6.TINT	TV -64~+63	—	—	+0	(+0)
			7.BLACK OFF SET		R-Y -8~+7	+0	←	—
2.DRIVE	B	-128~+127		B-Y -8~+7	+0	←	—	—
	R	-128~+127	8.SHARP (Do not adjust)	-36~+27	-15 (Fixed)	←	+0 (Fixed)	(+0) (Fixed)
3.BRIGHT	B	-128~+127	9.TEXT(RGB) CONT (Do not adjust)	-128~+127	-45 (Fixed)	←	—	—
			10.DC TRAN RATE (Do not adjust)	—	-08 (Fixed)	←	—	—
4.CONT			11.BLACK STRETCH (Do not adjust)	—	-01 (Fixed)	←	—	—
			12.B.S.OFF (Do not adjust)	—	OFF (Fixed)	←	—	—

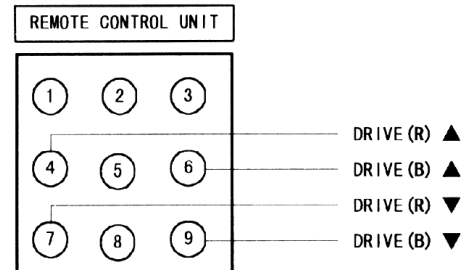
Item
Adjustment of WHITE BALANCE(High Light)

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 4/7(R) key or 6/9(B) key.
5. Press the MENU key, and memorize the respective set value.



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 set 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 set 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
(PAL COLOUR)
1. Receive any broadcast.
2. Select 2.V/C from the SERVICE MENU.
3. Select SCOLOUR with the FUNCTION UP/ DOWN key.
4. Set the initial setting value for PAL COLOUR with the FUNCTION - or + key.
5. If the contrast is not the best with the initial

- set value, make fine adjustment until you get the best contrast.
6. Press the MENU key and memorize the set value.

Adjustment part
SECAM COLOUR
(AV-29TS2EN/AV-29TS2PF)
(SECAM COLOUR)

Description
1. Receive a SECAM broadcast. Make fine adjustment of SECAM COLOUR in the same manner as for above.

- Adjustment part**
NTSC COLOUR
(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.

Adjustment part
(NTSC 4.43 COLOUR)
1. When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Measuring instrument
Signal generator
Oscilloscope
Remote control unit

Test point
TP-47B
TP-E(✎)
[CRT SOCKET PWB]

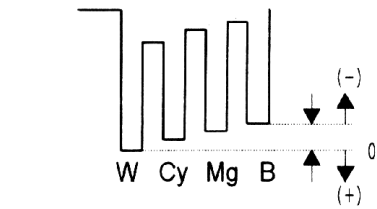
Adjustment part
5.COLOUR (PAL~NTSC)

Description
[Method of adjustment using measuring instrument]

Item
Adjustment of SUB COLOUR II

- Adjustment part**
PAL COLOUR
(PAL COLOUR)
1. Receive a PAL full field colour bar signal (75% white).
2. Select 2.V/C from the SERVICE MENU.
3. Select 7.COLOUR with the FUNCTION UP/ DOWN key.
4. Set the initial setting value for 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 0V (voltage difference between white and blue).
7. Press the MENU key and memorize the setting value.

- Adjustment part**
SECAM COLOUR
(AV-29T52EN/AV-29T52PF)
(SECAM COLOUR)
1. Receive a SECAM full field colour bar signal (75% white).
2. Set the initial setting value of SECAM COLOUR with the FUNCTION +/- key.
3. Adjust SECAM COLOUR and bring the value of (A) of the illustration to +5V (W~B).
4. Press the MENU key and memorize the setting value.



Adjustment part
NTSC 3.58 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 (0V (W~B 29"). (+5V (W~B 21").
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 SUB TINT I

Measuring Instrument
Remote control unit

Ajustment 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 3.85 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.

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

JVC AV-29TS2

Adjustments Cont'd

Description

[Method of adjustment using measuring instrument]

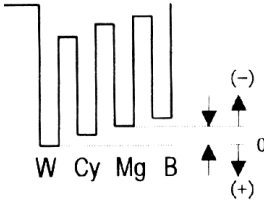
Adjustment part

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 3.85 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 (+5V 29") (+2V 21") (voltage difference between white and magenta).
7. Press the MENU key and memorize the setting value



[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 BLACK OFFSET (SECAM) I

Measuring Instrument

Remote control unit

Adjustment Part

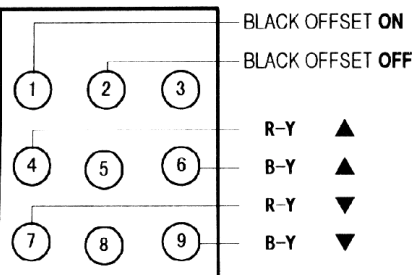
7.BLACK OFFSET
(R-Y) ***
(B-Y) ***

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

Test Point

35 PIN (R-Y)
36 PIN (B-Y)
IC-101 OF MAIN PWB

Adjustment part

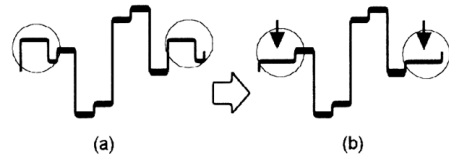
7. BLACK OFFSET
(R-Y) ***
(B-Y) ***

Description

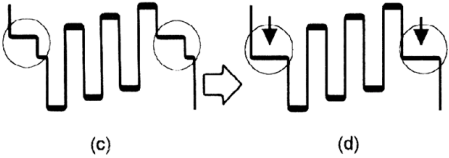
[Method of adjustment using measuring instrument]

1. Receive a SECAM COLOUR bar signal (full field colour bar 75% white).
2. Select 2. V/C from SERVICE MENU.
3. Select 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 5 modes of adjustment (1) 50Hz mode ((1) REGULAR, (2) ZOOM1, (3) ZOOM2, (4) 16:9) and (2) 60Hz mode (REGULAR) — depending upon the kind of signals (VERTICAL FREQUENCY 50Hz / 60Hz).

When the 50Hz REGULAR 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 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 set values.

Setting (adjustment) item	Adjustment name	Variable range	Initial setting value				
			50Hz mode				60Hz mode
			REGULAR	ZOOM1	ZOOM2	16:9	
1. TRAPEZ	Trapezoidal distortion correction	-32~+31	+16	-2	-4	+1	-1
2.V-SHIFT	Vertical center	-32~+31	-13	+2	+3	+2	+12
3.V-SIZE	Vertical hight	-64~+63	-26	+16	+27	-25	-1
4.H-CENT	Horizontal center	-16~+15	-9	+0	+0	-9	+5
5.H-SIZE	Horizontal width	-32~+31	+15	-3	-3	+0	+0
6.EW-PIN	Side pin correction	-32~+31	+2	+11	+20	-14	-1
7.V-S.CR (Fixed)	Vertical hight correction	-16~+15	+2	+1	+4	+0	+0
8.V-EDGE (Fixed)	Vertical edge correction	-08~+07	+7	+0	+0	+0	+0
9.EW-COR (Fixed)	Side pin for corner correction	-08~+07	-2	+3	+4	+0	-1
10.ABL POINT (Do not adjust)	Auto beam limited point	-08~-01	-4	-4	-4	-4	-4
11.ABL GAIN (Do not adjust)	Auto beam limiter gain	-08~-01	-4	-4	-4	-4	-4

Setting (adjustment) item	Adjustment name	Variable range	Initial setting value				
			50Hz mode				60Hz mode
			REGULAR	ZOOM1	ZOOM2	16:9	
2.V-SHIFT	Vertical center	-32~+31	-18	-2	-2	0	+2
3.V-SIZE	Vertical hight	-64~+63	-5	+21	+33	-31	-2
4.H-CENT	Horizontal center	-16~+15	-12	+0	+0	-12	+4
7.V-S.CR (Fixed)	Vertical hight correction	-64~+63	+33	+15	+20	+10	+0
10.ABL POINT (Do not adjust)	Auto beam limited point	-08~-01	-4	←	←	←	←
11.ABL GAIN (Do not adjust)	Auto beam limiter gain	-08~-01	-4	←	←	←	←

Item

1. Adjustment of TRAPEZ

Measuring Instrument

Signal generator
Remote control unit

Adjustment Part

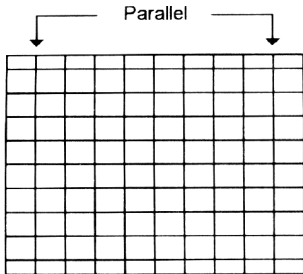
1.TRAPEZ

Description

[50Hz REGULAR 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

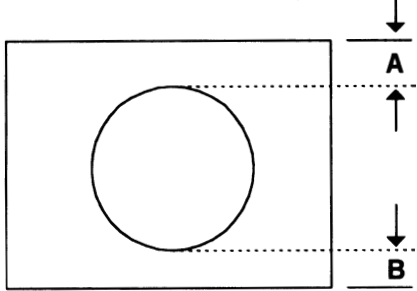
2. Adjustment of V-SHIFT

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

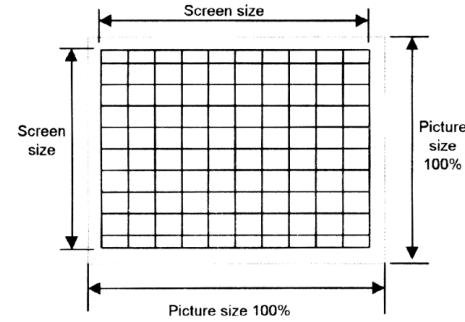
3. Adjustment of V-SIZE

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 below table.
13. Press the MENU key and memorize the set value.



REGULAR	ZOOM1	ZOOM2
92%	80%	74%

Item

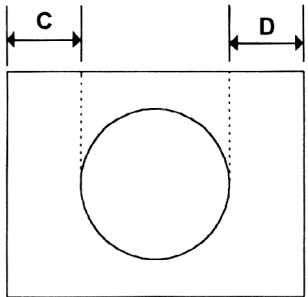
4. Adjustment of H.CENTER

Adjustment Part

4.H-CENT.

Description

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



Item

5. Adjustment of H.SIZE

Adjustment Part

5.H-SIZE

Description

18. Receive a cross-hatch signal.
19. Select 5.H-SIZE and set the initial setting value.
20. Adjust H-SIZE and make sure that the horizontal screen size of the picture size is in the below table.
21. Press the MENU key and memorize the set value.

MODE	REGULAR	ZOOM1	ZOOM2
MODEL			
AV-29TS2EN	92%	85%	85%
AV-29TS2EK	92%	85%	85%
AV-29TS2PF	91%	85%	85%

Item

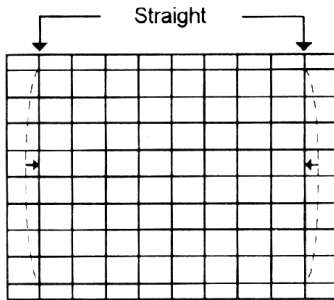
6. Adjustment of EW-PIN

Adjustment Part

6.EW-PIN

Description

22. Select 6.EW-PIN and set the initial setting value
23. Adjust EW-PIN and make the 1 st.vertical lines at the left and right edges of the screen straight. Also make sure that the 2nd vertical lines are also straight.
24. Press the MENU key and memorize the set value.



Item

7. Adjustment of V-SCR

Adjustment Part

7.V-S.CR

Description

25. Select 7.V-S.CR and set the initial setting value.
26. Adjust V-S.CR and make the gaps between the horizontal lines uniform.
27. Press the MENU key and memorize the set value.
- * No alignment, but adjust this mode if result of no alignment is too bad.

Item

8. Adjustment of V-EDGE

Adjustment Part

8. Y-EDGE

Description

28. Select 8.V-EDGE and set the initial setting value.
29. Adjust V-EDGE and make the gaps between the horizontal lines uniform.
30. Press the MENU key and memorize the set value.
- * No alignment, but adjust this mode if result of no alignment is too bad.

Item

9. Adjustment of EW-COR

JVC AV-29TS2

Adjustments Cont'd

Adjustment Part
9. EW-COR

Description

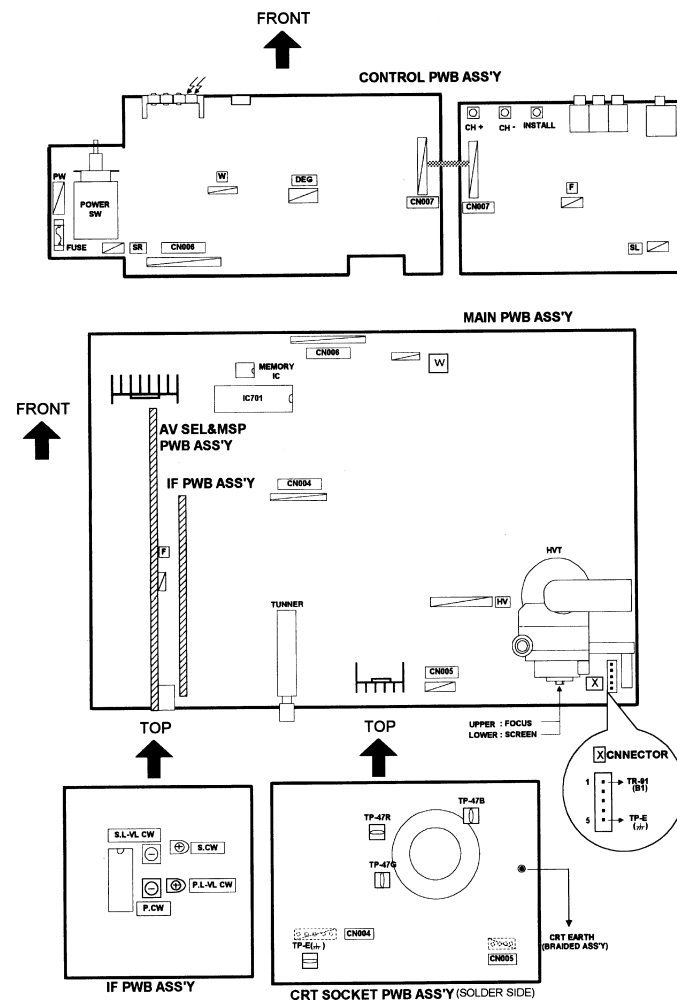
31. Select 9.EW-COR and set the initial setting value.
32. Adjust EW-COR and make the vertical lines at the four corners of the screen straight.
33. Press the MENU key and memorize the set value.
- * No alignment, but adjust this mode if result of no alignment is too bad.
34. Make sure that the adjustment is properly done on the screen of other mode.

AUDIO CIRCUIT

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

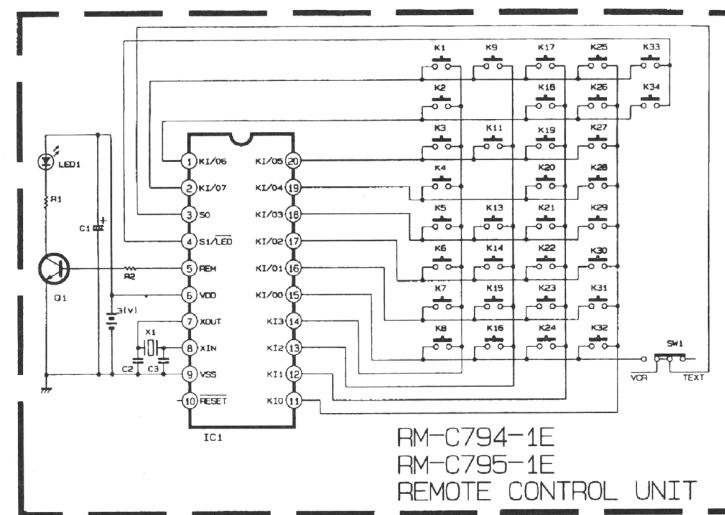
3. AUDIO

Setting item	Variable range	fixed value
1. CONC LIMIT (Do not adjust)	00H~FFH	0AH
2. A2 ID THR (Do not adjust)	00H~FFH	19H
















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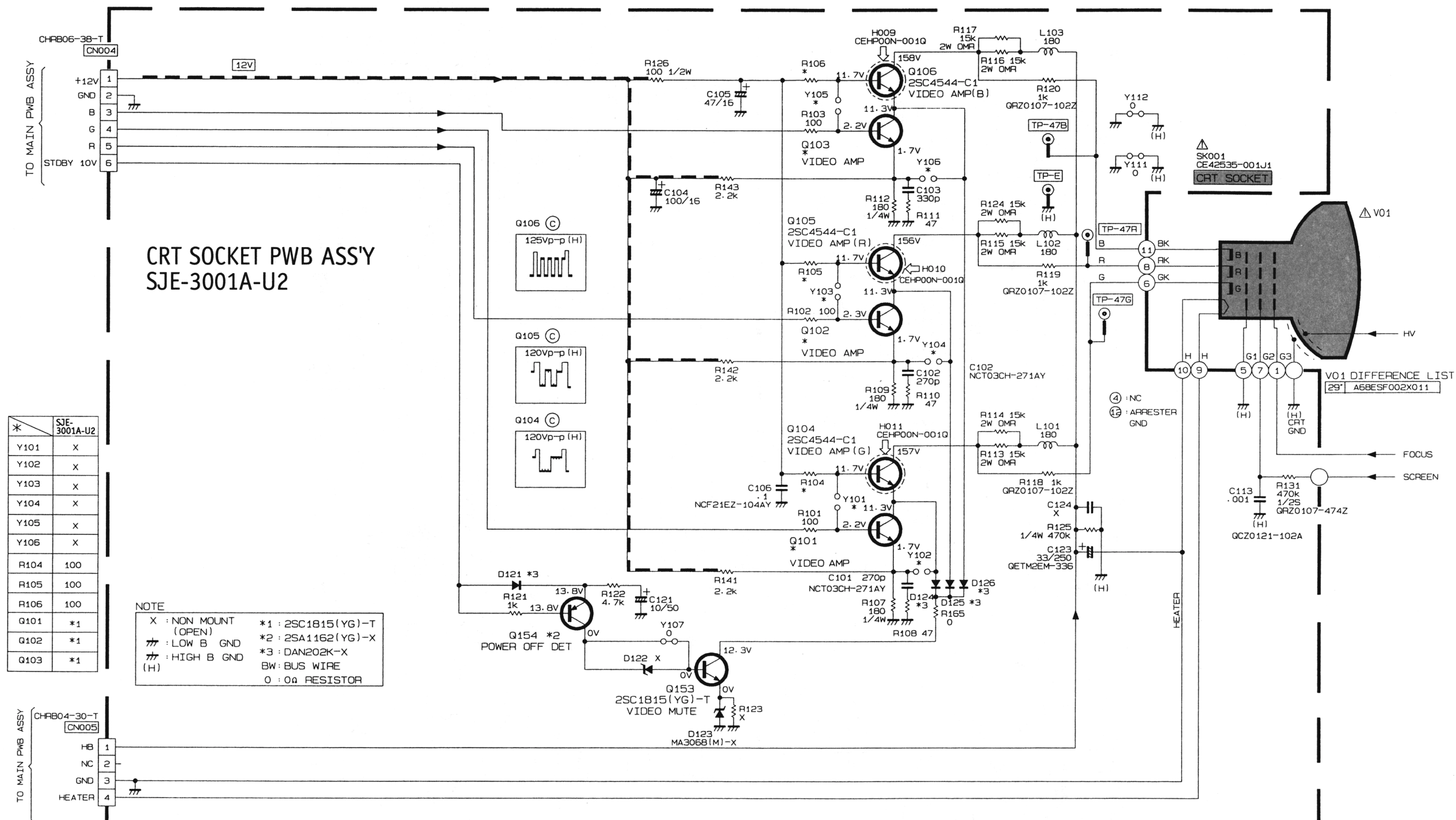
Remote Control Diagram



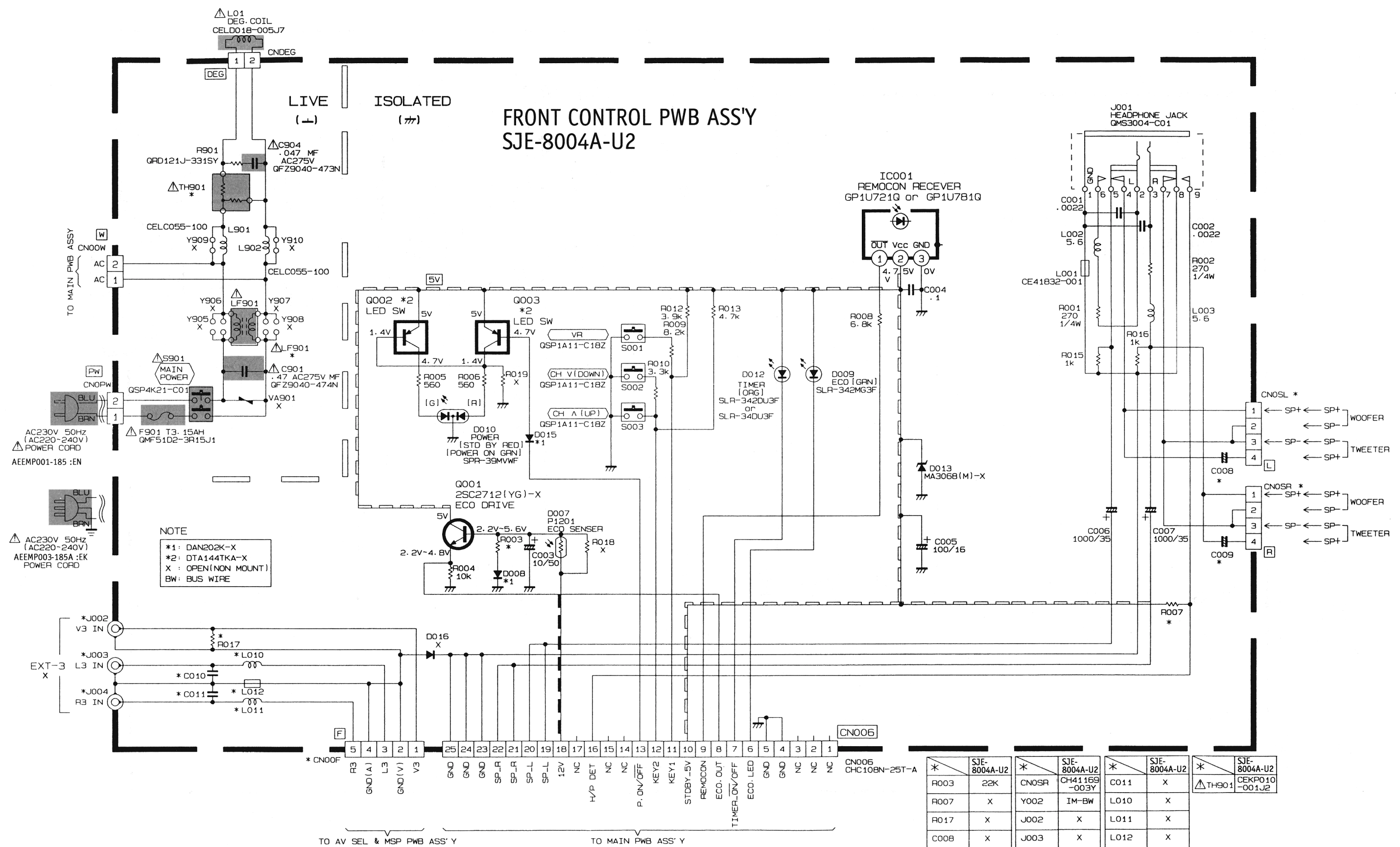
■ KEY FUNCTION

No.	Key Name	No.	Key Name	No.	Key Name	No.	Key Name
1	1	14	3D 	22	MODE (TEXT)	29	CANCEL (TEXT)
2	2	15	PBASS		REW  (VCR)	30	STOP  (VCR)
3	3	16	PIP	23	SIZE (TEXT)	31	INDEX (TEXT)
4	4	17			FF  (VCR)	32	 (VCR)
5	5	18	REVEAL (TEXT)	24	SUB PAGE(TEXT)	33	
6	6		PLAY  (VCR)		P V (VCR)	34	
7	7	19	TV	25			
8	8	20	MENU/OK	26	STORE (TEXT)		
9	9	21	HOLD (TEXT)		(VCR)		
11	0		P  (VCR)	27			
13	ZOOM			28			

CRT Diagram

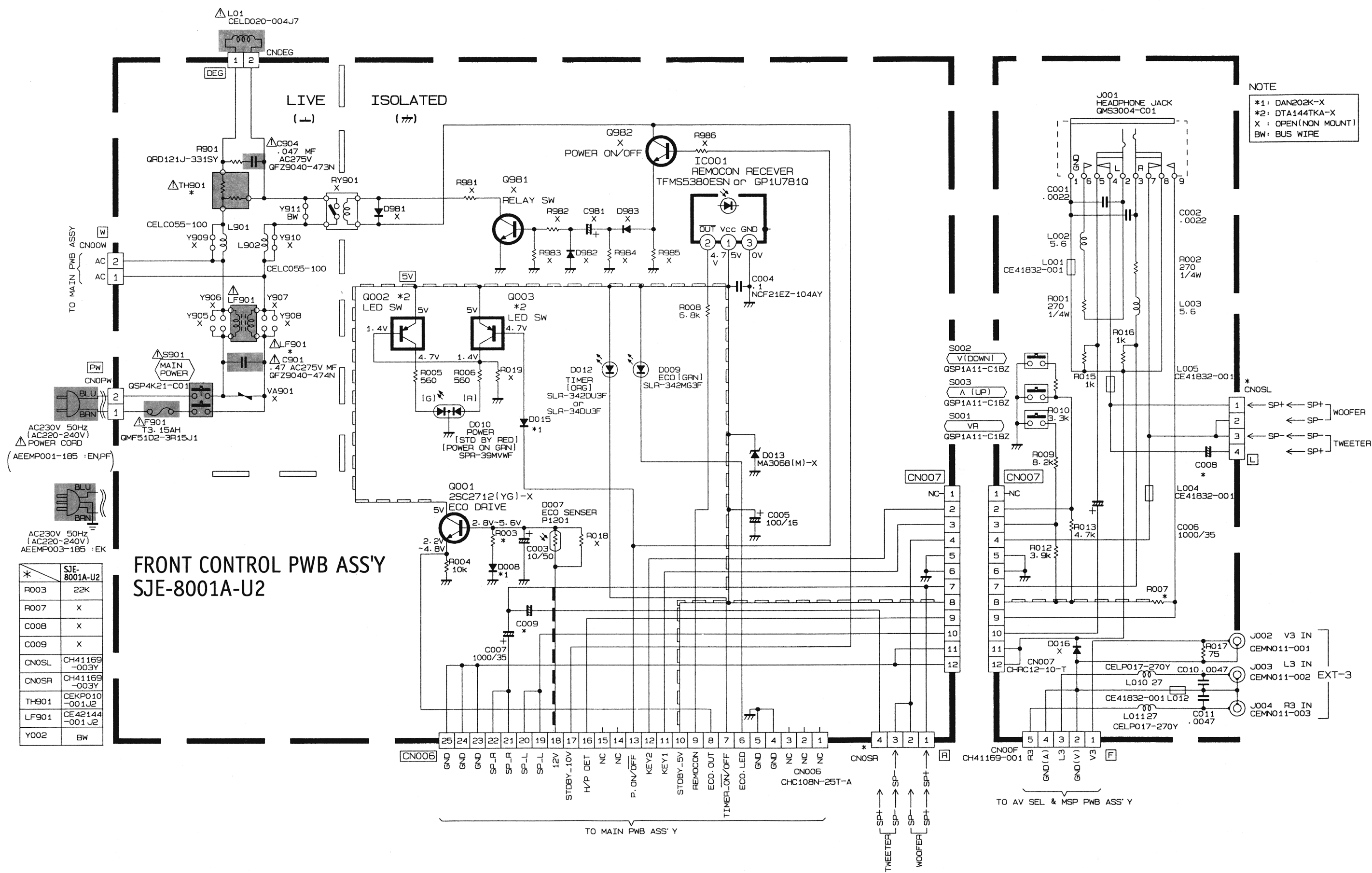


Front Control Diagram (21")

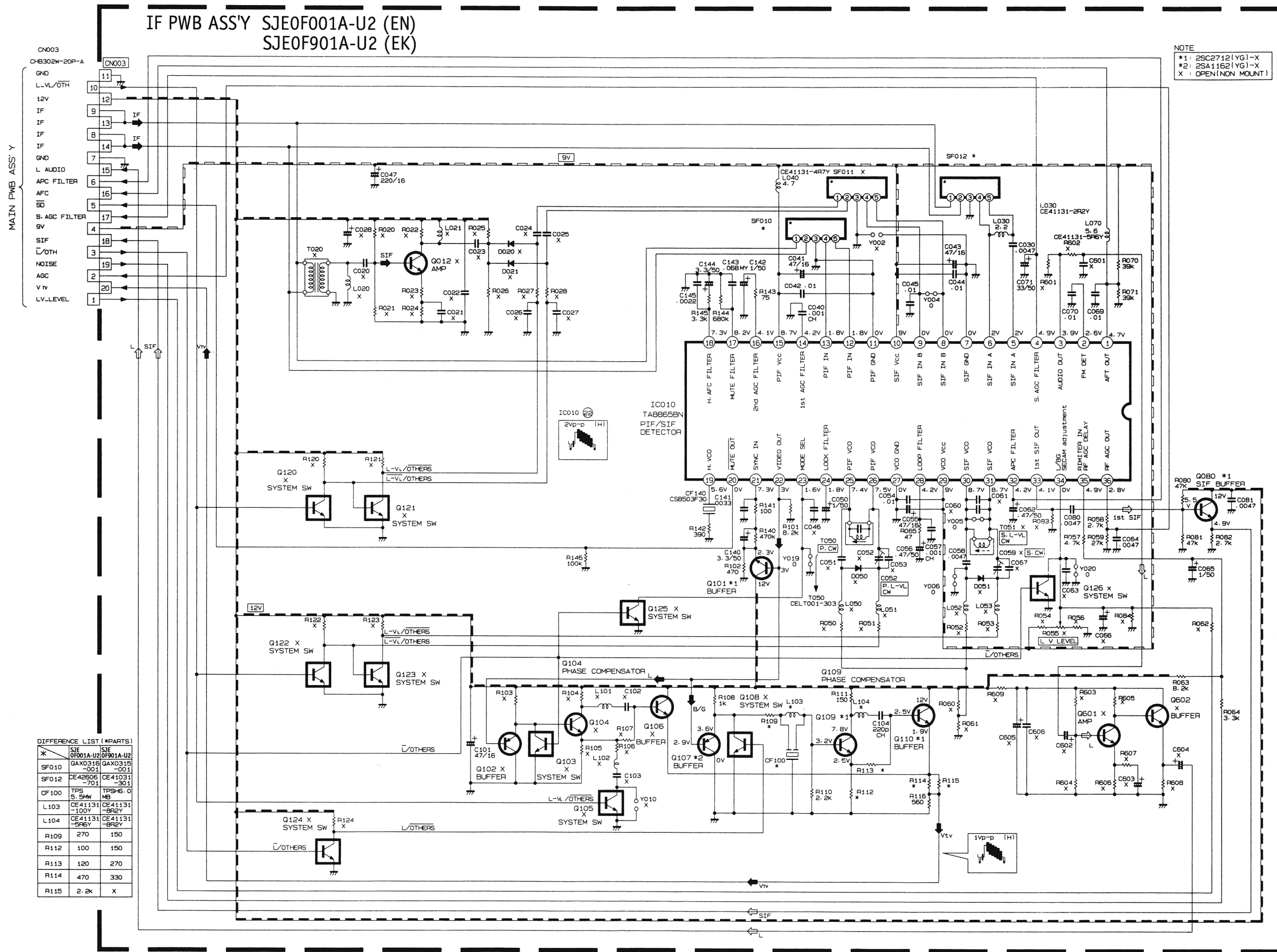


* /	SJE-8004A-U2	* /	SJE-8004A-U2	* /	SJE-8004A-U2	* /	SJE-8004A-U2
R003	22K	CN0SR	CH41169-003Y	C011	X	TH901	CEKP010-001J2
R007	X	Y002	IM-BW	L010	X		
R017	X	J002	X	L011	X		
C008	X	J003	X	L012	X		
C009	X	J004	X	CN00F	X		
CN0SL	CH41169-003Y	C010	X	LF901	AEELF002-001		

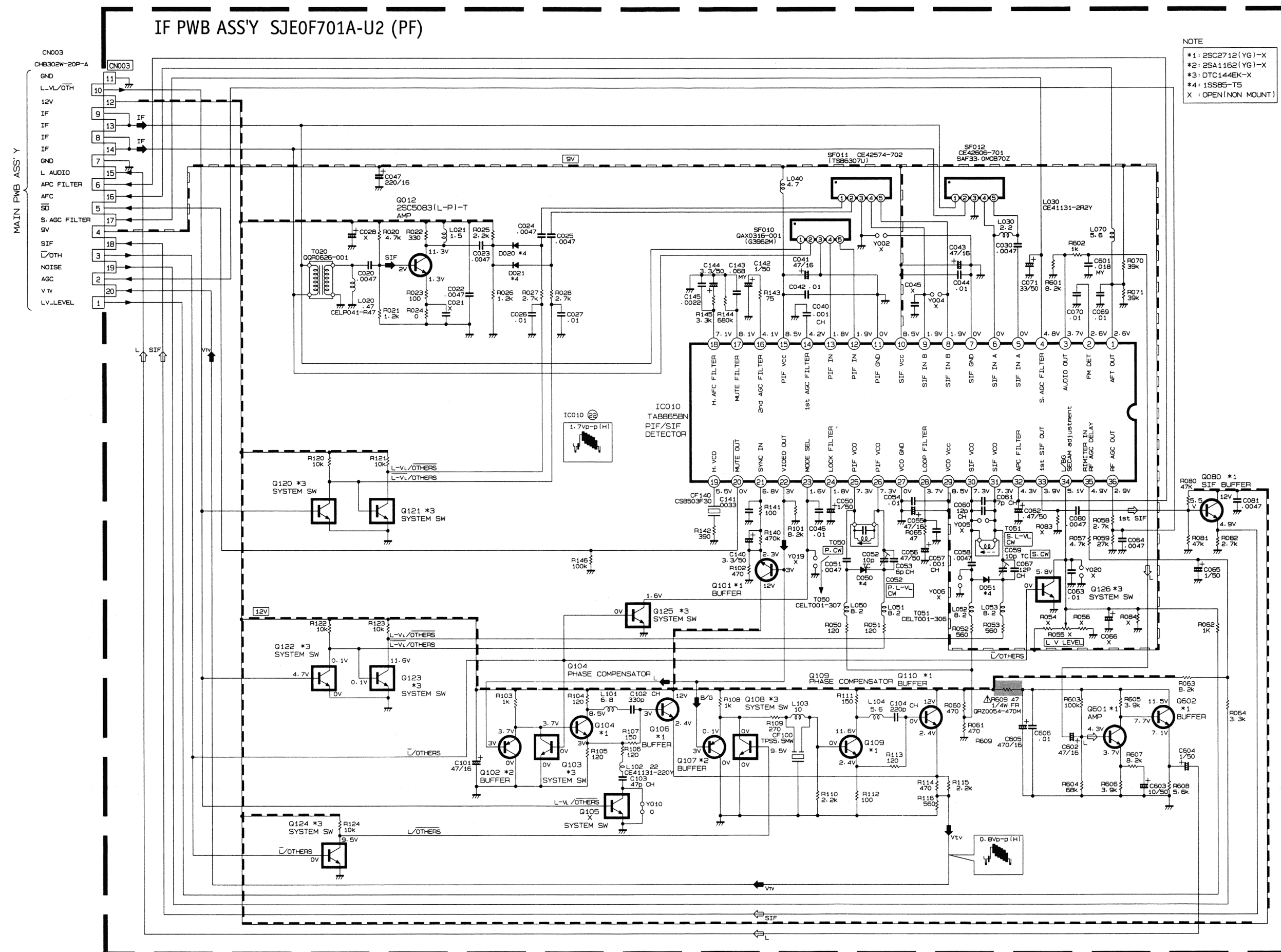
Front Control Diagram (29")



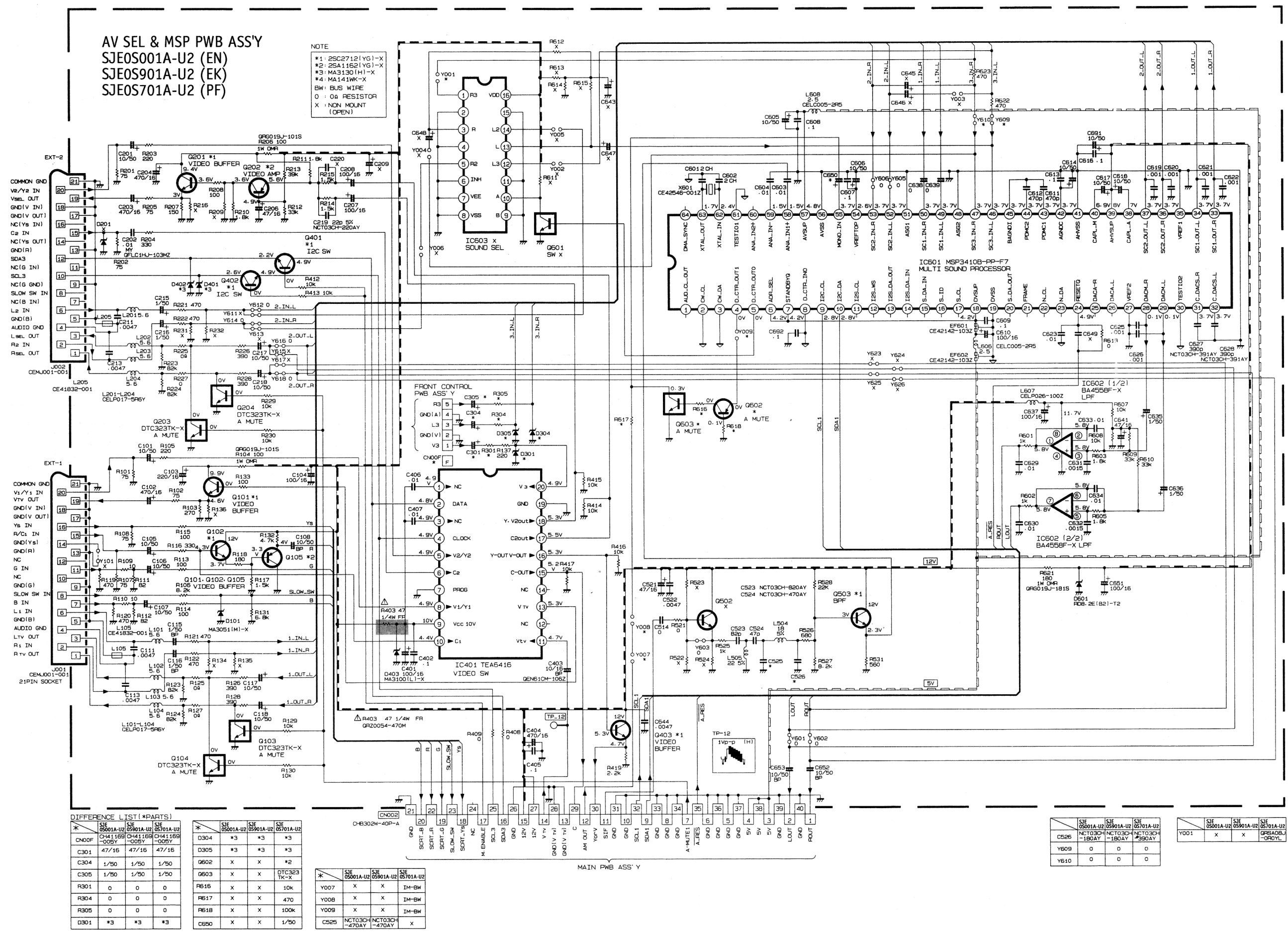
IF Diagram (EN & EK) Diagram



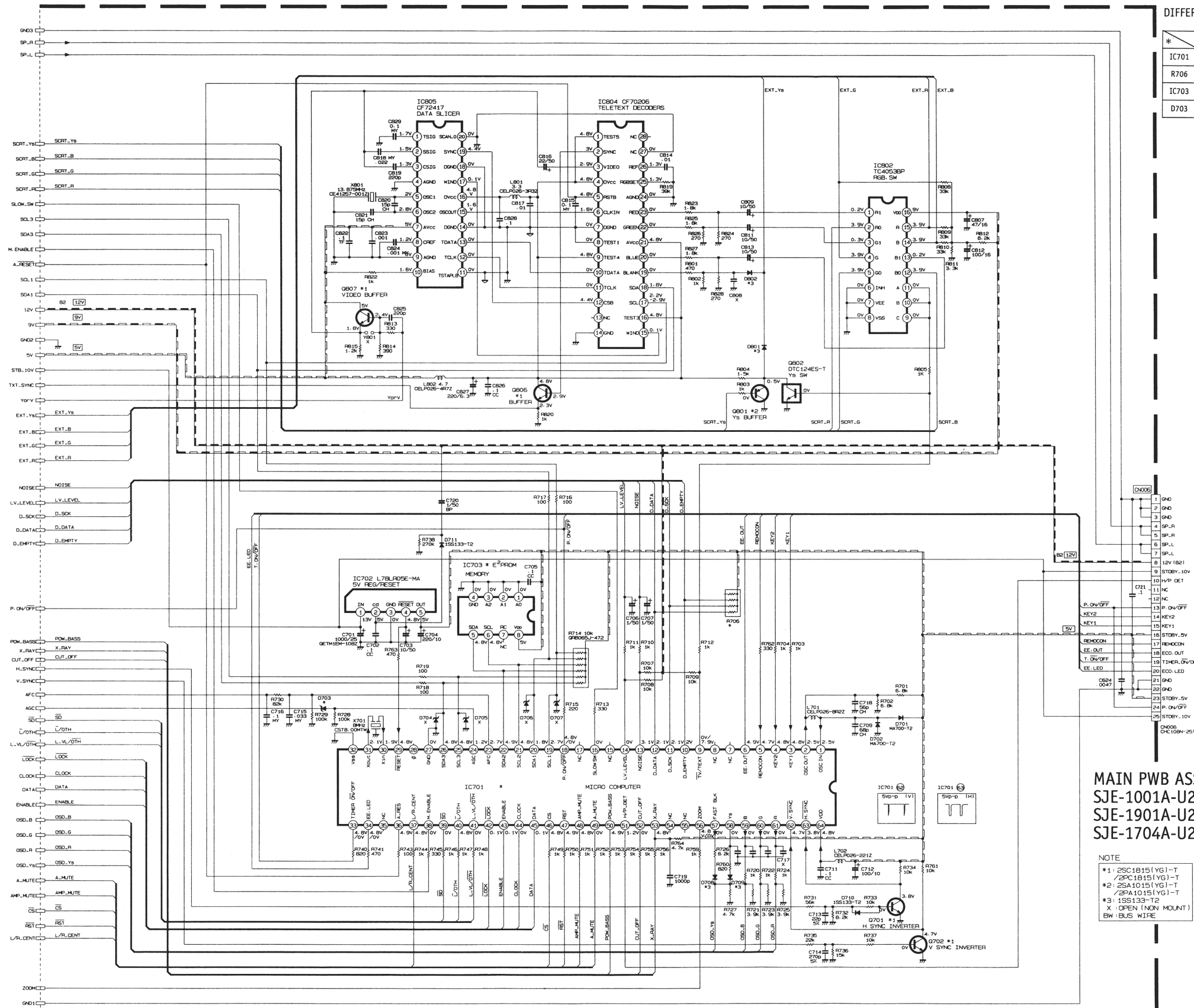
IF Diagram (PF) Diagram



AV Selector & Multi Sound Processor Diagram



Microprocessor / Text Diagram



DIFFERENCE LIST (*PARTS)

	AV-29TS2EK	AV-29TS2EN	AV-29TS2PF
* /	SJE-1901A-U2	SJE-1001A-U2	SJE-1704A-U2
IC701	M37204M C-40SP	M37204M C-40SP	M37204M C-40SP
R706	×	×	×
IC703	AT24C16 25TS2EK	AT24C16 25TS2EN	AT24C16 25TS2PF
D703	MTJ3.6 (A)-T2	×	×

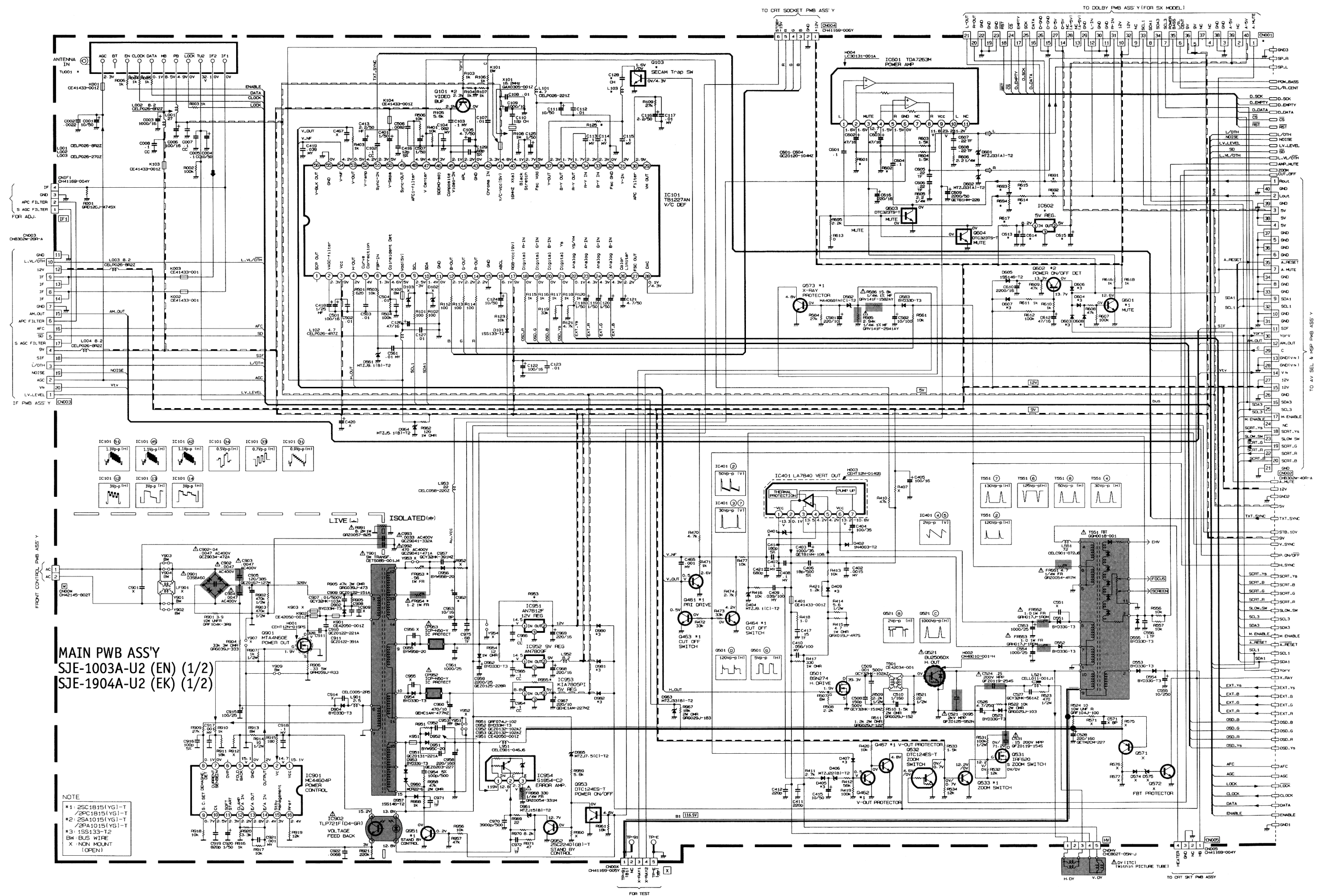
#	AV-29T52EK AV-29T52EN AV-29T52PF		
	SJE-1901A-U1 CEEK380-B01	SJE-1001A-U2 CEEK481-B02	SJE-1704A-U2 CEEK481-B02
R125	BW	470	470
L103	×	CELPO26-330Z	CELPO26-330Z
Q103	×	QTC124 ESA-1	QTC124 ESA-1
C128	×	QCT25CH-390Z	QCT25CH-390Z
R955	ORG029J-180	ORG029J-180	ORG029J-180
D608	×	×	×
H005	CM42862-00H	CM42862-00H	CM42862-00H
L551	CEL901-08636	CEL901-08636	CEL901-08636
R970	12K	12K	12K
D465	MTJ232 (C)-T2	MTJ232 (C)-T2	MTJ232 (C)-T2
D466	MTJ232 (C)-T2	MTJ232 (C)-T2	MTJ232 (C)-T2
R484	1K	1K	1K
R601	47	47	47
R602	47	47	47
R614	0	0	0
C469	.01	.01	.01
R414	2.7	2.7	2.7
IC602	×	×	×
R617	×	×	×
C613	×	×	×
C614	×	×	×
C615	×	×	×
R691	100	100	100
R692	100	100	100
R615	0	0	0
CN001	×	×	×
C962	QEH81VM-106M	QEH81VM-106M	QEH81VM-106M
R417	ORG019J-1015	ORG019J-1015	ORG019J-1015
R483	ORG039J-330A	ORG039J-330A	ORG039J-330A
T551	CETH019-00A J1	CETH019-00A J1	CETH019-00A J1
R510	CELL011-002J1	CELL011-002J1	CELL011-002J1
L521	ORG029J-182	ORG029J-182	ORG029J-182
R693	100K	100K	100K
R511	ORG029J-222	ORG029J-222	ORG029J-222
C521	QF02117-4001L	QF02117-4001L	QF02117-4001L
C522	QF02117-9501L	QF02117-9501L	QF02117-9501L
C523	QFP32GJ-223M	QFP32GJ-223M	QFP32GJ-223M
C524	QF02194-364	QF02194-364	QF02194-364
C525	QF02119-684S	QF02119-684S	QF02119-684S
C531	QF02119-154S	QF02119-154S	QF02119-154S
J.FR953	×	×	×
J.FR954	QRH017K-R82M	QRH017K-R82M	QRH017K-R82M
R911	6.8K	6.8K	6.8K
R918	5.6K	5.6K	5.6K
D959	BW	BW	BW
T901	CET5083-00137	CET5083-00137	CET5083-00137
R906	QRM059J-R27	QRM059J-R27	QRM059J-R27
C919	.001	.001	.001
R953	×	×	×
R919	12K	12K	12K
Y956	×	×	×
R956	6.8K	6.8K	6.8K
R557	8.2K	8.2K	8.2K
IC401	LA7845N	LA7845N	LA7845N
R694	100K	100K	100K

MAIN PWB ASS'Y
SJE-1001A-U2 (EN) (2/2)
SJE-1901A-U2 (EK) (2/2)
SJE-1704A-U2 (PF) (2/2)

NOTE

*1: 2SC1815(YG)-T /2PC1815(YG)-T
*2: 2SA1015(YG)-T /2PA1015(YG)-T
*3: 1SS133-T
X: OPEN (NON MOUNT)
BW: BUS WIRE

Power Deflection Diagram (21")



Power Deflection Diagram (29'')

