

SHARP SERVICE MANUAL

SEMK76DW18H/2

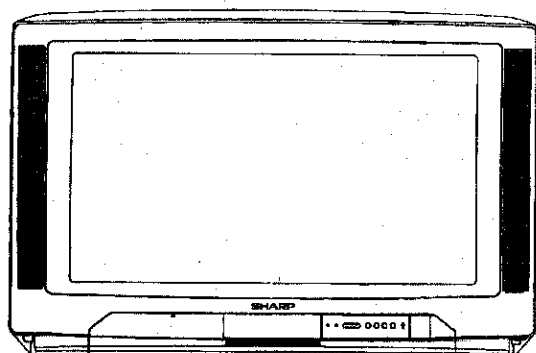
CW-100 CHASSIS

PAL SYSTEM COLOUR TELEVISION



DOLBY SURROUND

PRO • LOGIC



66DW-18H

MODELS 76DW-18H

In the interests of user safety (required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

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SHARP CORPORATION

ELECTRICAL SPECIFICATIONS

• Power Input.....240 VAC 50Hz

• Power Consumption

Normal Operating.....132Wh (66DW18H)

142Wh (76DW18H)

Stand-by Operating..... 3Wmax.

• Audio Power

Output Rating

Center.....15W (MPO)

Front L.....15W (MPO)

Front R.....15W (MPO)

Rear.....7,5+7,5W (MPO)

Subwoofer.....30W (MPO)

Speakers

Center (in TV set).....8 12W

Front L (in TV set).....8

Front R (in TV set).....8

Rear.....(External) 16

Rear.....(External) 16

Subwoofer(External) 4

• White Level

Set brightness control to get total picture tube cathode current of 600 microampere under no signal condition. Maximum necessary correction of each picture tube cathode current to get 8900 degrees K-20MPCD screen temperature should not exceed 15% of its original value.

X=0.290

Y=0.284

• Convergence.....Self Converging System

• Focus.....Bi-Potential Electrostatic

• Sweep.....Magnetic

• Intermediate Frequencies

Picture IF Frequency38.9 MHz

Sound Carrier Trap32.9 MHz

Adjacent Sound Carrier Trap.....40.9 MHz

Adjacent Picture Carrier Trap30.9 MHz

• Aerial Input Impedance75 Unbalanced

• Tuning Ranges48.25MHz to 855.25MHz
CAT Special Channels

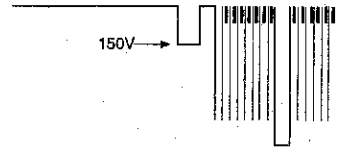
Specifications are subject to change without prior notice

SERVICE ADJUSTMENTS

All the adjustments required for this chassis will be done in Service Mode, except G2, IF PLL (AFT) and RF AGC.

• G2 ADJUSTMENT

1. Receive cross hatch pattern signal.
2. Set contrast to 80/100 and brightness to 40/100.
3. Connect the oscilloscope to the red cathode and adjust G2 to read 150V on the sensor pulse as in below drawing:



• IF PLL ADJUSTMENT (AFT)

1. Disconnect antenna signal
2. Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal.
 - SSG output: 38.9 MHz (CW) \pm 5 kHz
 - SSG output level: approx. 90 dB μ V
 - Probe: Direct
3. Connect the digital voltmeter to pin 11 of IC 201.
4. Adjust the AFT coil (L 205) to obtain 4.5VDC on voltmeter.

NOTE:

Oscilloscope should be adjusted for vertical TV field trigger and synchronized with video signal.

• RF AGC ADJUSTMENT

1. Receive "COLOUR BAR" signal (UHF).
 - signal strength: 57 dB μ V
2. Connect DC voltmeter to Test Point J91 (RF AGC).
3. Set AGC control (R224) to maximum position (memory).
4. Adjust R224 to obtain voltage of 0.1V below maximum voltage (step 3).

• SERVICE MODE FUNCTION

This mode function is provided to assist with the settings of those adjustment that may vary from one Picture Tube to another, or between models.

In order to use the Service Mode

1. Connect Test Pattern signal to antenna terminal.
Set to full mode screen by wide button
2. Press main switch to "OFF".
3. Press volume-down and channel-up buttons and main switch to "ON" simultaneously.
4. Service mode is now entered.

The required adjustments can then be made from the Remote Control Unit.

The only buttons required are the following:

Up/Down-channel for movement in adjustment options menu; Up/Down-volume are used to carry out an adjustment in said menu; ON/OFF is used to memorize a new adjustment.

Adjustment menu is as follows:

- SERVICE SOFTWARE
- HORIZONTAL SHIFT
- EAST WEST WIDTH
- PIN PHASE
- PIN AMP
- UPPER CORNER CORRECTION
- LOWER CORNER CORRECTION
- VERTICAL LINEARITY
- VERTICAL ANGLE
- VERTICAL BOW
- VERTICAL AMPLITUDE
- S CORRECTION
- VERTICAL SHIFT
- RED GAIN
- GREEN GAIN
- BLUE GAIN
- RED CUT OFF
- GREEN CUT OFF
- BLUE CUT OFF
- ALTER NVM PAG
- ALTER NVM POS
- ALTER NVM VAL
- TELETEXT MIX MODE CONTRAST
- TELETEXT CONTRAST
- OSD CONTRAST
- DVCO ADJUSTMENT (ONLY PAL)
- DVCO ADJUSTMENT (ONLY NTSC)
- LUMA CHROMA DELAY
- OPC VALUE
- AUTOINSTALLATION ON/OFF

To exit service mode, press main switch to off.

Adjustment Note:

The procedure for making adjustments to horizontal corrections is as follows:

- Adjust HORIZONTAL SHIFT
- Adjust E-W WIDTH
- Adjust PIN PHASE
- Adjust PIN AMPLITUDE
- Adjust UPPER CORNER CORRECTION
- Adjust LOWER CORNER CORRECTION

The procedure for making adjustments to vertical corrections is as follows:

- Adjust VERTICAL AMPLITUDE
- Adjust S-CORRECTION
- Adjust VERTICAL SHIFT
- Adjust VERTICAL LINEARITY
- Adjust VERTICAL ANGLE
- Adjust VERTICAL BOW

1- HORIZONTAL SHIFT

- a) Receive Philips pattern signal.
- b) When volume-up button is pressed, picture moves to the left.
- c) When volume-down button is pressed, picture moves to the right.
- d) Adjust the horizontal location to obtain picture centering (fig. 1).

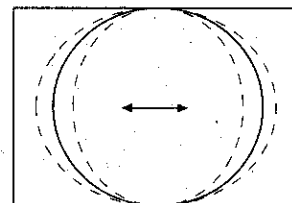


Fig. 1

2- E-W WIDTH

- a) Receive Philips pattern signal.
- b) When volume-up button is pressed, horizontal scanning increases.
- c) When volume-down button is pressed, horizontal scanning decreases.
- d) Adjust the horizontal amplitude to obtain 8% overscan (fig. 2).

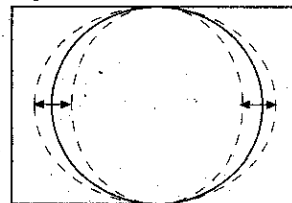


Fig. 2

3- PIN PHASE

- a) Receive Philips pattern signal.
- b) When volume-up button is pressed, slide pincushion changes.
- c) When volume-down button is pressed, slide pincushion changes.
- d) Adjust the PIN PHASE to obtain condition as in (fig. 3).

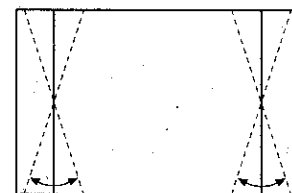


Fig. 3

4- PIN AMPLITUDE

- a) Receive Philips pattern signal.
- b) When volume-up button is pressed, slide pincushion changes from pincushion to barrel shape.
- c) When volume-down button is pressed, slide pincushion changes from barrel to pincushion shape.
- d) Adjust the PIN AMPLITUDE to obtain condition as in (fig. 4).

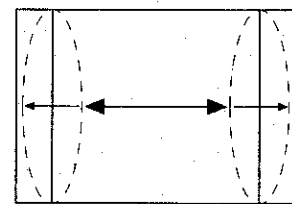


Fig. 4

5- UPPER CORNER CORRECTION

- Receive Philips pattern signal.
- When volume-up button is pressed, slide pincushion changes from pincushion to barrel shape.
- When volume-down is pressed, slide pincushion changes from barrel to pincushion shape.
- Adjust the UPPER CORNER CORRECTION to obtain condition as in (fig. 5).

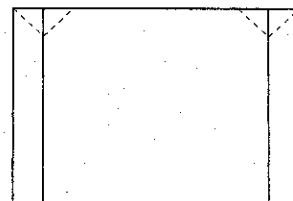


Fig. 5

6- LOWER CORNER CORRECTION

- Receive Philips pattern signal.
- When volume-up button is pressed, slide pincushion changes from pincushion to barrel shape.
- When volume-down button is pressed, slide pincushion changes from barrel to pincushion shape.
- Adjust the LOWER CORNER CORRECTION to obtain condition as in (fig. 6).

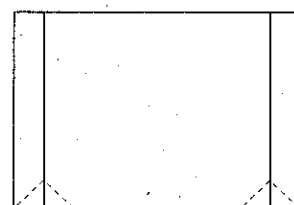


Fig. 6

7- VERTICAL LINEARITY

- Receive Philips pattern signal.
- When volume-up button is pressed, upper picture scanning decreases and lower picture scanning increase.
- When volume-down button is pressed, upper picture scanning increases and lower picture scanning decreases.
- Adjust the vertical symmetry to obtain symmetrical scanning between upper and lower picture (fig. 7).

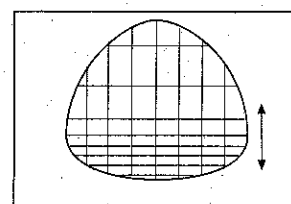


Fig. 7

8- VERTICAL ANGLE

- Receive Philips pattern signal.
- When volume-up button is pressed, vertical angle changes to the right.
- When volume-down button is pressed, vertical angle changes to the left.
- Adjust the VERTICAL ANGLE to obtain condition as in (fig. 8).

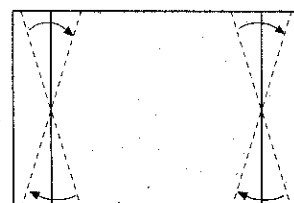


Fig. 8

9- VERTICAL BOW

- Receive Philips pattern signal.
- When volume-up button is pressed, vertical bow changes to the right.
- When volume-down button is pressed, vertical bow changes to the left.
- Adjust the VERTICAL BOW to obtain condition as in (fig. 9).

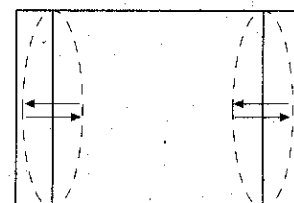


Fig. 9

10- VERTICAL AMPLITUDE

- Receive Philips pattern signal.
- When volume-up button is pressed, vertical size of picture increases.
- When volume-down button is pressed, vertical size of picture decreases.
- Adjust the vertical size to obtain overscan (fig. 10).

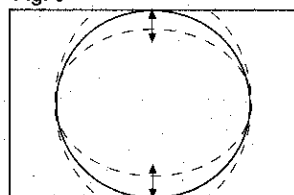


Fig. 10

11- S-CORRECTION

- Receive Philips pattern signal.
- When volume-up button is pressed, upper and lower scanning decreases, and center scanning increases.
- When volume-down button is pressed, upper and lower scanning increases, and center scanning decreases.
- Adjust the S-correction to obtain a balance between upper, lower and center (fig. 11).

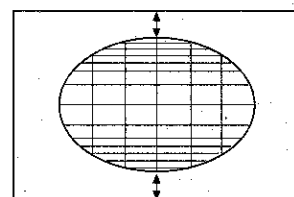


Fig. 11

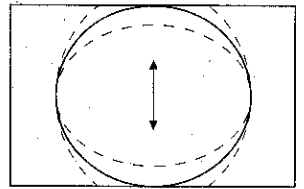


Fig. 12

12- VERTICAL SHIFT

- a) Receive Philips pattern signal.
- b) When volume-up button is pressed, picture moves up.
- c) When volume-down button is pressed, picture moves down.
- d) Adjust the horizontal location to obtain picture centering (fig. 12)

1. RED CUT OFF / GREEN CUT OFF / BLUE CUT OFF


- 1.1 Adjust G2.
- 1.2 Tune a white card.
- 1.3 Adjust colour to minimum.
- 1.4 Position colourimeter in the center of screen.
- 1.5 Adjust brightness and contrast to obtain a luminance of ≈ 20 NITS.
- 1.6 Operate in Service Mode and select location RED CUT OFF / GREEN CUT OFF / BLUE CUT OFF, to obtain colour coordinates:

$$X = 0.297 \pm 0.015$$

$$Y = 0.310 \pm 0.015$$

To increase press volume-up button and to decrease press volume-down button

RED CUT OFF alter "X" coordinate
GREEN CUT OFF alter "Y" coordinate
BLUE CUT OFF alter "X" and "Y" coordinate

- 1.7 The changes introduced can be memorized by pressing button  on TV set.

2. RED GAIN / GREEN GAIN / BLUE GAIN

- 2.1 Using brightness and contrast buttons, select a luminance of ≈ 110 NITS.
- 2.2 Operate again in Service Mode and select location RED GAIN / GREEN GAIN BLUE GAIN, to obtain colour coordinates:

$$X = 0.297 \pm 0.015$$

$$Y = 0.310 \pm 0.015$$

To increase press volume-up button and to decrease press volume-down button

RED GAIN alter "X" coordinate
GREEN GAIN alter "Y" coordinate
BLUE GAIN alter "X" and "Y" coordinate

- 2.3 The changes introduced can be memorized by pressing button  on TV set.

- 2.4 Exit Service Mode and check colour coordinates "X" and "Y" at 20 and 110 NITS. It may be necessary to repeat procedure 1 and 2 of COLOUR ADJUSTMENT.

ACCESS TO NVM

Press CHA to move in the following sequence:

ALTER NVM PAG → ALTER NVM POS → ALTER NVM VAL

to alter presetting adjustments, press up/down-volume buttons on ALTER NVM VAL.

⚠ CAUTION: Do not change NVM VALUE to avoid risk of serious damages to TV set.

CONTRAST ADJUSTMENT

Up/Down-volume buttons are used to adjust the contrast of the following items:

- TELETEXT MIX MODE CONTRAST
- TELETEXT CONTRAST
- OSD CONTRAST

DVCO ADJUSTMENT

- a) Receive Philips pattern signal.
- b) When Stand-by button is pressed (Remote Control Unit), start automatically the adjustment.

LUMA CHROMA DELAY

- a) Receive Philips pattern signal.
- b) When volume-up button is pressed, luma phase delays.
- c) When volume-down button is pressed, chroma phase delays.
- d) Adjust the Chroma-Luma delay.

OPC VALUE

Shows reading of detected illuminated value by O.P.C. (Optical Picture Control) to check function.

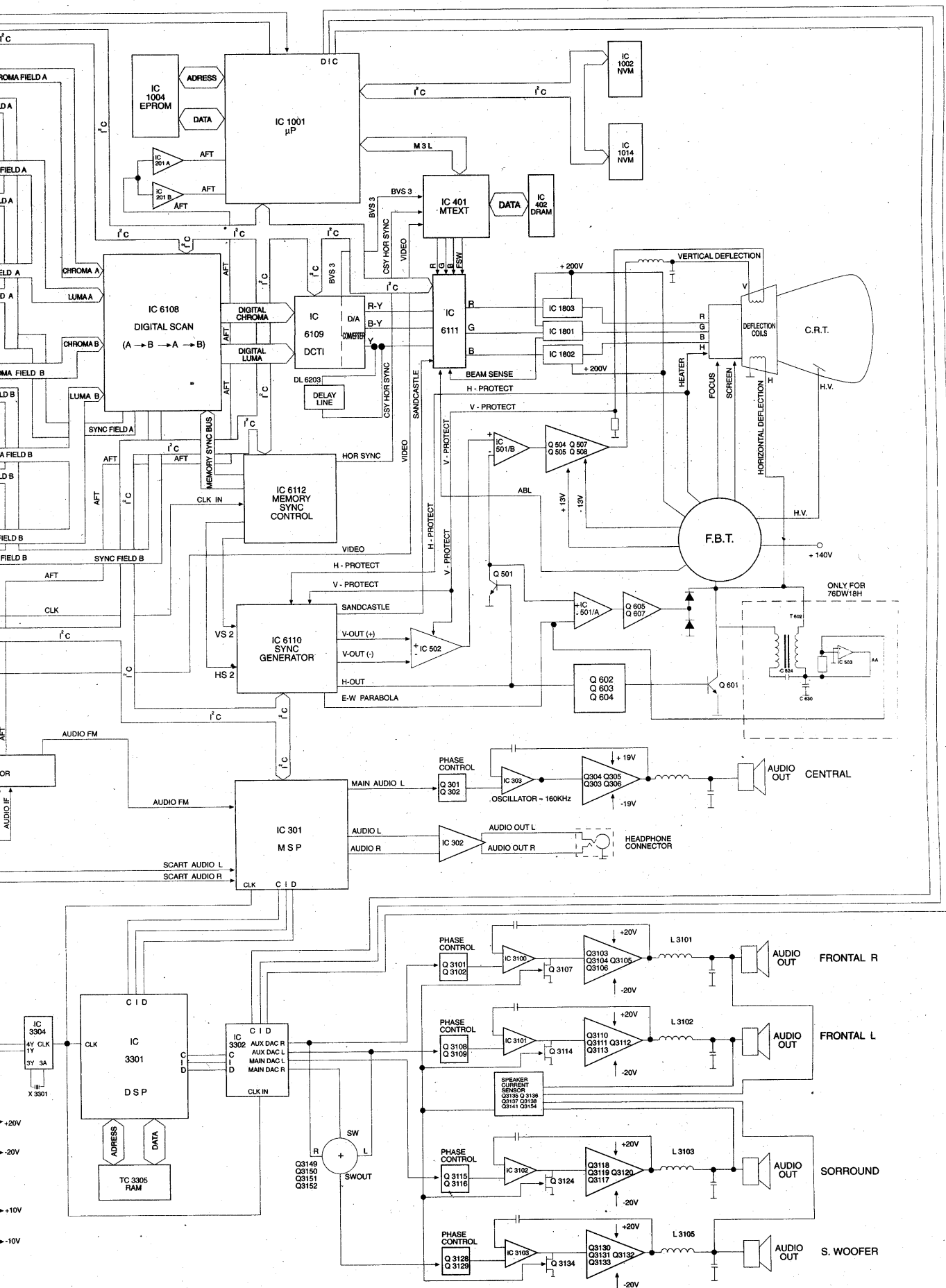
AUTO INSTALLATION OFF/ON

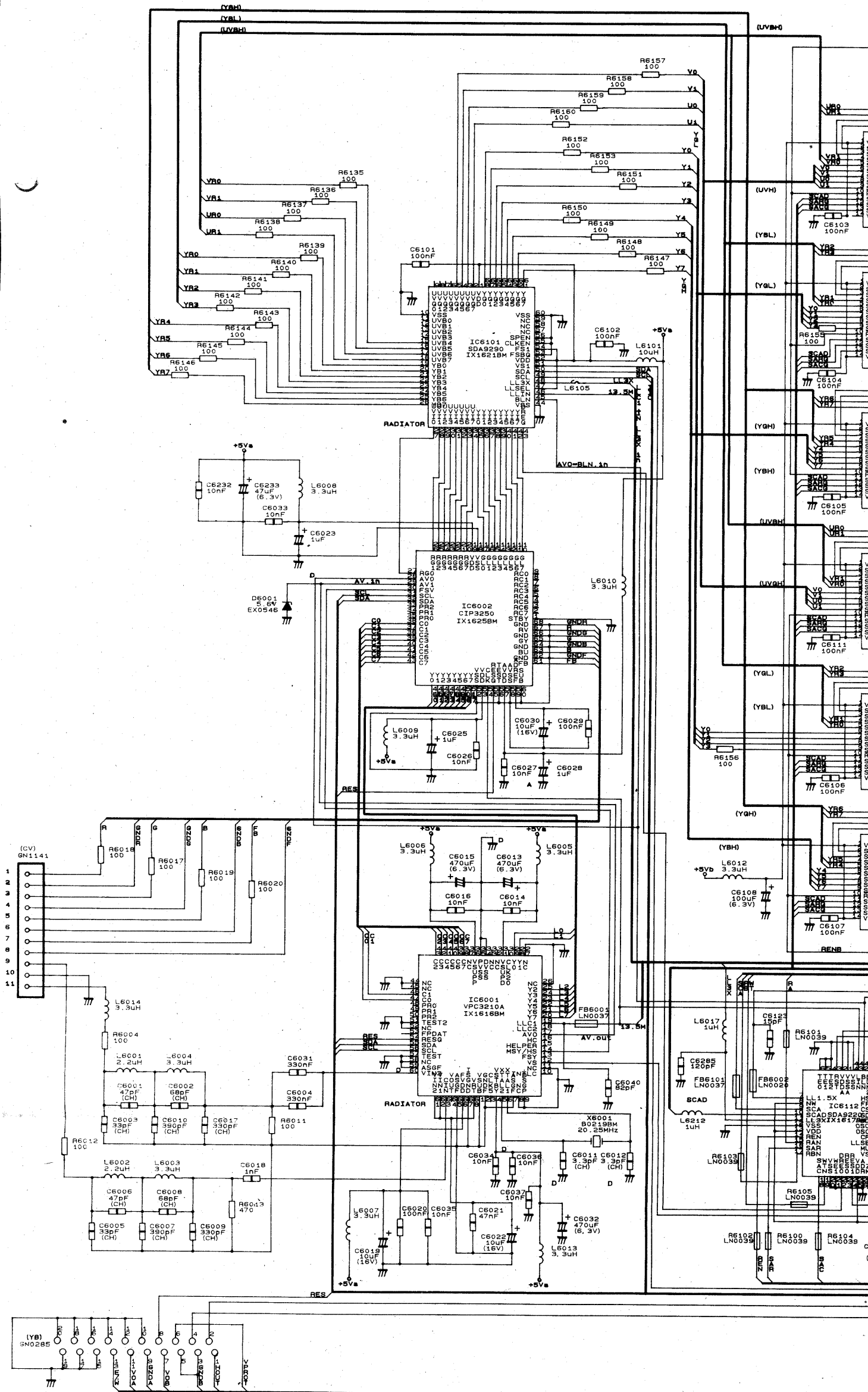
When ON is selected, the TV will perform the autoinstallation sequence as soon as service mode is removed.

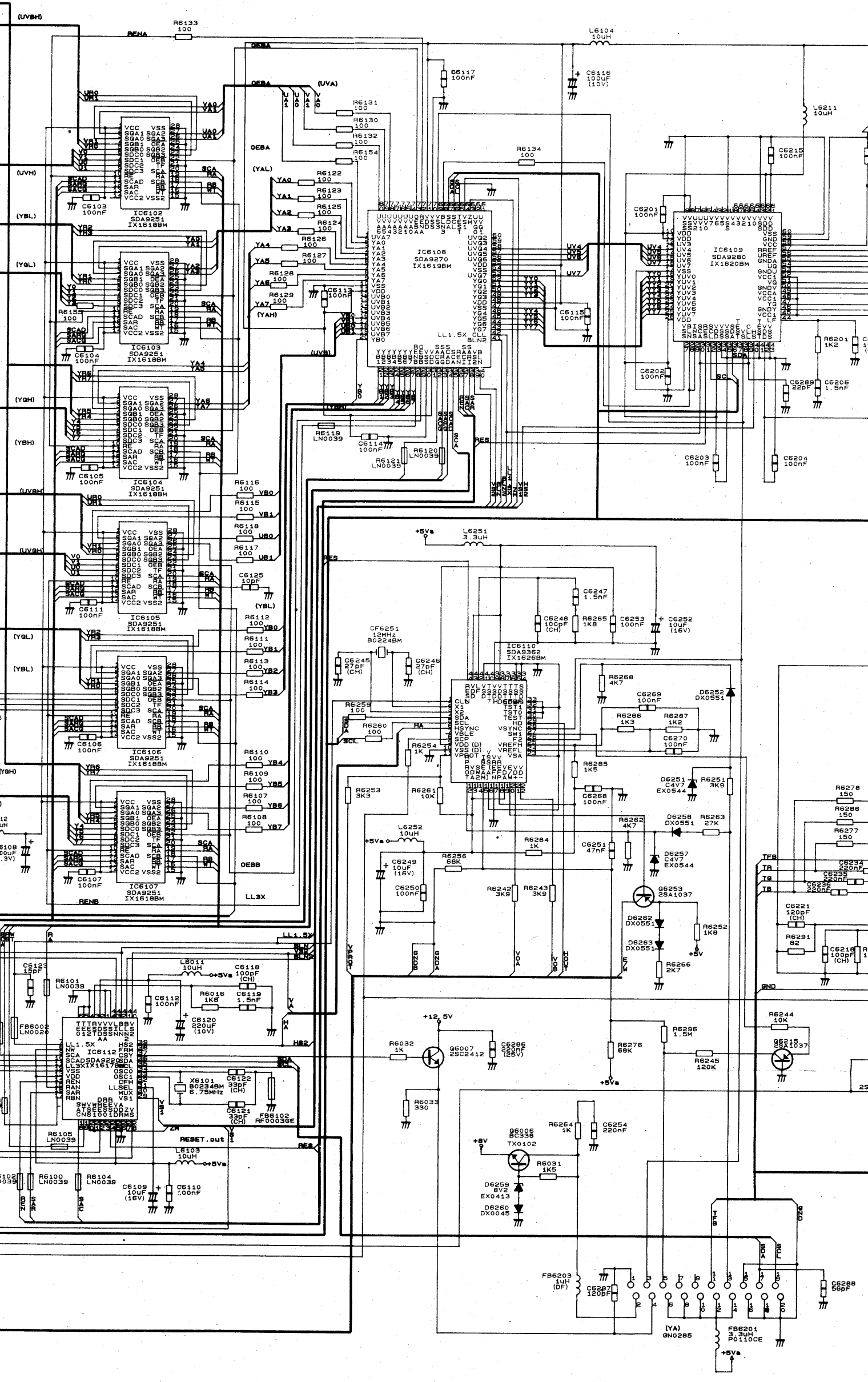
PROTECTIONS CANCEL

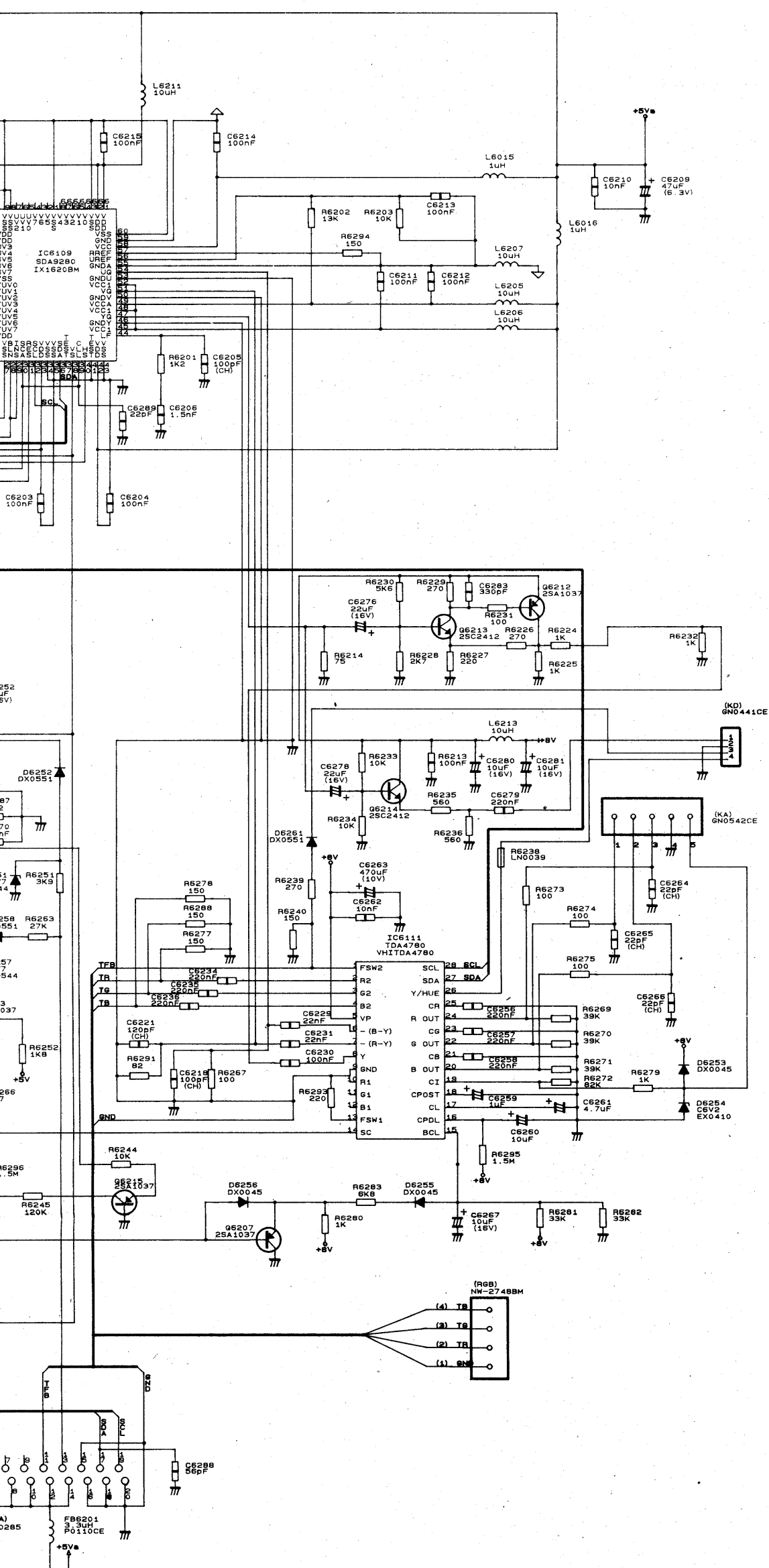
- a) Connect Test Pattern signal to antenna terminal.
- b) Press main switch to OFF.
- c) Press volume-down and channel-up buttons and main switch to ON simultaneously.
- d) "Service software Vxx.xx" appears on screen.
- c) Press main switch to OFF.

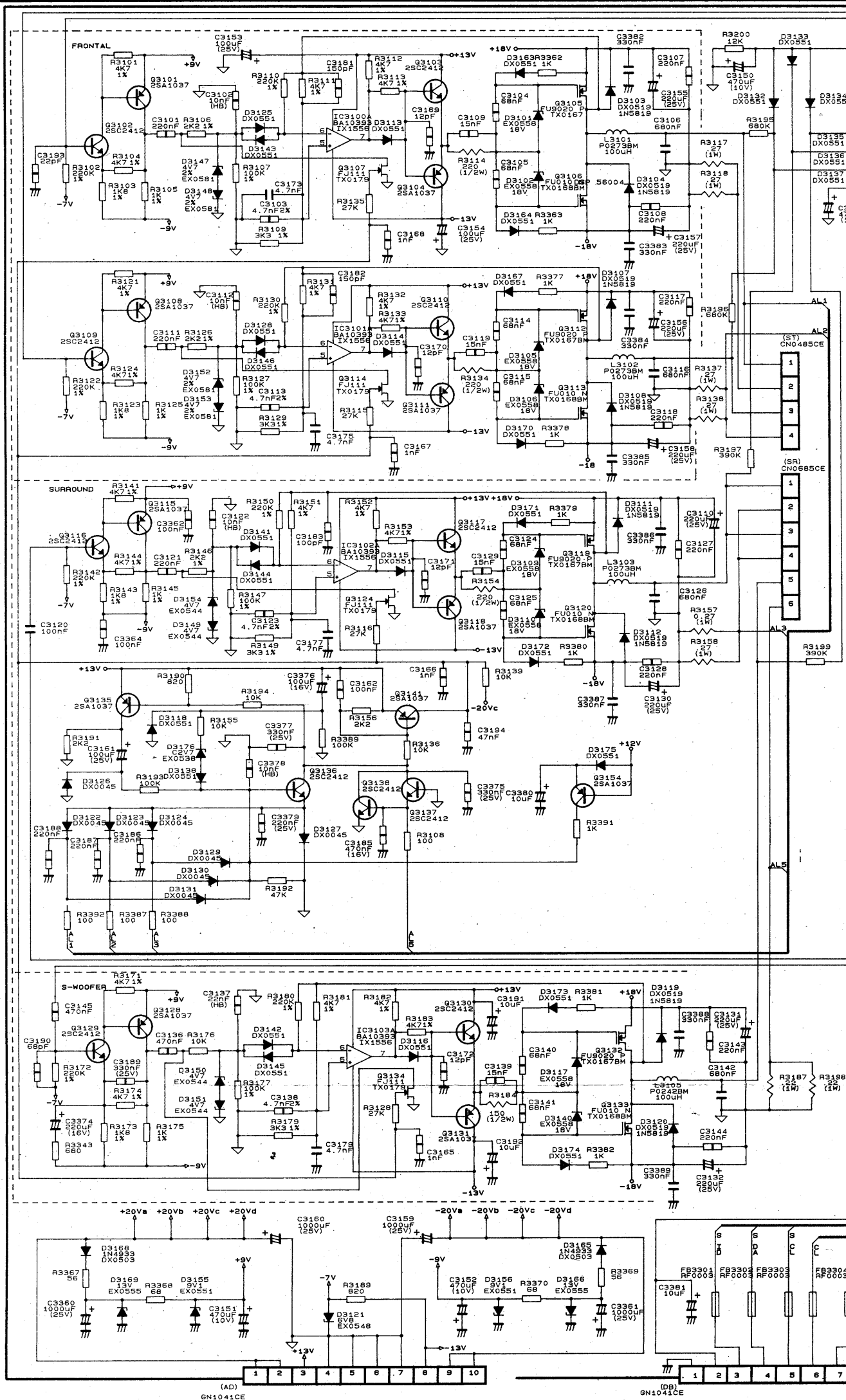


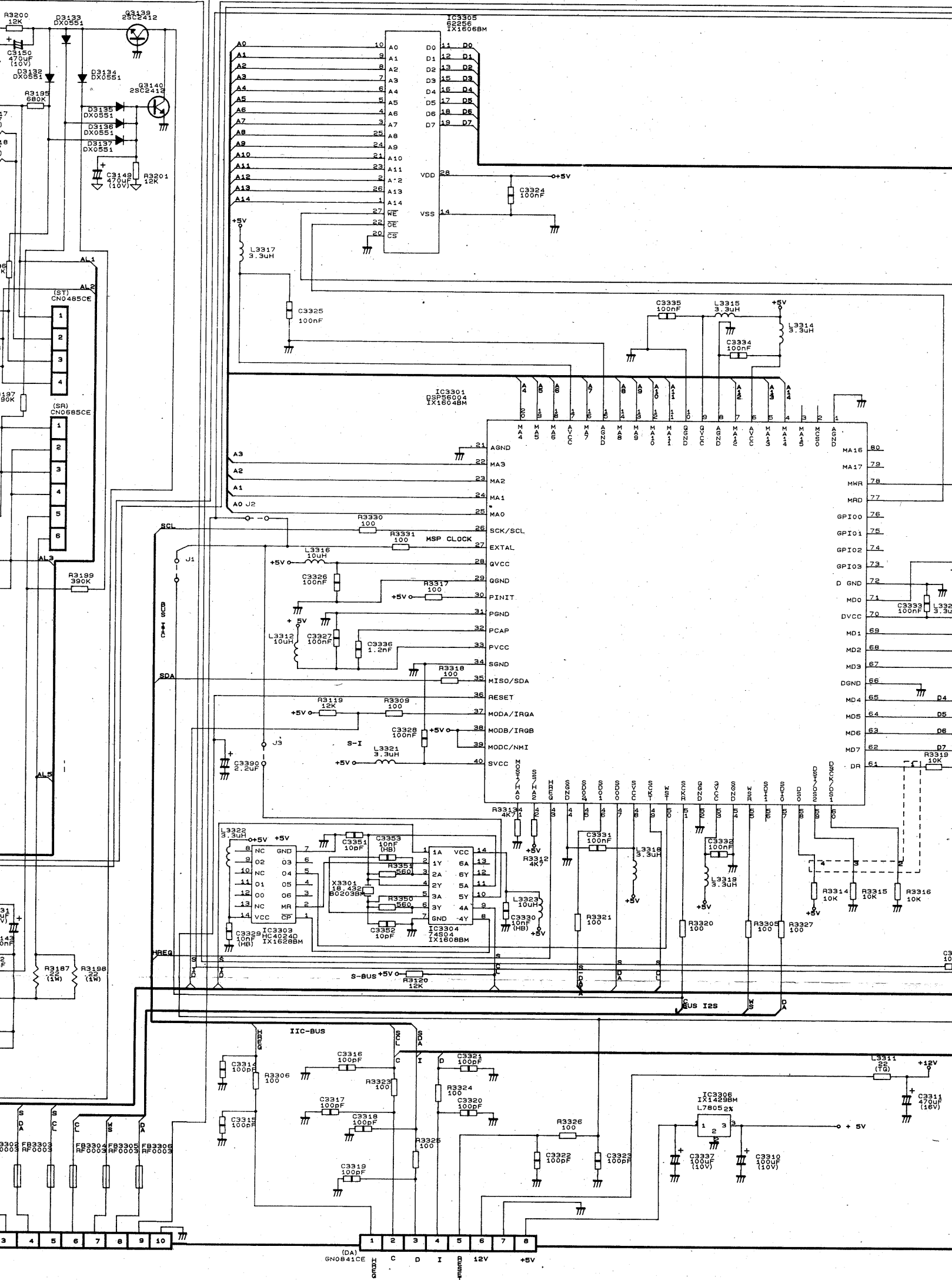


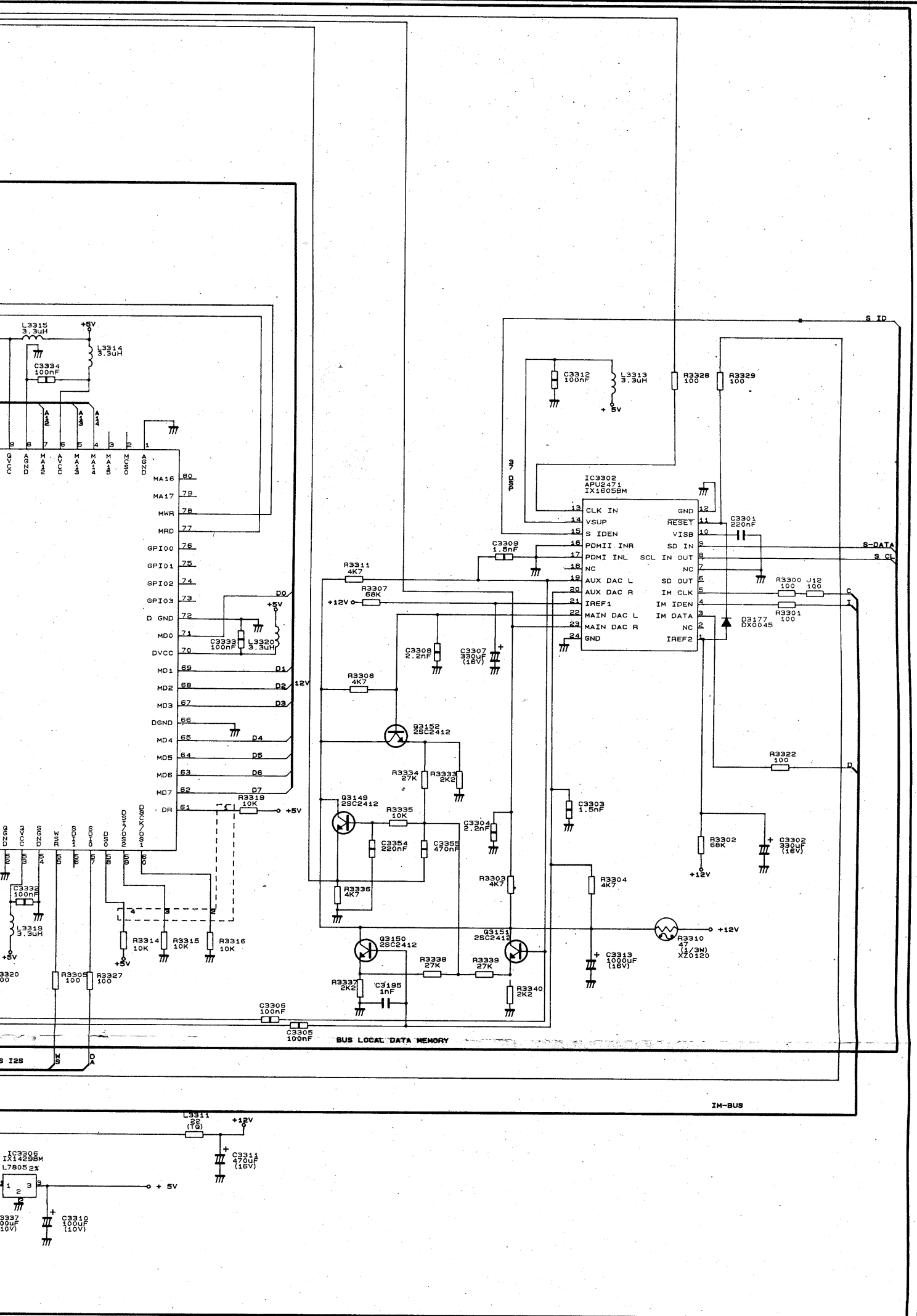




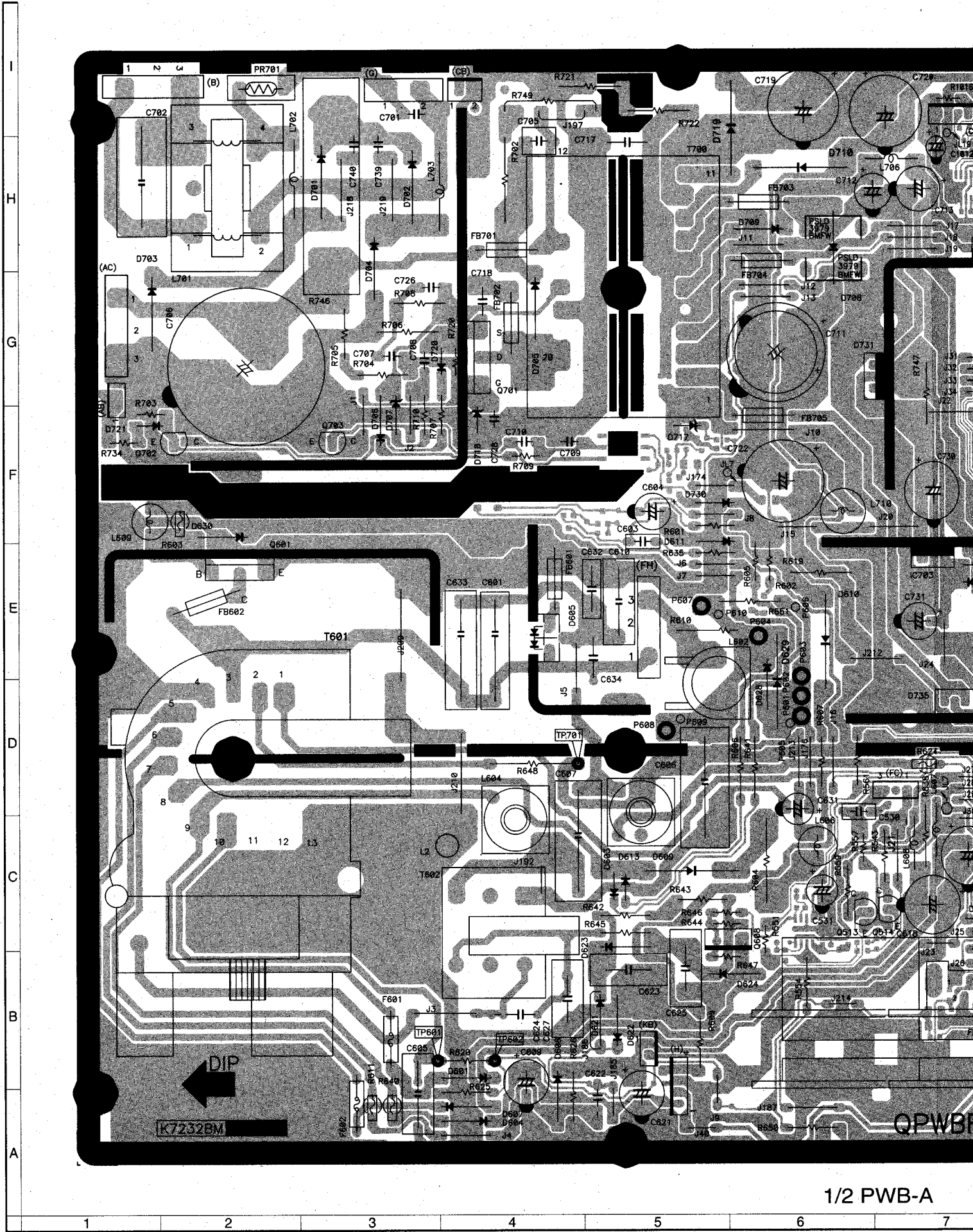


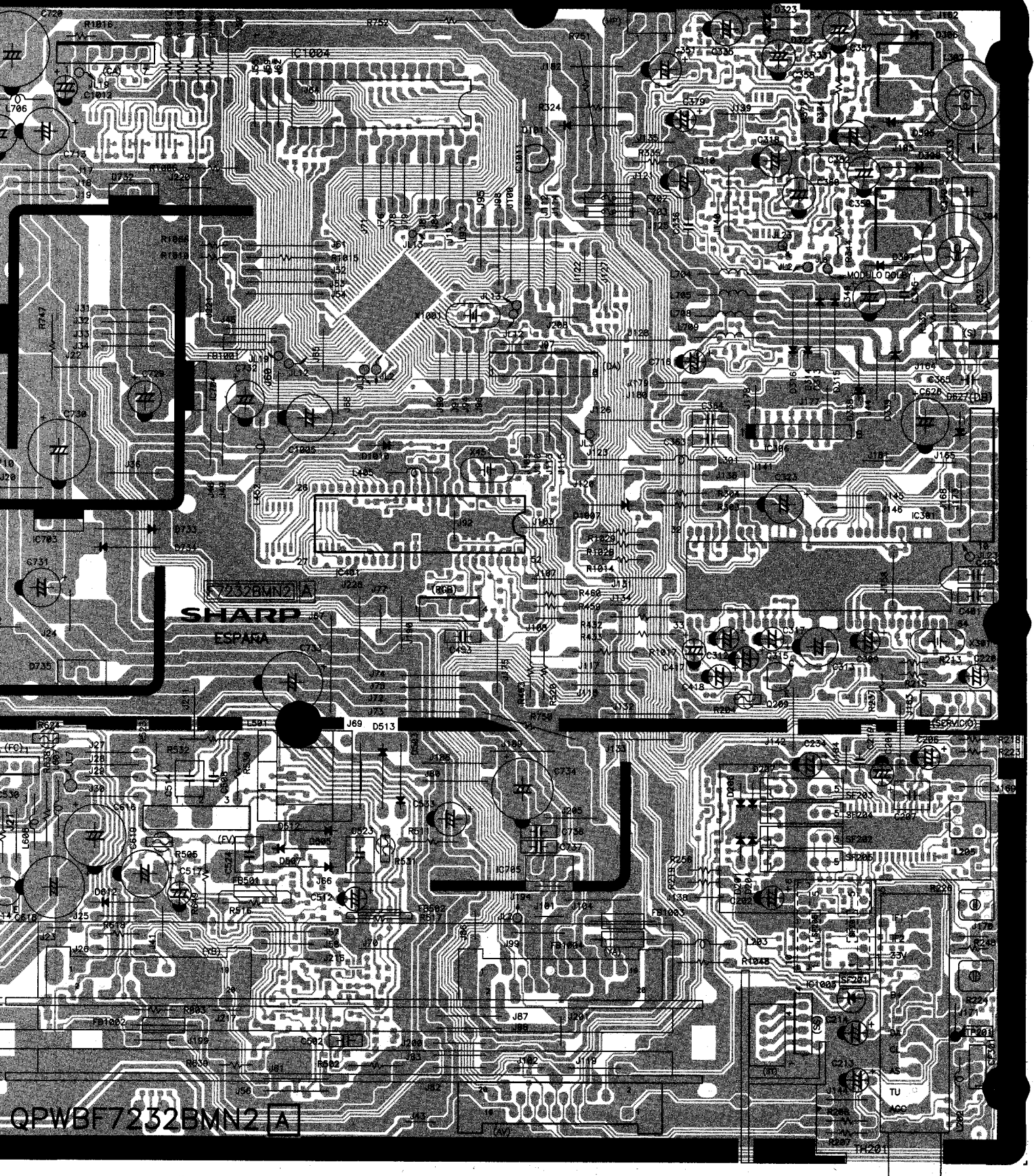


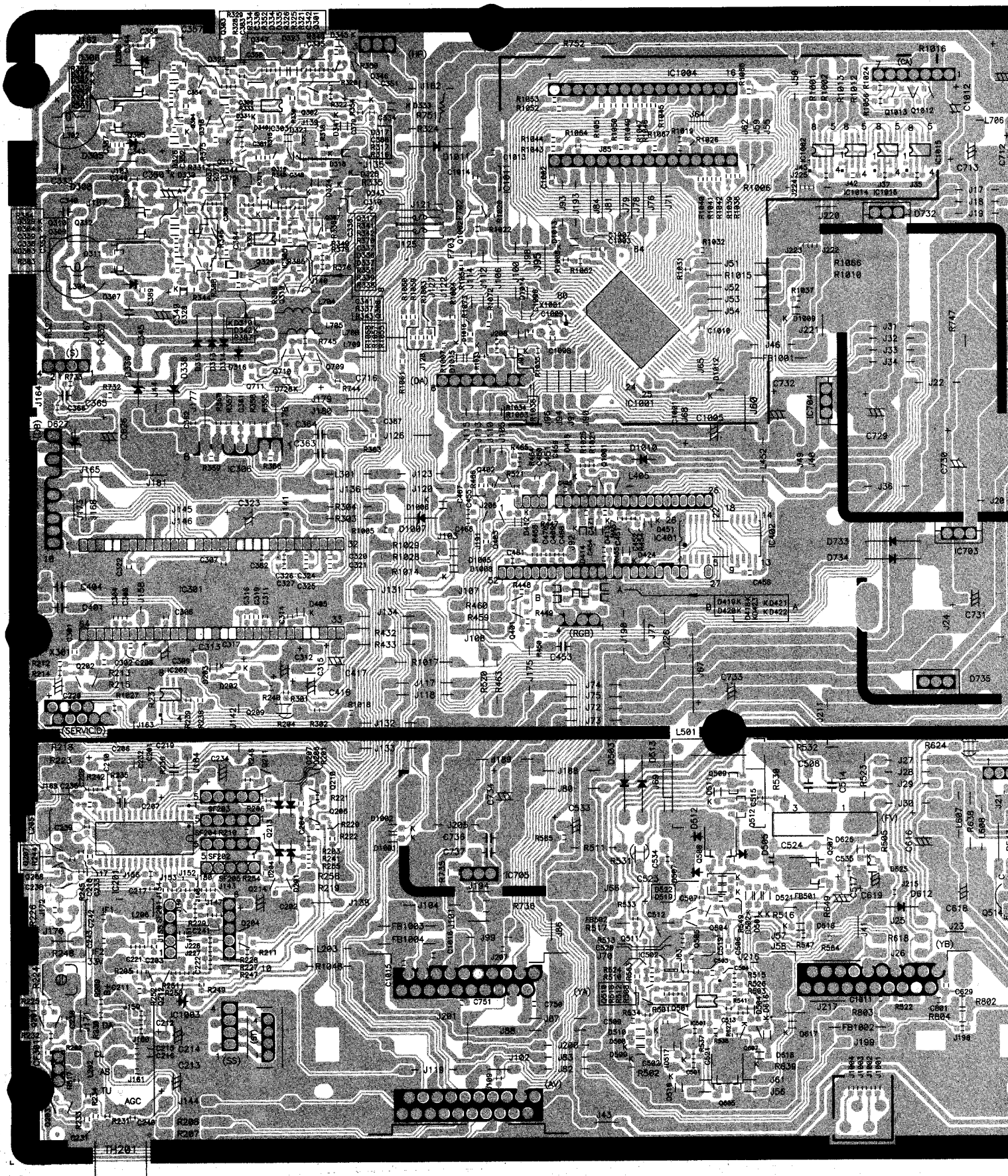


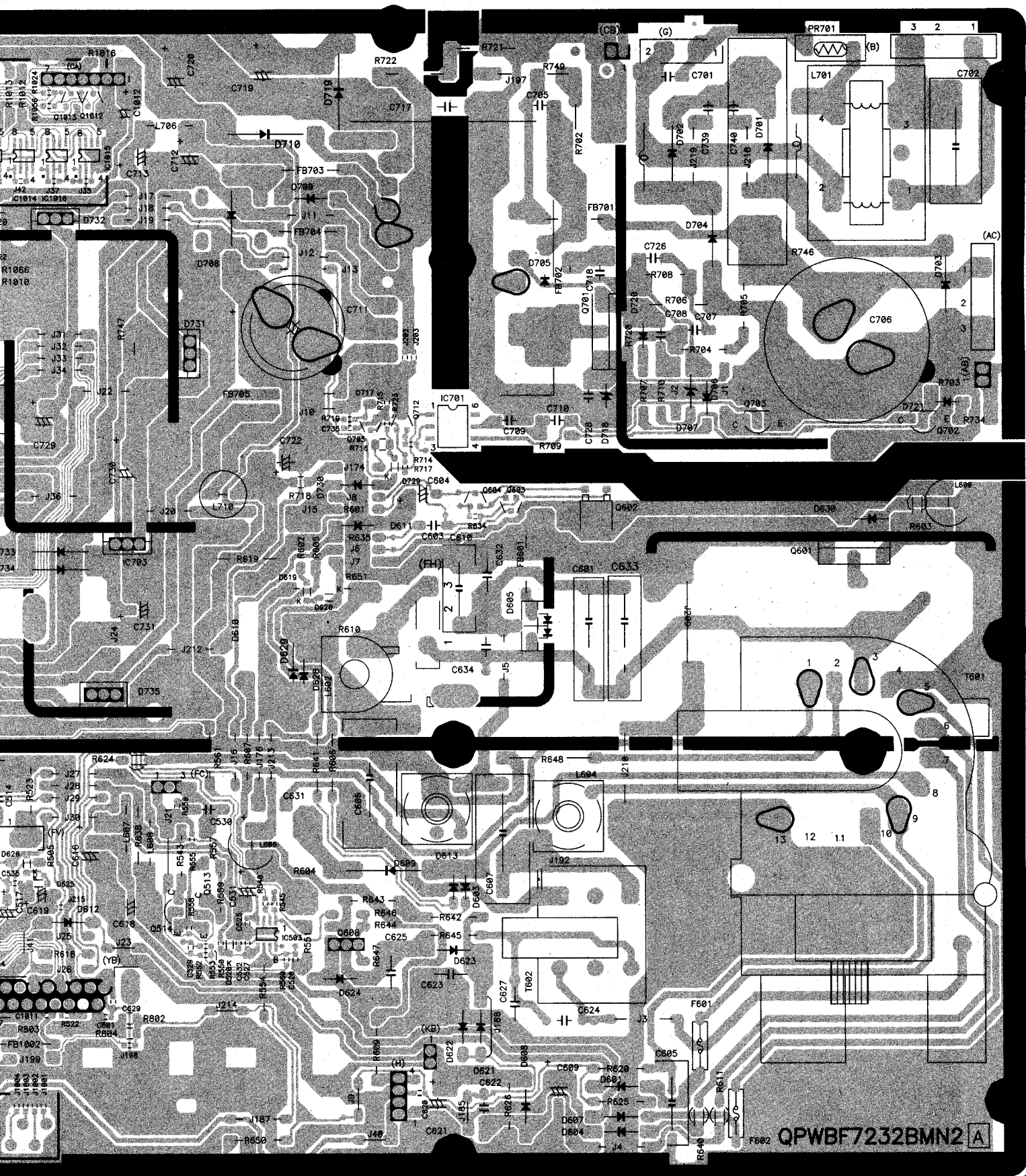


PRINTED WIRING BOARDS









1/2 PWB-A

SAFETY NOTE:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "△" () ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (- - - -) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTE:

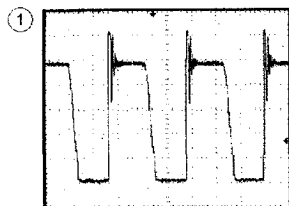
1. THE UNIT OF RESISTANCE "OHM" IS OMITTED ($K=1000$ OHMS, $M=$ MEGAOHM).
2. ALL RESISTORS ARE 1/8 WATT, UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS μF , UNLESS OTHERWISE NOTED ($P=\mu\mu F$).
4. THE CAPACITOR WITH PART NO. RC-FZ9XXXBMNJ IS DESIGNED TO WITHSTAND 63V.

WAVEFORM MEASUREMENT CONDITIONS

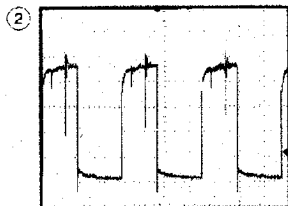
COLOUR BAR GENERATOR SIGNAL OF 70 DB FROM RF INPUT.

CAUTION:

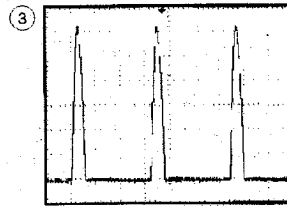
THIS CIRCUIT DIAGRAM IS ORIGINAL ONE, THEREFORE THERE MAY BE A SLIGHT DIFFERENCE FROM YOURS.



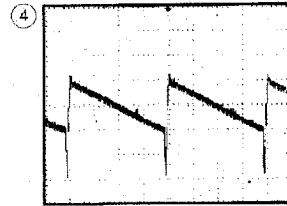
616 Vp-p 63.75KHz



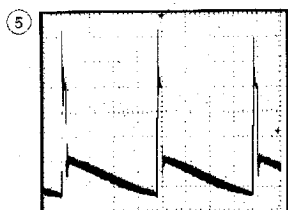
5.6 Vp-p 31.25KHz



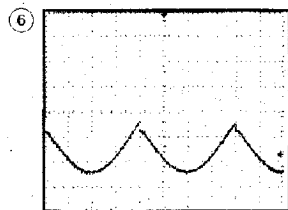
1.28 KV 31.25KHz



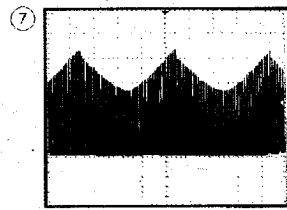
2Vp-p 100Hz



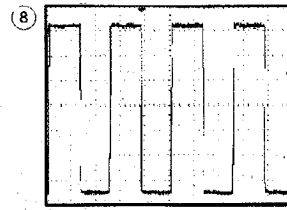
67Vp-p 100Hz



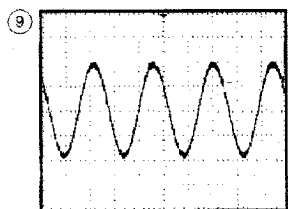
2Vp-p 100Hz



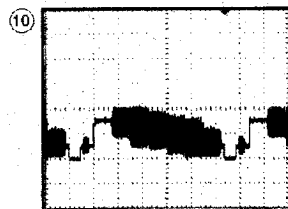
208Vp-p 100Hz



35Vp-p 160KHz

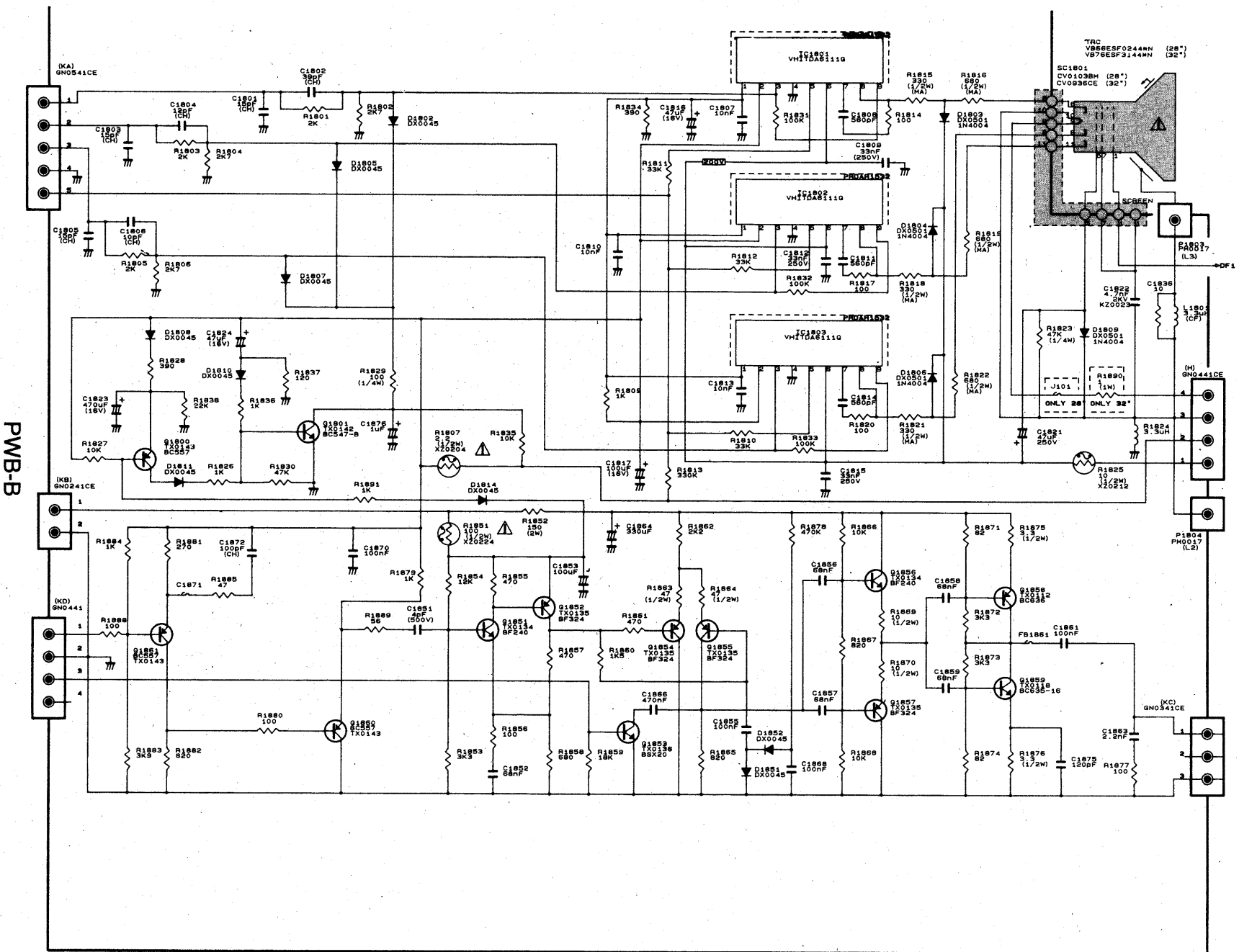


19Vp-p 400Hz (Audio Out)

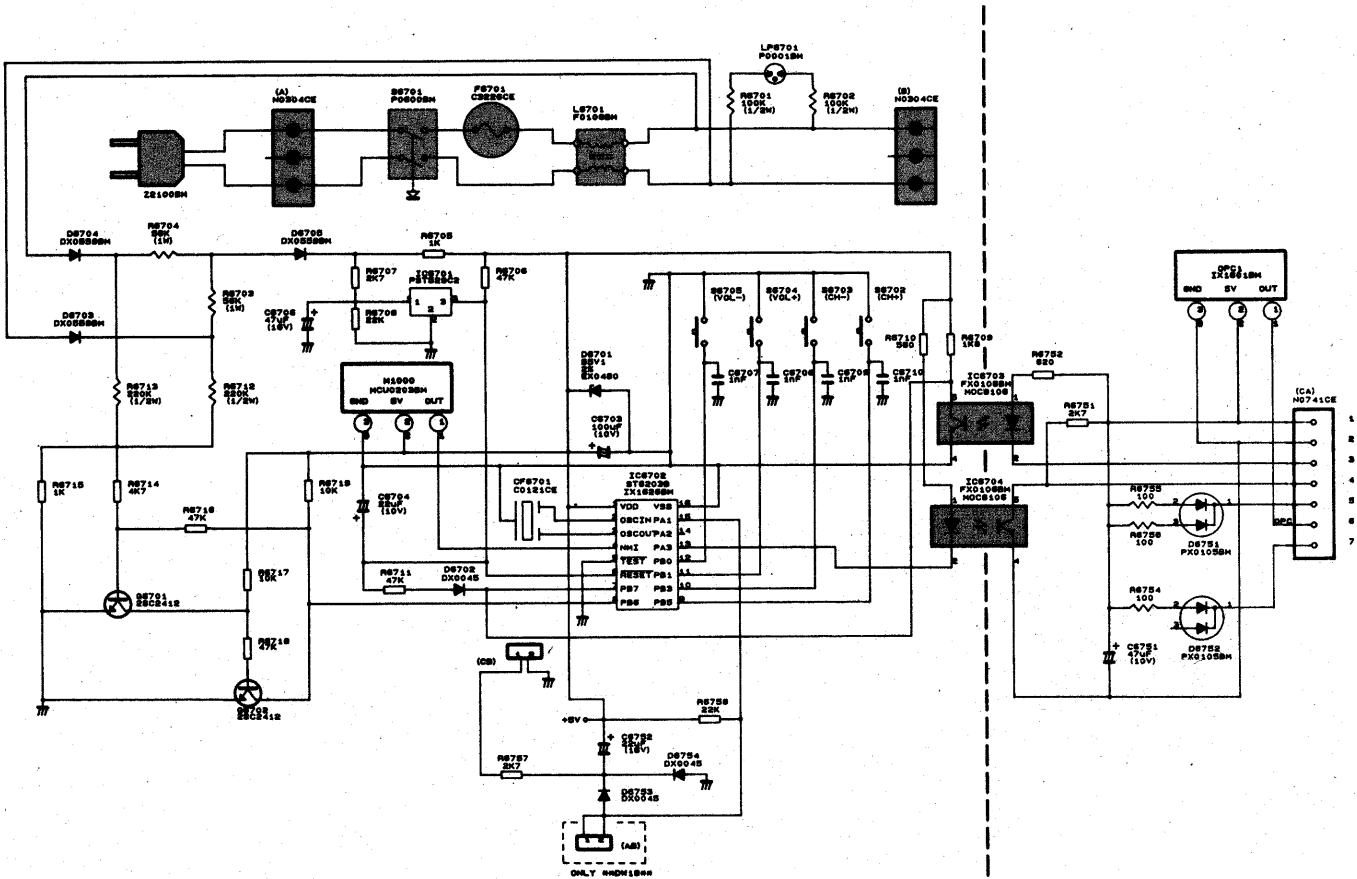


1.1Vp-p 50Hz

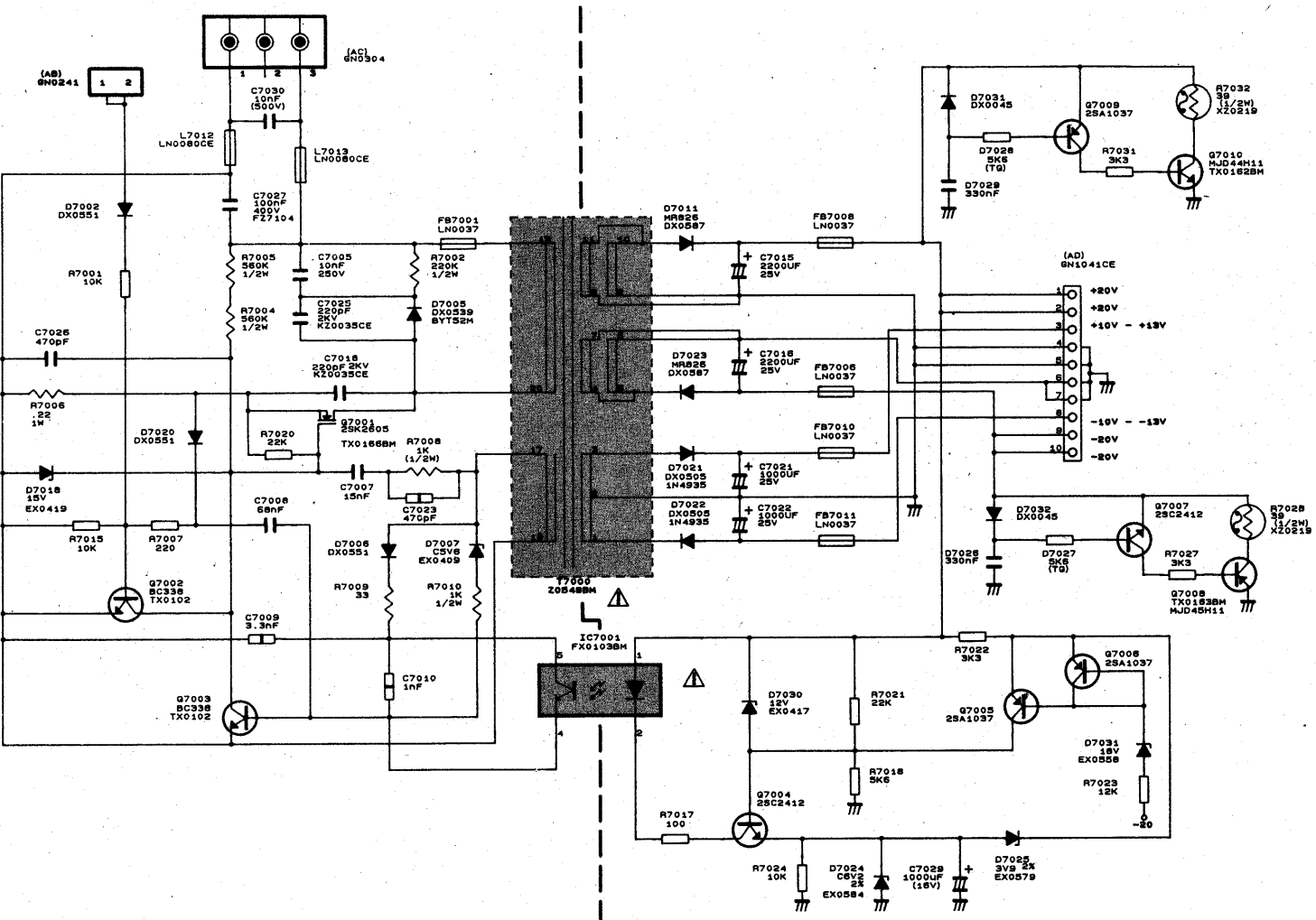
66DW-18H
76DW-18H



SCHEMATIC DIAGRAM CONTROL UNIT

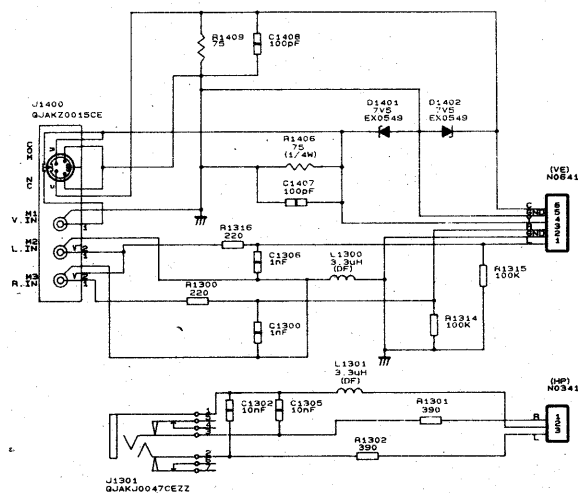


PWB-F

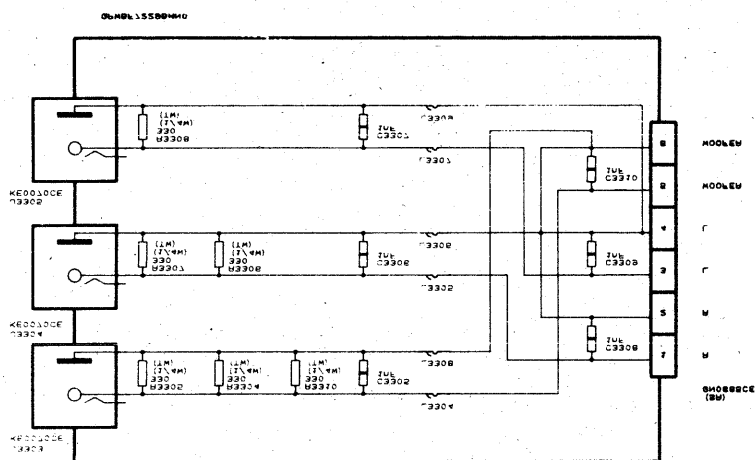


1	2	3	4	5	6
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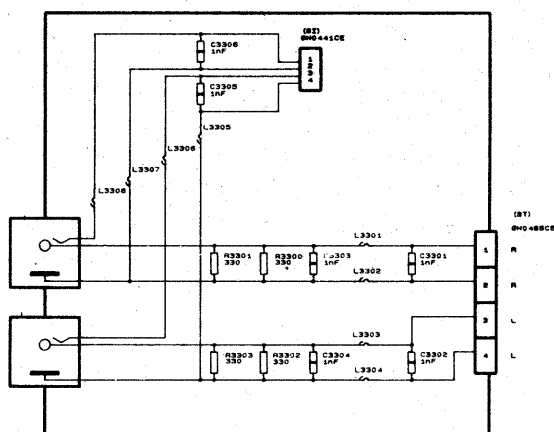
SCHEMATIC DIAGRAM



PWB-E

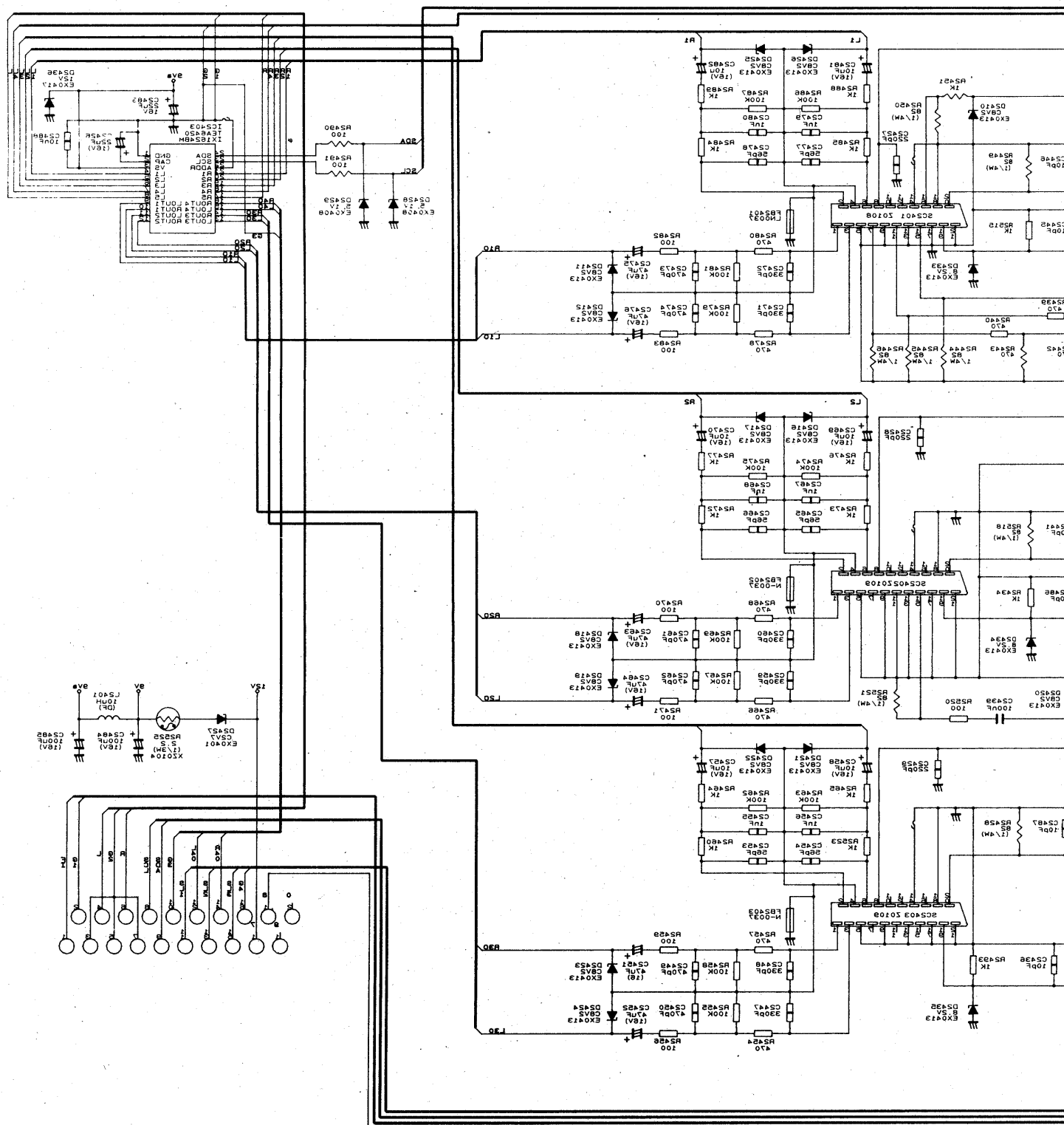


PWB-H

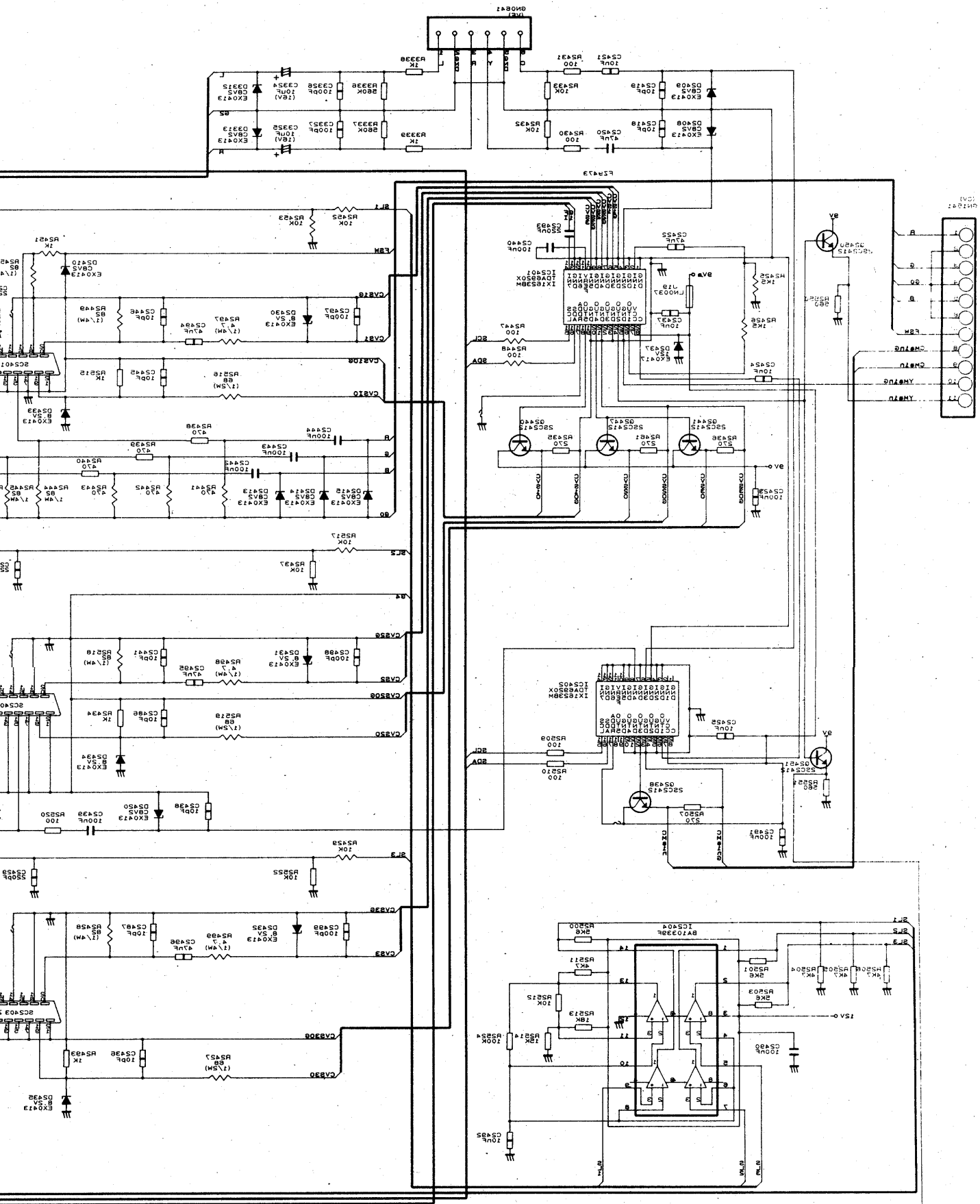


PWB-I

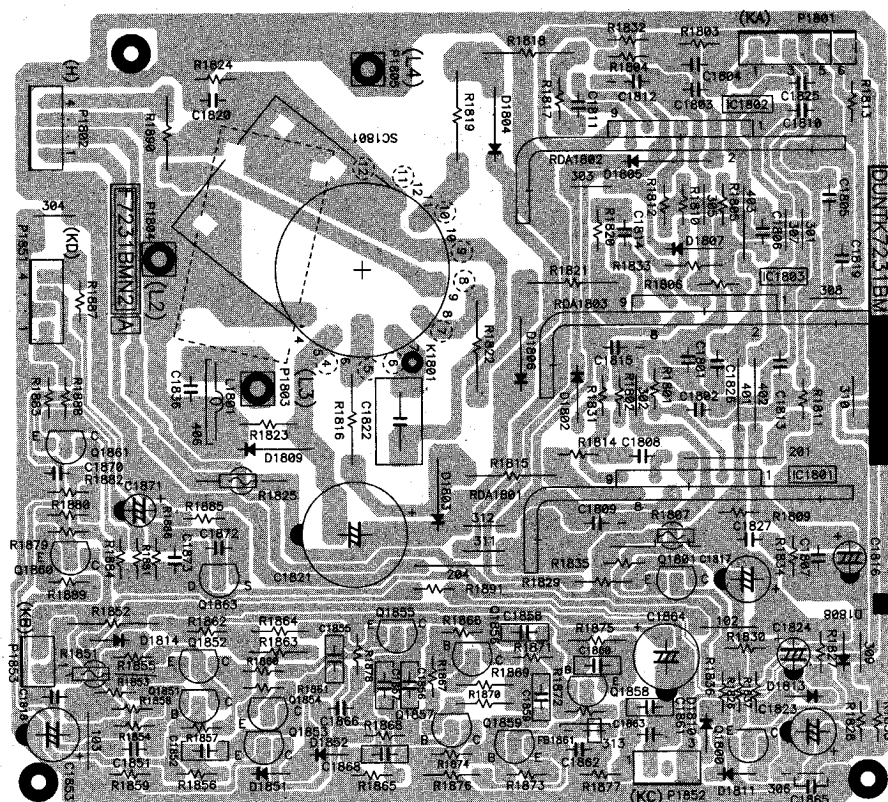
SCHEMATIC DIAGRAM A/V UNIT



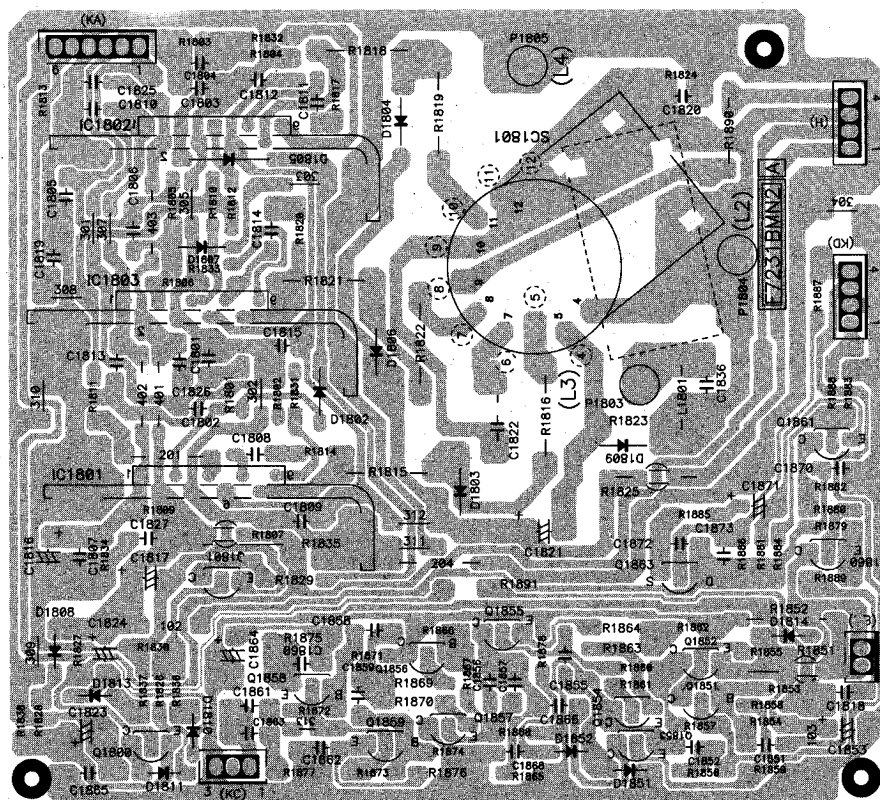
PWB-D



PRINTED WIRING BOARDS

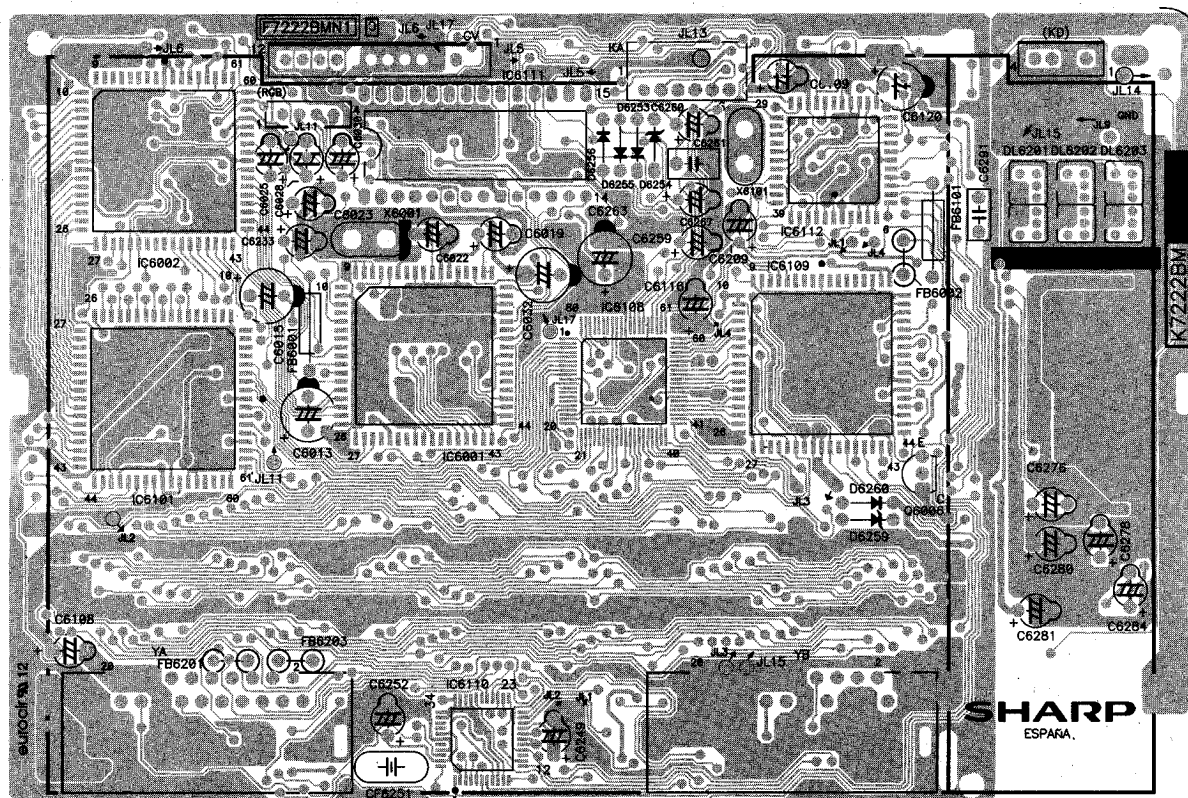


1/2 PWB-B

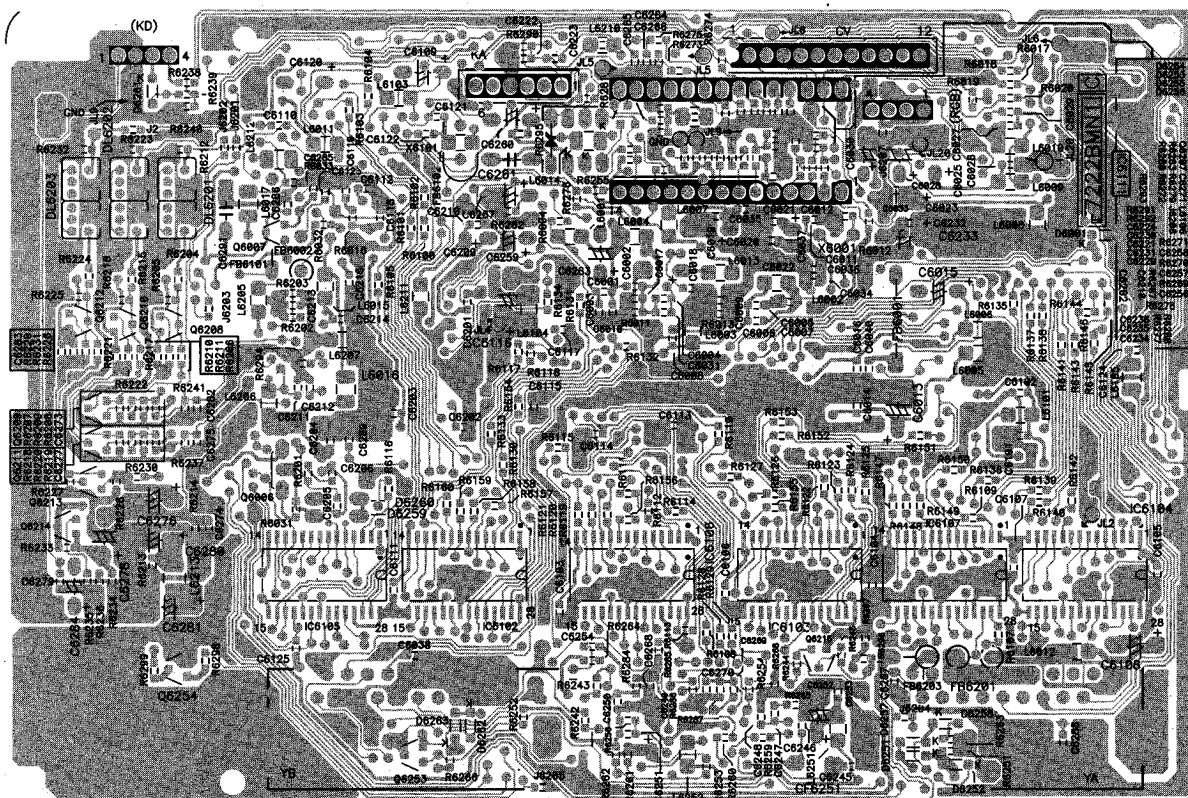


1/2 PWB-B

PRINTED WIRING BOARDS

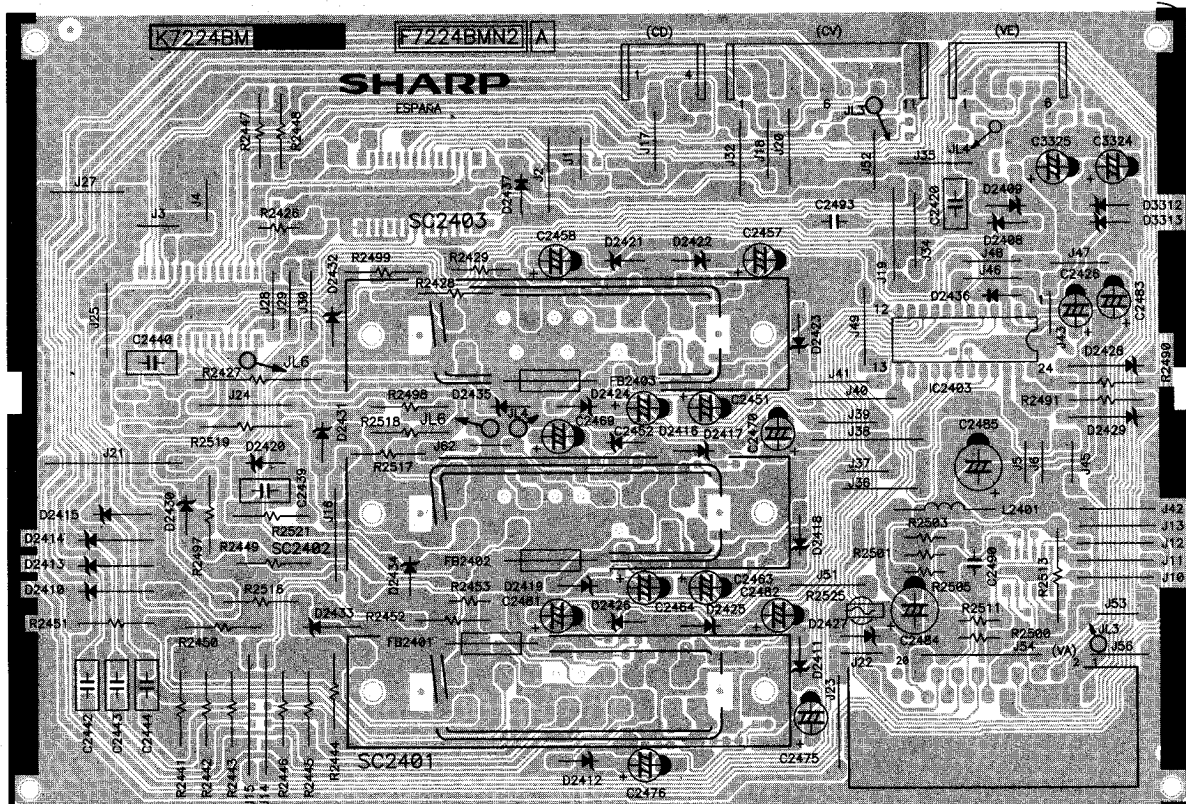


1/2 PWB-C

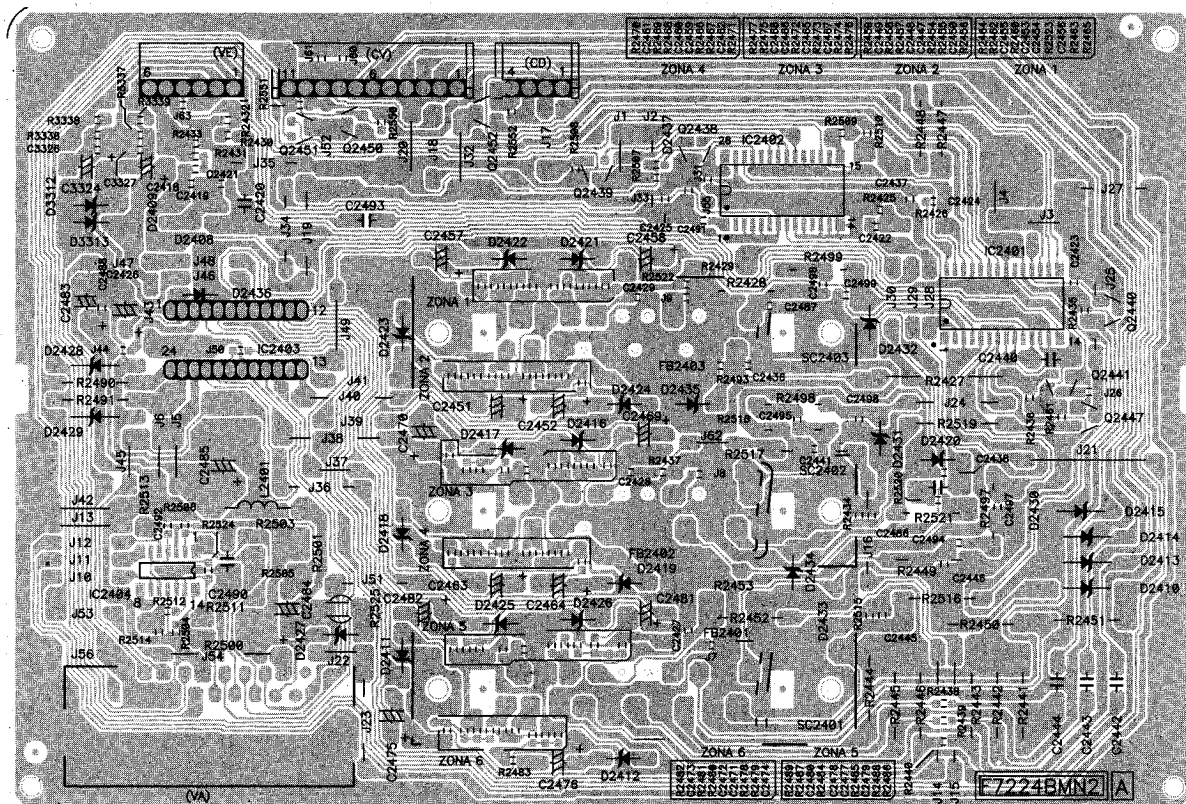


1/2 PWB-C

PRINTED WIRING BOARDS

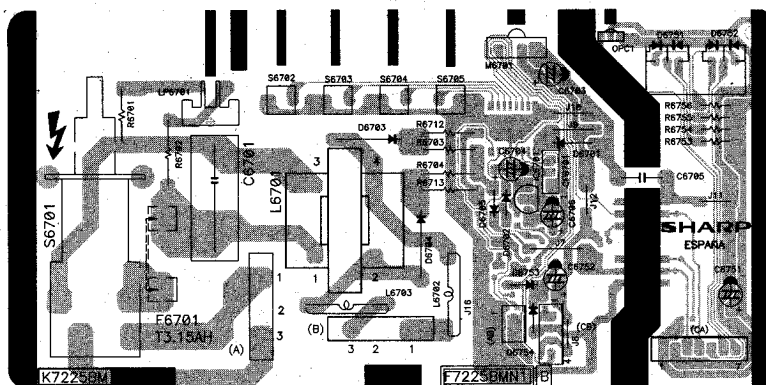


1/2 PWB-D

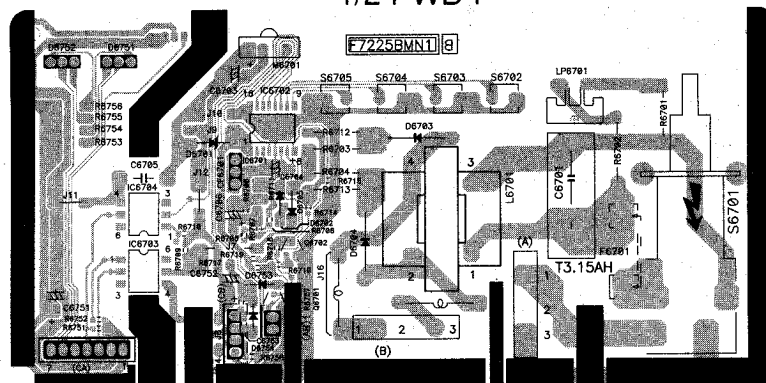


1/2 PWB-D

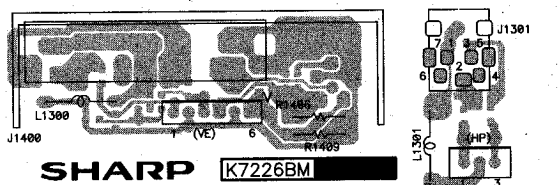
PRINTED WIRING BOARDS



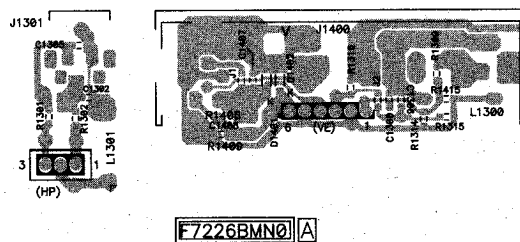
1/2 PWB-F



1/2 PWB-F

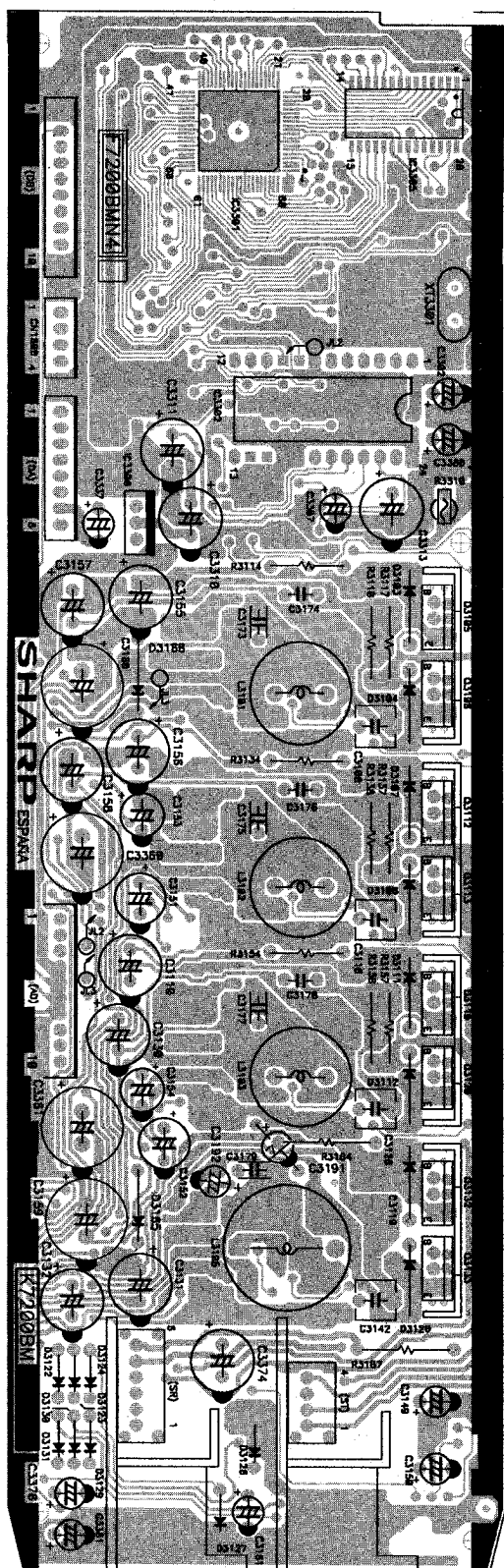


1/2 PWB-E

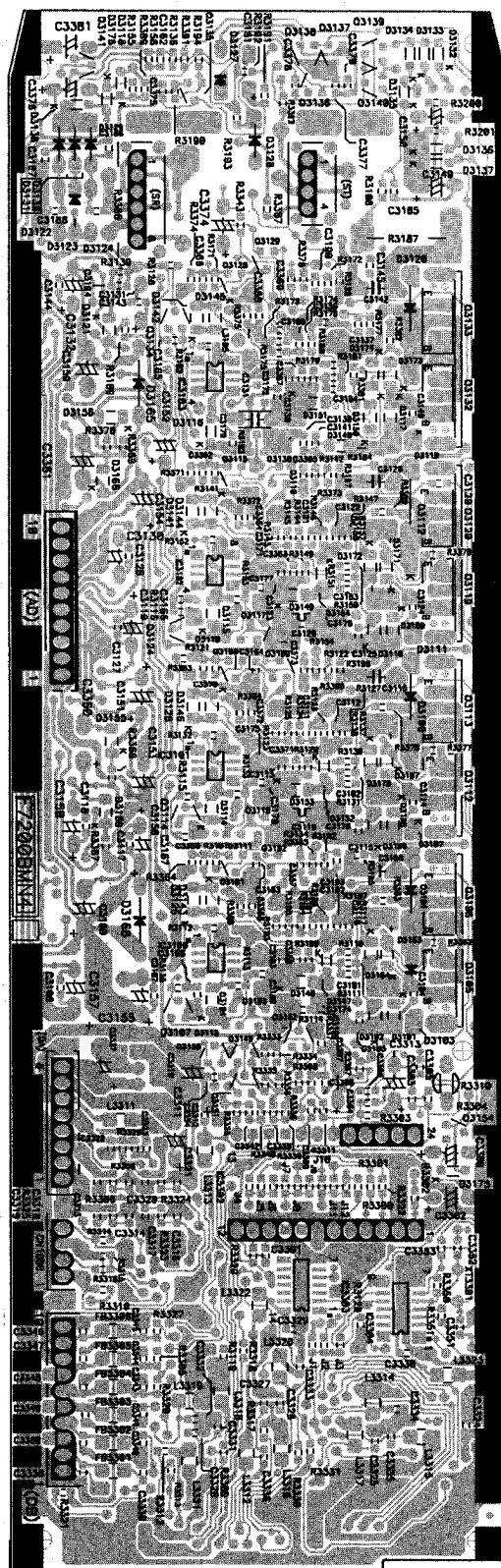


1/2 PWB-E

PRINTED WIRING BOARDS

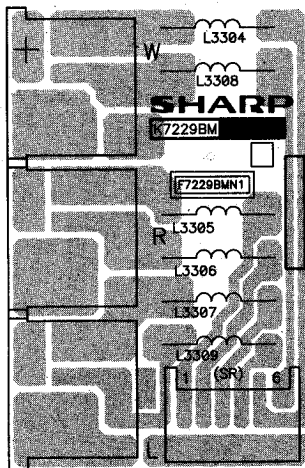


1/2 PWB-G

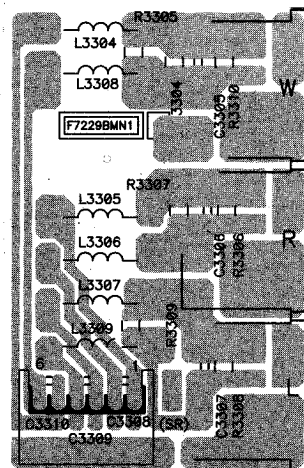


1/2 PWB-G

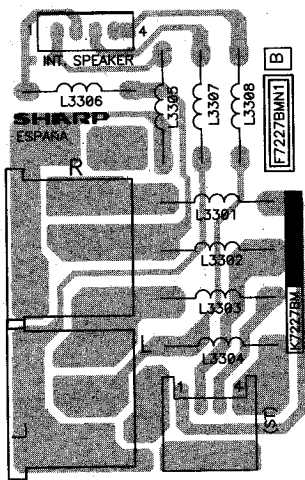
PRINTED WIRING BOARDS



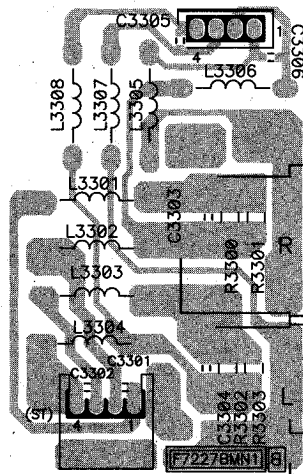
1/2 PWB-H



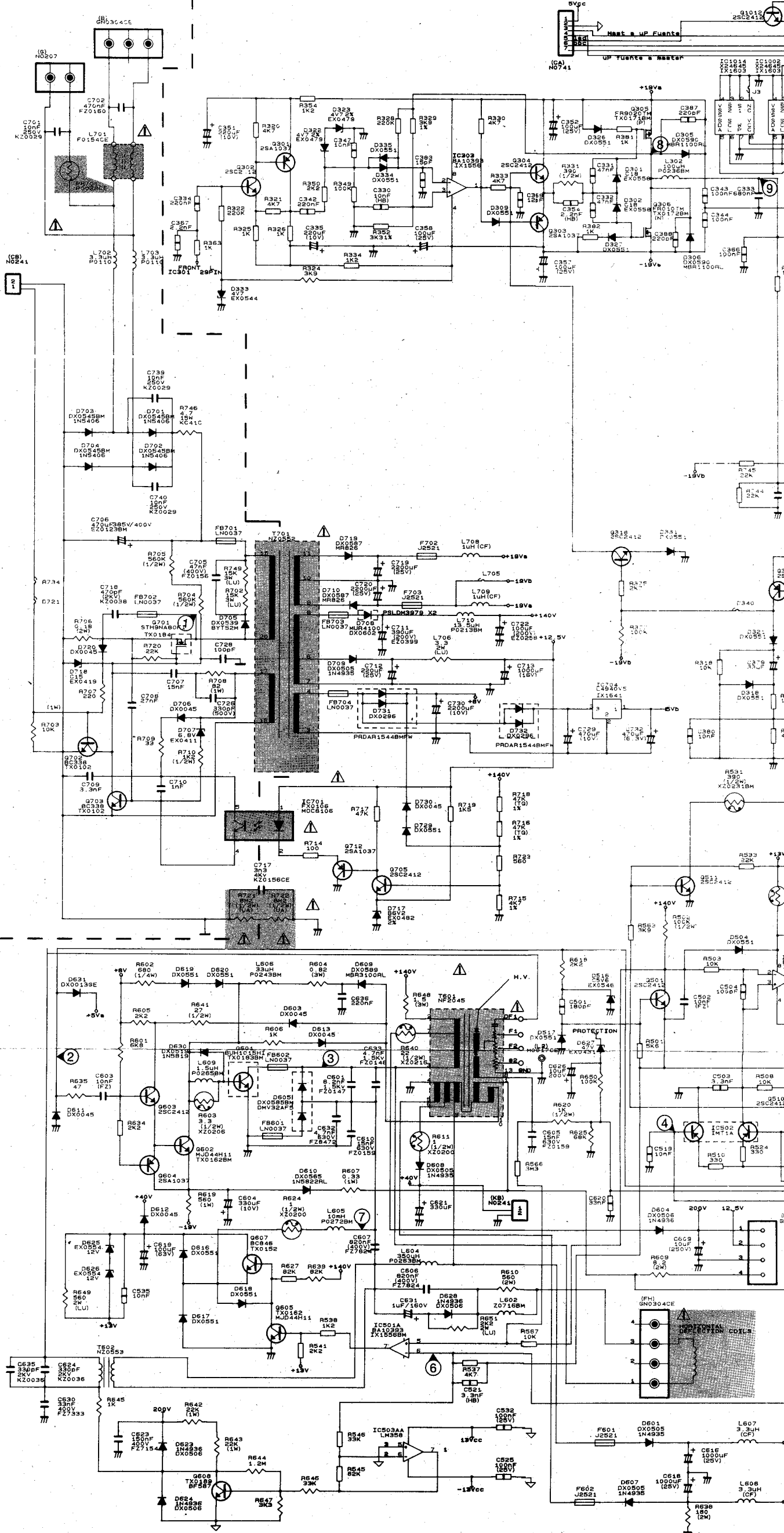
1/2 PWB-H

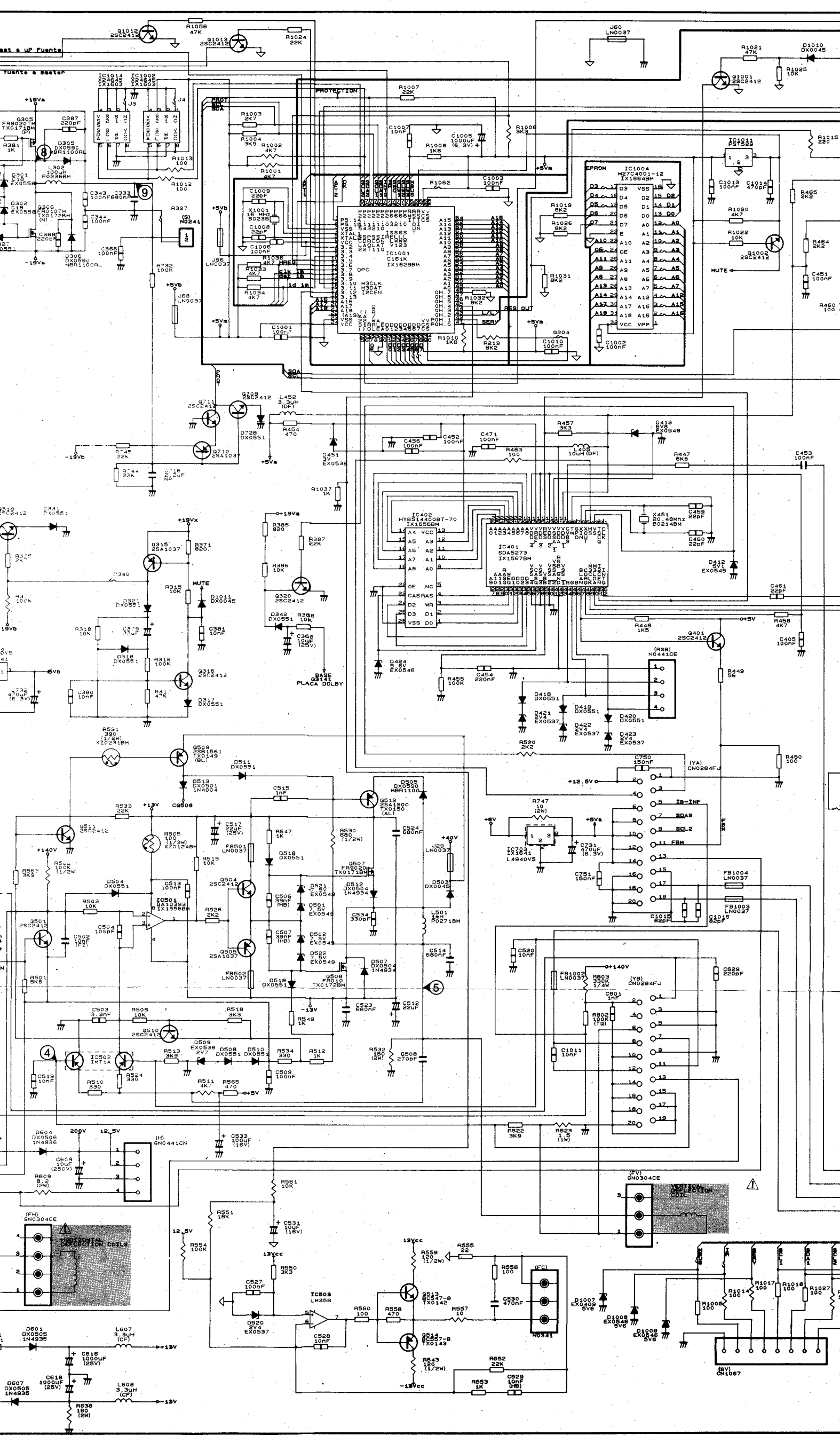


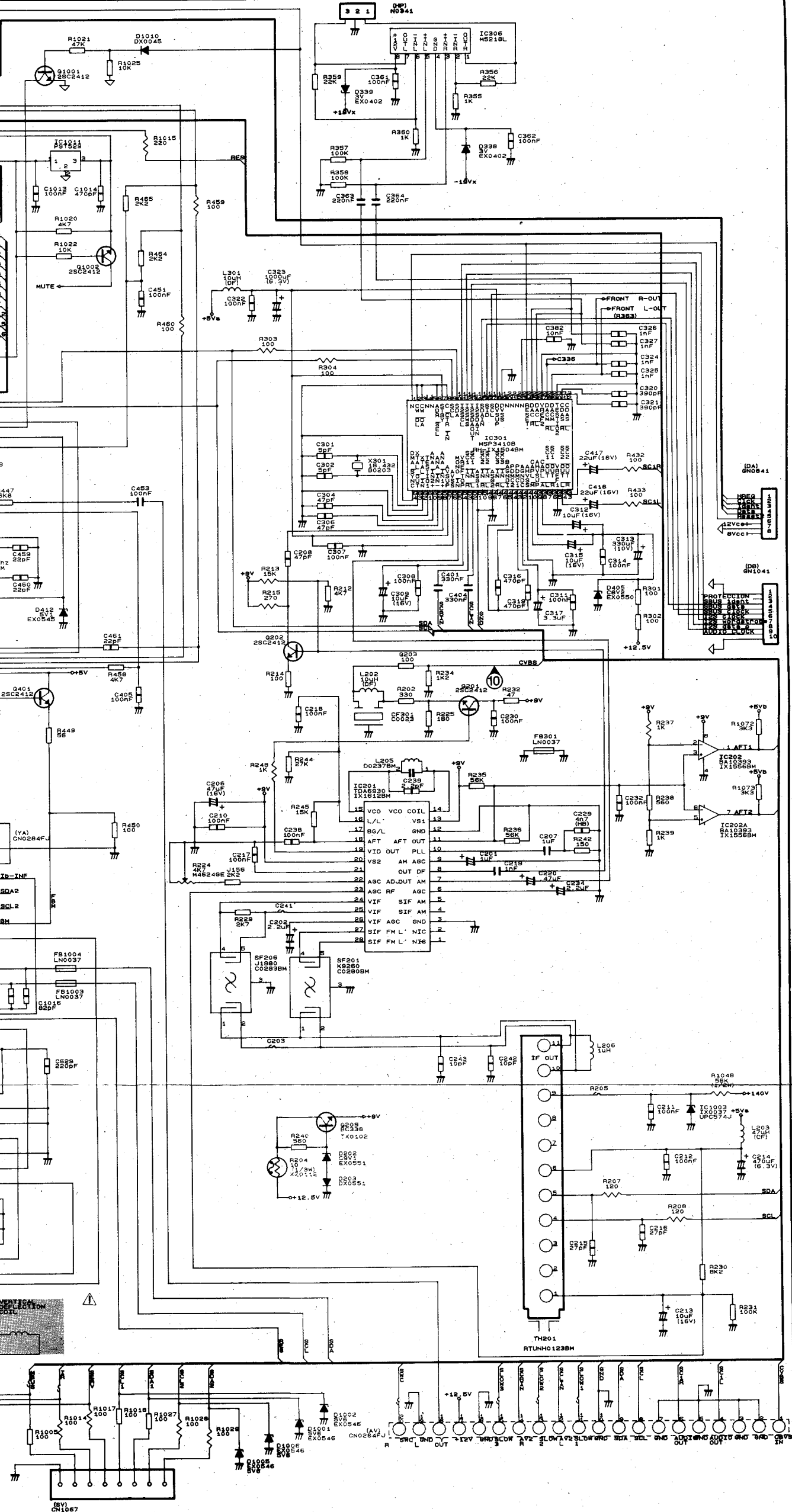
1/2 PWB-I



1/2 PWB-I







PARTS LIST REPLACEMENT PARTS

Replacement parts which have special safety characteristics are identified in this manual. Electrical components having such features are identified by Δ in the Replacement Parts list. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended is not permitted. Replacement parts not shown in this service manual may create shock fire, or other hazards.

HOW TO ORDER REPLACEMENT PARTS

To have your order completed promptly and correctly please supply the following information.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |
| 5. CODE | 6. QUANTITY |

★ MARK: SPARE PARTS DELIVERY SECTION

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
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PICTURE TUBE

△	VB66ESF0244*N	S	C.R.T. 28" 16:9 66DW18H	CT
△	VB76ESF3144*N	S	C.R.T. 32" 16:9 76DW18H	**
△	RCILG0417BMZZ	S	Degaussing Coil 28" 16:9 66DW18H	AX
△	RCILG0418BMZZ	S	Degaussing Coil 32" 16:9 76DW18H	AZ
△	RCILG0419BMZZ	S	Rotation Coil 16:9	AR

PRINTED WIRING BOARDS

PWB - A	DUNTK7232CJV3	S	Mother Unit 66DW18H	—
PWB - A	DUNTK7232CJV7	S	Mother Unit 76DW18H	—
PWB - B	DUNTK7231BMV2	S	Socket Unit 66DW18H	—
PWB - B	DUNTK7231BMV5	S	Socket Unit 76DW18H	—
PWB - C	DUNTK7222BMV2	S	100Hz Unit 66DW18H	—
PWB - D	DUNTK7224BMV3	S	A / V Unit	—
PWB - E	DUNTK7226BMV2	S	Front A / V Unit	—
PWB - F	DUNTK7225BMV3	S	Control Unit 66DW18H	—
PWB - F	DUNTK7225BMV7	S	Control Unit 76DW18H	—
PWB - G	DUNTK7200BMV2	S	Dolby Unit	—
PWB - H	DUNTK7229BMV1	S	External Speaker (X3)	—
PWB - I	DUNTK7227BMV1	S	External Speaker (X2)	—
PWB - J	DUNTK7201BMV2	S	Aux. Power Supply Unit	—
CHASSIS	DSETU7232CJV3	S	Complete Chassis 66DW18H	—
CHASSIS	DSETU7232CJV7	S	Complete Chassis 76DW18H	—

PWB - A MOTHER UNIT

TUNER

TH 0201	RTUNH0123BMZZ	S	Tuner	BA
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INTEGRATED CIRCUITS

IC 0201	RH-IX1612BMZZ	S	TDA6930X	AS
IC 0202	RH-IX1556BMZZ	S	BA10393 S0P8	AD
IC 0301	RH-IX1504BMZZ	S	MS 3410B-PP-F7	BG
IC 0303	RH-IX1556BMZZ	S	BA10393 S0P8	AD
IC 0306	VHIM5218L/-1	S	M5218L	AF
IC 0401	RH-IX1567BMZZ	S	SDA5273 SDIP52	BG
IC 0402	RH-IX1656BMZZ	S	DRAM	AY
IC 0501	RH-IX1556BMZZ	S	BA10393 S0P8	AD
IC 0502	VSIMT1A/A/-1	S	IMT1A	AB
IC 0503	VHILM358D/-1	S	LM358DR	AE
△ IC 0701	RH-FX0106BMZZ	S	MOC8106SR2V	AD
IC 0703	RH-IX1641BMZZ	S	L4940V5	AH
IC 0704	RH-IX1641BMZZ	S	L4940V5	AH

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
IC 1001	RH-IX1629BMZZ	S	SAB-C161K-L16Q	AY
IC 1002	RH-IX1603BMZZ	S	NVM	AV
IC 1003	RH-IX0037CEZZ	S	UPC574J 33V	AD
IC 1004	CH-IX1642CJH1	S	EPROM 76DW18H	AX
IC 1004	CH-IX1642CJH0	S	EPROM 66DW18H	AZ
IC 1011	VHIPST529C2-1	S	PST529C	AD
IC 1014	RH-IX1603BMZZ	S	NVM	AV

TRANSISTORS

Q 0201	VS2SC2412KQ-1	S	2SC2412	AA
Q 0202	VS2SC2412KQ-1	S	2SC2412	AA
Q 0209	RH-TX0102BMZZ	S	BC338	AB
Q 0301	VS2SA1037KQ-1	S	BC807	AA
Q 0302	VS2SC2412KQ-1	S	2SC2412	AA
Q 0303	VS2SA1037KQ-1	S	BC807	AA
Q 0304	VS2SC2412KQ-1	S	2SC2412	AA
Q 0305	RH-TX0171BMZZ	J	IRFR9020TM	AF
Q 0306	RH-TX0172BMZZ	J	IRFR010TM	AE
Q 0315	VS2SA1037KQ-1	S	BC807	AA
Q 0316	VS2SC2412KQ-1	S	2SC2412	AA
Q 0318	VS2SC2412KQ-1	S	2SC2412	AA
Q 0320	VS2SC2412KQ-1	S	2SC2412	AA
Q 0401	VS2SC2412KQ-1	S	2SC2412	AA
Q 0501	VS2SC2412KQ-1	S	2SC2412	AA
Q 0504	VS2SC2412KQ-1	S	2SC2412	AA
Q 0505	VS2SA1037KQ-1	S	BC807	AA
Q 0507	RH-TX0171BMZZ	J	IRFR9020TM	AF
Q 0508	RH-TX0172BMZZ	J	IRFR010TM	AE
Q 0509	RH-TX0149BMZZ	S	2SB1561	AD
Q 0510	VS2SC2412KQ-1	S	2SC2412	AA
Q 0511	VS2SC2412KQ-1	S	2SC2412	AA
Q 0512	RH-TX0150BMZZ	S	2SA1900T100/Q	AC
Q 0513	RH-TX0142BMZZ	S	BC547-B	AB
Q 0514	RH-TX0143BMZZ	S	BC557-B	AA
Q 0601	RH-TX0183BMZZ	S	BUH1015HI	AQ
Q 0602	RH-TX0162BMZZ	S	MJD44H11	AF
Q 0603	VS2SC2412KQ-1	S	2SC2412	AA
Q 0604	VS2SA1037KQ-1	S	BC807	AA
Q 0605	RH-TX0162BMZZ	S	MJD44H11	AF
Q 0607	RH-TX0152BMZZ	S	BC846BLT1	AA
Q 0608	RH-TX0189BMZZ	S	BF587	AE
Q 0701	RH-TX0184BMZZ	S	STH9NA80FI	AV
Q 0702	RH-TX0102BMZZ	S	BC338	AB
Q 0703	RH-TX0102BMZZ	S	BC338	AB
Q 0705	VS2SC2412KQ-1	S	2SC2412	AA
Q 0709	VS2SC2412KQ-1	S	2SC2412	AA
Q 0710	VS2SA1037KQ-1	S	BC807	AA
Q 0711	VS2SC2412KQ-1	S	2SC2412	AA
Q 0712	VS2SA1037KQ-1	S	BC807	AA
Q 1001	VS2SC2412KQ-1	S	2SC2412	AA
Q 1002	VS2SC2412KQ-1	S	2SC2412	AA
Q 1012	VS2SC2412KQ-1	S	2SC2412	AA
Q 1013	VS2SC2412KQ-1	S	2SC2412	AA

DIODES

D 0202	RH-EX0551BMZZ	S	Zener TZMC9V1	AA
D 0203	RH-DX0551BMZZ	S	LL4148	AA
D 0301	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0302	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0305	RH-DX0590BMZZ	S	MBR1100RL	AE
D 0306	RH-DX0590BMZZ	S	MBR1100RL	AE
D 0309	RH-DX0551BMZZ	S	LL4148	AA
D 0317	RH-DX0551BMZZ	S	LL4148	AA
D 0318	RH-DX0551BMZZ	S	LL4148	AA
D 0321	RH-DX0551BMZZ	S	LL4148	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
D 0322	RH-EX0479BMZZ	S	Zener BZX79 B4V7	AA	D 0703	RH-DX0545BMZZ	S	1N5406 600V 3A	AD
D 0323	RH-EX0479BMZZ	S	Zener BZX79 B4V7	AA	D 0704	RH-DX0545BMZZ	S	1N5406 600V 3A	AD
D 0326	RH-DX0551BMZZ	S	LL4148	AA	D 0705	RH-DX0539BMZZ	S	BYT52M	AC
D 0327	RH-DX0551BMZZ	S	LL4148	AA	D 0706	RH-DX0045BMZZ	S	1N4148	AA
D 0331	RH-DX0551BMZZ	S	LL4148	AA	D 0707	RH-EX0411BMZZ	S	Zener BZX79C6V8	AA
D 0333	RH-EX0544BMZZ	S	Zener TZMC4V7	AA	D 0708	RH-DX0602BMZZ	S	MUR4100	AH
D 0334	RH-DX0551BMZZ	S	LL4148	AA	D 0709	RH-DX0505BMZZ	S	1N4935	AB
D 0335	RH-DX0551BMZZ	S	LL4148	AA	D 0710	RH-DX0587BMZZ	S	MR826	AP
D 0338	RH-EX0402BMZZ	S	Zener BZX79C3V0	AB	D 0717	RH-EX0482BMZZ	S	Zener BZX79 B6V2	AA
D 0339	RH-EX0402BMZZ	S	Zener BZX79C3V0	AB	D 0718	RH-EX0419BMZZ	S	Zener BZX79C15V 0.4W	AB
D 0342	RH-DX0551BMZZ	S	LL4148	AA	D 0719	RH-DX0587BMZZ	S	MR826	AP
D 0405	RH-EX0550BMZZ	S	Zener TZMC8V2	AA	D 0720	RH-DX0045BMZZ	S	1N4148	AA
D 0412	RH-EX0545BMZZ	S	Zener TZMC5V1	AA	D 0728	RH-DX0551BMZZ	S	LL4148	AA
D 0413	RH-EX0548BMZZ	S	Zener TZMC6V8	AA	D 0729	RH-DX0551BMZZ	S	LL4148	AA
D 0418	RH-DX0551BMZZ	S	LL4148	AA	D 0730	RH-DX0045BMZZ	S	1N4148	AA
D 0419	RH-DX0551BMZZ	S	LL4148	AA	D 0731	RH-DX0296CEZZ	S	ESAB92M-02	AG
D 0420	RH-DX0551BMZZ	S	LL4148	AA	D 0732	RH-DX0296CEZZ	S	ESAB92M-02	AG
D 0421	RH-EX0537BMZZ	S	Zener TZMC2V4	AB	D 1001	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0422	RH-EX0537BMZZ	S	Zener TZMC2V4	AB	D 1002	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0423	RH-EX0537BMZZ	S	Zener TZMC2V4	AB	D 1005	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0424	RH-EX0546BMZZ	S	Zener TZMC5V6	AA	D 1006	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0451	RH-EX0539BMZZ	S	Zener TZMC3V0	AA	D 1007	RH-EX0409BMZZ	S	Zener BZX79C5V6	AA
D 0501	RH-EX0549BMZZ	S	Zener TZMC7V5	AA	D 1008	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0502	RH-EX0549BMZZ	S	Zener TZMC7V5	AA	D 1009	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0503	RH-DX0045BMZZ	S	1N4148	AA	D 1010	RH-DX0045BMZZ	S	1N4148	AA
D 0504	RH-DX0551BMZZ	S	LL4148	AA	D 1011	RH-DX0045BMZZ	S	1N4148	AA
D 0505	RH-DX0590BMZZ	S	MBR1100RL	AE	PACKAGED CIRCUITS				
D 0507	RH-DX0504BMZZ	S	1N4934	AB	△ PR 0701	RMPTP0028CEZZ	S	P.T.C.	AG
D 0508	RH-DX0551BMZZ	S	LL4148	AA	X 0301	RCRSB0203BMZZ	S	Crystal 18.432 MHz	AG
D 0509	RH-EX0538BMZZ	S	Zener TZMC2V7	AA	X 0451	RCRSB0214BMZZ	S	Crystal 20.48 MHz	AH
D 0510	RH-DX0551BMZZ	S	LL4148	AA	X 1001	RCRSB0235BMZZ	S	Crystal 16 MHz	AF
D 0511	RH-DX0551BMZZ	S	LL4148	AA	COILS				
D 0512	RH-DX0504BMZZ	S	1N4934	AB	L 0202	VP-DF100K0000	S	10μH	AB
D 0513	RH-DX0501BMZZ	S	1N4004	AA	L 0203	VP-CF470K0000	S	47μH	AA
D 0516	RH-EX0546BMZZ	S	Zener TZMC5V6	AA	L 0205	RCILD0237BMZZ	S	BOB 7KM A768HM TOKO	AF
D 0517	RH-DX0551BMZZ	S	LL4148	AA	L 0206	VP-NM1R0MR10N	S	1μH	AB
D 0518	RH-DX0551BMZZ	S	LL4148	AA	L 0301	VP-DF100K0000	S	10μH	AB
D 0519	RH-DX0551BMZZ	S	LL4148	AA	L 0302	RCILP0236BMZZ	S	100μH	AQ
D 0520	RH-EX0537BMZZ	S	Zener TZMC2V4	AB	L 0405	VP-DF100K0000	S	10μH	AB
D 0521	RH-EX0549BMZZ	S	Zener TZMC7V5	AA	L 0452	VP-DF3R3K0000	S	3.3μH	AB
D 0522	RH-EX0549BMZZ	S	Zener TZMC7V5	AA	L 0501	RCILP0271BMZZ	S	400μH	AG
D 0601	RH-DX0505BMZZ	S	1N4935	AB	L 0602	RCILZ0716BMZZ	S	Delay Line 76DW18H	AM
D 0603	RH-DX0045BMZZ	S	1N4148	AA	L 0602	RCILZ0713BMZZ	S	Delay Line 66DW18H	AL
D 0604	RH-DX0506BMZZ	S	1N4936	AB	L 0604	RCILP0263BMZZ	S	350μH	AG
D 0605	RH-DX0585BMZZ	S	DMV32AF5	AM	L 0605	RCILP0262BMZZ	S	5mH 66DW18H	AG
D 0607	RH-DX0505BMZZ	S	1N4935	AB	L 0605	RCILP0272BMZZ	S	10mH 76DW18H	AG
D 0608	RH-DX0505BMZZ	S	1N4935	AB	L 0606	RCILP0243BMZZ	S	33μH	AD
D 0609	RH-DX0589BMZZ	S	MBR3100RL	AF	L 0607	VP-CF3R3K0000	S	3.3μH	AB
D 0610	RH-DX0565BMZZ	S	1N5822RL	AD	L 0608	VP-CF3R3K0000	S	3.3μH	AB
D 0611	RH-DX0045BMZZ	S	1N4148	AA	L 0609	RCILP0265BMZZ	S	1.5μH	AD
D 0612	RH-DX0045BMZZ	S	1N4148	AA	△ L 0701	RCILF0154CEZZ	S	Coil	AQ
D 0613	RH-DX0045BMZZ	S	1N4148	AA	△ L 0702	RCILP0110CEZZ	S	3.3μH	AD
D 0616	RH-DX0551BMZZ	S	LL4148	AA	△ L 0703	RCILP0110CEZZ	S	3.3μH	AD
D 0617	RH-DX0551BMZZ	S	LL4148	AA	L 0708	VP-CF1R0M0000	S	1μH	AB
D 0618	RH-DX0551BMZZ	S	LL4148	AA	L 0709	VP-CF1R0M0000	S	1μH	AB
D 0619	RH-DX0551BMZZ	S	LL4148	AA	L 0710	RCILP0213BMZZ	S	13.5μH	AF
D 0620	RH-DX0551BMZZ	S	LL4148	AA	CERAMIC FILTERS				
D 0623	RH-DX0506BMZZ	S	1N4936	AB	CF 0301	RFILC0023CEZZ	S	Filter	AE
D 0624	RH-DX0506BMZZ	S	1N4936	AB	SF 0201	RFILC0280BMZZ	S	SAW Filter K9260M	AL
D 0625	RH-EX0554BMZZ	S	Zener TZMC12	AA	SF 0206	RFILC0283BMZZ	S	SAW Filter J1980M	AM
D 0626	RH-EX0554BMZZ	S	Zener TZMC12	AA					
D 0627	RH-EX0431BMZZ	S	Zener BZX79C47V	AA					
D 0628	RH-DX0506BMZZ	S	1N4936	AB					
D 0630	RH-DX0519BMZZ	S	1N5819	AD					
D 0631	RH-DX0013GEZZ	S	Diode	AB					
D 0701	RH-DX0545BMZZ	S	1N5406 600V 3A	AD					
D 0702	RH-DX0545BMZZ	S	1N5406 600V 3A	AD					

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
TRANSFORMERS					C 0344	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
△ T 0601	RTRNF2046BMZZ	S	F.B.T. 66DW18H	BK	C 0347	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
△ T 0601	RTRNF2045BMZZ	S	F.B.T. 76DW18H	BK	C 0351	VCEAGA1AW227M	S	220 10V Electrolytic	AB
△ T 0602	RTRNZ0553BMZZ	S	Focus Transformer 76DW18H	AU	C 0352	VCEAGA1EW107M	S	100 25V Electrolytic	AB
△ T 0701	RTRNZ0552BMZZ	S	Chopper	AX	C 0354	VCKYTV1HB222K	S	2200p 50V Ceramic	AA
CAPACITORS					C 0357	VCEAGA1EW107M	S	100 25V Electrolytic	AB
C 0070	VCKYTV1EB154K	S	0.15 25V Ceramic	AB	C 0358	VCEAGA1EW107M	S	100 25V Electrolytic	AB
C 0201	VCEAGA1HW105M	S	1 50V Electrolytic	AA	C 0361	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0202	VCEAGA1HW225M	S	2.2 50V Electrolytic	AB	C 0362	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0206	VCEAGA1CW476M	S	47 16V Electrolytic	AB	C 0363	RC-FZ9224BMNJ	J	0.22 63V Mylar	AC
C 0207	RC-FZ9105BMNJ	J	1 63V Mylar	AD	C 0364	RC-FZ9224BMNJ	J	0.22 63V Mylar	AC
C 0208	VCCCTV1HH470J	S	47p 50V Ceramic	AA	C 0366	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0210	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0367	VCKYTV1HB222K	S	2200p 50V Ceramic	AA
C 0211	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0368	VCEAGA1EW106M	S	10 25V Electrolytic	AA
C 0212	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0369	VCCCTV1HH120J	S	12p 50V Ceramic	AA
C 0213	VCEAGA1CW106M	S	10 16V Electrolytic	AA	C 0379	VCEAGA1HW336M	S	33 50V Electrolytic	AB
C 0214	VCEAGA0JW477M	S	470 6.3V Electrolytic	AB	C 0380	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 0215	VCCCTV1HH270J	S	27p 50V Ceramic	AA	C 0381	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 0216	VCCCTV1HH270J	S	27p 50V Ceramic	AA	C 0382	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 0217	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0383	VCCCTV1HH150J	S	15p 50V Ceramic	AA
C 0218	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0387	VCCCTV1HH221J	S	220p 50V Ceramic	AA
C 0219	RC-FZ9102BMNJ	J	1000p 63V Mylar	AB	C 0388	VCCCTV1HH221J	S	220p 50V Ceramic	AA
C 0220	VCEAGA1HW474M	S	0.47 50V Electrolytic	AA	C 0401	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC
C 0221	VCKYTV1HB103K	S	0.01 50V Ceramic	AA	C 0404	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC
C 0229	VCKYTV1HB472K	S	4700p 50V Ceramic	AA	C 0405	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0230	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0417	VCEAGA1CW226M	S	22 16V Electrolytic	AA
C 0232	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0418	VCEAGA1CW226M	S	22 16V Electrolytic	AA
C 0234	VCEAGA1HW225M	S	2.2 50V Electrolytic	AB	C 0451	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0238	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0452	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0239	VCCCTV1HH2R2C	S	2.2p 50V Ceramic	AA	C 0453	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
C 0242	VCCCTV1HH100D	S	10p 50V Ceramic	AA	C 0454	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA
C 0243	VCCCTV1HH100D	S	10p 50V Ceramic	AA	C 0456	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0301	VCCCTV1HH5R0C	S	5p 50V Ceramic	AA	C 0459	VCCCTV1HH220J	S	22p 50V Ceramic	AA
C 0302	VCCCTV1HH5R0C	S	5p 50V Ceramic	AA	C 0460	VCCCTV1HH220J	S	22p 50V Ceramic	AA
C 0304	VCCCTV1HH470J	S	47p 50V Ceramic	AA	C 0461	VCCCTV1HH220J	S	22p 50V Ceramic	AA
C 0306	VCCCTV1HH470J	S	47p 50V Ceramic	AA	C 0471	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0307	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0501	VCCCTV1HH181J	S	180p 50V Ceramic	AA
C 0308	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0502	RC-FZ9103BMNJ	J	0.01 63V Mylar	AB
C 0309	VCEAGA1CW106M	S	10 16V Electrolytic	AA	C 0503	VCKYTV1HB102K	S	1000p 50V Ceramic 66DW18H	AA
C 0311	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0503	VCKYTV1HB332K	S	3300p 50V Ceramic 76DW18H	AA
C 0312	VCEAGA1CW106M	S	10 16V Electrolytic	AA	C 0504	VCCCTV1HH101J	S	100p 50V Ceramic	AA
C 0313	VCEAGA1AW337M	S	330 10V Electrolytic	AB	C 0506	VCKYTV1HB393K	S	0.039 50V Ceramic	AA
C 0314	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0507	VCKYTV1HB393K	S	0.039 50V Ceramic	AA
C 0315	VCEAGA1CW106M	S	10 16V Electrolytic	AA	C 0508	VCCSPA1HL271J	S	270p 50V Ceramic	AA
C 0316	VCCCTV1HH471J	S	470p 50V Ceramic	AA	C 0509	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0317	VCEAGA1HW335M	S	3.3 50V Electrolytic	AA	C 0512	VCEAGA1HW226M	S	22 50V Electrolytic	AA
C 0319	VCCCTV1HH471J	S	470p 50V Ceramic	AA	C 0513	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0320	VCCCTV1HH391J	S	390p 50V Ceramic	AA	C 0514	RC-FZ9684BMNJ	J	0.68 63V Mylar	AD
C 0321	VCCCTV1HH391J	S	390p 50V Ceramic	AA	C 0515	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
C 0322	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0517	VCEAGA1EW226M	S	22 25V Electrolytic	AA
C 0323	VCEAGA0JW108M	S	1000 6.3V Electrolytic	AB	C 0519	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 0324	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	C 0520	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 0325	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	C 0521	VCKYTV1HB332K	S	3300p 50V Ceramic	AA
C 0326	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	C 0523	RC-FZ9684BMNJ	J	0.68 63V Mylar	AD
C 0327	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	C 0524	RC-FZ9684BMNJ	J	0.68 63V Mylar	AD
C 0330	VCKYTV1HB103K	S	0.01 50V Ceramic	AA	C 0525	VCKYTV1EB104K	S	0.1 25V Ceramic	AA
C 0331	VCKYTV1HF473Z	S	0.047 50V Ceramic	AA	C 0527	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 0332	VCKYTV1HF473Z	S	0.047 50V Ceramic	AA	C 0528	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 0333	RC-FZ9684BMNJ	J	0.68 63V Mylar	AD	C 0529	VCKYTV1HB103K	S	0.01 50V Ceramic	AA
C 0334	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA	C 0530	RC-FZ9474BMNJ	J	0.47 63V Mylar	AD
C 0335	VCEAGA1AW227M	S	220 10V Electrolytic	AB	C 0531	VCEAGA1CW106M	S	10 16V Electrolytic	AA
C 0342	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA	C 0532	VCKYTV1EB104K	S	0.1 25V Ceramic	AA
C 0343	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 0533	VCEAGA1CW107M	S	100 16V Electrolytic	AB
					C 0534	VCCCTV1HH331J	S	330p 50V Ceramic	AA
					C 0535	VCKYTV1HB103K	S	0.01 50V Ceramic	AA
					C 0601	RC-FZ0152BMZZ	S	0.012 1.5KV Mylar 66DW18H	AD
					C 0601	RC-FZ0147BMZZ	S	8200p 1.5KV Mylar 76DW18H	AE

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
C 0603	RC-FZ9103BMNJ	J	0.01 63V Mylar	AB	RESISTORS				
C 0604	VCEAGA1AW337M	S	330 10V Electrolytic	AB	R 0202	VRS-TV1JD331J	S	330 1/10W Metal Oxide	AA
C 0605	RC-FZ0159BMZZ	S	0.015 630V Mylar	AE	R 0204	RR-XZ0112BMZZ	S	10 1/3W Fuse Resistor	AB
C 0606	RC-FZ7684BMNJ	J	0.68 400V Mylar 66DW18H	AH	R 0205	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
C 0606	RC-FZ7824BMNJ	J	0.82 400V Mylar 76DW18H	AK	R 0207	VRD-RA2BE121J	S	120 1/8W Carbon	AA
C 0607	RC-FZ7684BMNJ	J	0.68 400V Mylar 66DW18H	AH	R 0208	VRD-RA2BE121J	S	120 1/8W Carbon	AA
C 0607	RC-FZ7824BMNJ	J	0.82 400V Mylar 76DW18H	AK	R 0212	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
C 0609	VCEAGA2EW106M	S	10 250V Electrolytic	AD	R 0213	VRD-RA2BE153J	S	15K 1/8W Carbon	AA
C 0610	RC-FZ0159BMZZ	S	0.015 630V Mylar	AE	R 0214	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
C 0616	VCEAGA1EW108M	S	1000 25V Electrolytic	AD	R 0215	VRD-RA2BE271J	S	270 1/8W Carbon	AA
C 0618	VCEAGA1EW108M	S	1000 25V Electrolytic	AD	R 0219	VRD-RA2BE822J	S	8.2K 1/8W Carbon	AA
C 0619	VCEAGA1JW107M	S	100 63V Electrolytic	AB	R 0224	RVR-M4624GEZZ	S	4.7K	AB
C 0620	VCKYTV1HB333K	S	0.033 50V Ceramic	AA	R 0225	VRS-TV1JD181J	S	180 1/10W Metal Oxide	AA
C 0621	VCEAGA1HW337M	S	330 50V Electrolytic	AD	R 0229	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA
C 0623	RC-FZ7154BMNJ	J	0.15 400V Mylar	AC	R 0230	VRS-TV1JD822J	S	8.2K 1/10W Metal Oxide	AA
C 0624	RC-KZ0036CEZZ	S	330p 2KV Ceramic	AC	R 0231	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
C 0626	VCEAGA2DW106M	S	10 200V Electrolytic	AD	R 0232	VRS-TV1JD470J	S	47 1/10W Metal Oxide	AA
C 0627	RC-FZ7333BMNJ	J	0.033 400V Mylar	AC	R 0234	VRS-TV1JD122J	S	1.2K 1/10W Metal Oxide	AA
C 0629	VCCCTV1HH221J	S	220p 50V Ceramic	AA	R 0235	VRS-TV1JD563J	S	56K 1/10W Metal Oxide	AA
C 0631	VCEAGA2CW105M	S	1 160V Electrolytic	AB	R 0236	VRS-TV1JD563J	S	56K 1/10W Metal Oxide	AA
C 0632	RC-FZ8472BMNJ	S	4700p 630V Mylar	AC	R 0237	VRD-RA2BE102J	S	1K 1/8W Carbon	AA
C 0633	RC-FZ0148BMZZ	S	4700p 1.5KV Mylar	AD	R 0238	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA
C 0635	RC-KZ0036CEZZ	S	330p 2KV Ceramic	AC	R 0239	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 0636	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA	R 0240	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA
△ C 0701	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC	R 0242	VRS-TV1JD151J	S	150 1/10W Metal Oxide	AA
△ C 0702	RC-FZ0160BMZZ	S	0.47 275V Mylar	AF	R 0244	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA
C 0705	RC-FZ0156BMZZ	S	0.022 630V Mylar	AE	R 0245	VRS-TV1JD153J	S	15K 1/10W Metal Oxide	AA
C 0706	RC-EZ0123BMZZ	S	470 385V Electrolytic	AW	R 0248	VRD-RA2BE102J	S	1K 1/8W Carbon	AA
C 0707	RC-FZ9153BMNJ	J	0.015 63V Mylar	AB	R 0250	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
C 0708	RC-FZ9273BMNJ	J	0.027 63V Mylar	AB	R 0255	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
C 0709	VCKZPA1HB332K	S	3300p 50V Ceramic	AA	R 0301	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
C 0710	VCKZPA1HB102K	S	1000p 50V Ceramic	AA	R 0302	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
C 0711	RC-EZ0399CEZZ	S	390 200V Electrolytic	AA	R 0303	VRD-RA2BE101J	S	100 1/8W Carbon	AA
C 0712	VCEAGA1EW227M	S	220 25V Electrolytic	AA	R 0304	VRD-RA2BE101J	S	100 1/8W Carbon	AA
C 0713	VCEAGA1CW108M	S	1000 16V Electrolytic	AE	R 0315	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
C 0716	VCE9GA1HW225M	S	2.2 50V Electrolytic	AB	R 0316	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
△ C 0717	RC-KZ0156CEZZ	S	3300p 4KV Ceramic	AD	R 0317	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA
C 0718	RC-KZ0038CEZZ	S	470p 2KV Ceramic	AB	R 0318	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
C 0719	VCEAGA1EW228M	S	2200 25V Electrolytic	AG	R 0320	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
C 0720	VCEAGA1EW228M	S	2200 25V Electrolytic	AG	R 0321	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
C 0722	RC-EZ0258CEZZ	S	100 200V Electrolytic	AH	R 0322	VRS-TV1JD224J	S	220K 1/10W Metal Oxide	AA
C 0726	VCKYPA2HB331K	S	330p 500V Ceramic	AA	R 0324	VRD-RA2BE392J	S	3.9K 1/8W Carbon	AA
C 0728	VCCCPA1HH101J	S	100p 50V Ceramic	AA	R 0325	VRD-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 0729	VCEAGA1AW477M	S	470 10V Electrolytic	AB	R 0326	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 0730	VCEAGA1AW228M	S	2200 10V Electrolytic	AF	R 0328	VRS-TV1JD224J	S	220K 1/10W Metal Oxide	AA
C 0731	VCEAGA0JW477M	S	470 6.3V Electrolytic	AB	R 0329	VRS-TV1JD392F	S	3.9K 1/10W Metal Oxide	AA
C 0732	VCEAGA0JW477M	S	470 6.3V Electrolytic	AB	R 0330	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
C 0739	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC	R 0331	VRD-RA2HD391J	S	390 1/2W Carbon	AA
C 0740	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC	R 0333	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
C 0750	VCKYTV1EB154K	S	0.15 25V Ceramic	AB	R 0334	VRS-TV1JD122J	S	1.2K 1/10W Metal Oxide	AA
C 0751	VCKYTV1EB154K	S	0.15 25V Ceramic	AB	R 0349	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
C 0801	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	R 0350	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA
C 1001	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	R 0352	VRS-TV1JD332F	S	3.3K 1/10W Metal Oxide	AA
C 1002	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	R 0354	VRS-TV1JD122J	S	1.2K 1/10W Metal Oxide	AA
C 1003	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	R 0355	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 1005	VCEAGA0JW108M	S	1000 6.3V Electrolytic	AB	R 0356	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA
C 1006	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	R 0357	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
C 1007	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA	R 0358	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
C 1008	VCCCTV1HH220J	S	22p 50V Ceramic	AA	R 0359	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA
C 1009	VCCCTV1HH220J	S	22p 50V Ceramic	AA	R 0360	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 1010	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	R 0363	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 1011	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA	R 0371	VRS-TV1JD821J	S	820 1/10W Metal Oxide	AA
C 1013	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	R 0375	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA
C 1014	VCCSTV1HL471J	S	470p 50V Ceramic	AA	R 0377	VRD-RA2BE104J	S	100K 1/8W Carbon	AA
C 1015	VCCCTV1HH820J	S	82p 50V Ceramic	AA	R 0381	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 1016	VCCCTV1HH820J	S	82p 50V Ceramic	AA	R 0382	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 0385	VRS-TV1JD821J	S	820 1/10W Metal Oxide	AA	R 0602	VRD-RA2EE681J	S	680 1/4W Carbon	AA
R 0386	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 0603	RR-XZ0206BMZZ	S	3.3 1/2W Fuse Resistor	AB
R 0387	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA	R 0604	VRN-VV3LBR82J	S	0.82 3W Metal Film	AB
R 0388	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 0605	VRD-RA2BE222J	S	2.2K 1/8W Carbon	AA
R 0432	VRD-RA2BE101J	S	100 1/8W Carbon	AA	R 0606	VRD-RA2BE102J	S	1K 1/8W Carbon	AA
R 0433	VRD-RA2BE101J	S	100 1/8W Carbon	AA	R 0607	VRN-VV3ABR33J	S	0.33 1W Metal Film	AA
R 0447	VRS-TV1JD682J	S	6.8K 1/10W Metal Oxide	AA	R 0609	VRN-VV3DB5R6J	S	5.6 2W Metal Film 66DW18H	AA
R 0448	VRS-TV1JD152J	S	1.5K 1/10W Metal Oxide	AA	R 0609	VRN-VV3DB8R2J	S	8.2 2W Metal Film 76DW18H	AB
R 0449	VRS-TV1JD560J	S	56 1/10W Metal Oxide	AA	R 0610	VRS-VV3DB561J	S	560 2W Metal Oxide	AA
R 0450	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 0611	RR-XZ0200BMZZ	S	1 1/2W Fuse Resistor	AB
R 0454	VRS-TV1JD471J	S	470 1/10W Metal Oxide	AA	R 0618	VRD-RA2BE222J	S	2.2K 1/8W Carbon	AA
R 0455	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA	R 0619	VRS-VV3AB561J	S	560 1W Metal Oxide	AA
R 0457	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA	R 0620	VRD-RA2HD102J	S	1K 1/2W Carbon	AA
R 0458	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	R 0624	RR-XZ0200BMZZ	S	1 1/2W Fuse Resistor	AB
R 0459	VRD-RA2BE101J	S	100 1/8W Carbon	AA	R 0625	VRD-RA2BE683J	S	68K 1/8W Carbon	AA
R 0460	VRD-RA2BE101J	S	100 1/8W Carbon	AA	R 0627	VRS-TV1JD823J	S	82K 1/10W Metal Oxide	AA
R 0463	VRD-RA2BE101J	S	100 1/8W Carbon	AA	R 0634	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA
R 0464	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA	R 0635	VRD-RA2BE470J	S	47 1/8W Carbon	AA
R 0465	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA	R 0638	VRS-VV3DB181J	S	180 2W Metal Oxide	AA
R 0501	VRS-TV1JD562J	S	5.6K 1/10W Metal Oxide	AA	R 0639	VRD-RA2BE823J	S	RES OHM % W	AA
R 0502	VRD-RA2HD104J	S	100K 1/2W Carbon	AA	R 0640	RR-XZ0216BMZZ	S	22 1/2W Fuse Resistor	AB
R 0503	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 0641	VRD-RA2HD270J	S	27 1/2W Carbon	AA
R 0505	RR-XZ0124BMZZ	S	100 1/3W Fuse Resistor	AA	R 0642	VRS-VV3AB223J	S	22K 1W Metal Oxide	AA
R 0508	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 0643	VRS-VV3AB223J	S	22K 1W Metal Oxide	AA
R 0510	VRS-TV1JD331J	S	330 1/10W Metal Oxide	AA	R 0644	VRD-RA2BE125J	S	1.2M 1/8W Carbon	AA
R 0511	VRD-RA2BE472J	S	4.7K 1/8W Carbon	AA	R 0645	VRD-RA2BE102J	S	1K 1/8W Carbon	AA
R 0512	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 0646	VRD-RA2BE333J	S	33K 1/8W Carbon	AA
R 0513	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA	R 0647	VRD-RA2BE332J	S	3.3K 1/8W Carbon	AA
R 0515	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 0648	VRN-VV3LB1R5J	S	1.5 3W Metal Film	AB
R 0518	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA	R 0649	VRS-LU3DB561J	S	560 2W Metal Oxide	AB
R 0520	VRD-RA2BE222J	S	2.2K 1/8W Carbon	AA	R 0650	VRD-RA2BE104J	S	100K 1/8W Carbon	AA
R 0522	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA	R 0651	VRS-LU3DB222J	S	2.2K 2W Metal Oxide	AB
R 0523	VRN-VV3AB1R5J	S	1.5 1W Metal Film	AA	R 0702	VRS-LU3LB153J	S	15K 3W Metal Oxide	AB
R 0524	VRS-TV1JD331J	S	330 1/10W Metal Oxide	AA	R 0703	VRD-RA2BE103J	S	10K 1/8W Carbon	AA
R 0526	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA	R 0704	VRD-RA2HD564J	S	560K 1/2W Carbon	AC
R 0530	VRD-RA2HD681J	S	680 1/2W Carbon	AA	R 0705	VRD-RA2HD564J	S	560K 1/2W Carbon	AC
R 0531	RR-XZ0231BMZZ	S	390 1/2W Fuse Resistor	AB	R 0706	VRN-VV3DBR18K	J	0.18 2W Metal Film	AB
R 0532	VRS-VV3DB151J	S	150 2W Metal Oxide	AA	R 0707	VRD-RA2BE221J	S	220 1/8W Carbon	AA
R 0533	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA	R 0708	VRS-VV3AB820J	S	82 1W Metal Oxide	AA
R 0534	VRS-TV1JD331J	S	330 1/10W Metal Oxide	AA	R 0709	VRD-RA2BE330J	S	33 1/8W Carbon	AA
R 0537	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide 66DW18H	AA	R 0710	VRD-RA2HD122J	S	1.2K 1/2W Carbon	AA
R 0537	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide 76DW18H	AA	R 0714	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 0538	VRS-TV1JD122J	S	1.2K 1/10W Metal Oxide	AA	R 0715	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA
R 0541	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA	R 0716	VRS-TQ2BD473F	S	47K 1/8W Metal Oxide	AA
R 0543	VRD-RA2HD121J	S	120 1/2W Carbon	AA	R 0717	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA
R 0545	VRS-TV1JD823J	S	82K 1/10W Metal Oxide	AA	R 0718	VRS-TQ2BD473F	S	47K 1/8W Metal Oxide	AA
R 0546	VRS-TV1JD333J	S	33K 1/10W Metal Oxide	AA	R 0719	VRS-TV1JD152J	S	1.5K 1/10W Metal Oxide	AA
R 0547	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 0720	VRD-RA2BE223J	S	22K 1/8W Carbon	AA
R 0549	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	△ R 0721	VRC-UA2HG825K	S	8.2M 1/2W Solid	AA
R 0550	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA	△ R 0722	VRC-UA2HG825K	S	8.2M 1/2W Solid	AA
R 0551	VRD-RA2BE183J	S	18K 1/8W Carbon	AA	R 0723	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA
R 0552	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA	R 0732	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
R 0553	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 0744	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA
R 0554	VRD-RA2BE104J	S	100K 1/8W Carbon	AA	R 0745	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA
R 0555	VRS-TV1JD220J	S	22 1/10W Metal Oxide	AA	R 0746	VRW-KQ41C4R7K	S	4.7 15W Cement	AE
R 0556	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 0747	VRS-VV3LB100J	S	10 3W Metal Oxide	AB
R 0557	VRD-RA2BE100J	S	10 1/8W Carbon	AA	R 0749	VRS-LU3LB153J	S	15K 3W Metal Oxide	AB
R 0558	VRS-TV1JD471J	S	470 1/10W Metal Oxide	AA	R 0802	VRS-TQ2BD124J	S	120K 1/8W Metal Oxide	AA
R 0559	VRD-RA2HD121J	S	120 1/2W Carbon	AA	R 0803	VRD-RA2EE334J	S	330K 1/4W Carbon	AA
R 0560	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 0804	VRS-TQ2BD224J	S	220K 1/8W Metal Oxide	AA
R 0561	VRD-RA2BE103J	S	10K 1/8W Carbon	AA	R 1001	VRD-RA2BE472J	S	4.7K 1/8W Carbon	AA
R 0563	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA	R 1002	VRD-RA2BE472J	S	4.7K 1/8W Carbon	AA
R 0565	VRS-TV1JD471J	S	470 1/10W Metal Oxide	AA	R 1003	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA
R 0566	VRS-TV1JD335J	S	3.3M 1/10W Metal Oxide 76DW18H	AA	R 1004	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA
R 0566	VRS-TV1JD225J	S	2.2M 1/10W Metal Oxide 66DW18H	AA	R 1005	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 0567	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 1006	VRD-RA2BE332J	S	3.3K 1/8W Carbon	AA
R 0601	VRD-RA2BE682J	S	6.8K 1/8W Carbon	AA	R 1007	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 1008	VRS-TV1JD182J	S	1.8K 1/10W Metal Oxide	AA	△ F 0703	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD
R 1010	VRD-RA2BE182J	S	1.8K 1/8W Carbon	AA	(AC)	QPLGN0304CEZZ	S	Connector	AB
R 1012	VRD-RA2BE101J	S	100 1/8W Carbon	AA	(AV)	QSOCN0284FJZZ	S	Socket 20pin	AG
R 1013	VRD-RA2BE101J	S	100 1/8W Carbon	AA	(B)	QPLGN0304CEZZ	S	Connector	AB
R 1014	VRD-RA2BE101J	S	100 1/8W Carbon	AA	(CA)	QPLGN0741CEZZ	S	Connector	AB
R 1015	VRD-RA2BE221J	S	220 1/8W Carbon	AA	(CB)	QPLGN0241CEZZ	S	Connector	AA
R 1017	VRD-RA2BE101J	S	100 1/8W Carbon	AA	(DA)	QPLGN0841CEZZ	S	Connector	AB
R 1018	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(DB)	QPLGN1041CEZZ	S	Connector	AB
R 1019	VRS-TV1JD822J	S	8.2K 1/10W Metal Oxide	AA	(FC)	QPLGN0341CEZZ	S	Connector	AA
R 1020	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	(FH)	QPLGN0304CEZZ	S	Connector	AB
R 1021	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA	(FV)	QPLGN0304CEZZ	S	Connector	AB
R 1022	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	(G)	QPLGN0207CEZZ	S	Connector	AA
R 1024	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA	(H)	QPLGN0441CEZZ	S	Connector 4pin	AB
R 1025	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	(HP)	QPLGN0341CEZZ	S	Connector	AA
R 1026	VRS-TV1JD822J	S	8.2K 1/10W Metal Oxide	AA	(KB)	QPLGN0241CEZZ	S	Connector	AA
R 1027	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(RGB)	QPLGN0441CEZZ	S	Connector 4pin	AB
R 1028	VRD-RA2BE101J	S	100 1/8W Carbon	AA	(S)	QPLGN0241CEZZ	S	Connector	AA
R 1029	VRD-RA2BE101J	S	100 1/8W Carbon	AA	(SV)	QSOCN1067BMZZ	S	Connector	AE
R 1031	VRS-TV1JD822J	S	8.2K 1/10W Metal Oxide	AA	(YA)	QSOCN0284FJZZ	S	Socket 20pin	AG
R 1032	VRS-TV1JD822J	S	8.2K 1/10W Metal Oxide	AA	(YB)	QSOCN0284FJZZ	S	Socket 20pin	AG
R 1033	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	FB 0301	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1034	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	FB 0501	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1036	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	FB 0502	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1037	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	FB 0601	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1038	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 0602	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1039	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 0701	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1040	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 0702	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1041	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 0703	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1042	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 0704	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1043	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 1002	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1044	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 1003	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1045	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	FB 1004	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1046	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	IC 1004	QSOCZ22051SC32	S	Socket 32 PIN	AC
R 1047	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	J 0029	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1048	VRD-RA2HD563J	S	56K 1/2W Carbon	AA	J 0060	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1049	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	J 0068	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1050	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	J 0096	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 1051	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	PWB - B SOCKET UNIT				
R 1052	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	INTEGRATED CIRCUITS				
R 1053	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	IC 0801	VHITDA6111Q-1	S	TDA6111Q	AQ
R 1054	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	IC 0802	VHITDA6111Q-1	S	TDA6111Q	AQ
R 1056	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA	IC 0803	VHITDA6111Q-1	S	TDA6111Q	AQ
R 1057	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	TRANSISTORS				
R 1058	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1800	RH-TX0143BMZZ	S	BC557-B	AA
R 1059	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1801	RH-TX0142BMZZ	S	BC547-B	AB
R 1060	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1851	RH-TX0134BMZZ	S	BF240 PH	AC
R 1061	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1852	RH-TX0135BMZZ	S	BF324 PH	AC
R 1062	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1853	RH-TX0136BMZZ	S	BSX20 PH	AE
R 1063	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1854	RH-TX0135BMZZ	S	BF324 PH	AC
R 1064	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1855	RH-TX0135BMZZ	S	BF324 PH	AC
R 1065	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1856	RH-TX0134BMZZ	S	BF240 PH	AC
R 1066	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1857	RH-TX0135BMZZ	S	BF324 PH	AC
R 1072	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA	Q 1858	RH-TX0112BMZZ	S	BC636	AB
R 1073	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA	Q 1859	RH-TX0118BMZZ	S	BC635-16 β> 100	AC
C 0203	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1860	RH-TX0143BMZZ	S	BC557-B	AA
C 0241	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	Q 1861	RH-TX0143BMZZ	S	BC557-B	AA
D 0340	VRS-TQ2BD000J	S	Jumper	AA	DIODES				
J 0156	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA	D 1802	RH-DX0045BMZZ	S	1N4148	AA
L 0706	VRN-LU3DB3R3J	S	3.3 2W Metal Film	AB	D 1803	RH-DX0501BMZZ	S	1N4004	AA
Q 0203	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	D 1804	RH-DX0501BMZZ	S	1N4004	AA
Q 0204	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	MISCELLANEOUS PARTS				
△ F 0601	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD					
△ F 0602	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD					
△ F 0702	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD					

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
D 1805	RH-DX0045BMZZ	S	1N4148	AA	R 1809	VRD-RA2BE102J	S 1K	1/8W Carbon	AA
D 1806	RH-DX0501BMZZ	S	1N4004	AA	R 1810	VRD-RA2BE333J	S 33K	1/8W Carbon	AA
D 1807	RH-DX0045BMZZ	S	1N4148	AA	R 1811	VRD-RA2BE333J	S 33K	1/8W Carbon	AA
D 1808	RH-DX0045BMZZ	S	1N4148	AA	R 1812	VRD-RA2BE333J	S 33K	1/8W Carbon	AA
D 1809	RH-DX0501BMZZ	S	1N4004	AA	R 1813	VRD-RA2BE334J	S 330	1/8W Carbon	AA
D 1810	RH-DX0045BMZZ	S	1N4148	AA	R 1814	VRD-RA2BE101J	S 100	1/8W Carbon	AA
D 1811	RH-DX0045BMZZ	S	1N4148	AA	R 1815	VRC-MA2HG331J	S 330	1/2W Solid	AB
D 1813	RH-DX0045BMZZ	S	1N4148	AA	R 1816	VRC-MA2HG681J	S 680	1/2W Solid	AB
D 1814	RH-DX0045BMZZ	S	1N4148	AA	R 1817	VRD-RA2BE101J	S 100	1/8W Carbon	AA
D 1851	RH-DX0045BMZZ	S	1N4148	AA	R 1818	VRC-MA2HG331J	S 330	1/2W Solid	AB
D 1852	RH-DX0045BMZZ	S	1N4148	AA	R 1819	VRC-MA2HG681J	S 680	1/2W Solid	AB
COILS					R 1820	VRD-RA2BE101J	S 100	1/8W Carbon	AA
L 1801	VP-CF3R3K0000	S	3.3μH	AB	R 1821	VRC-MA2HG331J	S 330	1/2W Solid	AB
R 1824	VP-XF3R3K0000	S	3.3μH	AB	R 1822	VRC-MA2HG681J	S 680	1/2W Solid	AB
CAPACITORS					R 1823	VRD-RA2EE473J	S 47	1/4W Carbon	AA
C 1801	VCCCPA1HH150J	S	15p 50V Ceramic	AA	R 1825	RR-XZ0212BMZZ	S 10	1/2W Fuse Resistor	AB
C 1802	VCCCPA1HH390J	S	39p 50V Ceramic	AA	R 1826	VRD-RA2BE102J	S 1K	1/8W Carbon	AA
C 1803	VCCCPA1HH150J	S	15p 50V Ceramic	AA	R 1827	VRD-RA2BE103J	S 10K	1/8W Carbon	AA
C 1804	VCCCPA1HH120J	S	12p 50V Ceramic	AA	R 1828	VRD-RA2BE391J	S 390	1/8W Carbon	AA
C 1805	VCCCPA1HH150J	S	15p 50V Ceramic	AA	R 1829	VRD-RA2EE101J	S 100	1/4W Carbon	AA
C 1806	VCCCPA1HH100D	S	10p 50V Ceramic	AA	R 1830	VRD-RA2BE473J	S 47K	1/8W Carbon	AA
C 1807	VCKZPA1HF103Z	S	0.01 50V Ceramic	AA	R 1831	VRD-RA2BE104J	S 100K	1/8W Carbon	AA
C 1808	VCCSPA1HL561J	S	560p 50V Ceramic	AA	R 1832	VRD-RA2BE104J	S 100K	1/8W Carbon	AA
C 1809	VCFYAA2EA333K	J	0.033 250V Mylar	AE	R 1833	VRD-RA2BE104J	S 100K	1/8W Carbon	AA
C 1810	VCKZPA1HF103Z	S	0.01 50V Ceramic	AA	R 1834	VRD-RA2BE391J	S 390	1/8W Carbon	AA
C 1811	VCCSPA1HL561J	S	560p 50V Ceramic	AA	R 1835	VRD-RA2BE103J	S 10K	1/8W Carbon	AA
C 1812	VCFYAA2EA333K	J	0.033 250V Mylar	AE	R 1836	VRD-RA2BE102J	S 1K	1/8W Carbon	AA
C 1813	VCKZPA1HF103Z	S	0.01 50V Ceramic	AA	R 1837	VRD-RA2BE121J	S 120	1/8W Carbon	AA
C 1814	VCCSPA1HL561J	S	560p 50V Ceramic	AA	R 1838	VRD-RA2BE223J	S 22K	1/8W Carbon	AA
C 1815	VCFYAA2EA333K	J	0.033 250V Mylar	AE	R 1851	RR-XZ0224BMZZ	S 100	1/2W Fuse Resistor	AB
C 1816	VCEAGA1CW476M	S	47 16V Electrolytic	AB	R 1852	VRS-VV3DB151J	S 150	2W Metal Oxide	AA
C 1817	VCEAGA1CW107M	S	100 16V Electrolytic	AB	R 1853	VRD-RA2BE332J	S 3.3K	1/8W Carbon	AA
C 1821	VCEAGH2EW476M	S	47 250V Electrolytic	AE	R 1854	VRD-RA2BE123J	S 12K	1/8W Carbon	AA
C 1822	RC-KZ0023CEZZ	S	4700p 2KV Ceramic	AD	R 1855	VRD-RA2BE471J	S 470	1/8W Carbon	AA
C 1823	VCEAGA1CW477M	S	470 16V Electrolytic	AC	R 1856	VRD-RA2BE101J	S 100	1/8W Carbon	AA
C 1824	VCEAGA1CW476M	S	47 16V Electrolytic	AB	R 1857	VRD-RA2BE471J	S 470	1/8W Carbon	AA
C 1851	VCCSPA2HL4R0D	S		AA	R 1858	VRD-RA2BE681J	S 680	1/8W Carbon	AA
C 1852	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB	R 1859	VRD-RA2BE183J	S 18K	1/8W Carbon	AA
C 1853	VCEAGA1HW107M	S	100 50V Electrolytic	AC	R 1860	VRD-RA2BE152J	S 1.5K	1/8W Carbon	AA
C 1855	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 1861	VRD-RA2BE471J	S 470	1/8W Carbon	AA
C 1856	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB	R 1862	VRD-RA2BE222J	S 2.2K	1/8W Carbon	AA
C 1857	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB	R 1863	VRD-RA2HD470J	S 47	1/4W Carbon	AA
C 1858	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB	R 1864	VRD-RA2HD470J	S 47	1/4W Carbon	AA
C 1859	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB	R 1865	VRD-RA2BE821J	S 820	1/8W Carbon	AA
C 1861	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 1866	VRD-RA2BE103J	S 10K	1/8W Carbon	AA
C 1863	RC-FZ9222BMNJ	J	2200p 63V Mylar	AA	R 1867	VRD-RA2BE821J	S 820	1/8W Carbon	AA
C 1864	VCEAGA1HW337M	S	330 50V Electrolytic	AD	R 1868	VRD-RA2BE103J	S 10K	1/8W Carbon	AA
C 1866	RC-FZ9474BMNJ	J	0.47 63V Mylar	AD	R 1869	VRD-RA2HD100J	S 10	1/2W Carbon	AA
C 1868	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 1870	VRD-RA2HD100J	S 10	1/2W Carbon	AA
C 1870	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 1871	VRD-RA2BE820J	S 82	1/8W Carbon	AA
C 1872	VCCCPA1HH101J	S	100p 50V Ceramic	AA	R 1872	VRD-RA2BE332J	S 3.3K	1/8W Carbon	AA
C 1875	VCCCPA1HH121J	S	120p 50V Ceramic	AA	R 1873	VRD-RA2BE332J	S 3.3K	1/8W Carbon	AA
C 1876	VCEAGA1HW105M	S	1 50V Electrolytic	AA	R 1874	VRD-RA2BE820J	S 82	1/8W Carbon	AA
RESISTORS					R 1875	VRD-RA2HD3R3J	S 3.3	1/2W Carbon	AA
R 1801	VRD-RA2BE202J	S	2K 1/8W Carbon	AA	R 1876	VRD-RA2HD3R3J	S 3.3	1/2W Carbon	AA
R 1802	VRD-RA2BE272J	S	2.7K 1/8W Carbon	AA	R 1877	VRD-RA2BE101J	S 100	1/8W Carbon	AA
R 1803	VRD-RA2BE202J	S	2K 1/8W Carbon	AA	R 1878	VRD-RA2BE474J	S 470K	1/8W Carbon	AA
R 1804	VRD-RA2BE272J	S	2.7K 1/8W Carbon	AA	R 1879	VRD-RA2BE102J	S 1K	1/8W Carbon	AA
R 1805	VRD-RA2BE202J	S	2K 1/8W Carbon	AA	R 1880	VRD-RA2BE101J	S 100	1/8W Carbon	AA
R 1806	VRD-RA2BE272J	S	2.7K 1/8W Carbon	AA	R 1881	VRD-RA2BE271J	S 270	1/8W Carbon	AA
R 1807	RR-XZ0204BMZZ	S	2.2 1/2W Fuse Resistor	AB	R 1882	VRD-RA2BE821J	S 820	1/8W Carbon	AA
					R 1883	VRD-RA2BE392J	S 3.9K	1/8W Carbon	AA
					R 1884	VRD-RA2BE102J	S 1K	1/8W Carbon	AA
					R 1885	VRD-RA2BE470J	S 47	1/8W Carbon	AA
					R 1888	VRD-RA2BE101J	S 100	1/8W Carbon	AA
					R 1889	VRD-RA2BE560J	S 56	1/8W Carbon	AA
					R 1890	VRN-VV3AB1R0J	S 1	1W Metal Film	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 1891 C 1836	VRD-RA2BE102J VRD-RA2BE100J	S S	1K 1/8W Carbon 10 1/8W Carbon	AA AA	COILS				
MISCELLANEOUS PARTS					L 6001	VP-NM2R2MR16N	S	2.2μH	AC
(H)	QPLGN0441CEZZ	S	Connector 4pin	AB	L 6002	VP-NM2R2MR16N	S	2.2μH	AC
(KA)	QPLGN0541CEZZ	S	Connector	AB	L 6003	VP-NM3R3MR19N	S	3.3μH	AC
(KB)	QPLGN0241CEZZ	S	Connector	AA	L 6004	VP-NM3R3MR19N	S	3.3μH	AC
(KC)	QPLGN0341CEZZ	S	Connector	AA	L 6005	VP-NM3R3MR19N	S	3.3μH	AC
(KD)	QPLGN0441CEZZ	S	Connector 4pin	AB	L 6006	VP-NM3R3MR19N	S	3.3μH	AC
△ SC 1801	QSOCV0103BMZZ	S	C.R.T. Socket 66DW18H	AG	L 6007	VP-NM3R3MR19N	S	3.3μH	AC
△ SC 1801	QSOCV0936CEZZ	S	C.R.T. Socket 76DW18H	AM	L 6008	VP-NM3R3MR19N	S	3.3μH	AC
PWB - C 100 Hz UNIT					L 6009	VP-NM3R3MR19N	S	3.3μH	AC
INTEGRATED CIRCUITS					L 6010	VP-NM3R3MR19N	S	3.3μH	AC
IC 6001	RH-IX1616BMZZ	S	VPC3200A	BH	L 6011	VP-NM100KR42N	S	10μH	AC
IC 6002	RH-IX1625BMZZ	S	CIP3250A-PS-B1	BA	L 6012	VP-NM3R3MR19N	S	3.3μH	AC
IC 6101	RH-IX1621BMZZ	S	SDA9290	AZ	L 6013	VP-NM3R3MR19N	S	3.3μH	AC
IC 6102	RH-IX1618BMZZ	S	SDA9251	AZ	L 6014	VP-NM3R3MR19N	S	3.3μH	AC
IC 6103	RH-IX1618BMZZ	S	SDA9251	AZ	L 6015	VP-NM1R0MR10N	S	1μH	AB
IC 6104	RH-IX1618BMZZ	S	SDA9251	AZ	L 6016	VP-NM1R0MR10N	S	1μH	AB
IC 6105	RH-IX1618BMZZ	S	SDA9251	AZ	L 6017	VP-NM1R0MR10N	S	1μH	AB
IC 6106	RH-IX1618BMZZ	S	SDA9251	AZ	L 6101	VP-NM100KR42N	S	10μH	AC
IC 6107	RH-IX1618BMZZ	S	SDA9251	AZ	L 6103	VP-NM100KR42N	S	10μH	AC
IC 6108	RH-IX1619BMZZ	S	SDA9270	BE	L 6104	VP-NM100KR42N	S	10μH	AC
IC 6109	RH-IX1620BMZZ	S	SDA9280	BD	L 6205	VP-NM100KR42N	S	10μH	AC
IC 6110	RH-IX1626BMZZ	S	SDA9362	AZ	L 6206	VP-NM100KR42N	S	10μH	AC
IC 6111	VHITDA4780/-1	S	TDA4780	AZ	L 6207	VP-NM100KR42N	S	10μH	AC
IC 6112	RH-IX1617BMZZ	S	SDA9220	AX	L 6211	VP-NM100KR42N	S	10μH	AC
TRANSISTORS					L 6212	VP-NM1R0MR10N	S	1μH	AB
Q 6006	RH-TX0102BMZZ	S	BC338	AB	L 6213	VP-NM100KR42N	S	10μH	AC
Q 6007	VS2SC2412KQ-1	S	2SC2412	AA	L 6251	VP-NM3R3MR19N	S	3.3μH	AC
Q 6207	VS2SA1037KQ-1	S	BC807	AA	L 6252	VP-NM100KR42N	S	10μH	AC
Q 6212	VS2SA1037KQ-1	S	BC807	AA	FB 6201	RCILP0110CEZZ	S	3.3μH	AD
Q 6213	VS2SC2412KQ-1	S	2SC2412	AA	FB 6203	VP-DF1R0M0000	S	1μH	AB
Q 6214	VS2SC2412KQ-1	S	2SC2412	AA	CAPACITORS				
Q 6215	VS2SA1037KQ-1	S	BC807	AA	C 6001	VCCCTV1HH470J	S	47p 50V Ceramic	AA
Q 6253	VS2SA1037KQ-1	S	BC807	AA	C 6002	VCCCTV1HH680J	S	68p 50V Ceramic	AA
DIODES					C 6003	VCCCTV1HH330J	S	33p 50V Ceramic	AA
D 6001	RH-EX0546BMZZ	S	Zener TZMC5V6	AA	C 6004	VCKYTV1EF334Z	S	0.33 25V Ceramic	AB
D 6251	RH-EX0544BMZZ	S	Zener TZMC4V7	AA	C 6005	VCCCTV1HH330J	S	33p 50V Ceramic	AA
D 6252	RH-DX0551BMZZ	S	LL4148	AA	C 6006	VCCCTV1HH470J	S	47p 50V Ceramic	AA
D 6253	RH-DX0045BMZZ	S	1N4148	AA	C 6007	VCCCTV1HH391J	S	390p 50V Ceramic	AA
D 6254	RH-EX0410BMZZ	S	Zener BZX79C6V2	AB	C 6008	VCCCTV1HH680J	S	68p 50V Ceramic	AA
D 6255	RH-DX0045BMZZ	S	1N4148	AA	C 6009	VCCCTV1HH331J	S	330p 50V Ceramic	AA
D 6256	RH-DX0045BMZZ	S	1N4148	AA	C 6010	VCCCTV1HH391J	S	390p 50V Ceramic	AA
D 6257	RH-EX0544BMZZ	S	Zener TZMC4V7	AA	C 6011	VCCCTV1HH3R3C	S	3.3p 50V Ceramic	AA
D 6258	RH-DX0551BMZZ	S	LL4148	AA	C 6012	VCCCTV1HH3R3C	S	3.3p 50V Ceramic	AA
D 6259	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 6013	VCEAGA0JW477M	S	470 6.3V Electrolytic	AA
D 6260	RH-DX0045BMZZ	S	1N4148	AA	C 6014	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
D 6261	RH-DX0551BMZZ	S	LL4148	AA	C 6015	VCEAGA0JW477M	S	470 6.3V Electrolytic	AA
D 6262	RH-DX0551BMZZ	S	LL4148	AA	C 6016	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
D 6263	RH-DX0551BMZZ	S	LL4148	AA	C 6017	VCCCTV1HH331J	S	330p 50V Ceramic	AA
PACKADGED CIRCUITS					C 6018	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
CF 6251	RCRSB0224BMZZ	S	Crystal 12 MHz	AK	C 6019	VCEAGA1CW106M	S	10 16V Electrolytic	AA
X 6001	RCRSB0219BMZZ	S	Crystal 20.25 MHz	AH	C 6020	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
X 6101	RCRSB0234BMZZ	S	Crystal 6.75 MHz	AG	C 6021	VCKYTV1HF473Z	S	0.047 50V Ceramic	AA
					C 6022	VCEAGA1CW106M	S	10 16V Electrolytic	AA
					C 6023	VCEAGA1HW105M	S	1 50V Electrolytic	AA
					C 6025	VCEAGA1HW105M	S	1 50V Electrolytic	AA
					C 6026	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
					C 6027	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
					C 6028	VCEAGA1HW105M	S	1 50V Electrolytic	AA
					C 6029	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
					C 6030	VCEAGA1CW106M	S	10 16V Electrolytic	AA
					C 6031	VCKYTV1EF334Z	S	0.33 25V Ceramic	AB
					C 6032	VCEAGA0JW477M	S	470 6.3V Electrolytic	AB
					C 6033	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA

REF. NO.	PARTS NO.	★	DESCRIPTION			CODE	REF. NO.	PARTS NO.	★	DESCRIPTION			CODE
C 6034	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA	C 6261	VCEAHA1HN475M	S	4.7	50V	Electrolytic	AB
C 6035	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA	C 6262	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA
C 6036	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA	C 6263	VCEAGA1AW477M	S	470	10V	Electrolytic	AB
C 6037	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA	C 6264	VCCCTV1HH220J	S	22p	50V	Ceramic	AA
C 6040	VCCCTV1HH820J	S	82p	50V	Ceramic	AA	C 6265	VCCCTV1HH220J	S	22p	50V	Ceramic	AA
C 6101	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6266	VCCCTV1HH220J	S	22p	50V	Ceramic	AA
C 6102	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6267	VCEAGA1CW106M	S	10	16V	Electrolytic	AA
C 6103	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6268	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 6104	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6269	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 6105	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6270	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 6106	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6276	VCEAGA1CW226M	S	22	16V	Electrolytic	AA
C 6107	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6278	VCEAGA1CW226M	S	22	16V	Electrolytic	AA
C 6108	VCEAGA0JW107M	S	100	6.3V	Electrolytic	AA	C 6279	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA
C 6109	VCEAGA1CW106M	S	10	16V	Electrolytic	AA	C 6280	VCEAGA1CW106M	S	10	16V	Electrolytic	AA
C 6110	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6281	VCEAGA1CW106M	S	10	16V	Electrolytic	AA
C 6111	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6283	VCCCTV1HH331J	S	330p	50V	Ceramic	AA
C 6112	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6285	VCCCTV1HH121J	S	120p	50V	Ceramic	AA
C 6113	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6286	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA
C 6114	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6287	VCCCTV1HH121J	S	120p	50V	Ceramic	AA
C 6115	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 6288	VCCCTV1HH560J	S	56p	50V	Ceramic	AA
C 6116	VCEAGA1AW107M	S	100	10V	Electrolytic	AA	C 6289	VCCCTV1HH220J	S	22p	50V	Ceramic	AA
C 6117	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	RESISTORS						
C 6118	VCCCTV1HH101J	S	100p	50V	Ceramic	AA							
C 6119	VCKYTV1HB152K	S	1500p	50V	Ceramic	AA	R 6004	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6120	VCEAGA1AW227M	S	220	10V	Electrolytic	AB	R 6011	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6121	VCCCTV1HH330J	S	33p	50V	Ceramic	AA	R 6012	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6122	VCCCTV1HH330J	S	33p	50V	Ceramic	AA	R 6013	VRS-TV1JD471J	S	470	1/10W	Metal Oxide	AA
C 6123	VCCCTV1HH150J	S	15p	50V	Ceramic	AA	R 6016	VRS-TV1JD182J	S	1.8K	1/10W	Metal Oxide	AA
C 6125	VCCCTV1HH100D	S	10p	50V	Ceramic	AA	R 6017	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6201	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6018	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6202	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6019	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6203	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6020	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6204	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6031	VRS-TV1JD152J	S	1.5K	1/10W	Metal Oxide	AA
C 6205	VCCCTV1HH101J	S	100p	50V	Ceramic	AA	R 6032	VRS-TV1JD102J	S	1K	1/10W	Metal Oxide	AA
C 6206	VCKYTV1HB152K	S	1500p	50V	Ceramic	AA	R 6033	VRS-TV1JD331J	S	330	1/10W	Metal Oxide	AA
C 6209	VCEAGA0JW476M	S	47	6.3V	Electrolytic	AA	R 6107	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6210	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA	R 6108	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6211	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6109	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6212	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6110	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6213	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6111	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6214	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6112	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6215	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6113	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6218	VCCCTV1HH101J	S	100p	50V	Ceramic	AA	R 6114	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6221	VCCCTV1HH121J	S	120p	50V	Ceramic	AA	R 6115	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6229	VCKYTV1HF223Z	S	0.022	50V	Ceramic	AA	R 6116	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6230	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6117	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6231	VCKYTV1HF223Z	S	0.022	50V	Ceramic	AA	R 6118	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6232	VCKYTV1HF103Z	S	0.01	50V	Ceramic	AA	R 6122	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6233	VCEAGA0JW476M	S	47	6.3V	Electrolytic	AA	R 6123	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6234	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6124	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6235	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6125	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6236	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6126	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6245	VCCCTV1HH270J	S	27p	50V	Ceramic	AA	R 6127	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6246	VCCCTV1HH270J	S	27p	50V	Ceramic	AA	R 6128	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6247	VCKYTV1HB152K	S	1500p	50V	Ceramic	AA	R 6129	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6248	VCCCTV1HH101J	S	100p	50V	Ceramic	AA	R 6130	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6249	VCEAGA1CW106M	S	10	16V	Electrolytic	AA	R 6131	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6250	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6132	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6251	VCKYTV1HF473Z	S	0.047	50V	Ceramic	AA	R 6133	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6252	VCEAGA1CW106M	S	10	16V	Electrolytic	AA	R 6134	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6253	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	R 6135	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6254	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6136	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6256	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6137	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6257	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6138	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6258	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	R 6139	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6259	VCEAGA1HW105M	S	1	50V	Electrolytic	AA	R 6140	VRS-TV1JD101J	S	100	1/10W	Metal Oxide	AA
C 6260	VCEAGA1HW106M	S	10	50V	Electrolytic	AA							

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 6141	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6278	VRS-TV1JD151J	S	150 1/10W Metal Oxide	AA
R 6142	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6279	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
R 6143	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6280	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
R 6144	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6281	VRS-TV1JD333J	S	33K 1/10W Metal Oxide	AA
R 6145	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6282	VRS-TV1JD333J	S	33K 1/10W Metal Oxide	AA
R 6146	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6283	VRS-TV1JD682J	S	6.8K 1/10W Metal Oxide	AA
R 6147	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6284	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
R 6148	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6285	VRS-TV1JD152J	S	1.5K 1/10W Metal Oxide	AA
R 6149	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6286	VRS-TV1JD132J	S	1.3K 1/10W Metal Oxide	AA
R 6150	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6287	VRS-TV1JD122J	S	1.2K 1/10W Metal Oxide	AA
R 6151	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6288	VRS-TV1JD151J	S	150 1/10W Metal Oxide	AA
R 6152	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6291	VRS-TV1JD820J	S	82 1/10W Metal Oxide	AA
R 6153	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6293	VRS-TV1JD221J	S	220 1/10W Metal Oxide	AA
R 6154	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6294	VRS-TV1JD151J	S	150 1/10W Metal Oxide	AA
R 6155	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6295	VRS-TV1JD155J	S	1.5M 1/10W Metal Oxide	AA
R 6156	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6296	VRS-TV1JD155J	S	1.5M 1/10W Metal Oxide	AA
R 6157	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	MISCELLANEOUS PARTS				
R 6158	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(CV)	QPLGN1141CEZZ	S	Connector	AC
R 6159	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(KA)	QPLGN0541CEZZ	S	Connector	AB
R 6160	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(KD)	QPLGN0441CEZZ	S	Connector 4pin	AB
R 6201	VRS-TV1JD122J	S	1.2K 1/10W Metal Oxide	AA	(RGB)	QPLGN0441CEZZ	S	Connector 4pin	AB
R 6202	VRS-TV1JD133J	S	13K 1/10W Metal Oxide	AA	(YA)	QPLGN0285FJZZ	S	Connector	AG
R 6203	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	(YB)	QPLGN0285FJZZ	S	Connector	AG
R 6214	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	FB 6001	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 6214	VRS-TV1JD750J	S	75 1/10W Metal Oxide	AA	FB 6002	RBLN-0020CEZZ	S	Ferrite Bead	AB
R 6224	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	FB 6101	RBLN-0037CEZZ	S	Ferrite Bead	AB
R 6225	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	FB 6102	RCORF0003GEZZ	S	Ferrite	AC
R 6226	VRS-TV1JD271J	S	270 1/10W Metal Oxide	AA	R 6100	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6227	VRS-TV1JD221J	S	220 1/10W Metal Oxide	AA	R 6101	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6228	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA	R 6102	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6229	VRS-TV1JD271J	S	270 1/10W Metal Oxide	AA	R 6103	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6230	VRS-TV1JD562J	S	5.6K 1/10W Metal Oxide	AA	R 6104	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6231	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 6105	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6232	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 6119	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6233	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 6120	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6234	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 6121	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6235	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA	R 6238	RBLN-0039TAZZ	S	Ferrite Bead	AB
R 6236	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA	PWB - D A / V UNIT				
R 6239	VRS-TV1JD271J	S	270 1/10W Metal Oxide	AA	INTEGRATED CIRCUITS				
R 6240	VRS-TV1JD151J	S	150 1/10W Metal Oxide	AA	IC 2401	RH-IX1623BMZZ	S	TDA6920X	AN
R 6242	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA	IC 2402	RH-IX1623BMZZ	S	TDA6920X	AN
R 6243	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA	IC 2403	RH-IX1624BMZZ	S	TEA6420	AP
R 6244	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	IC 2404	VHIBA10339F-1	S	BA10339	AC
R 6245	VRS-TV1JD913J	S	91K 1/10W Metal Oxide	AA	TRANSISTORS				
R 6251	VRS-TV1JD392J	S	3.9K 1/10W Metal Oxide	AA	Q 2438	VS2SC2412KQ-1	S	2SC2412	AA
R 6252	VRS-TV1JD182J	S	1.8K 1/10W Metal Oxide	AA	Q 2440	VS2SC2412KQ-1	S	2SC2412	AA
R 6253	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA	Q 2441	VS2SC2412KQ-1	S	2SC2412	AA
R 6254	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	Q 2447	VS2SC2412KQ-1	S	2SC2412	AA
R 6256	VRS-TV1JD683J	S	68K 1/10W Metal Oxide	AA	Q 2450	VS2SC2412KQ-1	S	2SC2412	AA
R 6259	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	Q 2451	VS2SC2412KQ-1	S	2SC2412	AA
R 6260	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	DIODES				
R 6261	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	D 2408	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6262	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	D 2409	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6263	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA	D 2410	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6264	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	D 2411	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6265	VRS-TV1JD182J	S	1.8K 1/10W Metal Oxide	AA	D 2412	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6266	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA	D 2413	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6267	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	D 2414	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
R 6268	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA					
R 6269	VRS-TV1JD393J	S	39K 1/10W Metal Oxide	AA					
R 6270	VRS-TV1JD393J	S	39K 1/10W Metal Oxide	AA					
R 6271	VRS-TV1JD393J	S	39K 1/10W Metal Oxide	AA					
R 6272	VRS-TV1JD823J	S	82K 1/10W Metal Oxide	AA					
R 6273	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA					
R 6275	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA					
R 6276	VRS-TV1JD683J	S	68K 1/10W Metal Oxide	AA					
R 6277	VRS-TV1JD151J	S	150 1/10W Metal Oxide	AA					

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
D 2415	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2460	VCCCTV1HH331J	S	330p 50V Ceramic	AA
D 2416	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2461	VCCCTV1HH471J	S	470p 50V Ceramic	AA
D 2417	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2462	VCCCTV1HH471J	S	470p 50V Ceramic	AA
D 2418	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2463	VCEAEA1CW476M	S	47 16V Electrolytic	AB
D 2419	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2464	VCEAEA1CW476M	S	47 16V Electrolytic	AB
D 2420	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2465	VCCCTV1HH560J	S	56p 50V Ceramic	AA
D 2421	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2466	VCCCTV1HH560J	S	56p 50V Ceramic	AA
D 2422	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2467	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
D 2423	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2468	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
D 2424	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2469	VCEAEA1CW106M	S	10 16V Electrolytic	AB
D 2425	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2470	VCEAEA1CW106M	S	10 16V Electrolytic	AB
D 2426	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2471	VCCCTV1HH331J	S	330p 50V Ceramic	AA
D 2427	RH-EX0401BMZZ	S	Zener BZX79C2V7	AA	C 2472	VCCCTV1HH331J	S	330p 50V Ceramic	AA
D 2428	RH-EX0408BMZZ	S	Zener BZX79C5V1	AB	C 2473	VCCCTV1HH471J	S	470p 50V Ceramic	AA
D 2429	RH-EX0408BMZZ	S	Zener BZX79C5V1	AB	C 2474	VCCCTV1HH471J	S	470p 50V Ceramic	AA
D 2430	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2475	VCEAEA1CW476M	S	47 16V Electrolytic	AB
D 2431	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2476	VCEAEA1CW476M	S	47 16V Electrolytic	AB
D 2432	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2477	VCCCTV1HH560J	S	56p 50V Ceramic	AA
D 2433	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2478	VCCCTV1HH560J	S	56p 50V Ceramic	AA
D 2434	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2479	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
D 2435	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2480	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
D 2436	RH-EX0417BMZZ	S	Zener BZX79C12V	AA	C 2481	VCEAEA1CW106M	S	10 16V Electrolytic	AB
D 2437	RH-EX0417BMZZ	S	Zener BZX79C12V	AA	C 2482	VCEAEA1CW106M	S	10 16V Electrolytic	AB
D 3312	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2483	VCEAEA1CW226M	S	22 16V Electrolytic	AB
D 3313	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB	C 2484	VCEAEA1CW107M	S	100 16V Electrolytic	AB
COILS					C 2485	VCEAEA1CW107M	S	100 16V Electrolytic	AB
L 2401	VP-DF100K0000	S	10μH	AB	C 2486	VCCCTV1HH100D	S	10p 50V Ceramic	AA
CAPACITORS					C 2487	VCCCTV1HH100D	S	10p 50V Ceramic	AA
C 2418	VCCCTV1HH100D	S	10p 50V Ceramic	AA	C 2488	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 2419	VCCCTV1HH100D	S	10p 50V Ceramic	AA	C 2490	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
C 2420	RC-FZ9473BMNJ	J	0.047 63V Mylar	AC	C 2491	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA
C 2421	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA	C 2492	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA
C 2422	VCKYTV1HB473K	S	0.047 50V Ceramic	AA	C 2493	RC-FZ9224BMNJ	J	0.22 63V Mylar	AC
C 2423	VCKYTV1HF104Z	S	0.1 50V Ceramic	AA	C 2494	VCKYTV1HF473Z	S	0.047 50V Ceramic	AA
C 2424	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA	C 2495	VCKYTV1HF473Z	S	0.047 50V Ceramic	AA
C 2425	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA	C 2496	VCKYTV1HF473Z	S	0.047 50V Ceramic	AA
C 2426	VCEAEA1CW226M	S	22 16V Electrolytic	AB	C 2497	VCCSTV1HL101J	S	100p 50V Ceramic	AA
C 2427	VCCCTV1HH221J	S	220p 50V Ceramic	AA	C 2498	VCCSTV1HL101J	S	100p 50V Ceramic	AA
C 2428	VCCCTV1HH221J	S	220p 50V Ceramic	AA	C 2499	VCCSTV1HL101J	S	100p 50V Ceramic	AA
C 2429	VCCCTV1HH221J	S	220p 50V Ceramic	AA	C 3324	VCEAEA1CW106M	S	10 16V Electrolytic	AB
C 2436	VCCCTV1HH100D	S	10p 50V Ceramic	AA	C 3325	VCEAEA1CW106M	S	10 16V Electrolytic	AB
C 2437	VCKYTV1HF103Z	S	0.01 50V Ceramic	AA	C 3326	VCCSTV1HL101J	S	100p 50V Ceramic	AA
C 2438	VCCCTV1HH100D	S	10p 50V Ceramic	AA	C 3327	VCCSTV1HL101J	S	100p 50V Ceramic	AA
C 2439	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	RESISTORS				
C 2440	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 2425	VRS-TV1JD152J	S	1.5K 1/10W Metal Oxide	AA
C 2441	VCCCTV1HH100D	S	10p 50V Ceramic	AA	R 2426	VRD-RA2BE152J	S	1.5K 1/8W Carbon	AA
C 2442	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 2427	VRD-RA2HD680J	S	68 1/2W Carbon	AA
C 2443	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 2428	VRD-RA2EE820J	S	82 1/4W Carbon	AA
C 2444	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB	R 2429	VRD-RA2BE103J	S	10K 1/8W Carbon	AA
C 2445	VCCCTV1HH100D	S	10p 50V Ceramic	AA	R 2430	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
C 2446	VCCCTV1HH100D	S	10p 50V Ceramic	AA	R 2431	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
C 2447	VCCCTV1HH331J	S	33< 50V Ceramic	AA	R 2432	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
C 2448	VCCCTV1HH331J	S	330p 50V Ceramic	AA	R 2433	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
C 2449	VCCCTV1HH471J	S	470p 50V Ceramic	AA	R 2434	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
C 2450	VCCCTV1HH471J	S	470p 50V Ceramic	AA	R 2435	VRS-TV1JD271J	S	270 1/10W Metal Oxide	AA
C 2451	VCEAEA1CW476M	S	47 16V Electrolytic	AB	R 2436	VRS-TV1JD271J	S	270 1/10W Metal Oxide	AA
C 2452	VCEAEA1CW476M	S	47 16V Electrolytic	AB	R 2437	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
C 2453	VCCCTV1HH560J	S	56p 50V Ceramic	AA	R 2438	VRS-TV1JD471J	S	470 1/10W Metal Oxide	AA
C 2454	VCCCTV1HH560J	S	56p 50V Ceramic	AA	R 2439	VRS-TV1JD471J	S	470 1/10W Metal Oxide	AA
C 2455	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	R 2440	VRS-TV1JD471J	S	470 1/10W Metal Oxide	AA
C 2456	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	R 2441	VRD-RA2BE471J	S	470 1/8W Carbon	AA
C 2457	VCEAEA1CW106M	S	10 16V Electrolytic	AB	R 2442	VRD-RA2BE471J	S	470 1/8W Carbon	AA
C 2458	VCEAEA1CW106M	S	10 16V Electrolytic	AB	R 2443	VRD-RA2BE471J	S	470 1/8W Carbon	AA
C 2459	VCCCTV1HH331J	S	330p 50V Ceramic	AA	R 2444	VRD-RA2EE820J	S	82 1/4W Carbon	AA
					R 2445	VRD-RA2EE820J	S	82 1/4W Carbon	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 2446	VRD-RA2EE820J	S 82	1/4W Carbon	AA	R 2519	VRD-RA2HD680J	S 68	1/2W Carbon	AA
R 2447	VRD-RA2BE101J	S 100	1/8W Carbon	AA	R 2520	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA
R 2448	VRD-RA2BE101J	S 100	1/8W Carbon	AA	R 2521	VRD-RA2EE820J	S 82	1/4W Carbon	AA
R 2449	VRD-RA2EE820J	S 82	1/4W Carbon	AA	R 2522	VRS-TV1JD103J	S 10K	1/10W Metal Oxide	AA
R 2450	VRD-RA2EE820J	S 82	1/4W Carbon	AA	R 2523	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA
R 2451	VRD-RA2BE102J	S 1K	1/8W Carbon	AA	R 2524	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA
R 2452	VRD-RA2BE103J	S 10K	1/8W Carbon	AA	R 2525	RR-XZ0104BMZZ	S 2.2	1/3W Fuse Resistor	AB
R 2453	VRD-RA2BE103J	S 10K	1/8W Carbon	AA	R 2550	VRS-TV1JD561J	S 560	1/10W Metal Oxide	AA
R 2454	VRS-TV1JD471J	S 470	1/10W Metal Oxide	AA	R 2551	VRS-TV1JD561J	S 560	1/10W Metal Oxide	AA
R 2455	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA	R 3336	VRS-TV1JD564J	S 560K	1/10W Metal Oxide	AA
R 2456	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA	R 3337	VRS-TV1JD564J	S 560K	1/10W Metal Oxide	AA
R 2457	VRS-TV1JD471J	S 470	1/10W Metal Oxide	AA	R 3338	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA
R 2458	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA	R 3339	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA
R 2459	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA	<div>MISCELLANEOUS PARTS</div> <div>(CV) QPLGN1142CEZZ S Connector AD</div> <div>(VA) QPLGN0285FJZZ S Connector AG</div> <div>(VE) QPLGN0642CEZZ S Connector AB</div> <div>FB 2401 RBLN-0037CEZZ S Ferrite Bead AB</div> <div>FB 2402 RBLN-0037CEZZ S Ferrite Bead AB</div> <div>FB 2403 RBLN-0037CEZZ S Ferrite Bead AB</div> <div>J 0019 RBLN-0037CEZZ S Ferrite Bead AB</div> <div>SC 2401 QSOCZ0108BMZZ S RGB Connector AE</div> <div>SC 2402 QSOCZ0109BMZZ S RGB Connector AE</div> <div>SC 2403 QSOCZ0109BMZZ S RGB Connector AE</div>				
R 2460	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2461	VRS-TV1JD271J	S 270	1/10W Metal Oxide	AA					
R 2462	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA					
R 2463	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA					
R 2464	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA	<div>PWB - E A / V FRONT UNIT</div> <div>DIODES</div>				
R 2465	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA	D 1401	RH-EX0549BMZZ	S Zener TZMC7V5	AA	
R 2466	VRS-TV1JD471J	S 470	1/10W Metal Oxide	AA	D 1402	RH-EX0549BMZZ	S Zener TZMC7V5	AA	
R 2467	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA	<div>COILS</div>				
R 2468	VRS-TV1JD471J	S 470	1/10W Metal Oxide	AA					
R 2469	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA	L 1300	VP-DF3R3K0000	S 3.3μH	AB	
R 2470	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA	L 1301	VP-DF3R3K0000	S 3.3μH	AB	
R 2471	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA	<div>CAPACITORS</div>				
R 2472	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2473	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2474	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA					
R 2475	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA					
R 2476	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2477	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2478	VRS-TV1JD471J	S 470	1/10W Metal Oxide	AA	C 1300	VCKYTV1HB102K	S 1000p 50V Ceramic	AA	
R 2479	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA	C 1302	VCKYTV1HF103Z	S 0.01 50V Ceramic	AA	
R 2480	VRS-TV1JD471J	S 470	1/10W Metal Oxide	AA	C 1305	VCKYTV1HF103Z	S 0.01 50V Ceramic	AA	
R 2481	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA	C 1306	VCKYTV1HB102K	S 1000p 50V Ceramic	AA	
R 2482	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA	C 1407	VCCCTV1HH101J	S 100p 50V Ceramic	AA	
R 2483	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA	C 1408	VCCCTV1HH101J	S 100p 50V Ceramic	AA	
R 2484	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA	<div>RESISTORS</div>				
R 2485	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2486	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA					
R 2487	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA					
R 2488	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2489	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2490	VRD-RA2BE101J	S 100	1/8W Carbon	AA					
R 2491	VRD-RA2BE101J	S 100	1/8W Carbon	AA					
R 2493	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA					
R 2497	VRD-RA2EE4R7J	S 4.7	1/4W Carbon	AA					
R 2498	VRD-RA2EE4R7J	S 4.7	1/4W Carbon	AA	R 1300	VRS-TV1JD221J	S 220	1/10W Metal Oxide	AA
R 2499	VRD-RA2EE4R7J	S 4.7	1/4W Carbon	AA	R 1301	VRS-TV1JD391J	S 390	1/10W Metal Oxide	AA
R 2500	VRD-RA2BE562J	S 5.6K	1/8W Carbon	AA	R 1302	VRS-TV1JD391J	S 390	1/10W Metal Oxide	AA
R 2501	VRD-RA2BE562J	S 5.6K	1/8W Carbon	AA	R 1314	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA
R 2503	VRD-RA2BE562J	S 5.6K	1/8W Carbon	AA	R 1315	VRS-TV1JD104J	S 100K	1/10W Metal Oxide	AA
R 2504	VRS-TV1JD472J	S 4.7K	1/10W Metal Oxide	AA	R 1316	VRS-TV1JD221J	S 220	1/10W Metal Oxide	AA
R 2505	VRD-RA2BE472J	S 4.7K	1/8W Carbon	AA	R 1406	VRD-RA2EE750J	S 75	1/4W Carbon	AA
R 2506	VRS-TV1JD472J	S 4.7K	1/10W Metal Oxide	AA	R 1409	VRD-RA2BE750J	S 75	1/8W Carbon	AA
R 2507	VRS-TV1JD271J	S 270	1/10W Metal Oxide	AA	<div>MISCELLANEOUS PARTS</div>				
R 2509	VRS-TV1JD101J	S 100	1/10W Metal Oxide	AA					
R 2510	VRS-TV1JD101J	S 100	1/10W Metal Oxide	A					
R 2511	VRD-RA2BE472J	S 4.7K	1/8W Carbon	AA					
R 2512	VRS-TV1JD103J	S 10K	1/10W Metal Oxide	AA					
R 2513	VRD-RA2BE183J	S 18K	1/8W Carbon	AA	J 1301	QJAKJ0047CEZZ	S Earphone Jack	AG	
R 2514	VRS-TV1JD153J	S 15K	1/10W Metal Oxide	AA	J 1400	QJAKZ0015CEZZ	S Jack	AM	
R 2515	VRS-TV1JD102J	S 1K	1/10W Metal Oxide	AA	(HP)	QPLGN0341CEZZ	S Connector	AA	
R 2516	VRD-RA2HD680J	S 68	1/2W Carbon	AA	(VE)	QPLGN0641CEZZ	S Connector	AB	
R 2517	VRD-RA2BE103J	S 10K	1/8W Carbon	AA					
R 2518	VRD-RA2EE820J	S 82	1/4W Carbon	AA					

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
PWB - F CONTROL UNIT					R 6751	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA
INTEGRATED CIRCUITS					R 6752	VRS-TV1JD821J	S	820 1/10W Metal Oxide	AA
IC 6701	VHIPST529C2-1	S	PST529C	AD	R 6754	VRD-RA2BE101J	S	100 1/8W Carbon	AA
IC 6702	RH-IX1646BMZZ	S	ST6203B	AL	R 6755	VRD-RA2BE101J	S	100 1/8W Carbon	AA
△ IC 6703	RH-FX0106BMZZ	S	M0C8106SR2V	AD	R 6756	VRD-RA2BE101J	S	100 1/8W Carbon	AA
△ IC 6704	RH-FX0106BMZZ	S	M0C8106SR2V	AD	R 6757	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA
OPC0001	RH-IX1601BMZZ	S	O.P.C.	AH	R 6758	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA
TRANSISTORS					MISCELLANEOUS PARTS				
Q 6701	VS2SC2412KQ-1	S	2SC2412	AA	QFSHD1010CEZZ	S	Fuse Holder	AB	
Q 6702	VS2SC2412KQ-1	S	2SC2412	AA	QFSHD1009CEZZ	S	Fuse Holder	AA	
DIODES					△ F 6701	QFS-C3226CEZZ	S	Fuse 3.15A 250V	AE
D 6701	RH-EX0480BMZZ	S	Zener BZX79 B5V1	AA	S 6701	QSW-P0600BMZZ	S	Power Switch	AL
D 6702	RH-DX0045BMZZ	S	1N4148	AA	S 6702	QSW-K0079GEZZ	S	Switch	AB
D 6703	RH-DX0559BMZZ	S	BAS12	AC	S 6703	QSW-K0079GEZZ	S	Switch	AB
D 6704	RH-DX0559BMZZ	S	BAS12	AC	S 6704	QSW-K0079GEZZ	S	Switch	AB
D 6705	RH-DX0559BMZZ	S	BAS12	AC	S 6705	QSW-K0079GEZZ	S	Switch	AB
D 6751	RH-PX0105BMZZ	S	LED	AC	LP 6701	RLAMP0001BMZZ	S	Neon	AC
D 6752	RH-PX0105BMZZ	S	LED	AC	M 6701	RRMCU0203BMZZ	S	Remote Control Unit	AG
D 6753	RH-DX0045BMZZ	S	1N4148	AA	(A)	QPLGN0304CEZZ	S	Connector	AB
D 6754	RH-DX0045BMZZ	S	1N4148	AA	(AB)	QPLGN0241CEZZ	S	Connector	AA
COILS					(B)	QPLGN0304CEZZ	S	Connector	AB
△ L 6701	RCILF0108BMZZ	S	Main Filter	AL	(CA)	QPLGN0741CEZZ	S	Connector	AB
CERAMIC FILTERS					(CB)	QPLGN0241CEZZ	S	Connector	AA
CF 6701	RFILC0121GEZZ	S	Filter 8 MHz	AD	PWB - G DOLBY SURROUND UNIT				
CAPACITORS					INTEGRATED CIRCUITS				
C 6703	VCEAGA1AW107M	S	100 10V Electrolytic	AA	IC 3100	RH-IX1556BMZZ	S	BA10393 S0P8	AD
C 6704	VCEAGA1AW226M	S	22 10V Electrolytic	AA	IC 3101	RH-IX1556BMZZ	S	BA10393 S0P8	AD
C 6706	VCEAGA1CW476M	S	47 16V Electrolytic	AB	IC 3102	RH-IX1556BMZZ	S	BA10393 S0P8	AD
C 6707	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	IC 3103	RH-IX1556BMZZ	S	BA10393 S0P8	AD
C 6708	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	IC 3301	RH-IX1604BMZZ	S	DSP56004	BD
C 6709	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	IC 3302	RH-IX1605BMZZ	S	APU2471	AY
C 6710	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	IC 3303	RH-IX1628BMZZ	S	MC HC4024D	AE
C 6751	VCEAGA1AW476M	S	47 10V Electrolytic	AA	IC 3304	RH-IX1608BMZZ	S	74S04	AD
C 6752	VCEAGA1CW226M	S	22 16V Electrolytic	AA	IC 3305	RH-IX1606BMZZ	S	62256	AT
RESISTORS					IC 3306	RH-IX1429BMZZ	S	L7805CV	AE
R 6701	VRD-RA2HD104J	S	100K 1/2W Carbon	AA	TRANSISTORS				
R 6702	VRD-RA2HD104J	S	100K 1/2W Carbon	AA	Q 3101	VS2SA1037KQ-1	S	BC807	AA
R 6703	VRS-VV3AB563J	S	56K 1W Metal Oxide	AA	Q 3102	VS2SC2412KQ-1	S	2SC2412	AA
R 6704	VRS-VV3AB563J	S	56K 1W Metal Oxide	AA	Q 3103	VS2SC2412KQ-1	S	2SC2412	AA
R 6705	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	Q 3104	VS2SA1037KQ-1	S	BC807	AA
R 6706	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA	Q 3105	RH-TX0167BMZZ	J	IRFU9020	AF
R 6707	VRS-TV1JD272J	S	2.7K 1/10W Metal Oxide	AA	Q 3106	RH-TX0168BMZZ	J	IRFU010	AF
R 6708	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA	Q 3107	RH-TX0179BMZZ	S	PMBFJ111	AE
R 6709	VRS-TV1JD182J	S	1.8K 1/10W Metal Oxide	AA	Q 3108	VS2SA1037KQ-1	S	BC807	AA
R 6710	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA	Q 3109	VS2SC2412KQ-1	S	2SC2412	AA
R 6711	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA	Q 3110	VS2SC2412KQ-1	S	2SC2412	AA
R 6712	VRD-RA2HD224J	S	220K 1/2W Carbon	AA	Q 3111	VS2SA1037KQ-1	S	BC807	AA
R 6713	VRD-RA2HD224J	S	220K 1/2W Carbon	AA	Q 3112	RH-TX0167BMZZ	J	IRFU9020	AF
R 6714	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA	Q 3113	RH-TX0168BMZZ	J	IRFU010	AF
R 6715	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	Q 3114	RH-TX0179BMZZ	S	PMBFJ111	AE
R 6716	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA	Q 3115	VS2SA1037KQ-1	S	BC807	AA
R 6717	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	Q 3116	VS2SC2412KQ-1	S	2SC2412	AA
R 6718	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA	Q 3117	VS2SC2412KQ-1	S	2SC2412	AA
R 6719	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	Q 3118	VS2SA1037KQ-1	S	BC807	AA
					Q 3119	RH-TX0167BMZZ	J	IRFU9020	AF
					Q 3120	RH-TX0168BMZZ	J	IRFU010	AF
					Q 3124	RH-TX0179BMZZ	S	PMBFJ111	AE
					Q 3128	VS2SA1037KQ-1	S	BC807	AA
					Q 3129	VS2SC2412KQ-1	S	2SC2412	AA
					Q 3130	VS2SC2412KQ-1	S	2SC2412	AA

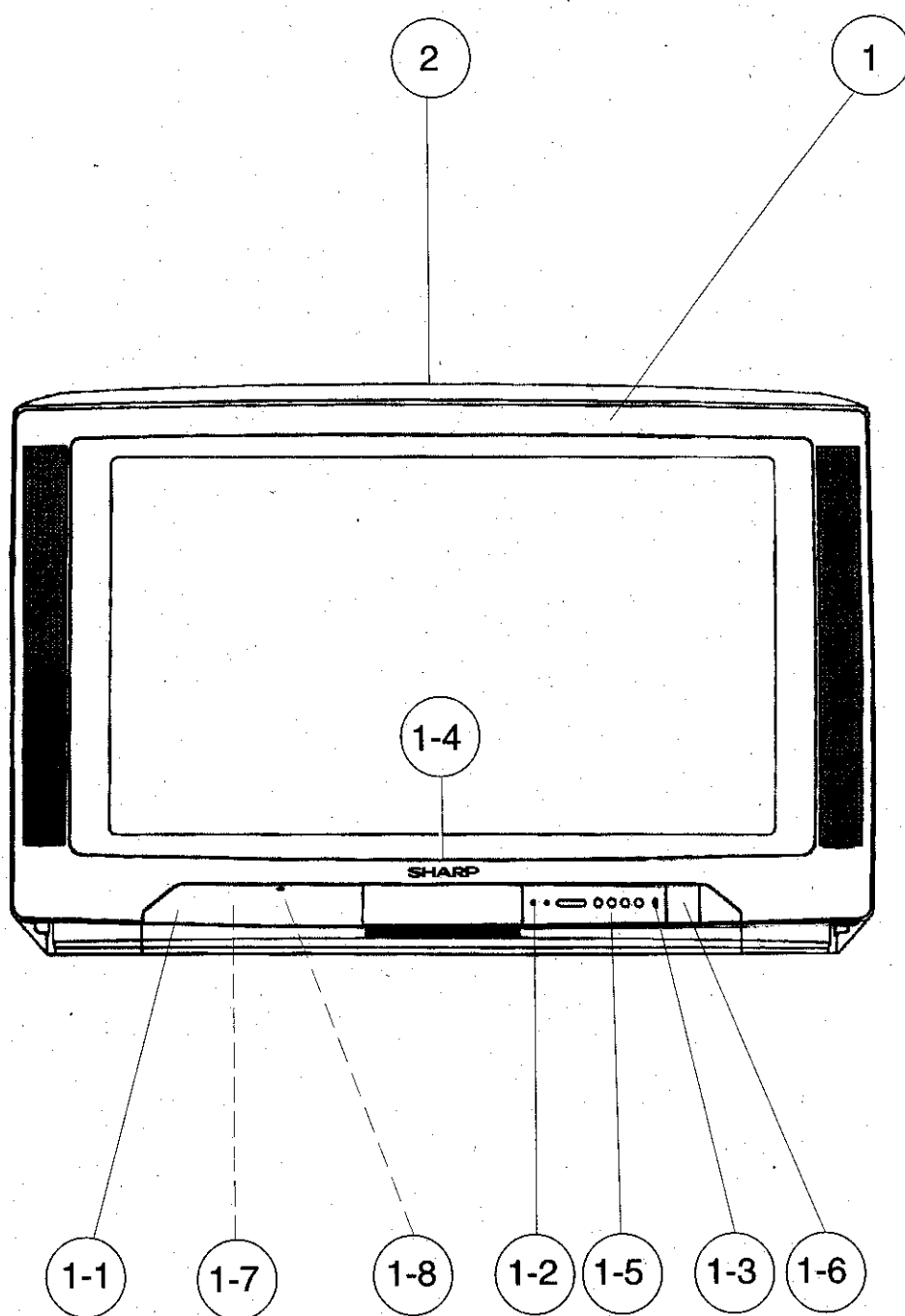
REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
Q 3131	VS2SA1037KQ-1	S	BC807	AA	D 3148	RH-EX0581BMZZ	S	Zener TZMBC4V7	AA
Q 3132	RH-TX0167BMZZ	J	IRFU9020	AF	D 3149	RH-EX0544BMZZ	S	Zener TZMC4V7	AA
Q 3133	RH-TX0168BMZZ	J	IRFU010	AF	D 3150	RH-EX0544BMZZ	S	Zener TZMC4V7	AA
Q 3134	RH-TX0179BMZZ	S	PMBFJ111	AE	D 3151	RH-EX0544BMZZ	S	Zener TZMC4V7	AA
Q 3135	VS2SA1037KQ-1	S	BC807	AA	D 3152	RH-EX0581BMZZ	S	Zener TZMBC4V7	AA
Q 3136	VS2SC2412KQ-1	S	2SC2412	AA	D 3153	RH-EX0581BMZZ	S	Zener TZMBC4V7	AA
Q 3137	VS2SC2412KQ-1	S	2SC2412	AA	D 3155	RH-EX0551BMZZ	S	Zener TZMC9V1	AA
Q 3138	VS2SC2412KQ-1	S	2SC2412	AA	D 3156	RH-EX0551BMZZ	S	Zener TZMC9V1	AA
Q 3139	VS2SC2412KQ-1	S	2SC2412	AA	D 3163	RH-DX0551BMZZ	S	LL4148	AA
Q 3140	VS2SC2412KQ-1	S	2SC2412	AA	D 3164	RH-DX0551BMZZ	S	LL4148	AA
Q 3141	VS2SA1037KQ-1	S	BC807	AA	D 3165	RH-DX0503BMZZ	S	1N4933	AB
Q 3149	VS2SC2412KQ-1	S	2SC2412	AA	D 3166	RH-EX0555BMZZ	S	Zener TZMC13	AA
Q 3150	VS2SC2412KQ-1	S	2SC2412	AA	D 3167	RH-DX0551BMZZ	S	LL4148	AA
Q 3151	VS2SC2412KQ-1	S	2SC2412	AA	D 3168	RH-DX0503BMZZ	S	1N4933	AB
Q 3152	VS2SC2412KQ-1	S	2SC2412	AA	D 3169	RH-EX0555BMZZ	S	Zener TZMC13	AA
Q 3154	VS2SA1037KQ-1	S	BC807	AA	D 3170	RH-DX0551BMZZ	S	LL4148	AA
DIODES					D 3171	RH-DX0551BMZZ	S	LL4148	AA
D 3101	RH-EX0558BMZZ	S	Zener TZMC18	AA	D 3172	RH-DX0551BMZZ	S	LL4148	AA
D 3102	RH-EX0558BMZZ	S	Zener TZMC18	AA	D 3173	RH-DX0551BMZZ	S	LL4148	AA
D 3103	RH-DX0519BMZZ	S	1N5819	AD	D 3174	RH-DX0551BMZZ	S	LL4148	AA
D 3104	RH-DX0519BMZZ	S	1N5819	AD	D 3175	RH-DX0551BMZZ	S	LL4148	AA
D 3105	RH-EX0558BMZZ	S	Zener TZMC18	AA	D 3176	RH-EX0538BMZZ	S	Zener TZMC2V7	AA
D 3106	RH-EX0558BMZZ	S	Zener TZMC18	AA	D 3177	RH-DX0045BMZZ	S	1N4148	AA
D 3107	RH-DX0519BMZZ	S	1N5819	AD	PACKADGED CIRCUIT				
D 3108	RH-DX0519BMZZ	S	1N5819	AD	X 3301	RCRSB0203BMZZ	S	Crystal 18.432 MHz	AG
D 3109	RH-EX0558BMZZ	S	Zener TZMC18	AA	COILS				
D 3110	RH-EX0558BMZZ	S	Zener TZMC18	AA	L 3101	RCILP0273BMZZ	S	100μH	AK
D 3111	RH-DX0519BMZZ	S	1N5819	AD	L 3102	RCILP0273BMZZ	S	100μH	AK
D 3112	RH-DX0519BMZZ	S	1N5819	AD	L 3103	RCILP0273BMZZ	S	100μH	AK
D 3113	RH-DX0551BMZZ	S	LL4148	AA	L 3105	RCILP0242BMZZ	S	100μH	AM
D 3114	RH-DX0551BMZZ	S	LL4148	AA	L 3312	VP-NM100KR42N	S	10μH	AC
D 3115	RH-DX0551BMZZ	S	LL4148	AA	L 3313	VP-NM3R3MR19N	S	3.3μH	AC
D 3116	RH-DX0551BMZZ	S	LL4148	AA	L 3314	VP-NM3R3MR19N	S	3.3μH	AC
D 3117	RH-EX0558BMZZ	S	Zener TZMC18	AA	L 3315	VP-NM3R3MR19N	S	3.3μH	AC
D 3118	RH-DX0551BMZZ	S	LL4148	AA	L 3316	VP-NM100KR42N	S	10μH	AC
D 3119	RH-DX0519BMZZ	S	1N5819	AD	L 3317	VP-NM3R3MR19N	S	3.3μH	AC
D 3120	RH-DX0519BMZZ	S	1N5819	AD	L 3318	VP-NM3R3MR19N	S	3.3μH	AC
D 3121	RH-EX0548BMZZ	S	Zener TZMC6V8	AA	L 3319	VP-NM3R3MR19N	S	3.3μH	AC
D 3122	RH-DX0045BMZZ	S	1N4148	AA	L 3320	VP-NM3R3MR19N	S	3.3μH	AC
D 3123	RH-DX0045BMZZ	S	1N4148	AA	L 3321	VP-NM3R3MR19N	S	3.3μH	AC
D 3124	RH-DX0045BMZZ	S	1N4148	AA	L 3322	VP-NM3R3MR19N	S	3.3μH	AC
D 3125	RH-DX0551BMZZ	S	LL4148	AA	L 3323	VP-NM100KR42N	S	10μH	AC
D 3126	RH-DX0045BMZZ	S	1N4148	AA	CAPACITORS				
D 3127	RH-DX0045BMZZ	S	1N4148	AA	C 0311	VCEAGA1CW477M	S	470 16V Electrolytic	AC
D 3128	RH-DX0551BMZZ	S	LL4148	AA	C 3101	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA
D 3129	RH-DX0045BMZZ	S	1N4148	AA	C 3102	VCKYTV1HB103K	S	0.01 50V Ceramic	AA
D 3130	RH-DX0045BMZZ	S	1N4148	AA	C 3103	VCCCTV1HH472G	S	4700p 50V Ceramic	AD
D 3131	RH-DX0045BMZZ	S	1N4148	AA	C 3104	VCKYTV1HF683Z	S	0.068 50V Ceramic	AA
D 3132	RH-DX0551BMZZ	S	LL4148	AA	C 3105	VCKYTV1HF683Z	S	0.068 50V Ceramic	AA
D 3133	RH-DX0551BMZZ	S	LL4148	AA	C 3106	RC-FZ9684BMNJ	J	0.68 63V Mylar	AD
D 3134	RH-DX0551BMZZ	S	LL4148	AA	C 3107	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA
D 3135	RH-DX0551BMZZ	S	LL4148	AA	C 3108	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA
D 3136	RH-DX0551BMZZ	S	LL4148	AA	C 3109	VCKYTV1HB153K	S	0.015 50V Ceramic	AA
D 3137	RH-DX0551BMZZ	S	LL4148	AA	C 3110	VCEAGA1EW227M	S	220 25V Electrolytic	AA
D 3138	RH-DX0551BMZZ	S	LL4148	AA	C 3111	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA
D 3140	RH-EX0558BMZZ	S	Zener TZMC18	AA	C 3112	VCKYTV1HB103K	S	0.01 50V Ceramic	AA
D 3141	RH-DX0551BMZZ	S	LL4148	AA	C 3113	VCCCTV1HH472G	S	4700p 50V Ceramic	AD
D 3142	RH-DX0551BMZZ	S	LL4148	AA	C 3114	VCKYTV1HF683Z	S	0.068 50V Ceramic	AA
D 3143	RH-DX0551BMZZ	S	LL4148	AA	C 3115	VCKYTV1HF683Z	S	0.068 50V Ceramic	AA
D 3144	RH-DX0551BMZZ	S	LL4148	AA	C 3116	RC-FZ9684BMNJ	J	0.68 63V Mylar	AD
D 3145	RH-EX0544BMZZ	S	Zener TZMC4V7	AA	C 3117	VCKYTV1EF224Z	S	0.22 25V Ceramic	AA
D 3145	RH-DX0551BMZZ	S	LL4148	AA					
D 3146	RH-DX0551BMZZ	S	LL4148	AA					
D 3147	RH-EX0581BMZZ	S	Zener TZMBC4V7	AA					

REF. NO.	PARTS NO.	★	DESCRIPTION			CODE	REF. NO.	PARTS NO.	★	DESCRIPTION			CODE
C 3118	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3303	VCKYTV1HB152K	S	1500p	50V	Ceramic	AA
C 3119	VCKYTV1HB153K	S	0.015	50V	Ceramic	AA	C 3304	VCKYTV1HB222K	S	2200p	50V	Ceramic	AA
C 3120	RC-FZ9104BMNJ	J	0.1	63V	Mylar	AB	C 3305	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3121	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3306	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3122	VCKYTV1HB103K	S	0.01	50V	Ceramic	AA	C 3307	VCEAGA1CW337M	S	330	16V	Electrolytic	AC
C 3123	VCCCTV1HH472G	S	4700p	50V	Ceramic	AD	C 3308	VCKYTV1HB222K	S	2200p	50V	Ceramic	AA
C 3124	VCKYTV1HF683Z	S	0.068	50V	Ceramic	AA	C 3309	VCKYTV1HB152K	S	1500p	50V	Ceramic	AA
C 3125	VCKYTV1HF683Z	S	0.068	50V	Ceramic	AA	C 3310	VCEAGA1AW107M	S	100	10V	Electrolytic	AA
C 3126	RC-FZ9684BMNJ	J	0.68	63V	Mylar	AD	C 3312	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3127	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3313	VCEAGA1CW108M	S	1000	16V	Electrolytic	AE
C 3128	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3314	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3129	VCKYTV1HB153K	S	0.015	50V	Ceramic	AA	C 3315	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3130	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3316	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3131	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3317	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3132	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3318	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3136	VCKYTV1CF474Z	S	0.47	16V	Ceramic	AA	C 3319	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3137	VCKYTV1HB223K	S	0.022	50V	Ceramic	AA	C 3320	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3138	VCCCTV1HH472G	S	4700p	50V	Ceramic	AD	C 3321	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3139	VCKYTV1HB153K	S	0.015	50V	Ceramic	AA	C 3322	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3140	VCKYTV1HF683Z	S	0.068	50V	Ceramic	AA	C 3323	VCCCTV1HH101J	S	100p	50V	Ceramic	AA
C 3141	VCKYTV1HF683Z	S	0.068	50V	Ceramic	AA	C 3324	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3142	RC-FZ9684BMNJ	J	0.68	63V	Mylar	AD	C 3325	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3143	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3326	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3144	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3327	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3145	VCKYTV1CF474Z	S	0.47	16V	Ceramic	AA	C 3328	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3149	VCEAGA1AW477M	S	470	10V	Electrolytic	AB	C 3329	VCKYTV1HB103K	S	0.01	50V	Ceramic	AA
C 3150	VCEAGA1AW477M	S	470	10V	Electrolytic	AB	C 3330	VCKYTV1HB103K	S	0.01	50V	Ceramic	AA
C 3151	VCEAGA1AW477M	S	470	10V	Electrolytic	AB	C 3331	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3152	VCEAGA1AW477M	S	470	10V	Electrolytic	AB	C 3332	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3153	VCEAGA1EW107M	S	100	25V	Electrolytic	AB	C 3333	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3154	VCEAGA1EW107M	S	100	25V	Electrolytic	AB	C 3334	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3155	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3335	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3156	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3336	VCKYTV1HB122K	S	1200p	50V	Ceramic	AA
C 3157	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3337	VCEAGA1AW107M	S	100	10V	Electrolytic	AA
C 3158	VCEAGA1EW227M	S	220	25V	Electrolytic	AA	C 3351	VCCCTV1HH100D	S	10p	50V	Ceramic	AA
C 3159	VCEAGA1EW108M	S	1000	25V	Electrolytic	AD	C 3352	VCCCTV1HH100D	S	10p	50V	Ceramic	AA
C 3160	VCEAGA1EW108M	S	1000	25V	Electrolytic	AD	C 3353	VCKYTV1HB103K	S	0.01	50V	Ceramic	AA
C 3161	VCEAGA1EW107M	S	100	25V	Electrolytic	AB	C 3354	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA
C 3162	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA	C 3355	VCKYTV1CF474Z	S	0.47	16V	Ceramic	AA
C 3165	VCKYTV1HB102K	S	1000p	50V	Ceramic	AA	C 3360	VCEAGA1EW108M	S	1000	25V	Electrolytic	AD
C 3166	VCKYTV1HB102K	S	1000p	50V	Ceramic	AA	C 3361	VCEAGA1EW108M	S	1000	25V	Electrolytic	AD
C 3167	VCKYTV1HB102K	S	1000p	50V	Ceramic	AA	C 3362	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3168	VCKYTV1HB102K	S	1000p	50V	Ceramic	AA	C 3364	VCKYTV1HF104Z	S	0.1	50V	Ceramic	AA
C 3169	VCCCTV1HH120J	S	12p	50V	Ceramic	AA	C 3374	VCEAGA1CW227M	S	220	16V	Electrolytic	AC
C 3170	VCCCTV1HH120J	S	12p	50V	Ceramic	AA	C 3375	VCKYTV1EF334Z	S	0.33	25V	Ceramic	AB
C 3171	VCCCTV1HH120J	S	12p	50V	Ceramic	AA	C 3376	VCEAGA1CW107M	S	100	16V	Electrolytic	AB
C 3172	VCCCTV1HH120J	S	12p	50V	Ceramic	AA	C 3377	VCKYTV1EF334Z	S	0.33	25V	Ceramic	AB
C 3173	RC-FZ9472BMNJ	J	4700p	63V	Mylar	AB	C 3378	VCKYTV1HB103K	S	0.01	50V	Ceramic	AA
C 3175	RC-FZ9472BMNJ	J	4700p	63V	Mylar	AB	C 3379	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA
C 3177	RC-FZ9472BMNJ	J	4700p	63V	Mylar	AB	C 3380	VCEAGA1HW106M	S	10	50V	Electrolytic	AA
C 3179	RC-FZ9472BMNJ	J	4700p	63V	Mylar	AB	C 3381	VCEAGA1HW106M	S	10	50V	Electrolytic	AA
C 3181	VCCCTV1HH151J	S	150p	50V	Ceramic	AA	C 3382	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3182	VCCCTV1HH151J	S	150p	50V	Ceramic	AA	C 3383	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3183	VCCCTV1HH101J	S	100p	50V	Ceramic	AA	C 3384	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3185	VCKYTV1CF474Z	S	0.47	16V	Ceramic	AA	C 3385	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3186	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3386	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3187	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3387	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3188	VCKYTV1EF224Z	S	0.22	25V	Ceramic	AA	C 3388	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3189	VCKYTV1EF334Z	S	0.33	25V	Ceramic	AB	C 3389	RC-FZ9334BMNJ	J	0.33	63V	Mylar	AC
C 3190	VCCCTV1HH680J	S	68p	50V	Ceramic	AA	C 3390	VCEAGA1HW225M	S	2.2	50V	Electrolytic	AB
C 3191	VCEAGA1HW106M	S	10	50V	Electrolytic	AA	RESISTORS						
C 3192	VCEAGA1HW106M	S	10	50V	Electrolytic	AA							
C 3193	VCCCTV1HH220J	S	22p	50V	Ceramic	AA	R 3101	VRS-TV1JD472F	S	4.7K	1/10W Metal Oxide	AA	
C 3194	VCKYTV1HB473K	S	0.047	50V	Ceramic	AA	R 3102	VRS-TV1JD224F	S	220K	1/10W Metal Oxide	AA	
C 3195	VCKZPA1HB102K	S	1000p	50V	Ceramic	AA	R 3103	VRS-TV1JD182F	S	1.8K	1/10W Metal Oxide	AA	
C 3301	RC-FZ9224BMNJ	J	0.22	63V	Mylar	AC	R 3104	VRS-TV1JD472F	S	4.7K	1/10W Metal Oxide	AA	
C 3302	VCEAGA1CW337M	S	330	16V	Electrolytic	AC							

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 3105	VRS-TV1JD102F	S	1K 1/10W Metal Oxide	AA	R 3190	VRS-TV1JD821J	S	820 1/10W Metal Oxide	AA
R 3106	VRS-TV1JD222F	S	2.2K 1/10W Metal Oxide	AA	R 3191	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA
R 3107	VRS-TV1JD104F	S	100K 1/10W Metal Oxide	AA	R 3192	VRS-TV1JD473J	S	47K 1/10W Metal Oxide	AA
R 3108	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	R 3193	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA
R 3109	VRS-TV1JD332F	S	3.3K 1/10W Metal Oxide	AA	R 3194	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
R 3110	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3195	VRS-TV1JD684J	S	680K 1/10W Metal Oxide	AA
R 3111	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3196	VRS-TV1JD684J	S	680K 1/10W Metal Oxide	AA
R 3112	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3197	VRS-TV1JD394J	S	390K 1/10W Metal Oxide	AA
R 3113	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3198	VRN-VV3ABR22J	S	0.22 1W Metal Film	AA
R 3114	VRD-RA2HD221J	S	220 1/2W Carbon	AA	R 3199	VRS-TV1JD394J	S	390K 1/10W Metal Oxide	AA
R 3115	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA	R 3200	VRS-TV1JD123J	S	12K 1/10W Metal Oxide	AA
R 3116	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA	R 3201	VRS-TV1JD123J	S	12K 1/10W Metal Oxide	AA
R 3117	VRN-VV3ABR27J	J	0.27 1W Metal Film	AA	R 3300	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3118	VRN-VV3ABR27J	J	0.27 1W Metal Film	AA	R 3301	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3119	VRS-TV1JD123J	S	12K 1/10W Metal Oxide	AA	R 3302	VRS-TV1JD683J	S	68K 1/10W Metal Oxide	AA
R 3120	VRS-TV1JD123J	S	12K 1/10W Metal Oxide	AA	R 3303	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3121	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3304	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3122	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3305	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3123	VRS-TV1JD182F	S	1.8K 1/10W Metal Oxide	AA	R 3306	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3124	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3307	VRS-TV1JD683J	S	68K 1/10W Metal Oxide	AA
R 3125	VRS-TV1JD102F	S	1K 1/10W Metal Oxide	AA	R 3308	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3126	VRS-TV1JD222F	S	2.2K 1/10W Metal Oxide	AA	R 3309	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3127	VRS-TV1JD104F	S	100K 1/10W Metal Oxide	AA	R 3310	RR-XZ0120BMZZ	S	47 1/3W Fuse Resistor	AB
R 3128	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA	R 3311	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3129	VRS-TV1JD332F	S	3.3K 1/10W Metal Oxide	AA	R 3312	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3130	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3313	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3131	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3314	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
R 3132	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3315	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
R 3133	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3316	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
R 3134	VRD-RA2HD221J	S	220 1/2W Carbon	AA	R 3317	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3135	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA	R 3318	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3136	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 3319	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
R 3137	VRN-VV3ABR27J	J	0.27 1W Metal Film	AA	R 3320	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3138	VRN-VV3ABR27J	J	0.27 1W Metal Film	AA	R 3321	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3139	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 3322	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3141	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3323	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3142	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3324	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3143	VRS-TV1JD182F	S	1.8K 1/10W Metal Oxide	AA	R 3325	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3144	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3326	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3145	VRS-TV1JD102F	S	1K 1/10W Metal Oxide	AA	R 3327	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3146	VRS-TV1JD222F	S	2.2K 1/10W Metal Oxide	AA	R 3328	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3147	VRS-TV1JD104F	S	100K 1/10W Metal Oxide	AA	R 3329	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3149	VRS-TV1JD332F	S	3.3K 1/10W Metal Oxide	AA	R 3330	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3150	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3331	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA
R 3151	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3333	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA
R 3152	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3334	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA
R 3153	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3335	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA
R 3154	VRD-RA2HD221J	S	220 1/2W Carbon	AA	R 3336	VRS-TV1JD472J	S	4.7K 1/10W Metal Oxide	AA
R 3155	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 3337	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA
R 3156	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA	R 3338	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA
R 3157	VRN-VV3ABR27J	J	0.27 1W Metal Film	AA	R 3339	VRS-TV1JD273J	S	27K 1/10W Metal Oxide	AA
R 3158	VRN-VV3ABR27J	J	0.27 1W Metal Film	AA	R 3340	VRS-TV1JD222J	S	2.2K 1/10W Metal Oxide	AA
R 3171	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3343	VRS-TV1JD681J	S	680 1/10W Metal Oxide	AA
R 3172	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3350	VRS-TV1JD561J	S	560 1/10W Metal Oxide	AA
R 3173	VRS-TV1JD182F	S	1.8K 1/10W Metal Oxide	AA	R 3351	VRS-TV1JD 561J	S	560 1/10W Metal Oxide	AA
R 3174	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3362	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
R 3175	VRS-TV1JD102F	S	1K 1/10W Metal Oxide	AA	R 3363	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA
R 3176	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	R 3364	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
R 3177	VRS-TV1JD104F	S	100K 1/10W Metal Oxide	AA	R 3365	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
R 3179	VRS-TV1JD332F	S	3.3K 1/10W Metal Oxide	AA	R 3366	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
R 3180	VRS-TV1JD224F	S	220K 1/10W Metal Oxide	AA	R 3367	VRS-TV1JD560J	S	56 1/10W Metal Oxide	AA
R 3181	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3368	VRS-TV1JD680J	S	68 1/10W Metal Oxide	AA
R 3182	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3369	VRS-TV1JD560J	S	56 1/10W Metal Oxide	AA
R 3183	VRS-TV1JD472F	S	4.7K 1/10W Metal Oxide	AA	R 3370	VRS-TV1JD680J	S	68 1/10W Metal Oxide	AA
R 3184	VRD-RA2HD151J	S	150 1/2W Carbon	AA	R 3371	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
R 3187	VRN-VV3ABR22J	S	0.22 1W Metal Film	AA	R 3372	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA
R 3189	VRS-TV1JD821J	S	820 1/10W Metal Oxide	AA	R 3373	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
R 3374	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	C 3303	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
R 3375	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	C 3304	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
R 3376	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	C 3305	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
R 3377	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	C 3306	VCKYTV1HB102K	S	1000p 50V Ceramic	AA
R 3378	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	RESISTORS				
R 3379	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 3300	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 3380	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 3301	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 3381	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 3302	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 3382	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	R 3303	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 3383	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	MISCELLANEOUS PARTS				
R 3384	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	J 3301	QJAKE0070CEZZ	S	Jack	AD
R 3385	VRS-TV1JD000J	S	0 1/10W Metal Oxide	AA	J 3302	QJAKE0070CEZZ	S	Jack	AD
R 3387	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(SI)	QPLGN0441CEZZ	S	Connector 4pin	AB
R 3388	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	(ST)	QPLGN0485CEZZ	S	Connector	AC
R 3389	VRS-TV1JD104J	S	100K 1/10W Metal Oxide	AA	PWB - J AUX. POWER SUPPLY UNIT				
R 3391	VRS-TV1JD102J	S	1K 1/10W Metal Oxide	AA	INTEGRATED CIRCUIT				
R 3392	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	△ IC 7001	RH-FX0103BMZZ	S	MOC8105SR2V	AD
J 0012	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA	TRANSISTORS				
L 3311	VRS-TQ2BD220J	S	22 1/8W Metal Oxide	AA	Q 7001	RH-TX0166BMZZ	S	2SK2605	AK
MISCELLANEOUS PARTS					Q 7002	RH-TX0102BMZZ	S	BC338	AB
(AD)	QPLGN1041CEZZ	S	Connector	AB	Q 7003	RH-TX0102BMZZ	S	BC338	AB
(DA)	QPLGN0841CEZZ	S	Connector	AB	Q 7004	VS2SC2412KQ-1	S	2SC2412	AA
(DB)	QPLGN1041CEZZ	S	Connector	AB	Q 7005	VS2SA1037KQ-1	S	BC807	AA
(SR)	QSOCN0685CEZZ	S	Socket	AD	Q 7006	VS2SA1037KQ-1	S	BC807	AA
(ST)	QSOCN0485CEZZ	S	Socket	AC	Q 7007	VS2SC2412KQ-1	S	2SC2412	AA
FB 3301	RCORF0003GEZZ	S	Ferrite	AC	Q 7008	RH-TX0163BMZZ	S	MJD45H11	AF
FB 3302	RCORF0003GEZZ	S	Ferrite	AC	Q 7009	VS2SA1037KQ-1	S	BC807	AA
FB 3303	RCORF0003GEZZ	S	Ferrite	AC	Q 7010	RH-TX0162BMZZ	S	MJD44H11	AF
FB 3304	RCORF0003GEZZ	S	Ferrite	AC	DIODES				
FB 3305	RCORF0003GEZZ	S	Ferrite	AC	D 7002	RH-DX0551BMZZ	S	LL4148	AA
FB 3306	RCORF0003GEZZ	S	Ferrite	A	D 7005	RH-DX0539BMZZ	S	BYT52M	AC
PWB - H EXTERNAL SPEAKERS (X3)					D 7006	RH-DX0551BMZZ	S	LL4148	AA
CAPACITORS					D 7007	RH-EX0409BMZZ	S	Zener BZX79C5V6	AA
C 3305	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7011	RH-DX0587BMZZ	S	MR826	AP
C 3305	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7018	RH-EX0419BMZZ	S	Zener BZX79C15V 0.4W	AB
C 3306	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7020	RH-DX0551BMZZ	S	LL4148	AA
C 3306	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7021	RH-DX0505BMZZ	S	1N4935	AB
C 3307	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7022	RH-DX0505BMZZ	S	1N4935	AB
C 3308	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7023	RH-DX0587BMZZ	S	MR826	AP
C 3309	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7024	RH-EX0584BMZZ	S	Zener TZMBC6V2	AA
C 3310	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	D 7025	RH-EX0579BMZZ	S	Zener TZMBC3V9	AA
RESISTORS					D 7030	RH-EX0417BMZZ	S	Zener BZX79C12V	AA
R 3304	VRS-TW2ED331J	S	330 1/4W Metal Oxide	AA	D 7031	RH-EX0558BMZZ	S	Zener TZMC18	AA
R 3305	VRS-TW2ED331J	S	330 1/4W Metal Oxide	AA	D 7031	RH-EX0558BMZZ	S	Zener TZMC18	AA
R 3306	VRS-TW2ED331J	S	330 1/4W Metal Oxide	AA	D 7031	RH-DX0045BMZZ	S	1N4148	AA
R 3307	VRS-TW2ED331J	S	330 1/4W Metal Oxide	AA	D 7032	RH-DX0045BMZZ	S	1N4148	AA
R 3308	VRS-TW2ED331J	S	330 1/4W Metal Oxide	AA	TRANSFORMER				
R 3310	VRS-TW2ED331J	S	330 1/4W Metal Oxide	AA	△ T 7000	RTRNZ0548BMZZ	S	Transformer	AU
MISCELLANEOUS PARTS					CAPACITORS				
J 3303	QJAKE0070CEZZ	S	Jack	AD	C 7005	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC
J 3304	QJAKE0070CEZZ	S	Jack	AD	C 7007	RC-FZ9153BMNJ	J	0.015 63V Mylar	AB
J 3305	QJAKE0070CEZZ	S	Jack	AD	C 7008	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB
(SR)	QPLGN0685CEZZ	S	Connector	AC					
PWB - I EXTERNAL SPEAKERS (X2)									
CAPACITORS									
C 3301	VCKYTV1HB102K	S	1000p 50V Ceramic	AA					
C 3302	VCKYTV1HB102K	S	1000p 50V Ceramic	AA					

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE	REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
C 7009	VCKYTV1HB332K	S	3300p 50V Ceramic	AA	CABINET PARTS				
C 7010	VCKYTV1HB102K	S	1000p 50V Ceramic	AA	1	CCABA1206BMV0	S	Front Cabinet 66DW18SN	BK
C 7015	VCEAGA1EW228M	S	2200 25V Electrolytic	AG	1	CCABA1215BMV0	S	Front Cabinet 76DW18SN	BN
C 7016	VCEAGA1EW228M	S	2200 25V Electrolytic	AG	1 - 1	GDORF1050BMSA	S	Door 66DW18SN	AE
C 7018	RC-KZ0035CEZZ	S	220p 2KV Ceramic	AC	1 - 1	GDORF1051BMSA	S	Door 76DW18SN	AE
C 7021	VCEAGA1EW108M	S	1000 25V Electrolytic	AD	1 - 2	HDECQ0027BMSA	S	Window LED 66DW18SN	AC
C 7022	VCEAGA1EW108M	S	1000 25V Electrolytic	AD	1 - 2	HDECQ0029BMSA	S	Window LED 76DW18SN	AC
C 7023	VCCCTV1HH471J	S	470p 50V Ceramic	AA	1 - 3	HDECQ0028BMSA	S	Window Power 66DW18SN	AC
C 7025	RC-KZ0035CEZZ	S	220p 2KV Ceramic	AC	1 - 3	HDECQ0030BMSA	S	Window Power 76DW18SN	AC
C 7026	VCCSPA1HL471J	S	470p 50V Ceramic	AA	1 - 4	HBDGB3013MESA	S	Badge SHARP	AG
C 7027	RC-FZ7104BMNJ	J	0.1 400V Mylar	AD	1 - 5	JBTN-1042BMSA	S	Button Control 66DW18SN	AD
C 7029	VCEAGA1CW108M	S	1000 16V Electrolytic	AE	1 - 5	JBTN-1044BMSA	S	Button Control 76DW18SN	AE
C 7030	VCKYPA2HB103K	S	0.01 500V Ceramic	AC	1 - 6	JBTN-1043BMSA	S	Button Power 66DW18SN	AE
D 7026	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC	1 - 6	JBTN-1045BMSA	S	Button Power 76DW18SN	AE
D 7029	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC	1 - 7	HINDP5096BMSA	S	Indicator 66DW18SN	AF
RESISTORS					1 - 7	HINDP5098BMSA	S	Indicator 76DW18SN	AE
R 7001	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA	1 - 8	PKAI-1083BM00	S	Door Latch	AF
R 7002	VRD-RA2HD224J	S	220K 1/2W Carbon	AA	2	CCABB1075BMV0	S	Rear Cabinet 66DW18SN	BK
R 7004	VRD-RA2HD564J	S	560K 1/2W Carbon	AC	2	CCABB1077BMV0	S	Rear Cabinet 76DW18SN	BG
R 7005	VRD-RA2HD564J	S	560K 1/2W Carbon	AC					
R 7006	VRN-VV3ABR22J	S	0.22 1W Metal Film	AA					
R 7007	VRS-TV1JD221J	S	220 1/10W Metal Oxide	AA					
R 7008	VRD-RA2HD102J	S	1K 1/2W Carbon	AA					
R 7009	VRD-RA2BE330J	S	33 1/8W Carbon	AA					
R 7010	VRD-RA2HD102J	S	1K 1/2W Carbon	AA					
R 7015	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA					
R 7017	VRS-TV1JD101J	S	100 1/10W Metal Oxide	AA					
R 7018	VRS-TV1JD562J	S	5.6K 1/10W Metal Oxide	AA					
R 7020	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA					
R 7021	VRS-TV1JD223J	S	22K 1/10W Metal Oxide	AA					
R 7022	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA					
R 7023	VRS-TV1JD123J	S	12K 1/10W Metal Oxide	AA					
R 7024	VRS-TV1JD103J	S	10K 1/10W Metal Oxide	AA					
R 7027	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA					
R 7028	RR-XZ0219BMZZ	S	39 1/2W Fuse Resistor	AB					
R 7031	VRS-TV1JD332J	S	3.3K 1/10W Metal Oxide	AA					
R 7032	RR-XZ0219BMZZ	S	39 1/2W Fuse Resistor	AB					
D 7027	VRS-TQ2BD562J	S	5.6K 1/8W Metal Oxide	AA					
D 7028	VRS-TQ2BD562J	S	5.6K 1/8W Metal Oxide	AA					
MISCELLANEOUS PARTS									
(AB)	QPLGN0241CEZZ	S	Connector	AA					
(AC)	QPLGN0304CEZZ	S	Connector	AB					
(AD)	QPLGN1041CEZZ	S	Connector	AB					
FB 7001	RBLN-0037CEZZ	S	Ferrite Bead	AB					
FB 7006	RBLN-0037CEZZ	S	Ferrite Bead	AB					
FB 7008	RBLN-0037CEZZ	S	Ferrite Bead	AB					
FB 7010	RBLN-0037CEZZ	S	Ferrite Bead	AB					
FB 7011	RBLN-0037CEZZ	S	Ferrite Bead	AB					
L 7012	RBLN-0080CEZZ	S	Ferrite Bead	AB					
L 7013	RBLN-0080CEZZ	S	Ferrite Bead	AB					
MISCELLANEOUS PARTS									
▲	CACCB5007BMV0	S	AC Cord	AU					
	RRMCG1065BMSA	S	Remote Control Unit	AX					
	TINS-6516BMN0	S	Operation Manual	AP					
	VSP1306PB067S	S	Central Speaker 12W 8 ohms	AR					
	VSP1004PB438A	S	Speaker 12W	AU					
(CV)	RCORF0002BMZZ	S	Ferrite	AK					
(KA)	RCORF0002BMZZ	S	Ferrite	AK					
(KD)	RCORF0002BMZZ	S	Ferrite	AK					
(VE)	RCORF0002BMZZ	S	Ferrite	AK					



SHARP

**Wide Screen
Colour Television
CW100 Chassis**

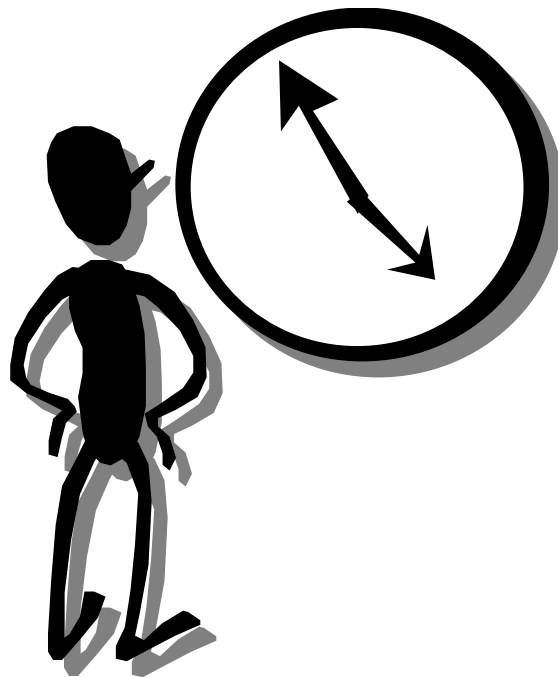
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Self Assessment Question

Power Supply



60 Min Study Period

POWER SUPPLY

This CTV employs two power supplies, both are similar in construction to the ones employed in the 5BS, CS, CA1 & CA10 chassis. The power supply located on the sub-board 'PWB-J' supplies the Dolby Prologic circuit on PWB-G, which includes the audio output stages except for the centre channel. The audio centre channel and all other circuits in this CTV are supplied from the main power supply situated on PWB-A. Similar to the CS & CA10 chassis, when this receiver is in standby mode, the outputs from power supplies (including the supply to the Main Microprocessor circuit) will be damped by removal of the FET gate voltage. The Slave Processor (IC6702) performs standby & timer on/off functions, which is located on the primary side of the main power supply and will be discussed later.

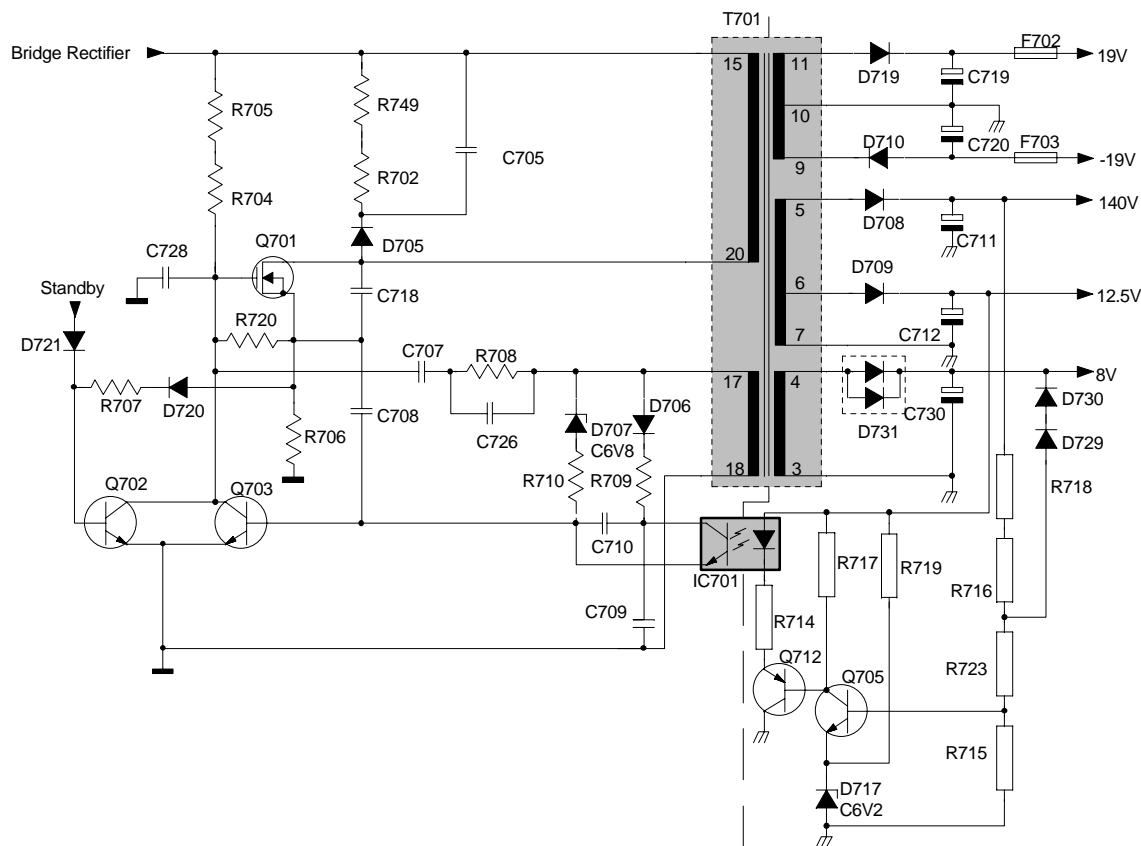


Figure 1 Main Power Supply

START UP OPERATION

Rectified and smoothed mains voltage (+320VDC) is used to provide the start up voltage to the gate of Q701. Current flows via R704 and R705 causing C707 to charge up, the earth return for this capacitor is via R708 and the secondary winding of T701 (pins 17 & 18). This allows a voltage to be built slowly up on the gate of Q701 (Q701 will turn on when the gate reaches about four and a half volts). D718 ensures that Q701 gate voltage will not exceed 15V, preventing damage to the device.

When Q701 turns on, current will flow from the bridge rectifier, through T701 primary winding (pins 15 and 20), Q701 source/drain junction, returning to the bridge rectifier via, R706. The current flowing through T701 primary will induce an 'e.m.f.' into secondary windings

The 'e.m.f.' produced at T701 pin 17 will flow through D706 and the collector emitter junction of the opto-coupler (IC701), charging C708. Once the charge on C708 reaches 0.6V Q703 will turn on, connecting Q701 gate to ground, turning off Q701 & discharging C707.

At this point, the magnetic field within T701 will collapse causing the e.m.f at pin 17 to go negative turning off Q703.

Q701 will not turn on until sufficient charge has built up on C707. However, currently C707 negative plate is approximately -12V; due to the collapsing field within T701. This results in the time period required to build sufficient charge on C707 to biased Q701 'On' increasing i.e. Q701 off time = the time for the back 'e.m.f.' to decay to zero, plus C707 charge time from zero to 4.5V approx.).

VOLTAGE REGULATION

The feed back through the opto-coupler (IC701), provides voltage regulation. The 140V line is used as the controlling source and a reference is provided from the +12.5V supply. Protection is also incorporated via the +8V supply for faults that may occur on either the +8V rail or the 5V rail, which is derived from the +8V rail.

Increase in load

As the 140V rail falls due to increase in load, Q705 will turn off causing Q712 to turn off thus decreasing the brightness of the LED section within IC701. This has the effect of decreasing the conduction of the light sensitive transistor which will increase the voltage drop across the collector/emitter junction; thereby increasing the time taken to charge C708, delaying the point when Q703 turns on, causing Q701 to turn off. Allowing more energy to be transferred across T701 increasing the HT rail; hence, the frequency of the power supply will fall.

Decrease in load

As the 140V rail increases due to a decrease in load, Q705 will turn on, turning on Q712, and the brightness of the LED section within IC701. This will increase the conduction of the light sensitive transistor; thereby decreasing the voltage drop across the collector/emitter junction; which will decrease the time taken to charge C708, thus advancing the point when Q703 turns off, causing Q701 to turn on earlier. Allowing less energy to be transferred across T701 decreasing the HT rail; hence, the frequency of the power supply will increase.

It can now be seen that this is a variable frequency power supply, typically the frequency will vary between 144kHz (no load) to 70kHz (high beam current).

OVER VOLTAGE PROTECTION

D707 is used to prevent the secondary rails increase beyond safe limits. If the e.m.f. @ T701 pin 17 increases beyond safe limits D707 will conduct, increase the voltage across C708, thereby reducing its charge time, turning on Q703 earlier, turning off Q701, allowing the HT rails to fall. Once the HT starts to fall Q703 will turn off allowing the Power Supply to restart.

OVER CURRENT CONTROL

Over current control is performed by monitoring the amount of current passing through the R706 (Q701 drain, earth return resistor). This resistor is an extremely low value, 0.18R, and Ohm's Law dictates that the current flowing through it must be proportional to the voltage across it. The base voltage required for turning on Q702, is +0.6V then the voltage across R706 to 'trip' the circuit would have to be approximately 1.2V (this includes 0.6V drop across D720). Therefore, it can be seen (using Ohm's Law) a current of 6.7amp is required to operate the trip circuit.

The voltage developed across R706 will turn Q702 on via D720 & R707. Once Q702 turns on, C707 will discharge rapidly, removing Q701 gate bias. Q701 will remain turned off until the current through R706 decreases. At this point Q702 turns off allowing C707 to charge turning on Q701. If the overload is still present then Q702 will turn on again, thus repeating the cycle. In the case of a short circuit line output transistor the power supply will keep repeating this cycle. The HT rail & base of Q702 (if measured with a standard DVM) would normally read zero volts and the power supply appears not to be working. On some occasions when the short is not as heavy then a whistle may be heard.

Note:

To check that the power supply operating, disconnect R648 & measure the voltage at the cathode of D708:

- 140V. Power Supply working, short in line stage
- <40V. Short on a LT rail
- 0V. Power Supply not operating (check that the CTV is not in standby mode)

Self Assessment Question

Name two conditions that will turn on Q702?

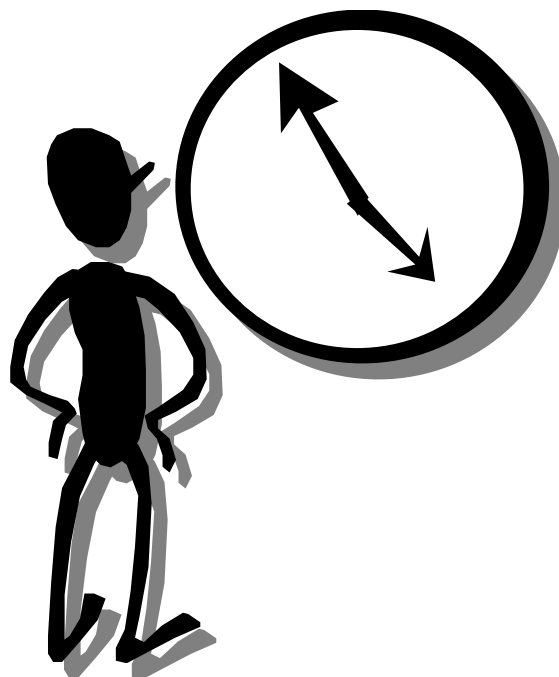
What is the supply voltage to IC1001 during standby?

What will be measured with a DVM at the base of Q702 during over-current?

If Q703 is open circuit, what would happen to the power supply frequency?

If load increase on the power supply, what will happen to the frequency?

Slave Processor



30 Min Study Period

SLAVE PROCESSOR

As described previously, to control the operation of the set in the standby mode (including timer on function) a Slave Processor (IC6702) is utilised.

This Slave Processor has a volatile memory therefore a copy of its operating system (software) is stored in the EPROM and any customer/engineering settings are stored in the NVM's (EEPROM) which forms part of the Main Microprocessor circuit. For this reason, the default condition Slave Processor standby function (<- standby), pin15; is low; enabling IC6702 software to be downloaded from the Main Microprocessor circuit each time power is applied to the CTV.

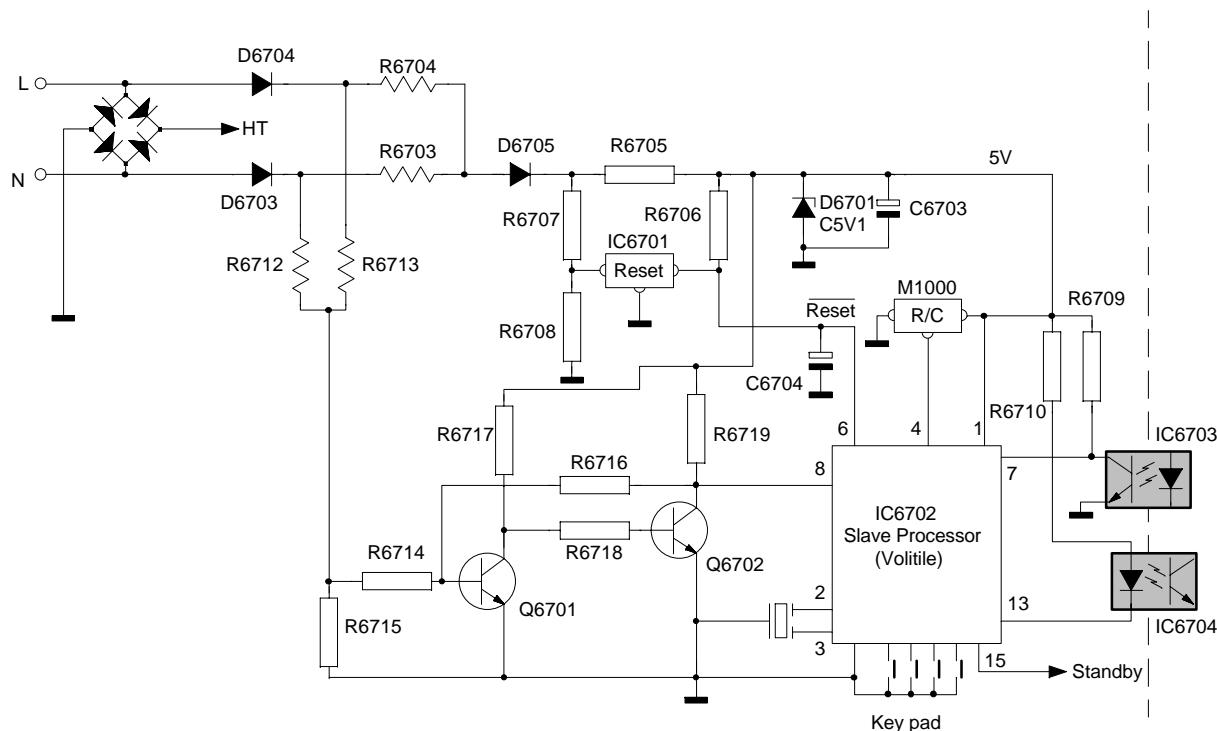


Figure 1 - Slave Processor Circuit (CA10)

STANDBY OPERATION

Due to legislation, which limits the standby power consumption, We ensure that this CTV will consume as little power as possible during standby. This includes not fitting a standby indicator. However, legislation states that there must be an indication that power is flowing through the On/off switch, therefore, fitted across the On/off switch is a 'neon'. The amount of power which a neon consumes is negligible when compared with an LED or incandescent lamp.

If the CTV is in standby mode when power removed, it will remember to switch to standby the next time power is applied.

The data that determine whether the CTV comes on in standby is stored in one of the NVM's (IC6702 has a volatile memory). At switch on IC6702 will not know what to do, but the default condition for the standby signal IC6702 pin15 is low. Therefore, the power supplies will start, enabling the Main Processor circuit to function Once IC1001 has reset, and downloaded its data from the EPROM, IC1001 will communicate with IC6702 via the two opto-couplers (IC6703 & IC6704); downloading IC6702 software. Once this has finish IC1001 will check the data contained within the NVM's relating to standby. If it is then decided that the CTV should be in standby mode; IC1001 will instruct IC6702 to take its pin15 high, removing the FET gate voltage from both power supplies.

The two transistors Q6701 and Q6702 comprise a Schmidt Trigger, which is triggered from the mains input at double frequency, i.e. 100Hz. The square wave signal on pin 8 (PB6) is used to control the on timer. This is necessary due to the fact that in standby, the Main Microprocessor, IC1001, is dormant, i.e. no supply and therefore can not perform any functions. The off timer function is controlled within IC1001.

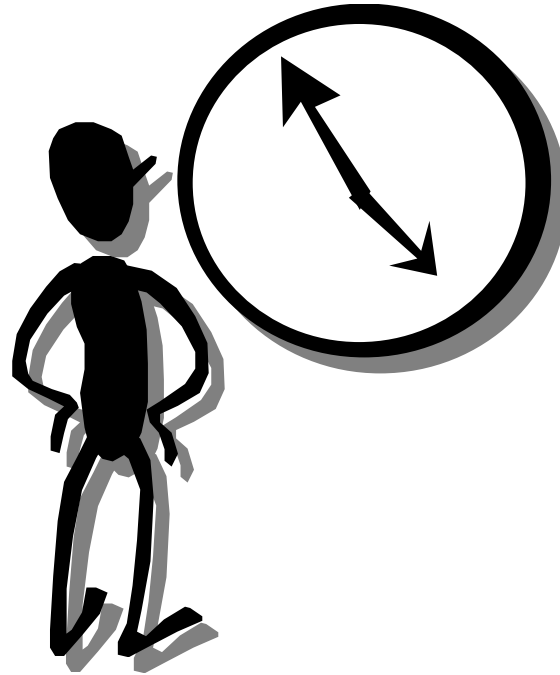
Self Assessment Question

What is the default condition of IC6702 pin15?

If IC6702 pin15 is high, what will happen to the Dolby power supply?

What type of device is IC6702?

Data Communications



45 Min Study Period

MICROPROCESSOR CIRCUIT

This is possibly the most complex processor circuit that has been used in a Sharp CTV's, although it is using the same processor as the CA10 chassis (the mask is different). The CW100 chassis has several buses for communicating with all areas, which are:

Parallel bus	Communication between the Main Microprocessor and the EPROM
Two I ² C buses,	SDA1 & SCA1, communicates with the 100Hz PWB, SCART PWB, Tuner & MSP. SDA2 & SCA2, communicate with the NVM's.
M3 bus.	Communicates with the Megatext chip (similar to the CS chassis with the addition of an Indent line)
'D I C' bus.	Communicates with the Dolby Processor circuit
Reset In.	Main system reset (IC1011).
Two reset out.	First '100Hz PWB Reset' is used by the 100Hz PWB, without this pulse the line oscillator will not start. Second 'Secondary Reset' will reset the MSP, Megatext & the Dolby circuit.
Data In.	Data from Slave Processor, including remote control & keypad commands
Data Out.	Data to Slave Processor

There will be data on any of the buses if the Reset in & the 100Hz reset have not occurred.

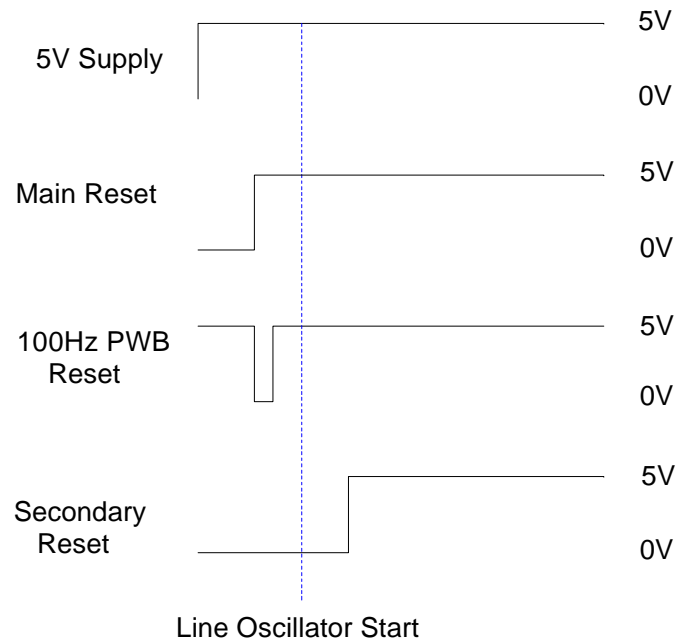


Figure 1 - Reset Pulse Timing

Once the main system microprocessor, IC1001, has been reset and the clock oscillator is running at the correct frequency the internal programme sequence is initiated. It first checks that the internal functions of the IC are working correctly then checks the devices connected to it via the I²C bus. If any errors are encountered then the microprocessor will shut down (no line drive and the NICAM LED is turned on or pulsing); or fault symptom of pulsating line drive.

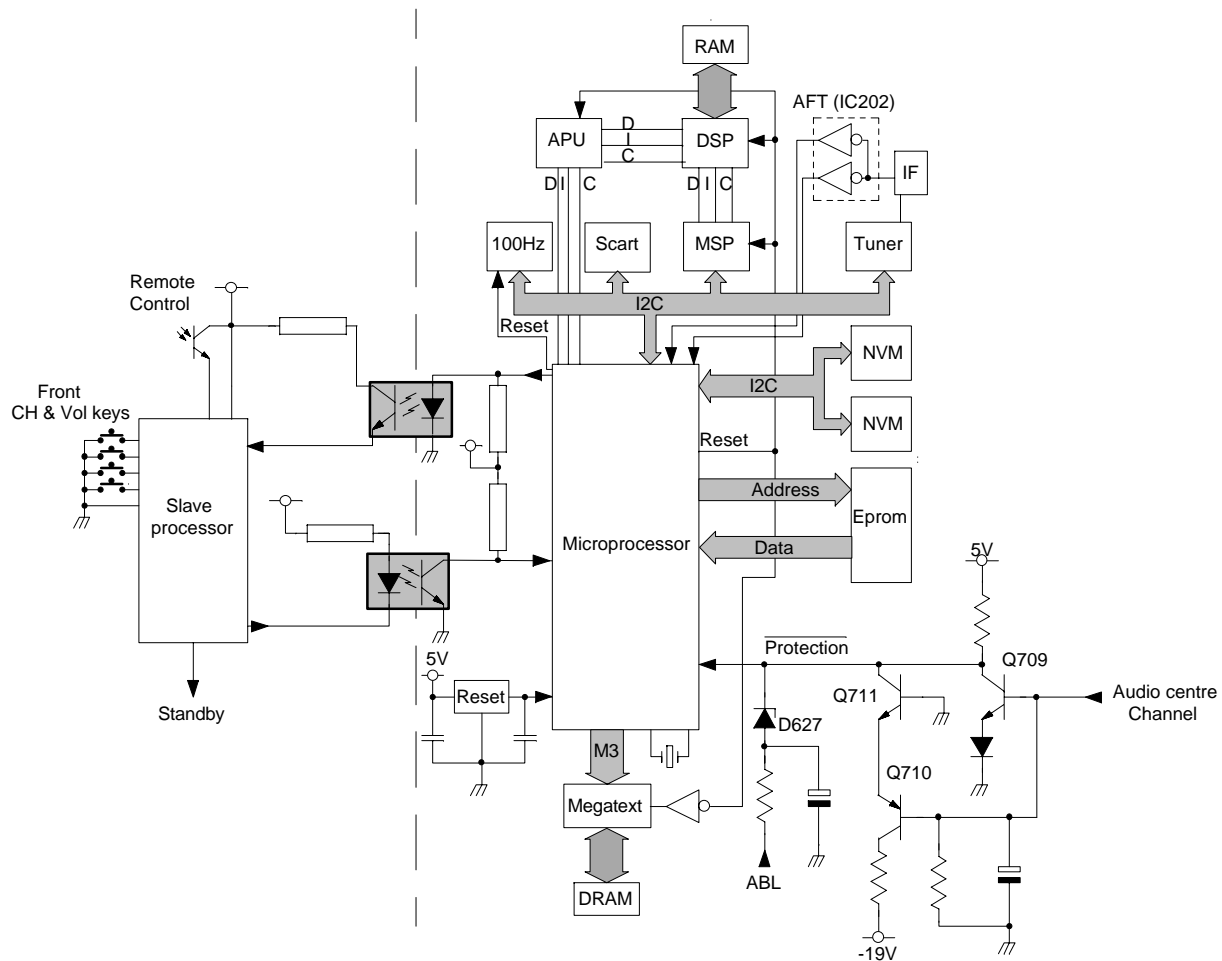


Figure 2 - CPU Data Communication (CA10)

PROTECTION CIRCUITS

There is protection input on IC1001, pin 78 (PROT) which causes the set to switch to standby should there be a fault with the centre audio channel or excessive beam current. Pin 78 is active low therefore, if the beam current increases in a negative direction D627 (47V zener) will conduct, taking pin 78 low, initiating a standby command. Q709, Q710 & Q711 are normally biased off and are part of an averaging circuit. The input to this circuit comes from the Audio Centre Channel Output Stage. The average of a sine wave is zero, if the average goes positive Q709 will turn on taking pin 78 low. If the average goes negative Q710 will turn on feeding -19V to the emitter of Q711. Since Q711 base is grounded, Q711 will turn on taking pin 78 low. In both cases, if the average of the sine wave is not zero pin 78 will go low initiating a standby command.

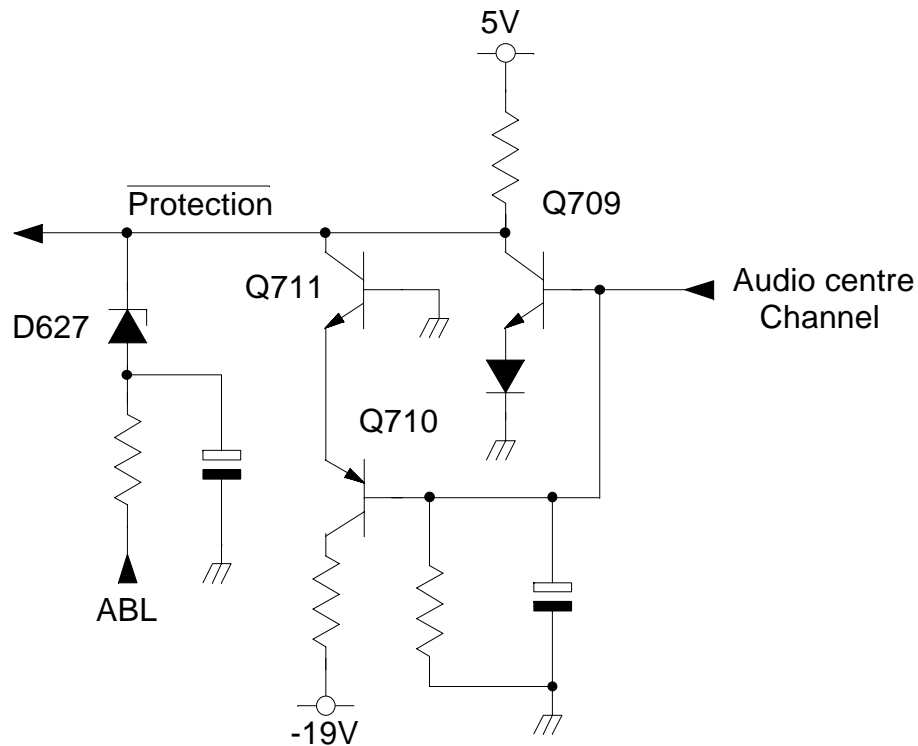


Figure 3 - Protection Circuit

NICAM INDICATOR

The NICAM indicator reacts to the control systems in the same way as the CS & CA10 chassis. Normally the NICAM indicator will illuminate as soon as the power supply starts. It then turns off as the main microprocessor finishes its boot sequence, then if a NICAM signal is detected it will turn on again.

If the NICAM indicator is illuminated then you can assume the power supply is working and the faulty is connected to the bus system. To fault find check Reset, Clock & supplies to the processors. Remove the SCART PWB, If the SCART PWB is at fault the line oscillator will start to pulsate. Next remove the three plugs on the Dolby PWB, If this circuit is at fault then the CTV will work correctly but audio will only be heard through the centre channel. Next, remove the I²C bus from the remaining IC's connected to the bus system to see if the fault condition alters.

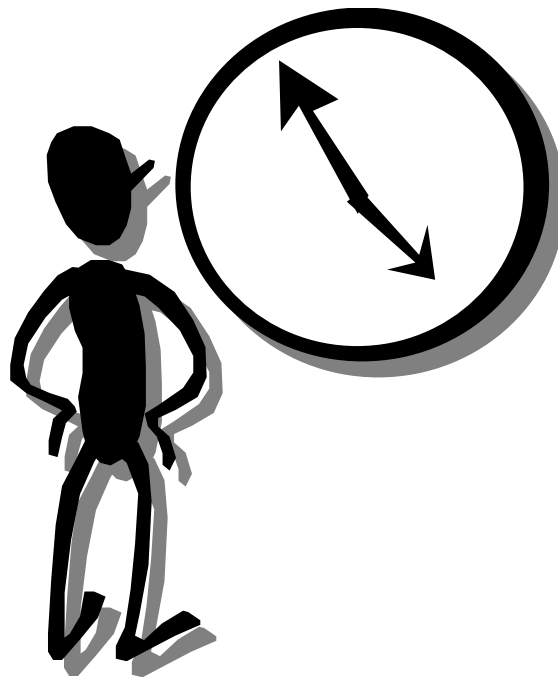
Remember when disconnecting the NVM's you must leave the CTV on for 30 seconds for the default data to start the line. And you can not remove the I²C bus from the sync processor.

Self Assessment Question

What is the active level of IC1001 pin78?

IF the 100Hz PWB reset is permanetly high, what will happen to the line drive?

Video Processing



90 Min Study Period

This is a highly complex PWB, its main functions are as follows: -

1. Double the field frequency
2. Double the line frequency
3. Process the Video signal
4. Decode Chroma carrier
5. Insertion of external RGB signals
6. Reduce picture noise
7. Allow multi image display
8. Insertion of Teletext & OSD signals

All of the signal processing is carried out within integrated circuits, which are TTL compatible therefore, they can be directly connected. Full details of the functions and operation can be located in the appropriate data book, most IC's manufactures have web sites where you can obtain these data books.

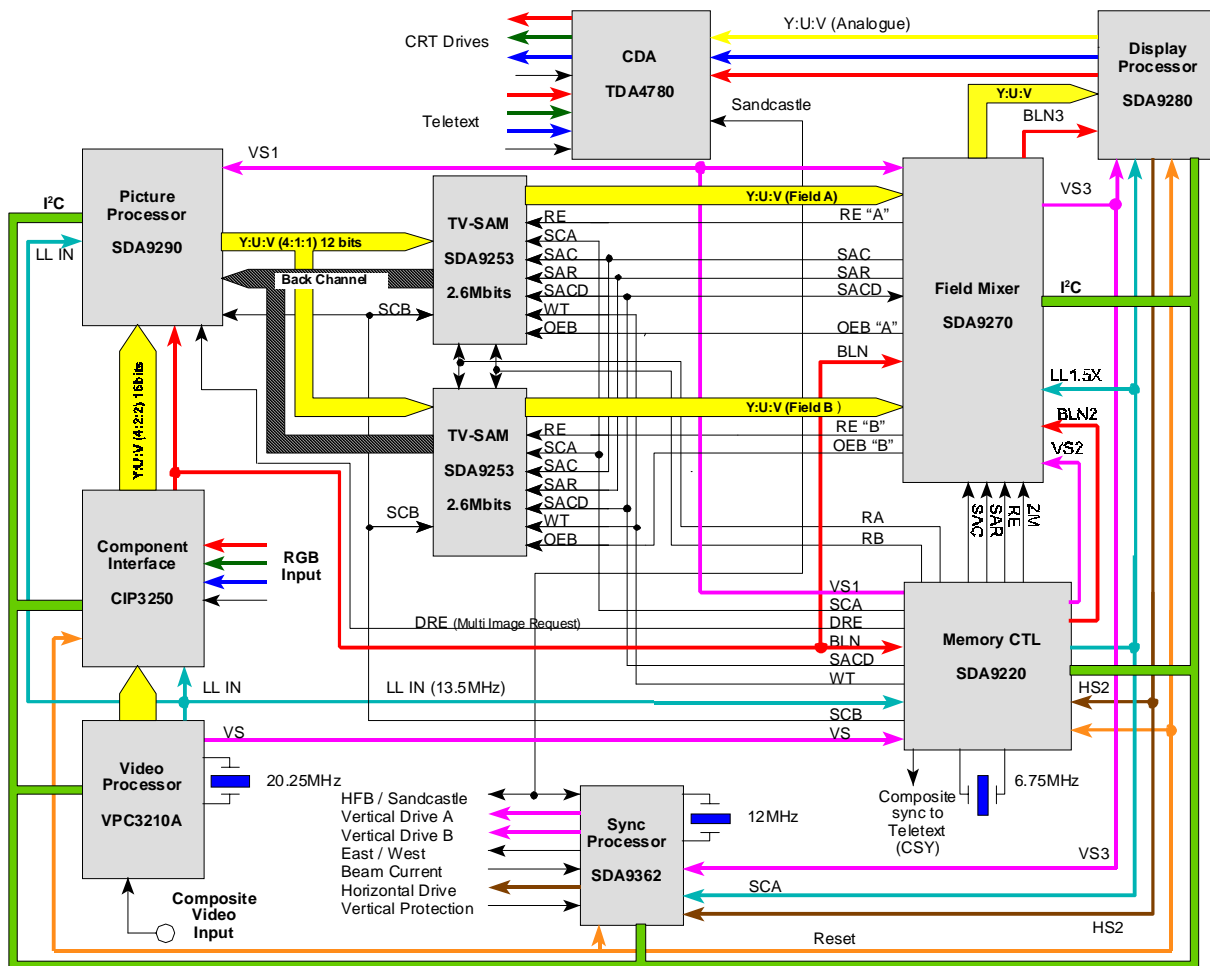


Figure 1 100Hz Block Diagram

ANALOGUE TO DIGITAL CONVERSION

The composite video enters the 100Hz PWB and is applied to IC6001 (VPU) for conversion into a digital component video signal conforming to the 4:2:2 standard. This will give a picture resolution of 720 pixels x 576 lines for luma and 360 pixels x 576 lines for R-Y and the same for B-Y. Each sample is 8 bits wide

This is achieved by a sampling frequency of 13.5MHz for luma and 6.75MHz for each of the chroma signals (line locked), the same sampling frequency is used with NTSC systems. This sampling frequency is calculated by multiplying the number of pixels per line (including blanking/flyback period) by the Line frequency therefore, using a PAL system

$$fs = 864 * 15625\text{Hz}$$

$$fs = 13.5\text{MHz}$$

NTSC system will have 858 pixels per line

From this IC the 4:2:2 & 13.5MHz line lock clock signal is outputted to a Component Interface (CIP), IC6002. As the name of this chip suggests it is an interface between our 4:2:2 digital video & another signal. In this case the other signal is the external RGB input which is feed directly to the CIP. The CIP then converts the RGB to digital component video (4:2:2) format, which can be selected instead of the composite video 4:2:2 signal via the I²C bus. From here the outputted 4:2:2 signal proceeds to the Picture Processor (IC6101)

Additionally the VPC will output a vertical sync pulse (VS), which is fed to the memory control. And the CIP will output a horizontal sync (BLN) signal to the memory control and the field mixer IC's.

MEGAVISION CHIP SET

From the Picture processor we use the Siemens Megavision Chip-set processing the luma, chroma and to produce the 100Hz scan, until the Colour Difference Amplifier.

PICTURE PROCESSOR

The Picture Processor produces the following picture formats:

- 9 image display
- Still image
- Large still image with small moving image on top
- Small still image on top off large moving image

In all case where there is more than one image being displayed, only one will be moving.

Additionally the Picture Processor will reduce picture noise, it reduce the amount of missing data by means motion predictor circuit.

To enable all of these function the Picture Processor require two sources of data. Source one is our 4:2:2 signal from the CIP and the other is a feed back path from the field stores (back channel). However, the back channel is a 4:1:1 formatted signal. This is because the signal from the Picture Processor to Field store is in 4:1:1 format.

The Picture Processor reduced the chroma resolution by half to reduce in order to reduce signal-processing time with out degrading the picture quality. Only one field of memory is required for the Picture Processor to carry out all of its functions.

FIELD STORE

There are two versions of the CW100 chassis 100Hz PWB, the difference is in the Field Store. The early 100Hz PWB's used 6, SDA9251 (triple port, Dynamic Sequential Access Memory). Each port is 4 bit wide and has a memory of 868352-Bit. This means that to store a field of picture data three device is required. To store both odd & even fields, 6 SDA9251 are required.

Later production of the 100Hz PWB (This is the one that you are more likely to find fitted) the 6 x SDA9251 has been replaced with 2 x SDA9253. Each SD9253 is a complete field store, its ports are 12 bit wide, and its memory capacity is triple that of the SD9251 (2.6Mbits). The operation of both type of devices are the same, for purposes the only difference is the width of the ports. Therefore, we shall only discuss the SD9253.

The three ports are called A, B and C, port C is the input from the picture processor. Port B is the back channel and port A is the output to the field mixer. These ports can be enabled or disable depending whether the device is being written to or its being read with the exception of port 'A' which is always enabled.

The table below shows the function of various signals supplied to these Dynamic Sequential Access Memories. You will notice that all signals are inputs, apart from ports A and B.

Name	In/Out	Active Level	DESCRIPTION
SQA 0~11	O		Port A
SCA	I		Port A – Serial Clock
RA	I	L	Read Transfer Control (Latch A to Register A)
OEA	I	L	Port A – Output Enable
SQB 0~11	O		Port B
SCB	I		Port B – Serial Clock
RB	I	L	Read Transfer Control (Latch B to Register B)
OEB	I	L	Port B – Output Enable
SDC 0~11	I		Port C
WT	I	L	Write Transfer Control (Latch C to Register C)
SAR	I		Serial Row Address
SAC	I		Serial Column Address
SCAD	I		Serial Address Clock
RE	I	L	RAM Enable

Note

All timing signals are derived from the Memory Control IC, although some are routed via the Field Mixer IC.

FIELD MIXER

The function of the field mixer is to produce an output signal which would have two fields for ever one 50Hz field, therefore doubling the field frequency to 100Hz.

Note:

50Hz system

Interlace Scanning, two fields = one frame,
Field frequency = 50 Hz, therefore, frame frequency = 25
Each field consists of 312.5 lines

100Hz system

Frame frequency remains at 25Hz
Four Fields per frame, therefore field frequency = 100Hz
Each field consists of 312.5 lines, but since there are twice the number of fields within the same frame rate the line frequency doubles.

The Field Mixer will use a motion predictor circuit to calculate movement between field A and Field B, this data is then inserted between each Field A and Field B as field B-A, as shown in Figure 1

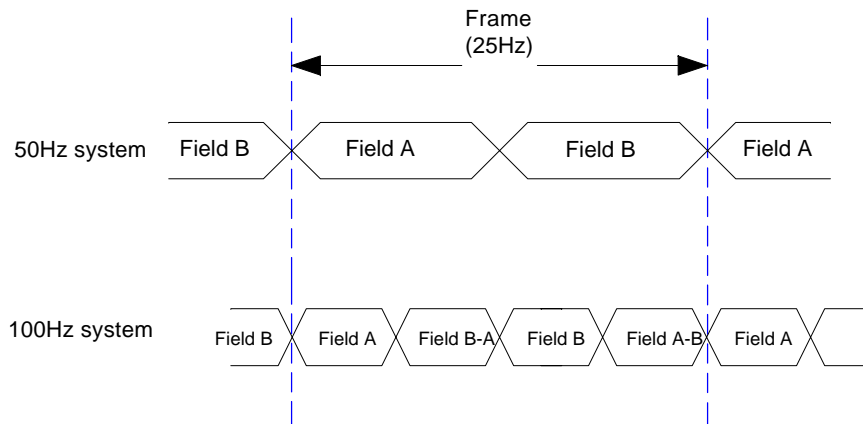


Figure 2 Field Frequency

To ensure that the picture remains synchronised the Memory Control IC will produce a 100Hz vertical sync plus (VS2) from the VS sync pulse and a 31.25kHz horizontal sync pulse (BLN2) from BLN

The Field Mixer has addition function, which allows you to enlarge the picture, whether the image is moving or still.

DISPLAY PROCESSOR

This is a triple 9-bit digital to analogue converter the designed of this 'IC' allows for any digital component video signal format from 4:1:1 to 4:4:4 to be converted to analogue component video (Y:U:V), our input source is 4:1:1 format.

From the Display Processor the Y:U:V is fed to the Colour Difference Amplifier (CDA) where it is converted into an RGB signal before being passed to the RGB output stage on the CRT base.

The RGB signal from the Megatext chip, which contains the On Screen Display data is added in at the CDA chip.

Self Assessment Question

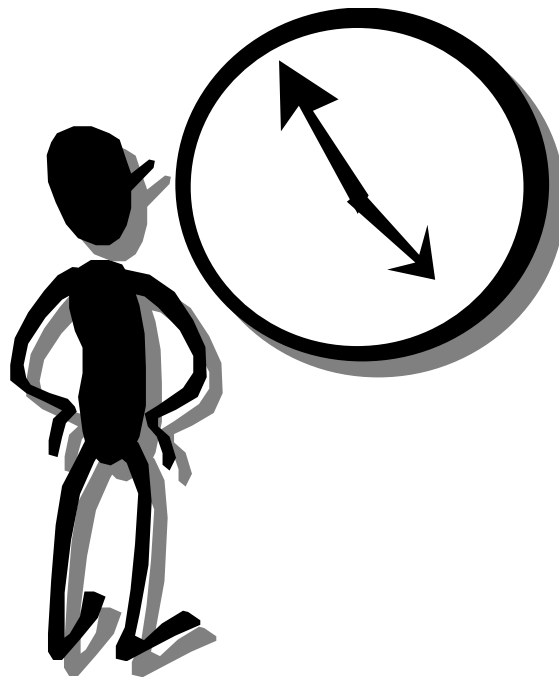
During 100Hz scan, what is the frame frequency?

How many fields per frame (100Hz)?

Why is the line frequency double?

What is the difference in number of pixels per line (picture area) between NTSC & PAL?

Sync Signal Processor



60 Min Study Period

SYNC PROCESSOR

This IC is located on the 100Hz PWB circuit reference is IC6110. As its name implies it is responsible for processing Vertical & Horizontal synchronisation signals. However, since the CW100 has a filed scanning rate of 100Hz both the Vertical & Horizontal frequencies are twice that of a CTV with 50Hz field scan. The Key features of this IC are:

Deflection - Protection - 16:9 / 4:3

Three selectable reduced V-scan modes (75 %, 66 %, 50 % V-size)

Adjustable over-scan to hide the cut off control measuring lines in the reduced scan modes

Stop/start of vertical deflection adjustable to fill out the 16/9 screen with different letterbox formats without annoying over-scan

I²C Bus alignment of all parameters

East/West-functions

Independent adjustment of	Upper/lower corner
	V-angle correction:
	V-bow correction

Picture Width & Height compensation for fluctuation of EHT

H- and V-blanking time adjustable

Protection against EHT runaway (X-rays protection)

Protection against missing V-deflection (CRT-protection)

Soft-start of the H-output stage

DESCRIPTION

The SDA 9362 is a highly integrated deflection controller for CTV receivers with doubled line and standard or doubled field frequencies. It controls among others a horizontal driver circuit line output stage, a DC coupled vertical sawtooth output stage and an East-West raster correction circuit. All adjustable output parameters are I²C Bus controlled. Inputs are HSYNC, VSYNC and the line locked clock (CLL).

The output signals will control the horizontal as well as the vertical deflection stage including the East-West raster correction circuit. The H-output signal 'HD' compensates the delays of the line output stage and its phase can be modulated by the vertical frequency to remove horizontal distortions of the vertical raster lines (V-Bow, V-Angle). A positive HD pulse switches off the line output transistor.

The V-output sawtooth signals VD- (Vertical A) and VD+ (Vertical B) controls a DC coupled class D output stage. The East-West output signal E/W is a vertical frequency parabola of 4th order, enabling an additional corner correction, separately for the upper and lower part.

The picture width and height compensation processes is controlled by the IBEAM signal, this will effect the E/W and VD signal, enabling constant width and height independent of brightness.

The start up-circuit controls the energy supply to the H-output stage during the receiver's run up time by smoothly decreasing the line output transistors switching frequency down to the normal operating value (soft-start). HD starts with about 55 kHz and decreases within 85 ms to its final value of 31.25kHz. A watch dog function limits the period of the HD output signal independent of the clock CLL to a max 35.2 µs.

The protection circuit watches an EHT reference and the sawtooth of the vertical output stage. H-output stage is switched off if the EHT succeeds a defined threshold or if the V-deflection fails. The function of this circuit is based on the internal quartz oscillator and therefore independent of the input clock CLL.

HPR0T	$V_i < V_2$	Continues blanking
	$V_i > V_1$	HD disabled
	$V_2 \leq V_i < V_1$	Operating range

VPROT: Vertical saw-tooth voltage
 $V_i < V_1$ in first half of V-period or
 $V_i > V_2$ in second half: HD disabled

The pin SCP (Sandcastle) delivers the composite blanking signal SCP. It contains burst (V_b), H-blanking HBL (V_{HBL}) V-blanking. The phase of the H-blanking period can be varied by I²C Bus.

The system clock for the SDA 9362 has to be generated externally and is applied to pin1 'CLL'. Its frequency must be always be the same as the line frequency (defined by the horizontal time reference HSYNC) multiplied by 864. If no HSYNC signal is available an internal horizontal synchronization signal is derived from CLL (CLL divided by 879).

The input signal at VSYNC is the vertical time reference. It has to pass a window avoiding too short or long V-periods in the case of distorted or missing VSYNC pulses. The window allows a VSYNC pulse only after a minimum number of lines from its predecessor and sets an artificial one after a maximum number of lines. The window size is programmable by I²C Bus.

The beam-current dependent input signal IBEAM is A/D converted and then digitally processed. The A/D Converter requires a clock frequency twice the frequency of CLL. This is generated by an internal analog PLL with an external loop filter at pin LF. Values, which influence shape and amplitude of the output signals, are transmitted as reduced binary values to the SDA 9362 via I²C Bus. A CPU which is designed for speed reasons in a pipe line structure calculates in consideration of feedback signals (e.g. IBEAM) values which exactly represent the output signals. These values control after D/A conversion the external deflection and raster correction circuits. The CPU firmware is stored in an internal ROM.

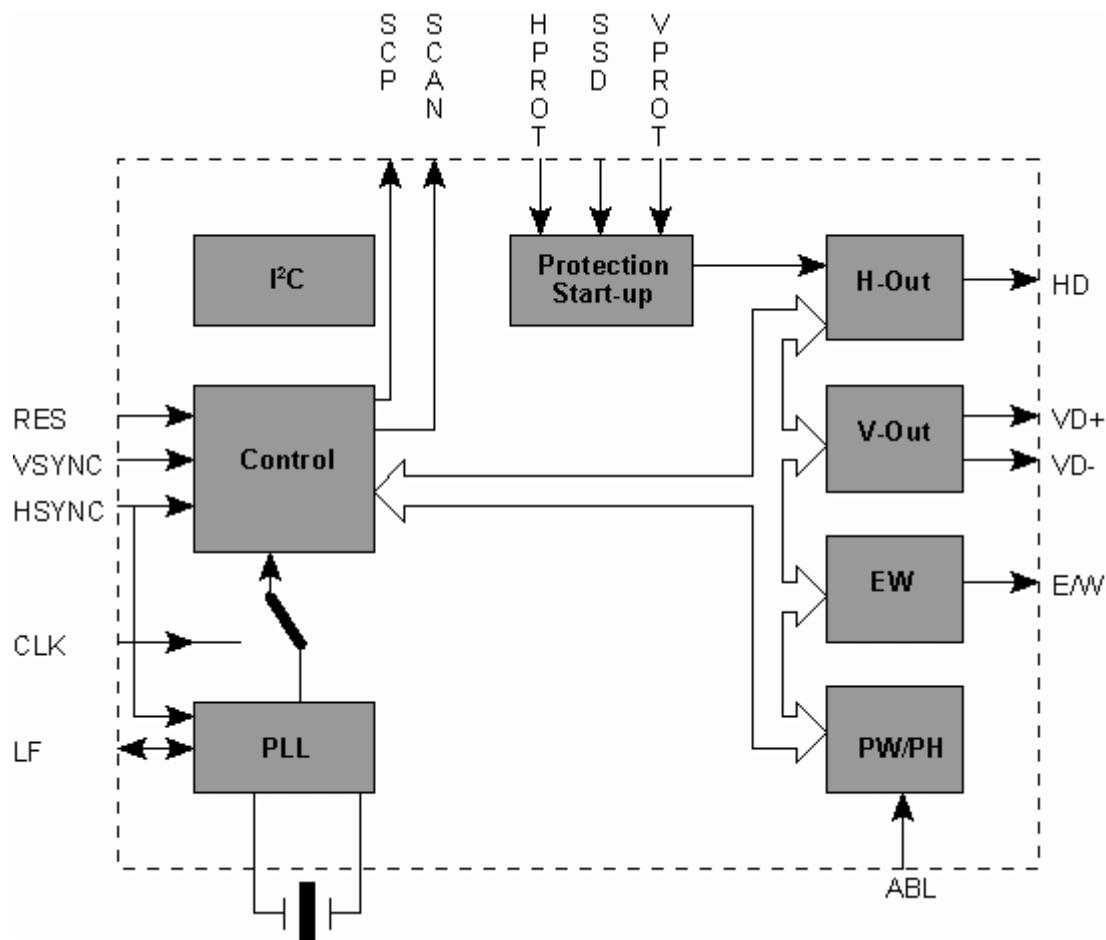


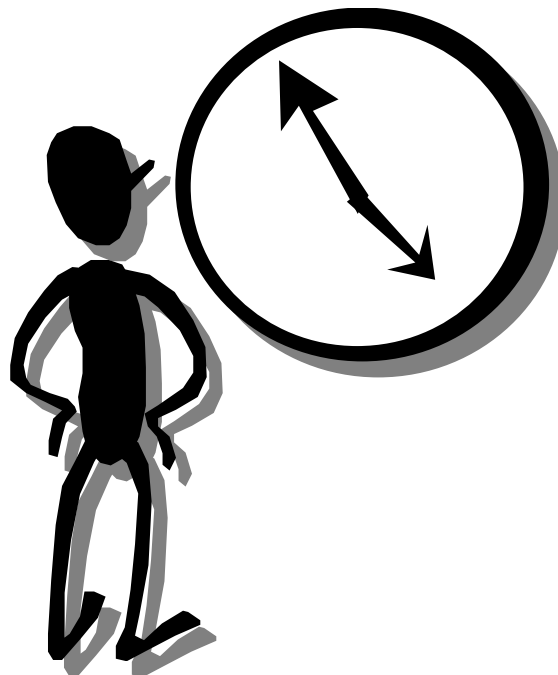
Figure 1 Sync Processor Block Diagram

Self Assessment Question

If VPROT goes permanently high, what is the effect?

How is soft start of the horizontal output stage achieved?

16:9 Picture Format



20 Min Study Period

It is perceived that the way in which our eye view images is in a 16:9 ratio. It is for this reason why 16:9 has been chosen for wide screen CTV and not to enable viewing of off wide screen cinema films without losing any of the picture edge.

There are several picture formats used by the film industry, the more common ones are:

4:3
14:9
16:9
21:9

The 21:9 format is used by most of the Hollywood block-busting films, this means it is possible with wide screen CTV to still lose picture information from the sides of the image or have black borders at the top and bottom of the picture, depending on the mode of operation.

The CW100 has six modes of operation, which are shown in the table below:

Format	Description	Notes
Panorama	Converts the broadcast picture to 16:9 without changing the centre view.	Ideal for news programs
Full	Stretches the whole picture including Centre	Ideal for sports programs
Normal	4:3 format.	Large borders at the sides of picture
Zoom 14:9	Adapts 14:9 broadcasts.	Small borders at the sides of the picture
Cinema	Adapts 16:9 broadcasts to fill screen.	
Automatic	Selects format depending on the WSS signal.	No WSS or 4:3 detected Panorama will be selected

Table 1 Picture Formats

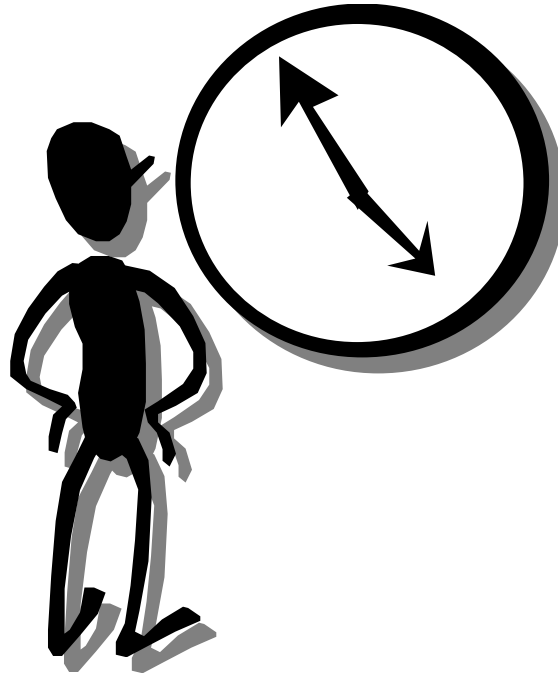
The Automatic mode utilises a signal known as the 'Wide Screen Signalling' (WSS) this signal is transmitted on line 28, When the CTV detects this data it will automatically adjust the screen format. However, this WSS signal is normally not transmitted, therefore the end user will have to select the correct screen format. For this reason the default condition for the CW100 chassis, is 'Panorama'.

The end user can make adjustments to the height & vertical shift when using Panorama, Zoom 14:9 or Cinema formats

When carrying out engineers, picture geometry adjustments, the CTV has to be operating in the Full picture format mode.

When transmitting a 16:9 format picture to ensure that it is compatible with 4:3 CTV it is always transmitted in a 4:3 format. This achieved by multiplying 576 (active picture lines) by $\frac{3}{4}$ which = 432 lines. This is then stretch by a wide screen CTV to fill the screen. It can now be seen that line resolution is actuarially decreased.

Vertical Output Stage



30 Min Study Period

VERTICAL OUTPUT STAGE

The Vertical output stage in the CW100 chassis are operated in a 'Class D' configuration; similar to the CS chassis. The output transistors are acting as switches, and not amplifiers. The advantages of this type of biasing system are minimal power consumption with minimal distortion, however a disadvantage is the noise that is left on the signal.

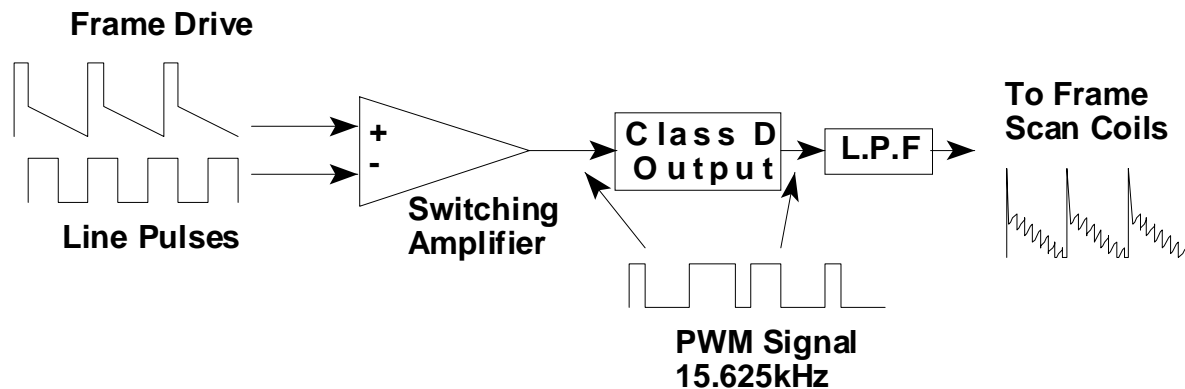


Figure 1 Block Diagram of a 50Hz Class D vertical output Stage

It can be seen in Figure 1 that our vertical drive is fed into a switching amplifier along with line pulses. The resultant of mixing these two signals is that at the switching amplifier output we have a PWM signal with a fix frequency of 15.625kHz but the width of the pulses will vary depending on the amplitude of the vertical drive signal.

From the output of the switching amplifier the PWM signal passes through a class 'D' amplifier circuit and it is converted back to an analogue signal by means of a low pass filter before being applied to the vertical scanning coils

Line frequency is chosen for the PWM frequency because each field is made up of 312.5 lines and therefore, our PWM signal will have a different size pulse per line and the scan will move down the screen one line by line. The CW100 chassis has 100Hz field scan therefore, the line frequency will be 31.25kHz, but the principle is exactly the same.

CIRCUIT DESCRIPTION

From the output of the switching amplifier shown in Figure 2 (IC501) the PWM signal is fed to the base of Q504 & Q505. Starting with a positive going PWM signal; Q504 will turn on & Q505 turns off. Allowing current to flow from the +13V rail, through Q504 collector/emitter junction, D502 & D522 turning on Q508, allowing current to flow from ground to the -13V rail via R523, vertical scanning coils, L501 & C514 (LPF), & Q508 collector/emitter junction.

Next when the PWM signal goes negative Q505 will turn on & Q504 turns off. Allowing current to flow from the -13V rail, through Q505 collector/emitter junction, D502 & D522 turning on Q508, allowing current to flow from +13V to ground via Q507 collector/emitter junction & vertical scanning coils, L501 & C514 (LPF), & R523

To prevent Q507 & Q508 being switched on simultaneously damaging Q507 & Q508 due to excessive current flow. Crossover distortion is introduced into the drive signal to Q507 & Q508 by the action of C507, D502, D522, C508, D501 & D521.

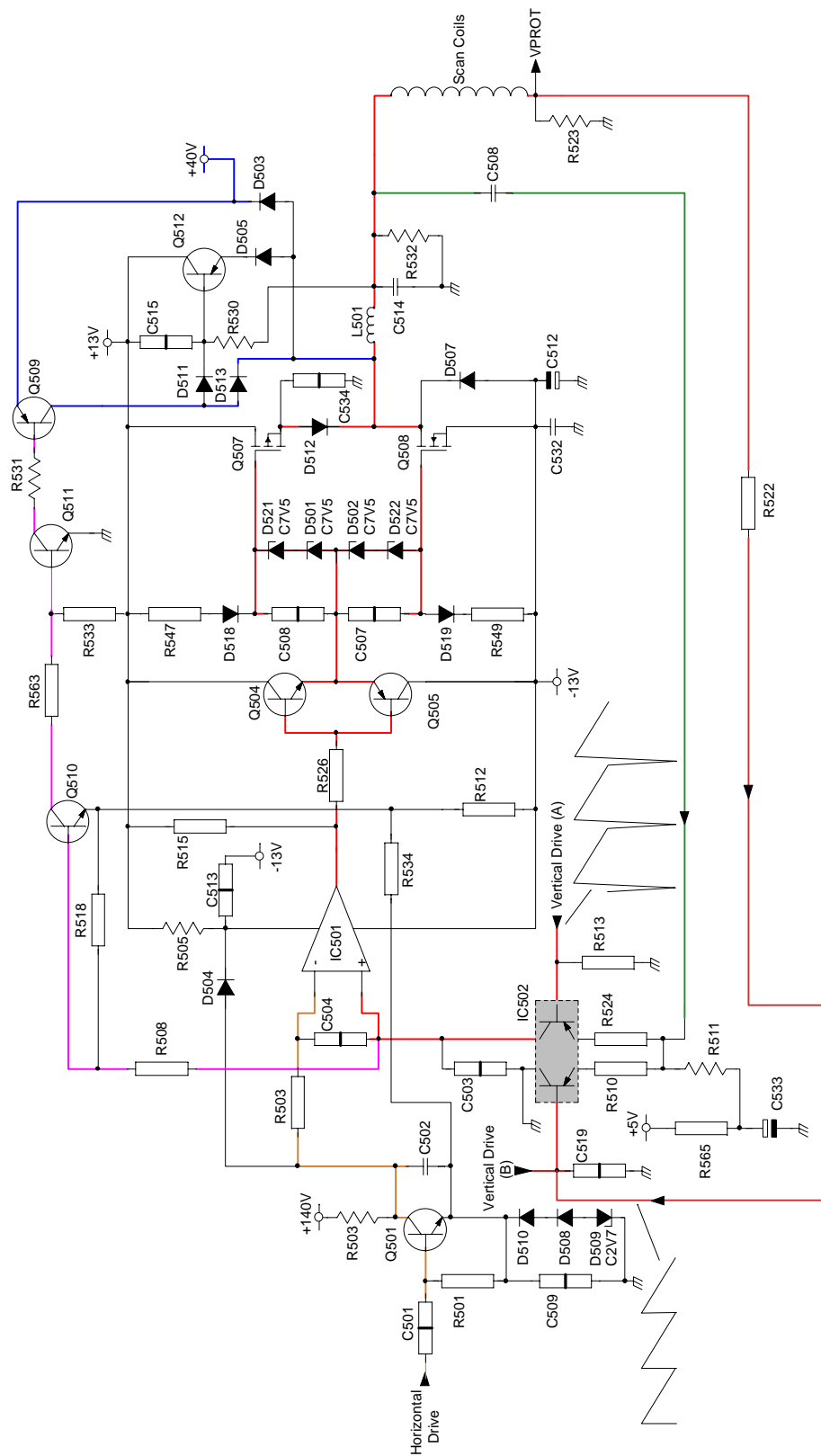
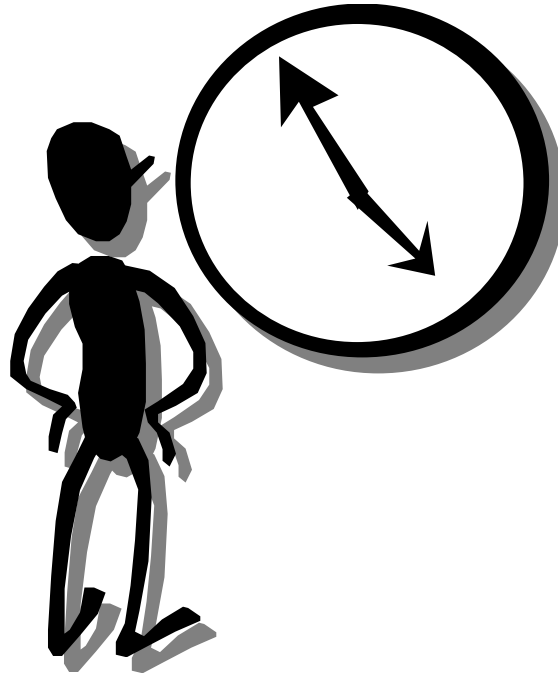


Figure 2 CW100 Field Output Stage

Self Assessment Question

How many variations in the width of the PWM signal are there?

Audio Output Stages



30 Min Study Period

The principles of all the audio output stages, including the sub-woofer are the same. And the principle of operation is the same, as the vertical output stage except the frequency of the PWM single will vary depending on the audio being inputted to the circuit.

The base frequency of the PWM is much higher than that which is used for the field output stage due to harmonics that could be heard by pets. And it will increase by as much as 20kHz (audio bandwidth)

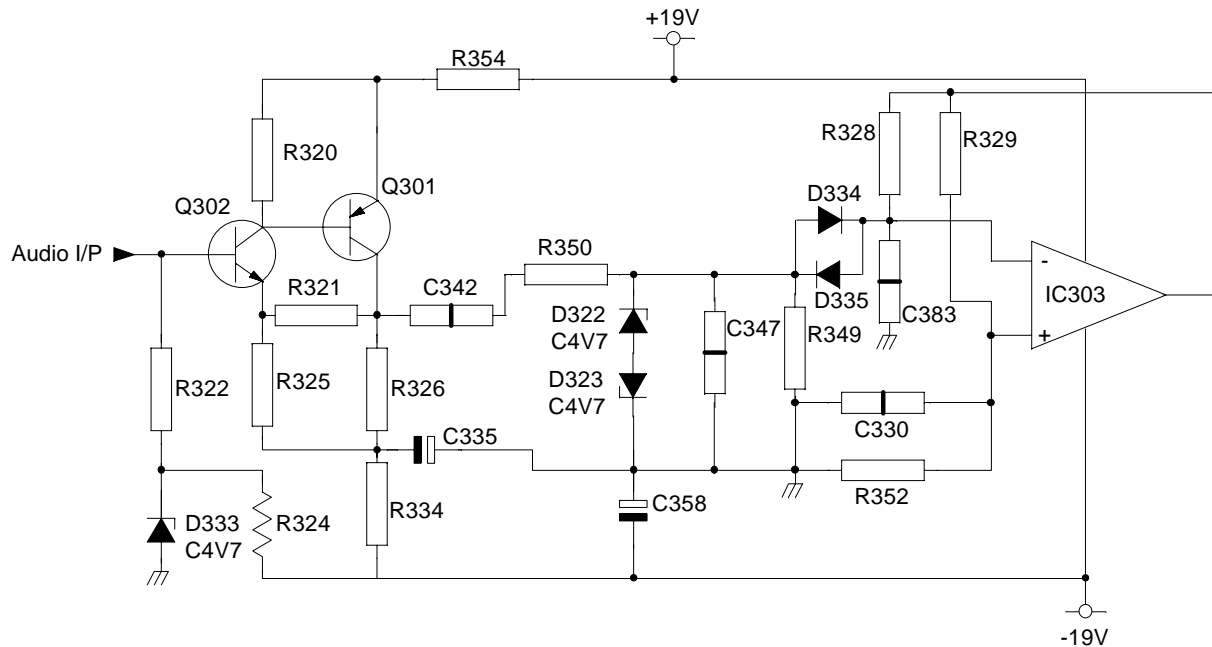


Figure 1 Centre Channel Switching Amplifier

The oscillator used to produce this changing frequency is a 'triangle wave oscillator', and the key components are R352 & C330.

The time that it takes C330 to charge will determine the frequency of the oscillator. To enable this oscillator to change frequency; the charging voltage is derived from the input to the low pass filter (L302) shown in Figure 2, fed back via R329. R352 will determine the time the C330 takes to discharge.

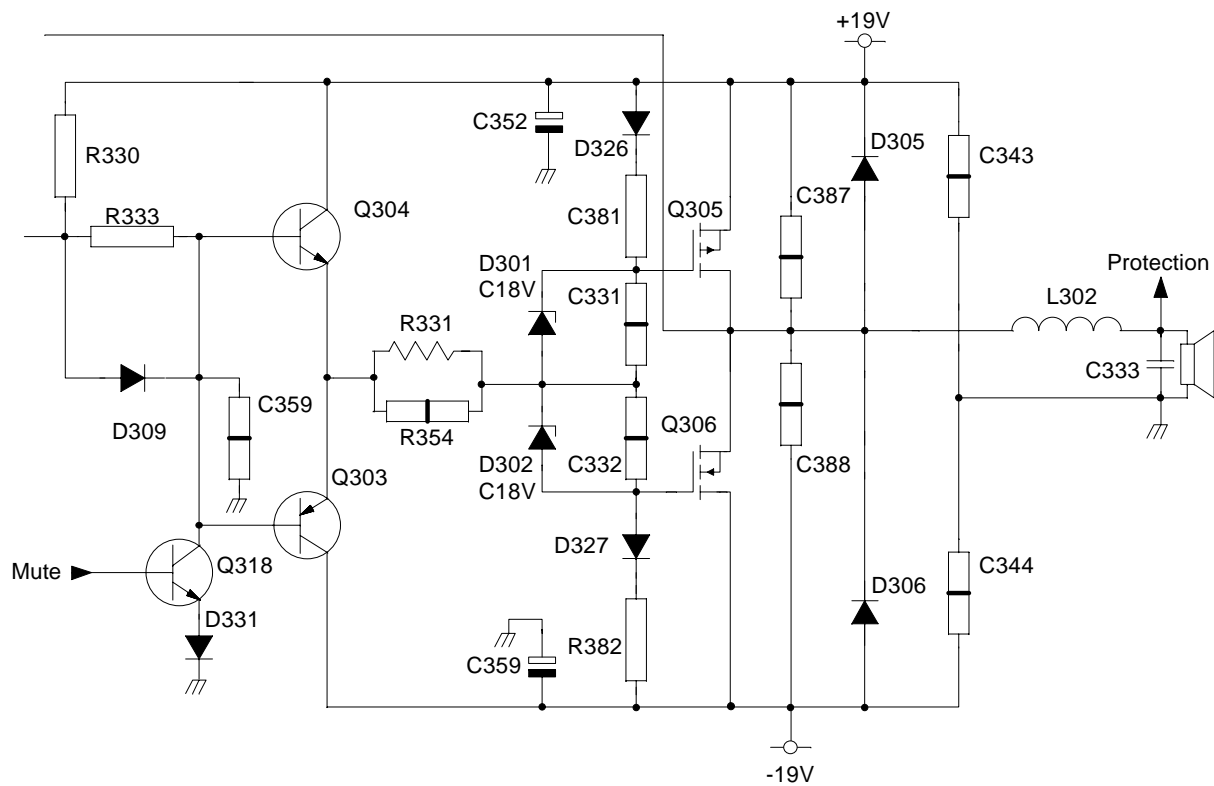
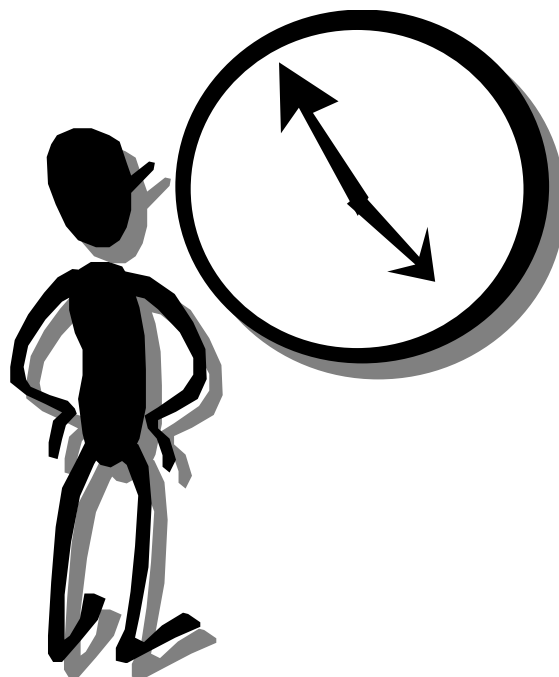


Figure 2 Centre Channel Output Stage

East West



20 Min Study Period

The E / W parabola is generated in IC6110, and applied to pin6 of IC501b. (Non inverting input pin). Pin 5 of IC501b (inverting pin) has a ramp waveform applied to it from the collector of Q501. This ramp is generated from the horizontal drive signal (also used for vertical output generation).

The application of the input signal (E/W parabola) and a ramp waveform to the op-amp are all that is required to perform pulse width modulation proportionate to the input signal. Once this has passed through the switching amplifier, it the output will appear as varying mark - space ratio square wave with a swing of $\pm 13\text{V}$ (similar to the vertical stage).

This output is fed via Q605 & Q607. The effect of the East-West circuit is to reduce the amount of charge available across C610 (Figure 2); thus directly affecting the width of the picture. The fact that the signal is pulsed rather than analogue will have no effect, the result is the same with an added advantage of less heat generated by power dissipation in this stage.

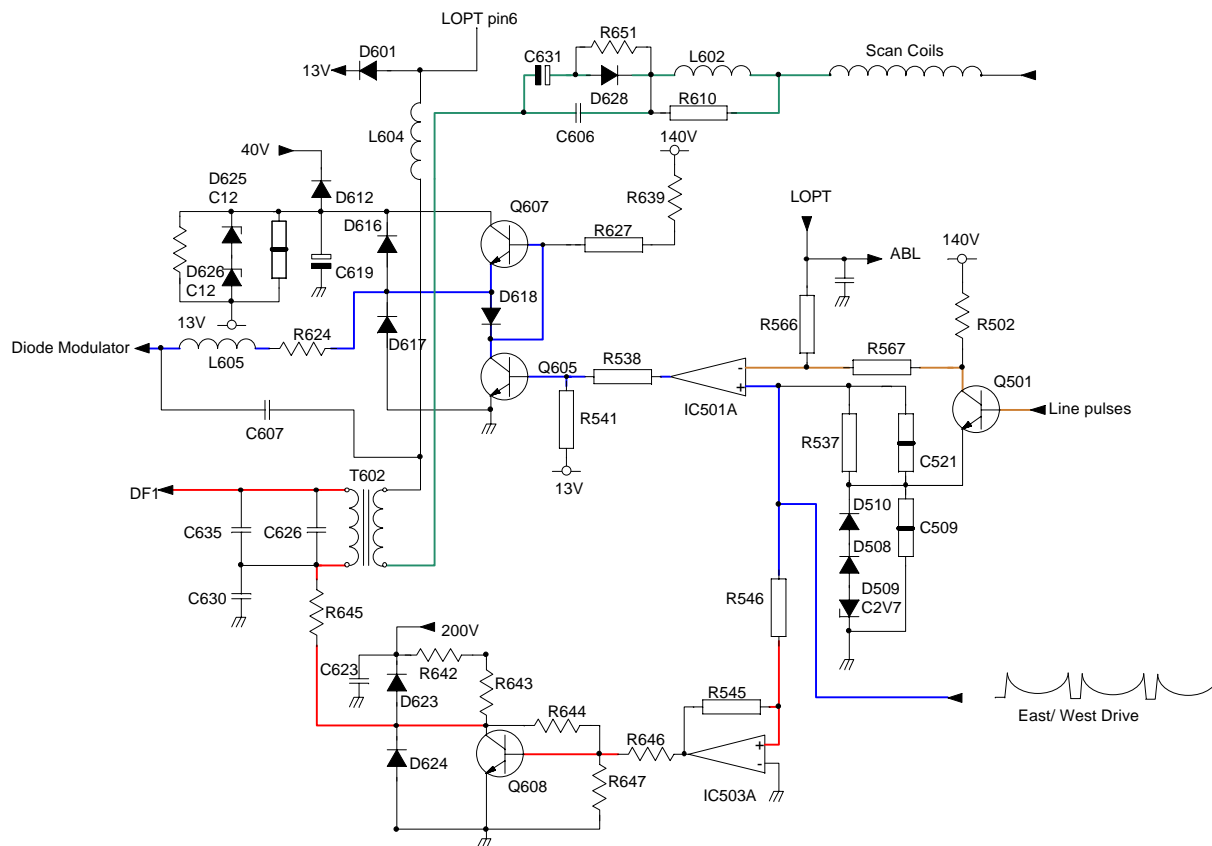


Figure 1 76DW18H East/West Circuit

In addition due to the size of the CRT fitted to the 76DW18H, the East/West drive signal is also fed to another switching amplifier (IC503) This signal is used to alter the inductance of the line linearity circuit and also modulate the focus. Ensuring that the linearity and focus is constant across the width of the CRT.

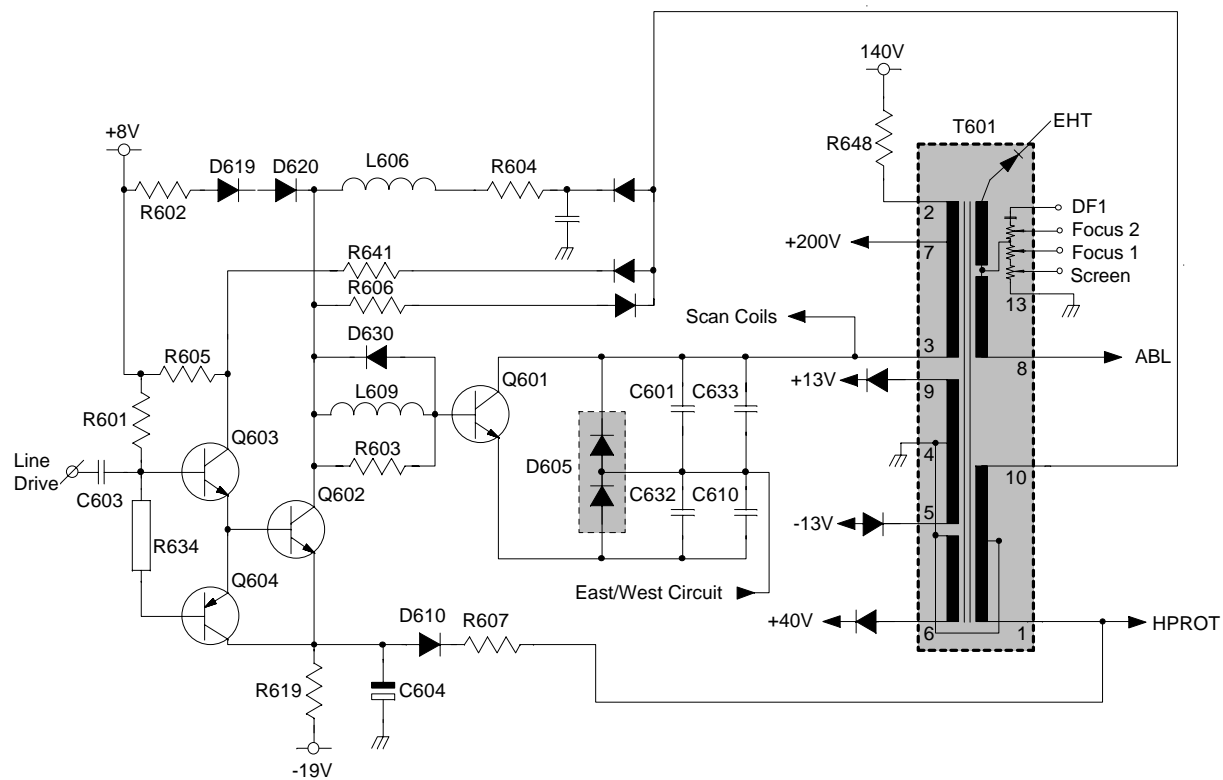


Figure 2 Line Output

SELF ASSESSMENT QUESTION ANSWERS

Section	Question	Answer
Power Supply	<i>Name two conditions that will turn on Q702?</i>	Standby & Over-current
	<i>What is the supply voltage to IC1001 during standby?</i>	Zero volts
	<i>What will be measured with a DVM at the base of Q702 during over-current?</i>	Zero volts
	<i>If Q703 is open circuit, what would happen to the power supply frequency?</i>	Power supply will stop oscillating
	<i>If load increase on the power supply, what will happen to the frequency?</i>	Decreases, allowing more energy to transferred across T701
Slave Processor	<i>What is the default condition of IC6702 pin 15?</i>	Low.
	<i>If IC6702 pin 15 is high what will happen to the Dolby power supply?</i>	Turn off
	<i>What type of device is IC6702?</i>	Processor with a combine volatile Memory
Data Communication	<i>What is the active level of IC1001 pin 78?</i>	Low. (CTV will switch to standby)
	<i>If the 100Hz PWB reset is permanently high, what will happen to the line drive?</i>	Line drive will not start. Reset level is low
100Hz PWB	<i>During 100Hz scan, what is the frame frequency?</i>	25Hz, the number of fields per frame is increase from 2 to 4 therefore frame frequency dose not alter.
	<i>Why is the line frequency doubled?</i>	Twice the amount of date within the 25Hz frame to be displayed.
	<i>What is the difference in the number of pixels (picture area) per line between NTSC & PAL?</i>	No difference, they both have 720 pixels per line