

General Information

1995

Chassis: 4BSA

CRT: 34EAC0136

Remote Control:

RRMCG1047BMSA

Power Button:

JBTN-1012BMSC

Matrix

Item	See Model
Remote Control Unit	Sharp DV-5150H 93/94 Book.

Specifications

Power Consumption	60W
Audio Power Output Rating	1.5W (Max)
Speaker	8cm round
Voice Coil Impedance	32 ohms
Intermediate Frequencies:	
Picture IF	39.5 MHz
Sound IF Carrier	33.5 MHz
Colour Sub-Carrier	35.07 MHz (Nominal)

Service Adjustments

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.

PIF/AGC Adjustment

VCO Adjustment (Rough adjustment)

Adjusting Point
T201: VCO coil

- 1: Turn off the AFT system. (The unit is now in the fine tuning mode).
- 2: Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal.

- SSG output: 39.5 MHz (CW) \pm 5kHz
- SSG output level: approx. 90 dBmV
- Probe: Direct

- 3: Connect the oscilloscope or digital voltmeter to pin (15) of IC201. Roughly adjust the VCO coil to obtain the AFT centre voltage of about 2.5v p-p.

VCO Adjustment (Fine adjustment)

Adjusting Point
T201: VCO coil

- 1: Receive VHF high channel (channel-E12).
 - Signal strength: over 55dBm v, Below 80dBm v
- 2: Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal across a capacitor of 1pF.
 - SSG output: 39.5 MHz (CW) \pm 5kHz
 - SSG output level: approx. 90 dBm v
- 3: Connect oscilloscope to pin (7) of IC201.
 - Oscilloscope range: 0.5 v/cm
 - Sweep time: 20 msec/cm
 - Synchronisation: horizontal sync.
 - Probe: 10:1
- 4: Adjust T201 so that no beating is caused at the output waveform.
 - Adjustment error: 39.5 MHz \pm 25 kHz see fig. 1.

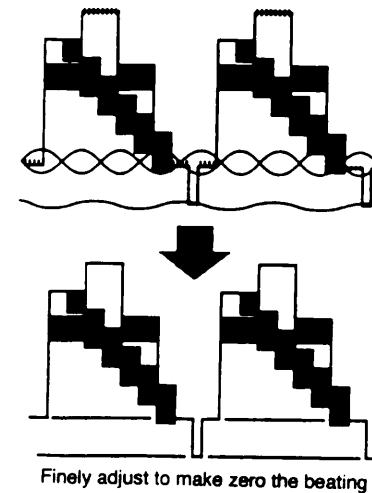


Fig 1.

RF-AGC Cut-In Adjustment (1²C BUS)

Note:

Make this adjustment after the +B 110v Adjustment.

- 1: Receive the "COLOUR BAR" signal (Channel E-12).
 - Signal strength: 60 dBmV \pm 0.5 dB.
- 2: Connect oscilloscope to TP201 (Tuner AGC terminal).
- 3: Call up the 1²C AGC Adjustment menu. Set the voltage to maximum.
- 4: Lower the voltage gradually by 0.1v below the maximum level. See fig. 2.

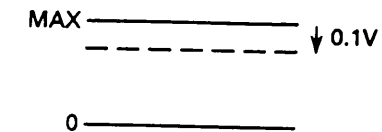


Fig 2.

- 5: Set the signal to 63-67 dBμV and make sure there is no noise.

Screen Adjustment

Focus Adjustment

- 1: Apply mains voltage of 240v AC/50 Hz to TV.
- 2: Receive Phillips pattern signal to a level between 60 and 80 dB.
- 3: Set contrast to 10/10, brightness to 5/10 and colour 0/10.
- 4: Adjust focus potentiometer to obtain maximum definition.

G2 Adjustment

- 1: Apply mains voltage of 240V AC/50 Hz to TV.
- 2: Receive black screen signal to a level between 60 and 80 dB.
- 3: Set contrast to 10/10, brightness to 0/10 and colour 0/10.
- 4: Enter into Service Mode.
- 5: Push CH Δ until GII appears.
- 6: Increase G2 potentiometer until flyback appears on screen, and OSD bar is at maximum.
- 7: Adjust G2 potentiometer until OSD bar is at half way position on screen.
- 8: Exit Service Mode.

Power Supply Adjustment

+B Adjustment

- 1: Receive monoscope pattern signal.
- 2: Adjust contrast control to obtain a beam current of 0.7 mA (0.7v between TP601 and TP602) set volume control to minimum.
- 3: Measure voltage at cathode D601 using a DC voltmeter on the 200v full-scale range.
- 4: Adjust R716 to obtain a voltage of 110v DC \pm 0.5V.

Service Mode Function

This mode function is provided to assist with the settings of those adjustments 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.
- 2: Connect a jump wire between terminals (3) (GDN) and (6) of the connector (TB) in the PWB-A (Mother Unit).
- 3: Press MODE button on R/C — SERV will appear on screen.
- 4: Remove a jump wire of the service slot.
- 5: Select adjustment using buttons Δ CH v.

	Displayed on Screen	Function
	-SERV-	Indicates operative Service Mode
a.	HOR AM	Horizontal Amplitude (DON'T TOUCH)
b.	BL PHA	Blanking Pulse shift
c.	VER PO	Vertical Position shift
d.	VER AM	Vertical Amplitude shift
e.	P-AMPL	Parabola Adjustment (DON'T TOUCH)
f.	VER SM	Vertical Symmetry alteration
g.	LUMA-D	Luma Delay
h.	P-TILT	Parabola Adjustment (DON'T TOUCH)
i.	GII	Indication of G2 adjustment
j.	B-B-CO	Blanking Breathing Correction (DON'T TOUCH)
k.	GAIN R	Red Gain
l.	GAIN G	Green Gain
m.	Gain B	Blue Gain
n.	AGC	Auto Gain Control
o.	NVM	Access to NVM memory

Recommended Safety Parts

Item	Part No.	Description
ACC701	RCILG0407BMZZ	Degaussing (ADG) Coil
C610	QACCB5001BMZZ	AC Cord
C617	RC-FZ0144BMZZ	5600p 1.5kV Mylar
C618	VCEAGA1HW106M	10 50V Electrolytic
C619	VCEAGA1CW476M	47 50V Electrolytic
C701	VCEAGA1CW475M	4.7 16V Electrolytic
C702, C704, C705, C706, C707	RC-FZ0070BMZZ	0.1 AC300V Mylar
C707	RC-Z0029CEZZ	0.01 AC250V Ceramic
C708	RC-EZ0100BMZZ	100 400V Electrolytic
C709	RC-FZ9473BMNJ	0.047 63V Mylar
C710	RC-KZ0006TAZZ	270p 2kV Ceramic
C711	RC-KZ0024CEZZ	1000p 2kV Ceramic
C712	VCEAGA1VW107M	100 35V Electrolytic
C713	VCEAGA1CW477M	470 16V Electrolytic
C714	VCEAGA1HW474M	0.47 50V Electrolytic
C715	RC-FZ9102BMNJ	1000p 63V Mylar
C716	VCKYPA2HB472K	4700p 500V Ceramic
C717	VCEAGA1HW475M	4.7 50V Electrolytic
C718	VCEAGA1HW105M	1 50V Electrolytic
C719	VCKYPA2HB102K	100p 500V Ceramic
C721	RC-KZ0128CEZZ	2200p 4kV Ceramic
C723	RC-FZ9102BMNJ	100p 63V Mylar
D607	RH-DX0512BMZZ	1N4936
D608	RH-EX0423BMZZ	Zener Diode, 22V
D609	RH-DX0045BMZZ	1N4148
D701, D702, D703, D704	RH-DX0502BMZZ	1N4005
D705	RH-DX0515BMZZ	1N4937
D706	RH-EX0405BMZZ	Zener Diode, 3.9V
D707	RH-DX0510BMZZ	1N4934
D708	RH-DX0045BMZZ	1N4148
F701	QFS-C2050BMZZ	Fuse, T2AH, 250V

Recommended Safety Parts Cont'd.

Item	Part No.	Description
IC701	RH-iX1434BMZZ	TEA2261
J451	QJAKF0014CEZZ	AVInut Jack (DV-3770H)
L701	RCi LF0110BMZZ	Line Filter
L703	VP-CF2R2K0000	Coil, 2.2mH
P701	QPLGN0304CEZZ	Plug-in 3-pin, (A)
P702	QPLGN0207CEZZ	Plug-in 2-pin, (G)
PR701	RMPTP0028CEZZ	Positive Coefficient
Q601	VS2SD1554/2E	2SD1554
Q603	RH-TX0104BMZZ	BC557
Q604	RH-TX0106BMZZ	BC547
Q701	RH-TX0125BMZZ	BU508AF
R301, R501	RR-XZ0200BMZZ	1 1/2W Fuse Resistor
R601	VRG-RL2HBR68K	0.68 1/2W Fuse Resistor
R604	RR-XZ0142BMZZ	3.3k 1/3W Fuse Resistor
R612, R616	RR-XZ0216BMZZ	22 1/2W Fuse Resistor
R618	VRD-RA2BE682J	6.8k 1/8W Carbon
R619, R620, R621	VRD-RA2BE473J	47k 1/8W Carbon
R622	VRD-RA2EE125J	1.2M 1/4W Carbon
R623	VRD-RA2BE472J	4.7k 1/8W Carbon
R624	VRD-RA2BE564J	560k 1/8W Carbon
R701	VRW-KX3HC5R6K	5.6 5W Cement
R702	VRS-VV3DB333J	33k 2W Metal Oxide
R703	VRD-RA2HD154J	150k 1/2W Carbon
R704	VRS-VV3DB221J	220 2W Metal Oxide
R705	VRN-VV3ABR27J	0.27 1W Metal Film
R706	VRD-RA2EE101J	100 1/4W Carbon
R707	VRD-RA2EE100J	10 1/4W Carbon
R708	VRD-RA2EE4R7J	4.7 1/4W Carbon
R709	VRD-RA2EE820J	82 1/4W Carbon
R710	VRD-RA2HD330J	33 1/2W Carbon
R711	VRD-RA2EE563J	56k 1/4W Carbon
R712	VRD-RA2EE183J	18k 1/4W Carbon

Recommended Safety Parts Cont'd.

Item	Part No.	Description
R713	VRD-RA2EE102J	1k 1/4W Carbon
R714	VRD-RA2EE472J	4.7k 1/4W Carbon
R715	VRD-RA2EE821J	820 1/4W Carbon
R716	RVR-M4616GEZZ	220(B) 110V Adj.
R717, R718	VRC-UA2HG825K	8.2M 1/2W Solid
R721	VRD-RA2HD330J	33 1/2W Carbon
R723	VRD-RA2HD154J	150k 1/2W Carbon
R725	VRD-RA2EE151J	150 1/4W Carbon
R815	RR-XZ0110BMZZ	6.8 1/3W Fuse Resistor
S1001	QSW-K0079GEZZ	Sound Volume (-)
S1002	QSW-K0079GEZZ	Sound Volume (+)
S1003	QSW-K0079GEZZ	Channel (-)
S1004	QSW-K0079GEZZ	Channel (+)
S701	QSW-P0418CEZZ	Main Power
SC851	QSOCV0833CEZZ	CRT Socket
SC951	QSOCZ0106BMZZ	Socket, Euro Scart
T602	RTRNF2024BMZZ	Flyback Trans. (FBT)
T701	RTRNZ0524BMZZ	Power Regulator Trans.
TU201	RTUNH0103BMZZ	Tuner, VHF/UHF
V1	VB34EAC0136*N	CRT Ass'y, 34cm (14") with Deflection Yoke, Purity Magnet and wedges.

Service Adjustments Cont'd.

- 6: For "a" thru "n" selections.
Adjustment to a selection can be made by pressing buttons Δ ∇ .
A colour bar is displayed on the OSD to indicate the adjustment position.

(MINIMUM) (MAXIMUM)

For "o" selection.

NVM storage location settings variants

NVM

Assigned value
Storage location

In order to have access to the desired storage location buttons \wedge \vee should be pressed as required, to obtain a higher or lower location, respectively. Bear in mind that, for storage location indication a hexadecimal numerical system is used instead of a decimal system.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, 10,
11, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, 21,
..... 99, 9A, 9B, 9C, 9D, 9E, 9F, A0, A1,
B0, D0, E0, F0, F1, F2, F3,
F4, F5, F6, F7, F8, F9, FA, FB, FC, FD, FE,
FF.

From the last location FF to the first 00 can be reached by increasing and from first to last by decreasing. Once the storage location to be varied has been selected its value can be modified by the bits that form part of the storage location numerical buttons numbers "0" to "7", respectively. This switches its binary number from and between 0 and 1 each time one of the buttons is pressed.

"0" = $2^0 = 1$, "1" = $2^1 = 2$, "2" = $2^2 = 4$,

- 7: The changes introduced are automatically memorised.
- 8: Having finalised adjustments, push **MODE** again to exit Service Mode.

Geometry Adjustment Procedure

"BL PHA".

- a: Receive Philips pattern signal.
- b: When Λ button is pressed picture moves to the left.
- c: When \vee button is pressed, picture moves to the right.
- d: Adjust the horizontal location to obtain picture centring (fig 3).

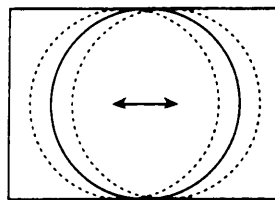


Fig 3.

"VER PO".

- a: Receive Philips pattern signal.
- b: When \wedge button is pressed picture moves up.
- c: When \vee button is pressed, picture moves down.
- d: Adjust the horizontal location to obtain picture centring (fig 4).

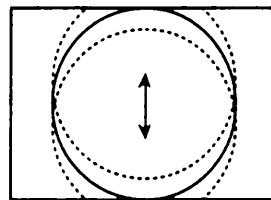


Fig 4.

"VER AM".

- a: Receive Philips pattern signal.
- b: When \wedge button is pressed, vertical size of picture increases.
- c: When \vee button is pressed, vertical size of picture decreases.
- d: Adjust the vertical size to obtain overscan. (fig 5).

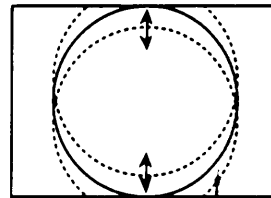


Fig 5.

"VER SM".

- Receive Philips signal pattern.
- When \wedge button is pressed, upper picture scanning decreases and lower picture scanning increases.
- When \vee 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 6)

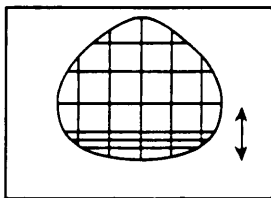


Fig 6.

Colour Adjustment

"LUMA D".

- a: Receive Philips pattern signal.
- b: When Λ button is pressed, luma phase delays.
- c: When \vee button is pressed, chroma phase delays.
- d: Adjust the chroma-luma delay.

The following adjustments are only required when the Picture Tube is changed.

"GAIN R", "GAIN G", "GAIN B".

- a: Adjust G2.
- b: Tune in white card.
- c: Adjust colour to minimum.
- d: Position colourmeter in the centre of the screen.
- e: Using brightness and contrast buttons, select a luminance of ≈ 120 nits.
- f: Operate again in Service Mode and select location GAIN R, GAIN G, GAIN B to obtain colour co-ordinates:
 $X = 0.290 \pm 0.015$
 $Y = 0.284 \pm 0.015$
- g: Exit Service Mode and check colour co-ordinates 'X' and 'Y' at 20 and 120 NITS. It may be necessary to repeat procedure.

Note:

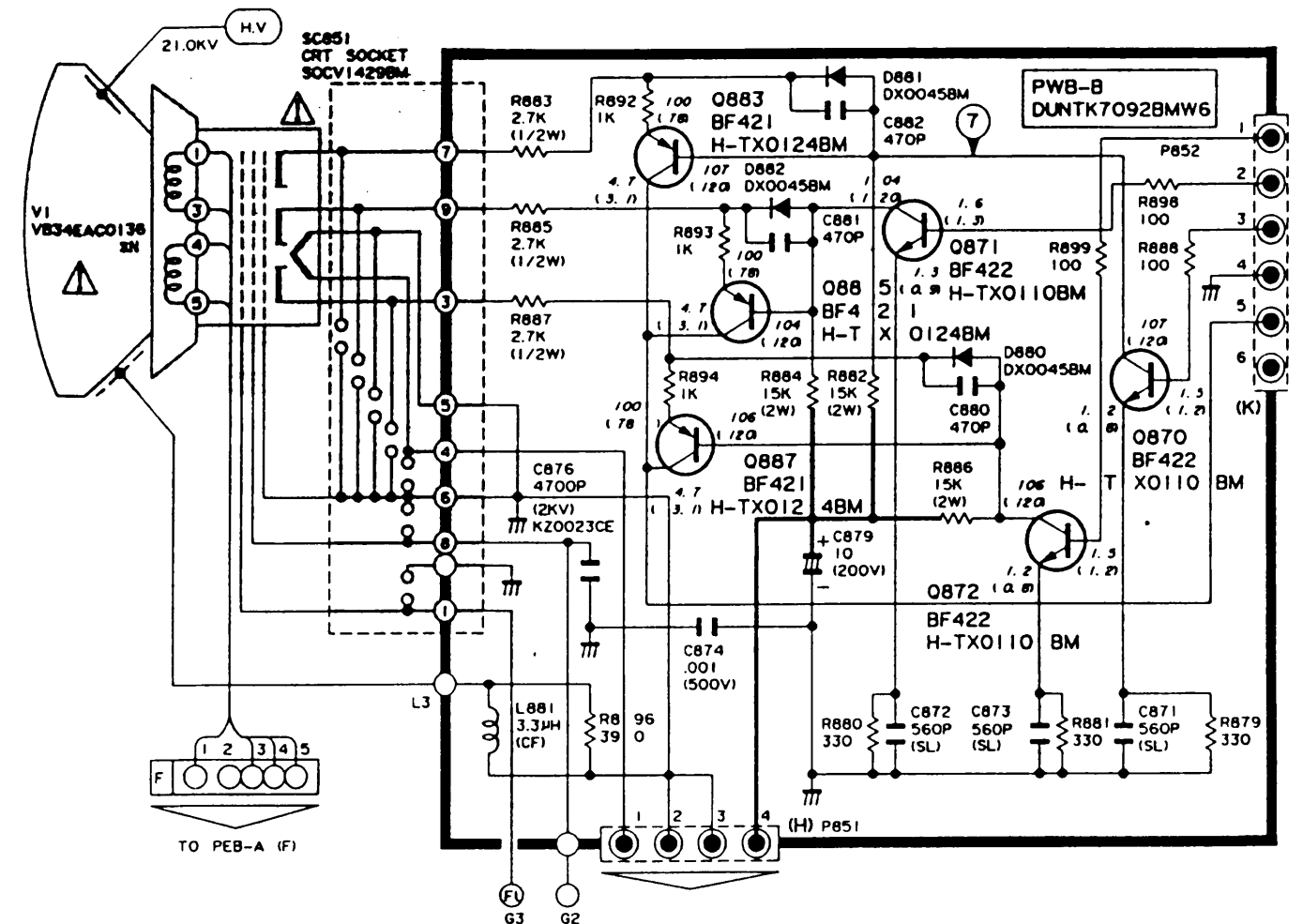
Locations:

GAIN R alter 'X' co-ordinate:

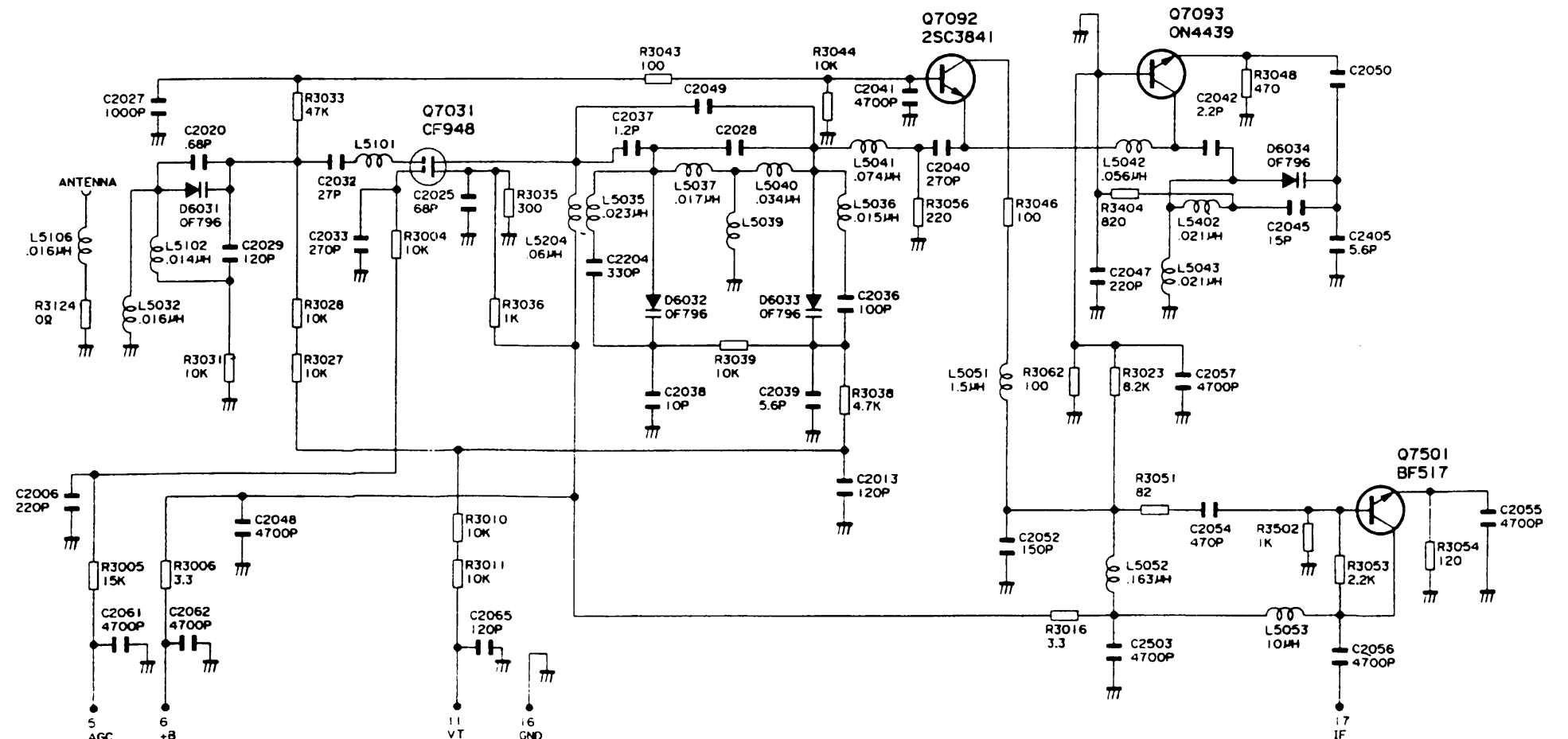
GAIN G alter 'Y' co-ordinates:

GAIN B alter the 'X' and 'Y' co-ordinates.

CRT Diagram

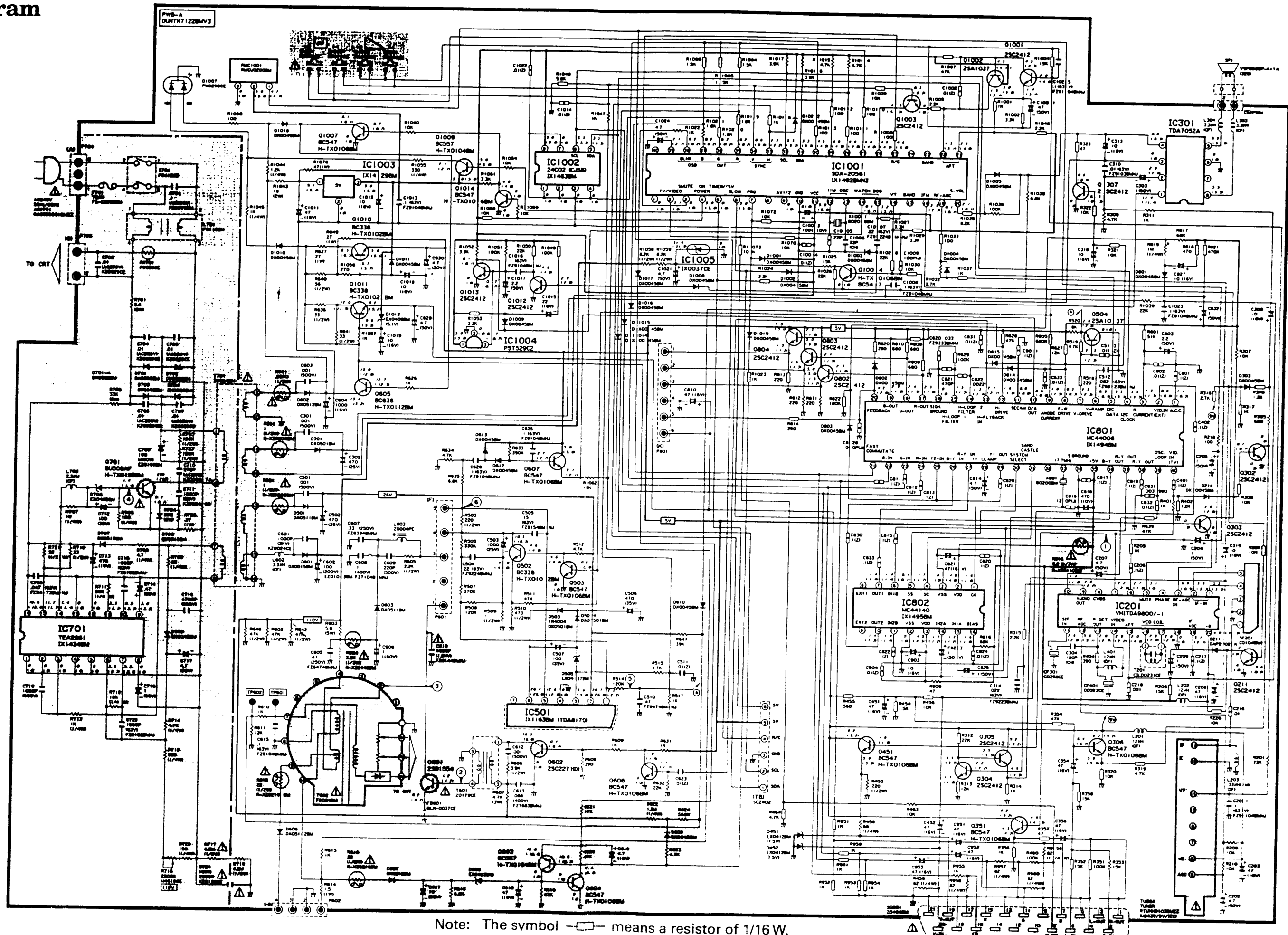
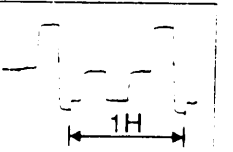
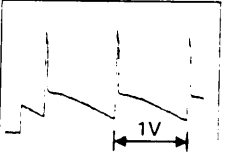
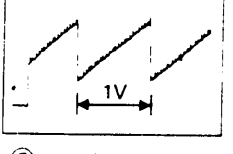
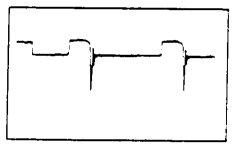
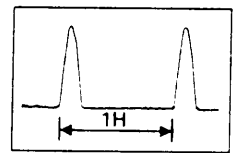
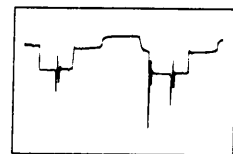
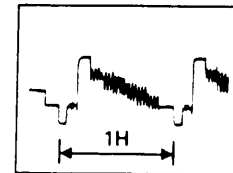



Tuner Diagram



Mother Unit Diagram

Waveforms



Note: The symbol  means a resistor of 1/16W.