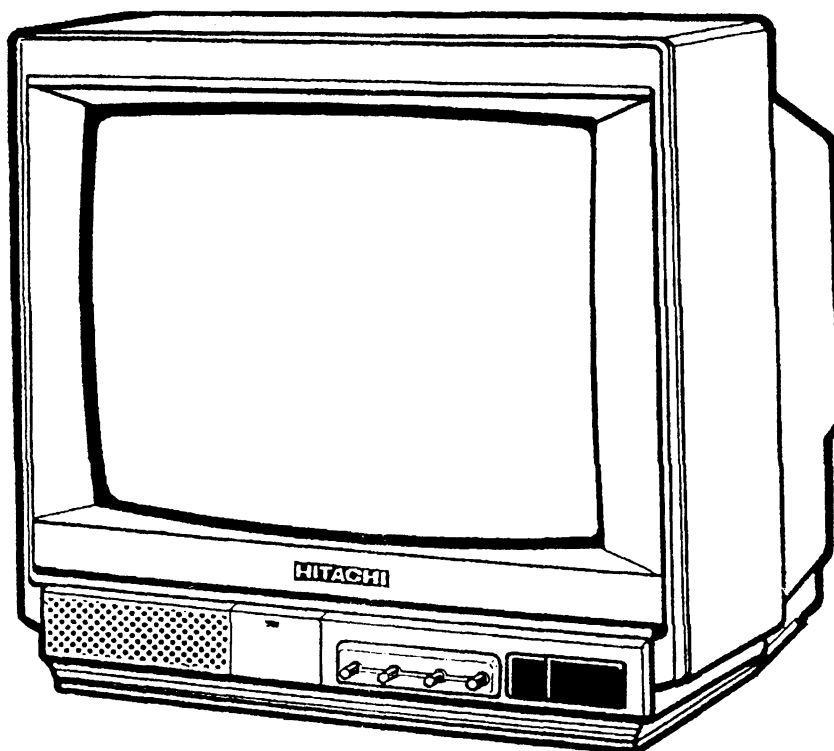


SERVICE MANUAL

CAUTION:

Before servicing this chassis, it is important that the service technician read the "Safety Precautions" and "Product Safety Notices" in this service manual.



TECHNICAL SPECIFICATIONS

TV standard	625 lines	Picture tube	34 cm Type
Speaker	8 Ohms 7.5 cm	Power consumption	45 W
Focusing	Electro static	Dimensions:	
Mains voltage	220-240 V 50 Hz	Width	405 mm
Fuse	T3.15A	Height	394 mm
		Depth	441 mm
		Weight	9.7 kg

Since this is a basic circuit, the values of the parts and specifications are subject to be altered for improvement

SAFETY PRECAUTIONS

WARNING: The following precautions should be observed.

1. Do not install, remove, or handle the picture tube in any manner unless shatter proof goggles are worn. People not so equipped should be kept away while picture tubes are handled. Keep the picture tube away from the body while handling.
2. When service is required, an isolation transformer should be inserted between the power line and the receiver before any service is performed on the chassis.
3. When replacing the chassis in the cabinet, ensure all the protective devices are put back in place, such as barriers, non-metallic knobs, adjustment or compartment covers or shields, isolation resistors/capacitors, etc.
4. When service is required, observe the original lead dressing. Extra precaution should be taken to ensure correct lead dressing in the high voltage circuitry area. Particularly note the R.G.B. lead dressing. Ensure they are dressed well away from the horizontal scan and F.B.T. circuitry.
5. Always use the manufacturer's replacement component. Always replace original spacers and maintain lead lengths. Especially critical components are indicated thus \triangle on the parts list and should not be replaced by other makes. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the instrument by the manufacturer has become defective, or inadvertently damaged during servicing.
Therefore, the following checks are recommended for the continued protection of the customers and service technicians.

INSULATION

Insulation resistance should not be less than $10M\Omega$ at 500V DC between the mains poles and any accessible metal parts.

Also, no flashover or breakdown should occur during the dielectric strength test, applying 3kV AC or 4.25kV DC for two seconds between the main poles and accessible metal parts.

HIGH VOLTAGE

High voltage should always be kept at the rated value of the chassis and no higher. Operating at higher voltages may cause a failure of the picture tube or high voltage supply, and also, under certain circumstances could produce X-radiation levels moderately in excess of design levels. The high voltage must not, under any circumstances, exceed 27kV on the chassis.

X-RADIATION

TUBES: The primary source of X-radiation in this receiver is the picture tube. The tube utilised for the above mentioned function in this chassis is specially constructed to limit X-radiation.

For continued X-radiation protection, replace tube with the same type as the original HITACHI approved type.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection, nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by marking with a \triangle on the schematics and the replacement parts list contained in this service manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list of this service manual, may create electrical shock, fire, X-radiation, or other hazards.

Product Safety is continuously under review, and new instructions are issued from time to time. For the latest information, always consult the current HITACHI service manual. A subscription to, or additional copies of HITACHI service manuals, may be obtained at a nominal charge from your HITACHI SALES CORPORATION.

TUBE DISCHARGE

The line output stage can develop voltages in excess of 25kV; if the E.H.T. cap is required to be removed, discharge the anode to chassis via a high value resistor, prior to its removal from the tube.

CIRCUIT DESCRIPTION

Sound stages:

The sound stages consist of IC201 and IC402, which is the output amplifier.

Audio signals are input via the scart or AUDIO-IN phono socket, then applied via R2117, Q2122, C2106 and buffer transistor Q2102, to pin 6 of IC201. The sound output is obtained from pin 50, then input to pin 3 of IC402 via C421 and R413, for further amplification. The output for the speaker is made available from pin 7.

Volume control is performed by the DC voltage applied to pin 5 of IC201, which can be preset by VR2102.

The audio signals input via the scart or AUDIO-IN phono socket, can also be applied as an output via the AUDIO OUT socket.

Vision Circuitry

Luminance:

Video signals input via the scart socket or BNC connector, are applied to pin 15 of IC201 via R2105, C2102, R311 and C303, for luminance/chrominance processing and deflection synchronisation.

The luminance signal is added internally to the RGB matrix circuits of IC201, and will be controlled by the brightness, contrast, and blanking stages of the IC.

The luminance signal finally emerges with the RGB signals from pins 18, 19 and 20 of IC201.

The voltages to control the contrast and brightness levels are applied to pins 25 and 17 of IC201, and can be varied by VR2103 and VR2104 respectively.

An automatic beam current circuit is employed on this chassis. Should the beam current start to rise, the voltage at pin 4 of the flyback transformer will fall. This fall is applied to the cathode of D706, then via R720 to pin 25 of IC201, thereby reducing the contrast level and consequently the beam current.

The video input from the scart socket or the VIDEO-IN socket can also be applied as an output to the VIDEO-OUT socket via the amplifier stages Q2101, Q2102 and buffer transistor Q2103.

Chrominance:

IC201 performs demodulation of the signal input to pin 15, and the R-y and B-y colour signals are output from IC201 at pins 30 and 31. They are then fed to pins 14 and 16 of IC501 which is a switch capacitor delay line. The inputs at pins 14 and 16 are clamped, then fed via a buffer stage to internal delay lines, which are driven by a clock signal of 3MHz, and a delay period of 64µ Seconds is obtained. The internal clock signal is generated from a 6MHz voltage controlled oscillator, and line locked by the sandcastle pulse input at pin 5. Low pass filters after the delay line stages suppress the clock signal.

The undelayed and the delayed signals are then added, with the resulting R-y and B-y signals being output from pins 11 and 12 via an internal buffer stage.

These outputs are then returned to IC201 at pins 28 and 29. The IC contains clamping circuits, and a DC colour saturation control, the level of which is set by VR2101, and applied to pin 26. The signals are then applied to a MATRIX circuit, and finally emerge from pins 18, 19 and 20, as the blue, green, and red signals.

Should S-VHS signals be applied via the 5 pin socket, the luminance and chrominance signals will be separate inputs.

The luminance signal is applied to pin 15 of IC201, but the chrominance signal is now applied to pin 16 via C2101 and R522.

In order for the I.C. to process these separated signals into the red, green and blue outputs, the voltage level at pin 16 needs to be approximately 4v5. This is achieved by SW2101. When it is set to the SVHS position, R2103 and R2118 form a potential divider to the +9v supply, thus creating the desired 4v5 level.

RGB external inputs:

RGB inputs can only be applied via the scart socket. When this is done, the switch SW2101 must be set to its RGB position.

This applies a voltage to pin 21 of IC201 via R2114, which changes the processing path of the I.C., so that only the RGB inputs applied to pins 22, 23, and 24, are output from pins 20, 19, and 18.

Deflection Circuits:

The deflection circuitry of IC201 contains a sync. separator stage, a horizontal oscillator and output stages, plus a vertical count-down and output stage.

Horizontal Stage

The video signal input to pin 15 of IC201 is applied to the internal sync. separator stages of the IC.

An internal phase detector stage is supplied with a sawtooth waveform, generated from the line pulse which is input to pin 38. The phase detector then compares this sawtooth to the sync. pulse.

Any frequency drift will cause a corrective output to be applied to the horizontal oscillator, thereby maintaining the desired phase relationship.

The components connected to pin 40 form a filter network for the phase detector, and VR701 connected to pin 39 provides manual phase control. The horizontal output emerges at pin 37, and is then applied to the base of line drive transistor Q701. T701 couples the output of Q701 to the line output transistor Q702. Both these transistors are powered by the 103v supply.

The line pulse available at pin 6 of the flyback transformer is rectified by D701, smoothed by C716, and provides approximately 180v to drive the output transistors Q801, Q802, Q803.

Under certain fault conditions, i.e. increased H.T. supply low line oscillator frequency, or reduced value of the tuning capacitor C730, an excess of E.H.T. could be developed. To prevent this happening, the rectified voltage of D701 is fed via potential divider R715, R716, and applied to ZD701. Should the E.H.T. rise excessively, the threshold of the zener will be exceeded, and a voltage will be applied to the gate of Q703 via R718, turning it on. This effectively applies a "Low" to Q952 base, turning the transistor off. Consequently, Q953 will turn off, and the +9v supply to IC201 is then removed, thereby shutting down the deflection stages of the IC, and preventing further E.H.T. generation.

Excessive beam current can also occur under certain fault conditions, so this is prevented in the following manner.

The H.T. current to the horizontal output stages is measured by R727.

Should the current rise due to a short circuit of Q702 for example, the voltage drop across R727 will cause Q704 to be turned on, and a voltage will be applied to the gate of Q703 via R729. This will then prevent further E.H.T. generation as described earlier.

A supply of +25v is required for IC601. This is obtained from pin 5 of the flyback transformer, rectified by D702, and smoothed by C719.

Vertical Stages:

The internal vertical sync. of IC201 is fed to a triggered vertical divider stage, which is used to count down the horizontal frequency to obtain the vertical frequency, thereby eliminating the need for a conventional oscillator circuit. This also has the advantage that no external frequency control is required.

C601 at pin 42 of the I.C. is used for ramp generation, and produces the required sawtooth output.

The vertical output from pin 43 of IC201 is applied to pin 4 of IC601 via R604. The components D601 and C605 determine the flyback generation time, and the vertical output to drive the deflection coils is made available from pin 2.

The deflection current that occurs at the junction of R609/R610, is added to the feedback from R607/C608 etc, and the result is applied to pin 41 of IC201. The values of R607 and C608 determine the linearity, whilst VR601 sets the vertical height.

Power Supply Circuit:

The AC input is rectified by D901 - 04 and produces approximately 300v to power Q903.

Current flowing through R901, causes Q903 to initially turn on.

Secondary voltages are then induced in T901, and a feedback voltage is applied to Q903 base via D905, L903 etc., thereby maintaining the transistors operation.

This circuitry self oscillates at a frequency determined by the inductance of the transformer, the AC mains voltage and load conditions.

The secondary voltage in the S1 - S2 winding is rectified by D951 to produce the H.T. of 103v, which is smoothed by C952. The S3 - S4 winding produces +15v from D952, which is smoothed by C954.

From this 15v, the chassis +9v is obtained via Q953 and IC951. Q951 stage is employed for H.T. regulation. The base of Q951 is set to a pre-determined level by the resistor network R952, VR951, and R951.

Should the H.T. rise, the emitter voltage of Q951 will become more positive, and this difference is amplified by the transistor and applied to opto-coupler IC901. An output is then produced from pin 5 of the opto-coupler, which is applied to transistor network Q901, Q902.

These transistors control the on time of the power transistor Q903, therefore a constant and regulated H.T. level is maintained. ZD952 offers protection to the H.T. circuits should the voltage level rise excessively.

PICTURE AND CONTROL ADJUSTMENTS

H.T. Adjustment:

1. Adjust VR951 to its centre position, then switch TV on.
2. Connect a voltmeter between the +ve side of C952 and ground.
3. Receive Philips test pattern and set brightness and contrast to maximum.
4. Allow approximately 1 minute for the TV to warm up thoroughly, then gradually turn VR951 clockwise until voltmeter reads $103v \pm 0v2$.

Horizontal Phase and Amplitude:

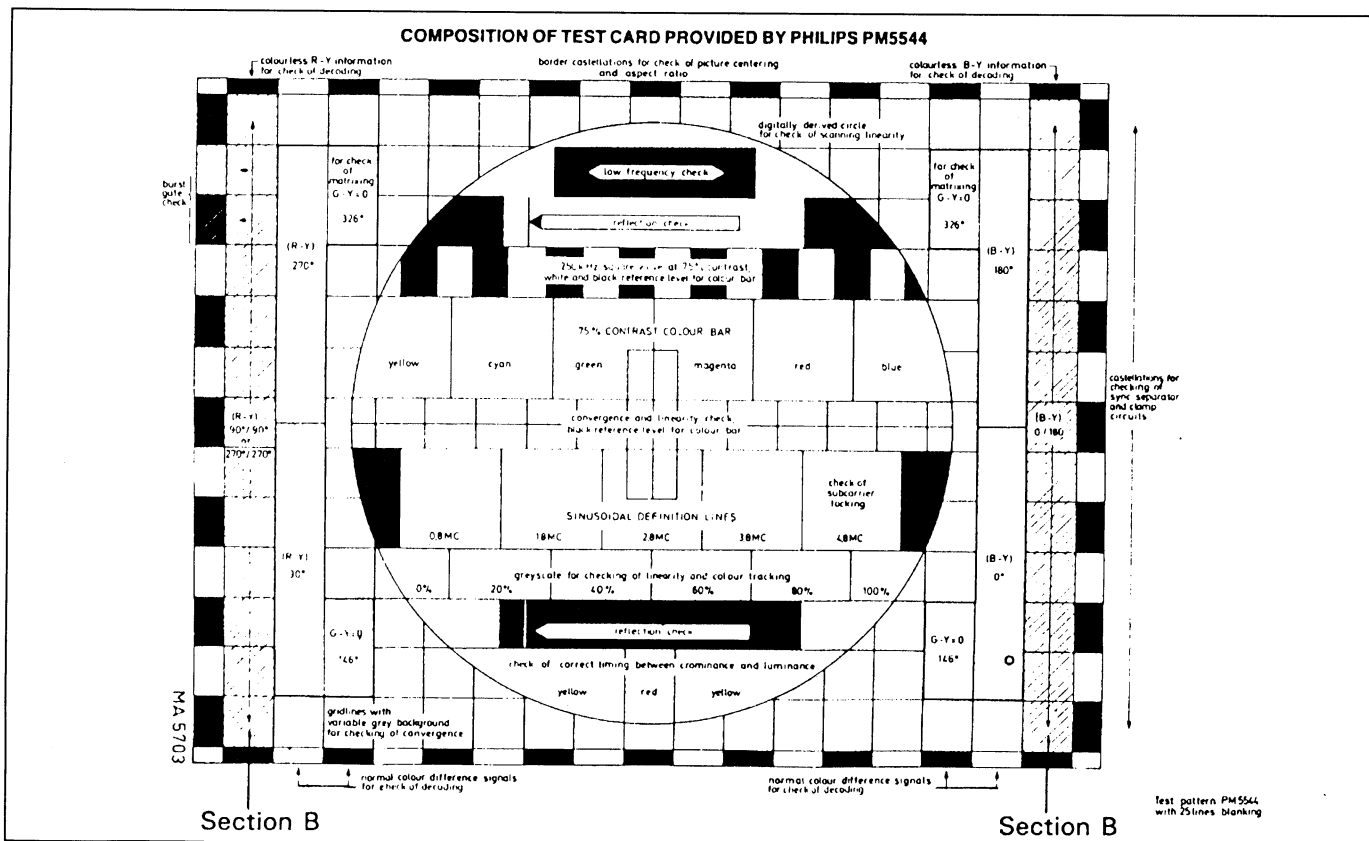
1. Switch TV on, and receive Philips test pattern.
2. Set the brightness and contrast to their maximum settings.
3. Adjust VR701 if picture is not centralised.

Vertical Centre and Height Adjustment:

1. Switch TV on, receive Philips test pattern, and wait 5 minutes.
2. Adjust contrast and brightness levels to their maximum setting.
3. If picture is not centred vertically, change position of shorting link on v. centre plug (see Position of Adjustment Control drawing, shown later) until desired result is obtained.
4. Adjust VR601 to obtain the desired height.

Focus Adjustment:

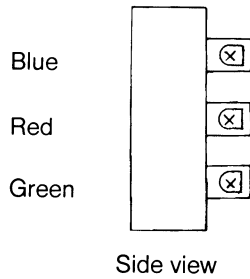
1. Switch TV on and receive Philips test pattern.
2. Set the colour level to minimum, and the brightness and contrast to their maximum levels.
3. Adjust contrast so that the first two bars of the colour bar display are the same colour black, then adjust brightness to make the first two bars of the grey scale bar pattern the same colour black.
4. Adjust focus control knob on the flyback transformer for the best overall focus.



CUT OFF AND SCREEN ADJUSTMENT

PREPARATION:

i) Preset the red, green and blue background controls on the C.R.T. base to the positions shown.



ii) Set the preset controls as follows:-

Contrast = minimum

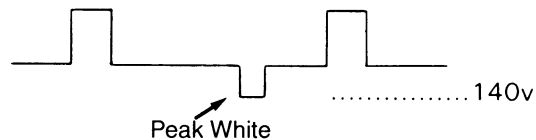
Colour = minimum

Brightness = mid point

iii) Receive horizontal white line, or red raster pattern from a Philips pattern generator.

METHOD:

1. Adjust screen control on the flyback transformer until the horizontal line is just visible and its colour can be seen.
2. Do not touch the background control of the colour that is most prominent on the screen, but adjust the other two background controls until a reasonable white line is obtained.
3. Connect an oscilloscope probe to each of the R.G.B. cathodes in turn and leave connected to the one with the highest level.
4. Set customer brightness so that the cathode value is no greater than 140v as shown below.



5. Disconnect oscilloscope, and set screen control so that the white horizontal line is just visible once more.

WHITE BALANCE

PREPARATION:

i) Set the preset controls as follows:-

Contrast = minimum

Colour = minimum

ii) Receive the white raster pattern.

iii) Obtain and set up a combined colour analyser and light meter, e.g. MINOLTA CA100.

METHOD:

1. Adjust brightness preset control so that the light output from the white raster reads $Y = 1 \rightarrow 2 \text{ cdm}^{-2}$ on the light meter.
2. Next adjust the red and blue background controls to obtain the colour chromaticity co-ordinates of $x = 283$ $y = 299$.

The above co-ordinates represent a colour temperature of 9300k.

N.B. For Export models $x = 304$ $y = 320$ temperature = 7400k

PROTECTION CHECKS

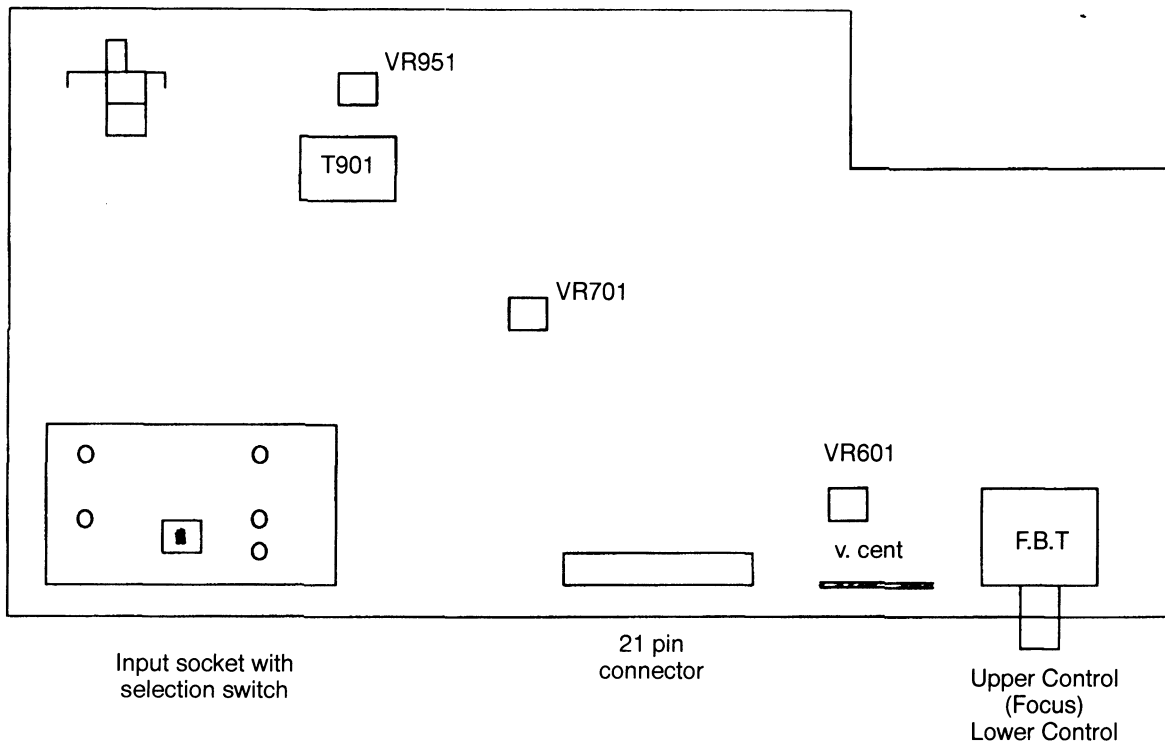
High Voltage Limit Check:

1. Switch TV on, receive Philips test pattern, and set contrast and brightness to their maximum levels.
2. Connect a 390K resistor in parallel with R715, and ensure that the sound and picture disappear instantly.
3. Switch TV off remove resistor and wait 10-15 seconds.
4. Switch TV on again to ensure normal operation, then return contrast and brightness to their previous levels.

Anode/Focus s/c Check:

1. Switch TV on, receive Philips test pattern, and set the contrast and brightness levels to maximum.
2. Connect a 270R resistor from pin 9 of the flyback transformer to ground.
3. Check that sound and picture disappear instantly.
4. Switch TV off, remove resistor, and wait 10-15 seconds.
5. Switch TV on again to ensure normal operation, then return contrast and brightness to their previous levels.

POSITION OF ADJUSTMENT CONTROLS



VOLTAGE TABLES

The following voltages were taken using a 20K Ω /volt meter, with brightness, colour and contrast set to give normal viewing levels.

IC201			
Pin	Volts	Pin	Volts
1	3V0	27	Not Used
2	Not Used	28	3V5
3	Not Used	29	2V9
4	Not Used	30	1V5
5	0V5 - 4V5 (VOLUME)	31	1V5
6	3V5	32	Not Used
7	Not Used	33	3V8
8	1V8	34	3V0
9	0V	35	2V0
10	8V0	36	8V4
11	0V	37	1V4
12	0V8	38	1V1
13	Not Used	39	2V7
14	6V8	40	2V6
15	3V8	41	2V3
16	8V5 (4V5)*	42	2V0
17	0V - 3V5 (brightness)	43	0V9
18	1V9	44	Not Used
19	1V9	45	Not Used
20	1V9	46	Not Used
21	0V2 (3V8)+	47	Not Used
22	0V5	48	7V5
23	0V5	49	Not Used
24	0V5	50	3V5
25	0V - 4V8 (contrast)	51	4V1
26	0V - 4V8 (colour)	52	6V5

* = SW2101 IN SVHS POSITION

+ = SW2101 IN RGB POSITION

IC402	
Pin	Volts
1	0V6
2	1V0
3	0V4
4	0V
5	6V5
6	12V
7	12V
8	Not Used

IC601	
Pin	Volts
1	10V
2	13V5
3	26V
4	—
5	—
6	26V
7	1V0

IC501			
Pin	Volts	Pin	Volts
1	5V7	9	5V7
2	Not Used	10	0V
3	0V	11	3V1
4	0V	12	3V1
5	1V5	13	Not Used
6	Not Used	14	—
7	Not Used	15	Not Used
8	0V	16	—

IC951	
Pin	Volts
1	13V
2	0V
3	9V0

IC901			
Pin	Volts	Pin	Volts
1	14V	4	-5V
2	13V	5	0V3
3	Not Used	6	Not Used

	Q701	Q702	Q704	Q801	Q802	Q803	Q804
C B E	24V 0V4 0V	103V — 0V	— 103V 103V	145V 2V2 1V7	140V 2V0 1V8	140V 2V0 1V5	— 8V4 8V3

	Q901	Q902	Q903	Q951	Q952	Q953
C B E	-2V2 0V3 0V	5V0 4V5 -3V0	340V -3V0 0V	14V 14V5 *28V 14V	0V2 *12V 0V8 *0V 0V	12V *0v8 12V 13V

* = standby

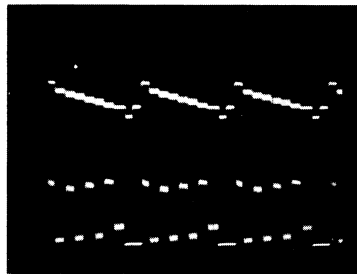
	Q2101	Q2102	Q2103	Q2122
C B E	5V0 2V1 1V6	2V9 5V0 5V7	8V8 2V9 2V2	8V8 1V1 0V5

A530720 PANEL

THESE WAVEFORMS WERE TAKEN USING A 10:1 PROBE ON A COLOUR BAR SIGNAL, WITH THE PRESET CONTROLS SET TO GIVE NORMAL VIEWING LEVELS. OSCILLOSCOPE WAS SET TO 20μ SECS/CM UNLESS STATED OTHERWISE.

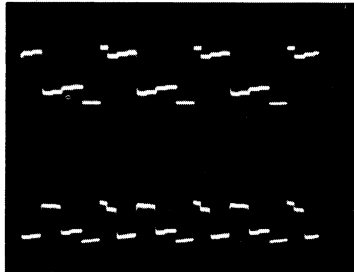
IC201
pin 15
2v p.p.

IC201
pins 18
3v8 p.p.



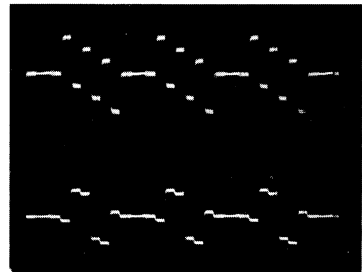
IC201
pin 19
3v5 p.p.

IC201
pin 20
4v p.p.



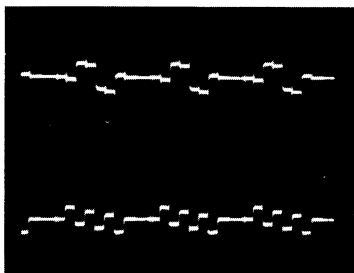
IC201
pin 28
1v5 p.p.

IC201
pin 29
1v2 p.p.

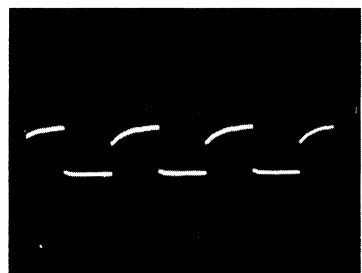


IC201
pin 30
0v8 p.p.

IC201
pin 31
0v8 p.p.

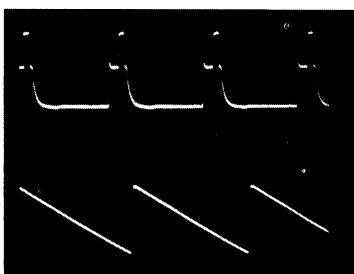


IC201
pin 37
3v8 p.p.



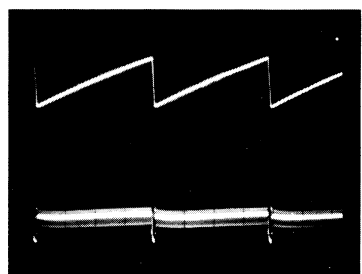
IC201
pin 38
6v0 p.p.

IC201
pin 41
1v0 p.p. at
5m secs/cm.



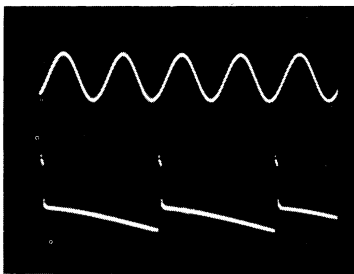
IC201
pin 42
2v p.p. at
5m secs/cm.

IC201
pin 43
1v8 p.p. at
5m secs/cm.



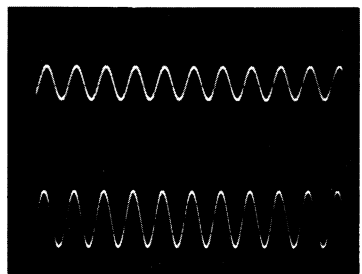
IC201
pin 50
2v0 p.p. at
0.5m secs/cm.
at max. volume
with speaker
disconnected.

IC601
pin 2
55v p.p. at
5m secs/cm.

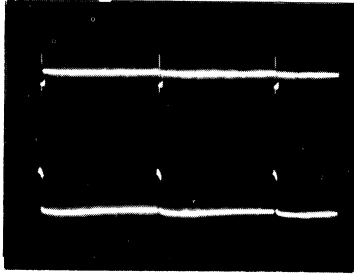


IC402
pin 3
0v25 p.p. at
1m sec/cm.
at max. vol.
with speaker
disconnected

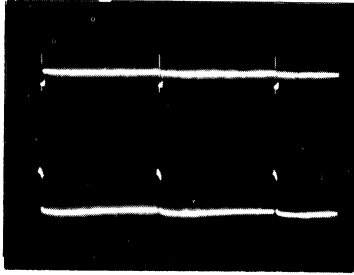
IC402
pin 7
10v p.p. at
1m sec/cm.
at max. volume
with speaker
disconnected.



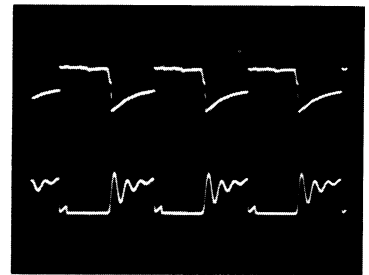
IC601
pin 4
3v0 p.p. at
5m secs/cm.



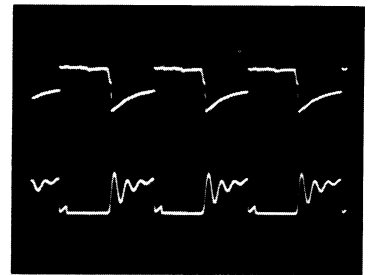
IC601
pin 3
25v p.p. at
5m secs/cm.

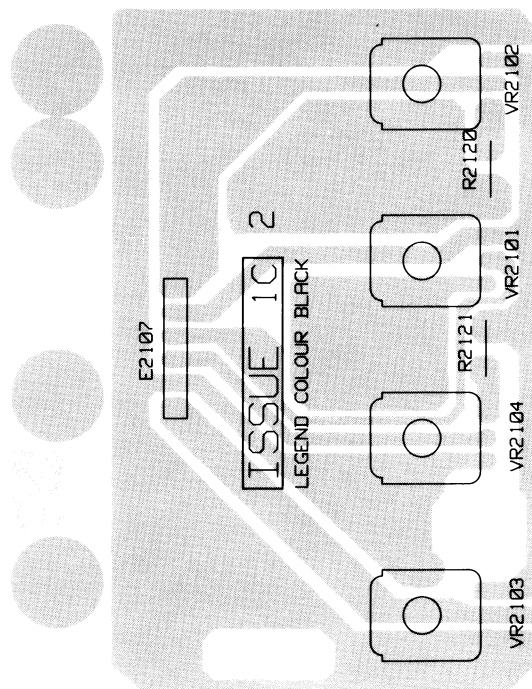
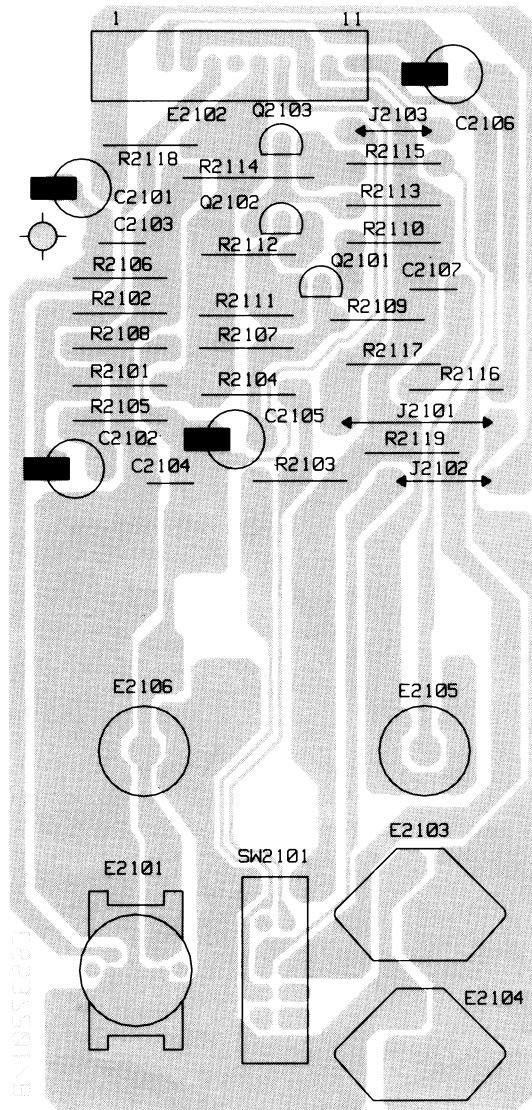


Q701
Base
1v5 p.p.

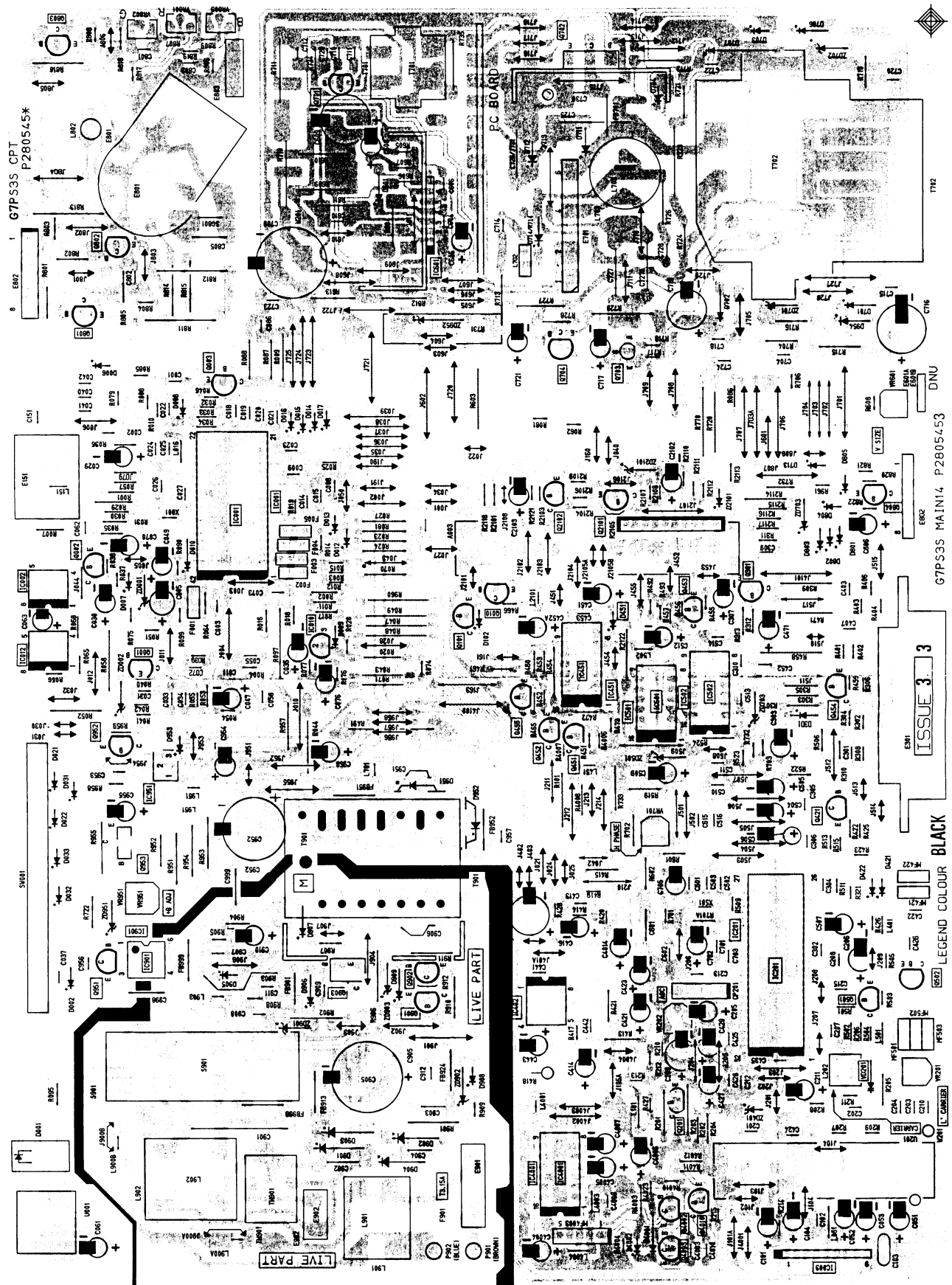


Q701
Collector
60v p.p.





INPUT/OUTPUT AND CUSTOMER CONTROL P.C.B.



G7PSS3S CPT
P280545K

G7PSS3S MAIN14 P2805453

ISSUE 3.3

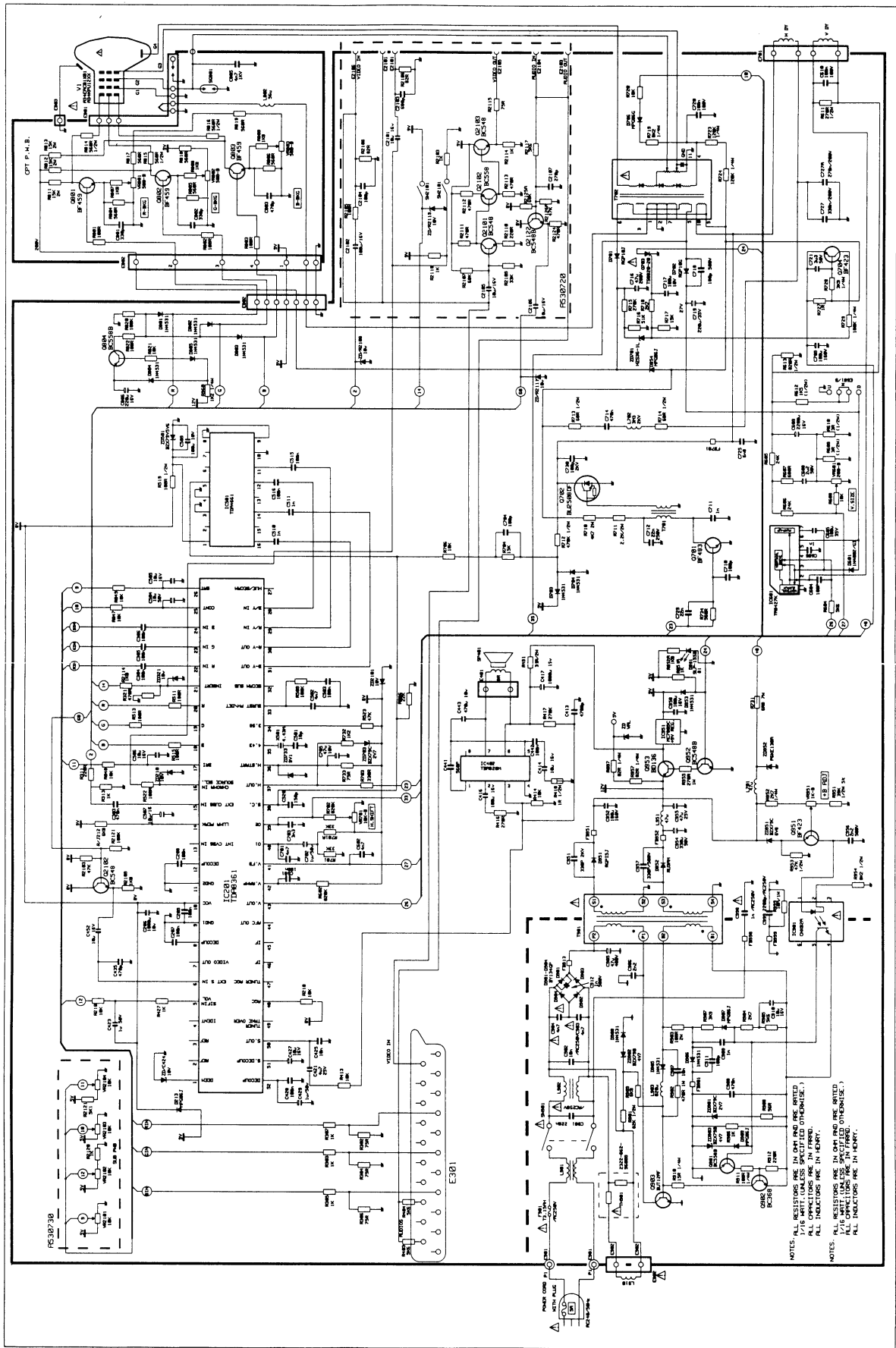
BLACK

LEGEND COLOUR

Legend symbols for components:

- Capacitor (C)
- Resistor (R)
- Connector (J)
- IC (U)
- Diode (D)
- Inductor (L)
- Other components

P.C.B. PRINT SIDE



MAIN CIRCUIT DIAGRAM

NOTES: ALL RESISTORS ARE IN OHMS AND ARE WRITTEN AS SUCH UNLESS OTHERWISE NOTED.
 ALL CAPACITORS ARE IN P.F.D.
 ALL INDUCTORS ARE IN HENRY.
 NOTES: ALL RESISTORS ARE IN OHMS AND ARE WRITTEN AS SUCH UNLESS OTHERWISE NOTED.
 ALL CAPACITORS ARE IN P.F.D.
 ALL INDUCTORS ARE IN HENRY.

PRESENTATION PARTS

△ CRT Type A34EAC01X06	2470781
Cabinet Back	X240257
Cabinet Front Frame	X212431
HITACHI Badge	X640251
△ Mains Lead (U.K. models)	E846629
△ Mains Lead (Export Models)	2972374
Mains Switch Knob	X320991
Operating Guide	X830892
Remote Control Window (cabinet)	X425010

MISCELLANEOUS PARTS

△ CRT Socket	2698711
△ Degaussing Coil	2229931
△ Fuse Type T3.15A	E882368
Fuse Holder	2721792
△ ON/OFF Switch	2633391
Phono Socket (black)	E826141
Phono Socket (red)	E826142
BNC Socket	E826143
S-VHS Socket	E826144
21 Pin Scart Socket	E826918
SW2101 3 Way Switch	E114303
Speaker	E511101

PRODUCT SAFETY NOTE: Components marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this service manual. Don't degrade the safety of this receiver through improper servicing.

Resistor Abbreviation	Type
CF	Carbon Film
MO	Metal Oxide
FF	Fusible Film
VR	Variable Control
MF	Metal Film
WW	Wire Wound

Capacitor Abbreviation	Type
C	Ceramic
PF	Plastic Film
FT	Feed Through
MPO	Met. Polyester
MPS	Mica/Polystyrene
MP	Metallised paper
TA	Tantalum

Ref No.	Part No.	Value	Type	%Tol	Wattage
R047	0700054M	10K	CF	5	1/16
R048	0700054M	10K	CF	5	1/16
R049	0700054M	10K	CF	5	1/16
R052A	0700041M	1K0	CF	5	1/16
R086	0700058M	22K	CF	5	1/16
R097	R812330	82R	CF	5	1/4
R210	0700054M	10K	CF	5	1/16
R212	0700052M	6K8	CF	5	1/16
R302	0187038M	75R	CF	5	1/16
R303	0700041M	1K0	CF	5	1/16
R304	0187038M	75R	CF	5	1/16
R305	0700041M	1K0	CF	5	1/16
R306	0187038M	75R	CF	5	1/16
R307	0700041M	1K0	CF	5	1/16
R311	0700032M	220R	CF	5	1/16
R313	0700041M	1K0	CF	5	1/16
R321	0700036M	470R	CF	5	1/16
R403	0700051M	5K6	CF	5	1/16
R404	0700051M	5K6	CF	5	1/16
R413	0700054M	10K	CF	5	1/16
R414	0700054M	10K	CF	5	1/16
R416	0700033M	270R	CF	5	1/16
R417	0700073M	270K	CF	5	1/16
R418	R100551	1R0	FF	5	1/2
R427	0700041M	1K0	CF	5	1/16
R491	0110308S	30R	MO	5	3
R509	0700067M	100K	CF	5	1/16
R511	0700031M	180R	CF	5	1/16
R513	0700031M	180R	CF	5	1/16
R515	0700031M	180R	CF	5	1/16
R519	R120319	100R	CF	5	1/2
R522	0700027M	100R	CF	5	1/16
R523	0700063M	47K	CF	5	1/16
VR601	0160421	200R	VR	VERTICAL	SIZE
R602	0179558M	820K	CF	5	1/16
R604	0700051M	5K6	CF	5	1/16
R605	0187098M	24K	CF	5	1/16
R606	0187098M	24K	CF	5	1/16
R607	0700038M	680R	CF	5	1/16
R608	0700054M	10K	CF	5	1/16
R609	0113687M	3R0	CF	5	1/2
R610	0113687M	3R0	CF	5	1/2
R611	R227319	270R	CF	5	1/2
R612	R135319	1K5	CF	5	1/2
R613	R822319	820R	CF	5	1/2
VR701	0160215	10K	VR	HORIZ.	PHASE
R701	0700061M	33K	CF	5	1/16
R701A	0700061M	33K	CF	5	1/16
R702	0179558M	820K	MF	5	1/16
R703	0700034M	330R	CF	5	1/16
R704	0700056M	15K	CF	5	1/16
R706	0700054M	10K	CF	5	1/16
R710	0110261S	4K7	MO	5	2
R711	0110253S	2K2	MO	5	2
R712	R457714	470K	MF	5	1/2
R713	R618319	68R	CF	5	1/2
R714	R618319	68R	CF	5	1/2
R715	0119665M	270K	MF	1	1/8
R716	0119648M	51K	MF	1	1/8
R717	0700056M	15K	CF	5	1/16
R718	0700046M	2K7	CF	5	1/16
R719	R832330	8K2	CF	5	1/4
R720	0700054M	10K	CF	5	1/16
R723	R152330	120K	CF	5	1/4

Ref No.	Part No.	Value	Type	%Tol	Wattage
R724	R152330	120K	CF	5	1/4
R727	0188192M	1R2	CF	5	1/2
R728	R339330	3K9	CF	5	1/4
R729	R158330	180K	CF	5	1/4
R731	0147630	6R8	WVW	10	7
R732	0700042M	1K2	CF	5	1/16
R733	0113722M	75R	CF	5	1/2
R734	0700037M	560R	CF	5	1/16
VR801	0160413	500R	VR	RED BACKGROUND	
R801	0700027M	100R	CF	5	1/16
VR802	0160413	500R	VR	GREEN BACKGROUND	
R802	0700027M	100R	CF	5	1/16
VR803	0160413	500R	VR	BLUE BACKGROUND	
R803	0700027M	100R	CF	5	1/16
R804	0700037M	560R	CF	5	1/16
R805	0700037M	560R	CF	5	1/16
R806	0700037M	560R	CF	5	1/16
R807	0700044M	1K8	CF	5	1/16
R808	0700044M	1K8	CF	5	1/16
R809	0700044M	1K8	CF	5	1/16
R811	0110273S	15K	MO	5	2
R812	0110273S	15K	MO	5	2
R813	0110273S	15K	MO	5	2
R814	R526319	560R	CF	5	1/2
R815	R526319	560R	CF	5	1/2
R816	R526319	560R	CF	5	1/2
R817	0700037M	560R	CF	5	1/16
R818	0700037M	560R	CF	5	1/16
R819	0700037M	560R	CF	5	1/16
R820	0700067M	100K	CF	5	1/16
R821	0700054M	10K	CF	5	1/16
R822	0700027M	100R	CF	5	1/16
R901	R842319	82K	CF	5	1/2
R902	0110137S	470R	MO	5	1
R903	0110221S	100R	MO	5	1
R904	0700046M	2K7	CF	5	1/16
R905	0700051M	5K6	CF	5	1/16
R906	0700041M	1K0	CF	5	1/16
R907	0700048M	3K9	CF	5	1/16
R908	0700024M	56R	CF	5	1/16
R909	0700052M	6K8	CF	5	1/16
R910	R115330	15R	CF	5	1/4
R911	R120330	100R	CF	5	1/4
R912	0700032M	220R	CF	5	1/16
VR951	0160211	1K0	VR	HT	PRESET
R951	R349319	39K	CF	5	1/2
R952	R237330	2K7	CF	5	1/4
R953	R447319	47K	CF	5	1/2
R954	R832319	8K2	CF	5	1/2
R955	0110131S	270R	MO	5	1
R957	R812330	82R	CF	5	1/4
R958	0700049M	4K7	CF	5	1/16
R959	0700049M	4K7	CF	5	1/16
R960	R132330	1K2	CF	5	1/4
R961	0700046M	2K7	CF	5	1/16
R999	R170727	10M	MF	5	1
VR2101	E311694	VR	10K	SATURATION CONTROL	
VR2102	E311694	VR	10K	VOLUME CONTROL	
VR2103	E311694	VR	10K	CONTRAST CONTROL	
R2103	0700063M	47K	CF	5	1/16
R2103	0700041M	1K0	CF	5	1/16
VR2104	E311694	10K	VR	(A530720 PANEL)	
R2105	0700027M	100R	CF	BRIGHTNESS CONTROL	

PRODUCT SAFETY NOTE: Components marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this service manual. Don't degrade the safety of this receiver through improper servicing.

Ref No.	Part No.	Value	Type	%Tol	Wattage
R2106	0700026M	82R	CF	5	1/16
R2107	0700065M	86K	CF	5	1/16
R2108	0700026M	82R	CF	5	1/16
R2109	0700041M	1K0	CF	5	1/16
R2109	0700061M	33K	CF	5	1/16
(A530720 PANEL)					
R2110	0700032M	220R	CF	5	1/16
R2111	0700036M	470R	CF	5	1/16
R2112	0700036M	470R	CF	5	1/16
R2113	0700036M	470R	CF	5	1/16
R2114	0700041M	1K0	CF	5	1/16
R2114	0700041M	1K0	CF	5	1/16
(A530720 PANEL)					
R2115	0187038M	75R	CF	5	1/16
R2116	0700058M	22K	CF	5	1/16
R2117	0700051M	5K6	CF	5	1/16
R2118	0700041M	1K0	CF	5	1/16
R2120	0700041M	1K0	CF	5	1/16
R2121	0700067M	100K	CF	5	1/16
R2121	0700051M	5K6	CF	5	1/16
(A530730 PANEL)					
R2124A	0700036M	470R	CF	5	1/16
R2125A	0700065M	68K	CF	5	1/16
R2126A	0700063M	47K	CF	5	1/16

Ref No.	Part No.	Value	Type	%Tol	Voltage
C712	0250511R	22n	PF	10	250
C714	0276725R	470n	PF	5	50
C716	0255031	47u	EL	-	200
C717	0800048R	100u	EL	-	10
C718	0243504R	180p	C	10	500
C719	0800337R	220u	EL	-	35
C720	0279693R	100n	PF	10	100
C721	0800007R	3u3	EL	-	50
C725	0299726	6n8	PF	5	1600
C727	0299932	330n	PF	10	200
C727A	0299931	270n	PF	10	200
C729	0880048R	22n	PF	10	50
C730	0246344	100p	C	10	2000
C801	0890081R	330p	C	10	50
C802	0890081R	330p	C	10	50
C803	0890083R	470p	C	10	50
C805	0245612	4n7	C	10	1000
C806	0800057R	220u	EL	-	10
C901	0279698	220n	C	10	250 AC
C902	0249396	10n	C	10	250 AC
C903	0249395	4n7	C	10	250 AC
C904	0249395	4n7	C	10	250 AC
C905	0253873	47u	EL	-	400
C906	0244215	2n2	C	10	2000
C907	0880044R	10n	PF	10	50
C908	C457715	470n	MPO	10	63
C909	0880031R	1n0	PF	10	50
C910	0800015R	10u	EL	-	16
C911	0890074R	100p	C	5	50
C912	0244501R	1n0	C	10	500
C951	0246351	330p	C	10	2000
C952	0259402	180u	EL	-	160
C954	0284457	330u	EL	-	50
C955	0254518R	47u	EL	-	25
C956	0244505R	2n2	C	10	500
C957	0243507R	330p	C	10	500
C958	0800048R	100u	EL	-	10
C998	0249498	1n0	C	10	250 AC
C999	0247974	2n2	C	10	250 AC
C2101	0800015R	10u	EL	-	16
C2102	0700049R	100u	EL	-	16
C2103	0890085R	680p	C	5	50
C2104	0890074R	100p	C	5	50
C2105	0800015R	10u	EL	-	16
C2106	0800015R	10u	EL	-	16
C2107	0890079R	270p	C	10	50



Ref No.	Part No.	Value	Type	%Tol	Voltage
C206	0800359R	1000u	EL	-	10
C207	0880057R	100n	PF	10	50
C208	0880057R	100n	PF	10	50
C209	0880057R	100n	PF	10	50
C303	0276713R	47n	PF	5	50
C304	0880057R	100n	PF	10	50
C305	0880057R	100n	PF	10	50
C306	0880057R	100n	PF	10	50
C413	0880039R	4n7	PF	10	50
C414	0800015R	10u	EL	-	16
C416	0800049R	100u	EL	-	16
C417	0800082	1000u	EL	-	16
C421	0800009R	4u7	EL	-	25
C423	0800003R	1u0	EL	-	50
C425	0880044R	10n	PF	10	50
C427	0800015R	10u	EL	-	16
C428	0880057R	100n	PF	10	50
C429	0800003R	1u0	EL	-	50
C435	0890083R	470p	C	10	50
C441	0890084R	560p	C	10	50
C442	0880057R	100n	PF	10	50
C443	0800073R	470u	EL	-	10
C452	0800015R	10u	EL	-	16
C501	0890117R	18p	C	5	50
C502	0880039R	4n7	PF	10	50
C503	0880057R	100n	PF	10	50
C504-07	0800015R	10u	EL	-	16
C509	0800048R	100u	EL	-	10
C510	0890087R	1n0	C	-	50
C511	0890087R	1n0	C	-	50
C515	0880057R	100n	PF	10	50
C516	0880057R	100n	PF	10	50
C601	0278331	100n	PF	5	50
C602	0880039R	4n7	PF	10	50
C604	0890074R	100p	C	5	50
C605	0800328R	100u	EL	-	35
C606	0890087R	1n0	C	-	50
C608	0800005R	2u2	EL	-	50
C609	08000087	2200u	EL	-	16
C610	0279693R	100n	PF	10	100
C701	0880039R	4n7	PF	10	50
C702	0800003R	1u0	EL	-	50
C703	0880037R	3n3	PF	10	50
C704	0890074R	100p	C	5	50
C705	0800039R	47u	EL	-	10
C709	0255510	100u	EL	-	160
C710	0890074R	100p	C	5	50
C711	0244501R	1n0	C	10	500

