

HITACHI

SERVICE MANUAL

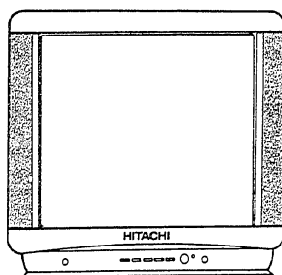
PAL/SECAM/NTSC

YS


No. 0042E

CMT2186-051

S2-M3SP Chassis



NOTE:

PORTIONS OF THIS TV
PRODUCT MANUFACTURED
UNDER A LICENSE FROM
DESPER PRODUCTS INC.
SPATIALIZER® &  ARE
THE TRADEMARKS OWNED
BY DESPER PRODUCTS, INC.

CAUTION: Before servicing this chassis, it is important that the service technician reads the "Safety Precaution" and "Product Safety Notices" in this Service Manual.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

COLOR TELEVISION

October 1995 HITACHI CONSUMER PRODUCTS (S)

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 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 assure 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 Δ 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 Ω 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 moderately in excess of design levels. The high voltage must not, under any circumstances, exceed 28kV on the chassis.

X-RADIATION

TUBES: The primary source of X-radiation in this receiver is the picture tube. The tube utilized 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 Δ on the schematics and replacement parts list 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 in 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.

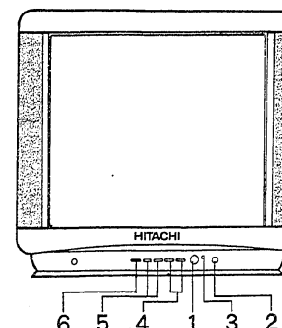
TUBE DISCHARGE

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 cap to chassis via a high value resistor, prior to its removal from the tube.

SPECIFICATIONS

Reception system	625-lines B.G/I/D. K/H PAL	Antenna input	75 OHM COAXIAL IEC TYPE
	B. G/D. K/K SECAM	Color picture tube	A51JFC61XH/A51KPD12XX
	NTSC50	Speaker	8cm \times 12cm \times 21
	525-lines M/NTSC	Sound output	5W \times 2 (max)
Channel coverage (Frequency range)	NTSC3.585.5/6.0/6.5	Power supply	AC100~260V, 50/60Hz
	NTSC4.435.5/6.0/6.5	Power consumption	90W
	PAL60	Weight (kg)	23
	CCIR : E2-12, E21-69, S01-3	Dimensions	52.5 \times 44 \times 46.5
Channel coverage (Frequency range)	S1-10, S11-20	Country of manufacture	Singapore
	OIRT : R1-12, R21-69		
	JAPAN : J1-12, J13-62		
	U.S.A. : US2-13, J-W, US14-69		
	Hong Kong, U.K. : UK21-69		
	China : C1-12, C13-57		

* Specifications are subject to change without notice to improve performance.

CONTROLS

1 Power switch

3 Power indicator (Stand-by)

5 Volume up/down

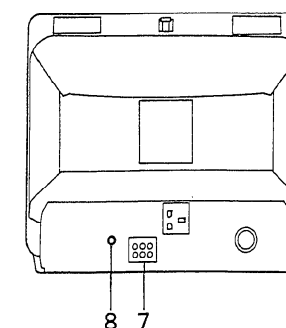
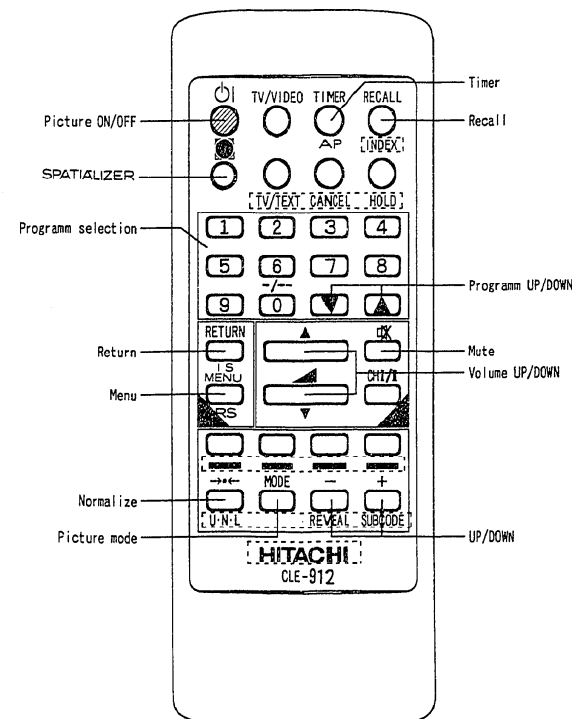
7 AV in/out terminals

2 Remote control receiver

4 Program up/down

6 TV/VIDEO selection

8 Antenna input terminal

**REMOTE CONTROL UNIT**

CIRCUIT DESCRIPTION

Tuner and I.F. Stages :

The tuner used on this chassis, is powered by the +9V supply, and covers VHF, UHF and CABLE.

The I.F. output from the tuner is applied to amplifier Q201 then selected with the mode shown in Table 1 and input to CP201 or CP202.

B-G/D-K	M/I	Saw filter	Sound filter	Sound trap
H	H	CP202	MF401(4.5MHz)	MF503
L	H	CP201	MF402(5.5MHz)	MF501/ MF502
H	L		MF403(6.0MHz)	
L	L		MF404(6.5MHz)	

Table 1.

Vision I.F. Stages :

The I.F. signal from CP201 and CP202 is input to pins 45 and 46 of IC201. These pins supply an internal amplifier consisting of three stages whose gain is controlled by the AGC circuit. The response speed of this internal AGC stage is determined by the external components connected to pin 48. The output from the I.F. amplifier is then fed to the video detector circuitry. The picture carrier is limited and phase shifted by the tank circuitry of L202 etc., connected between pins 2 and 3 of the IC. This produces a reference frequency which is utilised for synchronous video detection.

An RF AGC voltage is made available at pin 48 of IC201, the starting level of which is determined by the voltage applied to pin 49, which in turn is fixed by the setting of VR202. This AGC voltage is then fed to the tuner via R208 to control its gain accordingly.

The composite video finally emerges at pin 7 of IC201.

Luminance Circuitry :

The composite video signal output from pin 7 of IC201 is applied to the sound rejection filter MF501, MF502, and MF503. MF501, MF502 and MF503 are selected with the mode shown in Table 1. The resulting luminance signal is applied to the terminal of rear, for output to external equipment if desired. It is then returned to pin 13 of IC201 via Q506, for color decoding and deflection synchronisation.

The luminance signal is added internally to the R.G.B. matrix circuits of IC201, as well as being controlled by the brightness, contrast, and blanking stages of the IC.

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

The voltages to control the contrast and brightness levels are output from pins 3 and 4 of IC1101, then applied to pins 17 and 25 of IC201.

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 D758, then via R760 to pin 26 of IC201, thereby reducing the contrast level and hence the beam current.

Video inputs from external equipment connected to the terminal of rear, are fed to IC201 pin 15 via Q510.

When the external mode is selected, a "High" is applied to pin 16 of IC201.

Chrominance Circuitry :

IC201 is designed to demodulate PAL, NTSC and SECAM systems. And this IC can distinguish between PAL, NTSC or SECAM signals. The demodulated colour signals are output from IC201 pins 30 and 31 as the R-y and B-y signals, then fed to pins 14 and 16 of IC501 which is a switch capacitor delay line.

IC201 allows bi-directional communication between the SECAM decoder IC502 and automatic system manager for SECAM identification. It delivers the VCXO (voltage controlled xtal oscillator) reference frequency (4.43MHz only) to the SECAM decoder via pin 32 of IC201. Once SECAM is identified, the gated reference signal is outputted to pin 32 of IC201. The inputs at pins 14 and 16 of IC501 are clamped, then fed via a buffer stage to internal delay lines, which are driven by a clock signal of 3MHz to obtain a delay period of 64µs. This internal clock 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 signals.

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 fed to IC201 at pins 28 and 29. This IC contains clamping circuits, and a DC colour saturation control, the level of which is set by the voltage applied to pin 26 from pin 5 of IC1101. 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.

Deflection Circuits :

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

Horizontal Stage :

The composite video signal from pin 7 of IC201 is returned to pin 13 via C302 as explained previously. This input is applied to the internal sync, separator stages of the IC.

A internal phase detector stage is provided with a sawtooth waveform, generated from the line pulse input to pin 38. The phase detector will then compare this sawtooth waveform 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 Q721, T721 couples the output of Q721 to the line output transistor Q781. Both these transistors are powered by the 95V supply.

A line pulse available at pin 6 of the flyback transformer is rectified by D751, smoothed by C756 and provides approximately 180V to drive the output transistors Q851, Q852, Q853. Under certain fault conditions, i.e. increased H.T. supply, low line oscillator frequency, or reduced value of the tuning capacitor C781, an excess of E.H.T. could be developed. To prevent this happening, the rectified voltage of D751 is fed via potential divider R757, R758, and applied to ZD751. Should the E.H.T. rise excessively, the threshold of the zener will be exceeded, and a voltage will be applied to pin 35 of IC1101

via R1106, thereby shutting down the power circuit.

This effectively applies a "Low" to Q903 base, turning the transistor off. Consequently, Q902 will be turned off, and the +8V supply to IC201 is then removed, thereby shutting down the deflection stages of the IC, 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 R781.

Should the current rise, the voltage drop across R781 will increase, and a voltage will be applied to the gate of Q901. This will then prevent further E.H.T. generation as described earlier.

A supply of +25V is required for IC681. This is obtained from pin 1 of the flyback transformer, and smoothed by C754.

Vertical Stages :

The internal vertical sync. of IC201 is fed to a triggered vertical divider stage, which counts 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.

IC601 at pin 42 of the IC 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 IC681 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, 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 :

AC input is rectified by D901-04 and produces approximately 300V to pin 3 of IC901.

Current flowing through R902-03, C905, causes power transistor in IC901 to initially turn on.

Secondary voltages are then induced in T901, and a feedback voltage is obtained via C910, R905 etc. and applied to pin 2 of IC901, thereby maintaining the transistors operation.

Secondary voltage in F1:F2 winding is rectified by D905 to produce H.T. of 95V which is smoothed by C914.

S1:S2 winding produces 14V from D908, and this is smoothed by C916.

Pin 5 of IC901 is set to a pre-determined level by resistor network in IC901. Should the H.T. rise, pin 5 voltage of IC901 will become more positive, and this difference is amplified by transistor in IC901. An output is applied to drive transistor, and controls on time of power transistor. In this way, the H.T. is regulated and maintained at a constant level. D909 offers protection to the H.T. circuits should the voltage level rise excessively.

When the standby mode is selected, pins 21 and 22 of IC1101 will go "Low", removing the drive to Q903. As a result, Q902 is turned off, and voltage to pin 36 of IC201 disappears, therefore shutting down the deflection stages of the IC. E.H.T. generation will then cease for as long as the standby condition exists.

Remote Control and Tuning Circuitry :

The remote control receiving unit CP1201, contains an infrared amplifier type SPS409. This is powered by the +5V supply, which is stabilized by ZD1101. The output from pin 2 of this unit is applied to pin 16 of IC1101.

This IC type M37210M4, performs channel selection, UP/DOWN analogue control, an screen display, search tuning, and controls inputs and search tuning, and controls inputs and outputs to and from the AV terminal.

IC1102 is the memory IC, which stores the data relating to the above functions, then transfers that information to IC1101 when required. Both these ICs are powered by the +5V supply. X1101 supplies IC1101 with a basic clock frequency which controls all operating mode requirements.

When the TV is first switched on, IC1101 must be initially reset, and this is achieved by IC1101 stage. As the +5V supply begins to rise from switch on, pin 3 of Q1105 is held "Low". This is applied to pin 30 of IC1101 thus resetting the IC. Once pin 1 of Q1105 has almost reached its +5V potential, the "Low" is removed from pin 3 thus releasing the reset condition.

When the search routine has been initiated and a signal has been located, pin 14 of IC201 will become "High". This is applied to pin 34 of IC1101, and informs the IC that a signal is present. The search routine then stops, and the IC will monitor the AFC signal present at pin 15 to obtain the optimum signal.

Pins 46 and 47 control the signal system. Contrast, colour, brightness, sharpness, tint, and volume are all controlled from the remote control handset (the volume can also be adjusted by + and - buttons on the front of the TV), and will produce DC level changes from pins 3~8 of IC1101, which are then fed to the relevant pins of IC201.

Pins 31~32, 37~39, and 11 from the in and out matrix for the front control operations.

Pins 12 and 13 are the clock and data output pins. These signals are supplied to the memory IC1102.

It is supplied to pin 16 of IC201. When "High", the IC will process external inputs applied to pins 13 and 15, and when "Low", the internal signals are processed.

The handset button marked TV/VIDEO will need to be pressed. This will then produce the required "High" from pin 20 to achieve the necessary switching, as explained earlier.

The red, green and blue on-screen display signals are output from pins 50, 51 and 52. The components L1102, C1102, and C1103, on pins 28 and 29, determine the display oscillator frequency. The horizontal and vertical inputs at pins 1 and 2 determine the actual position of the on screen display.

When a command requiring an on-screen display is received by IC1101, a "High" will be output from pin 49.

This is applied to pin 21 of IC201, and blanks out a portion of the picture. The on-screen display information is then inserted into this portion, thus resulting in a clear display. When the ALARM mode has been set, and the time input has elapsed, an output is obtained from pin 45 of IC1101.

This is then applied via R1184, R1119, C1111, R1118 etc. to pins 2 and 5 of IC4501 thus causing a "Bleep" sound to be heard.

Once the "OFF" timer mode has been set, and the time input has elapsed, pins 21 and 22 of IC1101 output a "Low".

This removes the supply to the base of Q903, and as a result the +9V output of Q902 disappears. This places the TV into

its standby mode of operation by removing E.H.T. generation as explained previously.

When the "ON" time has been estimated and set, the stand command must be transmitted by the handset, to place the into its standby mode. As an indication that the standby mode is only temporary, pin 20 of IC1101 is taken "High" and "L" alternately, causing D1114 to flash on and off.

When the entered time has elapsed, the "Low" outputs from pins 21 and 22 of IC1101 are removed, and the TV will return normal operation.

Spatializer® sound selection are controlled from the remote control handset. Once the spatializer button is pressed, the Spatializer control from pin 40 of IC1101 select the functions as below:

- Spatializer® OFF ↔ Spatializer® MONO
- Spatializer® OFF ↔ Spatializer® STEREO

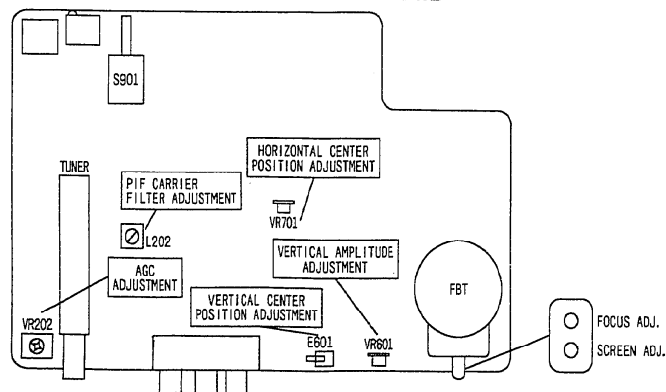
MAIN CHASSIS ADJUSTMENTS**P. I. F. Carrier filter Adjustment**

Preparations for adjustment	Adjustment Procedure	Remarks/Waveform
<p>(1) Apply the following signal across IF out and GND of tuner.</p> <div data-bbox="1265 391 1467 550"> </div> <p>SIGNAL LEVEL : -10~0dBm SIGNAL LEVEL : PHILIPS PATTERN</p>	<p>(1) Adjust L202 until a "Fast rate of charge" is seen on voltmeter. Then adjust L202 to obtain reading on voltmeter as below.</p> <div data-bbox="1534 406 1713 630"> </div>	<div data-bbox="1780 327 1982 502"> </div>
<p>(2) Connect the oscilloscope to the pin ④ of IC201.</p>		
<p>(3) Supply DC voltage as below.</p> <div data-bbox="1265 758 1467 885"> </div> <p>Delay time: More than 0.1sec.</p>		

AGC Adjustment

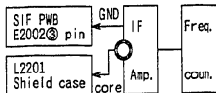
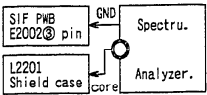
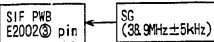
Preparations for adjustment	Adjustment Procedure	Remarks/Waveform
(1) With the signal received, apply heat run for more than two minutes to avoid the influence of circuit temperature drift.	(1) Received following channel and strength. CHANNEL : CCIR 5 STRENGTH : -47 dBm	
(2) Connect the voltmeter of at least 100k Ω internal impedance to the AGC terminal of the tuner.	Adjust VR202 until the following voltage is reached. V1—(0.5 \pm 0.2) V1:the voltage without signal	

ADJUSTMENT POINT OF MAIN PWB

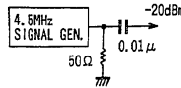


SIF PWB ADJUSTMENTS

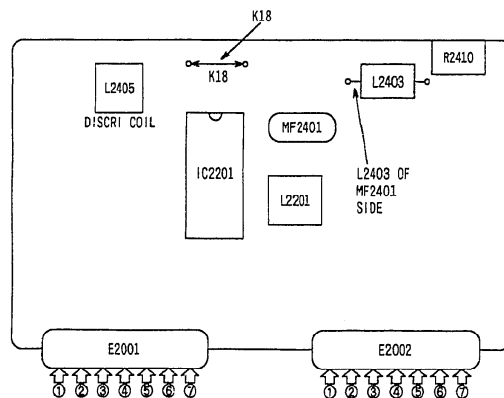
VCO Adjustment

Preparations for adjustment	Adjustment Procedure	Remarks/Waveform
<p>(1) Connect frequency counter between shield case of L2201 and E2002 ③ pin via Amp (Gain ≥ 40dB)</p> 	<p>(1) Adjust L2201 as frequency counter shows 38.9MHz ± 300kHz</p>	<p>Amp. should be amplify only 38.9MHz. To prevent VCO frequency drift, make heat run more than 10 minutes before adjustment.</p>
<p>(2) Put IC2201 ⑤ pin to GND via 100Ω.</p> <p>(3) Apply 9V to E2001 ③ pin.</p>		
<p>[Another Method]</p> <p>(1) Connect spectrum analyzer between L2201 shield case and E2002 ③ pin.</p> 	<p>(1) Adjust L2201 till the frequency difference between VCO and SG signal within ± 300kHz.</p>	
<p>(2) Put SG (38.9MHz ± 5kHz without modulation) signal to E2002 ③ pin. And increase output level till spectrum analyzer detect that level.</p> 		
<p>(3) Connects IC2201 pin ⑤ to GND via 100Ω</p> <p>(4) Apply 9V to E2001 pin ③.</p>		

DISCRI-COIL Adjustment

Preparations for adjustment	Adjustment Procedure	Remarks/Waveform
(1) Supply input signal to L2403 of MF2401 side.  (2) Connect digital voltmeter to K18. (3) Supply +9V to ③ pin of E2001.	(1) Adjust L2405 to get $4.5V \pm 0.5V$.	

ADJUSTMENT POINT OF SIF PWB



Vertical amplitude Adjustment

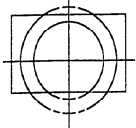
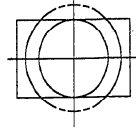
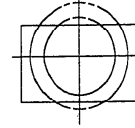
Preparations for adjustment		Adjustment Procedure	Remarks
(1) Start adjustment 5 minutes or more after the power switch is turned on. (2) Receive the PAL circle pattern signal. (3) Set the brightness and contrast VRs to maximum. (4) Place the set facing north or south.		(1) Select V. CENT select chip "U", "N" and "D" so that the center of the picture is closest to the geometrical center of the CPT. (2) Adjust VR601 as shown in Fig. 1. (3) Receive the NTSC circle pattern signal and check that the picture is the same as that when a PAL signal is received.	
Picture condition		Top shrunk, bottom expanded	
		Standard condition	
		Top expanded, bottom shrunk	
Adjustment method	Picture top	Center of inner and outer circles	
	Picture bottom	Center of inner circle	
		Inner circle	Center of inner and outer circles

Fig. 1

Horizontal center position Adjustment

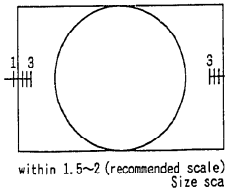
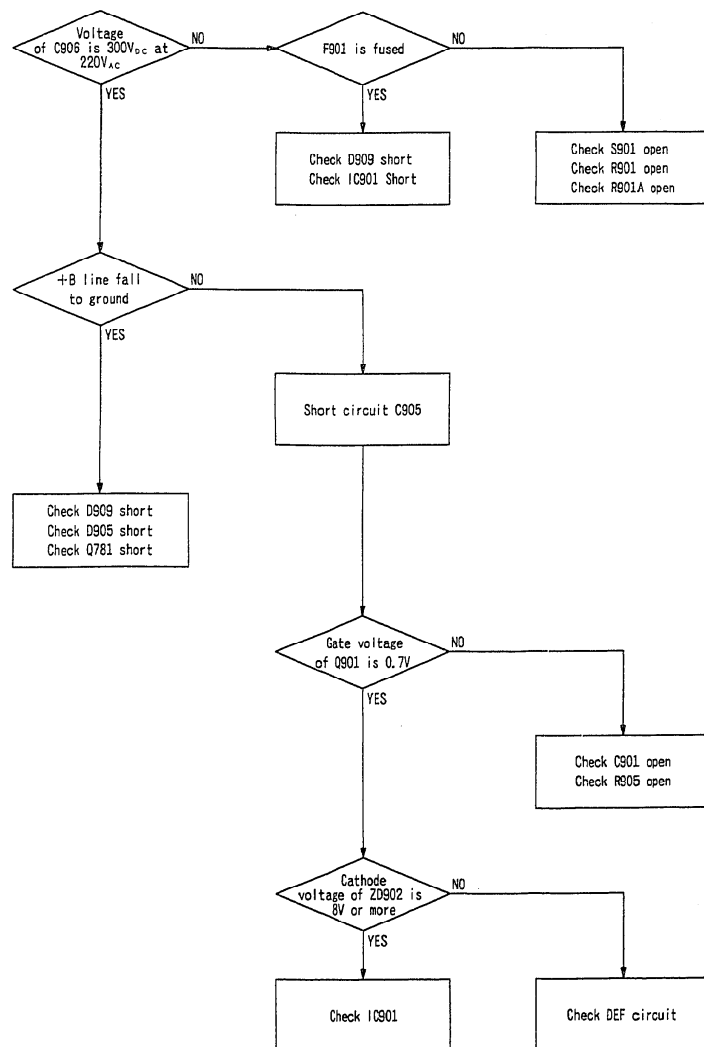
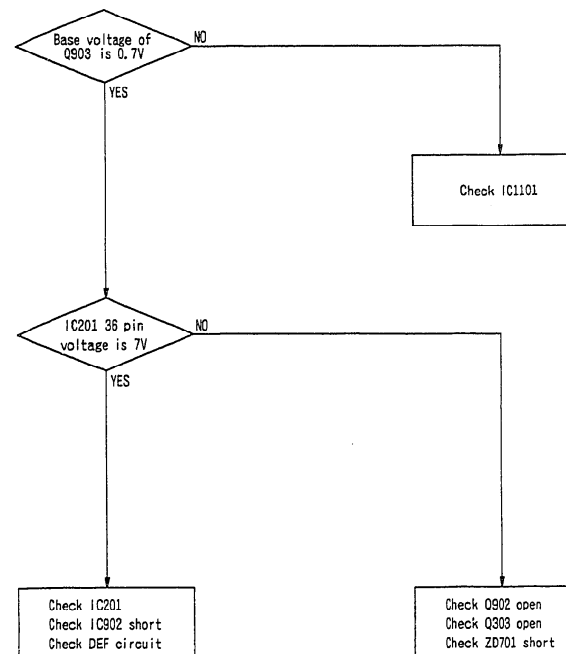
Preparations for adjustment	Adjustment Procedure	Remarks
(1) Receive the circle pattern signal. (2) Set the brightness and contrast VRs to maximum.	(1) Turn VR701 (H. Phase) and adjust so that size scales on the left and right are equal. (Refer to Fig. 2.)  within 1.5~2 (recommended scale) Size scale	<u>Picture information amount</u> The amount of information means the amount of the transmitted picture that can be displayed on the CPT screen. It is necessary to increase this amount of information as much as possible and also decrease the lack of raster as far as possible.

Fig. 2

TROUBLE SHOOTING

No +BTV SET DOES NOT GO TO ON FROM STAND-BY MODE

VOLTAGES OF CHECK POINTS

Pin No.	1	2	3	4	5	6	7	8	9
PAL	8.1	0	4.6	0	0	0	1	1.4	6
SECAM	0	8.5	4.6	4.6	0	6.7	1	1	9
NTSC	8.1	0	4.6	0	0	2	1	1.4	9

IC1101																																	
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
PAL	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16
SECAM	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16
NTSC	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16

Pin No.	33	34	25	36	17	38	29	40	41	42	43	44	45	46	48	41	48	49	50	51	52
PAL	0	0	0	0	1	0	1	1	1	1	0	0	0	0	1	0	0	1	0	0	0
SECAM	0	0	0	0	1	0	1	1	1	0	0	0	0	0	1	0	0	1	0	0	0
NTSC	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	1

Pn No.	1	2	3	4	5	6	7	8
PAL	3	5.2	0	0	0	0	5.2	5.2
SECAM	0	5.2	0	0	0	0	5.2	5.2
NTSC	0	5.2	0	0	0	0	5.2	5.2

COU	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Pal Inc.	2	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
PAL	2	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
SECAM	2	6	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
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IC4501												
Pn No.	1	2	3	4	5	6	7	8	9	10	11	12
PAL	1.5	9	14	9	9	11	12	12	9	14	12	6.5
SECAM	1.3	9	14	9	0	5.1	12	12	9	14	12	6.5
NTSC	1.5	9	14	9	9	9	9	9	9	9	9	9

IC4501												
Pn No.	1	2	3	4	5	6	7	8	9	10	11	12
PAL	4.1	2.6	4.1	4.1	0	4.8	5.3	4.8	4.1	4.1	4.1	4.1
SECAM	4.1	2.6	4.1	4.1	0	4.8	5.3	4.8	4.1	4.1	4.1	4.1
NTSC	4.1	2.6	4.1	4.1	0	4.8	5.3	4.8	4.1	4.1	4.1	4.1

NTSC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	NTSC
IC501																
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
PAL	4.8	0	0	0	0.1	0	0.2	0	4.8	0	3	3	0	1.0	0	1.
SECAM	4.8	0	0	0	0.2	0	0.2	1	4.8	0	3	3	0	1.0	0	1.
NTSC	4.8	0	0	0	0.2	0	0.2	0	4.8	0	3	3	0	1.0	0	1.

NTSC	4.8	0	0	0	0.7	0	0.7	0	4.8	0	3	3	0	1.3	0	1
IC502																
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PAL	1.7	1.7	8	0	0	0	3.3	4.1	1.5	1.5	0	0	0	0	0.7	5
SECAM	4.5	1.7	8	3	0	0	1.1	3.3	2.8	3	8	0	0	0	0	0

NTSC	1.7	1.1	A	2	4	0	1
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IC681

Pin No.	1	2	3	4	5	6	7
PAL	0	13.1	76	1.2	0	1.2	76
SECAM	0	13.1	76	1.2	0	1.2	76

Pin No.	1	2	3	4	5
PAL	0	47	5.1	45	2.1
SECAM	0	47	5.1	45	2.1
NTSC	0	47	5.1	45	2.1

Pin No.	1	2	3	4	5	6	7	8	9
PAL	4.1	2.8	4.1	4.1	0	4.8	5.1	4.8	4.1
SECAM	4.1	2.8	4.1	4.8	0	4.8	5.1	4.8	4.1

14	15	16
1.2	0	1.
1.2	0	1.
1.2	0	1.

1.2	0	1.2
14	15	16
0	0.75	5.1
6	0.75	1

8	40.7	5.1
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	%	g
1	45	2.7
2	45	2.7
3	45	2.7

G1101									G1102									G1104									G1105									G1106								
PAL			SECAM			NTSC			PAL			SECAM			NTSC			PAL			SECAM			NTSC			PAL			SECAM			NTSC											
0	C	F	R	C	F	R	C	F	R	C	F	R	C	F	R	C	F	R	C	F	R	C	F	R	C	1	2	3	1	2	3	1	2	3	B	C	E	B	C	E	B	C	E	

Q201									Q203									Q204									Q205								
PAL			SECAM			NTSC			PAL			SECAM			NTSC			PAL			SECAM			NTSC			PAL			SECAM			NTSC		
D	C	E	B	C	E	B	C	E	D	C	E	B	C	E	B	C	E	D	C	E	B	C	E	B	C	E	D	C	E	B	C	E			
1	2	3	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34			

D301									D303								
PAL			SECAM			NTSC			PAL			SECAM			NTSC		
D	C	E	D	C	E	D	C	E	D	C	E	D	C	E	D	C	E
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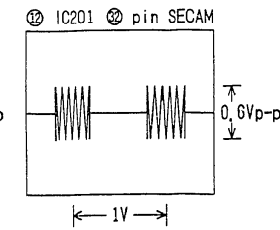
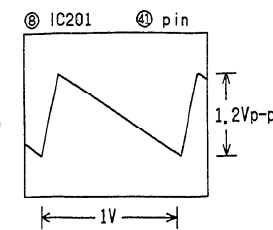
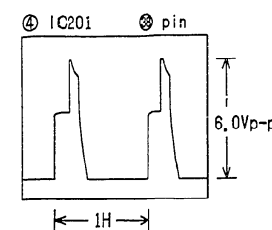
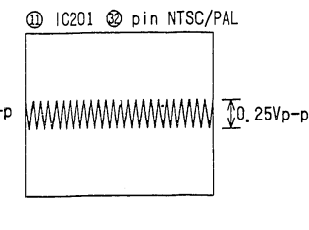
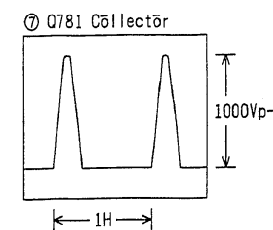
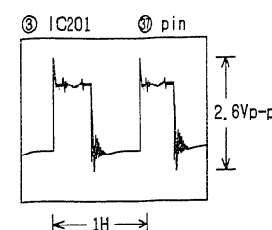
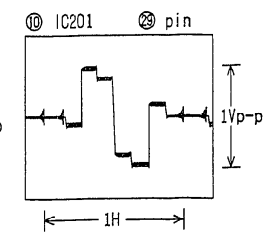
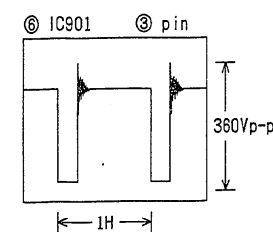
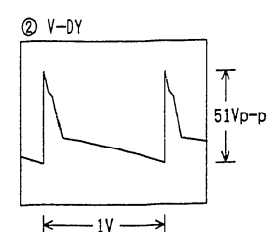
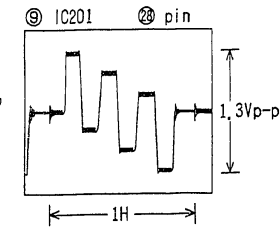
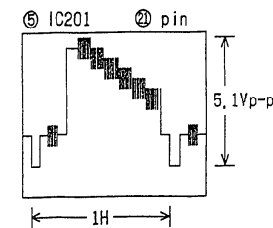
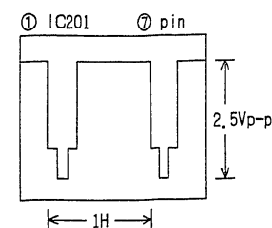
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3	1	7	9	3	1	7	9	3	1	7	9
1	7	9	3	1	7	9	3	1	7	9	3
7	9</										

Q721				Q722				Q723				Q724				Q725			
PAL	SECAM	NTSC		PAL	SECAM	NTSC		PAL	SECAM	NTSC		PAL	SECAM	NTSC		PAL	SECAM	NTSC	
B	C	E	B	C	E	B	C	B	C	E	B	C	E	B	C	B	C	E	
0.7	0.7	0.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	

[illegible]

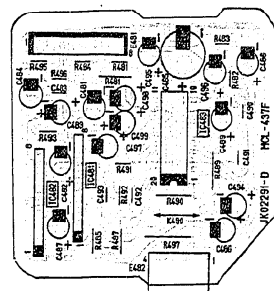
D901				D902				D903				D904				D905			
PAL	SECAM	NTSC		PAL	SECAM	NTSC		PAL	SECAM	NTSC		PAL	SECAM	NTSC		PAL	SECAM	NTSC	
K	A	G	K	A	G	K	A	C	B	E	C	B	E	C	B	E	C	B	
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	

WAVEFORMS

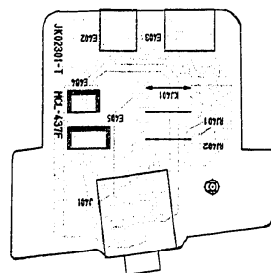


CMT2186

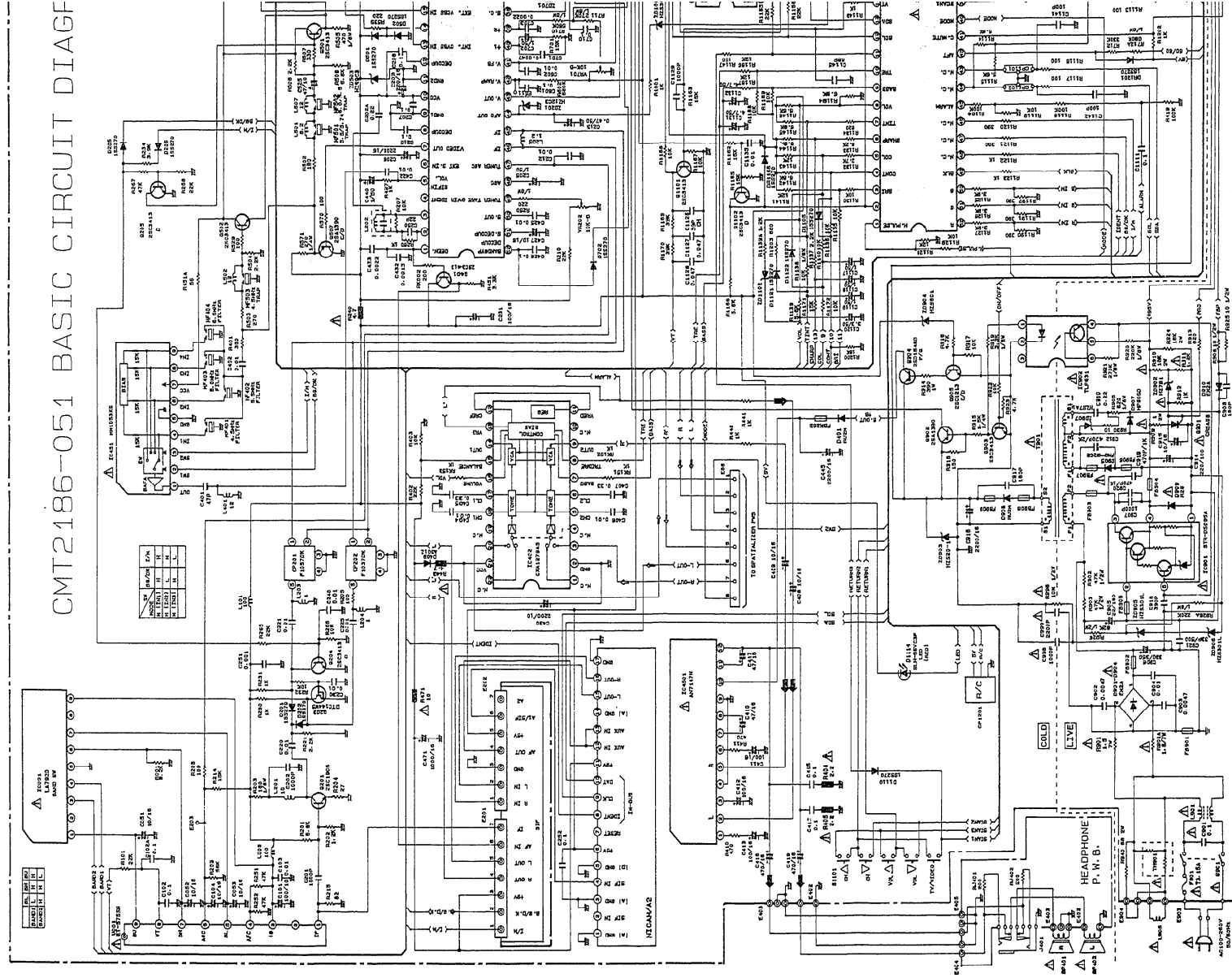
SPATIALIZER P.W.B.



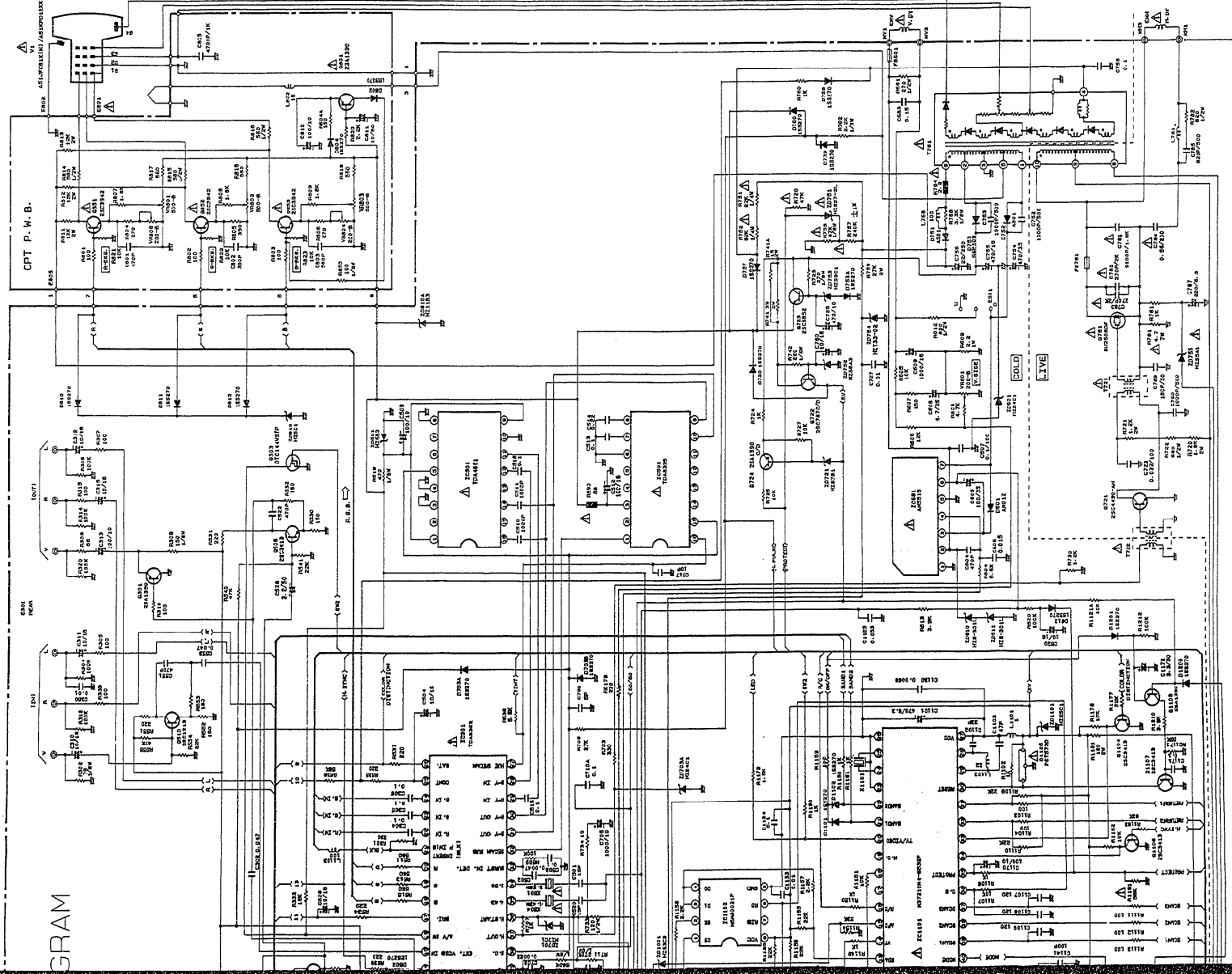
HEADPHONE P.W.B.



CMT2186-051 BASIC CIRCUIT DIAG



PRODUCT SAFETY NOTE: Components marked with a Δ and shaded have special characteristics important to safety. Read carefully these component markings and the accompanying PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



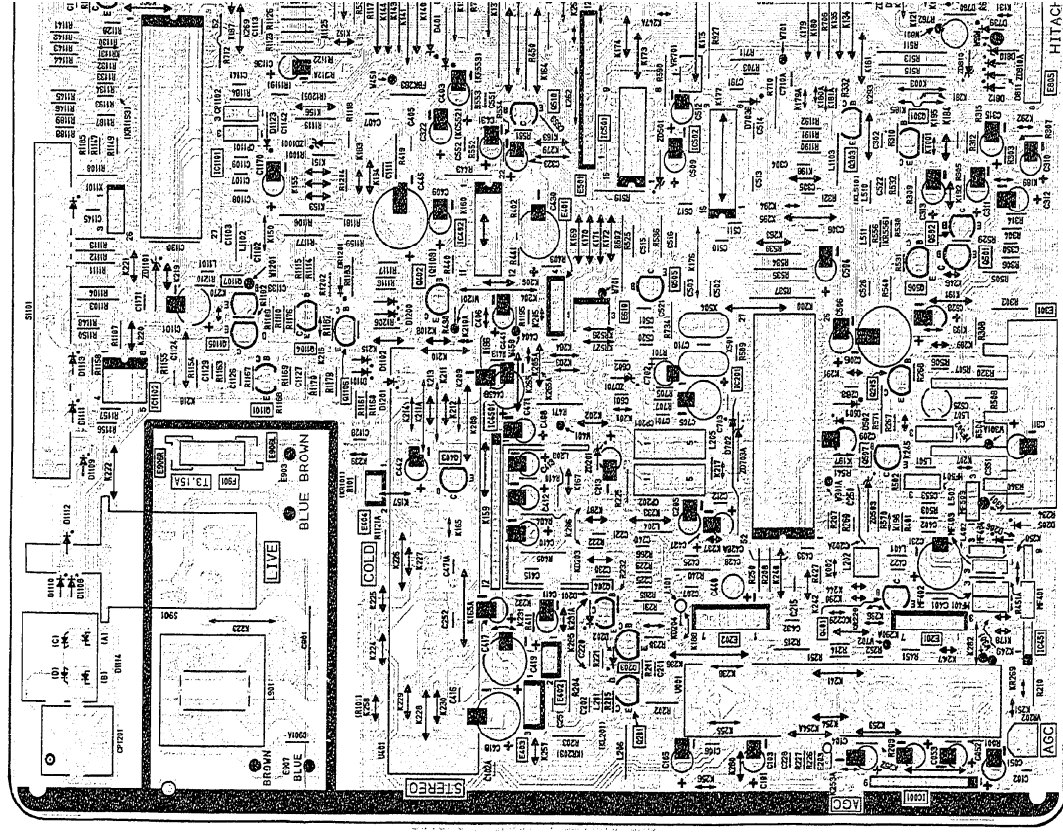
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.
- All DC voltage to be measured with a teier (100k Ω /V).

Voltage taken on a complex color bar signal including a standard color bar signal.

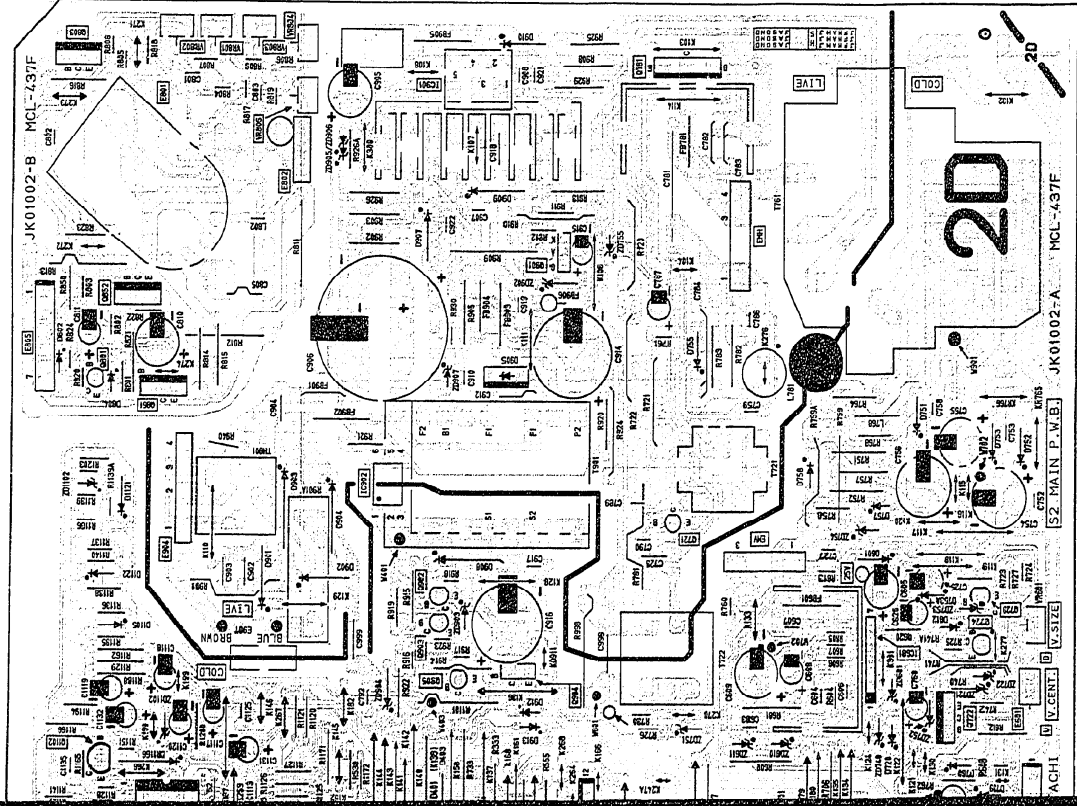
CMT2186

PRINTED WIRING BOARD

MAIN P. W. B.

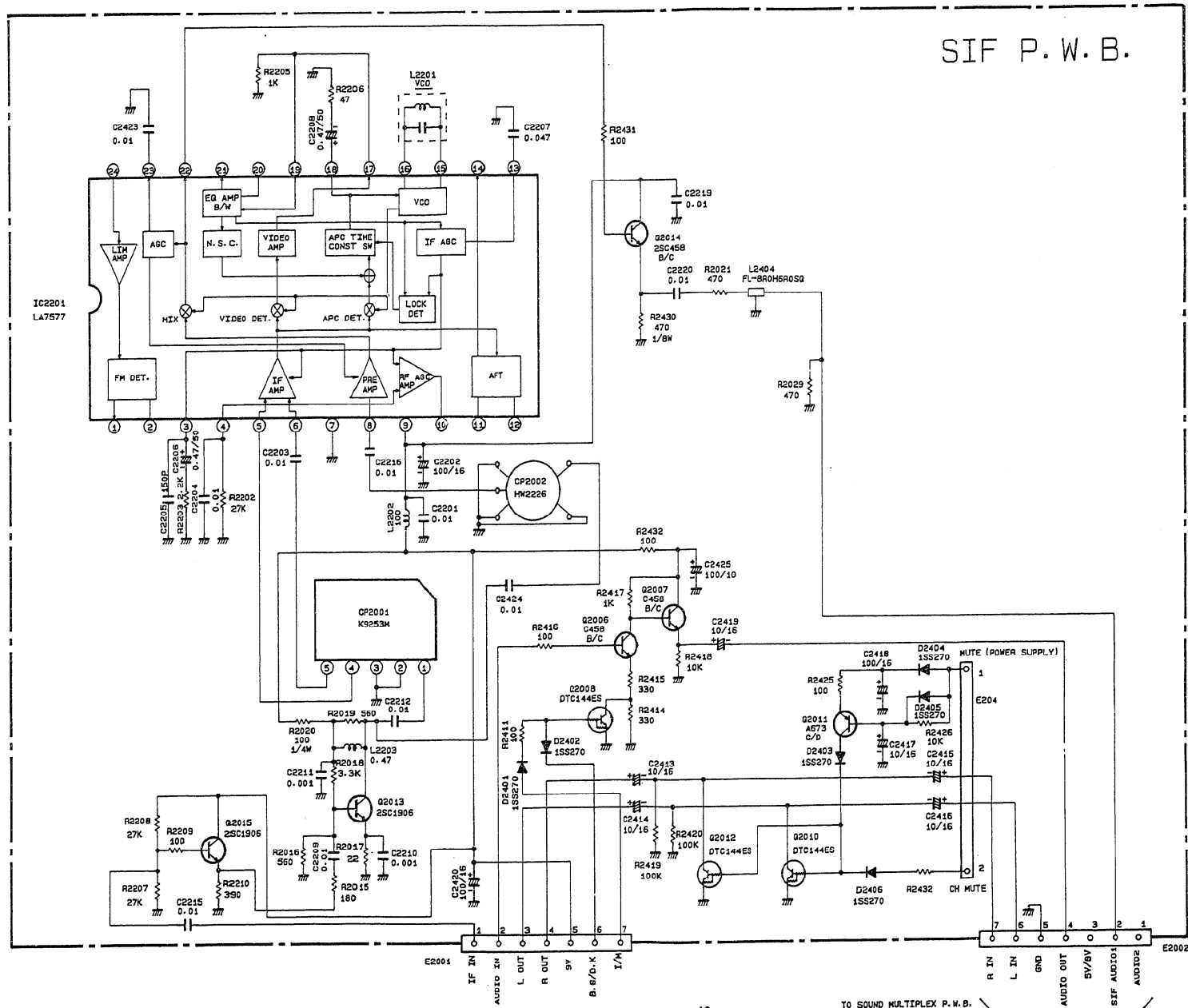


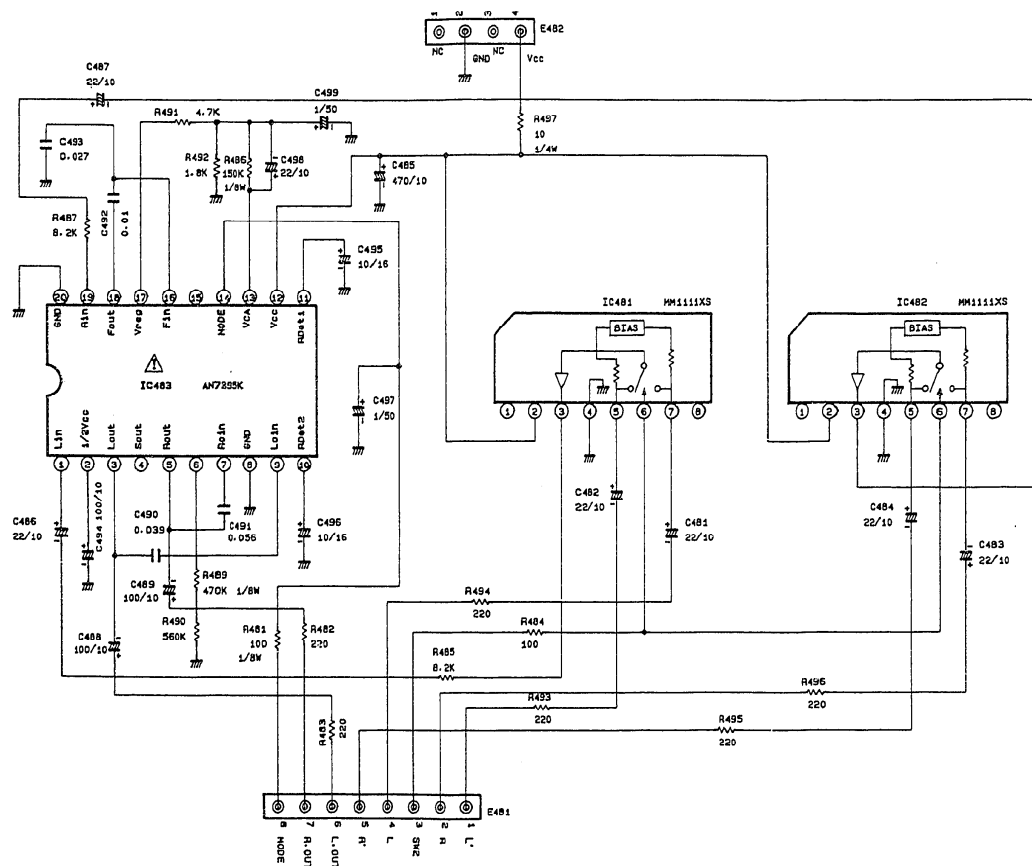
HCPST2 JK010020



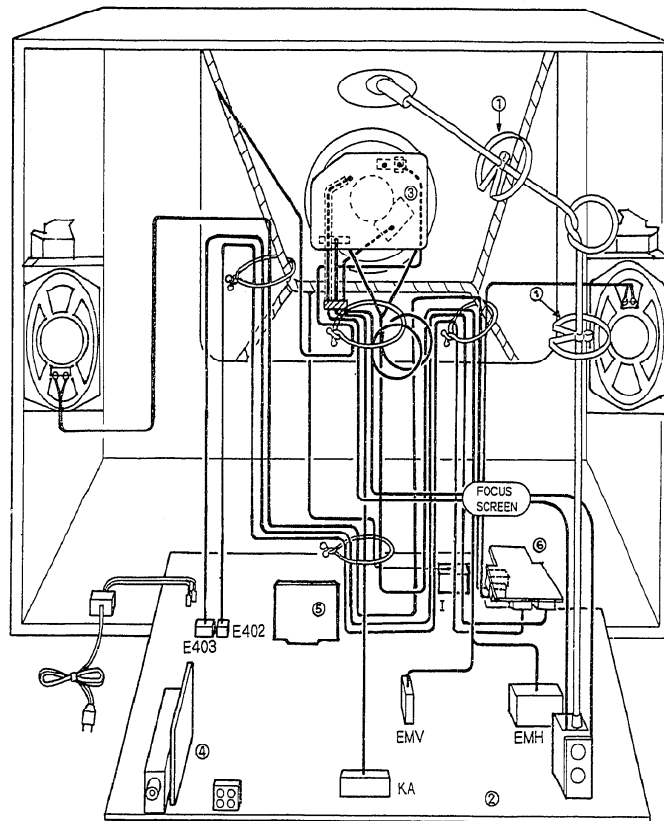
20 < MB > 19 JUNE '95

SIF P.W.B.





WIRING DIAGRAM



①	Adjust the position so that the anode lead does not touch the DY & speaker.
②	Main P.W.B.
③	CPT P.W.B.
④	SIF P.W.B.
⑤	Spatializer P.W.B.
⑥	Headphone P.W.B.

REPLACEMENT PARTS LIST

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 the receiver through improper servicing.

ABBREVIATIONS	Capacitors	CD: Ceramic Disk, PF: Polyester Film, EL: Electrolytic, PP: Polypropylene,
		PR: Paper, TA: Tantalum, TM: Trimer.
Resistors	CF: Carbon film, WW: Wire Wound, FR: Fuse Resistor, MG: Metal Glazed,	
		VR: Variable Resistor, CC: Carbon Composition, MF: Metal Oxide Film.
Semiconductors	TR: Transistor, DI: Diode, ZD: Zener Diode, VA: Varistor, TH: Thermistor.	

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C051	0800015R	EL 10MF 16V	C215	0880016R	PF 0.1MF $\pm 10\%$ 50V
C052	0800015R	EL 10MF 16V	C220	0880009R	PF 0.01MF $\pm 10\%$ 50V
C053	0800015R	EL 10MF 16V	C2201	0880009R	PF 0.01MF $\pm 10\%$ 50V
C101	0800048R	EL 100MF 10V	C2202	0800049R	EL 100MF 16V
C102	0880016R	CQ 0.1MF 50V	C2203	0880009R	PF 0.01MF $\pm 10\%$ 50V
C102A	0880016R	CQ 0.1MF 50V	C2204	0880009R	PF 0.01MF $\pm 10\%$ 50V
C103	0880009R	PF 0.01MF $\pm 10\%$ 50V	C2205	0890076R	CD 150PF $\pm 10\%$ 50V
C104	0800015R	EL 10MF 16V	C2206	0800277R	EL 0.47MF 50V
C1101	0800072R	EL 470MF 6.3V	C2207	0880014R	PF 0.047MF $\pm 10\%$ 50V
C1102	0890067R	CD 33PF $\pm 5\%$ 50V	C2208	0800003R	EL 1MF 50V
C1103	0890069R	CD 47PF $\pm 5\%$ 50V	C2209	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1107	0890075R	CD 120PF $\pm 5\%$ 50V	C221	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1108	0890075R	CD 120PF $\pm 5\%$ 50V	C2210	0890087R	CD 1000PF $\pm 10\%$ 50V
C1109	0890075R	CD 120PF $\pm 5\%$ 50V	C2211	0890087R	CD 1000PF $\pm 10\%$ 50V
C1111	0880016R	PF 0.1MF $\pm 10\%$ 50V	C2212	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1117	0800003R	EL 1MF 50V	C2215	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1118	0800003R	EL 1MF 50V	C2216	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1119	0800003R	EL 1MF 50V	C2219	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1120	0800007R	EL 3.3MF 50V	C2220	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1124	0880016R	PF 0.1 $\pm 10\%$ 50V	C225	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1125	0880013R	PF 0.033MF $\pm 10\%$ 50V	C230	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1126	0890122R	CD 39PF $\pm 5\%$ 50V	C231	0800049R	EL 100MF 16V
C1127	0880014R	PF 0.047MF $\pm 10\%$ 50V	C240	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1128	0880014R	PF 0.047MF $\pm 10\%$ 50V	C2413	0800015R	EL 10MF 16V
C1129	0880003R	PF 1000PF $\pm 10\%$ 50V	C2414	0800015R	EL 10MF 16V
C1130	0880008	PF 6800PF $\pm 10\%$ 50V	C2415	0800015R	EL 10MF 16V
C1131	0800012R	EL 4.7MF 50V	C2416	0800015R	EL 10MF 16V
C1132	0800012R	EL 4.7MF 50V	C2419	0800015R	EL 10MF 16V
C1133	0880009R	PF 0.01MF $\pm 10\%$ 50V	C2420	0800049R	EL 100MF 16V
C1135	0880009R	PF 0.01MF $\pm 10\%$ 50V	C2423	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1141	0890074R	CD 100PF $\pm 5\%$ 50V	C2424	0880009R	PF 0.01MF $\pm 10\%$ 50V
C1142	0890074R	CD 100PF $\pm 5\%$ 50V	C250	0890118R	CD 22PF $\pm 5\%$ 50V
C1145	0890072R	CD 68PF $\pm 5\%$ 50V	C251	0880003R	PF 1000PF $\pm 10\%$ 50V
C1170	0800048R	EL 100MF 10V	C252	0880016R	PF 0.1MF $\pm 10\%$ 50V
C1171	0880016	PF 0.1MF $\pm 10\%$ 50V	C302	0880014R	PF 0.047MF $\pm 10\%$ 50V
C1172	0800007R	EL 3.3MF 50V	C304	0880016R	PF 0.1MF $\pm 10\%$ 50V
C201	0890087R	CD 1000PF $\pm 10\%$ 50V	C305	0880016R	PF 0.1MF $\pm 10\%$ 50V
C202	0890087R	CD 1000PF $\pm 10\%$ 50V	C306	0880016R	PF 0.1MF $\pm 10\%$ 50V
C202A	0880062	PF 0.22MF $\pm 10\%$ 50V	C310	0800015R	EL 10MF 16V
C205	0800003	EL 1MF 50V	C311	0800015R	EL 10MF 16V
C206	0800087F	EL 2200MF 16V	C312	0800015R	EL 10MF 16V
C207	0880016R	PF 0.1MF $\pm 10\%$ 50V	C313	0800048R	EL 100MF 10V
C208	0880016R	PF 0.1MF $\pm 10\%$ 50V	C315	0800015R	EL 10MF 16V
C209	0800058R	EL 220MF 16V	C350	0880009R	PF 0.01MF $\pm 10\%$ 50V
C212	0880009R	PF 0.01MF $\pm 10\%$ 50V	C401	0890089R	CD 47PF $\pm 5\%$ 50V
C213	0800001R	EL 0.47MF 50V	C402	0880009R	PF 0.01MF $\pm 10\%$ 50V

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C404	0880009R	PF 0.01MF $\pm 10\%$ 50V	C516	0880016R	PF 0.1MF $\pm 10\%$ 50V
C405	0880019R	PF 0.33MF $\pm 10\%$ 50V	C517	0890061R	CD 10PF $\pm 0.5\%$ 50V
C406	0880009R	PF 0.01MF $\pm 10\%$ 50V	C520	0890116R	CD 15PF $\pm 5\%$ 50V
C407	0880019R	PF 0.33MF $\pm 10\%$ 50V	C522	0890083R	CD 470PF $\pm 10\%$ 50V
C408	0800015R	EL 10MF 16V	C525	0284668R	EL 47MF 10V (HCPS)
C409	0800015R	EL 10MF 16V	C528	0800005R	EL 2.2MF 50V
C410	0800041R	EL 47MF 16V	C551	0890083R	CD 470PF $\pm 10\%$ 50V
C411	0800049R	EL 100MF 16V	C552	0880016R	PF 0.1MF $\pm 10\%$ 50V
C412	0800049R	EL 100MF 16V	C553	0880014	PF 0.047MF $\pm 10\%$ 50V
C413	0800049R	EL 100MF 16V	C601	0880016R	PF 0.1MF $\pm 10\%$ 50V
C415	0880016R	PF 0.1MF $\pm 10\%$ 50V	C602	0880044R	PF 0.01MF $\pm 10\%$ 50V
C416	0880016R	PF 0.1MF $\pm 10\%$ 50V	C604	0249093R	CD 470PF $\pm 5\%$ 50V
C417	0800041R	EL 47MF 16V	C605	0800052R	EL 100MF 35V
C418	0800074N	EL 470MF 16V	C606	0880011R	PF 0.015MF $\pm 10\%$ 50V
C419	0800074N	EL 470MF 16V	C607	0279693R	PF 0.1MF $\pm 10\%$ 100V
C422	0880009R	PF 0.01MF $\pm 10\%$ 50V	C608	0800009R	EL 4.7MF 25V
C425	0880009R	PF 0.01MF $\pm 10\%$ 50V	C609	0800082F	EL 1000MF 16V
C427	0800015R	EL 10MF 16V	C620	0800015R	EL 10MF 16V
C428	0880016R	PF 0.1MF $\pm 10\%$ 50V	C683	0880017R	PF 0.15MF $\pm 10\%$ 50V
C430	0800366N	EL 2200MF 10V	C701	0880007R	PF 4700PF $\pm 10\%$ 50V
C432	0880004R	PF 1500PF $\pm 10\%$ 50V	C702	0800003R	EL 1MF 50V
C433	0880005R	PF 2200PF $\pm 10\%$ 50V	C703	0880005R	PF 2200PF $\pm 10\%$ 50V
C440	0284623R	EL 1MF 50V	C705	0800081F	EL 1000MF 10V
C445	0800082F	EL 1000MF 16V	C710	0880016R	PF 0.1MF $\pm 10\%$ 50V
C471	0800359R	EL 1000MF 10V	C710A	08800057R	PF 0.1MF $\pm 10\%$ 50V
C481	0800022R	EL 22MF 10V	C723	0279851F	PF 0.022MF $\pm 10\%$ 100V
C482	0800022R	EL 22MF 10V	C725	0800352R	EL 470MF 10V
C483	0800022R	EL 22MF 10V	C727	0880009R	PF 0.01MF $\pm 10\%$ 50V
C484	0800022R	EL 22MF 10V	C752	0244501R	CD 1000PF $\pm 10\%$ 500V
C485	0800073R	EL 470MF 10V	C753	0244501R	CD 1000PF $\pm 10\%$ 500V
C486	0800022R	EL 22MF 10V	C754	0800076F	EL 470MF 35V
C487	0800022R	EL 22MF 10V	C755	0800074N	EL 470MF 16V
C488	0800048R	EL 100MF 10V	C756	0253973F	EL 22MF 250V
C489	0800048R	EL 100MF 10V	C758	0880016R	PF 0.1MF $\pm 10\%$ 50V
C490	0880052R	PF 0.039MF 50V	C760	0800015R	EL 10MF 16V
C491	0880054R	PF 0.056MF 50V	Δ C781	0252426F	PP 9100PF $\pm 5\%$ 1.8KV
C492	0880044R	PF 0.01MF 50V	Δ C782	0244717R	CD 270PF $\pm 10\%$ 2KV
C493	0880049R	PF 0.027MF 50V	Δ C783	0244717R	CD 270PF $\pm 10\%$ 2KV
C494	0800048R	EL 100MF 10V	Δ C784	0262801F	PP 0.56MF $\pm 5\%$ 200V
C495	0800015R	EL 10MF 16V	C786	0243512R	CD 820PF $\pm 10\%$ 500V
C496	0800015R	EL 10MF 16V	C787	0800056R	EL 220MF 6.3V
C497	0800003R	EL 1MF 50V	C789	0890077R	CD 180PF $\pm 10\%$ 50V
C498	0800022R	EL 22MF 10V	C790	0244501R	CD 1000PF $\pm 10\%$ 500V
C499	0800003R	EL 1MF 50V	C791	0890055R	CD 5PF $\pm 0.25\%$ 50V
C501	0890116R	CD 15PF $\pm 5\%$ 50V	C801	0890083R	CD 470PF $\pm 10\%$ 50V
C502	0890007R	PF 4700PF $\pm 10\%$ 50V	C802	0890082R	CD 390PF $\pm 10\%$ 50V
C503	0880016R	PF 0.1MF $\pm 10\%$ 50V	C803	0890084R	CD 560PF $\pm 10\%$ 50V
C504	0800015R	EL 10MF 16V	C805	0245612F	CD 4700PF $\pm 10\%$ 1KV
C506	0800015	EL 10MF 16V	C810	0800048R	EL 100MF 10V
C509	0800048R	EL 100MF 10V	C811	0800018R	EL 10MF 50V
C510	0890087R	CD 1000PF $\pm 10\%$ 50V	Δ C901	0279697F	PF 0.1MF 250V
C511	0890087R	CD 1000PF $\pm 10\%$ 50V	C902	0248593F	CD 4700PF $\pm 80-20\%$ 250V
C512	0800049R	EL 100MF 16V	C903	0248593F	CD 4700PF $\pm 80-20\%$ 250V
C513	0880016R	PF 0.1MF $\pm 10\%$ 50V	C904	0248594F	CD 0.01MF $\pm 80-20\%$ 250V
C514	0880018R	PF 0.22MF $\pm 10\%$ 50V	C905	0255507F	EL 22MF 160V
C515	0880016R	PF 0.1MF $\pm 10\%$ 50V	C906	0284511	EL 330MF 50V

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C907	0245608R	CD 1000PF $\pm 10\%$ 1000V	R1134	0700039M	CF 820 OHM $\pm 5\%$ 1/16W
C908	0243504R	CD 180PF $\pm 10\%$ 500V	R1135	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
C910	0880062R	PF 0.22MF $\pm 10\%$ 50V	R1136	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
C912	0244721R	CD 470PF $\pm 10\%$ 2KV	R1137	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W
C914	0258129R	EL 220MF $\pm 20\%$ 100V	R1138	0100089M	CF 10K OHM $\pm 5\%$ 1/8W
C915	0800015R	EL 10MF 16V	R1139	0700051M	CF 5.6 OHM $\pm 5\%$ 1/16W
C916	0800087R	EL 220MF 16V	R1139A	0700042M	CF 1.2K OHM $\pm 5\%$ 1/16W
C917	0243504R	CD 180PF $\pm 10\%$ 500V	R1140	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
C918	0890029R	CD 390PF $\pm 10\%$ 50V	R1141	0700055M	CF 12K OHM $\pm 5\%$ 1/16W
C919	0245605R	CD 470PF $\pm 10\%$ 1KV	R1142	0700052M	CF 6.8K OHM $\pm 5\%$ 1/16W
C920	0245605R	CD 470PF $\pm 10\%$ 1KV	R1143	0700055M	CF 12K OHM $\pm 5\%$ 1/16W
C921	0247842R	CD 33PF $\pm 5\%$ 500V	R1144	0700052M	CF 6.8K OHM $\pm 5\%$ 1/16W
Δ C998	0249498R	CD 1000PF 4000V	R1145	0700052M	CF 6.8K OHM $\pm 5\%$ 1/16W
Δ C999	0247974R	CD 2200PF $\pm 80-200$ 400V	R1146	0700051M	CF 5.6K OHM $\pm 5\%$ 1/16W
RC1171	0700064M	CF 56K OHM $\pm 5\%$ 1/16W	R1147	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
RJ401	0113733M	CF 220 OHM $\pm 5\%$ 1/2W	R1148	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
RJ402	0113733M	CF 220 OHM $\pm 5\%$ 1/2W	R1149	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
RK002	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	R1150	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
RK151	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1151	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
RK153	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1154	0700061M	CF 33K OHM $\pm 5\%$ 1/16W
RK155	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1155	0700058M	CF 22K OHM $\pm 5\%$ 1/16W
RK179	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	R1156	0700058M	CF 22K OHM $\pm 5\%$ 1/16W
RO01	0700053M	CF 8.2K OHM $\pm 5\%$ 1/16W	R1157	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W
R1001	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1158	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W
R101	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R1159	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R1101	0110223S	MF 120 OHM $\pm 5\%$ 2W	R1160	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R1102	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1161	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R1103	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1162	0700056M	CF 15K OHM $\pm 5\%$ 1/16W
R1104	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1163	0700056M	CF 15K OHM $\pm 5\%$ 1/16W
R1106	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1165	0700058M	CF 15K OHM $\pm 5\%$ 1/16W
R1107	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R1166	0700051M	CF 5.6K OHM $\pm 5\%$ 1/16W
R1108	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R1167	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1109	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R1168	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1110	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R1169	0700062M	CF 39K OHM $\pm 5\%$ 1/16W
R1111	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1170	0700062M	CF 39K OHM $\pm 5\%$ 1/16W
R1112	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1171	0700056M	CF 15K OHM $\pm 5\%$ 1/16W
R1113	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1172	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1114	0700051M	CF 5.6K OHM $\pm 5\%$ 1/16W	R1176	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1115	0700051M	CF 5.6K OHM $\pm 5\%$ 1/16W	R1177	0700058M	CF 22K OHM $\pm 5\%$ 1/16W
R1116	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1179	0700043M	CF 1.5K OHM $\pm 5\%$ 1/16W
R1117	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R1180	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R1118	0700067M	CF 100K OHM $\pm 5\%$ 1/16W	Δ R1181	0700064M	CF 56K OHM $\pm 5\%$ 1/16W
R1119	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R1182	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1120	0700035M	CF 390 OHM $\pm 5\%$ 1/16W	R1183	0700066M	CF 82K OHM $\pm 5\%$ 1/16W
R1121	0700035M	CF 390 OHM $\pm 5\%$ 1/16W	R1184	0700067M	CF 100K OHM $\pm 5\%$ 1/16W
R1121A	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R1185	0700058M	CF 22K OHM $\pm 5\%$ 1/16W
R1122	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1186	0700055M	CF 12K OHM $\pm 5\%$ 1/16W
R1123	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R1187	0700055M	CF 12K OHM $\pm 5\%$ 1/16W
R1125	0700048M	CF 3.9K OHM $\pm 5\%$ 1/16W	R1188	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1126	0700048M	CF 3.9K OHM $\pm 5\%$ 1/16W	R1189	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R1127	0700048M	CF 3.9K OHM $\pm 5\%$ 1/16W	R1190	0700035M	CF 390 OHM $\pm 5\%$ 1/16W
R1128	0700055M	CF 12K OHM $\pm 5\%$ 1/16W	R1191	0700035M	CF 390 OHM $\pm 5\%$ 1/16W
R1129	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R1192	0700035M	CF 390 OHM $\pm 5\%$ 1/16W
R1130	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R1194	0700052M	CF 6.8K OHM $\pm 5\%$ 1/16W
R1132	0700046M	CF 2.7K OHM $\pm 5\%$ 1/16W	R1200	0700057M	CF 18K OHM $\pm 5\%$ 1/16W
R1133	0700053M	CF 8.2K OHM $\pm 5\%$ 1/16W	R1202	0700041M	CF 1K OHM $\pm 5\%$ 1/16W

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R1203	0700038M	CF 680 OHM $\pm 5\%$ 1/16W	R305	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R1210	0700048M	CF 3.9K OHM $\pm 5\%$ 1/16W	R306	0700067M	CF 100K OHM $\pm 5\%$ 1/16W
R1212	0700067M	CF 100K OHM $\pm 5\%$ 1/16W	R307	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R201	0700052M	CF 6.8K OHM $\pm 5\%$ 1/16W	R308	0700025M	CF 68 OHM $\pm 5\%$ 1/16W
R2015	0700031M	CF 180 OHM $\pm 5\%$ 1/16W	R309	0100045M	CF 150 OHM $\pm 5\%$ 1/8W
R2016	0700037M	CF 560 OHM $\pm 5\%$ 1/16W	R310	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R2017	0700018M	CF 22 OHM $\pm 5\%$ 1/16W	R312	0700067M	CF 100K OHM $\pm 5\%$ 1/16W
R2018	0700047M	CF 3.3K OHM $\pm 5\%$ 1/16W	R314	0700067M	CF 100K OHM $\pm 5\%$ 1/16W
R2019	0700037M	CF 560 OHM $\pm 5\%$ 1/16W	R315	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R202	0700042M	CF 1.2K OHM $\pm 5\%$ 1/16W	R320	0700067M	CF 100K OHM $\pm 5\%$ 1/16W
R2020	0114131M	CF 100 OHM $\pm 5\%$ 1/4W	R321	0700034M	CF 330 OHM $\pm 5\%$ 1/16W
R2021	0700036M	CF 470 OHM $\pm 5\%$ 1/16W	R332	0700057M	CF 18K OHM $\pm 5\%$ 1/16W
R2029	0700036M	CF 470 OHM $\pm 5\%$ 1/16W	R333	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R203	0100047M	CF 180 OHM $\pm 5\%$ 1/8W	R401	0700035M	CF 390 OHM $\pm 5\%$ 1/16W
R204	0700019M	CF 27 OHM $\pm 5\%$ 1/16W	R402	0700058M	CF 22K OHM $\pm 5\%$ 1/16W
R207	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R403	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R208	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	Δ R404	0119505S	FR 2.2 OHM $\pm 5\%$ 1/4W
R209	0700064M	CF 56K OHM $\pm 5\%$ 1/16W	Δ R405	0119505S	FR 2.2 OHM $\pm 5\%$ 1/4W
R210	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R410	0700036M	CF 470 OHM $\pm 5\%$ 1/16W
R214	0700055M	CF 15K OHM $\pm 5\%$ 1/16W	R411	0700036M	CF 470 OHM $\pm 5\%$ 1/16W
R215	0700026M	CF 82 OHM $\pm 5\%$ 1/16W	R419	0700057M	CF 100K OHM $\pm 5\%$ 1/16W
R2202	0700059M	CF 27K OHM $\pm 5\%$ 1/16W	R427	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R2203	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W	R440	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R2205	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R441	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R2206	0700023M	CF 47 OHM $\pm 5\%$ 1/16W	Δ R443	0119687S	FR 4.7 OHM ± 0.5 1/4W
R2207	0700059M	CF 27K OHM $\pm 5\%$ 1/16W	R451	0700047M	CF 3.3K OHM $\pm 5\%$ 1/16W
R2208	0700059M	CF 27K OHM $\pm 5\%$ 1/16W	R451A	0100035M	CF 56 OHM $\pm 5\%$ 1/8W
R2209	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	Δ R471	0119514G	FR 10 OHM $\pm 5\%$ 1/4W
R221	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W	R481	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R2210	0700035M	CF 390 OHM $\pm 5\%$ 1/16W	R482	0700032M	CF 220 OHM $\pm 5\%$ 1/16W
R225	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R483	0700032M	CF 220 OHM $\pm 5\%$ 1/16W
R230	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R484	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R231	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R485	0700053M	CF 8.2K OHM $\pm 5\%$ 1/16W
R232	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R486	0100117M	CF 150K OHM $\pm 5\%$ 1/16W
R234	0700048M	CF 3.9K OHM $\pm 5\%$ 1/16W	R487	0700053M	CF 8.2K OHM $\pm 5\%$ 1/16W
Δ R240	0119587G	FR 4.7 OHM $\pm 5\%$ 1/4W	R489	0100129M	CF 470K OHM $\pm 5\%$ 1/8W
R2411	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R490	0100131M	CF 560K OHM $\pm 5\%$ 1/8W
R2414	0700034M	CF 330 OHM $\pm 5\%$ 1/16W	R491	0700049M	CF 4.7K OHM $\pm 5\%$ 1/16W
R2415	0700034M	CF 330 OHM $\pm 5\%$ 1/16W	R492	0700044M	CF 1.8K OHM $\pm 5\%$ 1/16W
R2416	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R493	0700032M	CF 220 OHM $\pm 5\%$ 1/16W
R2417	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R494	0700032M	CF 220 OHM $\pm 5\%$ 1/16W
R2418	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R495	0700032M	CF 220 OHM $\pm 5\%$ 1/16W
R2419	0700067M	CF 100K OHM $\pm 5\%$ 1/16W	R496	0700032M	CF 220 OHM $\pm 5\%$ 1/16W
R2420	0700067M	CF 100K OHM $\pm 5\%$ 1/16W	R497	0119514S	FR 10 OHM $\pm 5\%$ 1/4W
R2430	0100057M	CF 470 OHM $\pm 5\%$ 1/8W	R502	0700031M	CF 180 OHM $\pm 5\%$ 1/16W
R2431	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R503	0700033M	CF 270 OHM $\pm 5\%$ 1/16W
R250	0100049M	CF 220 OHM $\pm 5\%$ 1/8W	R504	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W
R251	0700063M	CF 47K OHM $\pm 5\%$ 1/16W	R505	0100057M	CF 470 OHM $\pm 5\%$ 1/8W
R252	0700063M	CF 47K OHM $\pm 5\%$ 1/16W	R506	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W
R260	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R507	0700034M	CF 330 OHM $\pm 5\%$ 1/16W
R265	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R508	0700052M	CF 6.8K OHM $\pm 5\%$ 1/16W
R266	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R509	0700067M	CF 100K OHM $\pm 5\%$ 1/16W
R267	0700063M	CF 47K OHM $\pm 5\%$ 1/16W	R511	0700037M	CF 560 OHM $\pm 5\%$ 1/16W
R268	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R513	0700037M	CF 560 OHM $\pm 5\%$ 1/16W
R302	0100038M	CF 75 OHM $\pm 5\%$ 1/8W	R515	0700037M	CF 560 OHM $\pm 5\%$ 1/16W
R304	0700067M	CF 100K OHM $\pm 5\%$ 1/16W	R519	0100057M	CF 470 OHM $\pm 5\%$ 1/8W

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R529	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	Δ R758	0119647M	MF 47K OHM $\pm 1\%$ 1/8W
R530	0700029M	CF 150 OHM $\pm 5\%$ 1/16W	R759	0110279M	MF 27K OHM $\pm 5\%$ 2W
R531	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	R760	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R532	0700031M	CF 180 OHM $\pm 5\%$ 1/16W	R761	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R534	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	R762	0100073M	CF 2.2K OHM $\pm 5\%$ 1/8W
R535	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	Δ R764	0119505S	FR 2.2 OHM $\pm 5\%$ 1/4W
R536	0700051M	CF 5.6K OHM $\pm 5\%$ 1/16W	R768	0100077M	CF 3.3K OHM $\pm 5\%$ 1/8W
R537	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	Δ R781	0147626M	WW 4.7K OHM $\pm 10\%$ 7W
R538	0700064M	CF 56K OHM $\pm 5\%$ 1/16W	R782	0113748M	CF 820 OHM $\pm 5\%$ 1/2W
R539	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	R801	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R540	0700063M	CF 47K OHM $\pm 5\%$ 1/16W	R802	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R541	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R803	0700027M	CF 100 OHM $\pm 5\%$ 1/16W
R551	0700032M	CF 220 OHM $\pm 5\%$ 1/16W	R804	0700033M	CF 270 OHM $\pm 5\%$ 1/16W
R552	0700029M	CF 150 OHM $\pm 5\%$ 1/16W	R804A	0100047M	CF 180 OHM $\pm 5\%$ 1/8W
R553	0700031M	CF 180 OHM $\pm 5\%$ 1/16W	R805	0700035M	CF 390 OHM $\pm 5\%$ 1/16W
R554	0700058M	CF 22K OHM $\pm 5\%$ 1/16W	R806	0700033M	CF 270 OHM $\pm 5\%$ 1/16W
R555	0700063M	CF 47K OHM $\pm 5\%$ 1/16W	R807	0700044M	CF 1.8K OHM $\pm 5\%$ 1/16W
R570	0700027M	CF 100 OHM $\pm 5\%$ 1/16W	R808	0700044M	CF 1.8K OHM $\pm 5\%$ 1/16W
R571	0114141M	CF 270 OHM $\pm 5\%$ 1/4W	R809	0700044M	CF 1.8K OHM $\pm 5\%$ 1/16W
Δ R590	0119508S	FR 56 OHM $\pm 5\%$ 1/4W	R811	0110271M	MF 12K OHM $\pm 5\%$ 2W
R602	0179557M	MG 680K OHM $\pm 5\%$ 1/8W	R812	0110271M	MF 12K OHM $\pm 5\%$ 2W
R604	0700051M	CF 5.6K OHM $\pm 5\%$ 1/16W	R813	0110271M	MF 12K OHM $\pm 5\%$ 2W
R605	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R814	0113744M	CF 560 OHM $\pm 5\%$ 1/2W
R606	0700055M	CF 12K OHM $\pm 5\%$ 1/16W	R815	0113744M	CF 560 OHM $\pm 5\%$ 1/2W
R607	0700029M	CF 150 OHM $\pm 5\%$ 1/16W	R816	0113744M	CF 560 OHM $\pm 5\%$ 1/2W
R608	0700049M	CF 4.7K OHM $\pm 5\%$ 1/16W	R817	0700037M	CF 560 OHM $\pm 5\%$ 1/16W
R609	0119844M	MF 2.2 OHM $\pm 5\%$ 1W	R818	0700037M	CF 560 OHM $\pm 5\%$ 1/16W
R612	0113748M	CF 820 OHM $\pm 5\%$ 1/2W	R819	0700037M	CF 560 OHM $\pm 5\%$ 1/16W
R613	0700048M	CF 3.9K OHM $\pm 5\%$ 1/16W	R820	0700045M	CF 2.2K OHM $\pm 5\%$ 1/16W
R620	0700067M	CF 100K OHM $\pm 5\%$ 1/16W	R821	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R681	0113735M	CF 270 OHM $\pm 5\%$ 1/2W	R822	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R701	0700056M	CF 15K OHM $\pm 5\%$ 1/16W	R823	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R703	0700034M	CF 330 OHM $\pm 5\%$ 1/16W	R850	0100041M	CF 100 OHM $\pm 5\%$ 1/8W
R706	0700059M	CF 27K OHM $\pm 5\%$ 1/16W	Δ R901	0147614M	WW 1.5 OHM $\pm 10\%$ 7W
R707	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	Δ R901A	0147616M	WW 1.5 OHM $\pm 10\%$ 7W
R710	0100131M	CF 560K OHM $\pm 5\%$ 1/8W	R902	0113791M	CF 47K OHM $\pm 5\%$ 1/2W
R711	0100123M	CF 270K OHM $\pm 5\%$ 1/8W	R903	0113791M	CF 47K OHM $\pm 5\%$ 1/2W
R712	0100125M	CF 330K OHM $\pm 5\%$ 1/8W	R905	0100063M	CF 820 OHM $\pm 5\%$ 1/8W
R712A	0100133M	CF 680K OHM $\pm 5\%$ 1/8W	R908	0113701M	CF 10 OHM $\pm 5\%$ 1/2W
R720	0110251M	MF 1.8K OHM $\pm 5\%$ 2W	Δ R909	0194068F	WW 1 OHM $\pm 5\%$ 2W
R721	0110247M	MF 1.2K OHM $\pm 5\%$ 2W	Δ R910	0110275S	MF 18K OHM $\pm 5\%$ 2W
R722	0113746M	CF 680 OHM $\pm 5\%$ 1/2W	Δ R911	0700042M	CF 1.2K OHM $\pm 5\%$ 1/16W
R723	0100051M	CF 270 OHM $\pm 5\%$ 1/8W	R912	0700041M	CF 1K OHM $\pm 5\%$ 1/16W
R724	0700041M	CF 1K OHM $\pm 5\%$ 1/16W	R913	0700039M	CF 820 OHM $\pm 5\%$ 1/16W
R725	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R914	0110135S	MF 390 OHM $\pm 5\%$ 1W
Δ R726	0700063M	CF 47K OHM $\pm 5\%$ 1/16W	R915	0114165M	CF 1.5K OHM $\pm 5\%$ 1/4W
R727	0700054M	CF 10K OHM $\pm 5\%$ 1/16W	R916	0700049M	CF 4.7K OHM $\pm 5\%$ 1/16W
R730	0700042M	CF 1.2K OHM $\pm 5\%$ 1/16W	R917	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
R733	0113727M	CF 120 OHM $\pm 5\%$ 1/2W	R918	0700029M	CF 150 OHM $\pm 5\%$ 1/16W
R734	0700014M	CF 10 OHM $\pm 5\%$ 1/16W	R919	0100077M	CF 3.3K OHM $\pm 5\%$ 1/8W
R741	0110211M	MF 39 OHM $\pm 5\%$ 2W	R920	0100121M	CF 220K OHM $\pm 5\%$ 1/8W
R741A	0110201M	MF 15 OHM $\pm 5\%$ 2W	R921	0100123M	CF 270K OHM $\pm 5\%$ 1/8W
R742	0100049M	CF 220 OHM $\pm 5\%$ 1/8W	R922	0700054M	CF 10K OHM $\pm 5\%$ 1/16W
Δ R751	0114223M	CF 82K OHM $\pm 5\%$ 1/4W	R923	0700049M	CF 4.7K OHM $\pm 5\%$ 1/16W
Δ R752	0114223M	CF 82K OHM $\pm 5\%$ 1/4W	R924	0110275M	MF 18K OHM $\pm 5\%$ 2W
Δ R757	0118970M	MF 240K OHM $\pm 5\%$ 1/16W	R925	0113701M	CF 10 OHM $\pm 5\%$ 1/2W

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R926	0113797M	CF 82K OHM $\pm 5\%$ 1/2W	Q722	2323052	TR 2SD787 (D)/(E)
R926A	0100121M	CF 220K OHM $\pm 5\%$ 1/8W	Q723	2312171	TR 2SC3852
R930	0700014M	CF 10 OHM $\pm 5\%$ 1/16W	Q724	2327753	TR 2SA1390 (C)/(D)
R940	0110217M	MF 68 OHM $\pm 5\%$ 2W	Δ Q781	2315161	TR BU2508DF (HCPS)
Δ R998	0174704G	MF 10M OHM $\pm 5\%$ 1W	Δ Q801	2327754	TR 2SA1390 D
VR202	0150265	VR 10K OHM	Δ Q851	2312371	TR 2SC3942
VR601	0150109	VR 200 OHM-B RS-6	Δ Q852	2312371	TR 2SC3942
VR701	0150114	VR 10K OHM-B	Δ Q853	2312371	TR 2SC3942
VR801	0150110	VR 500 OHM-B	Δ Q901	2326631	THYRISTOR CR5AS-8
VR802	0150110	VR 500 OHM-B	Q902	2327754	TR 2SA1390 D
VR803	0150110	VR 500 OHM-B	Q903	2327773	TR 2SC3413 (C)/(D)
VR804	0150109	VR 200 OHM-B RS-6	Q904	2315933	TR 2SB1548A-P/Q (HCPS) (YOKOHAMA)
VR806	0150109	VR 200 OHM-B RS-6	Q905	2320647	TR 2SC1213
Δ IC001	2004801	IC LA7920	DR1166	2338321	DI 1SS270
Δ IC1101	CP00952	IC M37210M4 653SP	DR1201	2338321	DI 1SS270
Δ IC1102	2381112	IC M6M80021P (MEMORY)	D1101	2338321	DI 1SS270
Δ IC201	2004411	IC TDA8362 (HCPS)	D1102	2338321	DI 1SS270
Δ IC2201	2004171	IC LA7577	D1105	2338321	DI 1SS270
IC402	2004362	IC CXA1279AS	D1110	2338321	DI 1SS270
Δ IC4501	2004022	IC AN7147N (HCPS)	D1111	2338321	DI 1SS270
Δ IC451	2020601	IC MM1053XS (HCPS)	D1114	2339691	LED SLH-56VC77F
IC481	2020341	ICL-MM1111XS	D1121	2338321	DI 1SS270
IC482	2020341	ICL-MM1111XS	D1122	2338321	DI 1SS270
Δ IC483	CP01251U	IC AN7395K	D1200	2338321M	DI 1SS270
Δ IC501	2003652	IC TDA4661 (HCPS)	D1201	2338321M	DI 1SS270
Δ IC502	2004431	IC TDA8395 (HCPS)	D201	2338321M	DI 1SS270
Δ IC681	2020631	IC AN5515 (HCPS)	D202	2338321M	DI 1SS270
Δ IC901	2373372	MODULE STR-D5095A (HCPS)	D205	2338321M	DI 1SS270
Δ IC902	2004761	IC TLP631	D206	2338321M	DI 1SS270
J401	2672041	HEADPHONE JACK	D2401	2338321M	DI 1SS270
Q1101	2327773	TR 2SC3413 (C)/(D)	D2402	2338321M	DI 1SS270
Q1102	2327774M	TR 2SC3413D	D401	2333001M	DI RUZM
Q1104	2327773	TR 2SC3413 (C)/(D)	D403	2339481M	DI AS01Z 200V 0.6A
Δ Q1105	2003522	IC PST5720-2	D501	2338321M	DI 1SS270
Q1106	2327773	TR 2SC3413 (C)/(D)	D502	2338321M	DI 1SS270
Q1107	2327773M	TR 2SC3413 (C)/(D)	D601	2339491M	DI AM01Z
Q1108	2327753M	TR 2SA1390 (C)/(D)	D612	2338321M	DI 1SS270
Q2006	2320591M	TR 2SC458B/C SI 230MHZ 200MW	D702	2338321	DI 1SS270
Q2007	2320591M	TR 2SC458B/C SI 230MHZ 200MW	D703A	2338321	DIODE 1SS270
Q2008	2326872R	TR DTC114ES SI	D703B	2338321M	DIODE 1SS270
Q201	2320144	TR 2SC1906	D720	2338321M	DI 1SS270
Q2013	2320144M	TR 2SC1906	D739	2338321M	DI 1SS270
Q2014	2320591M	TR 2SC458B/C SI 230MHZ 200MW	D751	2339482M	DI AS01 (400V)
Q2015	2320144M	TR 2SC1906	D752	2339482M	DI AS01 (400V)
Q203	2326875R	TR DTC144WSTP	D753	2343941M	DI RGP10G-6038 (HCPS)
Q204	2327774M	TR 2SC3413D	D753A	2338321M	DI 1SS270
Q205	2327774M	TR 2SC3413D	D757	2338321M	DI 1SS270
Q301	2327753M	TR 2SA1390 (C)/(D)	D758	2338321M	DI 1SS270
Q303	2326875R	TR DTC144WSTP	D760	2338321M	DI 1SS270
Q401	2327773M	TR 2SC3413 (C)/(D)	D802	2338321M	DI 1SS270
Q501	2327773M	TR 2SC3413 (C)/(D)	D804	2338321	DI 1SS270
Q502	2327773M	TR 2SC3413 (C)/(D)	D810	2338321M	DI 1SS270
Q506	2327773M	TR 2SC3413 (C)/(D)	D811	2338321M	DI 1SS270
Q507	2327753M	TR 2SA1390 (C)/(D)	D812	2338321M	DI 1SS270
Q510	2320647M	TR 2SC1213 (C)/(D)	Δ D901	2342711M	DI EM2A
Q721	CF00112R	TR 2SC4490-AN	Δ D902	2342711M	DI EM2A

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
Δ D903	2342711M	DI EM2A	L202	2146114	VARIABLE COIL (HCPS)
Δ D904	2342711M	DI EM2A	L203	2123411M	AXIAL COIL (HCPS)
Δ D905	2349971	DI FMG-G2CS	L204	2123411M	AXIAL COIL (HCPS)
D907	2343961M	DI MP060D (HCPS)	L205	2123412M	LAL AXIAL COIL
D908	2333001M	DI RU2M	L206	2122253M	LA AXIAL COIL 100 MICRO H
Δ D909	2342861	DI R2G	L2201	2146116	RADIAL COIL
D910	2342711	DI EM2A	L2202	2122956M	LA AXIAL COIL 100 MICRO H $\pm 10\%$
ZD1001	2339819	ZD HZS3C3	L2203	2123407M	AXIAL COIL 0.47MH
ZD1101	2339837	ZD HZS-5C1	L2404	B100021	FL-BROH6ROSQ
ZD1102	2339812M	ZD HZS3A2	L401	2123104M	LAL AXIAL COIL 12MH KB
ZD201	2331849	ZD HZ-12 (C3)	L501	2123102M	LAL AXIAL COIL
ZD501	2331795	ZD HZ-5 (B2)	L502	2123104M	LAL AXIAL COIL 12MH KB
ZD503	2339869M	ZD HZS9C3	L507	2123104M	LAL AXIAL COIL 12MH KB
ZD601	2339827M	ZD HZS4C1	L768	2122253	LA AXIAL COIL 100 MICRO H
ZD610	2339231M	ZD HZS30-1L	L781	2164541	LINEARITY COIL
ZD611	2339231M	ZD HZS30-1L	L802	2122099	FILTER COIL 18 MICRO H
ZD701	2331817M	ZD HZ7 (C) 1 SI	Δ L901	2272391	LINE FILTER ELF-18
ZD703A	2339827M	ZD HZS4C1	Δ L905	2276002A	DEGAUSSING COIL (HCPS)
ZD721	2339854M	ZD HZS7B1	S1101	2632851	TACTO SWITCH
Δ ZD751	2339222M	ZD HZS27-2L	Δ S901	2634731	PUSH SWITCH
ZD752	2339843M	ZD HZS6A3	Δ V1	2356425	COLOR PICTURE TUBE A51JFC61X(H)
ZD753	2339867M	ZD HZS9C1	Δ U701	2444948	DEFLECTION YOKE
ZD754	2335991M	ZD HZT-33		OR	
Δ ZD755	2339831M	ZD HZS5A1-M	Δ V1	2471272	COLOR PICTURE TUBE A51KPD12XX
ZD810	2331797M	ZD HZS5C1	Δ U701	BY00411	DEFLECTION YOKE
ZD810A	2331836M	ZD HZ11B3		QD02151	FRAME ASS'Y (HCPS)
Δ ZD902	2331814M	ZD HZ7 (B) 1 SI		QD01991	BACK COVER (HCPS)
ZD903	2339921M	ZD HZS20-1		3332453	SPRING FOR KNOB
ZD904	2339847M	ZD HZS6C1		3333921	EARTH SPRING
ZD905	2339231	ZD HZS30-1L		3763751	SK BINDER
ZD906	2339231	ZD HZS30-1L		4159423	M3X12 SCREW W/WASHER
ZD907	2339851	ZD HZS7A1		4518375	SCREW
Δ T721	2260221	HORIZONTAL DRIVE TRANSFORMER		4519501	3X10 B-TIGHT TAPPING SCREW
Δ T722	2276081	H. DRIVE TRANSFORMER (HCPS)		4520883	M3X12 SCREW WITH WASHER
Δ T761	2437351	FLYBACK TRANSFORMER HFL1430M (HCPS)		8781450	3X20 TAPPING SCREW
Δ T901	2216333	SWITCHING TRANSFORMER (HCPS)		8781646B	4X16B TAPPING SCREW
Δ F901	2720402	FUSE 3.15A		8821234A	3 NUT
CP1101	2791754R	DSS306-55B101M	EMH	2665279A	4P PLUG PIN WITH BASE (UL)
CP1102	2791754R	DSS306-55B101M	EMV	2903543	3P PLUG PIN WITH BASE
CP1201	2574762	REMOTE CONTROL RECEIVER	E001	3705233	ANODE CLAMPER
CP2001	2306112	SAW FILTER K9253M (HCPS)	E002	3737101	PURSE LOCK 15
CP2002	2305861	SAW FILTER HW2226	E004	3731081	PURSE LOCK 10
CP201	2306121	SAW FILTER F10570K	E061	4615641A	WEDGE
CP202	2306122	SAW FILTER F10370K	E0701	2788084	CPT EARTH WIRE
MF401	2167311	CERAMIC FILTER 4.5MHZ	E2001	2997055	PLUG PIN TXC-P07X-A1
MF402	2167211	CERAMIC FILTER 5.5MHZ	E2002	2997055	PLUG PIN TXC-P07X-A1
MF403	2167212	CERAMIC FILTER 6.0MHZ	E2003	1ML2001	SHOULDER PIN RIVET
MF404	2167213	CERAMIC FILTER 6.5MHZ	E2005	4202823A	ET PLUG PIN
MF501	2167371	CERAMIC TRAP 5.5/5.74MHZ	E201	2997075	PLUG PIN TXC-P07P-A1
MF502	2143472	CERAMIC TRAP 6.0/6.5MHZ	E202	2997075	PLUG PIN TXC-P07P-A1
MF503	2142241	CERAMIC FILTER 4.5MHZ	E203	2774731R	FERRITE CPRE
L101	2122253F	LA AXIAL COIL 100 MICRO H	E301	2672113	6P JACK (HCPS)
L1101	2123739R	RADIAL COIL (HCPS)	E402	1EF2003	2J BOARD IN CONNECTOR WITH WIRES
L1102	2123298M	LA AXIAL COIL 22 MICRO H $\pm 10\%$	E402	2902261	2P MINI PLUG PIN WITH BASE
L1103	2122956M	LA AXIAL COIL 100 MICRO H $\pm 10\%$	E403	1EF2004	3J BOARD IN CONNECTOR WITH WIRES
L201	2123103M	LAL AXIAL COIL 10 MICRO H	E403	2902262	3P MINI PLUG PIN WITH BASE

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 the receiver through improper servicing.

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
E404	2902261	2P MINI PLUG PIN WITH BASE			
E405	2902262	3P MINI PLUG PIN WITH BASE			
E481	2902267	8P SUB MINI PLUG PIN			
E482	ED00362	CONNECTOR WITH BASE			
E501	2902272	12P EH CONNECTOR			
E601	2611361	ROTARY SWITCH (HCPS)			
E701	2776242	CF MAGNET			
E85	1EF2005	8J CONNECTOR WITH WIRES			
Δ E801	2698352	CPT SOCKET (HCPS)			
E802	2903542	2P PLUG PIN WITH BASE			
E805	2995604	8P CONNECTOR			
Δ E903	EV00071	POWER SUPPLY CORD			
E904	2661753	4P PLUG PIN WITH BASE			
E906L	2729252R	FUSE HOLDER			
E906R	2729252R	FUSE HOLDER			
E907	2995909	2J PROCESSED WIRE WITH AMPIN			
E950	3763751	SK BINDER			
FB601	2122653	FERRITE BEADS CORE			
FB781	2122653	FERRITE BEADS CORE			
FB901	2123468	FERRITE BEADS CORE LEAD 0.8			
FB902	2123468	FERRITE BEADS CORE LEAD 0.8			
FB903	2123468	FERRITE BEADS CORE LEAD 0.8			
FB904	2123468	FERRITE BEADS CORE LEAD 0.8			
FB905	2123468	FERRITE BEADS CORE LEAD 0.8			
FB906	2774731	FERRITE BEADS CORE			
FB907	2771892	FERRITE BEADS CORE 004			
FB908	2771892	FERRITE BEADS CORE 004			
FB909	2771892	FERRITE BEADS CORE 004			
FBK283	2123468	FERRITE BEADS CORE LEAD 0.8			
Δ SP401	2735343	SPEAKER BLOCK			
Δ SP402	2735343	SPEAKER BLOCK			
Δ TH901	CJ00041	TH (HCPS) (YOKOHAMA)			
Δ U001	2428334	TUNER ET-575N (HCPS)			
U1101	HL00341	REMOTE CONTROL TRANSMITTER CLE-912 (HCPS)			
U4801	2575651	NICAM/A2 UNIT			
X4801	BP00141	CERAMIC OSCILLATOR 8MHZ (HCPS)			
Δ X501	2791505	CRYSTAL			
Δ X504	2170043	CRYSTAL (HCPS)			

HITACHI

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