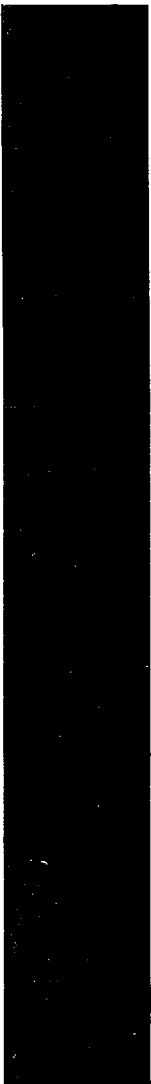


Service Manual Analog Receivers, Tuners, Integrated Amplifiers

319RA



349RA



439A



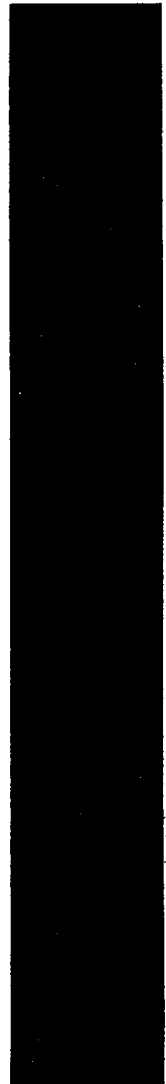
459A



528T/TL



539T/TL



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CAUTION NOTICE TO SERVICE PERSONNEL

The following safety precautions must be followed to assure continued reliability and safety against fire and shock hazard:

1. Replacement parts used during servicing of this appliance must have identical characteristics as those offered and recommended by H.H. Scott, Inc. In the interest of continued product safety we refer in particular to those safety critical components shown on the Replacement Parts List identified by the IEC Symbol "Δ".
These components must be installed as were the original components, spaced off the board and dressed away from adjacent components as applicable.
2. All soldering must be done in a professional manner using solder with resin core only.
3. All covers, shields and insulating spacers must be replaced before returning appliance to customer.
4. Damaged power supply cord must be replaced before returning appliance to customer.
5. A dielectric test consisting of 1080 volts AC is to be applied between both blades of the power supply cord attachment plug and the exposed conductive surface of the appliance for a period of not less than one second, after all covers are replaced and before the appliance is returned to the customer.
6. The dielectric test to be performed on H.H. Scott, Inc. electric components serviced in the United States and Canada for use in these countries shall consist of not less than the following:
 - 1) A dielectric tester designed to have an output voltage that (1) has a sinusoidal wave form, (2) has a frequency that is within the range of 40-70 Hz, and (3) has a peak value of the waveform that is not less than 1.3 and not more than 1.5 times the root-mean-square value.
 - 1a) The sensitivity of the test equipment shall be such that when a 120,000-ohm resistor is connected across the output, the test equipment does not indicate unacceptable performance for any output voltage less than the specified test voltage, and does indicate unacceptable performance for any output voltage equal to or greater than the specified test voltage. The calibrating resistor is to be adjusted as close to 120,000 ohms as instrumentation accuracy can provide, but not more than 120,000 ohms.
 - 2) The tester is to be connected per the instructions enclosed with the instrument, or as follows:
 - a. The tester is connected to the power line receptacle and the power switch is turned on.
 - b. Sufficient time is allowed for the tester supply to stabilize and then the output voltage is adjusted for 1080 V.
 - c. Leads of the tester, usually marked GND and HV, are connected between chassis ground and both blades of the male plug of the power cord.

*Dielectric tests made by service personnel in countries other than USA and Canada must use test equipment and procedures specified by the safety agency serving that country.

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SCOTT®

The Name to listen to.

Receivers/Tuners/Amplifiers/Turntables/Speakers/Cassette Decks

458A AMPLIFIER

Bulletin 040285

458A Amplifier filter capacitors - All units returned for service no matter what reason.

SUBJECT: Failure of one or both electrolytic capacitors (10,000mfd/63v) causing possible arcing on main PC board. Capacitor part number 1619-018-3007.

SYMPTOM:

- 1.) Dead unit due to blown line fuse.
- 2.) Failure of electrolytic resulting in AC hum.
- 3.) Evidence of heating of main PCB tracks near filter capacitors C505 and C506 and possible odor.

PROCEDURE:

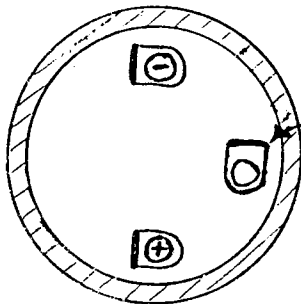
- 1.) Inspect bottom side of main PC board beneath electrolytics, particularly one nearest power transformer.
- 2.) Remove each electrolytic and locate third and inactive KEY terminal on electrolytic capacitor. This terminal was only used as a positioning or KEY terminal so that capacitor would not be mounted incorrectly and short out.

NOTE: ELECTROLYTIC CAPACITORS HAVE BEEN KNOWN TO EXPLODE IF CONNECTED WRONG.

- 3.) Break off this neutral or KEY terminal lug down close to the base of the capacitor by bending it with blunt nose pliers so that no connection will now be made to it. When capacitor is replaced, MAKE CERTAIN TO OBSERVE CORRECT POLARITY WHEN REPLACING CAPACITOR.
- 4.) Repeat above procedure for the other electrolytic capacitor observing the same precautions.
- 5.) Double check the work by observing your line current meter as the variac is advanced.

A normal warranty labor claim form should be made out for all repairs of this type, regardless of the date of sale, although a fully completed form giving all customer information will be required. Please place this Bulletin number on your warranty claim form in a conspicuous location.

If there should be a question regarding the handling or repair of any unit please contact Don Emmons, the National Service Manager, at the address below.



Neutral KEY terminal
Break off lug at bend.

10,000 MFD ELECTROLYTIC
Bottom View

SPECIFICATIONS

FM Section		319RA	349RA	528T-539T	528TL-539TL
Tuning Range		87.5-108 MHz	87.5-108 MHz	87.5-108 MHz	87.5-108 MHz
Usable Sens (IHF 300 _a)		10.8dBf/1.9 μ V	10.8dBf/1.9 μ V	10.8dBf/1.9 μ V	10.8dBf/1.9 μ V
50dB Quieting Sens					Din. 75 0.9 μ V
Mono		16.7dBf/3.8 μ V	15.0dBf	16.5dBf	16.5dBf
Stereo		37dBf/39 μ V	37dBf	37dBf	37dBf
Signal-to-Noise					
Mono		72dB	80dB	72dB	72dBf
Stereo		67dB	72dB	66dB	66dBf
					25 Hz-15 kHz
Frequency Response		30 Hz-15 kHz $\pm$ 2dB	30 Hz-15 kHz $\pm$ 0.5dB	25 Hz-15 kHz	25 Hz-15 kHz
Distortion @ 65dBf				+0.5-2.0dB	+0.5-2.0dB
	Mono	0.15%	0.1%	0.15%	0.15%
	Stereo	0.3%	0.15%	0.3%	0.3%
Capture Ratio		1.5dB	1.5dB	1.2dB	1.2dB
Alternate Channel Select		50dB	65dB	60dB	60dB
Spurious Response Ratio		78dB	78dB	65dB	65dB
Stereo Separation		45dB	45dB	45dB	45dB
Subcarrier Product Ratio		60dB		45dB	45dB
Output Voltage		—	—	750mV	750mV
AM Section					
Tuning Range (kHz)		515-1620	510-1605	150-360	150-360
				510-1605	510-1605
Usable Sensitivity		250 μ V/m	400 μ V/m	300 μ V/m	300 μ V/m
S/N Noise Ratio		45dB	55dB	52dB	52dB
Selectivity		40dB	45dB	30dB	30dB
Image Rejection		40dB	45dB	45dB	45dB
Output Voltage				250mV	250mV
Amplifier Section		319RA	349RA	439A	459A
Continuous Average Power Output		20 w/ch	40 w/ch	35 w/ch	45 w/ch
Frequency Response					
Phono R1AA 20 Hz-20 kHz		$\pm$ 0.5dB	$\pm$ 0.5dB	$\pm$ 0.5dB	$\pm$ 0.5dB
Other 20 Hz-20 kHz		$\pm$ 1.0dB	$\pm$ 0.5dB	$\pm$ 0.5dB	$\pm$ 0.5dB
Input Sensitivity					
Phono		2.5 mV	2.5 mV	2.5 mV	2.5 mV
Other		150 mV	150 mV	150 mV	150 mV
Signal-to-Noise Ratio					
(A-weighted)					
Phono		80dB	80dB	82dB	82dB
Other		95dB	100dB	100dB	100dB
Damping Factor		60	60	>55	>55
	100 Hz				
Tone Control Response	10 kHz	$\pm$ 10dB	$\pm$ 10dB	—	—
5 Band Equalizer Response		—	—	$\pm$ 12dB	$\pm$ 12dB
Filter Slope		—	—	12dB/octave	12dB/octave
Loudness Contour @ 30dB					
100 Hz		+ 7dB	+ 7dB	+ 7dB	+ 7dB
10 kHz		+ 3.5dB	+ 3.5dB	+ 3.5dB	+ 3.5dB
Maximum Input Signal Phono		180 mV	150 mV	180 mV	180 mV
(Phono Overload)					
IMD @ Rated Output		0.06%	0.06%	0.06%	0.06%
Power Requirement					
USA-Canada		120V/120W	120V/110W	120V/100W	120V/110W
Europe		—	220V	220V	220V
Dimensions W/H/D		3 1/2/17/11 inches	4 3/8/17/12 1/2 inches	3.5/17/10 3/8 inches	3 1/2/17/10 3/8 inches
Net Weight		88/430/270 mm	110/430/320 mm	88/430/263 mm	88/430/263 mm
		13 lbs., 6 kgs.	16.7 lbs., 7.6 kgs.	10.3 lbs., 4.7 kgs.	15 lbs., 6.8 kgs.

CIRCUIT DESCRIPTION

(Refer to Appropriate Circuit Diagram)

FM Front End

The FM front end consists of a tuning circuit using a three gang variable capacitor, a tuned RF amplifier, a bipolar mixer and a bipolar local oscillator. The RF amplifier is a dual gate MOSFET in which gate 2 is AC grounded, providing high RF amplification. The output of the RF amplifier is coupled to the base of the mixer stage for conversion. The local oscillator output is also coupled to the mixer base where through the heterodyne process it is converted to 10.7 MHz.

FM IF Amplifier & Quadrature Detector 319RA

Output of the FM front end is transformer coupled to the FM IF stage, composed of the 10.7 MHz transformer (T201), a ceramic filter, a transistor stage (Q201), 2 additional dual element ceramic filters (CF202 and 203) and one integrated circuit (IC201). This integrated circuit contains the limiter amplifiers, quadrature detector, AGC amplifier, mute circuits, A.F.C. circuit and audio amplifier. Within the IC, limiter output is fed directly to one quadrature input. This signal is also connected to Pin 8 where it is phase shifted by external coil L201 and reapplied to the other quadrature input at Pin 9. Two audio signals, opposite in phase, are obtained from the quadrature detector. Output of the first amplifier (pin 7) is at a DC level which varies with detuning and is used to provide the DC level shift necessary to operate the center tuning circuits. Output from the second amplifier (pin 6) is the composite audio signal which is coupled directly to the multiplex IC. The composite signal is internally muted in IC201 whenever a positive voltage is applied to pin 5. Drive for muting is supplied from pin 12 which provides a positive voltage when input to the IC is reduced to a low level.

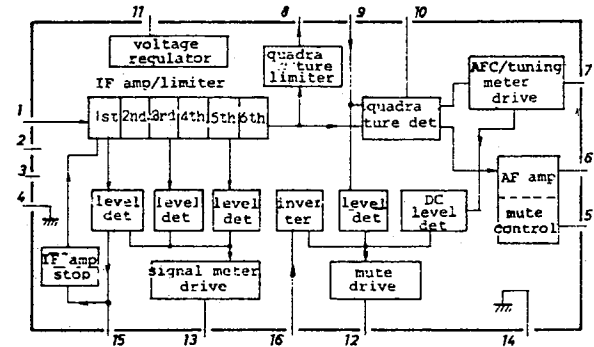
Drive for the signal strength indicator is provided at pin 13 and is coupled through diodes where it is applied to pin 10 of IC601, the LED signal strength driver.

FM IF Amplifier & Quadrature Detector 349RA & 539T/TL

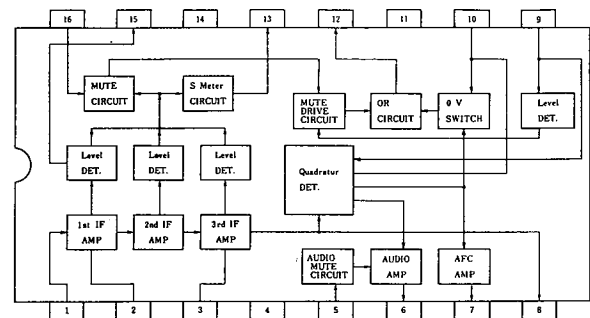
The output of the FM front end is transformer coupled to the IF amplifier circuit, composed of the 10.7 MHz transformer (T101), a transistor stage (Q104), dual element ceramic filters and one integrated circuit IC101. This integrated circuit contains the limiter amplifiers, quadrature detector, AGC amplifier, mute circuits, AFC circuit and audio amplifier. Within the IC, the limiter output is fed

directly to one quadrature input. This signal is also connected to pin 8 where it is phase shifted by the external coil L106 (L105*) and reapplied to the other quadrature input at pin 9. Two audio signals, opposite in phase, are obtained from the quadrature detector. Output of the first amplifier (pin 7) is at a DC level which varies with detuning and is used to provide the DC level shift necessary to operate the center tuning circuits. Output from the second amplifier (pin 6) is the composite audio signal which is coupled directly to the multiplex IC. The composite signal is internally muted in IC101, whenever a positive voltage is applied to pin 5. Pin 12 provides a positive voltage when the input to the IC is reduced to a low level.

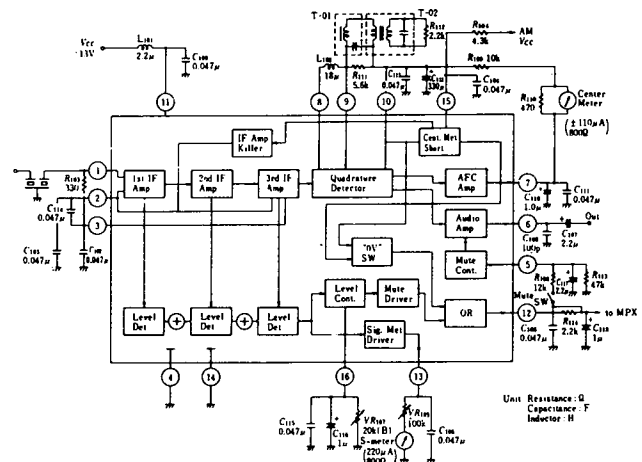
Equivalent Circuit Block Diagram



LA 123IN FM Detector 319 RA



UPC 1167C2 FM Detector 539T/TL Block Diagram



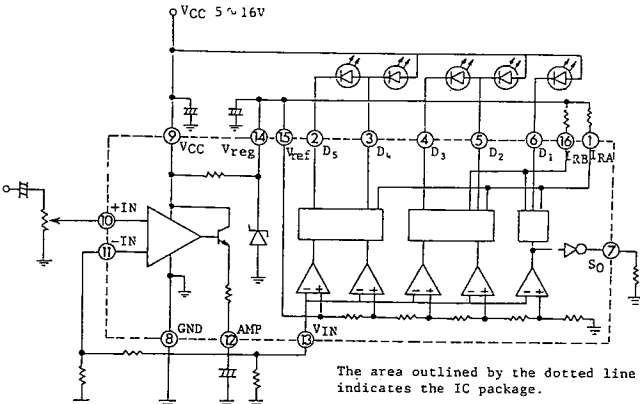
IC Type HA 12412 FM Detector 349RA Block Diagram

Center Tune Indicator

The center tune indicator is controlled by the output voltage at pin 12 of the FM detector IC. When a signal is applied to the input of the detector IC pin 12 voltage becomes more negative.

In the 319RA this negative voltage applied to the base of Q601 will cause the transistor to be turned-off thus removing the shunt across the LED.

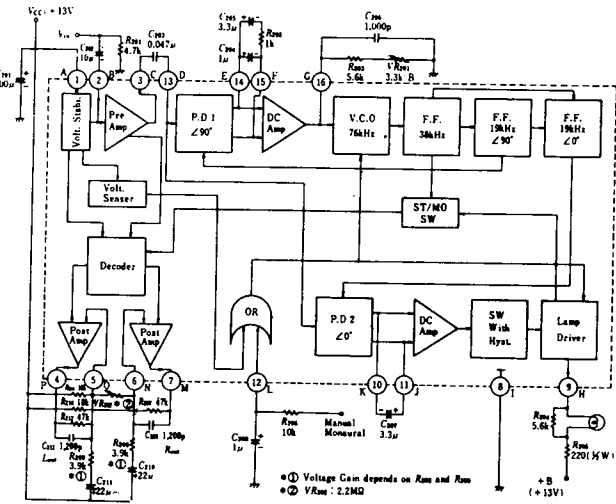
In the 349RA and 539T/TL the negative voltage applied to pin 13/9 of IC 301/501 causes the appropriate amplifier in the IC to conduct thus applying a positive voltage to the LED.



IR 2E01 Block Diagram Signal Strength IC 319RA

Signal Strength Indicator

The signal strength IC601 in the 319RA controls the turn-on points of the three LEDs, D604, D605, D606. Here the signal strength output voltage of the FM detector IC, Pin



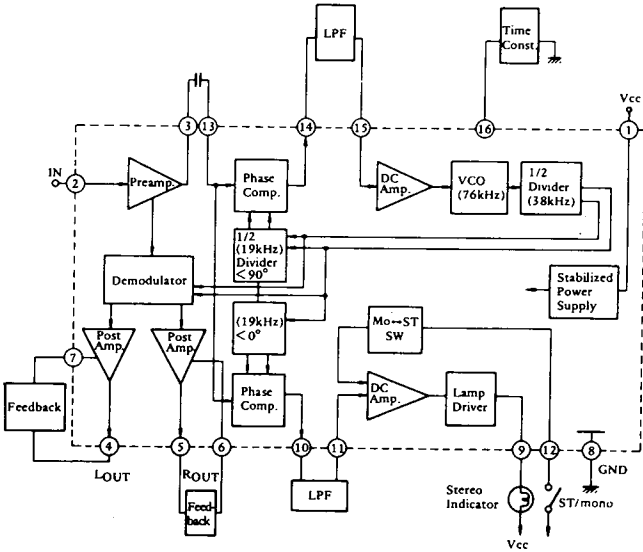
Block Diagram HA 12016

13 and the AM signal strength output voltage of the AM IC Pin 15 are connected through the tuner selector switch to Pin 10 of IC601. An increasing DC voltage, when applied to the input causes the comparators to switch on an increasing number of LEDS.

Operation of the signal strength indicator in the 349RA and 539T/TL is identical to the 319RA except for the IC types used and the comparator IC pin connections.

Multiplex Decoder

The multiplex decoder IC is functionally divided into 2 sections: the phase locked loop generator (PLL) and the stereo demodulator section. The PLL consists of a 76 kHz voltage controlled oscillator (VCO) followed by two frequency dividers, producing a 38 kHz and 19 kHz signal. The phase of this signal is compared with the phase of the incoming pilot and a difference signal is created which corrects the VCO and synchronizes the VCO to the pilot signal. Since higher order harmonics are contained in the phase difference signal, a low pass filter is used to eliminate these harmonics. A second phase comparator is used to sense when the PLL is locked to the pilot signal. The output of this comparator triggers the stereo indicator and connects the 38 kHz signal to the stereo demodulator. The demodulator circuit consists of two differential amplifiers operating as switches controlled by the phase locked 38 kHz signal and demodulate the composite incoming signal into the left and right audio outputs.



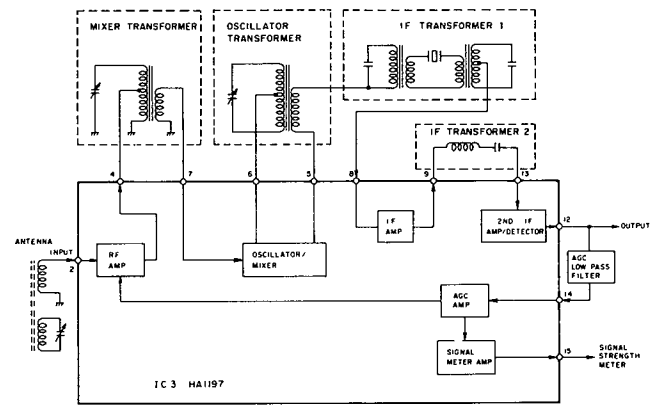
Block Diagram HA 1156/HA 12003

AM Tuner Section

The AM incoming signal received at the AM antenna enters the RF section of IC3 and is amplified and coupled to the converter stage. Here the signal is changed to the universal 455 kHz intermediate frequency.

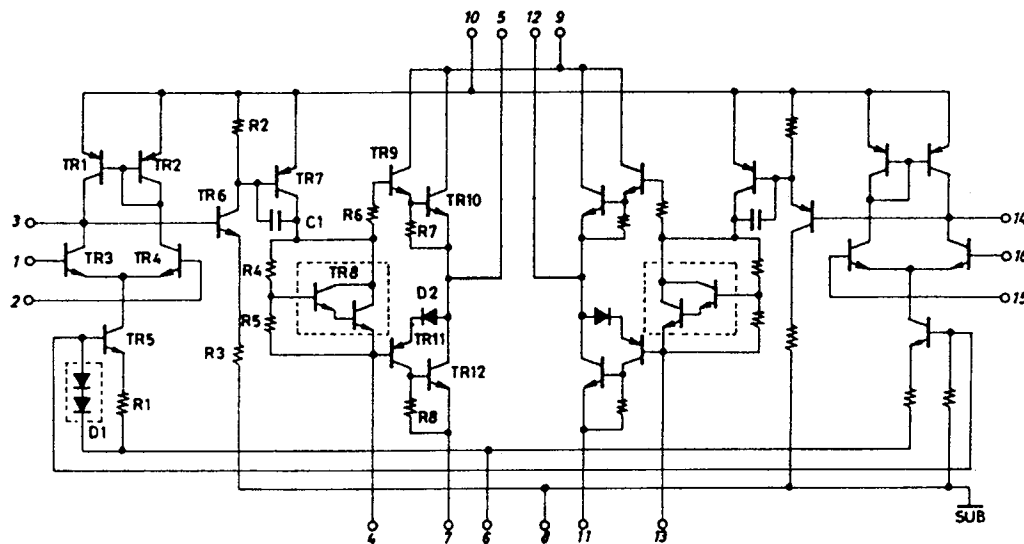
The local oscillator, operating 455 kHz above the incoming tuned signal, is achieved in the converter block in the IC with externally connected L102.

The 455 kHz signal is coupled through two stages of IF amplification, and to the detector. The detector output then appears as audio information at pin 12. This signal is then conducted through the low pass filter to further remove the 455 kHz component.

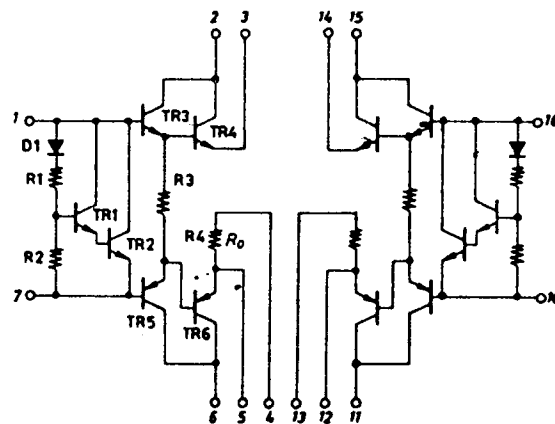


Block Diagram HA 1197

Thick Film Output IC Circuits



Equivalent Circuit 319RA
STK 4803/4833



Equivalent Circuit 349RA-459A
STK 2240/2250

CIRCUIT DESCRIPTION

AMPLIFIER SECTION 319RA

(Refer to Circuit Diagram Page 43)

Power Supply

The main power supply consists of a Tapped secondary power transformer, a full wave bridge rectifier and two 6800 mF filter capacitors connected to provide both plus and minus "B" supplies for the driver/output stages.

Power is also taken from these two supplies, filtered, and regulated for the low level audio and RF circuitry.

Phono Preamplifier

This model uses a low noise, dual operational amplifier (4558) in a negative feedback circuit which provides gain adjustment and equalization.

Gain adjustment is provided by resistors R305 and R306 while capacitors C305 and C306 provide the equalization necessary to conform to the RIAA standard curve for recorded disc reproduction.

The circuit is powered by split power supplies to provide an overload capability of not less than 150 mV at 1 kHz.

Tone Control

The tone control is a negative feedback type using the power amplifier stage as the active element, that is, the gain of the power amplifier is controlled by the tone control circuitry. At 1 kHz, the position of the tone controls has a minor effect on the gain since at this frequency the impedance of C506 and C507 is high effectively removing VR504 from the circuit; the impedance of C504 and C505 is low which short circuits VR505.

-Bass Control: With decreasing frequency below 1 kHz, the impedance of C504 and C505 increases proportionately. Thus at very low frequencies the gain is mainly determined by the position of the bass control VR505. Rotating VR505 toward C504 will boost the low frequencies, while turning it towards C505 will cut the bass response.

-Treble Control: At higher frequencies than 1 kHz, VR505 is effectively short circuited. At these frequencies however, the impedance of C506 and C507 decreases, so

that VR504 becomes the main control of the amplifier gain. Rotating VR504 towards C507 cuts and rotating toward C506 increases the treble response.

Power Amplifier

The complementary power output and driver transistors are contained within the thickfilm hybrid IC401. The idle current circuitry is in the same package thus providing very stable operation without any need of bias adjustment.

Turn-On Delay/Mute-319RA

(Refer to Schematic Diagram Page 43)

Muting of audio output for 2-3 seconds when this unit is turned ON is accomplished by transistors Q957, 958 which shunt the audio signal at the loudness control to ground. These transistors are controlled by Q954 which applies a positive voltage to each base until the R-C timing components R959 and C954 stabilize and cut-off Q954.

Turn-off muting to squelch and loudspeaker transient is controlled by transistors Q951, 952, 953 and D 952. When power is turned off, Q953 is immediately turned-off. Thus Q952 which is biased from the minus supply will conduct thereby removing the negative charge from capacitor C951. When C951 is discharged Q951 will not conduct and the negative bias voltage to IC401 will be switched off resulting in complete amplifier shut-down and cutting off Q951 which removes the negative bias voltage to IC401, results in complete amplifier shut-down.

Protection Circuit 319RA

The power output Hybrid IC is protected against excessive current when the output is shorted. In this model if a short or very low impedance load exists with a moderate to high audio signal level, sufficient voltage will be created across R960 or R963 to be rectified by D951 or 954 filtered and applied to the base of protection transistors Q955, 956 thus causing these devices to conduct, then with appropriate delay created by R-C components R969, 970 and C952 the base of Q953 will become sufficiently positive to conduct and through Q952, 951 the minus supply voltage to pin 6 of IC401 will be removed as with the turn-off muting sequence.

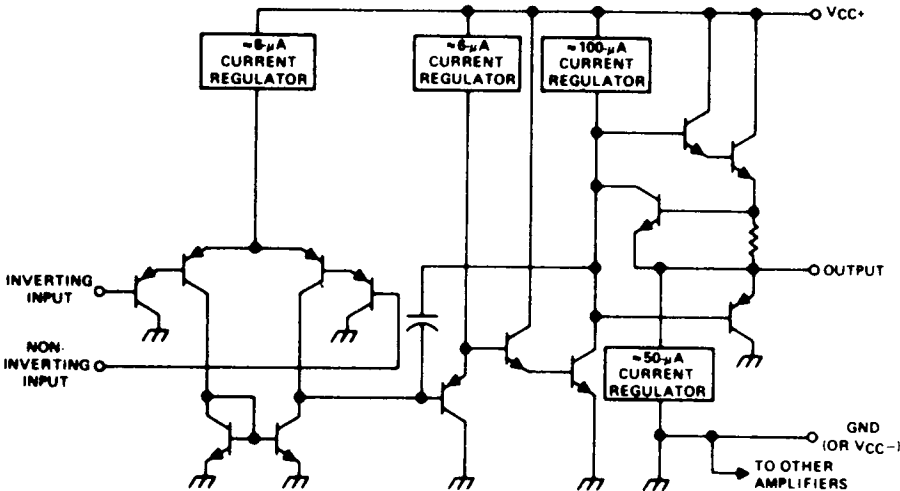
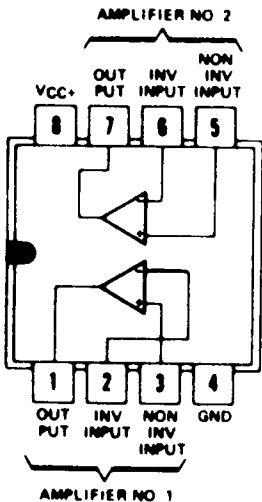


Diagram Of Preamp IC 4558



CIRCUIT DESCRIPTION

AMPLIFIER SECTION 349RA

(Refer to Schematic Diagram Page 44)

Power Supply

The main power supply consists of the power transformer with a full wave bridge rectifier and two 6800 μ F filter capacitors providing positive and negative supplies for the driver and power-output stages. Regulated supply voltages for the low power analog and digital circuitry is provided by a separate secondary transformer winding. IC601 is a monolithic voltage regulator providing stable low noise voltages for the RF section.

Turn-On Delay

Transistor Q603 and Q604 in the power supply circuit and Q601 and Q602 located at the input stage of the power amplifier act as a power ON/OFF muting circuit. The audio signal to the power amplifier can only pass when all DC circuits are stabilized. After the unit is switched on the base of Q601, 602 will be positive and the audio signal will be shunted to ground until C601 is charged through R605. When the unit is switched off C601 is discharged through Q604 activating the mute circuit to eliminate unwanted noise.

Phono Preamplifier

IC501 is a low noise dual operational amplifier designed in a negative feedback configuration providing the required gain and equalization conform to the RIAA standard curve. Gain is set by R809 while R510, R511 and C508, C509, C510 which form the RIAA feedback network. The circuit is powered by split supplies and has an overload capability at 1 kHz of 180 mV.

Tone Control

The tone control is a negative feedback type using the power amplifier stage as the active element, that is, the gain of the power amplifier is controlled by the tone control circuitry. At 1 kHz, the position of the tone controls has a minor effect on the gain since at this frequency the impedance of C713 and C714 is high effectively removing VR702 from the circuit; the impedance of C716 and C715 is low which short circuits VR703.

-Bass Control: With decreasing frequency below 1 kHz, the impedance of C716 and C715 increases proportionately. Thus at very low frequencies the gain is mainly determined by the position of the bass control VR703. Rotating VR703 toward C716 will boost the low frequencies, while turning it towards C715 will cut the bass response.

-Treble Control: At higher frequencies than 1 kHz, VR703 is effectively short circuited. At these frequencies however, the impedance of C713 and C714 decreases, so that VR702 becomes the main control of the amplifier gain. Rotating VR702 towards C714 cuts and rotating toward C713 increases the treble response.

Power Amplifier

The complementary power output and driver transistors are contained within the thickfilm hybrid IC701. The idle current circuitry is in the same package thus providing a very stable operation without any need of bias adjustment. Q701 a matched differential amplifier on one chip provides excellent common mode rejection and low DC offset. Transistor Q703 acts as voltage amplifier. The amplifier gain is controlled by multiple feedback networks. The DC feedback is assured by R710, R711 and C708 provides unity gain. AC gain at center position of bass and treble control is determined by the ratio of R720/721 and R708/710.

Protection Circuit

The power output Hybrid IC is protected against excessive current when the output is shorted. In this case Q705 conducts and activates the mute circuit Q604, Q603 and Q601/602. The fuse F 5 will mainly protect the speakers but will open in case of shorted speaker terminals with the volume set to an excessive level.

CIRCUIT DESCRIPTION

AMPLIFIER SECTION 439A—459A

(Refer to Schematic Diagram Page 45-46)

Power Supply

The main power supply consists of the power transformer with a full wave bridge rectifier and two 4700 μ F, (6800 μ F*) filter capacitors providing positive and negative supplies for the driver and power-output stages. Regulated supply voltages for the low power analog and digital circuitry is provided by zener diode regulators D105, D106.

Turn-On Delay

Audio power to the speakers or headphones is delayed at turn on by the R-C time constants of R712, C705. Here the AC voltage from the transformer is rectified by D703, applies a negative voltage to light D108 (protection indicator LED) and to charge C705 through R712. When C705 is charged Q706 will be turned off, which will turn off Q705 removing positive bias on muting transistors Q703 and Q704 and allow audio signal to be conducted from the Hi Filter switch to the power amp input.

Tone Control Equalizer

The equalizer circuitry is contained in a thick film low noise Hybrid IC. Each channel consists of five gain stages with the necessary phaseshift RC networks and one operational output amplifier. Capacitors C601 and C605 determine the center frequency of the individual tone controls. Pin 7 is the common feedback output and pin 1 to 5 are the inputs. With controls VR601 to VR605 set to the center position the audio is signal fed into pin 6 and passed to the output pin 8 with a gain of one. The bandpass of the individual controls will be boosted by sliding the controls toward pin 7 and cut by sliding towards pin 6.

Power Amplifier

The complementary power output and driver transistors are contained within the thickfilm hybrid IC701. The idle current circuitry is in the same package thus providing a very stable operation without any need of bias adjustment. The differential amplifier Q201 provides excellent common mode rejection and low DC offset. Transistor Q203 acts as voltage amplifier.

Protection Circuit

Transistor Q701 is used to sense excessive current or a DC condition at the output of IC201. If such condition exists the turn-on/turn-off muting circuits Q703, 704, 705 and 706 are activated, shunting audio signal to the differential amplifier input thus removing the input signals. Also, because of the positive voltage applied to base of Q706 under protected conditions, D108, the "protection" indicator LED will be turned on.

Output Power Meter

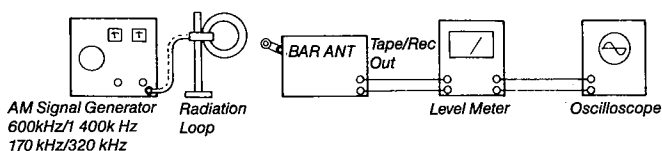
The output power meter is composed of two integrated circuits supplied from a common regulated supply. Log compression of the audio signal is performed by D508 and D509. This voltage is then coupled to the input of the LED Driver IC which is calibrated to switch each of the 7 LEDs on when the required input signal is applied.

TUNER SECTION ALIGNMENT PROCEDURES

Equipment Required

Audio signal generator.
Level meter.
Oscilloscope.
Digital frequency counter, 0-100 kHz.
FM multiplex signal generator.
DMM, high impedance.
455 kHz sweep generator.
10.7 MHz sweep generator.
AM signal generator.
AM radiation loop.

AM Section

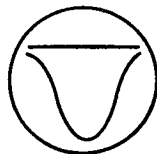


AM IF Amplifier

- 1) Apply 455 kHz sweep generator output to the unit AM antenna terminal.
- 2) Connect scope to pin number 12 of AM IC.
- 3) Adjust IF coil to obtain maximum and symmetrical display as shown.

If Adj.

319RA-T102
349RA-T201
528T/TL-T8
539T/TL-T202



Tracking Adj. — MW

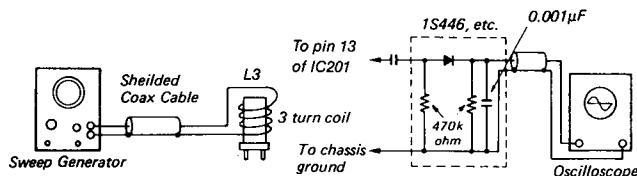
Model#	600 kHz	1400 kHz
319RA	T201, Ant. Core	osctrim, Ant. trim
349RA	L204, Ant. Core	TC201, TC202
528T/TL	T9 Ant. Core	CTD, CT
539T TL	T203, Ant. Core	TC201, TC202

AM Tracking 528TL, 539TL-LW

- 1) Apply 170 kHz, 30% modulated with 1 kHz to the AM bar antenna. See test setup figure. (Distance between the AM bar antenna and emitting loop antenna should be 60 cm.)
- 2) Adjust signal generator output so that a sine wave appears on the scope.
- 3) Adjust OSC. coil & ant. for maximum audio output on the level meter connected parallel with the scope. When turning core, always adjust signal generator output to maintain low input level. Do not change voltmeter range. Moreover, always keep the generator output as low as possible to avoid AGC action and to keep the measurements accurate.

- 4) Shift generator frequency to 320 kHz with same modulation condition.
- 5) Repeat step 2.
- 6) Adjust OSC. trimmer for maximum voltmeter reading.
- 7) Adjust ant. trimmer for maximum reading on the voltmeter.
- 8) Repeat items 3 through 7 for best tracking and maximum sensitivity.

FM IF Amplifier

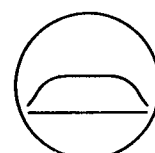


- 1) Mute the FM local oscillator by shorting L5.
- 2) Connect the oscilloscope to pin 13 of IF IC.
- 3) Apply 10.7 MHz signal from the sweep generator to mixer coil in the manner as shown above.
- 4) Adjust for correct figure as shown. It may be necessary to increase or decrease the sweep generator output for adjustment convenience.

Model#	Adj.
319RA	T201
349RA	T101
539T/TL	T101
528T/TL	T4



Correct

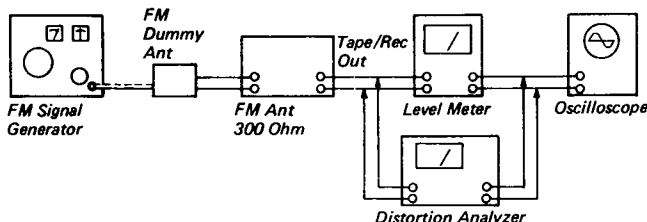


Incorrect,
as too low



Incorrect,
as too narrow

FM RF Tracking



Model#	Adj.
319RA	T3, T1, T2
349RA L105	L101, L103
539T/TL	L103, L101, L103
528T/TL	T3, T1, T2

- 1) Apply 90 MHz, 1 kHz and 100% modulated, 25 dBf signal level to the FM antenna terminals.
- 2) Tune unit to 90 MHz.

- 3) Observe the oscilloscope connected to the Tape/Rec output terminal for symmetrical sine wave. If failed, adjust.
- 4) Adjust for maximum level meter reading. Reduce input from the 25 dBf level as necessary to maintain noise on sine wave.
- 5) Readjust the signal generator for 106 MHz, and retune unit.
- 6) Repeat step 3. If failed, adjust the OSC. trimming capacitor mounted on the tuning capacitor.
- 7) Adjust the trimming capacitors, for mixer and RF.
- 8) Repeat as necessary until product specifications are met.

Center Tuning Adjustment

Connect DC DMM between chassis and pin 13 of IF IC. Tune receiver to signal generator with output set at 65 dBf, carefully tune for lowest AGC voltage. (Assuming proper IF alignment this step assures tuning to center of IF band pass.) Reconnect DMM to PCB Terminals. Adjust for zero volts.

Model#	PCB Terms	Adj.
319RA	TP1, TP2	T203
349RA	TP1, TP2	T103
539T/TL	P6, P7	T102
528T/TL	TP1, TP2	T5

FM Distortion

With unit connected as above for tuning indicator adjustment, adjust detector coil for minimum harmonic distortion. Since there is some interaction between coil settings, repeat center tune and distortion adjustments for optimum results.

Model#	Adj.
319RA	T202
349RA	T102
539T/TL	T103
528T/TL	T6

FM Signal Strength Display

- 1) At 98 MHz, with receiver connected and tuned to FM generator, apply 65 dBf signal to unit antenna.
- 2) Adjust on Display Board until all segments are lighted.
- 3) Reduce RF input to zero and note that both left and right center tune guide indicators are lighted.

Model#	Adj.
319RA	SVR202
349RA	VR102
539T/TL	VR102
528T/TL	VR1

Mute Threshold Adjust

- 1) At 98 MHz, 20 dBf signal level, and set-up connected as above, tune unit with mute switch in the OFF position.
- 2) Switch MUTE ON and adjust mute adj. pot until FM output is muted.

- 3) Increase generator output to check for proper muting action.

Model#	Adj.
319RA	VR201
349RA	VR101
539T/TL	VR101
528T/TL	None

Multiplex Pilot Adjust

- 1) Apply 98 MHz, 65 dBf signal to the unit with no modulation.
- 2) Adjust trim pot for 76 kHz reading on the frequency counter connected between TP and chassis ground. A deviation of ± 200 Hz is acceptable.

Model#	Test Point	Adj.
319RA	R258/47K	SVR252
349RA	Pin 16	VR103
539T/TL	P9	VR302
528T/TL	TP3	VR2

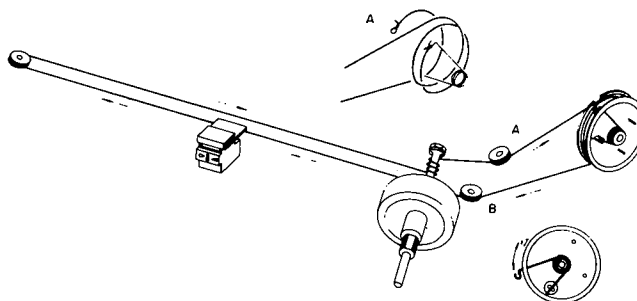
Stereo Separation

- 1) Apply 98 MHz, 65 dBf left channel signal to the unit modulated with 1 kHz, 9% pilot signal.
- 2) Connect a digital voltmeter to the right channel Tape/Rec output terminal.
- 3) Adjust trim pot for minimum leakage (minimum level) on the voltmeter.
- 4) Apply 98 MHz, 65 dBf right channel signal to the unit modulated same as step 1.
- 5) Move digital voltmeter to the left channel Tape/Rec output terminal.
- 6) Check for approximately the same leakage as in step 3, and that unit meets specification.

Model#	Adj.
319RA	SVR252
349RA	VR104
539T/TL	VR301
528T/TL	VR3

Dial Cord Replacement

- 1) There are a total of 3 turns of dial cord on the tuning drum. Proceed referring to drawing.
- 2) Attach the replacement dial cord to the protrusion on the plastic drum.



- 3) With the plastic drum in its original position on the tuning capacitor shaft and with plates fully meshed, wind 2½-3 turns of dial cord onto drum, over pulley A, 3 turns around capstan, etc. returning per dwg. to the tension spring with less than 1 turn of dial cord.
- 4) Secure dial cord with suitable tension and install pointer.
- 5) Check for free travel across dial.
- 6) Recalibrate AM/FM if required.
- 7) Note 349RA, 539T/TL dial cord around flywheel capstan is reverse of dwg., ie: starts near flywheel.

Audio Adjustments

Equipment required:

Audio signal generator.

Output level meter.

Distortion analyzer.

Multimeter.

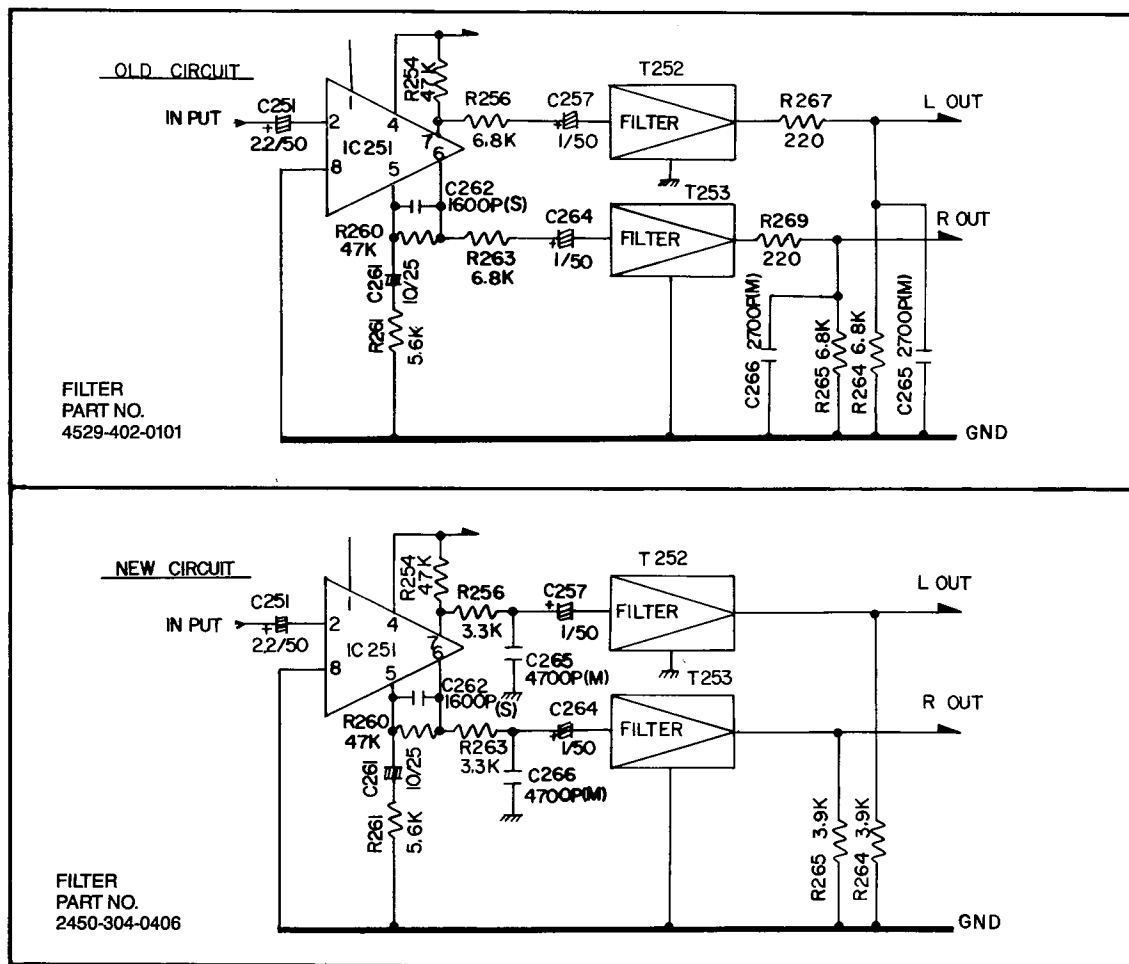
Output load resistors (2 ea. 8 ohm non inductive rated 100 ohm min.).

Power Meter Adjustment 349RA

- 1) Set up unit with output level meter to measure voltage across speaker terminals. No load resistors are to be connected.
- 2) Connect audio signal generator to Aux. input, mode switch to mono.
- 3) Adjust volume to Max., set input signal to 1 kHz and adjust input level for an output voltage across speaker terminals of 18.0V.
- 4) Adjust VR801 L for maximum indication left channel, repeat using VR801 R for maximum indication right channel.
- 5) Reduce input level to check tracking at lower output levels, adjust as necessary.

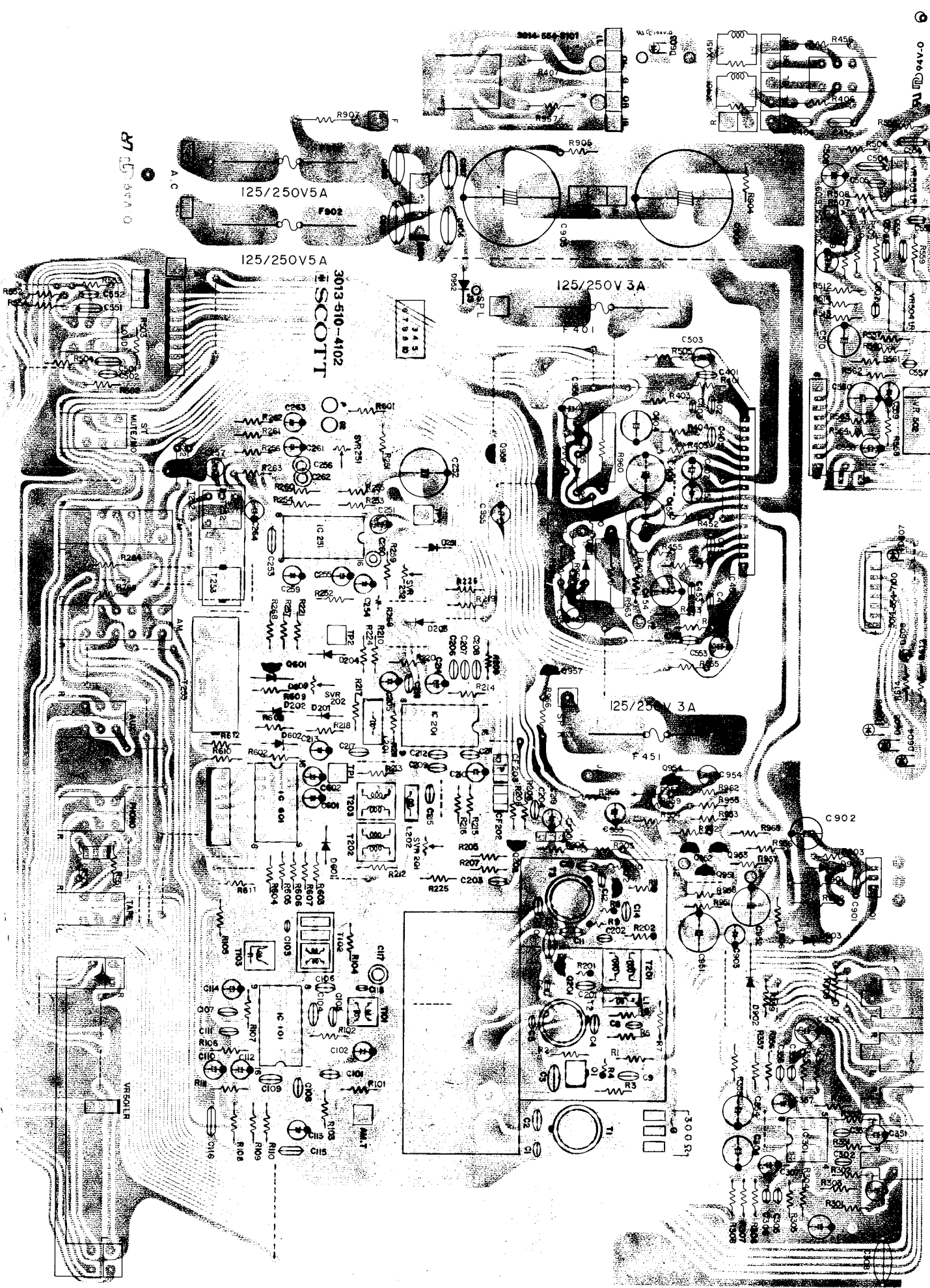
Power Meter Adjustment 439A, 459A

These models are designed with fixed value voltage divider to power meter IC and generally will not require adjustment.



Circuit Revision 319RA

Multiplex Filter Change Effective Serial No. 14010001



319RA PCB Layout-Revised MX Filter

EXPLODED VIEW PARTS LIST 319RA (SEE PAGE 52)

SYMBOL / EXP VIEW	DESCRIPTION	SPECIFICATION	PART NO.
1	SCREW-TAP TH	+ 3S 4 × 8 FE FN	7128-640-0855
2	CABINET	0.9T VINYL STEEL SILVER	6103-501-1100
3	SPACER-CABINET	0.5T HIMERON SHEET	6804-500-5105
4	KNOB-TUNING	ALS ANODIZING P140 × 18	7724-505-5202
5	KNOB-ROTARY	ABS 94HB C-GOLD 319RA	7624-520-4107
6	SCREW-FH	+ M3 × 6 FE FZY	7108-130-0611
7	PANEL-FRONT	AL EXTR ALUMITE	7702-514-7102
8	GUIDE-KNOB PUSH	94HB ABS DARK BLUE	7623-505-7108
9	GUIDE-KNOB PUSH·P	"	7624-520-9102
10	WINDOW-DIAL	4T ACRYL 94HB CLR 319RA	7654-538-2107
11	MASKING-LIGHT·L	RUBBER SPONGE BLK	6804-504-2102
12	MASKING-LIGHT·R	RUBBER SPONGE BLK	6804-504-3107
13	SCREW-TAP, RH	2S-3 × 6 FE FZY	7148-530-0615
14	MASKING-LIGHT	1.0T HIMERONE SHEET	6844-511-7109
15	BRKT-SCALE·L	1.0T SPC1 FZY	6614-508-8105
16	SCALE-DIAL	3T ACRYL 94HB CLR 319RA	7653-509-0100
17	SCALE-BACK	0.8T SPC1 FZY & PRINT	7712-500-3104
18	WINDOW-POINTER	ACRYL 0.5T	7654-504-8102
19	HOLDER, LED T	94HB ABS DARK BLUE	6604-515-6100
20	SHAFT-TUNING	MBSR2 & GC10	5104-516-8107
21	BRKT-HOLDER LAMP	0.8T SPC1 FZW	6624-509-0101
22	HOLDER LAMP	RUBBER HAIPLONG WHT 94HB	6604-106-2203
23	HOLDER SCALE	RUBBER NEOPLANE BLK	6834-509-2102
24	BRACKET-TUNING	1.0T SPC1 FZY	6623-500-3102
25	BACK-PLATE VOL	1.2T SPC1 FZY & SILK 319RA	7714-528-5104
26	KNOB-SLIDE	94HB ABS DARK BLUE	7624-520-7102
27	KNOB-INSERT·S	ABS 94HB BLK 319RA	7624-521-1105
28	KNOB-PUSH·F	ABS 94HB C-GOLD 379RA	7624-520-6107
29	KNOB-PUSH·L	ABS 94HB C-GOLD 319RA	7624-520-5102
30	MASKING-LIGHT·P	1.0T HINERON SHT 319RA	6844-511-8104
31	CAP-POINTER	94HB ABS BLACK	8003-500-4101
32	TEFRON-TAPE	W25.4 × 33Y × 0.08T 3M	0859-141-6008
33	BRKT-GUIDE POINTER	1.0T SPC1 FZY	6623-500-2107
34	SCREW-TAP, BH	2S-3 × 6 FE FZY	7158-530-0692
35	SCREW-RH	+ M3 × 6 FE FZY	7048-130-0616

SYMBOL / EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
36	CHASSIS-FRONT	0.8T SPC1 FZY 319RA	6122-519-6103
37	BRKT—SLIDE-VOL	0.8T SPC1 FZY 319RA	6624-509-7106
38	PIN-PULLEY	P.A WHT	5214-501-8206
39	PULLEY-S	P.A WHT	5214-502-1107
40	SHAFT-PULLEY	P.E NATURAL	5214-501-8206
41	PULLEY	P.A WHT	5214-501-9014
42	INSULATOR-PWB(T)	FIBER 94V-0 0.8T 319RA	6854-503-7109
43	SCREW-TAP, RH	2S-3×20 FE FZY	7148-530-2013
44	HEAT SINK	AL EXTR SR225 TYPE	5684-505-3103
45	HEAT-SINK, TR	1.5T ALS	5684-501-1101
46	SHIELD-FENCE	0.3T TE-SBC	4543-500-3107
47	JACK-AUX	4P	3339-544-0205
48	TAP-STUD	0.5T SPC1 BT2	3124-100-7105
49	SCREW-TAP, RH	2S-3X12 FE FZY	7148-530-1212
50	WHEEL-DIAL	94HB ABS NATURAL	5223-501-0107
51	STOP-SPRING	SPS-27 0.3T	6674-508-6103
52	SPRING-DIAL	STS #27 Pi 1.0	6674-501-9408
53	BRKT-GW·A	1.0T SPC1 FZY 319RA	6624-508-9103
54	FRAM-R	1.0T SPC1 FZY	6123-508-3101
55	BAND-WIRE	P.P BLACK	6634-100-6103
56	SCREW-TAP TH	2S-4×8 FE FZY	7128-540-0810
57	FRAME-L	1.0T SPC1 FZY 319RA	6122-520-1102
58	KNOB-PUSH·P	ABS 94HB C-GOLD 319RA	7624-520-8107
59	LINK-POWER, SW	ABS 94HB BLK	7624-500-1108
60	BRKT-POWER	1.2T SPC1 FZY 319RA	6624-509-8101
61	LUG-RING	0.3T SPTE	3114-501-2104
62	WASHER-CABINET	1.0T PHENOL BLK	7334-503-1105
63	CHASSIS-REAR	0.8T SPC1 FZY & PRINT 319RA	6122-519-7108
64	CLAMPER-CORD	HEYCO SR-4N-4 BLK	6634-100-8103
65	BAND-CORD WIRE	P.P BLACK	6634-101-8106
66	SCREW-TAP·RH	2S-3×8 FE FZB	7148-530-0837
67	SPACER-CABI	RUBBER-SPONGE 6T BLK	6834-504-6107
68	SCREW-TAP·RH	1-3×8 FE FZB	7148-130-0831
69	TERMINAL-BOARD SCREW	4T SCREW B-LITE 94HB	3304-101-5201
70	GROUND-SCREW	M4 FZ FN1	7054-500-2106
71	WASHER PLAIN	4.5 PI×10PI×1.0T SPC1 FN 1	7304-500-2106
72	SCREW-TAP RH SPEC	2S-3×8 FE FZY	7154-100-6303

SYMBOL/ EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
73	CHASSIS-BOTTOM	3.0T HARD BOARD 319RA	6122-519-8103
74	FOOT	94HB PVC SOFT BLK	6074-500-8101
75	FOOT-STOPPER	94HB ABS BLK	6074-500-9106
76	SCREW-RH	+ M3×4 FE FZY	7048-130-0412
77	WASHER-SPRING	PI3.0 (3.1×5.9×0.7T) FE FZY	7318-103-0014
78	BRKT-PROTECTOR-PWB	0.8T SPC1 FZY	6623-500-5102
79	SPACER	10T×30×25 RUBBER SPONGE	6834-502-0101
80	CLIP-FUSE	0.4T PBP	3163-500-1201
81	WASHER-TOOTHED	B-PI (3.2×6.5×T0.45) FE FZY	7328-203-0018
82	CUSHION-PWB	RUBBER-SPONGE	6834-504-6107
83	TERMINAL-BOARD PUSH	DRP003 4P	3304-501-6105
84	SUPPORTOR-ANT	SPC1 1.0T BLK & ABS	6654-508-1108
85	INSULATOR-PLATE	1.0T B-LITE BLK	6854-504-2107
87	PILOT-LAMP	AC8V-100MA BLUE	2059-305-0109
88	VR-SLIDE	S-6024H3 250KB×2	1239-105-0106
89	SWITCH-PUSH	SUF-654C2P×2 2C2P×4	3529-203-6804
90	SWITCH-PUSH	SUF-12 MOLD 2.5MM	3529-203-7304
91	VR-DOUBLE	K162A0A 100KC	1219-143-0104
92	VR-SIG DETENT	K16110A 250KW 50%	1209-120-0108
93	SWITCH-PUSH	SUF-12 2C2P	3529-203-6901
94	JACK-HEAD PHONE	HLJ0307-01-040 7P	3339-521-0204
95	CONNECTOR-WAFER	5045-03A 3P-TYPE	3349-511-5106
96	CONNECTOR-WIRE U/C	5051-03A1007 #26 500R/BR/BK	3052-303-5021
97	CONNECTOR-WAFER	5045-04A 4P-TYPE	3349-511-5504
97	CONNECTOR-WAFER	5045-954A 5P-TYPE	3349-511-5601
98	CONNECTOR WIRE	5051-09C 1007 #60M/M UL	3052-943-6006
99	CONNECTOR WIRE	5051-97C 1007 #26 140M/M	3052-743-1401
100	CONNECTOR-WAFER	5045-05A 5P-TYPE	3349-511-5601
100	CONNECTOR-WAFER	5045-02A 2P-TYPE	3349-511-5203
101	PCB-MAIN	246×320×1.6t 94V-0	3013-510-4102
103	VARICON-AIR	C752-J	1809-317-0201
104	TRANS-POWER	E176.2MM 120V 60HZ UL	2869-201-9102
105	SWITCH-PUSH POWER	SDLIP 25 10A LEAD TYPE U/C	3599-902-0100
106	FUSH-HOLDER	GC1H 60/240MM	3364-502-4108
107	JACK-AC OUTLET	125V15V S-1651P US/CSA	3339-593-0304
108	POWER-CORD AC	KKP-10W SPT-2AWG #18 U/C	3059-800-8304
109	COIL-BAR ANT	FB-A A-BASE #1057 310MM	2521-302-0104

TRANSISTORS

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
Q1	FET	3SK 73GR	2139 601 4806
Q2 Q201	TRANSISTOR	KSC 1674-0	2139 301 0508
Q202	TRANSISTOR	KSC 838-0	2139 301 8508
Q901	TRANSISTOR	KSC 288-Y	2149 401 2706
Q601 Q953 Q957 Q958	TRANSISTOR	KSC 945-Y	2139 302 7409
Q951 Q952 Q954 Q955 Q956	TRANSISTOR	KSC 733-Y	2139 103 3802

DIODES

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
D201 D202 D203 D204 D251 D601 D602 D609 D902 D951 D953 D954	DIODE-SW	ISS53/IN4148, CT: 6PF	2169 301 2901
D603	LED-SQUARE	IN 417YP	2309 119 0302
D605 D604 D606	DIODE-LED	SLP 151B	2309 104 1602
D607	LED-SQUARE	LN 317GP	2309 119 0108
D608	LED-SQUARE	LN 217RP	2309 120 0102
D901	DIODE-ZN BZ-150	1W 13.8-15.6V	2169 403 9202
D903	DIODE-ZN WZ-150	500MW 14.4-15.6V	2169 404 2307
D904	DIODE-RECT	2KBP02	2169 219 2101
D952	DIODE-RECT IN4001	SRIK-1 (1.0A 50V)	2169 201 0504

COIL

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
T1	COIL-ANT FM	100MHz 0.7PI UEW	2509 015 0103
T2	COIL-RF FM	100MHZ 0.7PI UEW	2519 004 0104
T3	TRANS-IF	CFOR 12PI 010	2539 108 4105
T101	COIL-SEVEN CAN	150UH A-BASE FMW RED	2619 010 4027
T102	FILTER-CERAMIC, AM	7MM CAN	4529 313 0106
T103	TRANS-IF AM	7MM CAN	2749 118 0204
T201	TRANS-IF FM A	10MM CAN	2739 105 0209
T202	TRANS-IF FM G	TKAEA 246 39X	2739 128 0103
T203	TRANS-IF FM F	TKAEA 246 38AVO	2739 127 0100
T252 T253	LOW PASS FILTER	FV-A D-BASE 19K/38K 10MM	2450 304 0406
L1 L202	COIL-CHOKE SQ/V	2R2UH-K Q80 F7 R96	2429 020 0300
L201	TRANS-IF	18UH-K Q30 F2R5	2429 020 0708
X401 X451	COIL-CHOKE SPK	2R2UH-K F7R9 RD ¼ P 10-J	2429 060 0313
L102	COIL-CHOKE LEAD	2R2UH-K Q30 F7R96	2429 040 0302

CAPACITORS

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
C851	C-CERAMIC AC	ECK-DFL 472ZV 125V AC	1469 502 0706
C904 C905	C-ELECTROLYTIC	ECE-T35R 682 SW	1619 018 2400
C906 C907 C908 C909	C-CERAMIC	CK45D 500V 0.01M-M	1419 206 4308

FUSE

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
F401 F451	FUSE	SLO 125/250V 3A UL/CSA	4709 033 2709
F801	FUSE	SLO 125/250V 2A 31.8 UL/CSA	4709 001 2515
F901 F902	FUSE-W/LEAD	SLO 125/250V 5A 31.8-L U/C	4709 133 3101

RESISTOR

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
R851	R-CARBON	RD1/2P 2.2M-K	1018 328 2254
R901	R-CARBON	RD1/2P 47-J	1049 301 0907
R902	R-CARBON	RD1/2P 680-J	1018 327 6817
R406 R456	R-METAL OXIDE	RS 1P 10-K	1049 301 0101
R407 R457	R-METAL OXIDE	RS 1P 270-K	1049 301 1805
R907	R-METAL OXIDE	RS 2P 100-J	1049 103 1308
R960 R963	R-CEMENT WIRE	RW 5P 0.27-J	1039 904 0604

INTEGRATED CIRCUIT

SYMBOL/EXP VIEW NO.	DESCRIPTION	SPECIFICATION	PART NO.
IC 101	IC-AM IF	HA1196	2119 201 0907
IC 201	IC-IF FM	LA123 INS	2119 201 0208
IC 251	IC	HA1196	2119 201 1106
IC 301	IC	NJM 4558DD	2119 401 0303
IC 401	IC-POWER	STK-4803	2119 208 0306
IC 601	IC	TR2E01	2119 201 7504

PARTS LIST 319RA

COMPONENT ITEM NUMBER DESCRIPTION

6122 519 6103	CHASSIS-FRONT	0.8T SPC1 FZY 319RA
7158 530 0692	SCREW-TAP,RH	2S-3X6 FE FZY
7048 130 0616	SCREW-RH	+M3X6 FE FZY
6854 503 7109	INSULATOR-PWB(T)	FIBER 94V-0 0.8T 319RA
5214 501 9104	PULLEY	P.A WHT
5214 501 8206	SHAFT-PULLEY	P.E NATURAL
5214 502 0102	PIN-PULLEY	P.A WHT
5214 502 1107	PULLEY-S	P.A WHT
6623 500 2107	BRKT-GUIDE POINTER	1.0T SPC1 FZY
7158 530 0692	SCREW-TAP,RH	2S-3X6 FE FZY
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
6624 509 0101	BRKT-HOLDER LAMP	0.8T SPC1 FZW
6604 106 2203	HOLDER LAMP	RUBBER HATPLONG WHT 94HB
6834 509 2102	HOLDER-SCALE	RUBBER NEOPLANE BLK
6614 508 8103	BRKT-SCALE,L	1.0T SPC1 FZY & BLK COAT
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
8003 500 4101	CAP-POINTER	94HB ARS BLACK
6844 511 8104	MASKING-LIGHT,P	1.0T HYMERON SHT319RA
7653 509 0100	SCALE-DIAL	3T ACRYL 94HB CLR 319RA
7712 500 3104	SCALE-BACK	0.8T SPC1 FZY & PRINT 319R
7712 500 3113	SCALE-BACK	0.8T SPC1 FZY
6623 500 3102	BRACKET-TUNING	1.0T SPC1 FZY & BLK COAT
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
5104 516 8107	SHAFT-TUNING	MBSR2 & GC10
6624 509 7106	BRKT-SLIDE,VOL	0.8T SPC1 FZY 319RA
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
7048 130 0616	SCREW-RH	+M3X6 FE FZY
7714 528 5104	BACK-PLATE,VOL	1.2T SPC1 FZY & SILK 319RA
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
6854 504 3102	SPACER-VOL	FIBER BLK
7624 521 1105	KNOB-INSERT,S	ABS 94HB BLK 319RA
7654 504 8102	WINDOW-POINTER	ACRYL 0.5T
6604 515 6100	HOLDER,LFD T	94HB ABS DARK BLUE
6844 511 7109	MASKING-LIGHT	1.0T HYMERONE SHEET
6804 504 2102	MASKING-LIGHT,L	RUBBER SPONGE BLK
6804 504 3107	MASKING-LIGHT,R	RUBBER SPONGE BLK
6123 508 3101	FRAME-R	1.0T SPC1 FZY
7154 100 6303	SCREW-TAP RH SPEC	2S-3X8 FE FZY
6122 520 1102	FRAME-L	1.0T SPC1 FZY 319RA
7128 540 0810	SCREW-TAP TH	2S-4X8 FE FZY
3114 501 2104	LUG-RING	0.3T SPTF
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
5223 501 0107	WHEEL-DIAL	94HB ABS NATURAL
7148 530 1212	SCREW-TAP,RH	2S-3X12 FE FZY
6674 501 9505	SPRING-DIAL	STS#27 P11.0
6674 508 6103	STOP-SPRING	SPS-27 0.3T

COMPONENT ITEM NUMBER DESCRIPTION

4543 500 3107	SHIELD-FENCE	0.3T TE-SRC
5684 501 1101	HEAT-SINK,TR	1.5T ALS
7148 530 0615	SCREW-TAP,RH	2S-3X6 FE FZY
3124 100 7105	TAP-STUD	0.5T SPC1 BT2
6623 500 5102	BRKT-PROTECTOR PWB	0.8T SPC1 FZY
7048 130 0412	SCREW-RH	+M3X4 FE FZY
7318 103 0014	WASHER-SPRING	PI3.0(3.1X5.9X0.7T)FE FZY
6854 504 2107	INSULATOR-PLATE	1.0T B-117E BLK
3163 500 1201	CLIP-FUSE	0.4T PAP
6634 100 6103	BAND-WIRE	P.P BLACK
6624 509 8101	BRKT-POWER	1.2T SPC1 FZY 319RA
7158 530 0692	SCREW-TAP,RH	2S-3X6 FE FZY
7048 130 0616	SCREW-RH	+M3X6 FE FZY
6624 508 9103	BRKT-GW.A	1.0T SPC1 FZY 319RA
7158 530 0692	SCREW-TAP,RH	2S-3X6 FE FZY
5214 501 9104	PULLEY	P.A WHT
5214 501 8206	SHAFT-PULLEY	P.E NATURAL
5214 502 0102	PIN-PULLEY	P.A WHT
5684 505 3103	HEAT-SINK	AL EXTR SK225 TYPE
7148 530 2013	SCREW-TAP,RH	2S-3X20 FE FZY
7328 203 0018	WASHER-TOOTHED	B-PI3(3.2X6.5X0.45)FE FZY
7334 503 1105	WASHER-CABINET	1.0T PHENOL BLK
6834 502 0101	SPACER	10TX30X25 RUBBER SPONGE
6834 507 8106	SPACER-CABT	RUBBER-SPONGE 6.0T BLK
6834 504 6107	CUSHION-PWB	RUBBER-SPONGE
3304 101 5201	TERMINAL-BOARD SCREW	4T SCREW B-LITE 94HR
7148 530 0837	SCREW-TAP,RH	2S-3X8 FE FZB
6654 508 1108	SUPPORTER-ANT	SPC1 1.0T BLK & ARS
7148 530 0837	SCREW-TAP,RH	2S-3X8 FE FZB
7158 530 0692	SCREW-TAP,RH	2S-3X6 FE FZY
7148 130 0831	SCREW-TAP,RH	1-3X8 FE FZB
6634 100 8103	CLAMPER-CORD	HEYCO SR-4N-4 BLK
6634 101 8106	BAND-CORD WIRE	P.P BLACK
7148 530 0837	SCREW-TAP,RH	2S-3X8 FE FZB
6122 519 7108	CHASSIS-REAR	0.8T SPC1 FZY & PRINT 319R
6122 519 7117	CHASSIS-REAR	0.8T SPC1 FZY
6122 519 8103	CHASSIS-BOTTOM	3.0T HARD BOARD 319RA
7154 100 6303	SCREW-TAP RH SPEC	2S-3X8 FE FZY
6074 500 8101	FOOT	94HB PVC SOFT BLK
6074 500 9106	FOOT-STOPPER	94HB ABS BLK
7054 500 1107	GROUD SCREW	M4 FZ FN1
7304 500 2106	WASHER PLATN	4.5PIX10PX1.0T SPC1 FN1
2119 201 0208	IC-IF FM	LA123INS
2119 201 1106	IC	HA1196
2119 201 0907	IC-AM,IF	HA1197
2119 201 7504	IC	IR2E01
2119 401 0303	IC	NJM4558DD

PARTS LIST 319RA (CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION
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[illegible]

****See page 10.**

COMPONENT ITEM NUMBER	DESCRIPTION
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1249 102 0607	VR-SEMT	SR19R B47K
1249 102 0500	VR-SEMT	SR19R B33K
1249 102 0908	VR-SEMT	SR19R B220K
1249 102 0306	VR-SEMT	SR19R B10K
1239 105 0106	VR-SLIDE	S6024H3-250KBX2 VOLUME
1209 120 0108	VR-SIG,DETENT	K16110A 250KW 50% BAL
1219 143 0104	VR-DOUBLE	K162A0A 100KC TONE
1219 143 0104	VR-DOUBLE	K162A0A 100KC TONE
1809 317 0201	VARICON-AIR	C752-J
1018 227 1026	R-CARBON	RD1/4P 1K-J
1049 301 0101	R-METAL OXIDE	RS 1P 10-K
1049 301 1805	R-METAL OXIDE	RS 1P 270-K
1018 227 5628	R-CARBON	RD 1/4P 5.6K-J
1018 227 2225	R-CARBON	RD 1/4P 2.2K-J
1018 227 1831	R-CARBON	RD 1/4P 18K-J
1018 227 6818	R-CARBON	RD 1/4P 680-J
1018 227 8216	R-CARBON	RD 1/4P 820-J
1049 103 1308	R-METAL OXIDE	RS 2P 100-J
1018 227 1239	R-CARBON	RD 1/4P 12K-J
1018 227 1035	R-CARBON	RD 1/4P 10K-J
1049 301 0907	R-METAL OXIDE	RS 1P 47-K
1018 327 6817	R-CARBON	RD 1/2P 680-J
1018 227 6818	R-CARBON	RD 1/4P 680-J
1018 227 4739	R-CARBON	RD 1/4P 47K-J
1018 227 1035	R-CARBON	RD 1/4P 10K-J
1018 227 4739	R-CARBON	RD 1/4P 47K-J
1018 227 3336	R-CARBON	RD 1/4P 33K-J
1018 227 1530	R-CARBON	RD 1/4P 15K-J
1018 227 1035	R-CARBON	RD 1/4P 10K-J
1018 227 8225	R-CARBON	RD 1/4P 8.2K-J
1018 227 2234	R-CARBON	RD 1/4P 22K-J
1018 227 1035	R-CARBON	RD 1/4P 10K-J
1018 227 4739	R-CARBON	RD 1/4P 47K-J
1018 227 1844	R-CARBON	RD 1/4P 180K-J
1039 904 0604	R-CEMENT, WTRE	RW5P 0.27-J
1018 227 2739	R-CARBON	RD 1/4P 27K-J
1018 227 2234	R-CARBON	RD 1/4P 22K-J
1039 904 0604	R-CEMENT, WTRE	RW5P 0.27-J
1018 227 2739	R-CARBON	RD 1/4P 27K-J
1018 227 1035	R-CARBON	RD 1/4P 10K-J
1018 227 1035	R-CARBON	RD 1/4P 10K-J
1409 109 9104	C-CERAMIC	CC45 TH 50V 15-J
1409 101 3605	C-CERAMIC	CC45 SL 50V 100-J
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
1409 105 1403	C-CERAMIC	CC45 CH 50V 15-J
1409 105 0602	C-CERAMIC	CC45 CH 50V 7-D
1439 001 1708	C-GIMMICK	C50V 0.75K
1409 101 3605	C-CERAMIC	CC45 SL 50V 100-J
1419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
1409 206 1900	C-CERAMIC	CC45 RH 50V 22-J
1409 206 0905	C-CERAMIC	CC45 RH 50V 8-C
1409 105 2204	C-CERAMIC	CC45 CH 50V 33-J
1409 105 1403	C-CERAMIC	CC45 CH 50V 15-J
1419 204 5501	C-CERAMIC	CK45 D 50V 0.0047M-M
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1689 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
1409 101 2804	C-CERAMIC	CC45 SL 50V 47-J

PARTS LIST 319RA (CONT.)

COMPONENT ITEM NUMBER DESCRIPTION

1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1419 204 4700	C-CERAMIC	CK45 D 50V 0.001M-M
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1609 401 4409	C-ELECTROLYTIC	CE04W 16V 22M
1419 204 4700	C-CERAMIC	CK45 D 50V 0.001M-M
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1609 402 2305	C-ELECTROLYTIC	CE04W 50V 3.3M
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1609 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1609 401 4700	C-ELECTROLYTIC	CE04W 16V 100M
1609 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
1619 018 2400	C-ELECTROLYTIC	ECE-T35R 682 SW
1619 018 2400	C-ELECTROLYTIC	ECE-T35R 682 SW
1419 206 4308	C-CERAMIC	CK45D 500V 0.01M-M
1419 206 4308	C-CERAMIC	CK45D 500V 0.01M-M
1419 206 4308	C-CERAMIC	CK45D 500V 0.01M-M
1419 206 4308	C-CERAMIC	CK45D 500V 0.01M-M
1609 401 6807	C-ELECTROLYTIC	CE04W 25V 100M
1609 401 6904	C-ELECTROLYTIC	CE04W 25V 220M
1609 402 0509	C-ELECTROLYTIC	CE04W 35V 4.7M
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1609 401 2807	C-ELECTROLYTIC	CE04W 16V 100M
1609 401 6506	C-ELECTROLYTIC	CE04W 25V 22M
1609 401 6506	C-ELECTROLYTIC	CE04W 25V 22M
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
2059 305 0109	PJL0T-LAMP	AC12V-110MA BLUE
1609 402 2208	C-ELECTROLYTIC	CE04W 50V 2.2M
1609 401 5006	C-ELECTROLYTIC	CE04W 16V 470M
1509 121 2207	C-POLYESTER	M 50V 0.047M-J
1609 902 2601	C-ELECTROLYTIC,LN	CE04W 50V 3.3M-M
1609 902 2106	C-ELECTROLYTIC,LN	CE04W 50V 1M-M
1509 452 2705	C-POLYSTYRENE	CQ 09 S 50V 1600-J
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1609 902 2407	C-ELECTROLYTIC,LN	CE04W 50V 0.22M-M
1509 452 0802	C-POLYSTYRENE	CQ 09 S 50V 360-J
1609 401 6409	C-ELECTROLYTIC	CE04W 25V 10M
1509 452 2705	C-POLYSTYRENE	CQ 09 S 50V 1600-J
1609 401 6409	C-ELECTROLYTIC	CE04W 25V 10M
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1509 121 0702	C-POLYESTER	M 50V 0.0027M-J
1509 121 0702	C-POLYESTER	M 50V 0.0027M-J
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1409 101 7401	C-CERAMIC	CC45 SL 50V 180-K
1609 401 1006	C-ELECTROLYTIC	CE04W 6.3V 100M
1609 401 6700	C-ELECTROLYTIC	CE04W 25V 47M
1509 121 1600	C-POLYESTER	M 50V 0.018M-J
1509 121 1008	C-POLYESTER	M 50V 0.0047M-J
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1409 101 7906	C-CERAMIC	CC45 SL 50V 470-K
1409 101 3401	C-CERAMIC	CC45 SL 50V 82-J
1509 121 1105	C-POLYESTER	M 50V 0.0056M-J
1609 401 6700	C-ELECTROLYTIC	CE04W 25V 47M
1409 101 3401	C-CERAMIC	CC45 SL 50V 82-J
1509 121 2605	C-POLYESTER	M 50V 0.1M-J
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1609 402 1106	C-ELECTROLYTIC	CE04W 35V 220M

COMPONENT ITEM NUMBER DESCRIPTION

1609 401 7006	C-ELECTROLYTIC	CE04W 25V 330M
1509 121 2304	C-POLYESTER	M 50V 0.056M-J
1409 101 7207	C-CERAMIC	CC45 SL 50V 120-K
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1509 121 2702	C-POLYESTER	M 50V 0.12M-J
1509 121 1804	C-POLYESTER	M 50V 0.022M-J
1509 121 5202	C-POLYESTER	M 50V 0.027M-K
1509 121 0809	C-POLYESTER	M 50V 0.0033M-J
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1609 401 4603	C-ELECTROLYTIC	CE04W 16V 47M
1609 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
1509 121 2207	C-POLYESTER	M 50V 0.047M-J
1509 121 2702	C-POLYESTER	M 50V 0.12M-J
1509 452 1001	C-POLYSTYRENE	CQ09S 50V 330-J
1409 105 0602	C-CERAMIC	CC45 CH 50V 7-D
1419 204 5501	C-CERAMIC	CK45 D 50V 0.0047M-M
1419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
1419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1609 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
1409 101 3605	C-CERAMIC	CC45 SL 50V 100-J
1419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
3529 203 6804	SWITCH-PUSH	SUF-65 4C2PX2, 2C2PX4
3529 203 7304	SWITCH-PUSH	SUF12 MOLD 2.5MM
3529 203 6901	SWITCH-PUSH	SUF-12 2C2P
4709 033 2709	FUSE	SL0 125/250V 3A UL/CSA
4709 133 3101	FUSE-W/LEAD	SL0 125/250 5A 31.8-L U/C
4709 001 2515	FUSE	SL0125/250V2A31.8UL/CSA
3349 072 0503	WAFER-ASSEMBLY	95:5C(1.)
3013 510 4102	PWB-MAIN	246X320X1.6T 94V-0
3052 303 5021	CONNECTOR-WIRE,U/C	S051-03A1007#26,500R/BR/BK
3349 511 5106	CONNECTOR-WAFER	S045-03A 3P-TYPE
3052 743 1401	CONNECTOR WIRE	S051-07C 1007#26 140M/M
3052 943 6006	CONNECTOR WIRE	S051-09C 1007#60M/M UL
3339 593 0304	JACK-AC,OUTLET	125V 15A S-I6519 UL/CSA
3364 502 4108	FUSE-HOLDER	GC 1H 60/240MM
3339 521 0204	JACK-HEADPHONE	HLJ 0307-01-040 7P
3599 902 0100	SWITCH-PUSH,POWER	SDL1P 125V10A LEAD TYPEU/C
3304 501 6105	TERMINAL-BOARD PUSH	DRP003 4P
3349 511 5203	CONNECTOR-WAFER	S045-02A 2P-TYPE
3124 100 7105	TAP-STUD	0.5T 9PC1 BT2
3124 100 6100	PTN	1X1X15 BSWZ FT
3339 544 0205	JACK-AUX	4P
3349 511 5504	CONNECTOR-WAFER	S045-04A 4P-TYPE
3349 511 5601	CONNECTOR-WAFER	S045-05A 5P-TYPE
3069 032 0120	FLAT-WIRE,U/C	3P 7/0.16 120MM,U/C
3059 105 0403	ANT TWIN WIRE W/PLUG	239#22(T) 125U/C
3059 242 1208	LEAD-FASTEN,U/C	110REC 120MM BLK,U/C

EXPLODED VIEW PART LIST 349RA (SEE PAGE 53)

No.	PARTS No.	DESCRIPTION	Q'ty	No.	PARTS No.	DESCRIPTION	Q'ty
1.	8602010410	Panel Front	1	46.	6525000210	Band Wire	1
2.	8521001610	Body Front	1	47.	6515000230	Holder Ant.	1
3.	8553002710	Window Front	1	48.	2608207150	Bar Ant.	1
4.	8521001710	Base Pointer	1	49.	4465100110	Terminal GND	1
5.	8573003010	Scale Dial	1	50.	4465100210	Terminal Washer	1
6.	6123611410	Frame Support	1	51.	6513000110	Stopper AM ANT	1
7.	6123611310	Frame Main (L)	1	52.	1718000201	Wire String	1.5
8.	6123611210	Frame Main (R)	1	53.	6335000310	Foot Rubber	4
9.	6102011310	Chassis Back	1	54.	7503003610	Heat Sink	1
10.	6122006410	Cover Top	1	55.	7505201940	Heat Sink REG TR	1
11.	6122406310	Cover Bottom	1	56.	2828030401	Transformer	1
12.	057005080140	Ass'y	1	57.	4628030810	S/W Push (1 Key)	1
13.	6505045010	BKT Phone	1	58.	4628030210	S/W Push (2 Key)	1
14.	4628031010	BKT Power S/W	1	59.	3228010140	Potentio Meter (Bal)	1
15.	4628031010	Switch Power	1	59-2.	3228010130	Potentio Meter (Tone)	2
16.	4438000610	Jack Phone	1	60.	4628030110	S/W Push (6 Key)	1
17.	4628010410	S/W Push (2 Key)	1	61.	4235001910	Plate GND	1
18.	8545008710	Button Push (Power)	1	62.	4002013200	PC BOARD Main	1
19.	8545009810	Knob Rotary	3	63.	4002013300	" Tuner	1
20.	8543002610	Button Push (Function)	6	64.	4005010510	" LED	1
21.	8643001410	Knob Tuning	1	65.	4005010500	" Meter	1
22.	8545008810	Button Push (Speaker)	2	66.	4002013320	" Volume	1
23.	6505025910	BKT Joint	3	67.	4002013310	" Signal Meter	1
23-2.	6505045310	BKT Roller	2	68.	2308220111	LED SLB 15UR3	16
24.	8545009310	Button Push (Filter)	3	69.	2308220305	LED SLB 15GG	1
25.	8545010010	Knob Slide	1	70.	2308220504	LED SLB 15YY3	1
26.	6055001810	Insert Slide	1	71.	8209540011	FLANG NUT	4
27.	8685002910	Plate Slide Volume	1	72.	8305001610	WASHER PW 03	2
28.	6505044910	BKT Slide VR	1	73.	4002013220	PC BOARD Phone	1
29.	3238405010	Volume Slide	1	74.	8305000510	WASHER VINYL	4
30.	8555006110	Filter Window	1	75.	8129330081	Screw #3 FTC 3 × 8Y	3
31.	3528200910	Lamp	1	76.	8109330081	Screw #3 BTC 3 × 8Y	3
31-2.	8728000510	Lamp Cap	1	77.	8109230061	Screw #2 BTC 3 × 6Y	17
32.	6505045410	BKT Lamp	1	78.	8119126061	Screw #1 PTC 2.6 × 6Y	10
33.	6505045210	BKT Roller (B)	1	79.	8195000210	PIVOT	4
34.	7115000710	Roller	4	80.	8109330061	Screw #3 BTC 3 × 6Y	5
35.	6505045110	BKT Roller (A)	1	81.	8069140103	Screw WPM 4 × 10B	4
36.	6505044810	BKT Heat Sink	1	82.	8119230083	Screw #2 PTC 3 × 8B	6
37.	8573002910	Pointer	1	83.	8119330063	Screw #3 PTC 3 × 6B	2
38.	4408101360	Terminal Speaker	1	84.	8119230063	Screw #2 PTC 3 × 6B	6
39.	4438100410	Jack RCA (4P)	3	85.	8159440085	Screw WSAM 4 × 10B	4
40.	3808201010	Varicon Air	1	86.	8109203121	Screw #2 BTC 3 × 12Y	4
41.	7113000112	Pulley Dial	1	87.	8159230061	Screw #2 WPTC 3 × 6Y	9
42.	4408000410	Terminal Ant.	1	88.	8159230081	Screw #2 WPTC 3 × 8Y	3
43.	4448100210	OUT LET	2	89.	8019130151	Screw PM 3 × 15Y	2
44.	6518000111	Stopper Cord	1	90.	8019120061	Screw PM 2 × 3Y	2
45.	4308000220	Cord Power AC	1				

PARTS LIST 349RA (CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION
046102011301	CHASSIS, BACK
046102011310	CHASSIS, BACK
046122006401	COVER, TOP
048521001601	BODY, FRONT
048521001701	BASE, POINTER
048543002601	BUTTON, PUSH
048545008701	BUTTON, PUSH
048545008801	BUTTON, PUSH
048545009301	BUTTON, PUSH
048545009801	KNOB, ROTARY
048545010001	KNOB, SLIDE
048573003001	SCALE, DIAL
048602010402	PANEL, FRONT
048643001401	KNOB, TUNING
048685002901	PLATE, SLIDE VOLUME
049605034200	BOX, CARTON
057005080140	SHAFT TUNING ASSY 65050A
2008015700	TR FNP DUAL 2SA798G NITSU
2008206105	TR FNP KTA1015Y KEC
2008209102	TR FNP MP5A56 MOT
2008409100	TR NPN LM9016G MOT
2008409101	TR NPN LM9018F MOT
2008606105	TR NPN KTC1815BL KEC
2008609102	TR NPN MP5A06 MOT
2008609107	TR NPN MPS9633C MOT
2008610100	TR NPN 2SD1302R MOT
2018207103	FET N-CH 3SK59BL TOSHIBA
2058010100	DIODE IN40PAIR MATSU
2058100105	DIODE RECTIFIER IN5402 RECTRON
2058106100	DIODE RECTIFIER IN4002 KEC
2058306101	DIODE IN4148 KEC
2058520108	DIODE ZENER WZ140 JRC
2058520112	DIODE ZENER WZ197 JRC
2058520120	DIODE ZENER WZ167 JRC
2168220104	IC NJM4558DD JRC
2168220105	IC NJM 2902 JRC
2168411104	IC HA1197 HITACHI
2168411105	IC HA12016 HITACHI
2168411106	IC HA12412 HITACHI
2168411103	IC HA17815 HITACHI
2178317103	IC STK2240 SANYO
2308220111	LED SLB 15UR3RD-ROHM POWER, SIG, STEREO
2308220305	LED SLB 15GG GN-ROHM TUNED
2308220504	LED SLB15YY3 ROHM POINTER
2528200740	LAMP 64071-04
2608001000	COIL FM ANT 30096
2608207150	COIL AM ANT BAR
2618001030	COIL FM RF 30131
2638001000	COIL IFT FM 30053
2638001001	COIL FM OSC 30052A
2638201001	COIL AM OSC 30101A
2648001010	COIL INDUCTOR 0.5MH 30152
2648601010	COIL INDUCTOR 2.2UH 30057
2648601050	COIL INDUCTOR 18UH 30112
2648601260	COIL INDUCTOR 47UH 30190
2648601270	COIL INDUCTOR 2.2MH 30191
2658001050	COIL FLTR MPX BLK 31031
2828030402	PWR TRANS TTK
2838501010	COIL FM QUAD DET(A) 30122
2838501020	COIL FM QUAD DET(B) 30123
2848001000	COIL AM IFT 30103
2848001110	COIL AM IFT 31021
3009101273	RES CF 100 1/4W J N
3009101977	RES CF 100 1/5W J N
3009102273	RES CF 1K 1/4W J N
3009102977	RES CF 1K 1/5W J N
3009103273	RES CF 10K 1/4W J N
3009103977	RES CF 10K 1/5W J N
3009104273	RES CF 100K 1/4W J N
3009104977	RES CF 100K 1/5W J

COMPONENT ITEM NUMBER	DESCRIPTION
3009121273	RES CF 120 1/4W J N
3009121977	RES CF 120 1/5W J N
3009122977	RES CF 1.2K 1/5W J N
3009123273	RES CF 12K 1/4W J N
3009152273	RES CF 1.5K 1/4W J N
3009153273	RES CF 15K 1/4W J N
3009153977	RES CF 15K 1/5W J N
3009154273	RES CF 150K 1/4W J N
3009154977	RES CF 150K 1/5W J N
3009181273	RES CF 180 1/4W J N
3009182273	RES CF 1.8K 1/4W J N
3009183273	RES CF 18K 1/4W J N
3009184273	RES CF 180K 1/4W J N
3009202977	RES CF 2K 1/5W J N
3009220977	RES CF 22 1/5W J N
3009221273	RES CF 220 1/4W J N
3009221977	RES CF 220 1/5W J
3009222273	RES CF 2.2K 1/4W J N
3009222977	RES CF 2.2K 1/5W J N
3009223273	RES CF 22K 1/4W J N
3009223977	RES CF 22K 1/5W J N
3009224273	RES CF 220K 1/4W J N
3009271273	RES CF 270 1/4W J N
3009271977	RES CF 270 1/5W J N
3009272273	RES CF 2.7K 1/4W J N
3009273273	RES CF 27K 1/4W J N
3009331273	RES CF 330 1/4W J N
3009331977	RES CF 330 1/5W J N
3009332273	RES CF 3.3K 1/4W J N
3009332977	RES CF 3.3K 1/5W J N
3009333977	RES CF 33K 1/5W J N
3009391273	RES CF 390 1/4W J N
3009470273	RES CF 47 1/4W J N
3009471273	RES CF 470 1/4W J N
3409247871	CAP E AF RSA 0.47UF 50V
3409247971	CAP E AF RSA 4.7UF 50V
3419568225	CAP E AF 6800UF 50V SL
3509100130	CAP C 10PF 50V J
3509101130	CAP C 100PF 50V J
3509102530	CAP C 0.001UF 50V Z
3509103450	CAP C 0.01UF 500V P
3509103530	CAP C 0.01UF 50V Z F
3509121130	CAP C 120PF 50V J
3509151130	CAP C 150PF 50V J
3509203130	CAP C 0.02UF 50V J
3509221130	CAP C 220PF 50V J
3509270130	CAP C 27PF 50V J
3509470130	CAP C 47PF 50V J
3509471130	CAP C 470PF 50V J
3509473530	CAP C 0.047UF 50V Z
3509560130	CAP C 56PF 50V J
3509680130	CAP C 68PF 50V J
3509681230	CAP C 680PF 50V K B
3529100110	CAP C 10PF RH 50V C
3529150110	CAP C 15PF RH 50V J
3529220110	CAP C 22PF RH 50V J
3529309210	CAP C 3PF CH 50V C
3529330210	CAP C 33PF CH 50V J
3549472407	CAP C 0.0047UF/400VAC KC
3609102120	CAP M 0.001UF 100V J
3609152120	CAP M 0.0015UF 100V J
3609153120	CAP M 0.015UF 100V J
3609183120	CAP M 0.018UF 100V J
3609222120	CAP M 0.0022UF 100V J
3609223120	CAP M 0.022UF 100V J
3609332120	CAP M 0.0033UF 100V J
3609333120	CAP M 0.033UF 100V J
3609393120	CAP M 0.039UF 100V J
3609472120	CAP M 0.0047UF 100V J
3609473120	CAP M 0.047UF 100V J

PARTS LIST 349RA (CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
3609563120	CAP M 0.056UF 100V J	6505045010	BKT,PHONE
3609683120	CAP M 0.068UF 100V J	6505045110	BKT,ROLLER'A'
3609822120	CAP M 0.0082UF 100V J	6505045210	BKT,ROLLER'B'
3619102110	CAP P 1000PF 50V J	6505045310	ROLLER'C'
3619221110	CAP P 220PF 50V J	6505045410	BKT,LAMP
3619332110	CAP P 0.0033UF 50V J	6505049410	BKT POWER SW
3619681110	CAP P 680PF 50V J	6513000110	STOPPER CORD
3808201010	CAP AIR C752J 66029	6515000210	HOLDER ANT
3908001000	FLTR C SFZ455FL 31020	6518000111	STOPPER,CORD
3908011001	FLTR C SFE10.7MA8-ARD31008RD	6525000120	CLAMP,WIRE
4002013201	PC BOARD,AUDIO	6525000210	BAND WIRE
4002013210	PC BOARD,SPK TERMINAL	6555300110	SPRING DIAL
4002013220	PC BOARD,SW	6715001310	SPONGE,RUBBER
4002013230	PC BOARD,LED POINTER	6735001310	FELT STRIP
4002013301	PC BOARD TUNER	7113000112	PULLEY DIAL
4002013310	PC BOARD,SIGNAL METER	7115000710	ROLLER
4002013320	PC BOARD,VOLUME	7503003610	HEAT,SINK
4005010500	PC BOARD POWER LEABEL METER	7505200740	HEAT SINK REG TR
4115100711	WIRE SLAT 6P60 67065A	8019120031	SCREW PM2X3Y
4115101911	WIRE SLAT 7P100 67079A	8019130151	SCREW PM3X15Y
4115102011	WIRE SLAT 2P120 67080A	8069140103	SCREW WPM4X10B
4115107310	WIRE SLAT 3P150 67163	8095000210	PIVOT
4115107710	WIRE SLAT 7P195 67167	8109230061	SCREW #2BTC3X6Y
4115112810	WIRE,SLATE	8109230081	SCREW #2BTC3X8Y
4115112910	SLAT,WIRE	8109230121	SCREW #2BTC3X12Y
4205000810	TERMINAL LUG 60169	8109330061	SCREW #3BTC3X6Y
4225000315	PIN WRAPPING 77038E	8109330081	SCREW #3BTC3X8Y
4235001610	TERMINAL GND	8119126061	SCREW #1PTC 2.6X6Y
4235001910	PLATE,GND	8119230063	SCREW #2PTC3X6B
4255000410	CLIP FUSE 69125	8119230081	SCREW #2PTC3X8Y
4308000220	CORD AC POWER 67045-02	8119230083	SCREW #2PTC3X8B
4348000310	ANT WIRE DIPOLE 67029	8119330063	SCREW #3PTC3X6B
4355005510	CONNECTOR W-D0607SMK 95161	8129330081	SCREW #3FTC3X8Y
4355007210	CONNECTOR W-D0608SMK 95184	8159230061	SCREW #2WPTC3X6Y
4408000410	TERMINAL ANT 76044	8159230081	SCREW #2WPTC3X8Y
4408101360	TERMINAL S/P 76043	8159440084	SCREW,WSAM 4X8(TNT)
4438000610	JACK PHONE 95176	8209540011	NUT FLANGE MAY
4438100410	JACK RCA 4P PCB 95138	8305000510	WASHER VINYL
4448100210	OUTLET AC 95105	8305001610	WASHER PLAIN
4458400310	HOLDER FUSE 69134	8319130011	WASHER SPRING #3Y
4465100110	TERMINAL GND	8553002710	WINDOW,FRONT
4465100210	TERMINAL,SCREW	8555006110	WINDOW,FILTER
4628010410	SWITCH PUSH 90419	8573002910	POINTER
4628030110	SWITCH SUF65 GS ALPS	8728000510	CAP,COLOR
4628030210	SWITCH SUF21 GS ALPS	9007010120	INSTRUCTIONS,MANUAL
4628030810	SWITCH	9027011000	SCHEMATIC DIAGRAM
4628031010	SWITCH,PUSH ESB99722T	9057000500	LABEL MADE IN KOREA
4855000111	CERAMIC PIPE 71028A	9057004500	LABEL CAUTION
5508211631	FUSE NB 31.8 0.5A 250V SJUL	9057022000	LABEL
5508212631	FUSE NB 31.8 3A 250V SJUL	9057037200	LABEL SERIAL NO.
5508212931	FUSE NB 31.8 4A 250V SJUL	9087003500	WARRANTY,CARD
5508213133	FUSE NB 31.8 6A 250V UL CSA	9705000210	POLY BAG
6055001810	INSERT,SLIDE	9705002010	POLY,BAG
6122406312	BOTTOM,COVER	9715000120	FILM SOFT PE
6123611210	FRAME,MAIN(R)	9722005610	CUSHION,POLY
6123611312	FRAME,MAIN	9748000110	PIN STAPLE
6123611411	FRAME,SUPPORT		
6145001412	WIRE,GUIDE		
6165100112	SHIELD,FENCE		
6165100213	COVER SHIELD 68276		
6165100412	SHIELD,FENCE		
6165111911	SHIELD,FENCE		
6305001610	BUTTON SHAFT		
6335000410	FOOT 71227		
6505025910	BKT JOINT 68758		
6505036210	BKT JOINT 68937		
6505044810	BKT,HEAT SINK		
6505044910	BKT,SLIDE VR		

EXPLODED VIEW

PART LIST 439A (USA/CANADA) (SEE PAGE 54)

No.	PARTS No.	DESCRIPTION	Q'ty
1.	8602010310	Panel Front	1
2.	8543002310	Knob Slide (EQ)	5
3.	8555006210	Window L.E.D.	1
4.	8521001520	Body Front	1
5.	6122406210	Cover Bottom	1
6.	6335000310	Foot	4
7.	8545010010	Knob Slide	2
8.	6055001710	Insert Knob	2
9.	8685002820	Cover Slide V/R	2
10.	3238404610	Slvr 45L S/W	1
11.	3238009010	Slvr 60L S/W	1
12.	6122606710	Frame Center	1
13.	6122606910	Frame Side (R)	1
14.	4438100510	RCA Jack (6P)	1
15.	4465100110	Terminal G.N.D.	1
16.	6102011220	C.H. Back	1
17.	4308000220	Cord AC Power	1
18.	4448100210	Out Let AC	3
19.	6518000111	Stopper Cord	1
20.	8545008710	Button Push (Power)	1
21.	6305000440	Knob Shaft	3
22.	6305000430	Knob Shaft	1
23.	4438000810	Jack Phone	1
24.	6122006410	Cabinet Top	1
25.	6122606810	Frame Side (L)	1
26.	4628010410	Push S/W (2Key)	1
27.	6505044610	B.K.T. Power Switch	1
28.	4628005710	Power Switch	1
29.	7505200720	Reg H/Sink	1
30.	6505044510	B.K.T. H/Sink (L)	1
31.	7503003510	H/Sink Power	1
32.	4628031510	Push Switch (61Cey)	1
33.	4628031710	Push S/W	1
34.	2828030501	Transformer	1
35.	2178317103	I.C.	1
36.	6705000710	Spacing	2
37.	8543002610	Button Push	8
38.	2308220110	L.E.D. (Red)	1
39.	6122208620	Chassis Front	1
40.	6165110910	Cover Shiled	1
41.	3238009210	SLVR 45L Switch	5
42.	6505044410	B.K.T. Phone	1
43.	4428101360	Speaker Terminal	1
44.	4438100410	RCA Jack (4P)	2
45.	8129330081	Screw #3 FTC 3 x 8Y	3
46.	8109330081	Screw #3 BTC 3 x 8Y	3
47.	8305000510	Vinyl Washer	4
48.	8159440083	Screw WSAM 4 x 8B	4
49.	8069140083	Screw WPM 4 x 8 (B)	4
50.	8019130221	Screw PM 3 x 22Y	2
51.	6705000740	Spacing	2
52.	8545008810	Button Push (S/P)	2
53.	4833000410	Washer	2

PARTS LIST 439A (USA/CANADA)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
046102011211	CHASSIS, BACK	3238009210	SLIDE, VR
046122006401	COVER, TOP	3238404610	SLVR 45L 100KSWX1
048521001501	BODY, FRONT	3248347320	RES SEMI CS47KB 10/5
048543002301	KNOB, SLIDE	3409210061	CAP E AF RSA 10UF 35V
048543002601	BUTTON, PUSH	3409210121	CAP E AF RSA 100UF 10V
048545008701	BUTTON, PUSH	3409210131	CAP E AF RSA 100UF 16V
048545008801	BUTTON, PUSH	3409210171	CAP E AF RSA 100UF 50V
048545010001	KNOB, SLIDE	3409210971	CAP E AF RSA 1UF 50V
048602010302	PANEL, FRONT	3409222141	CAP E AF RSA 220UF 25V
048685002801	PLATE, COVER SLIDE	3409222971	CAP E AF RSA 2.2UF 50V
048685002802	PLATE, COVER SLIDE	3409247031	CAP E AF RSA 47UF 16V
049605034203	BOX, CARTON	3409247041	CAP E AF RSA 47UF 25V
2008015700	TR PNP DUAL 2SA798G MITSU	3409247971	CAP E AF RSA 4.7UF 50V
2008206105	TR PNP KTA1015Y KEC	3419547223	CAP E AF 4700UF 50V SW MS
2008209102	TR PNP MPSA56 MOT	3509101130	CAP C 100PF 50V J
2008606104	TR NPN KTC1815Y KEC	3509103450	CAP C 0.01UF 500V P
2008609102	TR NPN MPSA06 MOT	3509221130	CAP C 220PF 50V J
2008609107	TR NPN MPS9633C MOT	3509222530	CAP C 0.0022UF 50V Z
2028406113	TR NPN KTD880Y KEC	3509309030	CAP C 3PF 50V C
2058106100	DIODE RECTIFIER 1N4002	3509331130	CAP C 330PF 50V J
2058126100	DIODE RECTIFIER 1N5172 GI	3509470130	CAP C 47PF 50V J
2058306101	DIODE 1N4148	3509471130	CAP C 470PF 50V J
2058513107	DIODE, ZENER RD9.1EB3 NEC	3509473530	CAP C 0.047UF 50V Z
2058513112	DIODE, ZENER RD20EB3 NEC	3509681230	CAP C 680PF 50V K B
2058513120	DIODE, ZENER RD18EB1 NEC	3549472407	CAP C 0.0047UF/400VAC KC
2168010104	IC AN 6879 MATSU	3609104120	CAP M 0.1UF 100V J
2168220103	IC NJM4540D JRC	3609152120	CAP M 0.0015UF 100V J
2168220104	IC NJM4558DD JRC	3609153120	CAP M 0.015UF 100V J
2178317103	IC STK2240 SANYO	3609223120	CAP M 0.022UF 100V J
2178317111	IC STK6328A SANYO	3609473120	CAP M 0.047UF 100V J
2308220110	LED SLB61RR3-RD ROHM	3609562120	CAP M 0.0056UF 100V J
2308220111	LED SLB 15UR3RD-ROHM	3609563120	CAP M 0.056UF 100V J
2648001010	COIL INDUCTOR 0.5MH 30152	3609683120	CAP M 0.068UF 100V J
2828030501	PWR TRANS HY	3609823120	CAP M 0.082UF 100V J
3009102273	RES CF 1K 1/4W J N	3658225201	CAP T 2.2UF 16V K
3009103273	RES CF 10K 1/4W J N	3658474201	CAP T 0.47UF 16V K
3009104273	RES CF 100K 1/4W J N	4002113100	PC BOARD MAIN
3009121273	RES CF 120 1/4W J N	4005112200	PC BOARD TONE
3009124273	RES CF 120K 1/4W J N	4115101111	WIRE SLAT-5P140 67069A
3009152273	RES CF 1.5K 1/4W J N	4115105010	WIRE SLAT 4P95 67124
3009154273	RES CF 150K 1/4W J N	4115105410	WIRE SLAT 3P110 67128
3009183273	RES CF 18K 1/4W J N	4115106310	WIRE SLAT 3P150 67142
3009203273	RES CF 20K 1/4W J N	4115107820	WIRE SLAT 3P80 67205-02
3009221273	RES CF 220 1/4W J N	4115108920	WIRE, SLAT
3009223273	RES CF 22K 1/4W J N	4115109110	WIRE, SLAT-7P132 67204
3009224273	RES CF 220K 1/4W J N	4115110110	WIRE, SLAT 2P90 67171-01
3009273273	RES CF 27K 1/4W J N	4115110810	WIRE SLAT 2P200 67212
3009274273	RES CF 270K 1/4W J N	4115111810	WIRE SLAT 8P140 67225
3009332273	RES CF 3.3K 1/4W J N	4205000810	TERMINAL LUG 60169
3009333273	RES CF 33K 1/4W J N	4225000315	PIN WRAPPING 77038E
3009391273	RES CF 390 1/4W J N	4255000410	CLIP FUSE 69125
3009392273	RES CF 3.9K 1/4W J N	4308000220	CORD AC-POWER 67045-02
3009470273	RES CF 47 1/4W J N	4355005810	CONNECTOR W-D0604SMK 95170
3009471273	RES CF 470 1/4W J N	4355007010	CONNECTOR W-D0603SMK 95183
3009472273	RES CF 4.7K 1/4W J N	4355007910	CONNECTOR W-D0605SMK 95218
3009473273	RES CF 47K 1/4W J N	4355008810	CONNECTOR W-D0604SMK
3009513273	RES CF 51K 1/4W J N	4408101360	TERMINAL S/P 76043
3009561273	RES CF 560 1/4W J N	4438000810	JACK PHONE 3P 95180
3009562273	RES CF 5.6K 1/4W J N	4438100410	JACK RCA 4P PCB 95138
3009563273	RES CF 56K 1/4W J N	4438100510	JACK RCA 6P PCB 95140
3009681273	RES CF 680 1/4W J N	4448100210	OUTLET AC 95105
3009753273	RES CF 75K 1/4W J N	4465100110	TERMINAL GND
3009821273	RES CF 820 1/4W J N	4465100210	TERMINAL, SCREW
3009822273	RES CF 8.2K 1/4W J N	4628005710	SWITCH PUSH 90331
3009823273	RES CF 82K 1/4W J N	4628010410	SWITCH PUSH 90419
3039100372	RES MO 10 1/2W J	4628031510	SWITCH, PUSH SUF65
3039101572	RES MO 100 2W J	4628031610	SWITCH, PUSH SUF25
3039102472	RES MO 1K 1W J	4855000111	CERAMIC PIPE 71028A
3039271572	RES MO 270 2W J	5508212931	FUSE NB 31.8 4A 250V SJUL
3039391572	RES MO 390 2W J	5508213031	FUSE NB 31.8 5A 250V SJUL
3238009010	SLVR 60L 250KBX2	6055001710	INSERT, KNOB

PARTS LIST 439A (USA/CANADA CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	
6122208610	CHASSIS, FRONT	
6122406210	COVER, BOTTOM	
6123612110	FRAME, SIDE (R)	
6123612210	FRAME, SIDE (L)	
6123612310	FRAME, CENTER	
6165110910	COVER, SHIELD	
6305000430	BAR CONNECTION	72339-03
6305000440	KNOB, SHAFT	
6335000310	FOOT	71194
6505044410	BKT, PHONE	
6505044510	BKT, HEAT SINK 'C'	
6505044610	BKT, POWER S/W	
6518000111	STOPPER, CORD SR-3P-4	
6525000210	BAND WIRE	69111
6705000710	SPACING	71305-01
6705000740	SPONGE	
6715001310	SPONGE, RUBBER	72160
6715005310	RUBBER SPONGE	
6715005610	SPONGE, RUBBER	
6735001410	FELT STRIP	71292
7503003510	HEAT, SINK	
7505200720	HEAT SINK REG TR	73060-02
8019120033	SCREW PM2X3B	
8019130181	SCREW PM3X18Y	
8019130221	SCREW PM3X22Y	
8049140081	SCREW M6TH 4X8	
8109230061	SCREW #2BTC3X6Y	
8109230121	SCREW #2BTC3X12Y	
8109330061	SCREW #3BTC3X6Y	
8109330081	SCREW #3BTC3X8Y	
8119230081	SCREW #2PTC3X8Y	
8119230083	SCREW #2PTC3X8B	
8119330061	SCREW #3PTC3X6Y	
8119330063	SCREW #3PTC3X6B	
8129330081	SCREW #3FTC3X8Y	
8159230081	SCREW #2WPTC3X8Y	
8159330061	SCREW #3WPTC3X6Y	
8159330081	SCREW #3WPTC3X8Y	
8159440084	SCREW, WSAM 4X8 (NI)	
8209540011	NUT FLANGE M4Y	
8305000510	WASHER VINYL	70046
8305000520	WASHER VINYL	70046-02
8309030011	WASHER, PLAIN #3Y	
8319130011	WASHER SPRING #3Y	
8555006210	WINDOW, LED	
9007010150	INSTRUCTION, MANUAL	
9057000500	LABEL MADE IN KOREA	85L207
9057004500	LABEL CAUTION	85L314
9057037200	LABEL SERIAL NO.	85L677
9087003500	WARRANTY, CARD	
9705000210	POLY BAG	74202
9705002010	POLY, BAG	
9715000140	FILM SOFT PE	74377-04
9722005610	CUSHION, POLY	
9748000110	PIN STAPLE	

PARTS LIST 439A (EUROPE)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
046102011213	CHASSIS, BACK	3069222270	RES CF 2.2K 1/4W J
046122006401	COVER, TOP	3069223270	RES CF 22K 1/4W J
048521001501	BODY, FRONT	3069224270	RES CF 220K 1/4W J
048543002301	KNOB, SLIDE	3069273270	RES CF 27K 1/4W J
048543002601	BUTTON, PUSH	3069332270	RES CF 3.3K 1/4W J
048545008701	BUTTON, PUSH	3069333270	RES CF 33K 1/4W J
048545008801	BUTTON, PUSH	3069391270	RES CF 390 1/4W J
048545010001	KNOB, SLIDE	3069392270	RES CF 3.9K 1/4W J
048602010302	PANEL, FRONT	3069470270	RES CF 47 1/4W J
048685002801	PLATE, COVER SLIDE	3069471270	RES CF 470 1/4W J
048685002802	PLATE, COVER SLIDE	3069472270	RES CF 4.7K 1/4W J
049605034203	BOX, CARTON	3069473270	RES CF 47K 1/4W J
2008015700	TR PNP DUAL 2SA798G MITSU	3069513270	RES CF 51K 1/4W J
2008206105	TR PNP KTA1015Y KEC	3069561270	RES CF 560 1/4W J
2008209102	TR PNP MPSA56 MOT	3069562270	RES CF 5.6K 1/4W J
2008606104	TR NPN KTC1815Y KEC	3069563270	RES CF 56K 1/4W J
2008609102	TR NPN MPSA06 MOT	3069681270	RES CF 680 1/4W J
2008609107	TR NPN MPS9633C MOT	3069753270	RES CF 75K 1/4W J
2028406113	TR NPN KTD880Y KEC	3069821270	RES CF 820 1/4W J
2058100105	DIODE RECTIFIER IN5402 RECTRON	3069822270	RES CF 8.2K 1/4W J
2058106100	DIODE RECTIFIER 1N4002	3069823270	RES CF 82K 1/4W J
2058306101	DIODE IN4148	3238009010	SLVR 60L 250KBX2
2058513107	DIODE, ZENER RD9.1EB3 NEC	3238009210	SLIDE VOLUME S4528L603M, ALPS
2058513112	DIODE ZENER RD20EB3 NEC	3238404610	SLVR 45L 100KSWX1
2058513120	DIODE, ZENER RD18EB1 NEC	3248347320	RES SEMI CS47KB 10/5
2168010104	IC AN 6879 MATSU	3409210061	CAP E AF RSA 10UF 35V
2168220103	IC NJM4560D JRC	3409210121	CAP E AF RSA 100UF 10V
2168220104	IC NJM4558DD JRC	3409210131	CAP E AF RSA 100UF 16V
2178317103	IC STK2240 SANYO	3409210171	CAP E AF RSA 100UF 50V
2178317111	IC STK6328A SANYO	3409210971	CAP E AF RSA 1UF 50V
2308220110	LED SLB61RR3-RD ROHM	3409222141	CAP E AF RSA 220UF 25V
2308220111	LED SLB 15UR3RD-ROHM	3409222971	CAP E AF RSA 2.2UF 50V
2648001010	COIL INDUCTOR 0.5MH	3409247031	CAP E AF RSA 47UF 16V
2648601250	COIL INDUCTOR 20UH	3409247041	CAP E AF RSA 47UF 25V
2828030501	PWR TRANS HY	3409247971	CAP E AF RSA 4.7UF 50V
3039100372	RES MO 10 1/2W J	3419547223	CAP E AF 4700UF 50V SW MS
3039100472	RES MO 10 1W J	3509101130	CAP C 100PF 50V J
3039101572	RES MO 100 2W J	3509104530	CAP C 0.1UF 50V Z
3039102472	RES MO 1K 1W J	3509221130	CAP C 220PF 50V J
3039271572	RES MO 270 2W J	3509222530	CAP C 0.0022UF 50V Z
3039391572	RES MO 390 2W J	3509309030	CAP C 3PF 50V C
3069101270	RES CF 100 1/4W J	3509331130	CAP C 330PF 50V J
3069102270	RES CF 1K 1/4W J	3509470130	CAP C 47PF 50V J
3069103270	RES CF 10K 1/4W J	3509471130	CAP C 470PF 50V J
3069104270	RES CF 100K 1/4W J	3509473530	CAP C 0.047UF 50V Z
3069121270	RES CF 120 1/4W J	3509681230	CAP C 680PF 50V K B
3069124270	RES CF 120K 1/4W J	3549472407	CAP C 0.0047UF/400VAC KC
3069152270	RES CF 1.5K 1/4W J	3609104120	CAP M 0.1UF 100V J
3069154270	RES CF 150K 1/4W J	3609152120	CAP M 0.0015UF 100V J
3069183270	RES CF 18K 1/4W J	3609153120	CAP M 0.015UF 100V J
3069203270	RES CF 20K 1/4W J N	3609223120	CAP M 0.022UF 100V J
3069221270	RES CF 220 1/4W J	3609334130	CAP M 0.33UF 150V J

PARTS LIST 439A (EUROPE CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
3609473120	CAP M 0.047UF 100V J	6305000440	KNOB, SHAFT
3609562120	CAP M 0.0056UF 100V J	6335000310	FOOT
3609563120	CAP M 0.056UF 100V J	6505044410	BKT, PHONE
3609683120	CAP M 0.068UF 100V J	6505044510	BKT, H/SINK(C)
3609823120	CAP M 0.082UF 100V J	6505044610	BKT, POWER S/W
3658225201	CAP T 2.2UF 16V K	6518000111	STOPPER, CORD SR-3P-4
3658474201	CAP T 0.47UF 16V K	6525000210	BAND WIRE
4002113100	PC BOARD MAIN	6705000740	SPONGE
4003111700	PC BOARD LED	6715001310	SPONGE, RUBBER
4005112200	PC BOARD TONE	6715004710	SPONGE, RUBBER
4115101111	WIRE SLAT 5P140	6715005310	RUBBER SPONGE
4115105410	WIRE SLAT 3P110	6715005610	SPONGE, RUBBER
4115106310	WIRE SLAT 3P150	6735001410	FELT STRIP
4115107820	WIRE, SLAT 3P80	7503003510	H/SINK POWER
4115108920	WIRE, SLAT	7505200720	H/SINK REG TR
4115110110	WIRE, SLAT 2P90	8019120033	SCREW PM2X3B
4115110810	WIRE SLAT 2P200	8019130181	SCREW PM3X18Y
4115112010	WIRE, SLAT 4P215	8019130221	SCREW PM3X22Y
4205000810	TERMINAL LUG	8049140081	SCREW MCTH 4X8
4225000315	PIN WRAPPING	8109230061	SCREW #2BTC3X6Y
4255000410	CLIP FUSE	8109230081	SCREW #2BTC3X8Y
4308000430	CORD, AC POWER	8109330061	SCREW #3BTC3X6Y
4355005810	CONNECTOR W-D0606SMK	8109330081	SCREW #3BTC3X8Y
4355007010	CONNECTOR W-D0603SMK	8119230083	SCREW #2PTC3X8B
4355007910	CONNECTOR W-D0605SMK	8119330061	SCREW #3PTC3X6Y
4355008810	CONNECTOR W-D0604SMK	8119330063	SCREW #3PTC3X6B
4408101360	TERMINAL S/P 76043	8129330081	SCREW #3FTC3X8Y
4438000810	JACK PHONE 3P	8159230081	SCREW #2WPTC3X8Y
4438100410	JACK RCA 4P PCB	8159330061	SCREW #3WPTC3X6Y
4438100510	JACK RCA 6P PCB	8159330081	SCREW #3WPTC3X8Y
4458400120	HOLDER FUSE	8159440084	SCREW, WSAM 4X8(NI)
4465100110	TERMINAL GND	8209540011	NUT FLANGE M4Y
4465100210	TERMINAL, SCREW	8305000510	WASHER VINYL
4628005410	SW POWER MATSU ESR-90117S TV-5	8305000520	WASHER VINYL
4628010410	SW PUSH 2KEY P:10 SELF 1AMP	8309030011	WASHER, PLAIN #3Y
4628031510	SW PUSH 6KEY P:25	8319130011	WASHER SPRING #3Y
4628031610	SW PUSH 2KEY P:25 SELF	8555006210	WINDOW, LED
4833000410	WASHER	9007010151	INSTRUCTIONS MANUAL
4835001221	INSULATION FUSE 71281A-02	9057002600	LABEL FUSE(T1.6A)
4835002710	INSULATION POWER SW 71381	9057037200	LABEL SERIAL NO.
4855000111	PIPE CERAMIC 71028A	9057039400	LABEL "E"
5508302334	FUSE TL 20 1.6A 250V SEMKO	9057047700	LABEL 85L781
5508402934	FUSE FB 20 4A 250V SEMKO	9057048800	LABEL FTZNO 85L792
5508403034	FUSE FR 20 5A 250V SEMKO	9087003500	WARRANTY, CARD
6055001710	KNOB, INSERT	9705000210	POLY BAG 74202
6122208610	CHASSIS, FRONT	9705002010	POLY, BAG
6122406210	COVER, BOTTOM	9715000140	FILM SOFT PE 74377-04
6123612110	FRAME, SIDE(R)	9722005610	CUSHION, POLY
6123612210	FRAME, SIDE(L)	9748000110	PIN STAPLE
6123612310	FRAME, CENTER		
6165110910	COVER, SHIELD		
6305000430	BAR CONNECTION		

EXPLODED VIEW

PART LIST 459A (USA/CANADA) (SEE PAGE 55)

No.	PARTS No.	DESCRIPTION	Q'ty
1.	8602010310	Panel Front	1
2.	8543002310	Knob Slide (EQ)	5
3.	8555006210	Window L.E.D.	1
4.	8521001520	Body Front	1
5.	6122406210	Cover Bottom	1
6.	6335000310	Foot	4
7.	8545010010	Knob Slide	2
8.	6055001710	Insert Knob	2
9.	8685002820	Cover Slide V/R	2
10.	3238404610	Slvr 45L S/W	1
11.	3238009010	Slvr 60L S/W	1
12.	6122606710	Frame Center	1
13.	6122606910	Frame Side (R)	1
14.	4438100510	RCA Jack (6P)	1
15.	4465100110	Terminal G.N.D.	1
16.	6102011220	C.H. Back	1
17.	4308000220	Cord AC Power	1
18.	4448100210	Out Let AC	3
19.	6518000111	Stopper Cord	1
20.	8545008710	Button Push (Power)	1
21.	6305000440	Knob Shaft	3
22.	6305000430	Knob Shaft	1
23.	4438000810	Jack Phone	1
24.	6122006410	Cabinet Top	1
25.	6122606810	Frame Side (L)	1
26.	4628010410	Push S/W (2Key)	1
27.	6505044610	B.K.T. Power Switch	1
28.	4628005710	Power Switch	1
29.	7505200720	Reg H/Sink	1
30.	6505044510	B.K.T. H/Sink (L)	1
31.	7503003510	H/Sink Power	1
32.	4628031510	Push Switch (61Cey)	1
33.	4628031710	Push S/W	1
34.	2828030501	Transformer	1
35.	2178317103	I.C.	1
36.	7505100410	Sub H/Sink	1
37.	8543002610	Button Push	10
38.	2308220110	L.E.D. (Red)	1
39.	6122208620	Chassis Front	1
40.	6165110910	Cover Shiled	1
41.	3238009210	SLVR 45L Switch	5
42.	6505044410	B.K.T. Phone	1
43.	4428101360	Speaker Terminal	1
44.	4438100410	RCA Jack (4P)	2
45.	8129330081	Screw #3 FTC 3 × 8Y	3
46.	8109330081	Screw #3 BTC 3 × 8Y	3
47.	8305000510	Vinyl Washer	4
48.	8159440083	Screw WSAM 4 × 8B	4
49.	8069140083	Screw WPM 4 × 8 (B)	4
50.	8019130221	Screw PM 3 × 22Y	2
51.	6705000740	Spacing	2
52.	8545008810	Button Push (S/P)	2
53.	4833000410	Washer	2
54.	6705000710	Spacing	2

PARTS LIST 459A (USA/CANADA)

COMPONENT ITEM NUMBER

DESCRIPTION

046102011212 CHASSIS, BACK
046122006401 COVER, TOP
048521001502 BODY, FRONT
048543002301 KNOB, SLIDE
048543002601 BUTTON, PUSH
048545008701 BUTTON, PUSH
048545008801 BUTTON, PUSH
048545010001 KNOB, SLIDE
048602010302 PANEL, FRONT
048685002801 PLATE, COVER SLIDE
048685002802 PLATE, COVER SLIDE
049605034202 BOX, CARTON
2008015700 TR PNP DUAL 2SA798G MITSU
2008206105 TR PNP KTA1015Y KEC
2008209102 TR PNP MPSA56 MOT
2008606104 TR NPN KTC1815Y KEC
2008609102 TR NPN MPSA06 MOT
2008609107 TR NPN MPS9633C MOT
2028406113 TR NPN KTD880Y KEC
2058106100 DIODE RECTIFIER 1N4002 KEC
2058126100 DIODE RECTIFIER 1N5172 GI
2058306101 DIODE 1N4148 KEC
2058513107 DIODE, ZENER RD9.1EB3 NEC
2058513112 DIODE, ZENER RD20EB3 NEC
2058513120 DIODE, ZENER RD18EB1 NEC
2168010104 IC AN 6879 MATSU
2168220103 IC NJM4560D JRC
2168220104 IC NJM4558DD JRC
2178317109 IC STK 2250 SANYO
2178317111 IC STK6328A SANYO
2308220110 LED SLB61RR3-RD ROHM
2308220111 LED SLB 15UR3RD-ROHM
2648001010 COIL INDUCTOR 0.5MH 30152
2828027601 FWR TRANS HY
3009101273 RES CF 100 1/4W J N
3009102273 RES CF 1K 1/4W J N
3009103273 RES CF 10K 1/4W J N
3009104273 RES CF 100K 1/4W J N
3009121273 RES CF 120 1/4W J N
3009124273 RES CF 120K 1/4W J N
3009152273 RES CF 1.5K 1/4W J N
3009153273 RES CF 15K 1/4W J N
3009154273 RES CF 150K 1/4W J N
3009183273 RES CF 18K 1/4W J N
3009221273 RES CF 220 1/4W J N
3009223273 RES CF 22K 1/4W J N
3009224273 RES CF 220K 1/4W J N
3009273273 RES CF 27K 1/4W J N
3009274273 RES CF 270K 1/4W J N
3009332273 RES CF 3.3K 1/4W J N
3009333273 RES CF 33K 1/4W J N
3009391273 RES CF 390 1/4W J N

COMPONENT ITEM NUMBER

DESCRIPTION

3009392273 RES CF 3.9K 1/4W J N
3009470273 RES CF 47 1/4W J N
3009472273 RES CF 4.7K 1/4W J N
3009473273 RES CF 47K 1/4W J N
3009513273 RES CF 51K 1/4W J N
3009561273 RES CF 560 1/4W J N
3009562273 RES CF 5.6K 1/4W J N
3009563273 RES CF 56K 1/4W J N
3009681273 RES CF 680 1/4W J N
3009753273 RES CF 75K 1/4W J N
3009821273 RES CF 820 1/4W J N
3009822273 RES CF 8.2K 1/4W J N
3009823273 RES CF 82K 1/4W J N
3039100372 RES MO 10 1/2W J
3039101572 RES MO 100 2W J
3039102472 RES MO 1K 1W J
3039271572 RES MO 270 2W J
3039471572 RES MO 470 2W J
3238009010 SLVR 60L 250KBX2
3238009210 SLIDE, VR
3238404610 SLVR 45L 100KSWX1
3248350320 RES SEMI CS50KB 10/5
3409210061 CAP E AF RSA 10UF 35V
3409210121 CAP E AF RSA 100UF 10V
3409210131 CAP E AF RSA 100UF 16V
3409210171 CAP E AF RSA 100UF 50V
3409210971 CAP E AF RSA 1UF 50V
3409222141 CAP E AF RSA 220UF 25V
3409222971 CAP E AF RSA 2.2UF 50V
3409247031 CAP E AF RSA 47UF 16V
3409247041 CAP E AF RSA 47UF 25V
3409247971 CAP E AF RSA 4.7UF 50V
3419568223 CAP E AF 6800UF 50V SW MS
3509101130 CAP C 100PF 50V J
3509103450 CAP C 0.01UF 500V P
3509221130 CAP C 220PF 50V J
3509222530 CAP C 0.0022UF 50V Z
3509309030 CAP C 3PF 50V C
3509331130 CAP C 330PF 50V J
3509470130 CAP C 47PF 50V J
3509471130 CAP C 470PF 50V J
3509473530 CAP C 0.047UF 50V Z
3509681230 CAP C 680PF 50V K B
3549472407 CAP C 0.0047UF/400VAC KC
3609104120 CAP M 0.1UF 100V J
3609152120 CAP M 0.0015UF 100V J
3609153120 CAP M 0.015UF 100V J
3609223120 CAP M 0.022UF 100V J
3609473120 CAP M 0.047UF 100V J
3609562120 CAP M 0.0056UF 100V J
3609563120 CAP M 0.056UF 100V J
3609683120 CAP M 0.068UF 100V J

PARTS LIST

459A (USA/CANADA CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
3609823120	CAP M 0.082UF 100V J	6518000111	STOPPER, CORD
3619821110	CAP P 820PF 50V J	6525000210	BAND WIRE
3658225201	CAP T 2.2UF 16V K	6705000740	SPONGE
3658474201	CAP T 0.47UF 16V K	6715001310	SPONGE, RUBBER
4002113100	PC BOARD MAIN	6715005310	RUBBER SPONGE
4003111500	PC BOARD TONE	6735001410	FELT STRIP
4115101111	WIRE SLAT 5P140	7503003510	HEAT, SINK
4115105010	WIRE SLAT 4P95	7505100410	HEAT, SINK SUB
4115105410	WIRE SLAT 3P110	7505200720	HEAT SINK REG TR
4115106310	WIRE SLAT 3P150	8019120033	SCREW FM2X3B
4115107820	WIRE SLAT 3P80	8019130181	SCREW FM3X18Y
4115108910	WIRE SLAT 6P290	8019130221	SCREW FM3X22
4115109110	WIRE, SLAT 7P132	8069140083	SCREW WPM4X8B
4115110110	WIRE, SLAT 2P90	8109230061	SCREW #2BTC3X6Y
4115110810	WIRE SLAT 2P200	8109230081	SCREW #2BTC3X8Y
4115111810	WIRE SLAT 8P140	8109230121	SCREW #2BTC3X12Y
4205000810	TERMINAL LUG	8109330061	SCREW #3BTC3X6Y
4225000315	PIN WRAPPING	8109330081	SCREW #3BTC3X8Y
4255000410	CLIP FUSE	8119230083	SCREW #2PTC3X8B
4308000220	CORD AC POWER	8119330061	SCREW #3PTC3X6Y
4355005810	CONNECTOR W-D0604SMK	8119330063	SCREW #3PTC3X6B
4355007010	CONNECTOR W-D0603SMK	8129330081	SCREW #3FTC3X8Y
4355007910	CONNECTOR W-D0605SMK	8159230081	SCREW #2WPTC3X8Y
4355008810	CONNECTOR W-D0604SMK	8159330061	SCREW #3WPTC3X6Y
4408101360	TERMINAL S/P	8159330081	SCREW #3WPTC3X8Y
4438000810	JACK PHONE 3P	8159440084	SCREW, WSAM 4X8(NI)
4438100410	JACK RCA 4P PCB	8209540011	NUT FLANGE M4Y
4438100510	JACK RCA 6P PCB	8305000510	WASHER VINYL
4448100210	OUTLET AC	8309030011	WASHER, FLAIN #3Y
4465100110	TERMINAL GND	8319130011	WASHER SPRING #3Y
4465100210	TERMINAL, SCREW	8555006210	WINDOW, LED
4628010410	SWITCH PUSH	9007010170	INSTRUCTION, MANUAL
4628031010	SWITCH, PUSH ESB99722T	9057000500	LABEL MADE IN KOREA
4628031510	SWITCH, PUSH SUF65	9057004500	LABEL CAUTION
4628031710	SWITCH, PUSH SUF45	9057037200	LABEL SERIAL NO.
4855000111	CERAMIC PIPE	9087003500	WARRANTY, CARD
5508212931	FUSE NB 31.8 4A 250V SJUL	9705000210	POLY BAG
5508213031	FUSE NB 31.8 5A 250V SJUL	9705002010	POLY, BAG
5508213133	FUSE NB 31.8 6A 250V UL CSA	9715000140	FILM SOFT PE
6055001710	INSERT, KNOB	9722005610	CUSHION, POLY
6122208620	CHASSIS, FRONT	9748000110	PIN STAPLE
6122406210	COVER, BOTTOM		
6123612110	FRAME, SIDE(R)		
6123612210	FRAME, SIDE(L)		
6123612310	FRAME, CENTER		
6165110910	COVER, SHIELD		
6305000430	BAR CONNECTION	72339-03	
6305000440	KNOB, SHAFT		
6335000310	FOOT	71194	
6505044410	BKT, PHONE		
6505044510	BKT, HEAT SINK 'C'		
6505044610	BKT, POWER S/W		

PARTS LIST 459A (EUROPE)

COMPONENT ITEM NUMBER

DESCRIPTION

046102011214 CHASSIS, BACK
046122006401 COVER, TOP
048521001502 BODY, FRONT
048543002301 KNOB, SLIDE
048543002601 BUTTON, PUSH
048545008701 BUTTON, PUSH
048545008801 BUTTON, PUSH
048545010001 KNOB, SLIDE
048602010302 PANEL, FRONT
048685002801 PLATE, COVER SLIDE
048685002802 PLATE, COVER SLIDE
049605003402 BOX, CARTON
2008015700 TR PNP DUAL 2SA798G MITSU
2008206105 TR PNP KTA1015Y KEC
2008209102 TR PNP MPSA56 MOT
2008606104 TR NPN KTC1815Y KEC
2008609102 TR NPN MPSA06 MOT
2008609107 TR NPN MPS9633C MOT
2028406113 TR NPN KTD880Y KEC
2058100105 DIODE RECTIFIER IN5402 RECTRON
2058106100 DIODE RECTIFIER 1N4002
2058306101 DIODE 1N4148
2058513107 DIODE, ZENER RD9.1EB3 NEC
2058513112 DIODE, ZENER RD20EB3 NEC
2058513120 DIODE, ZENER RD18EB1 NEC
2168010104 IC AN 6879 MATSU
2168220103 IC NJM4560D JRC
2168220104 IC NJM4558DD JRC
2178317109 IC STK 2250 SANYO
2178317111 IC STK6328A SANYO
2308220110 LED SLR61RR3-RD ROHM
2308220111 LED SLB 15UR3RD-ROHM
2648001010 COIL INDUCTOR 0.5MH
2648601250 COIL INDUCTOR 20UH
2828027601 PWR TRANS HY
3039100372 RES MO 10 1/2W J
3039100472 RES MO 10 1W J
3039101572 RES MO 100 2W J
3039102472 RES MO 1K 1W J
3039271572 RES MO 270 2W J
3039471572 RES MO 470 2W J
3069101270 RES CF 100 1/4W J
3069102270 RES CF 1K 1/4W J
3069103270 RES CF 10K 1/4W J
3069104270 RES CF 100K 1/4W J
3069121270 RES CF 120 1/4W J
3069124270 RES CF 120K 1/4W J
3069152270 RES CF 1.5K 1/4W J
3069153270 RES CF 15K 1/4W J
3069154270 RES CF 150K 1/4W J
3069183270 RES CF 18K 1/4W J
3069221270 RES CF 220 1/4W J

COMPONENT ITEM NUMBER

DESCRIPTION

3069222270 RES CF 2.2K 1/4W J
3069223270 RES CF 22K 1/4W J
3069224270 RES CF 220K 1/4W J
3069273270 RES CF 27K 1/4W J
3069332270 RES CF 3.3K 1/4W J
3069333270 RES CF 33K 1/4W J
3069391270 RES CF 390 1/4W J
3069392270 RES CF 3.9K 1/4W J
3069470270 RES CF 47 1/4W J
3069472270 RES CF 4.7K 1/4W J
3069473270 RES CF 47K 1/4W J
3069513270 RES CF 51K 1/4W J
3069561270 RES CF 560 1/4W J
3069562270 RES CF 5.6K 1/4W J
3069563270 RES CF 56K 1/4W J
3069681270 RES CF 680 1/4W J
3069753270 RES CF 75K 1/4W J
3069821270 RES CF 820 1/4W J
3069822270 RES CF 8.2K 1/4W J
3069823270 RES CF 82K 1/4W J
3238009010 SLVR 60L 250KBX2
3238009210 SLIDE VOLUME S4528L603M, ALPS
3238404610 SLVR 45L 100KSWX1
3248347320 RES SEMI CS47KB 10/5
3409210061 CAP E AF RSA 10UF 35V
3409210121 CAP E AF RSA 100UF 10V
3409210131 CAP E AF RSA 100UF 16V
3409210171 CAP E AF RSA 100UF 50V
3409210971 CAP E AF RSA 1UF 50V
3409222141 CAP E AF RSA 220UF 25V
3409222971 CAP E AF RSA 2.2UF 50V
3409247031 CAP E AF RSA 47UF 16V
3409247041 CAP E AF RSA 47UF 25V
3409247971 CAP E AF RSA 4.7UF 50V
3419568223 CAP E AF 6800UF 50V SW MS
3509101130 CAP C 100PF 50V J
3509104530 CAP C 0.1UF 50V Z
3509221130 CAP C 220PF 50V J
3509222530 CAP C 0.0022UF 50V Z
3509309030 CAP C 3PF 50V C
3509331130 CAP C 330PF 50V J
3509470130 CAP C 47PF 50V J
3509471130 CAP C 470PF 50V J
3509473530 CAP C 0.047UF 50V Z
3509681230 CAP C 680PF 50V K B
3549472407 CAP C 0.0047UF/400VAC KC
3609104120 CAP M 0.1UF 100V J
3609152120 CAP M 0.0015UF 100V J
3609153120 CAP M 0.015UF 100V J
3609223120 CAP M 0.022UF 100V J
3609334130 CAP M 0.33UF 150V J
3609473120 CAP M 0.047UF 100V J

PARTS LIST 459A (EUROPE CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
3609562120	CAP M 0.0056UF 100V J	6305000440	KNOB, SHAFT
3609563120	CAP M 0.056UF 100V J	6335000310	FOOT
3609683120	CAP M 0.068UF 100V J	6505044410	BKT, PHONE
3609823120	CAP M 0.082UF 100V J	6505044510	BKT, H/SINK (C)
3619821110	CAP P 820PF 50V J	6505044610	BKT, POWER S/W
3658225201	CAP T 2.2UF 16V K	6518000111	STOPPER, CORD SR-3P-4
3658474201	CAP T 0.47UF 16V K	6525000210	BAND WIRE
4002113100	PC BOARD MAIN	6705000740	SPONGE
4003111500	PC BOARD TONE	6715001310	SPONGE, RUBBER
4003111700	PC BOARD LED	6715004910	SPONGE, RUBBER
4115101111	WIRE SLAT 5P140	6715005310	RUBBER SPONGE
4115105410	WIRE SLAT 3P110	6715005610	SPONGE, RUBBER
4115106310	WIRE SLAT 3P150	6735001410	FELT STRIP
4115107820	WIRE SLAT 3P80	7503003510	H/SINK POWER
4115108910	WIRE SLAT 6P290	7505100410	H/SINK SUB
4115110110	WIRE, SLAT 2P90	7505200720	H/SINK REG TR
4115110810	WIRE SLAT 2P200	8019120033	SCREW PM2X3B
4115112010	WIRE, SLAT 4P215	8019130181	SCREW PM3X18Y
4205000810	TERMINAL LUG	8019130221	SCREW PM3X22Y
4225000315	PIN WRAPPING	8049140081	SCREW MCTH 4X8
4255000410	CLIP FUSE	8109230061	SCREW #2BTC3X6Y
4308000430	CORD, AC POWER	8109230081	SCREW #2BTC3X8Y
4355005810	CONNECTOR W-D0606SMK	8109230121	SCREW #2BTC3X12Y
4355007010	CONNECTOR W-D0603SMK	8109330061	SCREW #3BTC3X6Y
4355007910	CONNECTOR W-D0605SMK	8109330081	SCREW #3BTC3X8Y
4355008810	CONNECTOR W-D0604SMK	8119230083	SCREW #2PTC3X8B
4408101360	TERMINAL S/P 76043	8119330061	SCREW #3PTC3X6Y
4438000810	JACK PHONE 3P	8119330063	SCREW #3PTC3X6B
4438100410	JACK RCA 4P PCB	8129330081	SCREW #3FTC3X8Y
4438100510	JACK RCA 6P PCB	8159230081	SCREW #2WPTC3X8Y
4458400120	HOLDER FUSE	8159330061	SCREW #3WPTC3X6Y
4465100110	TERMINAL GND	8159330081	SCREW #3WPTC3X8Y
4465100210	TERMINAL, SCREW	8159440084	SCREW, WSAM 4X8 (NI)
4628005410	SW POWER MATSU ESB-90117S TV-5	8209540011	NUT FLANGE M4Y
4628010410	SW PUSH 2KEY P:10 SELF 1AMP	8305000510	WASHER VINYL
4628031510	SW PUSH 6KEY P:25	8305000520	WASHER VINYL
4628031710	SW PUSH 4KEY P:25 SELF	8309030011	WASHER, PLAIN 43Y
4833000410	WASHER	8319130011	WASHER SPRING 43Y
4835001221	INSULATION FUSE 71281A-02	8555006210	WINDOW, LED
4835002710	INSULATION POWER SW 71381	9007010171	INSTRUCTIONS MANUAL
4855000111	PIPE CERAMIC 71028A	9057003400	LABEL T2A
5508302434	FUSE TL 20 2A 250V SEMKO	9057037200	LABEL SERIAL NO. 85L677
5508403034	FUSE FB 20 5A 250V SEMKO	9057039400	LABEL "E"
5508403234	FUSE FB 20 6.3A 250V SEMKO	9057041600	LABEL, 85L720
6055001710	KNOB, INSERT	9057047700	LABEL 85L781
6122208620	CHASSIS, FRONT	9057048800	LABEL FTZNO 85L792
6122406210	COVER, BOTTOM	9087003500	WARRANTY, CARD
6123612110	FRAME, SIDE (R)	9705000210	POLY BAG 74202
6123612210	FRAME, SIDE (L)	97050002010	POLY, BAG
6123612310	FRAME, CENTER	9715000140	FILM SOFT PE 74377-04
6165110910	COVER, SHIELD	9722005610	CUSHION, POLY
6305000430	BAR CONNECTION	9748000110	PIN STAPLE

PARTS LIST 528T (USA/CANADA)

COMPONENT		DESCRIPTION
ITEM NUMBER		
9011 577 4305	ASSY-ST, TUNER	
9011 577 4402	ASSY-ST, TUNER	
9212 569 3900	ASSY-MACHINERY	528TL
3124 100 7105	TAP-STUD	0.5T SPC-1 BT2
6021 500 4202	CHASSIS-FRONT	PSH1 2.5T SPRAY PRJNT 2BND
6023 502 6202	FRAME-L	0.8T SPC-1 FZY
7304 100 2100	WASHER-PLAIN	0.5TX3.5PIX7PI FE FZY
8613 500 9109	CASE CASSETTE	COTTON FLOCKING
3114 102 4208	LUG	0.3T TE-SBC
6022 506 5202	CHASSIS-REAR	3.0T HARD BOARD.B COATING
6634 100 7108	CLAMPER CORD	HEYCO SR-3P-4 BLK
7304 501 0109	** NOT FOUND **	
7603 502 2201	MASK-KNOB 37	94HB ABS SPRAY
7702 508 9200	PANEL FRONT	AL EXTR430X88X1.7T 2BND
7653 503 1107	WINDOW-DIAL	94HB ACRYL CLR
7724 510 6109	KNOB-TUNING	ALB C-GOLD ABS 94HB 528TL
6102 503 5400	CABINET	PVC STEEL 0.9T SILVER-GRAY
8613 515 7202	PACKING-CASE	DW#1 WHT 528T
7128 640 0855	SCREW-TAP TH	+3S 4X8 FE FN
7724 507 8109	KNOB-PUSH(P)	ABS 94HB CHMPGN PLATING
7723 500 8101	KNOB-PUSH L	ABS 94HB CHMPGN PLATING
0749 200 0206	PVC-STEEL	SGEZ51 MF43 0.9TX914X1829
9112 559 3401	ASSY-CIRCUIT	
1018 327 2251	R-CARBON	RD 1/2P 2.2M-J
1509 452 2705	C-POLYSTYRENE	CQ 09 S 50V 1600-J
2509 306 5107	COIL-MW ANT	330UH W/HOLDER
3529 203 3508	SWITCH-PUSH	SUF34 (2C-2P) X3 NS
2869 201 5102	POWER-TRANS	EI41MM 120V 60HZ UL
3069 060 1265	FLAT-CABLE	1007 #26(T) 7P 260MM
4709 133 1402	FUSE-W/LEAD	SLO 125/250 0.5A31.8-L U/C
3053 806 3101	POWER CORD - AC	KP-10 SPT-1 #18 RLK UL/CSA
3324 500 9505	PHONO-PLUG U/C	CONNECTOR 1100M/M 1185#26
3344 100 8106	CONNECTOR-CLOSED,END	NYLON #66
2739 602 0108	TRANS-IF	TFAS 10MM 010
2739 603 0208	TRANS-FM DISC PRI	TFPS 10MM 010
2739 601 0503	TRANS-FM DISC SEC	TFSS 10MM 010
2749 608 0208	TRANS-IF	TABS 7MM 010
2749 602 0200	TRANS-AM MTX	TAAS 7MM 010
9213 501 5509	ASSY-ACCESSORY	
8134 530 2109	INSTRUCTIONS	ART PAPER 528T
8124 502 5102	CARD-WARRENTY	PAPER SCOTT
8114 524 2100	LABEL-SERIAL	ART/SCOTT TYPE

COMPONENT		DESCRIPTION
ITEM NUMBER		
9213 501 5606	RAW.SUB-MATERIAL	
0529 170 2606	WIRE-VINYL, U/C	1007 #26(T) BLK
0529 170 2615	WIRE-VINYL, U/C	1007 #26(T) BRN
0529 170 2624	WIRE-VINYL, U/C	1007 #26(T) RED
0529 170 2633	WIRE-VINYL, U/C	1007 #26(T) ORG
0529 170 2642	WIRE-VINYL, U/C	1007 #26(T) YEL
0529 170 2651	WIRE-VINYL, U/C	1007 #26(T) GRN
0529 170 2660	WIRE-VINYL, U/C	1007 #26(T) BLU
0529 170 2226	WIRE-VINYL, U/C	1007 #22(T) RED
0529 170 3027	WIRE-VINYL, U/C	1571 #30(T) RED
0529 170 3063	WIRE-VINYL, U/C	1571 #30(T) BLU
0529 170 3081	WIRE-VINYL, U/C	1571 #30(T) GRY
0529 170 3090	WIRE-VINYL, U/C	1571 #30(T) WHT
0529 170 3072	WIRE-VINYL, U/C	1571 #30(T) PPL
0539 154 1022	WIRE-SHIFLD, U/C	1185#26(T) RED
0539 154 1095	WIRE-SHIFLD, U/C	1185#26(T) WHT
0659 414 0014	TUBE-VINYL, U/C	AWG0 600V CLR
8114 507 7102	LABEL MADE IN KOREA	ART/45X6 M/M
8114 531 0209	LABEL-FUSE	125/250V 0.5A 25X7
8114 503 5100	LABEL-FUSE, CAUTION	ART/63.5X25M/M
8114 503 7100	LABEL-CAUTION	ALS 0.08T 63X20MM

PARTS LIST 528TL (EUROPEAN MODEL)

COMPONENT ITEM NUMBER	DESCRIPTION
9011 545 7107	** NOT FOUND **
9011 545 7204	** NOT FOUND **
9212 569 3803	** NOT FOUND **
7603 502 2201	MASK-KNOB 37 94HR ABS SPRAY
6021 500 4105	CHASSIS-FRONT PS-H1 2.5T
6023 502 6105	FRAME L 0.8T SPC1 FZY
7304 100 2100	WASHER-PLAIN 0.5TX3.5PIX7PT FE FZY
3164 101 9108	CLIP-FUSE PBP 3-1/2H T0.3 SN
3164 101 9108	CLIP-FUSE PBP 3-1/2H T0.3 SN
3124 100 7105	TAP-STUD 0.5T SPC1 BT2
6022 506 5105	** NOT FOUND **
6634 100 8103	CLAMPER-CORD HEYCO SR-4N-4 BLK
7304 501 0109	** NOT FOUND **
3124 100 7105	TAP-STUD 0.5T SPC1 RT2
7702 508 9103	PANEL-FRONT AL EXTR 430X88X1.5T
7653 503 1107	WINDOW-DIAL 94HR ACRYL CLR
7724 510 6109	KNOB-TUNING ALB C-GOLD ABS 94HR 528TL
6102 503 5400	CABINET PVC STEEL 0.9T SILVER-GRAY
7128 640 0855	SCREW-TAP TH +3S 4XR FE FN
8613 515 7105	PACKING CASE DW02 WHT 528TL
7724 507 8109	KNOB-PUSH(P) ABS 94HR CHMPGN PLATING
7723 500 8101	KNOB-PUSH L ABS 94HB CHMPGN PLATING
0749 200 0206	PVC-STEEL BGEZ51 ME43 0.9TX914X1829
9112 559 3100	** NOT FOUND **
1018 227 4720	R-CARBON RD 1/4P 4.7K-J
1018 227 1035	R-CARBON RD 1/4P 10K-J
1018 227 1035	R-CARBON RD 1/4P 10K-J
1018 227 4720	R-CARBON RD 1/4P 4.7K-J
1018 227 4711	R-CARBON RD1/4P 470-J
1018 227 1035	R-CARBON RD 1/4P 10K-J
1419 204 7608	C-CERAMIC CK45 F 50V 0.01M-Z
1419 204 7608	C-CERAMIC CK45 F 50V 0.01M-Z
1419 204 7608	C-CERAMIC CK45 F 50V 0.01M-Z
1409 101 2600	C-CERAMIC CC45 SL 50V 39-J
1509 452 3603	C-POLYSTYRENE CQ09 S 50V 160-J
1419 204 7802	C-CERAMIC CK45 F 50V 0.022M-Z
1509 452 1700	C-POLYSTYRENE CQ 09 S 50V 1100PF-J
2149 304 6308	TRANSISTOR KTC1815-GR
2509 607 1204	COIL-LW/MW ANT ASS'Y 3MH +340UH
2169 301 2901	DIODE-SW 1S553/1N4148,CT:6PF
2169 301 2901	DIODE-SW 1S553/1N4148,CT:6PF
2619 562 2175	COIL-TEN,CAN 570UH F-RASE FLW PNK
1829 516 0109	C-TRIMMER 1TBX10 8P

COMPONENT ITEM NUMBER	DESCRIPTION
3529 203 3304	SWITCH-PUSH SUF34 (2C-2P)X3 NS
2869 197 8309	TRANS-POWER ET41 AC 115V/230V 50/60HZ
3054 213 1203	FLAT-CABLE 7/0.12 7P 260MM
4709 241 4207	FUSE T250V 80MA 28EUR
4709 241 1406	FUSE T 250V 0.5A 20 EUR
3053 800 7307	POWER CORD-AC KP-419C 170D-2F BLK 4.1FT
3014 523 8206	PWR-FUSE,4V 68X52X1.6T 94V-0
3324 500 7107	PLUG-PHONO CONNECTOR 1100 MM
2739 602 0108	TRANS-IF TFAS 10MM 010
2739 603 0208	TRANS-FM DISC PRJ TFPS 10MM 010
2739 601 0503	TRANS-FM DISC REC TFSS 10MM 010
2749 608 0208	TRANS-IF TARS 7MM 010
2749 602 0200	TRANS-AM MIX TAAS 7MM 010
1409 101 1401	C-CERAMIC CC45 SL 50V 12-J
1409 101 1605	C-CERAMIC CC45 SL 50V 15-J
1409 101 2202	C-CERAMIC CC45 SL 50V 27-J
1409 101 2600	C-CERAMIC CC45 SL 50V 39-J
1409 101 2804	C-CERAMIC CC45 SL 50V 47-J
1409 101 3401	C-CERAMIC CC45 SL 50V 82-J
1409 101 3605	C-CERAMIC CC45 SL 50V 100-J
1409 101 7702	C-CERAMIC CC45 SL 50V 330-K
1409 105 0903	C-CERAMIC CC45 CH 50V 10-D
1409 105 2204	C-CERAMIC CC45 CH 50V 33-J
1409 302 1703	C-CERAMIC CC45 PH 50V 22-J
1419 204 4700	C-CERAMIC CK45 D 50V 0.001M-K
1419 204 5501	C-CERAMIC CK45 D 50V 0.0047M-M
1419 204 7608	C-CERAMIC CK45 F 50V 0.01M-Z
1419 204 7802	C-CERAMIC CK45 F 50V 0.022M-Z
1419 204 8001	C-CERAMIC CK45 F 50V 0.047M-Z
1439 001 1203	C-GLASS 051-K (500V 0.51PF)
1509 121 0508	C-POLYESTER M 50V 0.0022M-J
1509 121 3707	C-POLYESTER M 50V 0.0018M-K
1509 121 3901	C-POLYESTER M 50V 0.0022M-K
1509 452 0802	C-POLYSTYRENE CQ 09 S 50V 360-J
1509 452 1108	C-POLYSTYRENE CQ 09 S 50V 510-J
1509 452 1700	C-POLYSTYRENE CQ 09 S 50V 1100PF-J
1509 452 3603	C-POLYSTYRENE CQ09 S 50V 160-J
1609 401 2700	C-ELECTROLYTIC CE04W 16V 47M
1609 401 4302	C-ELECTROLYTIC CE04W 16V 10M
1609 401 4700	C-ELECTROLYTIC CE04W 16V 100M
1609 401 4807	C-ELECTROLYTIC CE04W 16V 220M
1609 401 6302	C-ELECTROLYTIC CE04W 25V 4.7M
1609 401 7200	C-ELECTROLYTIC CE04W 25V 1000M
1609 402 2004	C-ELECTROLYTIC CE04W 50V 0.47M
1609 402 2101	C-ELECTROLYTIC CE04W 50V 1M
1609 402 2208	C-ELECTROLYTIC CE04W 50V 2.2M
1609 402 2305	C-ELECTROLYTIC CE04W 50V 3.3M
1609 902 2106	C-ELECTROLYTIC,1N CE04W 50V 1M-M
1609 902 2407	C-ELECTROLYTIC,1N CE04W 50V 0.22M-M
1609 902 2601	C-ELECTROLYTIC,1N CE04W 50V 3.3M-M
1809 317 0201	VARIACON-AJR C752-J
1829 516 0109	C-TRIMMER 1TBX10 8P
2119 201 0402	DC-FM IF AMPLIFIER HA1137W
2119 201 0907	DC-AM,IF HA1197
2119 201 1106	DC HA1196
2119 203 4000	DC-DISPLAY LB-1405
2139 103 3802	TRANSISTOR KSA 733-Y
2139 103 4108	TRANSISTOR KSA 733-G
2139 301 0508	TRANSISTOR KSC1674-0

PARTS LIST

528TL (EUROPEAN MODEL CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION
9 302 7409	TRANSISTOR KSC 945-Y
9 401 0408	FET 2SK41-F
9 304 6308	TRANSISTOR KTC1815-GR
9 403 1406	TRANSISTOR KSC1096-Y
9 201 0504	DIODE-RECT, 1N4001 SR1K-1 (1.0A 50V)
9 301 2901	DIODE-SW 1SS53/1N4148, CT: 6PF
9 404 6501	DIODE-ZN 500MW12.4-14.1V 12-13RM
9 117 0102	LED-METER LN-05202P
9 119 0108	LED-SQUARE LN 317CP
9 020 0708	TRANS-IF 18UH-K Q30 F2R5
9 040 0302	COIL-CHOKE, LEAD 2R2UH-K Q30 F7R96
9 080 2500	TRANS-IF, POT 32MH-J Q100 FOR0796
9 108 3105	TRANS-IF CFAR 12P1010
9 407 1204	COIL-LW/MW ANT ASSY 3MH +340UH
9 107 4306	TRANS-IF CFRR 12P1010
9 108 4105	TRANS-IF CFOR 12P1010
9 560 3022	COIL-TEN, CAN 145UH F-BASE FMW RFD
9 562 2175	COIL-TEN, CAN 570UH F-BASE FLW PNK
9 601 0503	TRANS-FM DISC SEC 1FSS 10MM 010
9 602 0108	TRANS-IF 1FAS 10MM 010
9 603 0208	TRANS-FM DISC PRJ 1FPS 10MM 010
9 602 0200	TRANS-AM MIX 1AAS 7MM 010
9 608 0208	TRANS-IF 1ABS 7MM 010
9 197 8309	TRANS-POWER 1E14 AC 115V/230V 50/60HZ
4 522 1101	PWB-MAIN 197X163X1.6T 94HR
4 522 1208	PWB-STN, STEREO, LED 105X17X1.6T 94HR
4 523 8206	PWB-FUSE, 4V 68X52X1.6T 94V-0
4 528 5109	PWB-TUNING, LED 15X22X1.1 94HR
4 800 7307	POWER CORD-AC KP-419C 11VD-2F BLK 4.1FT
4 213 1203	FLAT-CABLE 7/0.32 2P 260MM
4 100 7105	TAP-STUD 0.5T-SPC3 RT2
4 101 9108	CLIP-FUSE PRP 3-1/2H T0.3 SN
4 502 1103	TERMINAL-BOARD, SCREW 2T PHENOL BOARD
4 500 7107	PLUG-PHONO CONNECTOR 1100 KM
4 069 1104	WAFER-ASSEMBLY PS11C (1)
4 203 3304	SWITCH-PUSH SUF34 (2C-2P)X3 NS
4 203 3401	SWITCH-PUSH SUF32 (2C-2P) NS
4 022 0209	CORE-FERRITE ANT 10PTX140M/M
4 104 0100	ANTENNA-T, FM 150+-5% OHM L=3525MM
4 109 0103	FILTER-CERAMIC SFE 10.7MHZ
4 113 0203	FILTER-CERAMIC, AM SFZ 455A
4 500 7107	SHIELD-FENCE 0.3T TE-SRC
4 502 9100	SHIELD-CAP (R) 0.3T TE-SRC
4 500 4104	PLATE-GND PCB 1E-SRC 0.3T
4 241 1406	FUSE T 250V 0.5A 20 FUR
4 241 4207	FUSE 1250V 80MA 20FUR
4 500 9106	SHAFT-TUNING MRSR2 & ASSY
4 501 8206	SHAFT-PULLEY P.E NATURAL
4 501 9104	PULLEY P.A WHT
4 502 0102	PIN-PULLEY P.A WHT
4 501 1109	WHEEL DRUM ARS 94HR NATURAL
4 500 4105	CHASSIS-FRONT PS-H1 2.5T
4 500 4114	CHASSIS-FRONT HTPS ARS BLK
4 506 5105	***
4 507 3108	CHASSIS BOTTOM 1T HARD BOARD
4 502 5100	FRAME R 0.8T SPC3 FZY
4 502 6105	FRAME L 0.8T SPC3 FZY
4 500 8101	FOOT 94HB PVC SOFT BLK
4 500 9106	FOOT-STOPPER 94HR ARS BLK

COMPONENT ITEM NUMBER	DESCRIPTION
6102 503 5400	CABINET PVC STEEL 0.9T SILVER-GRAY
6464 501 6101	GUIDE-KNOR(P) 94HR ARS
6403 502 4103	HAND-CORD WIRE P.P BLK
6613 506 6100	AKKT-MASKING 0.8T SPC3 BLK COATING
6614 585 0102	BRACKET-GW(FR) SPC3 1.0T FZY
6614 587 5103	AKT-PCR(F) 1.0T SPC3 FZY
6614 100 8103	CLAMPER-CORD HEYCO SK-4N-4 BLK
6674 501 9204	SPRING-DIAL 10PT STS27
6674 508 6103	STOP-SPRING SPS-27 0.31
6674 510 0100	SPRING-PUSH, KNOB STS #27
6674 511 4103	SPRING-G.POINTER STS P11
6804 502 2106	SPACER-CABINET 1.0T HMM-KON SHEET
6854 502 0101	SPACER RUBBER RUBBER NON MIGRATION
7048 130 0616	SCREW-RH +M3X6 FE FZY
7128 640 0855	SCREW-TAP TH +3S 4XR FE FN
7148 530 0615	SCREW-TAP, RH 2S-3X6 FE FZY
7148 530 0819	SCREW-TAP, RH 2S-3XR FE FZY
7148 530 0837	SCREW-TAP, RH 2S-3XR FE FZB
7148 530 1212	SCREW-TAP, RH 2S-3X12 FE FZY
7154 100 6303	SCREW-TAP RH SPEC 2S-3XR FE FZY
7154 100 7104	SCREW-SPEC FE FT BLK COATING
7158 530 1013	SCREW-TAP RH SPEC 2S-3X10 FE FZY
7174 100 3201	SCREW-WOOD RH SPEC 3.1PTX15 FE FZY
7204 500 3108	NUT SPECIAL MRS
7304 100 2100	WASHER-PLAIN 0.5TX3.5PTX7PT FE FZY
7304 500 8106	WASHER-SPECIAL SPC3 0.5T FZY
7304 501 0109	***
7603 502 2113	MASK-KNOB 37 94HR ARS WHT
7603 502 2201	MASK-KNOB 37 94HR ARS SPRAY
7653 503 1107	WINDOW-DIAL 94HR ACRYL CLR
7702 508 9103	PANEL-FRONT AL EXTR 430X88X1.5T
7723 500 8101	KNOB-PUSH L ARS 94HR CHMPGN PLATING
7724 507 8109	KNOB-PUSH(P) ARS 94HR CHMPGN PLATING
7724 510 6109	KNOB-TUNING ALB C-GOLD ARS 94HB 528TL
8003 500 5106	CAP-POINTER 94HR ARS WHT
8003 500 7106	POINTER-ASSY TIN LFD CREFNX2+REDX1 W/CAP
8114 524 2100	PANEL-SERIAL ART/SCOTT TYPE
8134 528 0908	INSTRUCTIONS WHT PAPER 528TL
8194 500 3101	CARD-SET, HISTORY 1500X950M/M
8403 500 1108	REFORM-POINTER PVC SOFT 94HR BLK
8613 515 7105	PACKING CASE DW#2 WHT 528TL
8654 101 0108	PE BAG 155X230X0.05T PE FILM
8654 101 0409	PE BAG 0.05TX240X320 PE FILM
8654 110 0300	PE-BAG HJVOREX 0.02TX500X690
8713 502 4103	CUSHION EPS 0.024

PARTS LIST 528T/TL (COMMON PARTS)

COMPONENT

ITEM NUMBER DESCRIPTION

714B 530 0819	SCREW-TAP,RH	2S-3XR FE FZY
6613 506 6100	ARKT-MASKING	0.8T SPC1 BLK COATING
7154 100 6303	SCREW-TAP RH SPEC	2S-3XR FE FZY
6023 500 4114	CHASSIS-FRONT	HIPS ABS BLK
6023 502 5100	FRAME R	0.8T SPC1 FZY
714B 530 0615	SCRFW-TAP,RH	2S-3X6 FE FZY
704B 130 0616	SCREW-RH	+M3X6 FE FZY
5214 502 0102	PTN-PULLEY	P.A WHT
5214 501 9104	PULLFY	P.A WHT
5214 501 8206	SHAFT-PULLEY	P.E NATURAL
8403 500 1108	REFORM-POINTER	PVC SOFT 94HB BLK
6614 585 0102	BRACKET-CW(FR)	SPC1 1.0T FZY
714B 530 0819	SCRFW-TAP,RH	2S-3XR FE FZY
6614 587 5103	BKT-PCR(F)	1.0T SPC1 FZY
714B 530 0819	SCREW-TAP,RH	2S-3XR FE FZY
7154 100 6303	SCREW-TAP RH SPEC	2S-3XR FE FZY
5224 501 1109	WHEEL DRUM	ABS 94HB NATURAL
6674 501 9204	SPRING-DIAL	10PJ STS27
6674 508 6103	STOP-SPRING	SPS-27 0.3T
714B 530 1212	SCREW-TAP,RH	2S-3X12 FE FZY
4543 500 7107	SHIELD-FENCE	0.3T TE-SRC
4544 502 9100	SHIELD-CAP(R)	0.3T TE-SRC
5103 500 9106	SHAFT-TUNING	MBSR2 & ASSY
8003 500 5106	CAP-POINTER	94HB ABS WHT
6674 511 4103	SPRING-G.POINTER	STS P13
4554 500 4104	PLATE-GND PCB	TE-SRC 0.3T
3304 502 1103	TERMINAL-BOARD,SCREW	2T PHENOL BOARD
714B 530 0837	SCREW-TAP,RH	2S-3XR FE FZB
7154 100 7104	SCREW-SPEC	FE FT BLK COATING
715B 530 1013	SCREW-TAP RH SPEC	2S-3X10 FE FZY
6603 502 4103	HAND-CORD WIRE	P.P BLK
6022 507 3108	CHASSIS BOTTOM	3T HARD BOARD
7154 100 6303	SCREW-TAP RH SPEC	2S-3XR FE FZY
6074 500 8101	FOOT	94HB PVC SOFT BLK
6074 500 9106	FOOT-STOPPER	94HB ABS BLK
714B 530 0819	SCREW-TAP,RH	2S-3XR FE FZY
6464 501 6101	GUIDE-KNOB(P)	94HB ABS
6674 510 0100	SPRING-PUSH,KNOB	STS #27
7603 502 2113	MASK-KNOB 37	94HB ABS WHT
6854 502 0101	SPACER RUBBER	RUBBER NON MIGRATION
7204 500 3108	NUT SPECIAL	MBS
7304 500 8106	WASHER-SPECIAL	SPC1 0.5T FZY

COMPONENT

ITEM NUMBER DESCRIPTION

4409 101 1401	C-CERAMIC	CC45 SL 50V 12-J
4419 204 4700	C-CERAMIC	CK45 D 50V 0.001M-K
4409 101 1605	C-CERAMIC	CC45 SL 50V 15-J
4409 101 0707	C-CERAMIC	CC45 SL 50V 5-C
4409 101 3605	C-CERAMIC	CC45 SL 50V 100-J
4419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
4419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
4419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
4439 001 1203	C-CERAMIC	CGM D 051-K (500V 0.51F)
4409 105 2204	C-CERAMIC	CC45 CH 50V 33-J
4409 105 0903	C-CERAMIC	CC45 CH 50V 10-D
4409 105 0903	C-CERAMIC	CC45 CH 50V 10-D
4409 302 1703	C-CERAMIC	CC45 PH 50V 22-J
4419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
4409 101 2202	C-CERAMIC	CC45 SL 50V 27-J
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4409 101 7702	C-CERAMIC	CC45 SL 50V 330-K
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4409 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
4409 402 2004	C-ELECTROLYTIC	CE04W 50V 0.47M
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4409 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
4409 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
4419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
4409 101 1605	C-CERAMIC	CC45 SL 50V 15-J
509 452 0802	C-POLYSTYRENE	CO 09 S 50V 360-J
4419 204 5501	C-CERAMIC	CK45 D 50V 0.0047M-K
4409 401 4700	C-ELECTROLYTIC	CE04W 16V 100M
4409 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
4419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
4409 101 3401	C-CERAMIC	CC45 SL 50V 82-J
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4409 401 2700	C-ELECTROLYTIC	CE04W 10V 47M
4419 204 7802	C-CERAMIC	CK45 F 50V 0.022M-Z
509 452 1108	C-POLYSTYRENE	CO 09 S 50V 510-J
4419 204 8001	C-CERAMIC	CK45 F 50V 0.047M-Z
4409 401 6302	C-ELECTROLYTIC	CE04W 25V 4.7M
4409 401 4807	C-ELECTROLYTIC	CE04W 16V 220M

PARTS LIST

528T/TL (COMMON PARTS CONT.)

COMPONENT

ITEM NUMBER DESCRIPTION

1419 204 5501	C-CERAMIC	CK45 D 50V 0.0047M-M
1609 902 2601	C-ELECTROLYTIC, 1N	CE04W 50V 3.3M-M
1609 902 2106	C-ELECTROLYTIC, 1N	CE04W 50V 1M-M
1609 902 2407	C-ELECTROLYTIC, 1N	CE04W 50V 0.22M-M
1609 401 4302	C-ELECTROLYTIC	CE04W 16V 10M
1609 401 4307	C-ELECTROLYTIC	CE04W 16V 10M
1409 101 3605	C-CERAMIC	CC45 SI. 50V 100-J
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1609 402 2103	C-ELECTROLYTIC	CE04W 50V 1M
1509 121 0508	C-POLYESTER	M 50V 0.0022M-J
1509 121 0508	C-POLYESTER	M 50V 0.0022M-J
1509 121 3707	C-POLYESTER	M 50V 0.0018M-K
1509 121 3707	C-POLYESTER	M 50V 0.0018M-K
1509 121 3901	C-POLYESTER	M 50V 0.0022M-K
1509 121 3901	C-POLYESTER	M 50V 0.0022M-K
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
1609 402 2101	C-ELECTROLYTIC	CE04W 50V 1M
1609 402 2208	C-ELECTROLYTIC	CE04W 50V 2.2M
1409 101 2804	C-CERAMIC	CC45 SI. 50V 47-J
1609 401 4700	C-ELECTROLYTIC	CE04W 16V 100M
1609 401 7200	C-ELECTROLYTIC	CE04W 25V 1000M
1419 204 7608	C-CERAMIC	CK45 F 50V 0.01M-Z
2139 601 0408	FET	2SK41-F
2139 301 0508	TRANSISTOR	KSC1674-0
2139 301 0508	TRANSISTOR	KSC1674-0
2139 302 7409	TRANSISTOR	KSC 945-Y
2139 302 7409	TRANSISTOR	KSC 945-Y
2139 103 4108	TRANSISTOR	KSA 733-G
2139 103 4108	TRANSISTOR	KSA 733-G
2139 103 3802	TRANSISTOR	KSA 733-Y
2149 403 1406	TRANSISTOR	KSC1096-Y
2119 201 0402	IC-FM IF AMPLIFIER	HA1137W
2119 201 0907	IC-AM, IF	HA1197
2119 201 1106	IC	HA1196
2119 203 4000	IC-DISPLAY	LB-1405
2429 040 0302	COIL-CHOKER, LEAD	2R2UH-K Q30 F7R96
2429 040 0302	COIL-CHOKER, LEAD	2R2UH-K Q30 F7R96
2429 020 0708	TRANS-IF	18UH-K Q30 F2R5
2429 040 0302	COIL-CHOKER, LEAD	2R2UH-K Q30 F7R96
2429 080 2500	TRANS-IF, PNT	32MH-J Q100 FOR0796
2429 080 2500	TRANS-IF, PNT	32MH-J Q100 FOR0796
4049 022 0209	CORE-FERRITE ANT	10PIX140M/M MWLW

COMPONENT

ITEM NUMBER DESCRIPTION

2169 301 2901	DIODE-SW	1SS53/1N4148, CT:6PF
2169 301 2901	DIODE-SW	1SS53/1N4148, CT:6PF
2169 301 2901	DIODE-SW	1SS53/1N4148, CT:6PF
2169 301 2901	DIODE-SW	1SS53/1N4148, CT:6PF
2309 119 0108	LED-SQUARE	LN 317GP
2309 117 0102	LED-METER	LN-05202P
2169 301 2901	DIODE-SW	1SS53/1N4148, CT:6PF
2169 301 2901	DIODE-SW	1SS53/1N4148, CT:6PF
2509 108 3105	TRANS-IF	CFAR 12P1010
2519 107 4306	TRANS-IF	CFRR 12P1010
2539 108 4105	TRANS-IF	CFOR 12P1010
2619 560 3022	COIL-TEN, CAN	145UH F-BASE FMW RED
2169 201 0504	DIODE-RECT, 1N4001	SR1K-1 (1.0A 50V)
2169 404 6501	DIODE-ZN	500MW12.4-14.1V 1/2-1/3BM
1249 102 0908	VR-SEMT	SR19R B220K
1249 102 0306	VR-SEMT	SR19R B10K
1249 102 0908	VR-SEMT	SR19R B220K
4529 309 0103	FILTER-CERAMIC	SFE 10.7MA8
4529 309 0103	FILTER-CERAMIC	SFE 10.7MA8
4529 313 0203	FILTER-CERAMIC, AM	SFZ 455A
3014 522 1101	PWB-MAIN	197X163X1.6T 94HR
3014 528 5109	PWB-TUNING, LED	15X22X1T 94HR
1809 317 0201	VARTCON-AIR	C752-J
3529 203 3401	SWITCH-PUSH	SUF12 (2C-2P) NS
3349 069 1304	WAFER-ASSEMBLY	P511C (1)
3014 522 1208	PWB-SIN, STEREO, LED	105X17X1.6T 94HR
8003 500 7106	POINTER-ASSY TUN LED	GREENX2+REDX1 W/CAP

EXPLODED VIEW

PART LIST 539T SHT 6-3-1 (SEE PAGE 56)

No.	PARTS No.	DESCRIPTION	Q'ty	No.	PARTS No.	DESCRIPTION	Q'ty
1.	048602010111	Panel Front	1	45.	4438101510	Jack R.C.A.	1
1.	048602010112	Panel Front	1	46.	4355005510	Connector	1
2.	8553002610	Window Dial	1	47.	046102010711	Chassis Back	1
3.	048643001401	Knob Tuning	1	47.	046102010712	Chassis Back	1
4.	048521001201	Body Front	1	48.	6515000220	Holder Ant.	1
5.	6505042610	BKT Joint	3	48.	6515000210	Holder Ant.	1
6.	6505036310	BKT Joint	4	49.	2608207160	Ant. AM-BAR	1
7.	6505043110	BKT SW	1	49.	2608607020	Ant. AM-BAR	1
8.	4628031310	SW Push	1	50.	6513000110	Stopper Cord Ant.	1
9.	048545008701	Button Push	1	51.	4308000220	Cord AC Power	1
10.	7115000710	Roller	3	51.	4308000430	Cord AC Power	1
11.	8095000210	Pivot	3	52.	6518000111	Stopper Cord AC	1
12.	048573002801	Scale Dial	1	53.	6122406010	Cover Bottom	1
12.	048573002802	Scale Dial	2	54.	6335000510	Foot Rubber	2
13.	8583000910	Holder Scale	2	55.	046122006301	Cabinet Top	1
14.	057005080140	Tuning Shaft Ass'y	1	56.	8305000510	Washer Vinyl	4
15.	6505043910	BKT PC Board	2				
16.	6505042910	BKT Roller	1	60.	8159440084	Screw WSAM 4 × 8N	4
17.	6705000510	Support LED	5	61.	8109330061	Screw #3 BTC 3 × 6Y	21
18.	4115110710	Wire Slat 7P × 150	1	62.	8129330061	Screw #3 FTC 3 × 6Y	7
19.	6505045810	BKT Lamp	1	63.	8109230081	Screw #2 BTC 3 × 8Y	9
20.	8728000510	Cap Color	1	64.	8159230081	Screw #2 WPTC 3 × 8Y	3
21.	2528201210	Lamp	1	65.	8069140101	Screw WPM 4 × 10Y	2
22.	8573002910	Pointer Dial	1	66.	8209540011	Nut FLANGE M4	2
23.	6555300110	Spring Coil	1	67.	8159230061	Screw #2 WPTC 3 × 6Y	6
24.	048543002601	Button Push	3	68.	8319130011	WASHER SPRING 03	1
25.	6305001210	Shaft Button	3	69.	8119230083	Screw #2 PTC 3 × 8B	3
26.	6122606610	Chassis Main	1	70.	8119330063	Screw #3 PTC 3 × 6B	4
27.	6335000310	Foot Rubber	2	71.	8009130041	Screw BM 3 × 4Y	3
28.	8305000211	BKT Washer	2				
29.	2828029601	Power Transformer	1				
30.		Fuse	1				
30.		Fuse	1				
31.	4255000410	Fuse Clip	2				
32.	4458400120	Fuse Holder	1				
33.	4835001221	Cover Fuse Holder	1				
34.	6123610710	Frame Side	1				
35.	6505043010	BKT Roller	1				
36.	4628031110	SW Push (SUF35)	1				
36.		SW Push (SUF35)	1				
37.	7505200740	Heat-Sink REG TR	1				
38.	6165111310	Shield Fence	1				
39.	6165111410	Shield Fence	2				
40.	3808201011	Varicon Air	1				
41.	7113000431	Pulley Dial	1				
42.	6535002610	Support Cabinet	1				
43.	6715005110	Spacer	1				
44.	4408000410	Terminal Ant.	1				

PARTS LIST 539T (USA/CANADA)

COMPONENT ITEM NUMBER

046102010711	CHASSIS, BACK	
046122006301	CABINET, TOP	
048521001201	BODY, FRONT	
048543002601	BUTTON, PUSH	
048545008701	BUTTON, PUSH	
048573002801	SCALE, DIAL	
048602010102	PANEL, FRONT	
048643001401	KNOB, TUNING	
049605035200	BOX, CARTON	
057005080140	SHAFT TUNING ASSY	65050A
2008406103	TR NPN KTC1923Y KEC	
2008409100	TR NPN LM9016G MOT	
2008409101	TR NPN LM9018F MOT	
2008606104	TR NPN KTC1815Y KEC	
2018207115	FET N-CH 2SK192GR TOSHIBA	
2058106100	DIODE RECTIFIER 1N4002 KEC	
2058306101	DIODE 1N4148 KEC	
2158613102	IC UPC1167C2 MEC	
2168212100	IC NJM2902 NATIONAL	
2168411104	IC HA1197 HITACHI	
2168411105	IC HA12016 HITACHI	
2168611103	IC HA17815 SANGYO	
2308060102	LED KLR205ERD KEC	
2308060302	LED KLG205EGN KEC	
2308220504	LED, LAMP SLB15YY3 ROHM	
2528201410	LAMP,	
2608001000	COIL FM ANT	30096
2608207160	COIL, AM ANT	
2618001000	COIL FM RF	30097
2638001001	COIL FM OSC	30052A
2638201060	COIL, MW OSC	
2648601010	COIL INDUCTOR 2.2UH	30057
2648601050	COIL INDUCTOR 18UH	30112
2658001050	COIL, FLTR MPX BLK	31031
2828029601	PWR, TRANS HY	
2838001000	COIL FM IFT	
2838501010	COIL FM QUAD DET(A)	30122
2838501020	COIL FM QUAD DET(B)	30123
2848001000	COIL AM IFT	30103
2848001110	COIL AM IFT	31021
3009100273	RES CF 10 1/4W J N	
3009101273	RES CF 100 1/4W J N	
3009102273	RES CF 1K 1/4W J N	
3009103273	RES CF 10K 1/4W J N	
3009104273	RES CF 100K 1/4W J N	
3009122273	RES CF 1.2K 1/4W J N	
3009123273	RES CF 12K 1/4W J N	
3009152273	RES CF 1.5K 1/4W J N	
3009181273	RES CF 180 1/4W J N	
3009182273	RES CF 1.8K 1/4W J N	
3009221273	RES CF 220 1/4W J N	
3009222273	RES CF 2.2K 1/4W J N	

COMPONENT ITEM NUMBER

3009223273	RES CF 22K 1/4W J N
3009272273	RES CF 2.7K 1/4W J N
3009273273	RES CF 27K 1/4W J N
3009331273	RES CF 330 1/4W J N
3009332273	RES CF 3.3K 1/4W J N
3009334273	RES CF 330K 1/4W J N
3009335373	RES CF 3.3M 1/2W J N
3009392273	RES CF 3.9K 1/4W J N
3009393273	RES CF 39K 1/4W J N
3009471273	RES CF 470 1/4W J N
3009472273	RES CF 4.7K 1/4W J N
3009473273	RES CF 47K 1/4W J N
3009560273	RES CF 56 1/4W J N
3009561273	RES CF 560 1/4W J N
3009562273	RES CF 5.6K 1/4W J N
3009564273	RES CF 560K 1/4W J N
3009682273	RES CF 6.8K 1/4W J N
3009821273	RES CF 820 1/4W J N
3039100372	RES MO 10 1/2W J
3039121372	RES MO 120 1/2W J
3248310320	RES SEMI CS10KB 10 5 16005
3248322420	RES SEMI CS220KB10/5 16001
3248333220	RES SEMI CS3.3KB10/5 16013
3248347320	RES SEMI CS47KB 10/5
3409210071	CAP E AF RSA 10UF 50V
3409210131	CAP E AF RSA 100UF 16V
3409210971	CAP E AF RSA 1UF 50V
3409222031	CAP E AF RSA 22UF 16V
3409222141	CAP E AF RSA 220UF 25V
3409222971	CAP E AF RSA 2.2UF 50V
3409233971	CAP E AF RSA 3.3UF 50V
3409247061	CAP E AF RSA 47UF 35V
3409247141	CAP E AF RSA 470UF 25V
3409247871	CAP E AF RSA 0.47UF 50V
3409247971	CAP E AF RSA 4.7UF 50V
3509101130	CAP C 100PF 50V J
3509102530	CAP C 0.001UF 50V Z
3509103450	CAP C 0.01UF 500V P
3509103530	CAP C 0.01UF 50V Z F
3509104530	CAP C 0.1UF 50V Z
3509150130	CAP, C 15PF 50V J
3509221130	CAP C 220PF 50V J
3509223530	CAP C 0.022UF 50V Z
3509473530	CAP C 0.047UF 50V Z
3509560130	CAP C 56PF 50V J
3529100110	CAP C 10PF RH 50V C
3529100210	CAP C 10PF CH 50V C
3529180110	CAP C 18PF RH 50V J
3529220110	CAP C 22PF RH 50V J
3529309210	CAP C 3PF CH 50V C
3529330210	CAP C 33PF CH 50V J
3529470310	CAP C 47PF SH 50V J

PARTS LIST

539T (USA/CANADA) (CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
3549472407	CAP C 0.0047UF/400VAC KC	6715005110	SPACER
3609104120	CAP M 0.1UF 100V J	6735001410	FELT STRIP 71292
3609152120	CAP M 0.0015UF 100V J	6735002610	SUPPORT CABINET
3609222120	CAP M 0.0022UF 100V J	7113000431	PULLEY DIAL 66075A-03
3609333120	CAP M 0.033UF 100V J	7115000710	ROLLER 66057
3609473120	CAP M 0.047UF 100V J	7505200740	HEAT SINK REG TR 73060-04
3619102110	CAP P 1000PF 50V J	8009130041	SCREW BM3X4Y
3619331110	CAP P 330PF 50V J	8069140101	SCREW WPM4X10Y
3619681110	CAP P 680PF 50V J	8095000210	PIVOT 70051
3808201011	CAP,AIR C752J-S	8109230081	SCREW #2BTC3X8Y
3908001000	FLTR C SFZ455FL 31020	8109330061	SCREW #3BTC3X6Y
3908011001	FLTR C SFE10.7MAB-ARD3100BRD	8119230081	SCREW #2PTC3X8Y
4002212000	PC,BOARD TUNER	8119230083	SCREW #2PTC3X8B
4003210700	PC,BOARD FUSE	8119330063	SCREW #3PTC3X6B
4115107820	WIRE SLAT 3P80 67205-02	8129330061	SCREW #3FTC3X6Y
4115110720	WIRE,SLAT 7P160	8159230061	SCREW #2WPTC3X6Y
4225000315	PIN WRAPPING 77038E	8159230081	SCREW #2WPTC3X8Y
4235000110	TERMINAL GND 68492	8159440083	SCREW,WSAM 4X8B
4255000410	CLIP FUSE 69125	8209540011	NUT FLANGE M4Y
4308000220	CORD AC POWER 67045-02	8305000211	WASHER TRANSFORMER 70019
4328200510	CORD,RCA 2P W800 67020	8305000510	WASHER VINYL 70046
4348000310	ANT WIRE DIPOLE 67029	8319130011	WASHER SPRING #3Y
4408000410	TERMINAL ANT 76044	8553002610	WINDOW,DIAL
4438101510	JACK RCA 2P PCB 95139-1/2	8573002910	POINTER
4628031110	SWITCH,PUSH SUF35	8583000910	COVER,SLIDE
4628031310	SWITCH,PUSH SUF12	9007010140	INSTRUCTION,MANUAL
4835003510	COVER,FUSE BD	9057004500	LABEL CAUTION 85L314
4855000111	CERAMIC PIPE 71028A	9057037200	LABEL SERIAL NO. 85L677
5508110931	FUSE SB 31.8 0.15A 250V UL	9087003500	WARRANTY,CARD
6122406010	COVER,BOTTOM	9705002010	POLY,BAG
6122606610	CHASSIS,MAIN	9715000110	FILM SOFT PE 74377
6123610710	FRAME,SIDE	9722005710	CUSHION,POLY
6165100213	COVER SHIELD 68276	9748000110	PIN STAPLE
6165111310	SHIELD,FENCE		
6165111410	SHIELD,FENCE		
6305001210	BUTTON SHAFT		
6335000310	FOOT 71194		
6335000510	FOOT 71265		
6505036310	BKT JOINT 68923		
6505042610	BKT,JOINT		
6505042910	BKT,ROLLER		
6505043010	BKT,ROLLER		
6505043110	BKT,S/W		
6505043910	BKT,PCB		
6505048010	BKT,LAMP		
6513000110	STOPPER CORD 71008		
6515000210	HOLDER ANT 10084-01		
6518000111	STOPPER,CORD 71008A		
6525000210	BAND WIRE 69111		
6555300110	SPRING DIAL 66052		
6705000510	SPACING LED 71213		
6715001310	SPONGE,RUBBER 72160		

PARTS LIST 539TL (EUROPE)

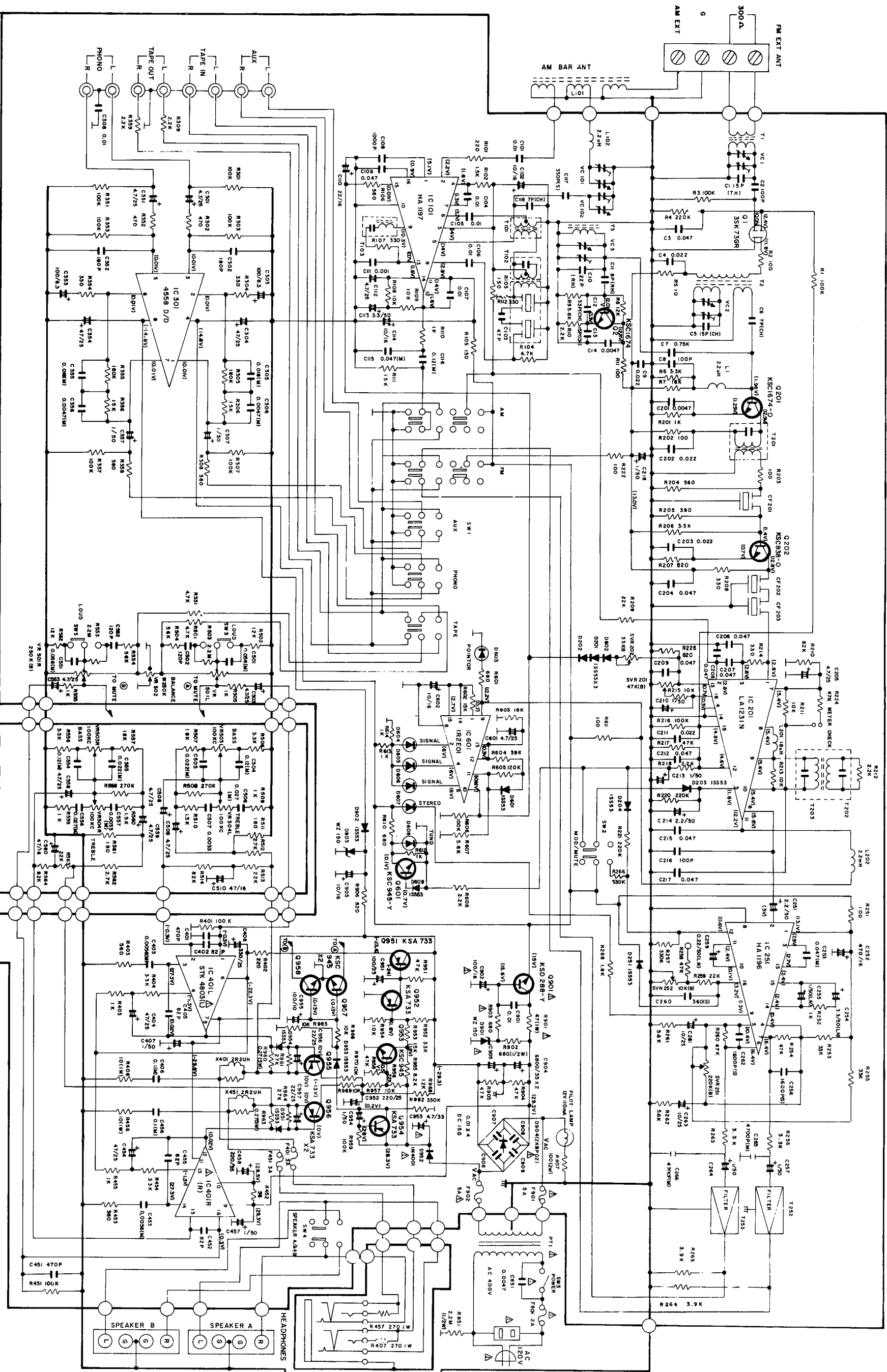
COMPONENT ITEM NUMBER	DESCRIPTION
046102010712	CHASSIS, BACK
046122006301	CABINET, TOP
046122406011	COVER, BOTTOM
046122606311	CHASSIS, MAIN
048521001201	BODY, FRONT
048543002601	BUTTON, PUSH
048545008701	BUTTON, PUSH
048573002802	SCALE, DIAL
048602010102	PANEL, FRONT
048643001401	KNOB, TUNING
049605035203	BOX, CARTON
057005080250	SHAFT TUNING ASSY
2008206105	TR PNP KTA1015Y KEC
2008406103	TR NPN KTC1923Y KEC
2008409100	TR NPN LM9016G MOT
2008409101	TR NPN LM9018F MOT
2008406104	TR NPN KTC1815Y KEC
2018207115	FET N-CH 25K192GR TOSHIBA
2058106100	DIODE RECTIFIER 1N4002
2058306101	DIODE 1N4148
2168013104	IC, UPC1167C2 NEC
2168212100	IC LM324/NJM2902
2168411104	IC HA1197 HITACHI
2168411105	IC HA12016 HITACHI
2168611103	IC HA17815 SGS
2308060102	LED KLR205ERD KEC
2308060302	LED KLG205EGN KEC
2308220504	LED SLB15YY3 ROHM
2528201510	LAMP BQ031-30303A (L=320) CT
2608001010	COIL FM ANT
2608607020	COIL AM ANT BAR
2618001000	COIL FM RF
2638001000	COIL IFT FM
2638001001	COIL FM OSC
2638201060	COIL MW OSC
2638401040	COIL LW OSC
2648601010	COIL INDUCTOR 2.2UH
2648601050	COIL INDUCTOR 18UH
2648601060	COIL INDUCTOR 18MH
2648601260	COIL INDUCTOR 47UH
2648701020	FERRITE BEAD
2658001050	COIL FLTR MPX BLK
2828029601	PWR TRANS HY
2838501010	COIL FM QUAD DET(A)
2838501020	COIL FM QUAD DET(B)
2848001000	COIL AM IFT
2848001110	COIL AM IFT
3009101273	RES CF 100 1/4W J N
3009335373	RES CF 3.3M 1/2W J N
3009560273	RES CF 56 1/4W J N
3039100372	RES MO 10 1/2W J
3039121372	RES MO 120 1/2W J

COMPONENT ITEM NUMBER	DESCRIPTION
3069100270	RES CF 10 1/4W J
3069101270	RES CF 100 1/4W J
3069102270	RES CF 1K 1/4W J
3069103270	RES CF 10K 1/4W J
3069104270	RES CF 100K 1/4W J
3069122270	RES CF 1.2K 1/4W J
3069123270	RES CF 12K 1/4W J
3069151270	RES CF 150 1/4W J
3069152270	RES CF 1.5K 1/4W J
3069181270	RES CF 180 1/4W J
3069182270	RES CF 1.8K 1/4W J
3069221270	RES CF 220 1/4W J
3069222270	RES CF 2.2K 1/4W J
3069223270	RES CF 22K 1/4W J
3069272270	RES CF 2.7K 1/4W J
3069273270	RES CF 27K 1/4W J
3069331270	RES CF 330 1/4W J
3069332270	RES CF 3.3K 1/4W J
3069334270	RES CF 330K 1/4W J
3069392270	RES CF 3.9K 1/4W J
3069393270	RES CF 39K 1/4W J
3069471270	RES CF 470 1/4W J
3069472270	RES CF 4.7K 1/4W J
3069473270	RES CF 47K 1/4W J
3069561270	RES CF 560 1/4W J
3069562270	RES CF 5.6K 1/4W J
3069564270	RES CF 560K 1/4W J
3069682270	RES CF 6.8K 1/4W J
3069821270	RES CF 820 1/4W J
3248310320	RES SEMI CS10KB 10 5
3248322420	RES SEMI CS220KB10/5
3248333220	RES SEMI CS3.3KB10/5
3248347320	RES SEMI CS47KB 10/5
3409210061	CAP E AF RSA 10UF 35V
3409210071	CAP E AF RSA 10UF 50V
3409210131	CAP E AF RSA 100UF 16V
3409210971	CAP E AF RSA 1UF 50V
3409222031	CAP E AF RSA 22UF 16V
3409222141	CAP E AF RSA 220UF 25V
3409222971	CAP E AF RSA 2.2UF 50V
3409233971	CAP E AF RSA 3.3UF 50V
3409247061	CAP E AF RSA 47UF 35V
3409247141	CAP E AF RSA 470UF 25V
3409247871	CAP E AF RSA 0.47UF 50V
3409247971	CAP E AF RSA 4.7UF 50V
3509101130	CAP C 100PF 50V J
3509103530	CAP C 0.01UF 50V Z F
3509104530	CAP C 0.1UF 50V Z
3509150130	CAP C 15PF 50V J
3509202530	CAP, C 0.002UF 50V Z
3509223530	CAP C 0.022UF 50V Z
3509473530	CAP C 0.047UF 50V Z

PARTS LIST 539TL (EUROPE CONT.)

COMPONENT ITEM NUMBER	DESCRIPTION	COMPONENT ITEM NUMBER	DESCRIPTION
3509560130	CAP C 56PF 50V J	6505036310	BKT JOINT
3529100110	CAP C 10PF RH 50V C	6505042610	BKT, JOINT
3529150110	CAP C 15PF RH 50V J	6505042910	BKT, ROLLER
3529180110	CAP C 18PF RH 50V J	6505043010	BKT, ROLLER
3529220110	CAP C 22PF RH 50V J	6505043110	BKT, S/W
3529270110	CAP C 27PF RH 50V J	6505043910	BKT, PCB
3529309210	CAP C 3PF CH 50V C	6505048010	BKT, LAMP
3529330210	CAP C 33PF CH 50V J	6513000110	STOPPER, CORD
3549472407	CAP C 0.0047UF/400VAC KC	6515000220	HOLDER, ANT
3609102120	CAP M 0.001UF 100V J	6518000111	STOPPER, CORD SR-3P-4
3609104120	CAP M 0.1UF 100V J	6525000210	BAND WIRE
3609222120	CAP M 0.0022UF 100V J	6555300110	SPRING DIAL
3609333120	CAP M 0.033UF 100V J	6705000510	SPACING, LED
3609334130	CAP M 0.33UF 150V J	6715001310	SPONGE, RUBBER
3609473120	CAP M 0.047UF 100V J	6735001410	FELT STRIP
3619102110	CAP P 1000PF 50V J	7113000431	PULLEY DIAL
3619251110	CAP P 250PF 50V J	7115000710	ROLLER
3619331110	CAP P 330PF 50V J	7505200740	H/SINK REG TR
3619681110	CAP P 680PF 50V J	8069140101	SCREW WPM4X10Y
3808201011	CAP AIR C752J-S	8095000210	PIVOT
3838001000	CAP C TRIMMER TZ03T110F MURATA	8109230081	SCREW #2BTC3X8Y
3838001010	CAP C TRIMMER TZ03R200F MURATA	8109330061	SCREW #3BTC3X6Y
3908001000	FLTR C SFZ455FL	8119230081	SCREW #2PTC3X8Y
3908011013	FLTR C SFE10.7MS3GBL 31022BL	8119230083	SCREW #2PTC3X8B
4002212000	PC BOARD TUNER	8119330063	SCREW #3PTC3X6B
4003210700	PC BOARD FUSE	8119330083	SCREW #3PTC3X8B
4115107820	WIRE SLAT 3P80	8129330061	SCREW #3FTC3X6Y
4115110720	WIRE, SLAT 7P160	8159230061	SCREW #2WPTC3X6Y
4225000315	PIN WRAPPING	8159230081	SCREW #2WPTC3X8Y
4235000110	TERMINAL GND	8159440084	SCREW, WSAM 4X8(NI)
4255000410	CLIP FUSE	8209130011	NUT HEX #1M3Y
4308000430	CORD, AC POWER	8209540011	NUT FLANGE M4Y
4328200510	CORD, RCA 2P W800	8305000211	WASHER TRANSFORMER
4348000310	ANT WIRE DIPOLE 67029	8305000510	WASHER VINYL
4428400110	ADAPTER ANT	8319130011	WASHER SPRING 43Y
4428400440	CONNECTOR	8553002610	WINDOW, DIAL
4438101510	JACK RCA 2P PCB	8573002910	POINTER
4438300410	JACK 99RCA(FTZ)	8583000910	COVER, SLIDE
4628031121	SW PUSH 3KEY P:25 SELF	9007010141	INSTRUCTION, MANUAL
4628031310	SW PUSH 1KEY H:6,5 1AMP	9027011400	SCHEMATIC DIAGRAM 539TL
4835002210	INSULATION PLATE 70078	9057010700	LABEL FUSE T50MA 85L420
4835003510	COVER, FUSE BD	9057037200	LABEL SERIAL NO. 85L677
4855000111	PIPE CERAMIC 71028A	9057039400	LABEL "E"
5508300434	FUSE TL 20 50MA 250V SEMKO	9057047700	LABEL 85L781
6123610710	FRAME, SIDE	9057048700	LABEL FTZNO 85L791
6145000910	GUIDE WIRE	9087003500	WARRANTY, CARD
6165100213	COVER SHIELD	9705000210	POLY BAG 74202
6165111310	FENCE, SHIELD	9705002010	POLY, BAG
6165111410	FENCE, SHIELD	9715000110	FILM SOFT PE 74377
6305001210	BUTTON SHAFT	9722005710	CUSHION, POLY
6335000310	FOOT	9748000110	PIN STAPLE
6335000510	FOOT		

SCHEMATIC DIAGRAM 319RA
SER. NO. 1401001 UP (SEE PAGE 10)

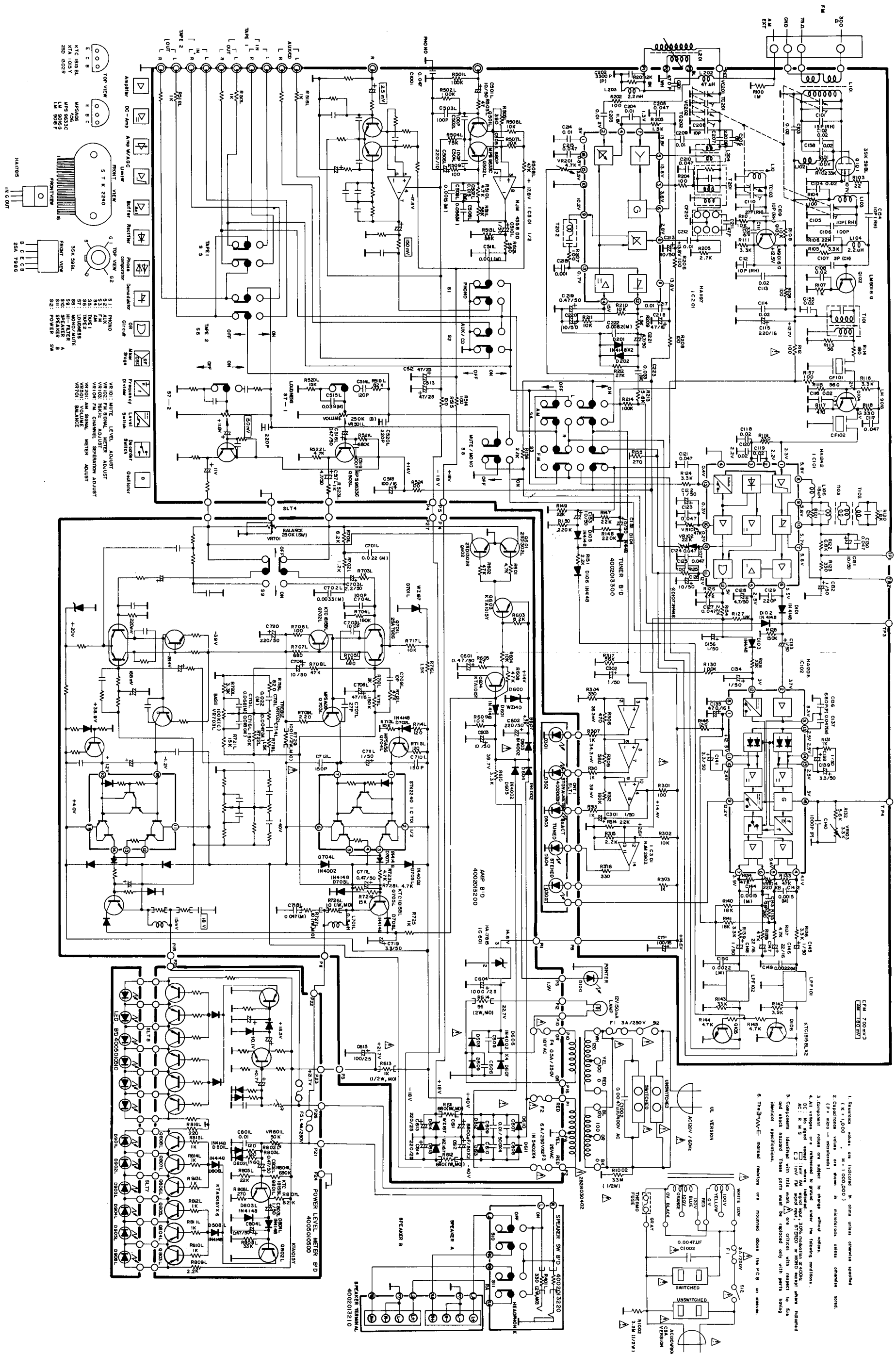


SW1: FUNCTION (AM, FM, AUX, PHONO, TAPE)
SW2: MUTE
SW3: LOUDNESS
SW4: SPEAKER
SW5: POWER
VR501: VOLUME
VR502: BALANCE
VR503: BASS

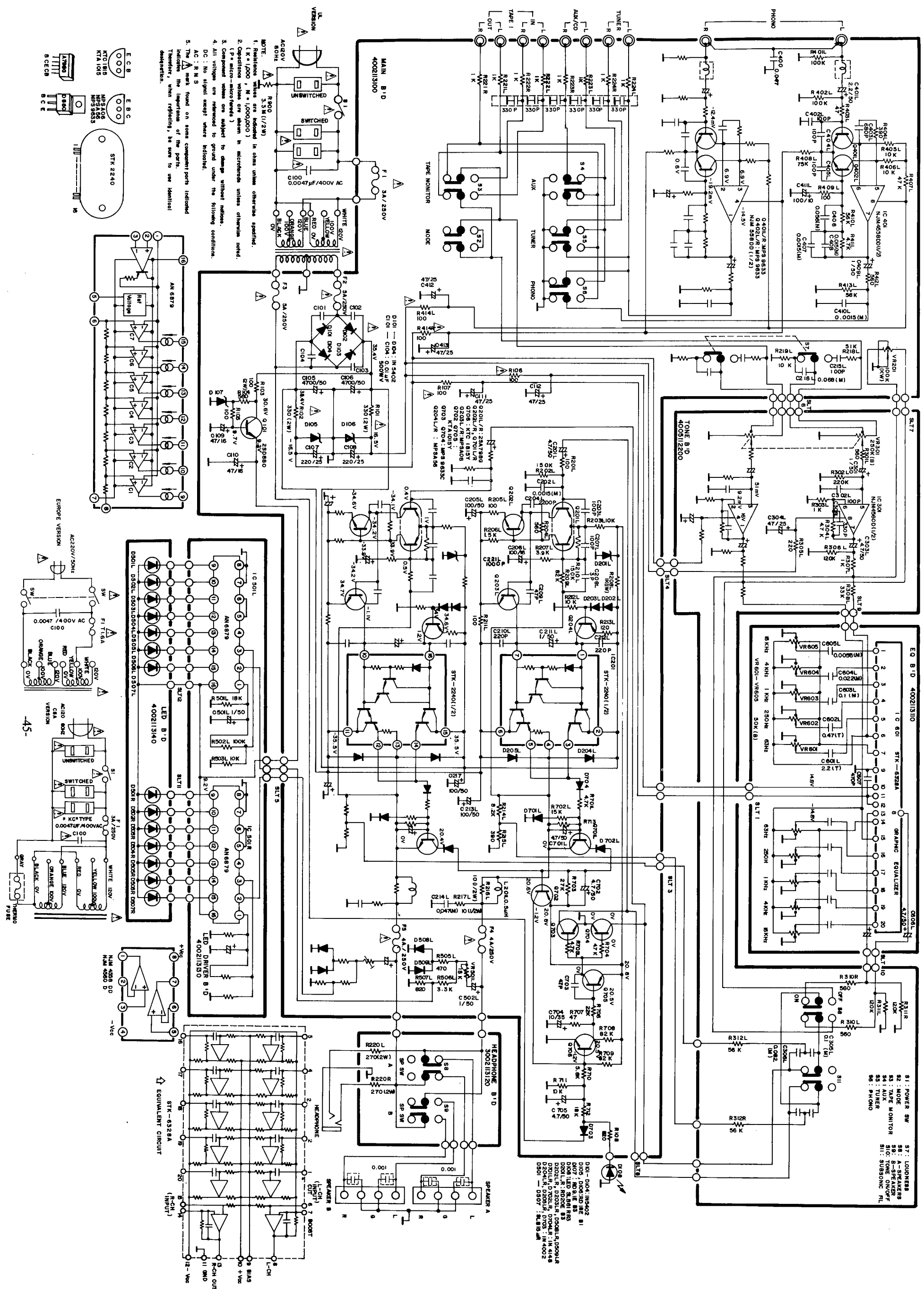
NOTE
1. ALL RESISTANCE VALUES IN OHMS
K=KILO OHMS M=MEGA OHMS, WATTAGE 1/2 WATT UNLESS
OTHERWISE SPECIFIED.

2. ALL CAPACITOR VALUES IN MFD UNLESS
OTHERWISE SPECIFIED.
3. THIS SYMBOL INDICATES SAFETY CRITICAL COMPONENTS WHICH MUST BE
REPLACED ONLY WITH COMPONENTS HAVING IDENTICAL CHARACTERISTICS.

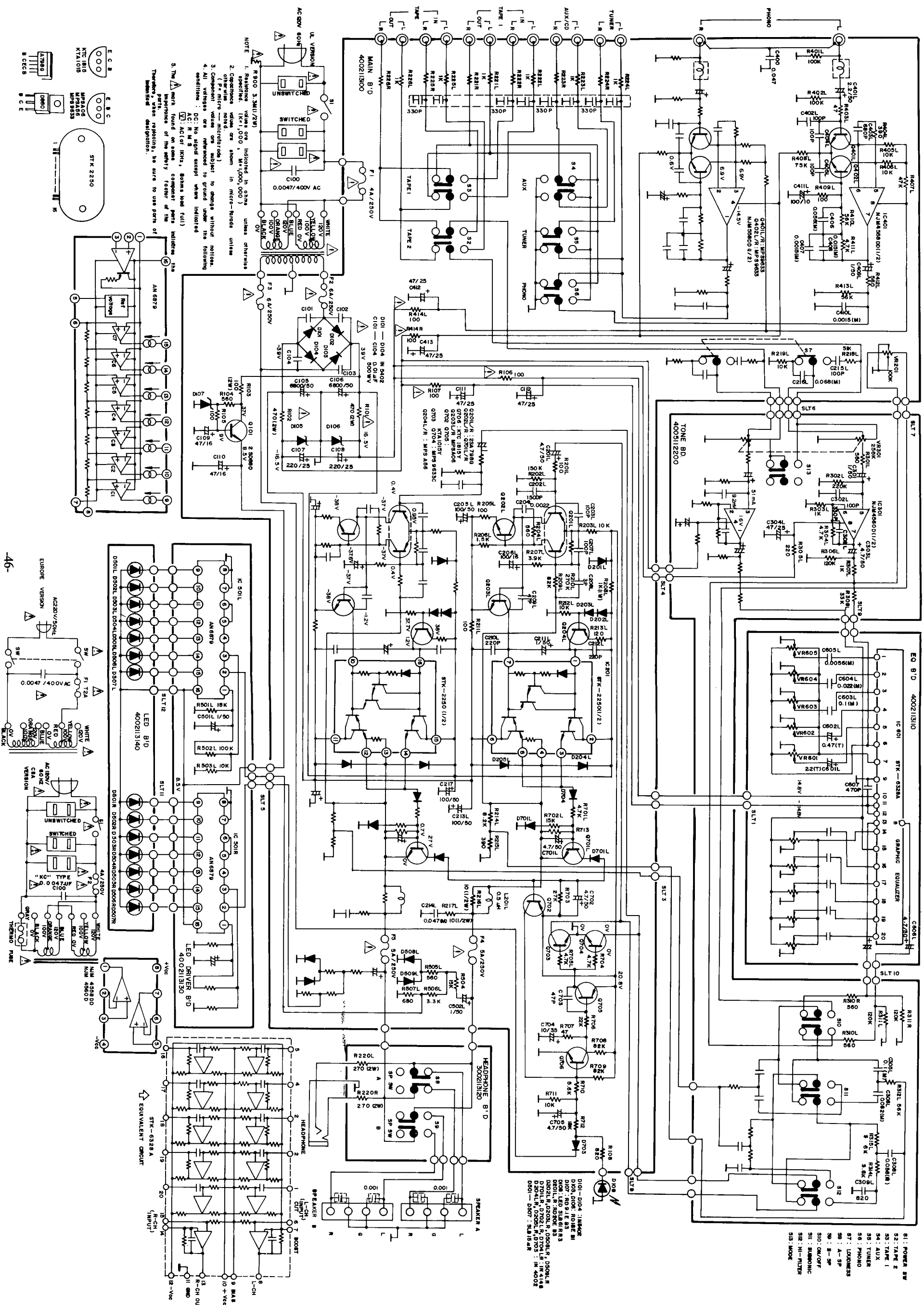
SCHEMATIC DIAGRAM 349RA



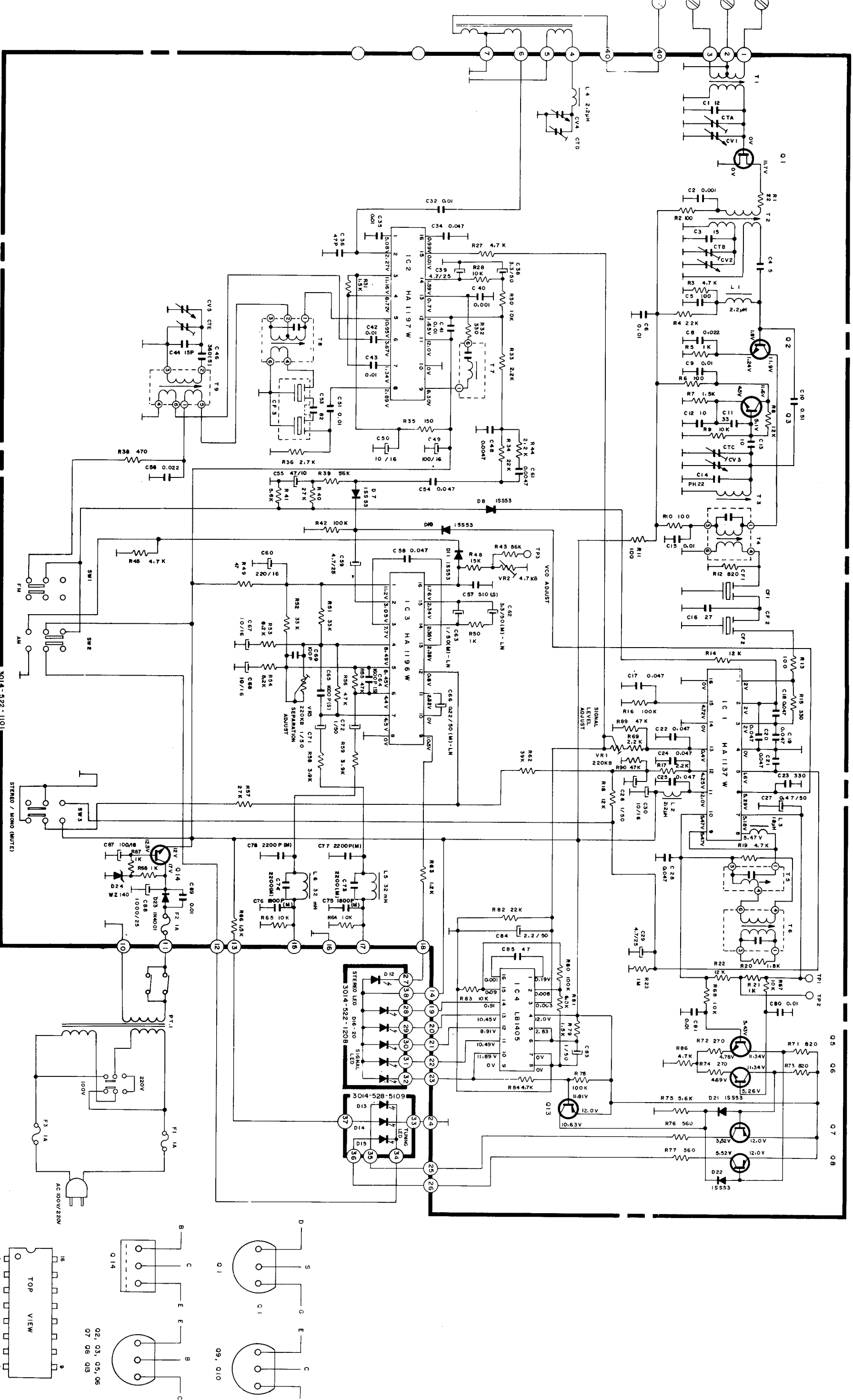
SCHEMATIC DIAGRAM 439A



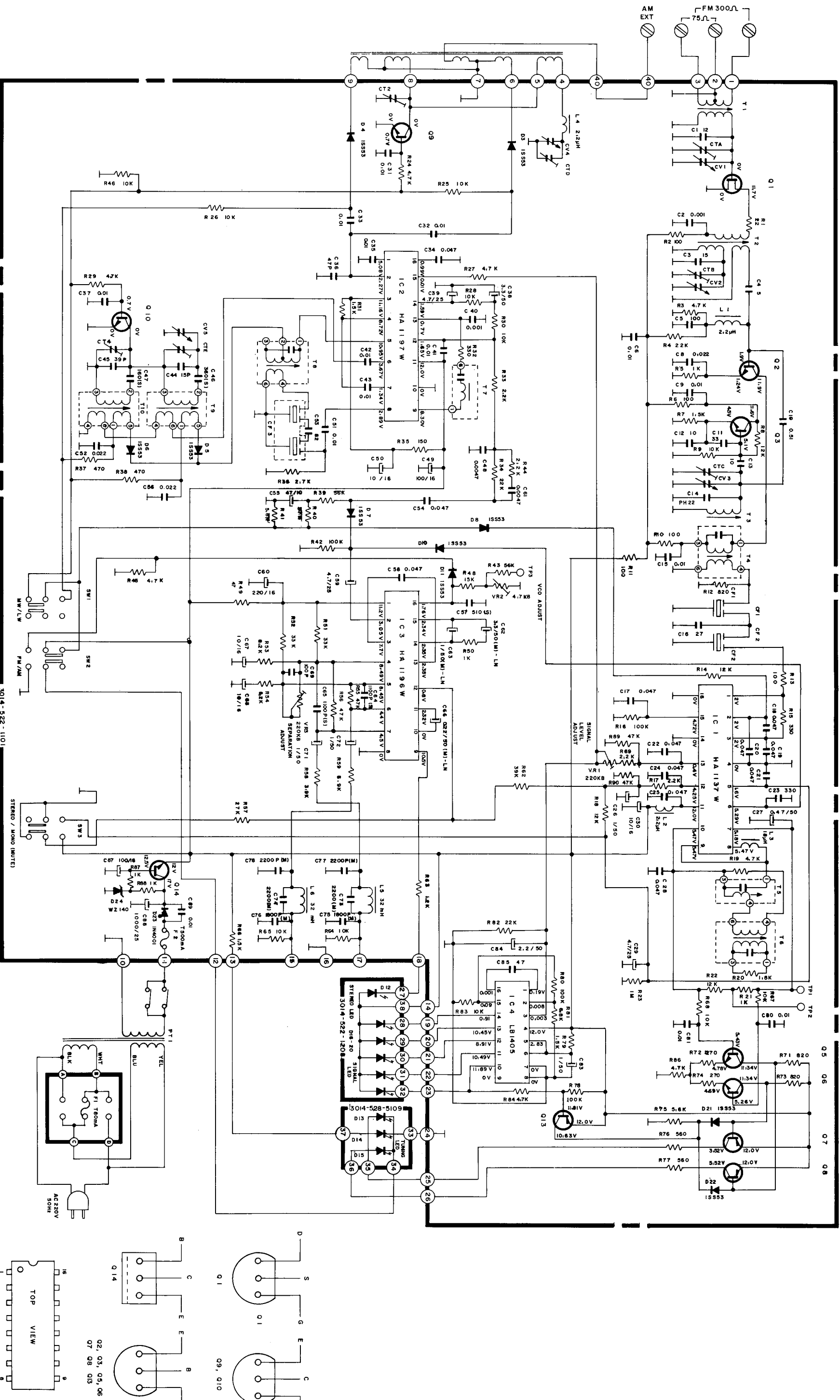
SCHEMATIC DIAGRAM 459A



SCHEMATIC DIAGRAM 528T



SCHEMATIC DIAGRAM 528TL



NOTE

1. ALL RESISTANCE VALUES IN OHM K.K OHM M.MIGA OHM, ALL RESISTORS 1/4W UNLESS OTHERWISE SPECIFIED.

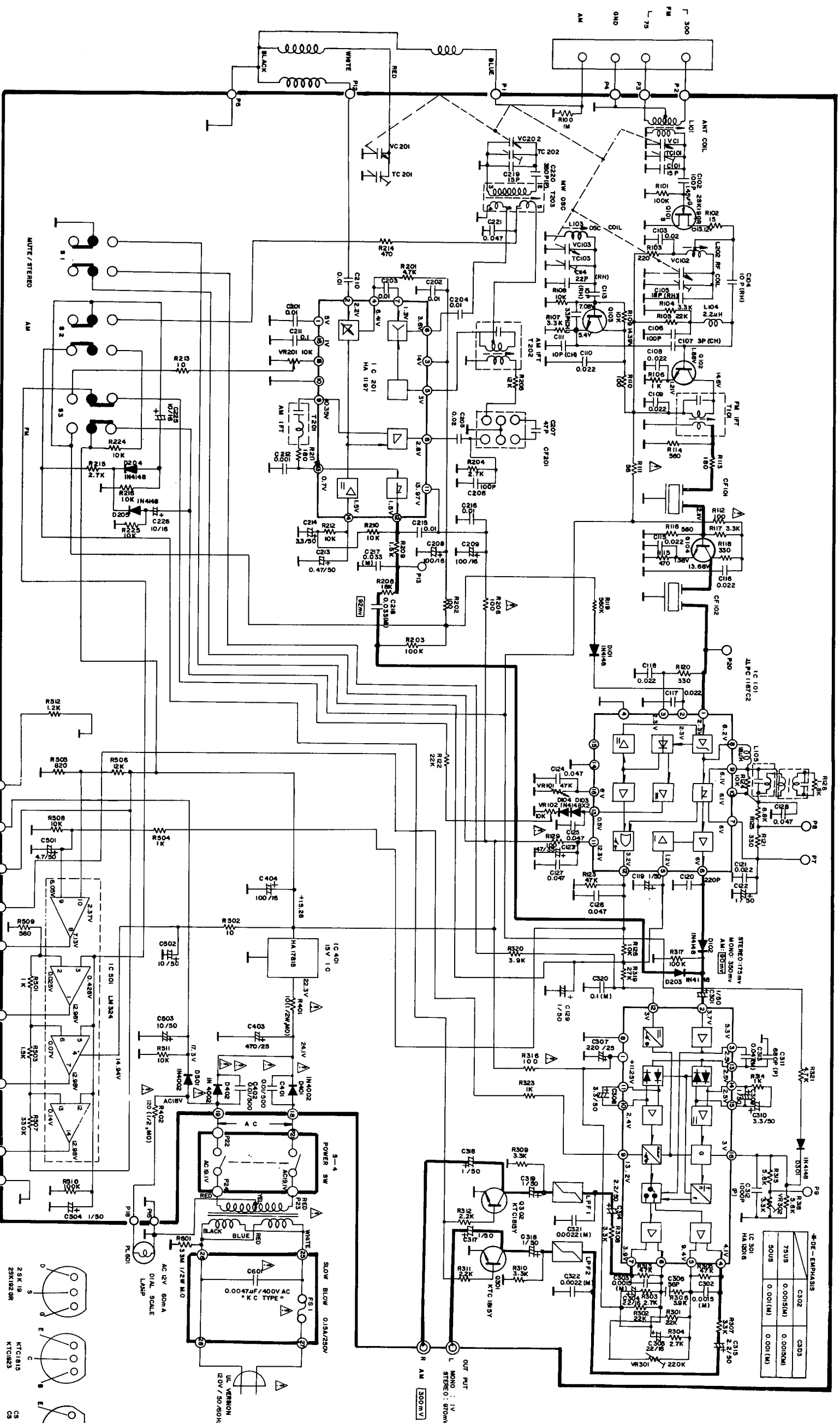
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITORS IN MFD P.F. PICOFARAD.

3. THERE MIGHT BE SLIGHT CHANGES IN THE ACTUAL SET.

4. ALL VOLTAGES ARE DC UNLESS OTHERWISE SPECIFIED, DC VOLTAGES SHOWN ARE MEASURED FROM CHASSIS WITH NO SIGNAL INPUT, LINE VOLTAGE 220V USING A HIGH IMPEDANCE DIGITAL MULTIMETER.

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SCHEMATIC DIAGRAM 539T

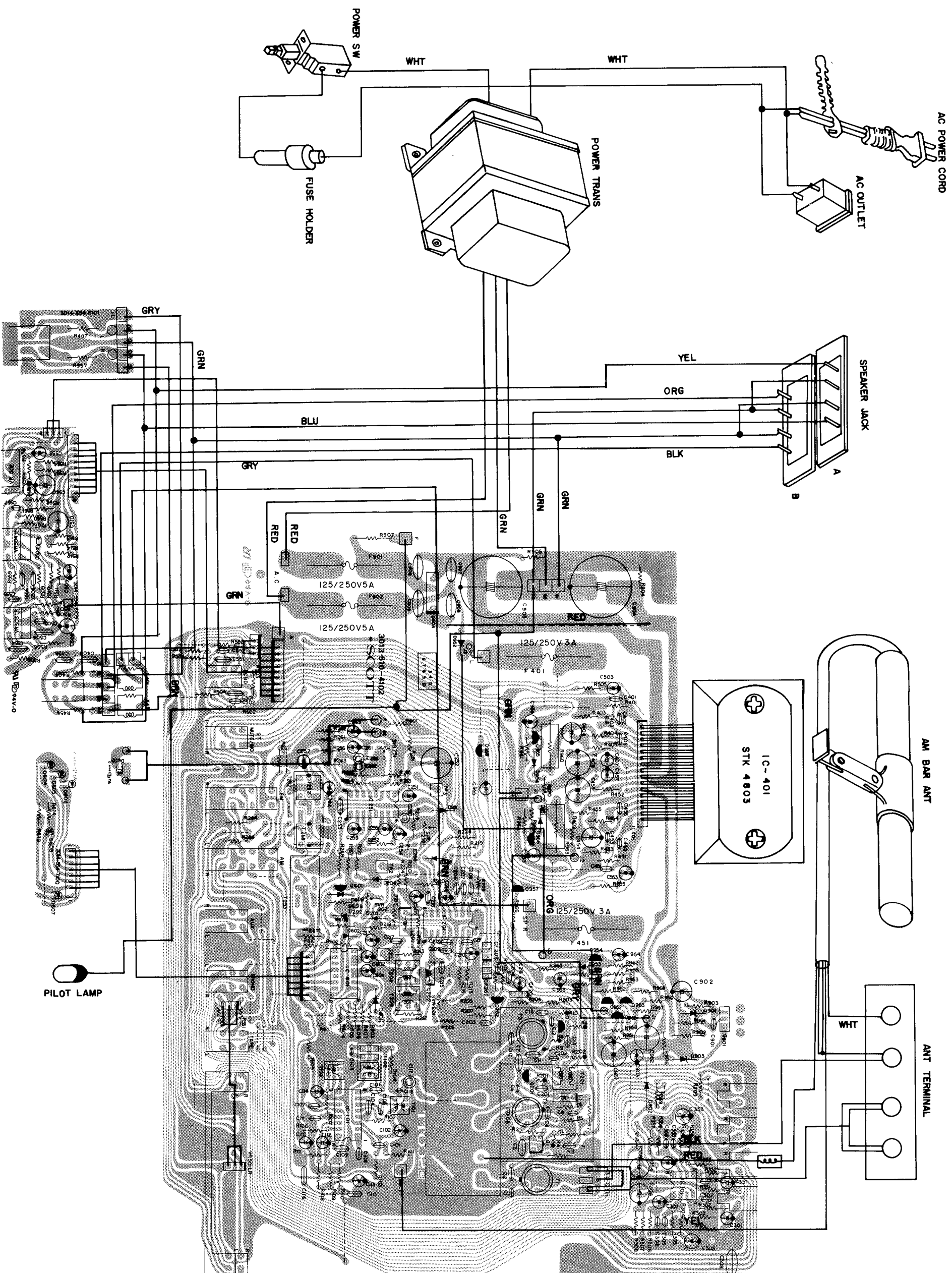


NOTE: 1. Resistor values are indicated in ohms unless otherwise specified. (K=1,000 M=1,000,000)
2. Capacitor values are shown in microfarads unless otherwise noted. (p=micro-microfarads)
3. Component values are subject to change without notice.
4. Components identified with the mark Δ are critical with respect to fit and stock.
5. All values are referenced to ground unless otherwise indicated.

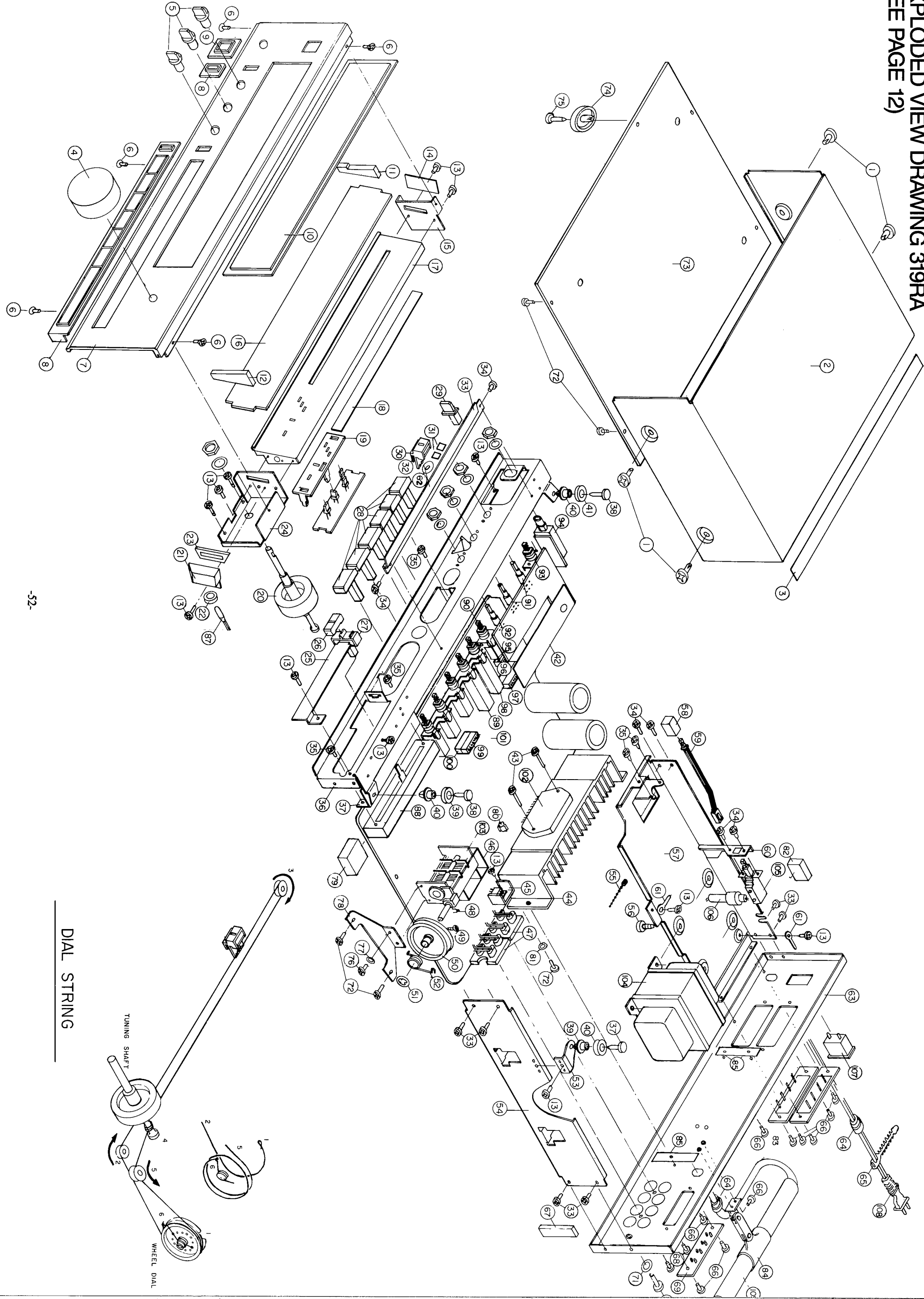
AC: R.M.S.
DC: No signal except where indicated

MONO-L: R 75 kHz deviation, at 100%
STEREO-L: or R 67.5 kHz deviation, prior 10%

CONNECTION DIAGRAM 319RA



EXPLODED VIEW DRAWING 319RA
(SEE PAGE 12)



DIAL STRING