



Technical Manual

AM/FM STEREO CASSETTE TUNER AMPLIFIER with TRANSMITTER UNIT RRT-2

RCX-860/-L

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Specifications

AMPLIFIER SECTION

Continuous Power Output40 watts* per channel, min. RMS both channels driven into 8 ohms from 20 to 20,000 Hz with no more than 0.06% total harmonic distortion.
Total Harmonic Distortion (20 to 20,000 Hz, from AUX)	No more than 0.06% (continuous rated power output) No more than 0.06% (continuous 1/2 rated power output) No more than 0.06% (1 watt per channel power output, 8 ohms)
Intermodulation Distortion (60 Hz : 7 kHz = 4 : 1)	No more than 0.06% (continuous rated power output) No more than 0.06% (continuous 1/2 rated power output) No more than 0.06% (1 watt per channel power output, 8 ohms)
Output: Speaker	A or B (8-16 ohms)
Headphone	4-16 ohms
Damping Factor	25 (20 to 20,000 Hz, 8 ohms)
Input Sensitivity/Impedance:	
PHONO . . . . .	.27 mV/47 kohms
Frequency Response:	
PHONO . . . . .	.30 to 15,000 Hz, ± 0.5 dB (RIAA STD)
Tone Control:	
BASS	± 10 dB, 100 Hz
TREBLE	± 10 dB, 10 kHz
Loudness Contour	± 10 dB (100 Hz), +4 dB (10 kHz) (volume control set at -40dB position)
Signal-to-Noise Ratio (HF, A network):	
PHONO	78 dB

FM TUNER SECTION

Usable Sensitivity (mono)	13.2 dBf/2.5 μ V 26 dB, 75 ohms (DIN)
50 dB Quieting Sensitivity:	
Mono	18.4 dBf/4.6 μ V
Stereo	38.2 dBf/45 μ V
Signal-to-Noise Ratio (at 65 dBf):	
Mono . . . . .	.70 dB
Stereo . . . . .	.65 dB
Harmonic Distortion (at 65 dBf):	
100 Hz	0.2% (mono), 0.3% (stereo)
1 kHz	0.4% (mono), 0.4% (stereo)
6 kHz	0.6% (mono), 0.6% (stereo)
Frequency Response . . . . .	.30 to 15,000 Hz, +0 dB, -2.0 dB
Capture Ratio	1.5 dB
Alternate Channel Selectivity (± 400 kHz) . . . . .	.62 dB
Spurious Response Ratio . . . . .	.60 dB
Image Response Ratio . . . . .	.40 dB
IF Response Ratio . . . . .	.90 dB
AM Suppression Ratio . . . . .	.50 dB
Stereo Separation	100 Hz/1 kHz/10 kHz, 40 dB/43 dB/30 dB
Subcarrier Product Ratio	55 dB
SCA Rejection Ratio . . . . .	.60 dB
Antenna Input . . . . .	.300 ohms balanced, 75 ohms unbalanced

AM TUNER SECTION

	MW	LW (RCX-860L)
Sensitivity . . . . .	.300 μ V/m	800 μ V/m
Selectivity . . . . .	.25 dB	25 dB
Signal-to-Noise Ratio . . . . .	.40 dB	32 dB
Image Response Ratio . . . . .	.35 dB	58 dB
IF Response Ratio . . . . .	.30 dB	50 dB
Antenna . . . . .	.Built-in ferrite bar antenna	

CASSETTE DECK SECTION

Heads: Rec/Play	High B "super hard" permalloy
Erase	Ferrite core
Track	4-track/2-channel
Tape Speed	4.8cm/sec.
Motor	Electronic DC Governor
Wow and Flutter	0.15% (DIN) 0.048% (WRMS)
Distortion (REC/PB, 400Hz)	1.2% (METAL)
Frequency Response (-20dB)	Normal, LH 50 to 15,000Hz ± 3 dB Chromium 50 to 15,000Hz ± 3 dB Metal 50 to 16,000Hz ± 3 dB
Signal-to-Noise Ratio (WTD, 0dB=580mV, Chromium)	Dolby NR in 68dB Dolby NR out: 60dB
Input Sensitivity/Impedance	MIC 0.4mV/10 kohms LINE 40mV/17 kohms
Fast Wind Time (C-60)	100 seconds
Tape Selector	BIAS EQUALIZER
Normal, LH	100% 120 μ s
Chromium	130% 70 μ s
Metal	200% 70 μ s

MISCELLANEOUS

Power Requirement	120V/60Hz, 220V/50Hz, 240V/50Hz, or 120, 220, 240V/50-60Hz (switchable, depending on destinations)
Power Consumption	250 watts
Dimensions (Overall)	430 (W) x 230 (H) x 320 (D) mm 16-15/16" x 9" x 12-19/32"
Weight (net)	11.9kg/26.18 lbs.

TRANSMITTER UNIT

Range of Operation	6m
IC	1
Transistor	3
Diode	2
Ceramic Oscillating Element	1
Infrared Light-Emitting Diode	2
Light Emitting Diode (LED)	1
Power Requirement	SUM-3 (UM-3) dry battery (1.5VDC) x 3
Dimensions (Overall) . . . . .	.74 (W) x .24 (H) x .172 (D) mm 2-29/32" x 15/16" x 6-25/32"
Weight	185g/6.53 ozs.

- Specifications and design subject to possible modification without notice.
- Dolby and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.
Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers (applicable to the U.S.A. only).

Adjustment

Instruments and parts required in adjusting the unit include: AC voltmeter, audio generator, oscilloscope, frequency counter, HD analyzer, DC millivoltmeter, AM signal generator, FM signal generator, FM stereo generator, DC digital voltmeter, zero-center meter and load resistors (8 ohms, 100 watts).

I. AUDIO SECTION

A. Bias (Idling Current) Adjustment

1. Be sure to warm up the unit before making adjustment.
 - a. Preset potentiometers VR801 (L-ch) and VR802 (R-ch) to mid-position.
 - b. Connect an 8-ohm (100-watt) load resistor to left and right speaker terminals respectively. Apply 1000 Hz (sine wave) signal to PHONO input terminal and operate both channels on 40-watt output for about 10 seconds.
2. Stop application of input signal and set the volume control to minimum. Connect the DC millivoltmeter to Test Points shown below, and adjust potentiometer VR801 (VR802 for R-ch) to obtain 10 mV reading on the DC millivoltmeter.
 - L-ch: TP1 (-), TP3 (+)
 - R-ch: TP2 (-), TP4 (+)

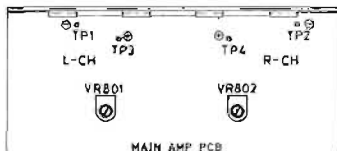


Fig. 1

B. Protection Circuit Check

1. Connect an 8-ohm load resistor, AC voltmeter, and oscilloscope to speaker terminals. Apply 1000 Hz (sine wave) signal to PHONO input terminal. Adjust input level or the volume control on the unit to obtain 2.82V/8 ohms (= 1 watt) reading on the AC voltmeter.
 2. Maintaining this state, check to see that the protection circuit is activated (the relay is set to OFF) the instant (+) and (-) speaker terminals are shorted. Also check to see that the protection circuit restores to the normal state and the relay is set to ON 4 – 7 seconds after the protection circuit has been activated.
- Note: Carry out this check for each channel separately.

II. TUNER SECTION

- Adjustment should be made in the following order.
 - 1) FM 2) MW 3) LW

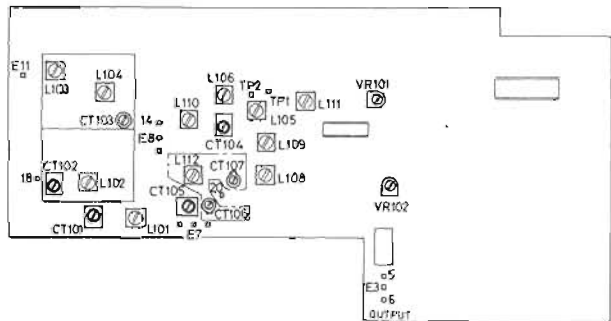


Fig. 2-1

FM ALIGNMENT

A. VCO Adjustment

1. Connect the DC digital voltmeter to pin 18 on the tuner p-c board and chassis ground. Operate the scanning button to display the lower edge frequency *1 on the frequency display. Then adjust FM OSC coil L104 so that the DC digital voltmeter reads 3V±0.5V.
2. Then display the higher edge frequency *2, and adjust trimmer capacitor CT103 so that the DC digital voltmeter reads 20V±0.5V.
3. Repeat steps 1 and 2 until no further improvement is noticed.

Note: *1, *2: Band edge varies according to area, as shown in Table 1, page 8.

B. FM RF Sensitivity Adjustment

1. Connect the AC voltmeter and oscilloscope to pins 5 or 6, and E6 on the tuner p-c board. Receive 90 MHz (90.1 MHz, channel space = 200 kHz) signal from the FM signal generator. Adjust the FM RF coils L101 and L102 to obtain maximum sensitivity.
2. Next, receive 105 MHz (105.1 MHz, channel space = 200 kHz) signal from the FM signal generator. Adjust RF trimmer capacitors CT101 and CT102 to obtain maximum sensitivity.
3. Repeat steps 1 and 2 until no further improvement is noticed.
4. Receive 90 MHz (90.1 MHz) signal from the FM signal generator. Antenna input should be set to optimal level where adjustment can be carried out satisfactorily with the appropriate amount of noise contained in the signal wave (2 μV). Adjust FM IFT L103 so that the waveform is largest and contains noise uniformly on the top and bottom of the waveform.

Note: Although two resonating points are available, be sure to adjust at the lower point.



Fig.2-2

C. Discriminator Adjustment

1. Connect the zero-center meter to test points TP1 and TP2. Connect the oscilloscope and HD analyzer to pins 5 or 6, and E6.
2. Receive 90 MHz (90.1 MHz) (1 mW) signal from the FM signal generator. Adjust FM IFT L105 so that the zero-center meter falls on mid-position.
3. Next adjust FM IFT L106 to minimize distortion.
4. Repeat steps 2 and 3 until no further improvement is noticed.

FM STEREO ADJUSTMENT

1. Connect the oscilloscope and AC voltmeter to pin 6 (R-ch output) and pin E6.
2. Receive stereo signal from the FM stereo signal generator (antenna input level set to 1 mV).
 Pilot tone. 9% mod.
 Audio signal 1000 Hz, L-ch only90% mod.
 Turn potentiometer VR101 to the mid-position of the range where stereo indicator lights up. (Fig. 2-3)
3. Adjust potentiometer VR102 to minimize leakage of signal from L-ch into R-ch.
4. Next, connect the oscilloscope and AC voltmeter to pin 5 (L-ch output), and switch the modulation of the FM stereo signal generator to R-ch signal. Check to make sure leakage of signal from R-ch into L-ch is almost the same as that from L-ch into R-ch. If there is a marked difference, fine-adjust VR102.

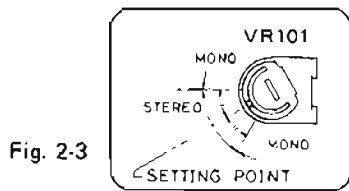


Fig. 2-3

AM ALIGNMENT

A. IF and MW Adjustments

1. Connect the oscilloscope and AC voltmeter to the output terminal. Feed 450 kHz signal from the AM signal generator to pin 14. (Fig. 2-1). Adjust AM IFT, L108, L109 and L111 to obtain maximum output.
2. Connect the DC digital voltmeter to pin 20 and chassis ground. Operated the scanning button to display the lower edge frequency*1 on the frequency display. Then adjust MW OSC coil L110 so that the DC digital voltmeter reads 0.9V±0.1V (1V±0.1V for 2-band units).
3. Then display the higher edge frequency*2, and adjust the trimmer capacitor CT104 so that the DC digital voltmeter reads 9V±0.5V.
4. Repeat steps 2 and 3 until no further improvement is noticed.
 Note: *1, *2: Band edge varies according to channel space, as shown in Table 1, page 8.
5. Receive 648 kHz (650 kHz, channel space = 10 kHz) signal from the AM signal generator, adjust MW coil of AM antenna L001 on the rear panel to obtain maximum sensitivity (Fig. 2-4).
6. Next, receive 1395 kHz (1400 kHz, channel space = 10 kHz) signal from the AM signal generator, and adjust trimmer capacitor CT105 to obtain maximum sensitivity.
7. Repeat steps 5 and 6 until no further improvement is noticed.

B. LW Adjustment (3-band models only)

1. Connect the DC digital voltmeter to pin 20 and chassis ground. Operate the scanning button to display the lower edge frequency (146 kHz) on the frequency display. Then adjust LW OSC coil L112 so that the DC digital voltmeter reads 0.9V±0.1V.
2. Then display the higher edge frequency (353 kHz), and adjust trimmer capacitor CT107 so that the DC voltmeter reads 9V±0.5V.
3. Repeat steps 1 and 2 until no further improvement is noticed.
4. Receive 164 kHz signal from the AM signal generator, adjust LW coil of AM antenna L001 on the rear panel to obtain maximum sensitivity. (Fig. 2-4)
5. Next, receive 317 kHz signal from the AM signal generator, and adjust trimmer capacitor CT106 to obtain maximum sensitivity.
6. Repeat steps 4 and 5 until no further improvement is noticed.

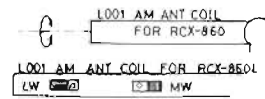


Fig. 2-4

III. TAPE DECK SECTION

Before Adjustment

1. Switches and controls should be set to the positions as follows:
 - a. Volume Control: minimum
 - b. Function: FM, interstation range
 - c. FM Muting Switch: ON (depressed)
 - d. Tape Switch: OFF (released)
 - e. Meter Switch: TAPE (released)
2. The following tapes should be used:
 Test tape: LCT-3004C – azimuth
 LCT-7001 – playback level
 Blank tape: TDK-AD (NORMAL)
 TDK-SA (SPECIAL)
 TDK-MA (METAL)
3. Output should be measured at pin 3 (L-ch) and pin 4 (R-ch) on the rec/playback amp p-c board. Input signal should be applied to REC IN terminal on the rec/playback amp p-c board (see Fig. 3-1).

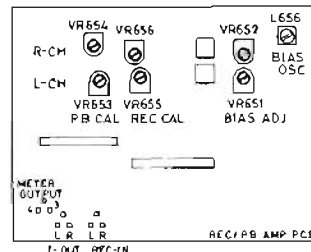


Fig. 3-1

A. Azimuth Adjustment and Playback Level Adjustment

1. Set Tape Selector to NORMAL and Dolby NR switch to OFF. Set Rec Level control to minimum.
2. Insert test tape LCT-3004C into deck and play it back.

Adjust the azimuth screw (Fig. 3-2) to increase the output levels of both channels at playback to maximum and reduce the difference in output between left and right channels to minimum.

3. After adjustment, fix the azimuth screw with paint.

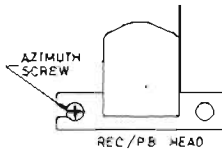


Fig. 3-2

4. Play back test tape LCT-7001, and adjust potentiometer VR653 (VR654 for R-ch) on the rec/playback p-c board (Fig. 3-1) so that the AC voltmeter reads 580 mV.

B. Bias Frequency Adjustment

1. Set Tape Selector to METAL position, and put the circuit into recording mode by pressing the REC button alone. Insert the blank tape into deck.
2. Connect the search coil to the frequency counter and bring the coil close to the erase head. Adjust OSC coil L656 to obtain bias oscillation frequency of 85.3 kHz.

C. Record Level and Rec Bias Adjustments

1. Set Tape Selector to NORMAL position, Dolby NR switch to OFF and Rec Level control to maximum.
2. Insert normal tape (TDK AD) into the deck, and press REC, PLAY and PAUSE buttons, Apply 400 Hz (sine wave) signal from the audio generator. Regulate output of the audio generator so that AC voltmeter reads 580 mV.

3. Record this signal. Check to see if the AC voltmeter reads 580 mV when playing back the recorded tape.
4. If recording and playback levels differ from each other, repeat step 3 until the two levels become almost equal, by adjusting potentiometer VR655 (VR656 for R-ch) on the rec/playback p-c board (Fig. 3-1) while recording.
5. Apply 400 Hz signal from the audio generator. Regulate output of the audio generator so that Line Output level is 58 mV. Record this signal. Change the frequency of the audio generator to 10,000 Hz (with the input at the same level). Then record the signal.
6. Play back the recorded tape. If there is a difference in playback level between the two signals, adjust potentiometer VR651 (VR652 for R-ch) on the rec/playback p-c board (Fig. 3-1), by repeating recording and playback until the difference of output level is within ± 1 dB.
7. Set Tape Selector to SPECIAL position. Insert the blank tape (TDK SA) and record 400 Hz and 10,000 Hz signals in the same manner as in step 5. Check to see that 400 Hz and 10,000 Hz signal outputs reach the same level.
8. Set Tape Selector to METAL position. Insert the blank tape (TDK MA) and record 400 Hz and 10,000 Hz signals in the same manner as in step 5. Check to see that 400 Hz and 10,000 Hz signal outputs reach the same level.

Note: The difference of rec/playback output levels between 400 Hz signal and 10,000 Hz signals may not come within ± 1 dB depending on kind of tape. In that case, repeat steps 5 and 6, taking into account of this deviation and recheck steps 7 and 8.

RECORD/PLAYBACK LEVEL DIAGRAM

Fig. 3-3 Playback Mode

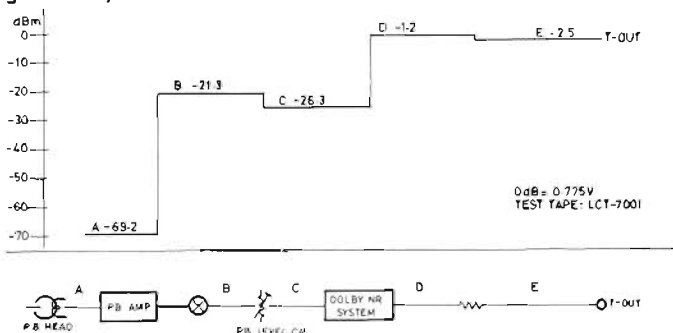
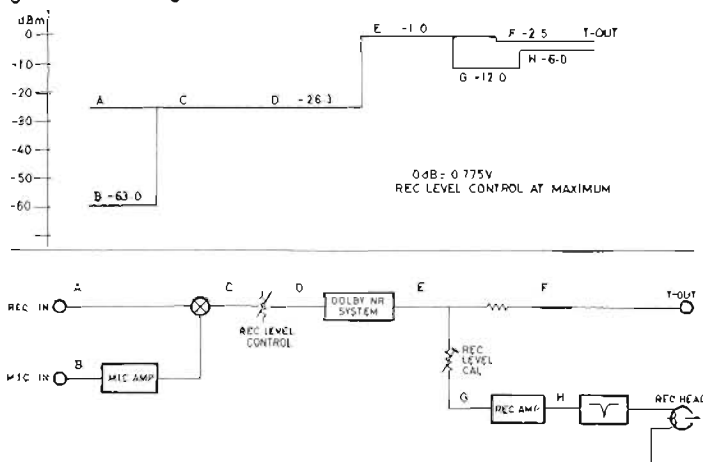


Fig. 3-4 Recording Mode



TAPE SELECTOR SETTING GUIDE

TDK	OD, AD	NORMAL
FUJI FILM	ER, DR	NORMAL
SONY	AHF, BHF	NORMAL
MAXELL	UD, XL-I	NORMAL
SCOTCH	MASTER I	NORMAL
BASF	Super LH-I, LH	NORMAL
TDK	SA, SA-X	SPECIAL
FUJI FILM	UR	SPECIAL
SONY	JHF	SPECIAL
MAXELL	XL-II, X II-S	SPECIAL
SCOTCH	MASTER II	SPECIAL
BASF	SCR	SPECIAL
TDK	MA	METAL
FUJI FILM	SUPER RANGE	METAL
SONY	METALLIC	METAL
MAXELL	NEW-MX	METAL
SCOTCH	METAFINE	METAL

Troubleshooting Guide

I. AUDIO SECTION

A. Protection circuit is activated during normal operation. — Check offset voltage.

1. If offset voltage is normal (= 0V),
 - a. Idling current should be adjusted.
 - b. Q807 (Q808 for R-ch) or Q809 is faulty.
 - c. IC803 is faulty.
2. If offset voltage is abnormal,
 - a. IC801 (IC802 for R-ch) is faulty.

II. TUNER SECTION

A. FM

1. Poor S/N ratio
 - a. Large ripple is contained in +B current.
 - b. LPF constant in the control circuit is improper (R253, etc.)
 - c. Q134, Q135 or Q136 is faulty.
 - d. Routing of wire (pin 3 to pin 15 or pin 4 to pin 16, etc) is improper.
2. Poor sensitivity (white noise is interfered.)
 - a. IC103 is faulty.
 - b. Poor adjustment of RF and IF.
 - c. Routing of wire is improper.

Notes:

1. FM 300-ohm feeder, AM Ant coil wires and +B wire should be routed away from the FM Ant coil.
2. Phono input shielded wire should be routed away from FM Ant circuit.

B. AM: MW (LW)

1. 0.9-volt (1V for 2-band units) adjustment cannot be made at the lower edge frequency.
 - a. OSC coil L217 (L218 for R-ch) is faulty.
2. 9-volt adjustment cannot be made at the higher edge frequency.
 - a. OSC trimmer capacitor CT104 (CT107 for R-ch) is faulty.
3. Neither 0.9-volt (or 1V) nor 9-volt adjustments can be fulfilled.
 - a. OSC circuit is faulty — check Q115 (Q117 for R-ch) or Q116.
 - b. Check wiring from pin 2 to pin 21 for breakage.
4. Tracking error is too large.
 - a. Varicap diodes at OSC side and at Ant side do not match in characteristic or either diode is faulty.
 - Varicap diodes should be replaced in a set at a time (two for 2-band unit or three for 3-band unit). Never replace each of them separately.
 - b. Band edge voltage is not correctly adjusted.
 - c. AM antenna coil is faulty.

C. Controller

1. Auto-stop does not work.
 - a. Check to see that scanning stops the instant pins 4 and 7 of IC104 are shorted.
 - 1) If scanning stops — Q120 or Q139 is faulty.
 - 2) If scanning does not stop — IC104 is faulty.
2. Auto-stop does not function correctly.
 - a. FM IF zero-center is not correctly adjusted.

3. Irrelevant segments of frequency display dimly glow.
 - a. Zener diode D166 is faulty.
4. Tuning cannot be made on the frequency display.
 - a. CPU program of the controller is out of order. Unplug the power cord to reset and plug in again.
5. When the power cord is unplugged and plugged in again, the last channel is not retained.
 - a. Memory backup circuit is faulty.
6. FM waveform does not appear on CRT.
 - a. Prescaler IC103 or related circuit is faulty.
 - b. FM OSC circuit is faulty.
 - c. FM LPF circuit is faulty.
 - d. IC104 is faulty.

III. TAPE DECK SECTION

A. Mechanism

1. Mechanism inoperative (in REW, FF or PLAY mode)
 - a. Drive belt comes off or slips.
 - b. Q614 or IC601 on mechanism-control circuit is faulty.
 - c. Faulty motor.
 - d. Faulty wire connection from input keyboard.
2. PLAY does not work.
 - a. Faulty play switch S604.
 - b. Faulty wire connection of play switch.
 - c. IC601 is faulty.
 - d. Q603 or Q604 is faulty.
 - e. Faulty plunger solenoid or related wire connection.
3. FF (or REW) does not work.
 - a. Faulty FF switch S603 (or REW switch S605)
 - b. Faulty wire connection of switch.
 - c. IC601 is faulty.
 - d. Q601 or Q602 is faulty.
4. Auto-shut-off function does not work.
 - a. Stop sensor S601 or related wire connection is faulty.
 - b. IC601 is faulty.
5. Excessive wow and flutter.
 - a. Decentered or dirty capstan (clinging dirt, etc.)
 - b. Deformed or dirty pinch roller.
 - c. Deformed or dirty drive belt.
 - d. Faulty motor.
 - e. Faulty Q606.

B. Signal Circuit

1. Faulty playback operation.
 - a. No output signal appears for either channel.
 - 1) Q612 in the muting circuit is open.
 - 2) Faulty IC601.
 - 3) Faulty Q684 or Q685.
 - b. Output signal appears for a single channel only.
 - 1) Faulty Q661, Q663 or Q665 (Q662, Q664 or Q666 for R-ch).
 - 2) Faulty IC 501 (IC502 for R-ch).
 - 3) Faulty rec/playback head.
 - c. Pop noise is generated in playback.
 - 1) Faulty Q671 (Q672 for R-ch) in the muting circuit.

- 2) Q612 short-circuited.
- 3) Q613 or D621 is open.
- 2. Faulty recording operation.
 - a. Recording cannot be made on either channel.
 - 1) Rec switch S002 or S606 is faulty.
 - 2) IC601 or D620 is faulty.
 - 3) Faulty Q612.
 - 4) Faulty Q669.
 - 5) Faulty Q683, Q684 or Q685.
 - 6) Q686, Q687 or L656 in the bias oscillating circuit is open.
 - b. Recording can be made only on a single channel.
 - 1) Faulty Q679 or Q681 (Q680 or Q682 for R-ch).
 - 2) Faulty IC501 (IC502 for R-ch).
 - 3) Faulty rec/playback head.
 - c. Pop noise is generated in recording.
 - 1) Q613 in the muting circuit is short-circuited.
- 3. Faulty pause function.
 - a. Pause cannot be engaged.
 - 1) Faulty Pause switch S608.
 - 2) Faulty IC601.
- 4. Faulty operation of peak level indicator.
 - a. Only one of the indicators works (output signal is normal),
 - if signal appears at indicator driver input terminals,
 - 1) Faulty IC551 or IC552.

IV. REMOTE CONTROL (RECEIVER) SECTION

- 1. Power relay does not work.
 - a. Faulty Q322 or Q323.
- 2. Volume control does not work.
 - a. "UP" does not work.
 - 1) Q315, Q316 or Q319 is faulty.
 - b. "DOWN" does not work.
 - 1) Q314, Q317 or Q318 is faulty.
 - c. Motor (combined with volume control) is faulty.
- 3. Tuner indicators (AM/MW, LW, FM) glow dimly when PHONO is selected (or vice versa).
 - a. D301 (D302) is faulty.
- 4. Audio muting does not work.
 - a. Q307 (Q306 for R-ch) is faulty.
 - b. IC304 is faulty.

Reference: IC304

Pin No.	Mute OFF	Mute ON	
1	+5V	-5V	Output
2	-5V	+5V	Output
3	-5V	+5V	Input

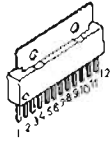
- 5. Function cannot be switched.
 - a. IC302 is faulty (phono—tuner)
 - b. IC303 is faulty (source—tape)

Reference: How to check IC305 (remote signal receiving LSI), TC9134P:

Ordinarily each pin of LSI is High (+5V). However, when a switch is turned on, related pin alone becomes Low (0V). This is conveniently used for checking if an LSI is good or defective.

A. AUDIO SECTION

1. IC801, 802: μ PC1225H;
power amplifier driver



A single chip containing the first stage through the driver stage is packaged in a 12-pin small SIP package. It can drive a 30-50W power amplifier.

Externally attached component:

- Capacitor C805 (C806) between pins 6 and 7 is for phase compensation.
- Capacitor C811 (C812) between pins 1 or 2, and grounding is for preventing oscillation around power supply section.

2. IC803: μ PC1237H;
overload protection



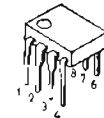
Detects deviation of offset voltage and overloading to protect circuit and speaker system.

- Offset voltage detection level is determined by resistor R827 (R828) which is connected between pin 2 and the emitter of power amp transistor. Resistance value of the resistor is 56 k Ω and the detection level is $\pm 1V$.
- Relay-on-time is determined by the time constant circuit consisting of R835 and C829 of pin 7.
- Overloading is detected at pin 1. If 110 μA (type) or over appears at pin 1, Q807 (Q808) and Q809 set the relay to off. The detection circuit is acti-

vated if the speaker circuit is shorted while the amplifier output is 100 mW or over. If amplifier load is a low resistance, the detection circuit is activated on 1 Ω full power.

- Latching or automatic reset is selected according to grounding of pin 3, which is direct or through capacitor. This unit uses the former method.
- Pin 4 is for detection of turn-off of AC power. Diode D804 rectifies AC and (+) voltage is applied to pin 4, which keeps the relay at ON. Time to set the relay to OFF is given by the time constant which is determined by capacitor C830 connected to pin 4 and internal resistor of IC.

3. IC301: NJM387DA;
phono amp (dual preamp)



4. Function of each transistor
- Q801 (Q802): Bias-idling current
 - Q803 (Q804)
Q805 (Q806) } Power amp
 - Q807 (Q808): Overload detector
 - Q809: Overload switch

B. TUNER SECTION

Description of Function

- Memory:
 - Preset stations: 5 FM stations plus 5 AM (LW/MW) stations (10 stations in total).
 - Last channel: 1 station for each band.
- Memory backup: Capacitor backup method (about

12 hours).

- Automatic tuning is possible only for FM band.
- Receiving frequency ranges, etc. are shown in the table below.

Table 1

Area	Band	Frequency Range	Channel Space	Reference Frequency	IF
USA	MW1	530kHz – 1620kHz	10kHz	10kHz	450kHz
	(MW2)	522kHz – 1611kHz	9kHz	9kHz	450kHz)
	FM	87.9MHz – 107.9MHz	200kHz	25kHz	10.70MHz
Europe, UK, etc.	MW	522kHz – 1611kHz	9kHz	9kHz	450kHz
	LW*	146kHz – 353kHz	9kHz	1kHz	450kHz
	FM	87.50MHz – 108.0MHz	50kHz	25kHz	10.70MHz

*3-band units only.

Note: Units for the U.S.A. are preset to MW1 (channel space = 10kHz).

- Frequency range, etc. are factory adjusted by opening or closing a part of the tuner circuit (see Table 2), depending on the destination of the units as shown in Table 1.

6. IC101: HA11211; FM IF amp, detector and AM IF amp

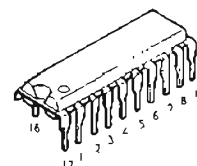


Table 2

Function		Destination	
		USA	Europe, UK, etc.
X1	Presetting of FM band	O	O
X2	Presetting of AM (MW/LW) band	O	C
X3	Presetting of FM band	O	C
X4	Presetting of FM deemphasis	C	O
X5		C	O
X6	Presetting of FM muting bandwidth.	C	O
X7		O	C

O: Open C: Closed

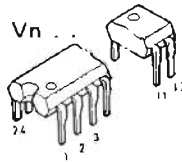
Table 3

	FM Deemphasis	FM Muting Lock Range
USA	75µs	±70kHz
Europe, UK, etc.	50µs	±30kHz

7. IC102: LA3390; FM MPX decoder and FM/AM switch

Reference:

- a. Muting ON... $V_5 > 3.4V$ (V_5, V_6, V_n . . . means voltage at pin 5, 6, n. . .)
OFF... $V_5 < 0.9V$
- b. FM/AM switch FM... $V_6 < 0.4V$
AM... $V_6 > 1.0V$
- c. VCO (voltage controlled oscillator) stops and compulsive monaural mode is obtained at $11V > V_{11} > 6V$.



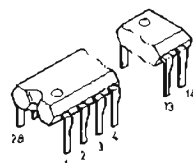
8. IC103: µPB553AC; Prescaler
Divides FM local oscillation frequency by 16.



Function of each pin

Pin No.	Symbol	Function
1	V _{cc}	Power supply terminal, +5V±10%
2	IN	VCO input terminal (DC cut-off with capacitor)
3	CHK	Check terminal, normally connected to GND
4	GND	Grounding terminal
5	OUT	Output terminal
6	PSC	Prescaler control terminal
7	NC	No connection
8	NC	No connection

9. IC104: µPD1703C-016;
PLL synthesizer controller



- a. Auto UP/DOWN tuning function (sawtooth wave mode)
When "high level" input appears at SD (station detector) terminal, tuning ends and the tuned station is retained.
- b. Manual UP/DOWN tuning function (sawtooth wave mode)
Step by step tuning with momentary switch.

Pressing the switch over 0.5 second enables continuous searching and releasing it stops search.

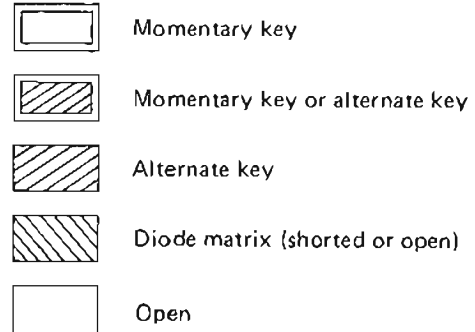
- c. Frequency range, channel space, etc. are as shown in Table 1.
- d. Preset memory function
FM. 7 stations (M1 to M7)
AM (MW + LW). 7 stations (M1 to M7)
This unit, however, uses only M1 through M5 (5 stations including FM, AM (MW + LW)).
- e. Function of each pin is as shown in the table below.

Function of each pin

Pin No.	Symbol	Function
1	EO1	Phase detector output. Both terminals have the same output. When the divided oscillation frequency is higher than the reference frequency: "High" level; when it is lower: "Low" level, and when it is equal to the reference frequency: "Floating"
2	EO2	
3	CE	Chip-enable input (device selection signal input terminal). "High" level in normal operation. "Low" level while memory is maintained.
4	PSC	Prescaler control terminal. Prescaler, µPB553 AC
5	X1	Crystal oscillation terminal 4.5MHz
6	X2	
7	SD	Station detector input. Stop input in auto tuning mode.
8	MUTE	Muting output. Prevents noise when changing frequency. Active High.
9	D ₁	Digit signal output for frequency display. Active Low.
10	D ₂	
11	D ₃	
12	D ₄	
13	D ₅	
14	V _{DD}	Power supply terminal. Supplies +5V±0.5V.
15	Sg	Segment signal output for frequency display Active High
16	Sf	
17	Se	
18	Sd	
19	Sc	
20	Sb	
21	Sa	
22	K3	Input terminal for key matrix (Key-return signal input)
23	K2	
24	K1	
25	K0	
26	FM	FM programmable counter input. Divided FM OSC frequency is fed in.
27	GND	Grounding terminal
28	AM	AM programmable counter input. Divided AM (MW, LW) OSC frequency is fed in.

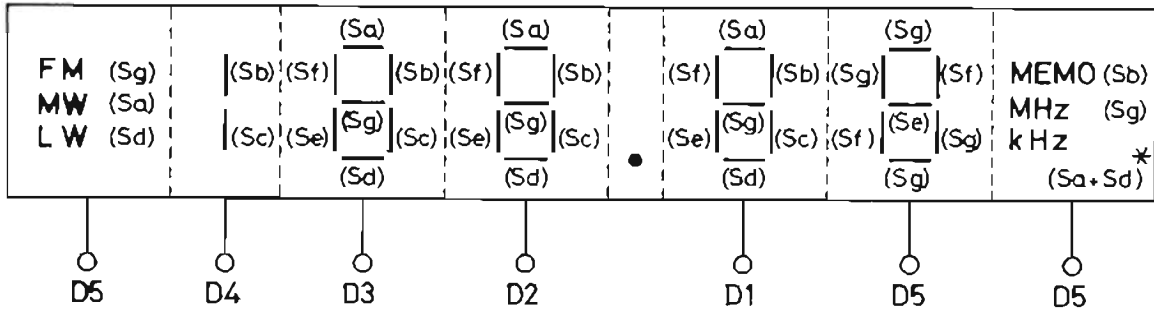
f. Configuration of key matrix

Out \ In	K3 (22)	K2 (23)	K1 (24)	K0 (25)
Sa (21)	Ext. Data Preset	Memory	Up	Down
Sb (20)	M1	M2	M3	M4
Sc (19)	M5	M6	M7	
Sd (18)	MW	FM	LW	
Se (17)				
Sf (16)		Auto/ Manual		9kHz/10kHz
Sg (15)	IF 0	IF 1	Band 1	Band 0



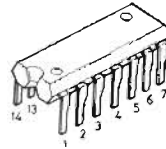
Note: This unit does not use M6 and M7.
() indicates pin number of IC.

g. Connection of indicator

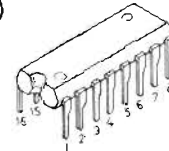


Note: * "kHz" is indicated by OR signals of Sa and Sd.

10. IC105*, IC106: μ PD4011C; MW/LW*, AM/FM switch (quadruple 2-input NAND gate)
*: 3-band unit only



11. IC107: μ PD4035BC: Station call (4-bit parallel-In/Out Shift Register)



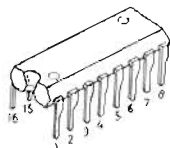
Truth Table

t _n									t _n + 1			
Input									Output			
R	P/S	CK	Parallel				Serial		Q _A n + 1	Q _B n + 1	Q _C n + 1	Q _D n + 1
			A	B	C	D	J	\bar{K}				
H	X	X	X	X	X	X	X	X	L	L	L	L
L	H		a	b	c	d	X	X	a	b	c	d
L	L		X	X	X	X	L	H	Q _A n	Q _A n	Q _B n	Q _C n
L	L		X	X	X	X	L	L	L	Q _A n	Q _B n	Q _C n
L	L		X	X	X	X	H	H	H	Q _A n	Q _B n	Q _C n
L	L		X	X	X	X	H	L	\bar{Q} _A n	Q _A n	Q _B n	Q _C n
L	X	L	X	X	X	X	X	X	Q _A n	Q _B n	Q _C n	Q _D n

T/C = H (When T/C = L, the outputs above are reversed)

- t_n : Pit time before clock pulse
- t_n + 1 : Pit time after clock pulse
- Q_n : Output at t_n
- Q_n + 1 : Output at t_n + 1
- H : High level
- L : Low level
- X : H or L

12. IC108: HD74LS42P; Station call (BCD to decimal decoder)
Function table below gives operating condition of the unit.



Pin Station	Input			Output				
	13	14	15	2	3	4	5	6
1	L	L	H	L	H	H	H	H
2	L	H	L	H	L	H	H	H
3	L	H	H	H	H	L	H	H
4	H	L	L	H	H	H	L	H
5	H	L	H	H	H	H	H	L

L = 0V H = 5V

13. Function of each transistor

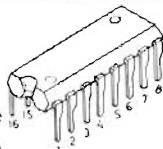
- Q101: FM RF amp
- Q102: Presetting FM auto stop level: When scanning, as voltage at VG₂ becomes 0, Auto-stop is effected on about 10 μV or over.
- Q103: FM mixer
- Q104: FM IF amp
- Q105: Decreases gain of AM IF amp in FM mode.
- Q106: AM signal LED driver

- Q107 to Q110: AM/FM signal LED driver
- Q111: FM local oscillator
- Q112: Buffer amp
- Q113, Q114: Power supply switch for LW and MW oscillation circuits (3-band units only)
- Q115: MW local oscillator
- Q116: Buffer amp
- Q117: LW local oscillator (3-band units only)
- Q118: FM power supply switch
- Q119: AM power supply switch
- Q120: Station detector (for auto-stop)
- Q121: LW switch (3-band units only)
- Q122 to Q125: Memory switches (4, 3, 2 and 1 respectively)
- Q126: FM switch
- Q127: AM switch
- Q128: Memory 5 switch
- Q129 to Q133: Buffer amp
- Q134 to Q136: FM LPF
- Q137, Q138: AM LPF
- Q139: FM auto-tuning switch
- Q140: LW power supply switch
- Q141: MW power supply switch (3-band units only)
- Q142: AM power supply switch
- Q143: FM power supply switch
- Q144: AM antenna coil switch (3-band units only)

C. CASSETTE TAPE DECK SECTION

1. IC601: TC9143P; Tape deck controller

- Sets in stop mode when power is turned on.
- Direct switching between any mode is possible (automatically goes by way of stop mode when necessary).
- Pause-to-Pause function



Function of each pin is given below:

Pin No.	Name	Function
1	GND	Grounding terminal
2	REW	Tape rewind code input
3	FF	Tape fast forward code input
4	PLAY	Tape play code input; record code input by simultaneously pressing REC button
5	REC	Source monitor code input; record code input by simultaneously pressing PLAY button
6	STOP	Stop code input to stop operation
7	PAUSE	Momentary hold of PLAY and release code input
8	A-STOP	Input terminal for tape travel stop
9	OSC	Input terminal for timing creation
10	O-PAUSE	Output in pause mode
11	O-MUTE	Momentary output during mode switching
12	O-REC	Output in record mode
13	O-PLAY	Output in play or record mode
14	O-FF	Output in fast forward mode
15	O-REW	Output in rewind mode
16	VDD	Power supply terminal

Key Input vs. Output State

Key Input	O-FF	O-REW	O-PLAY	O-REC	O-MUTE	O-PAUSE	Mode
STOP					•		STOP
FF	•				•		FAST FORWARD
REW		•			•		REWIND
PLAY			•				PLAYBACK
REC				•			MONITOR
REC/PLAY			•	•			RECORD
PAUSE					•		PAUSE
PLAY			•		•		PLAY/PAUSE
REC				•		•	MONITOR/PAUSE
REC/PLAY			•	•		•	REC/PAUSE
A-STOP						•	AUTO-SHUT-OFF

• "H" output

Output Mode When Plural Keys are Pressed

Key Input-1	Inputs of Other Keys	Output Mode
STOP	REW, FF, PLAY, REC, PAUSE	STOP
FF	REW, PLAY, REC, PAUSE	STOP FAST FORWARD
REW	FF, PLAY, REC, PAUSE	STOP REWIND
PLAY	PAUSE	PLAY/PAUSE
REC	PLAY, PAUSE, PLAY, PAUSE	RECORD MONITOR/PAUSE RECORD/PAUSE

Current Mode \ Key Input	STOP	FF	REW	PLAY	REC	REC/PLAY	PAUSE
STOP	—	FF	REW	PLAY	MONITOR	REC	PAUSE
FF	STOP	—	*REW	*PLAY	—	*REC	—
REW	STOP	*FF	—	*PLAY	—	*REC	—
PLAY	STOP	*FF	*REW	—	—	—	PLAY/PAUSE
MONITOR	STOP	FF	REW	PLAY	—	REC	MONITOR/PAUSE
REC	STOP	*FF	*REW	—	—	—	REC/PAUSE
PAUSE	STOP	FF	REW	PLAY/PAUSE	MONITOR/PAUSE	REC/PAUSE	STOP
PLAY/PAUSE	STOP	*FF	*REW	—	—	—	PLAY
MONITOR/PAUSE	STOP	FF	REW	PLAY/PAUSE	—	REC/PAUSE	MONITOR
REC/PAUSE	STOP	FF	REW	—	—	—	REC

Notes:

- 1) Switching to mode marked with * is carried out by way of STOP mode taking 0.4 second.
- 2) REC/PLAY means pushing of REC and PLAY keys in this order or simultaneously.

- 3) “—” indicates that the current mode is maintained.
- 4) Releasing of pause TC9143P is done by pushing PAUSE key (PAUSE-to-PAUSE).

2. IC501: NE646N;

Dolby NR system

3. IC551: TA7666P; Level indicator

LED driver 5-5-3-3 dB step

4. IC552: TA7667P; Level indicator LED

driver 2 dB step

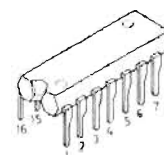


5. Function of each transistor

- a. Q601: Activates FF plunger solenoid.
- b. Q602: Activates and maintains REW/FF plunger solenoid.
- c. Q603: Activates PLAY plunger solenoid.
- d. Q604: Maintains PLAY plunger solenoid.
- e. Q605: PLAY plunger solenoid control in PAUSE mode
- f. Q606: Turns on or off the motor with EJECT switch.
- g. Q607 to 611: Switch input signals (for FF/REW, PLAY, REW, REC, PAUSE respectively)
- h. Q612, Q613: Muting control
- i. Q614: Voltage regulator
- j. Q531 (Q532): Mic amplifier
- k. Q651 (Q652), Q653 (Q654): PLAY/REC switch (ON in play mode)
- l. Q655 (Q656), Q657 (Q658): PLAY/REC switch
- m. Q659 (Q660): PLAY/REC switch (ON in record mode)
- n. Q661 (Q662), Q663 (Q664): Playback EQ
- o. Q665 (Q666), Q667 (Q668): PLAY/REC switch
- p. Q669 (Q670): Input muting
- q. Q671 (Q672): Output muting
- r. Q673 (Q674), Q675 (Q676): PLAY/REC switch
- s. Q677 (Q678): Rec amp muting
- t. Q679 (Q680), Q681 (Q682): Rec amp
- u. Q683 to Q685: PLAY/REC switching control
- v. Q686: Bias control
- w. Q687: Bias OSC

D. CONTROLLER SECTION

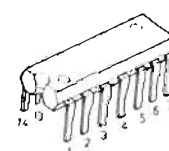
1. IC302: TC9145P; Function switch (TUNER/PHONO), Analog switch



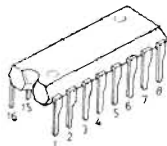
Function of each pin

Pin No.	Symbol	Function
15	SEL-1	Select input terminal of each switch.
14	SEL-2	Switches 1-3 are set to ON when SEL-1, -2 and -3 are at “H” level. Maintained with one pulse by means of built-in flip-flop.
13	SEL-3	
2	LED-1		Driver output terminals to indicate status. Correspond to SEL input terminals respectively. When “H” level is applied to SEL-1, -2 and -3, LED-1, -2 and -3 maintain “L” level.
3	LED-2	
4	LED-3	
5/12	SIG-A1 SIG-B1	Signal input terminal 1. When SEL-1 is selected, switch 1 is set to ON, and this terminal and COM terminal form a complete path.
6/11	SIG-A2 SIG-B2	Signal input terminal 2. When SEL-2 is selected, switch 2 is set to ON, and this terminal and COM terminal form a complete path.
7/10	SIG-A3 SIG-B3	Signal input terminal 3. When SEL-3 is selected, switch 3 is set to ON, and this terminal and COM terminal form a complete path.
8/9	COM-A COM-B	Switch common terminal
16	V _{DD}	Power supply terminal *2 power supply usable.
1	V _{SS}	

2. IC303: HD14066BP; Function switch (TAPE/SOURCE), Analog switch



3. IC304: HD140278P; Tape, Muting control, Dual JKF.F.

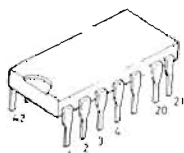


Input						Output**	
CK1	J	K	S	R	Qn*	Qn+1	$\overline{Qn+1}$
	H	X	L	L	L	H	L
	X	L	L	L	H	H	L
	L	X	L	L	L	L	H
	X	H	L	L	H	L	H
	X	X	L	L	X	Qn	\overline{Qn}
X	X	X	H	L	X	H	L
X	X	X	L	H	X	L	H
X	X	X	H	H	X	H	H

Notes:

- * Current status † Change of level
- ** Next status X Either in H or L

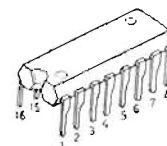
4. IC305: TC9134P; Remote control reception LSI



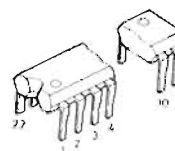
Function of each pin

Pin No.	Symbol	Function
1, 2	$X_T, \overline{X_T}$	Terminals for timing oscillator 455kHz ceramic oscillator or LC is connected.
3-5	C_1, C_2, C_3	Code instruction input terminal. Accept input when transmitter code and the code preset at this terminal are the same.
6-11	HP_6-HP_1	Continuous signal output terminal. While receiving signal is faded, this output maintains "L" level.
12	PW on/off	External control input terminal of cyclic output CP_1 . CP_1 is controllable with either transmitter or receiver. CP_1 is reversed at "L" level.
13-15	EX_1 EX_2 D/A out	External control input terminal of D/A converter. EX_1 for UP and EX_2 for DOWN operate on "L" level. D/A converter output terminal. V_{DD} is divided into $\frac{V_{DD}}{32}$ parts before fed to output.
16	RX IN	Receiving signal input terminal Feeds code signal after removing carrier signal.
17 18	CP_2 CP_1	Cyclic signal output terminal. When received, output is reversed. CP_1 can also be controlled by the receiving IC.
19 20 23-41	$SP_1, \overline{SP_1}$	Single pulse output terminal. When code signal is fed in, "L" level pulse appears for the designated output only.
21, 22	VDD GND	Power supply terminal

5. IC401: HA1197; Remote control signal amp



6. IC451: TC9132P; Remote control transmitter LSI

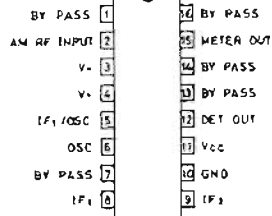
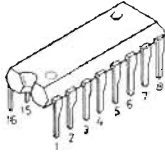


Function of each pin

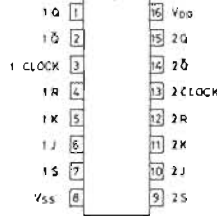
Pin No.	Symbol	Designation	Function and Operation
1-4	T_1-T_4	Timing signal output	Timing digit output terminal for key matrix
5-10 12, 13	K_1-K_8	Key input	Key input terminal for key 32 codes possible with T_1-T_4 x K_1-K_8
14-16	C_1-C_3	Code bit input	Code bit input terminal. & codes possible for comparing transmitter and receptor signals.
17	\overline{TEST}	Test term.	Set at "H" level normally.
18	IR _{OUT}	Transmitter output	16 bits/cycle, modulated with kHz carrier
19	TX _{OUT}	Transmitting indicator output	Normally in "H" level, turn to "L" level during transmission.
20, 21	$X_T, \overline{X_T}$	Oscillator terminal	455kHz ceramic oscillating element is used.

7. Function of each transistor

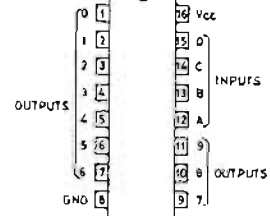
- a. Q301, Q302: Input control of IC302 (Phono LED, Tuner LED)
- b. Q303, Q304, Q305: Switching of LEDs (MW, FM and LW respectively)
- c. Q306, Q307: Muting (-15 dB)
- d. Q308, Q309: Switching of LEDs (TAPE and MUTING respectively)
- e. Q310: Input control (-15 dB MUTING) of IC304
- f. Q311: Input control (TAPE) of IC304
- g. Q312, Q313: Voltage regulator
- h. Q314, Q317, Q318: Volume control (Volume DOWN with the transistors ON)
- i. Q315, Q316, Q319: Volume control (Volume UP with the transistors ON)
- j. Q320, Q321: Start/Reject control of turntable
- k. Q322, Q323: Activates the speaker relay.
- l. Q451: Driver
- m. Q452: Transmitter indicator switch
- n. Q453: Transmitter output amplifier



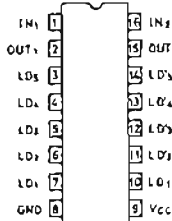
HA1197
(Top View)



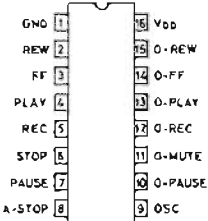
HD140278P
(Top View)



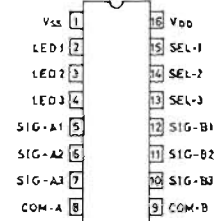
HD74LS42P
(Top View)



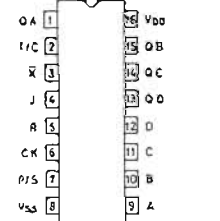
TA7666P
TA7667P
(Top View)



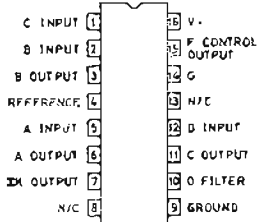
TC9143P
(Top View)



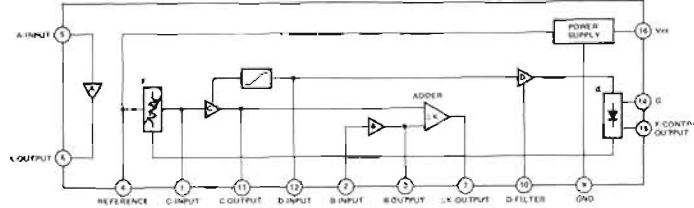
TC9145P
(Top View)



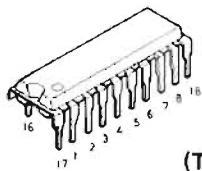
μPD4035C
(Top View)



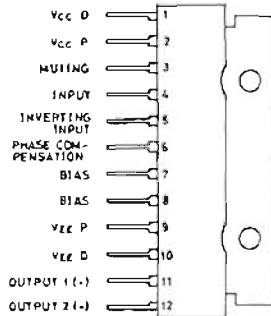
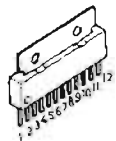
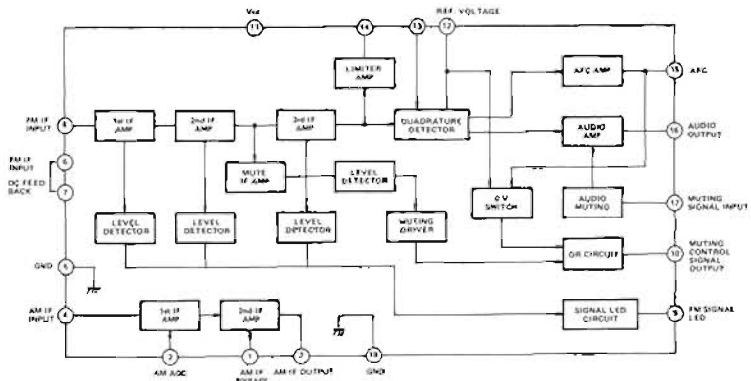
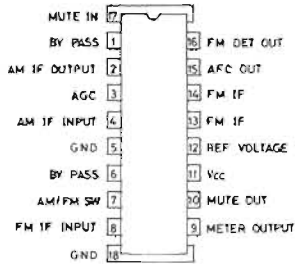
NE646N
(Top View)



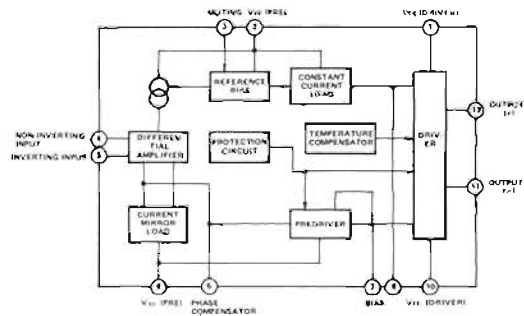
NE646N

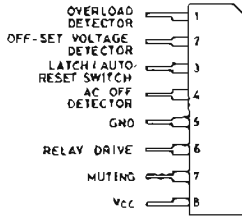


HA11211
(Top View)

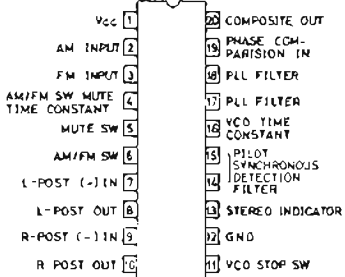
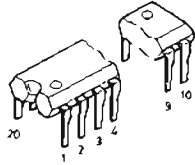
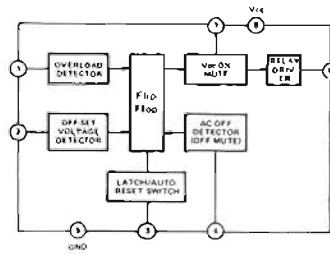


μPC1225H
(Front View)

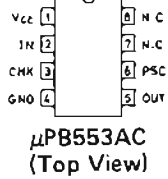
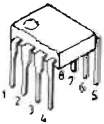
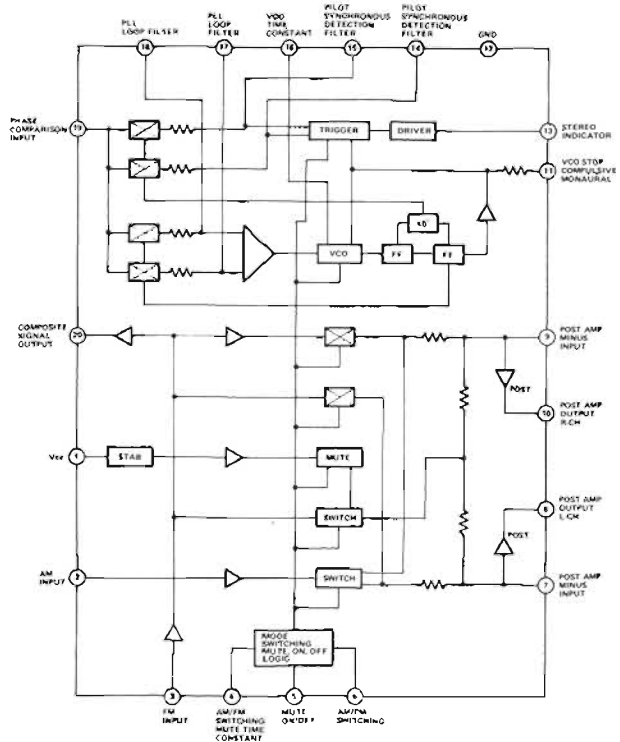




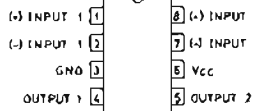
μPC1237H
(Side View)



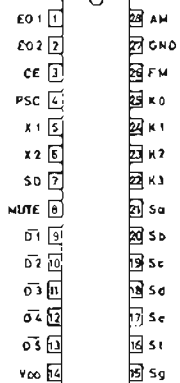
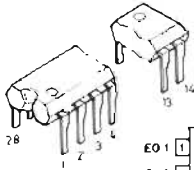
LA3390
(Top View)



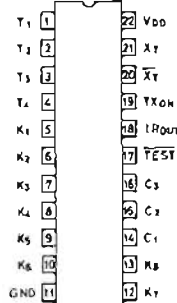
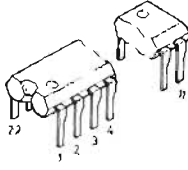
μPB553AC
(Top View)



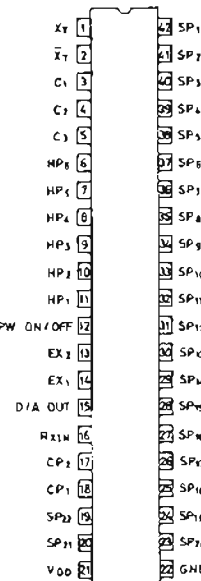
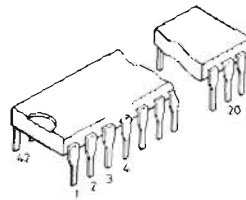
NJM387D-A
(Top View)



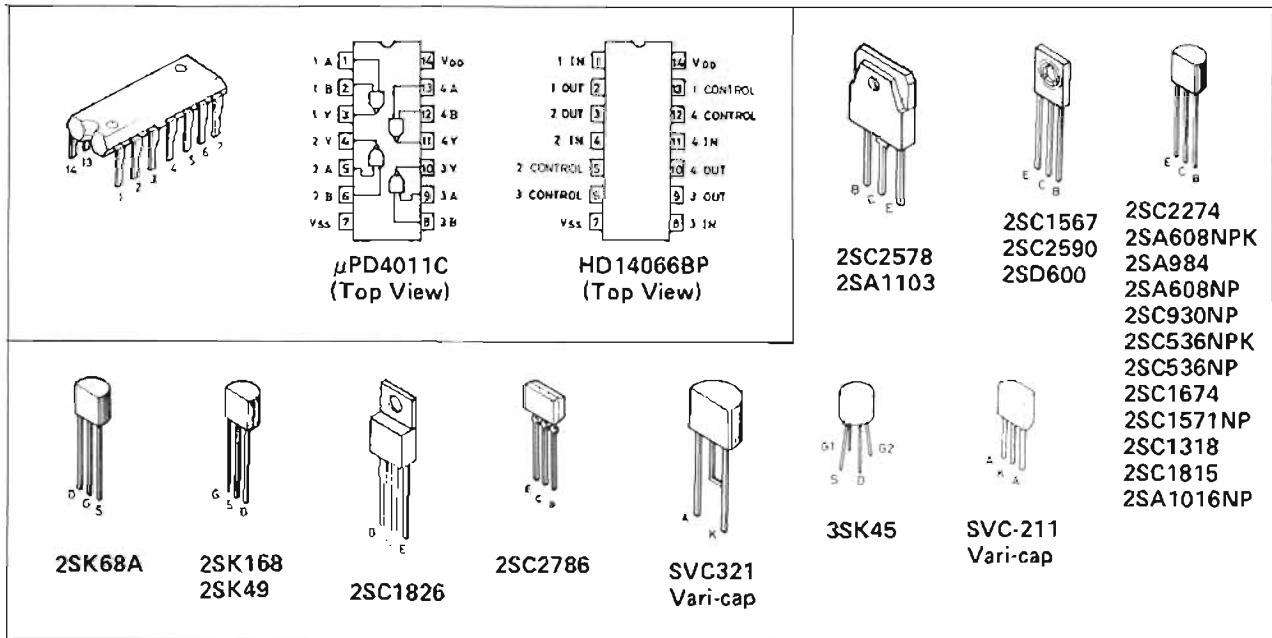
μPD1703C-016
(Top View)



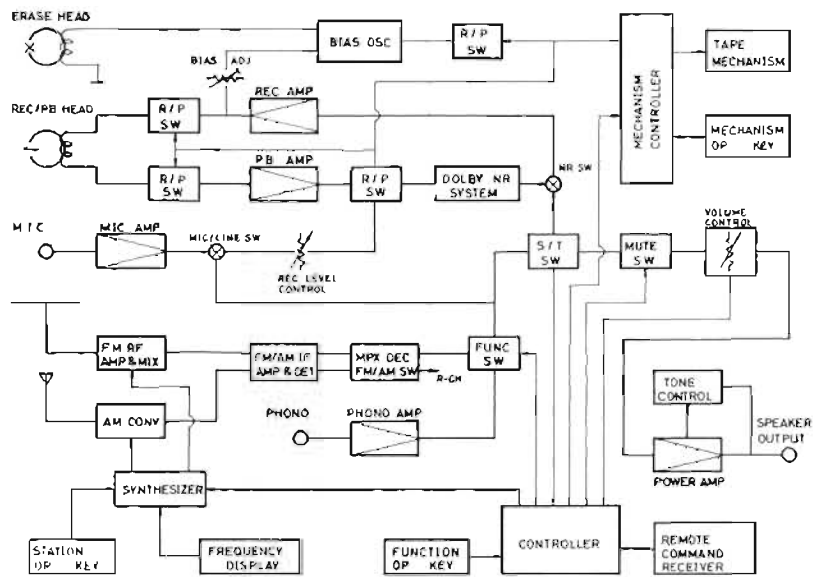
TC9132P
(Top View)



TC9134P
(Top View)



Block Diagram Schéma synoptique



Parts List

Liste des pièces

Schematic Location	Description	Part No.
TRANSISTORS, DIODES AND IC'S		
Q101	3SK45R (B)	302001128
Q102, 105, 106, 107 to 110, 120, 140*, 141*, 142, 143, 303, 304, 305*, 308, 309, 316, 317, 320, 321, 402, 403, 605, 607, 608 to 613, 651 to 654, 659, 660, 665, 667, 668, 684, 686	2SC536NP (F), (G)	301201234
Q103, 111	2SC2786 (K), (L) or 2SC1674	301201251 301201246
Q104, 115, 117, 114*, 673, 674, 675, 676	2SC930NP (E)	301201245
Q112	2SK168 (F)	302001122
Q113*, 114*, 118, 119, 121*, 122, 123 to 133, 139, 301, 302, 310, 311, 322, 681, 682, 683	2SA608NP (F), (G)	301001185
Q116	2SK49 (F), (H)	302001112
Q134	2SC536NP (F), (G) or 2SC1571NP (G)	301201234 301201228
Q135 to 138 401, 531, 532, 661 to 664	2SC1571NP (G), (H)	301201237
Q306, 307	2SK68A (K), (L), (M)	302001113
Q312, 314, 315	2SA984 (E), (F)	301001188
Q313, 318, 319, 323, 601, 602, 603, 604, 606, 614, 901	2SC2274 (E), (F)	301201231
Q655, 656	2SA1016 (F), (G)	301001194
Q657, 658, 669, 670, 671, 672, 677 to 680, 685	2SC536NP (F), (G) or 2SC1815 (GR)	301201134 301201144
Q687	2SD600 (E), (F)	301301150
Q801, 802	2SC2590 (R), (S) or 2SC1567 (R), (S)	301201223 301201239
Q803, 804	2SC2578 (Q), (Y)	301201235
Q805, 806	2SA1103 (Q), (Y)	301001190
Q807, 808	2SC536K (F), (G)	301201236
Q809	2SA608K (F), (G)	301001193
Q902, 903, 904	2SC1826 (Q), (Y)	301201252
D101, 102, 103	SVC-211, Vari-cap, FM Tune	300616106
D104, 105*, 106	SVC-321, Vari-cap, AM Tune	300616105
D107, 109, 111, 112, 121, 122, 123 to 145, 146*, 147*, 148, 149*, 150*, 151*, 152*, 153, 154, 155*, 156*, 157, 158 to 163, 303, 304, 307, 308, 309, 310*, 311 to 314 402, 591, 592, 593, 594, 604, 605 to 608, 610 to 620, 651 to 656, 801 to 804, 907, 908, 909	MA 150, (S)	300111016

Schematic Location	Description	Part No.
D108	KB265, Varistor	300212005
D110, 164, 403, 404, 609	1K188, (Ge)	300111008
D165	WZ-150, Zener, 15V, 0.5W	300313027
D166	WZ-090, Zener, 9V, 0.5W	300313014
D301, 302	WZ-067, Zener, 6.7V, 0.5W	300313036
D305, 306, 622, 905	WZ-056, Zener, 5.6V, 0.5W	300313031
D316, 601, 602, 603, 902	DS135C, Rectifier or SR1K-4	300919053 300919024
D315	W02, Rectifier	300919011
D401	NJ61441, Photo Diode	300717002
D521, 523, 524, 001, 002, 003, 010, 015, 016, 017, 018, 020	GL-9RP24, LED, (RED) or LN224RP	300414048 300414042
D522, 004, 005, 006 to 009, 011*, 012, 013, 014, 019	GL-9NG24, LED, (GRN) or LN324GP	300414047 300414040
D551, 552	SEL9510GB, LED Array	300414057
D553, 554	SEL9510MB01, LED Array	300414056
D621	WZ-050, Zener, 5V, 0.5W	300313028
D805	RB-402, Rectifier	300919054
D901	WZ-210, Zener, 21V, 0.5W	300313016
D903, 904	WZ-140, Zener, 14V, 0.5W	300313018
D906	WZ-240, Zener, 24V, 0.5W	300313025
IC101	HA11211, FM, AM IF Amp & Det.	303452283 303452289
IC102	LA3390, FM MPX Dec.	303452289
IC103	μ PC553AC FM Prescaler	303452260
IC104	μ PD1703C-016, PLL Synthe- sizer & Controller	303452274
IC105*, 106	μ PD4011C, Switching	303452276
IC107	μ PD4035C, Shift Register	303452275
IC108	HD74LS42P, Station Indicator Driver	303452284 303452284
IC301	NJM 387DA, Phono Amp	303452263
IC302	TC9145P, Switching	303452297
IC303	HD14066BP, Switching	303452270
IC304	HD14027BP, Flip-Flop	303452269
IC305	TC9134P, Remote Controller	303452291
IC401	HA1197, Remote Signal Amp	303452234
IC501	NE646B, Dolby NR System	303452218
IC551	TA7666P, Level Indicator Driver	303452295
IC552	TA7667P, Level Indicator Driver	303452296
IC601	TC9143P, Tape Mechanism Controller	303452272
IC801, 802	μ PC1225H, Tone Amp & Driver	303452292
IC803	μ PC1237H, Protection Circuit	303452293
COILS AND TRANSFORMERS		
L101	FM ANT Coil	226501210
L102	FM RF Coil	226501200
L103	FM IFT, 1st	225501147
L104	FM OSC Coil	226501202
L105	FM IFT, Discriminator (1)	225501146
L106	FM IFT, Discriminator (2)	225501145
L107	LPF	228641214
L108	AM IFT, 1st	225301125
L109	AM IFT, 2nd	225301144
L110	AM (MW) OSC Coil	223301140
L111	AM IFT, Detector	225301127
L112*	AM (LW) OSC Coil	223301141
L113*	LW BPF	228641120
L114, 116, 118	47 μ H, Choke	226501203
L115	2.2 μ H, Choke	226501143

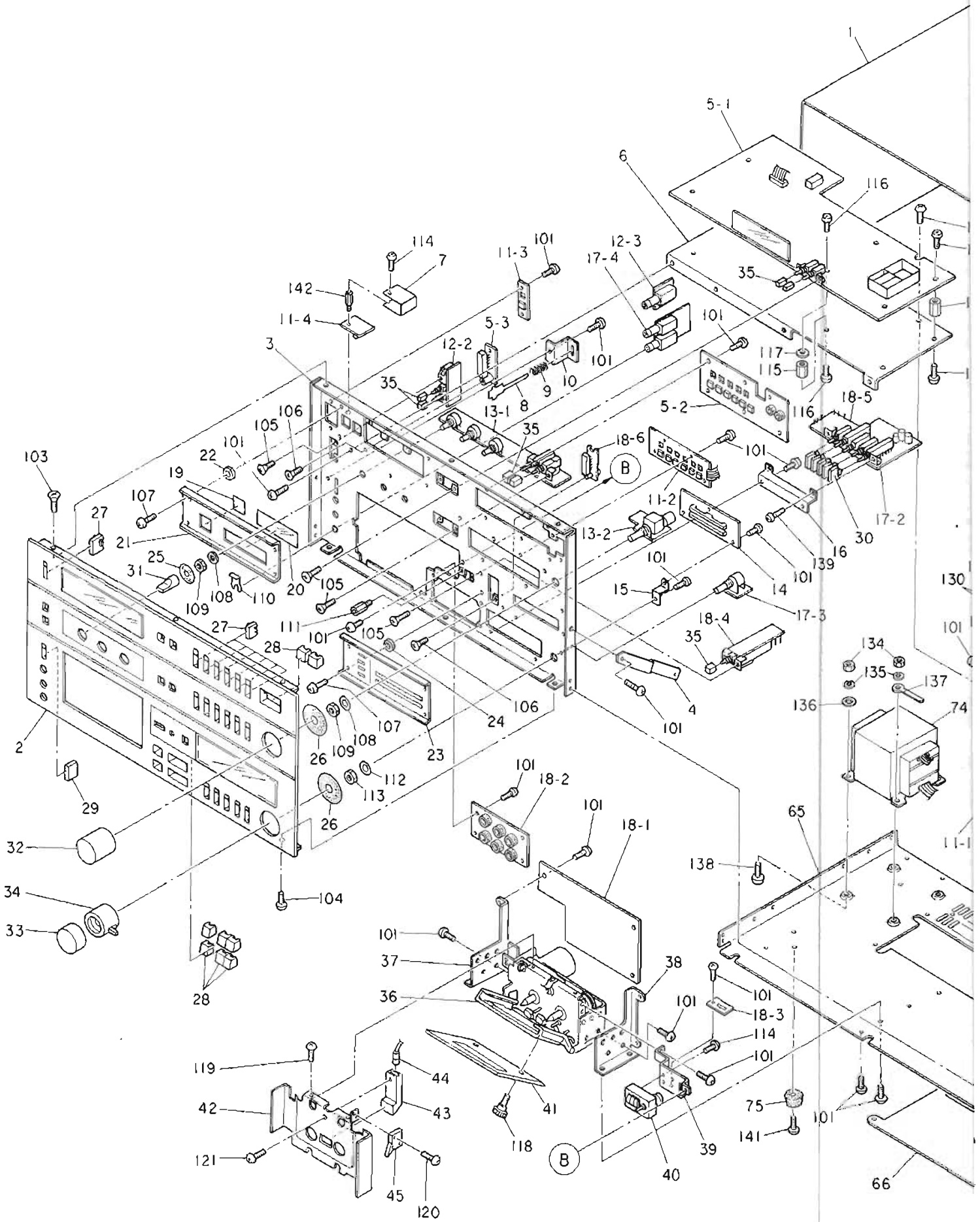
Schematic Location	Description	Part No.
L117, 121, 122, 123	47μH, Choke	226501123
L401	Coil, 38kHz Tune	228641213
L651 to 654	Coil, Bias Trap, etc	228641182
L655	560μH, Choke	226501196
L656	Trans, Bias OSC	228641216
L771, 772	12mH, Peaking Coil	228641205
L801, 802	Anti-parasitic Coil	228641215
VARIABLE RESISTORS		
VR101	10KB, Pot, 19kHz Adj	510502211
VR102	30KB, Pot, Stereo Separation Adj	510502212
VR651, 652	100KB, Pot, Rec Bias Level Adj	510502210
VR653, 654	50KB, Pot, Playback Level Cal.	510502191
VR655, 656, 801, 802	5KB, Pot, Rec Level Cal, Idling Adj	510502188
VR657	50KA, Dual, Rec Level Control	525101176
VR851	250KW, Balance Control	515121130
VR852	100KB x 2, Volume Control w/motor	525121156
VR853, 854	100KC x 2, Bass, Treble Control	525101166
TRIMMER CAPACITORS		
CT101, 102	CTY121B387, FM ANT, RF Adj	490110125
CT103	CTZ51C117, FM OSC Adj	490110124
CT104, 105	AT1-53W, AM (MW) Adj	490110117
CT106*	CVE-50-41, AM(LW) ANT Adj	490110119
CT107*	CVB-10-41, AM(LW) OSC Adj	490110126
SWITCHES		
S101, 102 (1st)	Push 2-key, FM Muting, FM Auto/Manual	614020460
S111 to 116 301 to 305 306*, 307	Tact, Station Memory, Function, etc.	615212297
S117, 118, 603, 604 to 608	Tact, Tuning (UP, DOWN), etc.	615212300
S591, 771, 772, 773, 774 (1 set)	Push 5-key, Tape Selector, etc.	614051030
S601	Reed, Stop Sensor	615212262
S602	Push 1-key, Memory	614010163
S851, 852 (1 set)	Push 2-key, Loudness, Subsonic	614020461
S951, 952 (1 set)	Push 2-key, Speaker A, B.	614020459
OTHERS		
X101, 102	BPF, 10.7MHz, (RED)	229101171
X103	BPF, 450kHz	229101209
X104	Crystal Resonator, 4.5MHz	224110006
X301	Ceramic Resonator, 455kHz	224110008
R240	RA8-104-7K, SIP, Resistor Network	594104073
R255	RA8-104-5K, SIP, Resistor Network	594104053
R259	RA8-104-4K, SIP, Resistor Network	594104043
R261	RA8-333-4K, SIP, Resistor Network	594333043
FL101	Frequency Display Tube	360201113
RY301	Relay, Turntable Remote ON/OFF	240111255
RY801	Relay, Protection	240111248
RY901	Relay, Remote Power ON/OFF	240111254
F901***	Fuse, 0.2A	341222020
F902***	Fuse, 3.5A	341222350
F903, 904	Fuse, 0.2A, 120V Spec.	341222020
	Fuse, T200mA, 220, 240V Spec.	345952020
F905, 906	Fuse, 5A, 120V Spec	341222500
	Fuse, T5A, 220, 240V Spec.	345952500
F907	Fuse, 1.5A, 120V Spec.	341222150
	Fuse, T1.4A, 220, 240V Spec.	345952140

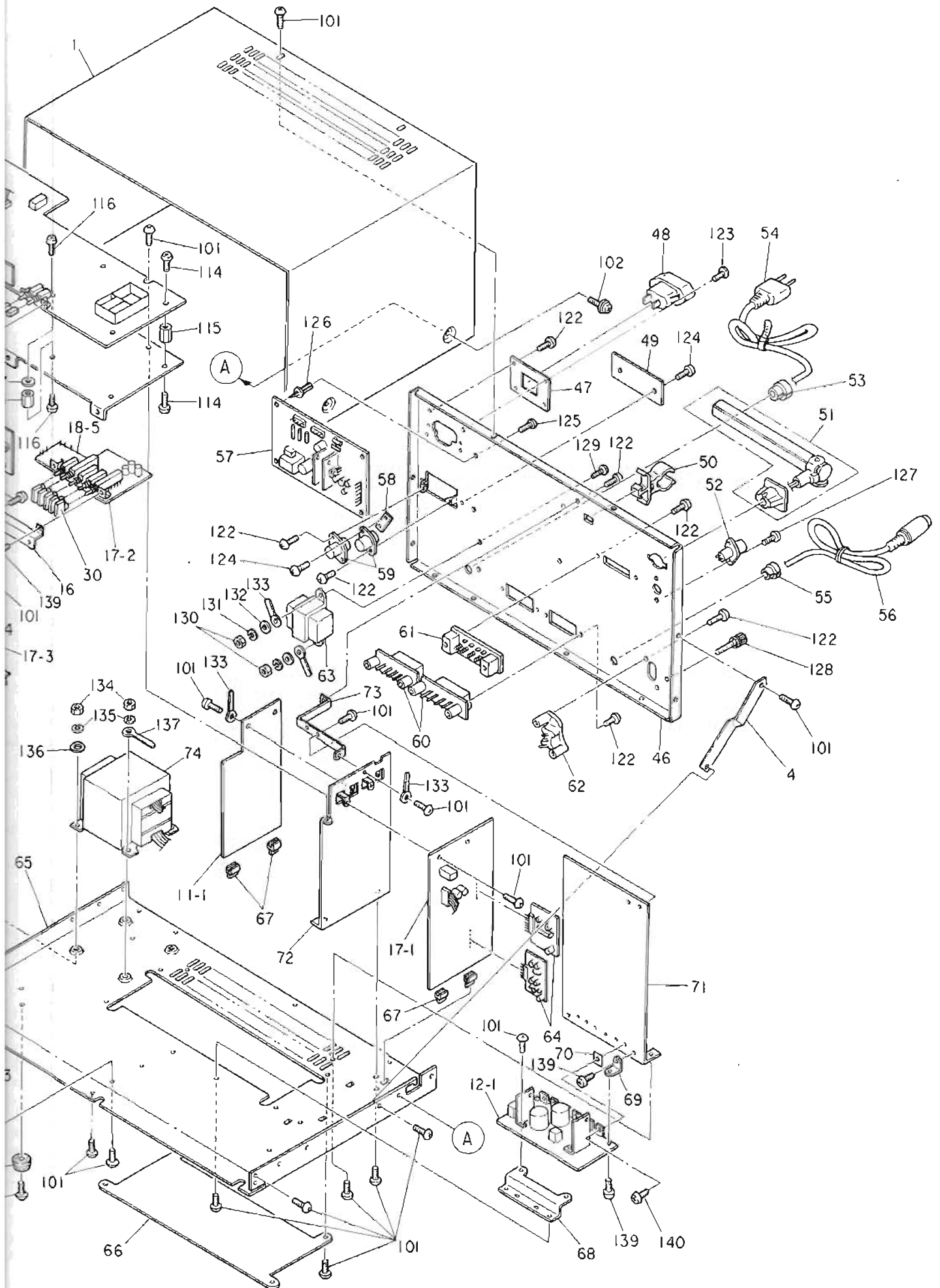
Schematic Location	Description	Part No.
	LED Connector w/Wire, BRN, L=300	648211292
	LED Connector w/Wire, RED, L=300	648211293
	LED Connector w/Wire, ORG, L=300	648211294
	LED Connector w/Wire, YLW, L=300	648211295
	LED Connector w/Wire, GRN, L=300	648211296
	LED Connector w/Wire, BLU, L=300	648211297
	LED Connector w/Wire, BRN, L=150	648211274
	LED Connector w/Wire, RED, L=150	648211275
	LED Connector w/Wire, ORG, L=150	648211276
	LED Connector w/Wire, YLW, L=150	648211277
	Connector Ass'y, Heads	628111210
	Socket, 3P, Flat Cable	628111170
	Socket, 7P, Flat Cable	682111174
	Socket, 8P, Flat Cable	682111175
	Mic Jack	6271117832
	Phone Jack	626110038
	Pin Socket, 8P	648211321
	Fuse Clip, φ6.3	648211257
	Fuse Clip, φ5.2	648211256
	Belt, Tape Counter, φ57	671011028
	Speaker Adaptor, (OVS only)	625001120
	Indoor FM Antenna, T-type	791001125
	Sleeve, Power Cord, Europe only	792011225
	Sleeve, Voltage Selector	792011218
	LED Holder (12-7)	114902387
	Sponge Spacer, Tuning Button, etc.	990201364
	Polyethylene Bag	855006075
	Stylofoam Moulding, Z-67	815001292
	Packing Case, RCX-860**	812001480
	Packing Case, RCX-860L*	812001481
	Washer, Insulation, M3, Q902 -- 903 Mtg	992001111

RRT-2

Schematic Location	Description	Part No.
Q451, 452	2SA608NP (F), (G), Transistor	301001185
Q453	2SC2274 (E), (F), Transistor or 2SC1318	301201233 301201155
D451, 452	MA150, (Si) Diode	300111016
D453	LN221RP, LED	300414042
D454, 456	NJL1102L, Infrared LED	300414049
IC451	TC9132P	303452273
X451	Ceramic Resonator, 455kHz	224110008
S451 to 470	Tactile Switch	615212297
	Case Ass'y w/Optical Filler	114902426
	Panel Ass'y	111911622
	Button, Operation	116210108
	Contact, Battery	648211317
	Rubber	990201357
	Sponge	990201356
	Screw, TP3 x 6 (Ni)	726213006
	Polyethylene Bag	855001030

* 3-band models only
** 2-band models only.
*** Not used for Europe/UK spec.



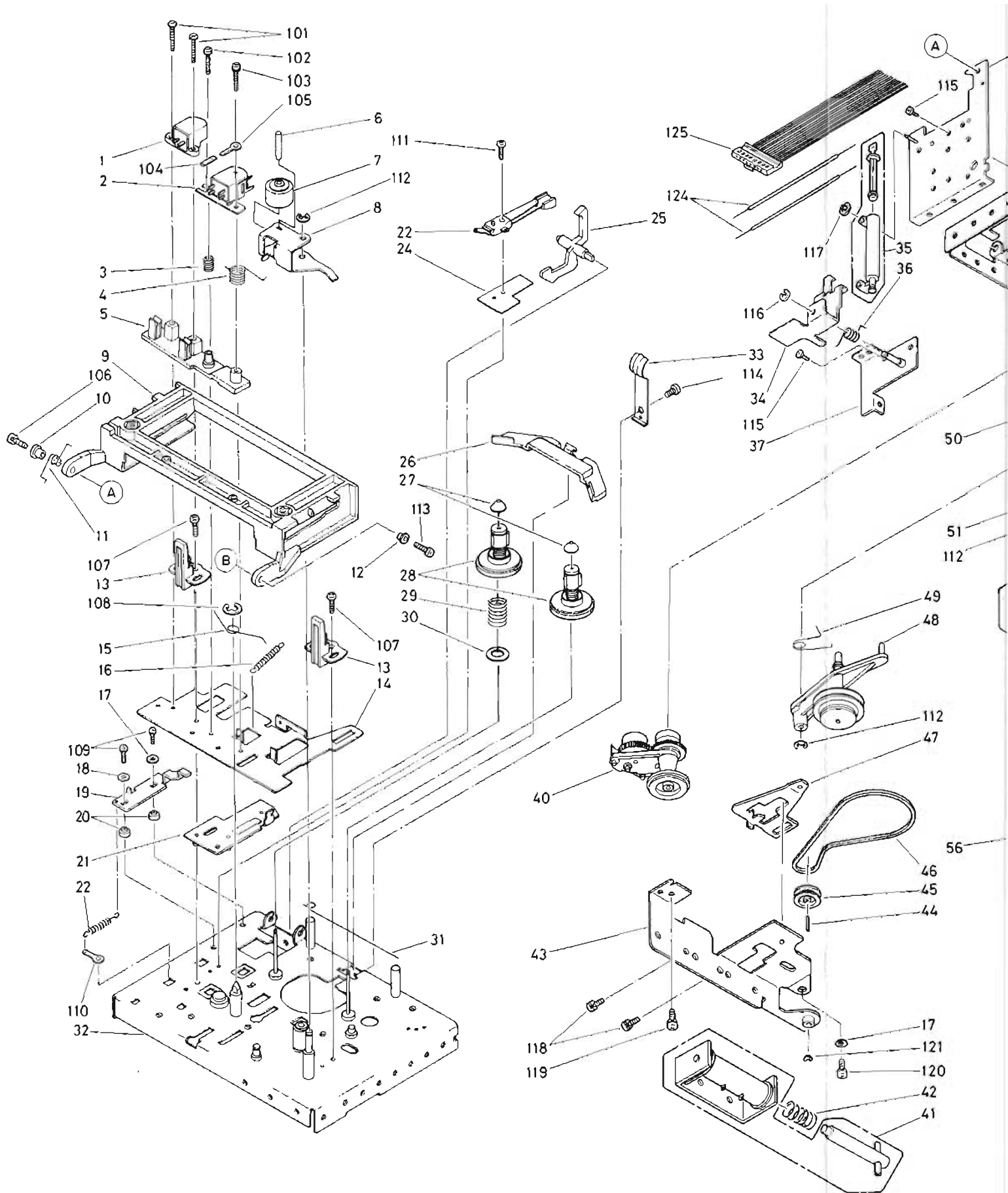


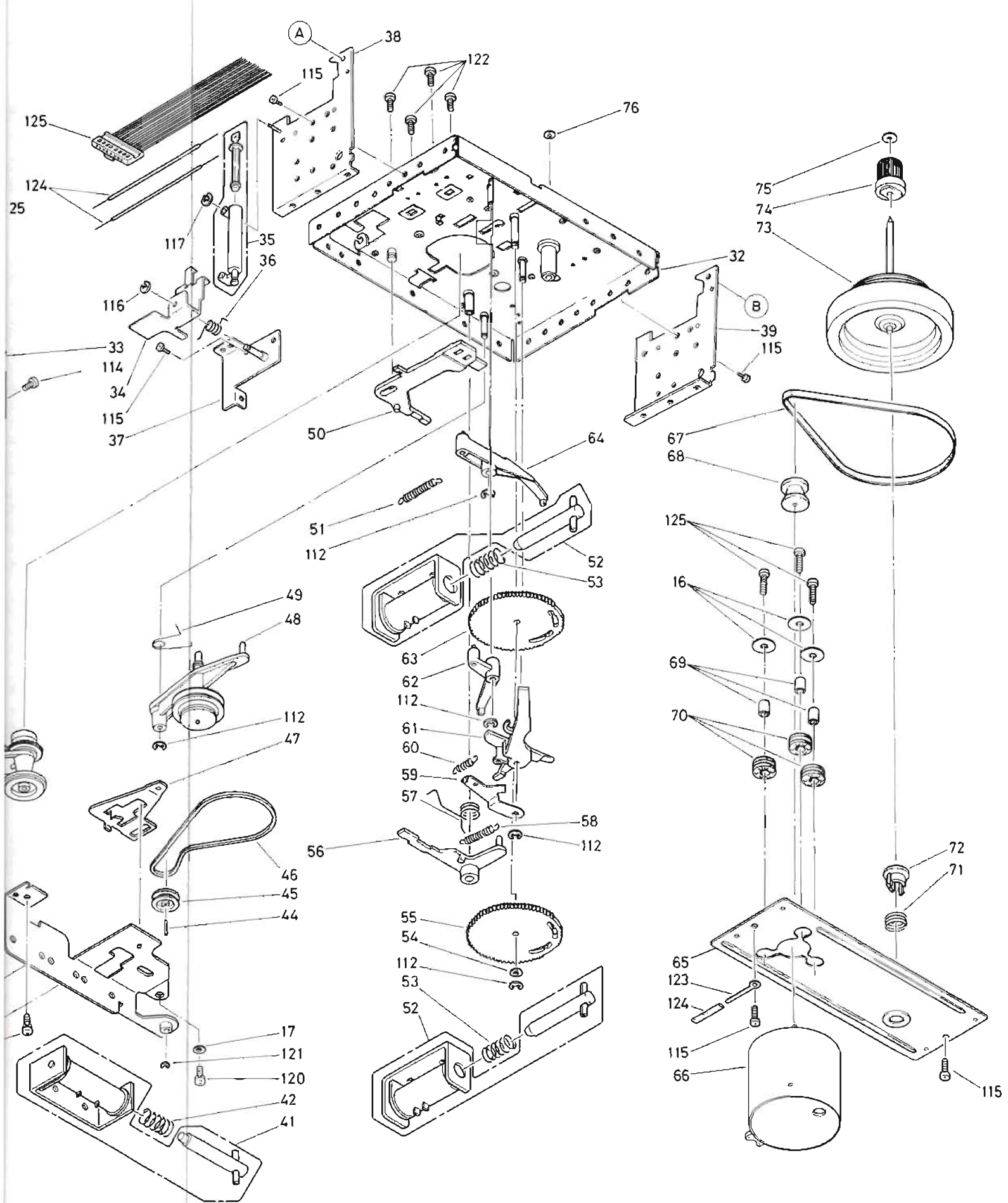
No.	Part No.	Description	Q'ty	No.	Part No.	Description	Q'ty
1	138011343	Bonnet	1	58.	120013136	Joint, Voltage Selector	1
2.	111911620	Front Panel Ass'y. for RCX-860	1	59.	648211247	Voltage Selector	2
	111911621	Front Panel Ass'y. for RCX-860L		60.	642400117	Speaker Terminal Board	2
3.	122011460	Front Chassis	1	61.	649201127	Antenna Terminal Board	1
4.	120013143	Bracket	4	62.	624208202	Pin Jack Board, 2P	1
5.	141311415	Tuner Circuit Board Ass'y, for RCX-860	1	63.	207001546	Power Transformer, Sub, T-160G, for STD	1
	141311416	for RCX-860L			201001546	T-160A, for Canada only	
6.	119011395	Shield Board, Tuner PCB Mtg	1	64.	141811227	Dolby NR System PCB Ass'y	2
7.	119011394	Shield Cover	1	65.	121011393	Main Chassis	1
8.	120013148	Eject Arm	1	66.	120013138	Bottom Lid	1
9	658601136	Eject Spring	1	67.	672200846	Holder, PCB	4
10.	120013147	Metal Fittings, Eject Arm	1	68.	120012899	Metal Fittings, Main Amp PCB Mtg	1
11.	141811283	Controller P-c Board Ass'y	1	69.	120012231	Metal Fittings, PCB Mtg	2
12.	141610359	Main Amp PCB Ass'y	1	70.	-	Mylar Sheet t ¹ , Power Transistor	4
13.	141710340	Tone and Volume Control PCB Ass'y	1	71.	127012272	Heat Sink	1
14	141811282	Level Indicator PCB Ass'y	1	72.	120013140	Sub-chassis, Rec/PB PCB, Other Mtg	1
15.	120013133	Metal Fittings, Level Indicator PCB Mtg	3	73.	120013132	Bracket	1
16.	120013131	Metal Fittings, Tape Switch PCB Mtg	1	74.	207001548	Power Transformer, Main, T-159G	1
17	141811278	Rec/PB Amp PCB Ass'y	1	75.	673402027	Rubber Foot	4
18.	141811284	Mechanism Control PCB Ass'y	1	76 to 100		Not used	
19.	114902393	Optical Filter #3, Target Eye	1	101.	726213008	Screw, TP3 x 8 (Ni)	93
20.	114902313	Optical Filter #1, Frequency Display	1	102.	755214008	Screw, M4 x 8 (Ni), Bind, w/FW	4
21.	120013141	Ornamental Board, Frequency Display	1	103.	721213006	Screw, TP3 x 6 (Ni), Countersunk	3(5)
22.	990201233	Rubber Sheet #1	4	104	723203006	Screw, TP3 x 6 (Z), Pan	3
23.	120013142	Ornamental Board, Level Indicator	1	105.	702213006	Screw, M3 x 6 (Ni), Oval-countersunk	10
24.	990201352	Rubber Sheet #4	4	106.	722213008	Screw, TP3 x 8 (Ni), Oval-countersunk	3
25.	990201306	Blind, Tone Control, etc.	3	107.	765222606	Screw, TPT2.6 x 6 (BLZ), Bind	8
26.	990201341	Blind, Volume Control	2	108.	770500006	F Washer, M7 t ¹	4
27	116210110	Button, Station, Function, etc	(12)13	109.	770402205	Nut, M7 t ¹ , Hexagonal	4
28.	116210129	Button, Tuning, Mechanism Function	8	110.	770911278	Jack Stopper	3
29.	116210077	Button, Eject	1	111.	770911270	Insert Screw #2, L=12	1
30.	116210092	Button, Tape Selector, etc.	5	112.	770500008	F. Washer, M9 t ⁴	1
31.	116310304	Knob, Tone Control, etc.	3	113.	770402202	Nut, M9 t ⁴ , Hexagonal	1
32.	116310367	Knob, Volume Control	1	114.	705213004	Screw, M3 x 4 (Ni), Bind	3
33.	116310368	Knob, Rec Level Control, L-ch	1	115.	770911301	Insert, M3, L=8	6
34.	116310369	Knob, Rec Level Control, R-ch	1	116.	770911310	Screw, M3 x 4, Polycarbonate	2
35.	116210104	Button, Speakers, Loudness, etc.	7	117.	770500113	Polyslider Washer #1	1
36.	900111050	Tape Mechanism Ass'y	1	118.	770911304	Ornamental Screw, M4 x 9	2
37.	120013145	Metal Fittings (L), Mechanism Ass'y Mtg	1	119.	726213006	Screw, TP3 x 6 (Ni)	2
38.	120013144	Metal Fittings (R), Mechanism Ass'y Mtg	1	120.	703212008	Screw, M2 x 8 (Ni), Pan	2
39.	120013146	Metal Fittings, Counter Mtg	1	121.	723222006	Screw, TP2 x 6 (BLZ), Pan	1
40.	650901122	Tape Counter	1	122.	726223008	Screw, TP3 x 8 (BLZ)	16(14)
41.	114902425	Cassette Lid	1	123.*	770911166	Screw, M3 x 6 (BLZ), Flat	2
42.	120013139	Ornamental Board, Mechanism Ass'y	1	124.	705223008	Screw, M3 x 8 (BLZ), Bind	2
43	114902423	Lamp Case	1	125.	726223506	Screw, TP3.5 x 6 (BLZ)	4
44.	359101131	Lamp, 14V, 40mA	1	126.	672200889	Holder, PCB	4
45	613000047	Motor Switch	1	127.	765222606	Screw, TPT2.6 x 6 (BLZ), Bind	2
46	123011593	Rear Chassis #1, for RCX-860	1	128.	770911282	Ground Terminal Screw	1
	123011594	Rear Chassis #2, for RCX-860L		129.	766223008	Screw, TPT3 x 8 (BLZ)	2
47.*	120013134	Metal Fittings #1, STD	1	130.	770402201	Nut, M3, Hexagonal	6
	120013135	Metal Fitting #2, Europe		131.	770500010	Spring Washer, M3	5
48.	648211255	AC Outlet, STD	1	132.	770500003	F. Washer, M3	5
	648211311	AC Outlet, Europe		133.	770031342	Cord Clamper #2, L=50	5
	648211316	AC Outlet, UK		134.	770402202	Nut, M4, Hexagonal	4
49.	-	Plate, Rating	1	135.	770500011	Spring Washer, M4	4
50.	-	Holder t ¹ , AM Ant Coil (not used on RCX-860)	1	136.	770500004	F. Washer, M4	4
51.	222391169	AM Ant Coil Ass'y, for RCX-860	1	137.	770031341	Cord Clamper #1, L=80	2
	222391170	AM Ant Coil Ass'y, for RCX-860L		138.	765214010	Screw, TPT4 x 10 (Ni), Bind	4
52.	628111208	FM Coaxial Ant Socket, STD	1	139.	705213006	Screw, M3 x 6 (Ni), Bind	14
	628111166	FM Coaxial Ant Socket, UK only		140.	705213012	Screw, M3 x 12 (Ni), Bind	6
53.	675201114	Cord Stopper, Power Cord Mtg, STD	1	141.	726223010	Screw, TP3 x 10 (BLZ)	4
	675201115	UK only		142.	770911271	Insert Screw #3, M3, L=6	1
54.	796301115	Power Supply Cord, STD	1				
	796301130	Power Supply Cord, Europe					
	796301148	Power Supply Cord, UK					
55.	675201116	Cord Stopper, Remote Cord Mtg	1				
56.	791001167	Remote Control Cord Ass'y w/DIN 3P plug	1				
57.	141811280	Power Supply PCB Ass'y, for STD	1				
	141811279	" for Europe/UK					
	141811281	" for Canada only					

Notes:

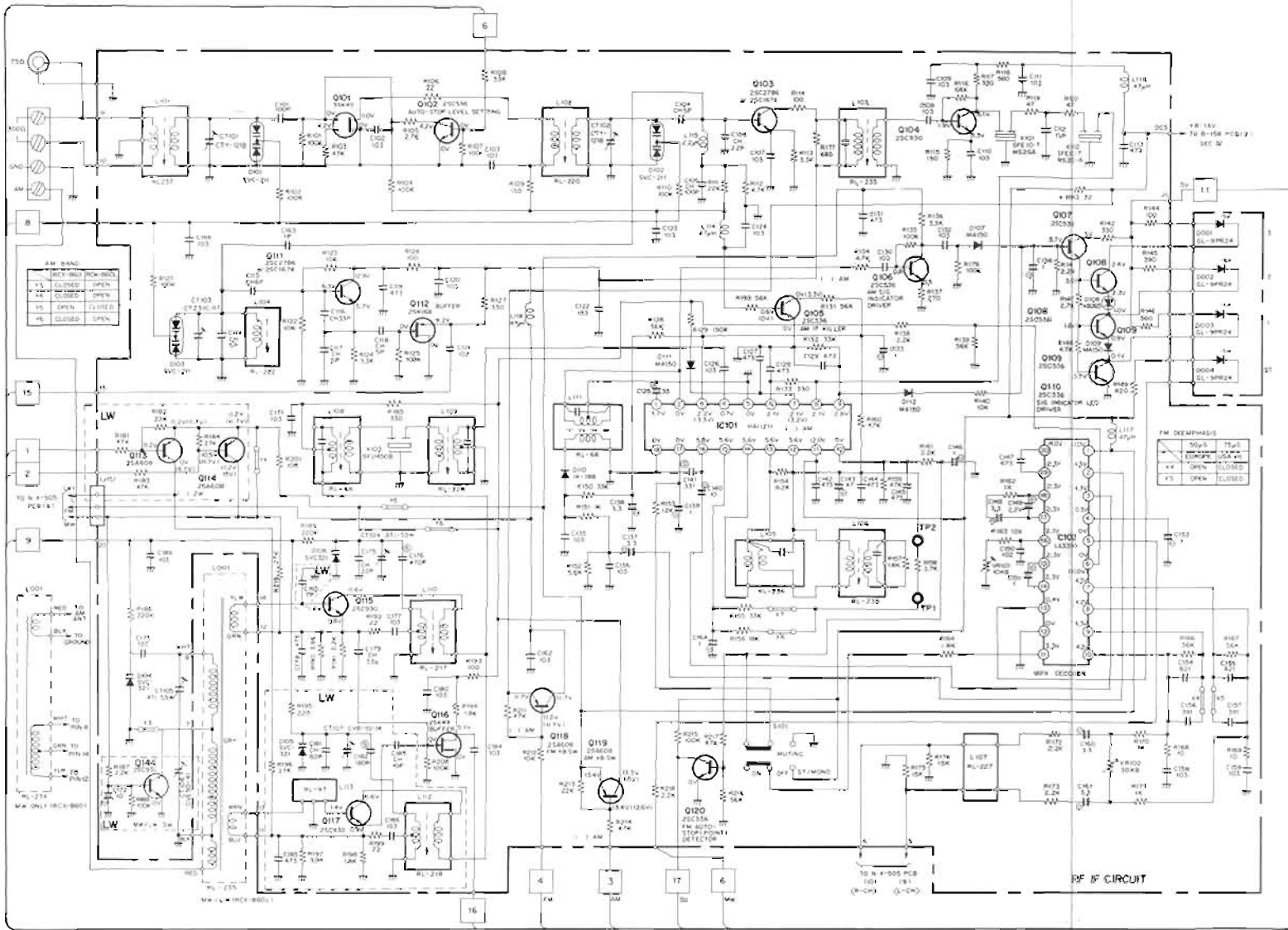
- The Disassembly Diagram is based on Model RCX-860L.
- () in Q'ty column: RCX-860
() in Q'ty column: UK spec.
- t¹: Accessory for No. 51 RCX-860L Ant Coil Ass'y
t²: Accessory for Power Transformer
t³: Accessory for Tone and Volume Control VRs
t⁴: Accessory for Rec/PB Level Control VR
- Ref. No. marked with * is not applicable to UK spec.

CASSETTE DECK SECTION
SECTION MAGNETO CASSETTE





No.	Part No.	Description	Q'ty	No.	Part No.	Description	Q'ty
1.	241001123	Erase Head, HF213250	1	70.	090230992	Cushion, Rubber, E	3
2.	241001124	Rac/PB Head, HN424971	1	71.	090236154	Spring, Capstan Bearing, 9A	1
3.	090236103	Spring, Rec/PB Head, B	1	72.	090236169	Bearing, Capstan, 9A	1
4.	090236159	Spring, Pinch Roller, 9C	1	73.	090236149	Flywheel Ass'y, 9A	1
5.	090231060	Head Base, 9A	1	74.	090236168	Gear, Capstan, 9A	1
6.	090236146	Shaft, Pinch Roller, D	1	75.	770500082	Washer, Polyslider, $\phi 2.6 \times \phi 4.7 \times t 0.5$	1
7.	090236145	Pinch Roller, G	1	76.	090237207	Washer, Oil Seal	1
8.	090231044	Arm, Pinch Roller, 9A	1	77 to 100		Not Used.	
9.	090231064	Cassette Case, 3D	1	101.	705202014	Screw, M2 x 14, Bind	2
10.	090237216	Collar, Case Mtg, 3LB	1	102.	090237211	Screw, M2 x 13, Azimuth Adj	1
11.	090236156	Spring, Case Lever, 3C	1	103.	713202014	Screw, M2 x 14, w/Spw, Pan	1
12.	090237215	Collar, Case Mtg, 3RB	1	104.	090237220	Sleeve, Lug, 2.0 x 30, F	1
13.	090231071	Cassette Guide, 9A	2	105.	090237209	Lug, Cord Clamp, F	1
14.	090231070	Head Panel, 9A-EGC	1	106.	713203010	Screw, M3 x 10, w/SPW	1
15.	090236158	Spring, Play Arm, 9B	1	107.	703202605	Screw, M2.6 x 6, Pan	1
16.	090236157	Spring, Head Panel, 9B	1	108.	770500040	ETW-4.0	1
17.	770500082	Washer, Flat, $\phi 2.8 \times \phi 10.0 \times t 0.5$	4	109.	713202606	Screw, M2.6 x 6 w/SPW	2
18.	770500105	Washer, Flat, $\phi 2.8 \times \phi 7.5 \times t 0.5$	2	110.	770031334	Lug, GND, M3	1
19.	090231082	Arm, Rec Sensor Release, 9A	1	111.	705202006	Screw, M2 x 6, Bind	1
20.	090237217	Collar, Rec Sensor Release Arm, 9A	2	112.	770500027	ETW-2.5	6
21.	090231065	Arm, Play, 9AA	1	113.	713203008	Screw, M3 x 8, w/SPW	1
22.	090236163	Spring, Rec Sensor Release Arm, 9A	1	114.	763203004	Screw, TPT3 x 4, Pan	1
23.	615212303	Leaf Switch, LSA-7P	1	115.	763203005	Screw, TPT3 x 5, Pan	5
24.	090239004	Sheet, Fiber, 9A	1	116.	770500039	ETW-3.0	1
25.	090231077	Lever, Rec Sensor, 9A	1	117.	770500035	ETW-2.0	1
26.	090231073	Arm, Brake, 9A	1	118.	713203005	Screw, M3 x 5, w/SPW, Pan	2
27.	090236128	Cap, Reel, A	2	119.	713202604	Screw, M2.6 x 4, w/SPW, Pan	1
28.	090236147	Table Ass'y, Reel, 4B-BR15	2	120.	713202605	Screw, M2.6 x 5, w/SPW, Pan	1
29.	090236104	Spring, Rew Rael, B	1	121.	770500026	ETW-1.5	1
30.	770500086	Washer, Polyslider, $\phi 6.2 \times \phi 9.5 \times t 0.25$	1	122.	703203004	Screw, M3 x 4	4
31.	090236152	Spring, Brake Arm, 9A	1	123.	090237218	Lug, Cord Clamp, E	1
32.	090231066	Chassis Sub-ass'y, 9AB	1	124.	090237219	Sleeve, $\phi 2.6 \times 30$, UL	1
33.	090236171	Spring Board, Cassette Hold, 3E	1	125.	703202608	Screw, M2.6 x 8, Pan	3
34.	090231083	Lever, Case Lock, 9D	1	126.	090237214	Wire, OS-18L340 x 5 x 35 #24	2
35.	090231061	Damper Ass'y, 90S-110	1	127.	090236148	Connector Ass'y, 011-08F-01	1
36.	090236162	Spring, Case Lock Lever, 9B	1				
37.	090231068	Metal Fittings, Side, 9LBA	1				
38.	090231067	Metal Fittings, Case Mtg, 9LAA	1				
39.	090231080	Metal Fittings, Case Mtg, 9RA	1				
40.	090231062	RF Ass'y, 90S-110	1				
41.	240111257	Plunger Solenoid, KS-13U-00073-12V x 58	1				
42.	090236164	Spring, Solenoid, 9D	1				
43.	090231069	Metal Fitting, Solenoid Mtg, 9BA	1				
44.	090236135	Shaft, Idler Pulley, 2 x 13.7	1				
45.	090236165	Pulley, Idler, 3A	1				
46.	671011026	Belt, Counter, 1.0 x 55	1				
47.	090231079	Lever, RF Shift, 9A	1				
48.	090231063	Clutch Ass'y, 90E-55	1				
49.	090236150	Spring, Clutch Arm, D	1				
50.	090236153	Spring, Brake Release Plate, 9A	1				
51.	090231074	Plate, Brake Release, 9A	1				
52.	240111256	Plunger Solenoid, KS-13U-00064-12V x 58	2				
53.	090236155	Spring, Solenoid, 9A	2				
54.	770500107	Washer, Polyslider, $\phi 3.1 \times \phi 5.4 \times t 0.13$	1				
55.	090236167	Gear, RF Drive, 9A	1				
56.	090231072	Lever, RF, 9A	1				
57.	090236161	Spring, RF Lever, 9B	1				
58.	090236151	Spring, Cam Lever, 9A	1				
59.	090231084	Lever, RF Operation, 9B	1				
60.	090236160	Spring, RF Operation Lever, 9A	1				
61.	090231078	Lever, Cam, 9A-GC25	1				
62.	090231076	Lever, RF Trigger, 9A	1				
63.	090236166	Gear, Drive, 9A	1				
64.	090231075	Lever, Trigger, 9A	1				
65.	090231081	Plate, Flywheel, 9C	1				
66.	260101130	Motor, MMI6A2LK	1				
67.	671011027	Belt, Drive, 63.5 x 4 x 0.4-60	1				
68.	090236170	Pulley, Motor, 2 x 9.0R-U	1				
69.	090237203	Collar, $\phi 2.8 \times \phi 3.8 \times h 6$	3				



RESISTORS

Unless otherwise specified, resistors are 1/4 watts, low noise type carbon film type with a tolerance of 5%.

KKiloohm

MMegohm

▼Uninflammable carbon film resistor, 1/2 watts

CAPACITORS

Unless otherwise specified, all capacitance values are expressed in mfd.

SPolystyrene film capacitor

MYMylar film capacitor

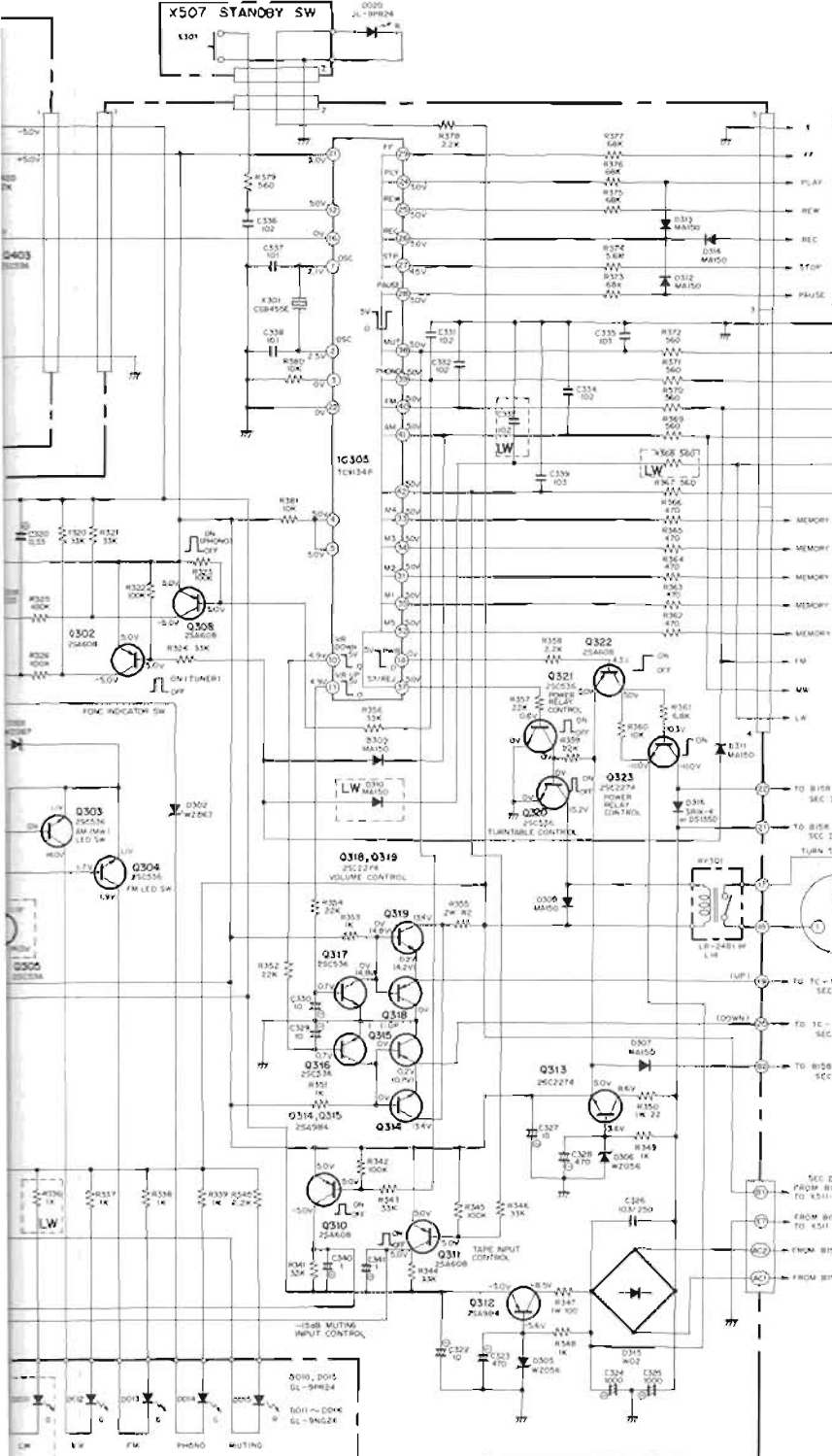
PPPolypropylene film capacitor

—|—Electrolytic capacitor

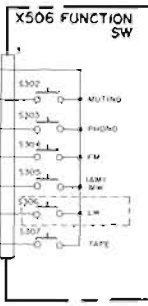
Non markCeramic capacitor

- Voltage read with VTVM across the point shown and the chassis ground (line voltage: 120V)
- Voltage reading tolerance: ±20%

X507 STANDBY SW

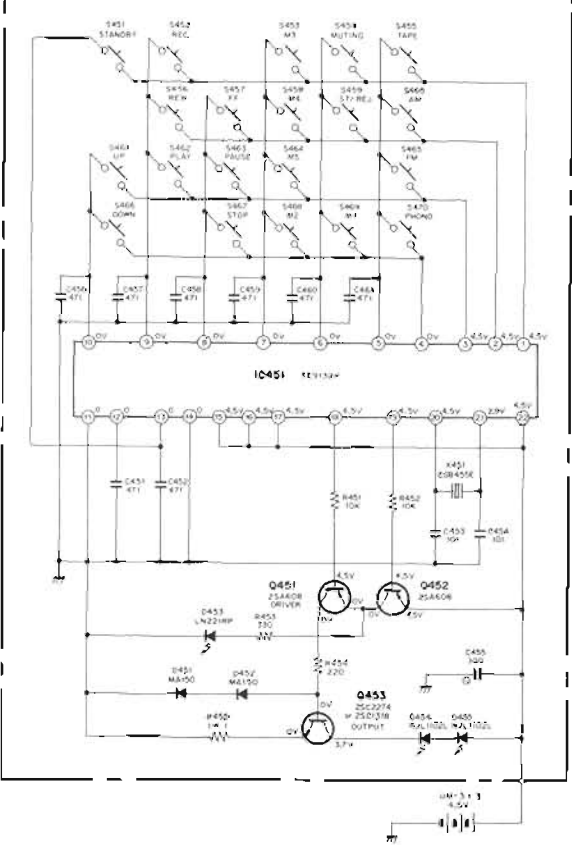


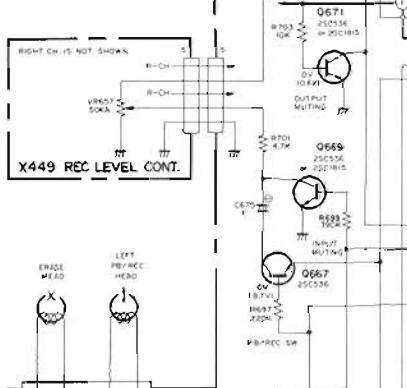
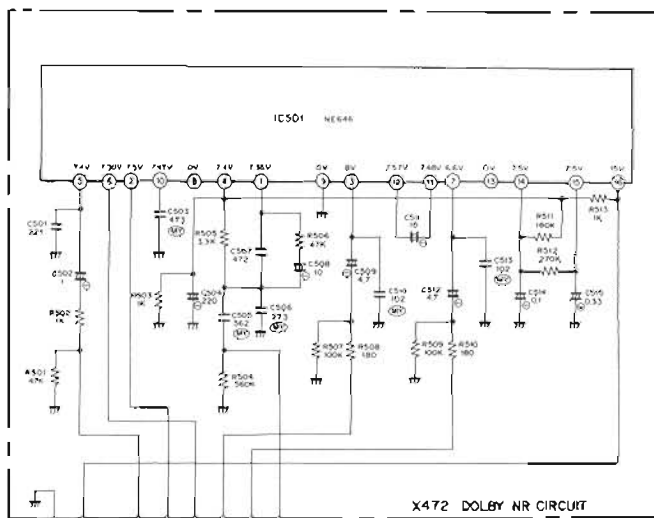
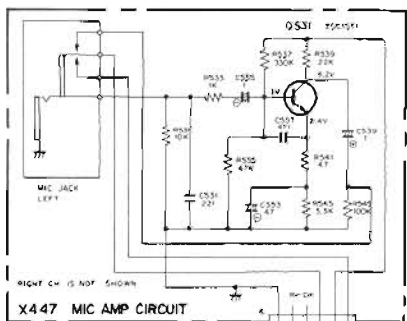
**SCHEMATIC DIAGRAM
MODEL RCX-860/-L
(SECTION II) AND
MODEL RRT-2**

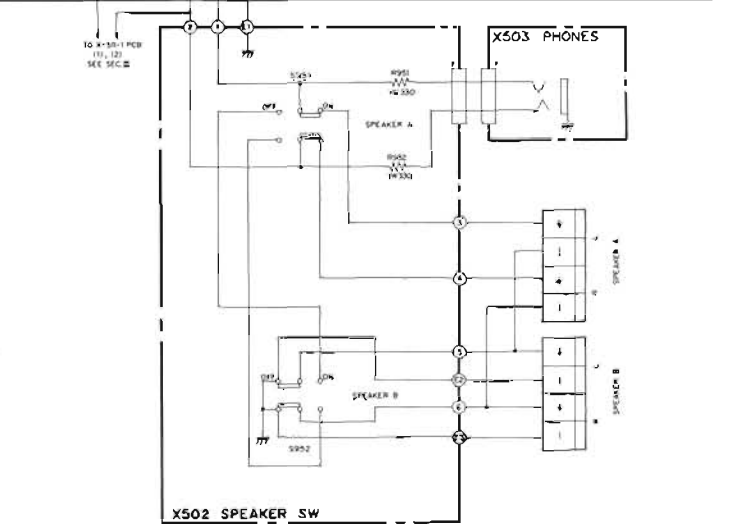
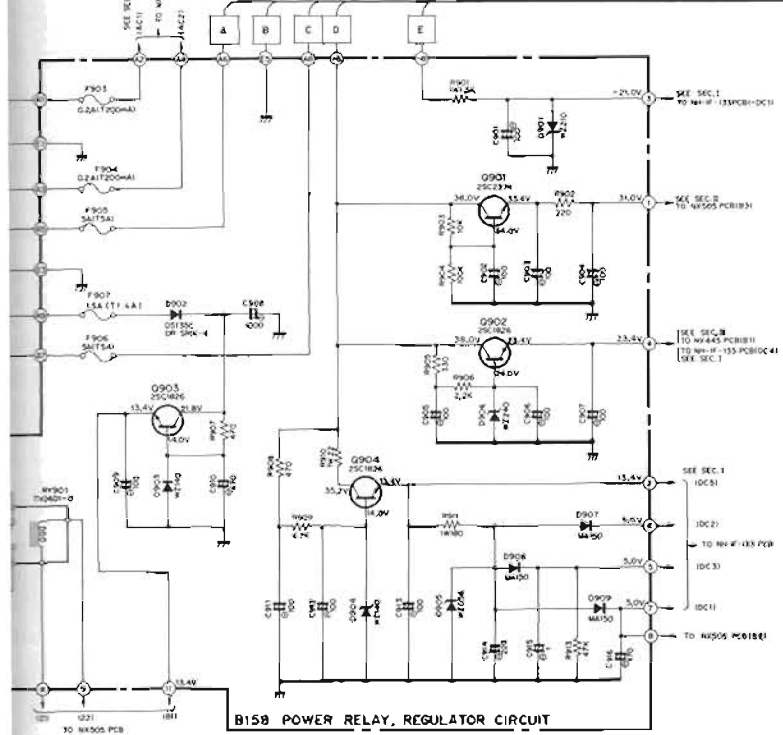
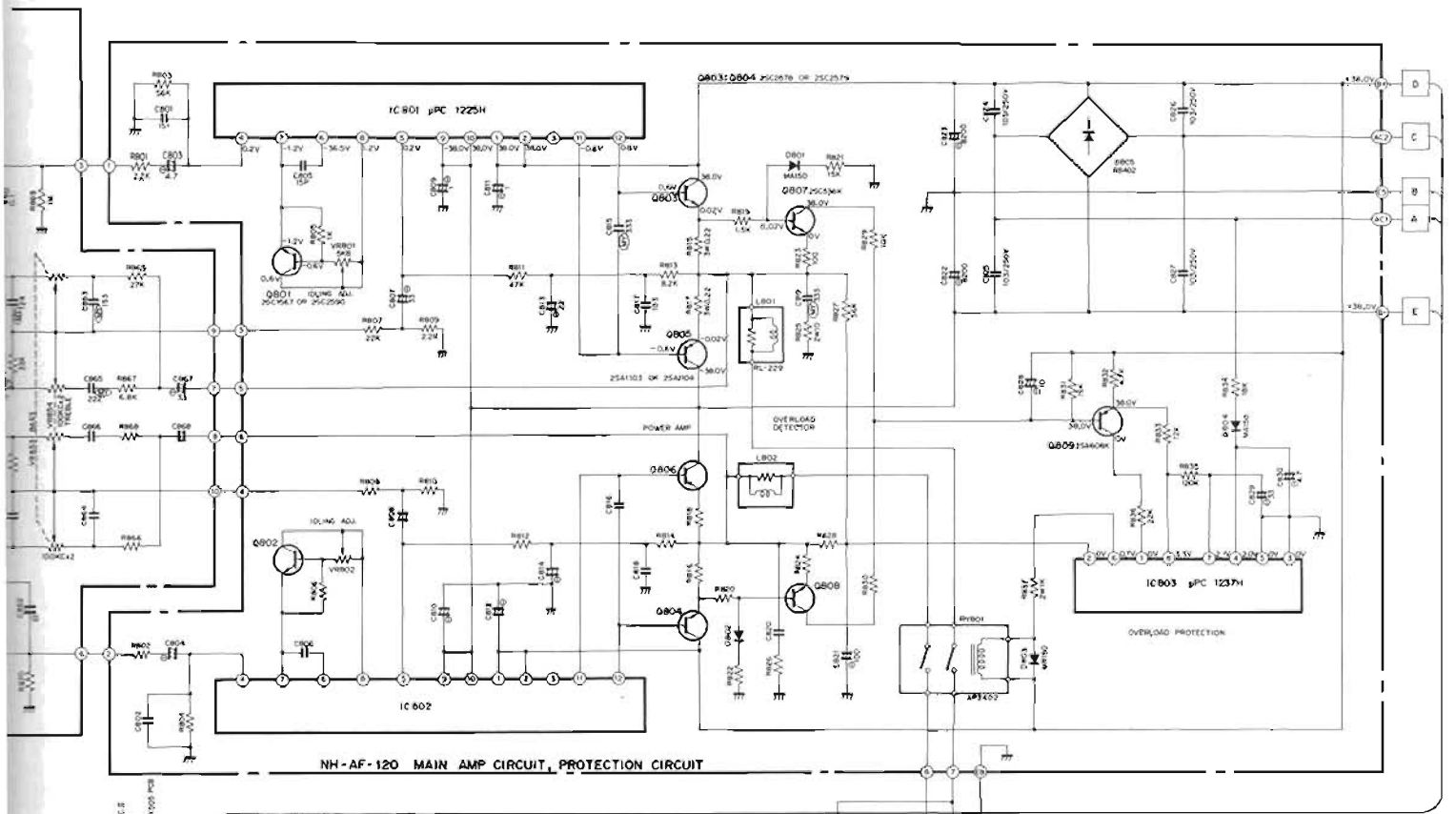


TRANSMITTER UNIT -

X514 TRANSMITTER CIRCUIT

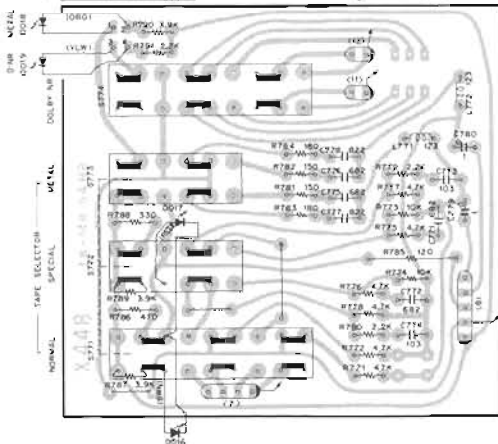
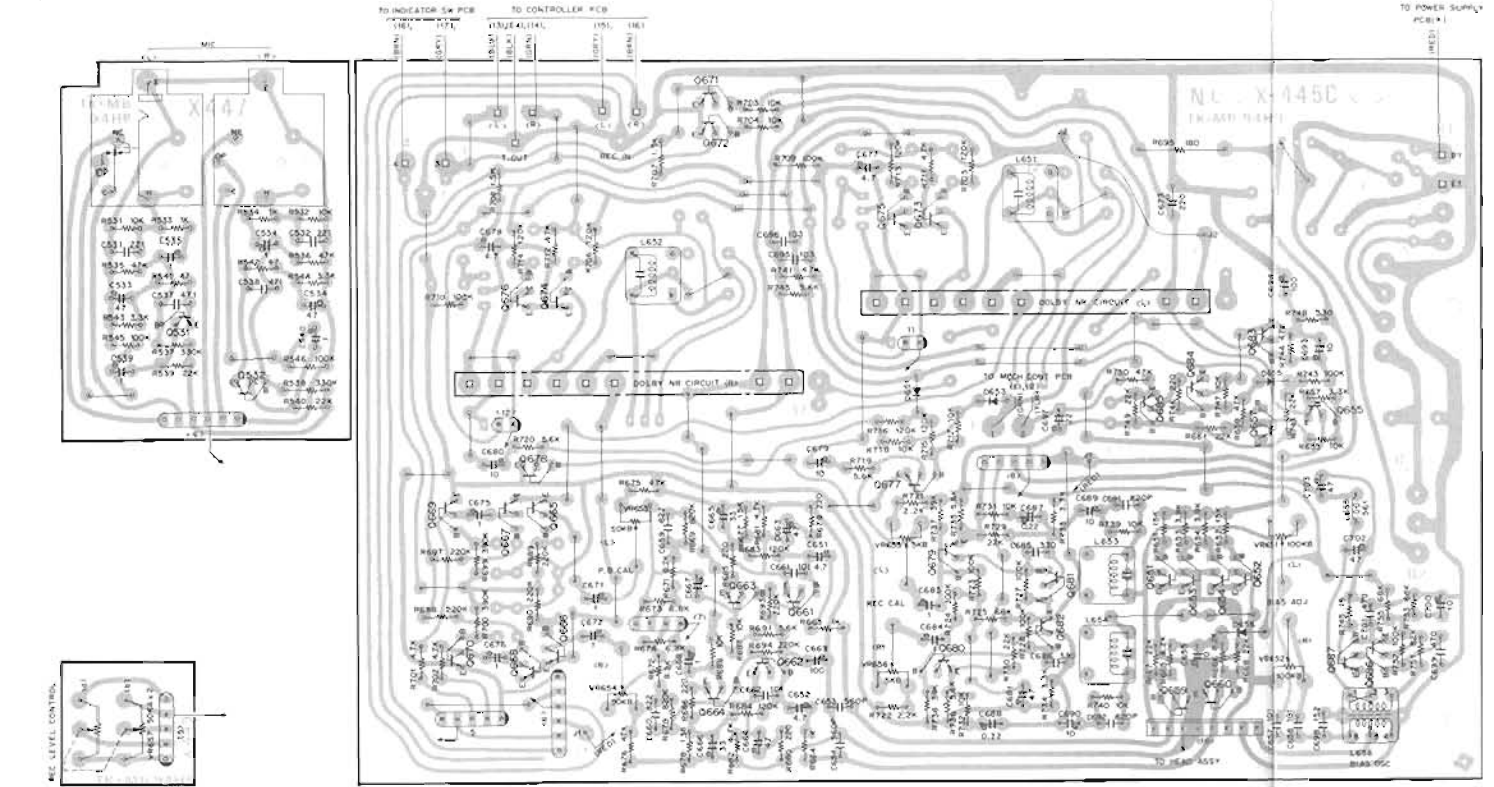




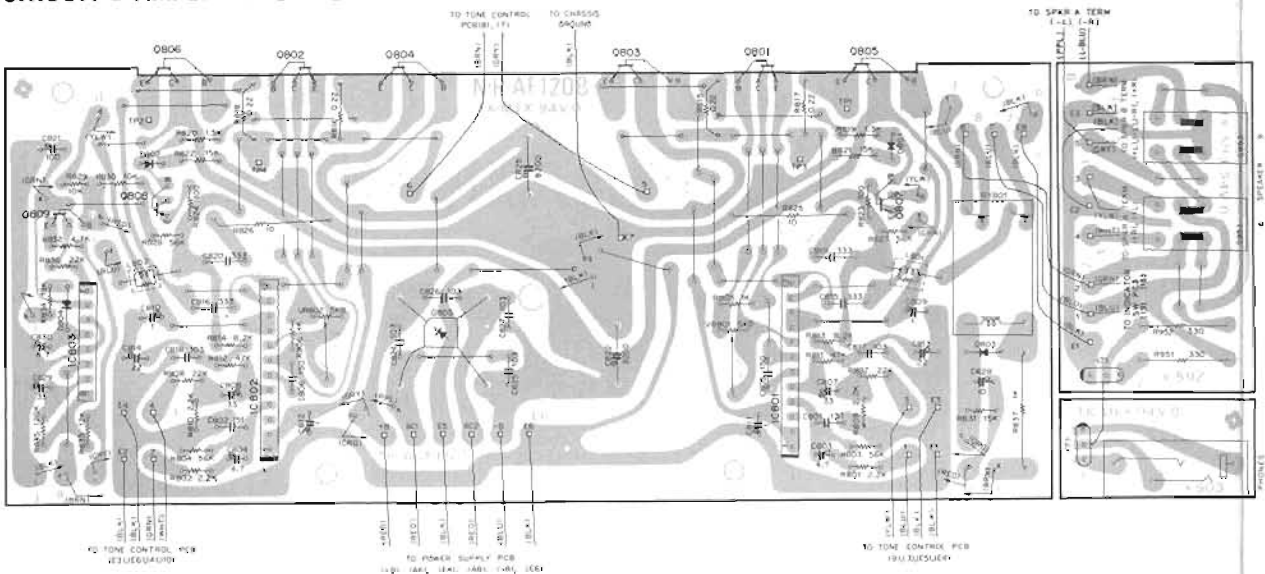


SCHEMATIC DIAGRAM
MODEL RCX-860/-L
(SECTION 8)

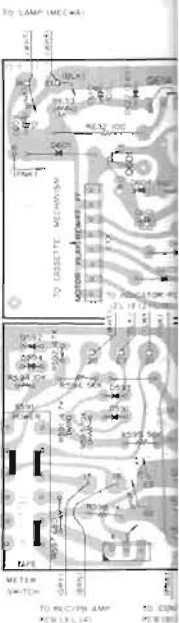
REC/PB AMP CIRCUIT
CIRCUIT D'AMPLI ENREGIST/LECTURE



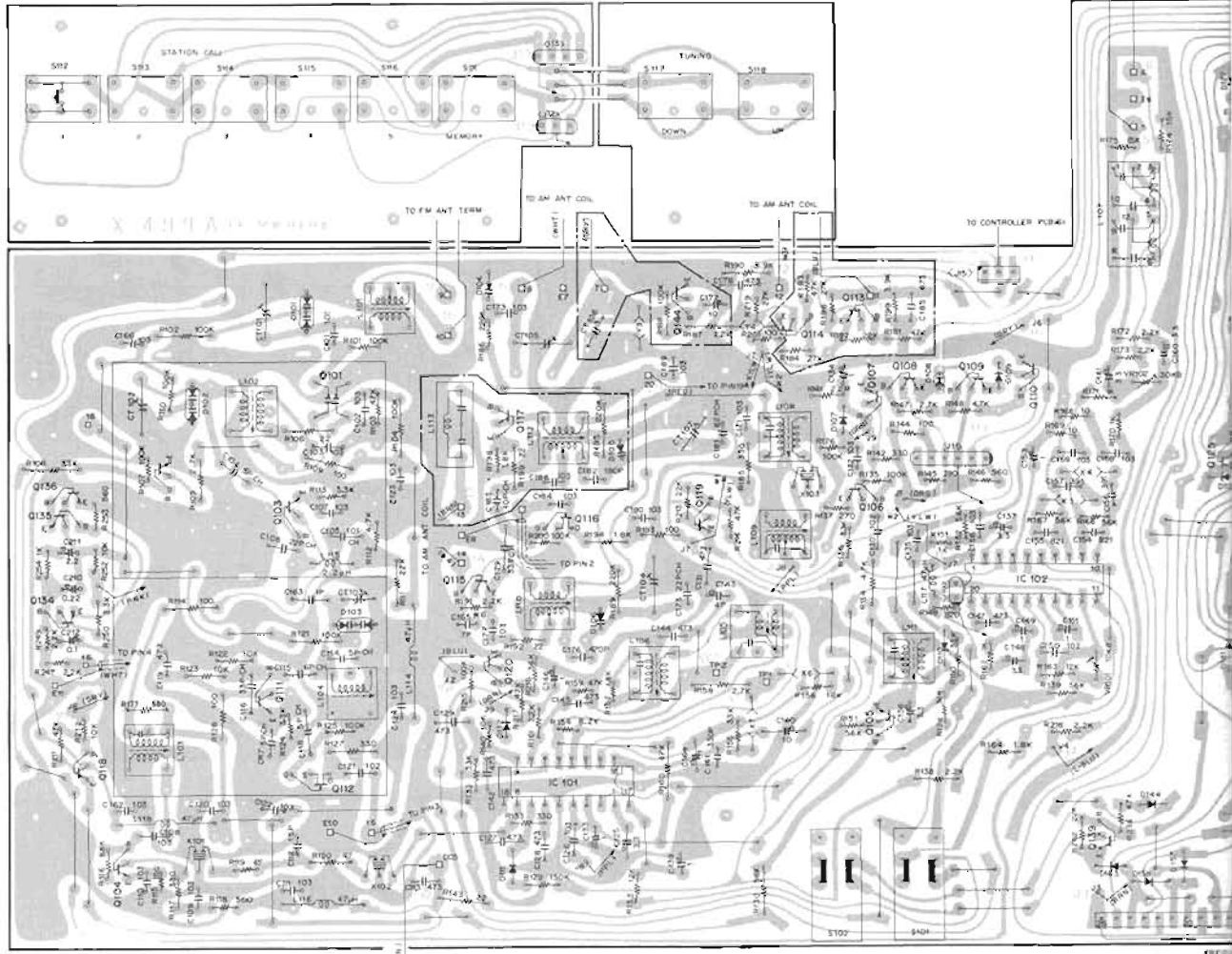
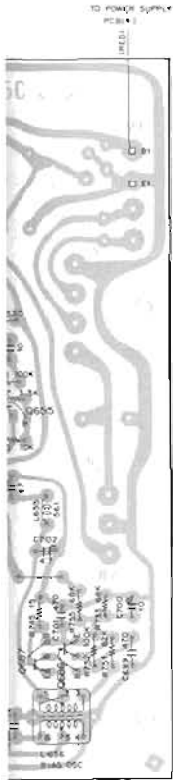
MAIN AMP CIRCUIT
CIRCUIT D'AMPLI PRINCIPALE



CASSETTE MEC
CIRCUIT DE CO



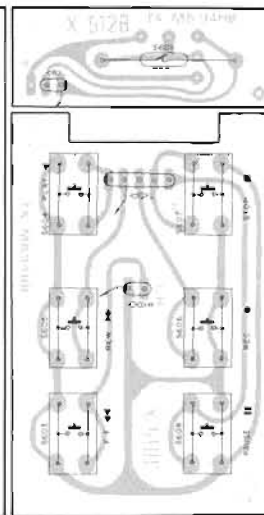
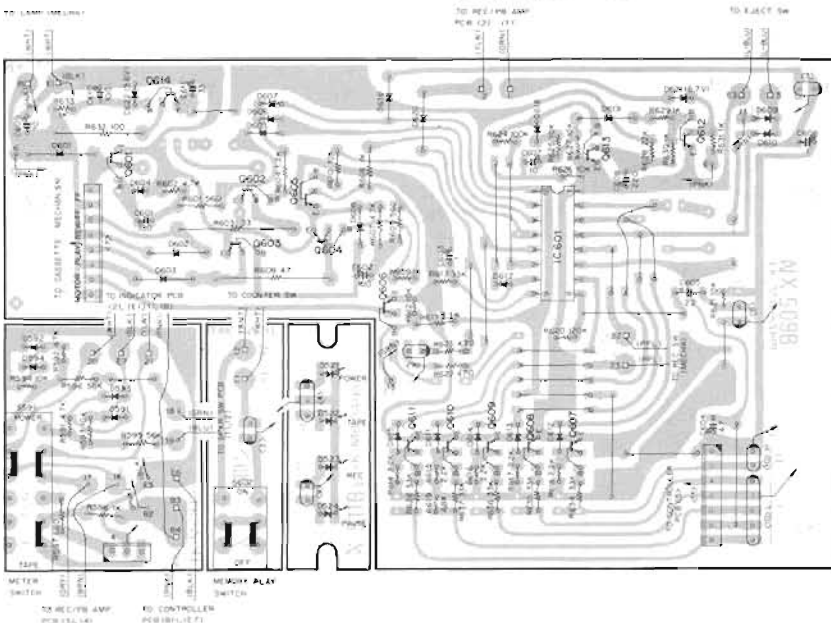
TUNER CIRCUIT CIRCUIT TUNER



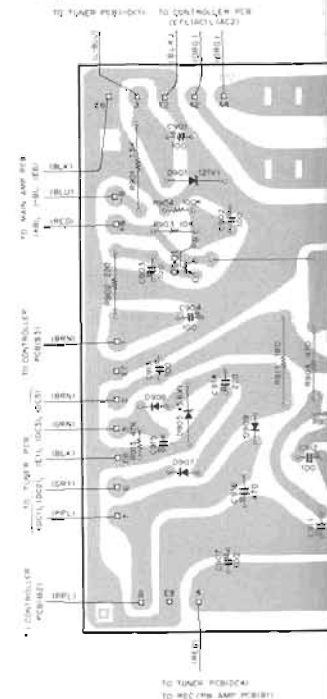
- *1: Jumper wire – 2-band units only; indicated by (Y6) on the schematic diagram.
- *2: Jumper wire – 3-band units only; indicated by (Y5) on the schematic diagram.

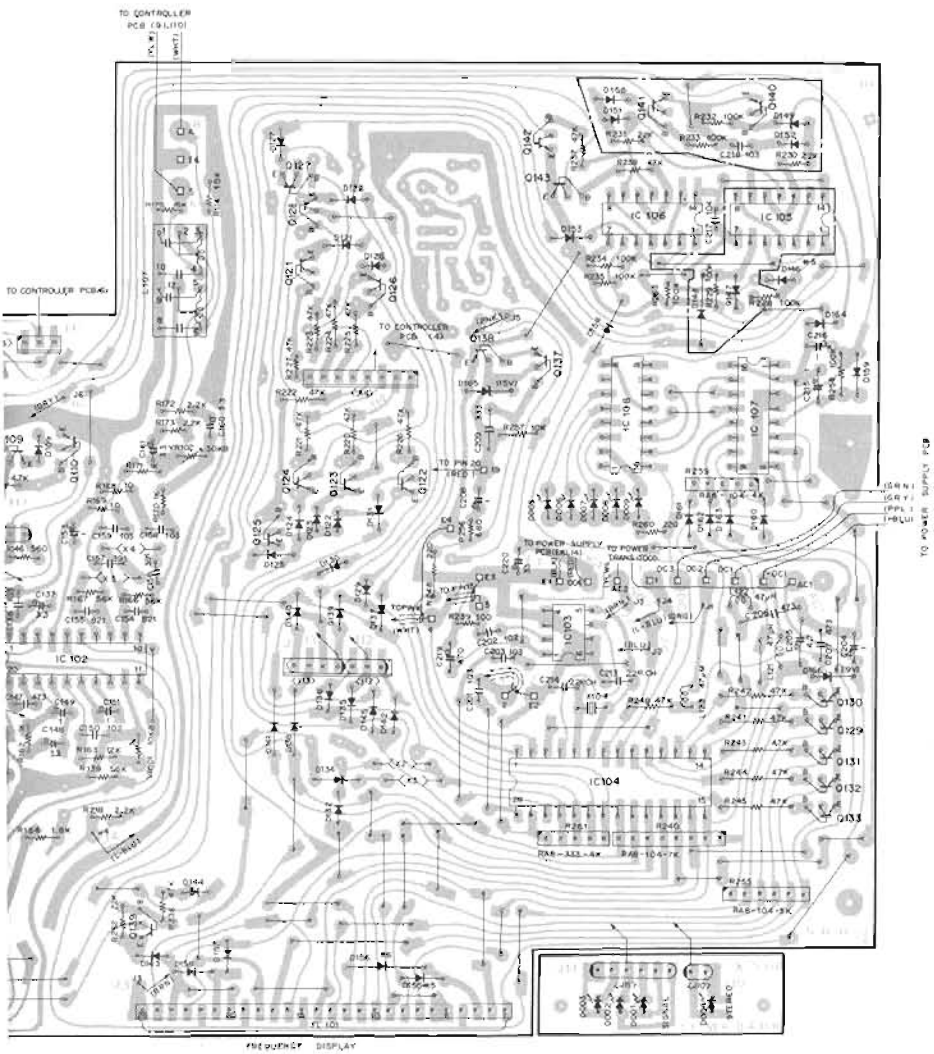
- *3 and *4: Antenna coil leads
- 2-band units YLW
- 3-band units GRN
- *3: Pin 12
- *4: Pin 14

CASSETTE MECHANISM CONTROLLER CIRCUIT CIRCUIT DE COMMANDE DE MECANISME DE MAGNETOPHONE

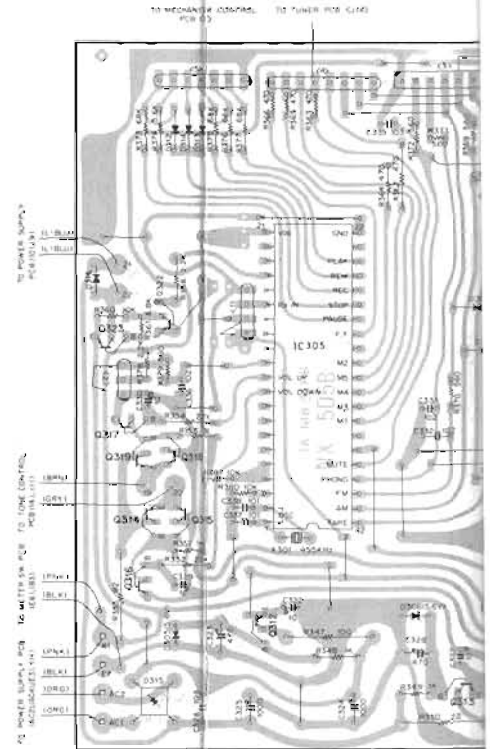


POWER SUPPLY CIRCUIT CIRCUIT D'ALIMENTATION

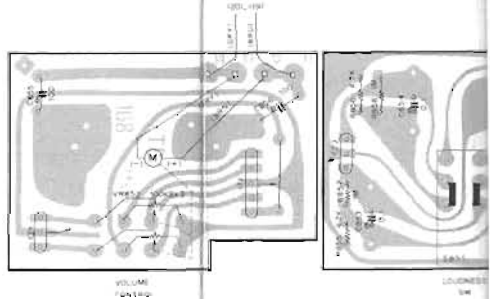




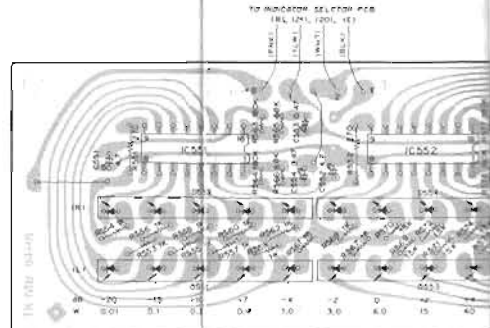
CONTROLLER CIRCUIT CIRCUIT DE RÉGULATEUR



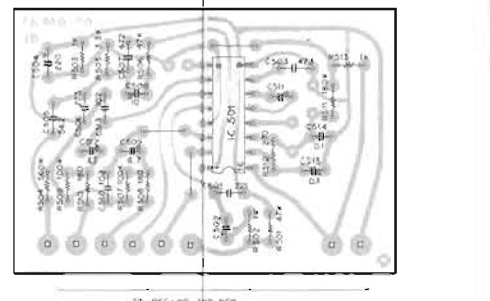
VOLUME AND TONE CONTROL CIRCUIT CIRCUIT DE COMMANDE DE VOLUME ET DE TON



LEVEL INDICATOR CIRCUIT CIRCUIT DE L'INDICATEUR DE NIVEAU



DOLBY NR CIRCUIT CIRCUIT DE DOLBY NR

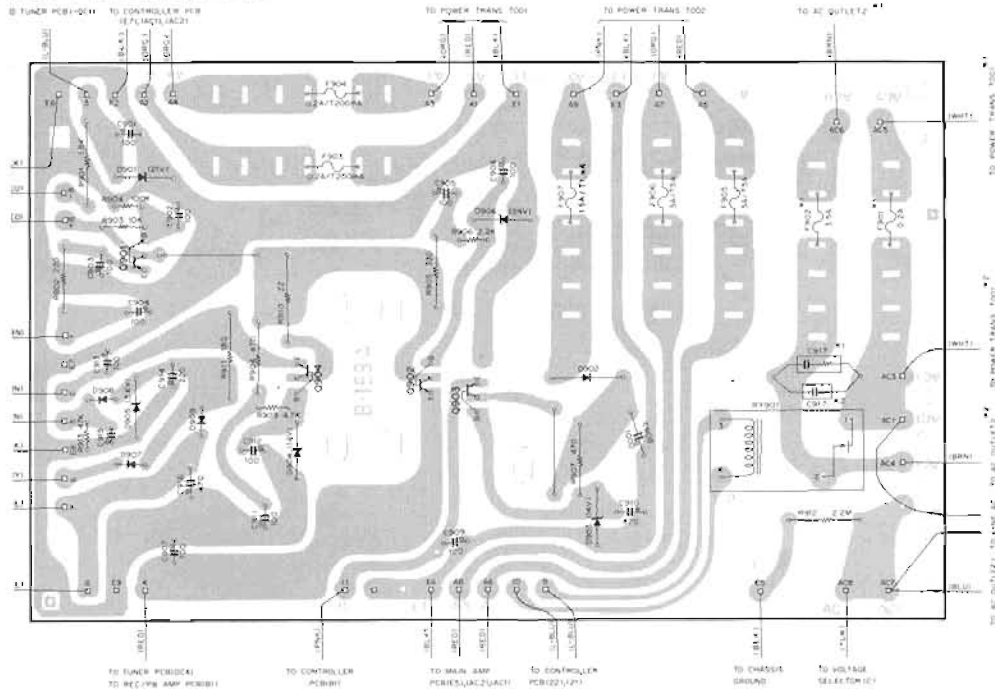


3-band units
GRN
YLW

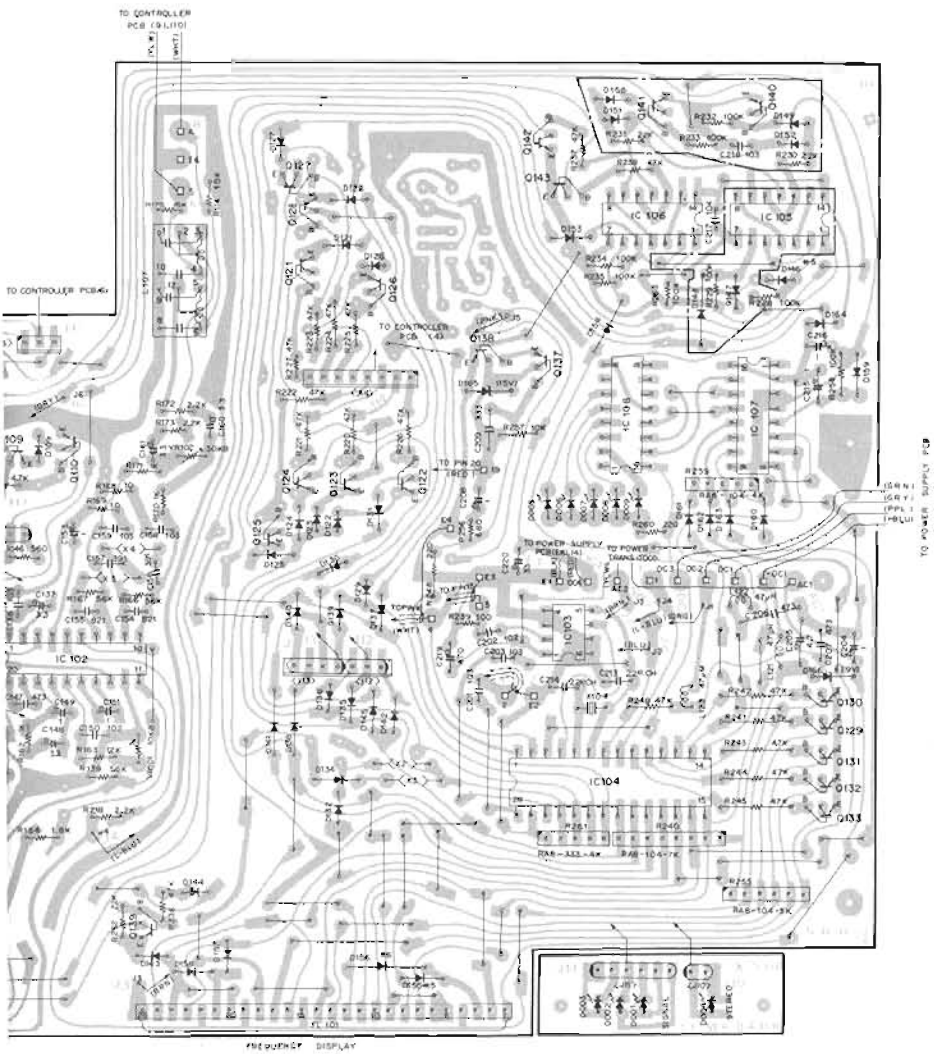
*5: 3-band units only (jumper wire for 2-band units); indicated by (Y1) and (Y2) on the schematic diagram.
*6: 3-band units only

Portion inside is applicable to 3-band units only.

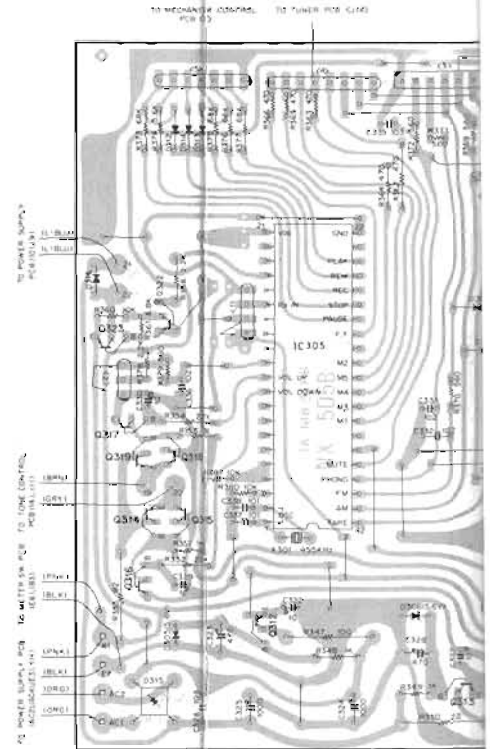
POWER SUPPLY CIRCUIT CIRCUIT D'ALIMENTATION



*1: 120V spec. only.
*2: 220/240V spec. only.



CONTROLLER CIRCUIT CIRCUIT DE RÉGULATEUR

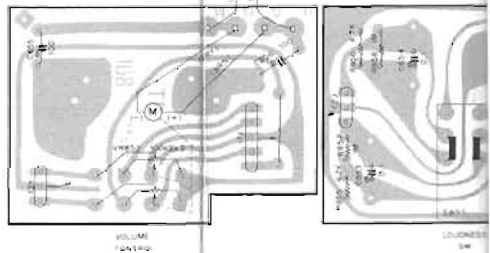


VOLUME AND TONE CONTROL CIRCUIT CIRCUIT DE COMMANDE DE VOLUME ET DE TON

3-band units
GRN
YLW

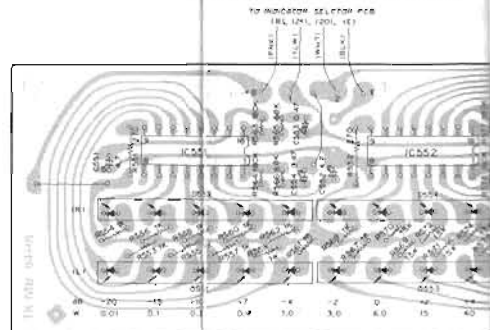
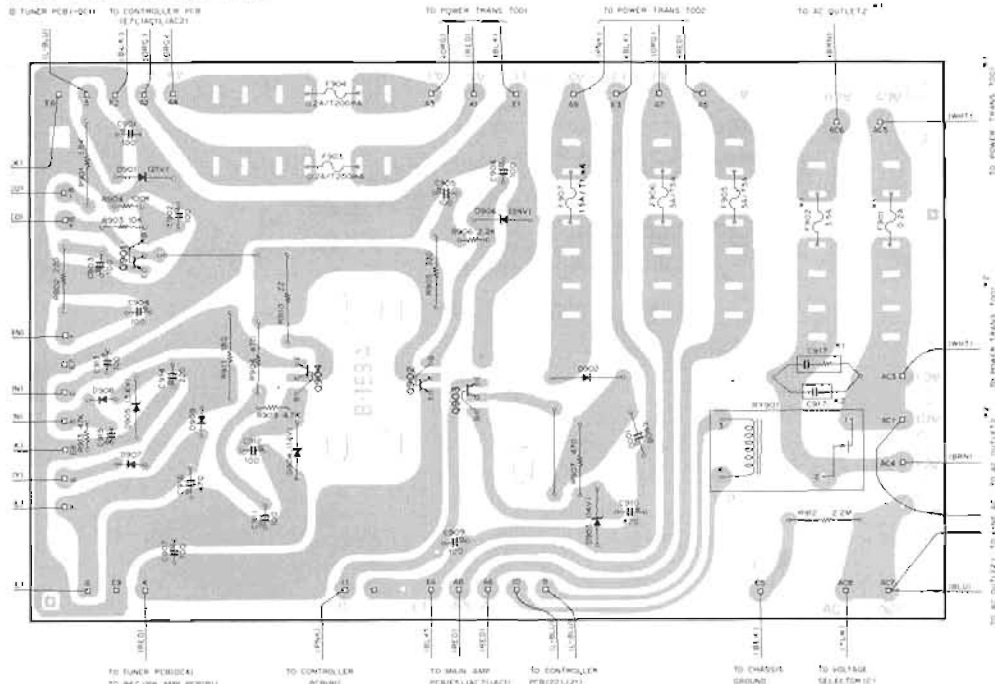
*5: 3-band units only (jumper wire for 2-band units); indicated by (Y1) and (Y2) on the schematic diagram.
*6: 3-band units only

Portion inside is applicable to 3-band units only.

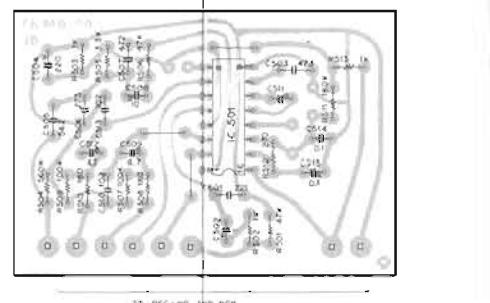


LEVEL INDICATOR CIRCUIT CIRCUIT DE L'INDICATEUR DE NIVEAU

POWER SUPPLY CIRCUIT CIRCUIT D'ALIMENTATION

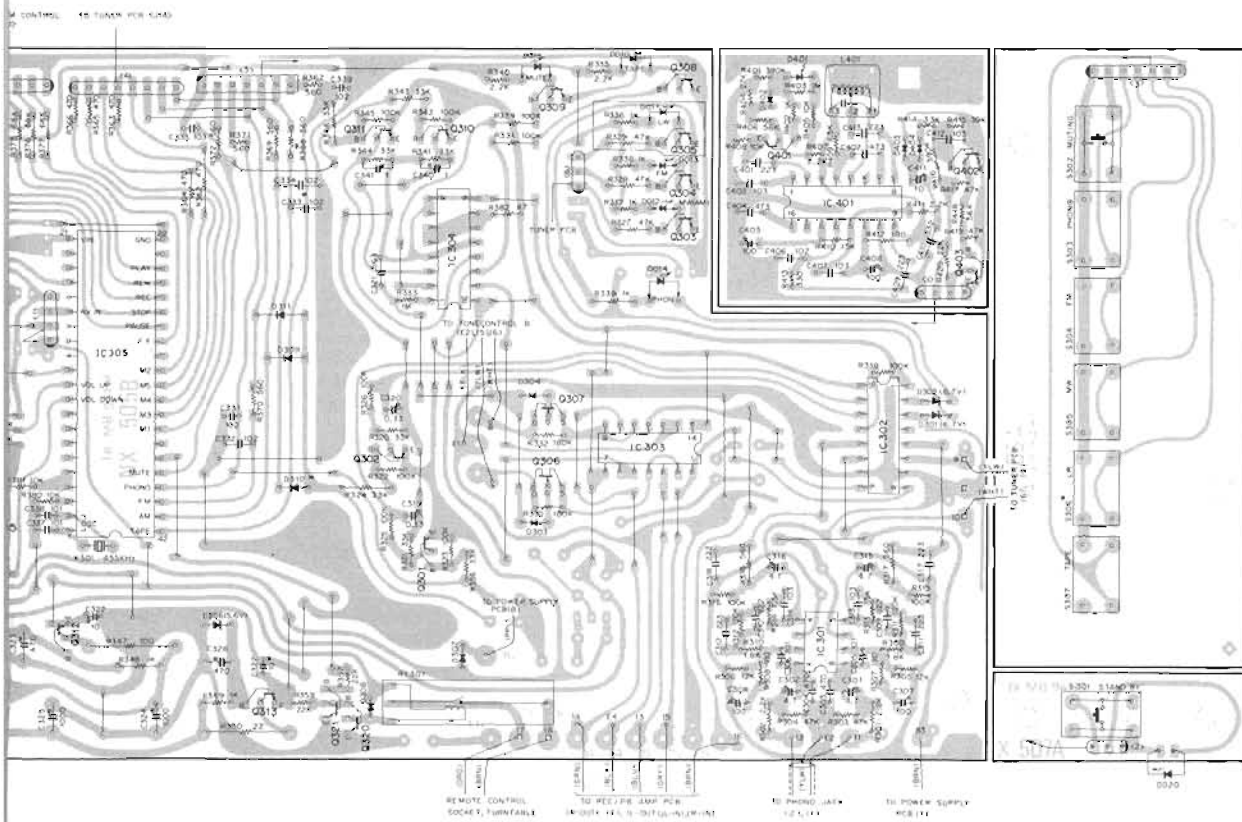


DOLBY NR CIRCUIT CIRCUIT DE DOLBY NR



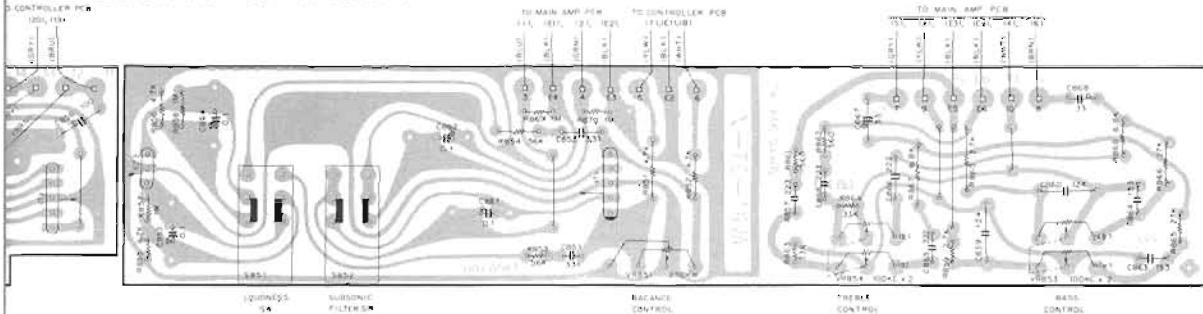
*1: 120V spec. only.
*2: 220/240V spec. only.

**CIRCUIT
AMPLIFICATEUR**

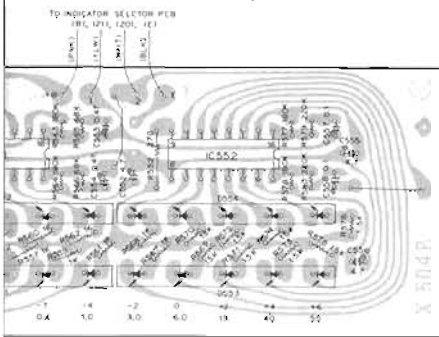


**VOLUME CONTROL CIRCUIT
MANDE DE VOLUME ET TONALITE**

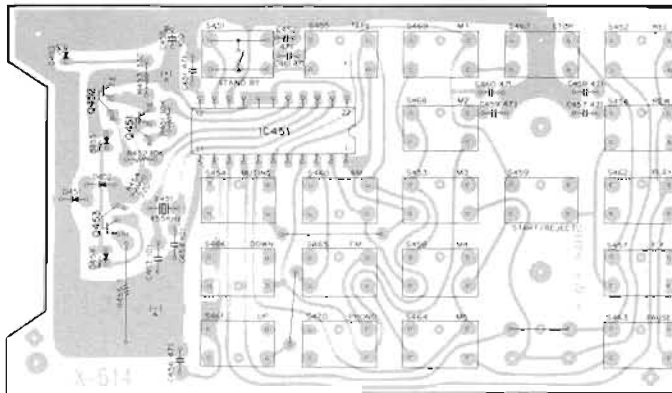
• and [] : applicable to 3-band units only.



**TUNING INDICATOR CIRCUIT
INDICATEUR DE NIVEAU**



**REMOTE CONTROL CIRCUIT
CIRCUIT DE COMMANDE A DISTANCE**



**UNIT
BY NR**

