
ROTEL®

Model RT-320

AM/FM Stereo

Solid State Tuner

Technical Manual

SUPPLEMENT

ALINEMENT PROCEDURE

CIRCUIT BOARD DIAGRAM

SCHEMATIC DIAGRAM

PARTS LIST

Serial No. Beginning ⓔ-16201

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The following modifications on model RT-320 were made, starting from Serial No. E-16201, as follows:

1. Muting circuit should be additionally set on this model.
2. Muting switch should be set instead of Modeswitch.
3. According to alteration 2, R906 should not set, and Part No. of Front Panel is 111911241, changed from old No. 11191121
4. The following resistors should be additionally set on AM circuit:
 - R214 – 100 ±5%, 1/4W, Carbon Film
 - R215 – 680 ±5%, 1/4W, Carbon Film

Note: The part No. revised in the new part list are applicable when a new order is placed.

MUTING ALIGNMENT PROCEDURE

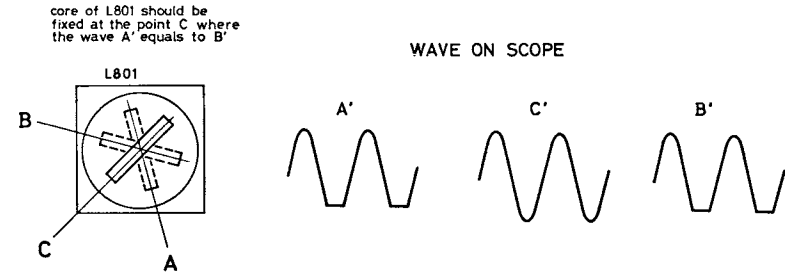
Note: The circuit on FM IF and FM RF should be set in proper way before the following steps of muting adjustment are taken.

Instruments: FM Signal Generator and Oscilloscope.

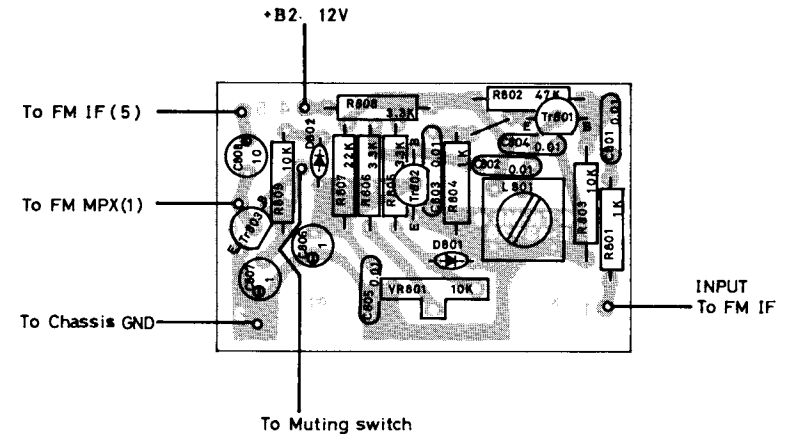
Set selector switch to FM and Muting switch to ON position. Connect the FM Signal Generator to the FM antenna terminals and connect the Oscilloscope to the OUTPUT jack (Left or Right channel). Set the frequency at 98MHz (when there are disrupting signal, choose another setting).

1. The Output wave should be set at the point where it vanishes while turning the potentiometer VR801 (on muting circuit board) and setting the antenna input level at 20uV.
2. After the input level on the antenna comes up to 400uV, the Muting coil L801 should be set in the following manners: see Fig. 1
 - A. The wave A or B' can be found on scope while turning the core of L801 to the Right or Left.
 - B. And the core should be fixed at the point C half way A and B where the wave A' equals to B'.
3. The step 1 should be taken again.
4. It should be confirmed that the muting is out of work at the input level of 30uV on the antenna, and that the waves appear on the oscilloscope.

Fig. 1 Muting Adjustment



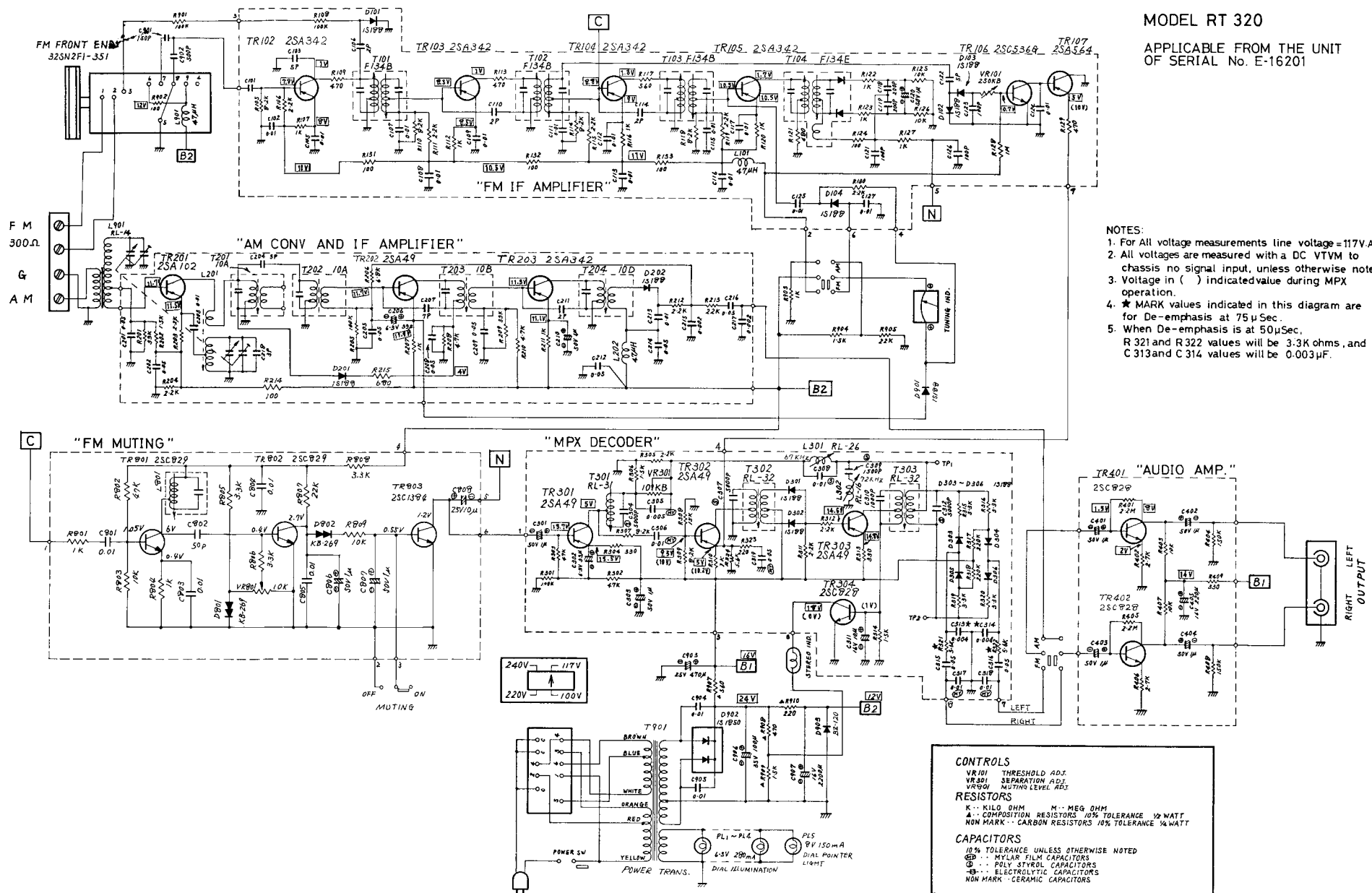
Muting Circuit Board Diagram



Schematic Diagram

MODEL RT 320

APPLICABLE FROM THE UNIT OF SERIAL No. E-16201



- NOTES:
1. For all voltage measurements line voltage = 117V AC
 2. All voltages are measured with a DC VTVM to chassis no signal input, unless otherwise noted
 3. Voltage in () indicated value during MPX operation.
 4. ★ MARK values indicated in this diagram are for De-emphasis at 75µSec.
 5. When De-emphasis is at 50µSec, R 321 and R 322 values will be 3.3K ohms, and C 313 and C 314 values will be 0.003µF.

REPLACEMENT PARTS LIST FOR MODEL RT-320

* Serial No. beginning 16201

Part No.	Symbol No.	Descriptions
111911241*		Front Panel Assembly
112011230		Dial Board
151691111		Dial Pointer w/Lamp
116310011		Knob, Tuning
321304357		Front end
231310001		Meter, Tuning
654911282		Shaft, Tuning w/Flywheel
614030802		Switch, Push 3-keys
641200104		Antenna Terminal, 4P
624100102		Output Jack, 2P
648211115		Bracket, Dial Lamp
120311215		Ring, AM Antenna Coil Adj.
648211111		Arm, AM Antenna Coil
352063028	PLI, 2, 3, 4.	Lamp, 6.3V, 0.28A, Dial Illumination
351063003		Lamp, 6.3V, 30mA, FM-Stereo Indicator
141210127		FM IF Amp. circuit board Ass'y
141110124		AM circuit board Ass'y
141411423		FM MPX circuit board Ass'y
141810127		Audio Amp. circuit board Ass'y
141810126*		Muting circuit board Ass'y

CAPACITORS

Part No.	Symbol No.	Descriptions
440100985	C101, 102, 105, 107 C108, 109, 111, 112, C113, 115, 116, 117, C124, 125, 127, 203, C213, 801, 803, 804, C805, 904, 905.	Ceramic, 0.01mfd, 250V
440500935	C201, 202, 205, 208, C209, 210, 212, 214, C216, 315, 316.	Ceramic, 0.05mfd, 50V
440201085	C215, 217.	Ceramic, 0.002mfd, 250V
442401083	C313, 314.	Ceramic, 0.004mfd ±10%, 250V
440501183	C902	Ceramic, 500pF ±10%, 250V
440201183	C118, 119.	Ceramic, 200pF ±10%, 250V
440101183	C121, 123, 126.	Ceramic, 100pF ±10%, 250V
440501283	C802.	Ceramic, 50pF ±10%, 250V
440701388	C207	Ceramic, 7pF ±0.5pF, 250V
440501388	C103, 122, 204.	Ceramic, 5pF ±0.5pF, 250V
441301336	C218.	Ceramic, 3pF, (N5.6), 50V
440201388	C106, 110, 114, 211.	Ceramic, 2pF ±0.5pF, 250V
450500933	C319.	Mylar Film, 0.05mfd ±10%, 50V
450100933	C306, 317, 318.	Mylar Film, 0.01mfd ±10%, 50V
450501033	C305.	Mylar Film, 0.005mfd ±10%, 50V
454100833	C308.	Polystyrene Film, 0.01mfd ±10%, 50V
454151073	C309.	Polystyrene Film, 1,500pF ±10%, 125V
454101073	C310.	Polystyrene Film, 1,000pF ±10%, 125V
453471033	C304, 307, 312.	Polystyrene Film, 4,700pF ±10%, 50V
402100749	C210, 301, 303, 401, C402, 403, 404, 806, C807.	Electrolytic, 1 mfd, 50V
402330609	C206, 302.	Electrolytic, 33mfd, 6.3V
402100629	C311, 808.	Electrolytic, 10mfd, 25V
402100519	C405.	Electrolytic, 100mfd, 16V
401470539	C903.	Electrolytic, 470mfd, 35V
401100439	C906.	Electrolytic, 1,000mfd, 35V
401220419	C907.	Electrolytic, 2,200mfd, 16V

RESISTORS

Part No.	Symbol No.	Descriptions
552082222	R105, 110, 114, 118, R307, 309.	Carbon Film, 8.2K ±5%, 1/4W
552022222	R106, 111, 115, 119, R130, 203, 204, 212, R312, 310, 311.	Carbon Film, 2.2K ±5%, 1/4W
552010222	R107, 112, 116, 120 R122, 123, 127, 207, R211, 310, 801, 804, R903.	Carbon Film, 1K ±5%, 1/4W
552010422	R108, 205, 301, 901.	Carbon Film, 100K ±5%, 1/4W
552047122	R109, 113, 129.	Carbon Film, 470 ±5%, 1/4W
552056122	R117.	Carbon Film, 560 ±5%, 1/4W
552068122	R121, 214.	Carbon Film, 680 ±5%, 1/4W
552010122	R124, 131, 132, 133, R902, 215.	Carbon film, 100 ±5%, 1/4W
552010322	R125, 126, 403, 407, R603, 609	Carbon Film, 10K ±5%, 1/4W
552010522	R128.	Carbon Film, 1M ±5%, 1/4W
552033322	R201, 209.	Carbon Film, 33K ±5%, 1/4W
552015222	R202, 306, 314, 904.	Carbon Film, 1.5K ±5%, 1/4W
552068222	R206.	Carbon Film, 6.8K ±5%, 1/4W
552047222	R208, 210.	Carbon Film, 4.7K ±5%, 1/4W
552022022	R213, 807, 905.	Carbon Film, 22K ±5%, 1/4W
552047322	R303, 302, 802.	Carbon Film, 47K ±5%, 1/4W
552033122	R304, 313, 409.	Carbon Film, 330 ±5%, 1/4W
552015322	R308.	Carbon Film, 15K ±5%, 1/4W
552033222	R315, 316, 319, 320, R805, 806, 808.	Carbon Film, 3.3K ±5%, 1/4W
552022422	R317, 318.	Carbon Film, 220K ±5%, 1/4W
552056222	R321, 322, 324.	Carbon Film, 5.6K ±5%, 1/4W
552022122	R323.	Carbon Film, 220 ±5%, 1/4W
552027222	R402, 406.	Carbon Film, 2.7K ±5%, 1/4W
552015422	R404, 408.	Carbon Film, 150K ±5%, 1/4W
551056133	R907.	Composition, 560 ±5%, 1/2W
551047133	R908.	Composition, 470 ±5%, 1/2W
551015233	R909.	Composition, 1.5K ±10%, 1/2W
551022133	R910.	Composition, 220 ±10%, 1/2W
510502124	VR101.	Potentiometer, 250K, Switching Level Adj.
510502102	VR301.	Potentiometer, 10K, Separation Adj.
510502125*	VR801.	Potentiometer, 10K Muting Level Adj.

TRANSISTORS AND DIODES

Part No.	Symbol No.	Descriptions
301001111	TR202, 301, 302, 303	2SA49, AM IF amp. & MPX amp.
301001124	TR201.	2SA102, AM conv.
301001122	TR102, 103, 104, 105, TR203.	2SA342 or 2SA102 FM IF amp. & AM IF amp.
301201112	TR106.	2SC536G, Mono-Stereo switching Amp.
301001117	TR107.	2SC564, Mono-Stereo switching driver
301201115	TR304, 401, 402.	2SC828, Audio Amp.
310201117*	TR801, 802.	2SC829, Muting Amp.
300111008	D101, 102, 103, 104, D201, 202, 301, 302, D303, 304, 305, 306, D901.	Diode, 1S188, FM AGC, AM Det., etc.
300212004*	D801, 802.	Diode, KB-269
300819005	D902.	Rectifier, 1S1850
300313004	D903.	Diode, 6Z-120, Zener
301201132*	TR803.	2SC1364, Muting Driver

COILS AND TRANSFORMERS

Part No.	Symbol No.	Descriptions
220001121	L101, 202, 901.	Coil, RF choke, 47uH
223301121	L201.	Coil, AM local oscillator
228641110	L301.	Coil, SCA Filter, 67KHz Trap
228641109	L302.	Coil, SCA Filter, 72KHz Trap
226501115*	L801.	Coil, FM Muting
222391115	L901.	Coil, AM Antenna
225501114	T101, 102, 103.	Trans. FM IF, 10.7 MHz
225501115	T104.	Trans. FM IF, Ratio
225301121	T201, 202.	Trans. AM IF, 455KHz
225301122	T203.	Trans. AM IF, 455KHz
225301124	T204.	Trans. AM IF, 455KHz
225501125	T301.	Trans. MPX, 19KHz
225501126	T302, 303.	Trans. MPX, 19KHz/38KHz
205001299	T901.	Trans. Power Supply (100-117-220-240V) (Primary 117V only - Part No. 201001299)

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Roland Electronics Co., Ltd.

Main Office: 1-36-8 Ohokayama, Meguro-ku, Tokyo, Japan
Chofu Plant: 3-60-3 Kamiishihara, Chofu-shi, Tokyo, Japan

Rotel Electronics Co., Ltd.

Offices & Plants: 310, Sec. 5, Nanking E. Road, Taipei, Taiwan

Rotel of America Inc.

Main Office: 2642 Central Ave., Yonkers, New York 10710, U.S.A.
Branch: 13518 South Normandie Ave., Gardena, Calif, 90249, U.S.A.