

General Description: A portable radio cassette recorder covering Medium and V.H.F. wavebands. The instrument operates from mains or battery supplies and the circuit features automatic record level control. Sockets are provided for the connection of headphones and for remote recorder motor switching.

Mains Supplies: 220-240 V, 50Hz.

Batteries: 6V (4 × HP2).

Quiescent Current (Playback): 170mA.

Wavebands: 535-1,605kHz; F.M. 88-108MHz.

Loudspeaker: 8Ω impedance.

Semiconductor Types:

Transistors

Q101	2SC829 (C)	Q106	2SC829 (C)	Q111	2SB186 (B)
Q102	25C1359 (B)	Q107	2SB303 (B)	Q112	2SB324 (B)
Q103	2SC829 (C)	Q108	2SB186 (B)	Q113	2SB324 (B)
Q104	2SC829 (C)	Q109	2SC829 (B)	Q801	2SC536 (F)
Q105	2SC829 (C)	Q110	2SB186 (B)		

Diodes

D101	1S2473	D104	IN60P	D111	IN60P
D102	IN60P	D105	KB265 Varistor		
D103	IN60P	D106	IS2473	D112	S1849R, Silicon Rectifier

Bias Oscillator, Frequency and Level Adjustment: Equipment required: Frequency counter or oscilloscope; accurate Audio Signal Generator; high impedance voltmeter.

Switch the unit into 'record' position.

Connect a frequency counter across the bias level control (VR801).

Adjust the bias oscillator coil (L801), to obtain 44.6kHz on the counter.

If a frequency counter is not available, connect the Y input of an oscilloscope across L801. Feed in a signal of 44.6 kHz from the Audio Signal Generator to the external X input of the oscilloscope. Adjust L801 for a circular figure on the oscilloscope.

When frequency alignment is completed, connect the A.C. voltmeter across the resistor R184 (100Ω).

Adjust the bias level control (VR801) to obtain 55mV on the voltmeter.

A.M. Alignment: *Note:* Progressively reduce output, as alignment proceeds, to prevent A.G.C. action. (For location of alignment points see Fig. R419.)

A.M. Alignment: Equipment required: A.M. Signal Generator; High impedance A.C. voltmeter.

<i>Sequence of alignment</i>	<i>Waveband (Button)</i>	<i>Dial Pointer</i>	<i>Signal generator</i>		<i>Apply signal to</i>
			<i>Frequency</i>	<i>Modulation</i>	
1.	M	minimum	460 kHz	A.M. 30%	
2.	M	minimum	460 KHz	A.M. 30 %	loose
3.	M	minimum	460 kHz	A.M. 30%	inductive
Oscillator M.W.	M	minimum	520 kHz	A.M. 30%	coupling to
Ferrite rod M.W.	M	600 kHz	600 kHz	A.M. 30%	ferrite rod

<i>Coil adjustment</i>	<i>Dial pointer</i>	<i>Signal generator</i>		<i>Trimmer adjustment</i>
		<i>Frequency</i>	<i>Modulation</i>	
T106 (yellow)	—	—	—	—
T107 (yellow)	—	—	—	—
T108 (black)	—	—	—	—
L107 (red)	maximum	1,620 kHz	A.M. 30%	TC104
L106	1,400 kHz	1,400 kHz	A.M. 30%	TC103

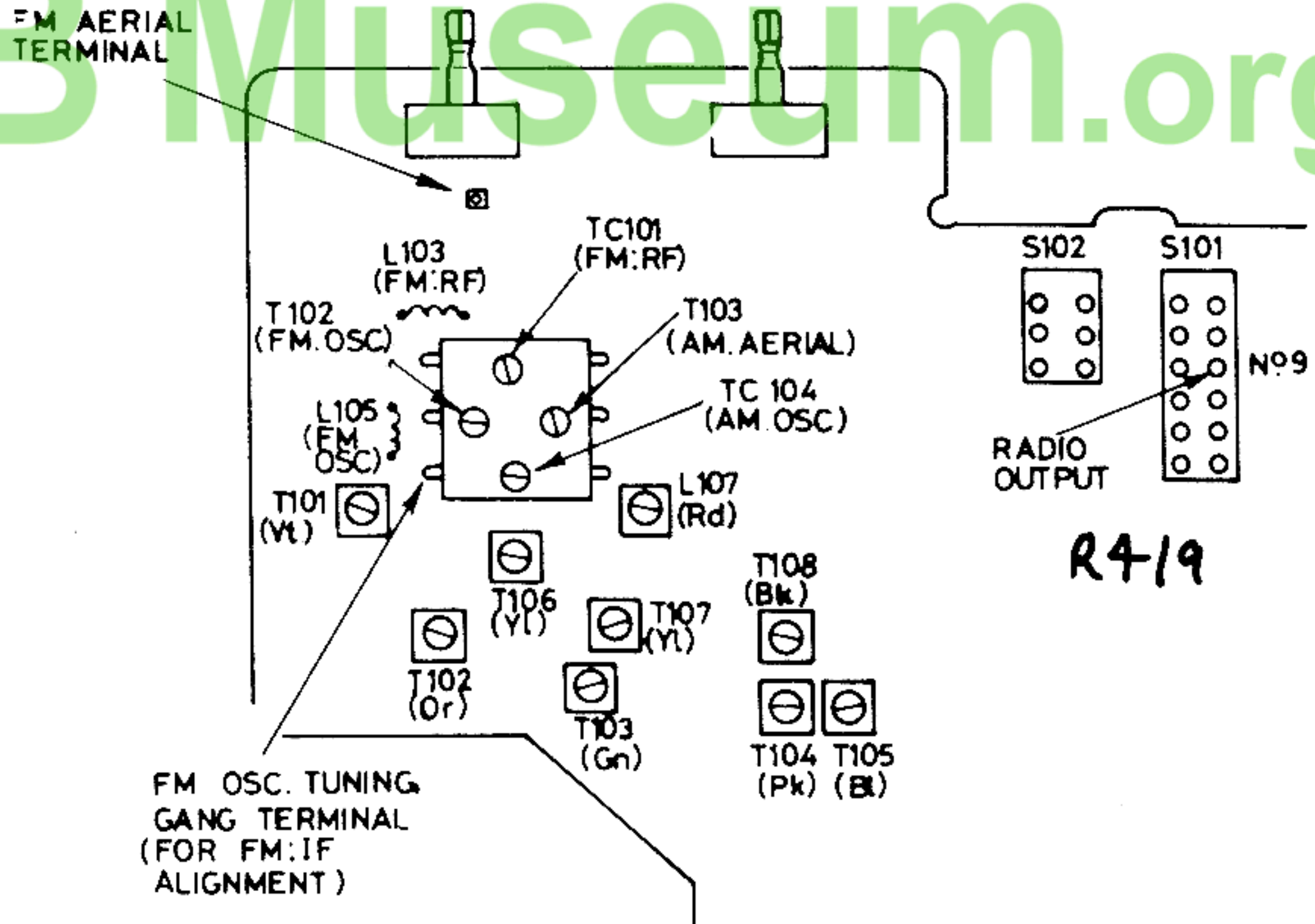
R.F. Alignment: Equipment required: 1 signal generator with 60Ω output, 1 output meter (V.V.M. or Electronic Voltmeter).

<i>Sequence alignment</i>	<i>Waveband (Button)</i>	<i>Dial pointer</i>	<i>Signal generator</i>		<i>Generator connection</i>
			<i>Frequency</i>	<i>Modulation</i>	
Oscillator	F.M.	minimum	88 MHz	F.M. 22·5 kHz	F.M. aerial socket
R.F. circuit	F.M.	Tune to 90 MHz	90 MHz 22·5 kHz	F.M. 22·5 kHz	F.M. aerial socket

<i>Coil adjustment</i>	<i>Dial pointer</i>	<i>Signal generator</i>		<i>Trimmer adjustment</i>
		<i>Frequency</i>	<i>Modulation</i>	
L105	maximum	108 MHz	F.M. 22·5 kHz	TC102
L103	Tune to 106 MHz	106 MHz	F.M. 22·5 kHz	TC101

If required, repeat the alignment several times

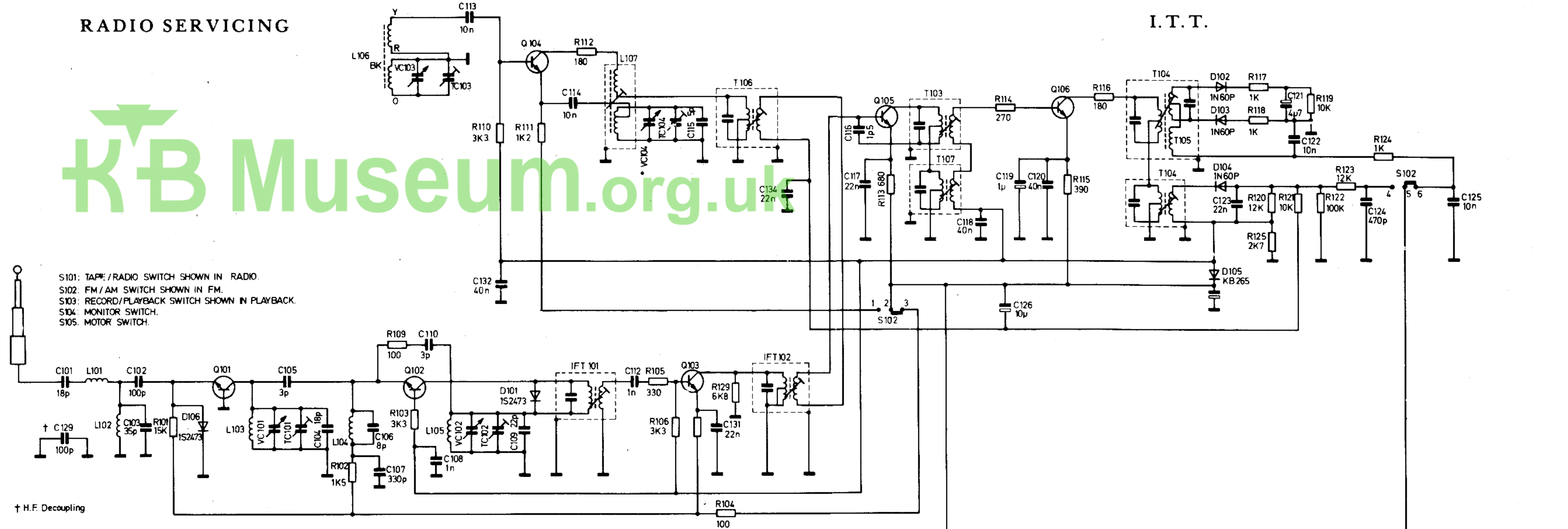
F.M. Alignment: *Note:* Before the alignment, check the battery voltage (6V D.C.) if battery power is used. Progressively reduce generator output as alignment proceeds to prevent A.G.C. action. (For location of alignment points see Fig R419.)



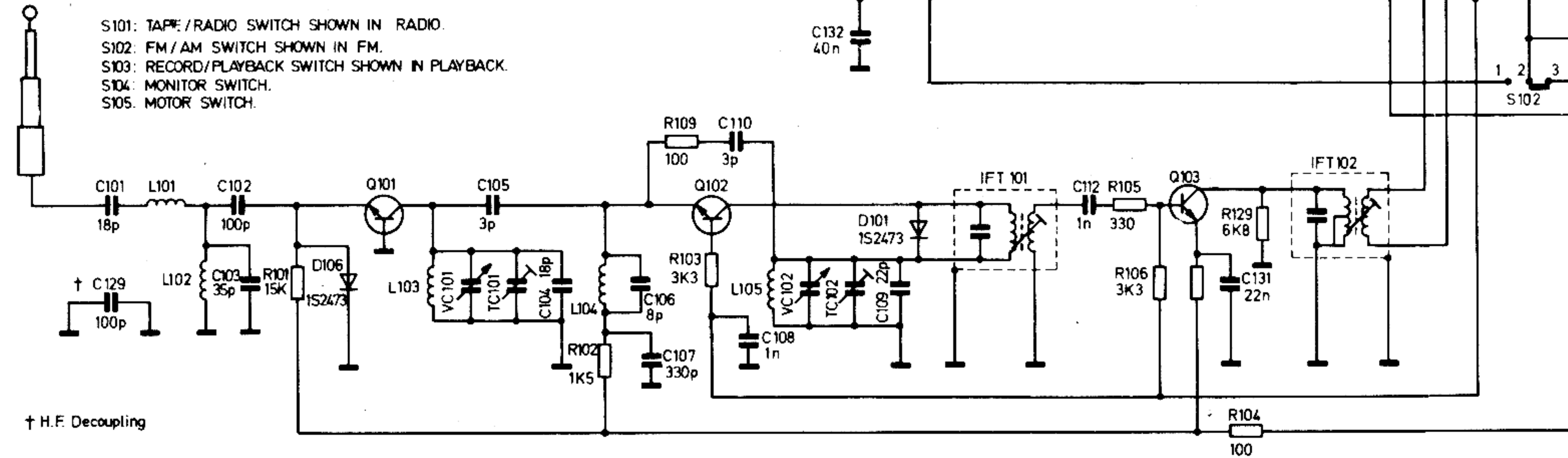
(R419) ALIGNMENT ADJUSTMENTS — MODEL RC200

F.M. Alignment: Equipment required: 1 sweep generator, with 10.7 MHz range and frequency marker; 1 oscilloscope.

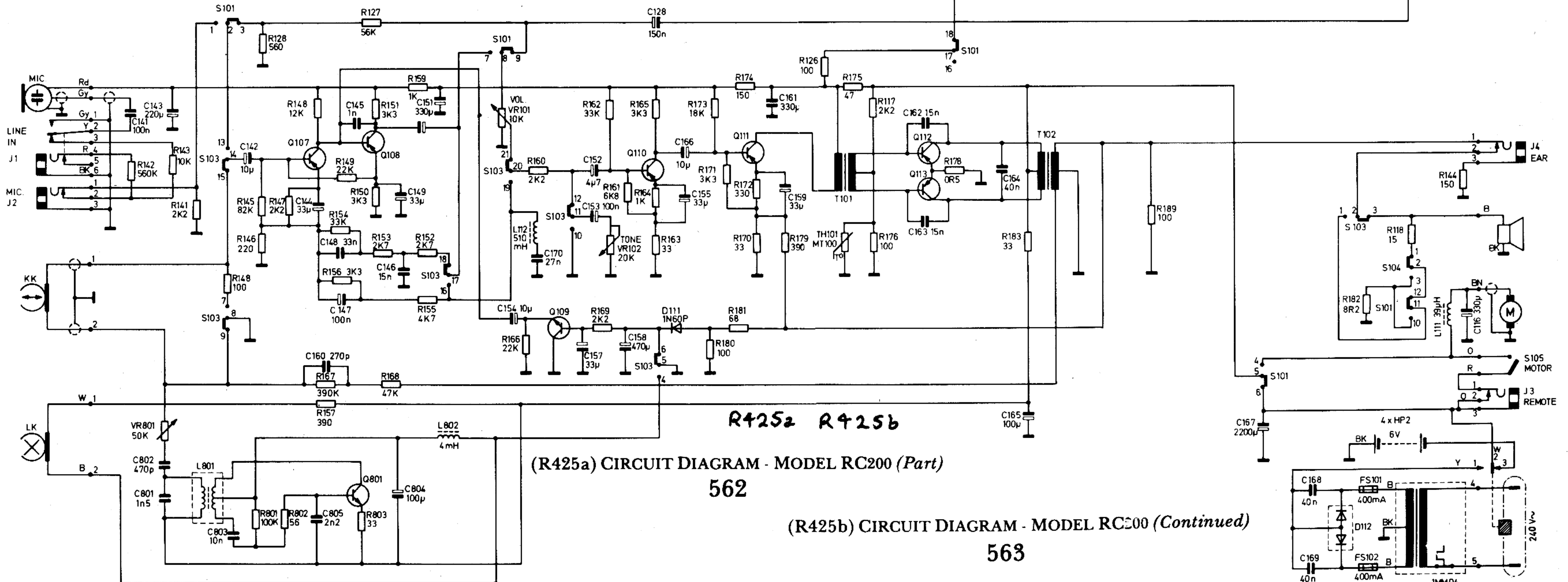
<i>Sequence alignment</i>	<i>Waveband (button)</i>	<i>Alignment connections</i>	<i>Test equipment and test set-up</i>	<i>Adjust</i>	
1.				T101 (violet)	
2.				T102 (orange)	
3.	F.M.	10.7 MHz	Connect sweep generator through 10nF to L105, oscilloscope to pin 9 of S101, unscrew T105 completely	T103 (green)	
4.				T104 (pink)	
					T105 (blue)
Alignment of discriminator response curve		"			"



S101: TAPE/RADIO SWITCH SHOWN IN RADIO.
 S102: FM/AM SWITCH SHOWN IN FM.
 S103: RECORD/PLAYBACK SWITCH SHOWN IN PLAYBACK.
 S104: MONITOR SWITCH.
 S105: MOTOR SWITCH.



† H.F. Decoupling



(R425a) CIRCUIT DIAGRAM - MODEL RC200 (Part)

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(R425b) CIRCUIT DIAGRAM - MODEL RC200 (Continued)

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