

VP 21
VP 31

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KB

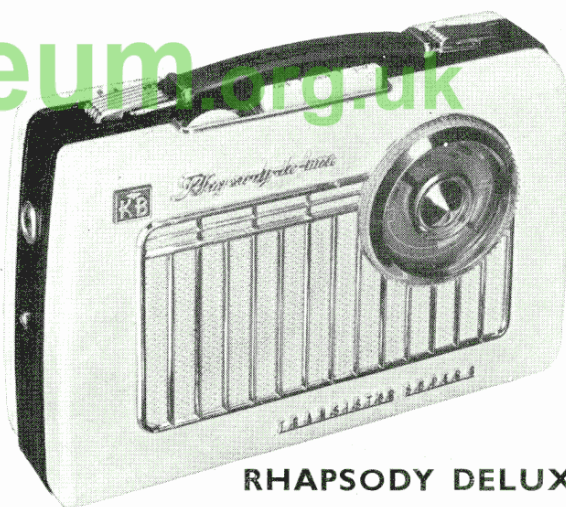
SERVICE MANUAL

TRANSISTOR PORTABLE

MODELS VP 21 & VP 31



RHAPSODY SUPER 8



RHAPSODY DELUXE

AN  ASSOCIATE

Issued MAY 1963

COMBINED RADIO AND TELEVISION SERVICE LTD

REGENT WORKS, SIDCUP, KENT. Tel: FOOTscray 3333

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MODELS VP 21 & VP 31

GENERAL DESCRIPTION

VP.21 and VP.31 are new versions of the successful Rhapsody range of transistor portable receivers. They employ similar cabinets to the previous range but a new eight transistor circuit has been designed using PNP and NPN output transistors.

LOUDSPEAKER 4" diameter.

BATTERY 2 x 4.5V contained in one battery.
Ever Ready PPII Exide DTII Vidor VTII.
Nominal life approximately 500 hours.

TRANSISTOR COMPLEMENT

	Function	TEXAS	G.E.C.	S.T.C.	MULLARD
TX1	Oscillator Mixer	2G344A	GET874	TK1000C	OC44
TX2	1st I.F.	2G345A	GET873	TK1000C	OC45
TX3	2nd I.F.	2G345B	GET873	TK1000C	OC45
TX4	Detector Diode	Y25			
TX5	1st Audio Amp.	2G374B			
TX6	Driver	2G374B			
TX7 } TX8 }	Matched Pair Push-Pull Output	2G381A(PNP) 2G339A(NPN)			

IMPORTANT NOTE

Should I.F. Transistors be replaced in the course of service by one of the alternative types, it may be necessary to change the neutralising condensers. See Chart on circuit sheet.

POWER OUTPUT

500mW for 10% distortion.

POWER CONSUMPTION

On Loudspeaker	Quiescent	18 mA
	50 mW Output	50 mA
	500 mW Output	130 mA
	Average Listening Level	22 mA
On Earpiece		18 mA

CONTROLS

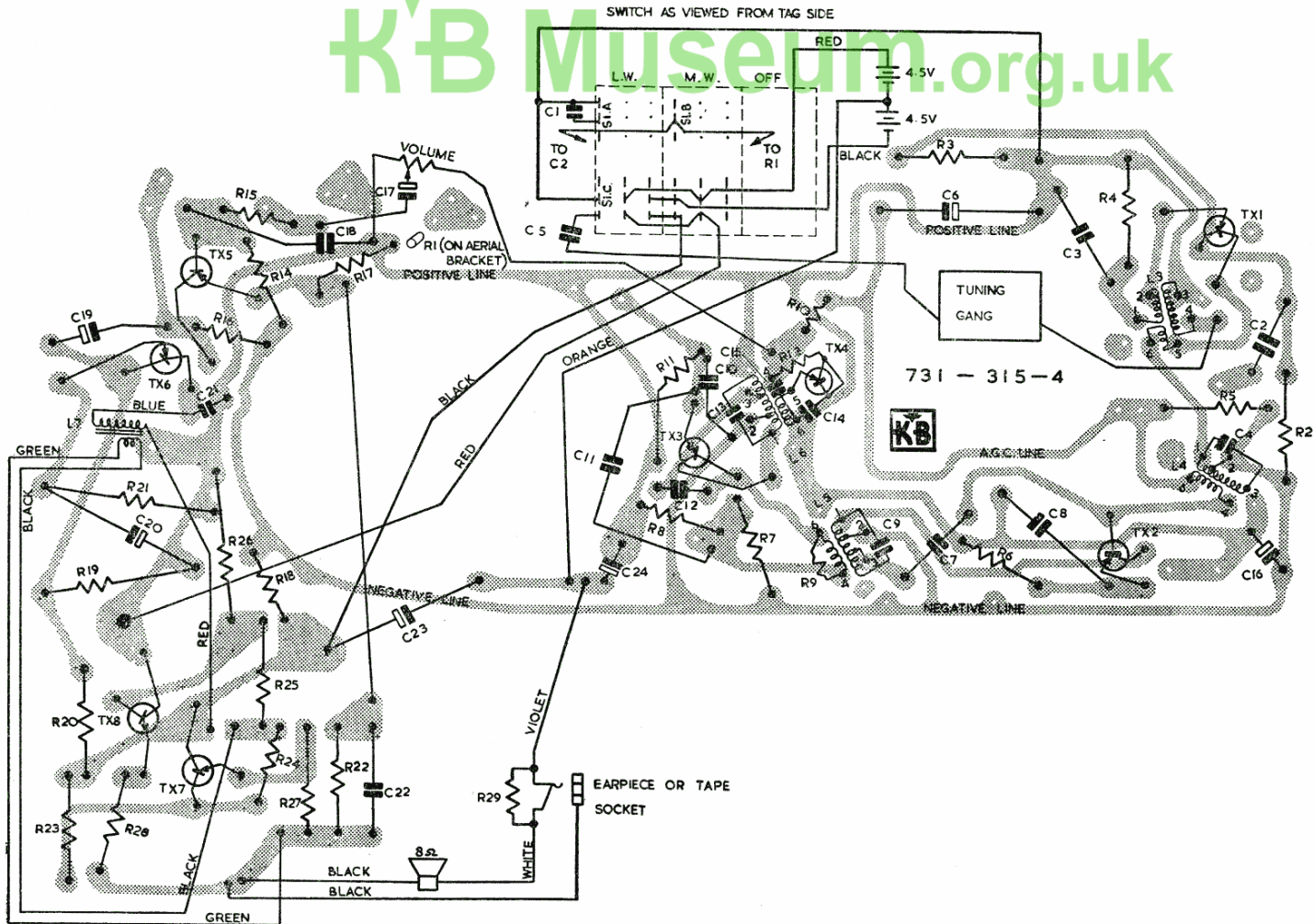
Press Buttons	Long wave band and On. Medium wave band and On.	Off. Volume Control (Thumb Drive).
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DIMENSIONS

	Height	Width	Depth
VP.21	7" (18 cms.)	9 $\frac{3}{4}$ " (25 cms.)	3 $\frac{1}{2}$ " (9 cms.)
VP.31	10" (25.5 cms.)	7 $\frac{1}{4}$ " (18.5 cms.)	3 $\frac{3}{4}$ " (9.5 cms.)

WEIGHT

VP.21	With Batteries	- - - -	3 lbs. 4 ozs. (1.48 Kgs.)
VP.31	" "	- - - -	3 lbs. 6 ozs. (1.54 Kgs.)



KB VP21

MIXER
TX1

1ST I.F.
TX2

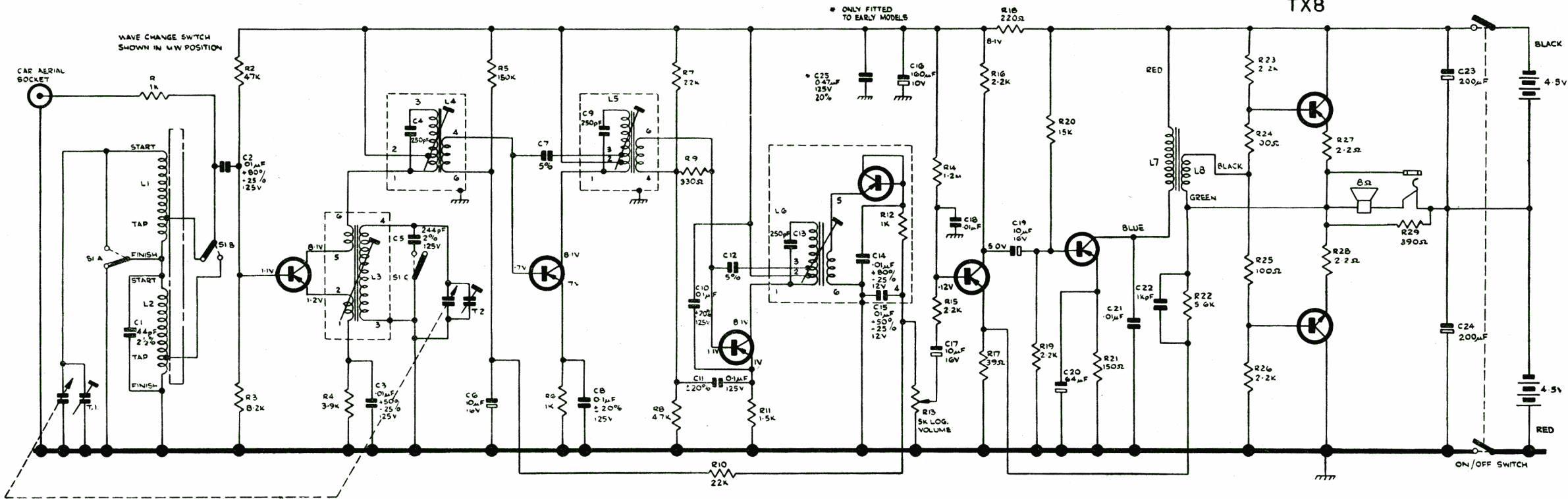
2ND I.F.
TX3

TX4

TX5

TX6

TX7
&
TX8



ALL RESISTORS $\pm 10\%$ 1/2 WATT EXCEPT WHERE STATED
CAPACITORS NEED NOT EXCEED 9V WORKING

I.F. 470 kc/s

TYPE	TX	FUNCTION	G.E.C.		T.I.		S.T.C.		MULLARD	
			TRANSISTOR	C7 & I2	TRANSISTOR	C7 & I2	TRANSISTOR	C7 & I2	TRANSISTOR	C7 & I2
PNP	1	MIXER	GET 874		2G 344A		TK 1000C		OC44 (YELLOW)	C7 & I2
PNP	2	1ST I.F.	GET 873	16pF	2G 345A	16pF	TK 1000C	24 pF	OC45 (ORANGE)	20pF
PNP	3	2ND I.F.	GET 873	16pF	2G 345B	16pF	TK 1000C	24pF	OC45 (BLUE)	20pF
PNP	4	DIODE			Y25					
PNP	5	PRE DRIVER			2G 371B	PURPLE				
PNP	6	DRIVER			2G 371B	GREEN				
PNP	7	MATCHED			2G 381A	BLACK				
NPN	8	OUTPUT PAIR			2G 330A	BLACK				

REF 3 KIT

ALIGNMENT INSTRUCTIONS FOR VP 21 & VP 31

The following equipment will be required:—

1. A.M. signal generator covering the range 140–1700 Kc/s.
2. Output power meter.
3. Shielded test coil (85 turns of enamel covered wire on 2" diameter former).

Procedure

1. All measurements made with signal modulated 30% at 400 c.p.s.
2. Progressively reduce signal input as the sensitivity increases with alignment maintaining approximately 50 mW output.

I.F. Alignment

1. Set generator to 470 Kc/s and connect via a 0.1 μ F condenser to base of mixer transistor. Set switch to M.W.
2. Set gang to minimum capacity.
3. Trim for maximum gain by adjusting cores in the following order: 3rd, 2nd, 1st, and then readjust if required.

R.F. Alignment

1. Connect signal generator to test coil.
2. The following operations should be carried out in the order indicated, being repeated as necessary until scale accuracy, with maximum sensitivity, is attained.

Operation	Input Frequency	Waveband	Gang Position	Adjustments
1	540 Kc/s	M.W.	180° (max. C)	Osc. core L3.
2	1610 Kc/s	M.W.	0° (min. C)	Osc. trimmer T.2
3	Check operation 1.			
4	600 Kc/s	M.W.	—	Move MW aerial coil for maximum gain.
5	1450 Kc/s	M.W.	—	Adjust aerial trimmer for maximum gain. T.1
6	225 Kc/s	L.W.	—	Adjust LW aerial coil for maximum gain.

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SPARE PARTS LIST VP 21 & VP 31

Prices are subject to alteration without notice.

COMPONENT	CIRCUIT REF.	PART NO.	PRICE
			£ s. d.
BATTERY			
Plug and Lead Assy.		732/125	1 6
CABINETS			
VP.21		Straight	731/4
		Golden	731/4/1
		Scarlet	731/4/2
		Carmina	731/4/3
VP.31		Blue	732/4
		Grey check	732/4/1
		Grey (wine band)	732/4/2
		Parchment	732/4/3
		Yellow	732/4/4
SPECIAL CAPACITORS			
Tuning Condenser		682/210	1 0 3
200µF 6.4v.	C23, C24	KEM191/S	2 2
160µF 10v.	C16	KEM162/S	1 10
64µF 10v.	C20	KEM181/S	1 10
10µF 16v.	C6, C17, C19	KEM164/S	2 0
44pF 2½%	C1	KST289	1 0
244pF 2%	C5	KST297	1 0
NEUTRALISING CAPACITORS			
16pF	C7, C12	KST280	1 0
20pF	C7, C12	KST310	1 0
24pF	C7, C12	KST283	1 0
INDUCTANCES			
Rod Aerial Assy.	L1, L2	731/31	8 8
MW Aerial Coil	L1	682/22	2 2
LW Aerial Coil	L2	682/25	3 0
Sleeve		29/65/1	1 0
Ferrite Rod		433/199/7	3 3
Aerial Mounting Pillars		682/204	8
Oscillator Coil	L3	682/57	6 2
1st I.F. Coil	L4	598/58	9 7
2nd I.F. Coil	L5	598/59	11 0
3rd I.F. Coil	L6	32/6	13 6
Interstage Transformer	L7, L8	39/AC/4	7 9
KNOBS			
Tuning Knob Assy. Gold		682/132	10 9
Tuning Knob Assy. Silver		682/132/1	12 7
SPECIAL RESISTORS			
2.2Ω ±½Ω	R27, R28	R2D2KED	1 0
Volume Control	R13	9/25/3	3 10
SWITCHES			
Push Button Switch Assy.		13/67/3	15 3
SPEAKER		11/108	£1 8 9 + 3 9 P/Tax
MISCELLANEOUS			
Car Aerial Socket		13/79/2	8
Earphone Jack Socket		13/72/1	1 10