Supplement to Electrical and Electronic Trader
17 September 1971

Trader
Service
Sheet

1996

DECCA Dauphine

PR200 ~~1966~~

Portable a.m./f.m. radio receiver

Introduction

The Decca Dauphine, model PR200, a.m./f.m. portable radio covers v. 1,000-2,000m (300-150kHz), .w. 185-594m (1,620-505kHz) and .h.f./f.m. 87·5-108MHz.

Reception for long and medium wavebands is via a ferrite rod aerial assembly, for v.h.f./f.m. a telescopic rod is fitted.

An output of 220mW is handled with a 4in diameter 8Ω loudspeaker. Power supplied from a 4·5V battery made up with three 1·5V cells type SP2 or their equivalent.

Controls are: tuning and on-off/volume mounted on the right-hand front of case and waveband switching – a slide operated switch at the rear of the case.

A normally closed jack is also fitted for earphone connection.

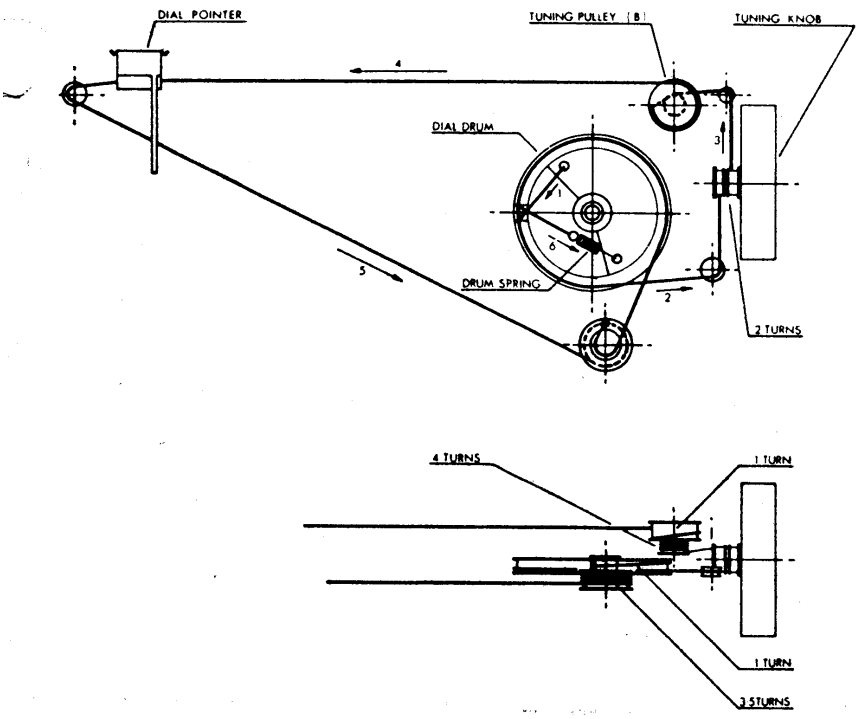
Circuit alignment

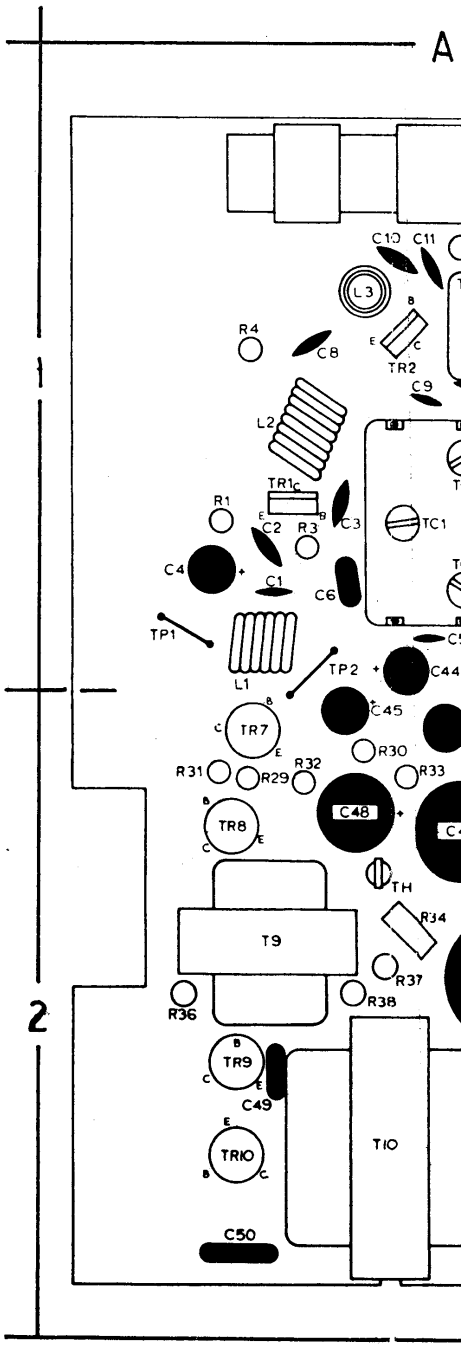
Equipment required. – An a.m./f.m. signal generator, a sweep generator – sweep centred on 470kHz for a.m. and 10·7MHz for f.m., an r.f. coupling coil, an electronic voltmeter and a c.r.o. (oscilloscope).

Check source voltage and, except for i.f. alignment, rotate volume to maximum and maintain approximately 50mW audio output by suitably attenuating input signal level.

1. – Connect c.r.o. to TP3, switch receiver to m.w. and rotate tuning gang to maximum capacitance. Terminate sweep generator in an r.f. coupling coil and loosely couple to ferrite rod aerial then feed in a sweep centred on 470kHz.

2. – Adjust **T6, T7** and **T8** for maximum trace amplitude. Repeat for optimum results.





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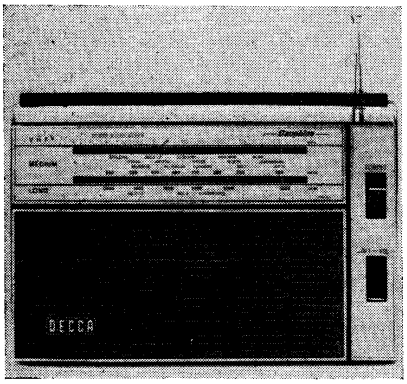

Decca Dauphine, model PR200

3. – Transfer r.f. coupling coil to signal generator, disconnect c.r.o. and connect an electronic voltmeter across loudspeaker voice coil. Loosely couple signal generator output to ferrite rod aerial assembly.

4. – Tune receiver to 594m and feed in a 505kHz a.m. signal. Adjust **L7** for maximum output.

5. – Tune receiver to 182m and feed in a 1,650kHz a.m. signal. Adjust **TC6** for maximum output.

6. – Repeat operations 4 and 5 to obtain frequency range.

7. – Tune receiver to 500m and feed in a 600kHz a.m. signal. Adjust position of **L5** on ferrite rod for maximum output.

8. – Tune receiver to 214m and feed in a 1,400kHz a.m. signal. Adjust **TC4** for maximum output.

9. – Repeat operations 7 and 8 as necessary to minimize tracking error, also operation 5 if found necessary.

10. – Switch receiver to l.w. and tune to 2,143m. Feed in a 140kHz a.m. signal and adjust **L6** for maximum output.

11. – Tune receiver to 968m and feed in a 310kHz a.m. signal. Adjust **TC5** for maximum output.

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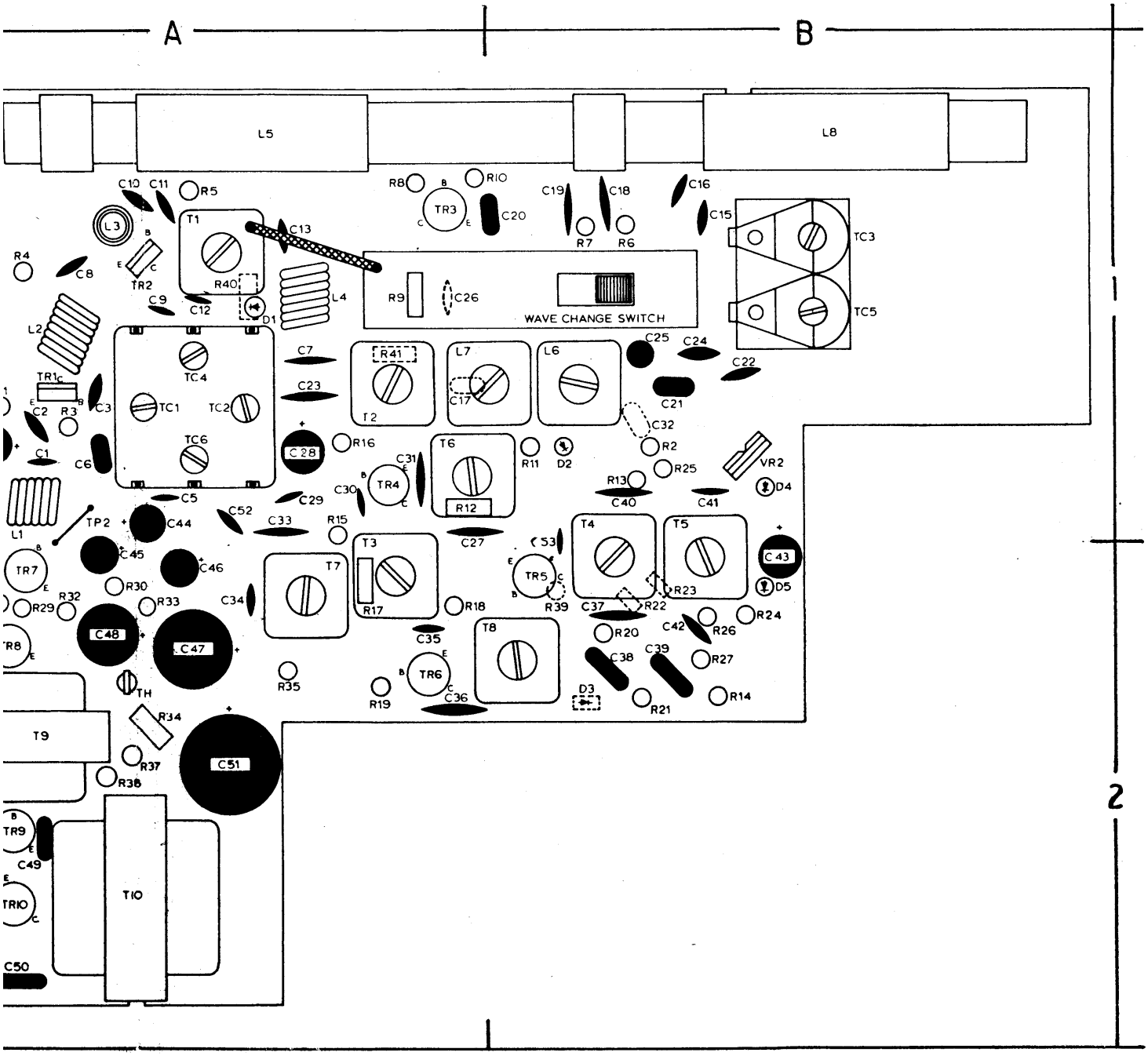

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DECCA PR200

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12. – Repeat operations 10 and 11 as necessary to obtain frequency range.

13. – Tune receiver to 1,714m and feed in a 175kHz a.m. signal. Adjust position of **L8** on ferrite rod for maximum output.

14. – Tune receiver to 1,200m and feed in a 250kHz a.m. signal. Adjust **TC3** for maximum output.

Transistor analysis

Transistor voltages quoted in the table were obtained from information supplied by the manufacturers. They were measured under quiescent conditions with an Avo model 8 switched to the 10V d.c. range. They are all negative with respect to battery positive.

15. – Repeat operations 13 and 14 as necessary to minimize tracking error, also operation 11 if found necessary. Disconnect test equipment.

16. – Connect c.r.o. to TP3 and then sweep generator between TP1 and TP2. Switch receiver to v.h.f./f.m. and rotate tuning gang to minimum capacitance. Feed in a sweep centred on 10·7MHz and adjust **T1, T2, T3, T4** and **T5** for maximum symmetrical response about 10·7MHz. Repeat these adjustments as necessary for an optimum 'S' curve. Disconnect test equipment.

17. – Disconnect lead to telescopic aerial and connect f.m. signal generator output via a matching pad if necessary – to this lead. Connect an electronic voltmeter across loudspeaker voice coil.

18. – Switch receiver to v.h.f./f.m. and tune to **87**MHz. Feed in an 87MHz f.m. signal and adjust **L4** for maximum output.

19. – Tune receiver to 109MHz and feed in a 109MHz f.m. signal. Adjust **TC2** for maximum output.

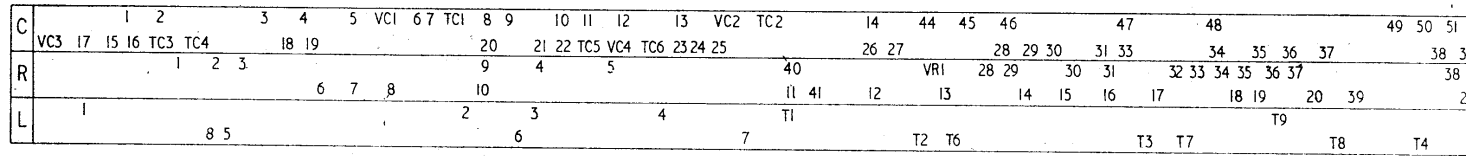
20. – Repeat operations 18 and 19 as necessary to obtain frequency range.

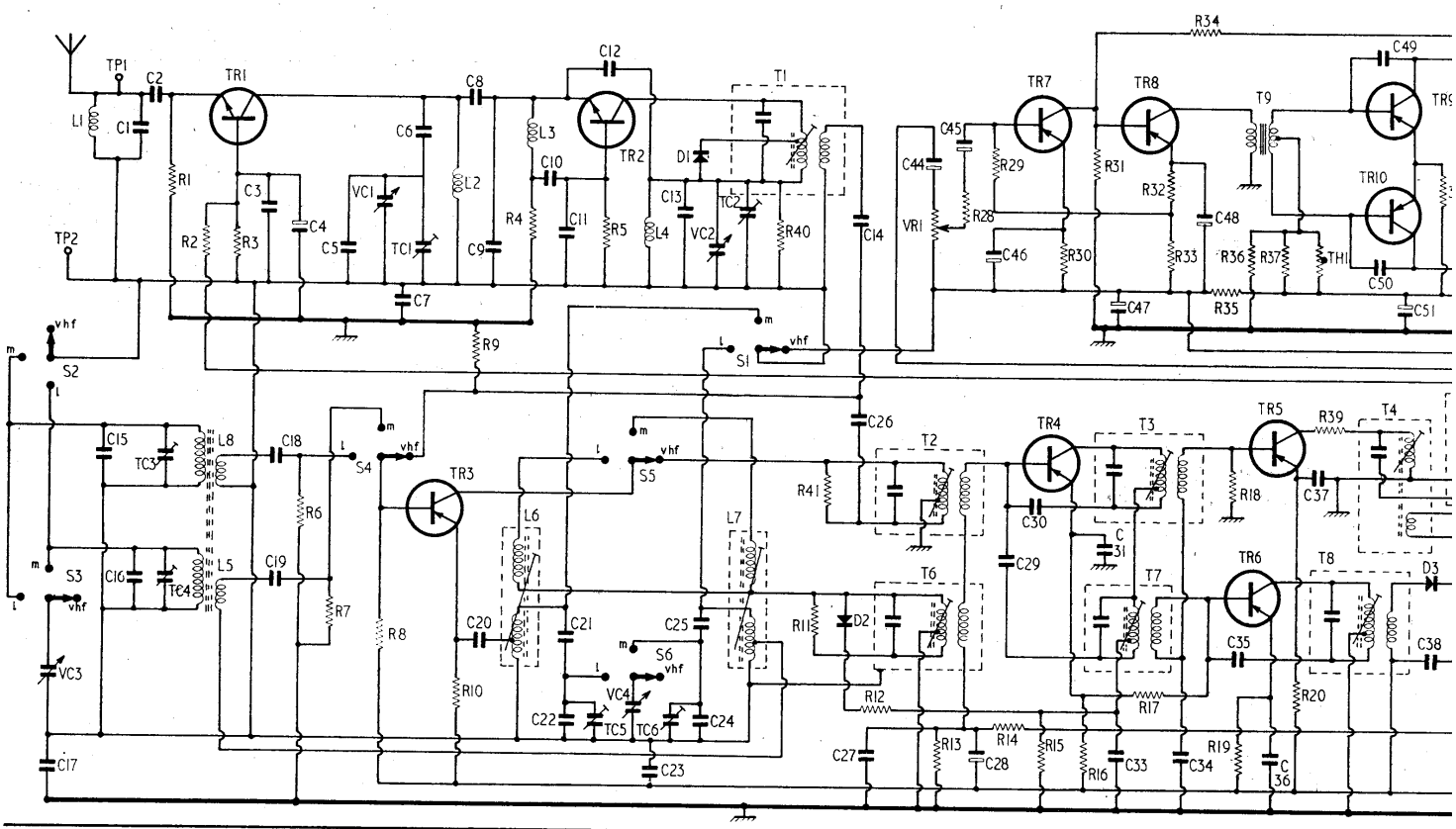
21. – Tune receiver to 88MHz and feed in an 88MHz f.m. signal. Adjust **L2** for maximum output.

Transistor table

Transistor		A.M. Emitter (V)	Base (V)	Collector (V)	F.M. Emitter (V)	Base (V)	Collector (V)
TR1	2SC535	4·8	4·5	4·2	4·5	3·6	0·9
TR2	2SC535	4·7	4·1	4·2	3·4	1·9	0·9
TR3	2SA350	1·4	1·5	4·8	2·3	2·5	4·8
TR4	2SA350	1·2	1·35	3·6	1·35	1·5	3·6
TR5	2SA234	4·8	4·8	4·0	4·8	1·4	4·1
TR6	2SA353	1·1	1·3	4·8	1·3	1·45	4·8
TR7	2SB75	1·0	1·2	1·6	1·2	1·3	1·8
TR8	2SB75	1·5	1·6	4·5	1·7	1·8	4·5
TR9	2SB77	0·05	4·2	4·8	0·05	4·2	4·8
TR10	2SB77	0·05	4·2	4·8	0·05	4·2	4·8

PR 200 circuit diagram. Note: A capacitator **C52** *is connected from junction* **C24/L7** *to chassis. The connection from* **L7** *to* **T6** *can and must be deleted.*





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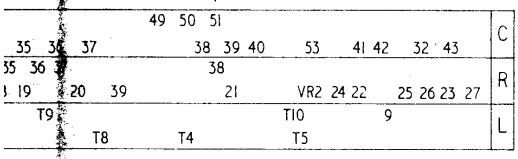
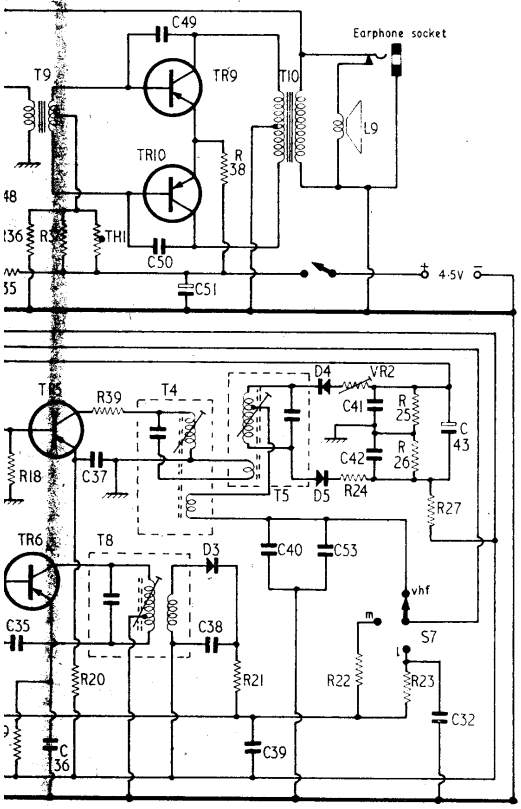
22. – Tune receiver to 106MHz and feed in a 106MHz f.m. signal. Adjust **TC1** for maximum output.

23. – Repeat operations 21 and 22 as necessary to minimize tracking error, also operation 20 if necessary. Disconnect test equipment.

Resistors			R27	100kΩ	B2
			R28*	1kΩ	—
R1	330Ω	A1	R29	4·7kΩ	A2
R2	6·8kΩ	B1	R30	390Ω	A2
R3	22kΩ	A1	R31	4·7kΩ	A2
R4	3·3kΩ	A1	R32	150Ω	A2
R5	330Ω	A1	R33	270Ω	A2
R6	15kΩ	B1	R34	33kΩ	A2
R7	22kΩ	B1	R35	100Ω	A2
R8	5·6kΩ	A1	R36	2·7kΩ	A2
R9	6·8kΩ	A1	R37	180Ω	A2
R10	1·5kΩ	A1	R38	2·7Ω	A2
R11*	180kΩ	B1	R39	470Ω	B2
R12	2·7kΩ	A1	R40*	10kΩ	A1
R13	39kΩ	B1	R41*	27kΩ	A1
R14	5·6kΩ	B2	VR1	10kΩ	—
R15	1kΩ	A1	VR2	1·5kΩ	B1
R16	390Ω	A1			
R17	1kΩ	A2	**Capacitors**		
R18	27kΩ	A2			
R19	330Ω	A2	C1	30pF	A1
R20	220Ω	B2	C2	25pF	A1
R21	470Ω	B2	C3	0·01μF	A1
R22*	6·8kΩ	B2	C4	4·7μF	A1
R23*	8·2kΩ	B2	C5	10pF	A1
R24	560Ω	B2	C6	80pF	A1
R25	2·7kΩ	B1	C7	0·02μF	A1
R26	2·7kΩ	B2	C8	3pF	A1





C49	25pF	A1
C10	300pF	A1
C11	0·01μF	A1
C12	3pF	A1
C13	12pF	A1
C14	0·01μF	—
C15	35pF	B1
C16	4pF	B1
C17	0·04μF	A1
C18	0·01μF	B1
C19	0·01μF	B1
C20	0·01μF	B1
C21	100pF	B1
C22	60pF	B1
C23	0·02μF	A1
C24	7pF	B1
C25	270pF	B1
C26	3pF	A1
C27	0·02μF	A1
C28	10μF	A1
C29	4pF	A1
C30	3pF	A1
C31	0·04μF	A1
C32	0·068μF	B1
C33	0·04μF	A1
C34	0·02μF	A2
C35	1pF	A2
C36	0·04μF	A2
C37	0·02μF	B2
C38	0·022μF	B2
C39	0·015μF	B2
C40	0·01μF	B1
C41	2,000pF	B1
C42	2,000pF	B2
C43	10μF	B2
C44	4·7μF	A1
C45	4·7μF	A2
C46	33μF	A2
C47	220μF	A2
C48	47μF	A2
C49	0·01μF	A2
C50	0·01μF	A2
C51	470μF	A2
C52	0·02μF	A1
C53	0·01μF	B1
TC1	—	A1
TC2	—	A1
TC3	—	B1
TC4	—	A1
TC5	—	B1
TC6	—	A1
VC1-4	—	—

Inductors

L1	—	A1
L2	—	A1
L3	—	A1
L4	—	A1
L5	—	A1
L6	—	B1
L7	—	B1
L8	—	B1
L9	8Ω	—
T1	—	A1
T2	—	A1
T3	—	B1
T4	—	B2
T5	—	B2
T6	—	B2
T7	—	B1
T8	—	B2
T9	—	A2
T10	—	A2

Miscellaneous

D1	1N60	A1
D2	1N34A	B1
D3	1N34A	B2
D4	1N60	B1
D5	1N60	B2
TH	MT-250	A2

** These values are nominal and may vary on every unit.*

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