

FERRANTI - A1

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial coupling coils ...	0.5
L2		2.0
L3		6.0
L4		21.0
L5	RF trans. primary coils ...	2.5
L6		3.0
L7	RF trans. secondary coils ...	6.0
L8		21.0
L9	Oscillator reaction coils ...	1.7
L10		7.7
L11	V2 cathode coupling ...	3.6
L12	Osc. MW tuning coil ...	4.5
L13	Osc. LW tuning coil ...	16.0
L14	1st IF trans. { Pri. ...	26.0
L15		26.0
L16	2nd IF trans. { Pri. ...	26.0
L17		26.0
L18	RF choke ...	200.0
L19	Speaker speech coil ...	9.0
L20	Hum neutralising coil ...	0.3
L21	Speaker field coil ...	2,000.0
T1	Interval trans. { Pri. ...	500.0
		3,000.0
T2	Speaker input trans. { Pri. ...	250.0
		0.3
	Mains trans. { Pri. total ...	24.0
		0.2
T3	Mains trans. { Heater sec. ...	0.25
		0.2
	Mains trans. { Rect. heat sec. ...	800.0
		800.0
S1	Mains aerial switch ...	—
S2-S7	Waveband switches ...	—
S8, S9	Tone control switches ...	—
S10	Mains switch ...	—

CIRCUIT ALIGNMENT

For all alignment operations, set the gain control so that not more than 7 V is measured between the slider and chassis.

IF Stages.—Connect signal generator to fixed vanes of C23 and chassis, feed in a 135 kc/s (2,222 m) signal, slacken C29 several turns, and adjust C31 and C30 for maximum output. Feed in a 140 kc/s (2,143 m) signal, and adjust C28 for maximum output. Feed in a 130 kc/s (2,308 m) signal, and adjust C29 for maximum output. Now sweep input from 125 kc/s (2,400 m) to 145 kc/s (2,069 m) and check for symmetrical peaks, repeating if necessary.

RF and Oscillator Stages.—Connect signal generator via a 0.0002 μ F capacitor to A and E connections.

MW.—Switch set to MW, tune to 200 m, feed in a 200 m (1,500 kc/s) signal, and adjust C27 for maximum output, selecting the peak involving the lesser trimmer capacitance if two are found. Tune to 228 m, feed in a 228 m (1,316 kc/s) signal, and adjust C22 and C24 for maximum output. Feed in a 540 m (555.5 kc/s) signal, tune it in and adjust the scale for correct calibration. Check calibration at 228 m, and if badly out repeat the whole process.

LW.—Switch set to LW, feed in a 1,807 m (166 kc/s) signal, tune it in and adjust C25 for maximum output while rocking the gang for optimum results.

VALVE ANALYSIS

Value	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VMS4	170	3.0	90	0.75
V2 VMS4	165	2.5	70	0.5
V3 D4	75	2.0	—	—
V4 VMS4	165	3.0	90	0.75
V5 D4	170	10.0	—	—
V6 P4	230	32.0	—	—
V7 R4	240†	—	—	—

† Not quoted; filament to chassis, approx., DC.

RESISTORS		Values (ohms)
R1	V2 GB resistor ...	900
R2	V3 CG resistor ...	100,000
R3	Parts of HT potential divider for anode and SG feeds ...	2,750
R4	...	7,340
R5	...	5,000
R6	V1, V4 gain control ...	4,020
R7	V1, V4 fixed GB ...	80
R8	V5 grid leak ...	500,000
R9	V5 GB (gram) resistor ...	250
R10	V6 CG decoupling ...	50,000
R11	V6 GB resistor ...	1,150

CAPACITORS		Values (μ F)
C1	Mains aerial coupling ...	0.0003
C2	SG's HT decoupling ...	2.0
C3	1st IF transformer fixed trimmers ...	—
C4	...	—
C5	V2 cathode by-pass ...	1.0
C6	Osc. LW fixed tracker ...	—
C7	V3 CG capacitor ...	0.0003
C8	2nd IF transformer fixed trimmers ...	0.00021
C9	...	0.00021
C10	V1, V4 cathodes by-pass ...	0.3
C11	V5 CG capacitor ...	0.00015
C12	IF by-pass capacitors ...	0.0006
C13	Anodes HT decoupling ...	2.0
C14	V6 CG decoupling ...	1.0
C15	...	0.1
C16	Tone control capacitors ...	0.2
C17	...	2.0
C18	...	4.0
C19	HT smoothing capacitors ...	6.0
C20	...	—
C21†	Aerial circuit tuning ...	—
C22†	Aerial MW trimmer ...	—
C23†	RF trans. sec. tuning ...	—
C24†	RF trans. MW trimmer ...	—
C25†	Osc. circ. LW tracker ...	—
C26†	Oscillator circuit, tuning ...	—
C27†	Osc. circ. MW trimmer ...	—
C28†	1st IF trans. pri. tuning ...	—
C29†	1st IF trans. sec. tuning ...	—
C30†	2nd IF trans. pri. tuning ...	0.0001
C31†	2nd IF trans. sec. tuning ...	0.0001

Variable. † Pre-set.

