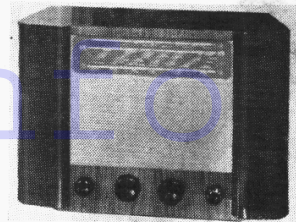


"TRADER" SERVICE SHEET
1056

JOY'S RADIO SERVICE.
SHELLENHAR ROAD.
BRISTOL 6.
FERRANTI
115



THE Ferranti 115 is provided with a heater transformer, but is otherwise designed on the lines of an A.C./D.C. receiver. It is a 4-valve (plus rectifier) 3-band superhet operating from A.C. mains only of 200-250 V, 50-100 c/s. The waveband ranges are 16-50 m, 190-570 m and 1,000-2,000 m. There is an export model 115E which is the same in general as the Home model, but it has tapings for 105-115 V, 120-135 V and 200-225 V mains and is fitted with a 1 A fuse.

Release date and original price: July 1951. £16 9s 2d plus purchase tax.

CIRCUIT DESCRIPTION

Aerial input via coupling coils **L2** (S.W.), **L3** (M.W.) or **L4** (L.W.) to single tuned circuits **L5**, **C36** (S.W.), **L6**, **C36** (M.W.) and **L7**, **C36** (L.W.) which precede triode hexode valve (**V1**, Mullard **ECH42**) operating as frequency changer with internal coupling. I.F. filtering by **L1**, **C2**.

Oscillator grid coils **L8** (S.W.), **L9** (M.W.) and **L10** (L.W.) are tuned by **C37**. Trimming by **C38** (S.W.), **C39** (M.W.) and **C11**, **C40** (L.W.); series tracking by **C12** (S.W.), **C13** (M.W.) and **C14** (L.W.).

Second valve (**V2**, Mullard **EF41**) is a variable mu R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings **C6**, **L14**, **L15**, **C7** and **C17**, **L16**, **L17**, **C18** intermediate frequency 470 kc/s.

Diode signal detector is part of double diode triode valve (**V3**, Mullard **EBG41**). Audio frequency component in rectified output is developed across diode load **R9** and passed via **C23**, volume control **R10** and **C24** to grid of triode section. I.F. filtering by **C19**, **R8**, **C20**. Provision is made for the connection of a gramophone pick-up across **C23**, **R10** via **S20** which closes in the gram position of the waveband control.

Second diode of **V3** is fed via **C21** from **V2** anode, and the resulting D.C. potential developed across load resistor **R15** is fed back as bias to **V1** and **V2** giving automatic gain control.

Resistance-capacitance coupling by **R13**, **C25** and **R16** between **V3** triode anode and pentode

output valve (**V4**, Mullard **EL41**). Variable tone control in grid circuit by **R16**, **R17**, **C26**, **C27**. Negative feed-back, developed across **R22**, provides fixed tone correction.

H.T. current is supplied by I.H.C. full-wave rectifying valve (**V5**, Mullard **EZ40**) whose anodes are connected together via surge limiting resistors **R20**, **R21**, to form a half-wave rectifier. Smoothing by **R23**, **R24** and electrolytic capacitors **C29**, **C30**, **C31**.

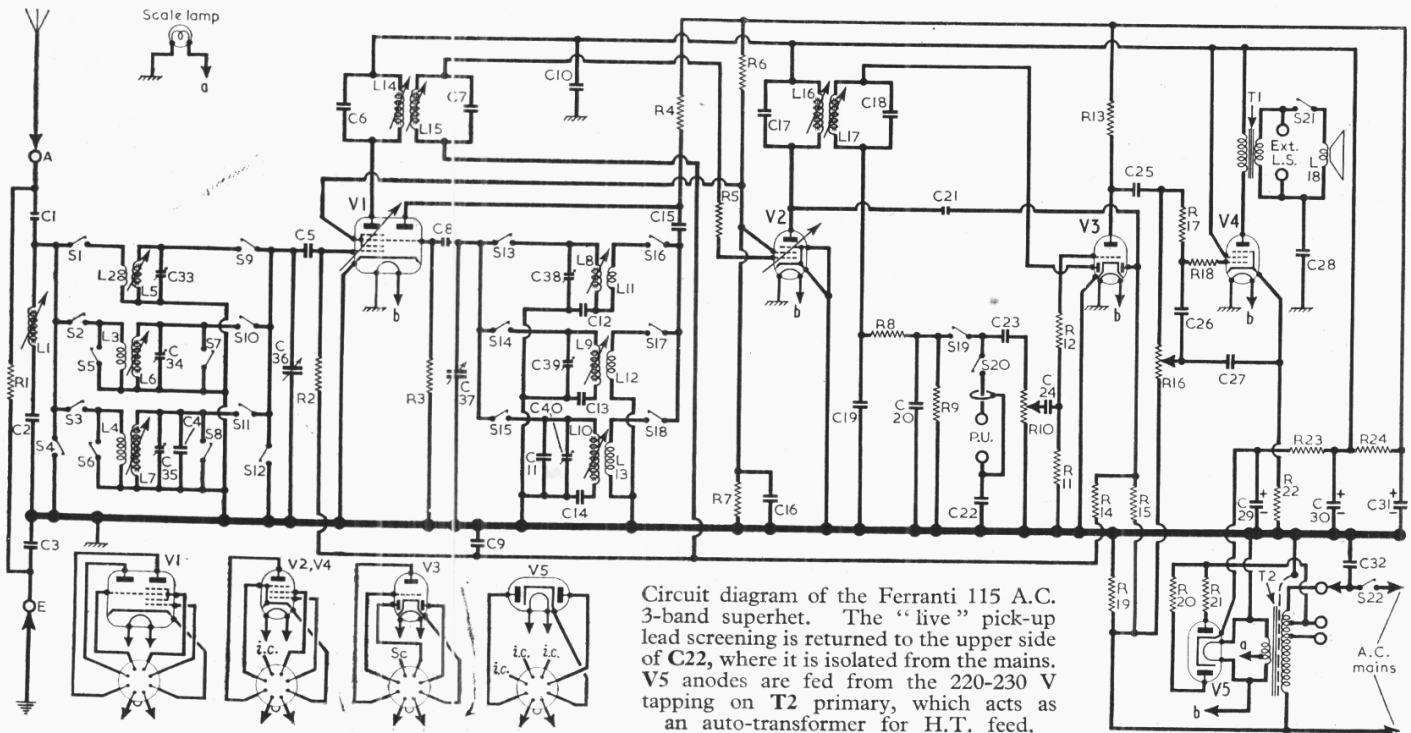
Heater transformer **T2** supplies the heaters of all the valves, including **V5**, from a single secondary winding. The scale lamp is connected to tapping **a**.

COMPONENTS AND VALUES

RESISTORS		Values	Locations
R1	Aerial shunt ...	33kΩ	F5
R2	V1 C.G. ...	1MΩ	F4
R3	V1 osc. C.G. ...	47kΩ	F5
R4	Osc. anode feed ...	22kΩ	F4
R5	S.G. C.G. stopper ...	3.3kΩ	F5
R6	S.G. potential divider ...	22kΩ	F4
R7	I.F. divider ...	27kΩ	F4
R8	Signal stopper ...	100kΩ	E5
R9	Signal diode load ...	470kΩ	E4
R10	Volume control ...	1MΩ	E3
R11	V3 C.G. ...	22MΩ	E4
R12	V3 C.G. stopper ...	4.7kΩ	E5
R13	V3 anode load ...	220kΩ	D4
R14	A.G.C. decoupling ...	1MΩ	E4
R15	A.G.C. diode load ...	1MΩ	E4
R16	Tone control ...	500kΩ	D3
R17	Part tone control ...	220kΩ	D4
R18	V4 C.G. stopper ...	100kΩ	D4
R19	Common G.B. ...	33Ω	E4
R20	V5 surge limiters ...	60Ω	C2
R21		60Ω	C2
R22	V4 G.B. ...	120Ω	D4
R23	H.T. smoothing ...	470Ω	B1
R24		1.5kΩ	D4

CAPACITORS		Values	Locations
C1	Aerial series ...	0.001μF	F5
C2	I.F. filter tune ...	30pF	F5
C3	Chassis isolator ...	0.02μF	F5
C4	L.W. aerial trim. ...	100pF	F5
C5	V1 C.G. ...	200pF	G5
C6	1st I.F. trans. {	100pF	B2
C7		tuning ...	100pF
C8	V1 osc. C.G. ...	50pF	A2
C9	A.G.C. decoupling ...	0.1μF	E4
C10	H.T. by-pass ...	0.1μF	E4
C11	L.W. osc. trim. ...	150pF	F3
C12	S.W. osc. tracker ...	0.004μF	F3
C13	M.W. osc. tracker ...	520pF	G3
C14	L.W. osc. tracker ...	200pF	G3
C15	Osc. anode coup. ...	200pF	F5
C16	S.G. decoupling ...	0.1μF	E4
C17	2nd I.F. trans. {	100pF	B2
C18		tuning ...	300pF
C19	I.F. by-passes ...	100pF	E5
C20		100pF	E5
C21	A.G.C. coupling ...	50pF	E5
C22	P.U. isolator ...	0.02μF	E4
C23	A.F. couplers ...	0.01μF	E3
C24		0.01μF	E4
C25	Part tone control ...	0.005μF	D4
C26		0.002μF	D4
C27	Ext. L.S. isolator ...	20pF	E5
C28		0.02μF	E5
C29*	H.T. smoothing ...	32μF	B1
C30*		32μF	B1
C31*	Mains R.F. by-pass ...	16μF	E3
C32		0.02μF	E3
C33†	S.W. aerial trim. ...	50pF	B2
C34†	M.W. aerial trim. ...	50pF	A2
C35†	L.W. aerial trim. ...	50pF	A2
C36†	Aerial tuning ...	—	A1
C37†	Oscillator tuning ...	—	A1
C38†	S.W. osc. trim. ...	50pF	B1
C39†	M.W. osc. trim. ...	50pF	B1
C40†	L.W. osc. trim. ...	50pF	B1

* Electrolytic. † Variable. ‡ Pre-set.



Circuit diagram of the Ferranti 115 A.C. 3-band superhet. The "live" pick-up lead screening is returned to the upper side of **C22**, where it is isolated from the mains. **V5** anodes are fed from the 220-230 V tapping on **T2** primary, which acts as an auto-transformer for H.T. feed.

