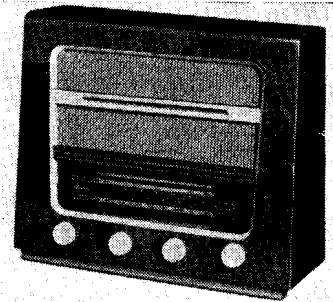


"TRADER" SERVICE SHEET
991

ETRONIC ETA5316



DESIGNED to operate from A.C. mains only of 200-250V, 50c/s, the Etronic ETA5316 is a 4-valve (plus rectifier) 3-band superhet. The waveband ranges are 15-51 m, 190-550m and 1,000-2,000m. Provision is made for the connection of a gramophone pick-up, which may be left connected permanently, and an external speaker.

There is an A.C./D.C. version of this receiver, called the ETU5316, and this is covered separately in Service Sheet 992.

Release date and original price: October, 1950; £15 11s 5d. Purchase tax extra.

CIRCUIT DESCRIPTION

Aerial input via coupling coil **L1** (S.W.) and "bottom" capacitance coupling **C2** (M.W. and L.W.) to single tuned circuits **L2, C29** (S.W.), **L3, C29** (M.W.) and **L4, C29** (L.W.). Modulation hum is bypassed by **R1**.

First valve (**V1, Brimar 7S7**) is a triode-hexode operating as frequency changer with internal coupling. Oscillator anode coils **L7** (S.W.), **L8** (M.W.) and **L9** (L.W.) are tuned by **C33**. Parallel trimming by **C30** (S.W.), **C31** (M.W.) and **C10, C32** (L.W.); series tracking by **C7** (S.W.), **C8** (M.W.) and **C9** (L.W.). Reaction coupling from grid across the common impedance of the trackers, with the addition of inductive coupling by **L5** (S.W.) and **L6** (M.W.). Stabilization by **R6**.

Second valve (**V2, Brimar 7B7**) is a variable-mu R.F. pentode operating as intermediate frequency amplifier with tuned transformer couplings **C3, L10, L11, C4** and **C13, L12, L13, C14**.

Intermediate frequency 470 kc/s.

Diode signal detector is part of double-diode triode valve (**V3, Brimar 6Q7GT**). A.F. component in rectified output is developed across volume control **R11**, which acts as the diode load, and is passed via **C17** to the grid of the triode section. I.F. filtering by **C16, R10, C18** and **C19**. Provision is made for the connection of a gramophone pick-up across **R11** via **S10**, which closes in the "Gram." position of the waveband switch. D.C. potential developed across **R10, R11** is fed back as bias to F.C. and I.F. valves, giving automatic gain control.

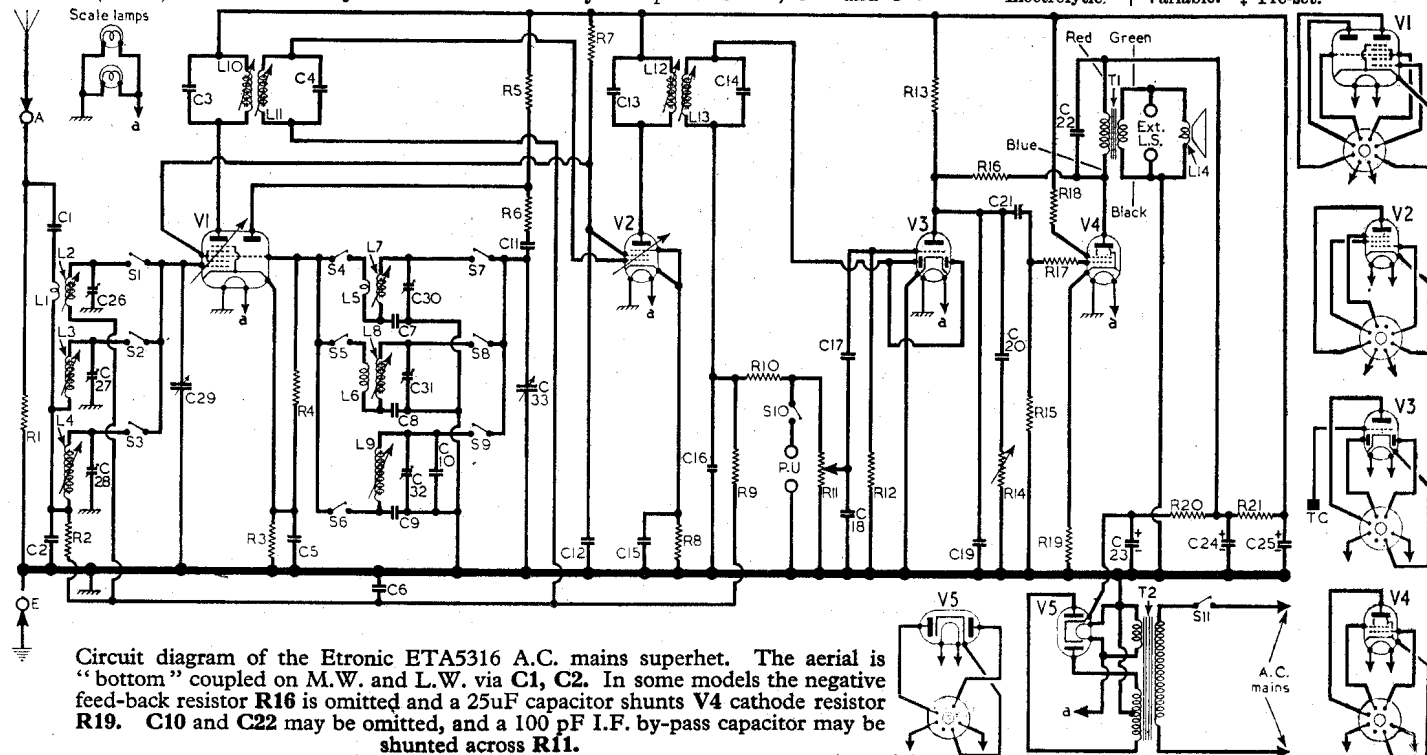
Resistance-capacitance coupling by **R13, C21** and **R15** between **V3** triode and beam tetrode output valve (**V4, Brimar 6V6GT**). Variable tone control by **C20** and **R14**. Tone correction by **C22** and by negative feed-back between **V3** and **V4** anodes via **R16**. Grid and screen-grid stoppers **R17, R18** suppress parasitic oscillation developing in **V4**.

H.T. current is supplied by I.H.C. full-wave rectifying valve (**V5, Brimar 6X5GT**) whose heater is fed from the same winding on **T2** as the other valves. Smoothing by resistors **R20, R21** and electrolytic capacitors **C23, C24** and **C25**.

COMPONENTS AND VALUES

| CAPACITORS | | Values | Locations |
|------------|------------------------|----------|-----------|
| C1 | Aerial series | 0.002μF | G4 |
| C2 | Aerial coupling | 0.0032μF | G4 |
| C3 | 1st I.F. trans. tuning | 120pF | A2 |
| C4 | | 120pF | A2 |
| C5 | V1 cath. by-pass | 0.1μF | G4 |
| C6 | A.G.C. decoupling | 0.05μF | F4 |
| C7 | S.W. tracker | 0.0025μF | G4 |
| C8 | M.W. tracker | 410pF | G3 |
| C9 | L.W. tracker | 150pF | G4 |
| C10 | L.W. trimmer | 150pF | G3 |
| C11 | Osc. anode coup. | 50pF | G4 |
| C12 | H.T. decoupling | 0.1μF | F4 |
| C13 | 2nd I.F. trans. tuning | 120pF | B2 |
| C14 | | 120pF | B2 |
| C15 | V2 cath. by-pass | 0.1μF | F4 |
| C16 | I.F. by-pass | 100pF | F3 |
| C17 | A.F. coupling | 0.005μF | E3 |
| C18 | I.F. by-passes | 100pF | E3 |
| C19 | | 400pF | E4 |
| C20 | Part tone control | 0.01μF | E4 |
| C21 | A.F. coupling | 0.01μF | E4 |
| C22 | Tone correction | 0.01μF | E3 |
| C23* | H.T. smoothing | 16μF | B1 |
| C24* | | 16μF | B1 |
| C25* | | 16μF | B1 |
| C26† | S.W. aerial trim. | — | G3 |
| C27† | M.W. aerial trim. | — | G3 |
| C28† | L.W. aerial trim. | — | G4 |
| C29† | Aerial tuning | — | A1 |
| C30† | S.W. osc. trimming | — | G3 |
| C31† | M.W. osc. trimming | — | G3 |
| C32† | L.W. osc. trimming | — | G4 |
| C33† | Oscillator tuning | — | A2 |

* Electrolytic. † Variable. ‡ Pre-set.



Circuit diagram of the Etronic ETA5316 A.C. mains superhet. The aerial is "bottom" coupled on M.W. and L.W. via **C1, C2**. In some models the negative feed-back resistor **R16** is omitted and a 25μF capacitor shunts **V4** cathode resistor **R19**. **C10** and **C22** may be omitted, and a 100 pF I.F. by-pass capacitor may be shunted across **R11**.

