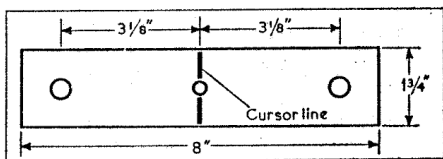


OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Frame aerial ...	2-0	B1
L2	L.W. loading coil...	9-5	A1
L3	Oscillator tuning coils ...	2-6	E3
L4	Oscillator reaction coils ...	13-0	E4
L5	Oscillator reaction coils ...	1-2	E3
L6	Oscillator reaction coils ...	6-0	E4
L7	1st I.F. { Pri. ...	10-0	A2
L8	trans. { Sec. ...	10-0	A2
L9	2nd I.F. { Pri. ...	10-0	B2
L10	trans. { Sec. ...	10-0	B2
L11	Speech coil ...	2-0	D3
T1	O.P. trans. { Pri. ...	500-0	D3
S1-S7	Waveband switches { Sec. ...	0-5	D3
S8, S9	Power sw., g'd 1 & 7...	—	B2
S10-			
S14	Mains/batt. sw. ...	—	C3
MR1	SenTerCel DRM2	—	C4



Dimensioned drawing of the substitute cursor-line panel.

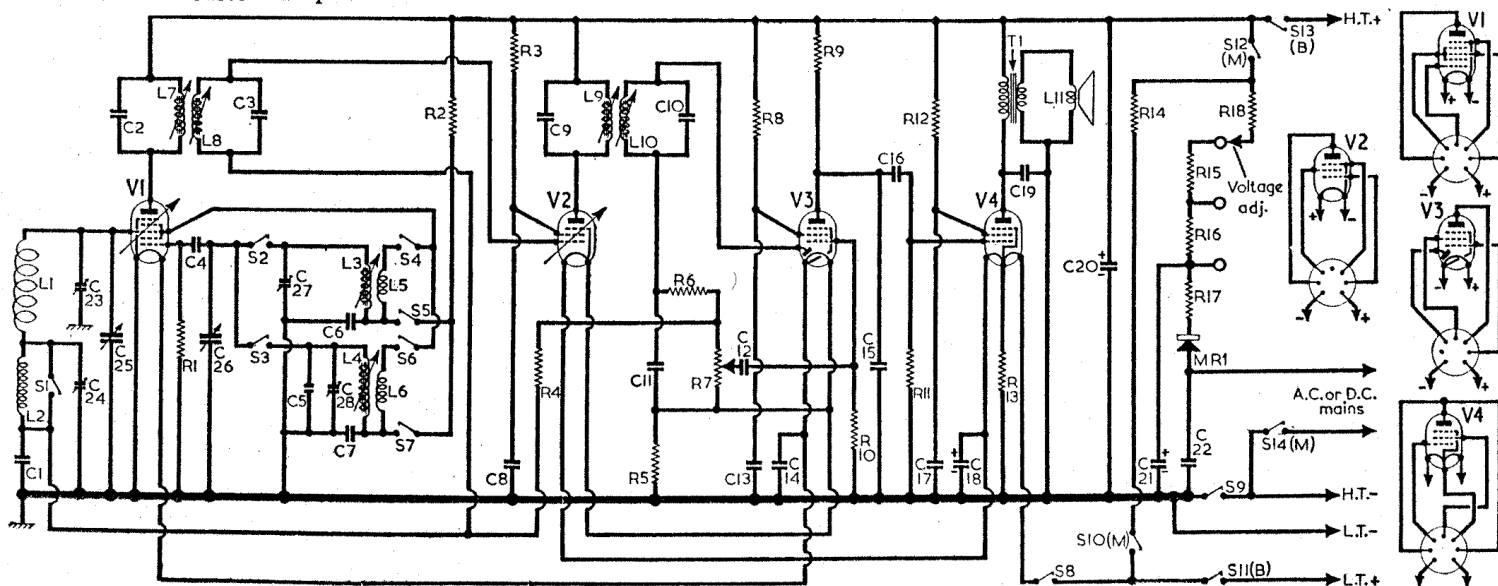
## ETRONIC - EPZ4213

Intermediate frequency 470 kc/s.

RESISTORS		Values	Locations
R1	V1 osc. C.G. ...	100kΩ	D4
R2	Osc. anode feed ...	15kΩ	D4
R3	V2 S.G. feed ...	47kΩ	D4
R4	A.G.C. decoupling	2-2MΩ	D4
R5	Filament shunt ...	1kΩ	C4
R6	I.F. stopper ...	47kΩ	D4
R7	Volume control ...	500kΩ	B2
R8	V3 S.G. feed ...	3-3MΩ	D4
R9	V3 anode load ...	1MΩ	D4
R10	V3 C.G. ...	10MΩ	C4
R11	V4 C.G. ...	2-2MΩ	C4
R12	V4 S.G. feed ...	8-2kΩ	C4
R13	Filament shunt ...	1-8kΩ	C4
R14	Filament ballast ...	1-68kΩ	B1
R15	Ballast and H.T. smoothing	400Ω	B1
R16		410Ω	B1
R17		225Ω	B1
R18		1-4kΩ	B1

CAPACITORS		Values	Locations
C1	A.G.C. decoupling	0-05μF	D4
C2	1st I.F. trans. tun. {	120pF	A2
C3		120pF	A2
C4	V1 osc. G. ...	0-002μF	D4
C5	L.W. fixed trim. ...	80pF	B3
C6	M.W. osc. tracker...	500pF	B3
C7	L.W. osc. tracker...	175pF	E4
C8	V2 S.G. decoup. ...	0-1μF	D4
C9	2nd I.F. trans. tun. {	120pF	B2
C10		120pF	B2
C11	I.F. by-pass ...	100pF	D4
C12	A.F. coupling ...	0-005μF	D4
C13	V3 S.G. decoup. ...	0-01μF	D4
C14	Filament by-pass...	0-05μF	E4
C15	I.F. by-pass ...	100pF	C4
C16	A.F. coupling ...	0-02μF	C4
C17	V4 S.G. decoup. ...	0-1μF	C4
C18*	Filament by-pass...	50pF	A2
C19	Tone corrector ...	0-002μF	C4
C20*	H.T. smoothing {	32μF	A2
C21*		32μF	A2
C22	R.F. filter ...	0-01μF	C4
C23†	M.W. aerial trim...	60pF	B4
C24†	L.W. aerial trim...	60pF	B4
C25†	Aerial tuning ...	—	D4
C26†	Oscillator tuning ...	—	D4
C27†	M.W. osc. trimmer	60pF	B3
C28†	L.W. osc. trimmer	60pF	B3

\* Electrolytic. † Variable. ‡ Pre-set.



### VALVE ANALYSIS

Valve	Anode		Screen	
	V	mA	V	mA
V1 X17	90	1-0	62	1-8
V2 W17	90	1-6	65	0-5
V3 ZD17	29	0-07	37	0-02
V4 N18	88	5-0	82	1-2

### CIRCUIT ALIGNMENT

Remove chassis from carrying case and stand on its waveband-switch end on the bench.

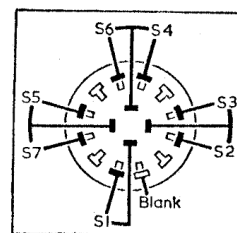
**I.F. Stages.**—Connect output leads of signal generator, via an 0.1μF capacitor in the "live" lead, to control grid (pin 4) of V1 and chassis. Switch set to M.W. and turn gang to maximum. Feed in a 470 kc/s (638.3m) signal and adjust the cores of L10 (location reference B2), L9 (D4), L8 (A2) and L7 (D4) for maximum output. Repeat these adjustments.

**R.F. and Oscillator stages.**—As the cursor line is marked on the scale window, which remains in the carrying case when the chassis is withdrawn, a strip of card should be cut and marked as shown in col. 3 to represent the cursor line. The card should be fitted over the control spindles, and the following alignment points read off against the cursor lines on to the scales below it. Check that

with the gang at maximum capacitance the cursor lines on the card coincide with the ends of the tuning scales. Transfer signal generator leads to an aerial loop placed in close proximity to the frame aerial winding.

**M.W.**—Switch set to M.W., tune to 500 m on scale, feed in a 500 m (600 kc/s) signal and adjust L3 (A1) for maximum output. Tune set to 200 m on scale, feed in a 200 m (1,500 kc/s) signal and adjust C27 (A1) and C23 (A2) for maximum output. Repeat these adjustments.

**L.W.**—Switch set to L.W., tune to 2,000 m on scale, feed in a 2,000 m (150 kc/s) signal and adjust the core of L4 (A2) for maximum output. Tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal and adjust C28 (A1) and C24 (A2) for maximum output. Repeat these adjustments.



Above : Diagram of the waveband switch unit.