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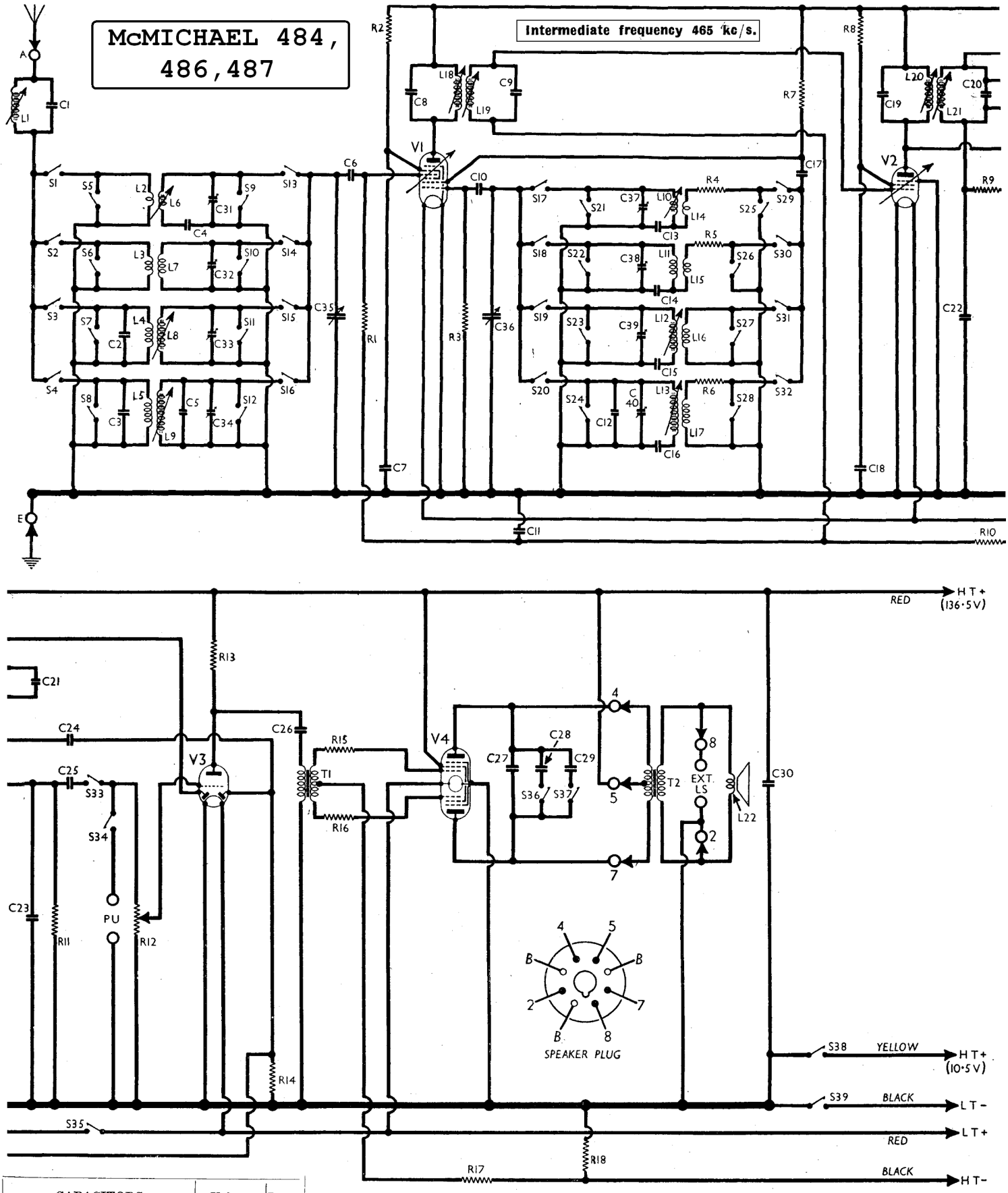


CAPACITORS		Values (μF)	Locations
C1	I.F. rejector tune	0.0005	J7
C2	Aerial M.W. shunt	0.0001	J4
C3	Aerial L.W. shunt	0.001	G4
C4	Aerial S.W.1. track	0.0015	G5
C5	Aerial L.W. trim...	0·000025	G4
C6	V1 pent C.G. ...	0·00015	C2
C7	V1 S.G. decoup. ...	0·1	H7
C8	1st I.F. transformer tuning	0·0001	A3
C9		0·0001	A3
C10	V1 osc. C.G. ...	0·00015	H7
C11	A.V.C. decoupling	0·1	K7
C12	Osc. L.W. trim. ...	0·000025	G6
C13	Osc. S.W.1. track	0·001	G6
C14	Osc. S.W.2. track...	0·0018	J7
C15	Osc. M.W. track ...	0·000538	J6
C16	Osc. L.W. track ...	0·00016	G6
C17	Osc. anode coup ...	0·0002	H7
C18	V2 S.G. decoup ...	0·1	K5
C19	2nd I.F. transformer tuning	0·0001	A2
C20		0·0001	A2
C21	I.F. by-passes ...	0·000005	K5
C22		0·0001	K5
C23		0·0001	K5
C24	A.V.C. coupling ...	0·000025	K5
C25	A.F. coupling capacitors	0·01	K5
C26		0·1	F5
C27	Tone corrector ...	0·002	F4
C28	Tone control capacitors	0·005	F4
C29		0·02	F4
C30	H.T. reservoir ...	0·5	K7
C31‡	Aerial S.W.1. trim.	0·00004	G5
C32‡	Aerial S.W.2. trim.	0·00004	J5
C33‡	Aerial M.W. trim.	0·00004	J5
C34‡	Aerial L.W. trim....	0·00004	G5
C35†	Aerial tuning ...	—	C2
C36†	Osc. tuning ...	—	C2
C37‡	Osc. S.W.1. trim....	0·00004	G7
C38‡	Osc. S.W.2. trim....	0·00004	J7
C39‡	Osc. M.W. trim. ...	0·00004	J7
C40‡	Osc. L.W. trim. ...	0·00004	G7

‡ Variable. † Pre-set.

	RESISTORS	Values (ohms)	Locations
R1	V1 pent. C.G. ...	470,000	C3
R2	V1 S.G. feed ...	47,000	H7
R3	V1 osc. C.G. ...	33,000	H7
R4	Oscillator stabilizing resistors ...	22	H7
R5		270	H7
R6		470	H6
R7	Osc. H.T. feed ...	22,000	H7
R8	V2 S.G. feed ...	120,000	K6
R9	I.F. stopper ...	22,000	K5
R10	A.V.C. decoupling	470,000	K4
R11	Sig. diode load ...	470,000	K5
R12	Volume control ...	1,000,000	K4
R13	V3 triode load ...	120,000	K4
R14	A.V.C. diode load	470,000	K4
R15	V4 grid stoppers	1,200	F6
R16		1,200	F6
R17	V4 G.B. decoup. ...	33,000	F6
R18	V4 G.B. resistor ...	1,200	F6

	OTHER COMPONENTS	Approx. Values (ohms)	Locations
L1	I.F. rejector coil ...	4·0	J7
L2	Aerial coupling coils	Very low	G5
L3		0·6	J5
L4		16·0	J4
L5		27·0	G4
L6	Aerial tuning coils	Very low	G5
L7		0·5	J5
L8		2·6	J4
L9		19·0	G4
L10	Oscillator tuning coils	Very low	G7
L11		0·4	J7
L12		1·7	J6
L13		7·3	G6
L14	Oscillator reaction coils	0·5	G7
L15		1·2	J7
L16		1·4	J6
L17		3·0	G6
L18	1st I.F. trans. Pri.	10·0	A3
L19	1st I.F. trans. Sec.	10·0	A3
L20	2nd I.F. trans. Pri.	10·0	A2
L21	2nd I.F. trans. Sec.	9·5	A2
L22	Speech coil ...	2·0	—
T1	Intervalve trans. Pri. ...	850·0	F7
	Intervalve trans. Sec., total	2,600·0	F7
T2	Speaker trans. Pri., total	820·0	—
	Speaker trans. Sec. ...	0·4	—
S1-S32	W/band switches ...	—	—
S33-S35	Radio/Gram. switches	—	—
S36, S37	Tone cont. switches	—	F4
S38	Battery switches, ganged R12 ...	—	K4
S39		—	K4

VALVE ANALYSIS

Valve		Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1	KK32	132	1·1	53	1·5
		Oscillator			
		83	2·0		
V2	KF35	132	2·4	48	0·7
V3	KBC32	53	0·6	—	—
V4	KLL35	130*	2·0*	132	0·8

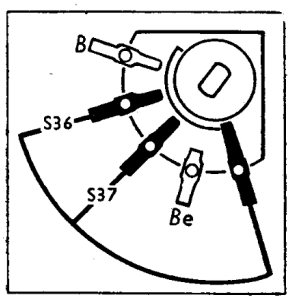


Diagram of the tone control switch unit, drawn as seen from the rear of an inverted chassis.

DRIVE CORD REPLACEMENT

In this receiver, the drive to the gang is via a small drum on the gang spindle, the drum being driven directly by the control spindle. A second (large) drum, also mounted on the gang spindle, drives the cursor via a drive cord. Thirty inches of Nylon braided glass yarn is required for a new drive cord, and this includes an adequate margin for tying off.

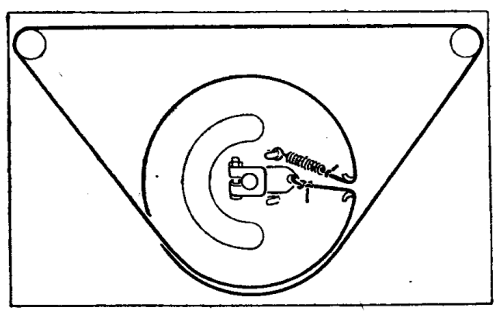
Access can be gained to the drive without removing the scale assembly, if the work is done from the rear of the chassis, and for that reason our sketch below showing the cursor drive cord system is drawn as seen from the rear. With the drum in the position shown, the gang should be at minimum capacitance.

Pass one end of the cord through the groove slot in the drum, and tie it to the anchorage provided in the central bracket. Turn the gang to minimum, and take the cord downwards and about a quarter of the way round the drum groove in a clockwise direction, then up to the left-hand pulley and across to the right hand pulley, and finally down again under the drum, making nearly a whole turn clockwise round the groove, entering the slot again and tying off on to the tension spring.

The length should be such that the spring is opened to about 1½ times its normal length when hooked to the anchor tag pressed in the drum. Both cord knots should be painted with some acetate adhesive to prevent them from slipping.

Turn the gang to maximum capacitance, slide the cursor along to register with the dot beneath 175 m on the S.W.2 scale, and clamp up the claws on the cursor carrier.

Waveband Indicator.—To replace the waveband indicator drive cord, for which any good quality twine or stout thread may be used, remove the channel-section scale lamp housing (two set screws)



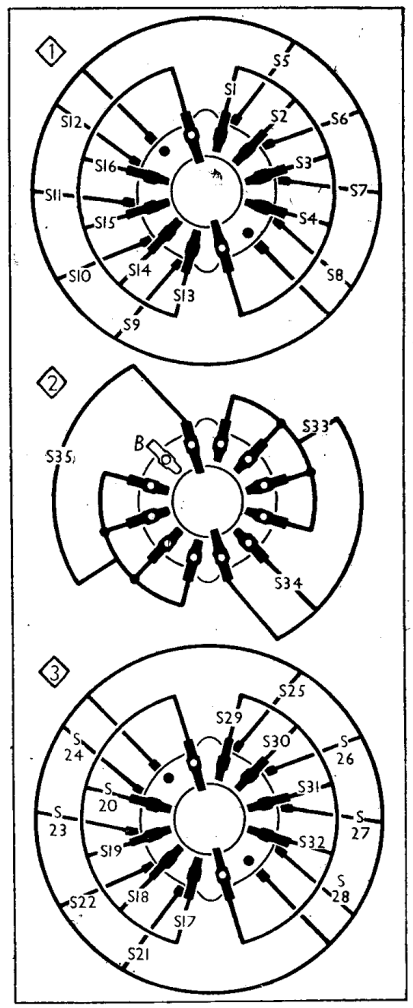
Sketch showing the run of the cursor drive cord.

clamping the glass scale plate to the top edge of the scale assembly, remove the glass, and slacken the two nuts and bolts (with lock-washers) holding the indicator housing to the outer edge of the scale assembly, and ease the housing away.

When replacing, note that two large rubber bands are stretched over each of the side flanges, one going on before the scale glass, to cushion it against the assembly, and the other after the glass is in position, so that it forms a rubber buffer on the front of the glass.

To adjust the cord length, turn the waveband control fully clockwise, turn the groove quadrant so that it faces the volume control spindle, and tie the cord to the upper anchor arm, at the same time pulling it to bring the white bar into view in the "Gram" arrow aperture on the indicator. Finally, adjust position of white bar accurately by turning the groove quadrant on the control spindle, then tighten up the fixing screw and check that the appropriate white bars register correctly with their respective arrow apertures.

Switch Diagrams and Table



Diagrams of the three waveband switch units. These are the *front* sides, drawn as seen from the *rear* of an inverted chassis after tilting up the front of it sufficiently to show them. Below is the associated table.

Switch	S.W.1.	S.W.2.	M.W.	L.W.	Gram
S1	C	—	—	—	—
S2	—	C	—	—	—
S3	—	—	C	—	—
S4	—	—	—	C	—
S5	—	C	C	C	C
S6	C	—	C	C	C
S7	C	C	—	C	C
S8	C	C	C	—	C
S9	—	C	C	C	C
S10	C	—	C	C	C
S11	C	C	—	C	C
S12	C	C	C	—	C
S13	C	—	—	—	—
S14	—	C	—	—	—
S15	—	—	C	—	—
S16	—	—	—	C	—
S17	C	—	—	—	—
S18	—	C	—	—	—
S19	—	—	C	—	—
S20	—	—	—	C	—
S21	—	C	C	C	C
S22	C	—	C	C	C
S23	C	C	—	C	C
S24	C	C	C	—	C
S25	—	C	C	C	C
S26	C	—	C	C	C
S27	C	C	—	C	C
S28	C	C	C	—	C
S29	C	—	—	—	—
S30	—	C	—	—	—
S31	—	—	C	—	—
S32	—	—	—	C	—
S33	C	C	C	C	—
S34	—	—	—	—	C
S35	C	C	C	C	—

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CIRCUIT ALIGNMENT

I.F. Stages.—Connect signal generator, via an 0.1 μF capacitor in the "live" lead, to control grid (top cap) of **V1** and the **E** socket. Switch set to M.W., turn the gang and volume control to maximum, slacken the core adjustment locknuts, feed in a 465 kc/s (645.16 m) signal, and adjust the cores of **L18, L19, L20** and **L21** (location references A3, A2) for maximum output.

R.F. and Oscillator Stages.—Transfer "live" signal generator lead to **A** socket, via a suitable dummy aerial. In the case of models 484 and 487 the cursor should coincide with the dot on the S.W.2 scale beneath the 175 m calibration mark when the gang is at maximum capacitance, and it may be adjusted in position by sliding the cursor carriage along the drive cord. In the Model 486 the pointer should be horizonal and directly behind the mark at the high-wavelength end of the M.W. scale when the gang is at maximum.

I.F. Rejector.—Switch set to M.W., tune to 550 m on scale, feed in a 465 kc/s signal, and adjust the core of **L1** (J7) for minimum output.

S.W.1.—Switch set to S.W.1, tune to 48 m on scale, feed in a 48 m (6.25 Mc/s) signal, and adjust the cores of **L10** (D3) and **L6** (D2) for maximum output. Tune to 16.5 m on scale, feed in a 16.5 m (18.19 Mc/s) signal, and adjust **C37** (D3) and **C31** (D2) for maximum output. Repeat these operations until no improvement results.

S.W.2.—Switch set to S.W.2, tune to 50 m on scale, feed in a 50 m (6.0 Mc/s) signal, and adjust **C38** (B3) and **C32** (B2) for maximum output. Check calibration at 171.4 m (1.75 Mc/s).

M.W.—Switch set to M.W., tune to 526.3 m (spot on scale), feed in a 526.3 m (570 kc/s) signal, and adjust the cores of **L12** (B3) and **L8** (B1) for maximum output. Tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust **C39** (B3) and **C33** (B2) for maximum output. Repeat these operations until no improvement results.

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 cores of **L13** (D3) and **L9** (D1) for maximum output. Tune to 750 m on scale, feed in a 750 m (400 kc/s) signal, and adjust **C40** (D3) and **C34** (D2) for maximum output. Repeat these operations until no improvement results.

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