

# SERVICE BULLETIN



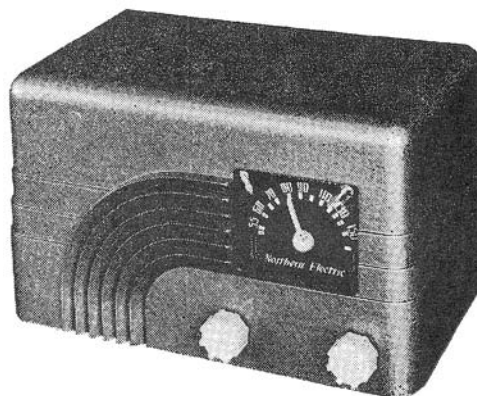
# Northern Electric RADIO

## Model 5110

5-Tube Mantel Model

AC Universal Superheterodyne

## SERVICE INFORMATION



## SPECIFICATIONS

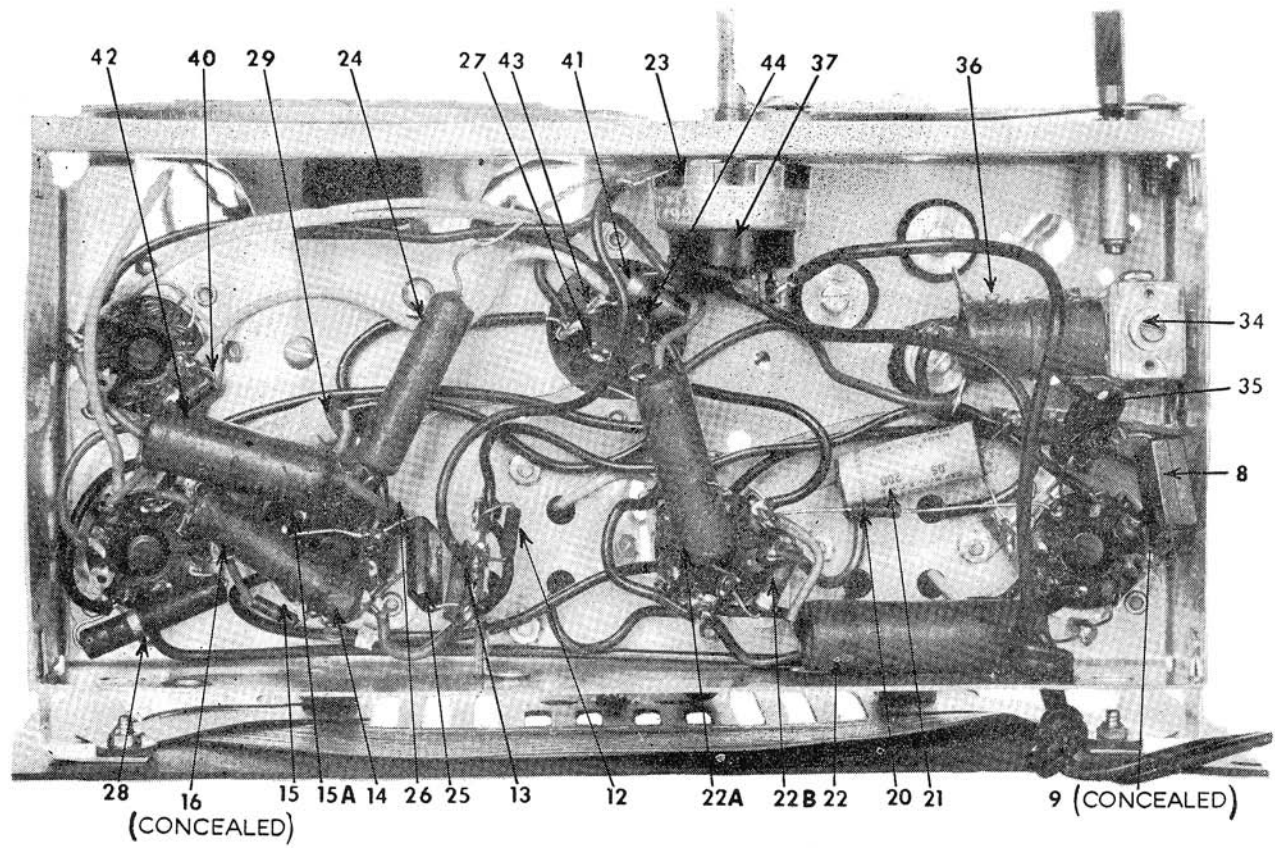
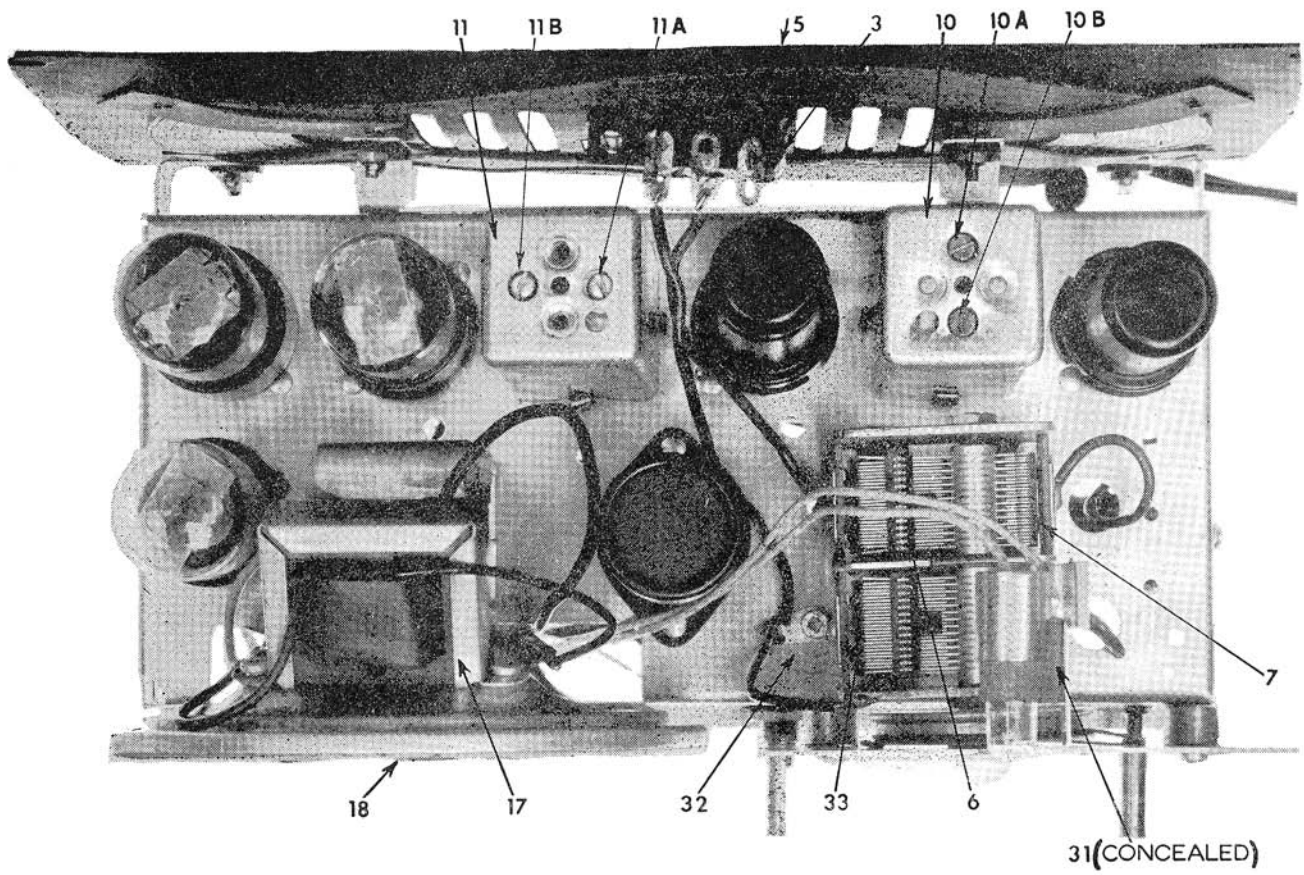
**GENERAL:** 5-Tube Superheterodyne A.C. Universal Radio Receiver housed in table model moulded plastic cabinet available in five colours.

### MODELS

5110	Ivory
5110	Gold
5110	Green
5110	Blue
5110	Rose

- FREQUENCY RANGE**  
Broadcast band — 540 to 1570 KC
- INTERMEDIATE FREQUENCY**  
455 K.C.
- TUBES**

Type	Function
12SA7	Converter
12SK7	I.F. Amplifier
12SQ7	Detector, A.V.C. and Audio Amplifier
50L6	Audio Output Amplifier
35Z5	Rectifier
- A.V.C.**  
On 12SA7 Mixer and 12SK7 I.F. Amplifier
- POWER SUPPLY**  
110-125 Volts, 25-60 Cycles — A.C.  
110-125 Volts D.C. (Reverse plug is set does not operate when plug is connected.)
- POWER CONSUMPTION**  
30 Watts
- AUDIO POWER OUTPUT**  
2.1 Watts
- ANTENNA**  
Built-in loop renders an external antenna unnecessary in most installations. Should one be required, a terminal marked "A" is provided on the back of the set.
- GROUND**  
No ground is necessary for operation of this set.
- AUDIO SYSTEM**  
Audio portion of 12SQ7 resistance — capacity coupled to 50L6.
- LOUDSPEAKER**  
5" Permanent Magnet
- CONTROLS**  
Left — Volume Control and ON-OFF Switch.  
Right — Tuning Control.
- DIMENSIONS**  
Chassis, Assembled (excluding shafts).  
Length 10 11/32", Width 5 3/8",  
Height 5 15/16"  
Cabinet, Overall (including knobs)  
Length 10 3/8", Width 6 9/16",  
Height 6 1/4"



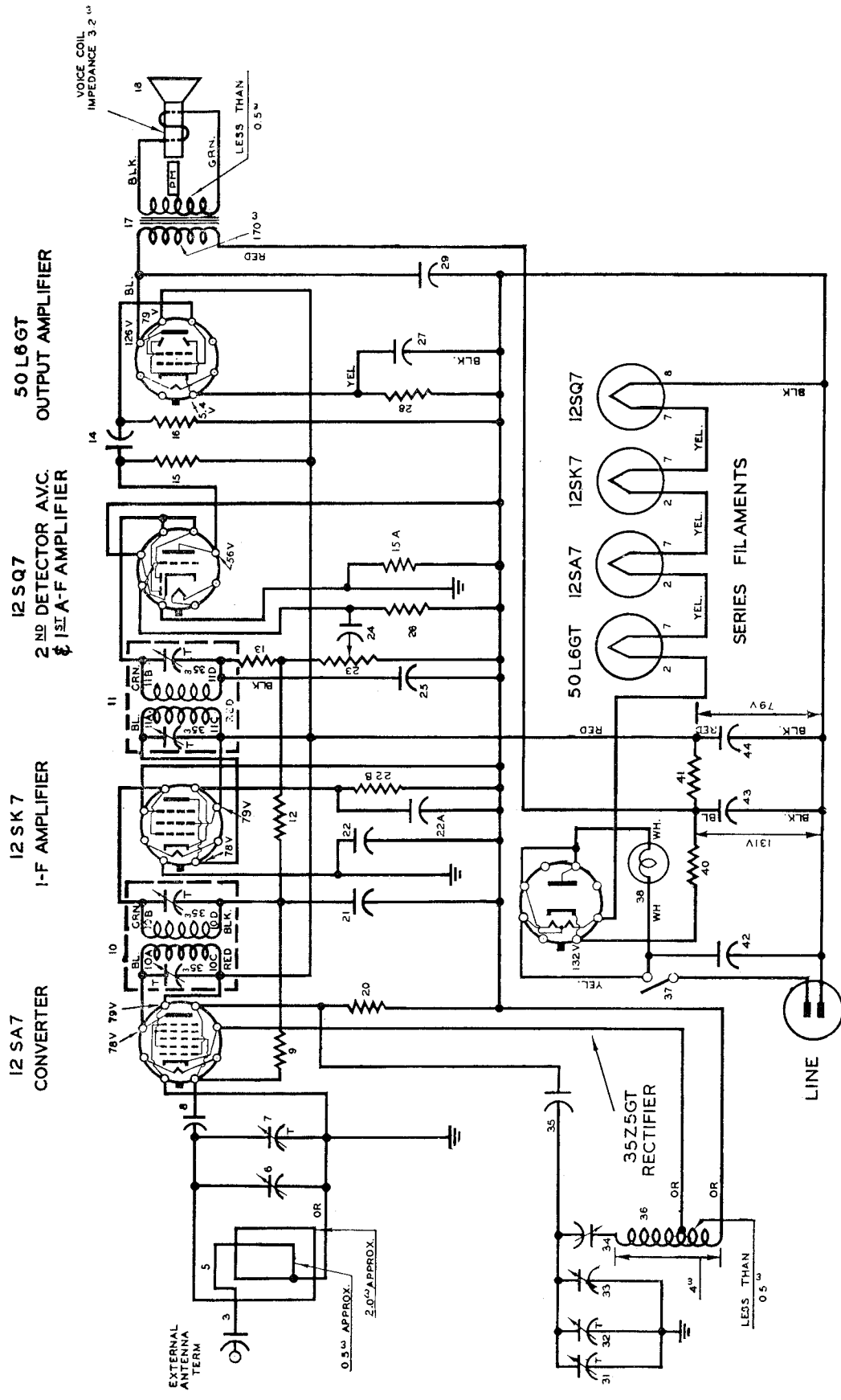
## ALIGNMENT

Alignment procedure should be carried out according to the following table and in the order shown.

Alignment Frequency	Dummy Antenna	Receiver Connection	Items to be adjusted for maximum output and their location.
I.F. 455 KC	.1 Mfd (Paper)	Antenna Section Gang	I.F. Trimmers, items 10A, 10B, 11A and 11B, on I.F. Transformers (tuning gang open)
B.C. 1400 KC	100 Mmf (Mica)	Antenna Terminal	(a) Oscillator trimmers on gang, 31 and 32. (b) Antenna trimmer on gang 7.
B.C. 600 KC	100 Mmf (Mica)	Antenna Terminal	Oscillator lag trimmer 34. Recheck at 1400 KC

## REPLACEMENT PARTS LIST

Item	Description	Part No.	Item	Description	Part No.
3	Capacitor, Paper, .003 Mfd 600 V.....	K10128-302	33	Capacitor, Gang, Oscillator Section, 420 Mmf, Part of.....	R12734
5	Loop Antenna Assembly.....	R16127-23	34	Capacitor, Trimmer, 225-750 Mmf (Part of R13472).....	K1458-13
6	Capacitor, Gang, Antenna Section, 420 Mmf, Part of.....	R12734	35	Capacitor, Mica, 51 Mmf 500 V.....	K10134 B-510
7	Capacitor, Trimmer, 1.5-20 Mmf, Part of..	R12734	36	Coil, Oscillator.....	R12513
8	Capacitor, Mica, 1,000 Mmf 300 V.....	K10134C-102	37	Switch, ON-OFF, Part of.....	K10323-2
9	Resistor, 1.0 Meg, 1/2 W.....	K10000C-105	38	Lamp, Dial, 6.3 Volts, 250 ma.....	K2589-3
10	Transformer, 1st I.F.....	R15375-1	40	Resistor, 33 Ohm 1/2 W.....	K10003C-330
10A	Capacitor, Trimmer, 20-150 Mmf, Part of	R15373	41	Resistor, 2,700 Ohms, 1 W.....	K10001C-272
10B	Capacitor, Trimmer, 20-150 Mmf, Part of	R15373	42	Capacitor, Paper, .025 Mfd 600 V.....	K10128-253
10C & D	Coil, 1st I.F.....	_____	43	Capacitor, Electrolytic, 40 Mfd, 150 V, Part of.....	R12730
11	Transformer, 2nd I.F.....	R15375-1	44	Capacitor, Electrolytic, 40 Mfd 150 V, Part of.....	R12730
11A	Capacitor, Trimmer, 20-150 Mmf, Part of	R15373			
11B	Capacitor, Trimmer, 20-150 Mmf, Part of	R15373			
11C & D	Coil, 2nd I.F.....	_____			
12	Resistor, 2.2 Meg, 1/2 W.....	K10000C-225		Miscellaneous	
13	Resistor, 47,000 Ohm, 1/2 W.....	K10000C-473		Socket, Octal Tube.....	K10145-36
14	Capacitor, Paper, .01 Mfd 600 V.....	K10128-103		Dial Scale Assembly.....	R16127-24
15	Resistor, .22 Meg 1/2 W.....	K10000C-224		Dial Indicator Assembly.....	R16281
15A	Resistor, .22 Meg 1/2 W.....	K10000C-224		Spring, Dial.....	R13898
16	Resistor, .47 Meg 1/2 W.....	K10000C-474		Dial Cord (10").....	K10301
17	Transformer, Output.....	K3873-9		Bezel.....	E12951
18	Loudspeaker.....	R12791		Shaft, Tuning Drive.....	R12727
20	Resistor, 22,000 Ohm 1/2 W.....	K10000C-223		Socket, Lamp.....	K5517
21	Capacitor, Paper, .05 Mfd 4004V.....	K10129-503		Strip, Terminal, Triple.....	K10120-10
22	Capacitor, Paper, 0.2 Mfd 200 V.....	K10130-204		Plain Knob Assembly (Ivory).....	R15348-1
22A	Capacitor, Paper, .05 Mfd 400 V.....	K10129-503		Speed Nut (Bezel Mounting).....	R12979
22B	Resistor, 270 Ohm 1/2 W.....	K10003 B-271		Cabinet, Ivory.....	R13357A
23	Volume Control, .5 Meg, Part of.....	K10323-2		Cabinet, Ornamental Green Finish.....	R13357C
24	Capacitor, Paper, .01 Mfd 600 V.....	K10128-103		Cabinet, Ornamental Gold Finish.....	R13357E
25	Capacitor, Mica, 390 Mmf 500 V.....	K10134C-291		Cabinet, Ornamental Blue Finish.....	R13357G
26	Resistor, 10 Meg 1/2 W.....	K10000C-106		Cabinet, Ornamental Rose Finish.....	R13357J
27	Capacitor, Electrolytic, 20 Mfd 25V, Part of	R12730		Trimmer and Bracket Assembly (including Item 34).....	R13472
28	Resistor, 150 Ohm 1 W.....	K10004 B-151		Mounting Plate (Electrolytic).....	R15102
29	Capacitor, .02 Mfd 600 V.....	K10128-203		Stud, Gang Mounting.....	K10298-3
31	Capacitor, Trimmer, 1.5-20 Mmf, Part of..	R12734			
32	Capacitor, Trimmer, 1.5-20 Mmf, Part of..	R12734			



SCHEMATIC DIAGRAM MODEL 5110 A.C. UNIVERSAL.

- NOTES
- 1- ALL VOLTAGES ARE READ FROM COMMON NEGATIVE LEAD USING A 20 000Ω/V METER
  - 2- LINE VOLTAGE IS 117 VOLTS DURING VOLTAGE MEASUREMENTS.
  - 3- WIRING SEE OF TUBES SHOWN.