

Allied Radio Corp.

Model: 19F-497

Chassis:

Year: Pre 1950

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

[Riders Volume 19 - ALLIED 19-15](#)

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[Riders Volume 19 - ALLIED 19-17](#)

[Riders Volume 19 - ALLIED 19-18](#)

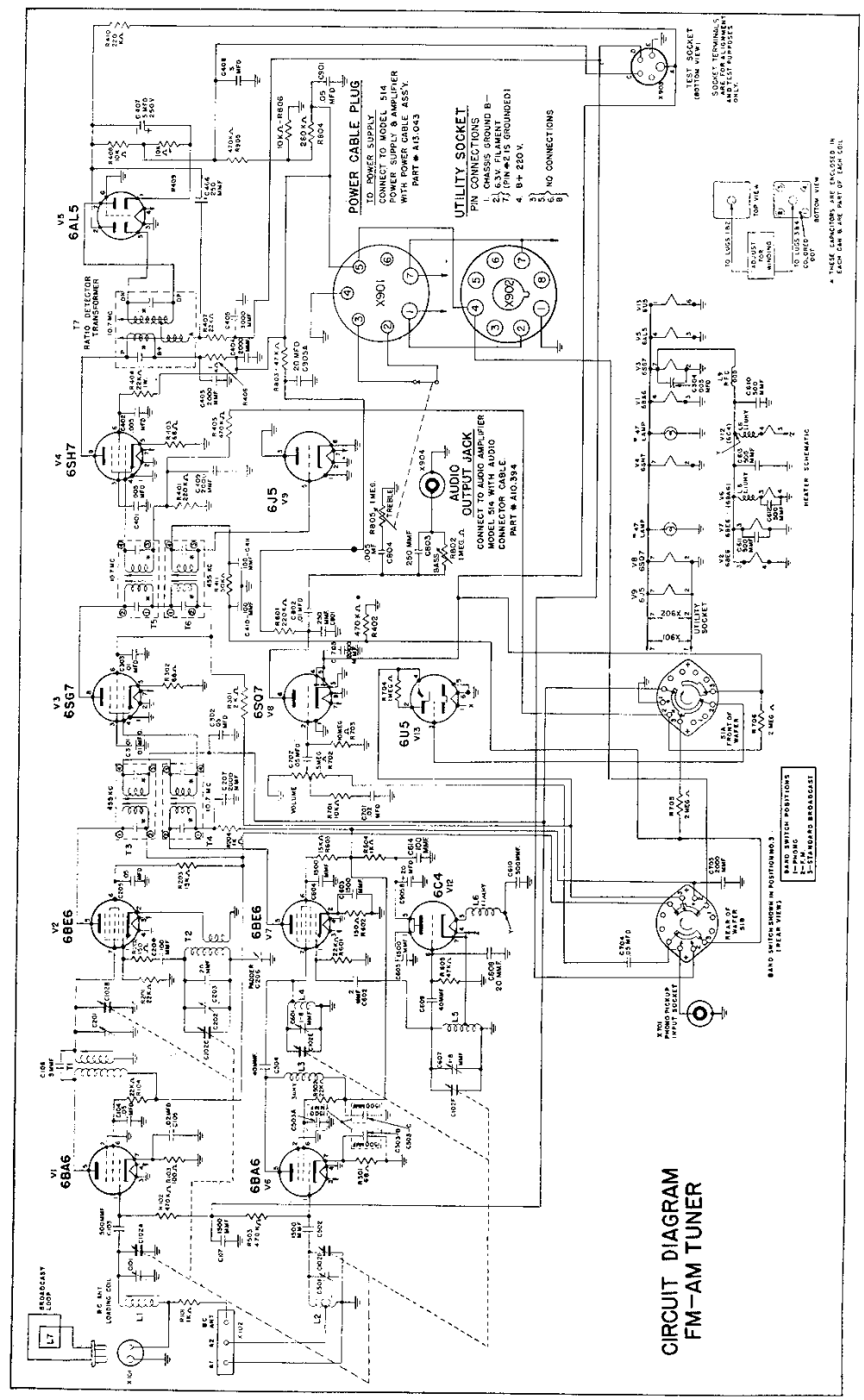
[Riders Volume 19 - ALLIED 19-19](#)

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ALLIED RADIO CORP.

MODELS 19F-492,
19F-497, 19F-498

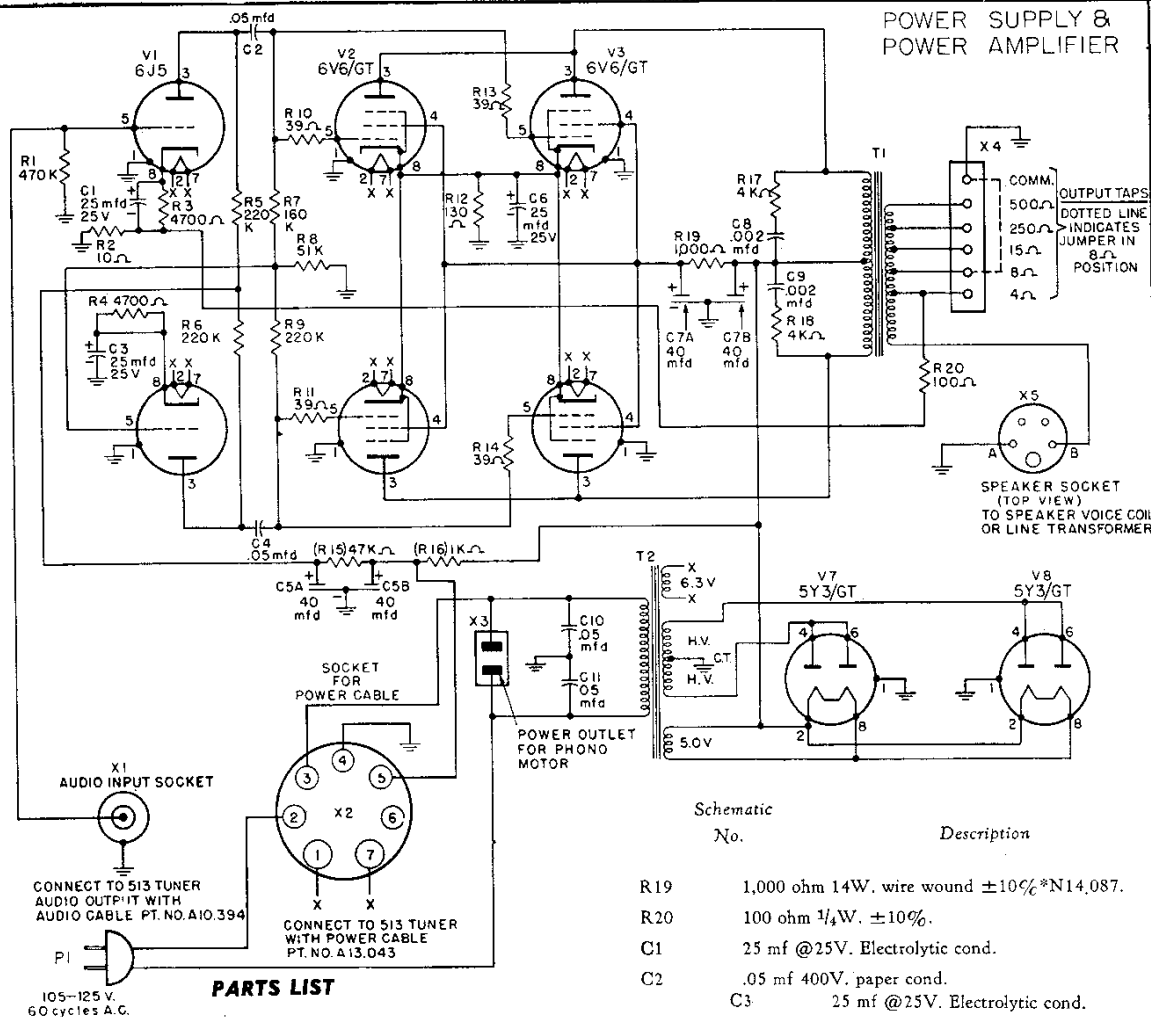


CIRCUIT DIAGRAM
FM-AM TUNER

MODELS 19F-492,
19F-497, 19F-498

ALLIED RADIO CORP.

POWER SUPPLY &
POWER AMPLIFIER



Schematic
No. Description

R19	1,000 ohm 14W. wire wound $\pm 10\%$ *N14.087.
R20	100 ohm $\frac{1}{4}$ W. $\pm 10\%$.
C1	25 mf @25V. Electrolytic cond.
C2	.05 mf 400V. paper cond.
C3	25 mf @25V. Electrolytic cond.
C4	.05 mf 400V. paper cond.
C5	A & B 40 mf x 40 mf @450V. Electrolytic cond.*C13.806.
C6	25 mf @25V. Electrolytic cond.
C7	A & B 40 mf x 40 mf @450V. Electrolytic cond.*C13.806.
C8	.002 mf 600V. paper cond.
C9	.002 mf 600V. paper cond.
C10	.05 mf 400V. Bakelite paper cond.
C11	.05 mf 400V. Bakelite paper cond.
T1	Output transformer*B15.037.
T2	Power transformer*B18.077
X1	Coaxial socket audio connector* N32.163.
X2	7 pin power cable socket* N32.294.
X3	Phono motor power receptacle* N32.072.
X4	Output taps terminal board* A32.299.
X5	Speaker socket* N32.109.
P1	Line power cord & plug set* N10.049.
P2	7 wire power cable* A13.043.
P3	Audio connector cable* A10.394.
P4	Speaker plug* N32.230.

PARTS LIST

Schematic No.	Description
R1	470K ohm $\frac{1}{4}$ W. $\pm 20\%$.
R2	10 ohm $\frac{1}{4}$ W. $\pm 10\%$.
R3	4,700 ohm $\frac{1}{4}$ W. $\pm 10\%$.
R4	4,700 ohm $\frac{1}{4}$ W. $\pm 20\%$.
R5	220K ohm $\frac{1}{4}$ W. $\pm 20\%$.
R6	220K ohm $\frac{1}{4}$ W. $\pm 10\%$.
R7	160K ohm $\frac{1}{4}$ W. $\pm 10\%$.
R8	51K ohm $\frac{1}{4}$ W. $\pm 10\%$.
R9	220K ohm $\frac{1}{4}$ W. $\pm 10\%$.
R10	39 ohm $\frac{1}{4}$ W. $\pm 20\%$.
R11	39 ohm $\frac{1}{4}$ W. $\pm 20\%$.
R12	130 ohm 5W. $\pm 10\%$ wire wound*N14.089.
R13	39 ohm $\frac{1}{4}$ W. $\pm 20\%$.
R14	39 ohm $\frac{1}{4}$ W. $\pm 20\%$.
R15	47K ohm $\frac{1}{4}$ W. $\pm 20\%$.
R16	1K ohm 14W. wire wound $\pm 10\%$ *N14.087.
R17	4K ohm 10W. wire wound $\pm 10\%$.
R18	4K ohm 10W. wire wound $\pm 10\%$.

ALLIED RADIO CORP.

MODELS 19F-492,
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this tuner may be used with any audio amplifier or P.A. system if it is powered by an auxiliary power supply capable of delivering 220 Volts @ 60 Ma., well filtered DC and 6.3V. @ 3.5 amps. 60 cycles AC or DC.

The Tuning Ranges are:

AM 535 kc to 1720 kc.

FM 88 mc to 108 mc.

ALIGNMENT PROCEDURE**Alignment Procedure for AM**

Equipment Required:

Broadcast Band Signal Generator

Audio Output Meter

Power Supply and Amplifier

A) 1. Set Band Switch to "AM". Advance Volume Control to maximum, set "BASS" Control at minimum, set Treble Control at maximum.

2. Connect output meter across speaker voice coil.

NOTE: During all of these tests it is necessary to reduce the signal generator output so that the receiver output level is maintained at .5 watt.

B) I.F. ALIGNMENT

1) Set signal generator to 455 kc. Connect a .05 mfd condenser in series with the "high" side of the generator output lead to pin #4 of the 6SG7 (V3) I.F. amplifier tube. Peak bottom and top cores of 2nd I.F. (T-6).

2) Connect signal generator ("high" side in series with a .05 mfd condenser) across C201 on variable condenser, peak bottom and top cores of 1st I.F. Transformer (T-3).

C) R. F. ALIGNMENT

1) Connect signal generator to the AM antenna terminal ("high" side in series with a 50 mmf condenser) and ground. Open variable condenser to minimum capacity, set signal generator to 1720 kc, adjust broadcast oscillator trimmer C202 to tune in signal.

2) Close variable condenser to maximum capacity, set signal generator to 535 kc and adjust broadcast band padder (C206) to tune in signal.

3) Repeat step (1).

4) With variable condenser fully meshed move dial pointer to small white line slightly to left of "55" on broadcast band dial scale.

5) Set signal generator to 1500 kc. Tune in signal with Tuning Control. Peak antenna trimmer (C101) and interstage trimmer (201).

6) Set signal generator to 600 kc, tune in signal with receiver Tuning Control, peak antenna loading coil (L1). Peak interstage transformer (T1).

7) Repeat step (5).

Tube Complement:

- 1 Type 6BA6 FM R.F. Amplifier.
- 1 Type 6BA6 AM R.F. Amplifier.
- 1 Type 6BE6 FM Mixer.
- 1 Type 6BE6 AM Oscillator, converter.
- 1 Type 6C4 FM Oscillator.
- 1 Type 6SG7 I.F. Amplifier.
- 1 Type 6SH7 FM Detector Driver.
- 1 Type 6AL5 FM Ratio Detector.
- 1 Type 6SQ7 A.V.C., 1st Audio Amplifier.
- 1 Type 6U5 Electron Ray Tuning Indicator.
- 1 Type 6J5 AM Detector.

SERVICE NOTES:**Failure of Tuner to Operate May Be Due to:**

1. Power Supply cable disconnected.
2. "Audio Connector" cable disconnected.
3. Band switch in wrong position.
4. Amplifier power off or gain set too low.
5. Low signal strength in the particular location. Change position (rotate) of loop, or "folded dipole" antenna, or use an outside antenna.
6. All tubes not firmly in sockets.

MODELS 19F-492,
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Alignment Procedure for FM

NOTE: Contacts A, C, and D of the test socket at the rear of the chassis have been provided for connection to V.T.V.M. for the alignment of the FM circuits.

Equipment Required:

High Frequency Signal Generator 87.5 mc to 108.5 mc.
Signal Generator capable of delivering .1 volt at 10.7 mc.
Audio Output Meter.
D.C. Vacuum Tube Voltmeter with zero center scale.
Tuning Wand.

A) RATIO DETECTOR ALIGNMENT

- 1) Connect V.T.V.M. across test socket terminals "A" and "C", (A.V.C. Voltage).
- 2) Feed 10.7 mc unmodulated R.F. signal into 6SH7 (V4) grid, pin #4, through .01 mfd condenser. This signal should be .1 volt.
- 3) Adjust primary of ratio detector transformer (T-7) for maximum indication on V.T.V.M.
- 4) Connect zero centered V.T.V.M. across test socket terminals "D" and "C".
- 5) Adjust secondary of ratio detector transformer (T-7) for zero indication.
- 6) Tune 10.7 mc Signal Generator higher in frequency (about 200 kc) until maximum voltage reading is obtained on V.T.V.M.

Note this voltage, then tune signal generator lower in frequency until maximum voltage of the opposite polarity is obtained. Note this voltage, then if necessary re-adjust primary of the detector (T-7) until the maximum detector voltages are about equal on either the high or low side of 10.7 mc.

B) FM 10.7 Mc I. F. ALIGNMENT

- 1) Shunt a 1000 ohm carbon resistor across the primary of the detector (T-7) lugs "B+" and "P".
- 2) Connect output meter across speaker.
- 3) Set volume control at maximum, bass at minimum.
- 4) Connect 10.7 mc signal generator (modulated 30%) to the grid (pin #4) of the 6SG7 (V-3) through a .01 mfd condenser and ground.
- 5) Peak bottom and top cores of (T-5) 2nd I.F.
- 6) Connect 10.7 mc signal generator (modulated 30%) across the FM interstage trimmer (C601) and ground.
- 7) Peak bottom and top cores of 1st I.F. (T-4).
- 8) Remove 1000 ohm shunting resistor from (T-7).

NOTE: During all of these tests it is necessary to reduce the signal generator output so that the receiver output level is maintained at .5 watts.

C) FM OSCILLATOR ALIGNMENT

- 1) Connect the high frequency signal generator across the FM antenna terminals. The ground side of the generator output cable is attached to terminal "A1", a 270 ohm carbon resistor is connected from the "high" side of the generator cable to terminal "A2".
- 2) Open variable condenser to minimum capacity; set signal generator to 108.5 mc, tune in signal with FM oscillator trimmer (C607).
- 3) Close variable condenser to maximum capacity; set signal generator to 87.5 mc. To adjust oscillator to signal it may be necessary to spread or squeeze the FM oscillator coil L5 slightly.
- 4) Repeat steps (2) and (3) if necessary.

D) FM R. F. ALIGNMENT

NOTE: When making the following tests keep the signal generator output at a level that will not cause A.V.C. voltage to rise above 1.5 volts DC.

- 1) Connect V.T.V.M. across test socket terminals "A" and "C". (A.V.C. Voltage).
- 2) FM antenna terminal connections as in "C-1".
- 3) Set signal generator to 108 mc. Tune in signal with the receiver Tuning Control. Peak FM antenna trimmer (C301), peak FM interstage trimmer (C601) for maximum voltage on V. T. V. M.
- 4) Set signal generator to 88 mc. Tune in signal with the receiver Tuning Control. Check FM antenna coil L2 and FM interstage coil L4 with a tuning wand; if any adjustment is necessary; spread or squeeze the coil turns slightly for maximum indication on V.T.V.M.
- 5) Repeat steps (3) and (4) if necessary.

V PARTS LIST

Schematic No.	Description
C101	Trimmer Cond. (Part of C102)
C102	Variable Cond. Gang.*B6.070.
C103	500mmf $\pm 20\%$.
C104	.05 mf 400V.
C105	.02 mf 150V.
C106	5mmf $\pm 10\%$.
C107	1500 mmf $\pm 20\%$.
C201	Trimmer Cond. (Part of C102).
C202	Trimmer Cond. (Part of C102).
C203	20 mmf $\pm 20\%$.
C204	100 mmf $\pm 20\%$.
C205	.05 mf 400V.
C206	Padder Cond. 500-1000 mmf*C13518.
C207	2000 mmf $\pm 20\%$.
C301	.01 mf 400V.

ALLIED RADIO CORP.

MODELS 19F-492,
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Y PARTS LIST

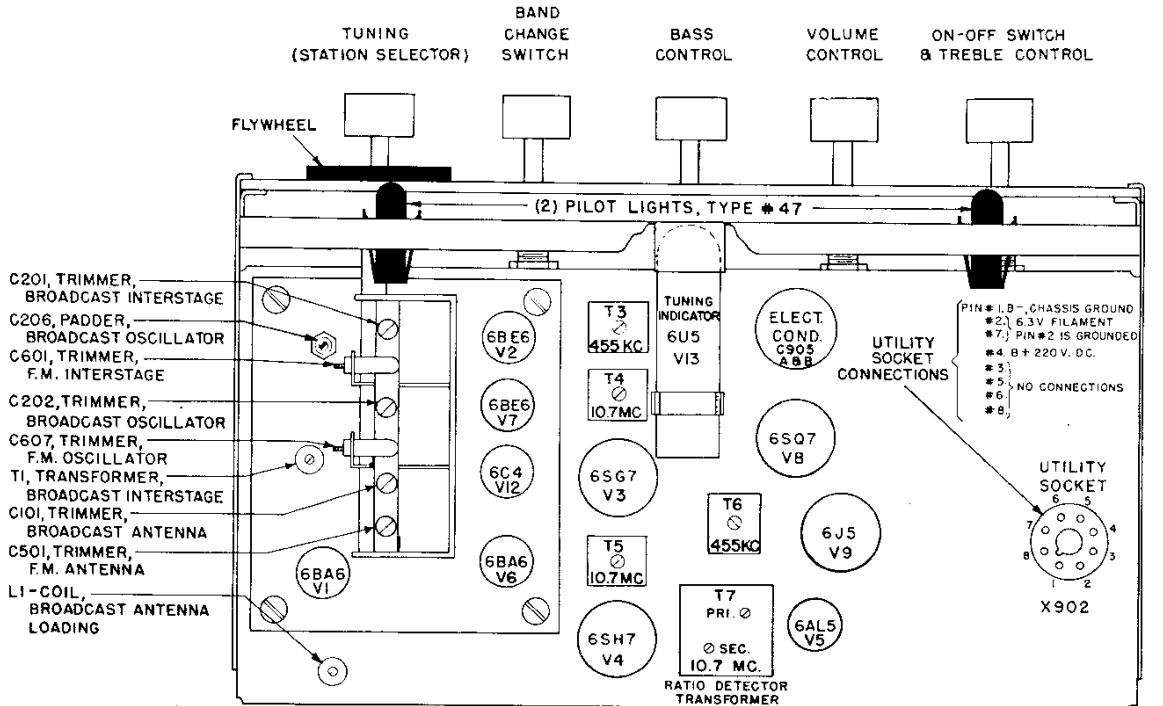
Schematic		Schematic	
No.	Description	No.	Description
C302	.05 mf 200V.	R301	2 K ohm $\frac{1}{2}$ W. $\pm 10\%$.
C303	.01 mf 400V.	R302	68 ohm $\frac{1}{2}$ W. $\pm 10\%$.
C304	.005 mf 400V.	R401	220 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C401	.005 mf 400V.	R402	470 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C402	.005 mf 400V.	R403	68 ohm $\frac{1}{2}$ W. $\pm 10\%$.
C403	2000 mmf $\pm 20\%$.	R404	22 K ohm 1 W. $\pm 10\%$.
C404	2000 mmf $\pm 20\%$.	R405	470 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C405	3000 mmf $\pm 20\%$.	R406	1 K ohm $\frac{1}{2}$ W. $\pm 20\%$.
C406	250 mmf $\pm 20\%$.	R407	22 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C407	5. mf 250V. Electrolytic Cond. *N25.206.	R408	10 K ohm $\frac{1}{4}$ W. $\pm 5\%$.
C408	.5 mf 200V.	R409	10 K ohm $\frac{1}{4}$ W. $\pm 5\%$.
C409	2000 mmf $\pm 20\%$.	R410	220 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C410	100 mmf $\pm 20\%$.	R411	50 K ohm $\frac{1}{4}$ W. $\pm 20\%$.
C411	100 mmf $\pm 20\%$.	R501	68 ohm $\frac{1}{2}$ W. $\pm 10\%$.
C501	Trimmer Cond. (Part of C102).	R502	22 K ohm 1 W. $\pm 10\%$.
C502	1500 mmf $\pm 20\%$.	R503	470 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C503	A, B, C, 1500 mmf each*N25.211.	R601	22 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C504	40 mmf $\pm 10\%$ NPO.	R602	150 ohm $\frac{1}{2}$ W. $\pm 10\%$.
C601	Trimmer Cond. 1.8 mmf*N20.022.	R603	15 K ohm 2W. $\pm 10\%$.
C602	2 mmf $\pm 10\%$ NPO.	R604	1 K ohm $\frac{1}{2}$ W. $\pm 10\%$.
C603	1500 mmf $\pm 20\%$.	R605	47 K ohm $\frac{1}{4}$ W. $\pm 10\%$.
C604	1500 mmf $\pm 20\%$.	R701	10 K ohm $\frac{1}{4}$ W. $\pm 20\%$.
C605	1500 mmf $\pm 20\%$.	R702	.5 Meg ohm volume control*A9.127.
C607	Trimmer Cond. 1.8 mmf*N20.022.	R703	10. Meg ohm $\frac{1}{4}$ W. $\pm 20\%$.
C608	20 mmf $\pm 10\%$ N130*N25.220.	R704	1. Meg ohm $\frac{1}{4}$ W. $\pm 20\%$.
C609	40 mmf $\pm 10\%$ NPO.	R705	2. Meg ohm $\frac{1}{4}$ W. $\pm 20\%$.
C610	500 mmf $\pm 20\%$.	R706	2. Meg ohm $\frac{1}{4}$ W. $\pm 20\%$.
C611	500 mmf $\pm 20\%$.	R801	220 K ohm $\frac{1}{4}$ W. $\pm 20\%$.
C612	500 mmf $\pm 20\%$.	R802	1. Meg ohm potentiometer*A9.129.
C613	500 mmf $\pm 20\%$.	R803	47 K ohm $\frac{1}{4}$ W. $\pm 20\%$.
C614	100 mmf 400V. $\pm 20\%$.	R804	260 K ohm 1 W. $\pm 20\%$.
C701	.02 mf 150V.	R805	1. Meg ohm potentiometer with S.P.S.T. Switch* A9.128
C702	.05 mf 200V.	R806	10 K ohm 1W. $\pm 10\%$.
C703	2,000 mmf $\pm 20\%$.	R905	470 K ohm $\frac{1}{4}$ W. $\pm 20\%$.
C704	.05 mf 200V.	T1	Interstage R.F. transf., AM*B2.409.
C705	2,000 mmf $\pm 20\%$.	T2	Oscillator Coil, AM*A2.410.
C801	250 mmf $\pm 20\%$.	T3	I.F. Transf. 455KC*N2.414.
C802	.01 mf 400V.	T4	I.F. Transf. 10.7MC*N2.415.
C803	250 mmf $\pm 20\%$.	T5	I.F. Transf. 10.7MC*N2.415.
C804	.005 mf 400V.	T6	I.F. Transf. 455 KC*N2.414.
C901	.05 mf 400V.	T7	Ratio Det. Transf. 10.7MC*C2.278.
C902	.05 mf 400V.	S1	Band Switch*A12.102.
C905	A & B 20 mf x 20 mf Electrolytic Cond. 450V. *N25.225.	L1	Ant. Loading Coil, AM*B2.423.
R101	1 K ohm $\frac{1}{4}$ W. $\pm 20\%$.	L2	Ant. Coil, FM*N2.411.
R102	470 K ohm $\frac{1}{4}$ W. $\pm 20\%$.	L3	R.F. Choke 3uhy*A2.402.
R103	100 ohm $\frac{1}{4}$ W. $\pm 10\%$.	L4	Interstage R.F. Coil, FM*N2.412.
R104	22 K ohm 1 W. $\pm 10\%$.	L5	Oscillator Coil, FM*N2.413.
R201	22 K ohm $\frac{1}{4}$ W. $\pm 10\%$.	L6	R.F. Choke 1.1uhy* N2.416.
R202	150 ohm $\frac{1}{4}$ W. $\pm 10\%$.	L7	Loop Ant. AM* C5.027.
R203	15 K ohm 2W. $\pm 10\%$.	L8	R.F. Choke 1.1uhy* N2.416.
R204	1 K ohm $\frac{1}{2}$ W. $\pm 10\%$.		

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ALLIED RADIO CORP.

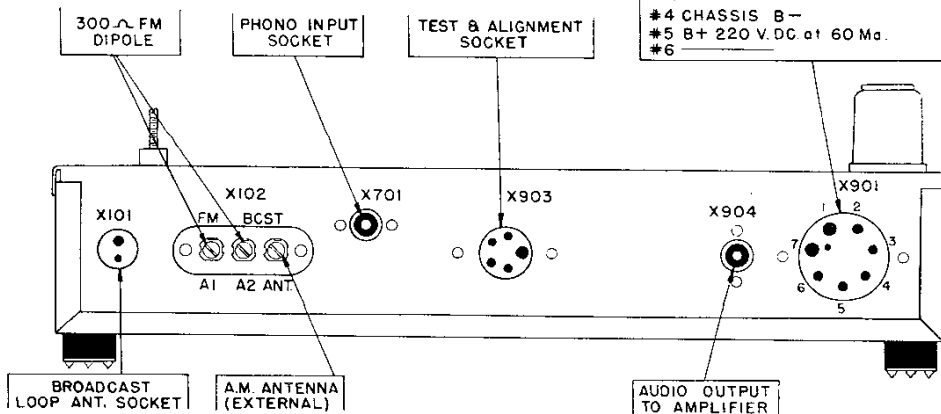
Schematic

No.	Description
L9	R.F. Choke* N2.439.
X101	Socket, AM Loop* X13.852.
X102	Ant. Terminal Strip* A32.329.
X701	Socket, Phono input* N32.163.
X901	Plug, recessed, 7 Pin* A32.297.
X902	Socket, Octal* X13821
X903	Test Socket* N32.109.
X904	Socket, Audio output N32.163.
P1	Plug, octal utility* N32.300.
Pilot Lamps, No. 47 6-8V. Bayonet* I12301.	
FM Folded dipole Ant.* A5.010.	



VOLTAGE REQUIREMENTS AT
POWER CABLE RECEPTACLE
(PIN CONNECTIONS)

- #1 } 6.3 V. at 3.5 AMP. (PIN #1 GROUNDED)
- #7 }
- #2 } TO POWER SUPPLY ON-OFF SWITCH
- #3 }
- #4 CHASSIS B-
- #5 B+ 220 V. DC at 60 Ma.
- #6



TUBE & PARTS LAYOUT
F.M. A.M. TUNER

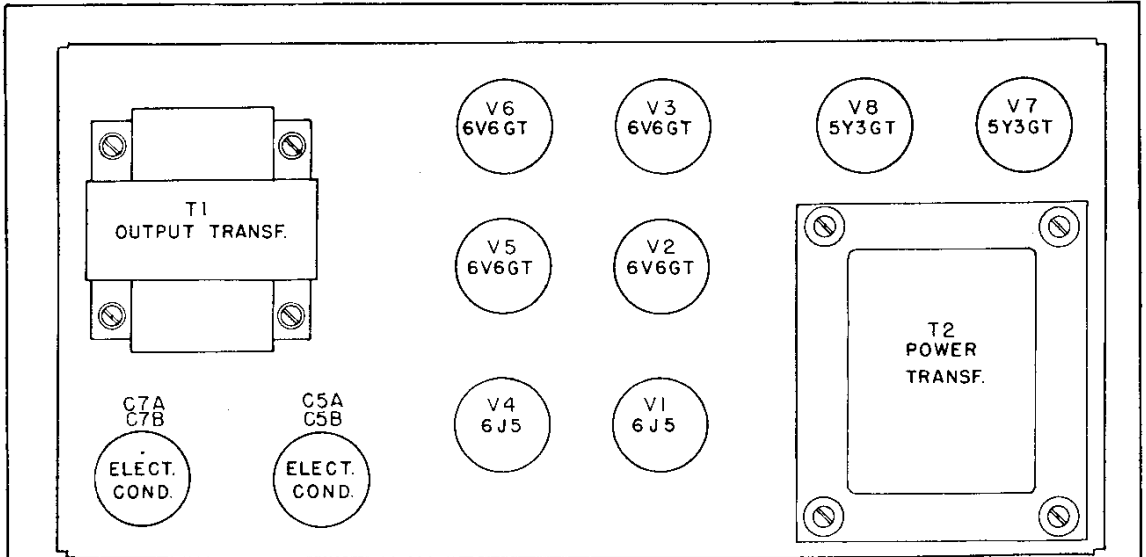
ALLIED RADIO CORP.

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TUBE COMPLEMENT:

- (4) 6V6/GT push-pull parallel power amplifier.
- (1) 6J5 Audio vottage amplifier.
- (1) 6J5 Audio voltage amplifier.
- (2) 5Y3/GT Rectifiers.

To be operated on 105-125 Volts 60 cycles AC
Power Consumption Approx. 150 Watts

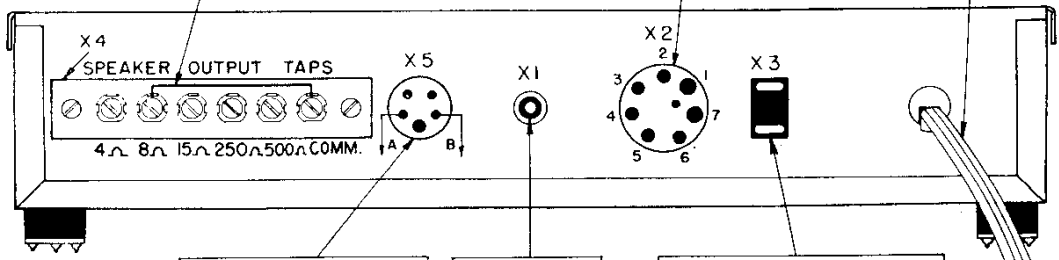


OUTPUT IMPEDANCE SELECTOR
CONNECT JUMPER FROM "COMM." TERMINAL
TO TERMINAL MARKED WITH DESIRED
IMPEDANCE. (SHOWN IN 8Ω POSITION)

PIN CONNECTIONS

- #1 } 6.3 V. A.C. at 4.5 A
- #7 }
- #2 } TO TUNER ON-OFF SWITCH,
- OTHERWISE SHORT TERMINALS
- #3 } 2 & 3 TOGETHER TO OPERATE
- #4 } CHASSIS B-
- #5 } B+ 220V. D.C. at 75 MA.
- #6 }

POWER CORD
105-125 VOLTS
60cycles A.C.



SPEAKER SOCKET
USE PINS A & B ONLY
'A' = GROUND SIDE

AUDIO INPUT
SOCKET

LINE POWER RECEPTACLE
FOR PHONO MOTOR

TUBE LAYOUT & CONNECTIONS
POWER SUPPLY & AMPLIFIER