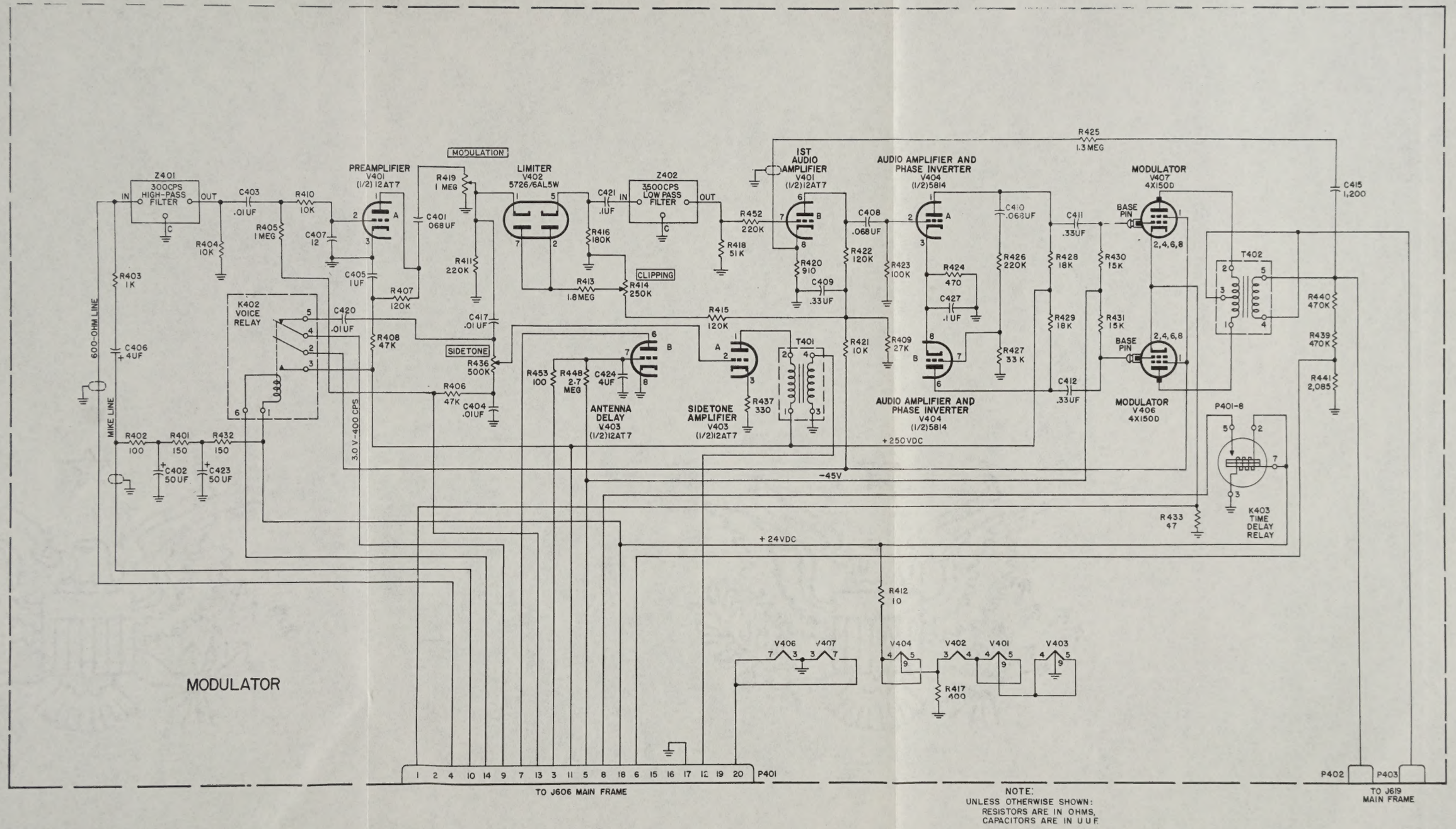
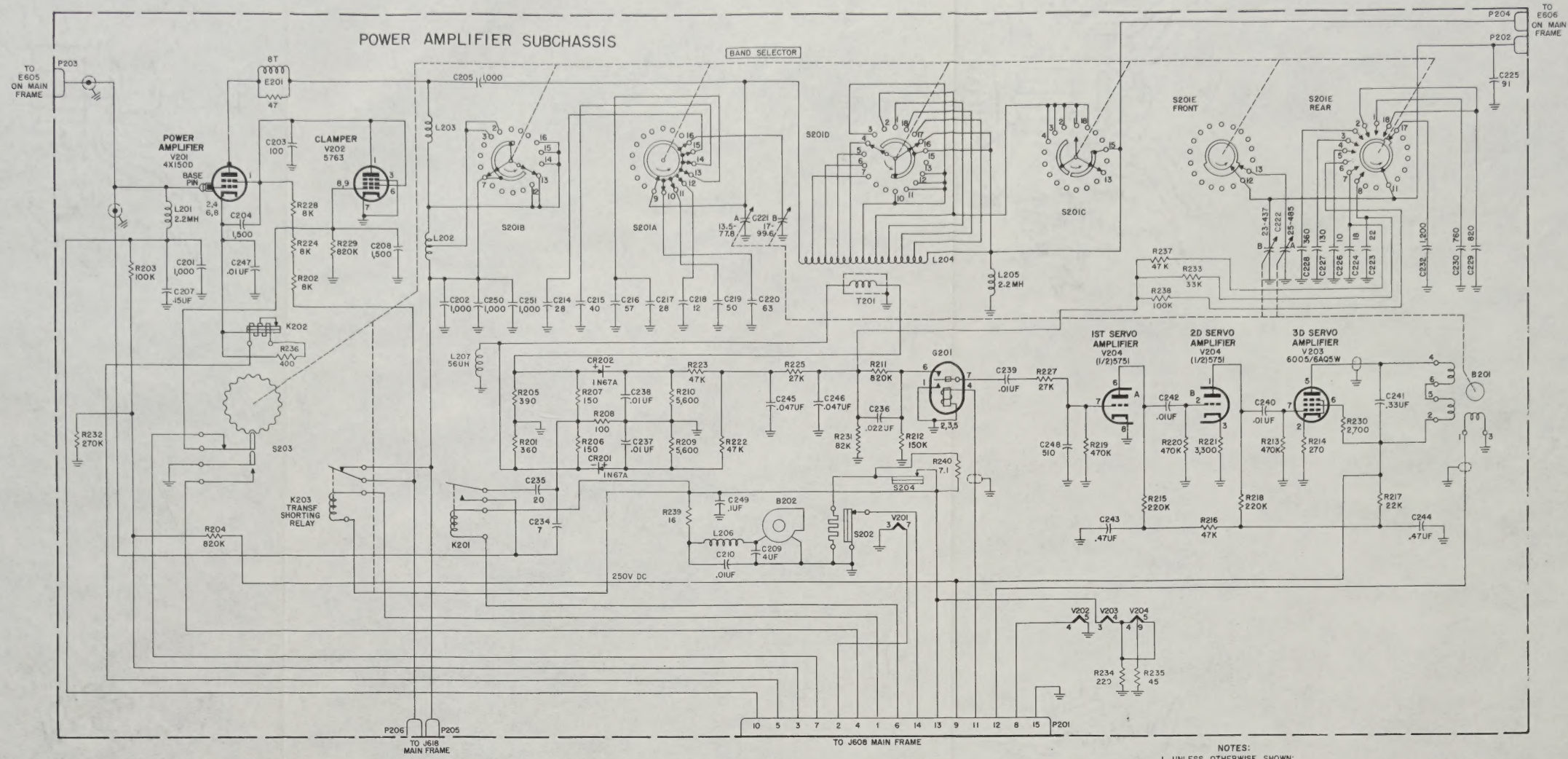


Figure 132. Modulator subchassis, schematic diagram.



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NOTES:
1. UNLESS OTHERWISE SHOWN: RESISTORS ARE IN OHMS, CAPACITORS ARE IN UUF.
2. S201 IS SHOWN AS VIEWED FROM REAR OF EQUIPMENT AND POSITIONED FOR THE 1.5 TO 1.7 MC RANGE

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Figure 131. Power amplifier subchassis, schematic diagram.

390412 O - 56 (In pocket) No. 19

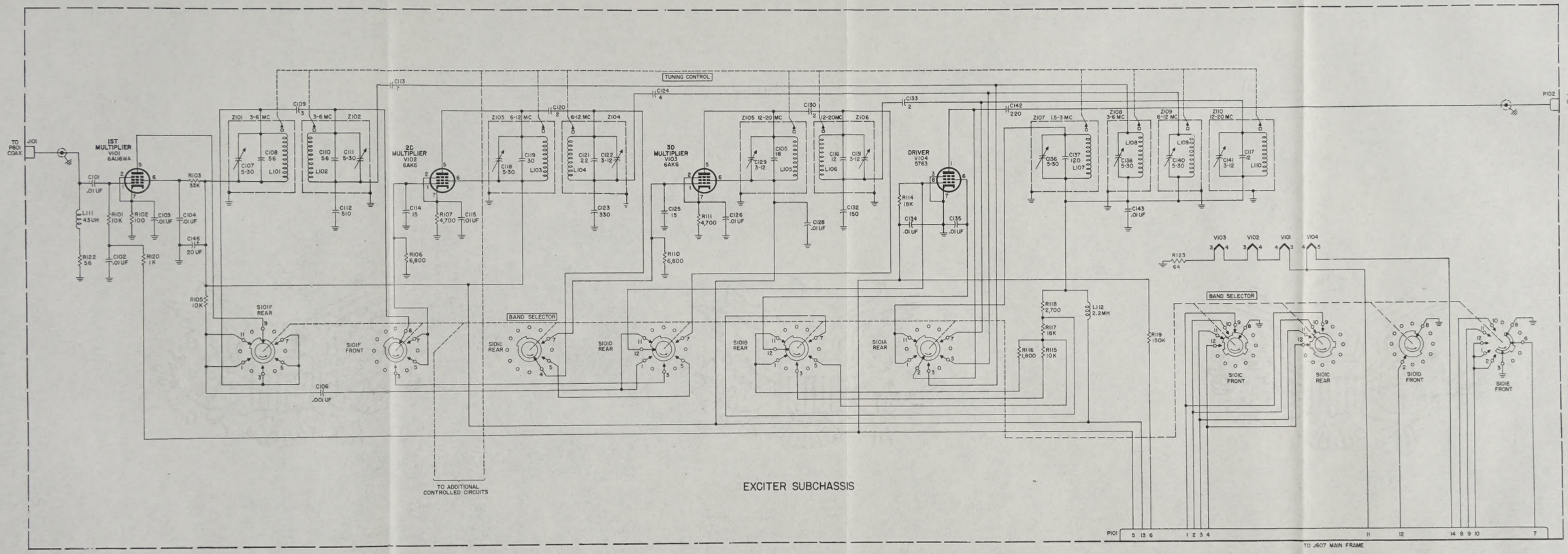
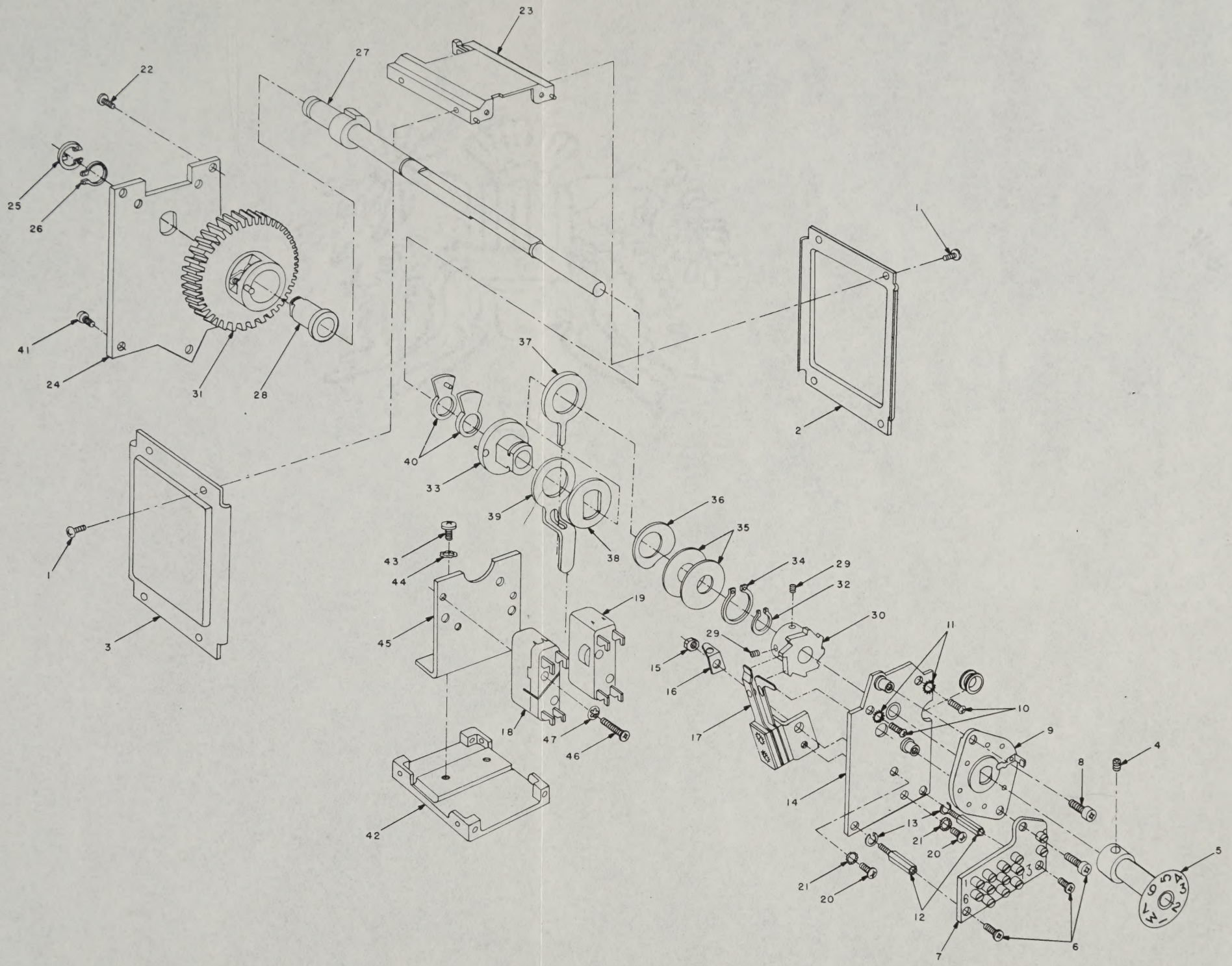


Figure 139. Exciter subchassis, schematic diagram.

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390412 O - 56 (In pocket) No. 18



TM 806-106

Figure 115. Disassembly of Autotune control head.

390412 O - 56 (In pocket) No. 17

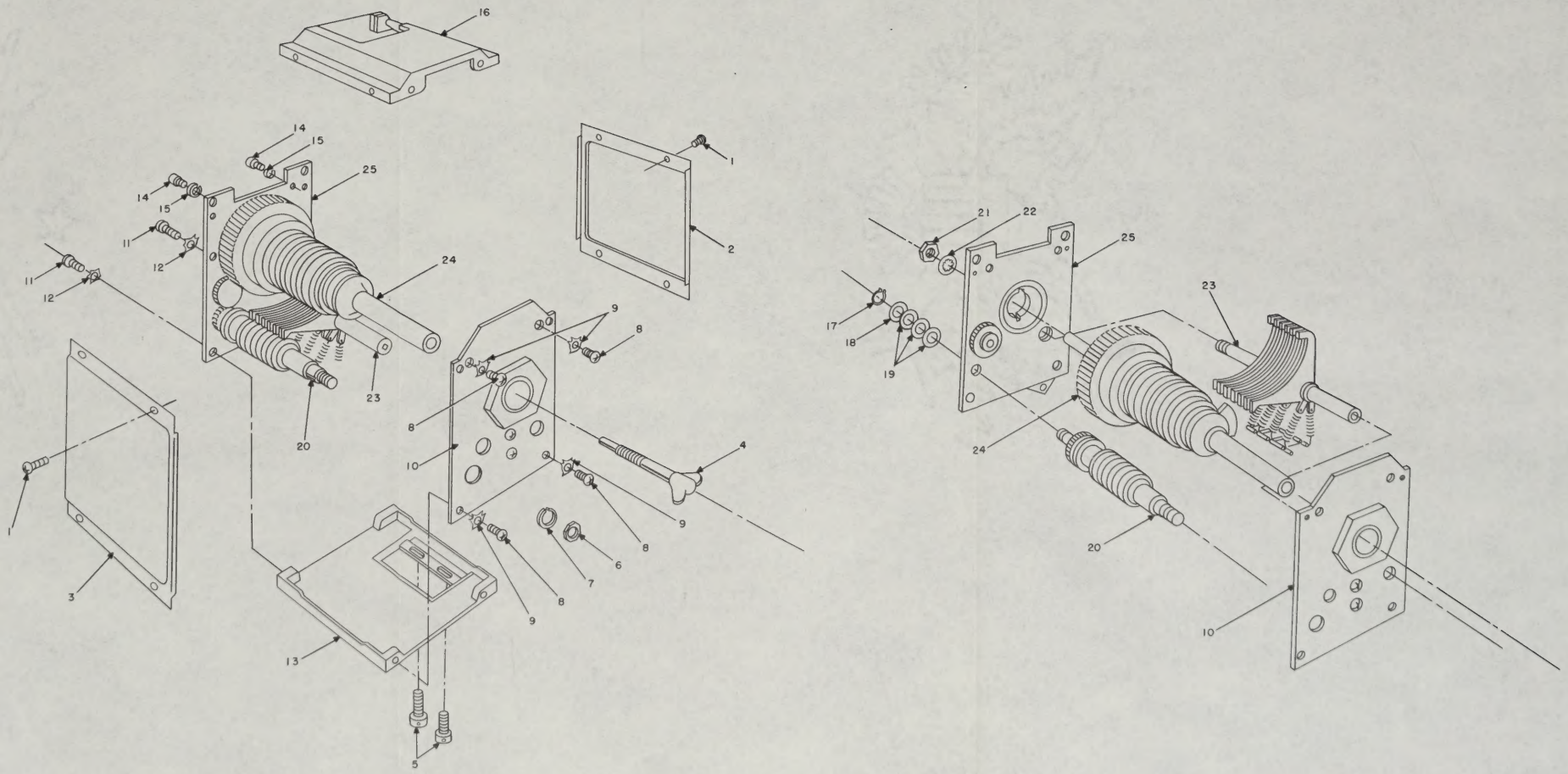


Figure 113. Disassembly of Autotune singleturn head

390412 O - 56 (In pocket) No. 15

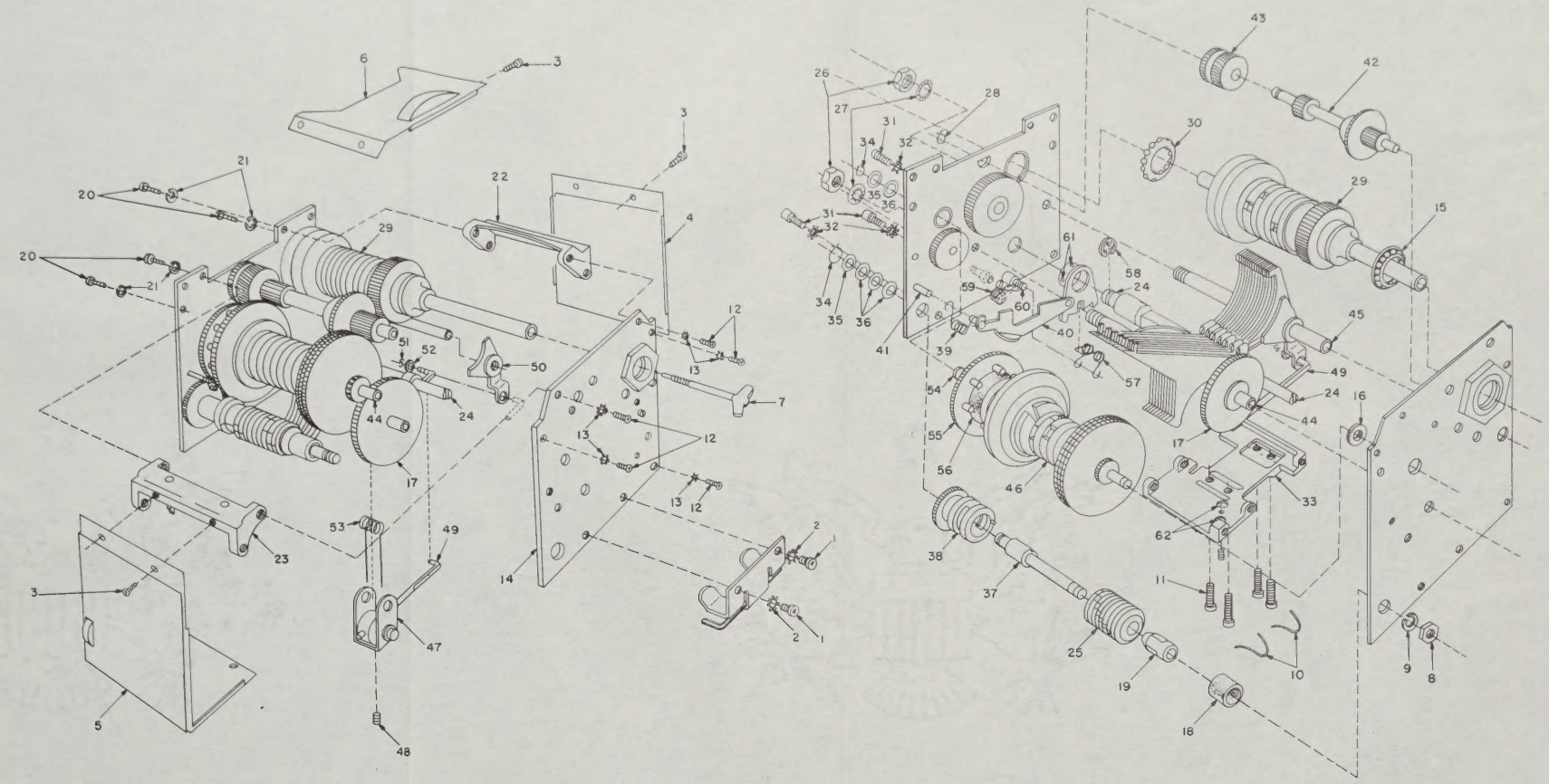


Figure 114. Disassembly of Autotune multiturn head.

390412 O - 56 (In pocket) No. 16

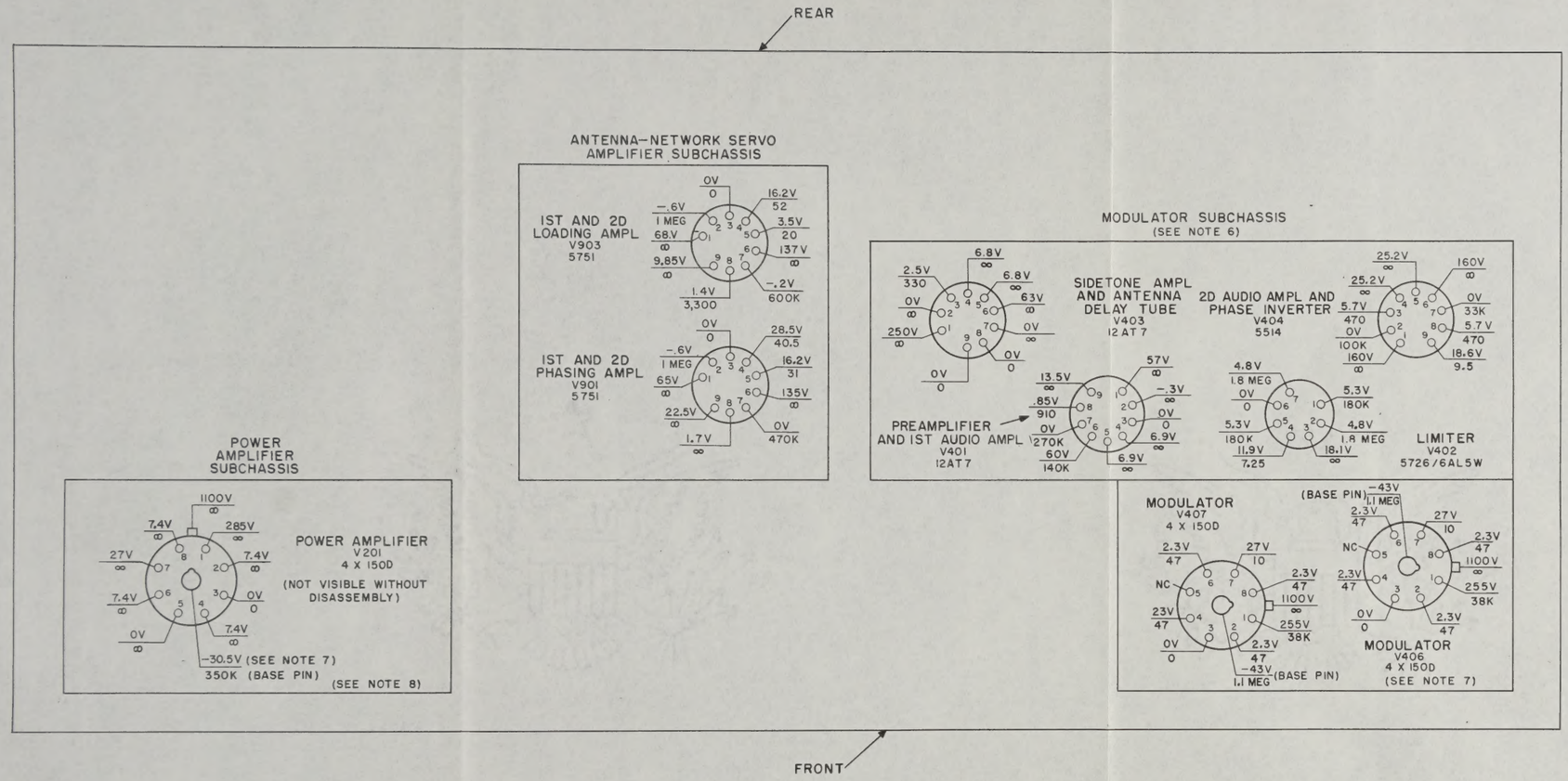


Figure 105. Radio Transmitter T-195/GRC-19, bottom deck, tube voltage and resistance diagram.

NOTES:

1. UNLESS OTHERWISE SHOWN, RESISTANCES ARE IN OHMS AND ARE MEASURED FROM SOCKET PIN TO GROUND WITH A 20,000-OHMS-PER-VOLT METER, AND WITH THE SUBCHASSIS PLUGS DISCONNECTED FROM THE MAIN FRAME. VOLTAGES ARE DC AND ARE MEASURED FROM SOCKET PIN TO GROUND WITH A VTVM AND WITH THE SUBCHASSIS CONNECTED TO MAIN FRAME, USING THE REQUIRED BENCH-TEST CABLE.
2. NC INDICATES NO CONNECTION.
3. ∞ INDICATES INFINITY.
4. UNLESS OTHERWISE NOTED, ALL RESISTANCE MEASUREMENTS ARE TAKEN WITH THE SERVICE SELECTOR AT OFF, AND THE BAND SELECTOR AND TUNING CONTROL SET FOR 18.000 MC AS SHOWN ON THE FREQUENCY INDICATOR ALL VOLTAGE MEASUREMENTS ARE TAKEN AT 18 MC WITH THE CONTROLS SET AS FOLLOWS: DIAL DIM AT FULL, TEST KEY AT ON, LINE LEVEL AT -34, RELAY-NORMAL-DUPLEX AT NORMAL, AND SERVICE SELECTOR AT CW.
5. THIS MEASUREMENT TAKEN WITH TEST KEY AT OFF.
6. VOLTAGE MEASUREMENT FOR THE MODULATOR SUBCHASSIS ARE MADE WITH SERVICE SELECTOR AT VOICE AND NO MODULATION INPUT TO THE TRANSMITTER.
7. THE MEASUREMENTS FOR THE PLATES OF V406 AND V407 ARE TAKEN AT TERMINALS 2 AND 1 RESPECTIVELY OF T402
8. MEASUREMENTS FOR SOCKET PINS 2,5,7 AND BASE PIN OF V201 ARE TAKEN AT TERMINALS E205, E207, E206, AND E208 RESPECTIVELY LOCATED ON SHIELD NEAR SOCKET XV201
9. ALL TUBES IN EACH SUBCHASSIS REMOVED.

390412 O - 56 (In pocket) No. 14

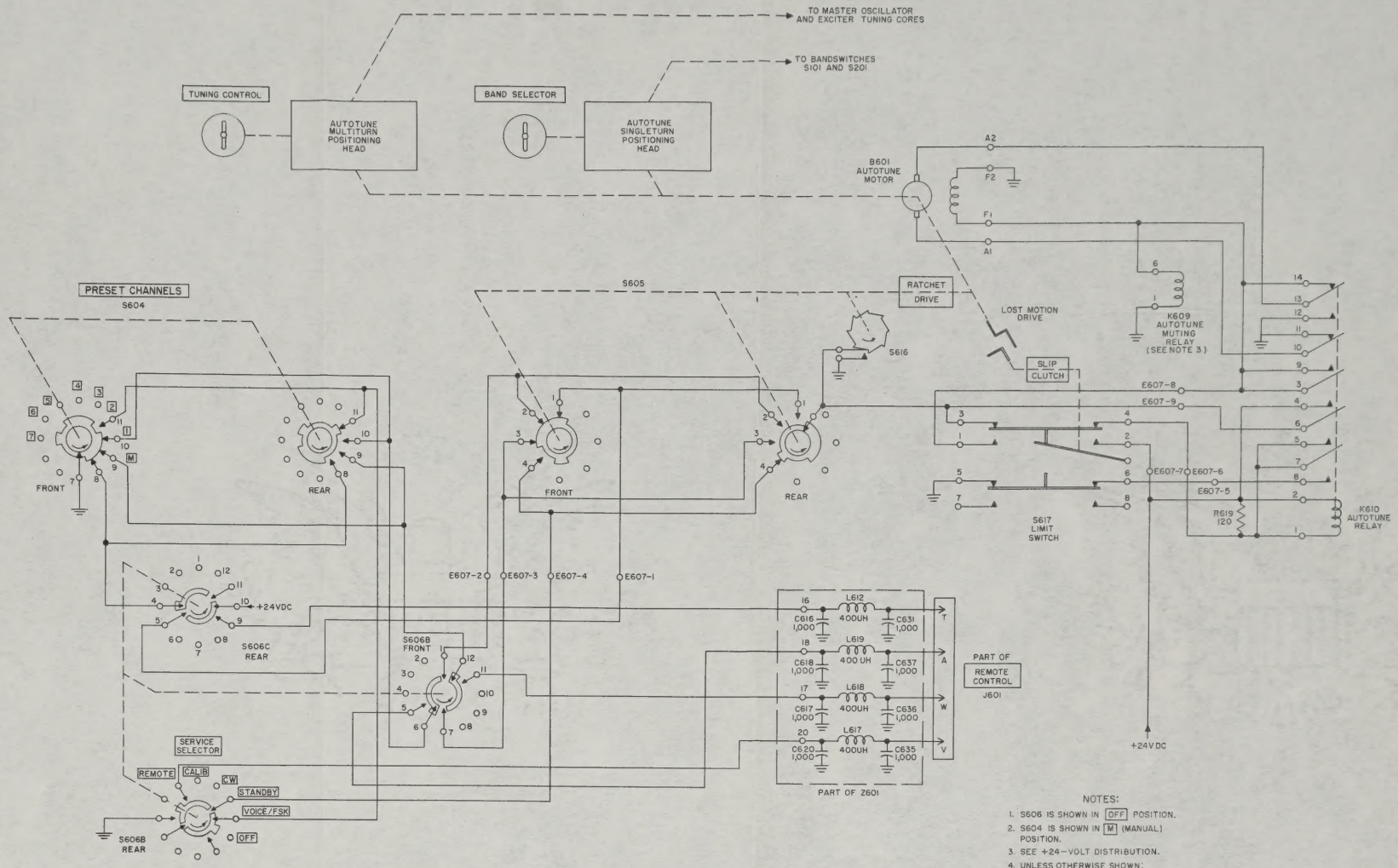
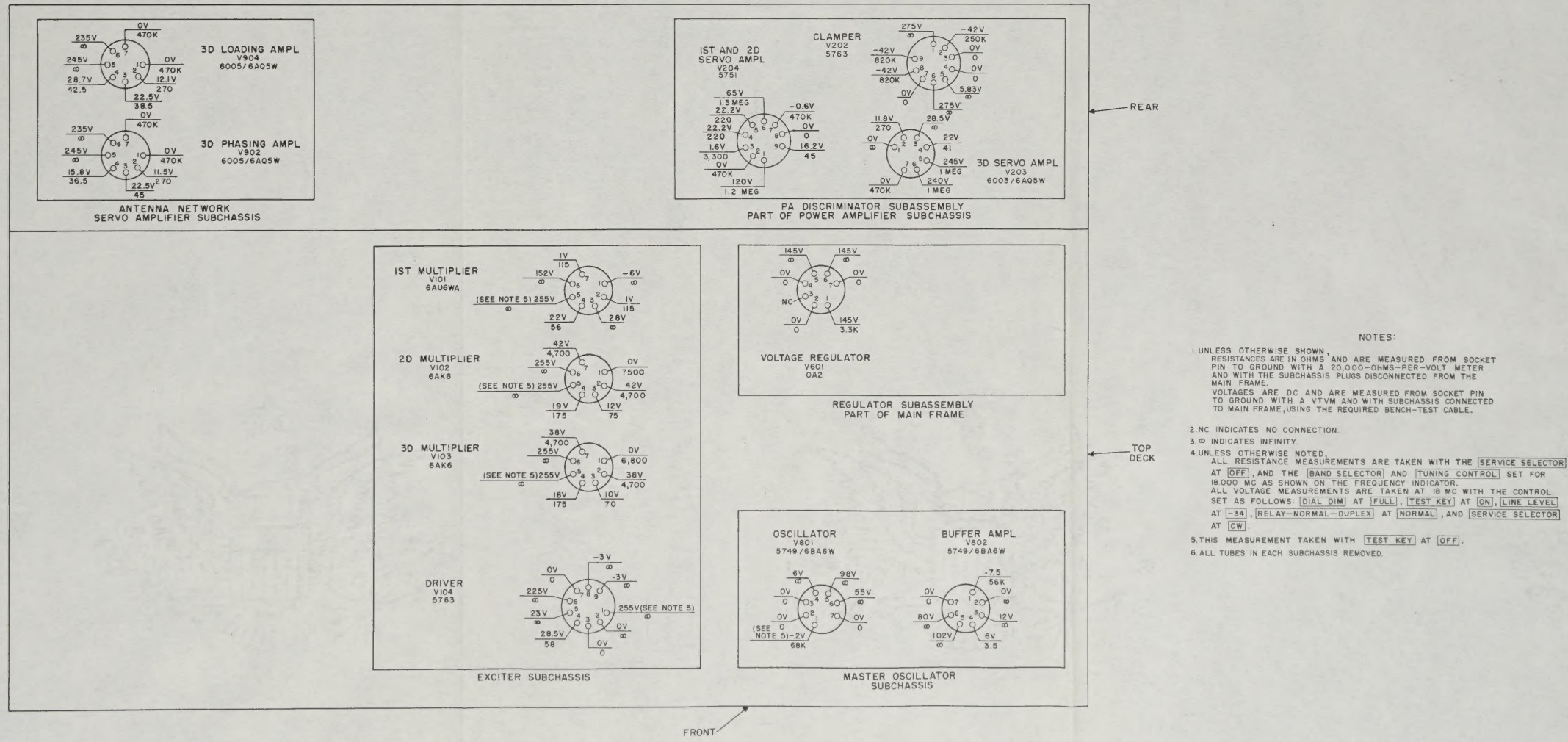


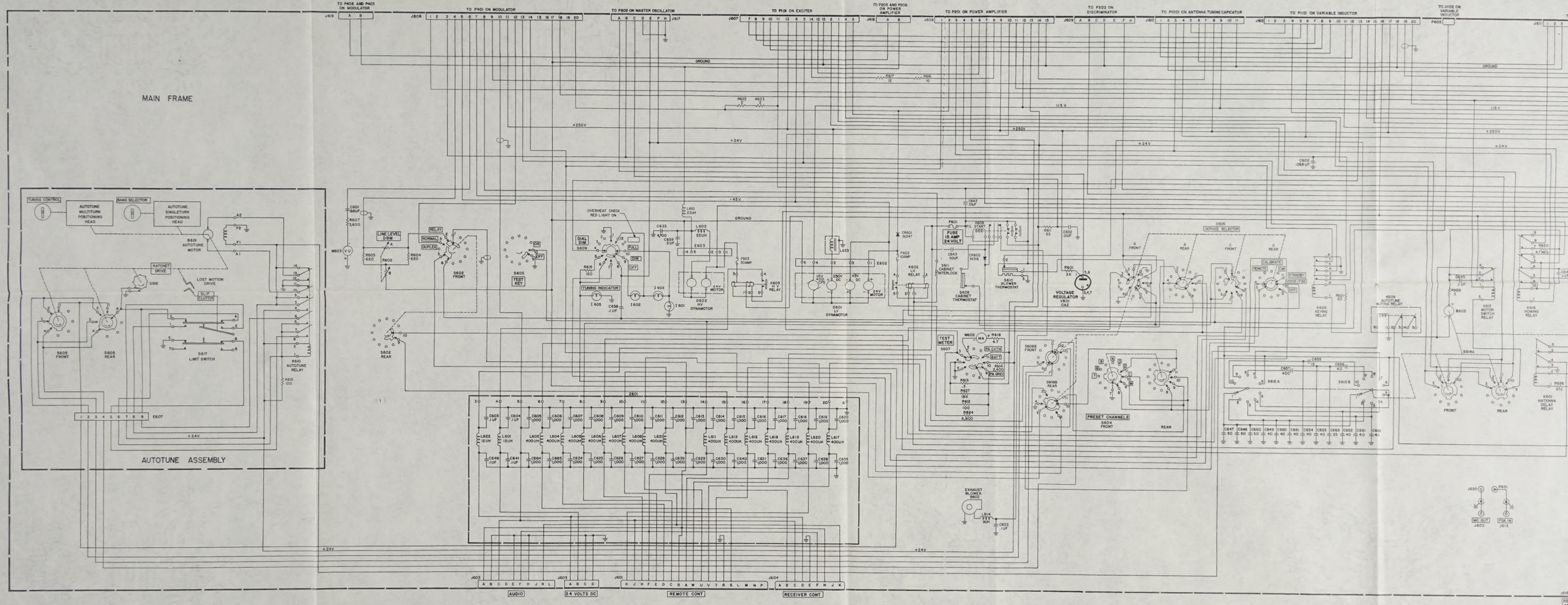
Figure 55. Autotune control circuits, functional diagram.

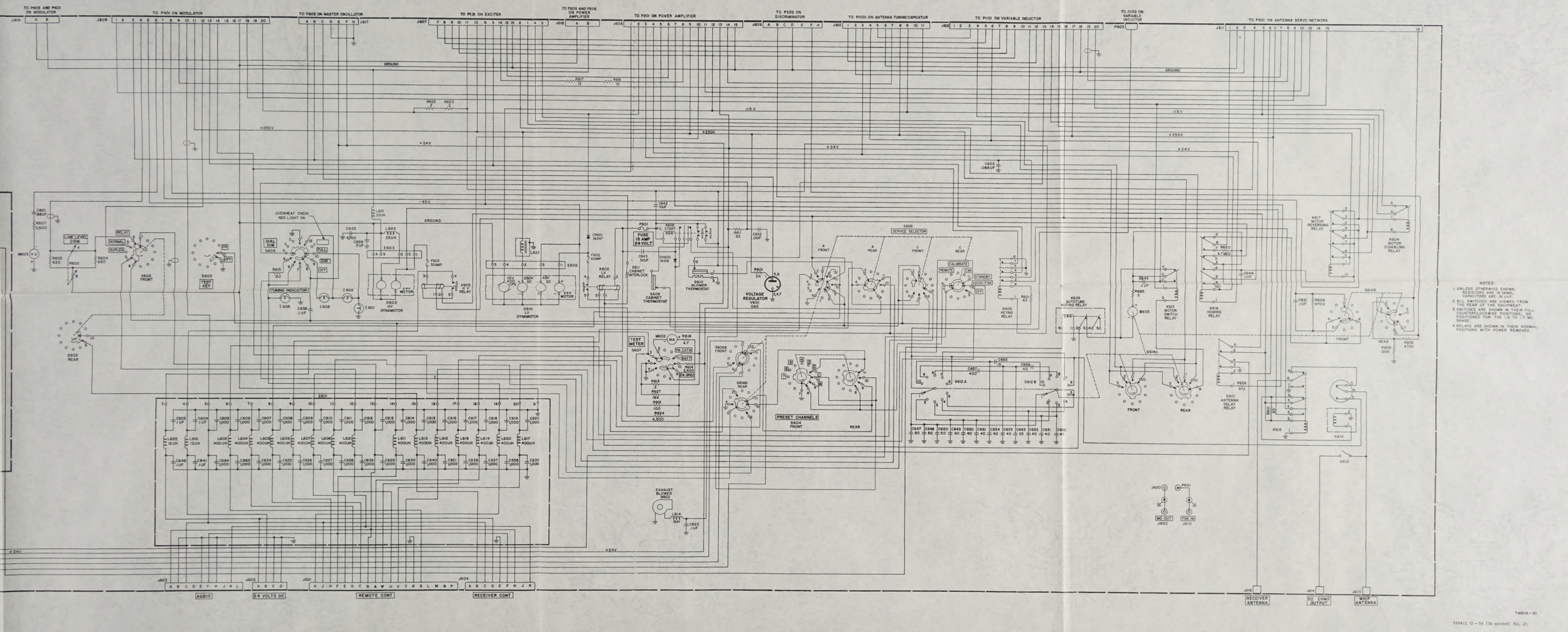


NOTES:

1. UNLESS OTHERWISE SHOWN, RESISTANCES ARE IN OHMS AND ARE MEASURED FROM SOCKET PIN TO GROUND WITH A 20,000-OHMS-PER-VOLT METER AND WITH THE SUBCHASSIS PLUGS DISCONNECTED FROM THE MAIN FRAME.
   VOLTAGES ARE DC AND ARE MEASURED FROM SOCKET PIN TO GROUND WITH A VTVM AND WITH SUBCHASSIS CONNECTED TO MAIN FRAME, USING THE REQUIRED BENCH-TEST CABLE.
2. NC INDICATES NO CONNECTION.
3. ∞ INDICATES INFINITY.
4. UNLESS OTHERWISE NOTED,
   ALL RESISTANCE MEASUREMENTS ARE TAKEN WITH THE [SERVICE SELECTOR] AT [OFF], AND THE [BAND SELECTOR] AND [TUNING CONTROL] SET FOR 18.000 MC AS SHOWN ON THE FREQUENCY INDICATOR.
   ALL VOLTAGE MEASUREMENTS ARE TAKEN AT 18 MC WITH THE CONTROL SET AS FOLLOWS: [DIAL DIM] AT [FULL], [TEST KEY] AT [ON], [LINE LEVEL] AT [-34], [RELAY—NORMAL—DUPLEX] AT [NORMAL], AND [SERVICE SELECTOR] AT [CW].
5. THIS MEASUREMENT TAKEN WITH [TEST KEY] AT [OFF].
6. ALL TUBES IN EACH SUBCHASSIS REMOVED.

Figure 104. Radio Transmitter T-195/GRC-19, top deck, tube voltage and resistance diagram.


MAIN FRAME
AUTOTUNE ASSEMBLY
TUNING CONTROL
BAND SELECTOR
AUTOTUNE MULTITURN POSITIONING HEAD
AUTOTUNE SINGLETURN POSITIONING HEAD
B601 AUTOTUNE MOTOR
RATCHET DRIVE
LOST MOTION DRIVE
SLIP CLUTCH
S605 FRONT
S605 REAR
S617 LIMIT SWITCH
K610 AUTOTUNE RELAY
S616
E607
+24V
TO P408 AND P403 ON MODULATOR
TO P401 ON MODULATOR
TO P802 ON MASTER OSCILLATOR
TO P101 ON EXCITER
TO P205 AND P206 ON POWER AMPLIFIER
TO P201 ON POWER AMPLIFIER
TO P302 ON DISCRIMINATOR
TO P1001 ON ANTENNA TUNING CAPACITOR
TO P1101 ON VARIABLE INDUCTOR
TO J1102 ON VARIABLE INDUCTOR
GROUND
+250V
+24V
-45V
115 V
C601 68UF
R607 3,600
M603 VU
LINE LEVEL DBM
R603 620
R602
R604 620
RELAY
NORMAL
DUPLEX
S602 FRONT
S603 TEST KEY
ON
OFF
OVERHEAT CHECK RED LIGHT ON
DIAL DIM S609
FULL
DIM
OFF
R615 120
TUNING INDICATOR
I 605
C658 .1 UF
I 602
I 603
E 601
L610 22UH
C623 4700
C659 2 UF
L602 22UH
L603
C4 C5
C2 C3 C1
E602
F603 .3 AMP
K603 H V RELAY
D602 HV DYNAMOTOR
24V MOTOR
D601 LV DYNAMOTOR
CR601 IN347
F602 .3 AMP
K602 LV RELAY
FUSE 15 AMP 24 VOLT
F601
S611 CABINET INTERLOCK
S606 CABINET THERMOSTAT
S608 BLOWER THERMOSTAT
C643 50UF
CR602 IN34
C647 10UF
C632 .01UF
R601 53
VOLTAGE REGULATOR VR01 OA2
R621 3K
15.6
24.7
S606 SERVICE SELECTOR
A FRONT
A REAR
C FRONT
C REAR
CALIBRATE
REMOTE
CW
STANDBY
VOICE/FSK
OFF
R620 63
K605 KEYING RELAY
K609 AUTOTUNE KEYING RELAY
C645 .1 UF
R605
B603
K613 MOTOR SWITCH RELAY
K616 HOMING RELAY
R620 4.7 MEG
R626 47K
K601 ANTENNA RELAY RELAY
S614A
S614B
S612 A
S612 B
C655
C656 40
C657 400
C647 .01 C648 .01 C650 .01 C649 .01 C650 .01 C661 .01 C654 .01 C653 .01 C663 .01 C652 .01 C651 .01 C662 .01
TEST METER S607
M602 MA
R618 4.7
PA CATH
BATT
PA GRID
R613 3
R627 18K
R612 100
R624 6,800
S606B FRONT
S606B REAR
PRESET CHANNELS S604 FRONT
REAR
EXHAUST BLOWER B602
L614 1UH
C622 .1UF
C602 .068 UF
J620
P601
MIC OUT J602
FSK IN J613
E601
C603 1 UF
C604 1 UF
C605 1,000
C606 1,000
C607 1,000
C608 1,000
C609 1,000
C610 1,000
C611 1,000
C612 1,000
C613 1,000
C614 1,000
C615 1,000
C616 1,000
C617 1,000
C618 1,000
C619 1,000
C620 1,000
L622 12 UH
L601 12UH
L605 400UH
L604 400UH
L606 400UH
L608 400UH
L607 400UH
L609 400UH
L621 400UH
L611 400UH
L613 400UH
L612 400UH
L618 400UH
L619 400UH
L620 400UH
L617 400UH
C646 1 UF
C641 1 UF
C642 1,000
C644 1,000
C624 1,000
C625 1,000
C626 1,000
C627 1,000
C628 1,000
C629 1,000
C639 1,000
C630 1,000
C640 1,000
C631 1,000
C636 1,000
C637 1,000
C638 1,000
C635 1,000
J603 AUDIO
J605 24 VOLTS DC
J601 REMOTE CONT
J604 RECEIVER CONT



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390412 O - 56 (In pocket) No. 21

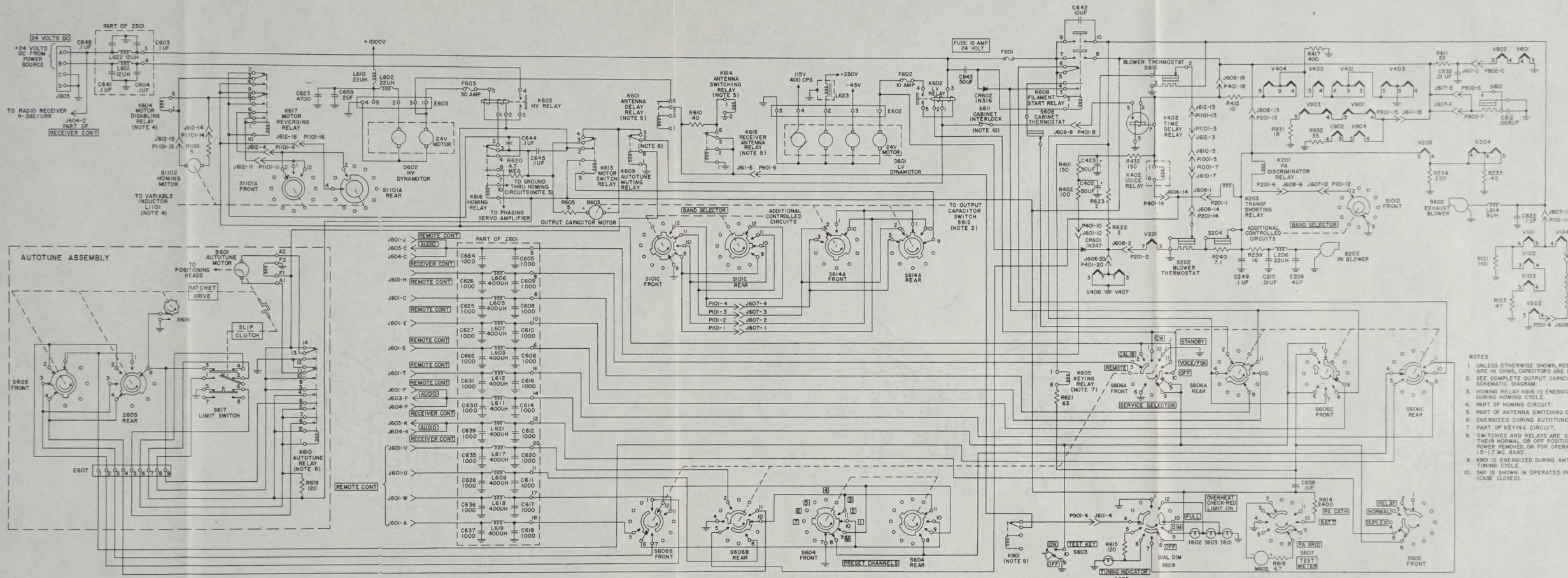


Figure 61. +24-volt distribution, functional diagram.

NOTES

1. UNLESS OTHERWISE SHOWN, RESISTORS ARE IN OHMS, CAPACITORS ARE IN UUF.
2. SEE COMPLETE OUTPUT CAPACITOR SCHEMATIC DIAGRAM.
3. HOMING RELAY K616 IS ENERGIZED DURING HOMING CYCLE.
4. PART OF HOMING CIRCUIT.
5. PART OF ANTENNA SWITCHING CIRCUIT.
6. ENERGIZED DURING AUTOTUNE CYCLE.
7. PART OF KEYING CIRCUIT.
8. SWITCHES AND RELAYS ARE SHOWN IN THEIR NORMAL OR OFF POSITIONS, WITH POWER REMOVED, OR FOR OPERATION IN 1.5-1.7 MC BAND.
9. K901 IS ENERGIZED DURING ANTENNA TUNING CYCLE.
10. S611 IS SHOWN IN OPERATED POSITION (CASE CLOSED).

390412 O - 56 (In pocket) No. 11

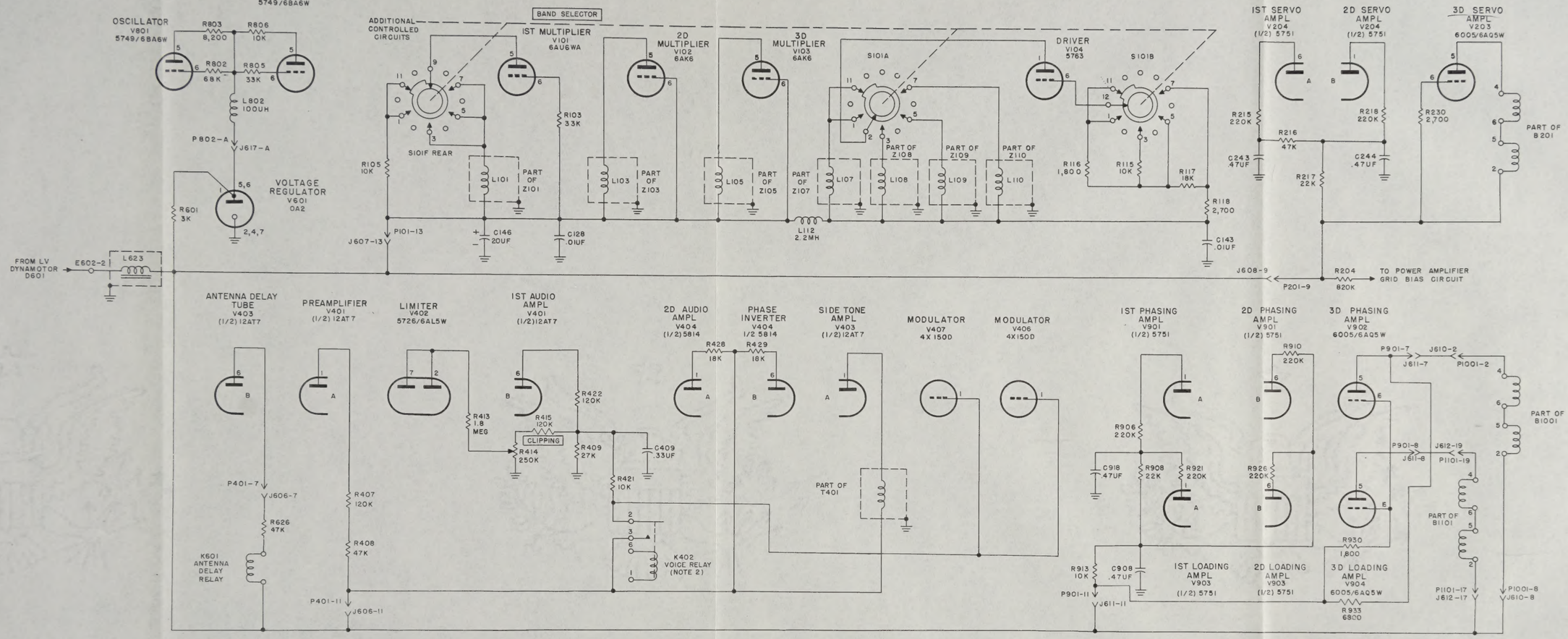
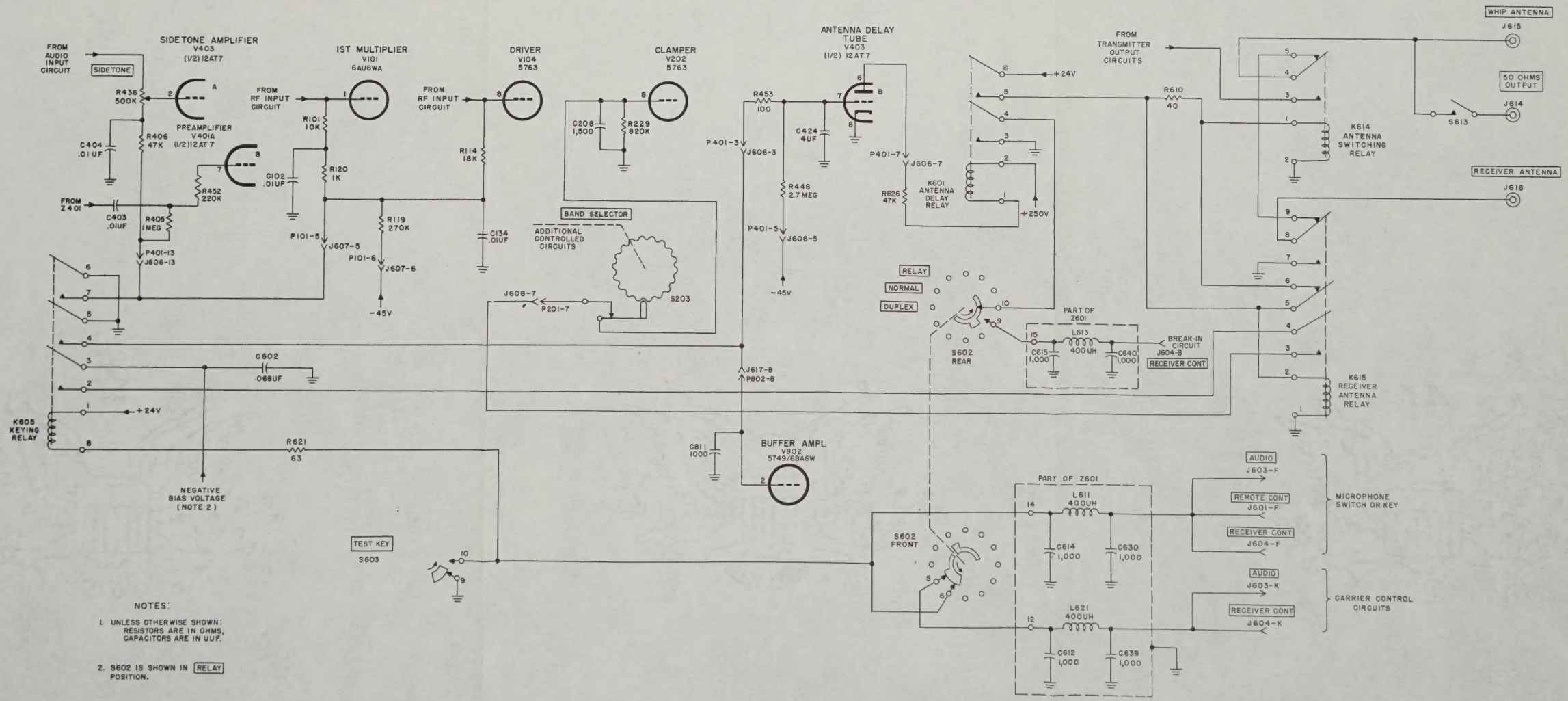


Figure 63. +250-volt distribution, function diagram.



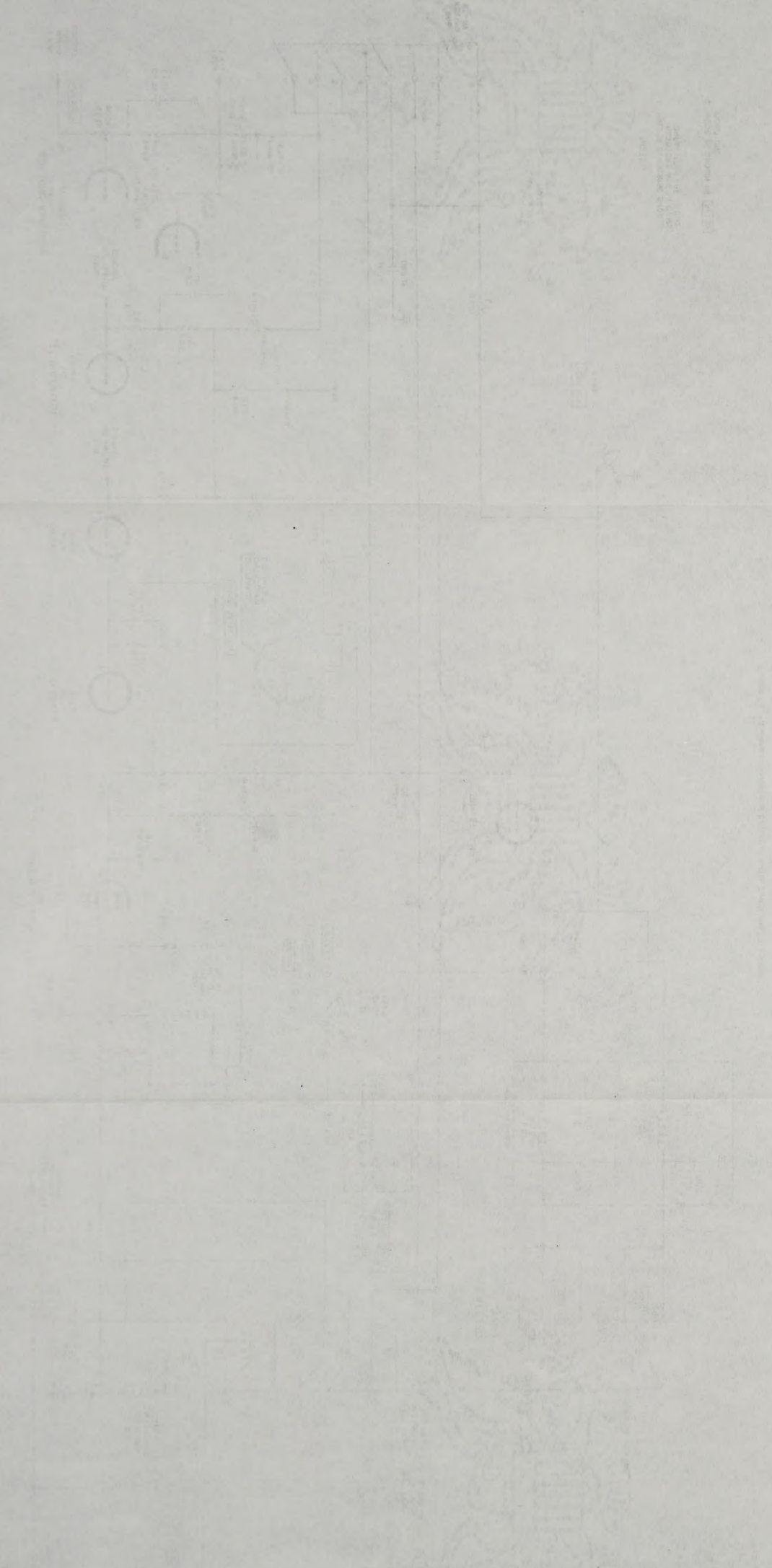
NOTES:

1. UNLESS OTHERWISE SHOWN: RESISTORS ARE IN OHMS, CAPACITORS ARE IN UUF.
2. S602 IS SHOWN IN RELAY POSITION.

Figure 54. Antenna switch and keying circuits, functional diagram.

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390412 O - 56 (In pocket) No. 7



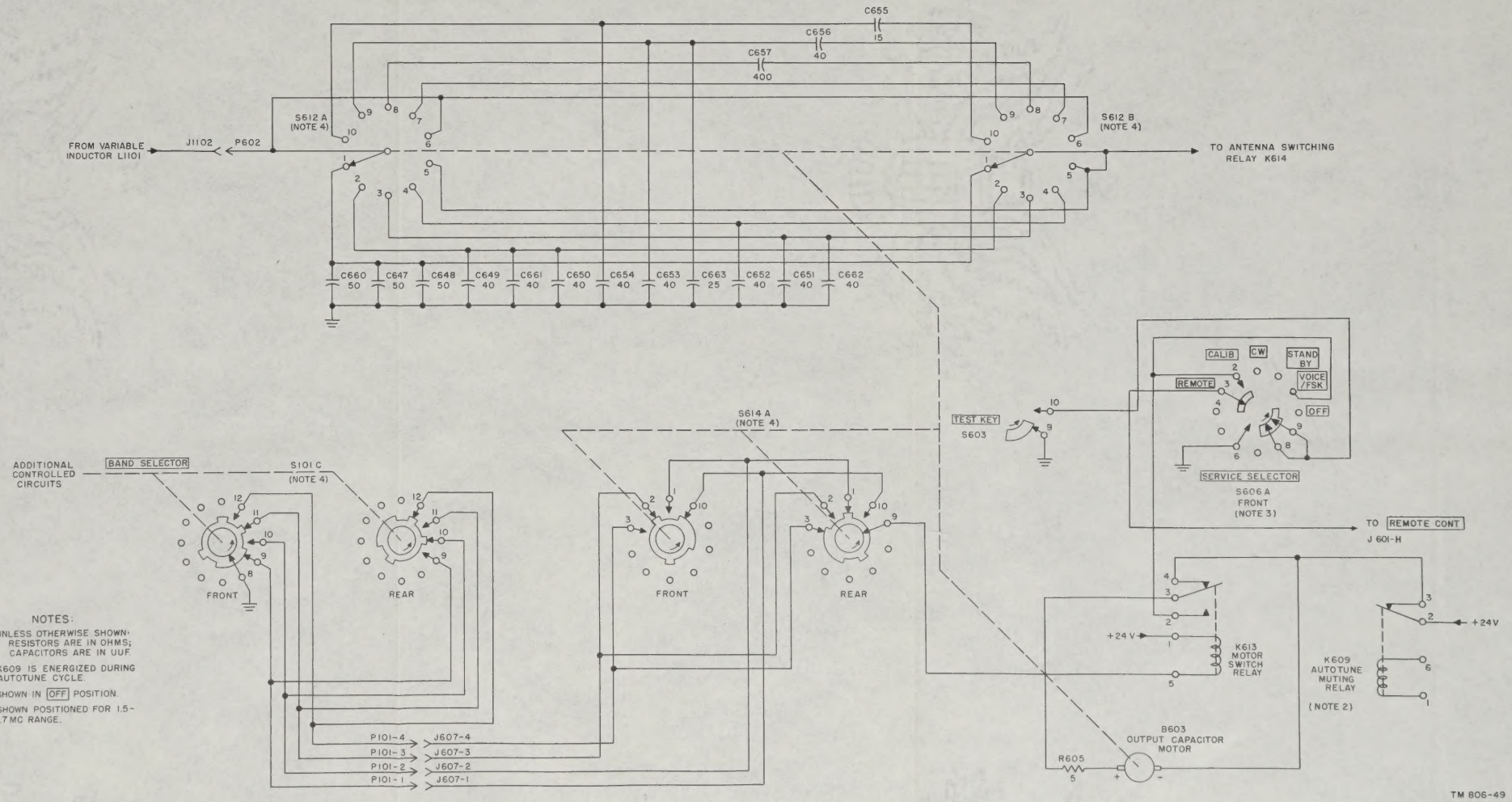


Figure 52. Output capacitor, functional diagram.

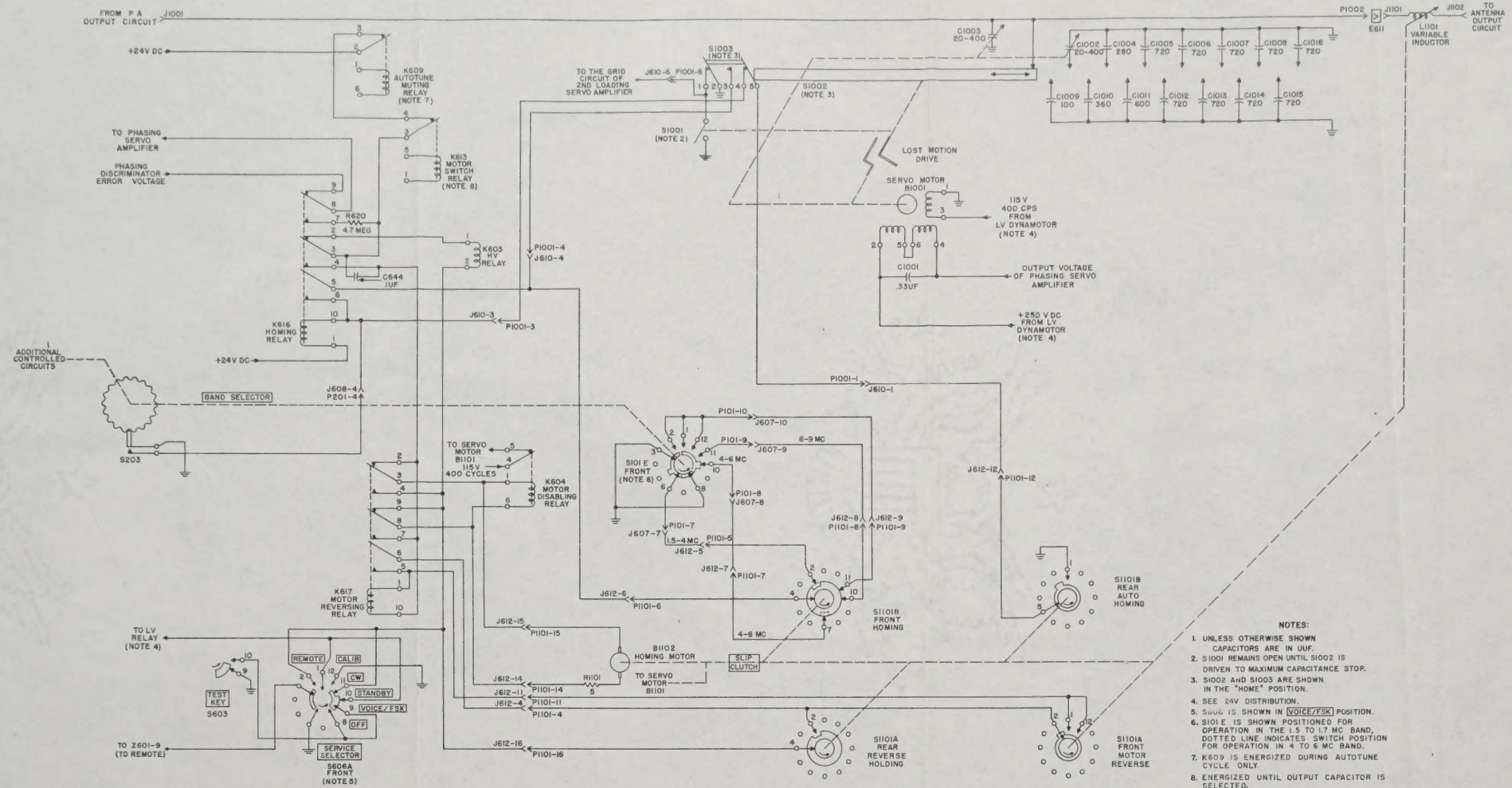


Figure 45. Homing circuits, functional diagram.

390412 O - 56 (In pocket) No. 5

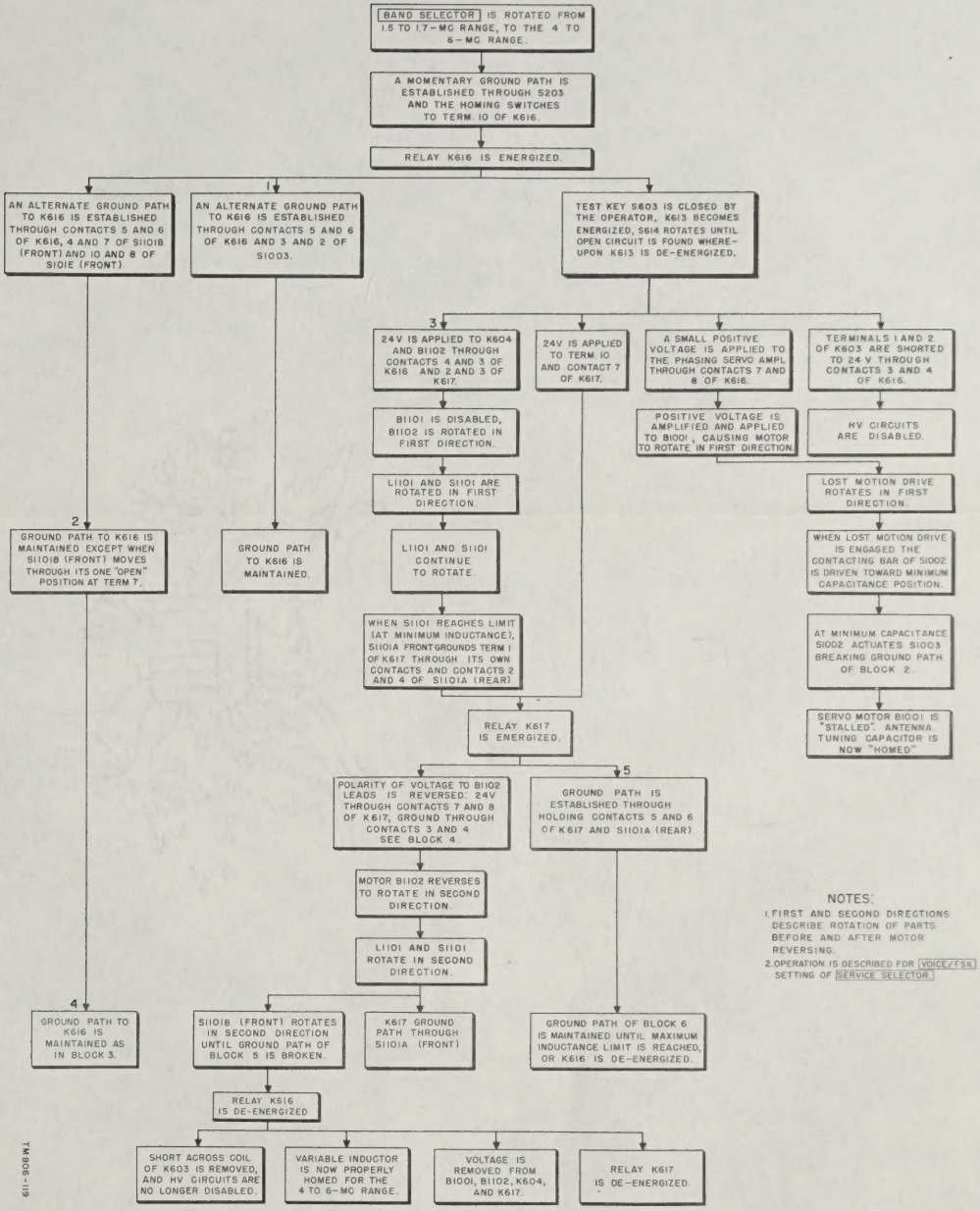


Figure 44. Homing cycle flow chart.

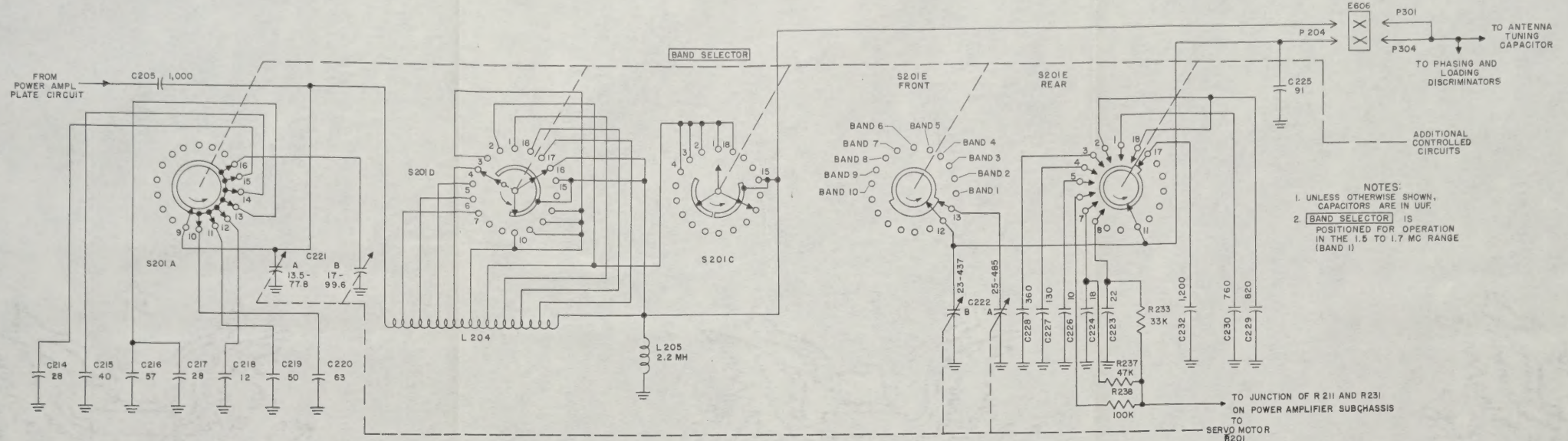


Figure 31. Power-amplifier plate circuit, functional diagram.

390412 O -56 (In pocket) No. 3

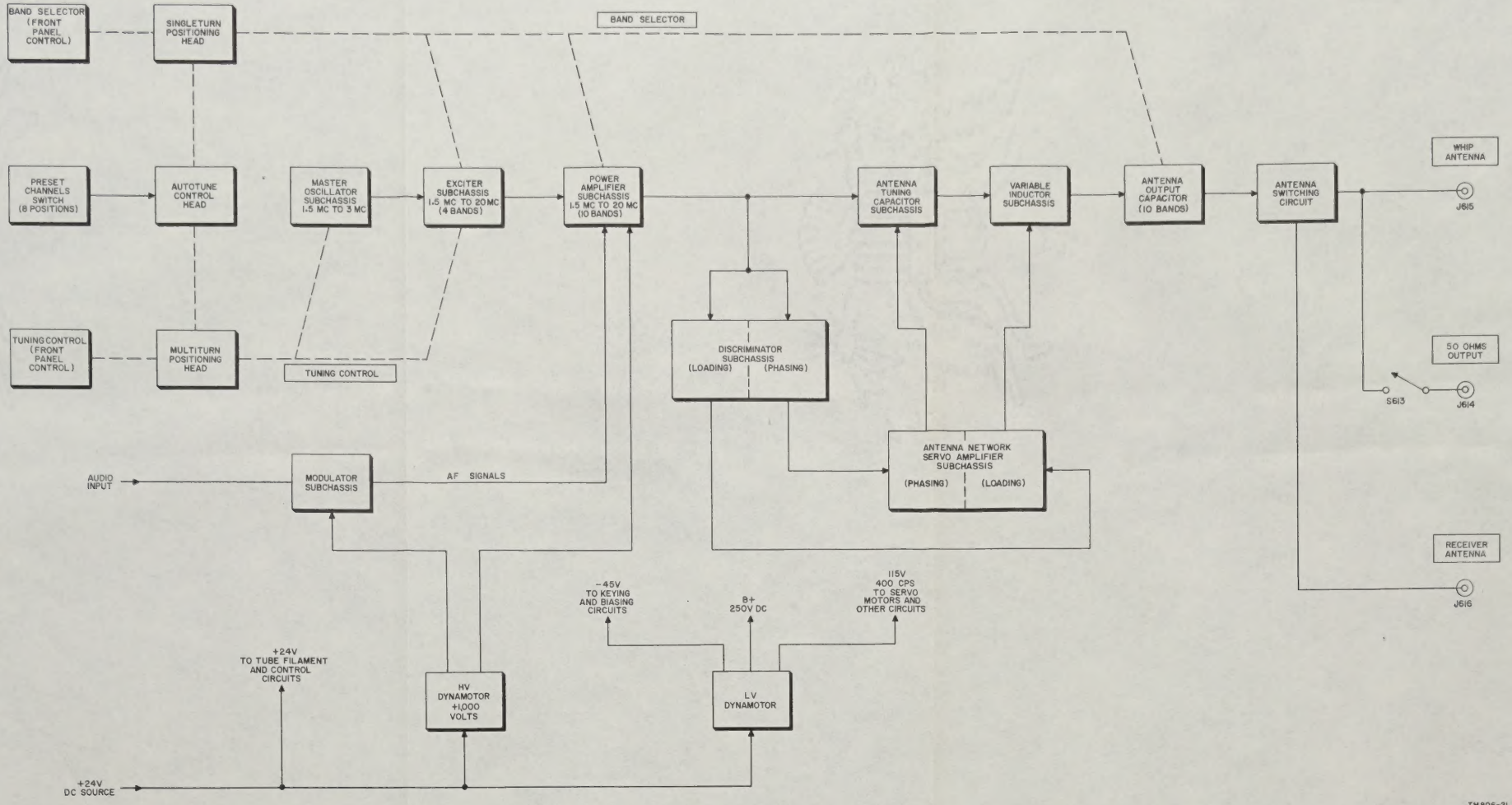
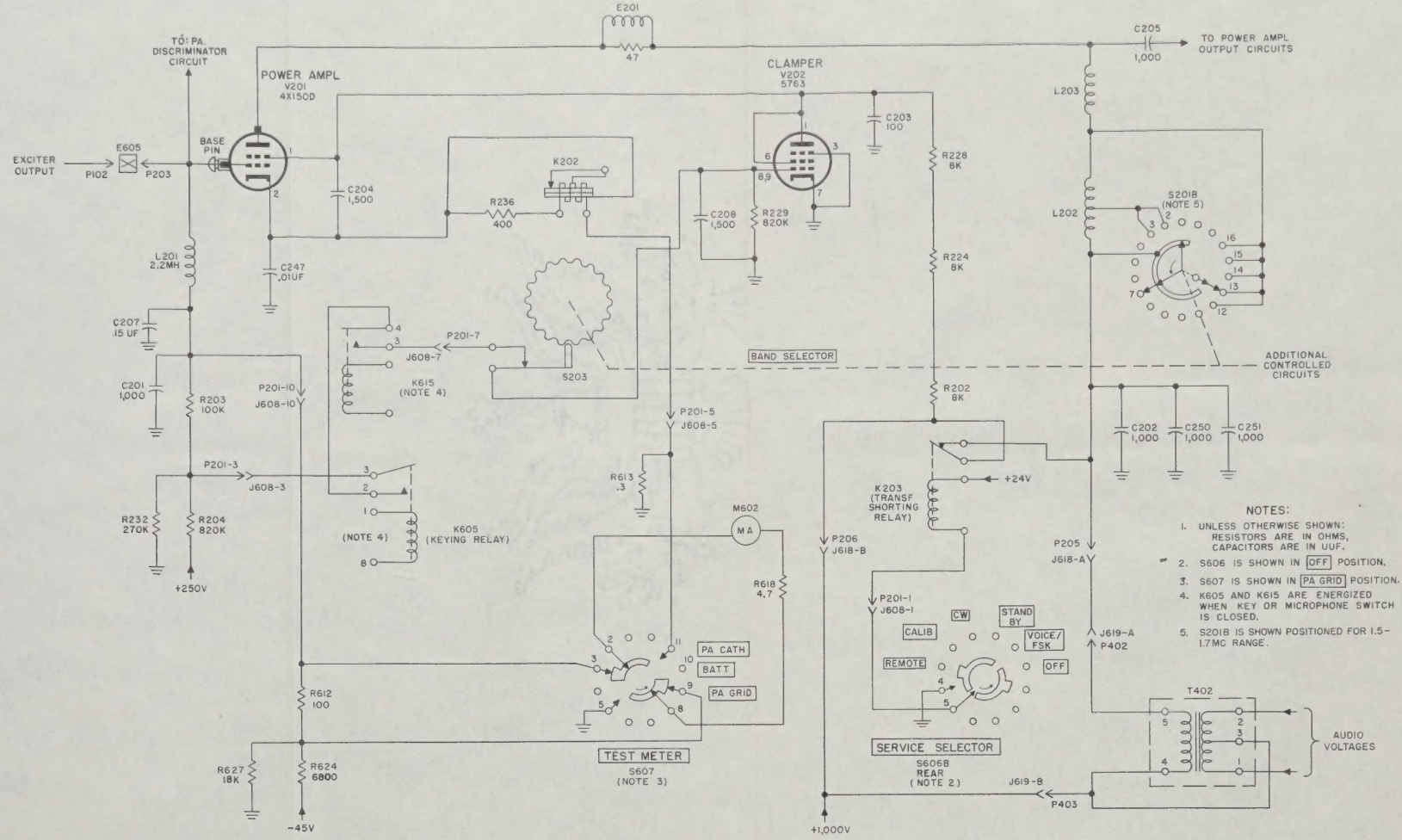


Figure 20. Radio Transmitter T-195/GRC-19, composite block diagram.



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Figure 30. Power-amplifier and clamper stages, functional diagram.

390412 O-56 (In pocket) No. 2

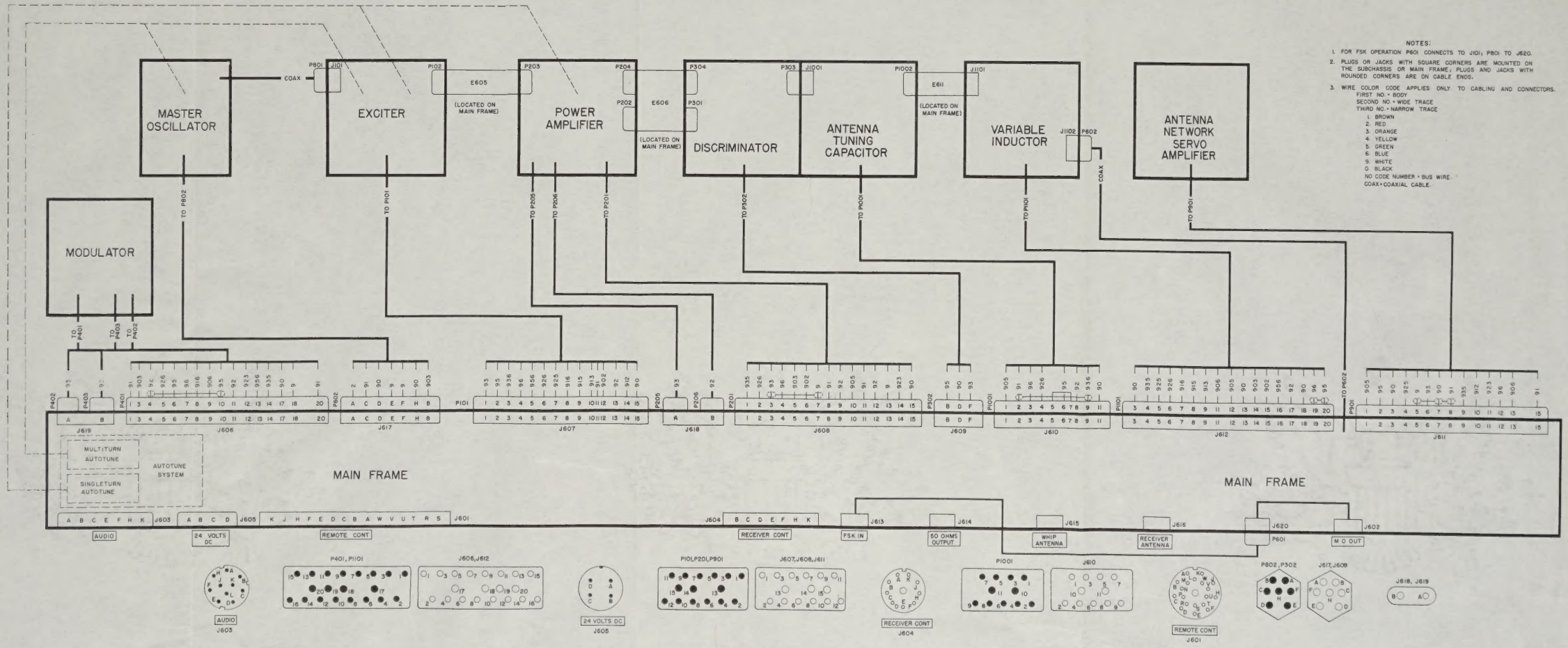


Figure 138. Subchassis interconnection cabling diagram.

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390412 O-56 (In pocket) No. 22

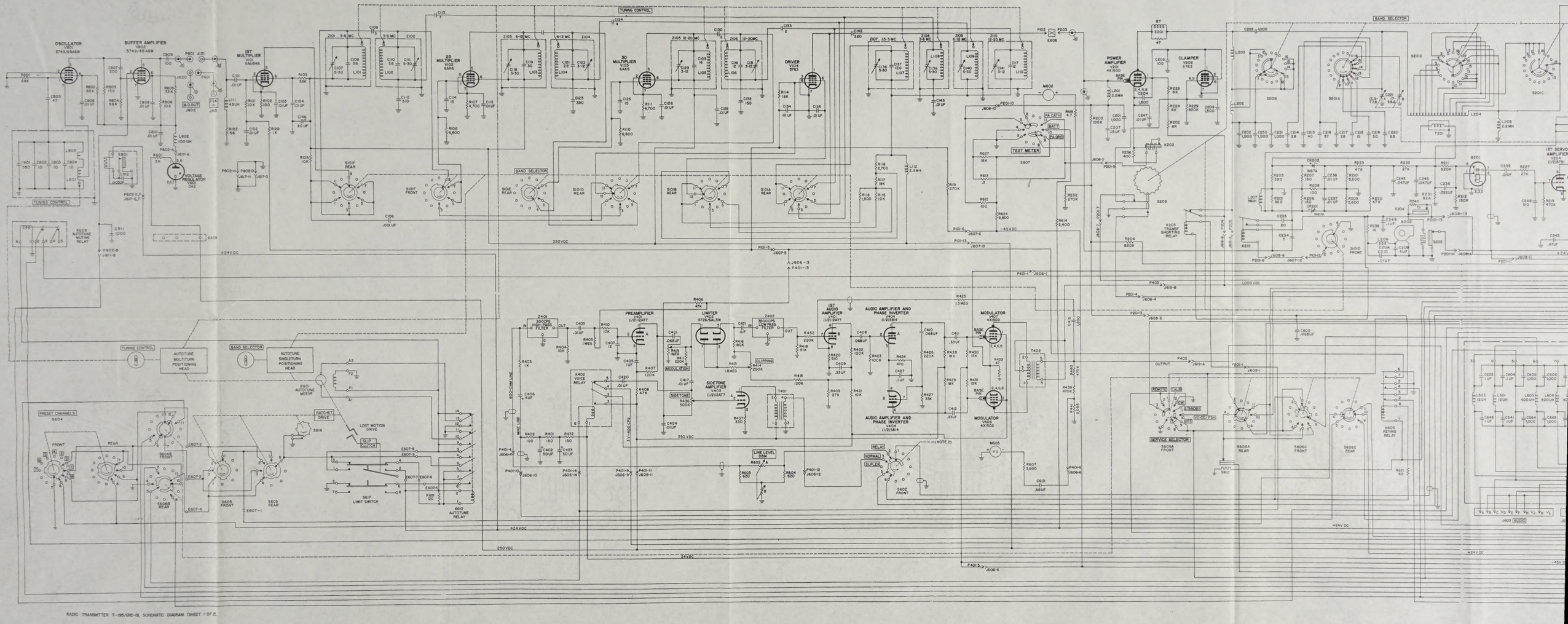
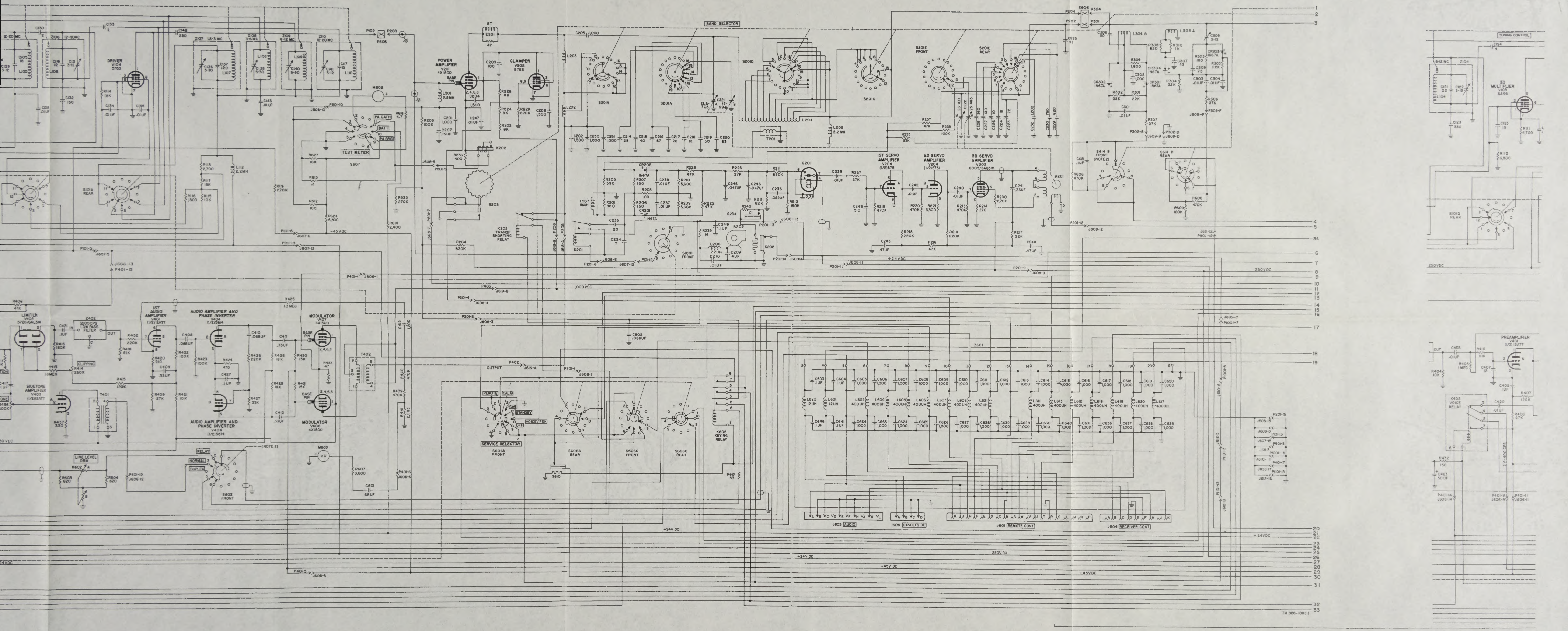


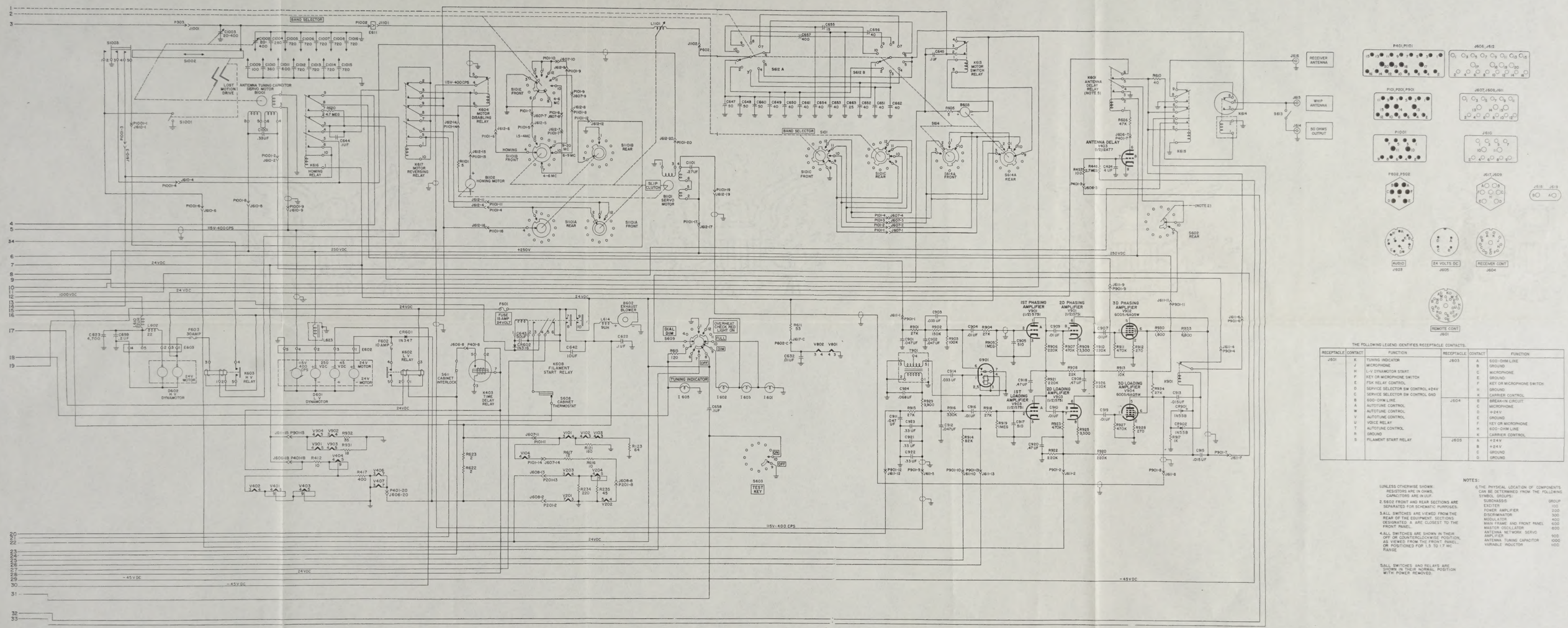
Figure 139. Radio Transmitter T–195/GRC–19, schematic diagram.



EMATIC DIAGRAM (SHEET 1 OF 2).

①

Figure 139. Radio Transmitter T–195/GRC–19, schematic diagram.



RECEPTACLE	CONTACT	FUNCTION	RECEPTACLE	CONTACT	FUNCTION
J601	K	TUNING INDICATOR	J603	A	600-OHM LINE
	J	MICROPHONE		B	GROUND
	H	L-V DYNAMOTOR START		C	MICROPHONE
	F	KEY OR MICROPHONE SWITCH		E	GROUND
	E	FSK RELAY CONTROL		F	KEY OR MICROPHONE SWITCH
	D	SERVICE SELECTOR SW CONTROL +24V		H	GROUND
	C	SERVICE SELECTOR SW CONTROL GND		K	CARRIER CONTROL
	B	600-OHM LINE	J604	B	BREAK-IN CIRCUIT
	A	AUTOTUNE CONTROL		C	MICROPHONE
	W	AUTOTUNE CONTROL		D	+24 V
	V	AUTOTUNE CONTROL		E	GROUND
	U	VOICE RELAY		F	KEY OR MICROPHONE
	T	AUTOTUNE CONTROL		H	600-OHM LINE
	R	GROUND		K	CARRIER CONTROL
	S	FILAMENT START RELAY	J605	A	+24 V
				B	+24 V
				C	GROUND
				D	GROUND

THE FOLLOWING LEGEND IDENTIFIES RECEPTACLE CONTACTS.

NOTES:

1. UNLESS OTHERWISE SHOWN: RESISTORS ARE IN OHMS, CAPACITORS ARE IN UUF.
2. S602 FRONT AND REAR SECTIONS ARE SEPARATED FOR SCHEMATIC PURPOSES.
3. ALL SWITCHES ARE VIEWED FROM THE REAR OF THE EQUIPMENT. SECTIONS DESIGNATED A ARE CLOSEST TO THE FRONT PANEL.
4. ALL SWITCHES ARE SHOWN IN THEIR OFF OR COUNTERCLOCKWISE POSITION, AS VIEWED FROM THE FRONT PANEL, OR POSITIONED FOR 1.5 TO 1.7 MC RANGE.
5. ALL SWITCHES AND RELAYS ARE SHOWN IN THEIR NORMAL POSITION WITH POWER REMOVED.
6. THE PHYSICAL LOCATION OF COMPONENTS CAN BE DETERMINED FROM THE FOLLOWING SYMBOL GROUPS:

SUBCHASSIS	GROUP
EXCITER	100
POWER AMPLIFIER	200
DISCRIMINATOR	300
MODULATOR	400
MAIN FRAME AND FRONT PANEL	600
MASTER OSCILLATOR	800
ANTENNA NETWORK SERVO AMPLIFIER	900
ANTENNA TUNING CAPACITOR	1000
VARIABLE INDUCTOR	1100

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Figure 139. Radio Transmitter T-195/GRC-19, schematic diagram—Continued.