NavP rs 93402-3

TRAINEE'S GUIDE

for

ELECTRONICS TECHNICIANS

CLASS C

AN/SRC-20 AN/SRC-21

RADIO SETS

VOLUME 3

SCHEMATICS

Bureau of Naval Personnel
January 1967

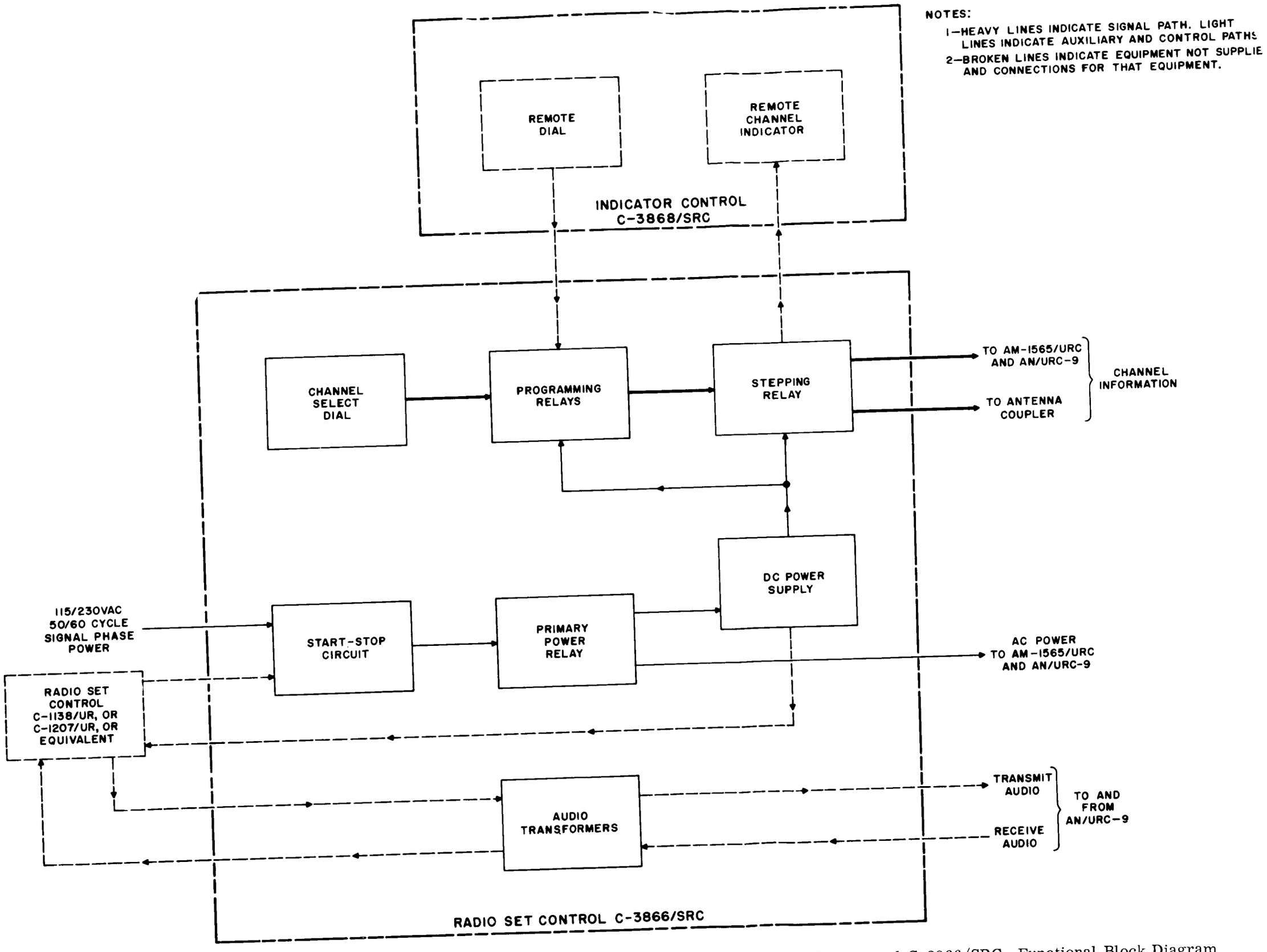


Figure 4-3. Radio Set Control C-3866/SRC, Functional Block Diagram

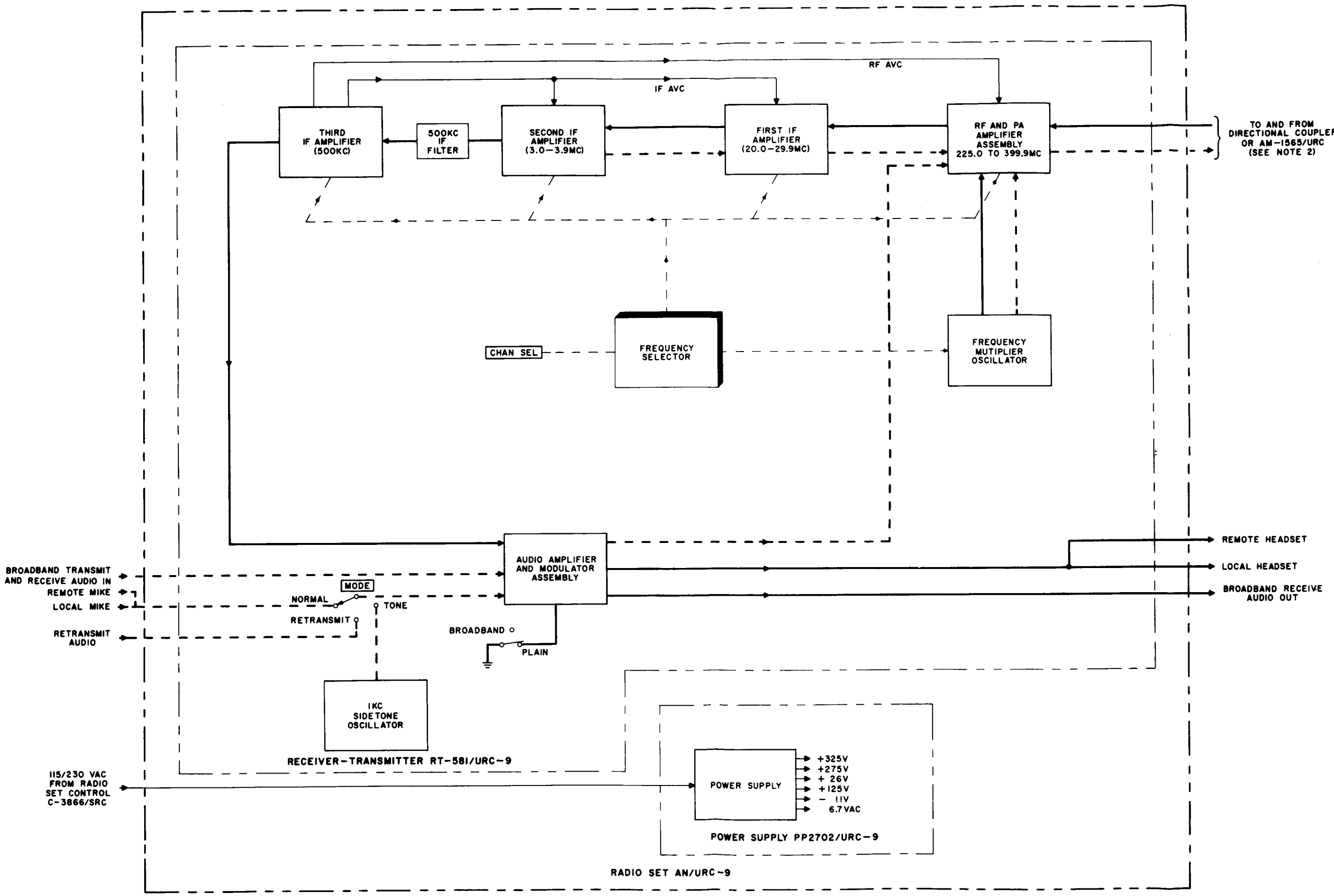


Figure 4-4. Radio Set AN/URC-9, Functional Block Diagram

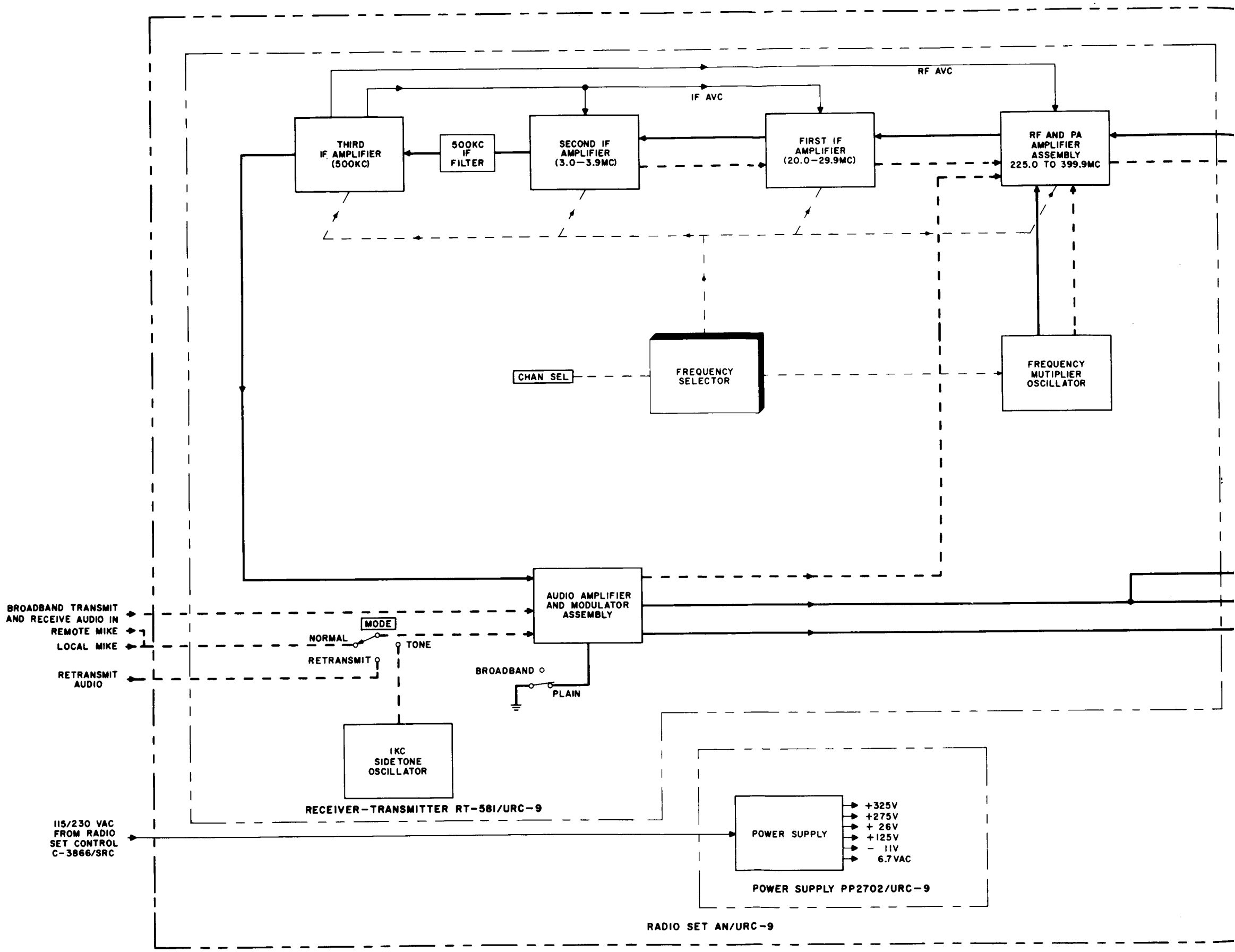


Figure 4-4. Radi

NOTES:
1- HEAVY SOLID LINES INDICATE RECEIVE SIGNAL PATH, HEAVY BROKEN LINES INDICATE TRANSMIT SIGNAL PATH, LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS, AND LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.

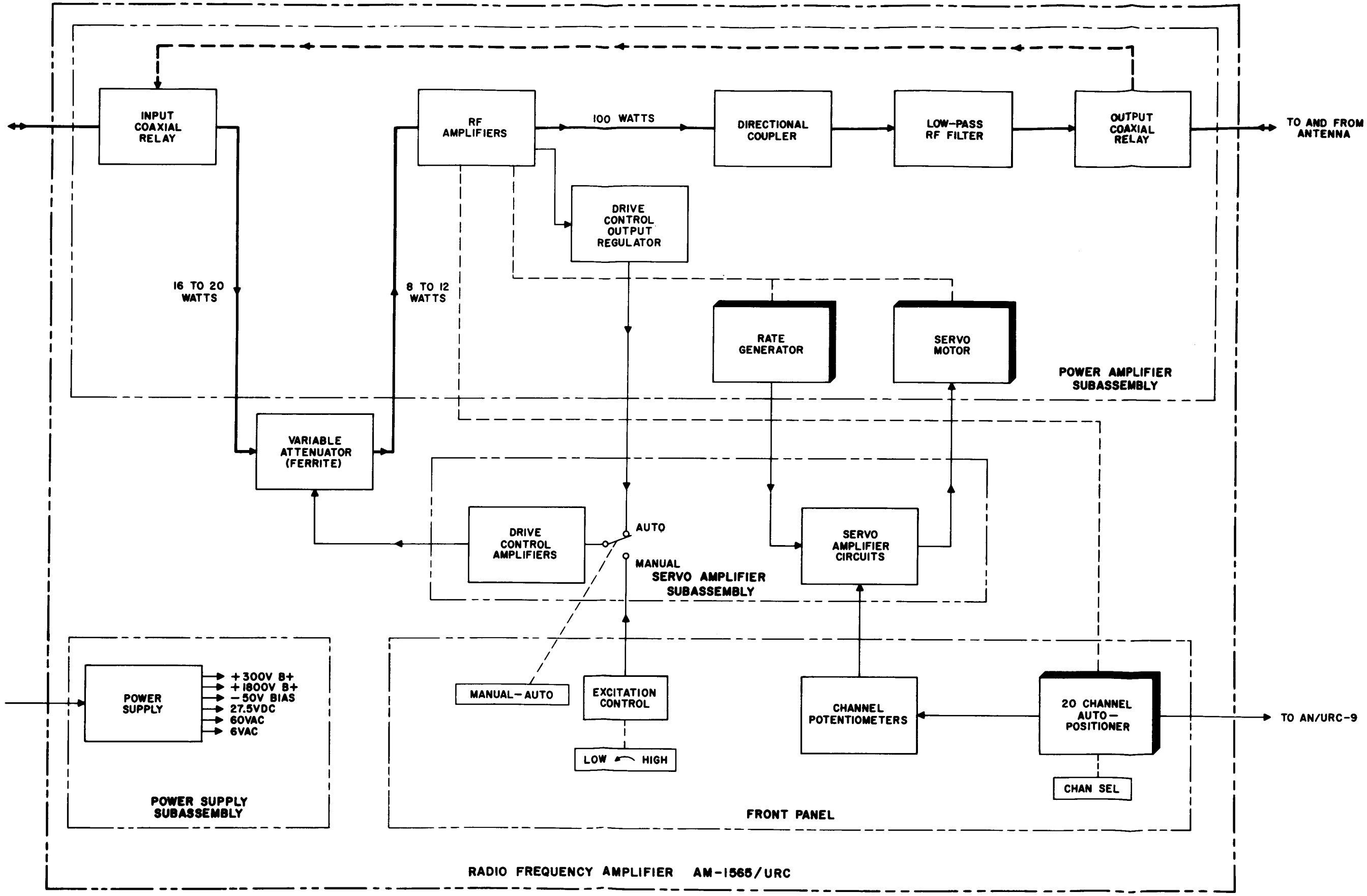


Figure 4-5. Radio-Frequency Amplifier AM-1565/URC, Functional Block Diagram

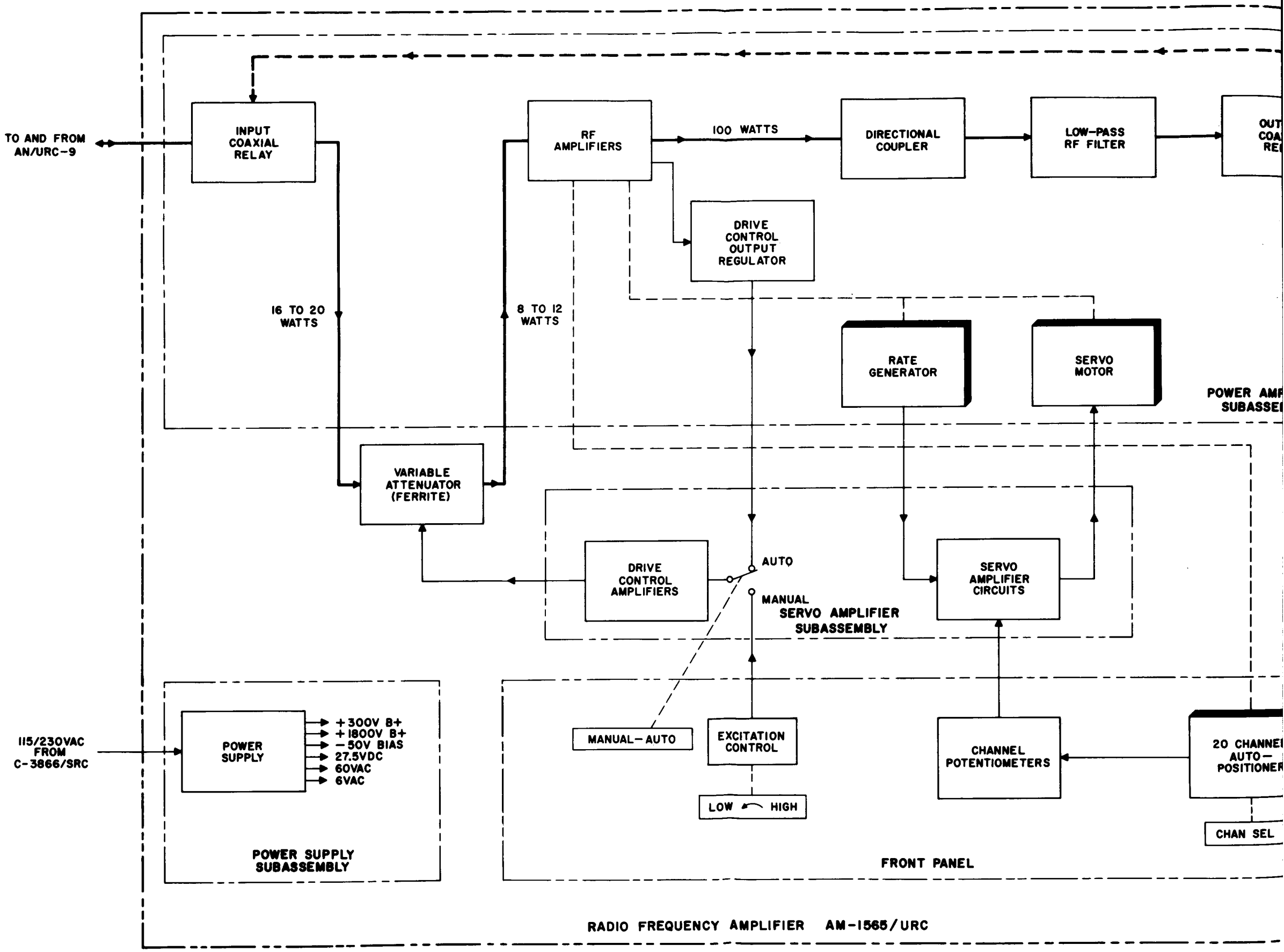
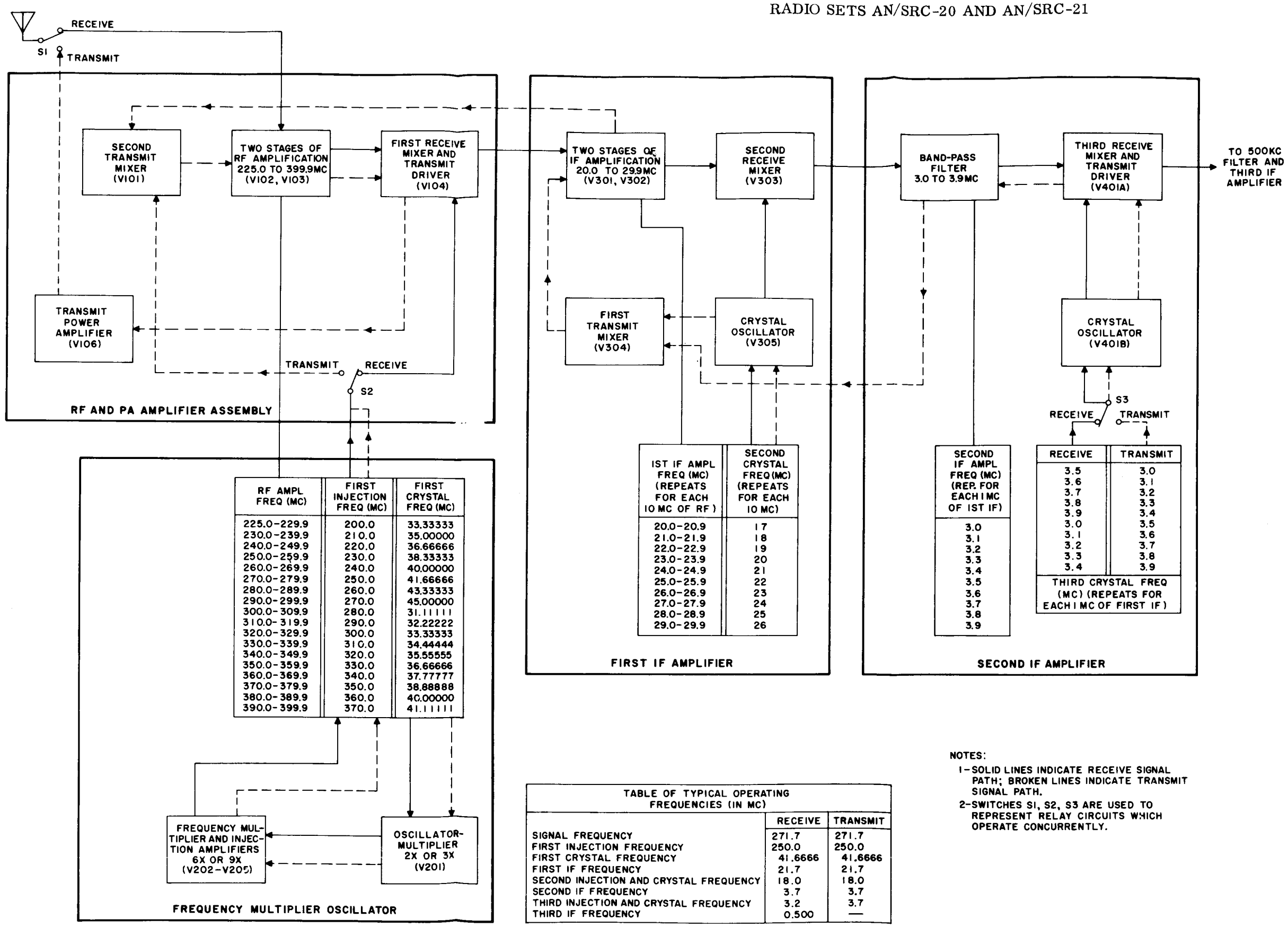


Figure 4-5. Radi



RF AMPL FREQ (MC)	FIRST INJECTION FREQ (MC)	FIRST CRYSTAL FREQ (MC)
225.0-229.9	200.0	33.33333
230.0-239.9	210.0	35.00000
240.0-249.9	220.0	36.66666
250.0-259.9	230.0	38.33333
260.0-269.9	240.0	40.00000
270.0-279.9	250.0	41.66666
280.0-289.9	260.0	43.33333
290.0-299.9	270.0	45.00000
300.0-309.9	280.0	31.11111
310.0-319.9	290.0	32.22222
320.0-329.9	300.0	33.33333
330.0-339.9	310.0	34.44444
340.0-349.9	320.0	35.55555
350.0-359.9	330.0	36.66666
360.0-369.9	340.0	37.77777
370.0-379.9	350.0	38.88888
380.0-389.9	360.0	40.00000
390.0-399.9	370.0	41.11111

IST IF AMPL FREQ (MC) (REPEATS FOR EACH 10 MC OF RF)	SECOND CRYSTAL FREQ (MC) (REPEATS FOR EACH 10 MC)
20.0-20.9	17
21.0-21.9	18
22.0-22.9	19
23.0-23.9	20
24.0-24.9	21
25.0-25.9	22
26.0-26.9	23
27.0-27.9	24
28.0-28.9	25
29.0-29.9	26

SECOND IF AMPL FREQ (MC) (REP. FOR EACH 1 MC OF IST IF)
3.0
3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9

RECEIVE	TRANSMIT
3.5	3.0
3.6	3.1
3.7	3.2
3.8	3.3
3.9	3.4
3.0	3.5
3.1	3.6
3.2	3.7
3.3	3.8
3.4	3.9

THIRD CRYSTAL FREQ (MC) (REPEATS FOR EACH 1 MC OF FIRST IF)

TABLE OF TYPICAL OPERATING FREQUENCIES (IN MC)

	RECEIVE	TRANSMIT
SIGNAL FREQUENCY	271.7	271.7
FIRST INJECTION FREQUENCY	250.0	250.0
FIRST CRYSTAL FREQUENCY	41.6666	41.6666
FIRST IF FREQUENCY	21.7	21.7
SECOND INJECTION AND CRYSTAL FREQUENCY	18.0	18.0
SECOND IF FREQUENCY	3.7	3.7
THIRD INJECTION AND CRYSTAL FREQUENCY	3.2	3.7
THIRD IF FREQUENCY	0.500	—

NOTES:

1-SOLID LINES INDICATE RECEIVE SIGNAL PATH; BROKEN LINES INDICATE TRANSMIT SIGNAL PATH.

2-SWITCHES S1, S2, S3 ARE USED TO REPRESENT RELAY CIRCUITS WHICH OPERATE CONCURRENTLY.

Figure 4-6. Frequency-Conversion System of Radio Set AN/URC-9, Functional Block Diagram

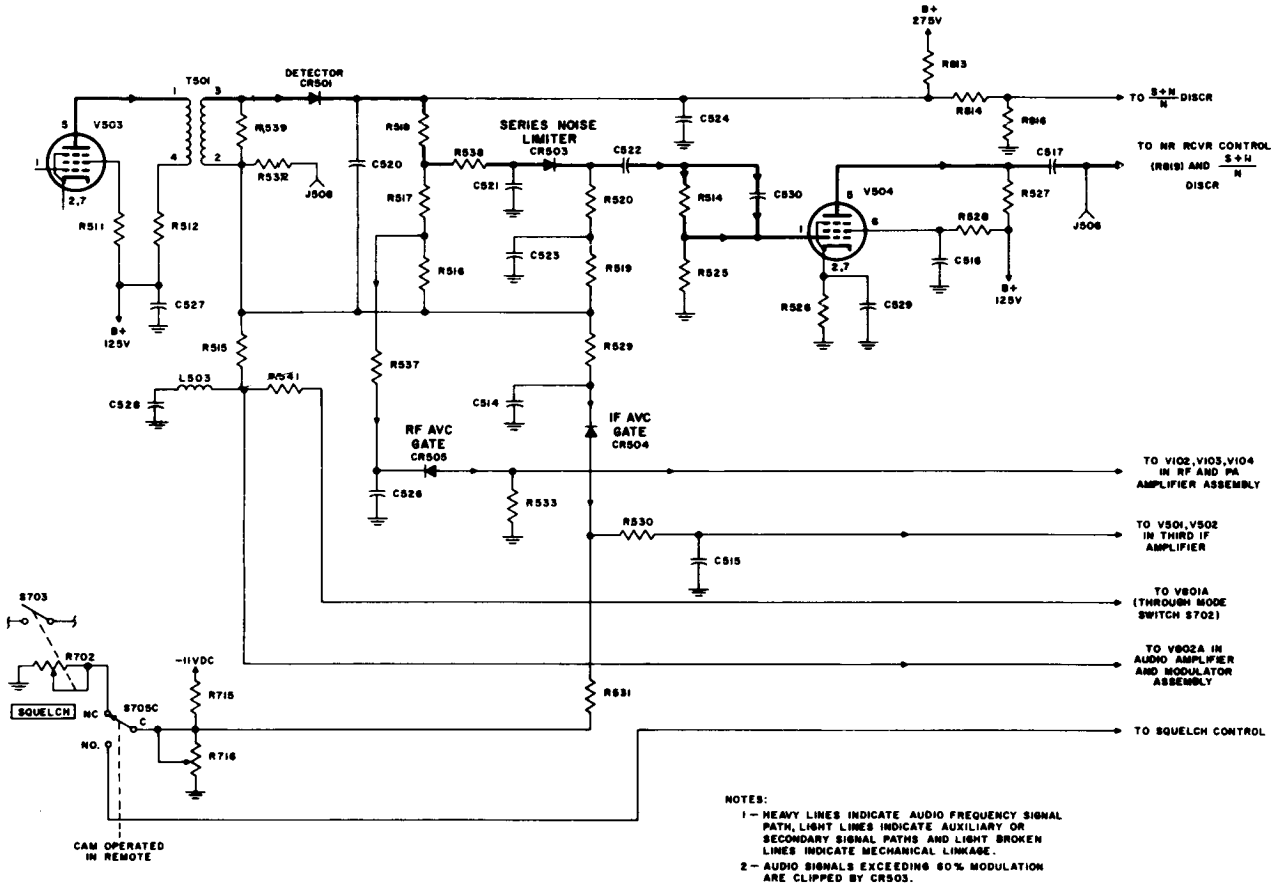
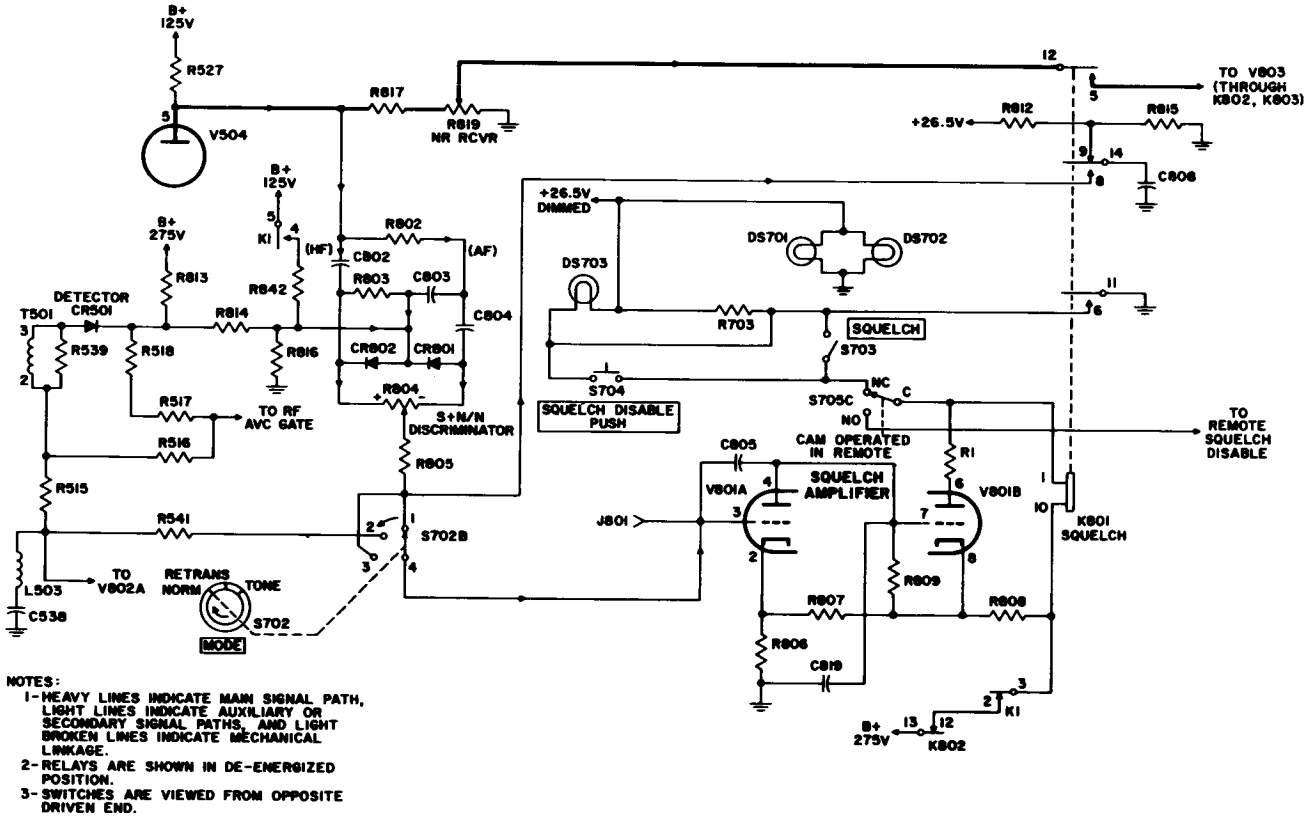


Figure 7-1. Radio Set AN/URC-9, Detector, Noise Limiter, and AVC Circuits, Simplified Schematic Diagram



NOTES:
1- HEAVY LINES INDICATE MAIN SIGNAL PATH, LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS, AND LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.
2- RELAYS ARE SHOWN IN DE-ENERGIZED POSITION.
3- SWITCHES ARE VIEWED FROM OPPOSITE DRIVEN END.

Figure 7-2. Radio Set AN/URC-9, Squelch Amplifier and Signal-Plus-Noise to Noise Discriminator, Simplified Schematic Diagram

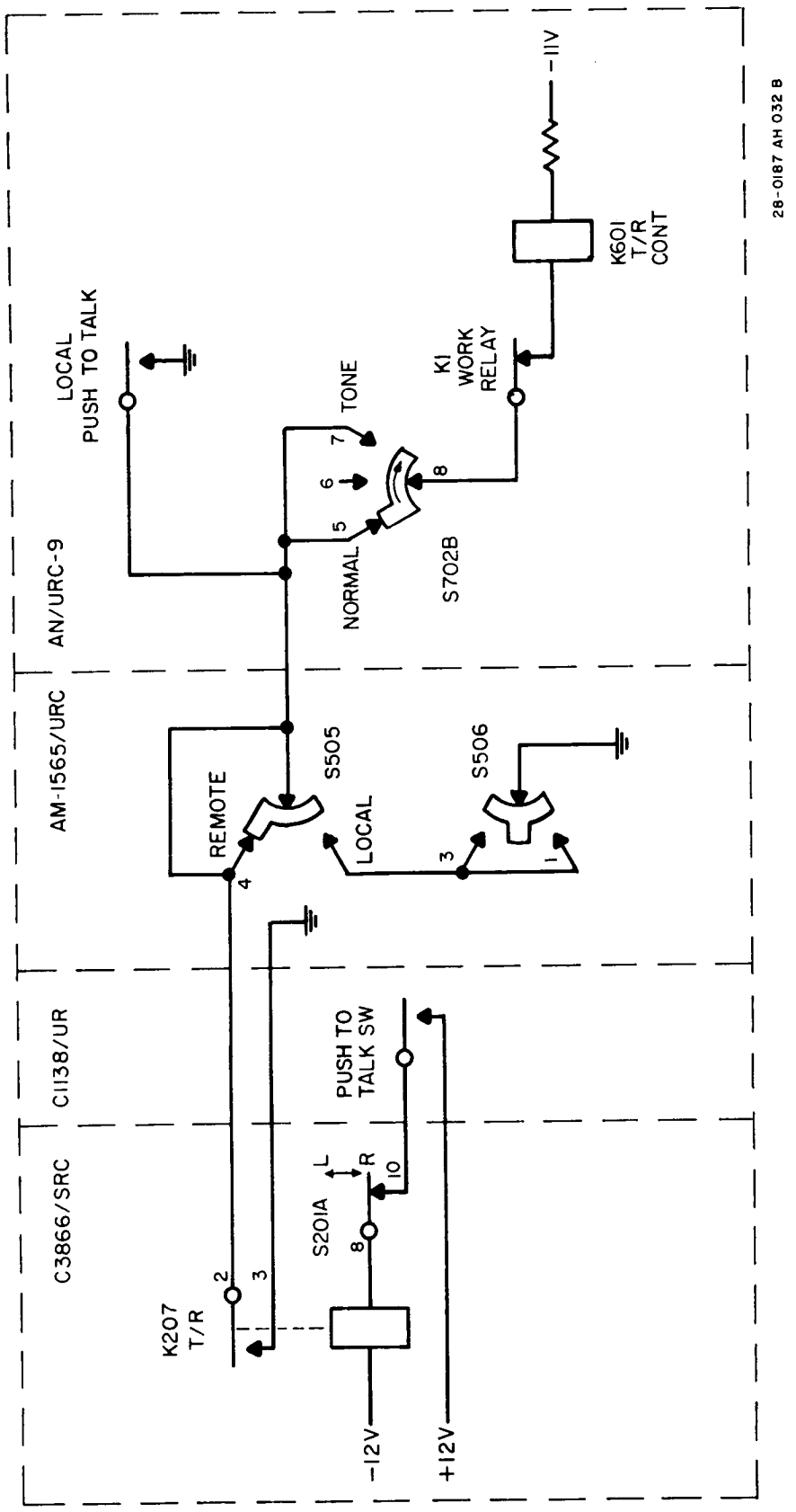


Figure 7-3. Operation of Transmit-Receive Relay K601, Simplified Diagram

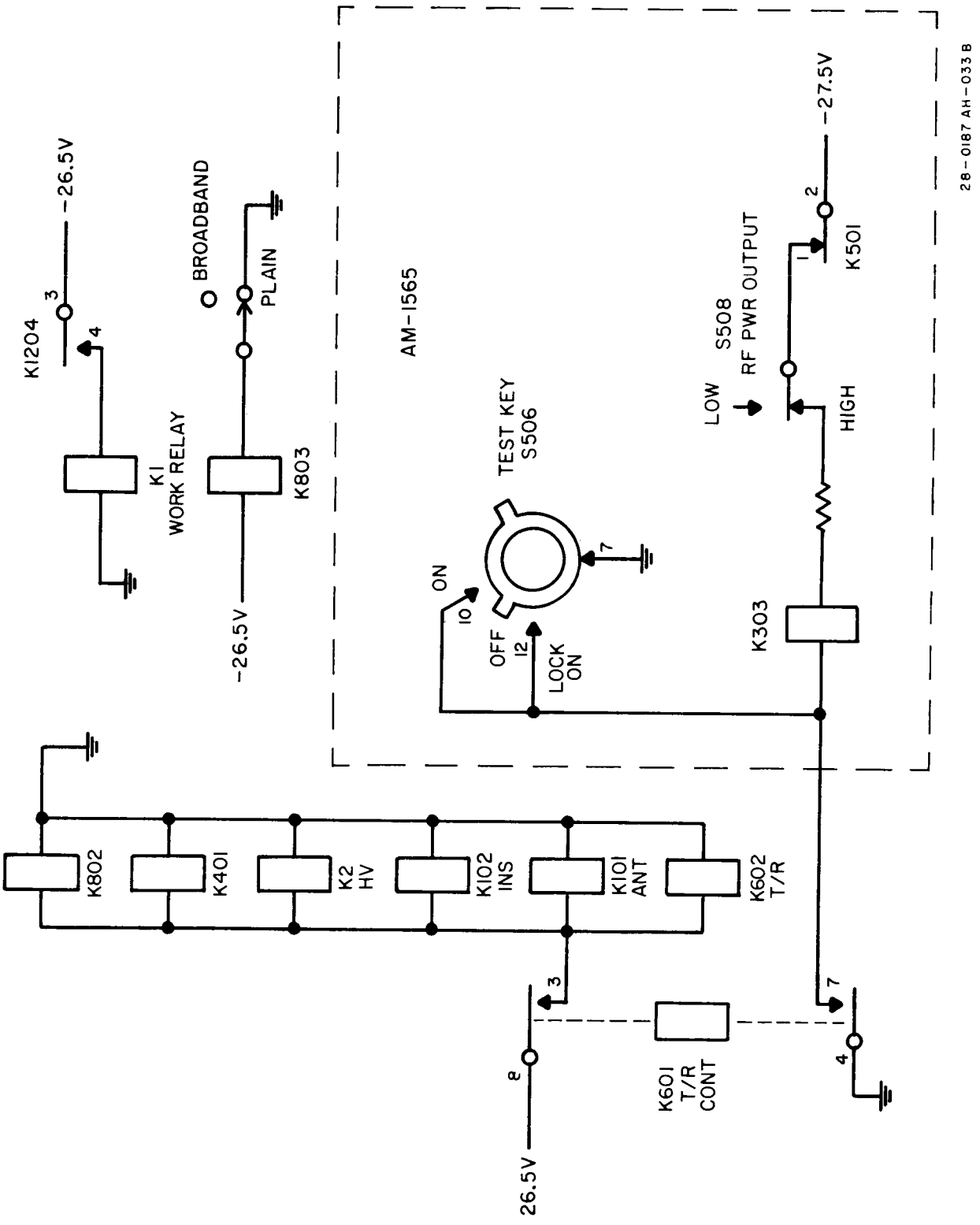


Figure 7-4. AN/URC-9 Relay Operation, Simplified Diagram

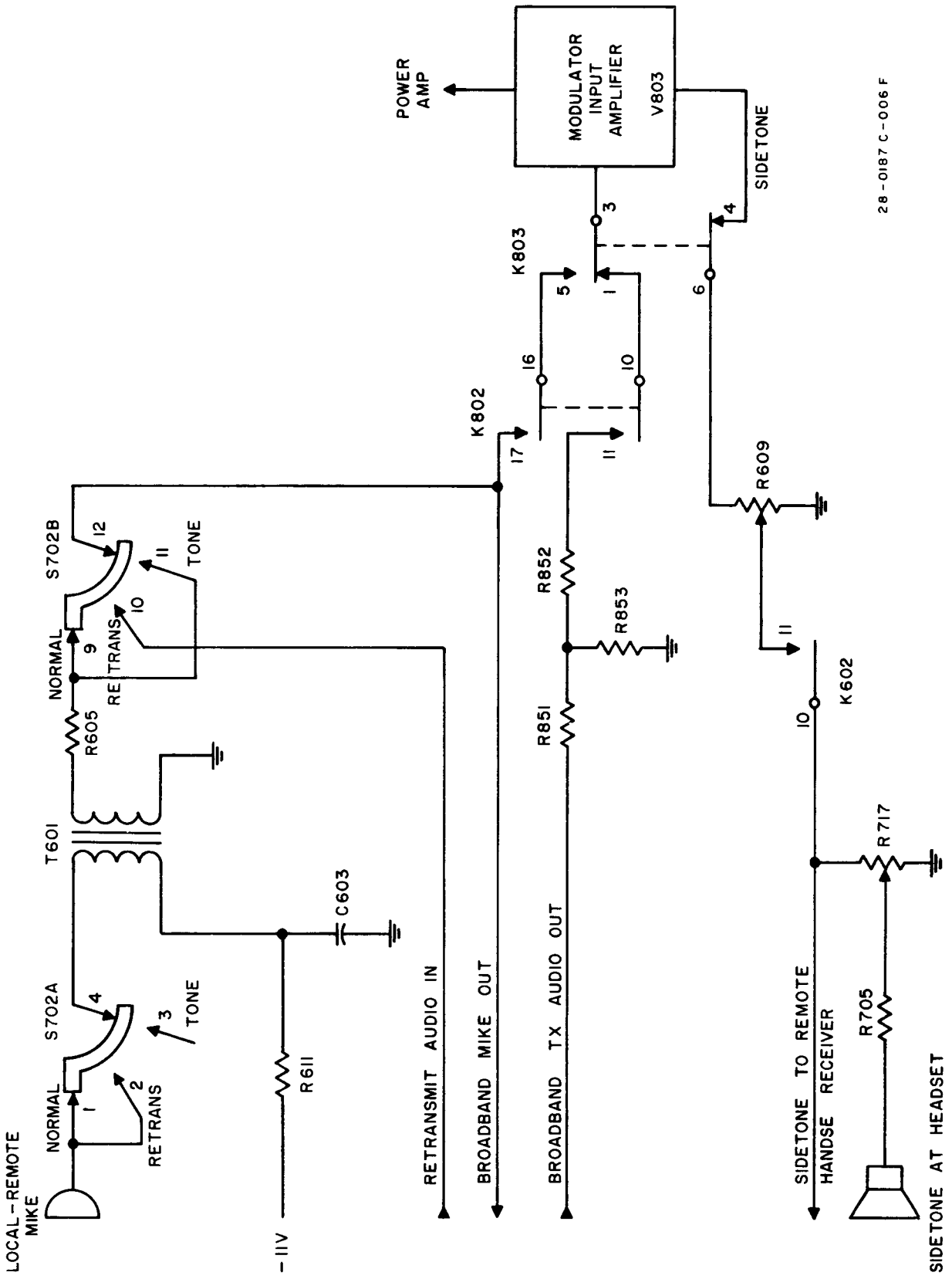
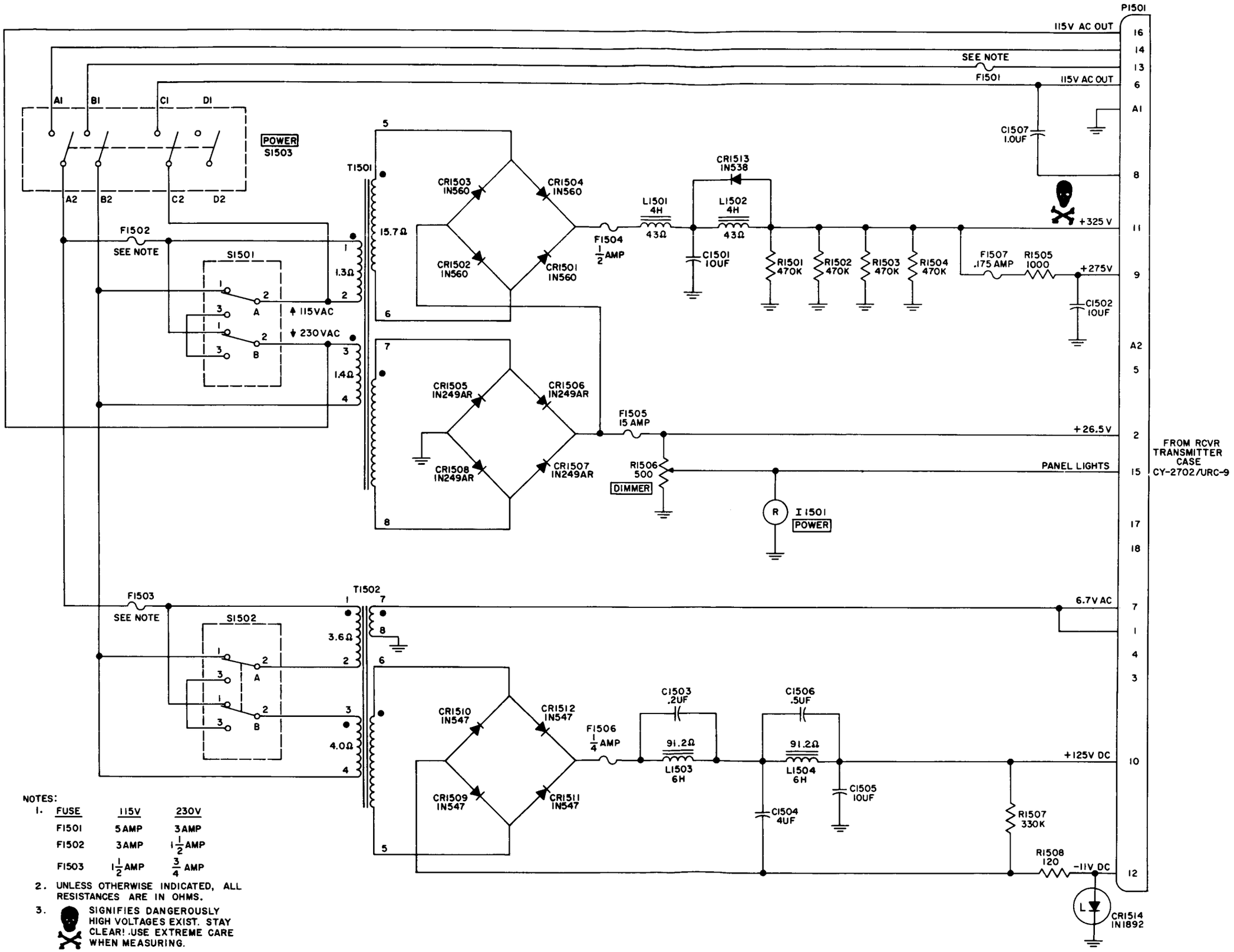


Figure 7-5. Audio Transmit, Simplified Diagram



NOTES:

1.

FUSE	115V	230V
F1501	5 AMP	3 AMP
F1502	3 AMP	1 1/2 AMP
F1503	1 1/2 AMP	3/4 AMP

2. UNLESS OTHERWISE INDICATED, ALL RESISTANCES ARE IN OHMS.
3. SIGNIFIES DANGEROUSLY HIGH VOLTAGES EXIST. STAY CLEAR! USE EXTREME CARE WHEN MEASURING.

Figure 7-6. Power Supply PP-2702/URC-9, Schematic Diagram

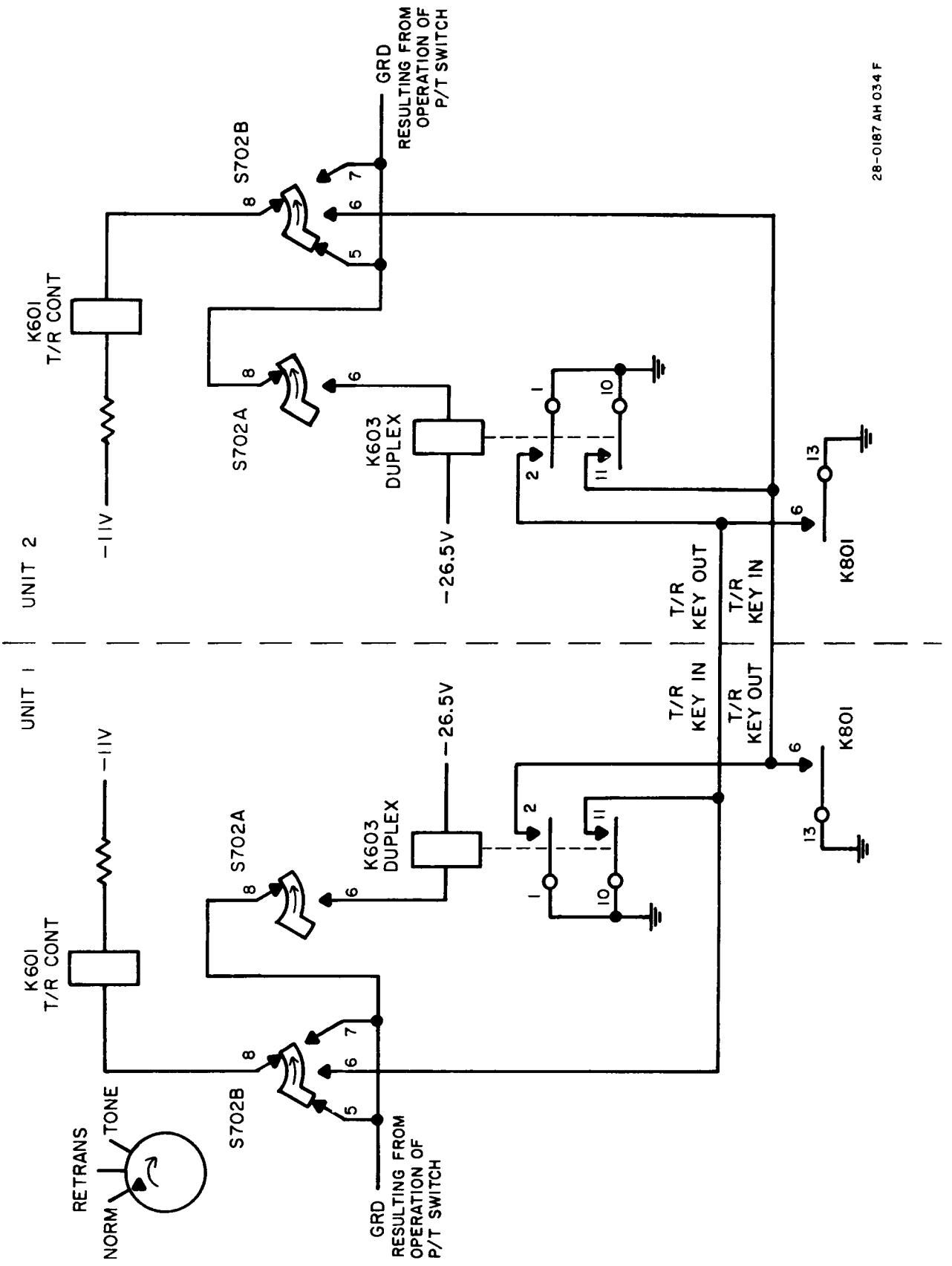


Figure 7-7. Retransmit Relay Operation, Simplified Diagram

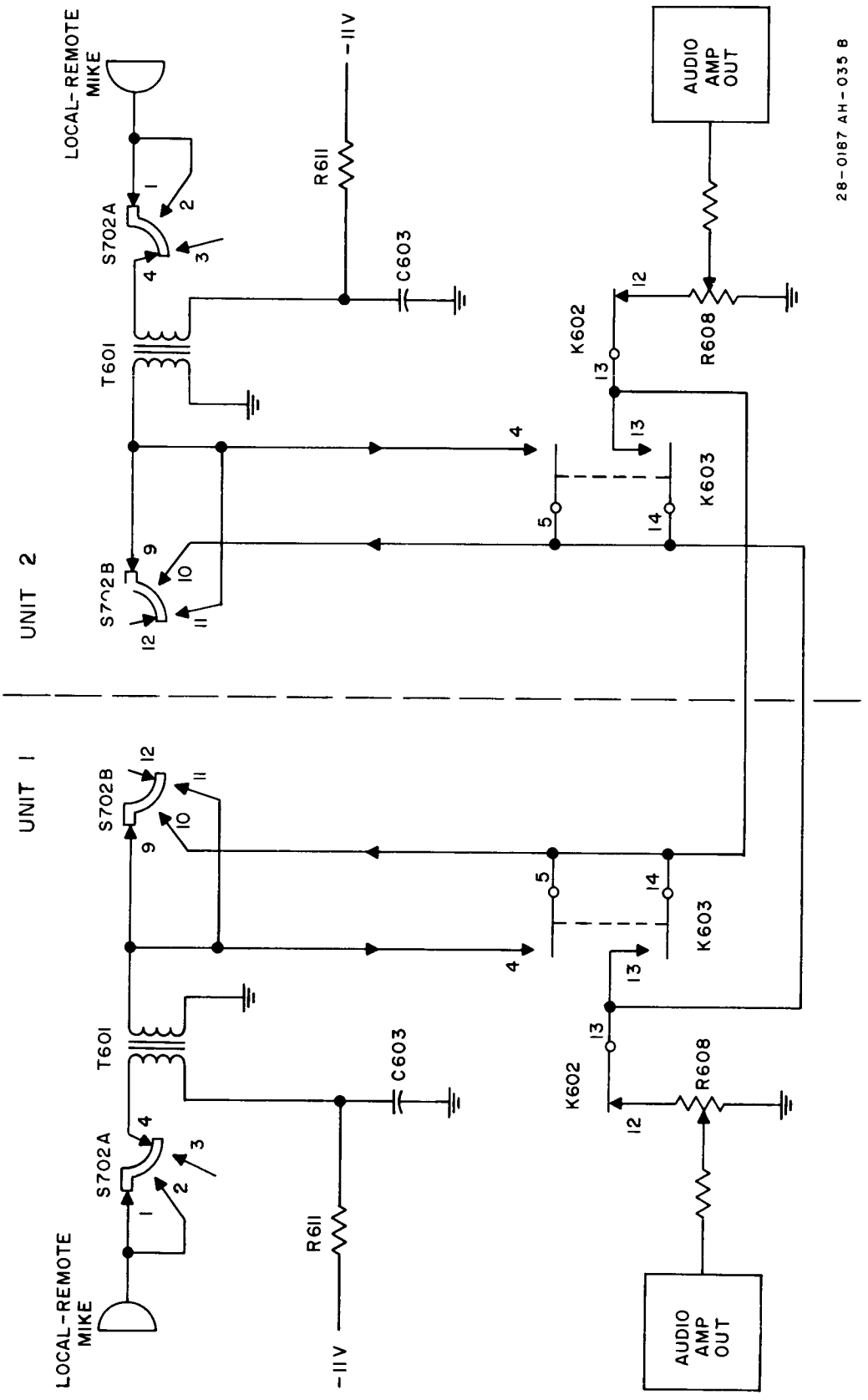


Figure 7-8. Audio Retransmit, Simplified Diagram

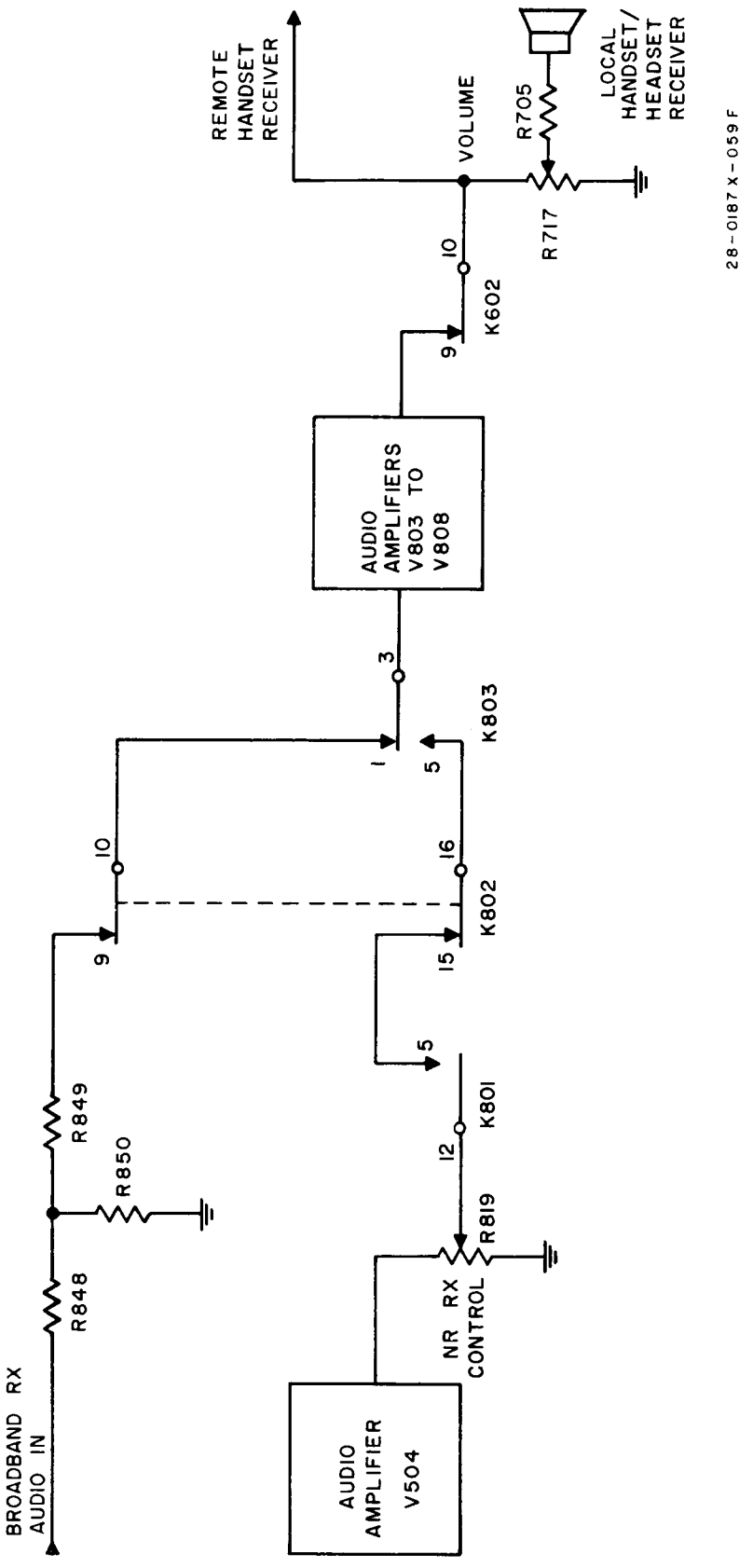


Figure 7-9. Audio Receive, Simplified Diagram

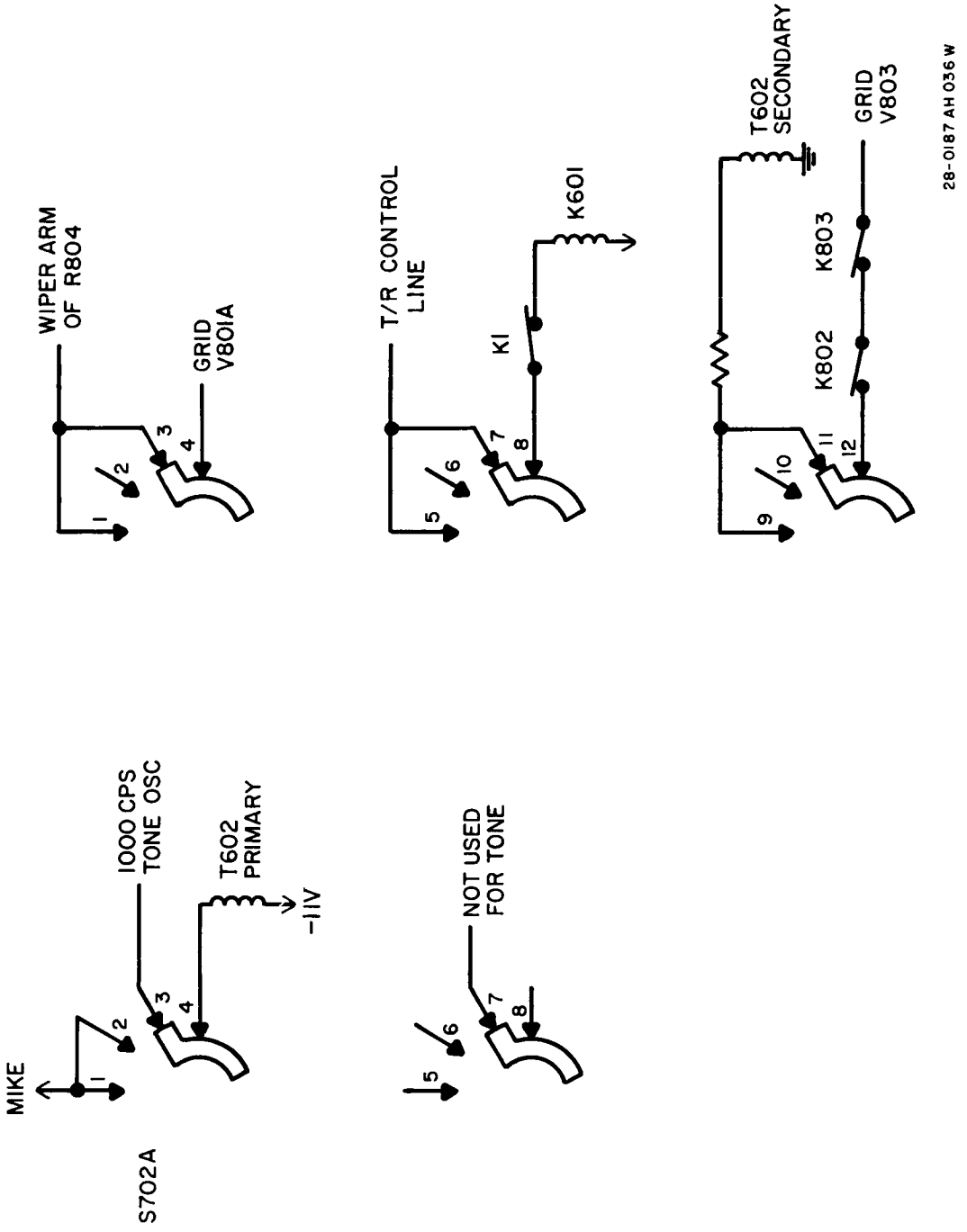


Figure 7-10. Mode Selector Switch, Tone Function, Simplified Diagram

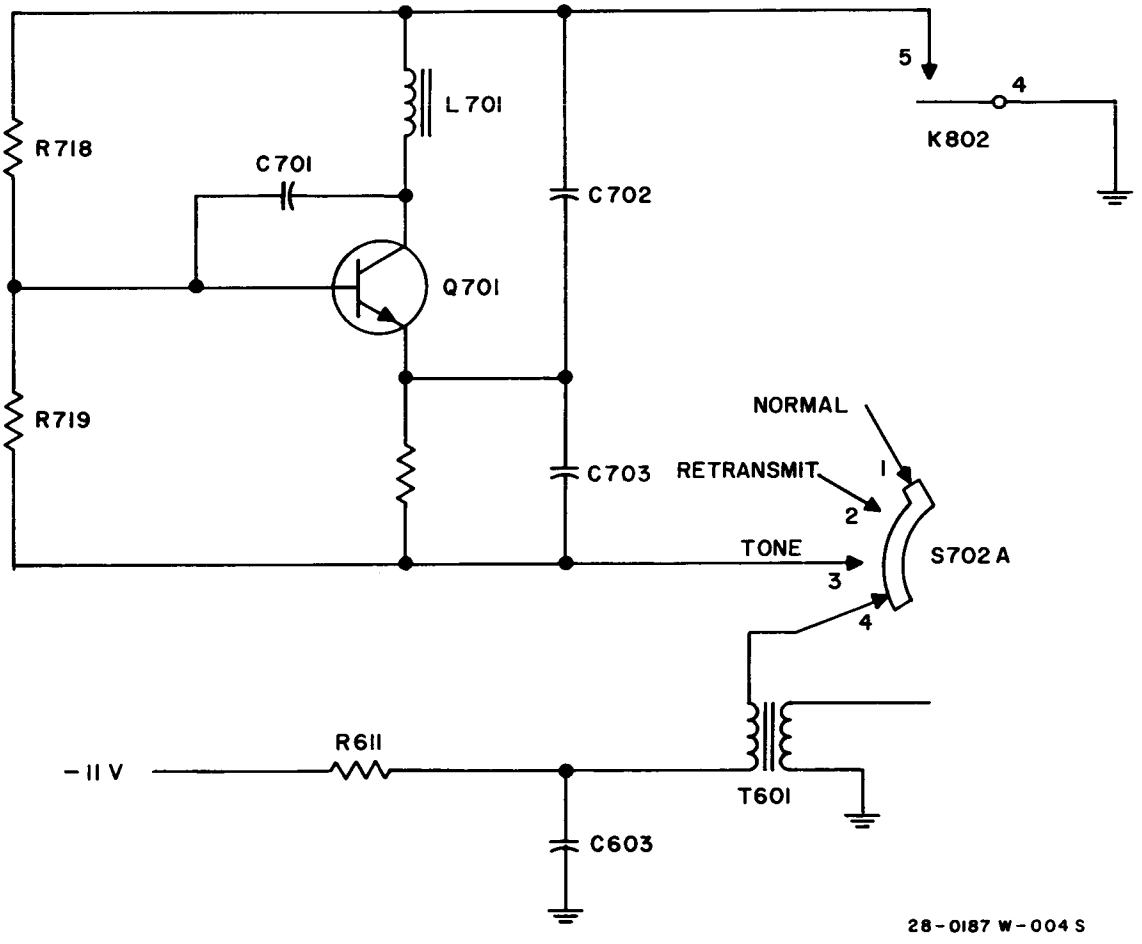


Figure 7-11. Tone Oscillator, Simplified Diagram

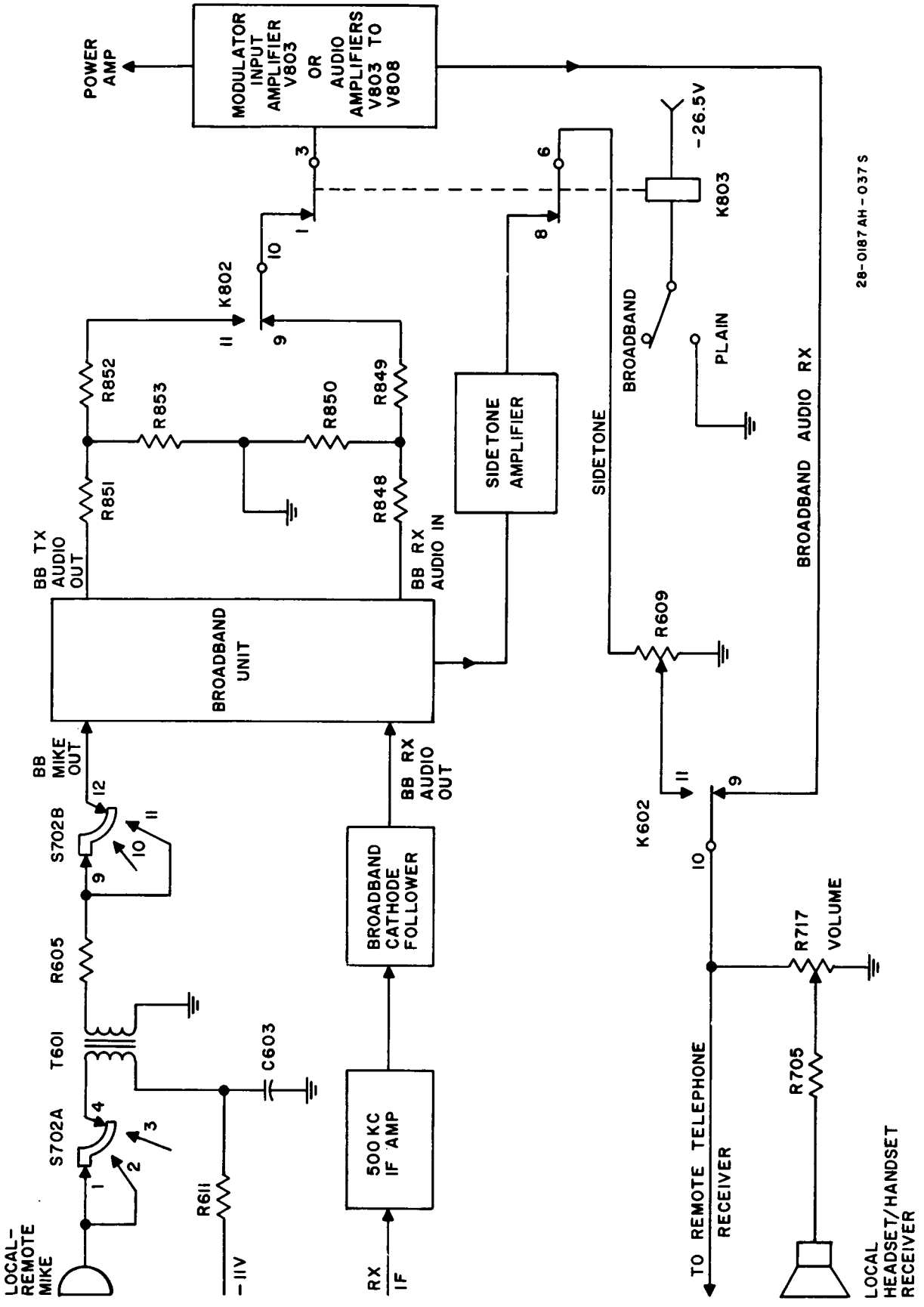
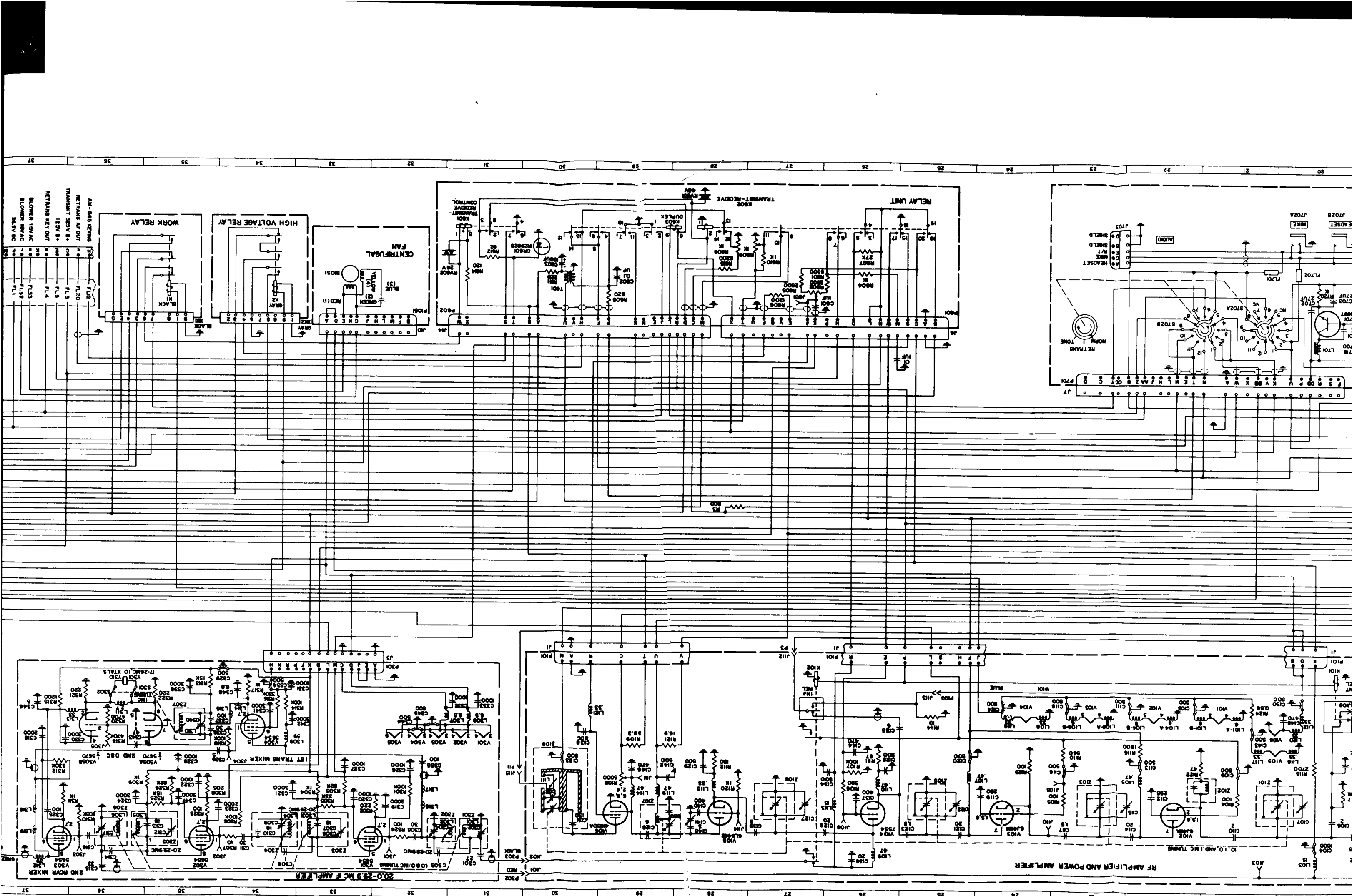
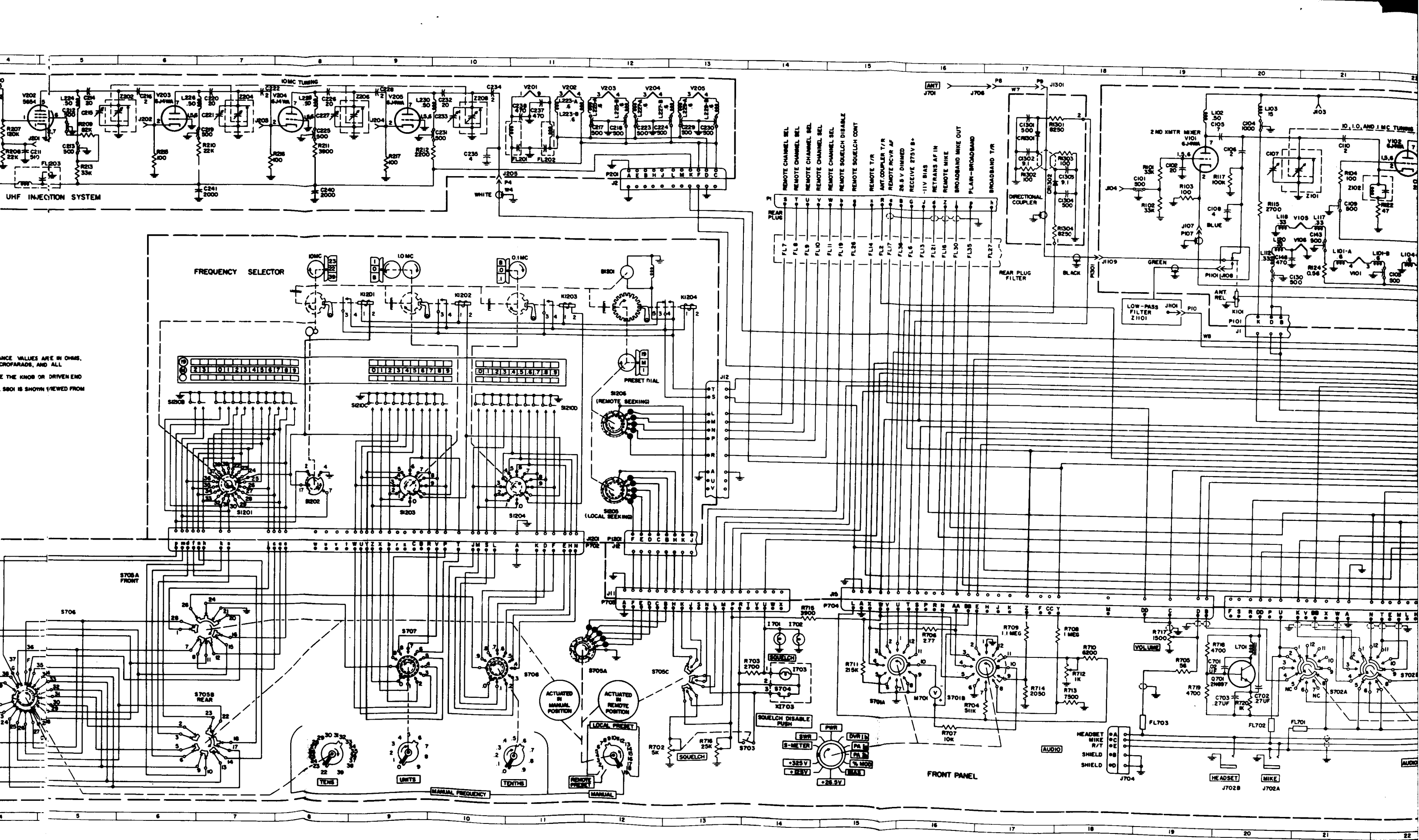


Figure 7-12. Broadband Transmit and Receive, Simplified Diagram

Figure 7-13. AN/URC-9, Receiver-Transmitter RT-581/URC, Schematic Diagram

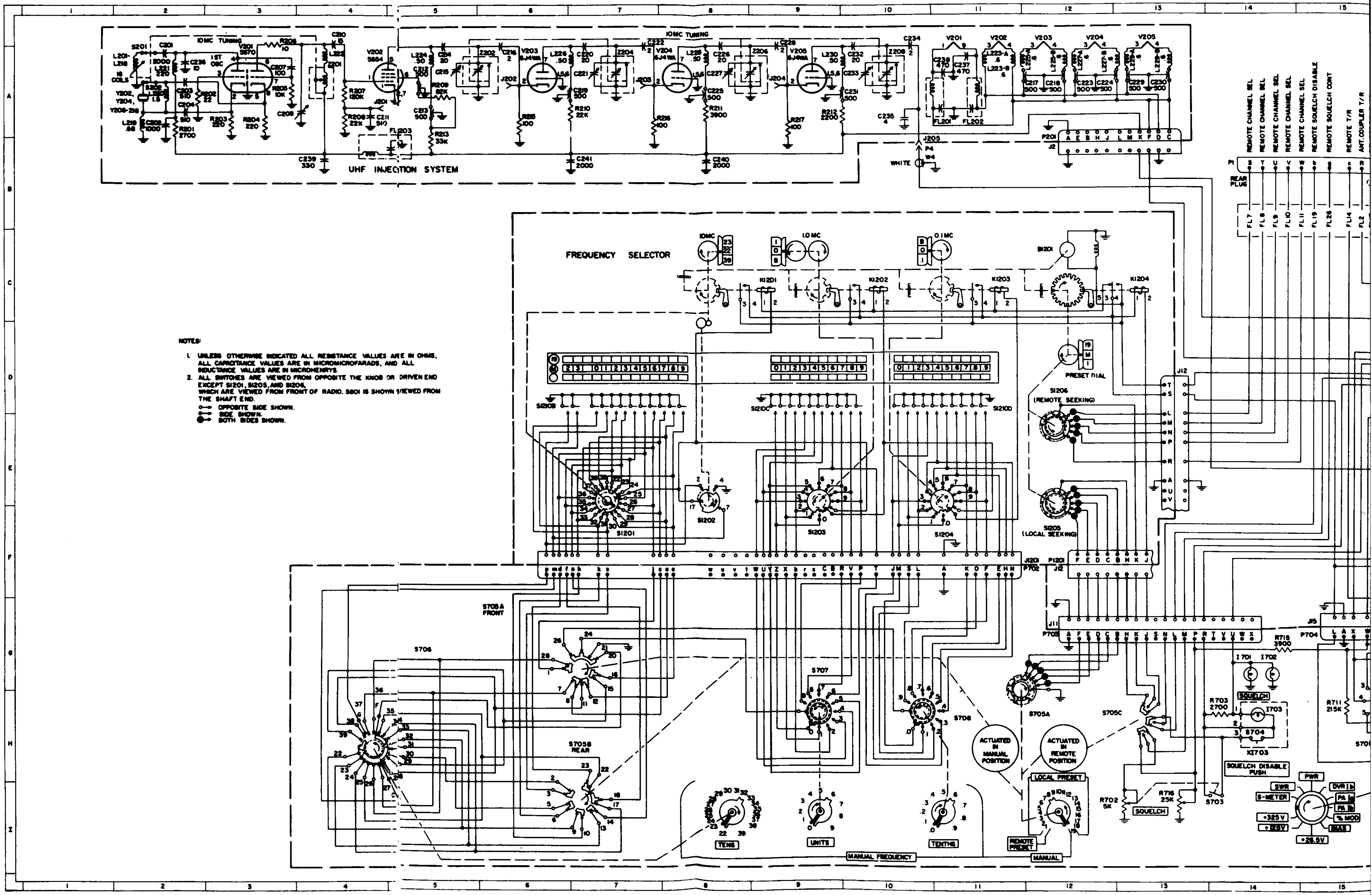

RELAY UNIT
TRANSMIT-RECEIVE
TRANSMIT-RECEIVE CONTROL
CENTRIFUGAL FAN
HIGH VOLTAGE RELAY
WORK RELAY
AM-FSK KEYING
RETRANS AFOUT
TRANSMIT 325V B+
125V B+
RETRANS KEY OUT
BLOWER 115V AC
BLOWER 115V AC
28.5V DC
HEADSET
MIKE
AUDIO
SHIELD
RETRANS
NORM
TONE
RF AMPLIFIER AND POWER AMPLIFIER
10, 1.0 AND 1 MC TUNING
20.0-29.9 MC F AMPLIFIER
1ST TRANS MIXER
2ND OSC
2ND MCPA MIXER



ANCE VALUES ARE IN OHMS, CROFARADS, AND ALL

E THE KNOB OR DRIVEN END

S801 IS SHOWN 1/REWED FROM


UHF INJECTION SYSTEM
IOMC TUNING
FREQUENCY SELECTOR
PRESET DIAL
S1206 (REMOTE SEEKING)
S1205 (LOCAL SEEKING)
S1201
S1202
S1203
S1204
S706
S707
S708
S705A
S705B REAR
S705C
S708A FRONT
ACTUATED IN MANUAL POSITION
ACTUATED IN REMOTE POSITION
LOCAL PRESET
REMOTE PRESET
MANUAL
TENS
UNITS
TENTHS
MANUAL FREQUENCY
SQUELCH
SQUELCH DISABLE PUSH
PWR
SWR
S-METER
+325V
+125V
+26.5V
DVR Ib
PA Ig
PA Ib
% MOD
BIAS
REAR PLUG
REMOTE CHANNEL SEL
REMOTE CHANNEL SEL
REMOTE CHANNEL SEL
REMOTE CHANNEL SEL
REMOTE CHANNEL SEL
REMOTE SQUELCH DISABLE
REMOTE SQUELCH CONT
REMOTE T/R
ANT.COUPLER T/R
WHITE

NOTES:

1. UNLESS OTHERWISE INDICATED ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROMICROFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
2. ALL SWITCHES ARE VIEWED FROM OPPOSITE THE KNOB OR DRIVEN END EXCEPT S1201, S1205, AND S1206, WHICH ARE VIEWED FROM FRONT OF RADIO. S801 IS SHOWN VIEWED FROM THE SHAFT END.

- OPPOSITE SIDE SHOWN.
- SIDE SHOWN.
- BOTH SIDES SHOWN.

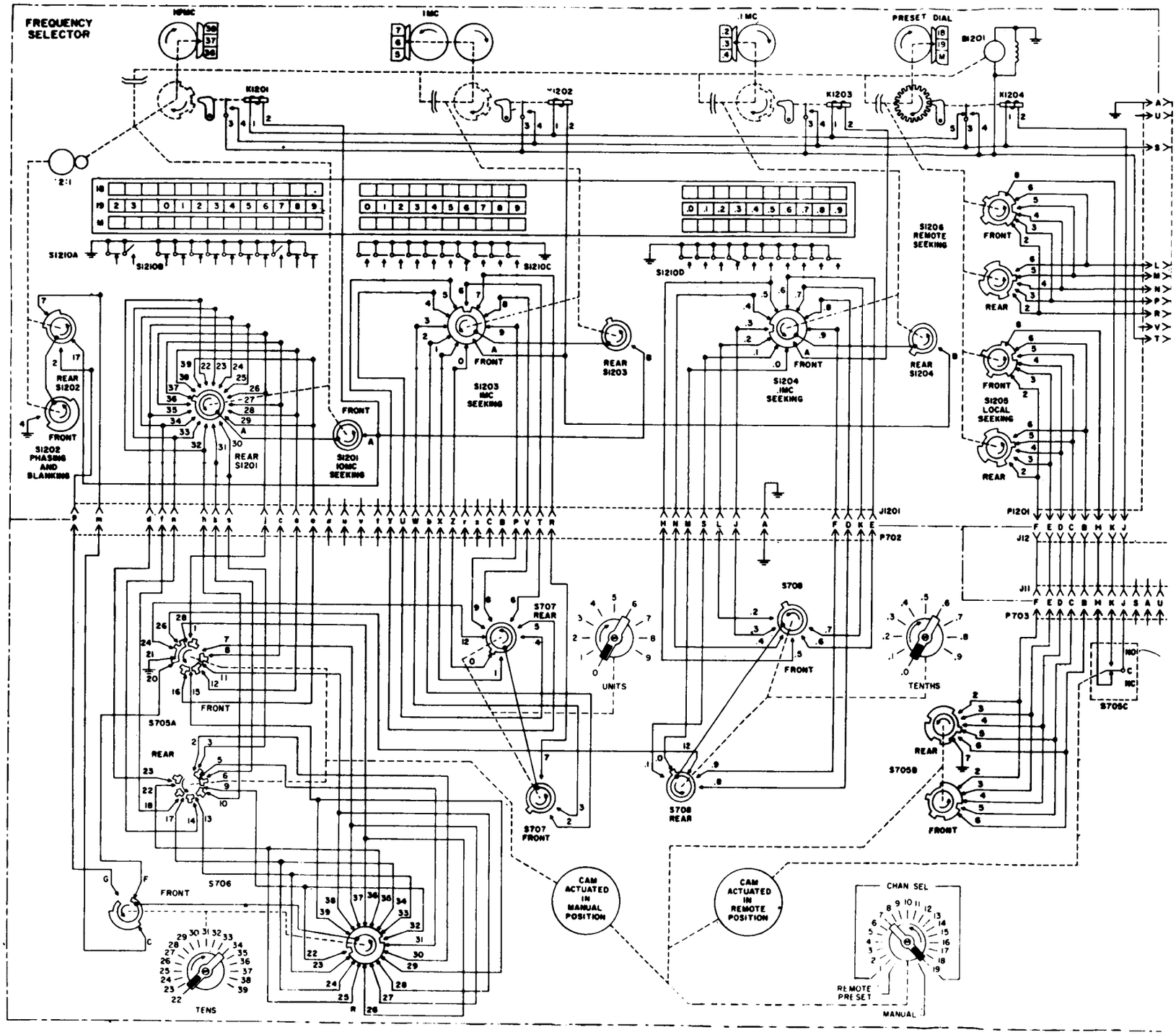


Figure 8-1. AN/URC-9, Front Panel and Frequency Selector

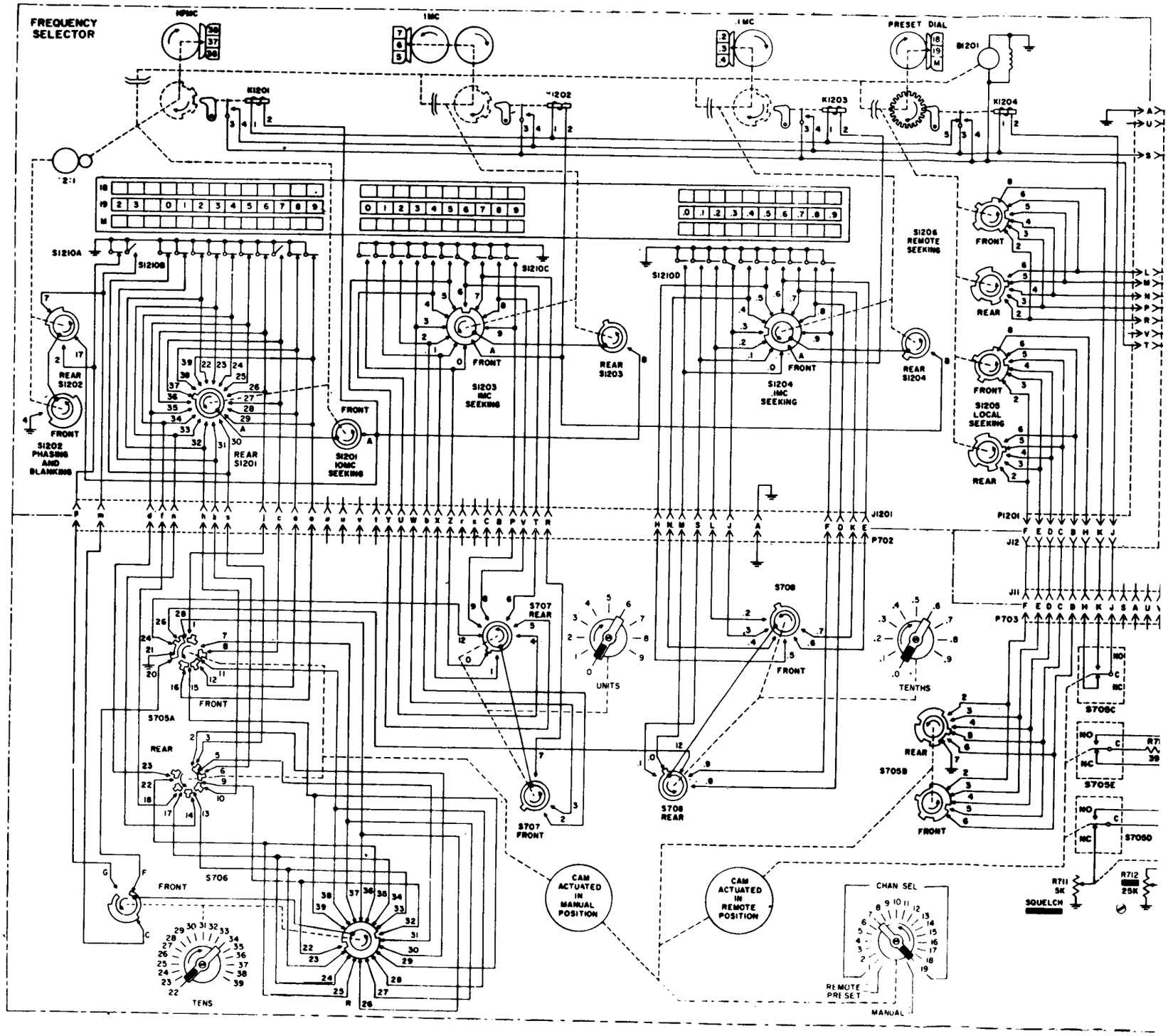


Figure 8-2. AN/URC-9, Front Panel and Frequency Selector (Preset Frequency Selector)

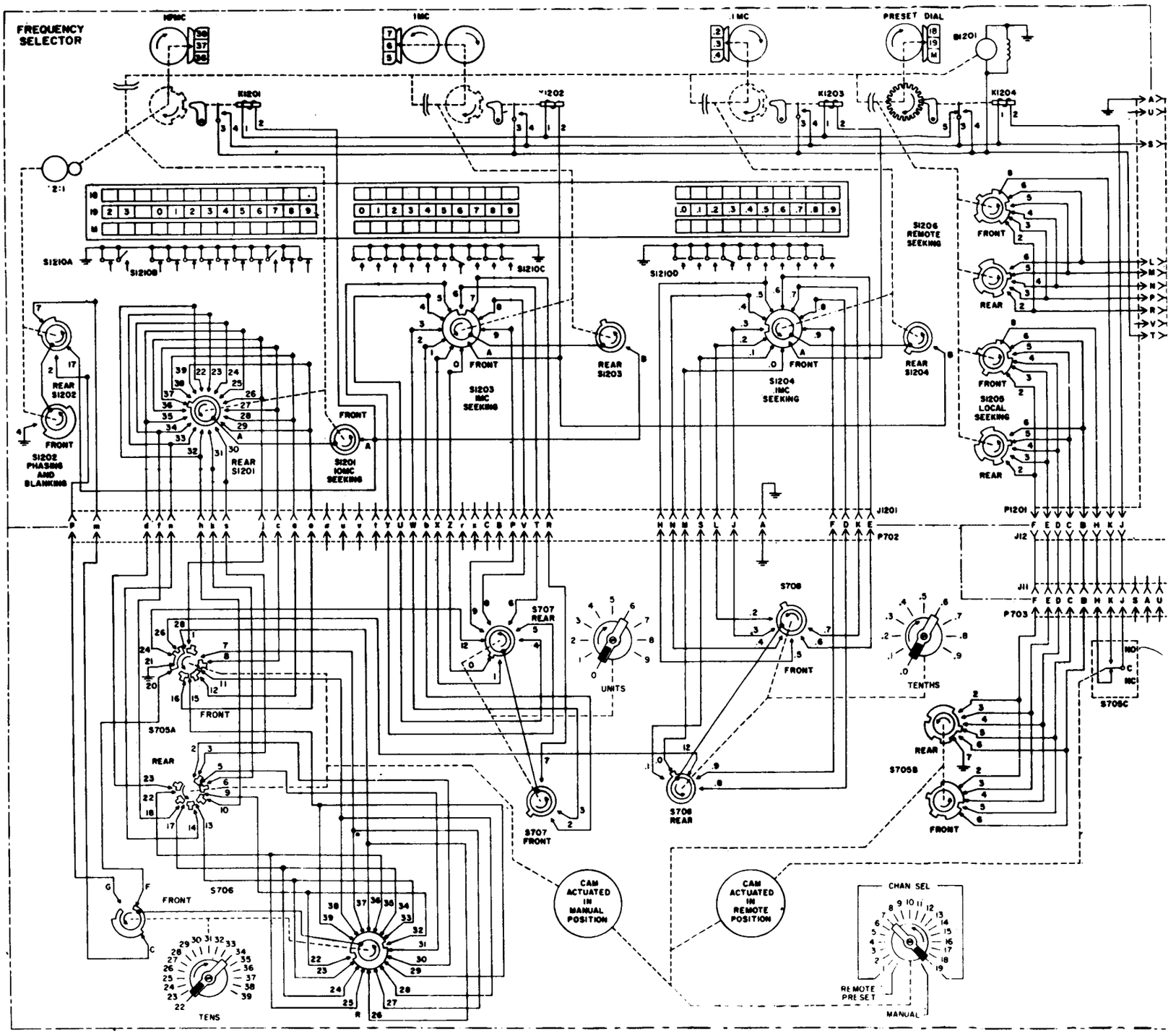


Figure 8-3. AN/URC-9, Front Panel and Frequency Selector (Manual Frequency Selector)

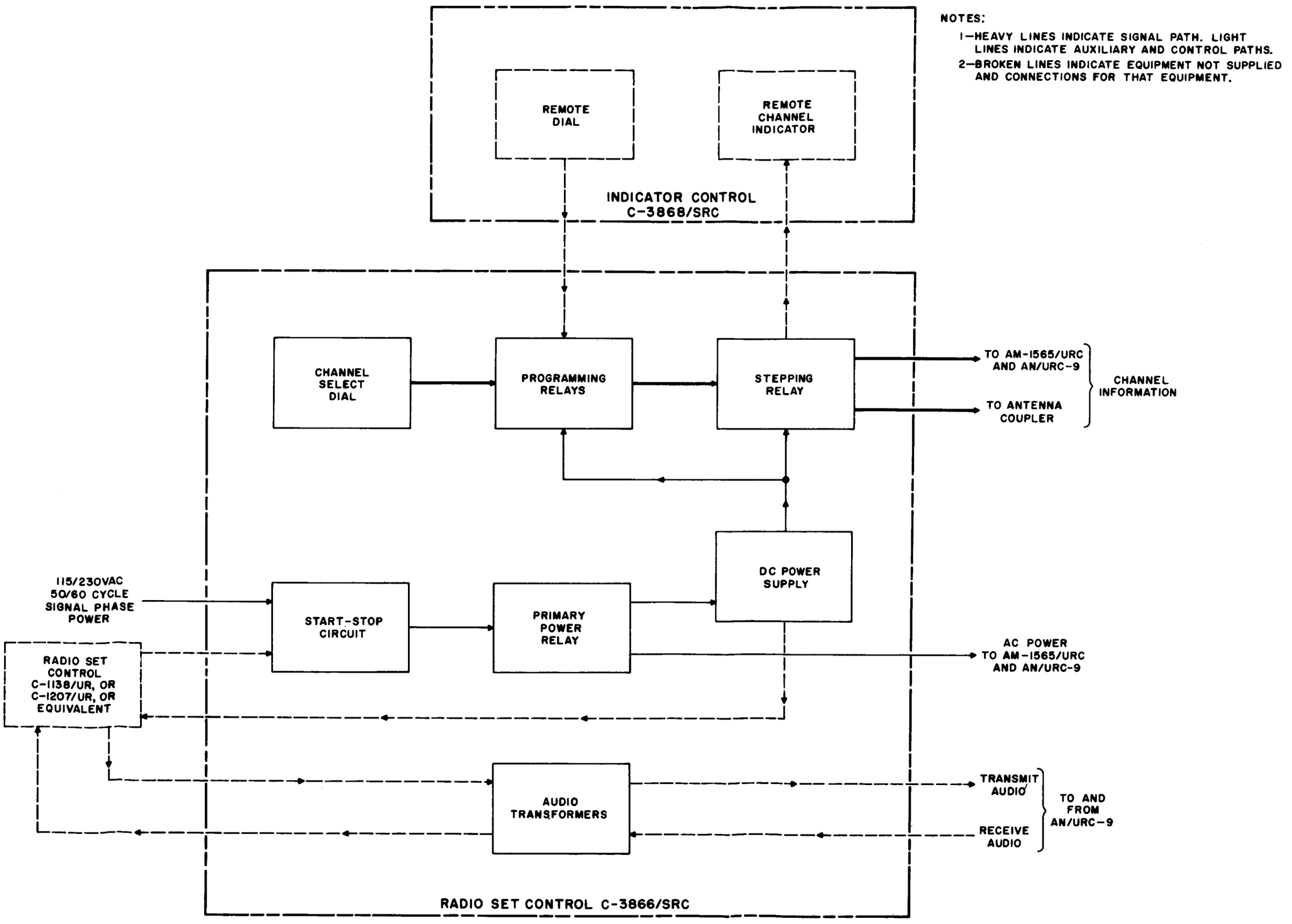


Figure 9-1. Radio Set Control C-3866/SRC, Functional Block Diagram

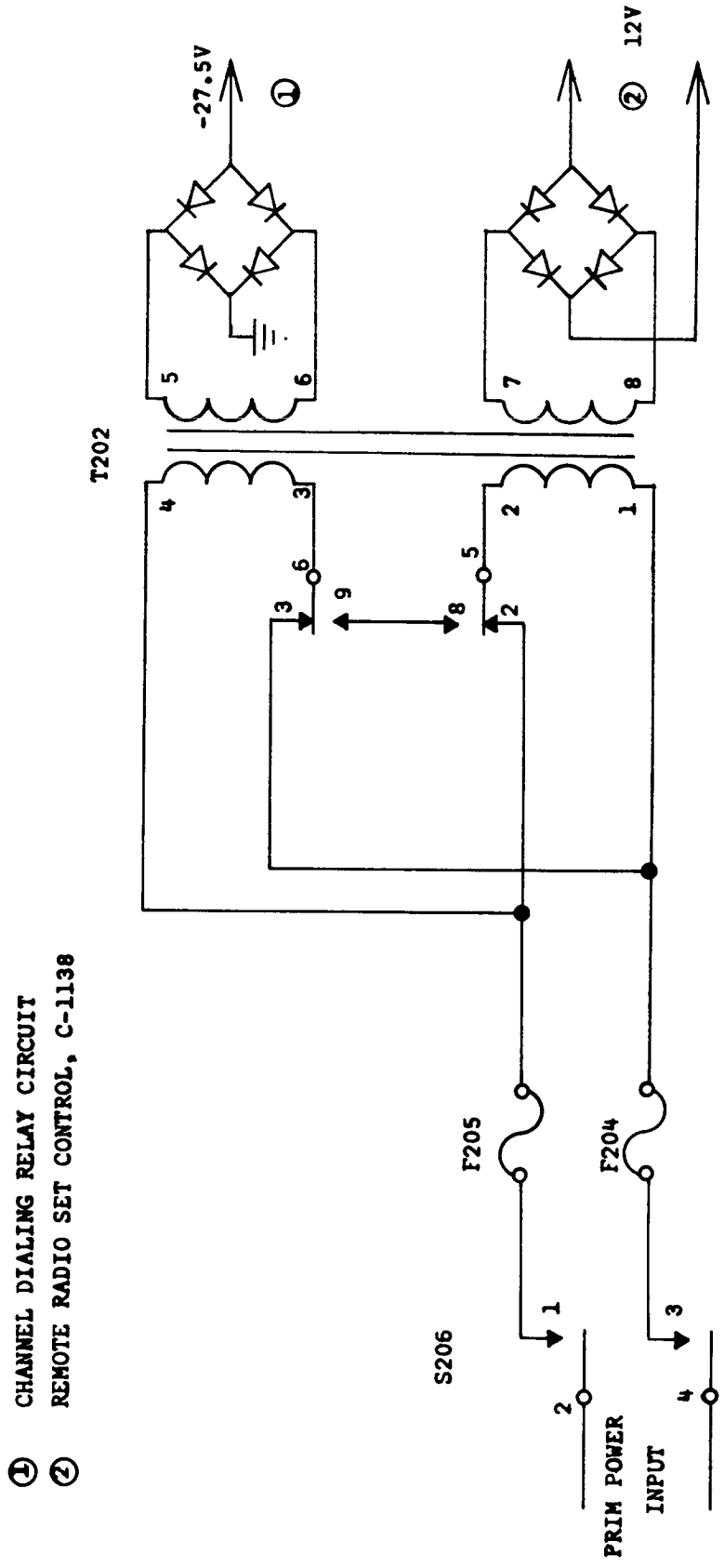


Figure 9-2. C-3866/SRC Primary Power Circuits, Simplified Diagram

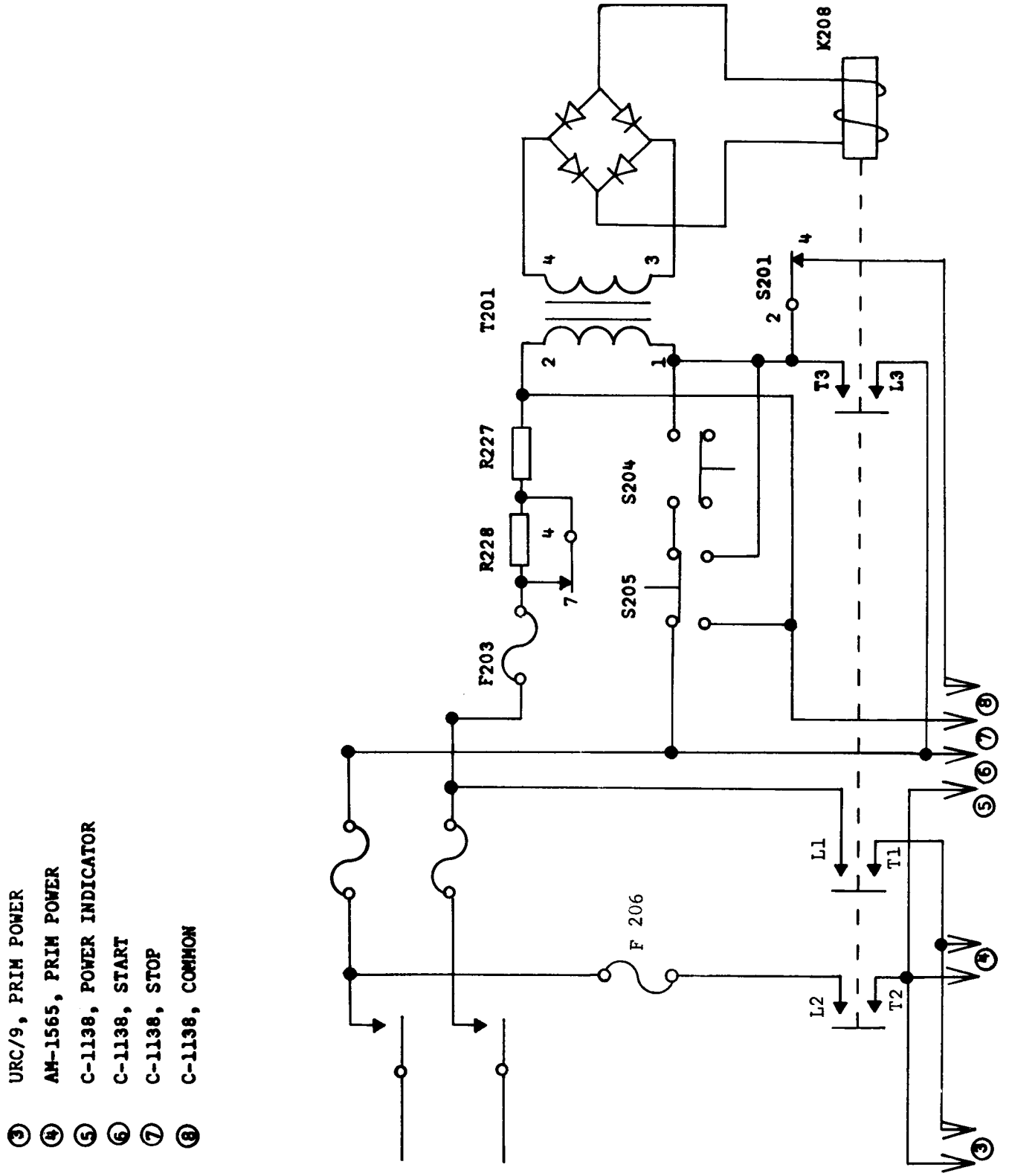


Figure 9-3. C-3866/SRC Start-Stop Circuits, Simplified Diagram

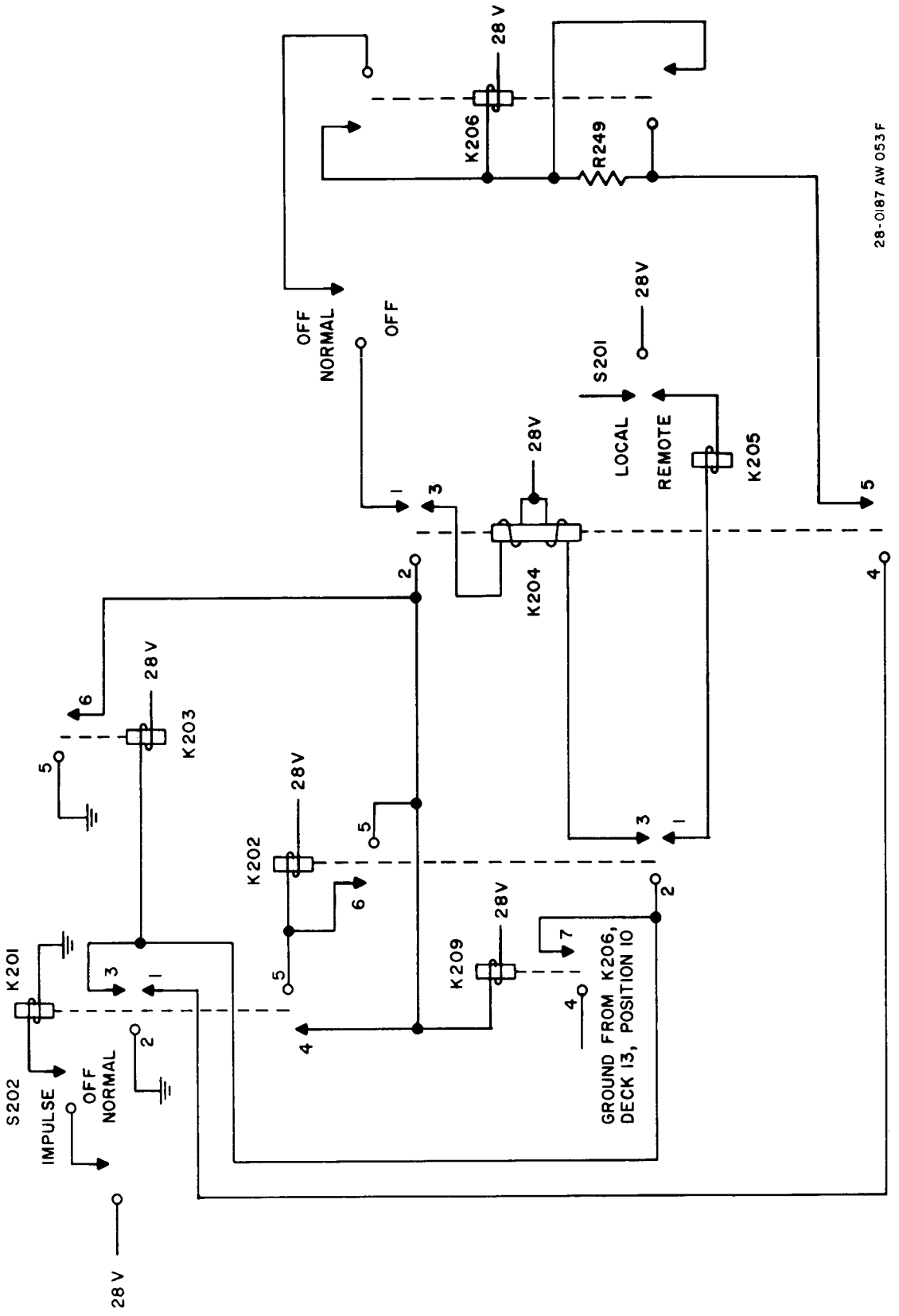


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 1 of 12)

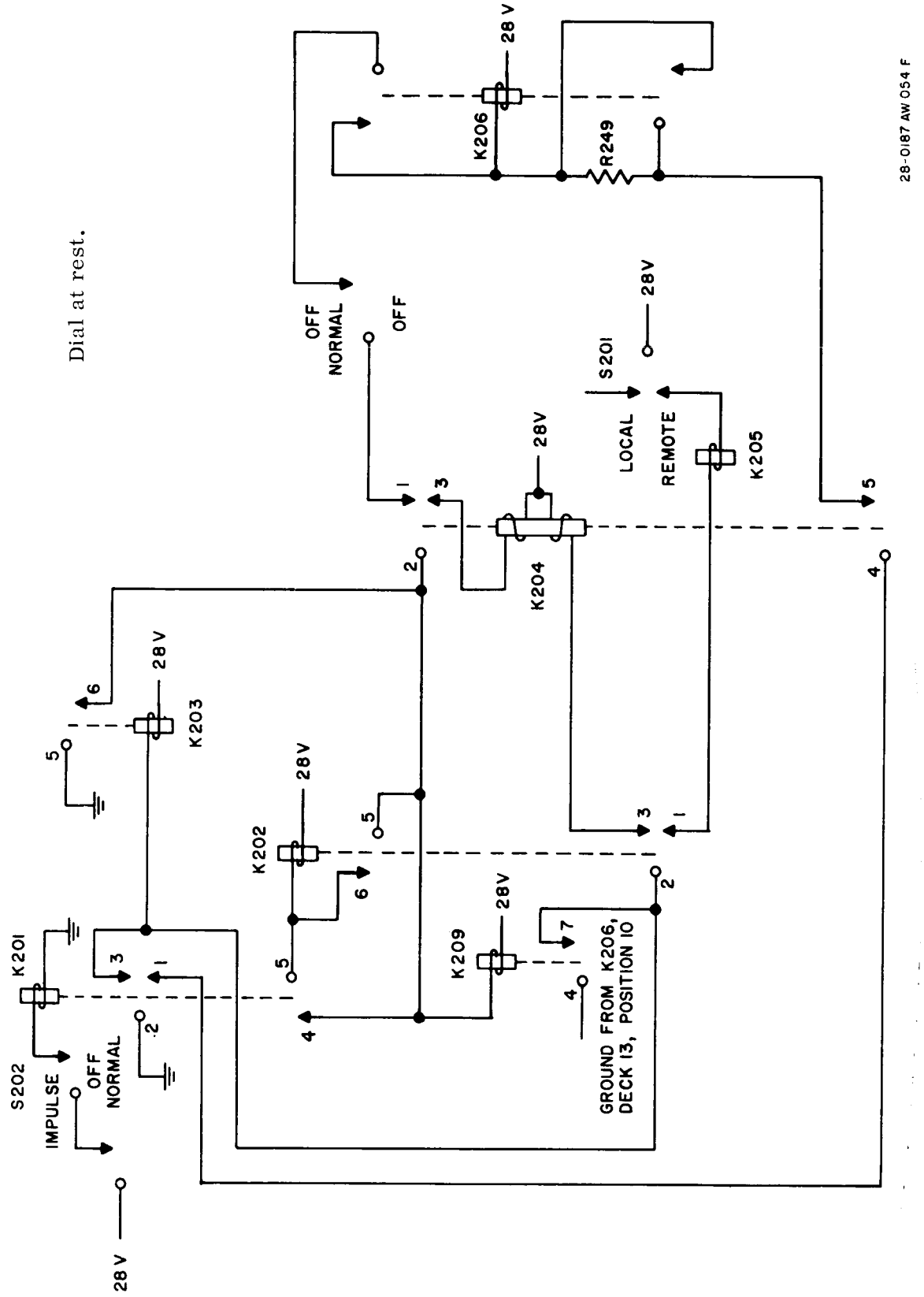


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 2 of 12)

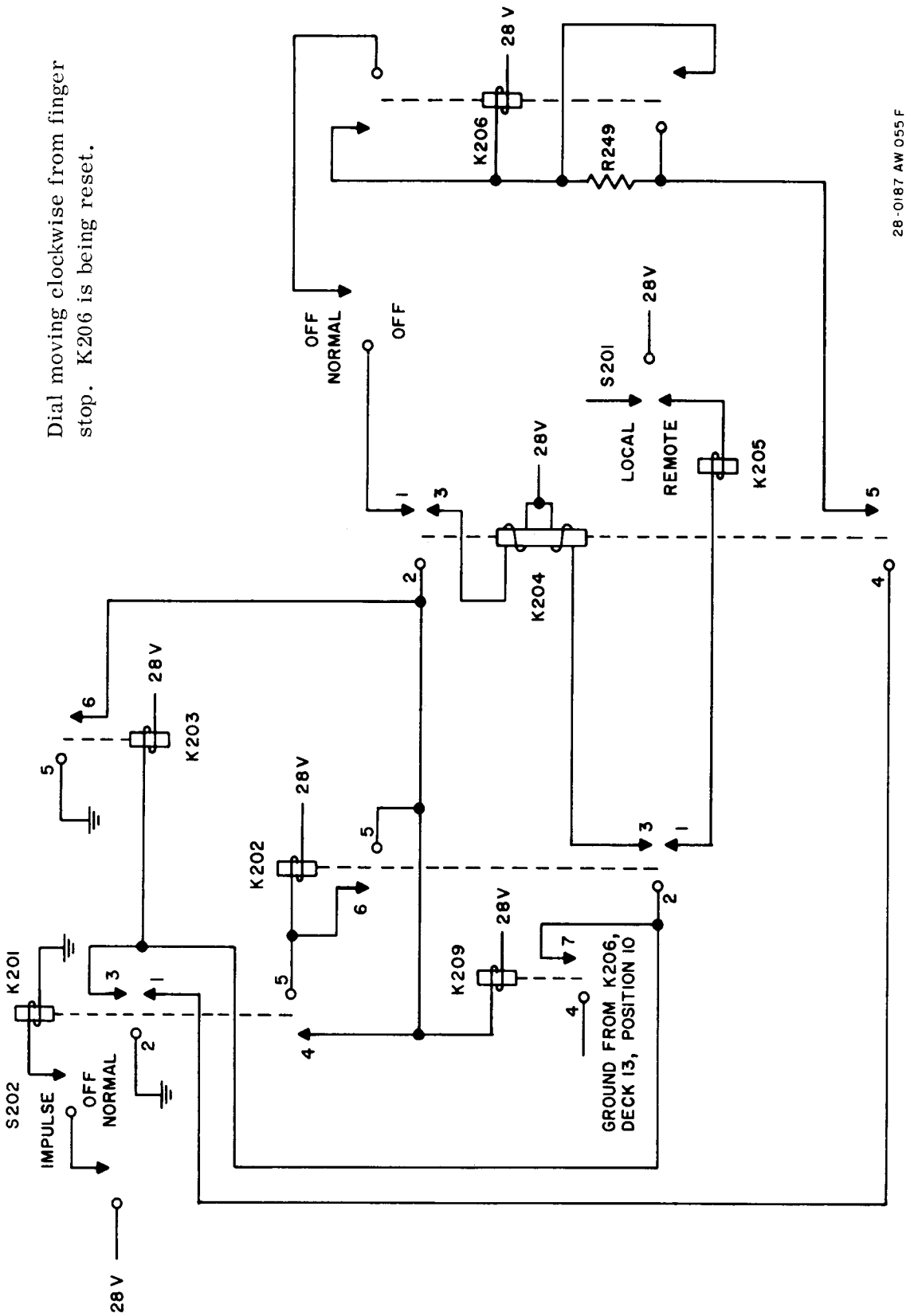


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 3 of 12)

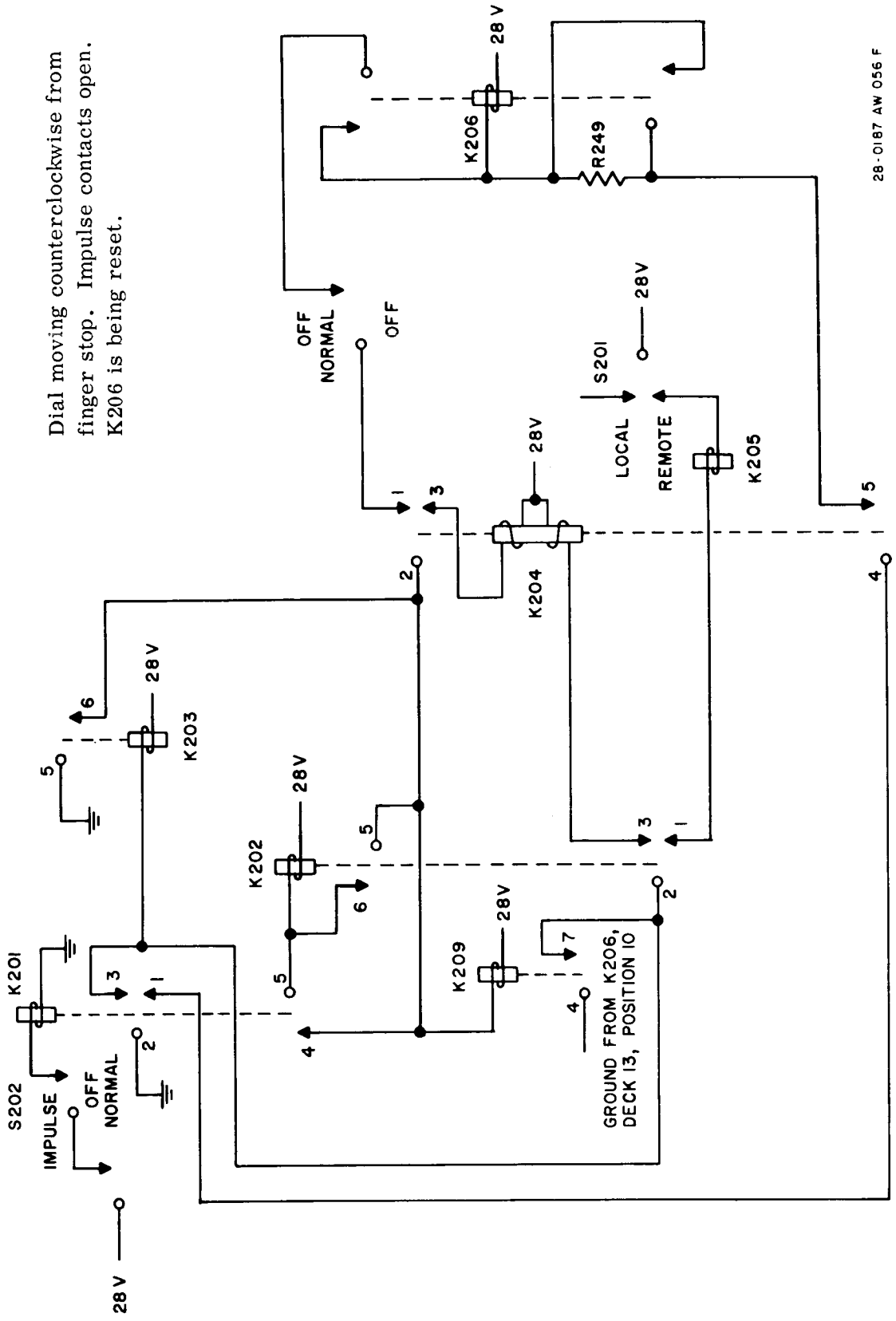


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 4 of 12)

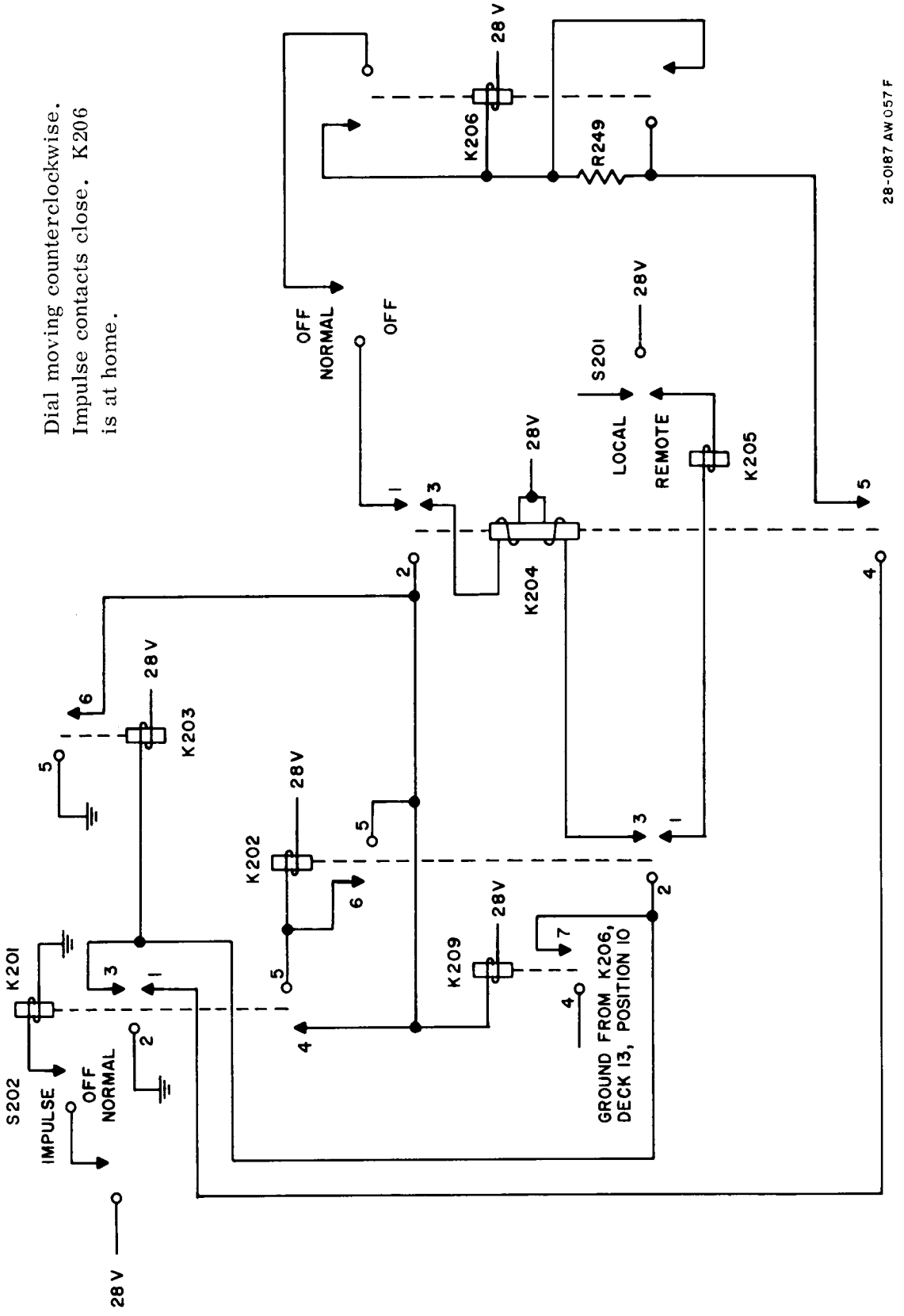


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 5 of 12)

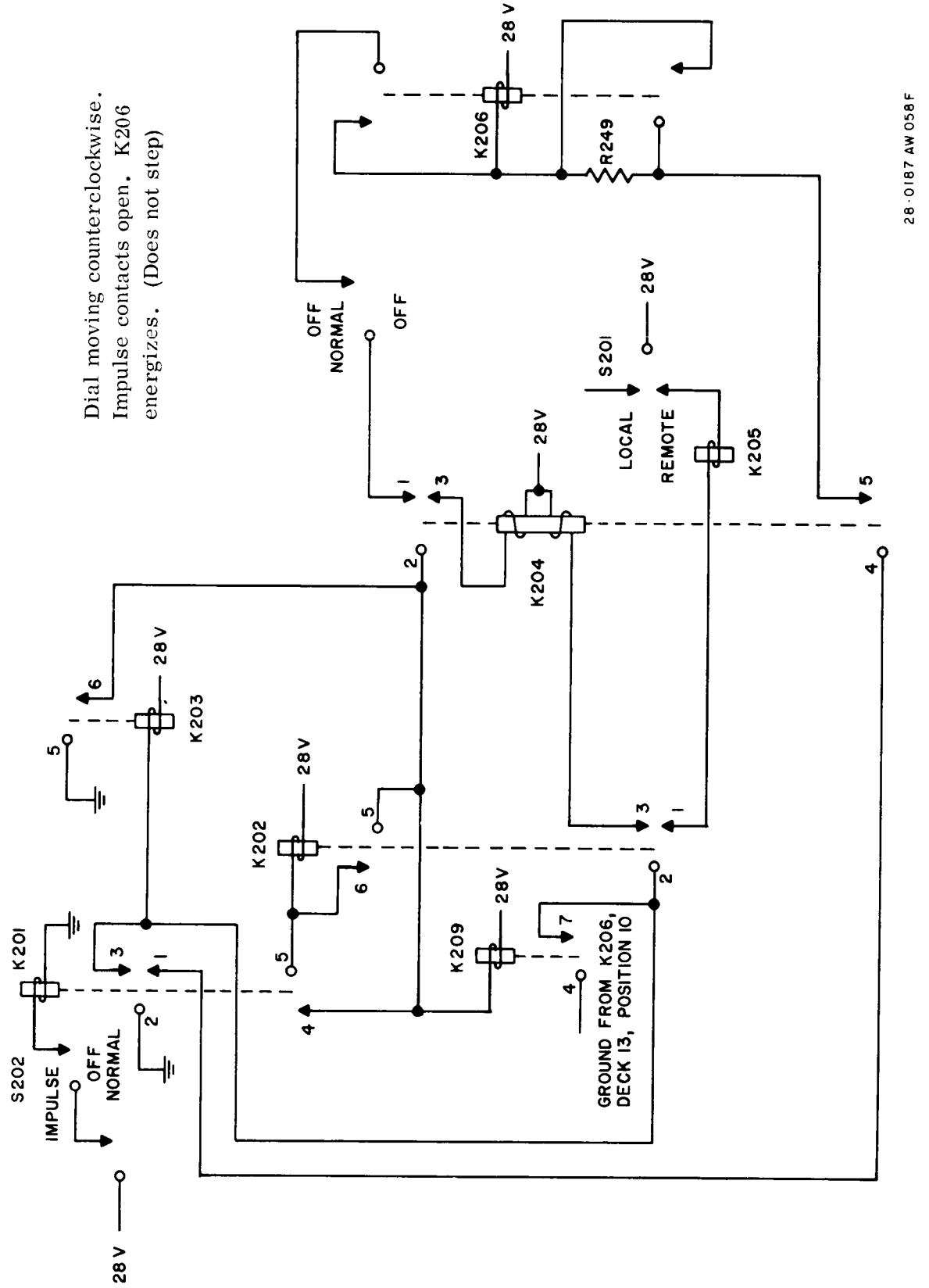


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 6 of 12)

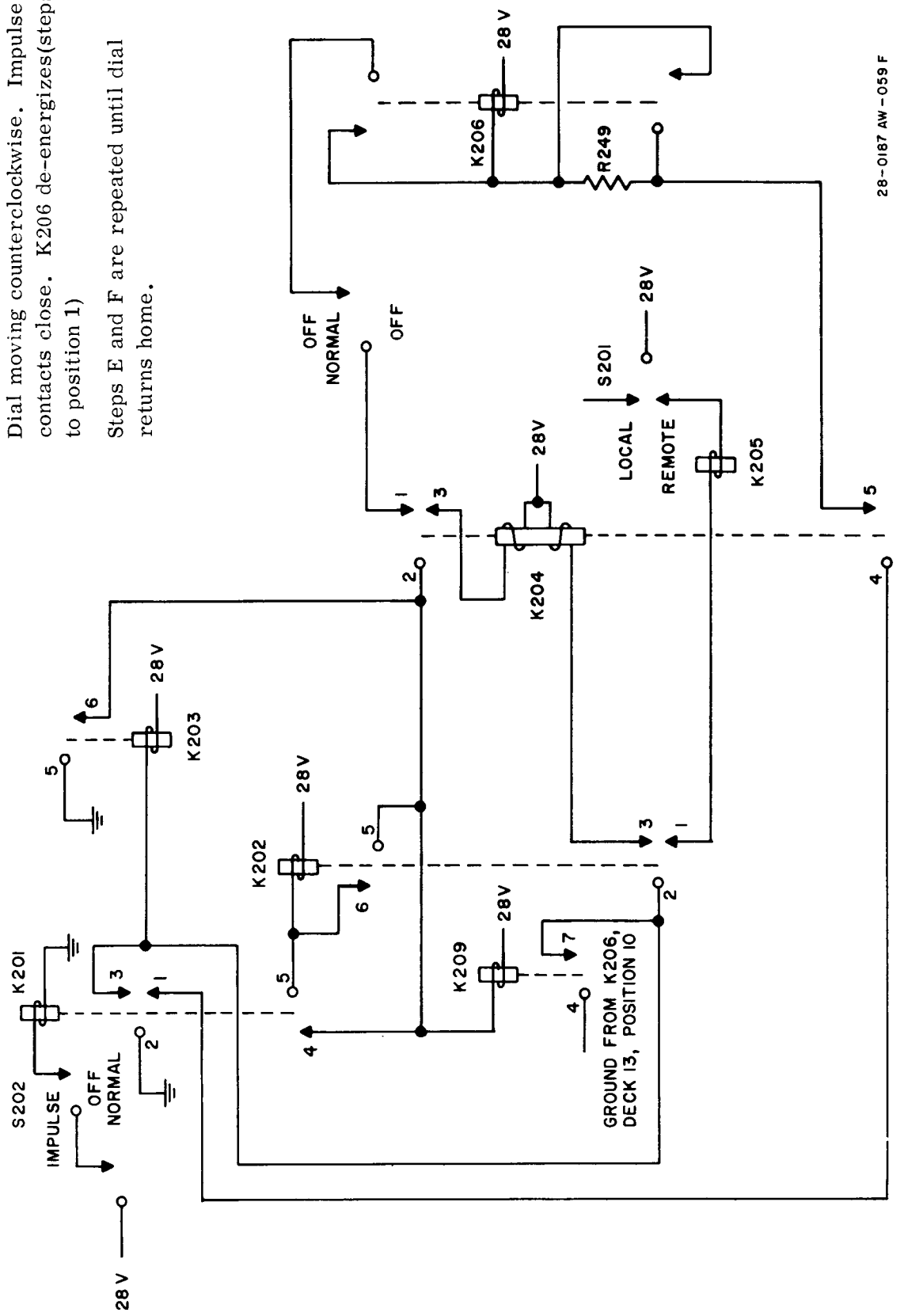


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 7 of 12)

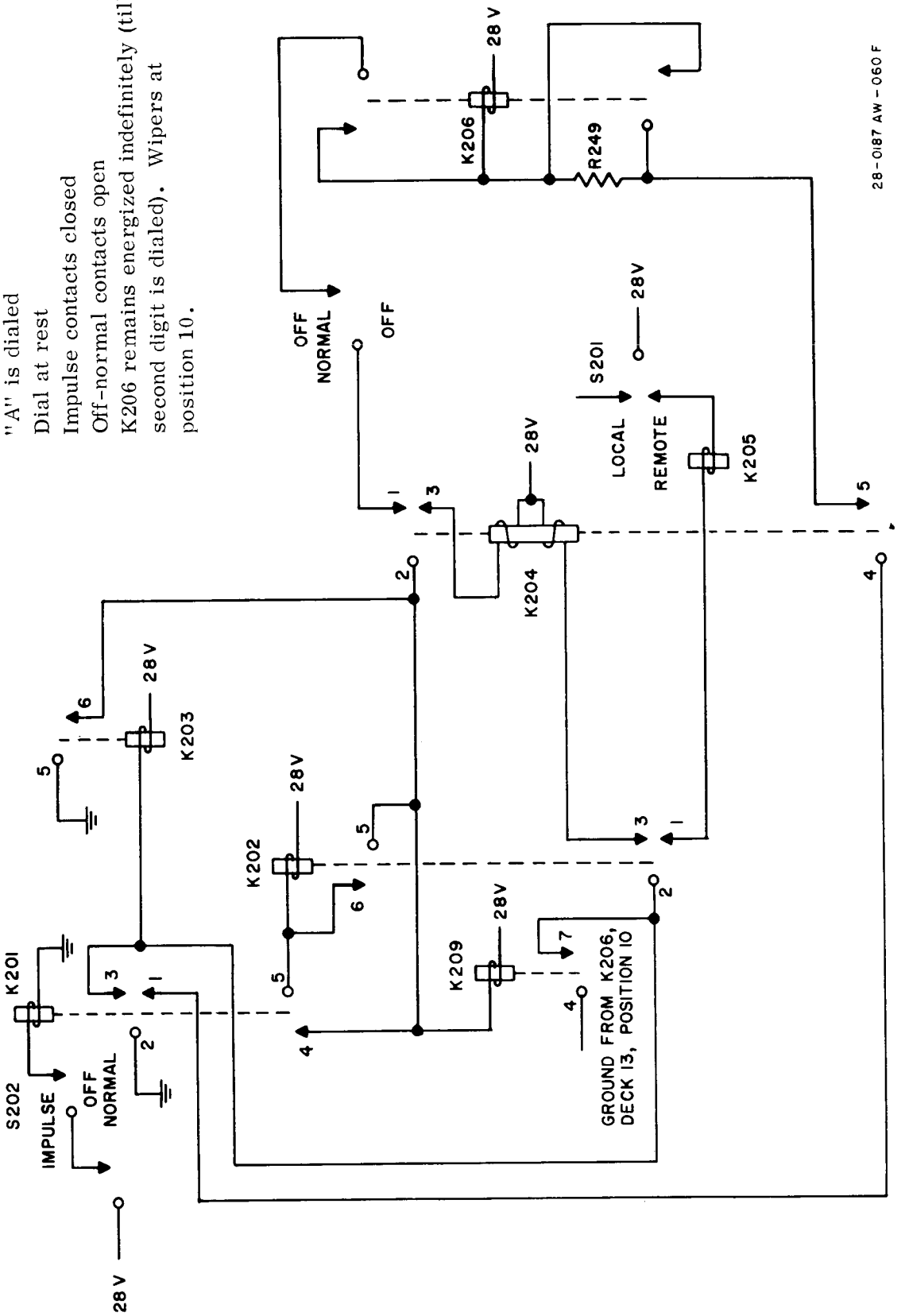


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 8 of 12)

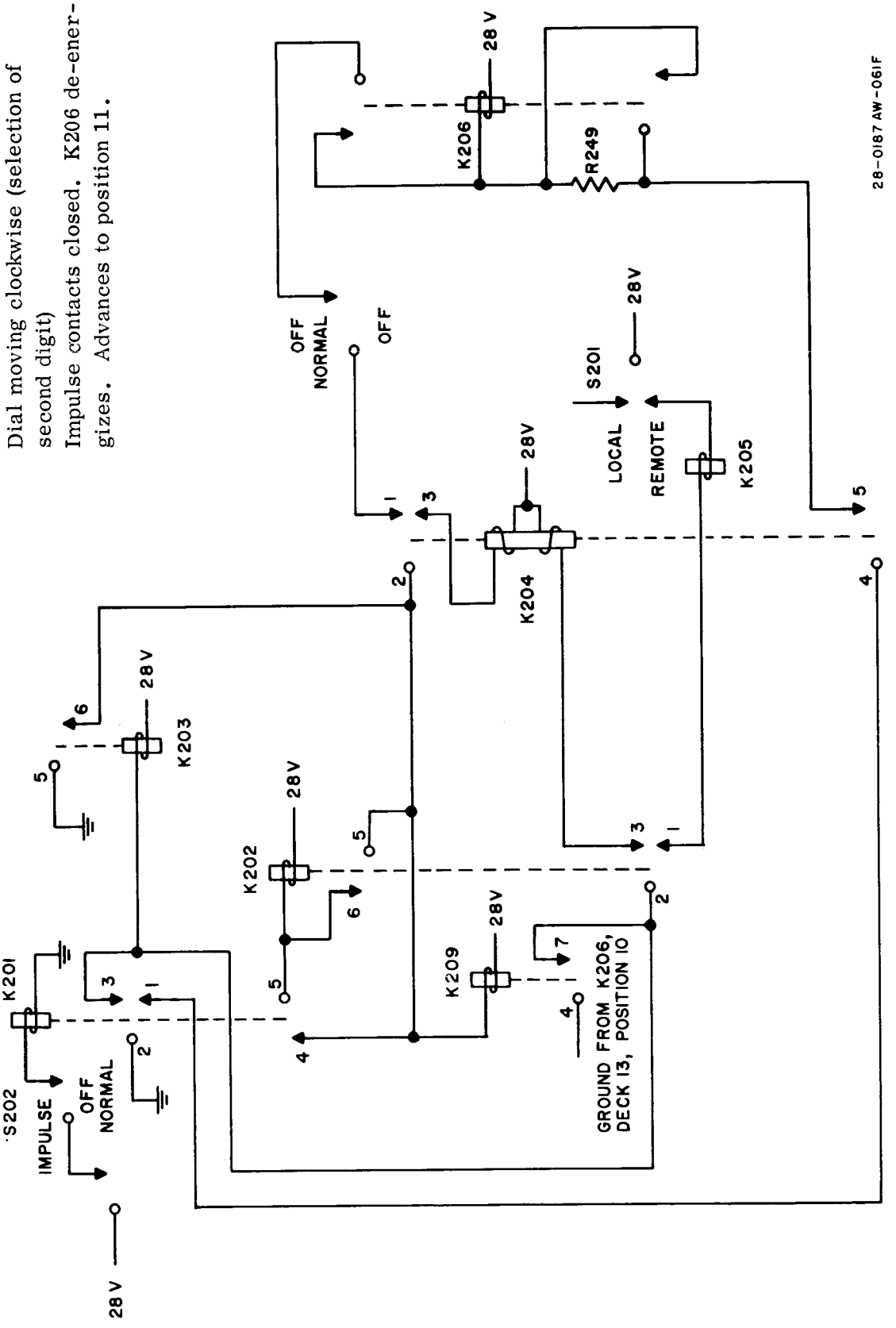


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 9 of 12)

Dial moving counterclockwise. Impulse contacts open. K 206 energizes. Steps 5 and 6 repeated until dial returns home.

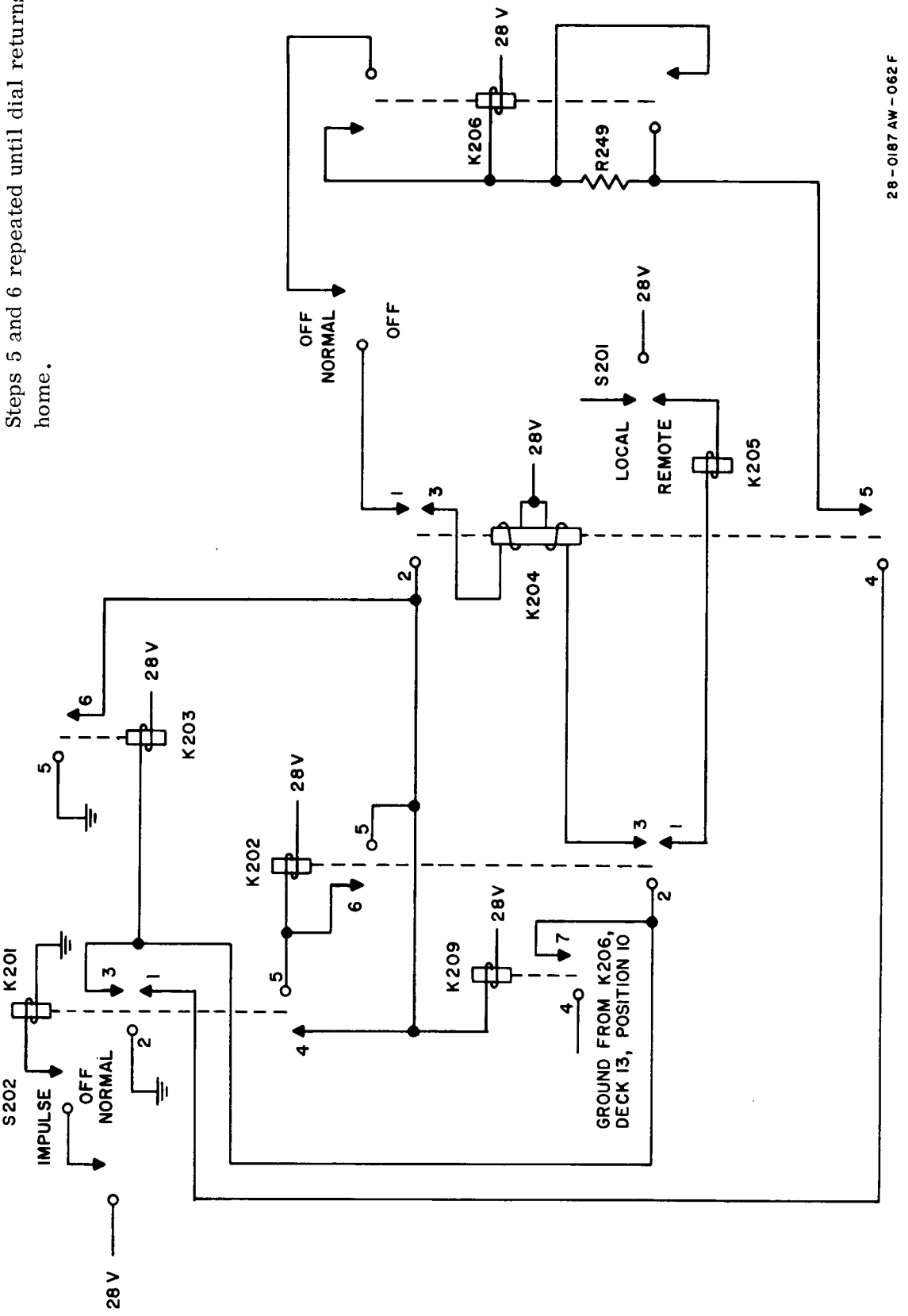


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 10 of 12)

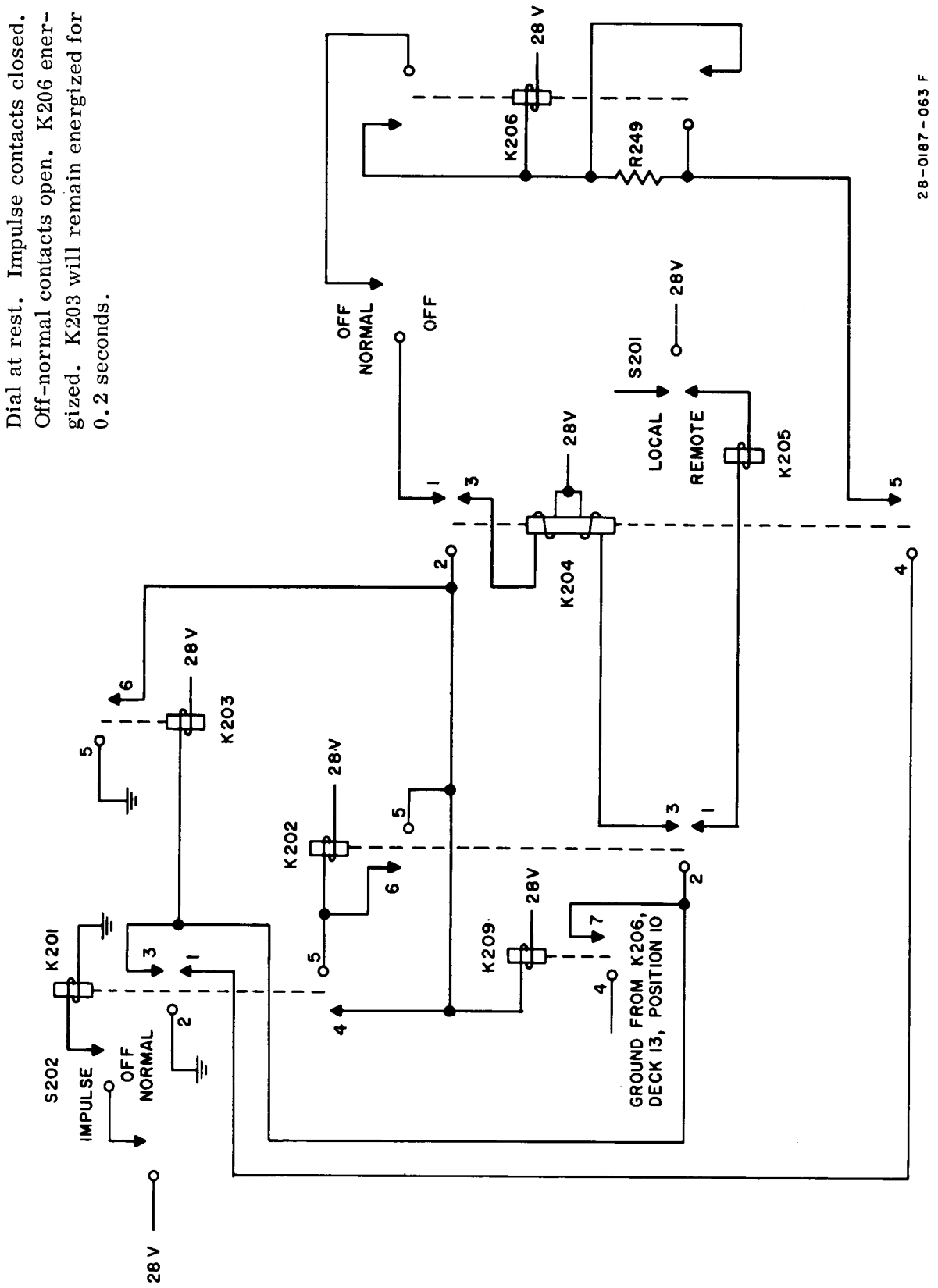


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 11 of 12)

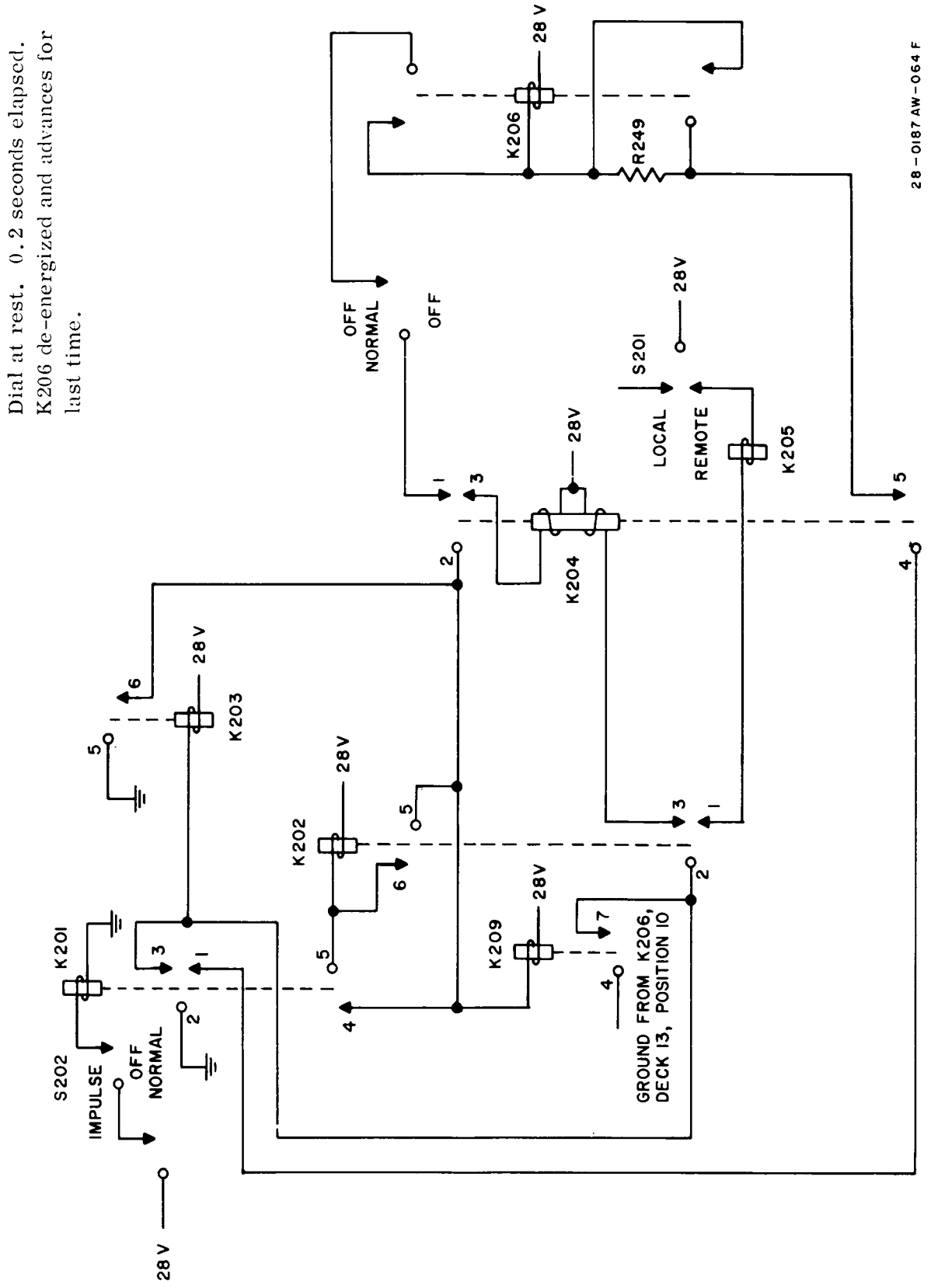


Figure 9-4. Relay Sequence for Channel Dialing (Sheet 12 of 12)

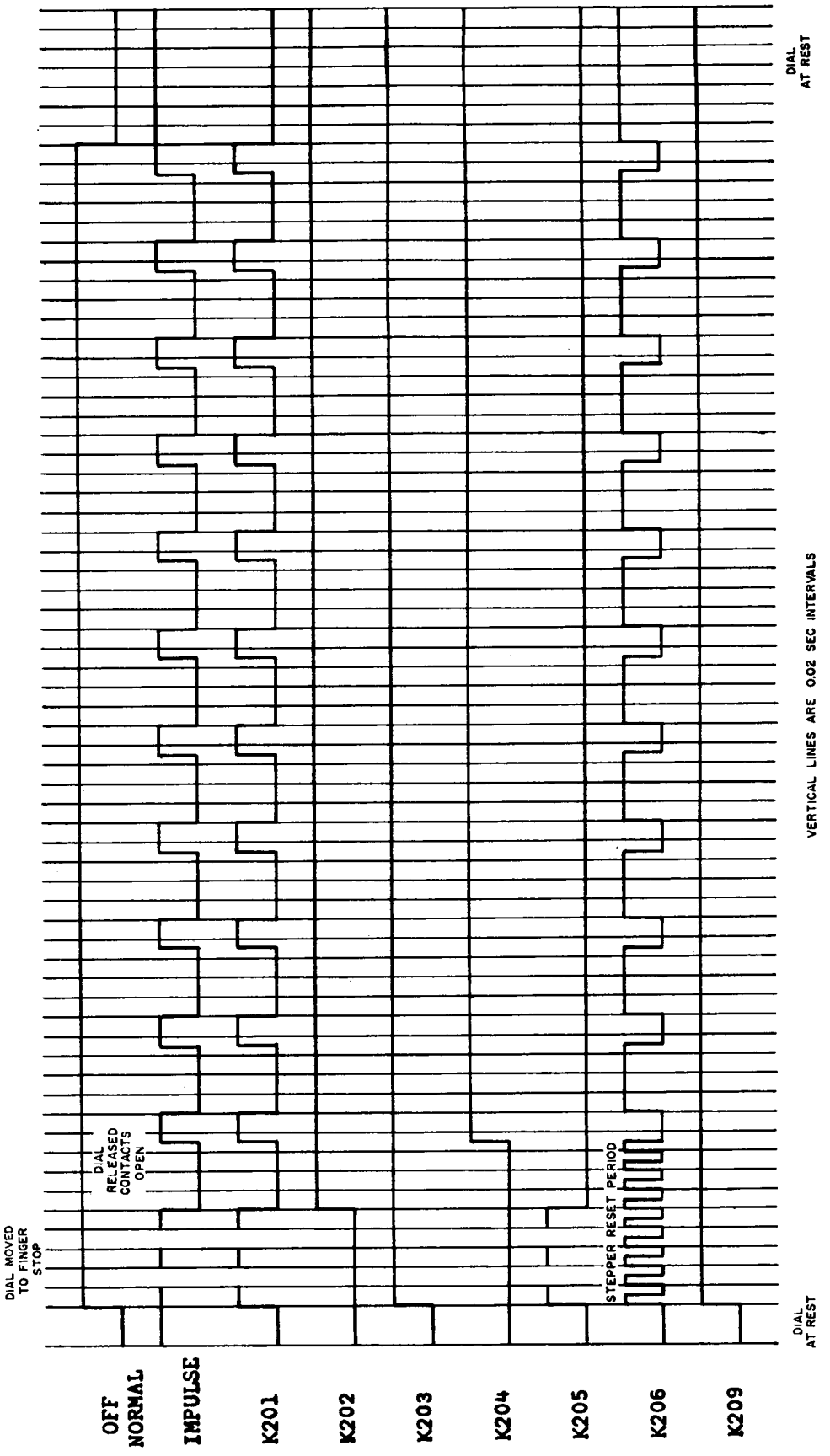


Figure 9-5. Channel Dialing Sequence Diagram, Dial "A" (First Digit) (Sheet 1 of 2)

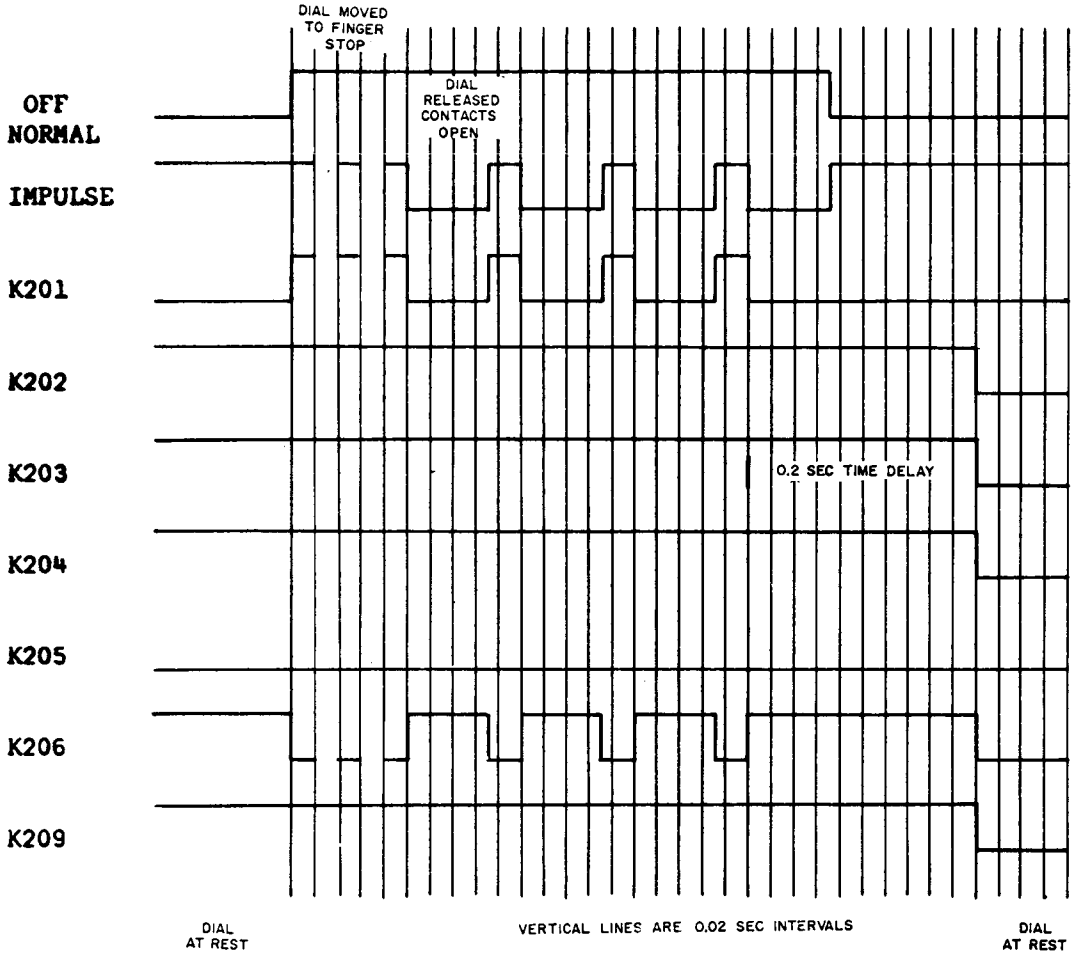
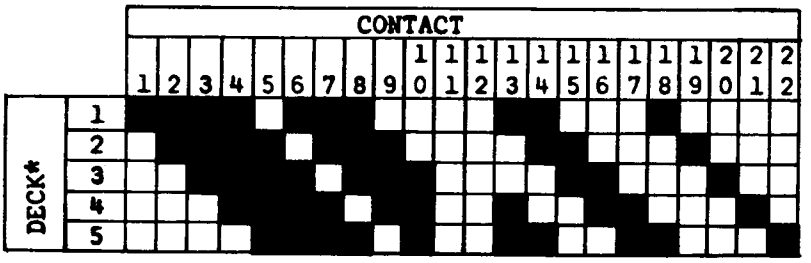


Figure 9-5. Channel Dialing Sequence Diagram, Dial "3" (Second Digit) (Sheet 2 of 2)



*The Same Code is Used For Decks 6, 7, 8, 9, 10

Figure 9-6. Five-Wire Autopositioner Code Generated by K206

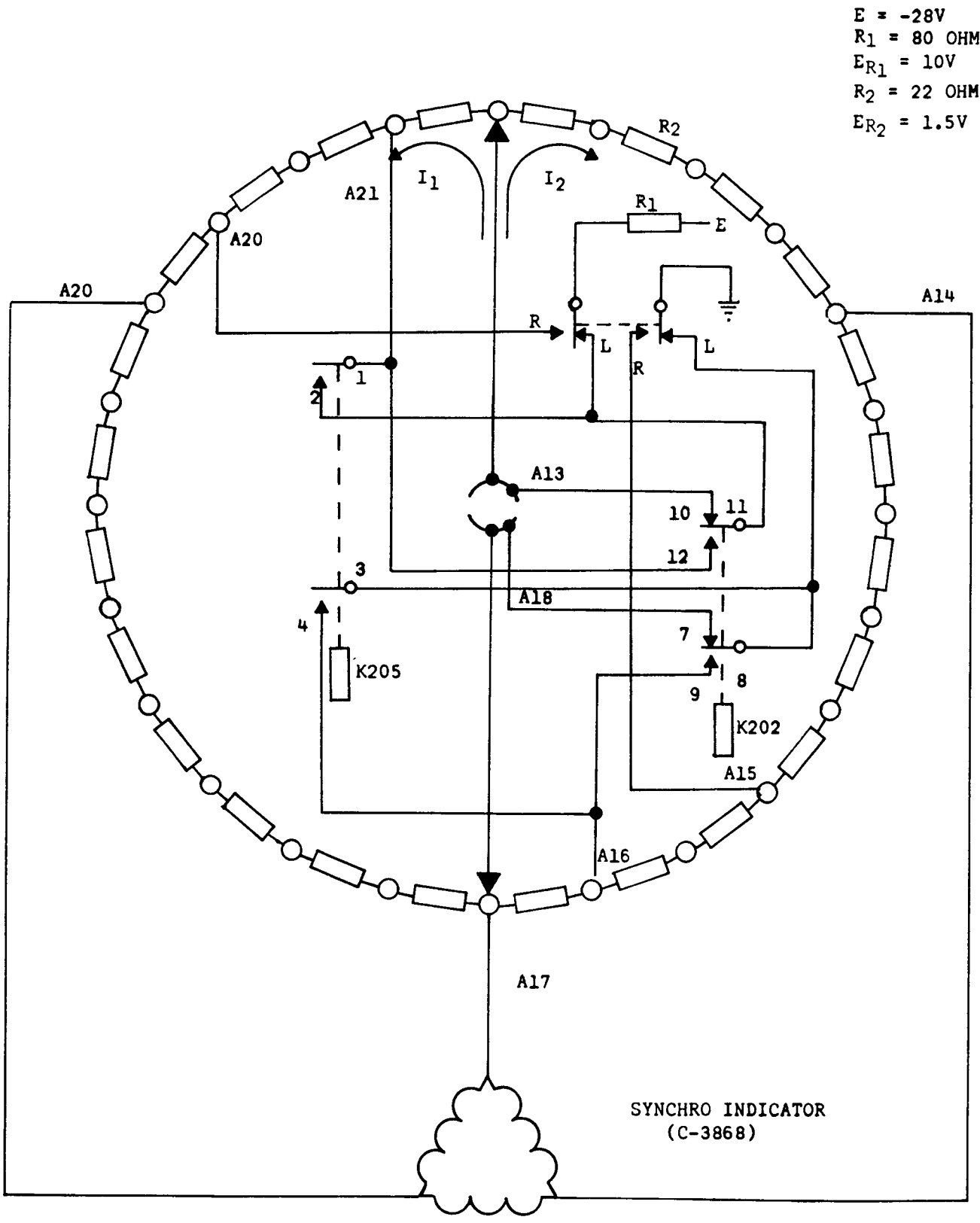


Figure 9-7. Synchro Transmitter, Simplified Diagram

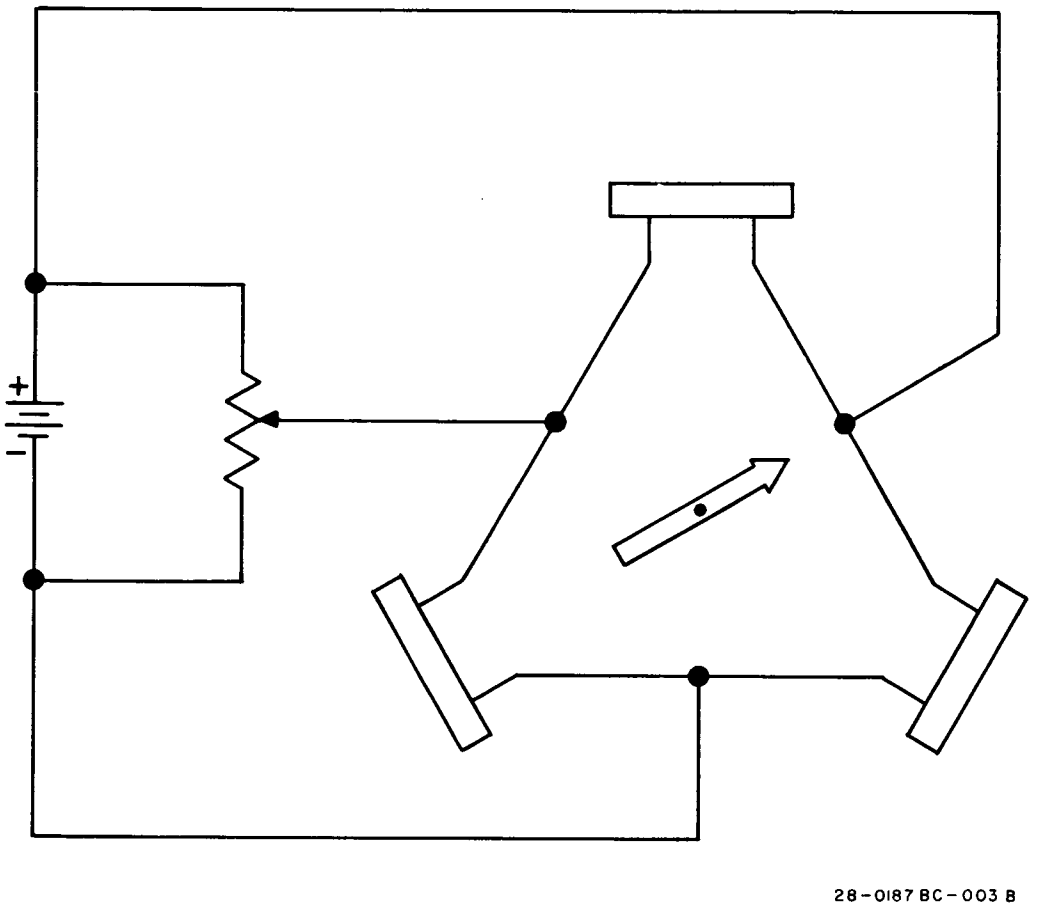
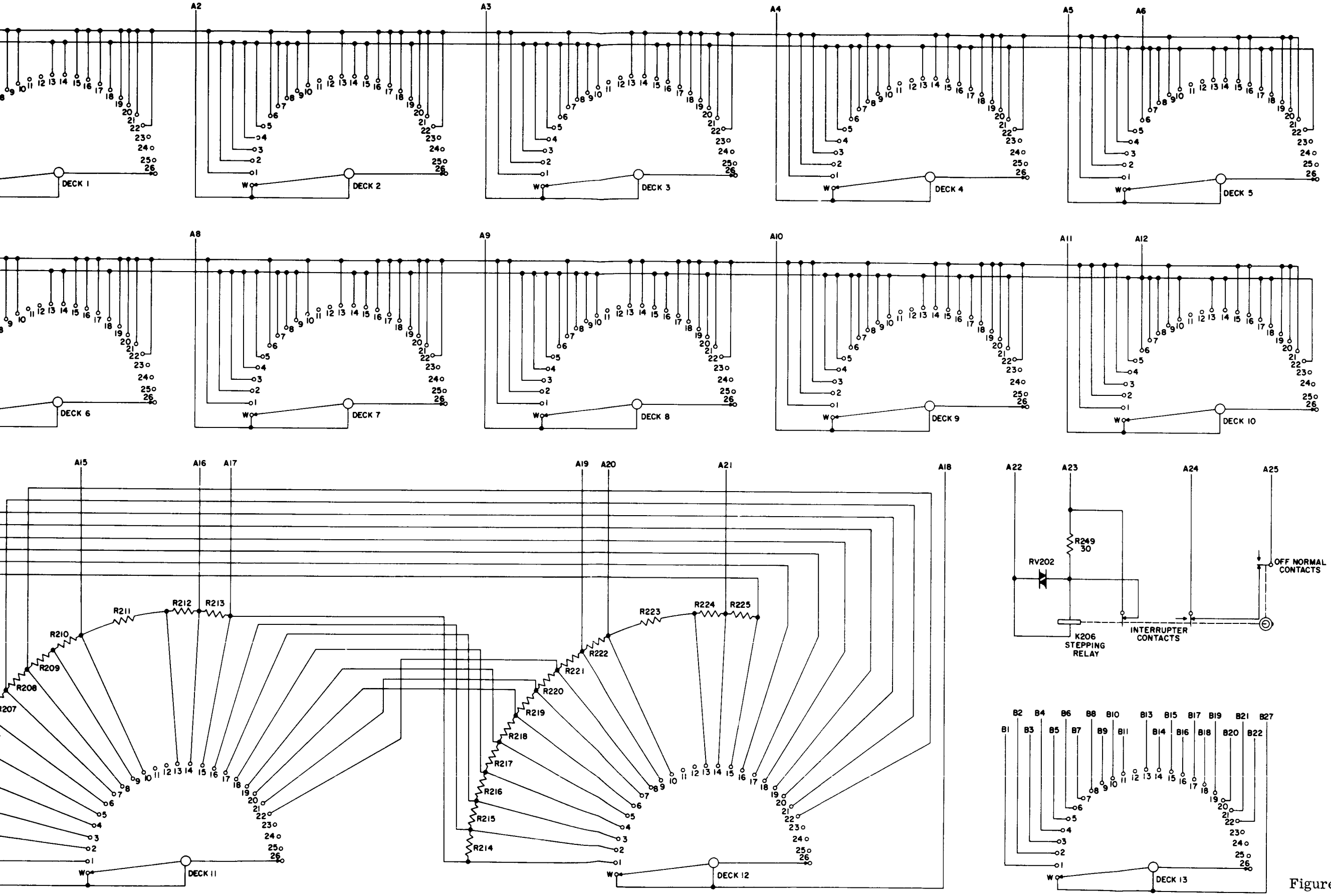


Figure 9-8. Synchro System, Simplified Diagram



NOTES:

1- SWITCH SHOWN IN HOME POSITION (NO. 26).
2- OFF NORMAL CONTACTS OPERATE IN POSITION NO. 26 ONLY.
3- R202 THRU R225 ARE 22 OHMS.
4- RV202 IS A 24 VOLT VARISTOR.

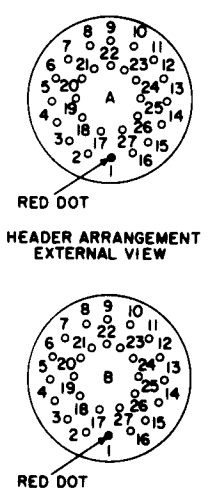
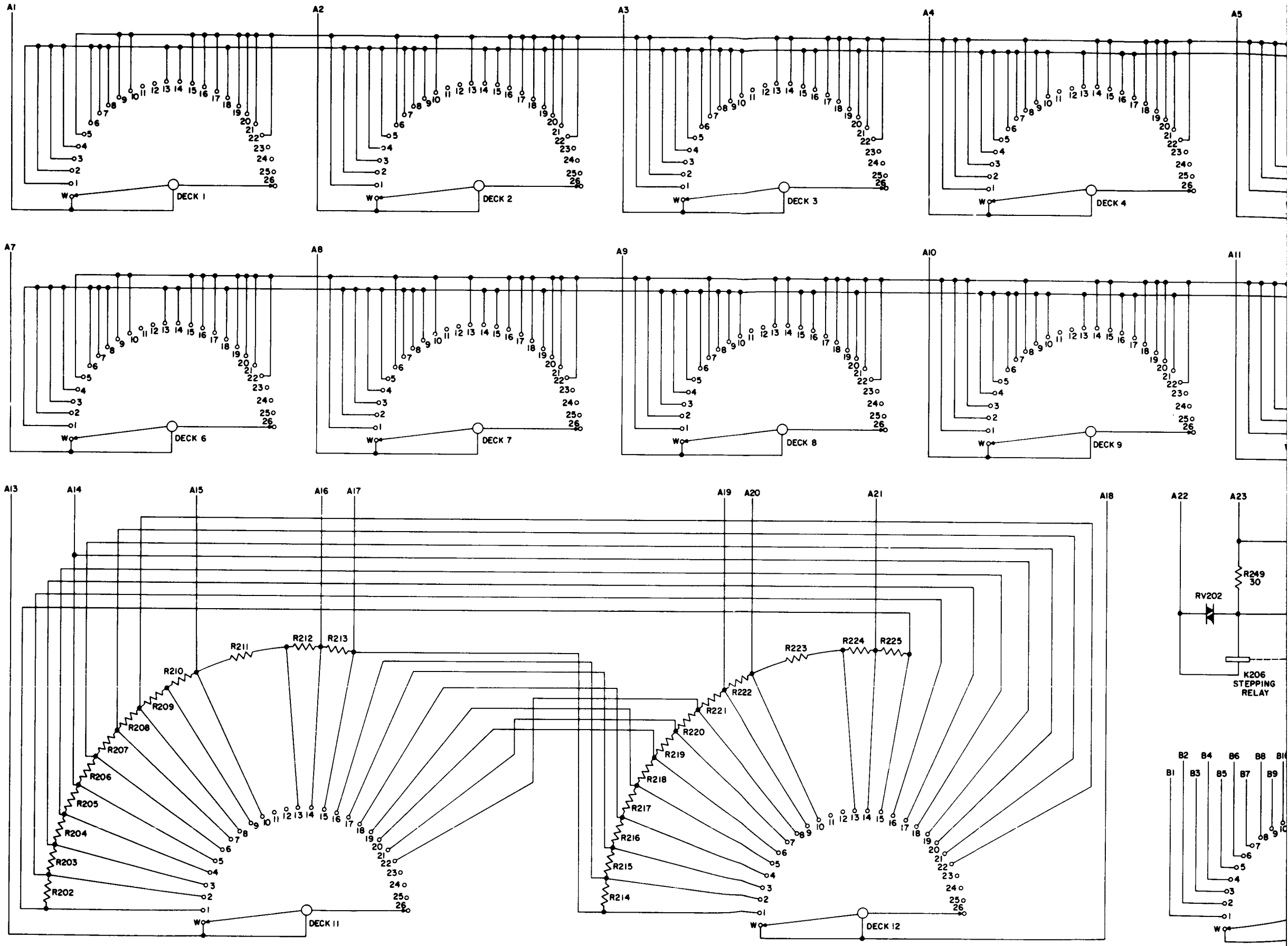


Figure 9-9. Radio Set Control C-3866/**SRC**, Stepping Relay K206, Simplified Schematic Diagram


A1
A2
A3
A4
A5
A7
A8
A9
A10
A11
A13
A14
A15
A16
A17
A19
A20
A21
A18
A22
A23
DECK 1
DECK 2
DECK 3
DECK 4
DECK 6
DECK 7
DECK 8
DECK 9
DECK 11
DECK 12
W
R202
R203
R204
R205
R206
R207
R208
R209
R210
R211
R212
R213
R214
R215
R216
R217
R218
R219
R220
R221
R222
R223
R224
R225
R249
30
RV202
K206
STEPPING
RELAY
B1
B2
B3
B4
B5
B6
B7
B8
B9

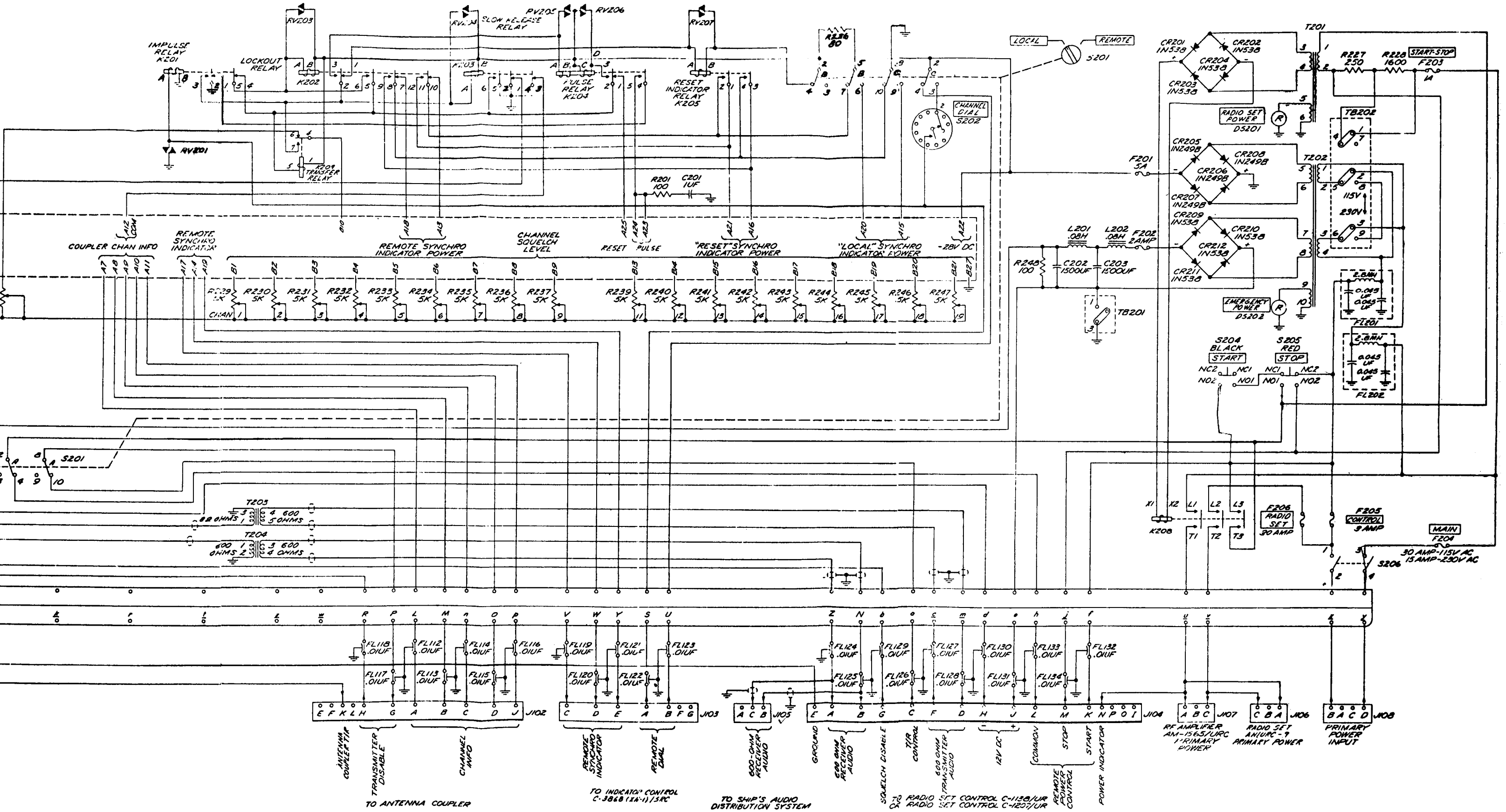


Figure 9-10. Radio Set Control C-3866/SRC, Schematic Diagram

TO RF AMPLIFIER AM-1565/URC OR
RADIO SET AN/URC-9

TO ANTENNA COUPLER

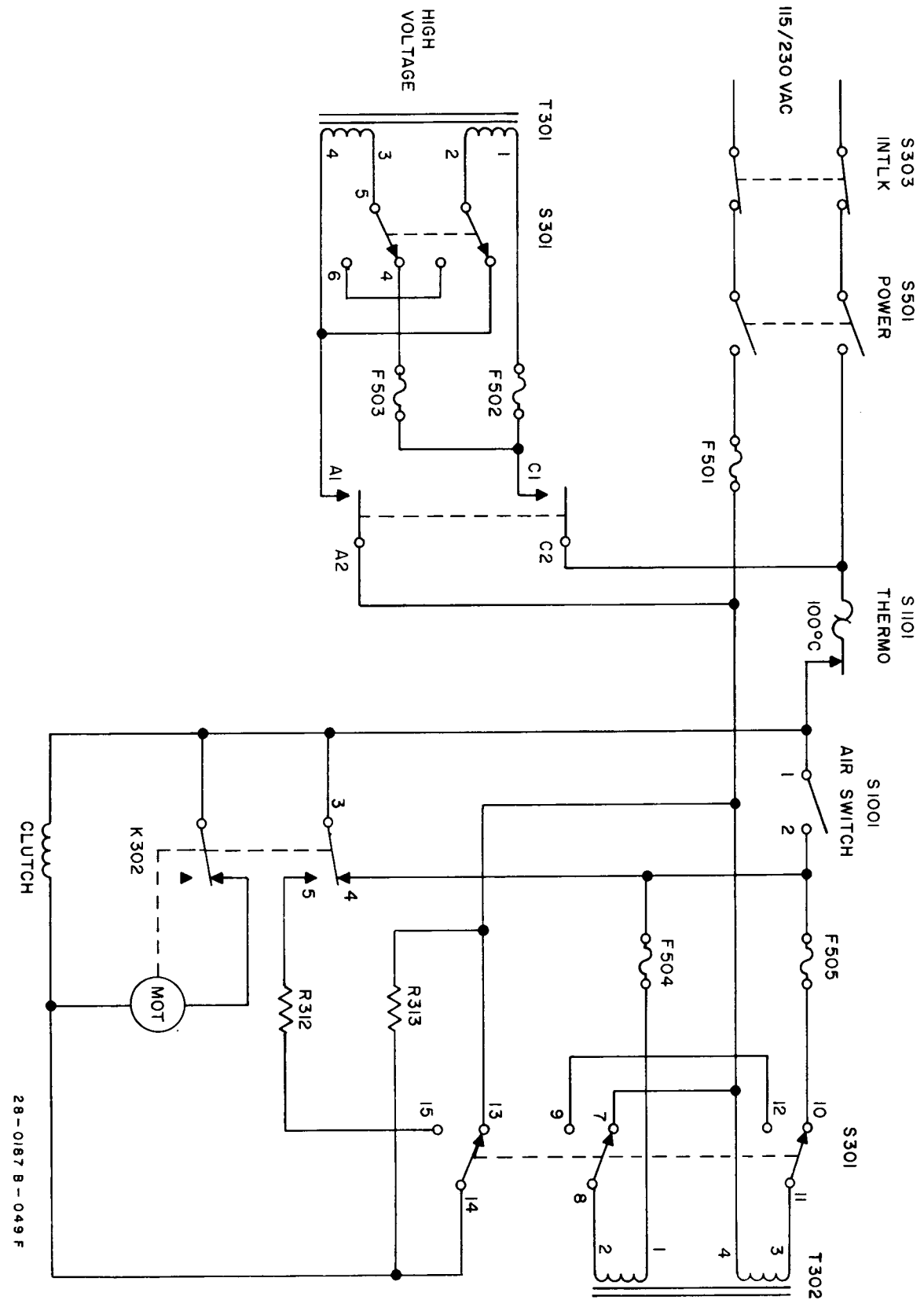


Figure 10-1. Radio-Frequency Amplifier AM-1565/URC, A-C Distribution, Simplified Diagram

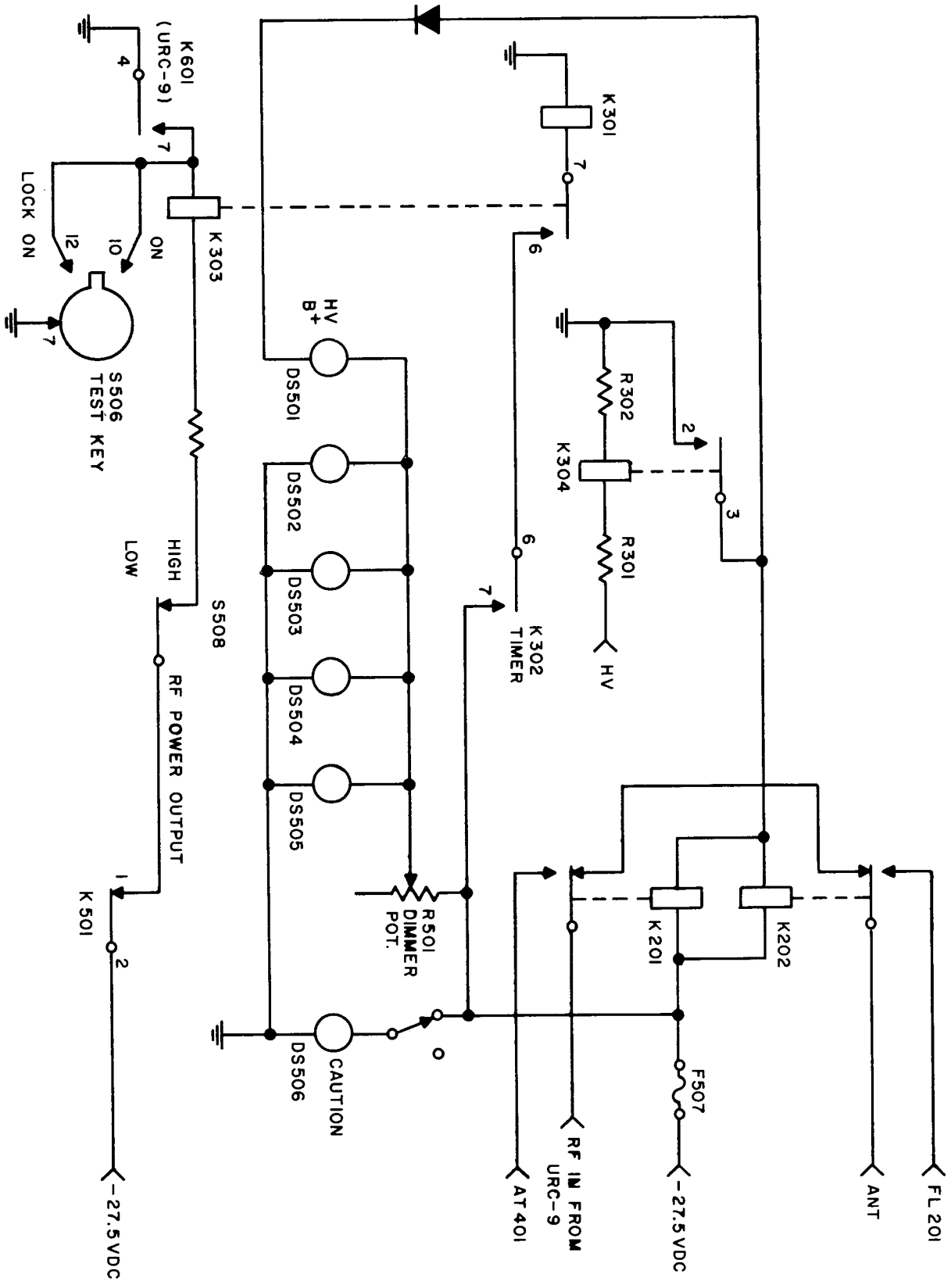


Figure 10-2. Radio-Frequency Amplifier AM-1565/URC, T/R Control, Simplified Diagram

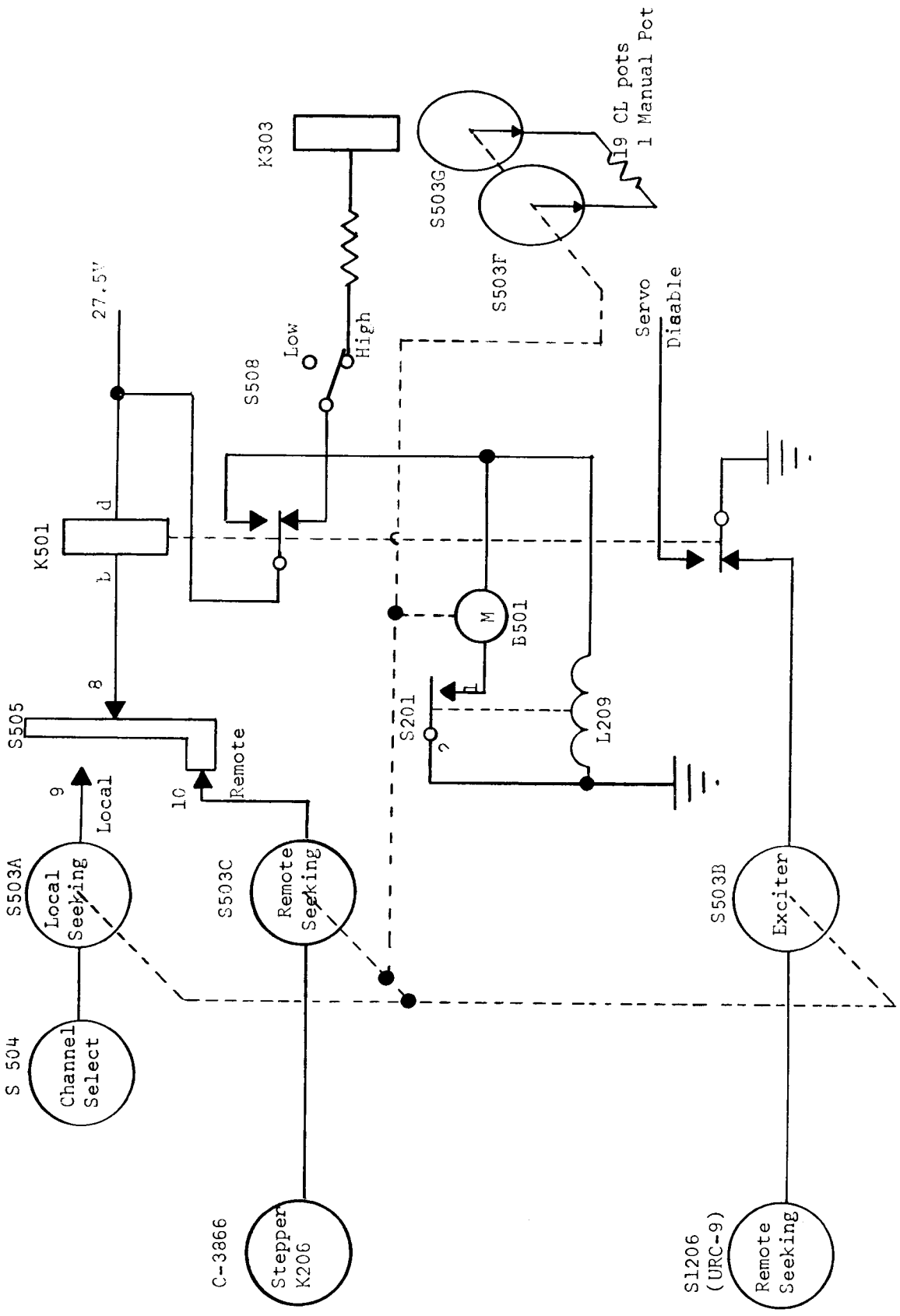


Figure 10-3. Radio-Frequency Amplifier AM-1565/URC, Autopositioner Operation

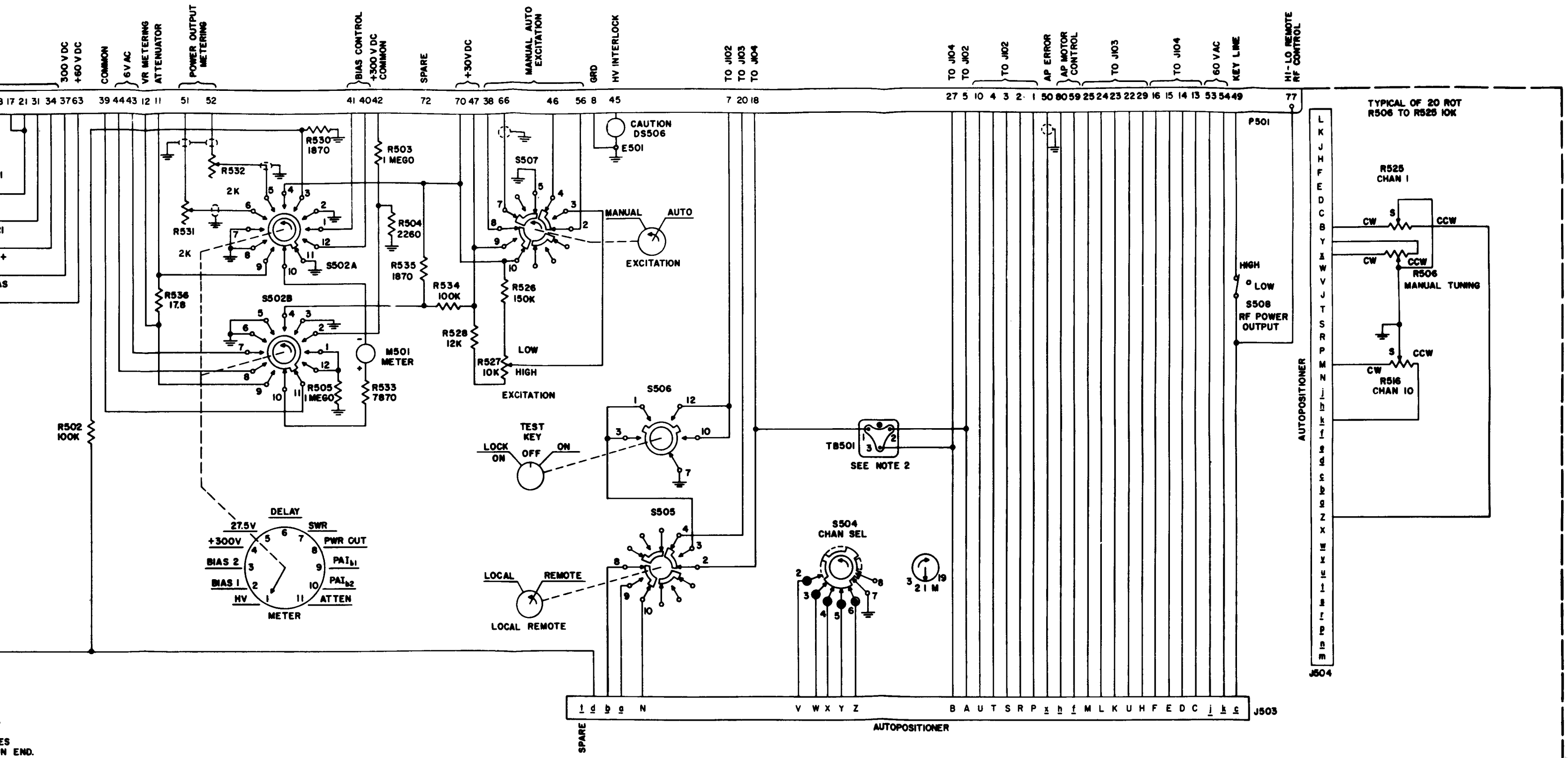
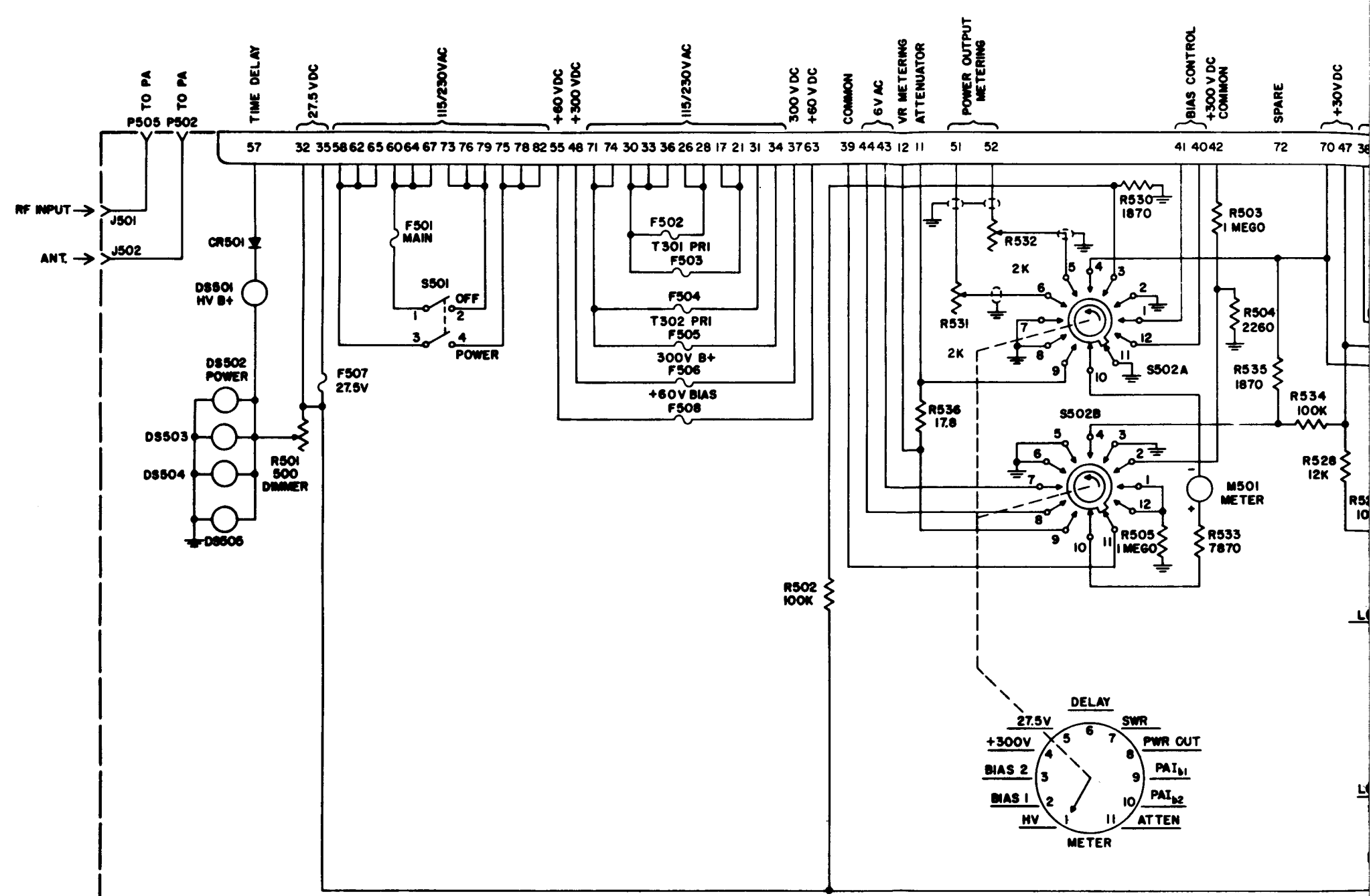


Figure 10-4. Radio-Frequency Amplifier AM-1565/URC, Front Panel Assembly, Schematic Diagram



NOTES:

1. UNLESS OTHERWISE INDICATED; RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROMICROFARADS, INDUCTANCE VALUES ARE IN MICROHENRYS AND ALL SWITCHES ARE VIEWED FROM THE END OPPOSITE THE KNOB OR DRIVEN END.
2. POSSIBLE CONNECTIONS;
   3 ⟶ NC TO CENTER (BLANK) TERMINAL
   3 ⟶ 1
   3 ⟶ 2
   3 ⟶ 1 AND 2

FRONT PANEL

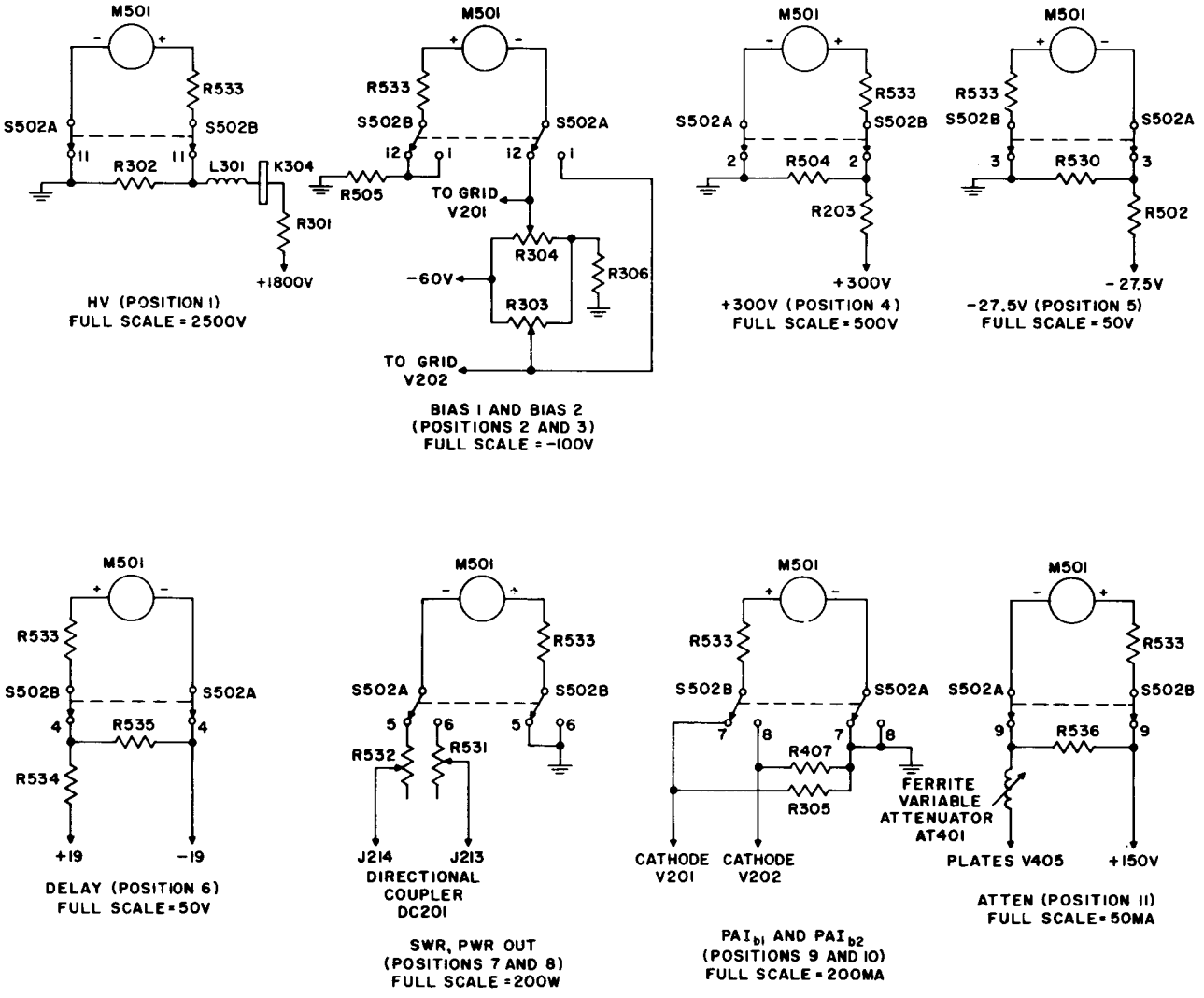


Figure 10-5. Radio-Frequency Amplifier AM-1565/URC, Metering Circuits, Simplified Schematic

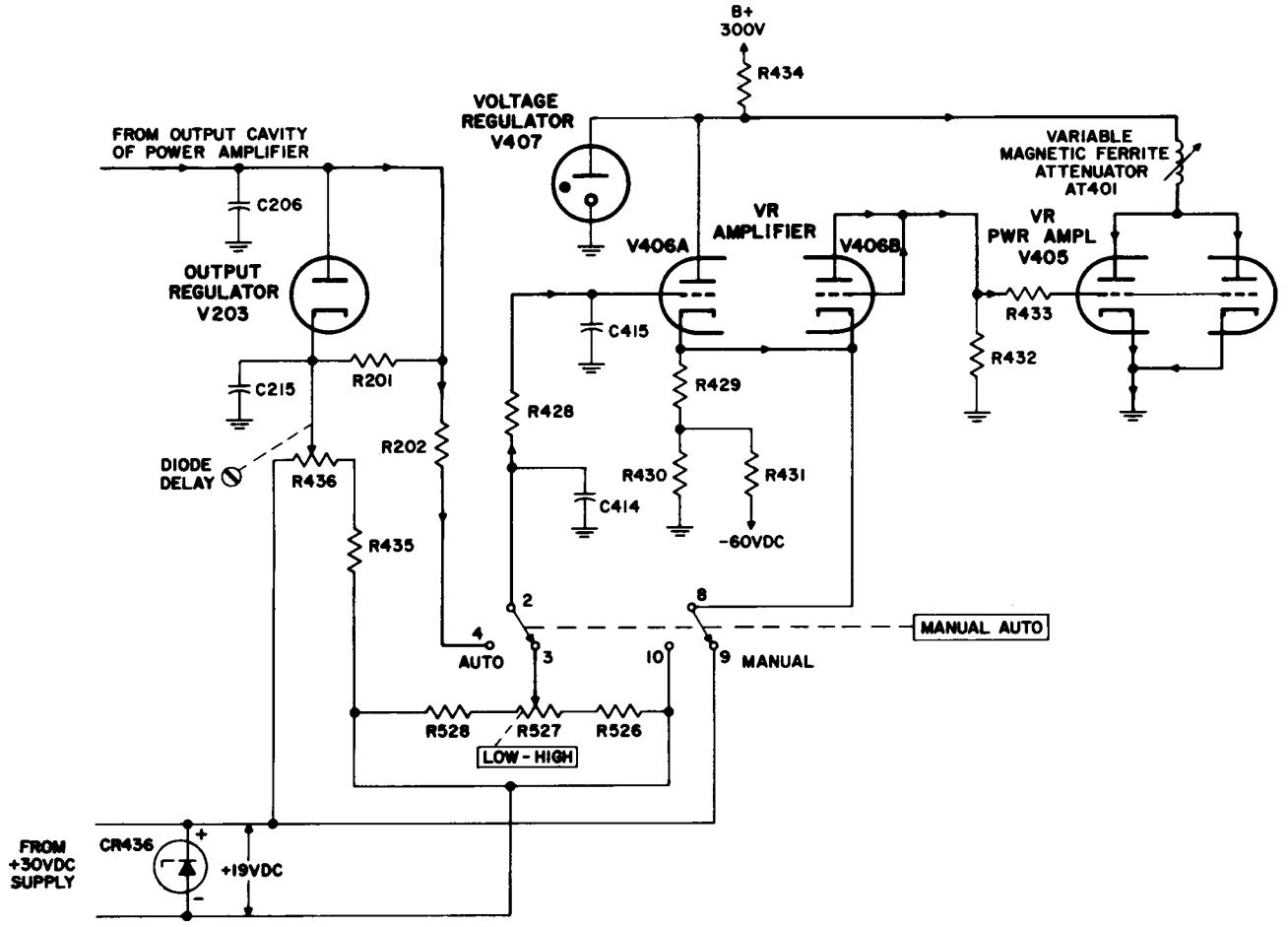
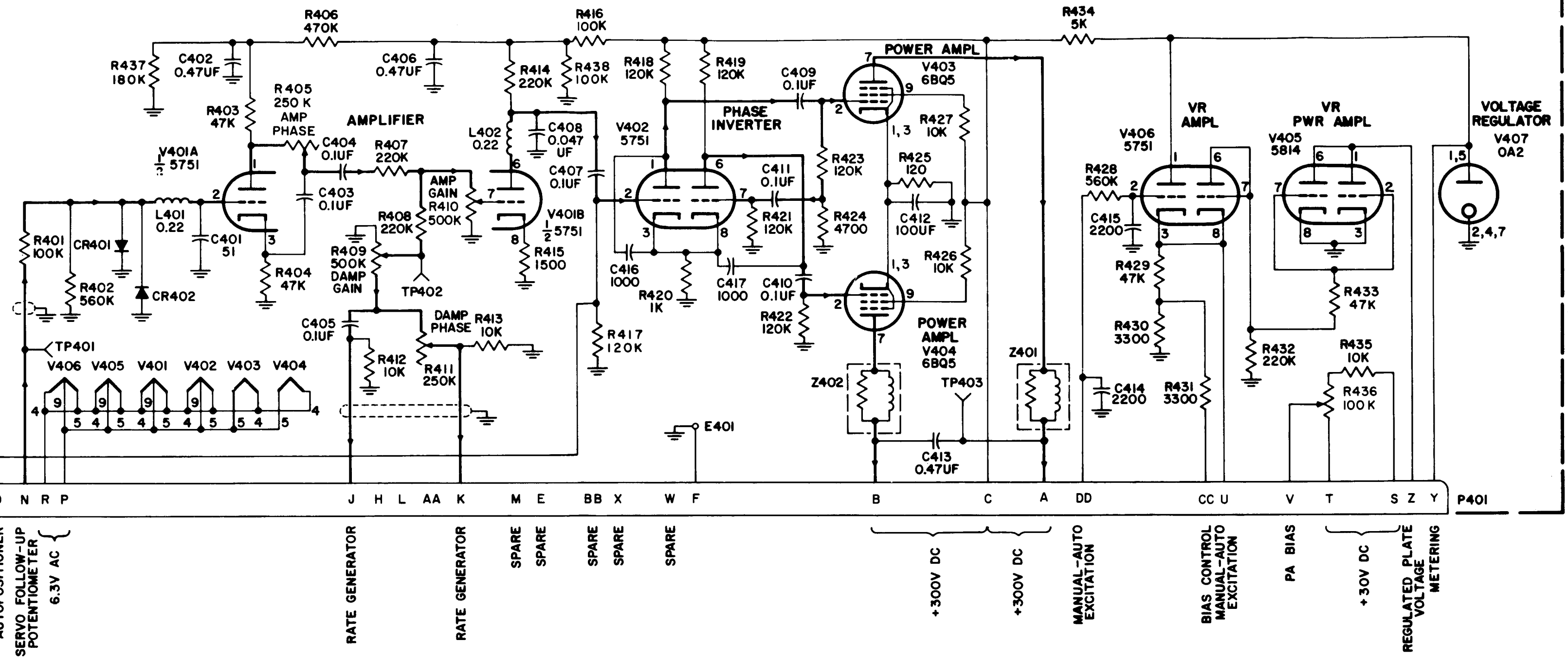


Figure 10-6. Radio-Frequency Amplifier AM-1565/URC, Drive Control Regulator, Simplified Schematic Diagram



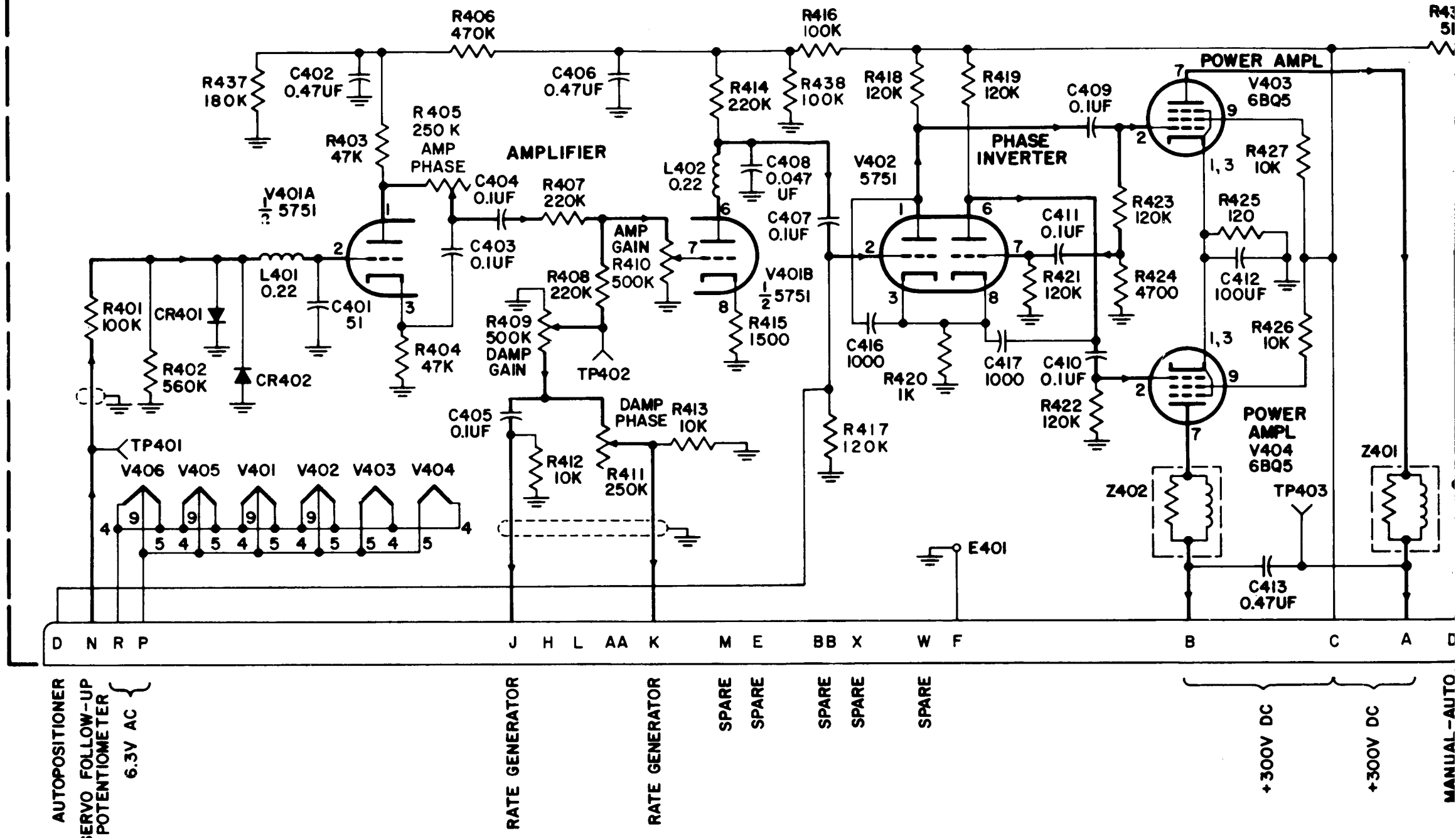
NOTES:

1 — UNLESS OTHERWISE INDICATED; ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICRO-MICROFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

2 — DC RESISTANCE OF COILS AND TRANSFORMERS LESS THAN ONE OHM HAS BEEN OMITTED.

3 — ALL VOLTAGE AND RESISTANCE MEASUREMENTS TAKEN TO GROUND WITH VTVM. ALL RESISTANCE MEASUREMENTS TAKEN WITH SUBASSEMBLY REMOVED AND POSITIVE LEAD TO GROUND. ALL VOLTAGE MEASUREMENTS TAKEN WITH SUBASSEMBLY PLUGGED IN, POWER APPLIED, NO SIGNAL INPUT AND NEGATIVE LEAD TO GROUND.

Figure 10-7. Radio-Frequency Amplifier AM-1565/URC, Servo Amplifier Subassembly, Schematic Diagram



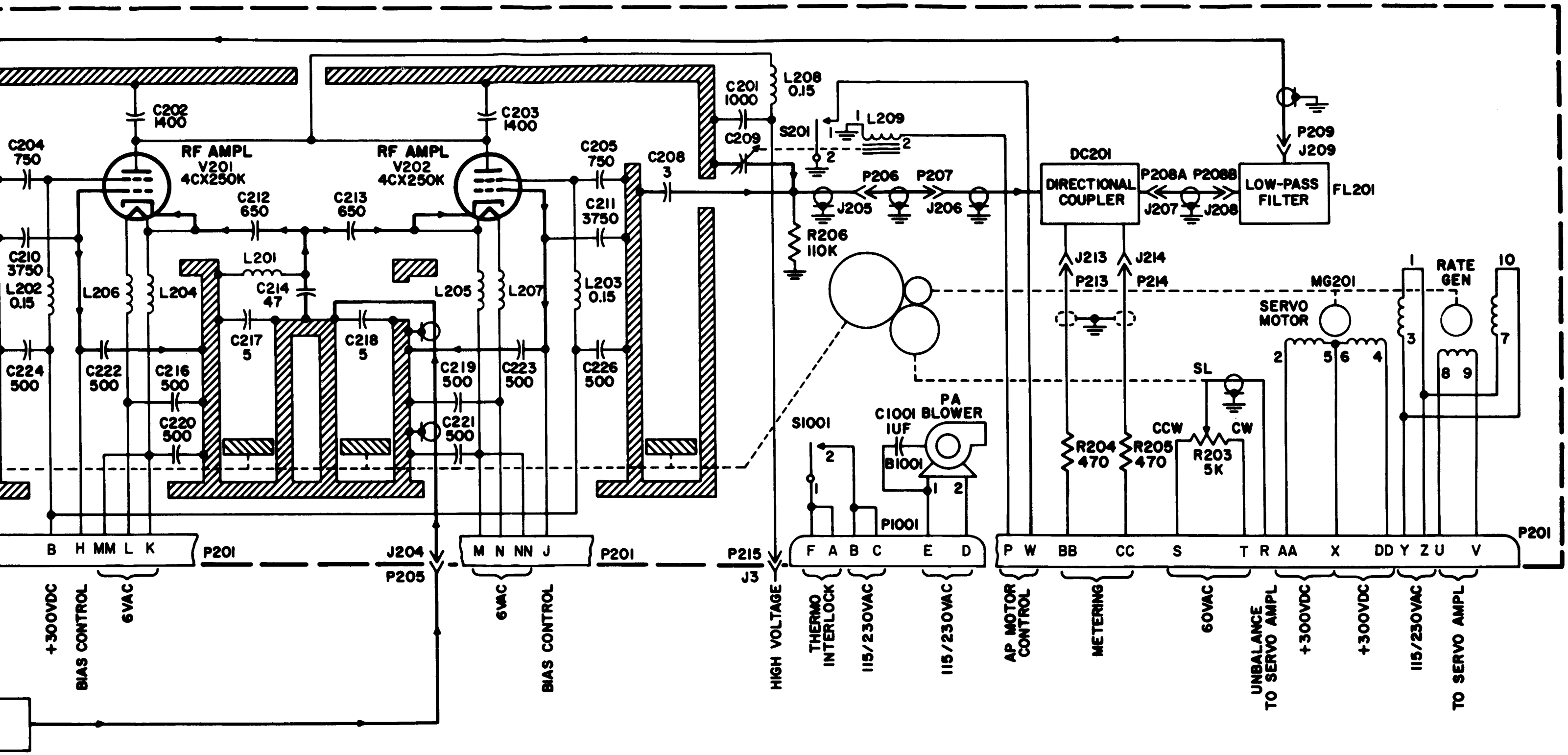
NOTES:

1 – UNLESS OTHERWISE INDICATED; ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE MICROFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

2 – DC RESISTANCE OF COILS AND TRANSFORMERS LESS THAN ONE OHM HAS BEEN OMITTED.

3 – ALL VOLTAGE AND RESISTANCE MEASUREMENTS TAKEN TO GROUND WITH VTVM. ALL RESIS TAKEN WITH SUBASSEMBLY REMOVED AND POSITIVE LEAD TO GROUND. ALL VOLTAGE MEA WITH SUBASSEMBLY PLUGGED IN, POWER APPLIED, NO SIGNAL INPUT AND NEGATIVE LEAD

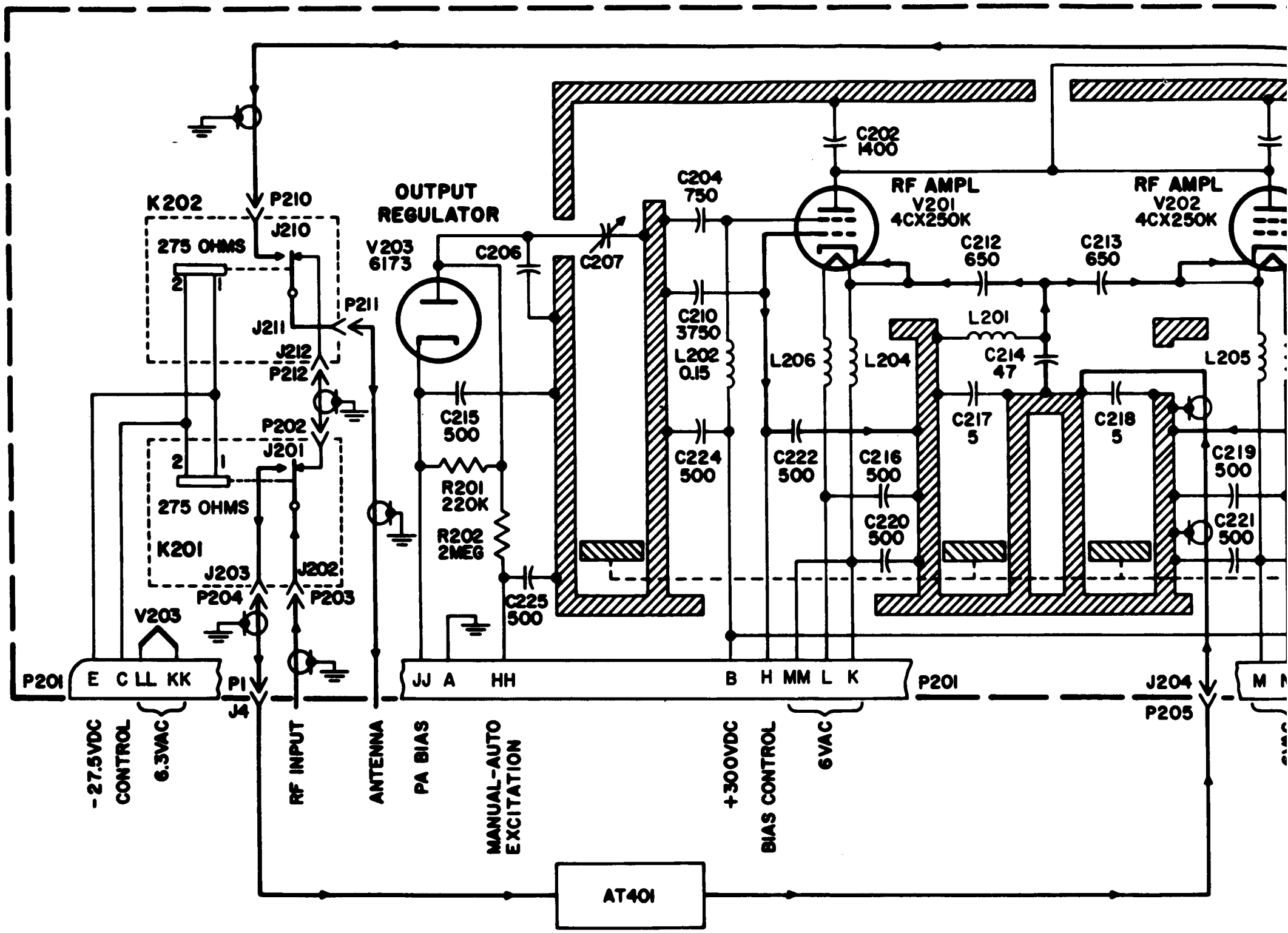
Figure 10-7.



OHMS,

NE

Figure 10-8. Radio-Frequency Amplifier AM-1565/URC, Power Amplifier Subassembly, Schematic Diagram



NOTES:

1-UNLESS OTHERWISE INDICATED ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROMICROFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

2-DC RESISTANCE OF COILS AND TRANSFORMERS LESS THAN ONE OHM HAS BEEN OMITTED.

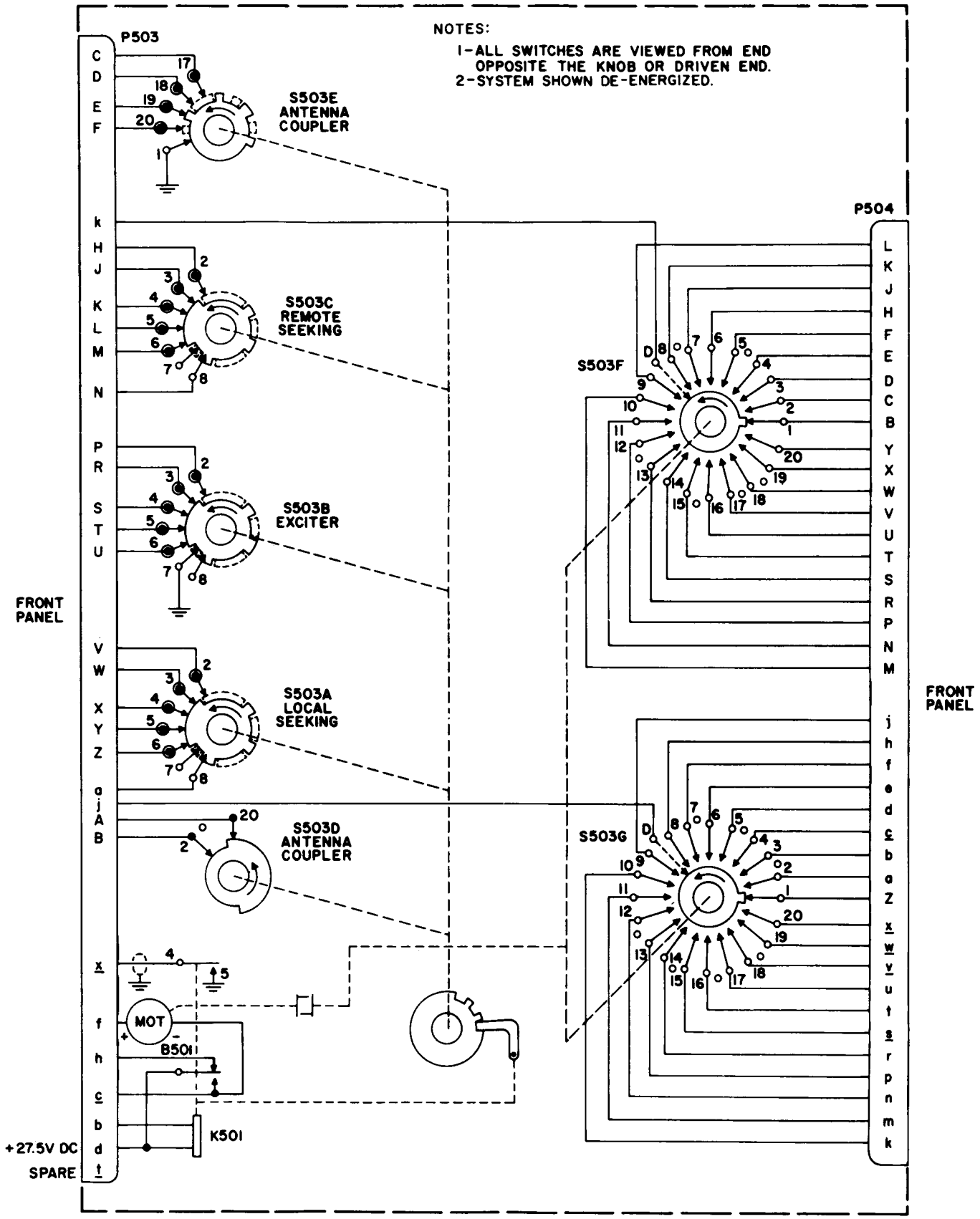


Figure 10-9. Radio-Frequency Amplifier AM-1565/URC, Autopositioner, Schematic Diagram

☆ U.S. GOVERNMENT PRINTING OFFICE : 1967 O - 245-571

NOTES:
1-UNLESS OTHERWISE INDICATED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROMICROFARADS, AND INDUCTANCE VALUES ARE IN MICRCHENRYS.
2-DC RESISTANCE OF COILS AND TRANSFORMERS LESS THAN ONE OHM HAVE BEEN OMITTED.

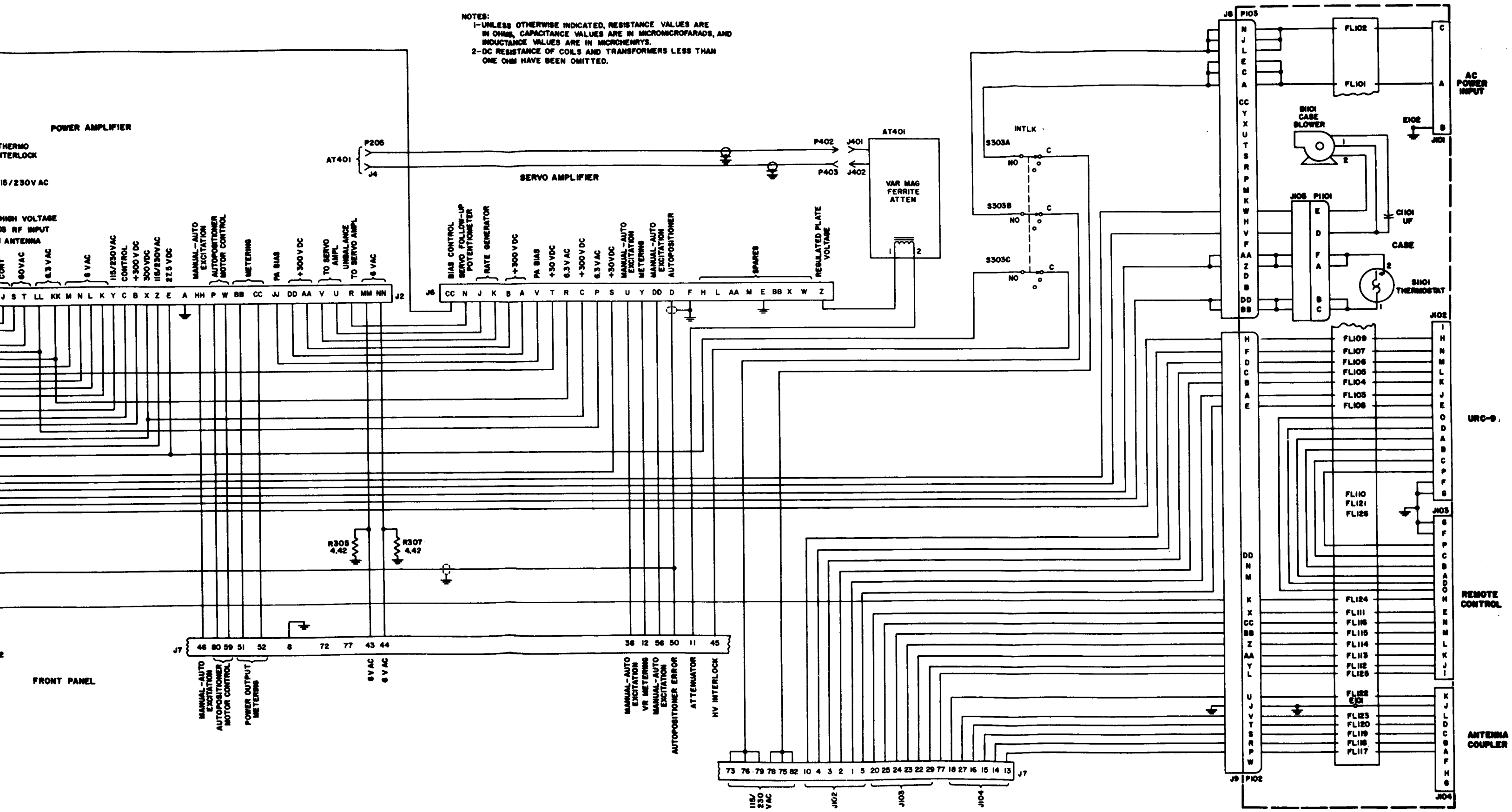
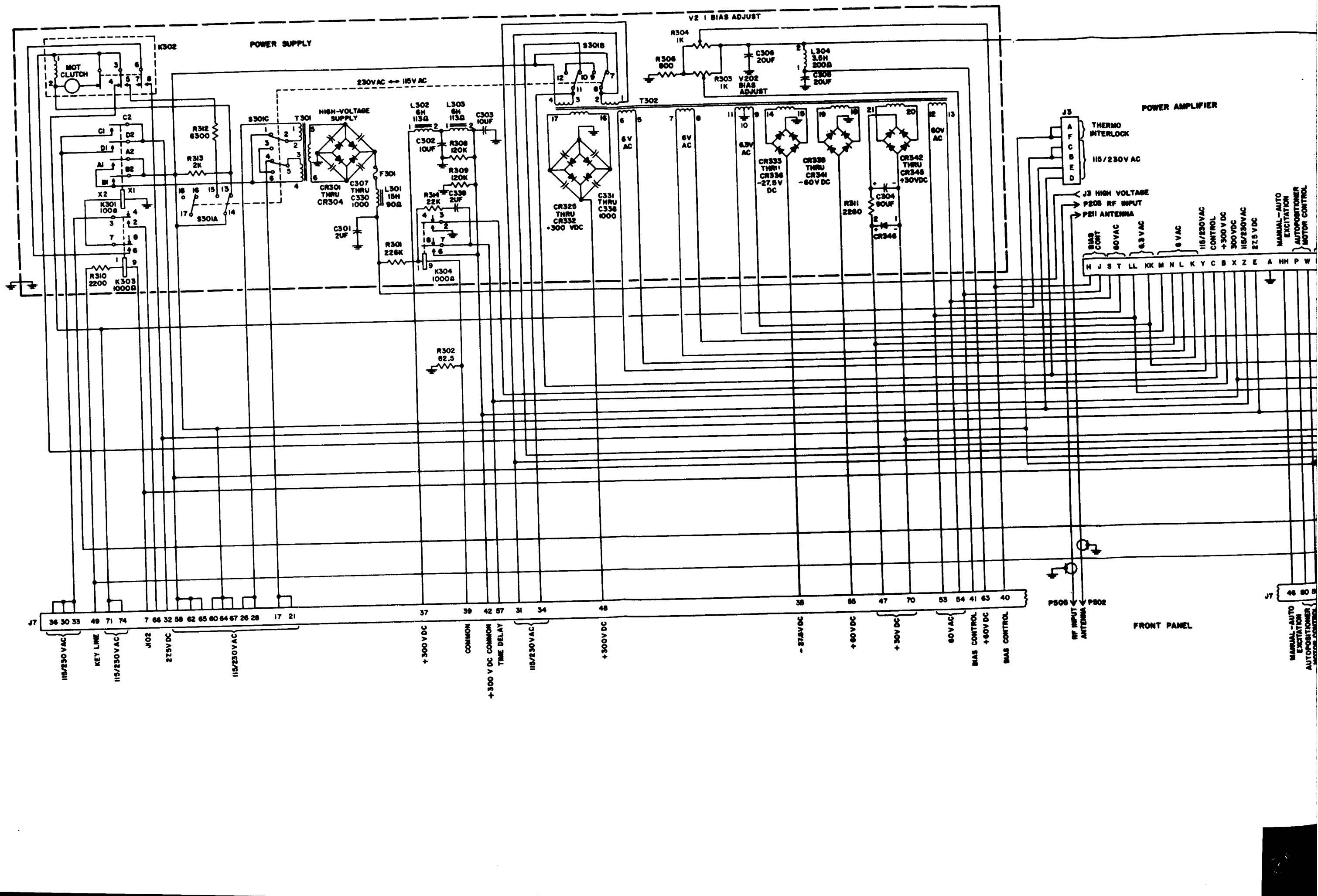
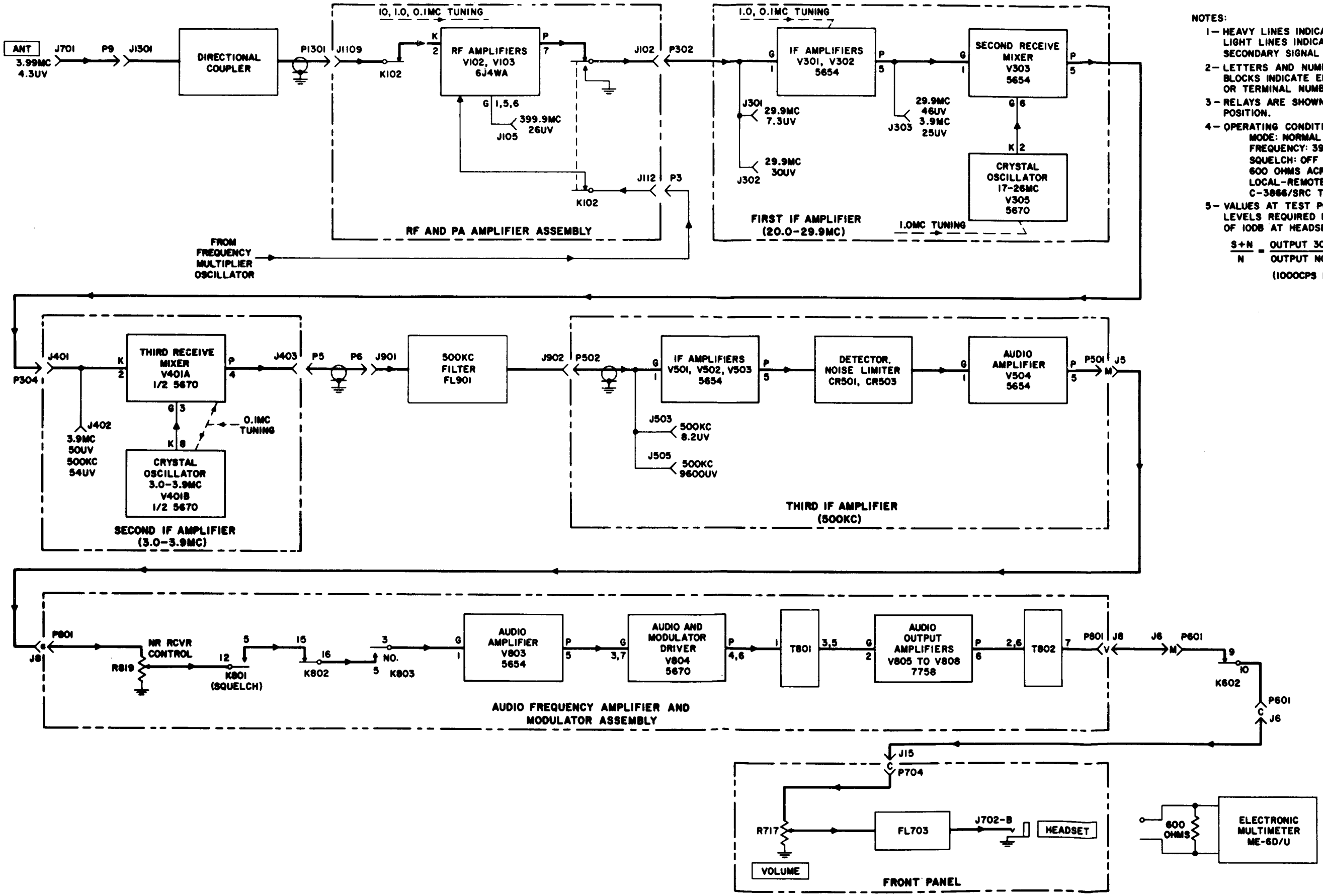


Figure 10-10. Radio-Frequency Amplifier AM-1565/URC, Power Supply and Interconnection Schematic Diagram


POWER SUPPLY
K302
MOT CLUTCH
230VAC ↔ 115V AC
S301C
T301
HIGH-VOLTAGE SUPPLY
CR301 THRU CR304
C307 THRU C330 1000
C301 2UF
F301
L301 15H 90Ω
L302 6H 113Ω
L303 6H 113Ω
C303 10UF
C302 10UF
R308 120K
R309 120K
C339 2UF
R344 22K
R301 226K
K304 1000Ω
R312 6300
R313 2K
S301A
R310 2200
K303 1000Ω
K301 100Ω
R302 62.5
S301B
V2 I BIAS ADJUST
R304 1K
R306 800
R303 1K
V202 BIAS ADJUST
C306 20UF
C308 20UF
L304 3.5H 200Ω
T302
CR325 THRU CR332 +300 VDC
C331 THRU C338 1000
6V AC
6V AC
6.3V AC
CR333 THRU CR336 -27.5 V DC
CR339 THRU CR341 -60V DC
R311 2260
C304 90UF
CR346
CR342 THRU CR345 +30VDC
60V AC
POWER AMPLIFIER
J3
THERMO INTERLOCK
115/230V AC
J3 HIGH VOLTAGE
P203 RF INPUT
P211 ANTENNA
BIAS CONT
60VAC
6.3 VAC
6 VAC
115/230VAC CONTROL
+300 V DC
300VDC
115/230VAC
27.5 VDC
MANUAL-AUTO EXCITATION
AUTOPOSITIONER MOTOR CONTROL
H J S T LL KK M N L K Y C B X Z E A HH P W
J7
36 30 33 49 71 74 7 66 32 58 62 65 60 64 67 26 28 17 21 37 39 42 57 31 34 48 38 55 47 70 53 54 41 63 40
115/230 VAC
KEY LINE
115/230 VAC
J102
27.5 VDC
115/230 VAC
+300 V DC
COMMON
+300 V DC COMMON
TIME DELAY
115/230 VAC
+300 V DC
-27.5 VDC
+60 V DC
+30 V DC
60 V AC
BIAS CONTROL
+60 V DC
BIAS CONTROL
PS08
PS02
RF INPUT ANTENNA
FRONT PANEL
J7
46 60 5
MANUAL-AUTO EXCITATION
AUTOPOSITIONER MOTOR CONTROL



NOTES:

1 – HEAVY LINES INDICATE MAIN SIGNAL PATH, LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS.

2 – LETTERS AND NUMBERS OUTSIDE TUBE BLOCKS INDICATE ELEMENT AND PIN OR TERMINAL NUMBERS.

3 – RELAYS ARE SHOWN IN DE-ENERGIZED POSITION.

4 – OPERATING CONDITIONS
MODE: NORMAL
FREQUENCY: 399.9MC
SQUELCH: OFF
600 OHMS ACROSS HEADSET JACK
LOCAL-REMOTE SWITCH ON C-3866/SRC TO LOCAL

5 – VALUES AT TEST POINTS ARE INJECTION LEVELS REQUIRED FOR A S+N/N RATIO OF 10DB AT HEADSET JACK

$$\frac{S+N}{N} = \frac{\text{OUTPUT 30\% MODULATED}}{\text{OUTPUT NOT MODULATED}}$$

(1000CPS MODULATION)

Figure 11-1. Receive Function Trouble-Shooting Block Diagram for Radio Set AN/URC-9

NOTES:
1 - HEAVY LINES INDICATE MAIN SIGNAL PATH, LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATH, AND LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.
2 - LETTERS AND NUMBERS OUTSIDE TUBE BLOCKS INDICATE ELEMENT AND PIN NUMBERS.
3 - RELAYS ARE SHOWN IN DE-ENERGIZED POSITION.
4 - MEASUREMENTS, TAKEN WITH MULTIMETER AN/USM-34, FROM TEST POINTS TO CHASSIS.
5 - OPERATING CONDITIONS
RF OUTPUT: 20 WATTS
FREQUENCY: 299.9MC
NO MODULATION

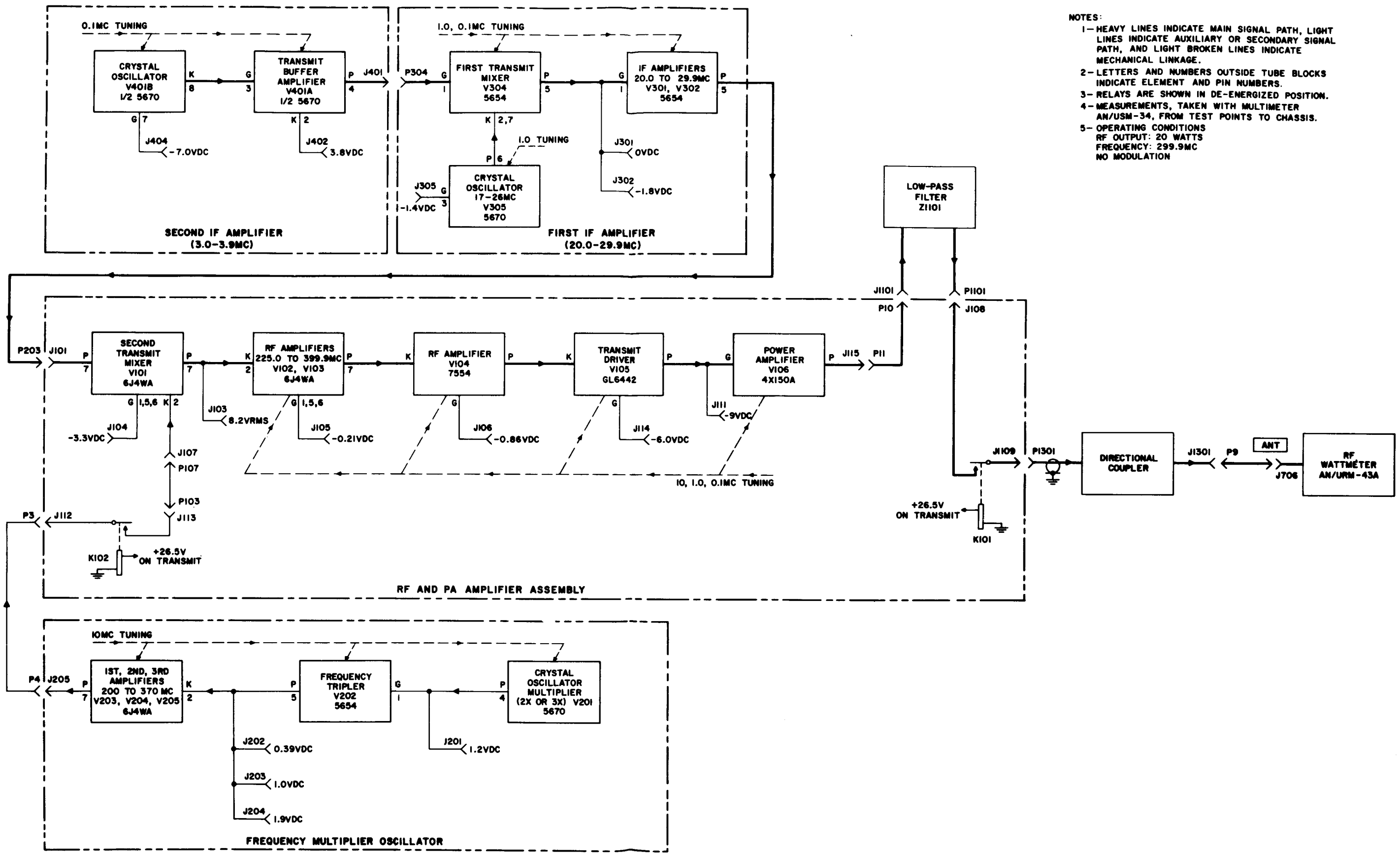


Figure 11-2. Transmit R-F Function Trouble-Shooting Block Diagram for Radio Set AN/SRC-9

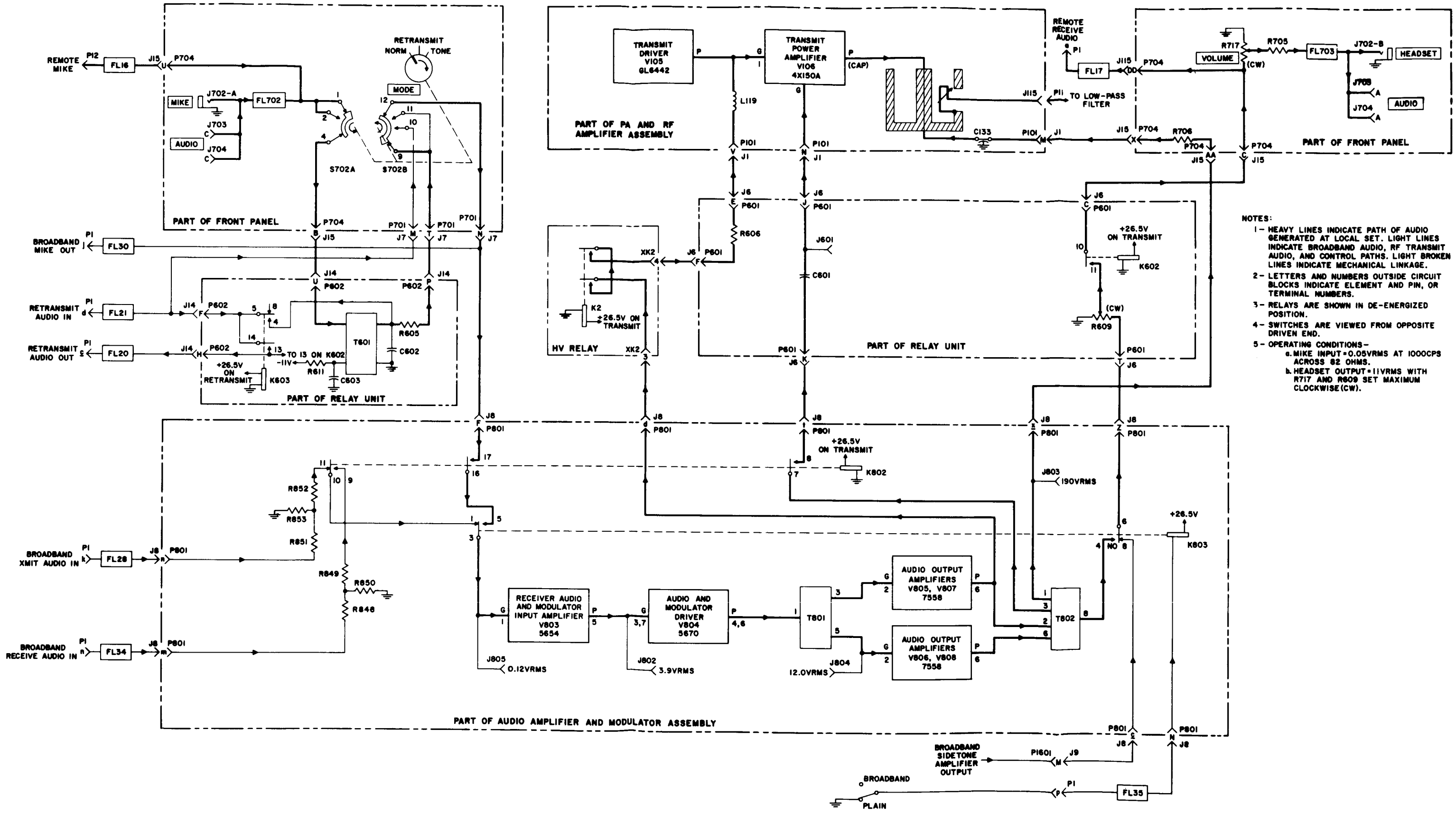
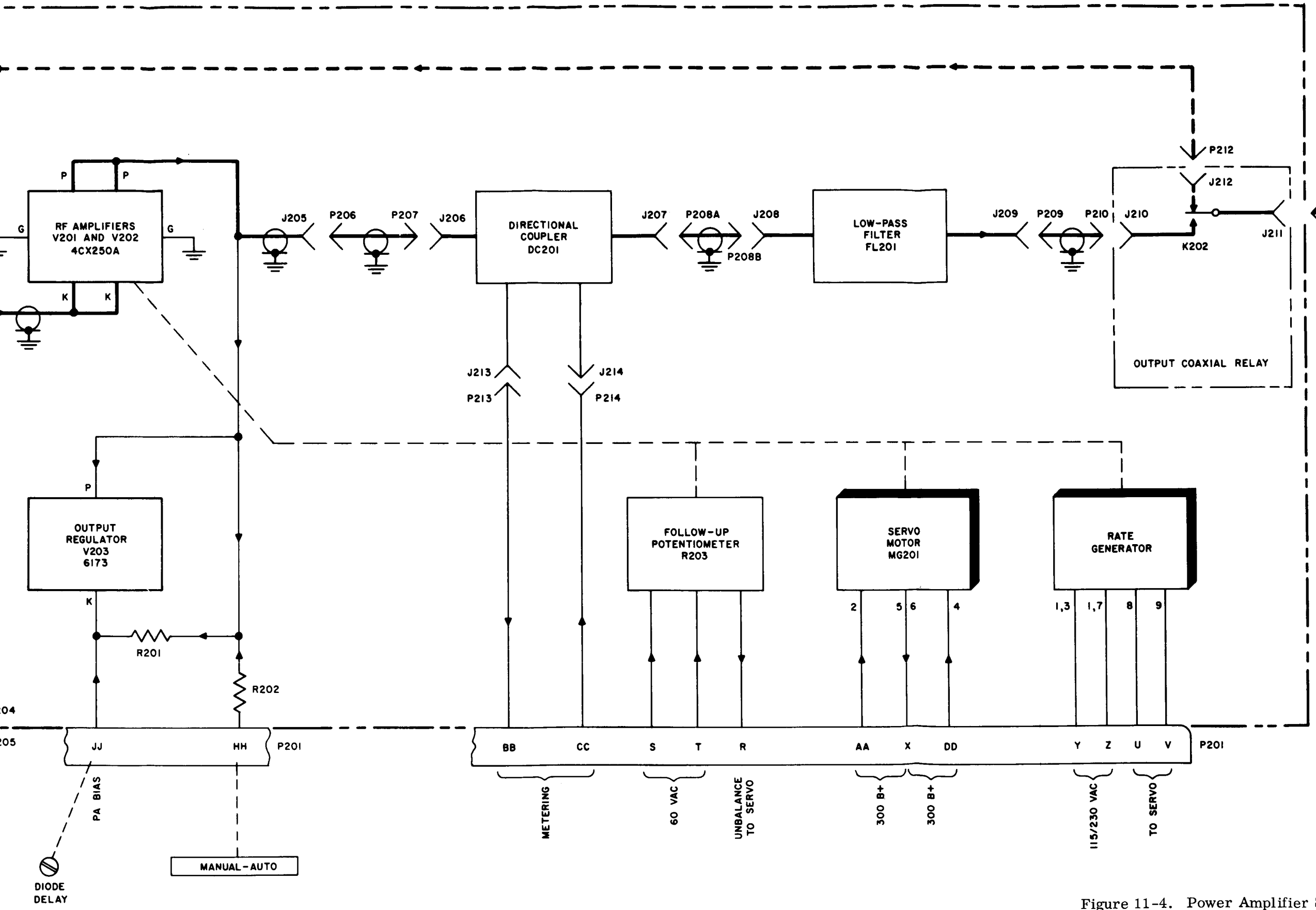


Figure 11-3. Transmit Audio Function Trouble-Shooting Block Diagram for Radio Set AN/URC-9



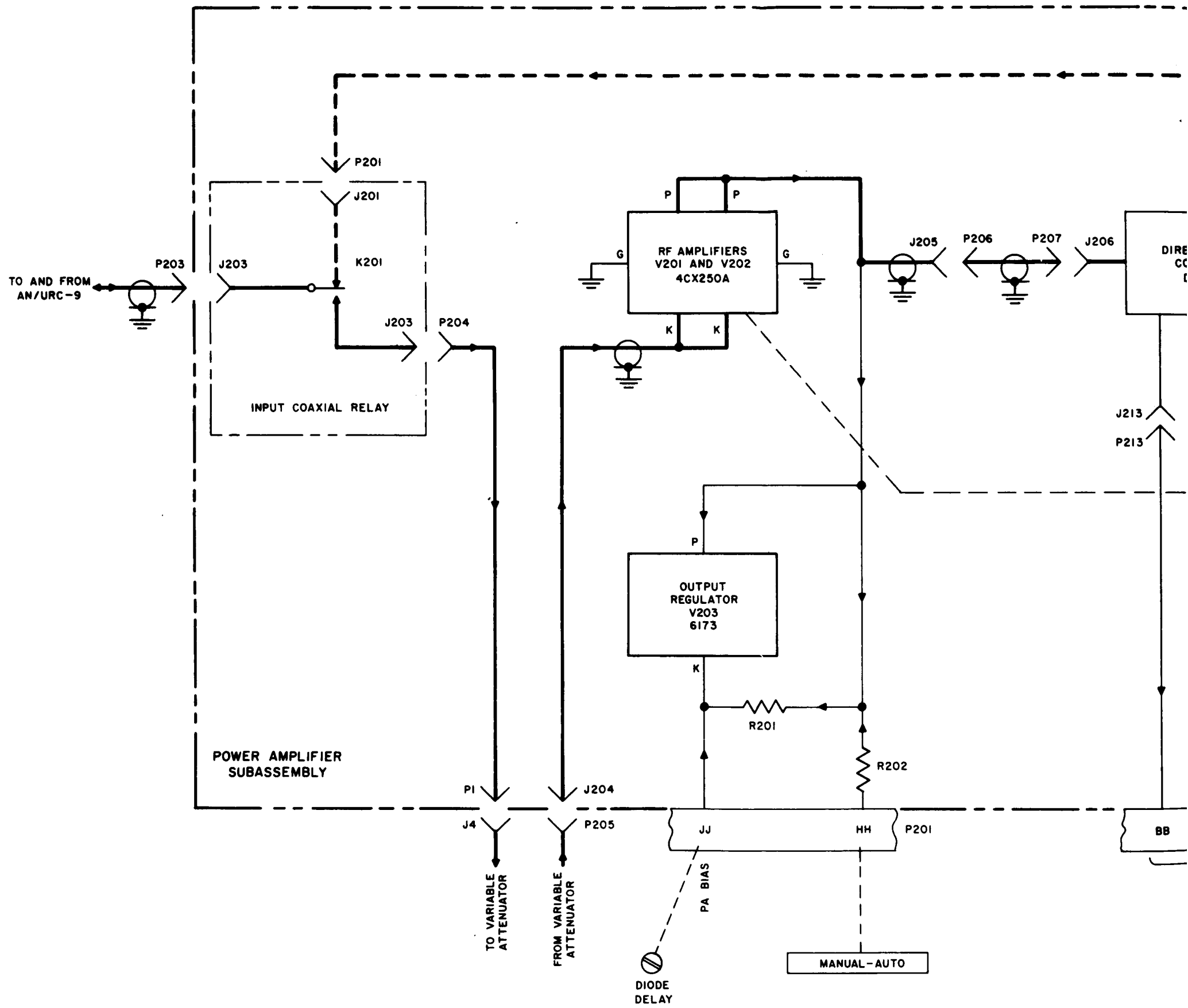
NOTES:

1- HEAVY SOLID LINES INDICATE TRANSMIT SIGNAL PATH; HEAVY BROKEN LINES INDICATE RECEIVE SIGNAL PATH. LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS, AND LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.

2- LETTERS AND NUMBERS OUTSIDE CIRCUIT BLOCKS INDICATE ELEMENT AND PIN NUMBERS. NUMBERS ON BLOCKS OTHER THAN CIRCUIT BLOCKS INDICATE TERMINAL NUMBERS.

3- RELAYS ARE SHOWN IN DE-ENERGIZED POSITION.

Figure 11-4. Power Amplifier Subassembly of Radio-Frequency Amplifier AM-1565/URC, Servicing Block Diagram


P201
J201
TO AND FROM AN/URC-9
P203
J203
K201
J203
P204
INPUT COAXIAL RELAY
P
P
G
RF AMPLIFIERS V201 AND V202 4CX250A
G
J205
P206
P207
J206
K
K
P
OUTPUT REGULATOR V203 6173
K
R201
R202
J213
P213
POWER AMPLIFIER SUBASSEMBLY
P1
J204
J4
P205
JJ
HH
P201
BB
TO VARIABLE ATTENUATOR
FROM VARIABLE ATTENUATOR
PA BIAS
DIODE DELAY
MANUAL-AUTO

NOTES:

1 — HEAVY SOLID LINES INDICATE RECEIVE SIGNAL PATH, LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS, AND LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.

2 — LETTERS AND NUMBERS OUTSIDE CIRCUIT BLOCKS INDICATE ELEMENT AND PIN, OR TERMINAL NUMBERS.

3 — Z401 AND Z402 REPRESENT IMPEDANCES OF SERVO MOTOR WINDINGS.

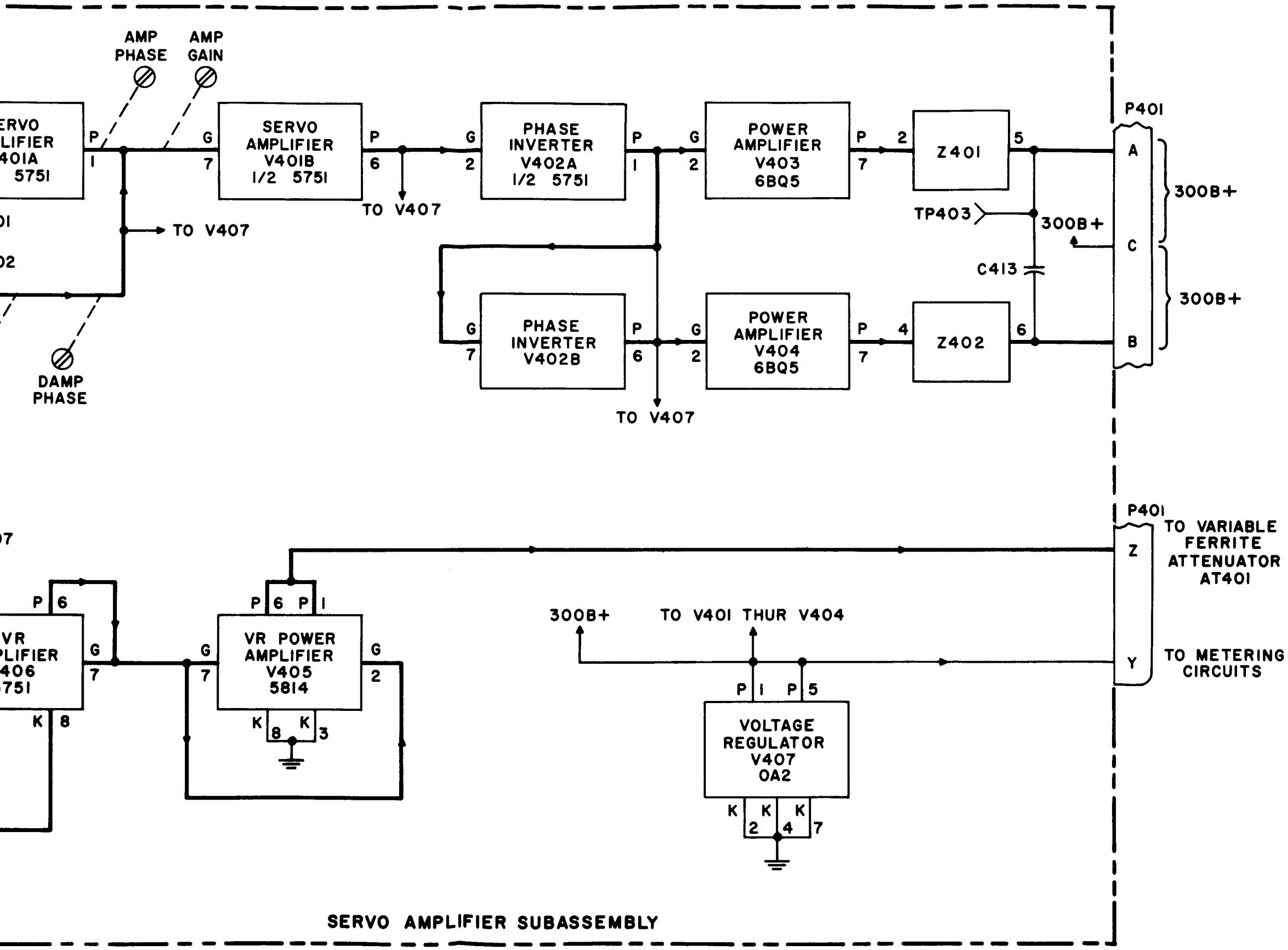
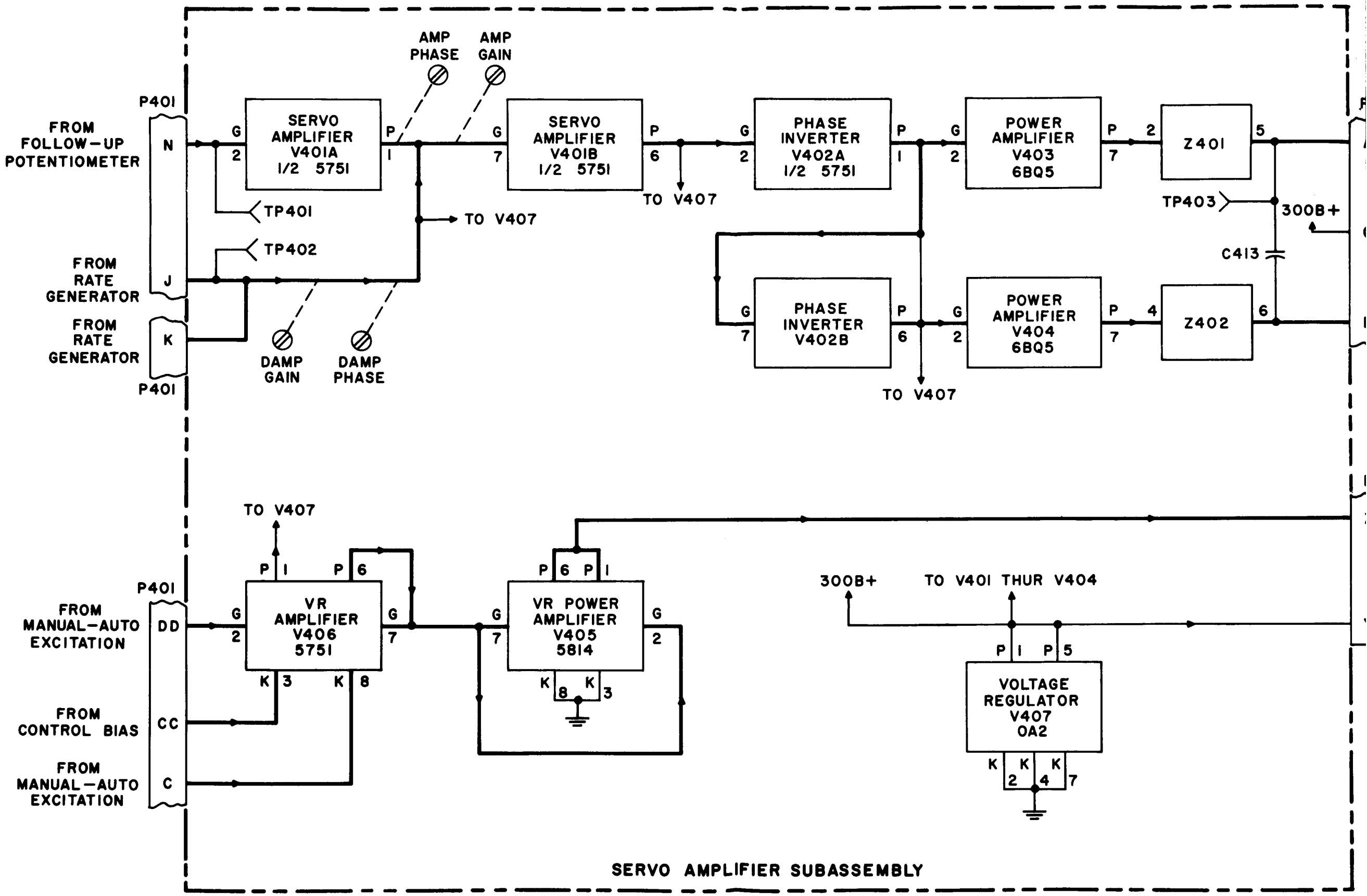


Figure 11-5. Servo Amplifier Subassembly of Radio-Frequency Amplifier AM-1565/URC, Servicing Block Diagram


FROM FOLLOW-UP POTENTIOMETER
P401
N
J
K
P401
FROM RATE GENERATOR
FROM RATE GENERATOR
G 2
SERVO AMPLIFIER V401A 1/2 5751
P 1
AMP PHASE
AMP GAIN
G 7
SERVO AMPLIFIER V401B 1/2 5751
P 6
TO V407
TP401
TP402
TO V407
DAMP GAIN
DAMP PHASE
G 2
PHASE INVERTER V402A 1/2 5751
P 1
G 2
POWER AMPLIFIER V403 6BQ5
P 7
2
Z401
5
TP403
300B+
C413
G 7
PHASE INVERTER V402B
P 6
G 2
POWER AMPLIFIER V404 6BQ5
P 7
4
Z402
6
TO V407
TO V407
P401
FROM MANUAL-AUTO EXCITATION
DD
FROM CONTROL BIAS
CC
FROM MANUAL-AUTO EXCITATION
C
G 2
VR AMPLIFIER V406 5751
P 1
P 6
G 7
K 3
K 8
P 6
P 1
G 7
VR POWER AMPLIFIER V405 5814
G 2
K 8
K 3
300B+
TO V401 THUR V404
P 1
P 5
VOLTAGE REGULATOR V407 0A2
K 2
K 4
K 7
SERVO AMPLIFIER SUBASSEMBLY

NOTES:

1 – HEAVY SOLID LINES INDICATE RECEIVE SIGNAL PATH; HEAVY BROKEN LINES INDICATE TRANSMIT SIGNAL PATH. LIGHT LINES INDICATE AUXILIARY OR CONTROL PATHS; LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.

2 – LETTERS AND NUMBERS OUTSIDE CIRCUIT BLOCKS INDICATE ELEMENT AND PIN NUMBERS.

3 – RELAYS ARE SHOWN IN DE-ENERGIZED POSITION.

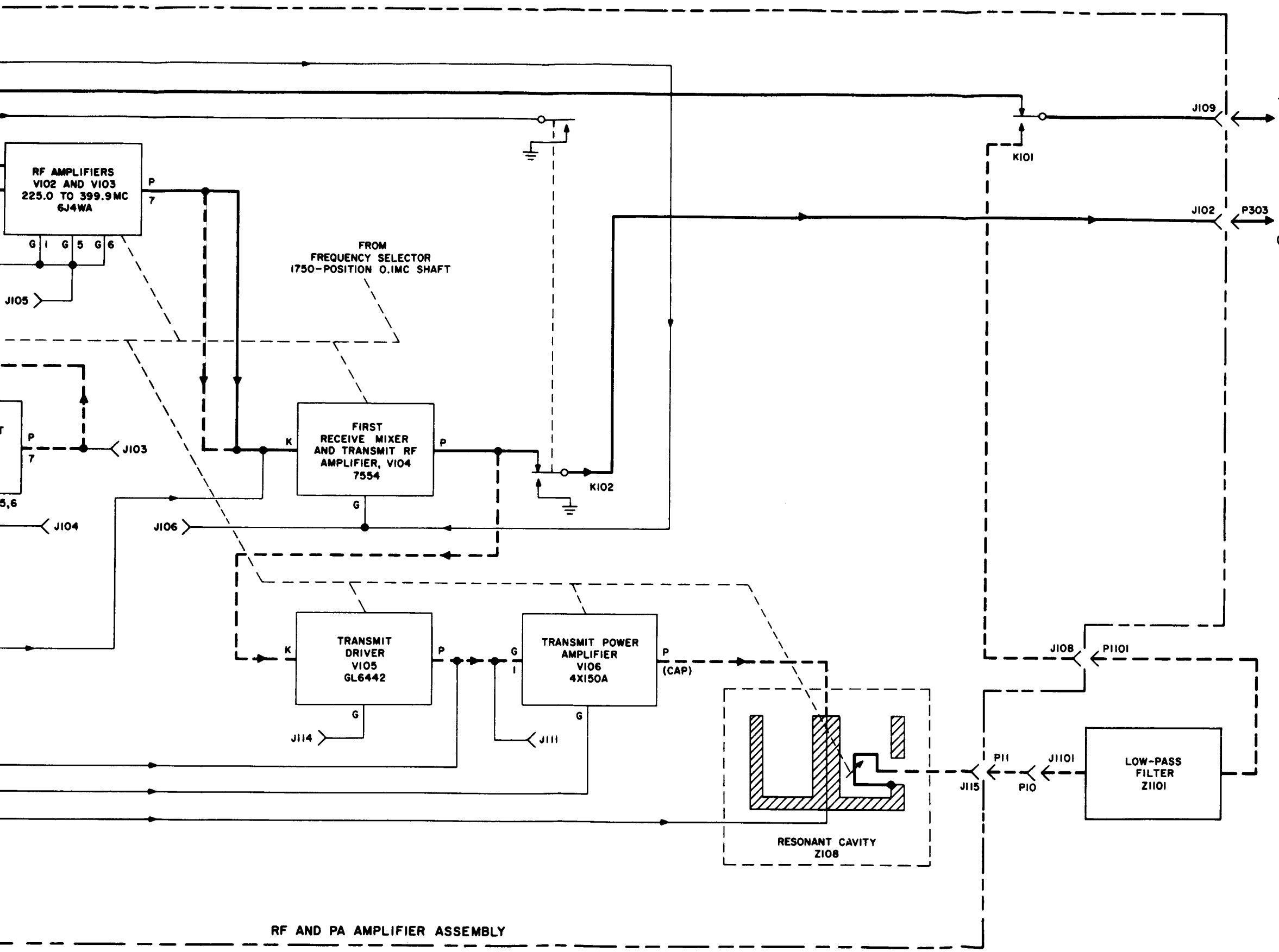
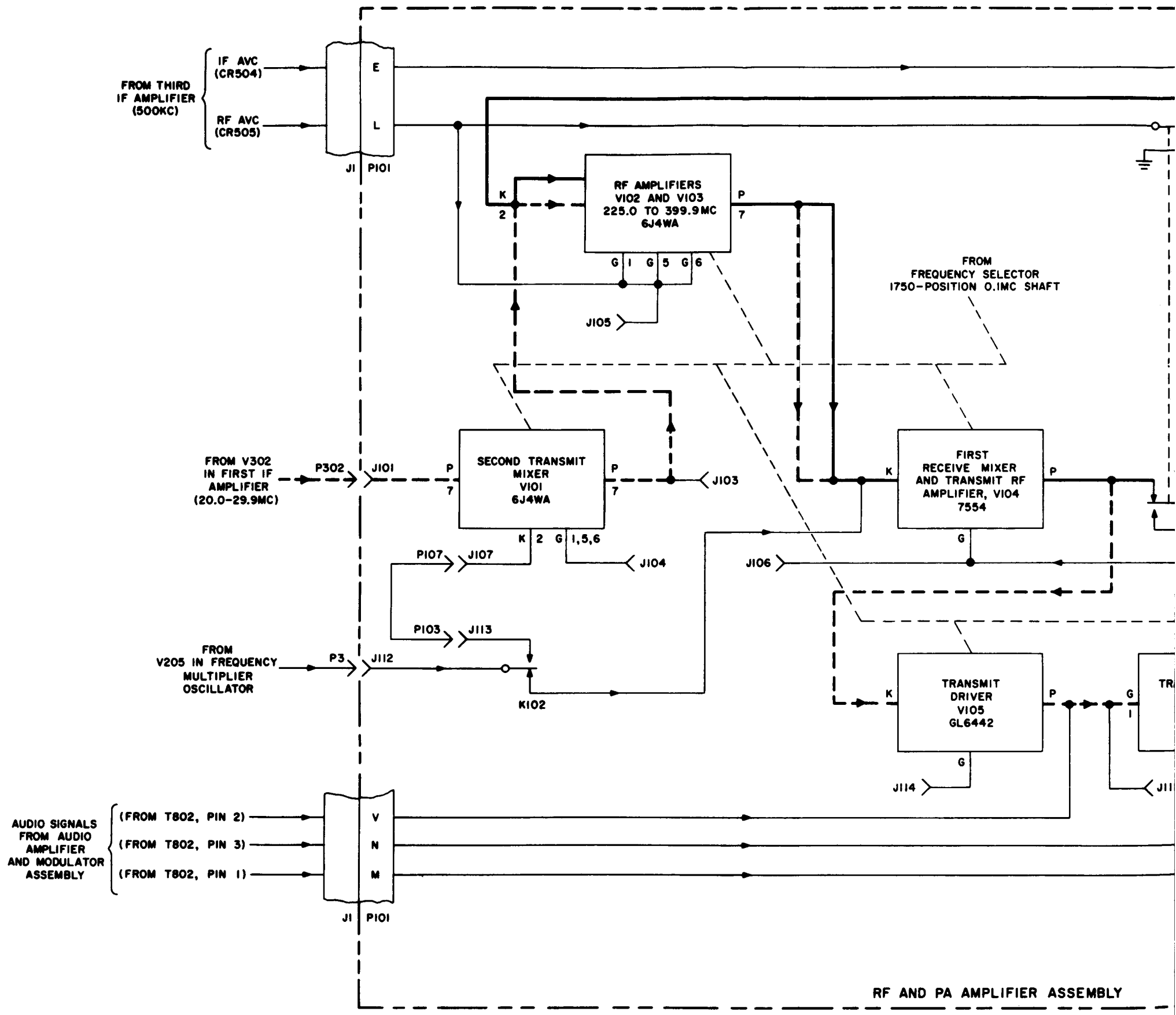
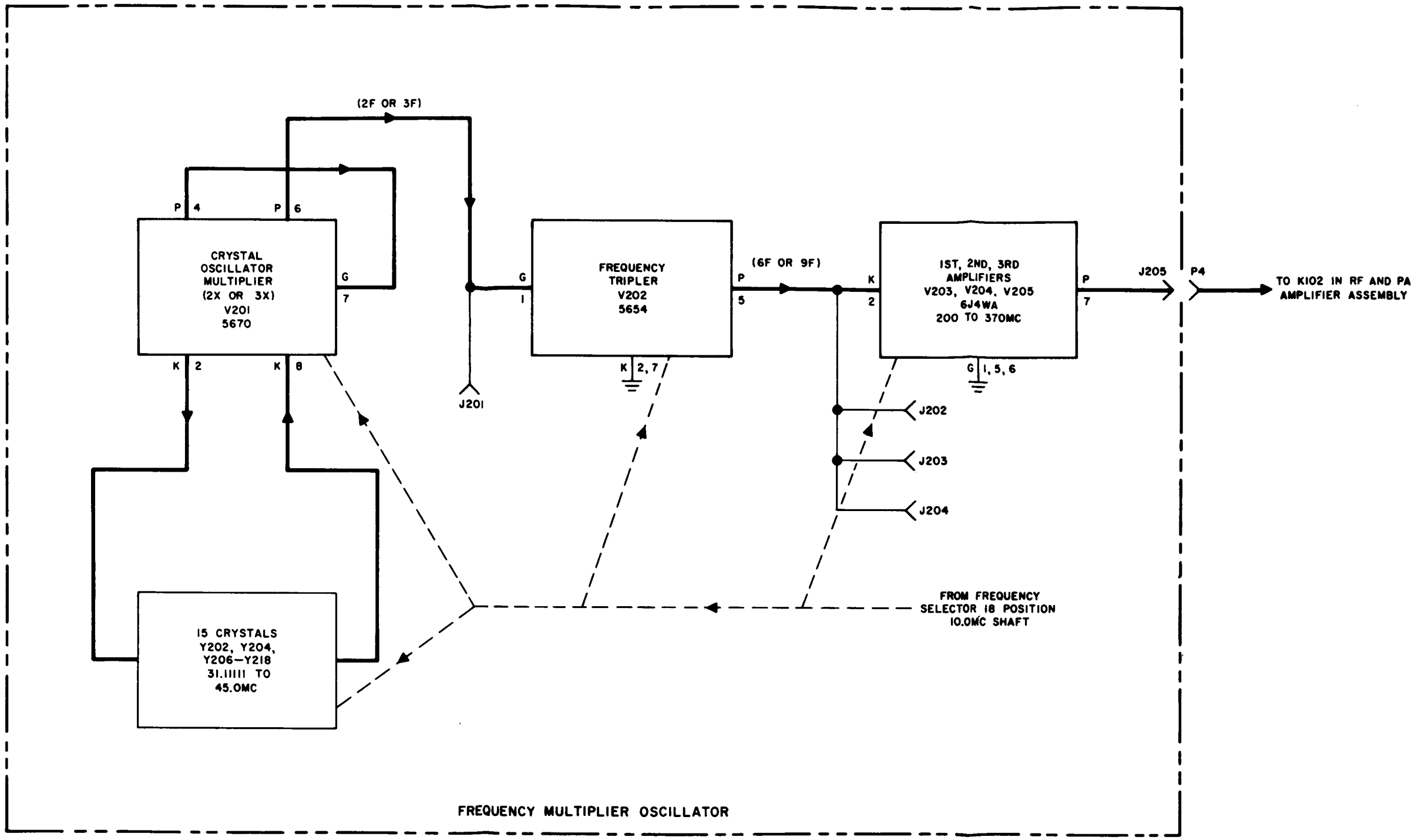


Figure 11-6. R-F and PA Amplifier Assembly of Radio Set AN/URC-9, Servicing Block Diagram


FROM THIRD IF AMPLIFIER (500KC)
IF AVC (CR504)
RF AVC (CR505)
E
L
J1
P101
RF AMPLIFIERS V102 AND V103 225.0 TO 399.9MC 6J4WA
K
2
P
7
G 1 G 5 G 6
J105
FROM FREQUENCY SELECTOR 1750-POSITION 0.1MC SHAFT
FROM V302 IN FIRST IF AMPLIFIER (20.0-29.9MC)
P302
J101
P
7
SECOND TRANSMIT MIXER V101 6J4WA
P
7
J103
FIRST RECEIVE MIXER AND TRANSMIT RF AMPLIFIER, V104 7554
K
P
G
K 2 G 1,5,6
J104
P107
J107
J106
P103
J113
FROM V205 IN FREQUENCY MULTIPLIER OSCILLATOR
P3
J112
K102
TRANSMIT DRIVER V105 GL6442
K
P
G
G
J114
AUDIO SIGNALS FROM AUDIO AMPLIFIER AND MODULATOR ASSEMBLY
(FROM T802, PIN 2)
(FROM T802, PIN 3)
(FROM T802, PIN 1)
V
N
M
J1
P101
RF AND PA AMPLIFIER ASSEMBLY

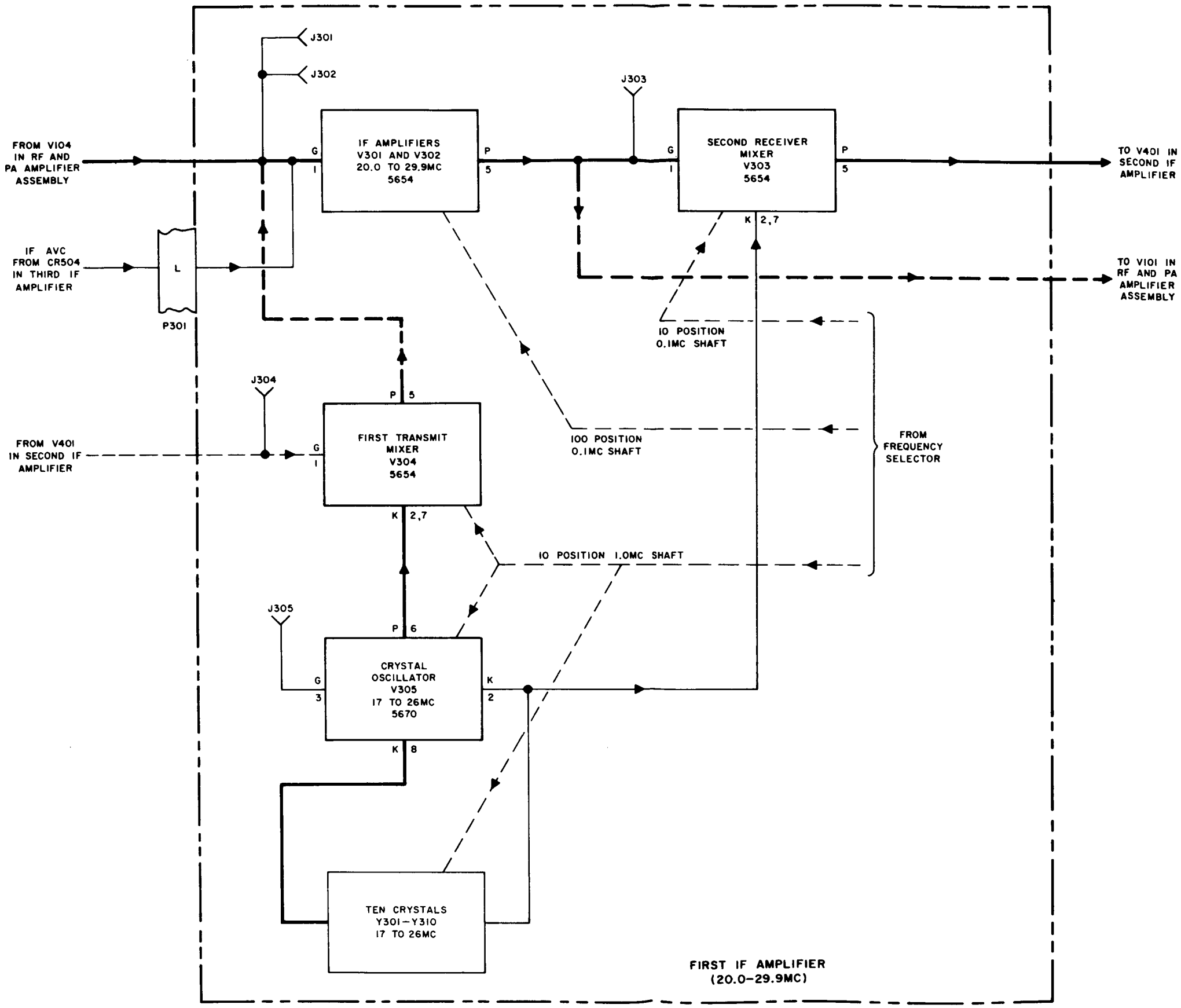


NOTES:

1 – HEAVY LINES INDICATES SIGNAL PATH DURING TRANSMIT AND RECEIVE. LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.

2 – LETTERS AND NUMBERS OUTSIDE CIRCUIT BLOCKS INDICATE ELEMENT AND PIN NUMBER.

Figure 11-7. Frequency Multiplier Oscillator of Radio Set AN/URC-9, Servicing Block Diagram



NOTES:

1 - HEAVY SOLID LINES INDICATE RECEIVE SIGNAL PATH, HEAVY BROKEN LINES INDICATE TRANSMIT SIGNAL PATH, LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS, AND LIGHT BROKEN LINES INDICATE MECHANICAL LINKAGE.

2 - LETTERS AND NUMBERS OUTSIDE TUBE BLOCKS INDICATE ELEMENT AND PIN NUMBERS.

Figure 11-8. First I-F Amplifier (20.0 to 29.9 Mc) of Radio Set AN/URC-9, Servicing Block Diagram

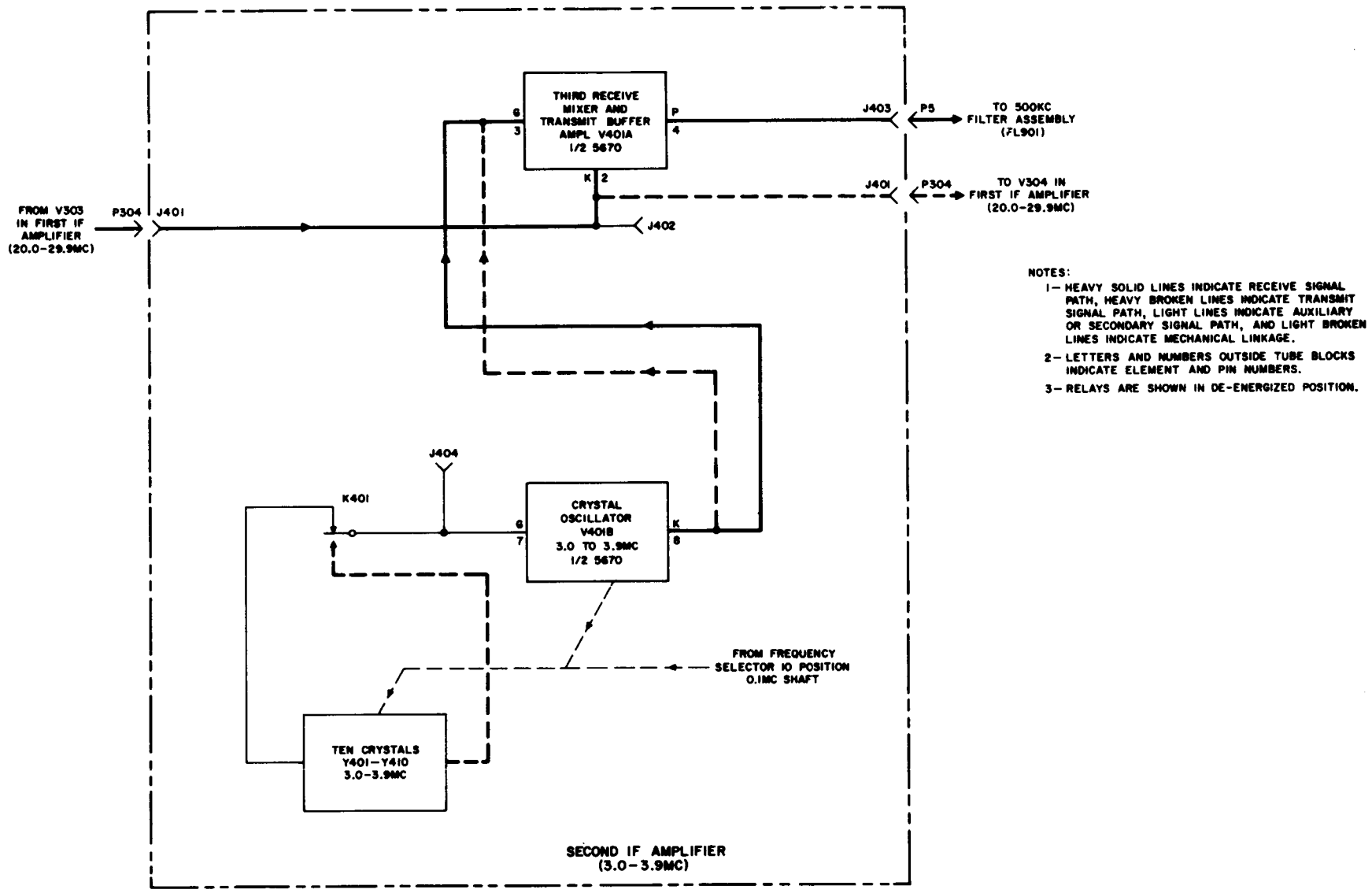


Figure 11-9. Second I-F Amplifier (3.0 to 3.9 Mc) of Radio Set AN/URC-9, Servicing Block Diagram

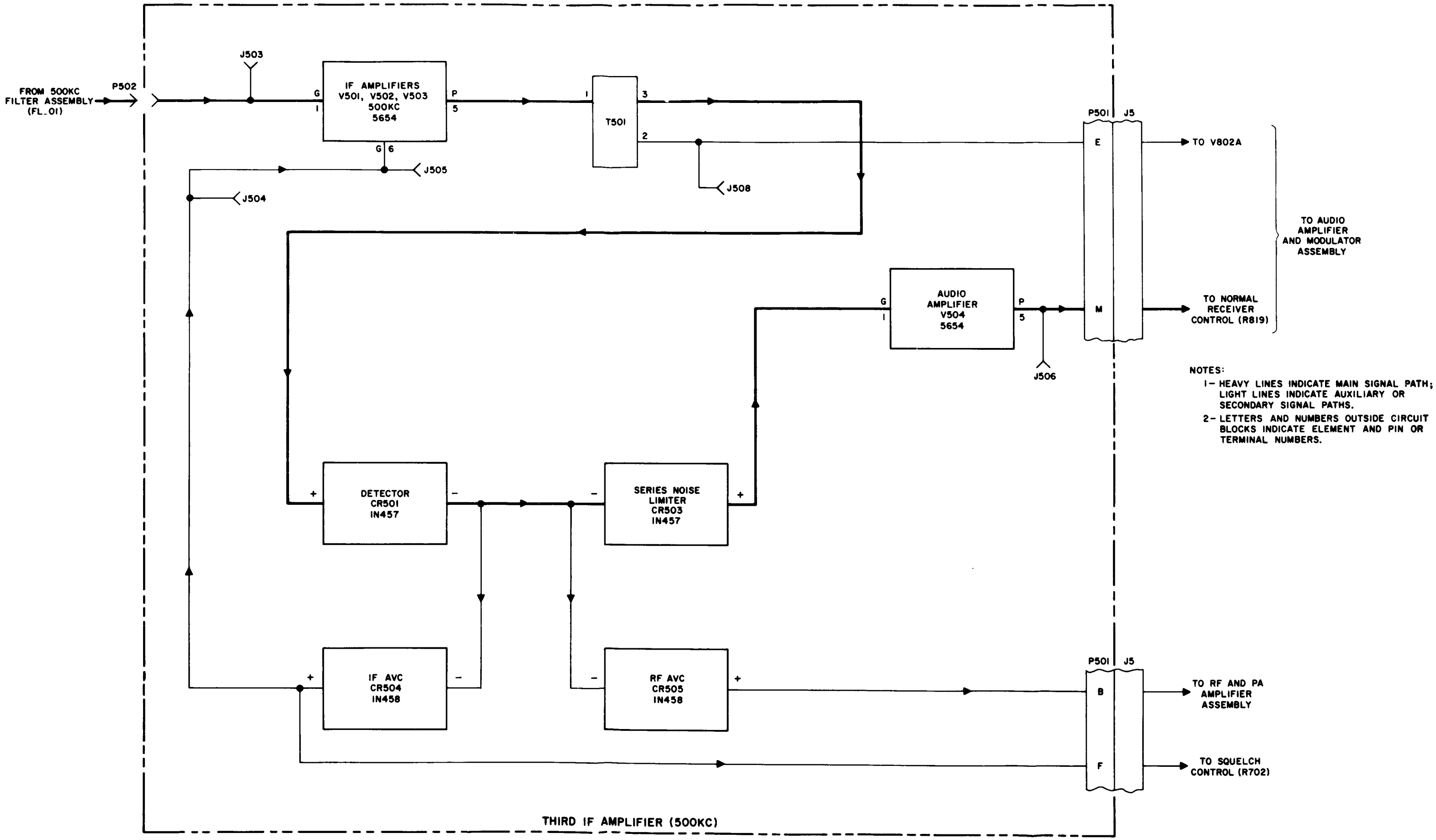


Figure 11-10. Third I-F Amplifier (500 Kc) of Radio Set AN/URC-9, Servicing Block Diagram

NOTES:
1 - HEAVY SOLID LINES INDICATE RECEIVE SIGNAL PATH, HEAVY BROKEN LINES INDICATE TRANSMIT SIGNAL PATH, AND LIGHT LINES INDICATE AUXILIARY OR SECONDARY SIGNAL PATHS.
2 - LETTERS AND NUMBERS OUTSIDE CIRCUIT BLOCKS INDICATE ELEMENT AND PIN OR TERMINAL NUMBERS.
3 - RELAYS ARE SHOWN IN DE-ENERGIZED POSITION.

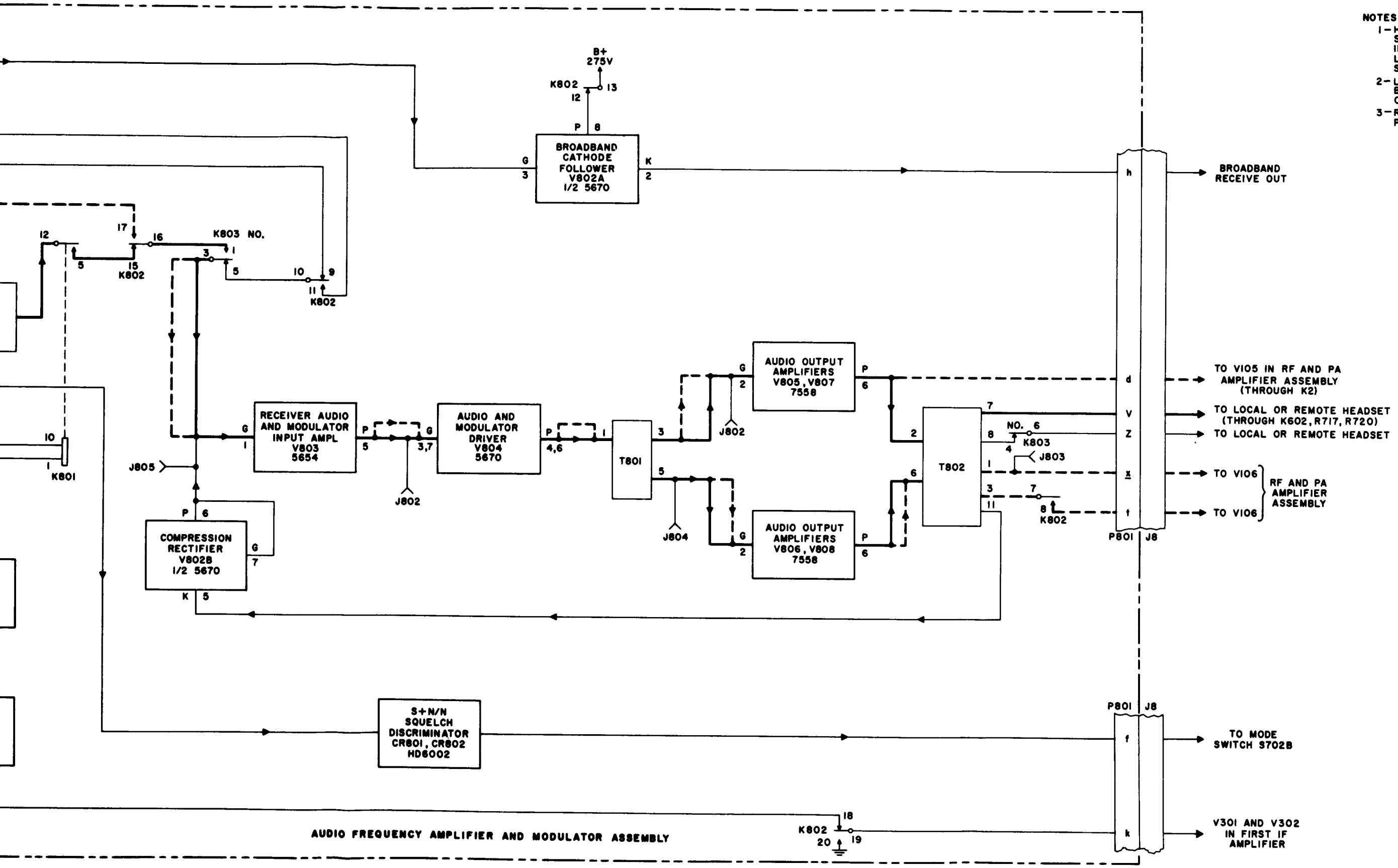
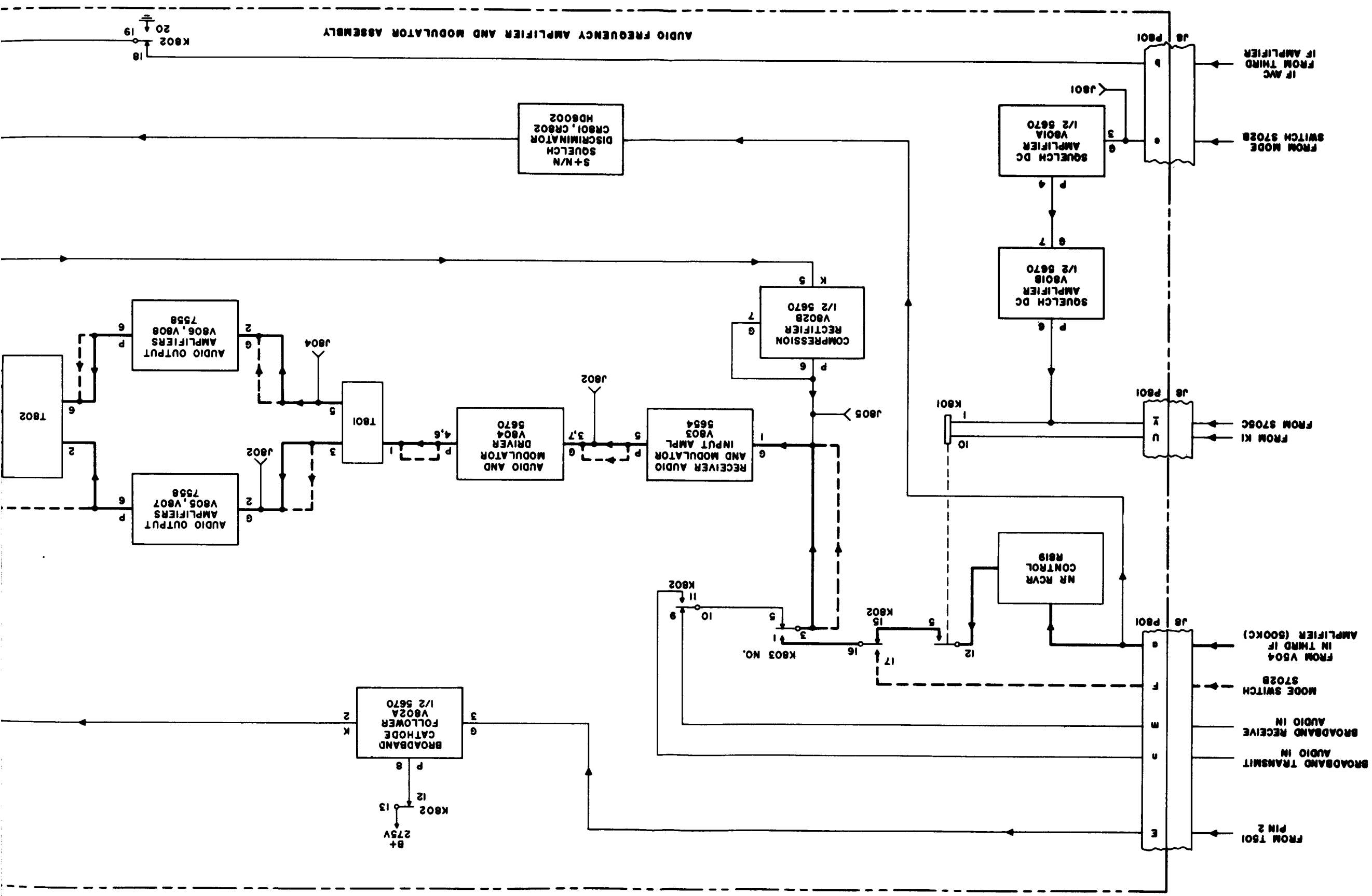


Figure 11-11. Audio-Frequency Amplifier and Modulator Assembly of Radio Set AN/URC-9, Servicing Block Diagram


AUDIO FREQUENCY AMPLIFIER AND MODULATOR ASSEMBLY
FROM MODE SWITCH S702B
IF AVC FROM THIRD IF AMPLIFIER
FROM KI
FROM S708C
FROM V504 IN THIRD IF AMPLIFIER (600KC)
MODE SWITCH S702B
BROADBAND RECEIVE AUDIO IN
BROADBAND TRANSMIT AUDIO IN
FROM T501 PIN 2
B+ 275V
K802
J801
P801
J8
SQUELCH DC AMPLIFIER V801A 1/2 5670
SQUELCH DC AMPLIFIER V801B 1/2 5670
NR RCVR CONTROL R819
S+N/N SQUELCH DISCRIMINATOR CR801, CR802 HD6002
COMPRESSION RECTIFIER V802B 1/2 5670
RECEIVER AUDIO AND MODULATOR INPUT AMPL V803 5654
AUDIO AND MODULATOR DRIVER V804 5670
T801
J802
J804
J805
AUDIO OUTPUT AMPLIFIERS V806, V808 7558
AUDIO OUTPUT AMPLIFIERS V805, V807 7558
T802
BROADBAND CATHODE FOLLOWER V802A 1/2 5670