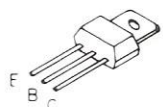


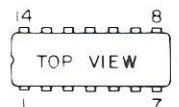
SEMICONDUCTOR BASING DIAGRAM
(BOTTOM VIEW UNLESS OTHERWISE SPECIFIED)



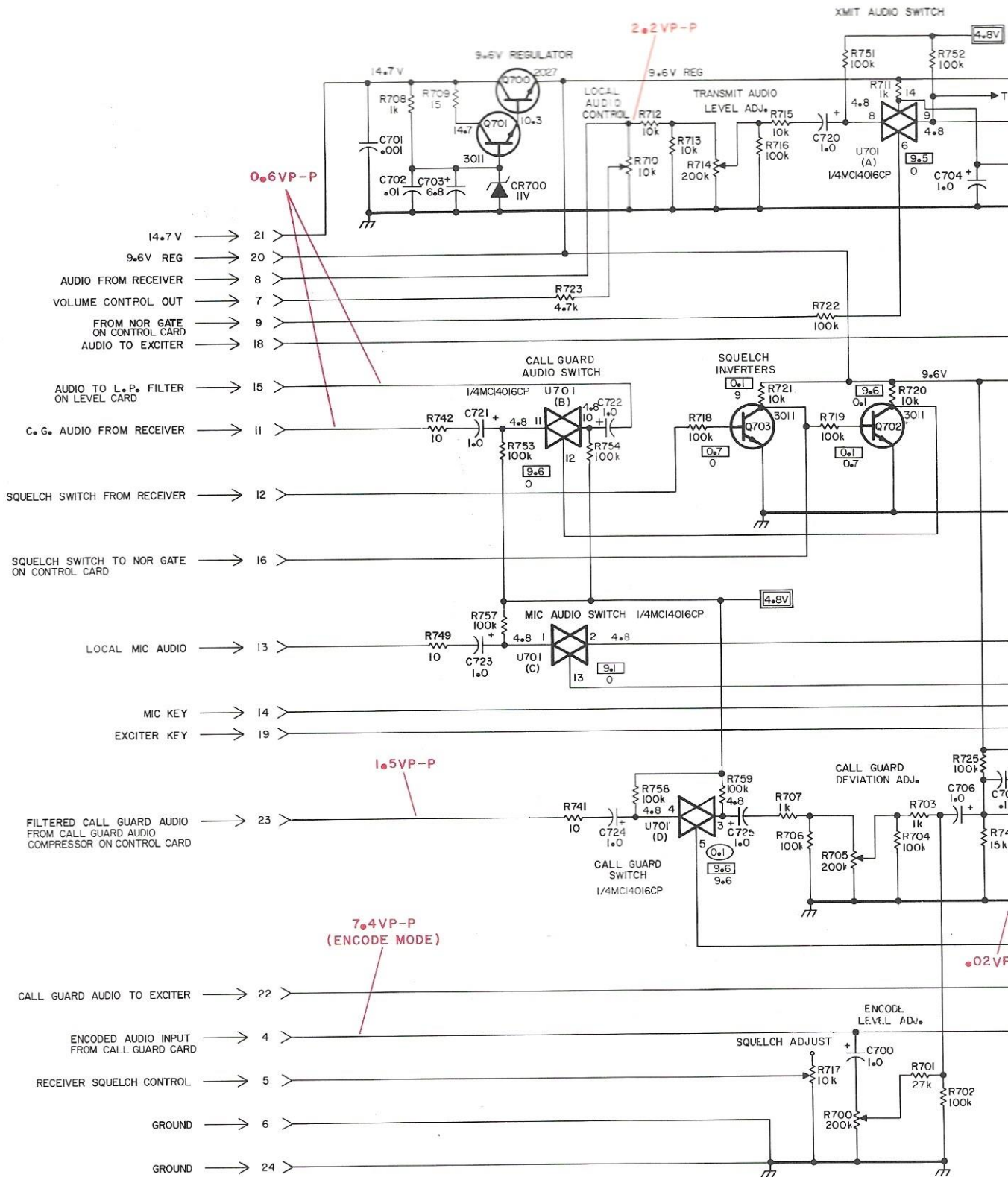
Q700
576-0002-027



Q701, Q702, Q703,
Q704, Q705, Q706,
Q707, Q708, Q709
576-0003-011



U701
544-3001-127
MC14016CP

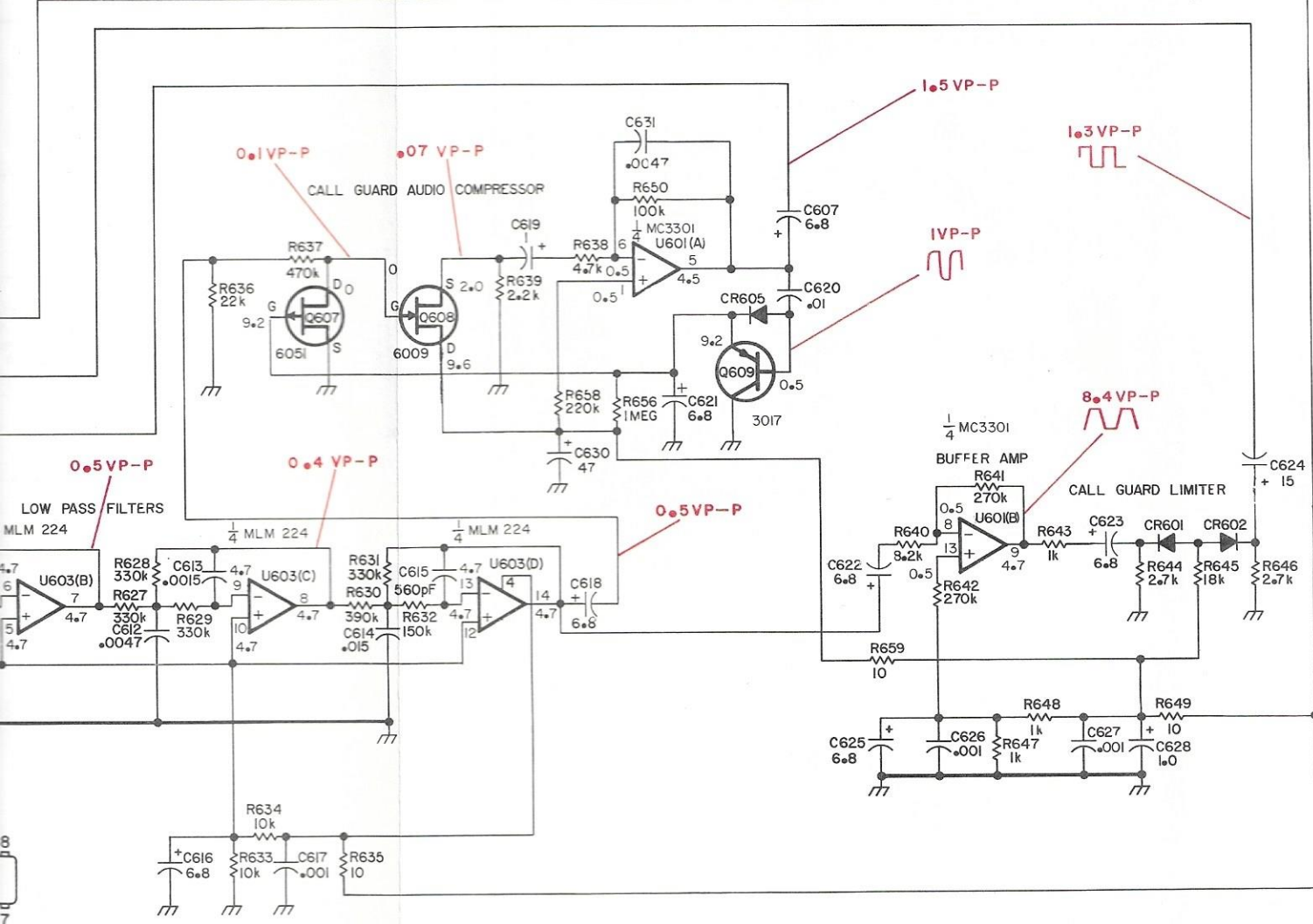
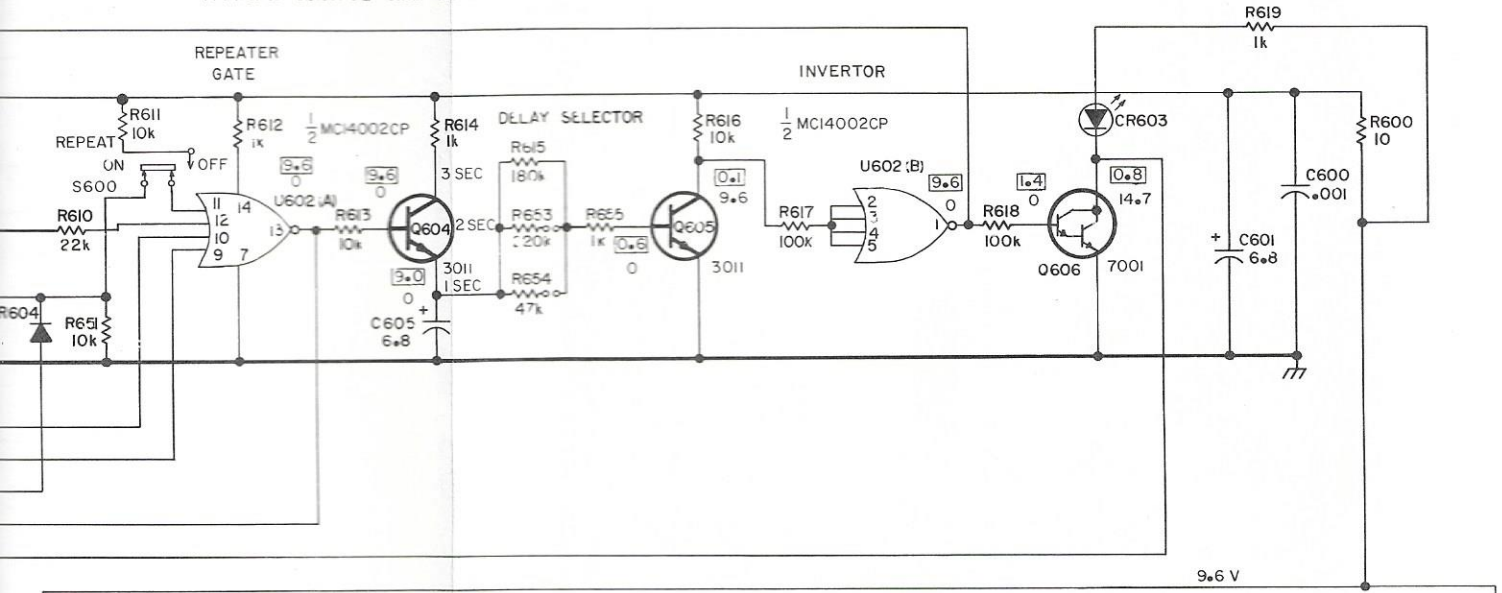


NOTES:

1. ALL RESISTOR VALUES ARE IN OHMS AND CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
2. U701 HAS PIN 7 CONNECTED TO GROUND.
3. DC VOLTAGES MEASURED IN STANDBY MODE.
 - ◻ DC VOLTAGES MEASURED IN TRANSMIT MODE WITH CALL GUARD TONE.
 - DC VOLTAGES MEASURED IN TRANSMIT MODE WITH ENCODED CALL GUARD AUDIO.
4. ALL AC VOLTAGES ARE SINE WAVES AND ARE MEASURED WITH A RECEIVER RF INPUT OF 100μV, MODULATED WITH 1KHz AT ±5KHz DEVIATION OR A CALL GUARD TONE AT ±600 Hz DEVIATION.

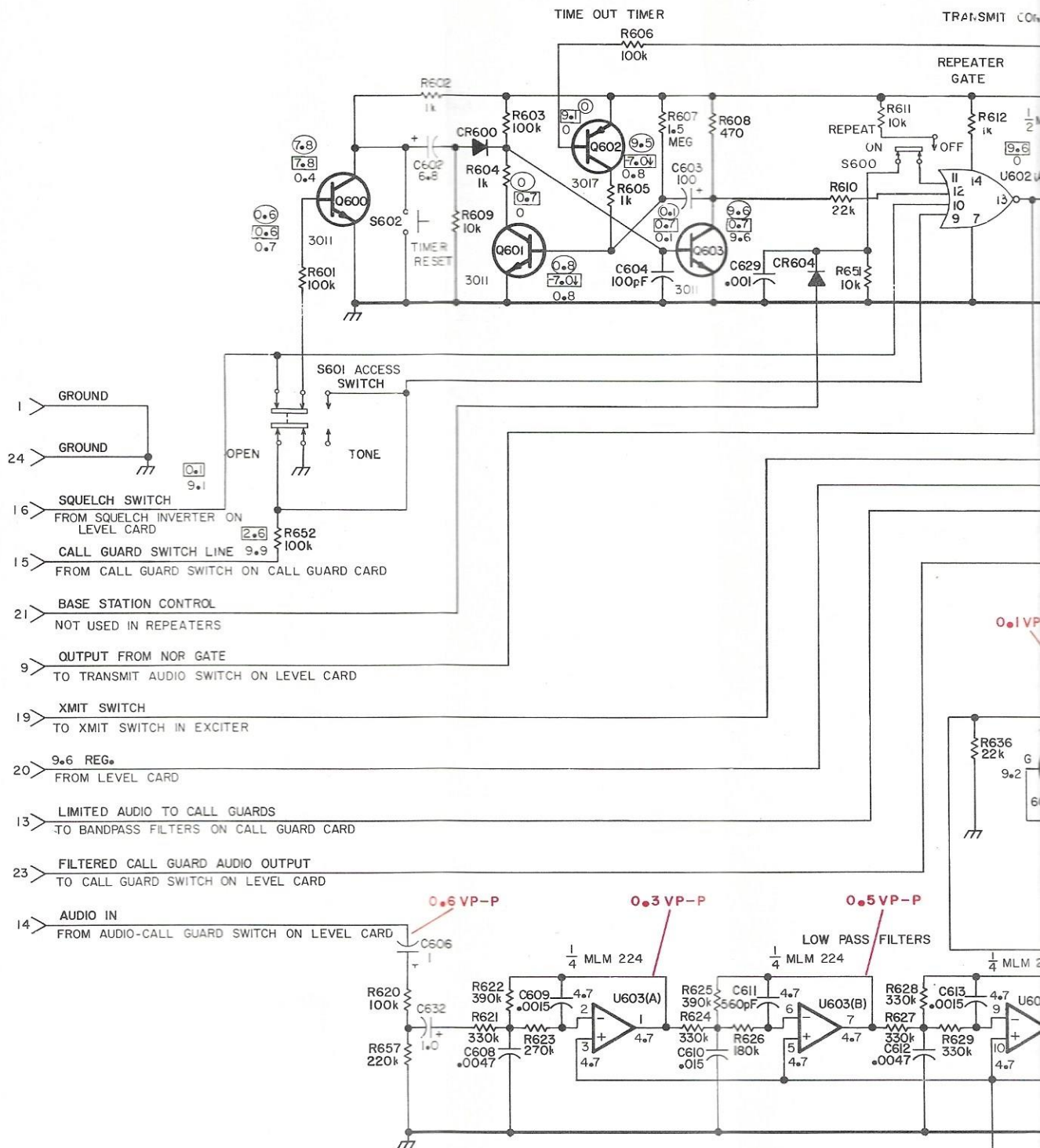
TRANSMIT CONTROL AND DELAY

TRANSMIT SWITCH



NOTES:

1. ALL RESISTOR VALUES IN OHMS UNLESS OTHERWISE SPECIFIED.
2. ALL CAPACITOR VALUES IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
3. DC VOLTAGES MEASURED WITH NO SIGNAL BEING RECEIVED.
 DC VOLTAGES MEASURED IN TRANSMIT.
 DC VOLTAGES MEASURED WITH TRANSMITTER TIMED OUT.
4. ALL AC WAVEFORMS ARE SINE WAVES UNLESS SHOWN OTHERWISE.
 AC MEASUREMENTS TAKEN WITH RECEIVER RF INPUT OF 100µV,
 MODULATED WITH A CALL GUARD TONE AT ± 600Hz DEVIATION.



SEMICONDUCTOR BASING DIAGRAM
(BOTTOM VIEW UNLESS OTHERWISE SPECIFIED)



Q600, Q601, Q603
576-0003-011



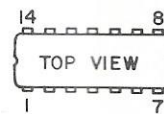
Q607
576-0006-051



Q608
576-0006-009



CR603
549-4001-001



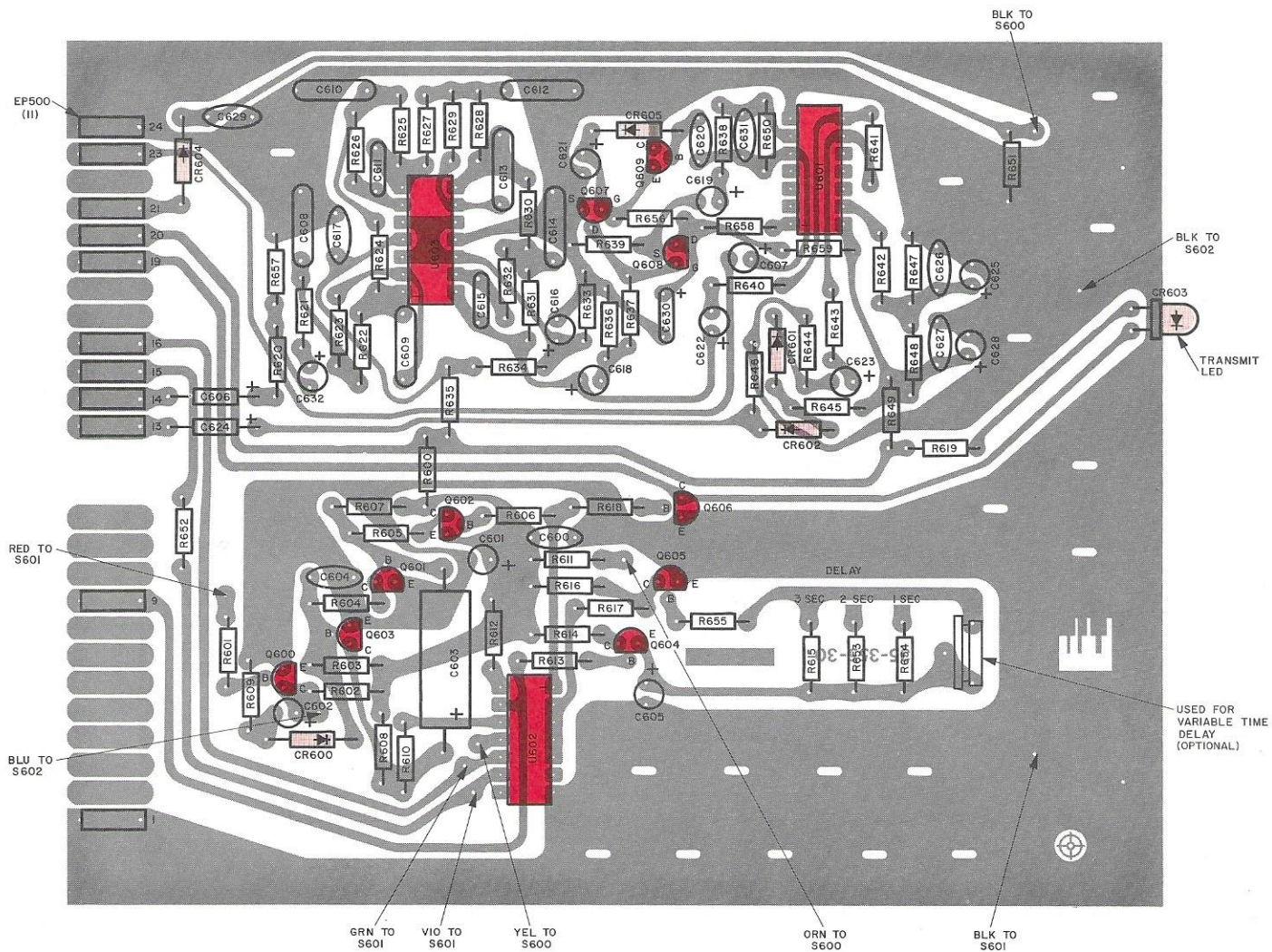
U601
544-2005-001
MC 3301

U602
544-3001-135
MC 14002CP

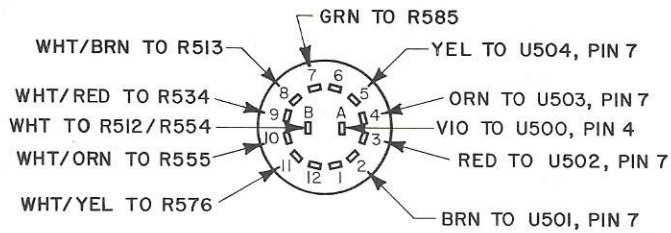
U603
544-2020-001
MLM 224

NOTES

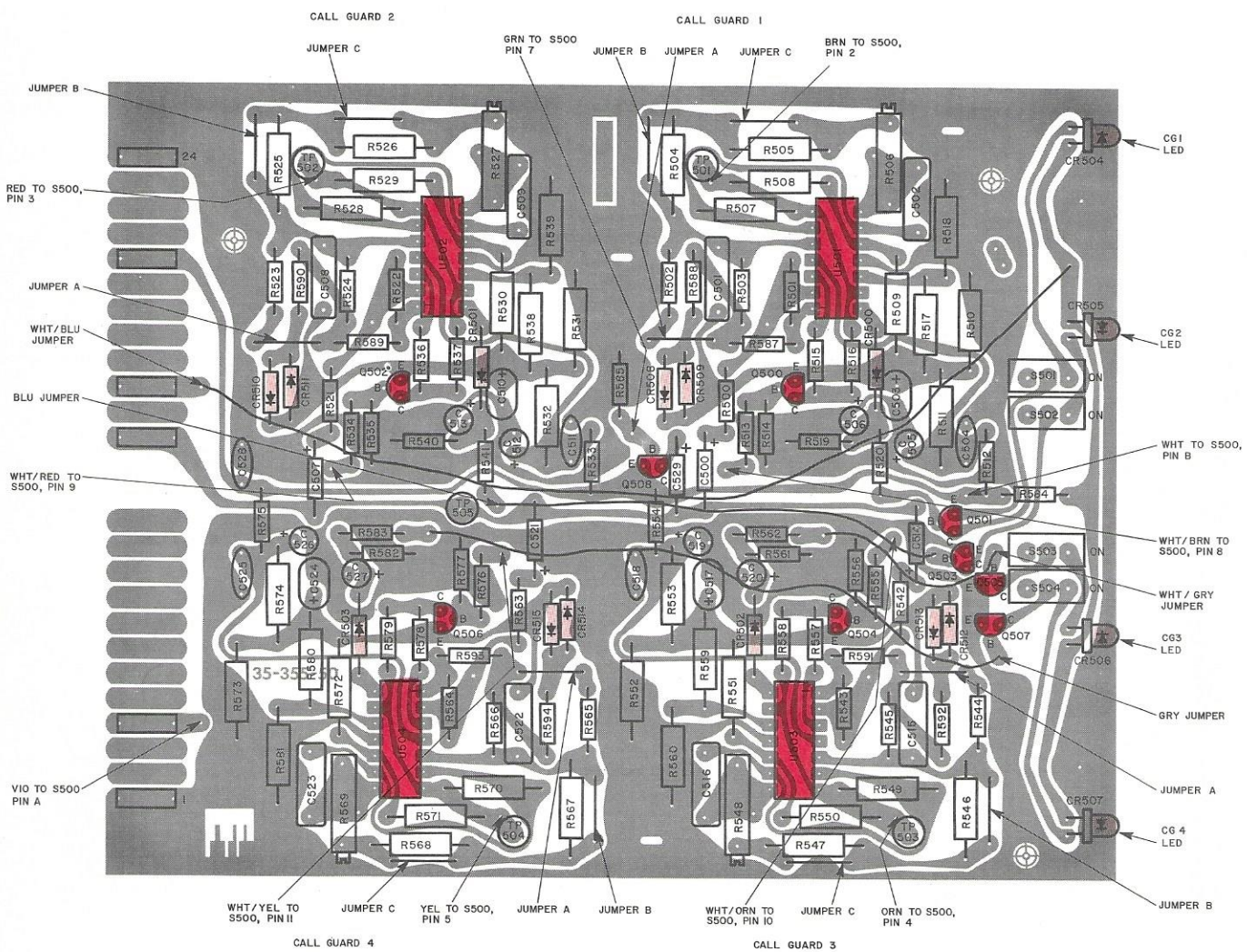
- 1.
- 2.
- 3.
- 4.



CONTROL CARD COMPONENT LAYOUT
(SOLDER SIDE VIEW)



S500
(BACK VIEW)



CALL GUARD CARD COMPONENT LAYOUT
(SOLDER SIDE VIEW)

SERVICE MANUAL QUESTIONNAIRE

Your Name _____
 Your Company _____
 Company Address _____
 _____ Zip _____

Today's Date _____

Service Manual Title _____ Printing Date _____

How frequently do you typically refer to the following service manual sections? How useful is each?

	Often	Seldom	Never	Usefulness
General Information	_____	_____	_____	_____
Specifications	_____	_____	_____	_____
Installation	_____	_____	_____	_____
Circuit Description	_____	_____	_____	_____
Servicing	_____	_____	_____	_____
Alignment	_____	_____	_____	_____
Parts List	_____	_____	_____	_____
Engineering Changes	_____	_____	_____	_____
Schematic	_____	_____	_____	_____

Comments on specific sections: _____

Compared to the information in the text, is the information available in the illustrations easy to find? _____ hard to find? _____
 easy to understand? _____ hard to understand? _____

Are the illustrations clear? _____

Please list the test equipment you used to work on the set(s) covered by this manual. _____

Which section(s) of the text did you find hardest to understand? _____

Did you find any errors in the manual? _____ Please list the errors. _____

What do you like least about our manuals? _____

What do you like best about our service manuals? _____

What do you suggest we do to improve our service manuals? _____

Which two-way radio manufacturer do you feel does the best job of helping you repair a radio? _____
 Why? _____

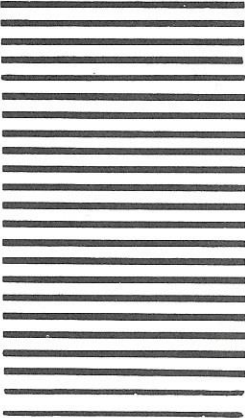
Return to: E. F. Johnson Company
 Technical Publications Department
 Waseca, Minnesota 56093

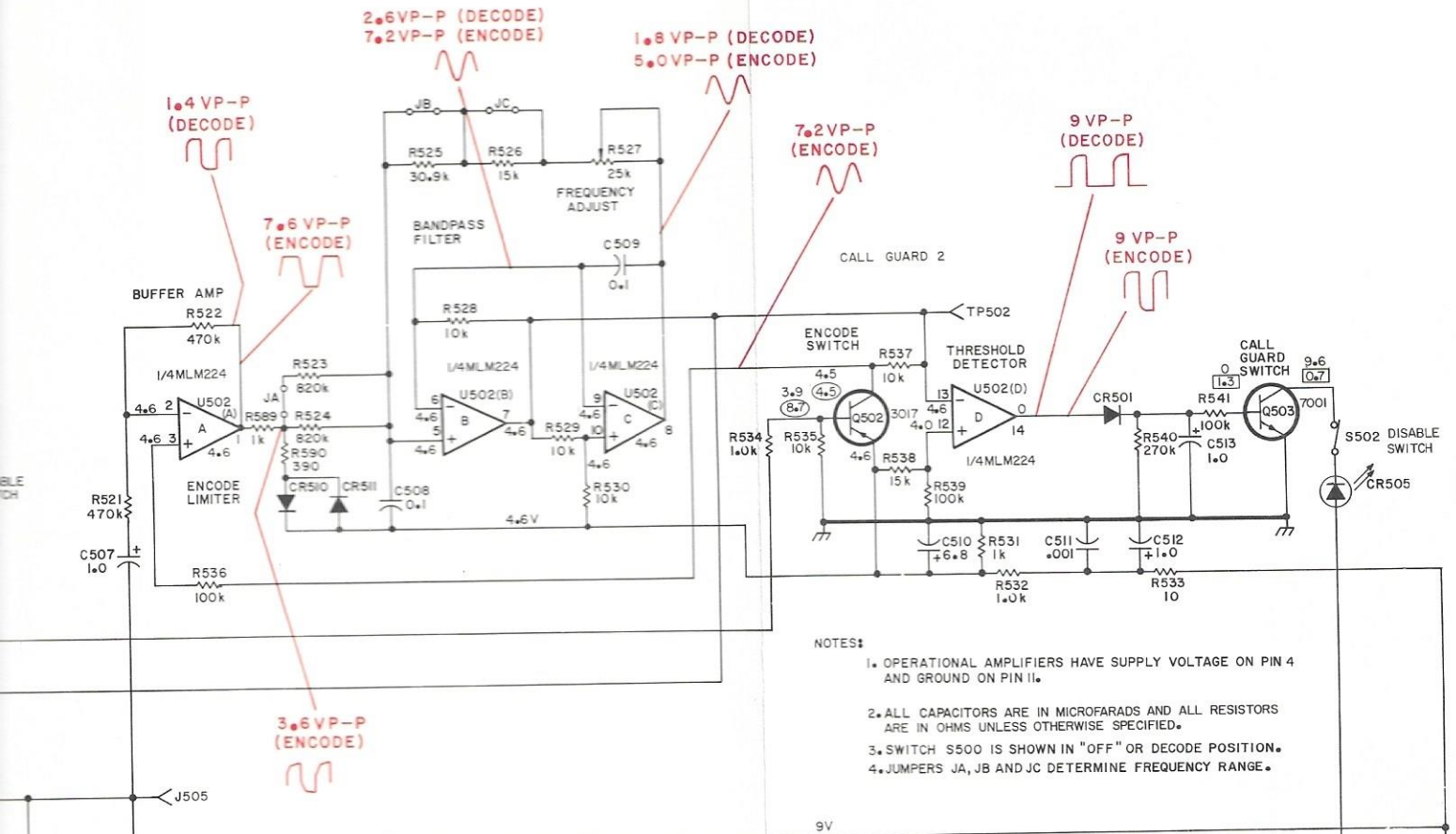
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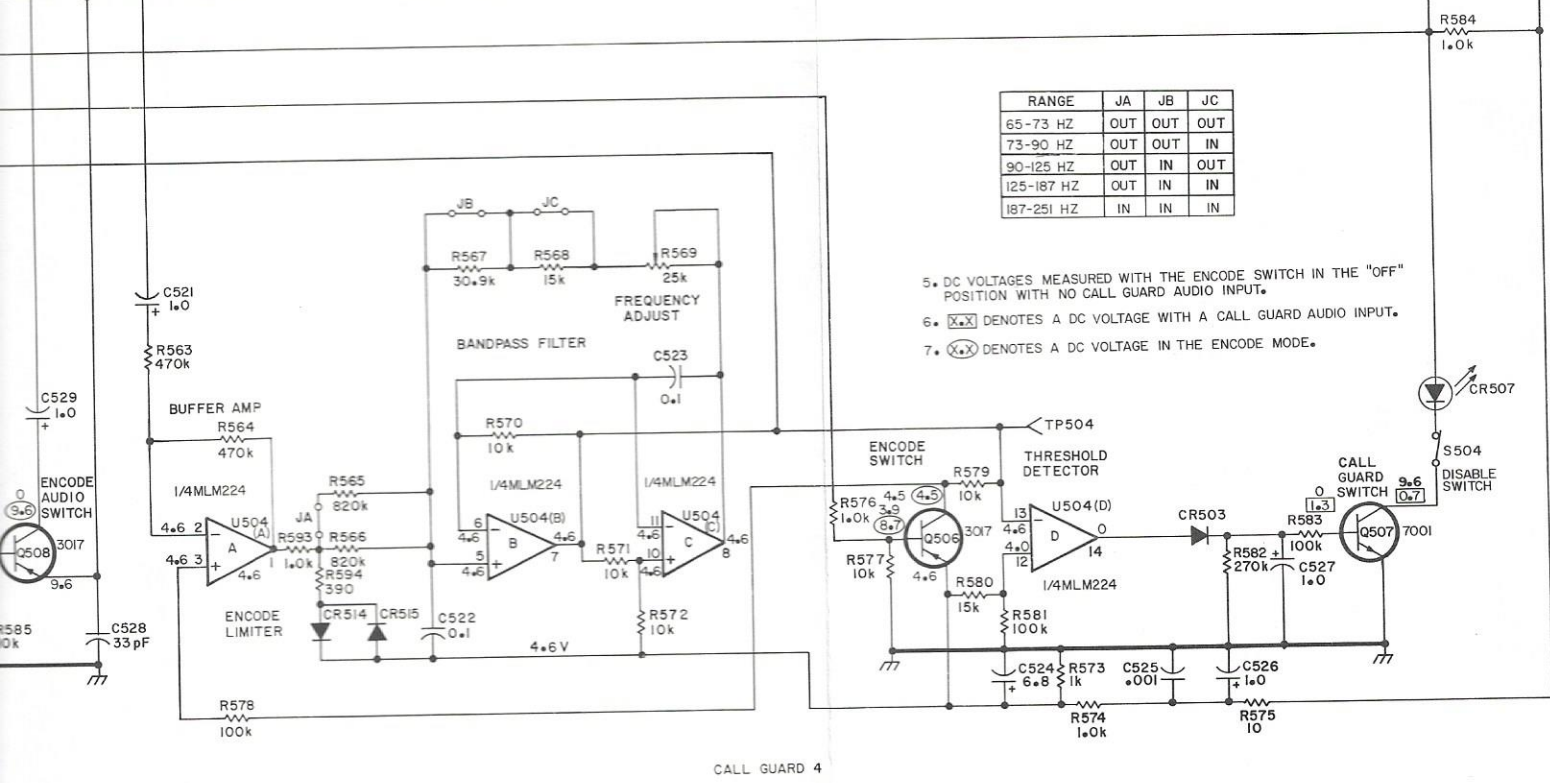




- NOTES:
1. OPERATIONAL AMPLIFIERS HAVE SUPPLY VOLTAGE ON PIN 4 AND GROUND ON PIN 11.
 2. ALL CAPACITORS ARE IN MICROFARADS AND ALL RESISTORS ARE IN OHMS UNLESS OTHERWISE SPECIFIED.
 3. SWITCH S500 IS SHOWN IN "OFF" OR DECODE POSITION.
 4. JUMPERS JA, JB AND JC DETERMINE FREQUENCY RANGE.

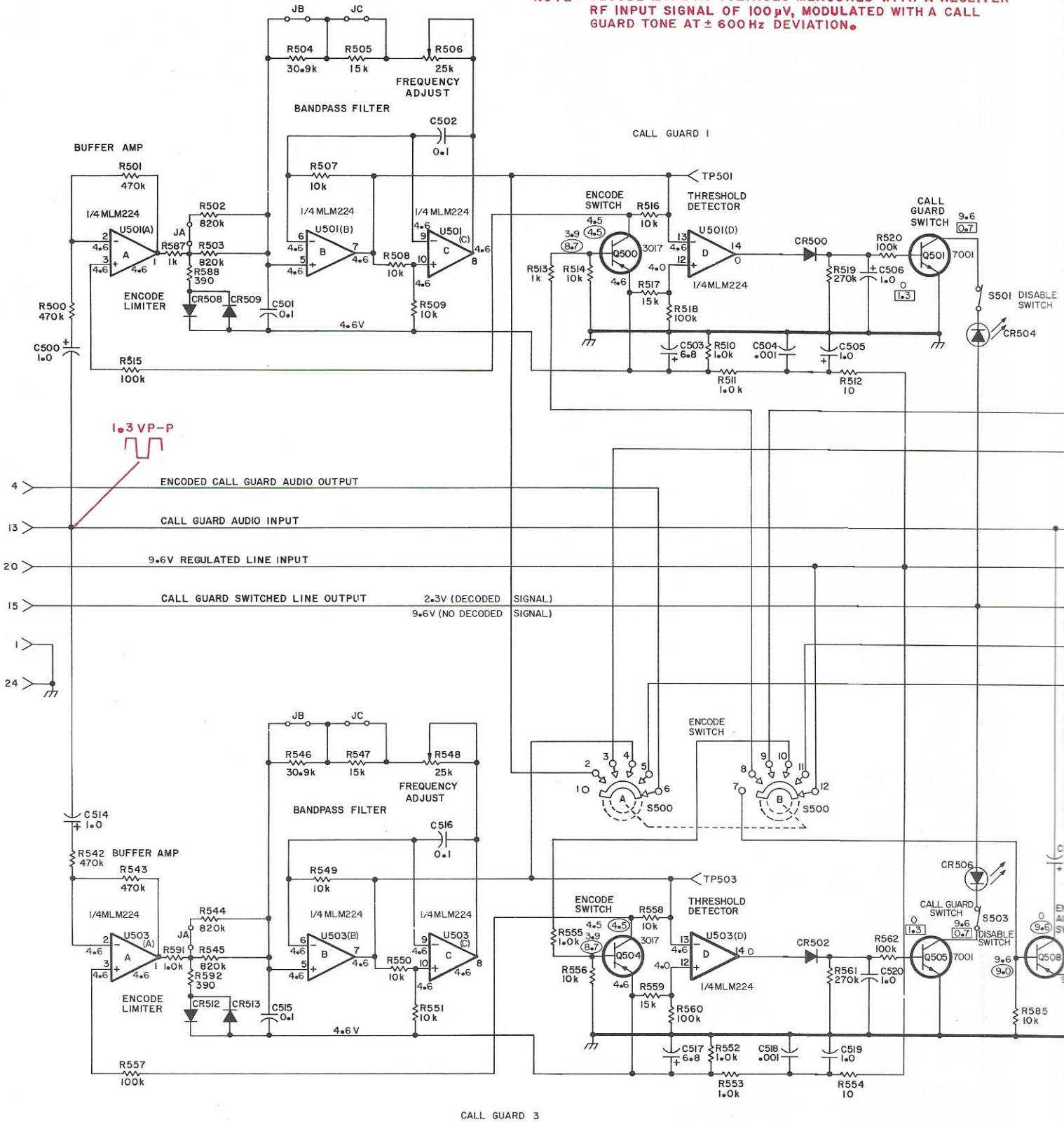
RANGE	JA	JB	JC
65-73 HZ	OUT	OUT	OUT
73-90 HZ	OUT	OUT	IN
90-125 HZ	OUT	IN	OUT
125-187 HZ	OUT	IN	IN
187-251 HZ	IN	IN	IN

5. DC VOLTAGES MEASURED WITH THE ENCODE SWITCH IN THE "OFF" POSITION WITH NO CALL GUARD AUDIO INPUT.
6. (X.X) DENOTES A DC VOLTAGE WITH A CALL GUARD AUDIO INPUT.
7. (X.X) DENOTES A DC VOLTAGE IN THE ENCODE MODE.



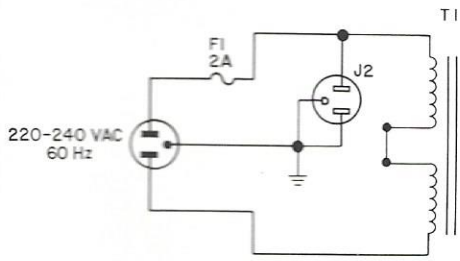
CR504 - CR507
549-4001-001

NOTE: DECODE MODE AC VOLTAGES MEASURED WITH A RECEIVER
 RF INPUT SIGNAL OF 100µV, MODULATED WITH A CALL
 GUARD TONE AT ± 600 Hz DEVIATION.

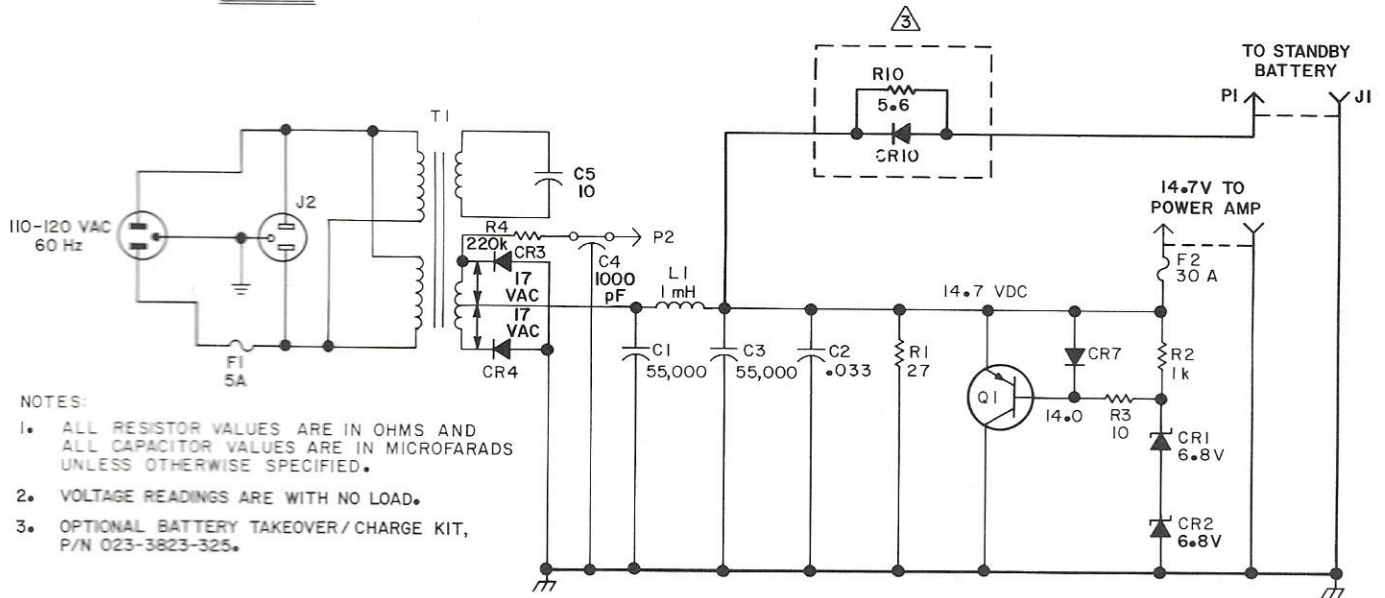


SEMICONDUCTOR BASING DIAGRAM
 (BOTTOM VIEW UNLESS OTHERWISE SPECIFIED)

- Q500, Q502
- Q504, Q506, Q508
- 576-0003-017
- Q501, Q503
- Q505, Q507
- 576-0007-001



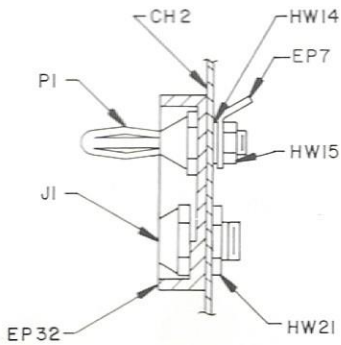
DETAIL A



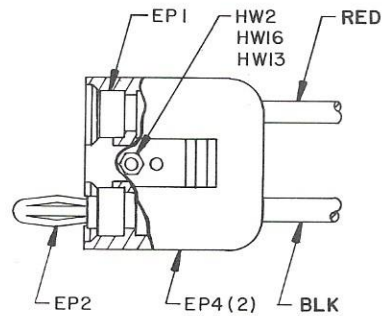
NOTES:

1. ALL RESISTOR VALUES ARE IN OHMS AND ALL CAPACITOR VALUES ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
2. VOLTAGE READINGS ARE WITH NO LOAD.
3. OPTIONAL BATTERY TAKEOVER/CHARGE KIT, P/N 023-3823-325.

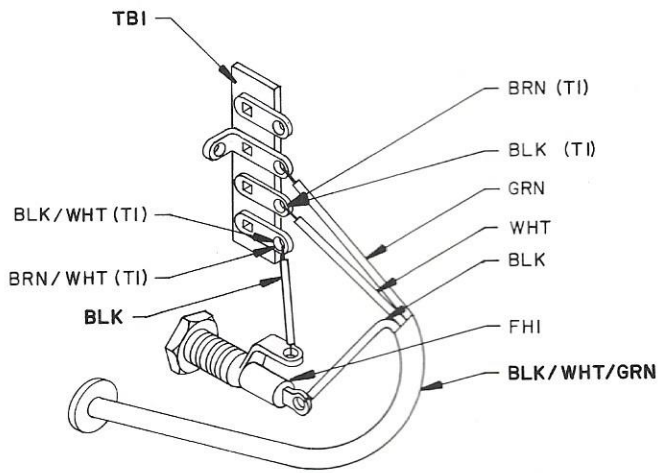
25 AMP POWER SUPPLY SCHEMATIC DIAGRAM



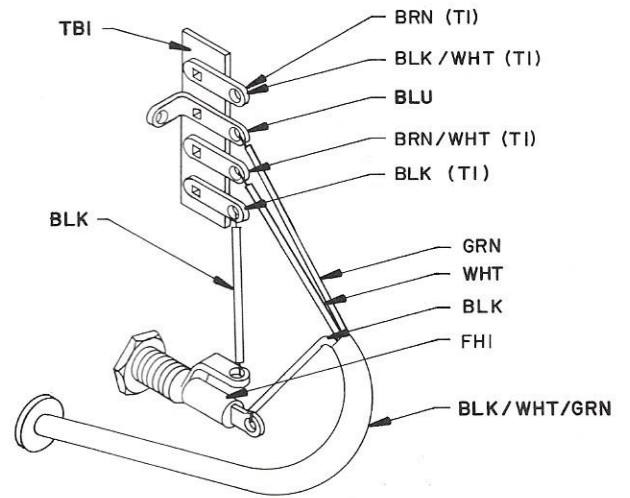
J1, P1 COMPONENTS



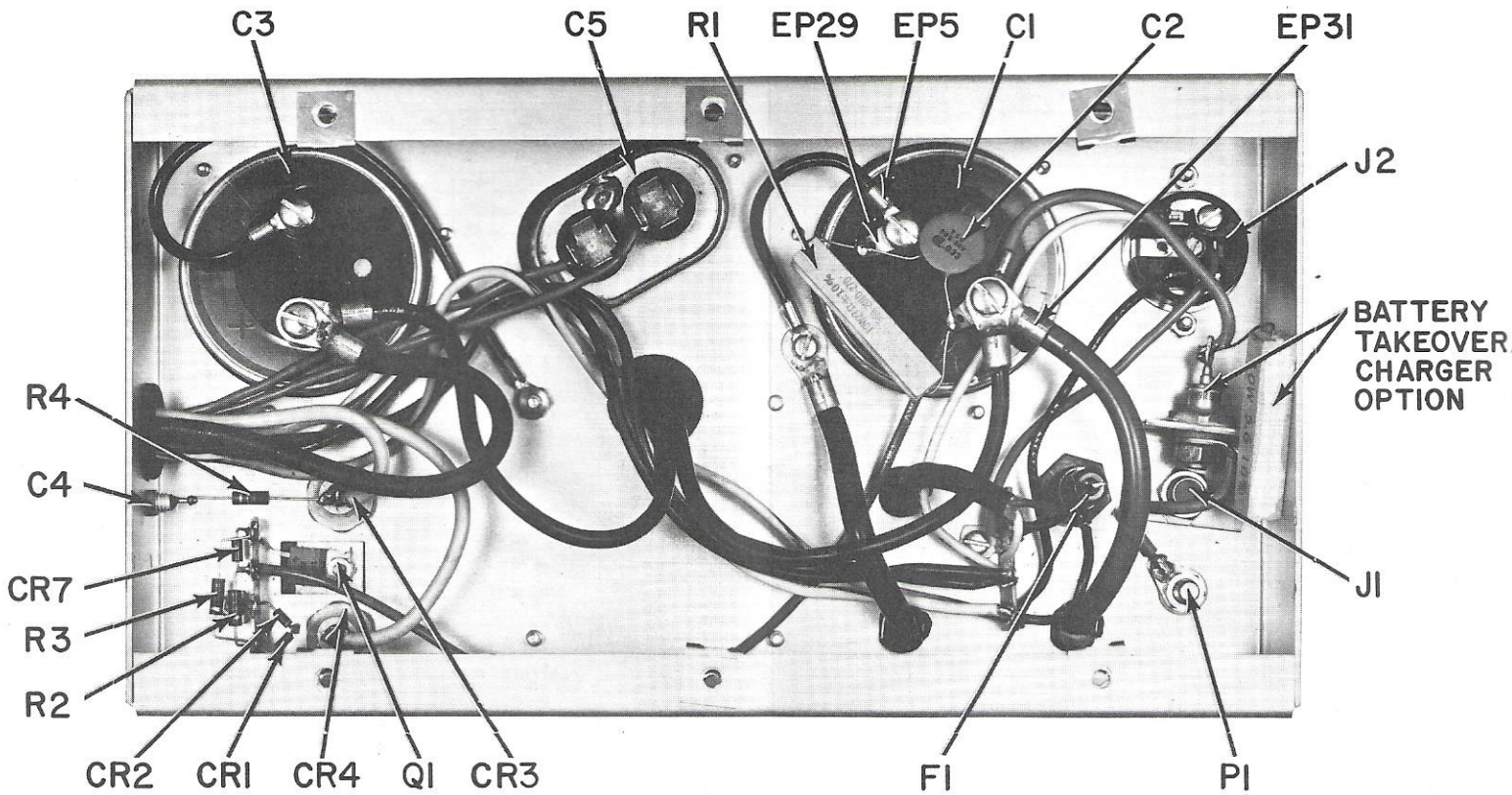
POWER CABLE CONNECTOR COMPONENTS



117 VAC WIRING DETAIL



230 VAC WIRING DETAIL



POWER SUPPLY COMPONENT LAYOUT (BOTTOM VIEW)



E. F. JOHNSON COMPANY, WASECA, MINN. 56093