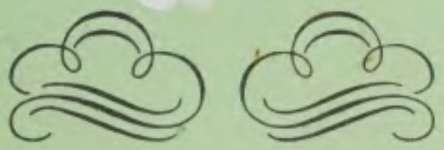
INSTRUCTION *Manual*

GALAXY III
TRANSCEIVER



MANUFACTURED BY
GALAXY ELECTRONICS

INSTRUCTION *Manual*

GALAXY III
TRANSCEIVER





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INSTRUCTION MANUAL

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WARRANTY INFORMATION

8-1. . . . . SPECIFICATIONS AND HANDLING OF WARRANTY PROBLEMS

SECTION I

1-1 It is assumed the purchaser has the unit removed from the carton by the time this manual has been read. NOTE! Some tubes and parts may be packed internally and other precautions will be necessary before attempting to apply power. Take notice of any notes or tags relating to parts packaging.

1-2 DAMAGE: This equipment has been carefully packed for safe arrival IF PROPERLY HANDLED EN ROUTE.

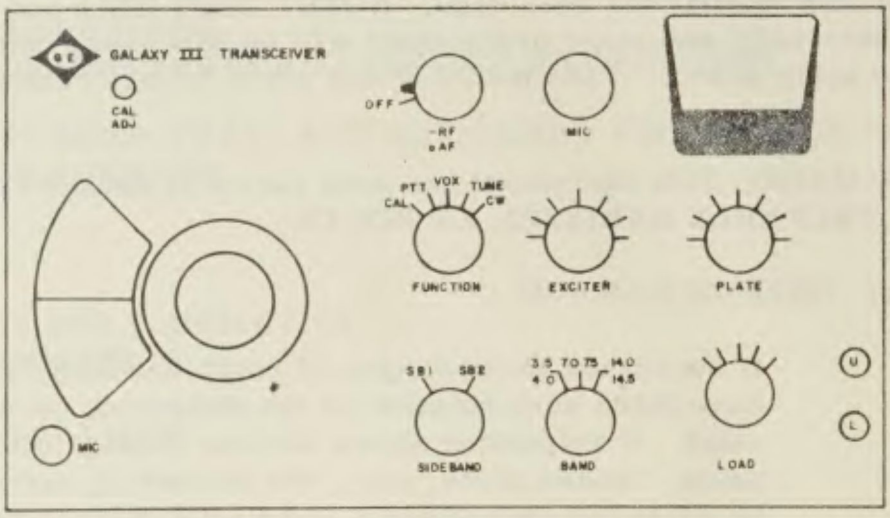
(a) OBVIOUS DAMAGE

If the carton showed signs of rough handling, you should have made such notation on the delivering carrier's receipt. If inspection shows obvious damage such as loose parts, broken parts, etc., the delivering carrier must be contacted immediately and a joint inspection made with this carrier's agent. The joint inspection is NOT a claim but an acknowledgement that the equipment was damaged. The form does not assign responsibility for the damage, but prepares the foundation on which to file a claim. The carrier will then acknowledge or decline the claim at their main office and a local agent may not decline to enter a claim. If the shipment was parcel post, contact your local postmaster for the necessary forms and he will help you enter the claim.

(b) HIDDEN DAMAGE

In many cases the carton may not be damaged but the equipment may suffer internal damage not obvious on delivery of the shipment. The procedure for filing the claim would be the same as above.

Remember, the responsibility for safe delivery rests with the carrier. The responsibility in obtaining reimbursement for damage rests with YOU. Prompt action on your part will speed adjustments. Our warranty in no way covers malfunction or damage which is a result of improper handling by a carrier. Under no circumstances should you return merchandise to your dealer before instigating the necessary forms. To do so can jeopardize your investment and the costs of necessary repairs may be a burden you will have to assume. After joint inspection forms have been completed, contact your dealer for assistance.



2-1 LOCATION OF CONTROLS, FRONT PANEL

CAL — Small knurled knob in upper left-hand of panel. Used to set actual frequency and dial indication in agreement.

O AF — At top of panel. Knob part of concentric control for audio volume on receiving.

- RF — Under above knob. Small lever control sets receiver RF gain. Used to reduce overload on extremely strong signals. Maximum RF gain occurs with the control maximum clockwise.

FUNCTION — A five-position rotary switch.
Function controls:

CAL — Turns on internal 100 Kc. calibrator if this accessory is installed.

PTT — Allows push-to-talk operation with a suitable microphone. Will not permit VOX to operate.

VOX — Will enable VOX to be used if this accessory item is installed and properly adjusted. PTT can also be used in this position.

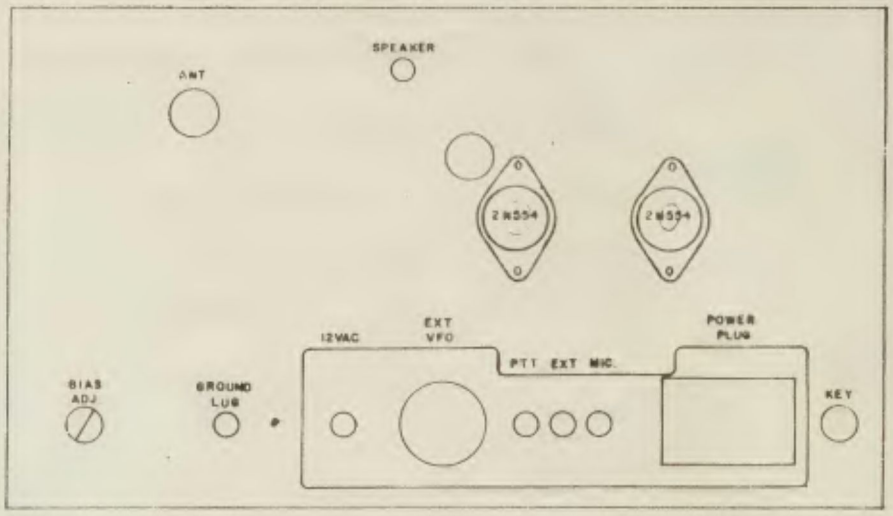
TUNE — Turns transmitter on at reduced power for proper tune-up. NOTE! SB switch must be on SB2 position.

CW — Sets transmitter on CW mode. To be used only after unit tuned on TUNE position. NOTE! MIC. control must be max. clockwise for CW operation. You must use SB2 sideband position.

SECTION II

2-1 LOCATION OF CONTROLS, FRONT PANEL, Continued

EXCITER	Tunes receiver input and final grid to resonance.
PLATE	Resonates final transmitter plate circuit.
LOAD	Matches final output to load presented by the antenna, within normal matching range of 40-100 Ohms resistive.
SIDEBAND	This switch serves two operations. In normal operation it selects the desired sideband, either upper or lower. The sideband in use is indicated by the panel lamps on the right side, marked "U" or "L". When the function switch is in either TUNE or CW position, the sideband switch MUST be in the SB2 position. Notice color matches these positions.
MIC.	This control serves two operations. In normal usage, it adjusts the transmitting microphone gain. In TUNE or CW, it sets the drive level to the final.
BANDSWITCH	Selects the desired band (500 Kc. ranges). Note the colors correspond to colors on the tuning dial. The lowest frequency number on the bandswitch is added to the dial reading to obtain actual frequency. (ie: Bandswitch on 3.5-4.0 position Dial reads 440. Actual frequency is 3.5 Mc. (3,500 Kc. added to dial, this totals 3,940 Kc.)
MIC.	A microphone jack in the lower left corner of the panel. Accepts a small 3/16" three-circuit plug, such as Switchcraft 260, or equal.



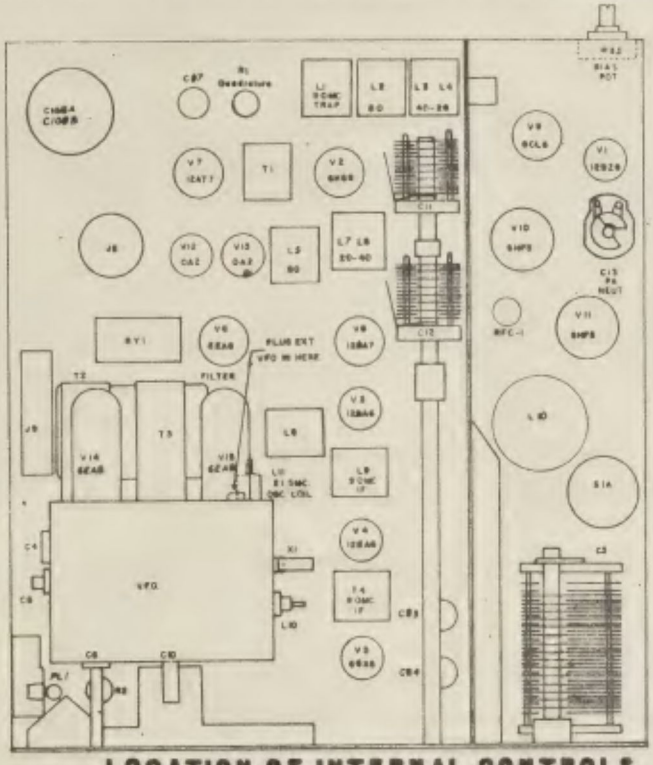
2-1 LOCATION OF CONTROLS, REAR PANEL

ANT.	Coax jack accepting PL259 plug. 52 Ohm nominal.
SPEAKER	Audio output jack J10. Attach 3/8 Ohm PM type speaker or earphones.
HOLE	Hole, near transistor, for passing coax cable from remote VFO to internal VFO.
BIAS ADJ.	Potentiometer R33 to set bias on final amplifier tubes.
12 VAC	Jack J12. To obtain voltage for meter illumination on DELUXE ACCESSORY CONSOLE.
EXT. VFO	Socket J1. Supplied with jumper plug which is removed when the accessory REMOTE VFO is connected.
PTT	Used to connect remote PTT switch for foot operation, etc., J6.
EXT.	Used to control other devices which require a grounded circuit (J5) in transmit condition. Do not apply over 28 VAC/DC to this circuit.
MIC.	Accessory input for microphone. Normally used for phone patch in DELUXE ACCESSORY CONSOLE. J4
POWER PLUG	Main power connector for AC or DC power supply. P1
KEY	Keying jack J3. Use standard two-circuit plug. Switchcraft 240, etc.

SECTION II

2-1 LOCATION OF CONTROLS, REAR PANEL, Continued

GROUND LUG A bolt to attach an external ground wire.



LOCATION OF INTERNAL CONTROLS,

The only internal adjustments usually made are: The "S" meter, R2, located on the chassis beside the VFO dial light. The VOX, in socket J9, where the controls are on the printed circuit board and the 100 Kc. calibrator which plugs into the octal socket J2.

The VOX socket is supplied with a jumper plug which must be inserted to operate the transmitter.

Other internal controls and adjustments should not be moved unless there is a malfunction and, then, only when the operator is thoroughly familiar with the procedures.

2-2 CONNECTIONS FOR POWER, MICROPHONE, ETC.

MICROPHONE---There are two microphone input jacks. The panel jack, J8, is normally used and requires a three-circuit 3/16" plug, such as Switchcraft #260, or equal. This is similar to the popular PL68 type. Connect ground (shield) to the barrel (sleeve) of the plug. Connect audio to the ring (the isolated part back from the tip) and connect the push-to-talk wire to the tip. Most microphones have just three wires but, if yours has four, you should connect the extra push-to-talk wire to the shield around the audio wire.

2-2 CONNECTIONS FOR POWER, MICROPHONE, ETC., Continued

NOTE: Some microphones have the element shorted when the push-to-talk is off. In this case, the contacts must be disabled to operate VOX.

The other microphone input is on the rear panel and is a phono type jack. It may be used for any special application of the user, except it will be used for phone patch when the DELUXE ACCESSORY CONSOLE is attached.

SPEAKER---The phono jack at the top of the rear panel. Connect any 4 to 8 Ohm PM speaker, or magnetic earphones.(2K typical) Normally, the DELUXE SPEAKER CONSOLE or the speaker in the DELUXE ACCESSORY CONSOLE will be used.

GROUND---A bolt post on the rear panel. Connect a heavy (#8 preferred) wire to a direct ground source. DO NOT USE WATER OR GAS PIPES. This wire should be as short as possible and, if over 5 feet, two ground wires should be used, one of which is exactly twice as long as the first. This will tend to eliminate a ground wire resonance. A ground rod should be at least 6 feet long and driven into the ground near the equipment.

POWER---Connect the power cable supplied with our AC supply to the 12 pin socket P1.

TURN OFF THE AC SWITCH
(switch on receiving audio control)
INSERT AC PRIMARY POWER CORD

2-3 SET-UP ADJUSTMENTS

Place FUNCTION switch in PTT position. Turn on AC supply with the switch located on the AF gain control. Allow initial warm-up of 10 minutes. Now, adjust "S" meter with internal control R2 for zero reading.

Now, connect antenna. Set SB selector switch to SB1. Set MIC. GAIN to minimum(maximum counter-clockwise) . Place FUNCTION to TUNE. Adjust bias control on rear of chassis R33, to produce meter reading of S2 to S4 on meter. This sets proper bias on final.

2-4 ANTENNA CONSIDERATIONS

The antenna is connected, and we know you are anxious to operate--- BUT, WAIT. Is the antenna suitable? Usually, 2:1 is suitable but, the GALAXY III is designed for antennas which present a resistive load of 40-100 Ohms. Only small reactance can be tolerated. Such an antenna should be provided.

SECTION II

2-4 ANTENNA CONSIDERATIONS, Continued

There are many considerations to a proper antenna system which are too broad in scope to be covered here. The user should refer to appropriate handbooks on the subject.

SECTION III

3-1 TRANSMITTER TUNE-UP

After using a particular piece of equipment for some time, the operator will become familiar enough to quickly re-tune. However, we believe this unit will prove easy to tune the first time, if the operator reads this information carefully.

For receiving ONLY, set the final LOAD to MIN. (counter-clockwise) and adjust EXCITER and PLATE controls for loudes signal reception.

To begin tune-up, set the SIDEBAND selector to SB2 (it must be on SB2 whenever the function switch is on TUNE or CW), set the MIC. gain control to min. (counter-clockwise). Set the FUNCTION switch to TUNE position. This will energize the transmitter section. Advance the MIC. gain control until the meter shows about an S5 reading. Now, tune the EXCITER control for maximum meter reading--then, adjust the PLATE control for a "dip" (minimum meter reading) which will be slight. Set the MIC control full clockwise. Adjust the LOAD control slightly clockwise to increase loading--then adjust the PLATE control for the "dip" again. Continue the alternate adjustment of LOAD and PLATE for "dip" until the "dip" occurs at the meter marking with the small triangle under TUNE marking on the meter. Tuning is now complete and the FUNCTION switch should be returned to PTT or VOX position as the case may be for the method of operation you will use. Set the SIDEBAND selector to USB or LSB, as desired, and set the MIC. gain control to about 1/2 open.

NOTE:

For voice SB operation, the MIC. gain control should be set so the meter will swing up to the TUNE mark, which represents full power. Do not allow the meter to swing higher. Where the MIC. gain control is set to produce full power is of no consequence. It may be slightly open, or it may be nearly full open. The setting will depend on voice characteristics, microphone output, distance and other factors.

3-1 TRANSMITTER TUNE-UP, Continued

If you desire to operate CW you do NOT tune differently than above. For CW use plug in a suitable key, set the MIC. gain full clockwise, set the SIDEBAND selector to SB2. Now when you place the FUNCTION switch to CW you will be in transmit condition and will transmit a signal whenever you close the key. To return to receive condition, you must manually return the FUNCTION switch to PTT position. You should unplug the microphone from the set when operating CW. As shifted carrier CW is used, you will be approximately on the received signals frequency when you have the received signal tuned in so as to produce about a 1,000 cycle tone in the speaker. Also, if you should want to operate with reduced power for a local CW QSO, you may directly control power input by the MIC. gain control. When the MIC. control is full clockwise you will run full power (the meter will read higher than SB and indicate about at the CW power mark) and, if you want less power, simply reduce the MIC. gain control setting. This will show less power by a lower meter reading. NO TUNING IS TO BE DONE WITH THE FUNCTION SWITCH IN THE CW POSITION.

Don't forget to close the key or unplug it when returning to voice operation, or the transmitter will not work.

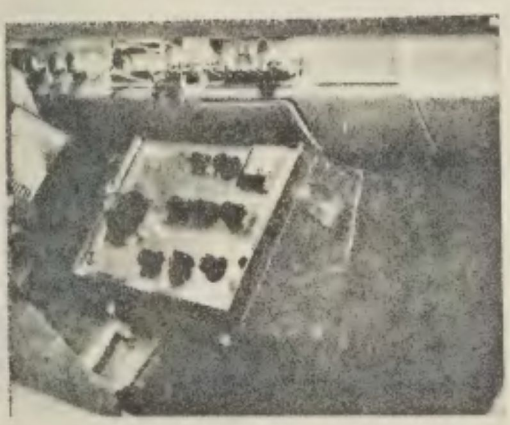
Note. If in the tuning above, the first dip, with the LOAD control at minimu, results in a dip above the TUNE mark on the meter, it indicates the antenna impedance is below that for which the PI-net can match. If full rotation of the LOAD control will not bring the current up to the TUNE mark, it indicates the impedance of the antenna is above that which the PI-network can match. In either case, the only solution is to adjust the antenna to present a load within the capabilities of the PI-network.

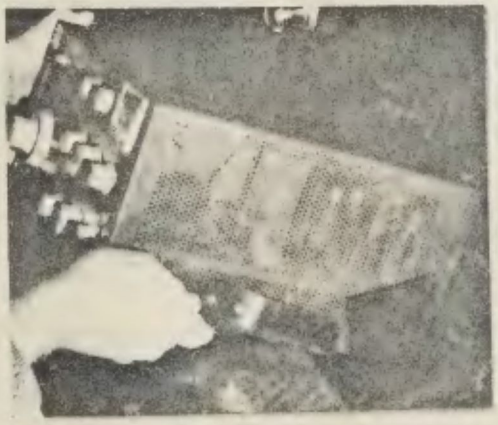
3-2 MOBILE OPERATION

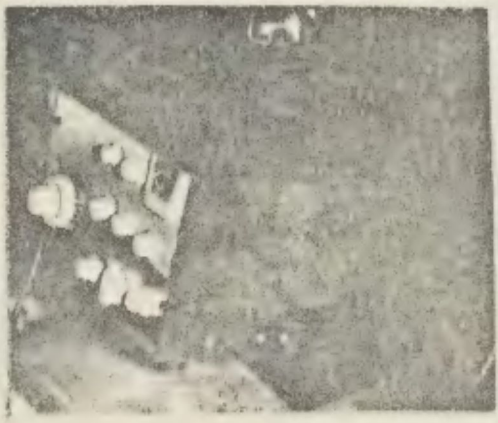
In most all respects, operation in mobile use is the same as fixed station. Tuning is the same, HOWEVER, the final bias adjust R33 MUST be re-set if you change power supplies, especially when installing in a car on a DC supply, where the bias was originally set on an AC supply.

3-2 MOBILE OPERATION, Continued

We believe the following pictures typify installation of our mobile bracket. It is a very universal bracket and one which permits easy removal of the GALAXY III from the car. Additional details are provided with the mount.







The mobile mounting ears that attach to the side of the GALAXY III cabinet MUST be removed to remove the transceiver from its cabinet. The SHORT sheet metal screws provided must be used to prevent damage to components inside the GALAXY III.

The transistors used are well heat protected, however, on a hot sunny day and all the car windows closed for a long time, great heat can build up in the car. This is indicated by the fact that many metal parts of the car cannot be touched for some time after opening up the car. In such case, allow a few minutes to ventilate the car and let metal parts cool down. This will help protect the transistors in the audio section. Operating the car vent fan a minute or two should cool the unit sufficiently. If you can touch the back panel and it is not too hot to hold, there should be no problem.

The DC supply should be mounted as near the battery as possible, but in no case where the primary leads will be over 4 feet in length. The DC supply should be positioned high on the fender well out of direct water

3-2 MOBILE OPERATION, Continued

splash as much as possible. The unit should be positioned so the power plug on the DC supply is to the rear. A nominal water spray will not hurt the DC supply, but water accumulation at the power plug could cause a short in the power plug. See the pictures for typical installations.

The power cable between the DC supply and the GALAXY III should not be over 10 feet long. Use no more than is necessary. See the wiring chart for connections and minimum wire sizes.

TERMINALS G300DC	wire size	TERMINALS GALAXY III
#1 and #2	#8 (to plus 12 VDC battery)	
#3	#22	#9 (bias-100VDC)
#4	#22	#3 (plus 325VDC)
#5	#22	#1 (plus 800VDC)
#6	#22	#12 (relay control)
#7	#18 (preferably 2 #18 parallel)	#7 & #11 (gnd & relay)
#7	#8 (to negative 12 VDC battery)	
#8	#18 (preferably 2 #18 parallel)	#5 & #6 (fil. & transistors)

NOTICE! Our ZMM accessory bracket is available to increase height of transceiver and give a higher tilt angle for floor mounting, when used with our regular Mobile Mount III. (ZMM $3.00)

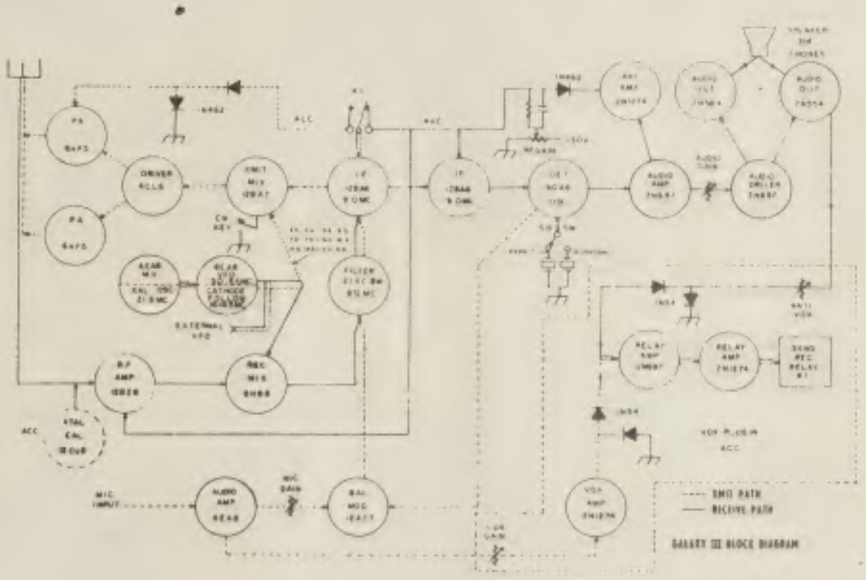
Unit shown with Mobile Mount III mounted above ZMM bracket.



SECTION III

3-3 CONNECTION AND USE OF ACCESSORY ITEMS

The jacks and plugs for connections of accessory items is shown in the drawings in section 2-2. The various accessories and their use will be covered in each manual for the various accessories in detail.



SECTION IV

THEORY OF OPERATION

4-1 GENERAL CIRCUIT ANALYSIS

TRANSMIT OPERATION

The voice signal from the microphone is fed to the mike input jack. The voice signal is amplified in the 6EA8 triode pentode tube and coupled to the 12AT7 dual triode balanced modulator. Also being fed into the balanced modulator is 9,001.250 CPS or 8,998,750 CPS, which was generated in the 6GX8 oscillator-detector tube. The 12AT7 balanced modulator combines the audio and the RF to put out a double sideband

4-1 GENERAL CIRCUIT ANALYSIS, Continued

surpressed carrier signal at 9,001.250 Kc. for lower sideband or 8,998,750 upper sideband. The double sideband signal passes through the 9 mc. filter which allows one sideband only to reach the 12BA6 IF amplifier. The single sideband surpressed carrier signal is amplified in the 12BA6 tube and coupled to the 12BA7 transmit mixer. A signal at 5.0 to 5.5 mc. from the VFO for the 80 - 20 meter operation or from the 6EA8 converter tube at 16.0 mc. to 16.5 mc. for 40 meter operation, is also fed into the 12BA7 transmit mixer. The sum or difference frequency, whichever is the desired output frequency is selected by the tune circuits and fed to the 6CL6 driver. The 6CL6 output drives the final amplifier, a pair of 6HF5's. The 1N462 ALC rectifiers detect any trace of grid current in the 6HF5's, and develops a bias voltage which is applied to the 12BA6 to reduce the IF gain whenever grid current flows, thus keeping the final in class AB1 and reducing distortion while increasing effective talk power. The plates of the 6HF5 final amplifiers are connected in parallel to the pi-network output circuit. In CW operation, the crystal oscillator is shifted to 9.000 mc. to provide carriers and the 12BA7 is grid block keyed.

RECEIVE OPERATION

The incoming signal from the antenna is coupled to the 12BZ6 receive RF stage through the 6HF5 pi-network plate circuit. The output of the 12BZ6 is fed to the 6HG8 receive mixer. A signal at 5.0 to 5.5 mc. from the VFO for 80 - 20 meter operation or from the 6EA8 converter tube at 16.0 to 16.5 mc. for 40 meter operation is also fed into the 6HG8 receive mixer. The output of the receive mixer is fed through the 9.0 mc. crystal filter to the 12BA6 IF amplifier. The output of the 12BA6 is further amplified by the second 12BA6 IF amplifier, and then fed to the 6GX6 oscillator-product detector tube. The result is an audio signal which is amplified by the 2N697 transistor. The output of the 2N697 feeds both the 2N1274 AVC amplifier and the 2N697 audio driver stage. The output of the 2N697 drives the push pull 2N554 output stage which is coupled to the loud speaker. The output of the 2N1274 AVC amplifier is rectified and the resulting DC voltage is fed to the receive RF, first IF and second IF amplifier stages and controls the gain of these tubes.

THE VOX CIRCUITRY

The VOX is an optional plug-in unit, shown by the dotted lines in the block diagram. A portion of the audio output from the 6EA8 microphone amplifier tube is fed to the VOX amplifier 2N1274 transistor. The output of the 2N1274 transistor is rectified by the 1N54 diodes, and the resulting positive voltage is fed to the two stage DC amplifier which

SECTION IV

4-1 GENERAL CIRCUIT ANALYSIS, Continued

operates the transmit-receive relay K1. The two stage DC amplifier is comprised of a 2N697 and a 2N1274 transistor. A portion of the receive audio output from the 2N554 output stage is rectified by the 1N54 diodes and the resulting negative DC voltage is also coupled to the two stage DC amplifier. This negative DC voltage balances out any positive DC voltage that may be coming from the VOX amplifier diodes due to the output from the loudspeaker feeding back into the microphone.

4-2 PERFORMANCE SPECIFICATIONS

(A) GENERAL

Full coverage of the Amateur 75/80-40-20 meter bands, with considerable overlap on 40 and 20 meters. 3.5/4.0 Mc., 7.0/7.5 Mc., 14.0/14.5 Mc.

Linear capacity tuned VFO: Tunes 5.0/5.5 Mc. at all times. 9.0 Mc. plus VFO freq. covers 20 meters, 9.0 Mc. minus VFO covers 75-80 meters, VFO plus crystal osc. mixed in premixer and 9.0 Mc. covers 40 meters.

36:1 planetary drive with 2:1 gear drive (spring loaded for anti-backlash) gives 72:1 slow tuning with fast tuning outer knob provided. Circular dial has over 9 inches of bandspread. 5 Kc. dial marks can be interpolated to nearly 1 Kc.

Stability of the VFO is extremely good with drift of less than 100 cps. in any 15 minute period after warmup. Less than 100 cps. frequency change for 10% change of line voltage.

(B) TRANSMITTING SPECIFICATIONS

300 watts CW, carrier shifted 1000 cps. into bandpass. Grid block mixer keying.
300 watts PEP, SSB input power.
Upper or lower sideband, panel selected.
PTT (or VOX with accessory)
Sideband suppression in excess of 55 DB
Carrier suppression in excess of 45 DB
Overall audio response down 6 DB at 300 and 2,400 cps.
Output impedance, nominal 50 Ohms (40-100 Ohms resistive), adjustable PI-net

4-2 PERFORMANCE SPECIFICATIONS, Continued

A. L. C. used to obtain maximum power and minimize flattopping, as well as increasing talk-power.
High impedance microphone input.

(C) RECEIVING SPECIFICATIONS

Less than 1/2 microvolt produces better than 10 DB S/N
Full AGC. Audio varies less than 6 DB for 60 DB change. Two speed AGC provides fast attack-fast release for signal variation of 20 DB and slow attack-slow release for greater signal variation. Essentially free from pops and pumping over 60 DB range and free over any range with proper use of RF gain control.
Antenna input impedance: nominal 50 Ohms
Speaker output impedance 4-8 Ohms nominal.
Audio power output 3 watts at low distortion.

(D) POWER REQUIRED

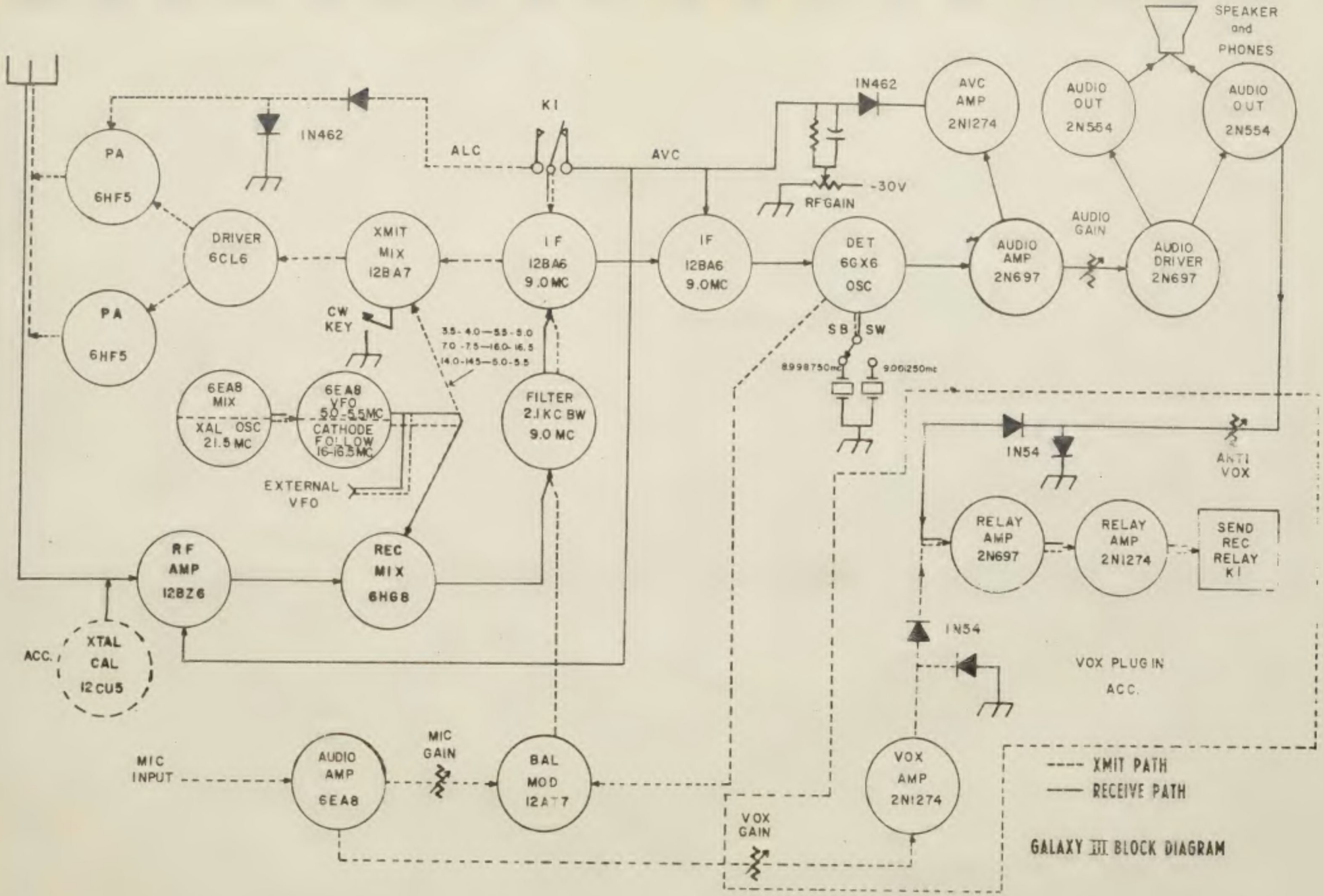
800 VDC @400 Ma. with 10% regulation for 80 to 400 Ma. swing.
350 VDC @200 Ma. with 10% regulation
Negative 100 VDC @35 Ma.
12.6 VAC/DC @5 Amp.
12.6 VDC @1 Amp.

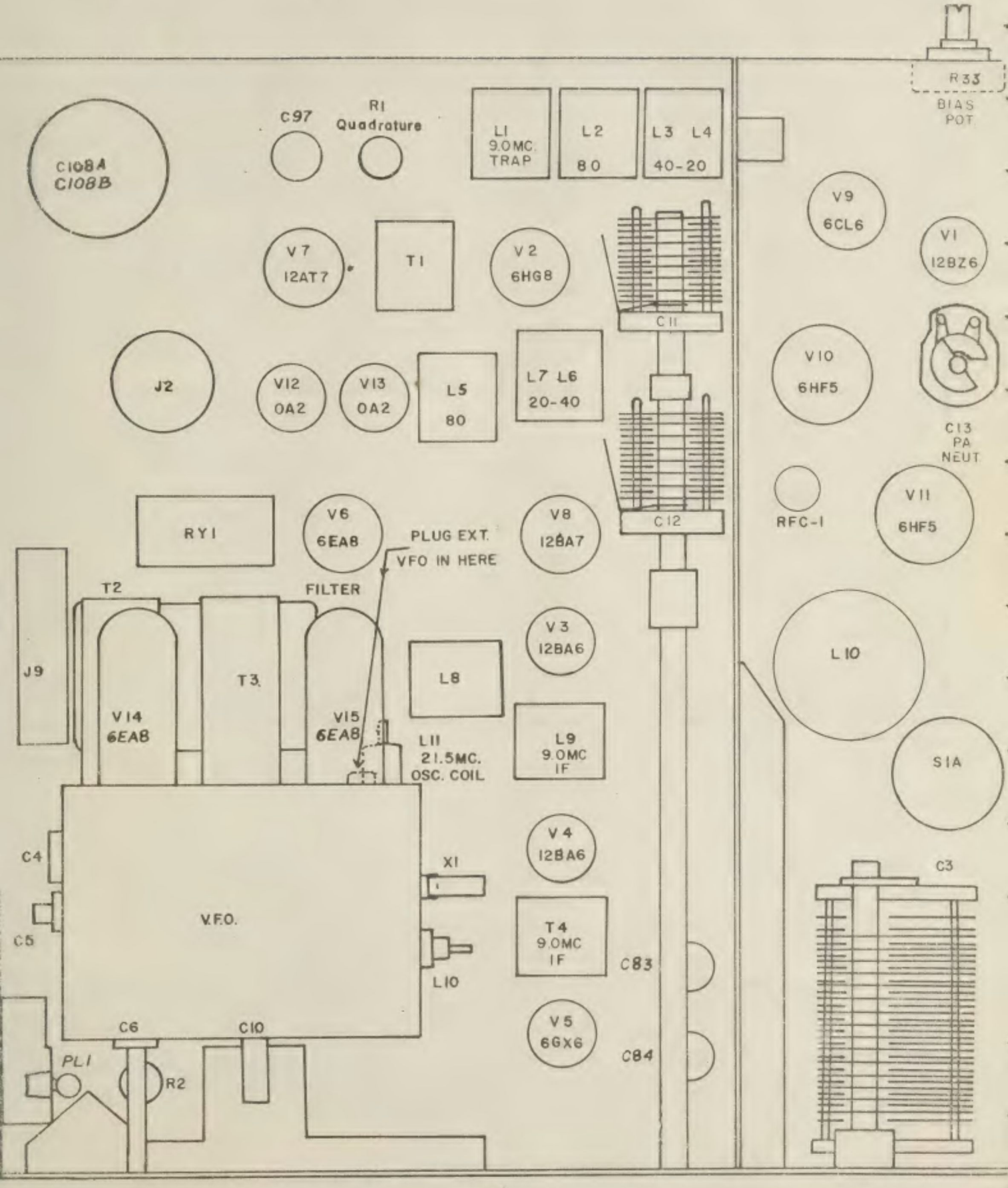
VOLTAGE CHART

Pins	1	2	3	4	5	6	7	8	9	10	11	12
V1	-.4 0	.54 160	0	12 AC	350	120 -40	0					
V2	.8 148	6 -100	.8 148	5.8AC	0	-.1 0	35 .32	345 -32	35 .32			
V3	-.5	0	12 AC	0	260 250	100	.6					
V4	-.4 0	0	12 AC	0	265 260	120 -40	1.5 8					
V5	-3 12.5	2.5	5.8 AC	0	120 100	120 110	-.01					
V6	260 250	-.8	26 25	12 AC	5.8 AC	67 62	0	56 52	50 45			
V7	145 140	0	0	12 AC	0	140 135	0	46 0	0			
V8	280 62	0	150 .9	0	12 AC	0	0 .2	0	280V 280V			
V9	48 3	0	400 150	5.8 AC	12 AC	360	.1 0	400 150	0			
V10	6.2 AC	.02	0 150	0 .1	-50	0 150	0	0 150	-50	0 .1	0 150	12 AC
V11	6.2 AC	.02	0 150	0 .1	-50	0 150	0	0 150	-50	0 .1	0 150	0
V12	150	0	10 5	0	150	12 8	0					
V13	0 15	0	0 10	0	0 150	0 4	0					
V14	140 130	2.5	100	12 AC	5.8 AC	140	.22	2.5	0			
V15	0	0	105 100	5.8 AC	0	140 130	1.7 1.6	1.7 1.6	.9 .8			

Transistor	Emitter	Base	Collector
Q1	4 4.4	4.6 5	10 11
Q2	9 10	9 9.5	1 1.2
Q3	4 13	4.2 6.4	10 12.5
Q4	12.5 13.5	12.5 13	.18 13.5
Q5	12.5 13.5	12.5 13	.18 13.5

Note: All measurements are made from ground to point being measured. AC power supply connected to Galaxy III. VOX and XTAL cal. are not plugged in. Bandswitch set on 14.0-14.5, the function switch set on PTT. AF gain, and mic gain set fully counter-clockwise. Sideband switch set on SB2. Exciter, plate, and load controls set anywhere. Where two voltages are shown, the top one is receive voltage, and the bottom is the transmit voltage. All measurements were made with a Hewlett Packard 410B VTVM.


SPEAKER and PHONES
AUDIO OUT 2N554
AUDIO OUT 2N554
IN462
AVC AMP 2N1274
K1
ALC
AVC
IN462
-30V
RF GAIN
PA 6HF5
DRIVER 6CL6
XMIT MIX 12BA7
I F 12BA6 9.0MC
IF 12BA6 9.0MC
DET 6GX6 OSC
AUDIO AMP 2N697
AUDIO GAIN
AUDIO DRIVER 2N697
PA 6HF5
CW KEY
3.5-4.0—5.5-5.0
7.0-7.5—16.0-16.5
14.0-14.5—5.0-5.5
SB SW
8.998750mc
9.001250mc
6EA8 MIX
XAL OSC 21.5 MC
6EA8 VFO 5.0-5.5MC CATHODE FOLLOW 16-16.5MC
FILTER 2.1KC BW 9.0 MC
EXTERNAL VFO
IN54
ANTI VOX
RELAY AMP 2N697
RELAY AMP 2N1274
SEND REC RELAY K1
RF AMP 12BZ6
REC MIX 6HG8
IN54
ACC.
XTAL CAL 12CU5
VOX PLUG IN ACC.
MIC INPUT
AUDIO AMP 6EA8
MIC GAIN
BAL MOD 12AT7
VOX AMP 2N1274
VOX GAIN
---- XMIT PATH
—— RECEIVE PATH
GALAXY III BLOCK DIAGRAM


C108A
C108B
C97
R1
Quadrature
L1
9.0MC.
TRAP
L2
80
L3 L4
40-20
R33
BIAS
POT
V9
6CL6
V1
12BZ6
V7
12AT7
T1
V2
6HG8
C11
J2
V12
0A2
V13
0A2
L5
80
L7 L6
20-40
V10
6HF5
C13
PA
NEUT
C12
RFC-1
V11
6HF5
RY1
V6
6EA8
PLUG EXT.
VFO IN HERE
V8
12BA7
T2
FILTER
V3
12BA6
L10
J9
T3
L8
V14
6EA8
V15
6EA8
L11
21.5MC.
OSC. COIL
L9
9.0MC
IF
S1A
C4
V4
12BA6
C3
XI
V.F.O.
C5
T4
9.0MC
IF
C83
L10
C6
C10
V5
6GX6
C84
PL1
R2

RESISTANCE CHART

Pin	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
V1	4.5M	45	0	.5	52K	55K	0					
V2	135	3	145	.6	.5	95K	100K	5.5K	100K			
V3	4.5M	0	.4	0	5.5K	100K	50					
V4	4.6M	0	.4	0	55K	55K	100					
V5	2.2M	1K	.6	0	27K	110K	23K					
V6	60K	1M	1M	0	.6	230K	0	100K	135K			
V7	60K	200K	**	0	.5	60K	0	**	7			
V8	80K	100K	**	0	.4	0	45K	0	55K			
V9	**	22K	100K	.6	.5	55K	**	100K	20K			
V10	.4	**	52K	2	8.5K	52K	**	52K	8.5K	2	52K	.4
V11	4	**	52K	2	8.5K	52K	**	52K	8.5K	2	52K	.4
V12	55K	0	**	0	55K	**	0					
V13	28K	0	**	0	26K	**	0					
V14	65K	50K	85K	1.4	.5	60	30	500	220			
V15	**	10K	85K	0	1.3	55K	200	200	90K			

Transistor	Emitter	Base	Collector
Q1	400	3.5K	320
Q2	650	520	520
Q3	370	5K	420
Q4	3	3	1.2
Q5	3	3	1.2

(** open circuit)

Power Plug	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
P1	**	**	55K	**	5.7	5	0	**	7K	**	**	**

Note: All measurements are made from ground to point being measured. Power Supply disconnected from Galaxy III. VOX and XTAL cal. are not plugged in. All tubes, relay and jumper plugs in their sockets. The band switch set on 14.0-14.5, the fundtion switch set on cal. AF, RF gain and mic. gain set fully clockwise. Side-band switch set on SB2. All measurements were made with a Hewlett Packerd 410B VTVM.

SECTION V

5-2 ALIGNMENT

This is a complicated apparatus, and alignment should not be attempted without a full understanding of the circuitry and adequate equipment.

> DANGER: HIGH VOLTAGE! USE EXTREME CAUTION WHEN THE UNIT IS OUT OF THE CABINET, AS VOLTAGES DANGEROUS TO LIFE EXIST!

TEST EQUIPMENT REQUIRED:

Calibrated signal generator
100 KC crystal calibrator
50 ohm dummy load capable of handling 200 watts
Output indicator - oscilliscope - RF Analyzer - RF volt meter
Audio signal generator
VTVM or VOM

IF AMPLIFIER ALIGNMENT

1. Remove VOX unit or VOX jumper board from J9. This will prevent you from accidentally keying the transmitter into the signal generator.
2. Set controls as follows:
   a. RF full clockwise
   b. Function switch - PTT
   c. Load Control - 10 o'clock
   d. Plate Control - 12 o'clock
   e. Band Switch - 7.0 to 7.50 mc.
3. Connect signal generator output to GALAXY III antenna jack.
4. Set volume control at half scale and allow five minutes for unit to warm up.
5. Adjust potentiometer R-2 for zero S-meter reading.
6. Set signal generator at 10,000 mv. output, 9.000 mc. Vary generator frequency until beat note is heard in transceiver loudspeaker. Adjust plate control for maximum S-meter reading. Set signal generator output level for approximately S-6 on GALAXY III S-meter.
7. Adjust the slug of L-9 and the top and bottom slug in T-4 for maximum S-meter reading. Reduce the signal generator level to keep S-meter reading below S-6.
8. Adjust slug in L-1 (9.0 mc. trap) to eliminate IF leak-thru) for minimum S-meter reading.

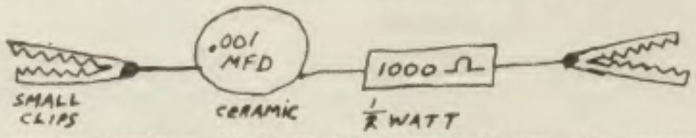
VFO ALIGNMENT

1. Set controls as follows:
   a. RF full clockwise

5-2 ALIGNMENT, Continued

b. Function switch to CAL
NOTE: If there is no plug-in crystal calibrator in unit, any other accurate frequency source at 3.500 and 4.000 mc. may be used.
c. Load Control - 10 o'clock
d. Plate Control - 2 o'clock
e. Band switch - 3.5 to 4.0 mc.
f. Exciter Control - 10 o'clock
g. Sideband Switch - SB-1
h. CAL ADJ - Midrange
i. Main Tuning Dial - 4.000 mc.

2. Adjust main tuning dial until calibrator is heard. (Check to see if this is the 4.0 mc. beat note with signal generator).
3. Adjust L-12 and main tuning dial until the calibrator zero beat occurs at 4.0 mc.
4. Adjust main tuning dial to 3.5 mc. Rock main tuning dial until calibrator is heard.
5. Adjust C-5 and main tuning dial until the calibrator zero beat occurs at 3.5 mc.
6. Repeat Steps 2 thru 5 until calibrator zero beat occurs at 3.500 and 4.000 mc.
7. Set band switch to 7.0 to 7.5 mc. Connect signal generator to GALAXY. Adjust frequency of generator to 7.250 mc.
8. Remove the four screws on VFO top and remove cover.
9. Make a test load circuit as illustrated below:



10. Adjust main tuning dial until signal from the generator is heard. Adjust level of generator for S-9.
11. Adjust L-11 for maximum S-Meter deflection.
12. Turn off the GALAXY and place the test load circuit on the colored terminal (can-I.F.) on T-3. Connect other end on ground.
13. Turn on Galaxy and wait for radio to warm up. Adjust main tuning dial until generator is heard. Adjust bottom slug on T-3 for maximum S-meter deflection.
14. Turn off Galaxy - Remove test load and place test load on the pin diagonally opposite of the pin that has the colored dot on T-3. Place the other end on ground.
15. Turn on Galaxy - allow to warm up and adjust the top slug in T-3 for maximum S-meter deflection.
16. Turn off GALAXY and remove test load. Replace the VFO cover.

5-2 ALIGNMENT, Continued

EXCITER ALIGNMENT

1. Attach an RF output indicator between the GALAXY and the dummy load. If a Heath Cantenna is used, a VTVM can be attached to it for RF output indication.
2. Replace the VOX unit or VOX jumper board.
3. Set controls as follows:
   a. Band switch to 3.5 to 4.0 mc.
   b. Sideband switch to SB-2
   c. Plate Control to 2 o'clock
   d. Load Control to 11 o'clock
   e. Mic gain max counter-clockwise
   f. Set dial to 3.750 mc.
   g. Exciter tune control to 12 o'clock
   h. Function switch to TUNE
4. Advance mic gain control until S-Meter deflects to S-5.
5. Adjust L-5 and L-2 for maximum meter reading - keep meter deflection below S-6 with mic gain control.
6. Set band switch to 7.0 to 7.5 mc. Set dial to 7.250 mc. Adjust mic gain control for an S-5 meter reading.
7. Tune L-3 (bottom slug) and L-6 (bottom slug) for maximum S-meter reading. Keep meter reading below S-6 with mic gain control.
8. Set band switch to 14.0 to 14.5 mc.
   Set tuning dial to 14.1 mc.
   Set load control to 12 o'clock and plate control to 12 o'clock.
9. Set exciter to 12 o'clock
   Function switch to tune
   Set mic gain control to an S-5 meter reading
10. Tune L-4 (top slug) and L-7 (top slug) for maximum S-meter reading. Keep meter reading below S-6 with mic gain control.

CARRIER SUPPRESSION ADJUSTMENT

1. Attach an output indicator between the GALAXY and the dummy load. If a Heath Cantenna is used, a VTVM can be attached to it for RF output indication.
2. Set band switch 7.0 to 7.5 mc.
3. Tune the transmitter up for normal sideband operation.
4. Place function switch in the PTT position. Plug in the push-to-talk microphone and key the transmitter.
5. Turn the mic gain control maximum counter-clockwise.
6. Observe the amount of carrier on the output indicator (scope -vtvm -external receiver-swr bridge, etc.)
7. Adjust C-97 & R-1 for minimum deflection. These controls interact and will have to be repeated several times.

5-2 ALIGNMENT, Continued

8. Set sideband switch on other sideband and observe carrier. A slight compromise setting of C-97 may be required to get best carrier suppressions on both sidebands.

FILTER TRANSFORMER ALIGNMENT

1. Set band switch 7.0 to 7.5 mc.
2. Tune the transmitter up for normal sideband operation.
3. Connect audio oscillator to GALAXY mic jack using 3/16" sleeve, three circuit plug (Switchcraft S-230 or S-260) with audio to ring and ground to sleeve - also connect tip to sleeve. Audio level must be padded to approximately .02 volts at approximately 1300 cps.
4. Advance mic gain control until meter reads S-5.
5. Tune L-8 for maximum meter reading. Reduce mic gain control to keep S-meter below S-6.
6. Adjust generator to a frequency of 2,200 cps.
7. Adjust top and bottom slugs in T-1 for maximum S-meter deflection. Reduce mic gain to keep S-meter below S-6.

CARRIER CRYSTAL ADJUSTMENT

1. Attach an RF output indicator between the GALAXY and the dummy load. If a Heath Cantenna is used, a VTVM can be attached to it for RF output indication.
2. Adjust audio oscillator to a frequency of 800 cps.
3. Adjust mic gain control for meter reading of S-9.
4. Observe the amount of output on the output indicating device (Scope, VTVM, SWR bridge.)
5. Adjust audio oscillator to a frequency of 300 cps.
6. Set sideband switch to SB-2 and adjust trimmer capacitor C-83 until the output drops to 1/2 the value noted in step 4.
7. Set sideband switch to SB-1 and adjust trimmer capacitor C-84 until the output drops to 1/2 the value noted in step 4.
8. Repeat CARRIER SUPPRESSION ADJUSTMENT section.

P.A. NEUTRALIZATION

1. Attach an RF output indicator between the GALAXY and the dummy load. If a Heath Cantenna is used, a VTVM can be attached to it for RF output indication.
2. Set Controls as follows:
    a. Band switch 14.0 to 14.5 mc.
    b. Sideband switch - S-2
    c. Mic gain - Max counter-clockwise
    d. Exciter - 11 o'clock
    e. Plate - 12 o'clock

f. Load - 12 o'clock
g. Main tuning dial - 14.25 mc.
h. Function switch - tune

3. Adjust mic. gain control until S-meter reads S-5. Peak S-meter with exciter control.

4. Set mic. gain control maximum clockwise.

5. Adjust plate and load controls until transmitter is loaded up to tune mark.

6. Set function switch to CW.

7. Rock the plate control through the plate current dip and observe the output indication. Adjust C-13 until the plate current dip and maximum RF output occur simultaneously.

VFO SIDEBAND FREQUENCY - SHIFT ADJUSTMENT

1. Set controls as follows:

a. RF-full clockwise
b. Function switch - CAL
c. Load control - 10 o'clock
d. Plate control - 2 o'clock
e. Sideband switch - SB-1
f. Band switch - 3.5 to 4.0 mc.
g. Main tuning dial - 3.8 mc.
h. Exciter tune - 12 o'clock

2. Adjust tuning dial until calibrate signal is zero beat.

3. Switch sideband switch to SB-2;
Adjust C-4 (on VFO) to zero beat.

SECTION VI

6-1 SERVICE INFORMATION

All correspondence should be addressed:

GALAXY ELECTRONICS
10 SOUTH 34th ST.
COUNCIL BLUFFS, IOWA

When corresponding, the following information MUST be included if you are to be able to offer the fastest possible service. Failure to provide it may well delay action while additional correspondence is exchanged.

SECTION VI

6-1 SERVICE INFORMATION, Continued

(a) MODEL OF EQUIPMENT IN QUESTION
(b) EQUIPMENT SERIAL
(c) DATE OF PURCHASE
(d) DEALER'S NAME AND ADDRESS
(e) OUR PART NUMBER OF ANY PART DESCRIBED

INFORMATION ONLY

If only information is desired, address the latter to the attention of the "TECHNICAL DEPARTMENT", stating the exact nature of the problem as briefly as possible, describing parts referred to by our part numbers and listing all measurements taken and effects observed. A brief, concise letter will be helpful.

PARTS ONLY REQUIRED
NOT IN WARRANTY

In the event you know exactly what part or parts are required, we prefer that you order them through your dealer; however, whenever possible, we will ship direct where your check, covering parts cost and postage, is included. Where not included, we will ship C. O. D. We do not offer a billing service.

PARTS ONLY REQUIRED
IN WARRANTY

Where possible, order parts through your dealer; however, to expedite, we can usually ship from our factory. HOWEVER, for parts to be shipped from our factory on an exchange-in-warranty basis, we MUST have your warranty card on file. It is therefore IMPORTANT that you mail in your warranty card as soon as possible. On requests for shipment of parts in warranty, where no card is on file, there may be a delay in order to verify warranty with your dealer. Where verification of warranty is in order, we will normally ship replacement parts with a special return label for the defective part or parts.

6-2 RETURNING EQUIPMENT FOR SERVICE

Do NOT ship equipment to us without prior authorization and special return labels. Doing so will usually cause delay.

When shipping equipment, be SURE it is insured with the carrier for compensation against possible shipping damage. we do NOT assume any responsibility for repairs necessary due to shipping damage. Units, received in

6-2 RETURNING EQUIPMENT FOR SERVICE, Continued

damaged condition, may be delayed while we file and process a claim to protect your interests. This is an undesirable but unavoidable situation. It is best avoided by adequate packing. Also, poor packing may result in the carrier rejecting the claim, in which case, you will bear the burden of repair costs. It is helpful and will expedite if you will mail an advance letter of the forthcoming shipment, listing complaints in detail and packing a copy in with the equipment. BE SURE TO LIST ALL REQUIRED INFORMATION OF DEALER, DATE OF PURCHASE, ETC.

PREPAY ALL SHIPMENTS TO US.

Where equipment is repaired and parts or labor are not in warranty, the equipment will be returned with costs collected by the carrier on delivery. We offer no billing service.

Resistor Parts List

Resistors

R No.	Value	Part No	Price
R1	2. 5K Pot.	13-7	$ 0. 60
R2	47K 1/2 watt	10-13	0. 12
R3	6. 8K 1/2 watt	10-15	0. 12
R4	27K 1/2 watt	10-14	0. 12
R5	1 K 1/2 watt	10-42	0. 12
R6	6. 8 1/2 watt	10-15	0. 12
R7	1 K 1/2 watt	10-42	0. 12
R8	220 1/2 watt	10-58	0. 12
R9	1 K 1/2 watt	10-42	0. 12
R10	100K 1/2 watt	10-32	0. 12
R11	22K 1/2 watt	10-6	0. 12
R12	10K 1/2 watt	10-56	0. 12
R13	1 K 1/2 watt	10-42	0. 12
R14	220 1/2 watt	10-58	0. 12
R15	100K 1/2 watt	10-32	0. 12
R16	4 K 10 watt	11-12D	0. 36
R17	100K 1/2 watt	10-32	0. 12
R18	18 K 2 watt	10-53B	0. 24
R19	100K 1/2 watt	10-32	0. 12
R20	68 1/2 watt	10-18	0. 12
R21	47K 1/2 watt	10-13	0. 12
R22	22K 1/2 watt	10-6	0. 12
R23	10 1/2 watt	10-52	0. 12
R24	100 ohm 1 watt	10-65A	0. 18
R25	100K 1/2 watt	10-32	0. 12
R26	100 1/2 watt	10-7	0. 12
R27	900-1 watt 1%	11-13A	0. 80
R28	2 ohm 5 watt	1-2C	0. 20
R29	100 ohm 1/2 watt	10-7	0. 12
R30	33K 2 watt 5%	10-69B	0. 30
R31	27K 1/2 watt	10-14	0. 12
R32	3. 5K 10 watt	11-1D	0. 36
R33	7. 5K Pot	13-12	0. 60
R34	4. 7K 1 watt	10-35A	0. 18
R35	2. 2K 1/2 watt	10-31	0. 12
R36	10K 1/ 2 watt	10-30	0. 12
R37	3. 3 meg 1/2 watt	10-57	0. 12
R38	100 1/2 watt	10-7	0. 12
R39	47K 1 watt	10-46A	0. 18

R No.	Value	Part No.	Price
R40	47 ohm 1/2 watt	10-29	$ 0.12
R41	1 meg 1/2 watt	10-15	0.12
R42	100K 1/2 watt	10-32	0.12
R43	150 ohm 1/2 watt	10-43	0.12
R44	22K 1 watt	10-47A	0.18
R45	47K 1 watt	10-46A	0.18
R46	100K 1/2 watt	10-32	0.12
R47	330 1/2 watt	10-28	0.12
R48	47K 1/2 watt	10-13	0.12
R49	47 ohm 1/2 watt	10-29	0.12
R50	47K 1/2 watt	10-13	0.12
R51	1 K 1/2 watt	10-42	0.12
R52	1 K 1/2 watt	10-42	0.12
R53	100 K 1/2 watt	10-32	0.12
R54	100 ohm 1/2 watt	10-7	0.12
R55	47K 1/2 watt	10-13	0.12
R56	47K 1/2 watt	10-13	0.12
R57	220K 1/2 watt	10-4	0.12
R58	22K 1/2 watt	10-6	0.12
R59	1 K 1/2 watt	10-42	0.12
R60	2.2 meg 1/2 watt	10-2	0.12
R61	33 K 1/2 watt	10-65	0.12
R62	330K 1/2 watt	10-69	0.12
R63	10 K Pot	13-9	1.25
R64	100K 1/2 watt	10-32	0.12
R65	56 K 1/2 watt	10-61	0.12
R66	50K Pot	13-8	1.02
R67	800 ohm 10 watt	11-3D	0.36
R68	3.3 meg 1/2 watt	10-57	0.12
R69	10K 1/2 watt	10-56	0.12
R70	1 meg 1/2 watt	10-10	0.12
R71	1 meg 1/2 watt	10-10	0.12
R72	220K 1/2 watt	10-4	0.12
R73	1 K 1/2 watt	10-42	0.12
R74	470 ohm 1/2 watt	10-53	0.12
R75	120K 1/2 watt	10-76	0.12
R76	10 K Pot	13-9	1.25
R77	1.5 K 1 watt	10-21A	0.18
R78	330 ohm 1/2 watt	10-28	0.12
R79	100K 1/2 watt	10-32	0.12
R80	100K 1/2 watt	10-32	0.12
R81	1.5K 1/2 watt	10-3	0.12
R82	1.5 K 1/2 watt	10-3	0.12
R83	1 K 1/2 watt	10-7	0.12
R84	6.8K 1/2 watt	10-15	0.12

R No.	Value	Part No.	Price
R85	6.8K 1/2 watt	10-15	$0.12
R86	1 K 1/2 watt	10-7	0.12
R87	33K 1/2 watt	10-65	0.12
R88	3.3K 1/2 watt	10-59	0.12
R89	4.7 meg 1/2 watt	10-70	0.12
R90	47K 1/2 watt	10-13	0.12
R91	10K Pot.	13-10	1.65
R92	10K Pot.	13-10	1.65
R93	10K 1/2 watt	10-56	0.12
R94	330K 1/2 watt	10-69	0.12
R95	10K 1/2 watt	10-56	0.12
R96	270 ohm 1/2 watt	10-68	0.12
R97	100 ohm 1/2 watt	10-7	0.12
R98	2 ohm 5 watt	11-2C	0.20
R99	10 ohm 1/2 watt	10-52	0.12
R100	10 Thermistor	210-1	1.35
R101	820 ohm 1/2 watt	10-75	0.12
R102	9K 5 watt	11-8C	0.57
R103	10 ohm 1/2 watt	10-52	0.12
R104	10K 1/2 watt	10-56	0.12
R105	330 ohm 1/2 watt	10-28	0.12
R106	100K 1/2 watt	10-32	0.12
R107	10K 1/2 watt	10-56	0.12
R108	10 ohm 1/2 watt	10-52	0.12
R109	220 ohm 1 watt	10-67A	0.18
R110	10K 1/2 watt	10-56	0.12
R111	100K 1/2 WATT	10-32	0.12
R112	680 OHM 1/2 WATT	10-72	0.12
R113	220 OHM 1/2 WATT	10-58	0.12

GALAXY III

Capacitor Parts List

C No.	Value	Part No.	Price
1	1000 PF	22-19	$0.33
2	1100 PF variable	25-10	3.15
3	300 PF variable	25-15	8.95
4	25 PF NPO	26-6	0.81
5	15 PF variable	25-20	2.67
6	3 PF variable	25-19	1.50
7	91 PF TCZ	20-30	0.30
8	20 PF TCN	20-41	0.35
9	.005	20-3	0.15
10	50 PF variable	25-17	1.67
11	65 PF	25-18A	2.06
12	65 PF	25-18B	1.95
13	22 PF variable	25-11A	1.70
14	1000 PF	22-19	0.33
15	.001	20-24	0.15
16	150 PF	22-26	0.17
17	1500 PF	22-25	0.40
18	1500 PF	22-25	0.40
19	100 PF	22-21	0.16
20	62 PF	22-9	0.15
21	.001	20-24	0.15
22	.001	20-24	0.15
23	.001	20-24	0.15
24	.001	20-24	0.15
25	.001	20-24	0.15
26	33 PF	22-7	0.12
27	120 PF	22-12	0.15
28	.005	20-3	0.15
29	.01	20-5	0.24
30	.005	20-3	0.15
31	.01	20-5	0.24
32	.001	20-24	0.15
33	50 PF	22-11	0.12
34	18 PF	22-24	0.15
35	.001	20-24	0.15
36	.005	20-3	0.15
37	680 PF	22-13	0.24
38	3.3 PF	20-35	0.30
39	.005	20-3	0.15
40	.01	20-5	0.24
41	.01	20-5	0.24

C No.	Value	Part No.	Price	
42	.01	20-5	$0.24	
43	.01	20-5	0.24	
44	.001 @ 5 KV	22-18	2.85	
45	.01	20-5	0.24	
46	.1 @ 200v	23-7	0.21	
47	.005	20-3	0.15	
48	18 PF	22-24	0.12	
49	.05 @ 200v	23-6	0.15	
50	.01	20-5	0.24	
51	.01	20-5	0.24	
52	10 PF @ 6KV	22-17	0.33	
53	.01	20-5	0.24	
54	820 PF	22-14	0.24	
55	.01	20-5	0.24	
56	.01	20-5	0.24	
57	.005	20-3	0.15	(All capacitors
58	.005	20-3	0.15	are 600W VDC
59	.01	20-5	0.24	unless marked
60	10 PF	22-17	0.21	otherwise)
61	7 PF	20-21	0.15	
62	39 PF	22-8	0.12	
63	120 PF	22-12	0.15	
64	100 PF	20-23	0.15	
65	.01	20-5	0.24	
66	4 @ 350 VDC	24-18	0.63	
67	.001	20-24	0.15	
68	.01	20-5	0.24	
69	2.2 PF	20-33	0.11	
70	.005	20-3	0.15	
71	500 PF	20-37	0.15	
72	.01	20-5	0.24	
73	7 PF	20-21	0.12	
74	.01	20-5	0.24	
75	.005	20-3	0.15	
76	500 PF	20-37	0.15	
77	.01	20-5	0.24	
78	.001	20-24	0.15	
79	.001	20-24	0.15	
80	.001	20-24	0.15	
81	7 PF	20-21	0.12	
82	50 PF	22-11	0.12	
83	5-25 PF NPO	26-6	0.81	
84	5-25 PF NPO	26-6	0.81	
85	100 PF	20-23	0.15	
86	.01	20-5	0.24	

C No.	Value	Part No.	Price
87	.02 @ 400v	23-11	$0.18
88	.001	20-24	0.15
89	.01	20-5	0.15
90	.1 @ 50 VDC	20-38	0.45
91A	40 @ 450 VDC	24-21	2.07
91B	40 @ 450 VDC	24-21	2.07
92	.01	20-5	0.15
94	.01	20-5	0.15
95	500 PF	20-37	0.15
96	50 PF	22-11	0.12
97	5-25 PF NPO	26-6	0.81
98	500 PF	20-37	0.15
99	62 PF	22-9	0.15
100	.005	20-3	0.15
101	.01	20-5	0.24
102	.01	20-5	0.24
103	2 mfd @ 25 VDC	29-4	0.68
104	.1 @200 VDC	23-9	2.43
105	.001	20-24	0.15
106	.01	20-5	0.24
107	2 @ 25	29-4	0.68
108	.01	20-5	0.24
109	100 @ 15 VDC	29-9	0.81
110	100 @ 15 VDC	29-9	0.81
111	100 @ 15 VDC	29-9	0.81
112	.001	20-24	0.15
113	.01	20-5	0.24
114	2000 @ 15 VDC	24-20	2.04
115	50 PF	22-11	0.12
116	5 @ 15 VDC	29-8	0.81
117	.01	20-5	0.24
118	.005	20-3	0.15
119	.01	20-5	0.24
120	.01	20-5	0.24
121	.01	20-5	0.24
122	.01	20-5	0.24
123	not assigned		
124	.22 @ 200 VDC	23-12	0.35
125	.005	20-3	0.15
126	25 PF	20-8	0.15
127	.005.	20-3	0.15
128	470 PF	20-39	0.15
129	25 PF	20-8	0.15
130	20 @ 25 VDC	29-4	0.68
131	.1 @ 50V	20-38	0.45
132	.01	20-29	0.24
133	not assigned		
134	.001	20-24	0.15

Parasitic choke, RF choke, Transformer & Coil Parts List

Coils

L. No.	Description	Part No.	Price
L1	9 MC Trap	42-26	$ 0.60
L2	80 Meter Coil	42-29	0.75
L3	40 Meter Coil	42-30	0.96
L4	20 Meter Coil	42-20	0.96
L5	80 Meter Coil	42-23	0.75
L6	40 Meter Coil	42-22	0.96
L7	20 Meter Coil	42-22	0.96
L8	9 MC terminating Coil	42-28	0.90
L9	9 MC I. F.	42-27	0.72
L10	PA Tank Coil	42-25	4.08
L11	21.5 Mc. Oscillator	42-24	0.51
L12	5 Mc. VFO Coil	42-12	5.25

Diodes

D No.			
D1	IN54A	112-IN54A	$0.95
D2	IN462	112-IN462	0.72
D3	IN462	112-IN462	0.72
D4	IN462	112-IN462	0.72

Meter

M No.			
M	0-1 Ma	115-6	$12.10

Pilot Lights

No.			
NE1	LSB Amber	113-B9NE2EAL	0.57
NE2	USB Red	113-B9NE2ERU	0.57
PL1	6v Min #12	113-#12	0.25

Transistors

Q1 - Q3	2N697	111-2	2.05
Q2	2N1274	111-1	1.40
Q4 - Q5	2N554	111-3	2.70

Transformers

T No.	Description	Part No.	Price
T1	Bal. Modulator Trans.	73-7	$0.75
T2	5 Mc. VFO Transformer	76-1	0.96
T3	16 Mc. Transformer	76-2	1.05
T4	9 Mc. I.F. Transformers	73-6	0.90
T5	AVC step up transformer	74-7	4.35
T6	Audio Driver Trans.	74-5	2.10
T7	Audio Output Trans.	74-6	2.50

Crystals

X No.			
X1	21.5 crystal	117-6	4.10
X2	8,998.750 Kc. crystal	117-4A	9.95
X3	9,001.250 Kc. crystal	117-4B	9.95
X4	9 Mc. Xtal Filter	117-4	59.00

Relay

K No.			
K1	6PDT 12 VDC	116-7	8.65

RF Chokes

RFC No.			
RFC-1	100 uh	30-12	0.60
RFC-2	2.5 uh	30-9	0.40
RFC-3	800 uh	30-3	0.45
RFC-4	800 uh	30-3	0.45
RFC-5	800 uh	30-3	0.45
RFC-6	40 uh	30-10	0.35
RFC-7	800 uh	30-3	0.45
RFC-8	50 uh	30-4	0.35

Parasitic Choke

PC No.			
PC-1	Parasitic Suppressor	33-3 special	0.40
PC-2	Parasitic Suppressor	33-3 special	0.40
PC-3	Parasitic Suppressor	33-4 special	0.26

Jacks - Sockets

J No.	Description	Part No.	Price
J1	External VFO	61-7	$0.18
J2	Xtal Cal.	61-7	0.18
J3	Key	102-1	0.45
J4	External Mic	100-5	0.15
J5	External Control	100-5	0.15
J6	PTT	100-5	0.15
J7	External VFO	100-4	0.10
J8	Mic	103-3	0.65
J9	VOX	61-17	3.50
J10	Speaker	100-4	0.10
J11	Antenna	101-1	0.60
J12	12.6 VAC	100-4	0.10
J13	Relay	61-16	1.90

Plugs

P No.			
P1	Power	104-5	0.90
P2	VOX	200-4	0.50
P3	External VFO	109-1	0.20

Switch

S1-A-B-C-D-E-F-G-H-I-J-K-L-	Bandswitch	53-15	4.00
S2	On-Off (part of R91 & R92)		
S3-A, B, C, D	Function	53-14	1.53
S4-A, B	Sideband	53-13	1.10

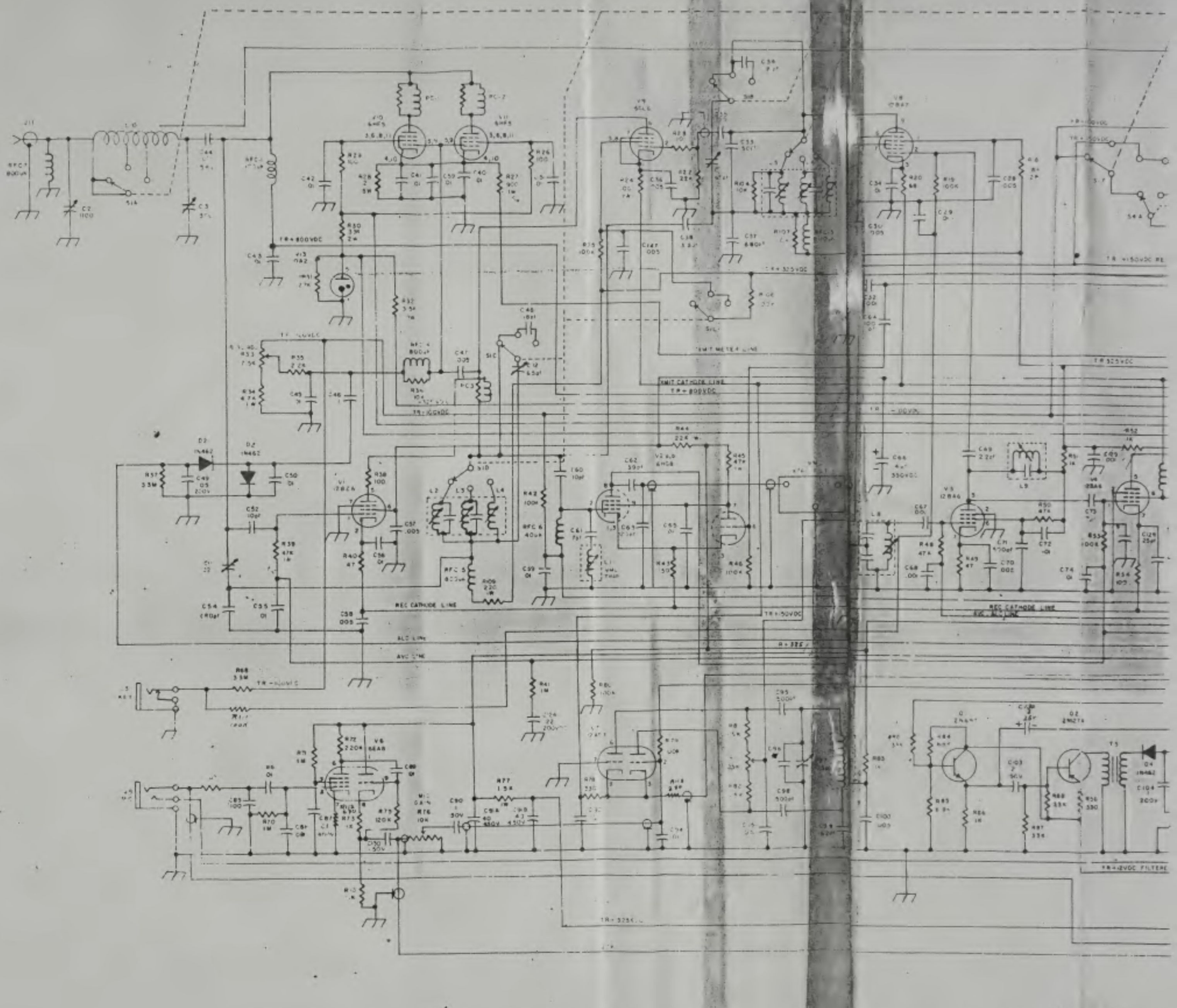
Tubes

Tube No.			
V1	12BZ6		1.13
V2	6HG8		2.18
V3	12BA6		0.83
V4	12BA6		0.83
V5	6GX6		1.25
V6	6EA8		1.60
V7	12AT7		1.53
V8	12BA7		2.98
V9	6CL6		1.88
V10	6HF5		3.90
V11	6HF5		3.90
V12	OA2		1.32
V13	OA2		1.32
V14	6EA8		1.60
V15	6EA8		1.60

Miscellaneous Parts List

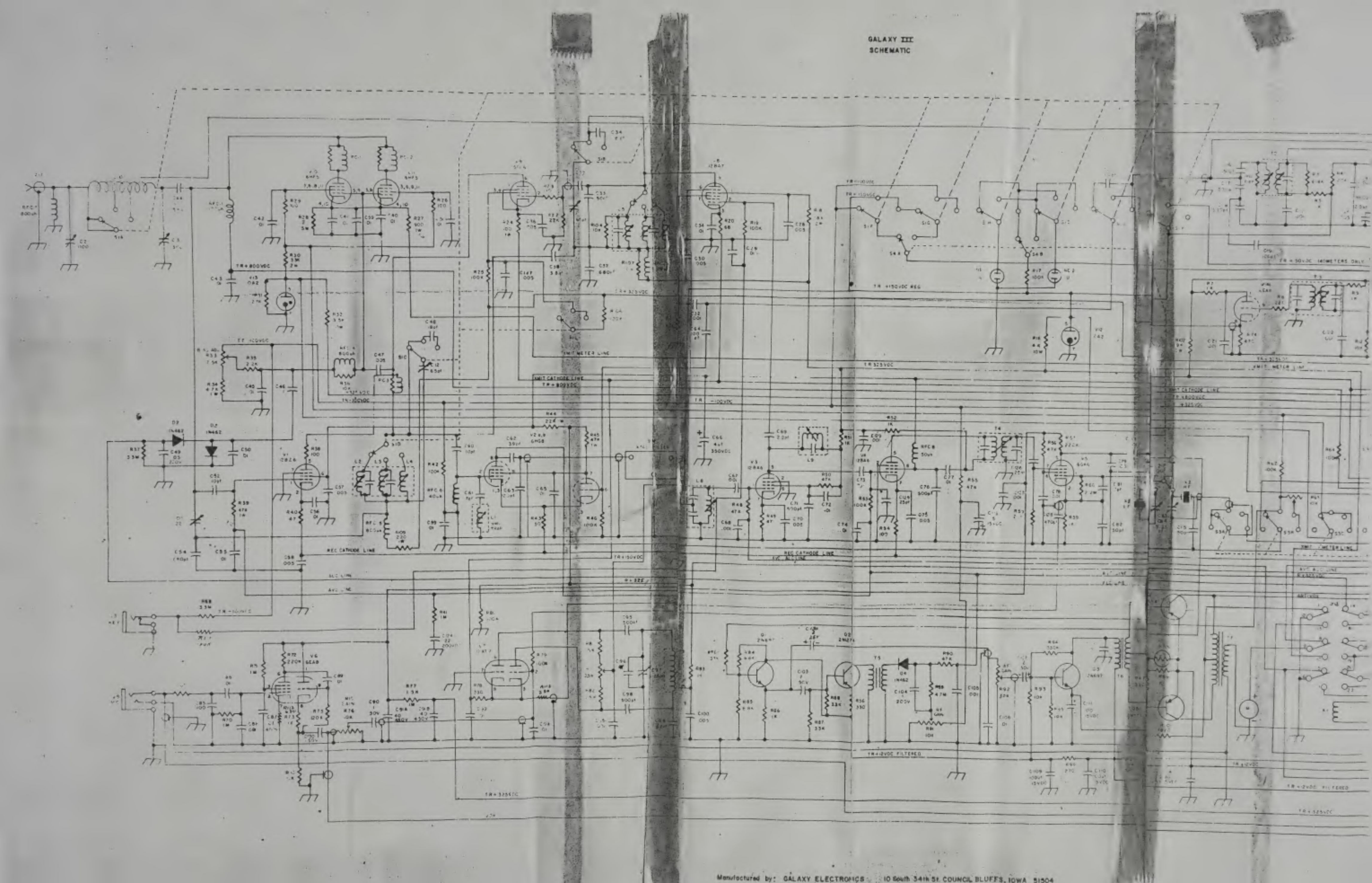
Description	Part No.	Price
Hairline	172-19	$ 2.35
VFO Dial (2 color)	172-17	3.30
Jackson Ball Drive 13/32 shaft	172-11A	1.20
Jackson Ball Drive 9/16 shaft	172-11B	1.20
26 Tooth gear	151-2	1.35
52 Tooth anti-backlash gear	151-3	1.80
Plastic feet front	133-15	0.05
Plastic feet rear	133-7	0.05
Cabinet	140-13	10.80
Front Panel	141-12	4.37
Rear Panel	142-15B	2.20
Wire Harness	185-3	8.95
Knobs		
VFO Dial Escucheon	130-14-1	0.35
Large VFO tuning knob	130-14-2	0.35
Small VFO tuning knob	130-14-3	0.30
RF Gain Knob	130-14-4	0.30
On-Off, AF Gain knob	130-14-5	0.25
Mic gain knob	130-14-6	0.25
Function switch knob	130-14-6	0.25
Bandswitch knob	130-14-7	0.35
Exciter knob	130-14-6	0.25
Sideband selector knob	130-14-6	0.25
Plate Control knob	130-14-6	0.25
Load control knob	130-14-6	0.25
Cal. adjust knob	151-9	0.25
Galaxy III Instruction Manual	183-29	2.00

GALAXY III
SCHEMATIC



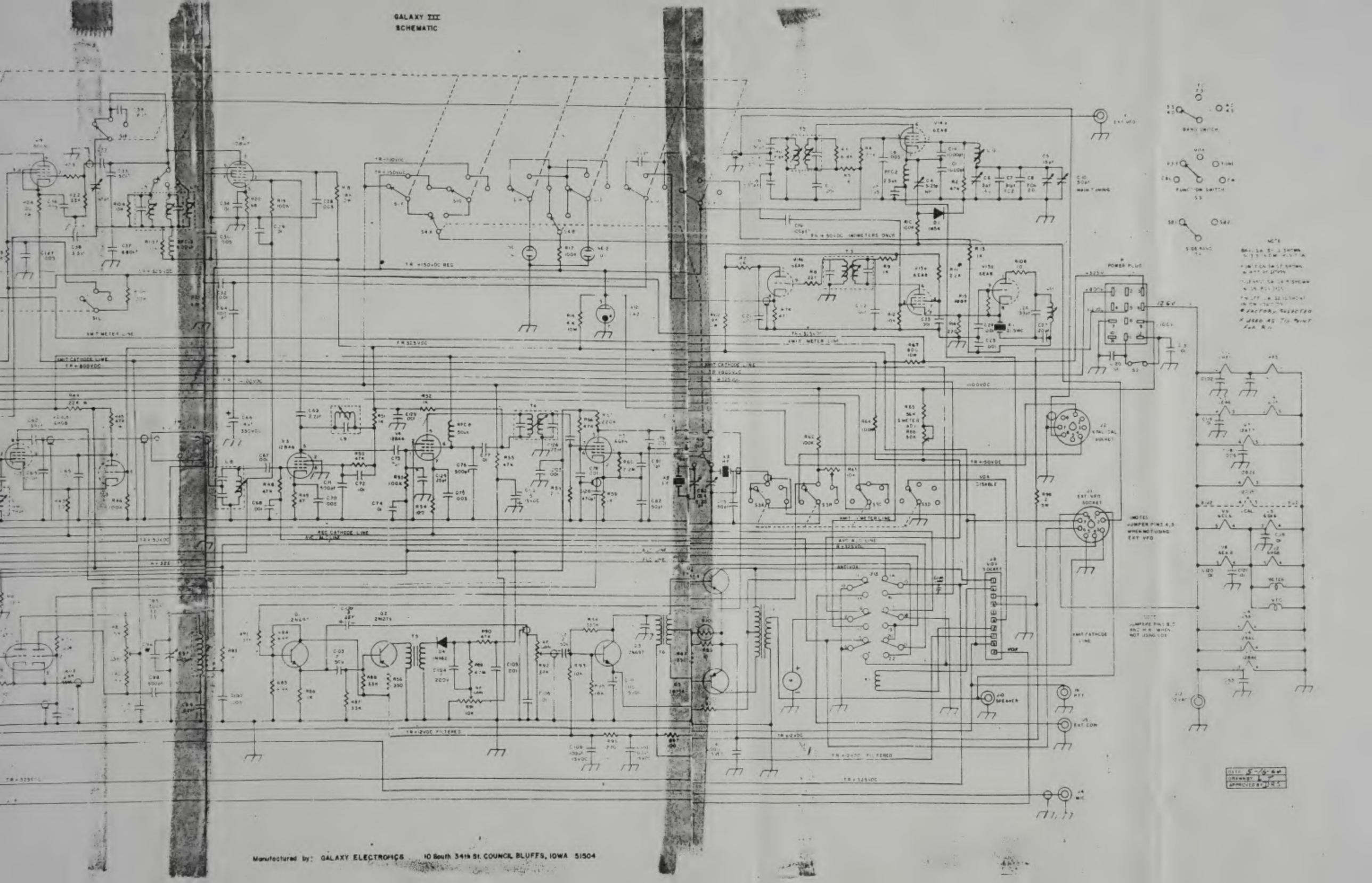
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GALAXY III
SCHEMATIC



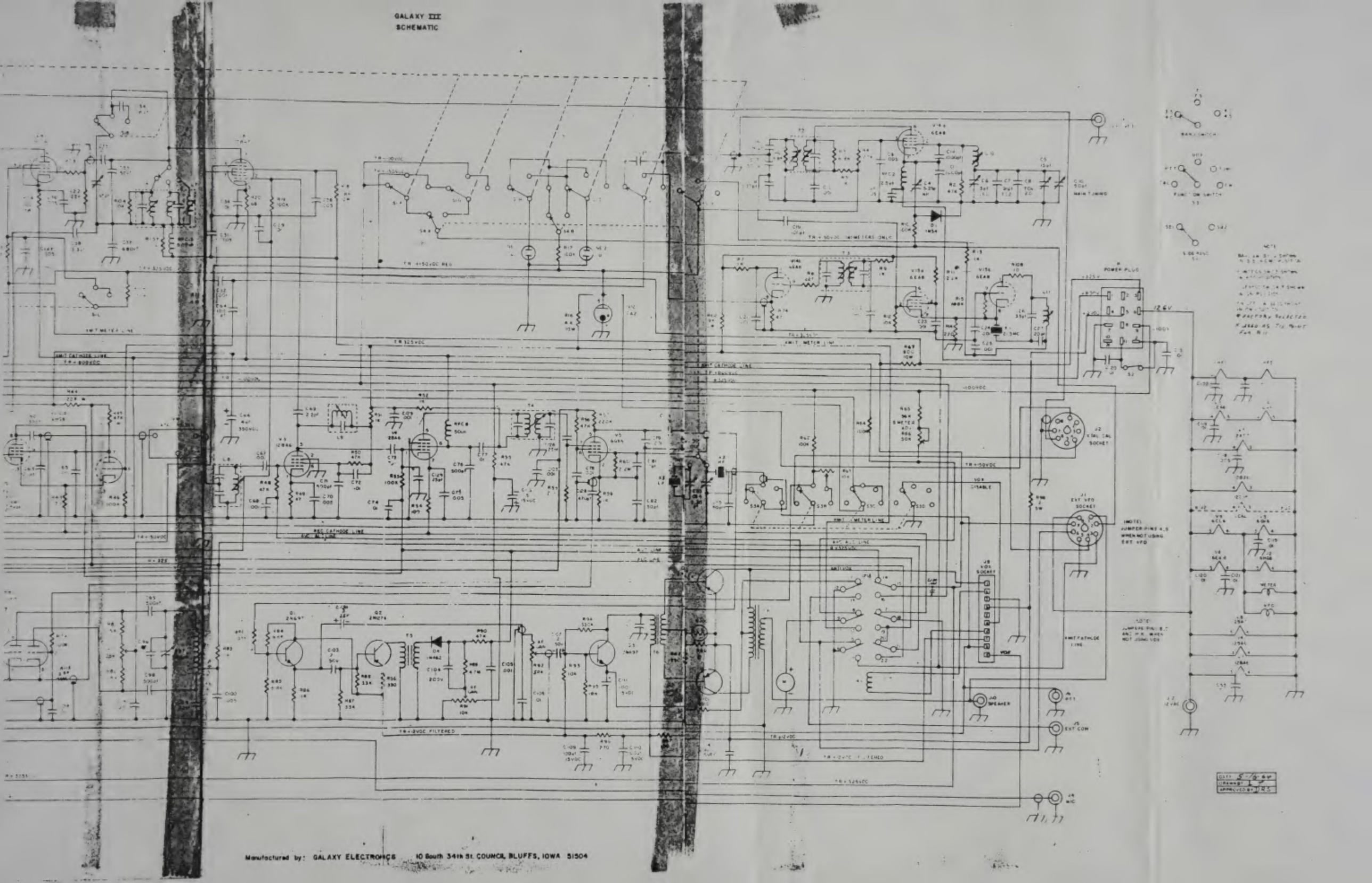
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GALAXY III
SCHEMATIC

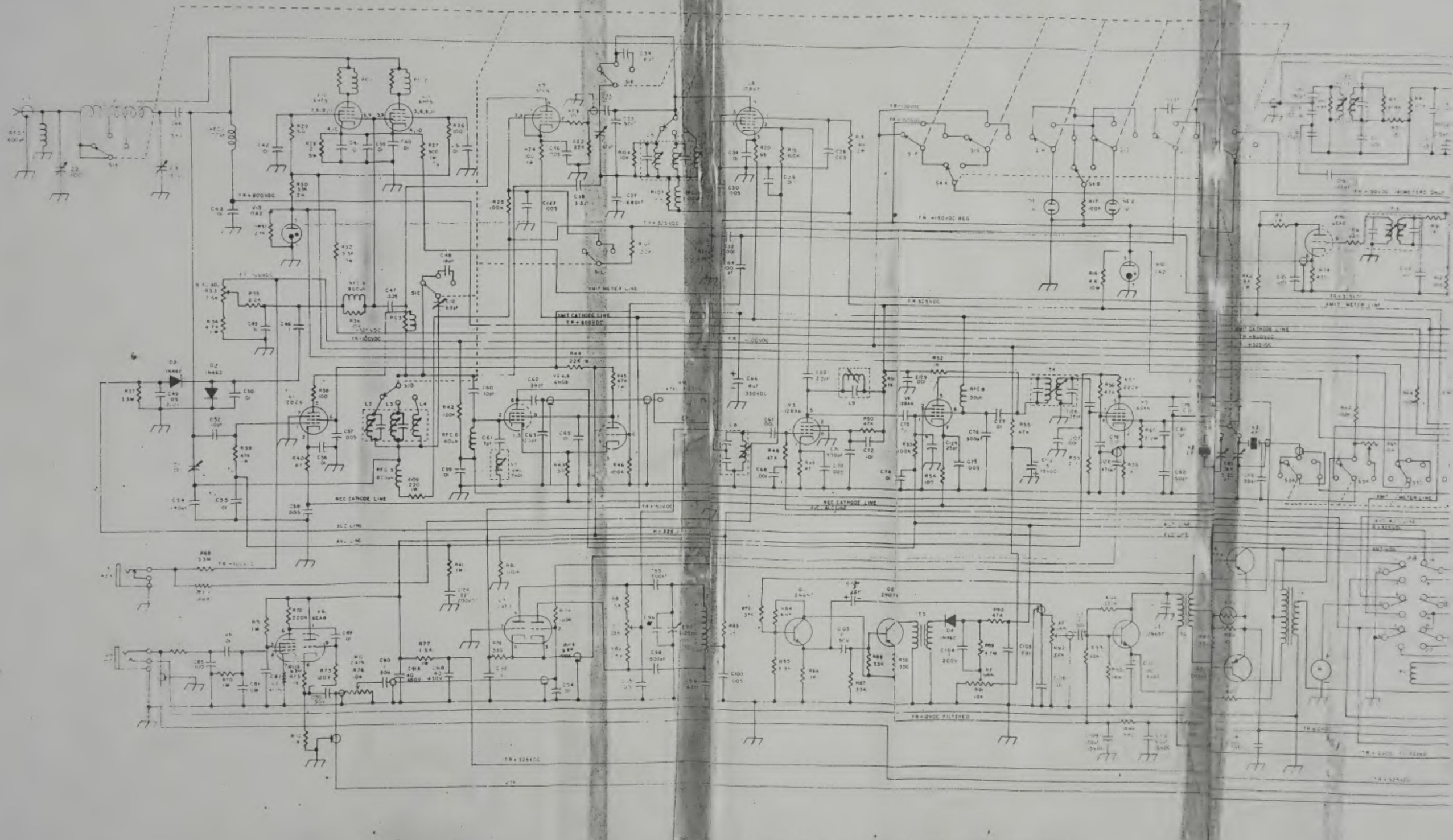


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GALAXY III
SCHEMATIC



GALAXY III
SCHEMATIC

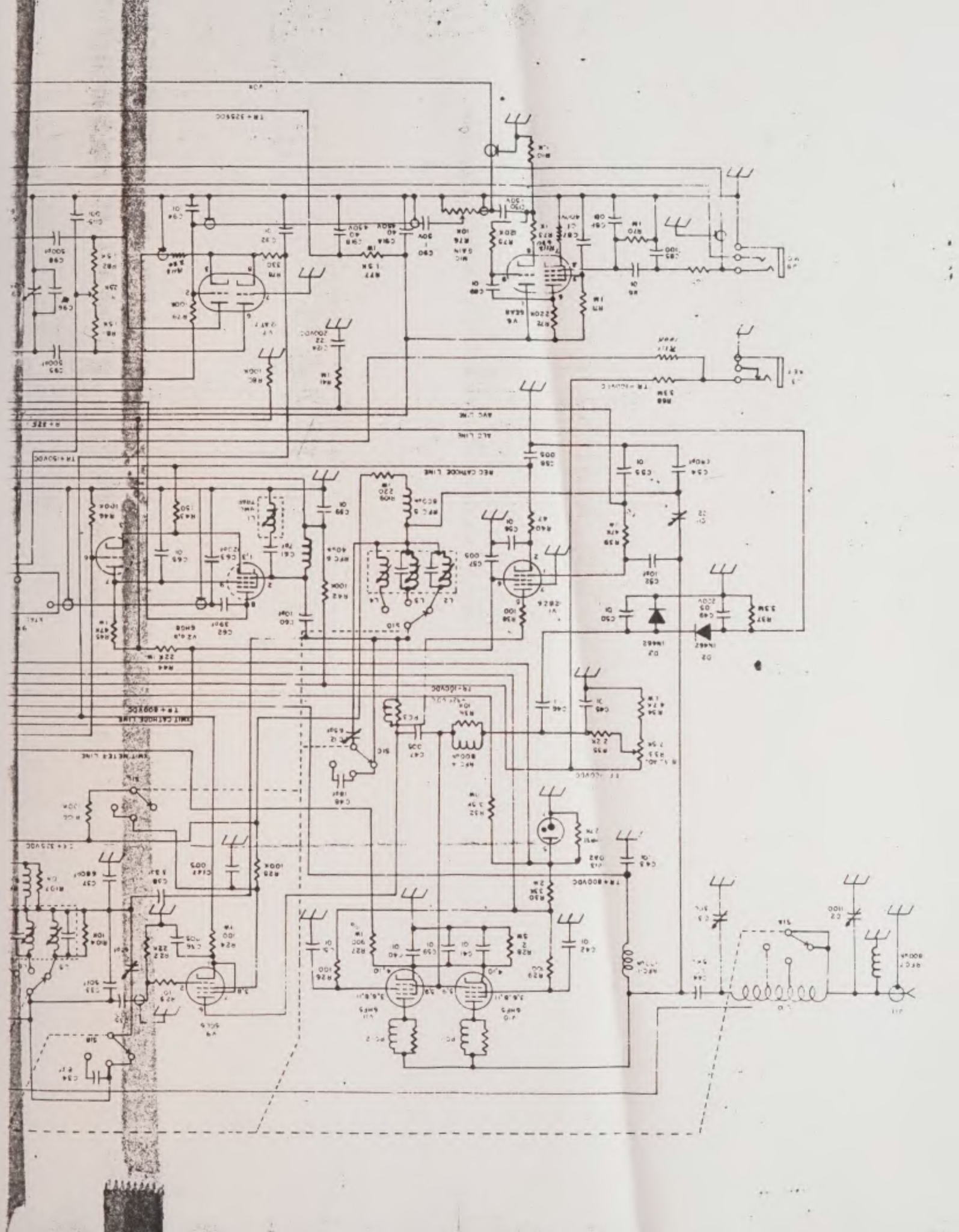


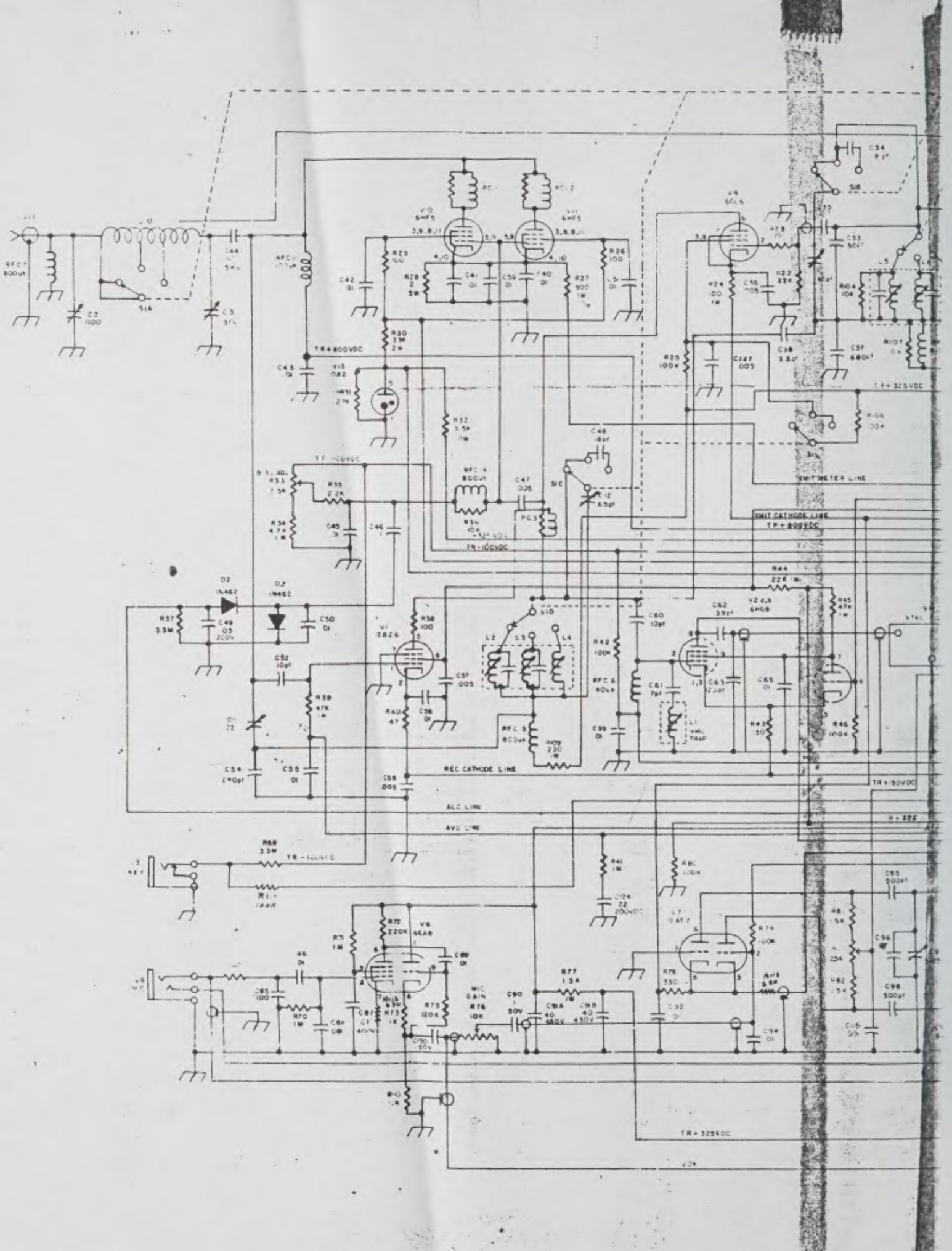
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GALAXY III
SCHEMATIC



Manufactured by: GALAXY ELECTRONICS 10 North 34th St COUNCIL BLUFFS, IOWA 51504




TR + 800VDC
TR + 325VDC
TR + 150VDC
TR + 325VDC
REC CATHODE LINE
XMIT CATHODE LINE
TR + 800VDC
XMIT METER LINE
ALC LINE
AVC LINE
MIC GAIN
R76 10K
V1 12BZ6
V2,3 6HG8
V4 12AT7
V5 6EA8
V6 6EA8
V7 12AT7
V8 6AQ5
V9 6CL6
V10 6HF5
V11 6HF5
D1 1N462
D2 1N462
S1A
S1B
S1C
S1D
S1E
L1
L2
L3
L4
L5
L6
XTAL