



ALPHA/10 & ALPHA/100 COM TRANSCEIVER MAINTENANCE MANUAL

GENAVE/ NRC

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Specifications:

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Weight:	A/10-1, -3, -10: 3.7 lbs. with DC power supply		
Front Panel Size:	6½" x 2½"		
Depth behind panel:	9", plus 1" for connectors		
Input Power:	13.7VDC	Standby: 0.15A	Rec., max. vol.: 0.5A
		Transmit: 1.5A	
	117-volt AC supply available		
Number of transistors:	A/10-1, -3, -10, -1V: 32 A/10-1U, -1S: 34		
Receiver circuit:	Double-conversion, superheterodyne, crystal-controlled.		
Frequency range:	118.0 to 135.95 mHz		
Number of channels:	10 maximum, all crystal controlled		
Channel spacing:	50 kHz		
Sensitivity:	1 to 2 microvolts for 6db $\frac{S + N}{N}$, nominal, @ 30% modulation, 1000 Hz.		
Primary image rejection:	-60db nominal		
Selectivity:	-6db 27 kHz -60db 90 kHz		
Squelch:	Adjustable		
AGC:	3 to 6 db from 10 microvolts to 300,000 microvolts		
Audio output:	4 watts nominal into 2-3 ohm speaker		
Sidetone:	12 milliwatts nominal into 600 ohm headset		
Transmitter circuit:	6 stage, solid state, crystal controlled		
Frequency range:	118.0 mHz to 135.95 mHz		
Number of channels:	10 maximum, all crystal controlled		
Channel spacing:	50 kHz		
Power output:	8 watts PEP; 2-3 watts carrier, nominal		
Modulation:	High level, automatic limiting.		

Unpacking

CAREFULLY REMOVE the unit and its mounting accessories from the shipping container by removing the staples from the top of the carton and lifting the contents straight out. The carton should be saved until the installation is complete in the event that damage is discovered or return of the unit is necessary for some reason. Any damage due to shipping should be reported and a claim filed as soon as possible with the shipping company. (If it is necessary to re-ship, use our container which is specifically designed for that purpose.)

Pre-Installation Check

VISUALLY INSPECT the unit for any obvious external damage, such as dents, loose wires, etc. Any damage not related to shipping should be reported to General Aviation Electronics, Inc., 4141 Kingman Drive, Indianapolis, Indiana (46226), Area Code 317-546-1111, as soon as possible.

Damage due to shipping should be reported to and a claim should be filed promptly with the transportation company.

All units are shipped in perfect operating condition. However, a pre-installation electrical test may be performed to assure that the unit has suffered no internal damage during shipment. For a detailed test procedure, refer to the Maintenance Section of the Service Manual. DO NOT ATTEMPT to bench test the unit without proper equipment as specified in the Service Manual.

Installation Planning

THE LOCATION of the unit in the aircraft should be carefully selected with due consideration to the following:

1. The unit generates only a very small amount of heat and, as such, does not require any type of cooling. However, the unit must NOT be mounted directly above a vacuum tube device or any other equipments that generate a large amount of heat unless such equipments have cooling provisions installed to keep the heat generated therein from coming in contact with other equipments mounted in close proximity to them.

MOUNTING THE UNIT DIRECTLY OVER UNCOOLED VACUUM TUBE EQUIPMENT OR IN THE HOT AIR BLAST OF ANY DEVICE, INCLUDING CABIN HEATERS, WILL AUTOMATICALLY VOID THE WARRANTY.

2. The placement of the unit should be such that all controls are easily accessible.

Aircraft Installation

1. The aircraft panel cutout for the unit is 6 1/4" wide x 2 13/32" high. Make this cutout in the selected location.
2. Insert the supplied mounting rack into the cutout. Mark the rack mounting holes on the panel support brackets on both sides of the cutout. If the location chosen does not provide the brackets, two angle brackets must be made and installed. Drill out the marked mounting holes with a #27 drill.
3. Install the rack in the aircraft panel, using the holes drilled in step 2, the #6-32 Binder head screws, washers, and nuts supplied. All screws must have their heads inside the rack.
4. Fabricate the power and signal cable using the connector socket supplied. A wiring diagram is shown in this manual.
5. Connect the cable just fabricated to the appropriate points in the aircraft's electronic system. Mechanically secure the cable at appropriate support points.
6. Insert the unit into the rack. Tighten the mounting bolt to secure the unit in the panel. Do not use excessive torque on the bolt. Tighten only until the unit is snugly secured against the front panel.
7. Update the appropriate logs and papers of the aircraft.

Vehicle Installation

1. Mount the ALPHA/10-V under the dash of the vehicle using the mounting bracket and 12-32 hardware provided. See Figure #6.

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2. Connect the power leads as illustrated in Figure #2. The ALPHA/10-V is shipped so that it can be installed only in negative ground vehicles. For positive ground vehicles, a positive ground converter must be used.

3. Mount the antenna as prescribed in the antenna mounting instructions supplied with the antenna.
4. Fabricate the antenna connector to the ALPHA/10-V using the minimum length of RG-58. See Figure #5.

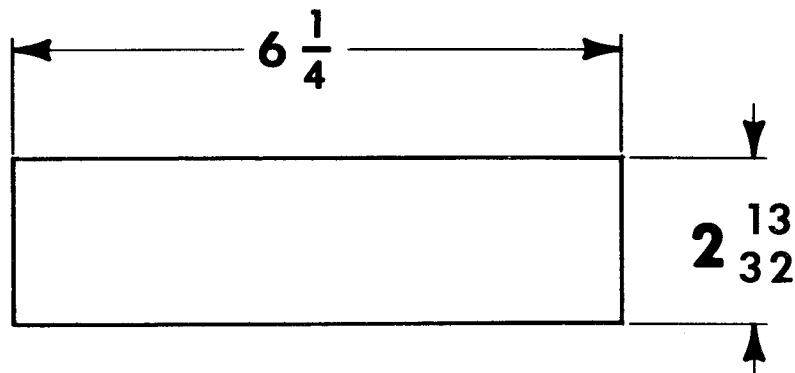
Unicom and Other Ground Station Installations

1. There is no installation required for the ALPHA/10-U. Plug the power cord into a 120 VAC outlet for operation.
2. Mount the antenna as prescribed in the instructions provided with the antenna.
3. If more than 10 feet of the RG-8 coaxial cable remain after the antenna is connected to the ALPHA/10-U, then the RG-8 should be tailored to length.
4. A remote public address speaker may be connected to the ALPHA/10-U. See Figure #3.

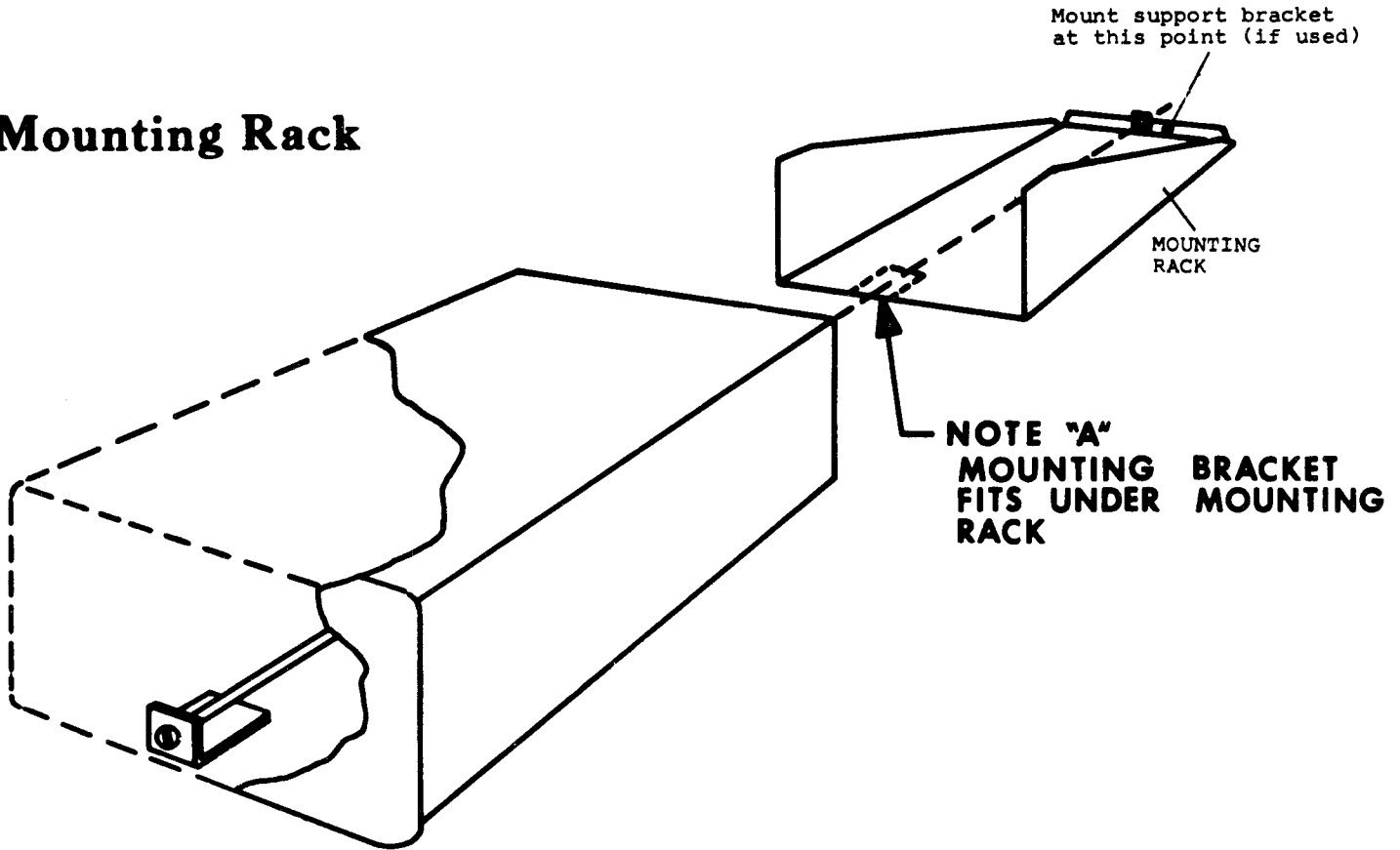
For All Installations

1. Fill out and return the bottom section of the warranty card.
2. Give the remainder of the warranty card to your customer. The proper sections of the warranty card MUST be completed and returned to Genave by both the dealer and the customer for the warranty to be in effect.

Panel Cutout



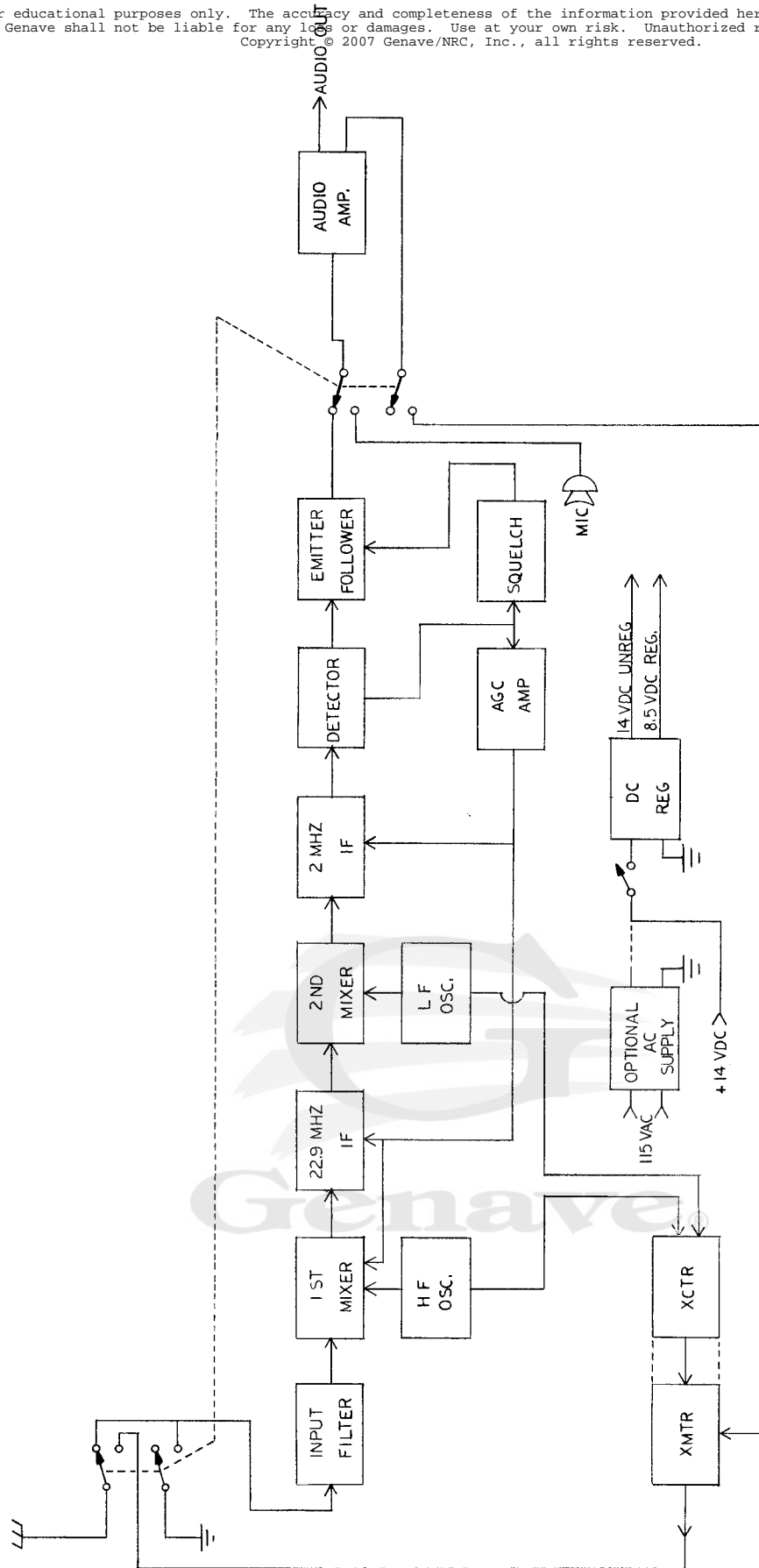
Mounting Rack



Post Installation Check

UPON COMPLETION of the installation, a flight test is desirable to insure that the unit is operating properly.





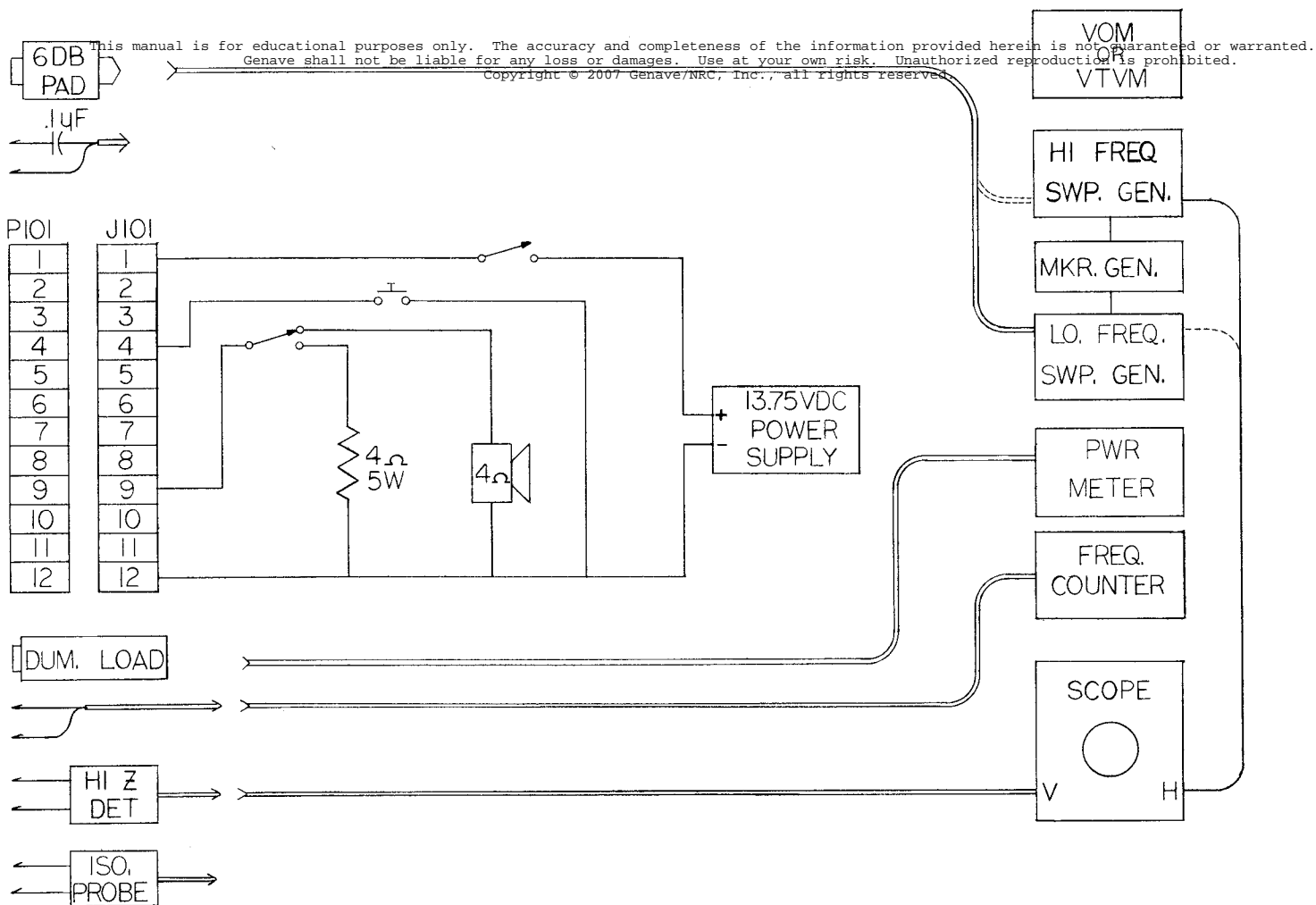


Figure 4-4-2
ALIGNMENT AND TEST SETUP

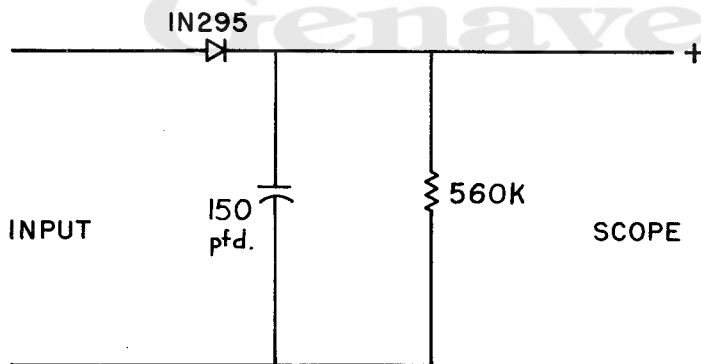


Figure 4-4-3
HIGH IMPEDANCE DETECTOR

SECTION II

INSTALLATION MANUAL

**The following Section
is reproduced
and included with every**

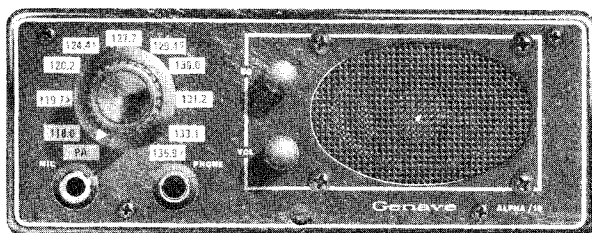
ALPHA/10 & ALPHA/100

**It is made a part of
this manual
for your permanent
reference**

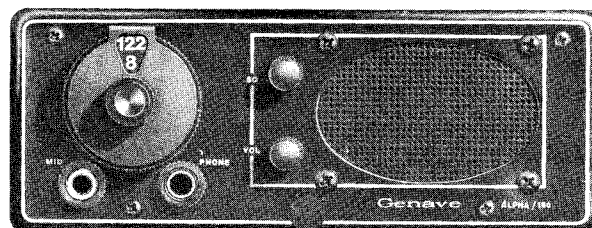
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SECTION III

OPERATING MANUAL



ALPHA/10



ALPHA/100

3-1. OPERATING CONTROLS AND INDICATORS

The ALPHA/10 has three operating controls as listed below:

1. On/Off/Volume Control
2. Squelch Control
3. Frequency Selector

The ALPHA/100 has five operating controls and indicators as listed below:

1. On/Off/Volume Control
2. Squelch Control
3. MHz Frequency Selector
4. KHz Frequency Selector
5. COM Frequency Readout

The ALPHA/10 and the ALPHA/100 both operate in a similar manner. To turn the units on rotate the volume control clockwise past the click.

Further clockwise rotation of the knob will increase the receiver output volume.

Rotate the squelch control to the maximum clockwise position and adjust the frequency selector(s) for the desired frequency of operation. Rotate the squelch control back counterclockwise until the Com receiver quiets.

To operate the transmitter set the desired frequency on the frequency selectors and plug the carbon microphone into the front panel microphone jack. To transmit depress the push-to-talk button and speak into the microphone. Side-tone is available for transmission monitoring by plugging earphones into the phone jack.

The ALPHA/10, when connected to an auxiliary speaker, can also be utilized for public address. To operate this feature: place the frequency selector in the PA position, depress the PTT button, and speak into the microphone.

SECTION IV

MAINTENANCE MANUAL

4-1. INTRODUCTION

This section provides the basic information required to electronically test, align, and repair the ALPHA/10, and ALPHA/100 series Com transceivers. It is assumed that the person working on the unit has a reasonable familiarity with the principles and terminology of communications electronics as applied to the aviation field.

4-2. THEORY OF OPERATION

I. General

The ALPHA/10, ALPHA/100, and ALPHA/100-360 are all three comprised of the same 7 major circuit blocks, however, some difference exists within the actual circuitry itself. The 7 major circuit blocks are:

- A. Receiver
- B. High Frequency Oscillator
- C. Low Frequency Oscillator
- D. Exciter
- E. Transmitter
- F. Audio Amplifier/Modulator
- G. Regulated Power Supply

The local oscillators, the exciter, and the transmitter are each contained within separate, replaceable shielded modules. The receiver, power supply, and audio amplifier/modulator circuits are located on the main circuit board.

II. Detailed Theory

A. *Receiver*—The receiver circuitry of the ALPHA/10, ALPHA/100, and ALPHA/100-360 are identical. The receiver in the ALPHA/10 and the ALPHA/100-360 may be crystal tuned to any frequency from 118.00 MHz to 135.95 MHz in 50 KHz increments. In the case of the ALPHA/10, however, only 10 of the frequencies may be used. The receiver in the ALPHA/100 may be crystal tuned on any frequency from 118.0 MHz to 127.9 MHz in 100 KHz increments. All three receivers are of the double conversion superheterodyne type

with a second IF center frequency of 2.0 MHz. The first IF has a center frequency of 22.9 MHz. These receivers do not employ mechanically tracked, tuned filters or an RF amplifier.

Signals from the antenna are applied to the transmit/receive relay K101 via J102 the antenna jack. When the T/R relay is in the receive position the signal from the antenna jack will be routed to the input filter. The input filter is a 5-pole Chebyshev filter consisting of L100 through L105 and their associated tuning and coupling capacitors. This bandpass filter allows signals in the range between 118.00 and 135.95 MHz to pass to the first mixer.

The high frequency oscillator output is applied to the base of Q101, the first mixer. This signal is 22.9 MHz above the frequency of the desired incoming signal. The gain of Q101, the first mixer, is controlled by means of the AGC voltage applied to the base through R101. The 22.9 MHz difference frequency produced in the first mixer is fed to the first IF consisting of Q102 and associated circuitry. The first IF has a center frequency of 22.9 MHz and a bandwidth of 1 MHz. This stage is also controlled by the AGC voltage which is applied to the base of Q102 through R106.

Output of the first IF is applied to the second mixer consisting of Q103 and associated circuitry. The output of the low frequency oscillator is applied to the base of Q103 through C122. The signal from the low frequency oscillator is 2 MHz above the desired first IF frequency. The resulting 2 MHz difference signal is then fed to the second IF. The 3-stage second IF consists of Q104, Q105, Q106 and their associated circuitry. The first two stages of the second IF are AGC controlled. This AGC voltage is applied to the bases of Q104 and Q105 through R119 and R126 respectively.

Output of the second IF is applied to the detector CR102. Audio from the detector is fed to the AGC amplifier, audio emitter follower, and squelch amplifier. The AGC amplifier is comprised of Q108 and associated circuitry. The AGC voltage, which is fed to the AGC amplifier, is determined by back-biasing the detector diode through R137. The varying DC voltage produced is amplified by Q108 and used to control the first mixer, first IF amplifier, and second mixer, R139, R141, CR108, and C149 form a noise limiter which removes impulse noise from the voice audio. Q109 and associated circuitry form the squelch amplifier. The squelch amplifier controls the bias level on the emitter of Q107, the voice emitter follower. The output of the voice emitter follower is fed to the audio amplifier.

B. High Frequency Oscillator—The high-frequency oscillators of the ALPHA/10 and ALPHA/100 series radios are electronically similar. The only difference between them being the number and frequencies of the crystals used.

The high frequency oscillator circuitry consists of Q301, Q302, Q303, and associated circuitry in a modified Colpitts, crystal controlled transistor oscillator. For the ALPHA/10 up to 10 crystals from 69.7185 MHz to 79.2185 MHz in .5 MHz increments may be used. In the ALPHA/100-360 all crystals from 69.7185 MHz to 79.2185 MHz in .5 MHz increments are used. The ALPHA/100 uses all the crystals from 69.7185 MHz to 75.2185 MHz in .5 MHz steps. The crystals are selected by grounding the appropriate crystal lead as selected by the front panel switch, SW101, and the transmit/receive relay.

The output of the oscillator is fed into the base of a Class AB frequency doubler, Q302. The output of the doubler is filtered by a 3-pole Chebyshev bandpass filter which reduces all spurious levels 70 db or more below the reference output frequency. The filter has a passband of 139 MHz to 159 MHz. The output of the filter is matched to a 50 ohm coaxial cable which is routed to the main circuit board and also to the exciter assembly. The high frequency oscillator is contained within a separate shielded module.

C. Low Frequency Oscillator—The low frequency oscillators of the ALPHA/10 and ALPHA/100 series radios are electronically similar. The only difference between them being the number and frequencies of the crystals used.

The low frequency oscillator, consisting of Q401 and associated circuitry, is a modified Colpitts, crystal controlled transistor oscillator. The crystal frequencies in the ALPHA/10 range from 20.486 MHz to 21.437 MHz in 50 KHz steps, however, only the crystals needed and up to a maximum of 10 are used. In the ALPHA/100-360 all crystals in the range from 20.486 MHz to 21.437 MHz in 50 KHz steps are used. The ALPHA/100 utilizes all crystals in the range from 20.537 MHz to 21.437 MHz in 100 KHz steps. The crystals are selected by grounding the appropriate crystal lead as selected by front panel switch SW101.

T401, used to adjust the low frequency oscillator, utilizes a pickup link. This link is the first element of a 5-pole Chebyshev low-pass filter consisting of the link on T401, C413, L403, C415, L404, C417, L405, C419, and L406. This filter suppresses all unwanted outputs to 70 db or more below the desired output frequency. The nominal cutoff frequency is 26.0 MHz. The output of the filter is matched to a 50 ohm coaxial cable which is routed to the main circuit board and then to the exciter assembly.

The low frequency oscillator is contained within a separate shielded compartment of the transceiver.

D. Exciter—The exciter circuitry is identical for the ALPHA/10 and ALPHA/100 series radios with one exception: the ALPHA/100 transceiver utilizes only the low frequency switched filter.

Inputs from the high and low frequency oscillators are fed through resistive attenuators to the balanced mixer, consisting of Q501 and Q502. The low frequency input is applied through a tuned transformer T501, and fed differentially to the transistor bases. The high frequency input is applied in-phase to both bases. Using this method of feeding the mixer, the high frequency input, its harmonics, and all even order harmonics of the low frequency input are suppressed in the col-

lector circuit. Mixing action occurs in the base emitter junctions and produces primarily the high frequency input plus and minus the low frequency input. Harmonically related spurious outputs also occur, but at lower levels. The desired output frequency is the high frequency input minus the low frequency input. The sum and difference frequencies appear in the collector circuit across the primary of T502. A pickup link on T502 forms the first element in a 3-pole Chebyshev bandpass filter consisting of the link on T502, C509, C510, C513, L501, C514, C515, C516, C511, C512, and L502. The nominal bandwidth of this filter is 19 MHz centered around a frequency of 127.95 MHz. This filter suppresses all undesired higher order outputs of the mixer to 60 db below the desired output.

The output filter drives an emitter follower consisting of Q504 and associated circuitry. The emitter follower drives two common emitter amplifiers consisting of Q504, Q505, and their associated circuitry. Q504 feeds the low frequency filter and Q505 feeds the high frequency filter. (Only Q504 and the low frequency filter are utilized in the ALPHA/100.) The undesired filter is removed from the signal path when +8.5 VDC is applied to the emitter of the preceding transistor. The frequency selector switch determines which filter will be utilized and accordingly applies +8.5 VDC to the Switched A+ line corresponding to this amplifier and shuts off the transistor.

The low frequency filter is comprised of L504, L507, L508, and their corresponding tuning and coupling capacitors. The low filter has a passband from 118.00 to 127.95 MHz and suppresses all lower order responses such as 2LO1-2LO2 to a level of 70 db or more below the desired output. When output frequencies in the range from 118.00 MHz to 127.95 MHz are desired this filter is utilized. The high filter has a passband from 128.00 to 135.95 MHz and is comprised of L503, L505, L506, and their associated tuning and coupling capacitors. When output frequencies in the range from 128.00 to 135.95 MHz are desired this filter is used.

The outputs of these two filters are combined by a diplexer coil, L509 (directly coupled in the case of the ALPHA/100). The summed output is taken from the center-tap of L509 and fed to J501 via C550. The exciter assembly is contained within a separate shielded module which prevents radiation.

E. Transmitter—Drive from the exciter is applied to Q506, a single-tuned bandpass amplifier. At the output of this bandpass amplifier all undesired outputs are more than 70 db below the desired output.

The output from Q506 is fed to a single-tuned Class C driver, Q507. The signal from Q508 is matched into the input of Q509 with a split inductor "pi" matching section, consisting of Z503, C566, C567, and Z504. Q509 is the final power amplifier stage. It is single-tuned into a 6-pole Chebyshev lowpass filter. The primary function of this filter is to remove harmonics of the output frequency which are generated in the Class C amplifier stages. The filter reduces all of the harmonics and spurious outputs to 60 db or more below the desired output. The output of the transmitter connects to the antenna switching section of the transmit/receive relay, K101.

F. Audio Amplifier/Modulator—The audio amplifier/modulator in the ALPHA/10 and ALPHA/100 series radios is a five-stage direct coupled Class B complementary symmetry amplifier consisting of Q110, Q111, Q112, Q113, Q114, Q115, and Q116. The amplifier is provided with AC decoupling and bias stabilization by means of R151, R154, and C157. C158 and C159 are used to provide closed loop stability. High frequency band shape and rolloff are controlled by the AC feedback network consisting of R162, R163, and C162.

During transmit, low frequency rolloff is controlled by R149 and C154. Transformer T113 is used to raise the output impedance and voltage levels to properly modulate the transmitter and speaker. The output voltage is slightly less than 12 volts, thus assuring that the transmitter cannot be over modulated. The Class B modulation tech-

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nique assures that the modulation voltages cannot exceed the voltage applied to the transmitter. R150 provides a noise free regulated current to the microphone element. It may be changed, if necessary, in the field to provide proper modulation percentage with non-standard, low, or high output microphones or their equivalent such as the various transistorized types designed for direct replacement of the carbon types. The up modulation, as previously mentioned, is controlled by the Class B modulation technique. Modulation voltage levels are selected so as to prevent carrier cutoff. This combination limits the modulation to 85% to 95% of maximum.

The audio amplifier/modulator circuitry is located on the main circuit board.

I. Regulated Power Supply—The circuits in the ALPHA/10, ALPHA/100, and ALPHA/100-360 which are sensitive to input voltage variations are operated from a regulated power supply consisting of Q117, Q118, and Q119. CR107 determines the necessary reference voltage on the base of Q118. The output level of the regulator, nominally 8.5 volts, is set on R169 which determines the bias level on the base of Q119. The differential amplifier formed by Q118 and Q119 is used to control the series regulator transistor Q117 via the collector to base connection of Q118 and Q117. R165 supplies a portion of the load current which allows Q117 to operate well within its dissipation capabilities.

CR106, although not a direct part of the regulated supply, limits the maximum input to the supply to about 16 volts. This protects the supply and the circuits of the radio which use the full input voltage, from the aircraft electrical system. This zenor diode prevents damage which may be caused by over-voltage spikes caused by starters, blowers, relays, etc.

J. Optional AC Power Supply—For convenience in fixed operation an AC power supply is offered as an option to the ALPHA/10 transceiver. This power supply converts 117 VAC to regulated +14 VDC which can then be applied to the regulated power supply.

108 VAC to 130 VAC applied to the primary of T114 will produce approximately 19 VAC on the secondary. The secondary output is rectified by the full wave diode bridge rectifier of CR108 through CR111. The rectifier output is filtered by C165 and applied to the voltage regulator of Q120, Q121, CR113, and associated circuitry. CR113 sets the reference voltage on the emitter of Q121 and R171 is used to adjust the regulator output to 14 VDC. Q120 is the regulating element and is maintained within operational limits by R172 which also supplies a portion of the load current. CR112 is used to prevent reverse current flow when +14 VDC is used to power the transceiver.

4-3. TEST EQUIPMENT REQUIRED

- Sweep Generator covering at least 22.9 MHz \pm 1 MHz and 127 MHz \pm 15 MHz.
Heathkit IG-52 (Modified Schematics available from GENAVE) or equivalent.
- Sweep Generator covering at least 2 MHz \pm 750 KHz. Texscan Model VS 20 or equivalent.
- Frequency Counter usable to at least 159 MHz.
GENAVE Model NU/200.
Computer Measurements Corp. Model 616A.
Hewlett Packard Model 5254 or equivalent.
- Oscilloscope, low frequency, DC coupled preferred.
- Power Supply, 13.75 VDC @4 amps filtered.
- VTVM.
any accurate instrument.
- VOM.
any accurate instrument.
- R.F. Wattmeter, 10 Watt minimum.
- R.F. Dummy Load 108 to 136 MHz 10 watt minimum may be part of line h.

4-4. ALIGNMENT PROCEDURES

NOTE: Alignment procedures for the High Frequency Oscillator Doubler Filter, the Exciter Assembly, and the Transmitter Power Amplifier are not included since these are considered to be replaceable modules and are not field repairable.

A. General—The receiver section of the ALPHA/10, ALPHA/100, and ALPHA/100-360 transceivers employ several multi-element bandpass filters. These filters MUST be aligned using swept frequency techniques. Do not attempt to align any portion of these filters by "peaking" or other single frequency techniques.

B. 8.5 VDC Power Supply

1. Connect an accurate VOM or VTVM to the output of the regulated 8.5 VDC power supply (TP-1).
2. Adjust R169, 8.5 VDC ADJUST, for an output of 8.5 VDC.

CAUTION: The 3-pole filter in the output circuit of the high frequency doubler has been pre-aligned at the factory. It should not be necessary to readjust this filter unless the components of the filter itself are damaged or replaced. It is recommended that repair or alignment of this filter be done at the factory.

C. H.F. Oscillator Alignment

1. Connect the receiver to the alignment setup shown in figure 4-4-2.
2. Connect a frequency counter to the H.F. Oscillator output where it connects to the main circuit board (TP-2).
3. Connect the 10 watt dummy load to the antenna jack.
4. Turn the receiver on. Set the Megahertz selector to the lowest frequency between 118 MHz and 127 MHz. If no frequencies within this range are used go on to step 7.
5. Energize the microphone key and turn the slug in L306 counterclockwise 2 or 3 turns then back clockwise to the point at which the oscillator starts.
6. Continue to check H.F. Oscillator output on each frequency from 118 MHz to 127 MHz. The oscillator output should conform to the specifications listed in table 4-4-12 for H.F. Oscillator, Transmit. If on any frequency no oscillator output is indicated readjust L306 slightly and recheck on all frequencies to insure proper operation.
7. Set the Megahertz selector to the lowest frequency between 128 MHz and 135 MHz. If no frequencies in this range are used go on to step 11.
8. Energize the microphone key and turn the slug in L301 counterclockwise 2 or 3 turns then back clockwise to the point at which the oscillator starts.

9. Continue to check H.F. Oscillator output on each frequency from 128 MHz to 135 MHz. The oscillator output should conform to the specifications listed in table 4-4-12 for H.F. Oscillator, Transmit. If on any frequency no oscillator output is indicated readjust L301 slightly and recheck on all frequencies to insure proper operation.

10. De-energize microphone key. Check oscillator output on 134 MHz and 135 MHz Receive, if used. The oscillator output should conform to the specifications listed in table 4-4-12 for H.F. Oscillator, Receive. If no output is indicated on any frequency readjust L301 slightly and repeat step 9 to insure proper operation.
11. Turn receiver off. Disconnect.

D. L.F. Oscillator Alignment

1. Connect the receiver to the alignment setup shown in figure 4-4-2.
2. Connect a frequency counter to the L.F. Oscillator output cable where it connects to the main circuit board (TP-3).
3. Turn receiver on. Set the KHz selector to the lowest KHz frequency used.
4. Turn the L.F. Oscillator tuning slug counterclockwise 2 or 3 turns and then back clockwise just to the point at which the oscillator starts.
5. Check oscillator output on all KHz frequencies used. The oscillator output should conform to the specifications listed in table 4-4-12 for L.F. Oscillator. If on any frequency no oscillator output is indicated readjust the oscillator tuning slug slightly until the oscillator starts and recheck all KHz frequencies to insure proper operation.
6. Turn off radio. Disconnect.

E. Input Filter Alignment

1. Connect the Heath sweep generator to the antenna jack using a 6 db pad.
2. Connect the high impedance detector to the output tap of L105 and ground (TP-4).
3. Apply a 118.0 MHz marker to the sweep generator.

4. Adjust the sweep frequency and phasing controls on the generator to center the pattern.
5. Adjust C101, C103, C105, C107, and C109 to obtain the desired wave shape as shown in figure 4-4-13. Once the desired wave shape has been obtained, the entire wave form should be shifted until the 118.0 MHz marker appears on the top of the low frequency end of the wave form as shown in figure 4-4-13. This shifting can be obtained by moving each slug the same portion of a turn and readjusting for proper wave shape. Apply a 136.0 MHz marker and check to see that it falls somewhere along the top high frequency end of the waveform. This marker should appear no further than half the distance down the high frequency end of the waveform or 6 db down.

F. First Mixer and First IF Alignment

1. Reconnect the output of the sweep generator through a .1 Mfd. capacitor to the output tap of L105, the last coil in the five-pole input filter (TP-4).
2. Connect the high impedance detector to the output of the first IF. This connection should be made at the junction of C119 and the top of T103 (TP-5).

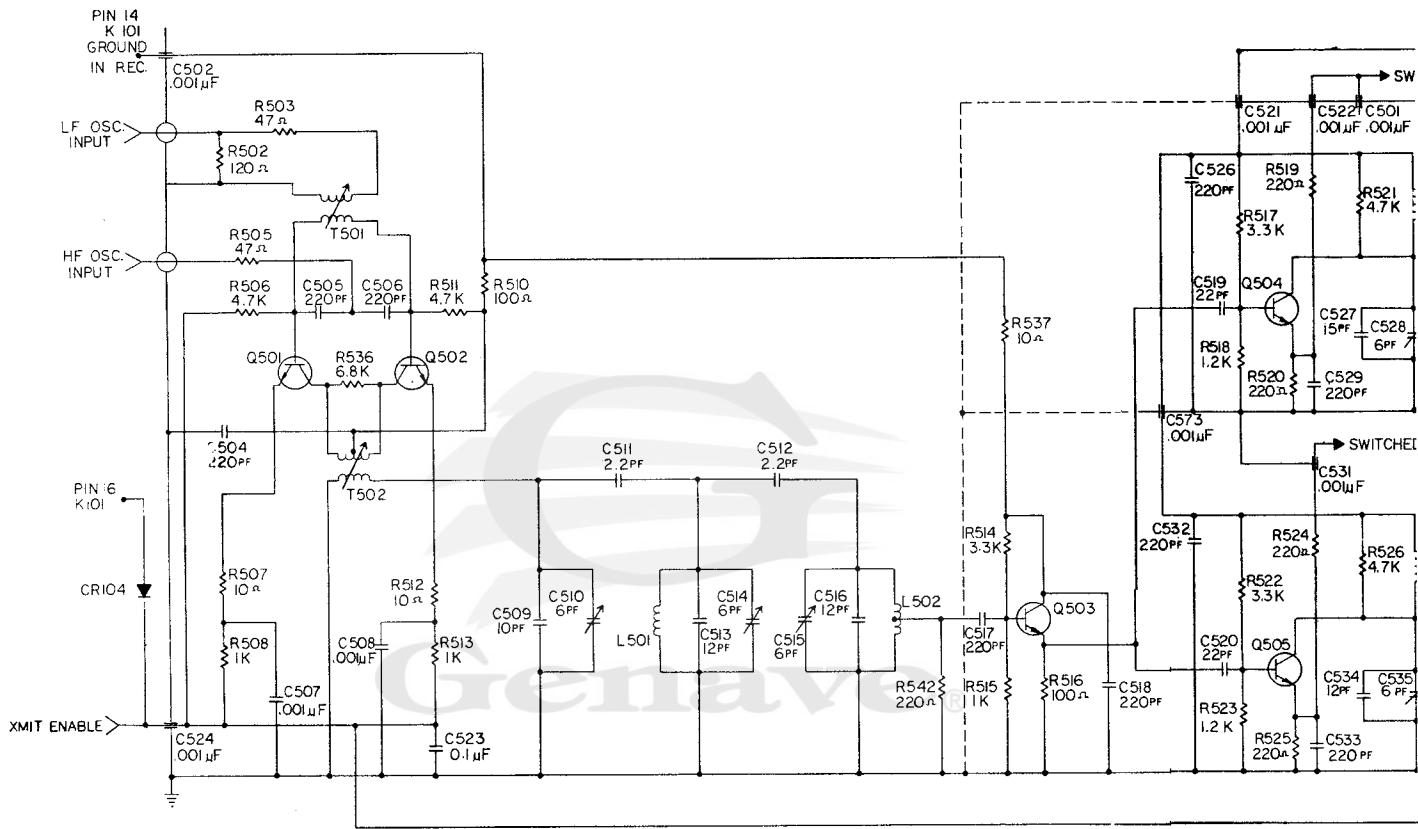
3. Set the sweep generator frequency to approximately 22.9 MHz. Again, use the minimum signal necessary for alignment in order to prevent AGC action.

4. Set the marker at 22.9 MHz.
5. Adjust T101, T102, and T103 to obtain the desired wave shape as shown in figure 4-4-14. This adjustment should be made to obtain maximum output, 1 MHz bandwidth, and steep skirts on the waveform. The sacrifice of wave shape may be somewhat necessary in order to obtain the proper bandwidth. The aligned waveform should be centered on the 22.9 MHz marker.

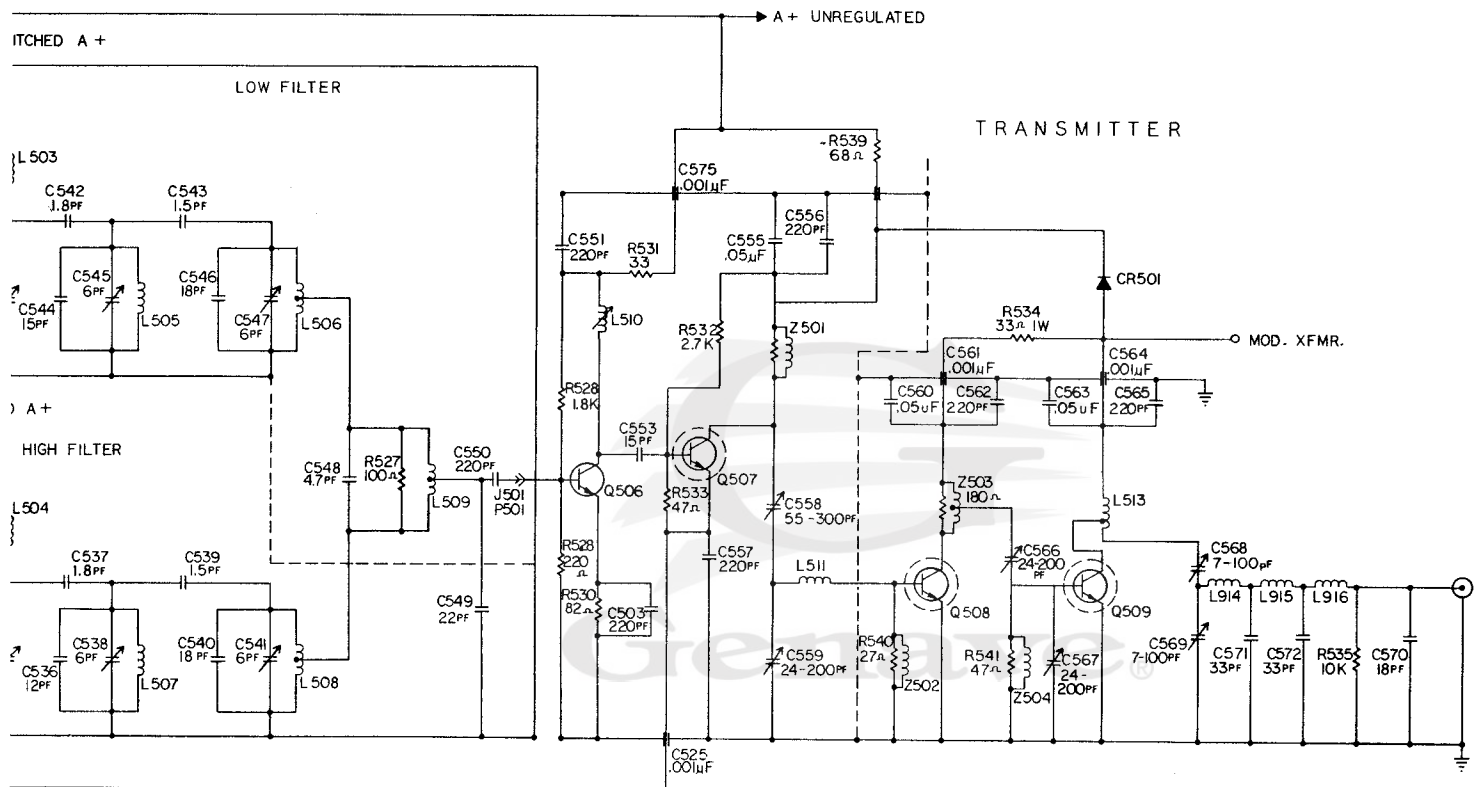
G. Second IF Alignment

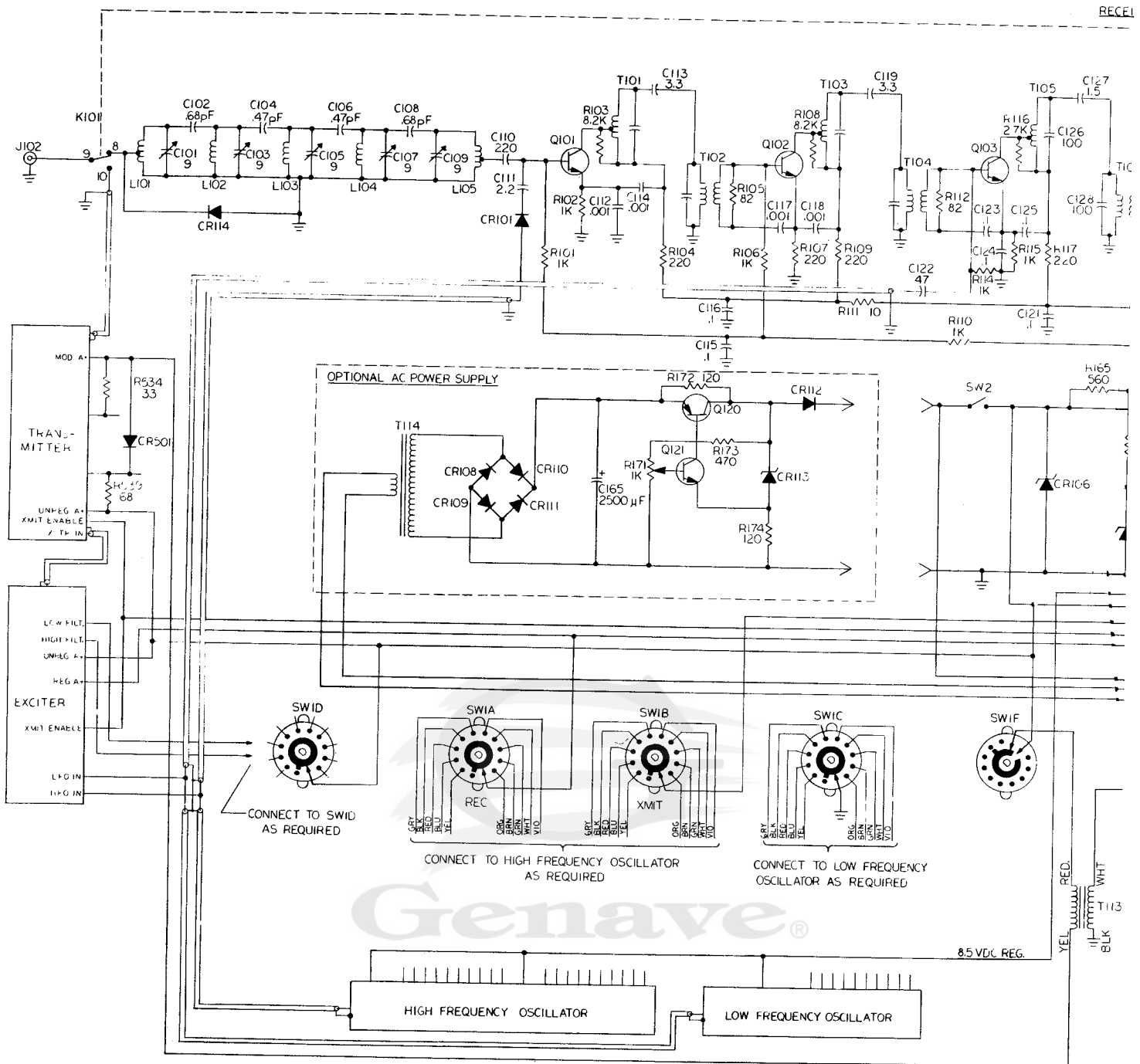
1. Connect sweep generator to the base of the second mixer Q103 (TP-6).
2. Connect the scope vertical input to the anode of CR102 (TP-7).
3. Apply a 2 MHz marker.
4. Adjust the sweep generator to center the sweep on the marker. Be sure to use the minimum generator output to prevent AGC action.
5. Adjust T104 through T112 for proper waveform as shown in figure 4-4-15. This adjustment is made to obtain best gain, symmetry, and a 20 KHz bandwidth measured at the 3 db points.

Genave®

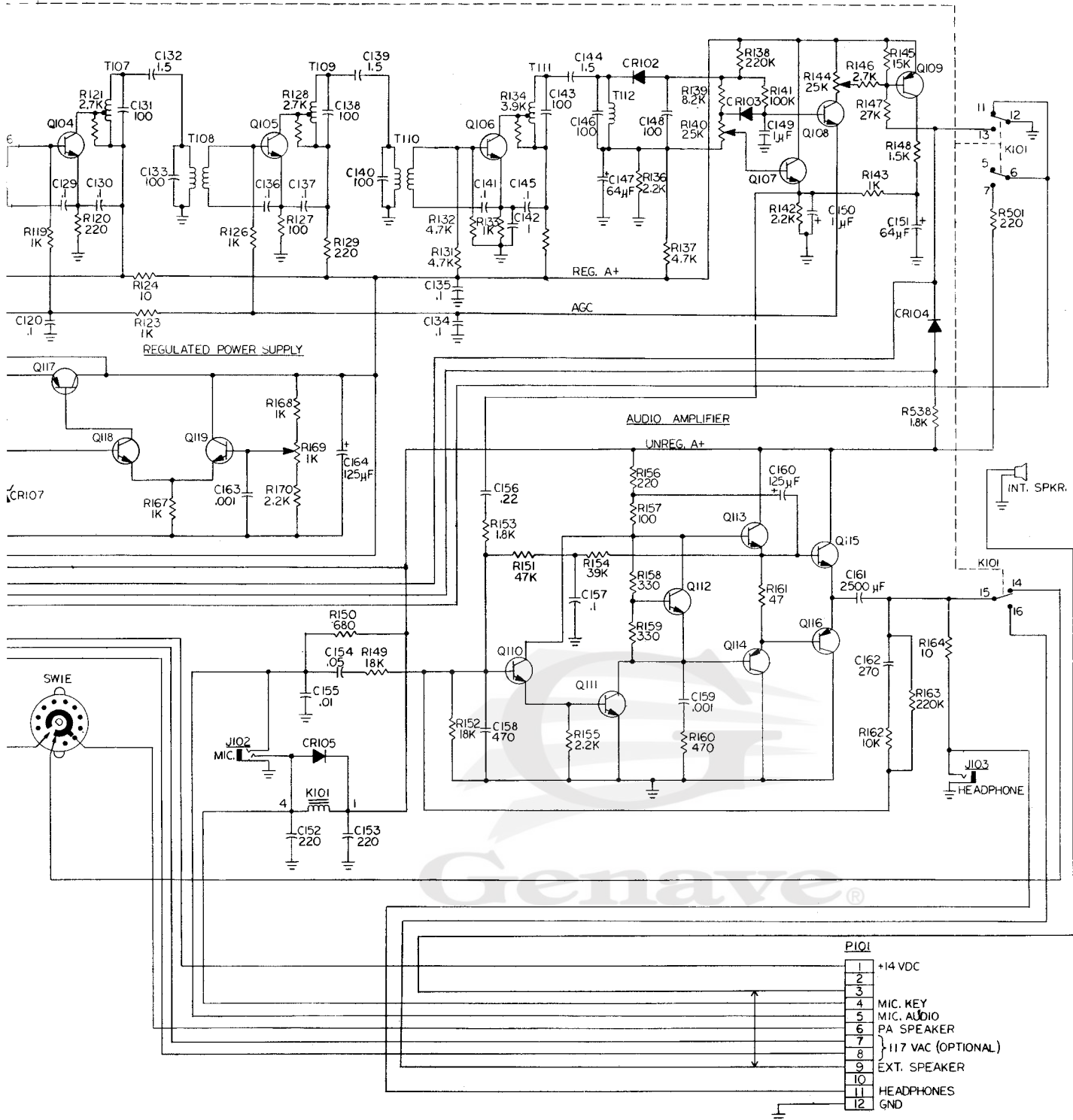


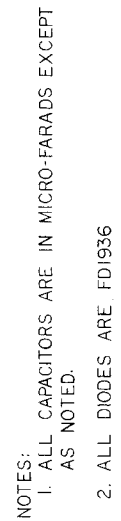
XCITER



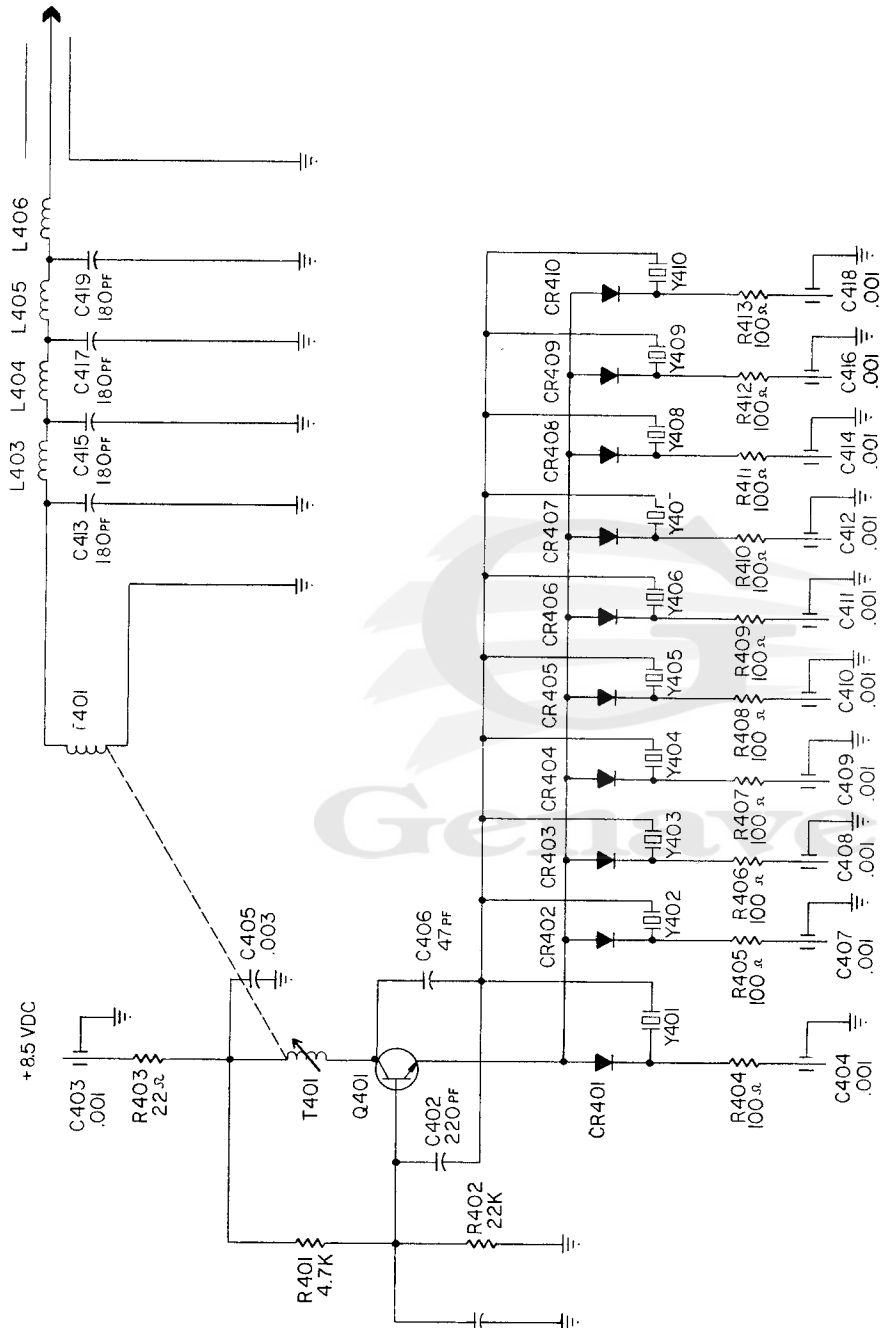


1/ER





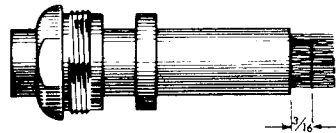
NOTES:
1. ALL CAPACITORS ARE IN MICRO-FARADS EXCEPT AS NOTED.
2. ALL DIODES ARE FD 1936.



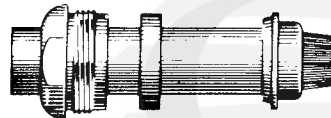
Antenna Connector Assembly - Vehicle



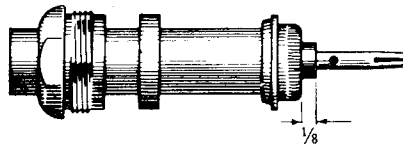
Place nut and gasket, with "V" groove toward clamp, over cable and cut jacket to dimension shown.



Comb out braid and fold out. Cut cable dielectric to dimension shown. Tin center conductor, using minimum amount of heat.



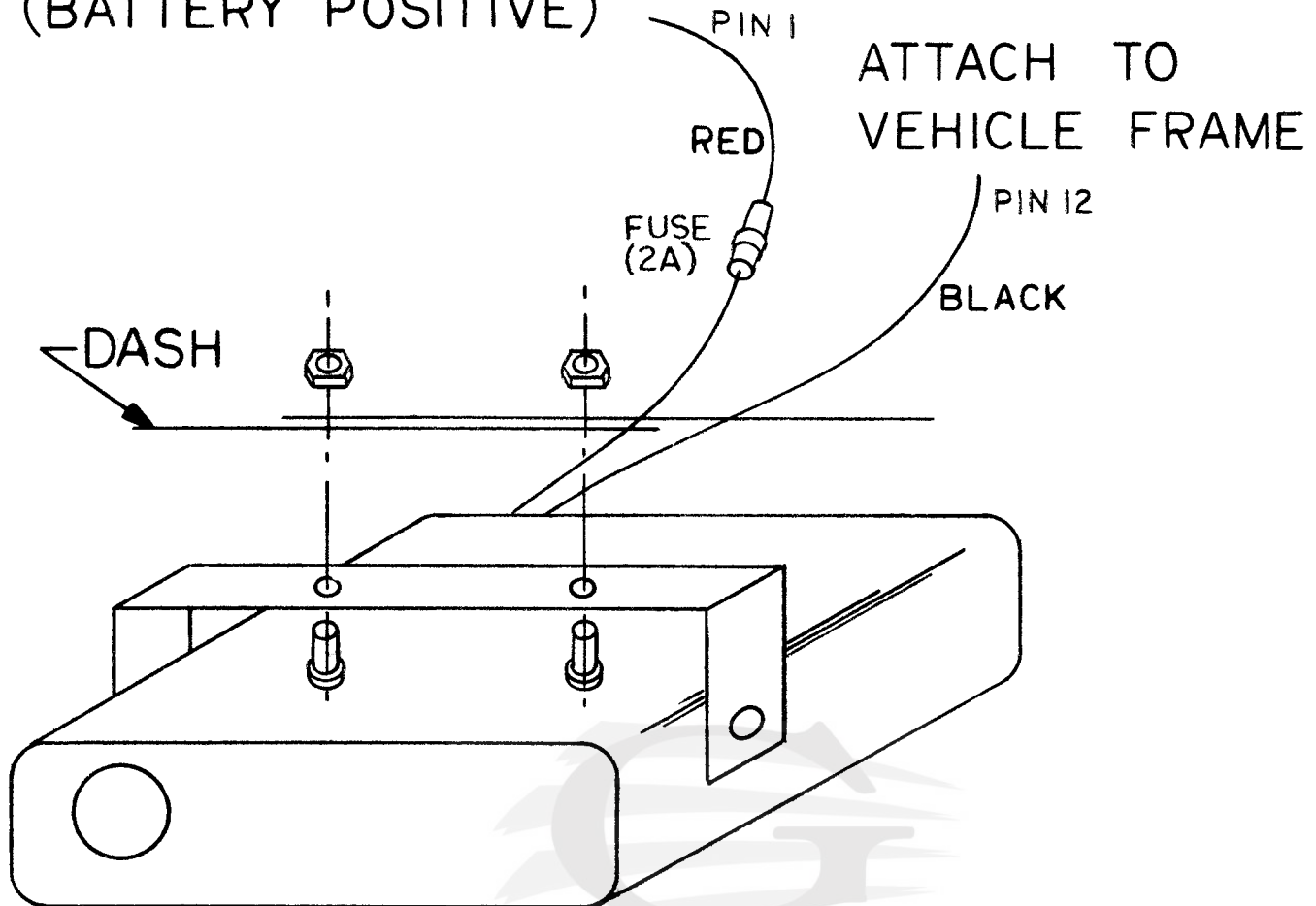
Pull braid wires forward and taper toward center conductor. Place clamp over braid and push back against cable jacket.



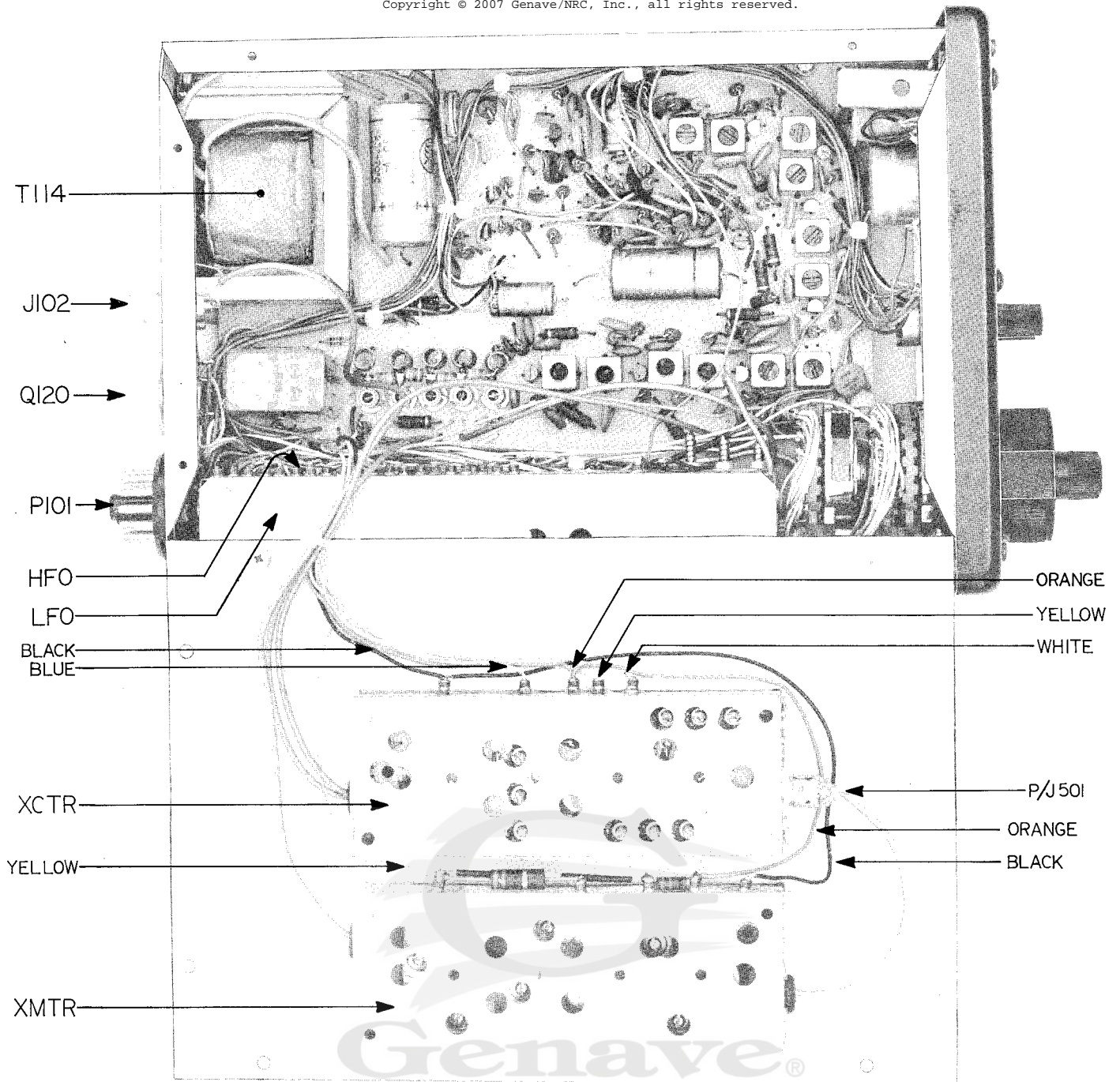
Fold back braid wires as shown, trim to proper length and form over clamp as shown.

Solder contact to center conductor, avoiding excessive heat which might swell cable dielectric.

ATTACH TO HOT (+) LEAD
OF ELECTRICAL SYSTEM
(BATTERY POSITIVE)



NOTE: UNIT WIRED FOR NEGATIVE
GROUND VEHICLES ONLY.



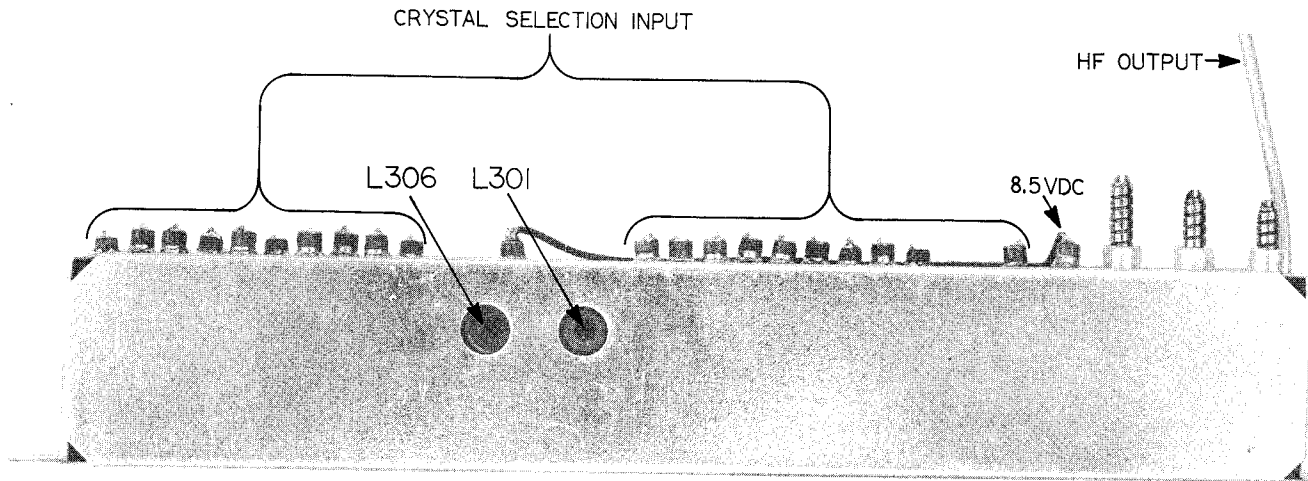
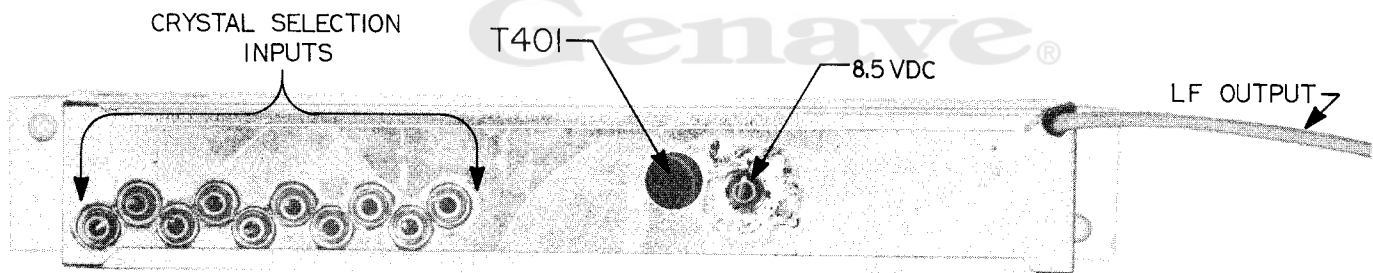


Figure 4-4-9
HF OSCILLATOR, ALL UNITS



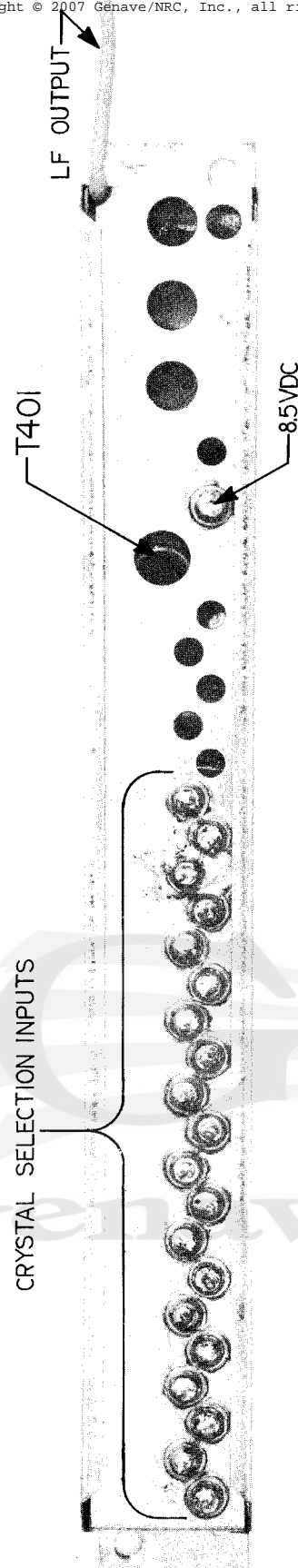


Figure 4-4-12

OSCILLATOR FREQUENCY TABLES

LOW FREQUENCY OSCILLATOR, ALL CONDITIONS

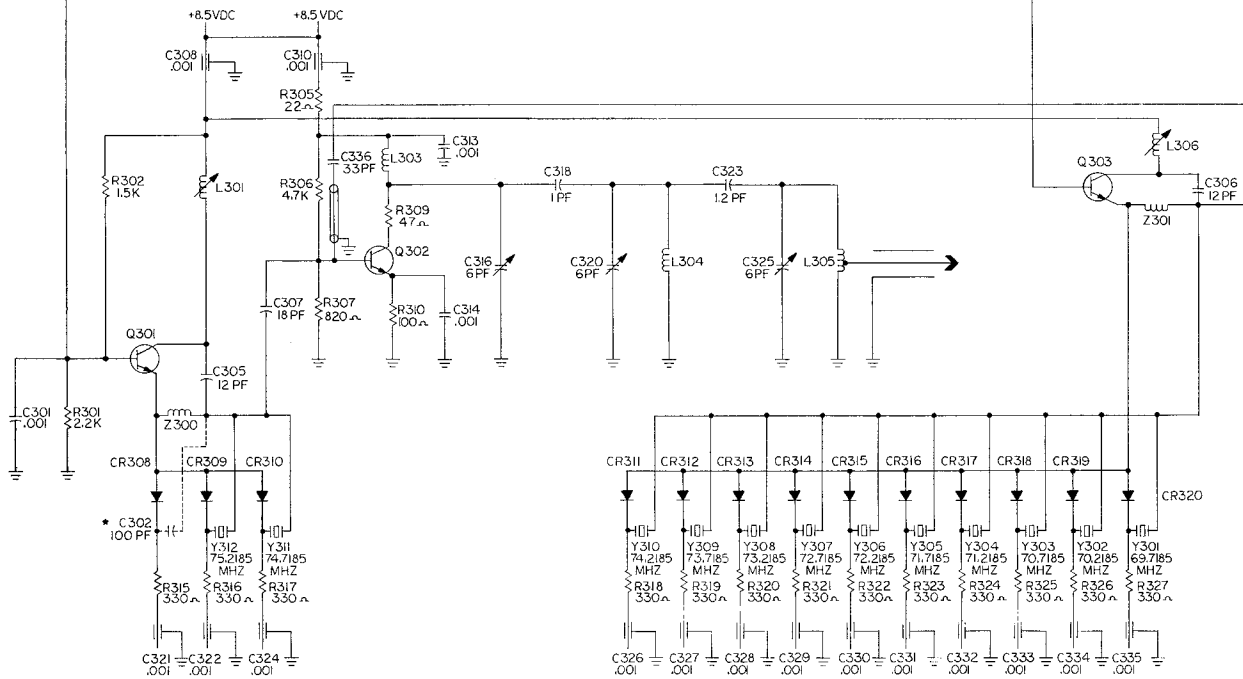
Dial Reading	Crystal & Output Freq.	Dial Reading	Crystal & Output Freq.
00	21.437 MHz \pm 1 KHz	5	20.937 MHz \pm 1 KHz
05	21.387 MHz \pm 1 KHz	55	20.887 MHz \pm 1 KHz
1	21.337 MHz \pm 1 KHz	6	20.837 MHz \pm 1 KHz
15	21.287 MHz \pm 1 KHz	65	20.787 MHz \pm 1 KHz
2	21.237 MHz \pm 1 KHz	7	20.737 MHz \pm 1 KHz
25	21.187 MHz \pm 1 KHz	75	20.687 MHz \pm 1 KHz
3	21.137 MHz \pm 1 KHz	8	20.637 MHz \pm 1 KHz
35	21.087 MHz \pm 1 KHz	85	20.587 MHz \pm 1 KHz
4	21.037 MHz \pm 1 KHz	9	20.537 MHz \pm 1 KHz
45	20.987 MHz \pm 1 KHz	95	20.487 MHz \pm 1 KHz

HIGH FREQUENCY OSCILLATOR, RECEIVE

Dial Reading	Crystal Frequency	Osc. Output Frequency
118	70.7185 MHz \pm 1.25 KHz	141.437 MHz \pm 2.5 KHz
119	71.2185 MHz \pm 1.25 KHz	142.437 MHz \pm 2.5 KHz
120	71.7185 MHz \pm 1.25 KHz	143.437 MHz \pm 2.5 KHz
121	72.2185 MHz \pm 1.25 KHz	144.437 MHz \pm 2.5 KHz
122	72.7185 MHz \pm 1.25 KHz	145.437 MHz \pm 2.5 KHz
123	73.2185 MHz \pm 1.375 KHz	146.437 MHz \pm 2.75 KHz
124	73.7185 MHz \pm 1.375 KHz	147.437 MHz \pm 2.75 KHz
125	74.2185 MHz \pm 1.375 KHz	148.437 MHz \pm 2.75 KHz
126	74.7185 MHz \pm 1.375 KHz	149.437 MHz \pm 2.75 KHz
127	75.2185 MHz \pm 1.375 KHz	150.437 MHz \pm 2.75 KHz
128	75.7185 MHz \pm 1.375 KHz	151.437 MHz \pm 2.75 KHz
129	76.2185 MHz \pm 1.375 KHz	152.437 MHz \pm 2.75 KHz
130	76.7185 MHz \pm 1.375 KHz	153.437 MHz \pm 2.75 KHz
131	77.2185 MHz \pm 1.50 KHz	154.437 MHz \pm 3.0 KHz
132	77.7185 MHz \pm 1.50 KHz	155.437 MHz \pm 3.0 KHz
133	78.2185 MHz \pm 1.50 KHz	156.437 MHz \pm 3.0 KHz
134	78.7185 MHz \pm 1.50 KHz	157.437 MHz \pm 3.0 KHz
135	79.2185 MHz \pm 1.50 KHz	158.437 MHz \pm 3.0 KHz

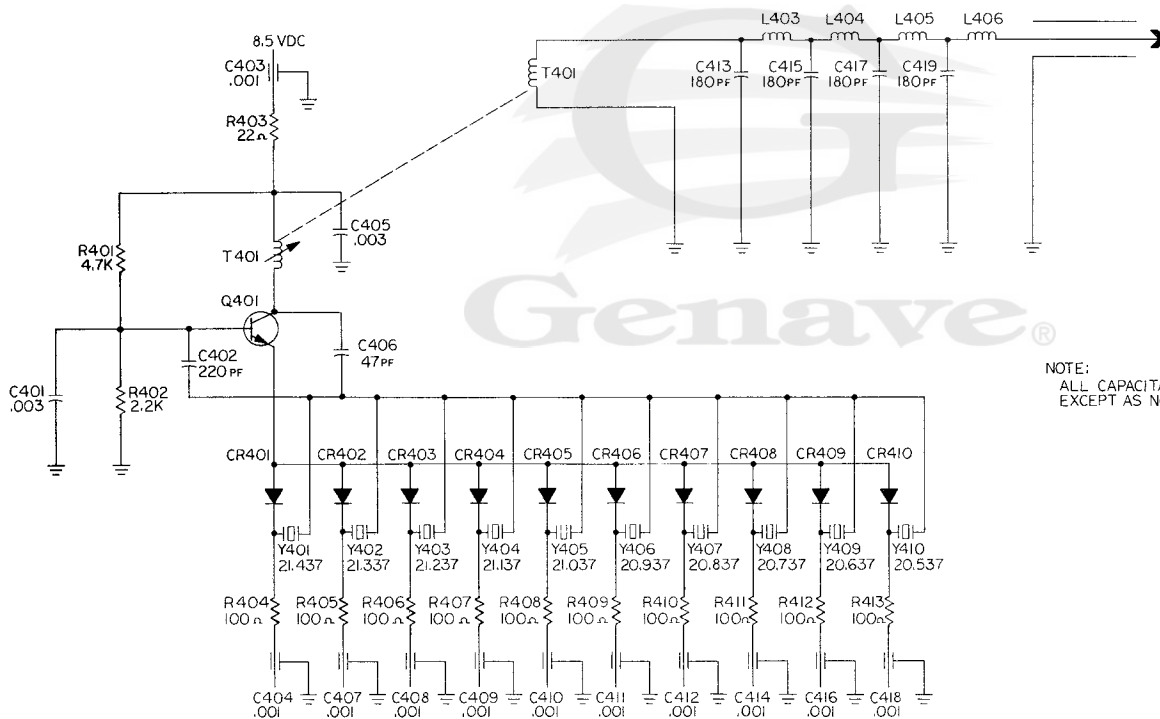
HIGH FREQUENCY OSCILLATOR, TRANSMIT

Dial Reading	Crystal Frequency	Osc. Output Frequency
118	69.7185 MHz \pm 1.25 KHz	139.437 MHz \pm 2.5 KHz
119	70.2185 MHz \pm 1.25 KHz	140.437 MHz \pm 2.5 KHz
120	70.7185 MHz \pm 1.25 KHz	141.437 MHz \pm 2.5 KHz
121	71.2185 MHz \pm 1.25 KHz	142.437 MHz \pm 2.5 KHz
122	71.7185 MHz \pm 1.25 KHz	143.437 MHz \pm 2.5 KHz
123	72.2185 MHz \pm 1.25 KHz	144.437 MHz \pm 2.5 KHz
124	72.7185 MHz \pm 1.25 KHz	145.437 MHz \pm 2.5 KHz
125	73.2185 MHz \pm 1.37 KHz	146.437 MHz \pm 2.75 KHz
126	73.7185 MHz \pm 1.37 KHz	147.437 MHz \pm 2.75 KHz
127	74.2185 MHz \pm 1.37 KHz	148.437 MHz \pm 2.75 KHz
128	74.7185 MHz \pm 1.37 KHz	149.437 MHz \pm 2.75 KHz
129	75.2185 MHz \pm 1.37 KHz	150.437 MHz \pm 2.75 KHz
130	75.7185 MHz \pm 1.37 KHz	151.437 MHz \pm 2.75 KHz
131	76.2185 MHz \pm 1.37 KHz	152.437 MHz \pm 2.75 KHz
132	76.7185 MHz \pm 1.37 KHz	153.437 MHz \pm 2.75 KHz
133	77.2185 MHz \pm 1.50 KHz	154.437 MHz \pm 3.00 KHz
134	77.7185 MHz \pm 1.50 KHz	155.437 MHz \pm 3.00 KHz
135	78.2185 MHz \pm 1.50 KHz	156.437 MHz \pm 3.00 KHz



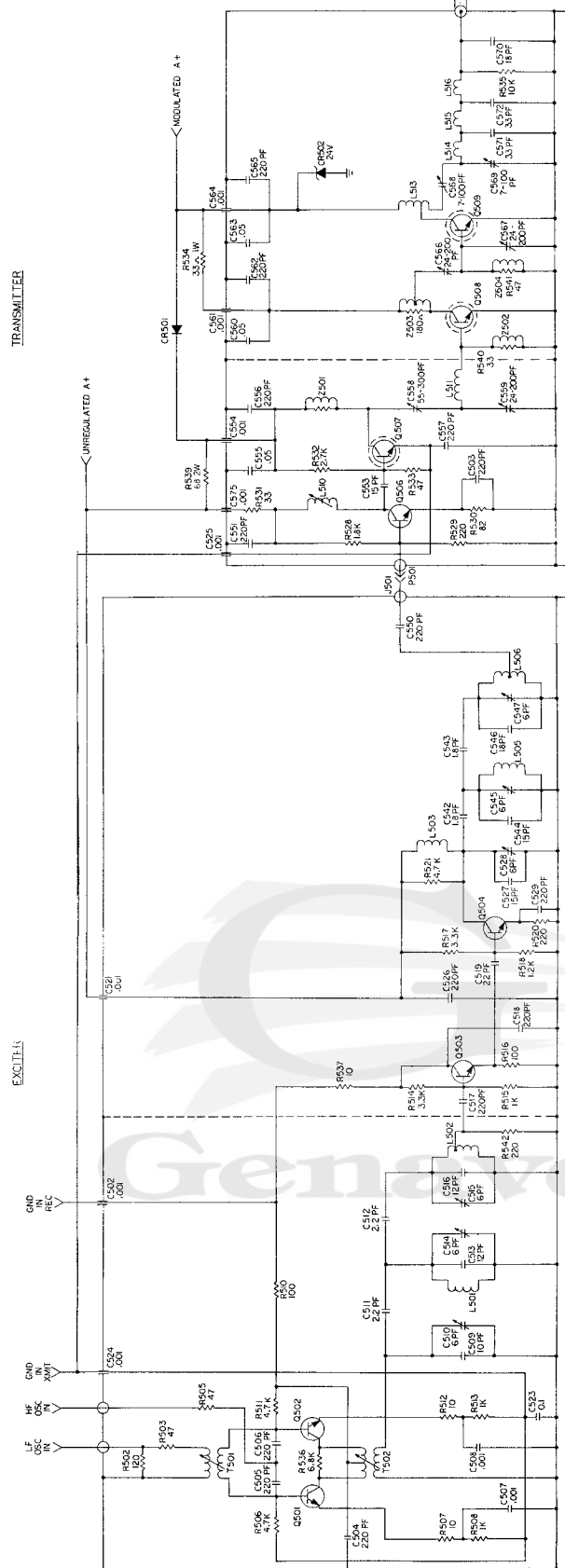
* IF NEEDED TO CORRECT FREQUENCIES

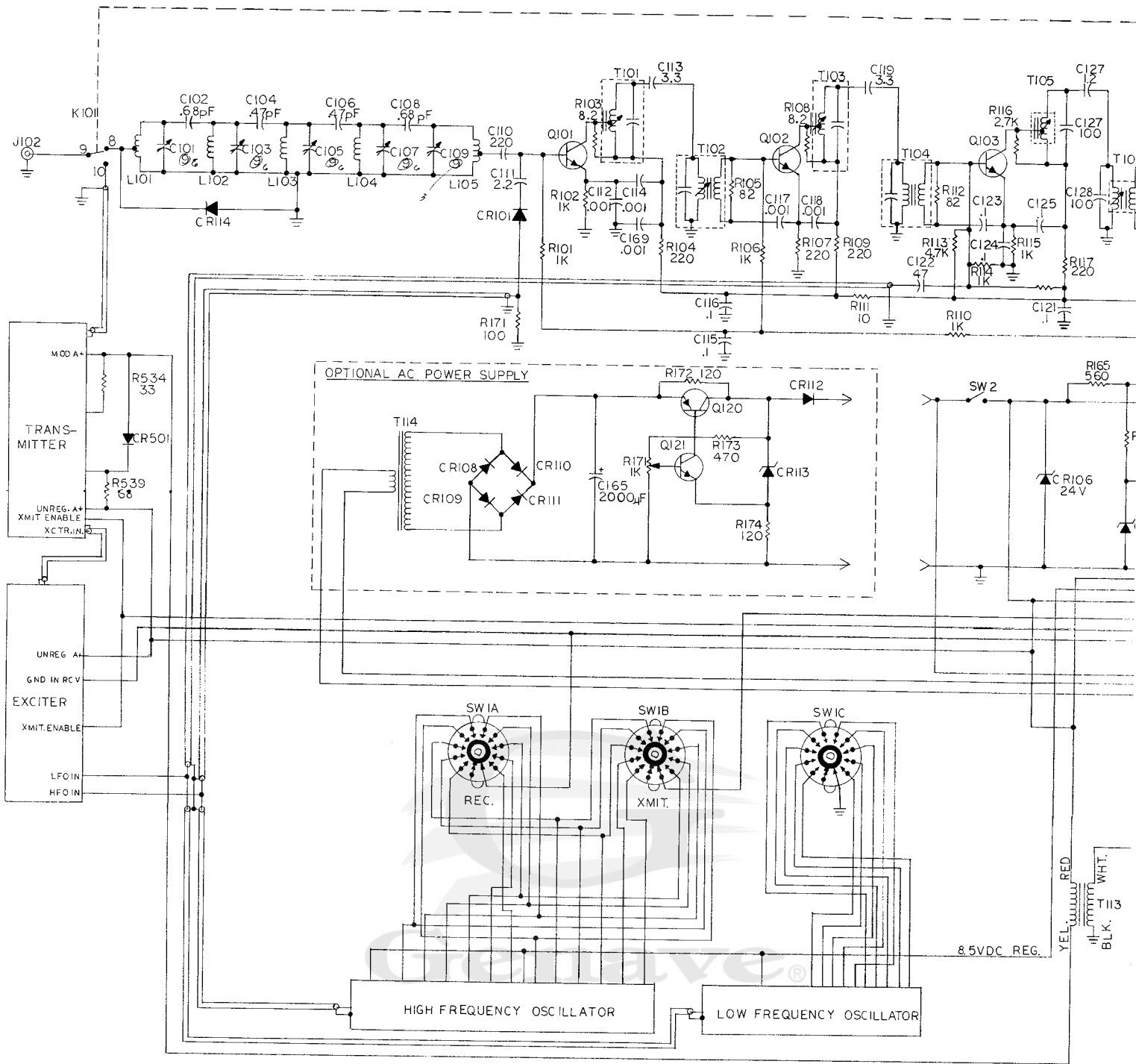
**Figure 4-5-7
ALPHA/100 HF OSC.**



NOTE:
ALL CAPACITANCES ARE IN MICROFARADS
EXCEPT AS NOTED.

**Figure 4-5-8
ALPHA/100 LF OSC.**





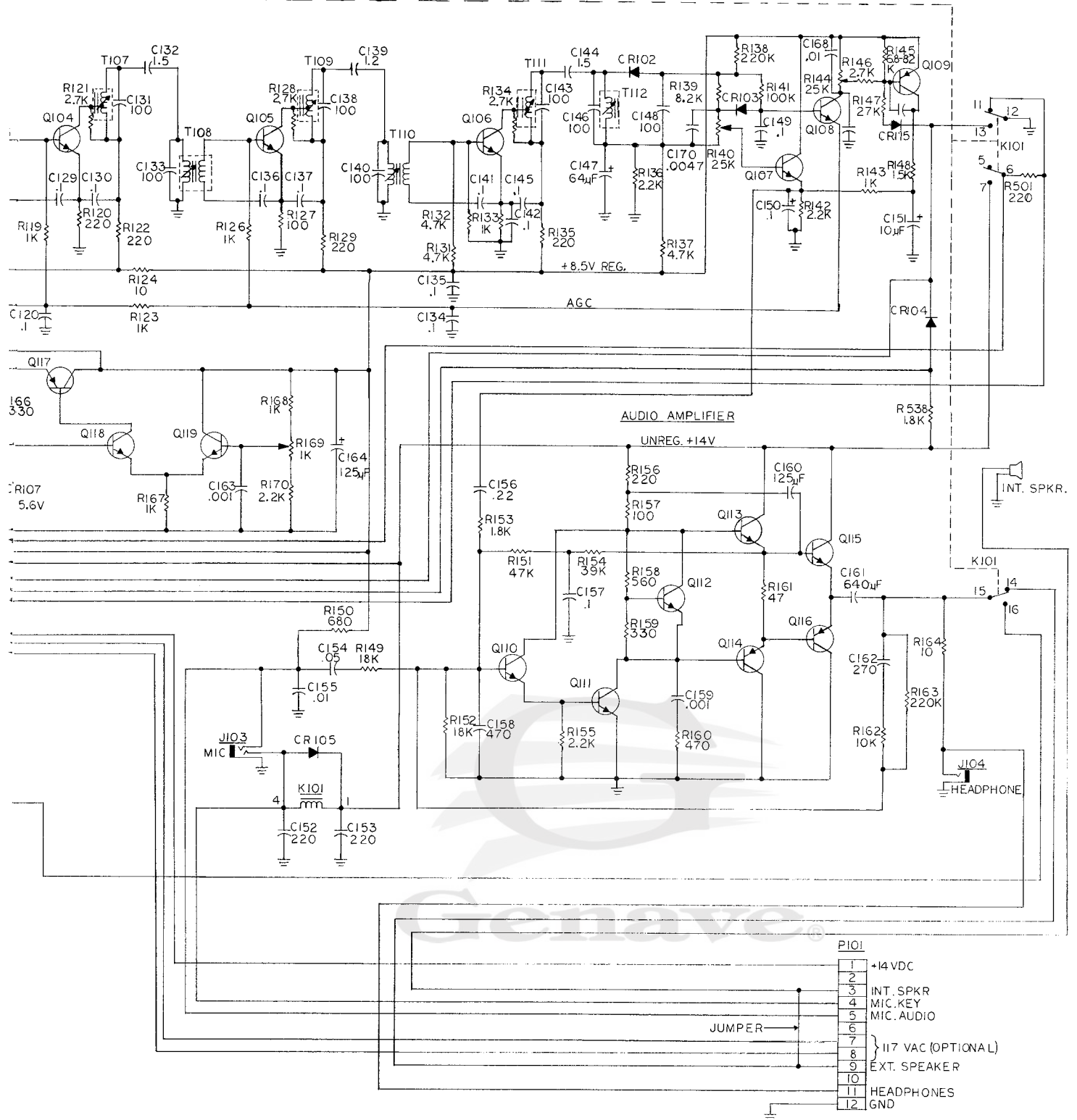
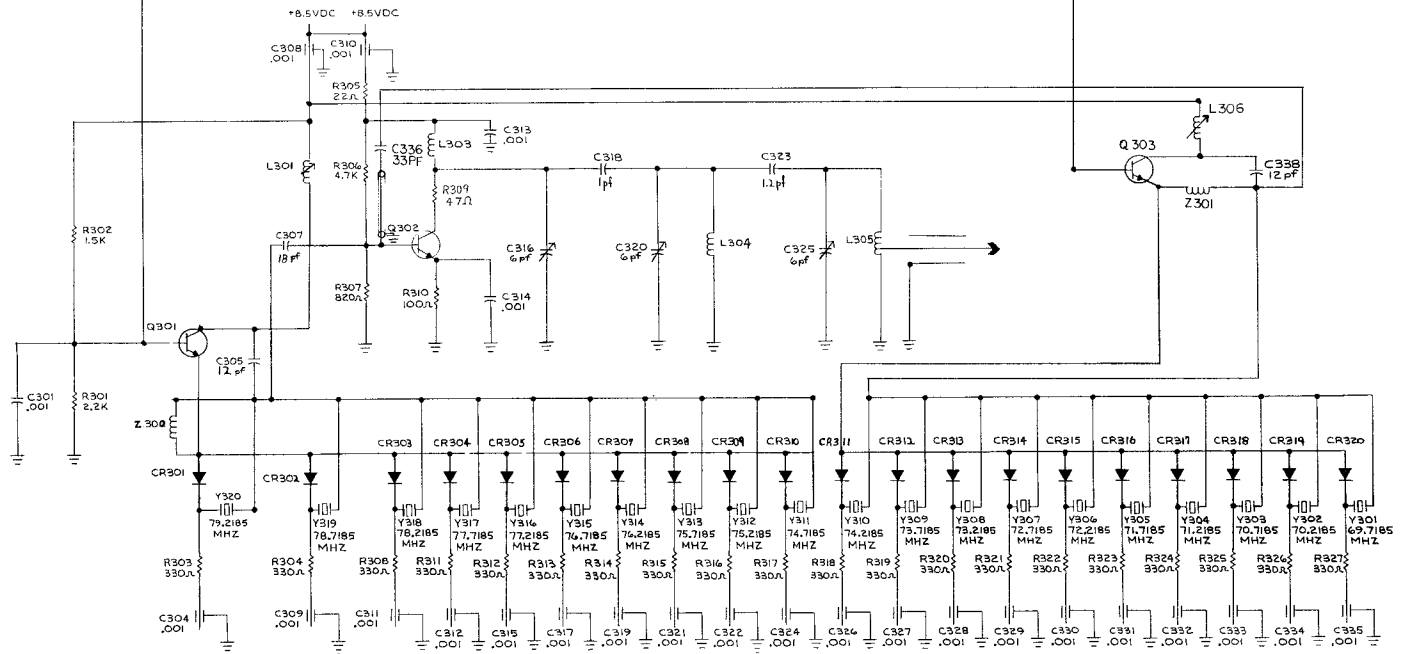
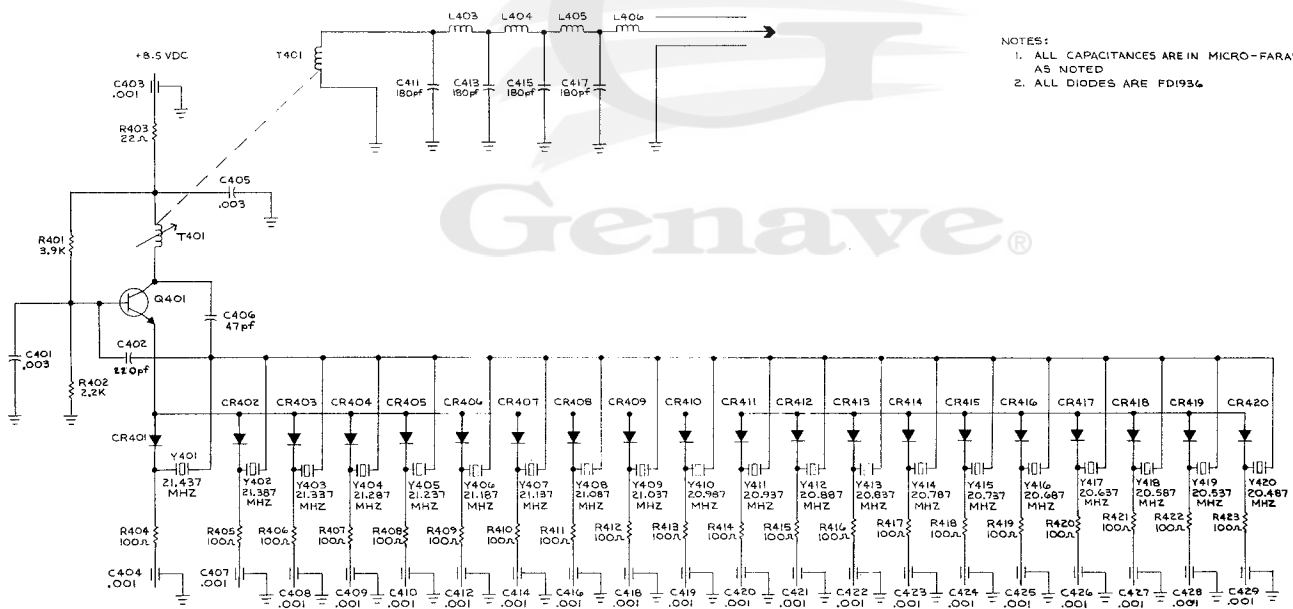


Figure 4-5-6
ALPHA/100 MAINBOARD SCHEMATIC



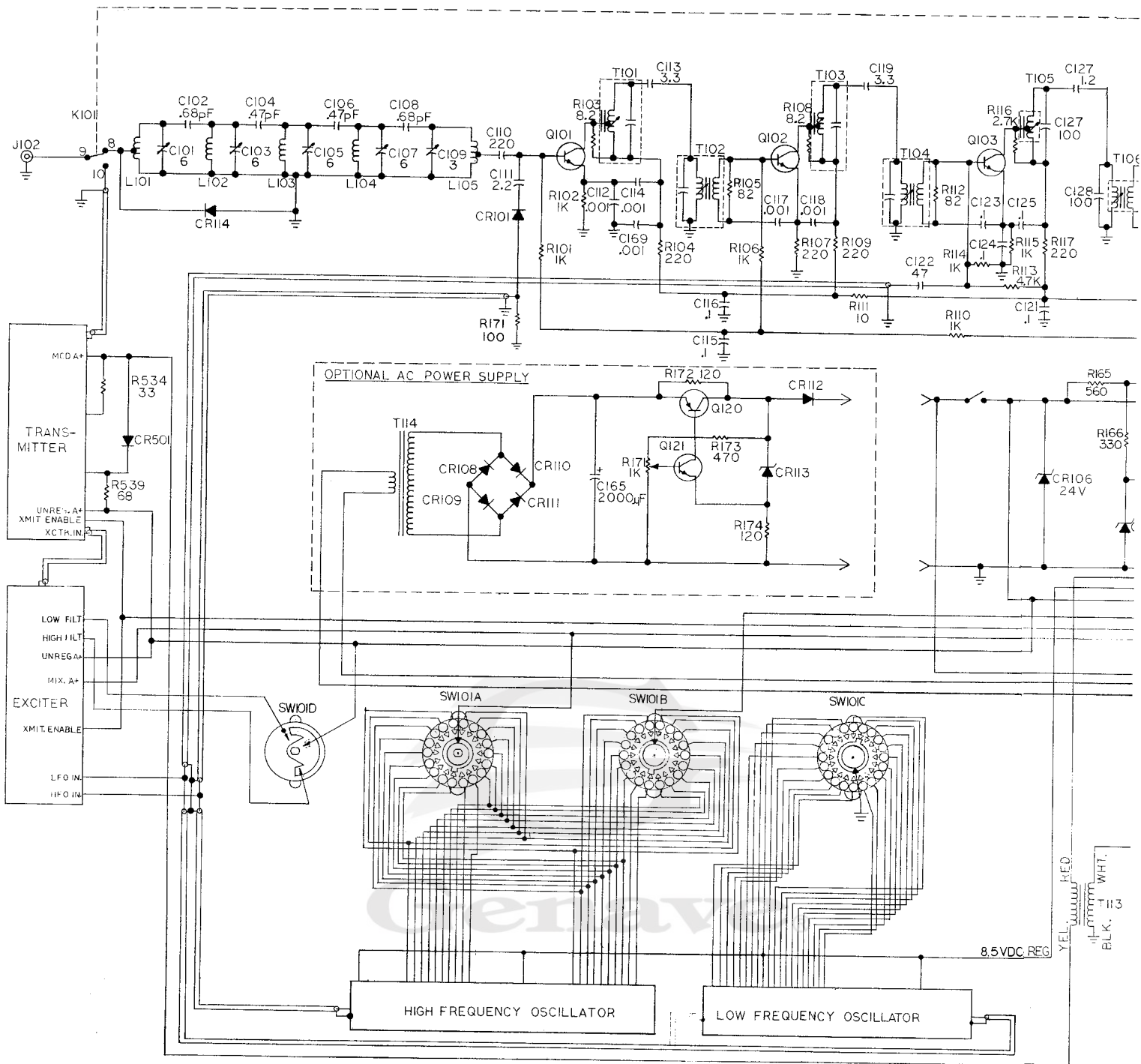
- NOTES:
1. ALL CAPACITORS ARE IN MICRO-FARADS, EXCEPT AS NOTED.
 2. ALL DIODES ARE FD1936

Figure 4-5-11
ALPHA/100-360 HF OSC.



- NOTES:
1. ALL CAPACITANCES ARE IN MICRO-FARADS EXCEPT AS NOTED
 2. ALL DIODES ARE FD1936

Figure 4-5-12
ALPHA/100-360 LF OSC.



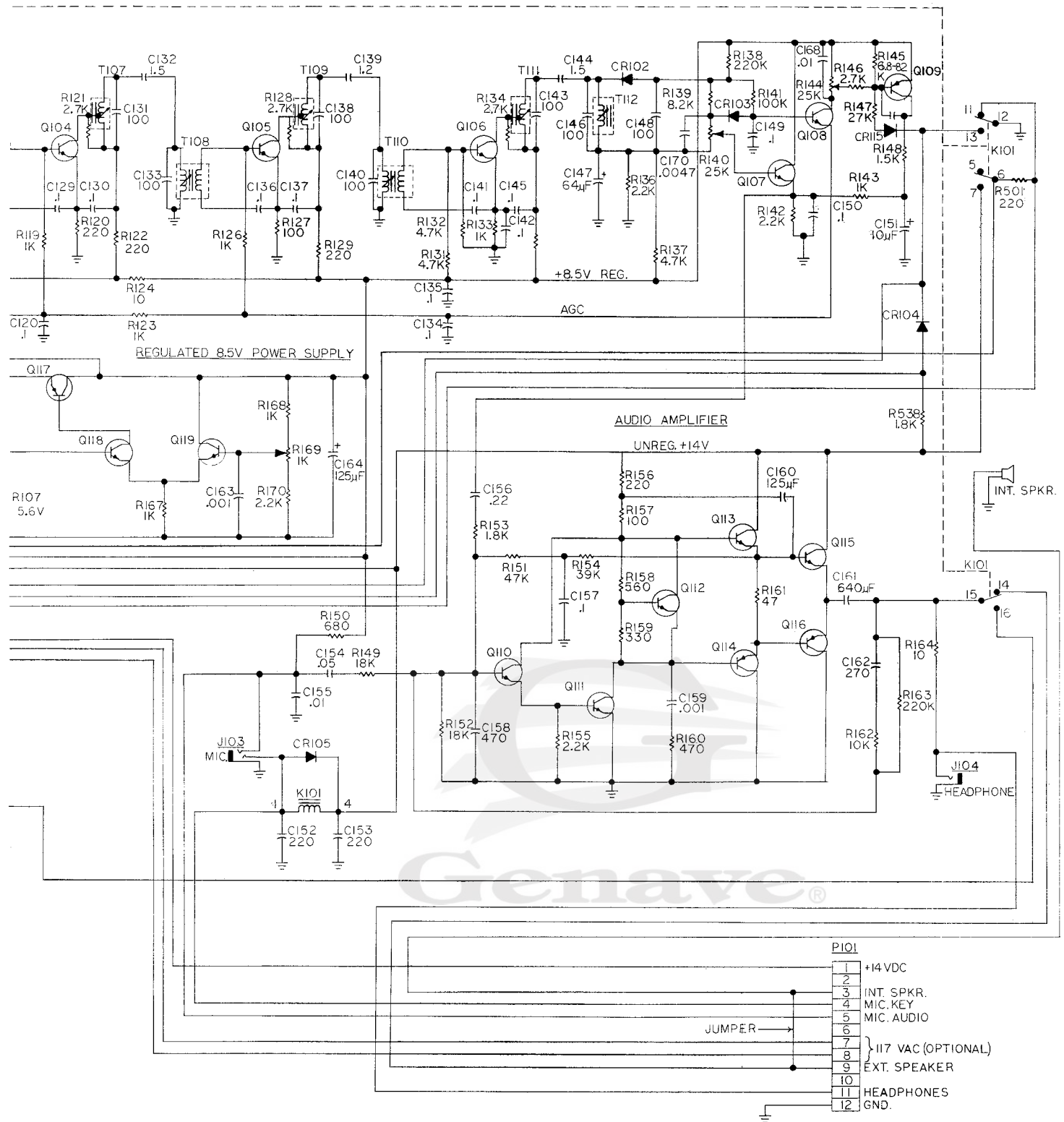
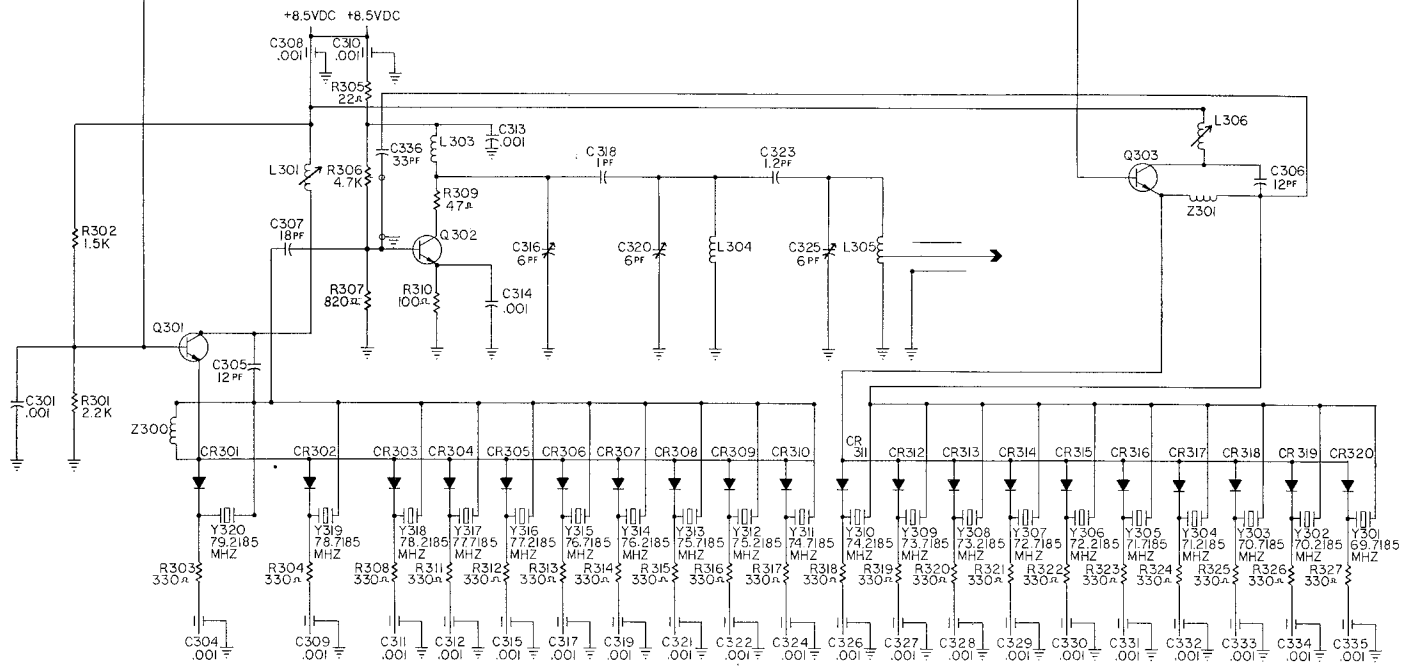
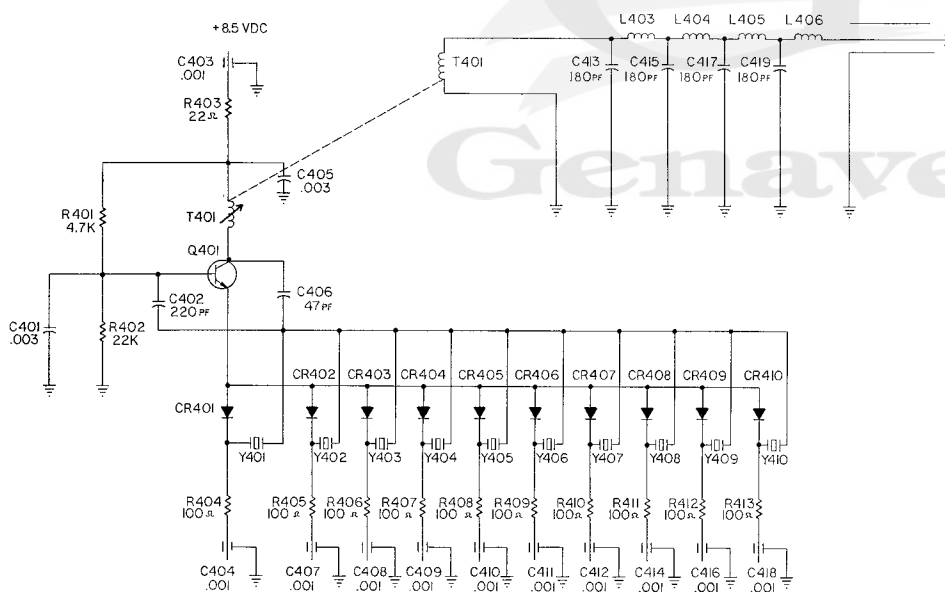


Figure 4-5-10
ALPHA/100-360 MAINBOARD SCHEMATIC



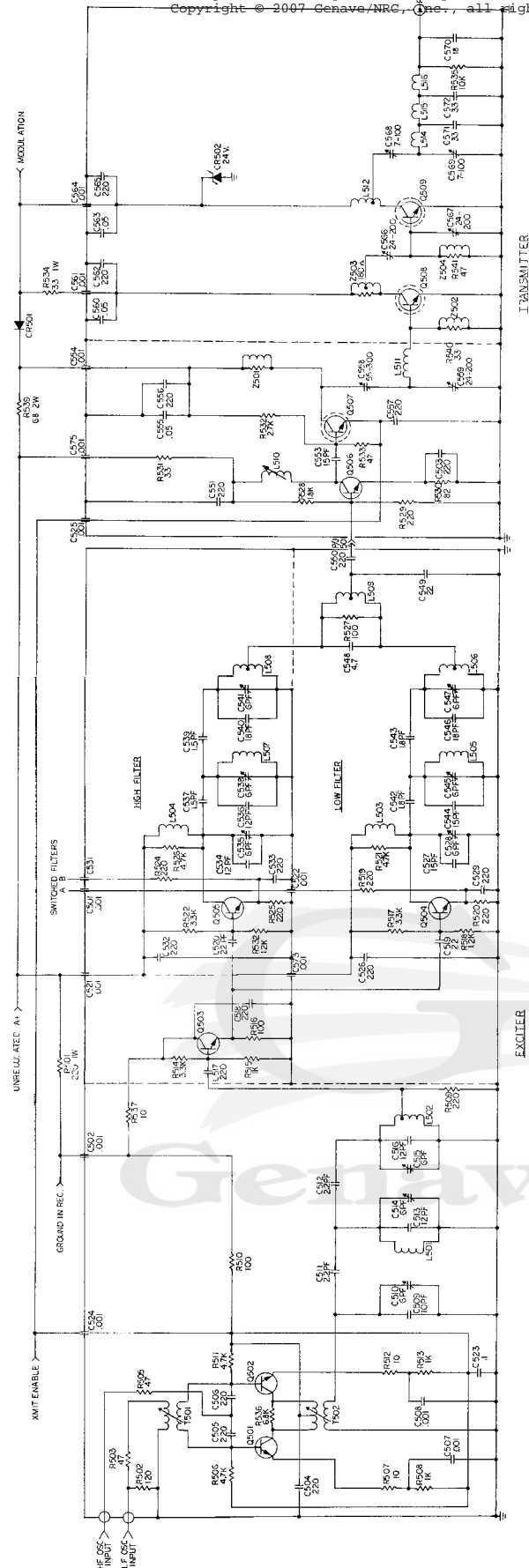
- NOTES:
1. ALL CAPACITORS ARE IN MICRO-FARADS EXCEPT AS NOTED.
 2. ALL DIODES ARE FD1936

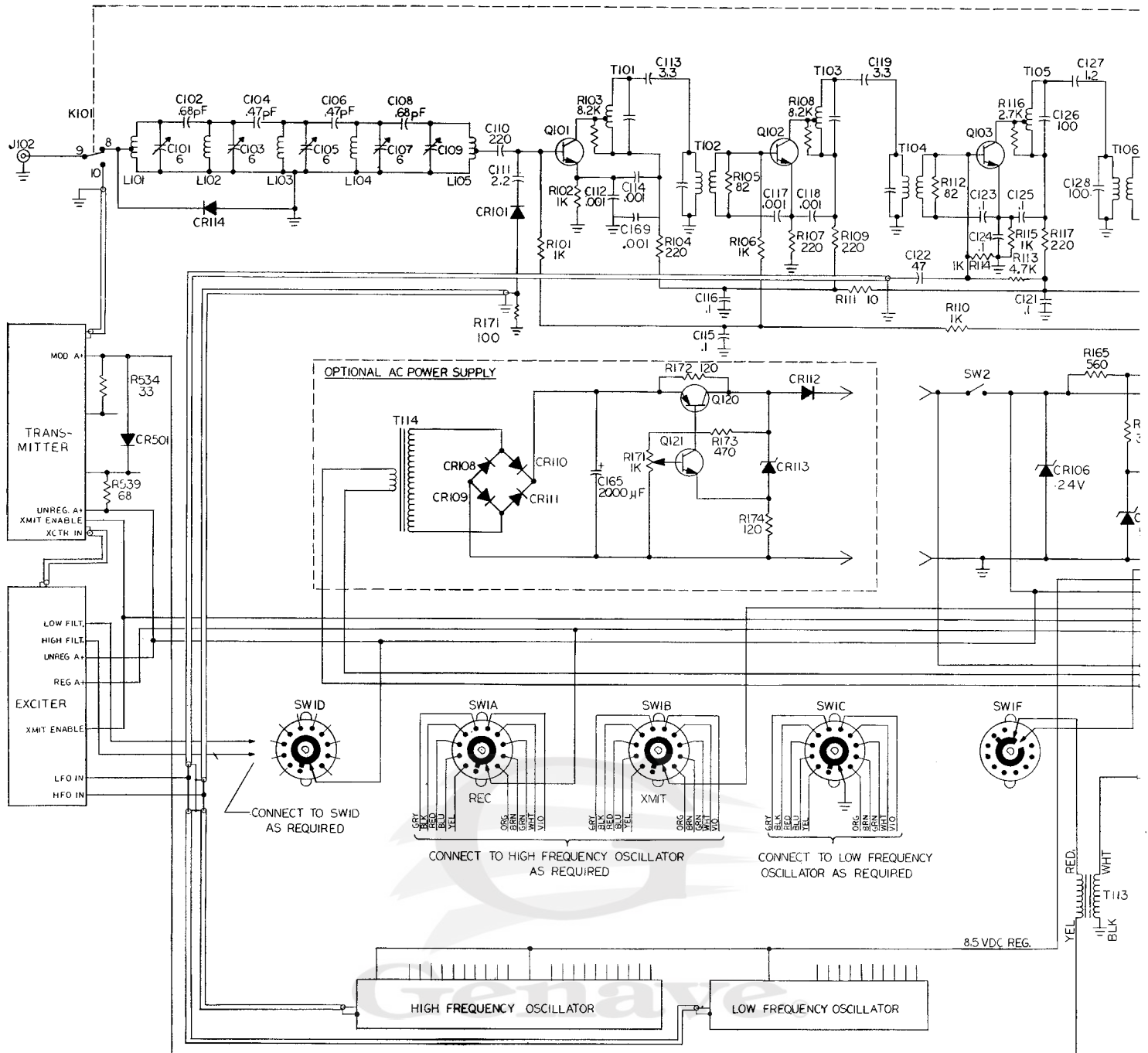
**Figure 4-5-3
ALPHA/10 HF OSC.**



- NOTES:
1. ALL CAPACITORS ARE IN MICRO-FARADS EXCEPT AS NOTED.
 2. ALL DIODES ARE FD 1936.

**Figure 4-5-4
ALPHA/10 LF OSC.**





R

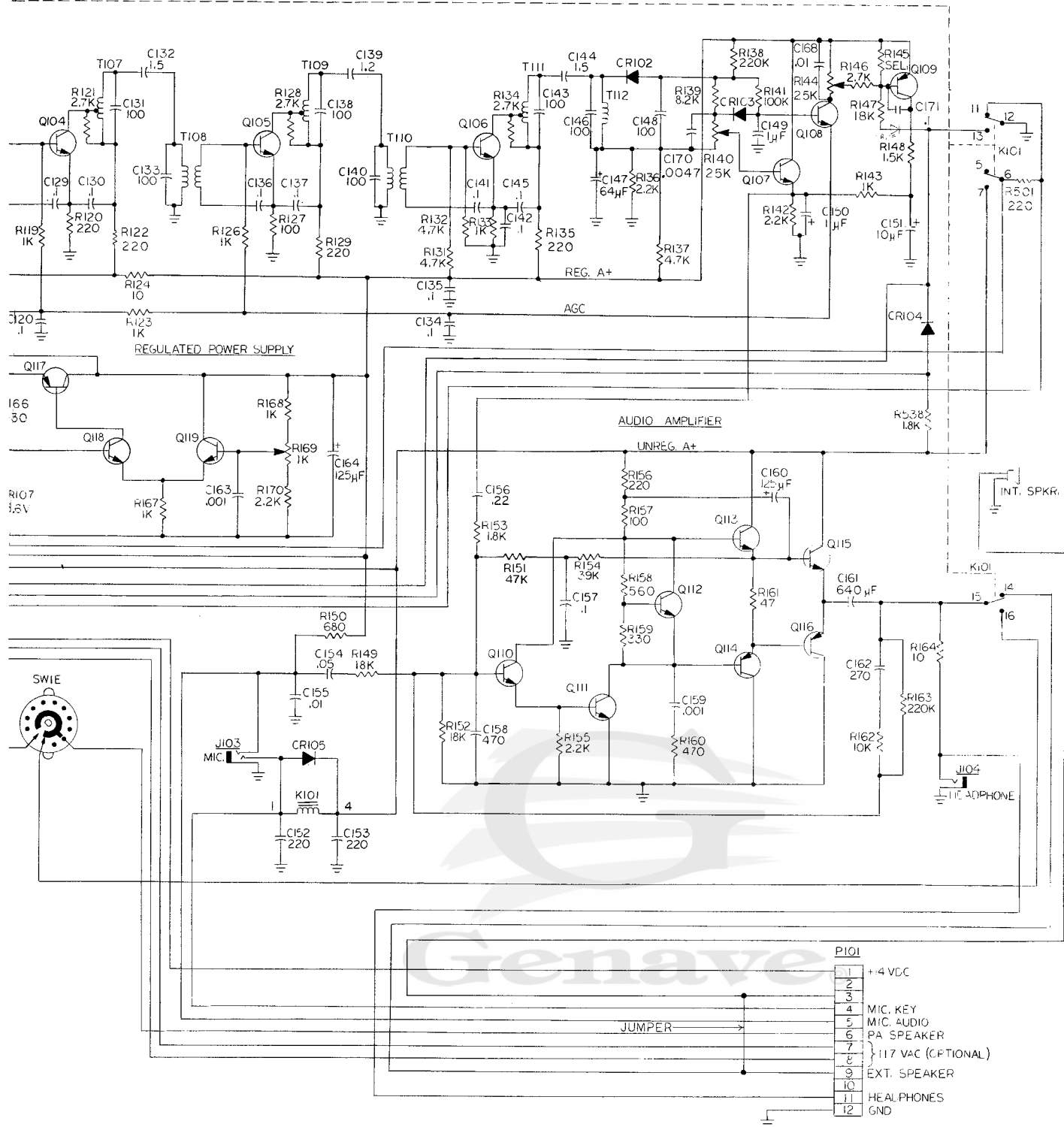
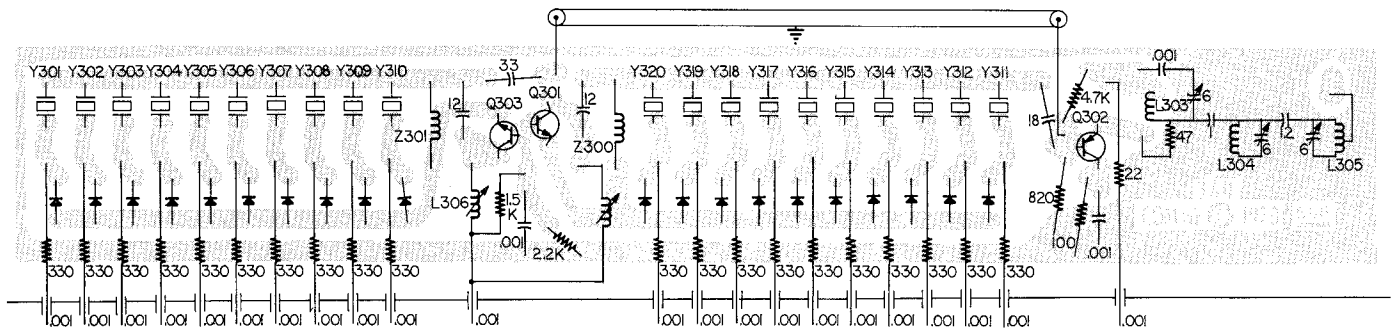
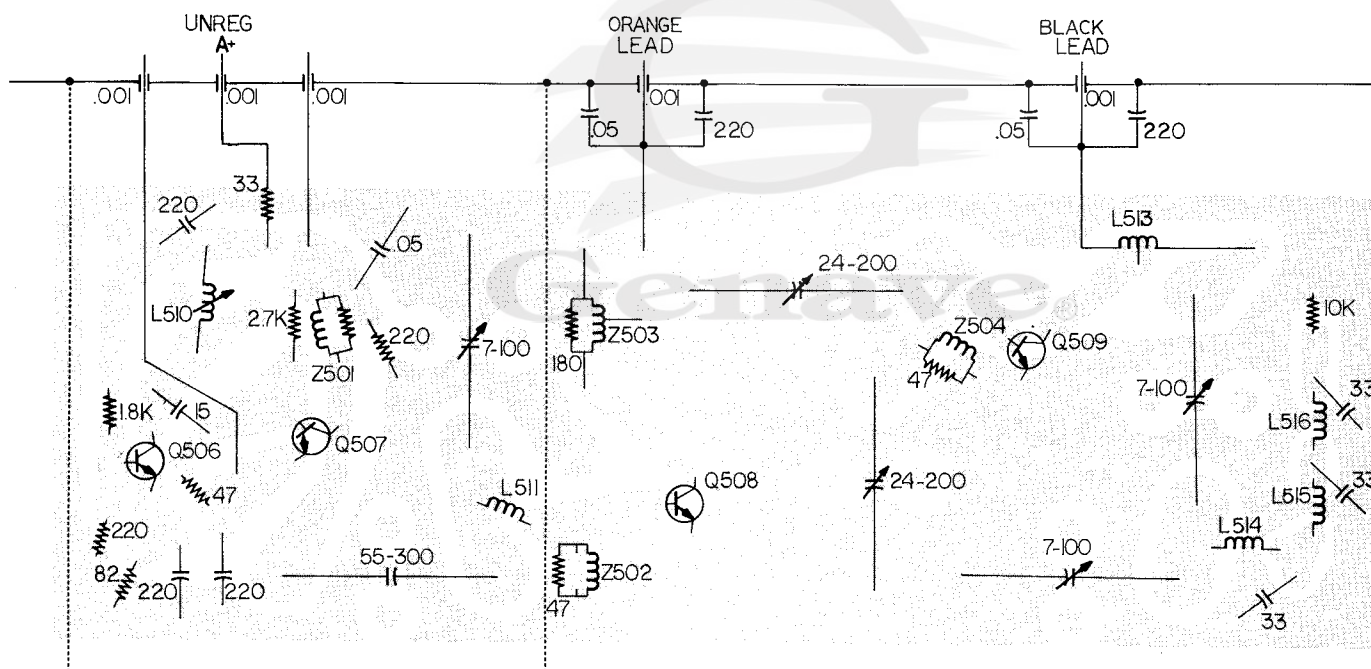
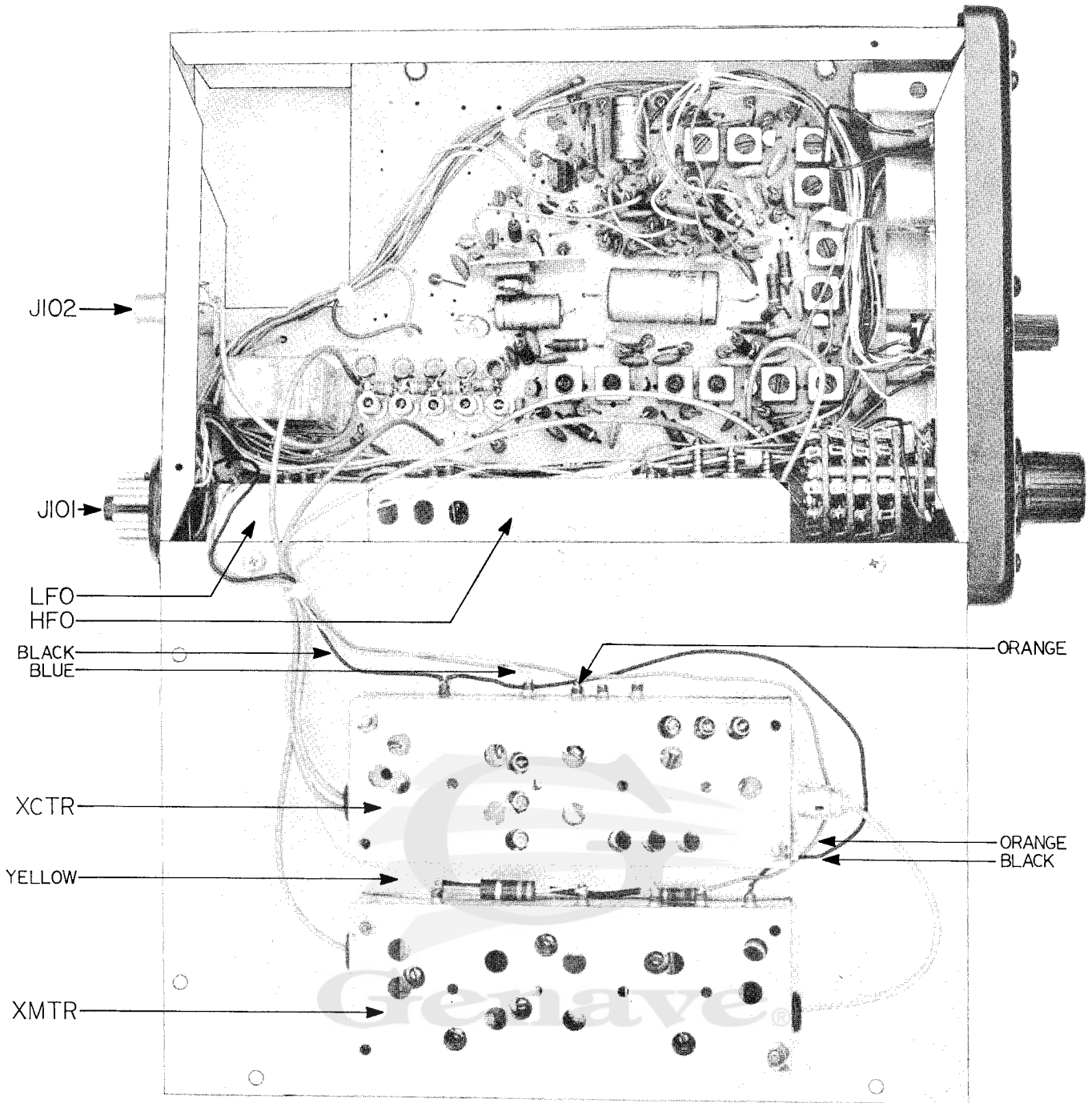
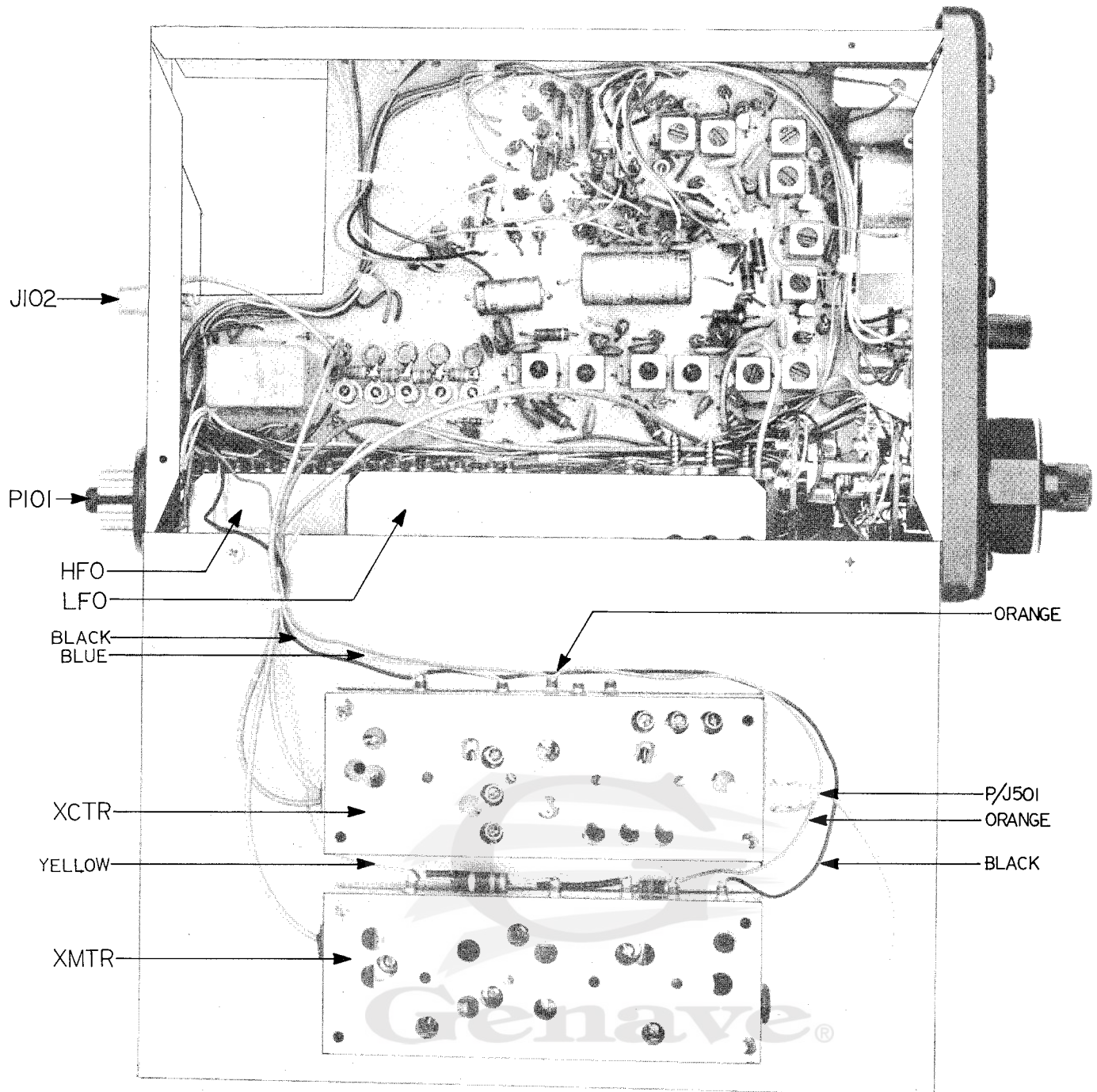


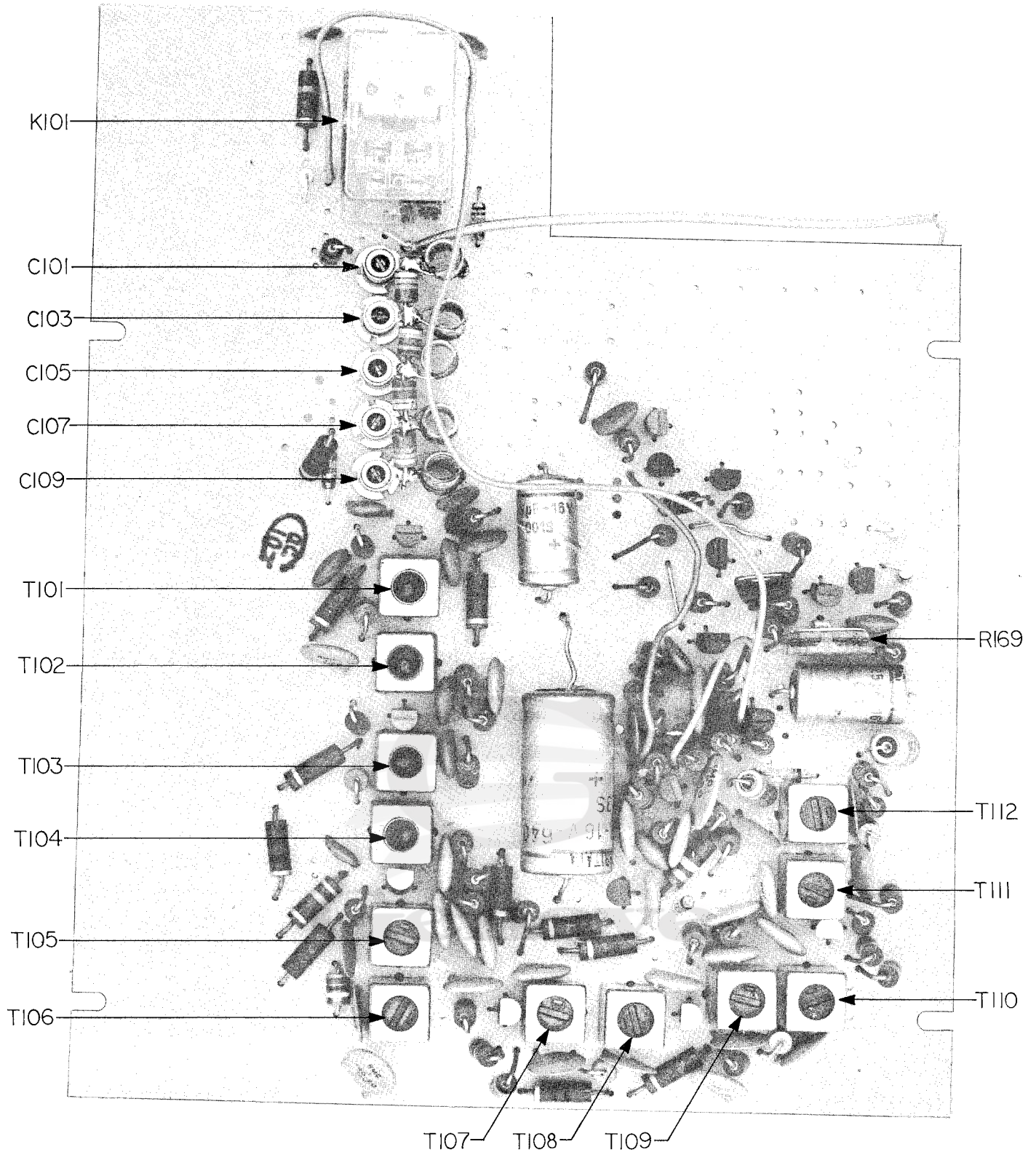
Figure 4-5-2
ALPHA/10 MAINBOARD SCHEMATIC











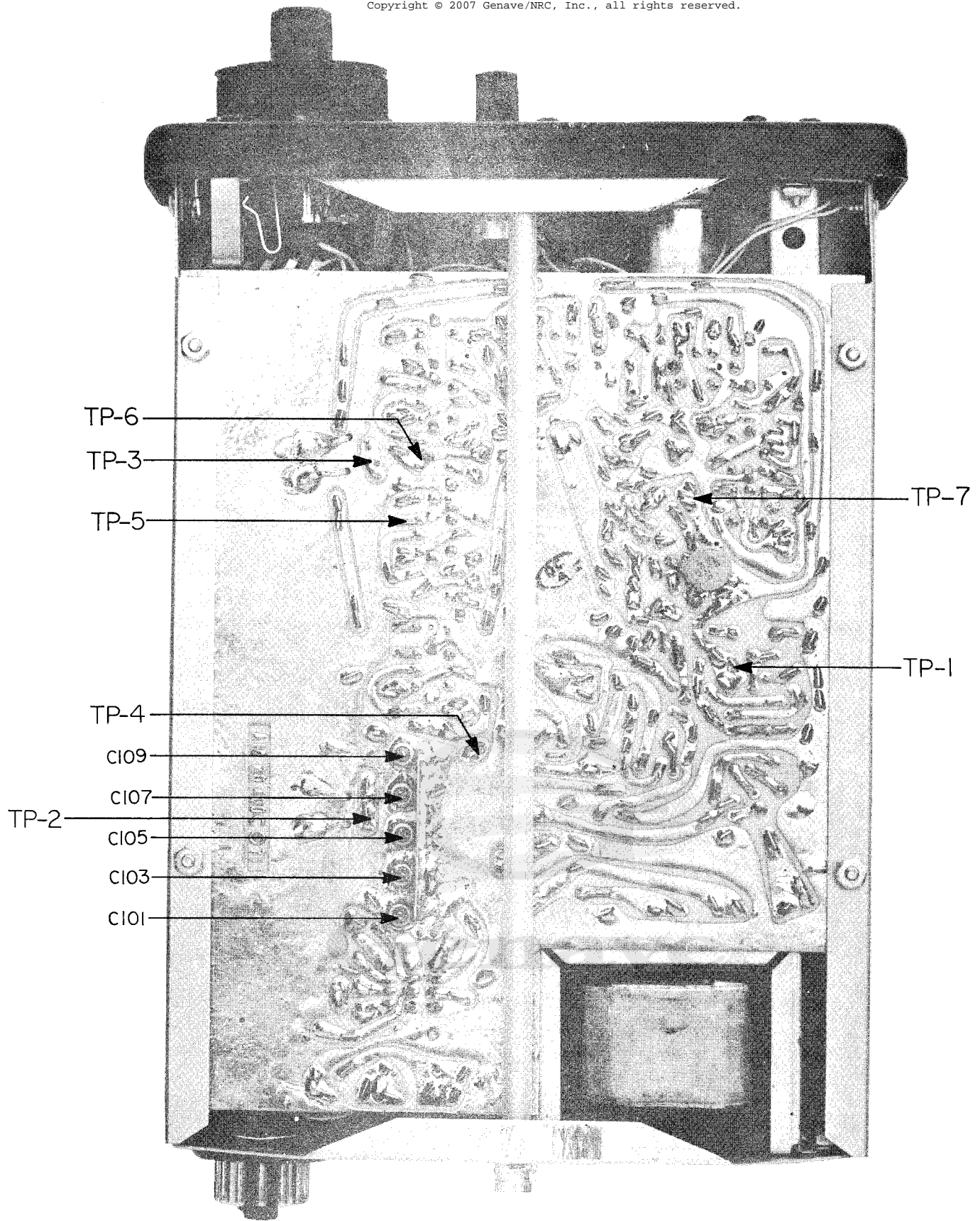
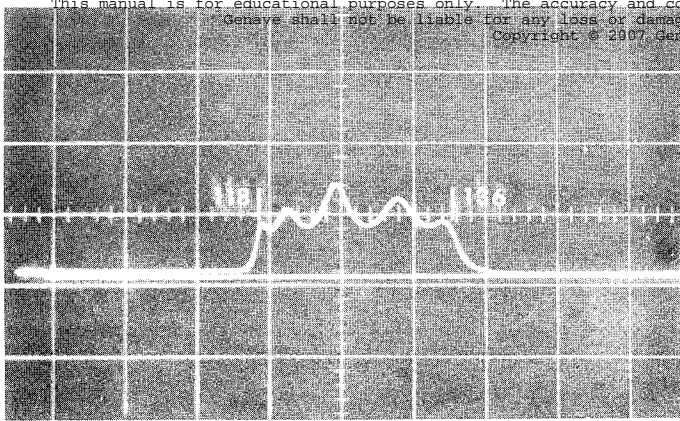
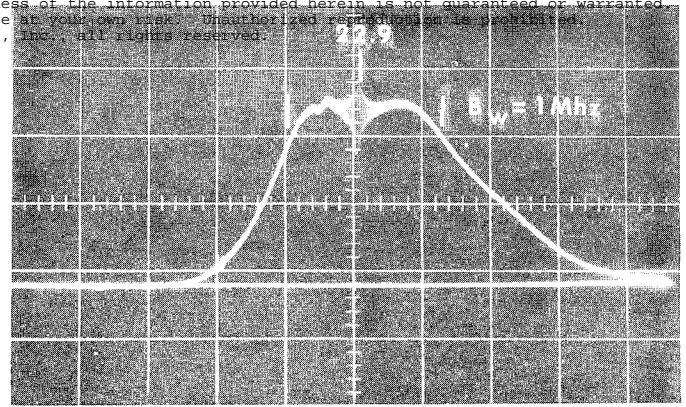


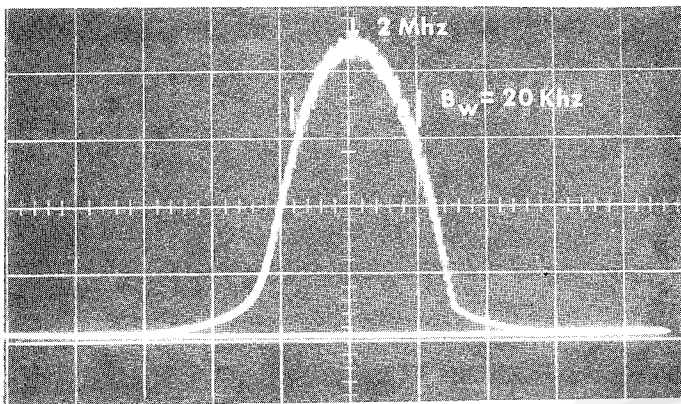
Figure 4-4-5 TEST POINTS



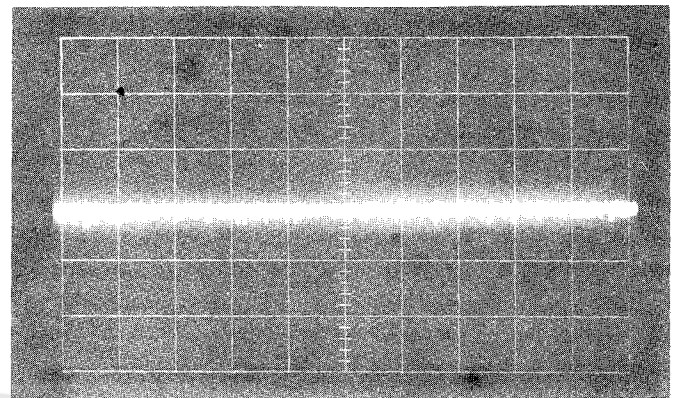
**Figure 4-4-13
INPUT FILTER**



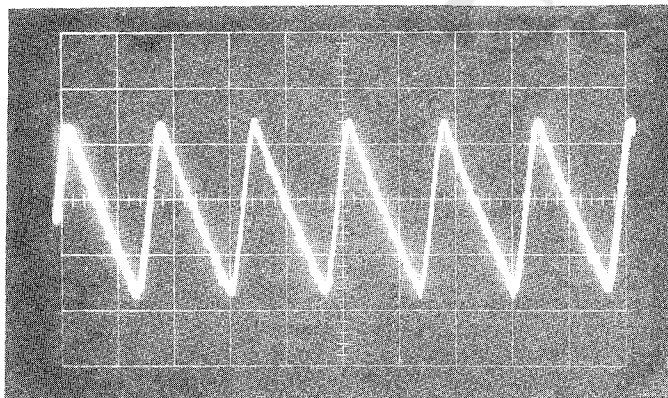
**Figure 4-4-14
FIRST IF**



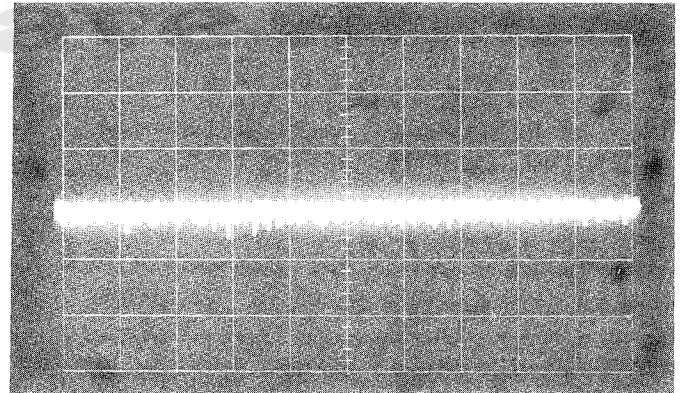
**Figure 4-4-15
SECOND IF**



**Figure 4-4-16
EMITTER, Q120**



**Figure 4-4-17
BASE, Q120**



**Figure 4-4-18
COLLECTOR, Q120**

4-5. TROUBLESHOOTING INFORMATION

I. General

It is assumed that the technician performing any troubleshooting or repair work on the unit is familiar with the principles of aviation electronics and the procedures of troubleshooting electronic equipment. It is further assumed that he has a working knowledge of transistorized circuitry and the use of all the normal test equipment found in the field.

The primary aids to troubleshooting the radio are the DC Voltage Measurements given in Table 4-5-1, the component Location Information (Figures 4-5-14 through 4-5-19), and Schematic Diagrams (Figures 4-5-2 through 4-5-13).

II. Table of Figures

A. Voltage Measurements

4-5-1 DC Voltage Measurements

B. Schematic Diagrams

4-5-2 ALPHA/10 Mainboard

4-5-3 ALPHA/10 H.F. Osc.

4-5-4 ALPHA/10 L.F. Osc.

4-5-5 ALPHA/10 Exciter and Transmitter

4-5-6 ALPHA/100 Mainboard

4-5-7 ALPHA/100 H.F. Osc.

4-5-8 ALPHA/100 L.F. Osc.

4-5-9 ALPHA/100 Exciter and Transmitter

4-5-10 ALPHA/100-360 Mainboard

4-5-11 ALPHA/100-360 H.F. Osc.

4-5-12 ALPHA/100-360 L.F. Osc.

4-5-13 ALPHA/100-360 Exciter and Transmitter

C. Component Location Information

4-5-14 400 Series Mainboard Parts/Track Map

4-5-15 400D Series Mainboard Parts/Track Map

4-5-16 ALPHA/10 H.F. Osc. Parts/Track Map

4-5-17 ALPHA/10 L.F. Osc. Parts/Track Map

4-5-18 Exciter Parts/Track Map

4-5-19 Transmitter Parts/Track Map



ALPHA/10 & 100 DC VOLTAGE MEASUREMENTS

Transistor	No Signal Condition			500 microvolt Signal With 1.3 KHz 30 % Modulation		
	E	B	C	E	B	C
Q101	1.0	1.5	8.1	0.3	0.8	8.4
Q102	0.8	1.5	7.5	0.1	0.8	8.3
Q103	0.8	1.4	8.2	0.8	1.4	8.3
Q104	0.9	1.5	7.4	0.1	0.8	8.3
Q105	0.8	1.5	6.5	0.1	0.8	8.3
Q106	3.5	4.2	7.8	3.5	4.2	7.8
SQ &						
Q107 Vol CW	1.9	2.5	8.5	1.2	1.8	8.5
SQ &						
Q107 Vol CCW	4.0	2.8	8.5	2.1	2.8	8.5
Q108	1.8	2.2	4.8	0.8	1.3	7.8
Q109 SQ CW	8.5	8.5	1.9	8.5	8.4	1.2
Q109 SQ CCW	8.5	7.8	8.4	8.5	8.1	2.1
Q110	0.6	1.1	7.9			
Q111	0	0.6	6.0			
Q112	6.0	6.7	7.9			
Q113	7.3	7.9	13.8			
Q114	6.6	6.0	0			
Q115	6.8	7.3	13.8			
Q116	6.8	6.6	0			
Q117	13.8	13.0	8.5			
Q118	4.8	5.5	13.0			
Q119	4.7	5.4	8.5			



4-6. SPECIALIZED PROCEDURES

A. Front Panel Removal

Removing the front panel allows access to the volume control, squelch control, microphone jack, earphone jack, and the speaker.

1. Remove all of the control knobs from their shafts.
2. Remove the four (4) Phillips head machine screws from the corners of the front panel using a screwdriver and open end wrench.
3. Collect the four (4) spacers, nuts, and lock-washers for reassembly.
4. Pull the front panel off over the control shafts.
5. To reassemble reverse the above steps.

B. Oscillator Repairs

The high and low frequency oscillators are constructed in a manner which makes servicing easy.

1. To service a singular or multiple crystals remove the oscillator assembly from the side panel by removing the two (2) retaining screws. There is no need to unsolder the oscillator leads unless the entire oscillator is to be replaced.
2. Remove the top and bottom oscillator covers by unsoldering. This makes the entire oscillator easily accessible.

NOTE: Do not attempt to adjust the high frequency oscillator doubler filter trimmers. The high frequency oscillator doubler filter is prealigned at the factory. It should not be necessary to readjust this filter unless the components of the filter itself are damaged, in which case the high frequency oscillator module should be replaced and the old module returned to the factory for repair.

3. In order to replace the oscillator module with a new module the cable from the oscillator must be removed from the main circuit board and the leads must be removed from the feedthroughs. Be sure to note the location of these various leads and the cable for module replacement.
4. To replace oscillator module reverse the above steps.

C. ALPHA/10 Frequency Changes

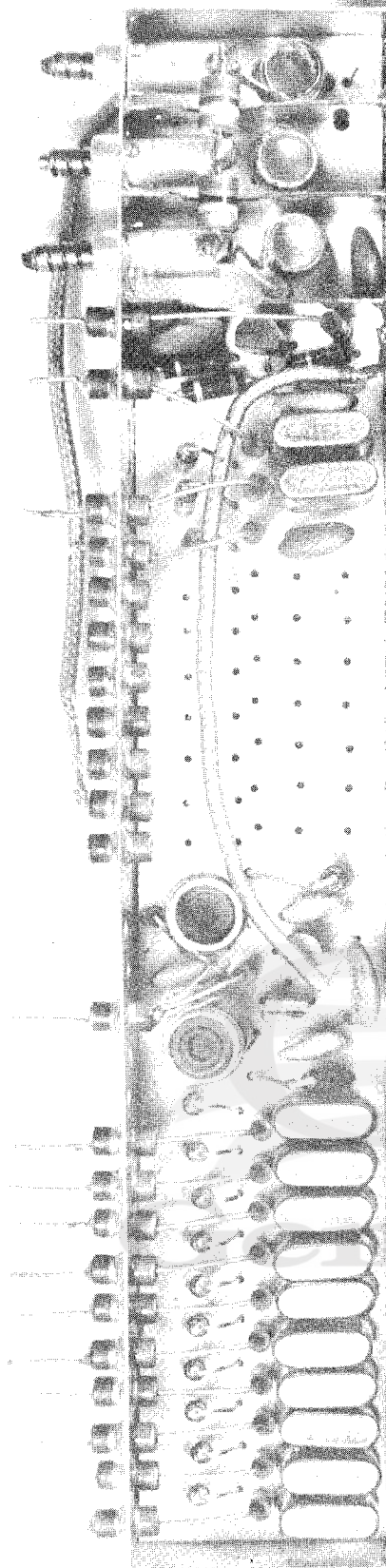
In order to change or add an additional frequency in the ALPHA/10 modifications must be made both to the oscillators and to the frequency selector.

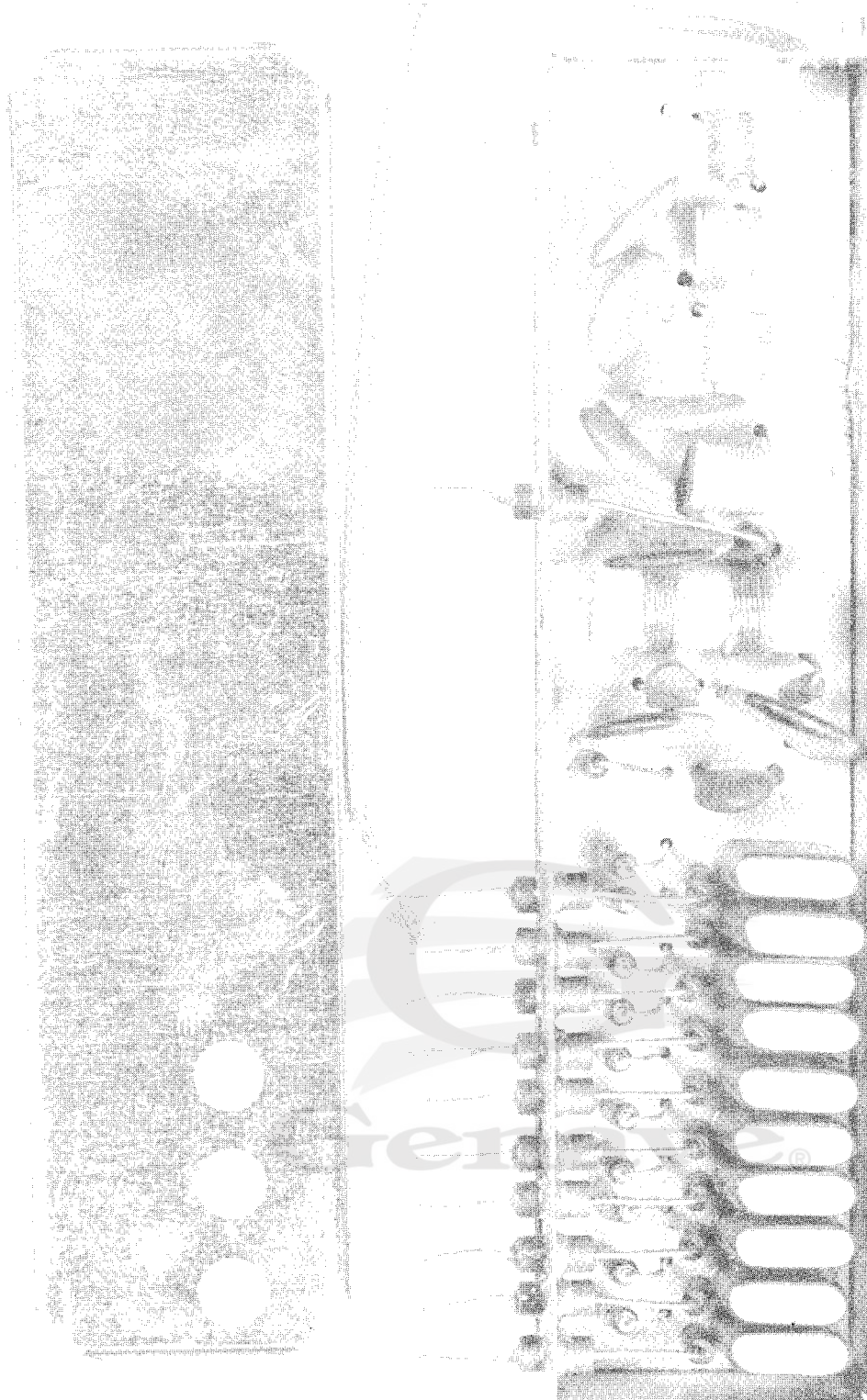
Whenever either the whole MHz or fractional MHz portion of the new frequency desired is the same as a portion of a frequency already in use the addition of a crystal for that portion of the desired frequency will not be necessary. For example, if the unit presently has the frequency of 122.8 MHz and the new frequency desired is 124.8 MHz the crystal for the fractional portion (.8 MHz) will not have to be installed since it is already present. In this example it would only be necessary to rewire the frequency selector and the low frequency oscillator in order to obtain the desired fractional portion of the desired frequency.

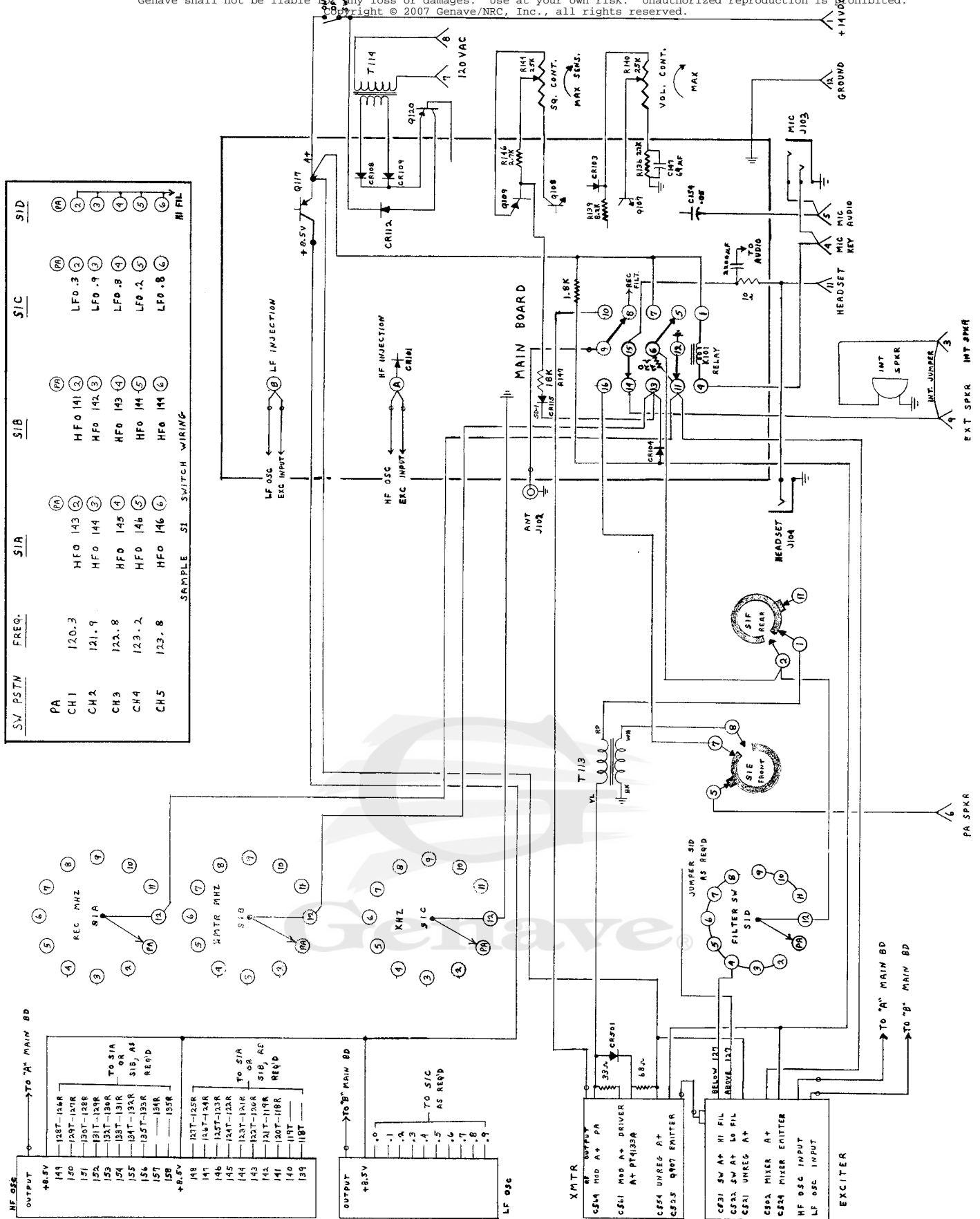
When it is necessary to install an additional crystal the following procedure should be used:

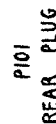
1. Remove the oscillator assembly as described in part B.
2. Install the new feedthrough, crystal, and diode in the position designated in figure 4-6-1 or 4-6-2.
3. Install the 330 ohm resistor in the board and carefully place other lead through feedthrough. Solder all connections.
4. Replace oscillator covers.
5. Modify switch wiring as necessary and make wiring connections to the feedthrough. See figures 4-5-2 and 4-6-3.
6. Reconnect oscillator leads if disconnected.
7. Realign the oscillator. See section IV, Part 4-6, C & D. Occasionally when less than 5 crystals are used in an oscillator section the indicated oscillator output will appear to be about 7 KHz low on each frequency. This condition can be corrected by placing a feedthrough, diode, and 330 ohm resistor in a vacant frequency position and in place of the crystal install a 100 pfd capacitor. Do not make any connections to the feedthrough. The capacitor added will simulate the capacitance of the normal number of crystals.
8. Reinstall oscillator in unit.

NOTE: All ALPHA/10 transceivers built to utilize frequencies below 127.9 MHz exclusively are equipped with an exciter assembly having only the low frequency switched filter. If crystal changes are made to enable one of these units to operate at or above 128.0 MHz the exciter module must be replaced with an exciter assembly having both switched filters. These exciter assemblies are made available from the factory.

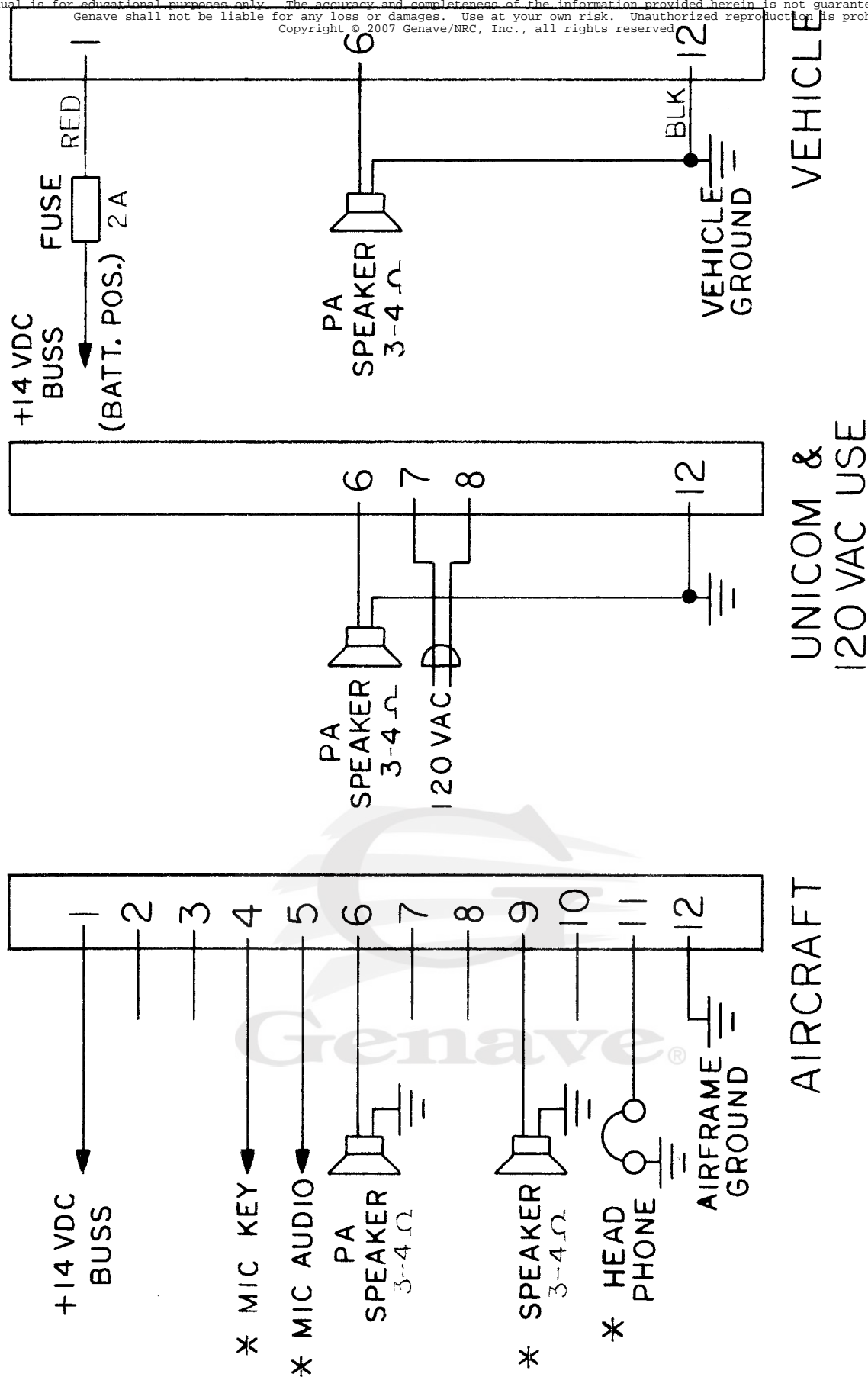






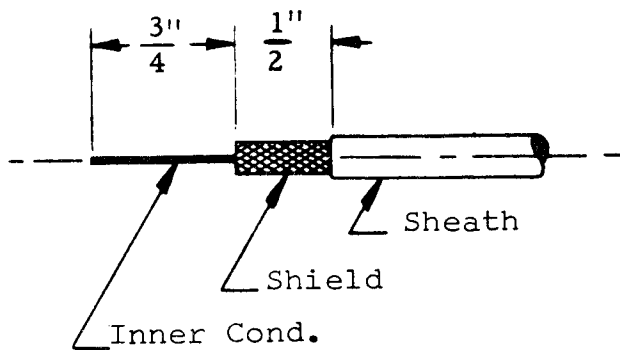


Model: ALPHA/10 & 100



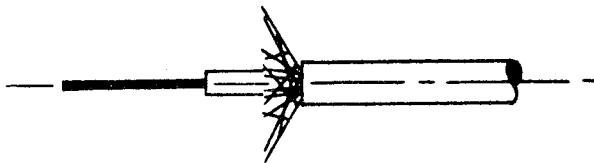
* PARALLEL WITH FRONT PANEL JACK, EITHER MAY BE USED.

COM Antenna Connector Assembly - Aircraft



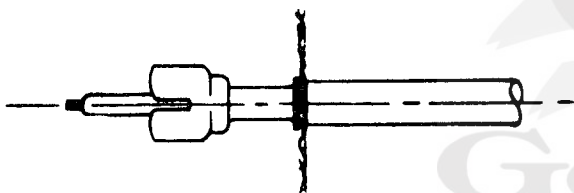
①

Cut and strip RG-58 A/U Coax as shown.



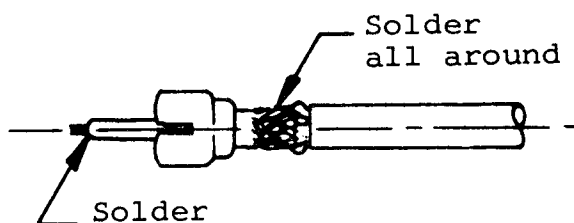
②

Spread shield. Do not pigtail.



③

Press long shank connector onto wire and against shield.



④

Fold shield over connector and solder all around. Flow solder into connector tip to secure inner conductor. Cut off tip of inner connector which protrudes from connector.

SECTION V

PARTS LIST

ALPHA/10

Ref. No.	Genave Part No.	Description	Ref. No.	Genave Part No.	Description
CAPACITORS					
C101	1570004	Trimmer, 8.6 pfd	C325	1570004	Trimmer, 8.6 pfd
C102	1510008	NPO Gimmick, 0.56 pfd, 10%	C326	1520061	Feedthrough, .001 mfd
C103	1570004	Trimmer, 8.6 pfd	C327	1520061	Feedthrough, .001 mfd
C104	1570007	NPO Gimmick, 0.47 pfd, 10%	C328	1520061	Feedthrough, .001 mfd
C105	1570004	Trimmer, 8.6 pfd	C329	1520061	Feedthrough, .001 mfd
C106	1570007	NPO Gimmick, 0.47 pfd, 10%	C330	1520061	Feedthrough, .001 mfd
C107	1570004	Trimmer, 8.6 pfd	C331	1520061	Feedthrough, .001 mfd
C108	1510008	NPO Gimmick, 0.56 pfd, 10%	C332	1520061	Feedthrough, .001 mfd
C109	1570003	Trimmer, 7.3 pfd	C333	1520061	Feedthrough, .001 mfd
C110	1520033	Z5F Disc, 220 pfd, 10%	C334	1520061	Feedthrough, .001 mfd
C111	1520001	NPO Disc, 2.2 pfd, 10%	C335	1520061	Feedthrough, .001 mfd
C112	1520048	X5R Disc, .001 mfd, 10%	C336	1520013	NPO Disc, 33 pfd, 10%
C113	1510017	NPO Gimmick, 3.3 pfd, 10%	C337		Unassigned
C114	1520048	X5R Disc, .001 mfd, 10%	C401	1520050	Z5F Disc, .003 mfd, 10%
C115	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C402	1520033	Z5F Disc, 220 pfd, 10%
C116	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C403	1520061	Feedthrough, .001 mfd
C117	1520048	X5R Disc, .001 mfd, 10%	C404	1520061	Feedthrough, .001 mfd
C118	1520048	X5R Disc, .001 mfd, 10%	C405	1520050	Z5F Disc, .003 mfd, 10%
C119	1510017	NPO Gimmick, 3.3 pfd, 10%	C406	1520016	NPO Disc, 47 pfd, 10%
C120	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C407	1520061	Feedthrough, .001 mfd
C121	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C408	1520061	Feedthrough, .001 mfd
C122	1520016	NPO Disc, 47pfd, 10%	C409	1520061	Feedthrough, .001 mfd
C123	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C410	1520061	Feedthrough, .001 mfd
C124	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C411	1520061	Feedthrough, .001 mfd
C125	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C412	1520061	Feedthrough, .001 mfd
C126	1520022	N220 Disc, 100 pfd, 10%	C413	1520030	N1500 Disc, 180 pfd, 10%
C127	1520012	NPO Gimmick, 1.2 pfd, 10%	C414	1520061	Feedthrough, .001 mfd
C128	1520022	N220 Disc, 100 pfd, 10%	C415	1520030	N1500 Disc, 180 pfd, 10%
C129	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C416	1520061	Feedthrough, .001 mfd, 10%
C130	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C417	1520030	N1500 Disc, 180 pfd, 10%
C131	1520022	N220 Disc, 100 pfd, 10%	C418	1520061	Feedthrough, .001 mfd
C132	1510013	NPO Gimmick, 1.5 pfd, 10%	C419	1520030	N1500 Disc, 180 pfd, 10%
C133	1520022	N220 Disc, 100 pfd, 10%	C420		Unassigned
C134	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C501	1520061	Feedthrough, .001 mfd
C135	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C502	1520061	Feedthrough, .001 mfd
C136	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C503	1520033	Z5F Disc, 220 pfd, 10%
C137	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C504	1520033	Z5F Disc, 220 pfd, 10%
C138	1520022	N220 Disc, 100 pfd, 10%	C505	1520033	Z5F Disc, 220 pfd, 10%
C139	1510012	NPO Gimmick, 1.2 pfd, 10%	C506	1520033	Z5F Disc, 220 pfd, 10%
C140	1520022	N220 Disc, 100 pfd, 10%	C507	1520048	X5R Disc, .001 mfd, 10%
C141	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C508	1520048	X5R Disc, .001 mfd, 10%
C142	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C509	1520007	NPO Disc, 10 pfd, 10%
C143	1520022	N220 Disc, 100 pfd, 10%	C510	1570004	Trimmer, 8.6 pfd
C144	1510013	NPO Gimmick, 1.5 pfd, 10%	C511	1510015	NPO Gimmick, 2.2 pfd, 10%
C145	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C512	1510015	NPO Gimmick, 2.2 pfd, 10%
C146	1520022	N220 Disc, 100 pfd, 10%	C513	1520008	NPO Disc, 12 pfd, 10%
C147	1540021	Aluminum Electrolytic, 64 mfd, 10%, 4V	C514	1570004	Trimmer, 8.6 pfd
C148	1520022	N220 Disc, 100 pfd, 10%	C515	1570004	Trimmer, 8.6 pfd
C149	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C516	1520008	NPO Disc, 12 pfd, 10%
C150	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C517	1520033	Z5F Disc, 220 pfd, 10%
C151	1540014	Aluminum Electrolytic, 10 mfd, 10%, 16V	C518	1520033	Z5F Disc, 220 pfd, 10%
C152	1520033	Z5F Disc, 220 pfd, 10%	C519	1520011	NPO Disc, 22 pfd, 10%
C153	1520033	Z5F Disc, 220 pfd, 10%	C520	1520011	NPO Disc, 22 pfd, 10%
C154	1520054	Z5F Disc, .05 mfd, 20%	C521	1520061	Feedthrough, .001 mfd
C155	1520051	Y5U Disc, .01 mfd, 20%	C522	1520061	Feedthrough, .001 mfd
C156	1520057	Disc, .22 mfd, +80% -20%, 12V	C523	1520055	Disc, .1 mfd, +80% -20%, 12V
C157	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C524	1520061	Feedthrough, .001 mfd
C158	1520040	Z5F Disc, 470 pfd, 10%	C525	1520061	Feedthrough, .001 mfd
C159	1520048	X5R Disc, .001 mfd, 10%	C526	1520033	Z5F Disc, 220 pfd, 10%
C160	1540023	Aluminum Electrolytic, 125 mfd, 10%, 10V	C527	1520009	NPO Disc, 15 pfd, 10%
C161	1540014	Aluminum Electrolytic, 10 mfd, 10%, 16V	C528	1570004	Trimmer, 8.6 pfd
C162	1520036	NPO Disc, 270 pfd, 10%	C529	1520033	Z5F Disc, 220 pfd, 10%
C163	1520048	X5R Disc, .001 mfd, 10%	C530	1520061	Feedthrough, .001 mfd
C164	1540023	Aluminum Electrolytic, 125 mfd, 10%, 10V	C531	1520061	Feedthrough, .001 mfd
C165		Unassigned	C532	1520033	Z5F Disc, 220 pfd, 10%
C166	1520048	X5R Disc, .001 mfd, 10%	C533	1520033	Z5F Disc, 220 pfd, 10%
C167	1520048	X5R Disc, .001 mfd, 10%	C534	1520008	NPO Disc, 12 pfd, 10%
C168	1520081	Y5U Disc, .01 mfd, 20%	C535	1570004	Trimmer, 8.6 pfd
C169	1520048	X5R Disc, .001 mfd, 10%	C536	1520008	NPO Disc, 12 pfd, 10%
C170	1520012	.0047 mfd	C537	1510013	NPO Gimmick, 1.5 pfd, 10%
C171	1520055	Disc, 0.1 mfd, +80% -20%, 12V	C538	1570004	Trimmer, 8.6 pfd
C172		Unassigned	C539	1510013	NPO Gimmick, 1.5 pfd, 10%
C301	1520048	X5R Disc, .001 mfd, 10%	C540	1520010	NPO Disc, 18 pfd, 10%
C302	1520022	N220 Disc, 100 pfd, 10%	C541	1570004	Trimmer, 8.6 pfd
C303		Unassigned	C542	1510014	NPO Gimmick, 1.8 pfd, 10%
C304		Unassigned	C543	1510014	NPO Gimmick, 1.8 pfd, 10%
C305	1520008	NPO Disc, 12 pfd, 10%	C544	1520009	NPO Disc, 15 pfd, 10%
C306	1520008	NPO Disc, 12 pfd, 10%	C545	1570004	Trimmer, 8.6 pfd
C307	1520010	NPO Disc, 18 pfd, 10%	C546	1520010	NPO Disc, 18 pfd, 10%
C308	1520061	Feedthrough, .001 mfd	C547	1570004	Trimmer, 8.6 pfd
C309	1520061	Feedthrough, .001 mfd	C548	1520004	NPO Disc, 4.7 pfd, 10%
C310	1520061	Feedthrough, .001 mfd	C549	1520011	NPO Disc, 22 pfd, 10%
C311	1520061	Feedthrough, .001 mfd	C550	1520033	Z5F Disc, 220 pfd, 10%
C312	1520061	Feedthrough, .001 mfd	C551	1520033	Z5F Disc, 220 pfd, 10%
C313	1520048	X5R Disc, .001 mfd, 10%	C552		Unassigned
C314	1520048	X5R Disc, .001 mfd, 10%	C553	1520009	NPO Disc, 15 pfd, 10%
C315	1520061	Feedthrough, .001 mfd	C554	1520061	Feedthrough, .001 mfd
C316	1520004	Trimmer, 8.6 pfd	C555	1520054	Z5F Disc, .05 mfd, 10%
C317	1520061	Trimmer, 8.6 pfd	C556	1520033	Z5F Disc, 220 pfd, 10%
C318	1510011	NPO Gimmick, 1.0 pfd, 10%	C557	1520033	Z5F Disc, 220 pfd, 10%
C319	1520061	NPO Gimmick, 1.0 pfd, 10%	C558	1560004	Variable, 53-300 pfd
C320	1520004	Trimmer, 8.6 pfd	C559	1560003	Variable, 24-200 pfd
C321	1520061	Trimmer, 8.6 pfd	C560	1520054	Z5F Disc, .05 mfd, 10%
C322	1520061	Trimmer, 8.6 pfd	C561	1520061	Feedthrough, .001 mfd
C323	1510012	NPO Gimmick, 1.2 pfd, 10%	C562	1520033	Z5F Disc, 220 pfd, 10%
C324	1520061	NPO Gimmick, 1.2 pfd, 10%	C563	1520054	Z5F Disc, .05 mfd, 10%
			C564	1520061	Feedthrough, .001 mfd

ALPHA/10 Parts List (Continued)

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Ref. No.	Genave Part No.	Description	Ref. No.	Genave Part No.	Description
C565	1520033	Z5F Disc, 220 pfd, 10%	CR501	4810013	Silicon, 1 Amp, 100V, SD-1
C566	1560003	Variable, 24-200 pfd	CR502	4810011	Zenor, 1 Amp, 5.6V
C567	1560003	Variable, 24-200 pfd	RESISTORS		
C568	1560002	Variable, 7-100 pfd	R101	4700025	1K, 1/2 W, 10%
C569	1560002	Variable, 7-100 pfd	R102	4700025	1K, 1/2 W, 10%
C570	1520010	NPO Disc, 18 pfd, 10%	R103	4700036	8.2K, 1/2 W, 10%
C571	1520013	NPO Disc, 33 pfd, 10%	R104	4700017	220 ohm, 1/2 W, 10%
C572	1520013	NPO Disc, 33 pfd, 10%	R105	4700012	82 ohm, 1/2 W, 10%
C573	1520061	Feedthrough, .001 mfd	R106	4700025	1K, 1/2 W, 10%
C574	1520033	Z5F Disc, 200 pfd, 10%	R107	4700017	220 ohm, 1/2 W, 10%
C575	1520061	Feedthrough, .001 mfd	R108	4700036	8.2K, 1/2 W, 10%
C576	1520054	0.5 mfd, 25V, M25 Disc, +80% -20%	R109	4700017	220 ohm, 1/2 W, 10%
C577		Unassigned	R110	4700025	1K, 1/2 W, 10%
CHOKES			R111	4700003	10 ohm, 1/2 W, 10%
Z300	1800038	Bias Choke, .68 uhy	R112	4700012	82 ohm, 1/2 W, 10%
Z301	1800038	Bias Choke, .68 uhy	R113	4700033	4.7K, 1/2 W, 10%
Z501	1800056	Bias Choke	R114	4700025	1K, 1/2 W, 10%
Z502	1800063	Bias Choke	R115	4700025	1K, 1/2 W, 10%
Z503	1800057	Bias Choke	R116	4700030	2.7K, 1/2 W, 10%
Z504	1800063	Bias Choke	R117	4700017	220 ohm, 1/2 W, 10%
COILS			R118		Unassigned
L101	1800052	Input Filter	R119	4700025	1K, 1/2 W, 10%
L102	1800050	Input Filter	R120	4700017	220 ohm, 1/2 W, 10%
L103	1800050	Input Filter	R121	4700030	2.7K, 1/2 W, 10%
L104	1800050	Input Filter	R122	4700017	220 ohm, 1/2 W, 10%
L105	1800039	Input Filter	R123	4700025	1K, 1/2 W, 10%
L301	1800047	HF Oscillator Tuning	R124	4700003	10 ohm, 1/2 W, 10%
L302		Unassigned	R125		Unassigned
L303	1800050	HF Doubler Filter	R126	4700025	1K, 1/2 W, 10%
L304	1800050	HF Doubler Filter	R127	4700013	100 ohm, 1/2 W, 10%
L305	1800052	HF Doubler Filter	R128	4700030	2.7K, 1/2 W, 10%
L306	1800048	HF Oscillator Tuning	R129	7400017	220 ohm, 1/2 W, 10%
L401		Unassigned	R130		Unassigned
L402		Unassigned	R131	4700033	4.7K, 1/2 W, 10%
L403	1800046	LF Oscillator Filter	R132	4700033	4.7K, 1/2 W, 10%
L404	1800046	LF Oscillator Filter	R133	4700025	1K, 1/2 W, 10%
L405	1800046	LF Oscillator Filter	R134	4700030	2.7K, 1/2 W, 10%
L406	1800016	LF Oscillator Filter	R135	4700017	220 ohm, 1/2 W, 10%
L501	1800012	Exciter Filter	R136	4700029	2.2K, 1/2 W, 10%
L502	1800011	Exciter Filter	R137	4700033	4.7K, 1/2 W, 10%
L503	1800012	Exciter Filter	R138		Unassigned
L504	1800012	Exciter Filter	R139	4700036	8.2K, 1/2 W, 10%
L505	1800012	Exciter Filter	R140	4760007	Potentiometer, 25K
L506	1800011	Exciter Filter	R141	4700049	100K, 1/2 W, 10%
L507	1800012	Exciter Filter	R142	4700029	2.2K, 1/2 W, 10%
L508	1800011	Exciter Filter	R143	4700025	1K, 1/2 W, 10%
L509	1800008	Exciter Output	R144	4760007	Potentiometer, 25K
L510	1800055	Exciter Tuning	R145		Selected, 6.8K to 82K
L511	1800054	Matching Coil	R146	4700030	2.7K, 1/2 W, 10%
L512		Unassigned	R147	4700040	18K, 1/2 W, 10%
L513	1800019	Matching Coil	R148	4700027	1.5K, 1/2 W, 10%
L514	1800012	Transmitter Filter	R149	4700040	18K, 1/2 W, 10%
L515	1800018	Transmitter Filter	R150	4700023	680 ohm, 1/2 W, 10%
L516	1800012	Transmitter Filter	R151	4700045	47K, 1/2 W, 10%
CR101	4810017	Silicon, High Frequency Switching, FD 1936	R152	4700040	18K, 1/2 W, 10%
CR102	4810021	Germanium, General Purpose, IN34A	R153	4700028	1.8K, 1/2 W, 10%
CR103	4810017	Silicon, High Frequency Switching, FD 1936	R154	4700044	39K, 1/2 W, 10%
CR104	4810013	Silicon, 1 Amp, 100V, SD-1	R155	4700029	2.2K, 1/2 W, 10%
CR105	4810013	Silicon, 1 Amp, 100V, SD-1	R156	4700017	220 ohm, 1/2 W, 10%
CR106	4810011	Zener, 1 Amp, 24V	R157	4700013	100 ohm, 1/2 W, 10%
CR107	4810006	Zener, 1 Amp, 5.6V	R158	4700022	560 ohm, 1/2 W, 10%
CR108		Unassigned	R159	4700019	330 ohm, 1/2 W, 10%
CR109		Unassigned	R160	4700021	470 ohm, 1/2 W, 10%
CR110		Unassigned	R161	4700009	47 ohm, 1/2 W, 10%
CR111		Unassigned	R162	4700037	10K, 1/2 W, 10%
CR112		Unassigned	R163	4700017	220K, 1/2 W, 10%
CR113		Unassigned	R164	4700003	10 ohm, 1/2 W, 10%
CR114	4810021	Germanium, General Purpose, IN34A	R165	4700022	560 ohm, 1/2 W, 10%
CR115	4810013	Silicon, 1 Amp, 100V, SD-1	R166	4700019	330 ohm, 1/2 W, 10%
CR301	4810017	Silicon, High Frequency Switching, FD 1936	R167	4700025	1K, 1/2 W, 10%
CR302	4810017	Silicon, High Frequency Switching, FD 1936	R168	4700025	1K, 1/2 W, 10%
CR303	4810017	Silicon, High Frequency Switching, FD 1936	R169	4700015	Trimmer, 1K, 20%
CR304	4810017	Silicon, High Frequency Switching, FD 1936	R170	4700029	2.2K, 1/2 W, 10%
CR305	4810017	Silicon, High Frequency Switching, FD 1936	R301	4710021	2.2K, 1/4 W, 10%
CR306	4810017	Silicon, High Frequency Switching, FD 1936	R302	4710019	1.5K, 1/4 W, 10%
CR307	4810017	Silicon, High Frequency Switching, FD 1936	R303	4710012	330 ohm, 1/4 W, 10%
CR308	4810017	Silicon, High Frequency Switching, FD 1936	R304	4710012	330 ohm, 1/4 W, 10%
CR309	4810017	Silicon, High Frequency Switching, FD 1936	R305	4710004	22 ohm, 1/4 W, 10%
CR310	4810017	Silicon, High Frequency Switching, FD 1936	R306	4710025	4.7K, 1/4 W, 10%
CR311	4810017	Silicon, High Frequency Switching, FD 1936	R307	4710016	820 ohm, 1/4 W, 10%
CR312	4810017	Silicon, High Frequency Switching, FD 1936	R308	4710012	330 ohm, 1/4 W, 10%
CR313	4810017	Silicon, High Frequency Switching, FD 1936	R309	4710005	47 ohm, 1/4 W, 10%
CR314	4810017	Silicon, High Frequency Switching, FD 1936	R310	4710008	100 ohm, 1/4 W, 10%
CR315	4810017	Silicon, High Frequency Switching, FD 1936	R311	4710012	330 ohm, 1/4 W, 10%
CR316	4810017	Silicon, High Frequency Switching, FD 1936	R312	4710012	330 ohm, 1/4 W, 10%
CR317	4810017	Silicon, High Frequency Switching, FD 1936	R313	4710012	330 ohm, 1/4 W, 10%
CR318	4810017	Silicon, High Frequency Switching, FD 1936	R314	4710012	330 ohm, 1/4 W, 10%
CR319	4810017	Silicon, High Frequency Switching, FD 1936	R315	4710012	330 ohm, 1/4 W, 10%
CR320	4810017	Silicon, High Frequency Switching, FD 1936	R316	4710012	330 ohm, 1/4 W, 10%
CR401	4810017	Silicon, High Frequency Switching, FD 1936	R317	4710012	330 ohm, 1/4 W, 10%
CR402	4810017	Silicon, High Frequency Switching, FD 1936	R318	4710012	330 ohm, 1/4 W, 10%
CR403	4810017	Silicon, High Frequency Switching, FD 1936	R319	4710012	330 ohm, 1/4 W, 10%
CR404	4810017	Silicon, High Frequency Switching, FD 1936	R320	4710012	330 ohm, 1/4 W, 10%
CR405	4810017	Silicon, High Frequency Switching, FD 1936	R321	4710012	330 ohm, 1/4 W, 10%
CR406	4810017	Silicon, High Frequency Switching, FD 1936	R322	4710012	330 ohm, 1/4 W, 10%
CR407	4810017	Silicon, High Frequency Switching, FD 1936	R323	4710012	330 ohm, 1/4 W, 10%
CR408	4810017	Silicon, High Frequency Switching, FD 1936	R324	4710012	330 ohm, 1/4 W, 10%
CR409	4810017	Silicon, High Frequency Switching, FD 1936	R325	4710012	330 ohm, 1/4 W, 10%
CR410	4810017	Silicon, High Frequency Switching, FD 1936	R326	4710012	330 ohm, 1/4 W, 10%
			R327	4710012	330 ohm, 1/4 W, 10%
			R401	4710025	4.7K, 1/4 W, 10%
			R402	4710021	2.2K, 1/4 W, 10%

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Ref. No.	Genave Part No.	Description	Ref. No.	Genave Part No.	Description
R403	4710004	22 ohm, 1/4 W, 10%	Q301	4800024	Silicon, NPN, Blue, MPS-3563
R404	4710008	100 ohm, 1/4 W, 10%	Q302	4800024	Silicon, NPN, Blue, MPS-3563
R405	4710008	100 ohm, 1/4 W, 10%	Q303	4800024	Silicon, NPN, Blue, MPS-3563
R406	4710008	100 ohm, 1/4 W, 10%	Q401	4800024	Silicon, NPN, Blue, MPS-3563
R407	4710008	100 ohm, 1/4 W, 10%	Q501	4800031	Silicon, NPN, Yellow, MPS-6544
R408	4710008	100 ohm, 1/4 W, 10%	Q502	4800031	Silicon, NPN, Yellow, MPS-6544
R409	4710008	100 ohm, 1/4 W, 10%	Q503	4800024	Silicon, NPN, Blue, MPS-3563
R410	4710008	100 ohm, 1/4 W, 10%	Q504	4800024	Silicon, NPN, Blue, MPS-3563
R411	4710008	100 ohm, 1/4 W, 10%	Q505	4800024	Silicon, NPN, Blue, MPS-3563
R412	4710008	100 ohm, 1/4 W, 10%	Q506	4800024	Silicon, NPN, Blue, MPS-3563
R413	4710008	100 ohm, 1/4 W, 10%	Q507	4800004	Silicon, NPN, 2N 3866
R501	4710011	220 ohm, 1/2 W, 10%	Q508	4800039	Silicon, NPN, 38817
R502	4700014	120 ohm, 1/2 W, 10%	Q509	4800039	Silicon, NPN, 38817
R503	4700009	47 ohm, 1/2 W, 10%			
R504		Unassigned			
R505	4710005	47 ohm, 1/4 W, 10%			
R506	4710025	4.7K, 1/2 W, 10%			
R507	4700003	10 ohm, 1/2 W, 10%			
R508	4700025	1K, 1/2 W, 10%			
R509		Unassigned			
R510	4710008	100 ohm, 1/2 W, 10%			
R511	4710025	4.7K, 1/2 W, 10%			
R512	4700003	10 ohm, 1/2 W, 10%			
R513	4700025	1K, 1/2 W, 10%			
R514	4710023	3.3K, 1/4 W, 10%			
R515	4710017	1K, 1/4 W, 10%			
R516	4710008	100 ohm, 1/4 W, 10%			
R517	4710023	3.3K, 1/4 W, 10%			
R518	4710018	1.2K, 1/4 W, 10%			
R519	4710011	220 ohm, 1/4 W, 10%			
R520	4710011	220 ohm, 1/4 W, 10%			
R521	4710025	4.7K, 1/4 W, 10%			
R522	4710023	3.3K, 1/4 W, 10%			
R523	4710018	1.2K, 1/4 W, 10%			
R524	4700017	220 ohm, 1/4 W, 10%			
R525	4700017	220 ohm, 1/4 W, 10%			
R526	4710025	4.7K, 1/4 W, 10%			
R527	4710008	100 ohm, 1/4 W, 10%			
R528	4710020	1.8K, 1/4 W, 10%			
R529	4700017	220 ohm, 1/4 W, 10%			
R530	4700012	82 ohm, 1/2 W, 10%			
R531	4700008	33 ohm, 1/2 W, 10%			
R532	4700030	2.7K, 1/2 W, 10%			
R533	4700009	47 ohm, 1/2 W, 10%			
R534	4700008	33 ohm, 1 W, 10%			
R535	4700037	10K, 1/2 W, 10%			
R536	4710027	6.8K, 1/4 W, 10%			
R537	4700037	10 ohm, 1/2 W, 10%			
R538	4700028	1.8K, 1/2 W, 10%			
R539	4700011	68 ohm, 1/2 W, 10%			
R540	4700008	33 ohm, 1/2 W, 10%			
R541	4700009	47 ohm, 1/2 W, 10%			
R542	4700017	220 ohm, 1/2 W, 10%			
		TRANSFORMERS			
T101	5600021	High IF, 22.5 MHz			
T102	5600021	High IF, 22.5 MHz			
T103	5600021	High IF, 22.5 MHz			
T104	5600021	High IF, 22.5 MHz			
T105	5600018	Low IF, 2 MHz			
T106	5600018	Low IF, 2 MHz			
T107	5600018	Low IF, 2 MHz			
T108	5600018	Low IF, 2 MHz			
T109	5600018	Low IF, 2 MHz			
T110	5600018	Low IF, 2 MHz			
T111	5600018	Low IF, 2 MHz			
T112	5600018	Low IF, 2 MHz			
T113	5600007	Audio Output			
T401	5600029	LF Osc. Tuning			
T501	5600024	Balanced Mixer LF Input			
T502	5600025	Balanced Mixer Output			
		TRANSISTORS			
Q101	4800024	Silicon, NPN, Blue, MPS-3563			
Q102	4800024	Silicon, NPN, Blue, MPS-3563			
Q103	4800026	Silicon, NPN, White, MPS-3693			
Q104	4800026	Silicon, NPN, White, MPS-3693			
Q105	4800026	Silicon, NPN, White, MPS-3693			
Q106	4800026	Silicon, NPN, White, MPS-3693			
Q107	4800029	Silicon, NPN, Orange, MPS-6514S			
Q108	4800029	Silicon, NPN, Orange, MPS-6514S			
Q109	4800008	Silicon, PNP, Black, 2N 5086			
Q110	4800033	Silicon, NPN, MPS-5172			
Q111	4800002	Silicon, NPN, MPS-6531			
Q112	4800033	Silicon, NPN, MPS-5172			
Q113	4800002	Silicon, NPN, MPS-6531			
Q114	4800025	Silicon, PNP, MPS-3638			
Q115	4800013	Silicon, NPN, MJE-520			
Q116	4800012	Silicon, PNP, MJE-370			
Q117	4800022	Silicon, PNP, MPS-U51			
Q118	4800029	Silicon, NPN, Orange, MPS-6514S			
Q119	4800029	Silicon, NPN, Orange, MPS-6514S			
		CRYSTALS			
Y301	2300062	69.7185 MHz			
Y302	2300064	70.2185 MHz			
Y303	2300066	70.7185 MHz			
Y304	2300068	71.2185 MHz			
Y305	2300070	71.7185 MHz			
Y306	2300072	72.2185 MHz			
Y307	2300074	72.7185 MHz			
Y308	2300076	73.2185 MHz			
Y309	2300078	73.7185 MHz			
Y310	2300080	74.2185 MHz			
Y311	2300082	74.7185 MHz			
Y312	2300083	75.2185 MHz			
Y313	2300081	75.7185 MHz			
Y314	2300084	76.2185 MHz			
Y315	2300085	76.7185 MHz			
Y316	2300086	77.2185 MHz			
Y317	2300087	77.7185 MHz			
Y318	2300088	78.2185 MHz			
Y319	2300089	78.7185 MHz			
Y320	2300090	79.2185 MHz			
Y401	2300050	21.437 MHz			
Y402	2300048	21.337 MHz			
Y403	2300046	21.237 MHz			
Y404	2300044	21.137 MHz			
Y405	2300042	21.037 MHz			
Y406	2300040	20.937 MHz			
Y407	2300038	20.837 MHz			
Y408	2300036	20.737 MHz			
Y409	2300034	20.639 MHz			
Y410	2300032	20.537 MHz			
Y411	2300049	21.387 MHz			
Y412	2300047	21.289 MHz			
Y413	2300045	21.187 MHz			
Y414	2300043	21.087 MHz			
Y415	2300041	20.987 MHz			
Y416	2300039	20.887 MHz			
Y417	2300037	20.787 MHz			
Y418	2300035	20.687 MHz			
Y419	2300033	20.587 MHz			
Y420	2300031	20.486 MHz			
		SWITCHES			
SW1	5600026	Frequency Selector			
SW2	4760007	Off/On, Part of R140			
		MISCELLANEOUS			
J101	2100010	Connector, 12 Pin, Female			
P101	2100013	Connector, 12 Pin, Male			
J102	2100021	Connector, Phono Socket, Hex Mount			
P102	2100023	Connector, Phono Plug, Short Shank			
J103	2100031	Connector, Mic. Jack			
J104	2100030	Connector, Headphone Jack			
CV101	2100018	Cover for J101			
J501	2100020	Connector, Phono Socket, Solder-in			
P501	2100023	Connector, Phono Plug, Short Shank			
HS101	5300001	Heatsink, Audio			
HS501	5300003	Heatsink, TO-5, Q508 & Q509			
HS502	5300004	Heatsink, Q507			
K101	4500007	Relay			
SPK101	1320020	Speaker			
		HARDWARE			
	2501000	Panel, Trim			
	2500830	Panel, Sub			
	2500811	Panel, Side, Left			
	2500816	Panel, Side, Right			
	2500821	Panel, Rear			
	2500826	Panel, Top			
	2400020	Knob, Volume & Squelch			
	2400019	Knob, Frequency Selector			
	9050005	Plug, Button			
	2500946	Tray, Mounting			
	2500045	Clip, Mounting			
	2504216	Grille, Speaker			

Specifications Subject to Change Without Notice

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ALPHA/100

PARTS LIST

Ref. no.	GENAVE Part No.	Description
CAPACITORS		
C101	1570004	Trimmer, .8-6 pfd
C102	1510008	NPO Gimmick, .56 pfd, 10%
C103	1570004	Trimmer, .8-6 pfd
C104	1510007	NPO Gimmick, .47 pfd, 10%
C105	1570004	Trimmer, .8-6 pfd
C106	1510008	NPO Gimmick, .56 pfd, 10%
C107	1570004	Trimmer, .8-6 pfd
C108	1510007	NPO Gimmick, .47 pfd, 10%
C109	1510001	Trimmer, 3 pfd
C110	1520033	Z5F Disc, 220 pfd, 10%
C111	1520001	NPO Disc, 2.2 pfd, 10%
C112	1520061	Feedthrough, .001 mfd
C113	1510017	NPO Gimmick, 3.3 pfd, 10%
C114	1520061	Feedthrough, .001 mfd
C115	1520056	Disc, .1 mfd, +80% -20%
C116	1520056	Disc, .1 mfd, +80% -20%
C117	1520061	Feedthrough, .001 mfd
C118	1520061	Feedthrough, .001 mfd
C119	1510017	NPO Gimmick, 3.3 pfd, 10%
C120	1520056	Disc, .1 mfd, +80% -20%
C121	1520056	Disc, .1 mfd, +80% -20%
C122	1520016	NPO Disc, 47 pfd, 10%
C123	1520056	Disc, .1 mfd, +80% -20%
C124	1520056	Disc, .1 mfd, +80% -20%
C125	1520056	Disc, .1 mfd, +80% -20%
C126	1520022	N220 Disc, 100 pfd, 10%
C127	1510012	NPO Gimmick, 1.2 pfd, 10%
C128	1520022	N220 Disc, 100 pfd, 10%
C129	1520056	Disc, .1 mfd, +80% -20%
C130	1520056	Disc, .1 mfd, +80% -20%
C131	1520022	N220 Disc, 100 pfd, 10%
C132	1510013	NPO Gimmick, 1.5 pfd, 10%
C133	1520022	N220 Disc, 100 pfd, 10%
C134	1520056	Disc, .1 mfd, +80% -20%
C135	1520056	Disc, .1 mfd, +80% -20%
C136	1520056	Disc, .1 mfd, +80% -20%
C137	1520056	Disc, .1 mfd, +80% -20%
C138	1520022	N220 Disc, 100 pfd, 10%
C139	1510012	NPO Gimmick, 1.2 pfd, 10%
C140	1520022	N220 Disc, 100 pfd, 10%
C141	1520056	Disc, .1 mfd, +80% -20%
C142	1520056	Disc, .1 mfd, +80% -20%
C143	1520022	N220 Disc, 100 pfd, 10%
C144	1510013	NPO Gimmick, 1.5 pfd, 10%
C145	1520056	Disc, .1 mfd, +80% -20%
C146	1520022	N220 Disc, 100 pfd, 10%
C147	1540021	Electrolytic, 64 mfd, 4V, 10%
C148	1520022	N220 Disc, 100 pfd, 10%
C149	1520056	Disc, .1 mfd, +80% -20%
C150	1520056	Disc, .1 mfd, +80% -20%
C151	1540014	Electrolytic, 10 mfd, 16V, 10%
C152	1520033	Z5F Disc, 220 pfd, 10%
C153	1520033	Z5F Disc, 220 pfd, 10%
C154	1520054	Disc, .05 mfd, +80% -20%
C155	1520052	Disc, .01 mfd, 20%
C156	1520057	Disc, .22 mfd, +80% -20%
C157	1520033	Disc, .1 mfd, +80% -20%
C158	1520040	Z5F Disc, 470 pfd, 10%
C159	1520061	Feedthrough, .001 mfd
C160	1540024	Electrolytic, 125 mfd, 16V, 10%
C161	1540036	Electrolytic, 640 mfd, 16V, 10%
C162	1520038	N1500 Disc, 270 pfd, 10%
C163	1520061	Feedthrough, .001 mfd
C164	1540024	Electrolytic, 125 mfd, 16V, 10%
C165		Unassigned
C166		Unassigned
C167	1520061	Feedthrough, .001 mfd
C168	1520052	Disc, .01 mfd, 10%
C169	1520061	Feedthrough, .001 mfd
C170	1500031	.0047 mfd, 10%
C171	1520056	Disc, .1 mfd, +80% -20%
C172		Unassigned
C301	1520048	X5R Disc, .001 mfd, 10%
C302	1520022	N220 Disc, 100 pfd, 10%
C303		Unassigned
C304		Unassigned
C305	1520008	NPO Disc, 12 pfd, 10%
C306	1520008	NPO Disc, 12 pfd, 10%
C307	1520010	NPO Disc, 18 pfd, 10%
C308	1520061	Feedthrough, .001 mfd
C309		Unassigned
C310	1520061	Feedthrough, .001 mfd
C311		Unassigned
C312		Unassigned
C313	1520048	X5R Disc, .001 mfd, 10%
C314	1520048	X5R Disc, .001 mfd, 10%
C315		Unassigned
C316	1570004	Trimmer, .8-6 pfd
C317		Unassigned
C318	1510011	NPO Gimmick, 1.0 pfd, 10%
C319		Unassigned

Ref. no.	GENAVE Part No.	Description
C320	1570004	Trimmer, .8-6 pfd
C321	1520061	Feedthrough, .001 mfd
C322	1520061	Feedthrough, .001 mfd
C323	1510012	NPO Gimmick, 1.2 pfd, 10%
C324	1520061	Feedthrough, .001 mfd
C325	1570004	Trimmer, .8-6 pfd
C326	1520061	Feedthrough, .001 mfd
C327	1520061	Feedthrough, .001 mfd
C328	1520061	Feedthrough, .001 mfd
C329	1520061	Feedthrough, .001 mfd
C330	1520061	Feedthrough, .001 mfd
C331	1520061	Feedthrough, .001 mfd
C332	1520061	Feedthrough, .001 mfd
C333	1520061	Feedthrough, .001 mfd
C334	1520061	Feedthrough, .001 mfd
C335	1520061	Feedthrough, .001 mfd
C336	1520013	NPO Disc, 33 pfd, 10%
C337		Unassigned
C401	1520050	Z5F Disc, .003 mfd, 10%
C402	1520033	Z5F Disc, 220 pfd, 10%
C403	1520061	Feedthrough, .001 mfd
C404	1520061	Feedthrough, .001 mfd
C405	1520050	Z5F Disc, .003 mfd, 10%
C406	1520016	NPO Disc, 47 pfd, 10%
C407	1520061	Feedthrough, .001 mfd
C408	1520061	Feedthrough, .001 mfd
C409	1520061	Feedthrough, .001 mfd
C410	1520061	Feedthrough, .001 mfd
C411	1520061	Feedthrough, .001 mfd
C412	1520061	Feedthrough, .001 mfd
C413	1520030	N1500 Disc, 180 pfd, 10%
C414	1520061	Feedthrough, .001 mfd
C415	1520030	N1500 Disc, 180 pfd, 10%
C416	1520061	Feedthrough, .001 mfd
C417	1520030	N1500 Disc, 180 pfd, 10%
C418	1520061	Feedthrough, .001 mfd
C419	1520030	N1500 Disc, 180 pfd, 10%
C420		Unassigned
C501		Unassigned
C502	1520061	Feedthrough, .001 mfd
C503	1520033	Z5F Disc, 220 pfd, 10%
C504	1520033	Z5F Disc, 220 pfd, 10%
C505	1520033	Z5F Disc, 220 pfd, 10%
C506	1520033	Z5F Disc, 220 pfd, 10%
C507	1520048	X5R Disc, .001 mfd, 10%
C508	1520048	X5R Disc, .001 mfd, 10%
C509	1520007	NPO Disc, 10 pfd, 10%
C510	1570004	Trimmer, .8-6 pfd
C511	1510015	NPO Gimmick, 2.2 pfd, 10%
C512	1510015	NPO Gimmick, 2.2 pfd, 10%
C513	1520008	NPO Disc, 12 pfd, 10%
C514	1570004	Trimmer, .8-6 pfd
C515	1570004	Trimmer, .8-6 pfd
C516	1520008	NPO Disc, 12 pfd, 10%
C517	1520033	Z5F Disc, 220 pfd, 10%
C518	1520033	Z5F Disc, 220 pfd, 10%
C519	1520011	NPO Disc, 22 pfd, 10%
C520		Unassigned
C521	1520061	Feedthrough, .001 mfd
C522		Unassigned
C523	1520059	Disc, .1 mfd, +80% -20%
C524	1520061	Feedthrough, .001 mfd
C525	1520061	Feedthrough, .001 mfd
C526	1520033	Z5F Disc, 220 pfd, 10%
C527	1520009	NPO Disc, 15 pfd, 10%
C528	1570004	Trimmer, .8-6 pfd
C529	1520033	Z5F Disc, 220 pfd, 10%
C542	1510014	NPO Gimmick, 1.8 pfd, 10%
C543	1510014	NPO Gimmick, 1.8 pfd, 10%
C544	1520008	NPO Disc, 12 pfd, 10%
C545	1570004	Trimmer, .8-6 pfd
C546	1520010	NPO Disc, 18 pfd, 10%
C547	1570004	Trimmer, .8-6 pfd
C548		Unassigned
C549		Unassigned
C550	1520033	Z5F Disc, 220 pfd, 10%
C551	1520033	Z5F Disc, 220 pfd, 10%
C552		Unassigned
C553	1520008	NPO Disc, 12 pfd, 10%
C554	1520061	Feedthrough, .001 mfd
C555	1520054	Disc, .05 mfd, +80% -20%
C556	1520033	Z5F Disc, 220 pfd, 10%
C557	1520033	Z5F Disc, 220 pfd, 10%
C558	1560004	Variable, 55-300 pfd
C559	1560003	Variable, 24-200 pfd
C560	1520054	Disc, .05 mfd, +80% -20%
C561	1520061	Feedthrough, .001 mfd
C562	1520033	Z5F Disc, 220 pfd, 10%
C563	1520054	Disc, .05 mfd, +80% -20%
C564	1520061	Feedthrough, .001 mfd
C565	1520033	Z5F Disc, 220 pfd, 10%
C566	1560003	Variable, 24-200 pfd

ALPHA/100 Parts List (Continued)

Ref. no.	GENAVE Part No.	Description
C567	1560003	Variable, 24-200 pfd
C568	1560002	Variable, 7-100 pfd
C569	1560002	Variable, 7-100 pfd
C570	1520010	NPO Disc, 18 pfd, 10%
C571	1520013	NPO Disc, 33 pfd, 10%
C572	1520013	NPO Disc, 33 pfd, 10%
C573		Unassigned
C574		Unassigned
C575	1520061	Feedthrough, .001 mfd
CHOKES		
Z300	1800038	Bias Choke, .68 uhy
Z301	1800038	Bias Choke, .68 uhy
Z501	1800056	Bias Choke
Z502	1800063	Bias Choke
Z503	1800057	Bias Choke
Z504	1800063	Bias Choke
COILS		
L101	1800052	Input Filter
L102	1800050	Input Filter
L103	1800050	Input Filter
L104	1800050	Input Filter
L105	1800039	Input Filter
L301	1800047	HF Oscillator Tuning
L302		Unassigned
L303	1800050	HF Doubler Filter
L304	1800050	HF Doubler Filter
L305	1800052	HF Doubler Filter
L306	1800048	HF Oscillator Tuning
L401		Unassigned
L402		Unassigned
L403	1800046	LF Oscillator Filter
L404	1800046	LF Oscillator Filter
L405	1800046	LF Oscillator Filter
L406	1800016	LF Oscillator Filter
L501	1800012	Exciter Filter
L502	1800011	Exciter Filter
L503	1800012	Exciter Filter
L504		Unassigned
L505	1800012	Exciter Filter
L506	1800011	Exciter Filter
L507		Unassigned
L508		Unassigned
L509		Unassigned
L510	1800055	Exciter Tuning
L511	1800054	Matching Coil
L512		Unassigned
L513	1800019	Matching Coil
L514	1800012	Transmitter Filter
L515	1800018	Transmitter Filter
L516	1800012	Transmitter Filter
DIODES		
CR101	4810017	Silicon, High Frequency Switching, FD1936
CR102	4810021	Germanium, General Purpose, IN34A
CR103	4810017	Silicon, High Frequency Switching, FD1936
CR104	4810013	Silicon, 1 Amp, 100V, SD-1
CR105	4810013	Silicon, 1 Amp, 100V, SD-1
CR106	4810011	Zener, 1 Amp, 24V
CR107	4810006	Zener, 1 Amp, 5.6V
CR114	4810021	Germanium, General Purpose, IN34A
CR115	4810013	Silicon, 1 Amp, 100V, SD-1
CR308	4810017	Silicon, High Frequency Switching, FD 1936
CR309	4810017	Silicon, High Frequency Switching, FD 1936
CR310	4810017	Silicon, High Frequency Switching, FD 1936
CR311	4810017	Silicon, High Frequency Switching, FD 1936
CR312	4810017	Silicon, High Frequency Switching, FD 1936
CR313	4810017	Silicon, High Frequency Switching, FD 1936
CR314	4810017	Silicon, High Frequency Switching, FD 1936
CR315	4810017	Silicon, High Frequency Switching, FD 1936
CR316	4810017	Silicon, High Frequency Switching, FD 1936
CR317	4810017	Silicon, High Frequency Switching, FD 1936
CR318	4810017	Silicon, High Frequency Switching, FD 1936
CR319	4810017	Silicon, High Frequency Switching, FD 1936
CR320	4810017	Silicon, High Frequency Switching, FD 1936
CR401	4810017	Silicon, High Frequency Switching, FD 1936
CR402	4810017	Silicon, High Frequency Switching, FD 1936
CR403	4810017	Silicon, High Frequency Switching, FD 1936
CR404	4810017	Silicon, High Frequency Switching, FD 1936
CR405	4810017	Silicon, High Frequency Switching, FD 1936
CR406	4810017	Silicon, High Frequency Switching, FD 1936
CR407	4810017	Silicon, High Frequency Switching, FD 1936
CR408	4810017	Silicon, High Frequency Switching, FD 1936
CR409	4810017	Silicon, High Frequency Switching, FD 1936
CR410	4810017	Silicon, High Frequency Switching, FD 1936
CR501	4810013	Silicon, 1 Amp, 100V, SD-1
CR502	5810011	Zener, 1 Amp, 24V
RESISTORS		
R101	4700025	1K, 1/2 W, 10%
R102	4700025	1K, 1/2 W, 10%
R103	4700036	8.2K, 1/2 W, 10%
R104	4700017	220 ohm, 1/2 W, 10%

Ref. no.	GENAVE Part No.	Description
R105	4700012	82 ohm, 1/2 W, 10%
R106	4700025	1K, 1/2 W, 10%
R107	4700017	220 ohm, 1/2 W, 10%
R108	4700036	8.2K, 1/2 W, 10%
R109	4700017	220 ohm, 1/2 W, 10%
R110	4700025	1K, 1/2 W, 10%
R111	4700003	10 ohm, 1/2 W, 10%
R112	4700012	82 ohm, 1/2 W, 10%
R113	4700033	4.7K, 1/2 W, 10%
R114	4700025	1K, 1/2 W, 10%
R115	4700025	1K, 1/2 W, 10%
R116	4700030	2.7K, 1/2 W, 10%
R117	4700017	220 ohm, 1/2 W, 10%
R118		Unassigned
R119	4700025	1K, 1/2 W, 10%
R120	4700017	220 ohm, 1/2 W, 10%
R121	4700030	2.7K, 1/2 W, 10%
R122	4700017	220 ohm, 1/2 W, 10%
R123	4700025	1K, 1/2 W, 10%
R124	4700003	10 ohm, 1/2 W, 10%
R125		Unassigned
R126	4700025	1K, 1/2 W, 10%
R127	4700013	100 ohm, 1/2 W, 10%
R128	4700030	2.7K, 1/2 W, 10%
R129	4700017	220 ohm, 1/2 W, 10%
R130		Unassigned
R131	4700033	4.7K, 1/2 W, 10%
R132	4700033	4.7K, 1/2 W, 10%
R133	4700037	10K, 1/2 W, 10%
R134	4700030	2.7K, 1/2 W, 10%
R135	4700017	220 ohm, 1/2 W, 10%
R136	4700029	2.2K, 1/2 W, 10%
R137	4700033	4.7K, 1/2 W, 10%
R138		Unassigned
R139	4700036	8.2K, 1/2 W, 10%
R140	4760007	Pot, 25K, Volume
R141	4700049	100K, 1/2 W, 10%
R142	4700029	2.2K, 1/2 W, 10%
R143	4700037	10K, 1/2 W, 10%
R144	4760008	Pot, 25K, Squelch
R145		Selected, 6.8K to 82K, 1/2 W, 10%
R146	4700030	2.7K, 1/2 W, 10%
R147	4700040	18K, 1/2 W, 10%
R148	4700027	1.5K, 1/2 W, 10%
R149	4700040	18K, 1/2 W, 10%
R150	4700023	680 ohm, 1/2 W, 10%
R151	4700045	47K, 1/2 W, 10%
R152	4700040	18K, 1/2 W, 10%
R153	4700028	1.8K, 1/2 W, 10%
R154	4700044	39K, 1/2 W, 10%
R155	4700029	2.2K, 1/2 W, 10%
R156	4700017	220 ohm, 1/2 W, 10%
R157	4700013	100 ohm, 1/2 W, 10%
R158	4700022	560 ohm, 1/2 W, 10%
R159	4700019	330 ohm, 1/2 W, 10%
R160	4700021	470 ohm, 1/2 W, 10%
R161	4700009	47 ohm, 1/2 W, 10%
R162	4700037	10K, 1/2 W, 10%
R163	4700017	220K, 1/2 W, 10%
R164	4700003	10 ohm, 1/2 W, 10%
R165	4700022	560 ohm, 1/2 W, 10%
R166	4700019	330 ohm, 1/2 W, 10%
R167	4700025	1K, 1/2 W, 10%
R168	4700025	1K, 1/2 W, 10%
R169	4760015	Trimmer, 1K, 20%
R170	4700029	2.2K, 1/2 W, 10%
R171	4700013	100 ohm, 1/2 W, 10%
R301	4710021	2.2K, 1/4 W, 10%
R302	4710019	1.5K, 1/4 W, 10%
R303		Unassigned
R304		Unassigned
R305	4710004	22 ohm, 1/4 W, 10%
R306	4710025	4.7K, 1/4 W, 10%
R307	4710016	820 ohm, 1/4 W, 10%
R308		Unassigned
R309	4710005	47 ohm, 1/4 W, 10%
R310	4710008	100 ohm, 1/4 W, 10%
R311		Unassigned
R312		Unassigned
R313		Unassigned
R314		Unassigned
R315	4710012	330 ohm, 1/4 W, 10%
R316	4710012	330 ohm, 1/4 W, 10%
R317	4710012	330 ohm, 1/4 W, 10%
R318	4710012	330 ohm, 1/4 W, 10%
R319	4710012	330 ohm, 1/4 W, 10%
R320	4710012	330 ohm, 1/4 W, 10%
R321	4710012	330 ohm, 1/4 W, 10%
R322	4710012	330 ohm, 1/4 W, 10%
R323	4710012	330 ohm, 1/4 W, 10%
R324	4710012	330 ohm, 1/4 W, 10%
R325	4710012	330 ohm, 1/4 W, 10%
R326	4710012	330 ohm, 1/4 W, 10%
R327	4710012	330 ohm, 1/4 W, 10%
R401	4710025	4.7K, 1/4 W, 10%
R402	4710021	2.2K, 1/4 W, 10%
R403	4710004	22 ohm, 1/4 W, 10%
R404	4710008	100 ohm, 1/4 W, 10%

ALPHA/100 Parts List (Continued)

Ref. no.	GENAVE Part No.	Description	Ref. no.	GENAVE Part No.	Description
R405	4710008	100 ohm, 1/4 W, 10%	Q115	4800013	Silicon, NPN, MJE-520
R406	4710008	100 ohm, 1/4 W, 10%	Q116	4800012	Silicon, PNP, MJE-370
R407	4710008	100 ohm, 1/4 W, 10%	Q117	4800022	Silicon, PNP, MPS-U51
R408	4710008	100 ohm, 1/4 W, 10%	Q118	4800029	Silicon, NPN, Orange, MPS-6514S
R409	4710008	100 ohm, 1/4 W, 10%	Q119	4800029	Silicon, NPN, Orange, MPS-6514S
R410	4710008	100 ohm, 1/4 W, 10%	Q301	4800024	Silicon, NPN, Blue, MPS-3563
R411	4710008	100 ohm, 1/4 W, 10%	Q302	4800024	Silicon, NPN, Blue, MPS-3563
R412	4710008	100 ohm, 1/4 W, 10%	Q303	4800024	Silicon, NPN, Blue, MPS-3563
R413	4710008	100 ohm, 1/4 W, 10%	Q401	4800024	Silicon, NPN, Blue, MPS-3563
R501	4700017	220 ohm, 1/2 W, 10%	Q501	4800031	Silicon, NPN, Yellow, MPS-6544
R502	4700014	120 ohm, 1/2 W, 10%	Q502	4800031	Silicon, NPN, Yellow, MPS-6544
R503	4700009	47 ohm, 1/2 W, 1%	Q503	4800024	Silicon, NPN, Blue, MPS-3563
R504		Unassigned	Q504	4800024	Silicon, NPN, Blue, MPS-3563
R505	4710005	47 ohm, 1/4 W, 10%	Q505	4800024	Silicon, NPN, Blue, MPS-3563
R506	4700033	4.7K, 1/2 W, 10%	Q506	4800024	Silicon, NPN, Blue, MPS-3563
R507	4700003	10 ohm, 1/2 W, 10%	Q507	4800004	Silicon, NPN, PT4133A
R508	4700009	47 ohm, 1/2 W, 10%	Q508	4800039	Silicon, NPN, 38817
R509		Unassigned	Q509	4800039	Silicon, NPN, 38817
R510	4700013	100 ohm, 1/2 W, 10%	CRYSTALS		
R511	4700033	4.7 K, 1/2 W, 10%	Y301	2300062	69.7185 MHz
R512	4700003	10 ohm, 1/2 W, 10%	Y302	2300064	70.2185 MHz
R513	4700025	1K, 1/2 W, 10%	Y303	2300066	70.7185 MHz
R514	4710023	3.3K, 1/4 W, 10%	Y304	2300068	71.2185 MHz
R515	4700025	1K, 1/4 W, 10%	Y305	2300070	71.7185 MHz
R516	4710008	100 ohm, 1/4 W, 10%	Y306	2300072	72.2185 MHz
R517	4710023	3.3K, 1/4 W, 10%	Y307	2300074	72.7185 MHz
R518	4710018	1.2K, 1/4 W, 10%	Y308	2300076	73.2185 MHz
R519		Unassigned	Y309	2300078	73.7185 MHz
R520	4710011	220 ohm, 1/4 W, 10%	Y310	2300080	74.2185 MHz
R521	4710025	4.7K, 1/4 W, 10%	Y311	2300081	74.7185 MHz
R522	4710020	1.8K, 1/4 W, 10%	Y312	2300082	75.2185 MHz
R523	4710011	220 ohm, 1/4 W, 10%	Y401	2300050	21.437 MHz
R524	4700012	82 ohm, 1/2 W, 10%	Y402	2300048	21.337 MHz
R525	4700008	33 ohm, 1/2 W, 10%	Y403	2300046	21.237 MHz
R526	4700030	2.7K, 1/2 W, 10%	Y404	2300044	21.137 MHz
R527	4700007	47 ohm, 1/2 W, 10%	Y405	2300042	21.037 MHz
R528	4730003	33 ohm, 1 W, 10%	Y406	2300040	20.937 MHz
R529	4700025	10K, 1/2 W, 10%	Y407	2300038	20.837 MHz
R530	4710027	6.8K, 1/4 W, 10%	Y408	2300036	20.737 MHz
R531	4700003	10 ohm, 1/2 W, 10%	Y409	2300034	20.637 MHz
R532	4700028	1.8K, 1/2 W, 10%	Y410	2300032	20.537 MHz
R533	4700011	68 ohm, 1/2 W, 10%	SWITCHES		
R534	4700008	33 ohm, 1/2 W, 10%	SW101	5100031	Frequency Selector
R535	4700009	47 ohm, 1/2 W, 10%	SW2	4760007	Off/On, Part of R140
R536	4700017	220 ohm, 1/2 W, 10%	MISCELLANEOUS		
TRANSFORMERS			J101	2100010	Connector, 12 Pin Female
T101	5600021	High IF, 22.5 MHz	P101	2100013	Connector, 12 Pin Male
T102	5600021	High IF, 22.5 MHz	J102	2100008	Jack, Phono, Hex Mount
T103	5600021	High IF, 22.5 MHz	P102	2100001	Plug, Phono, Short Shank
T104	5600021	High IF, 22.5 MHz	J103	2100031	Jack, Microphone
T105	5600018	Low IF, 2 MHz	J104	2100030	Jack, Headset
T106	5600018	Low IF, 2 MHz	J501	2100020	Jack, Phono, Solder-In
T107	5600018	Low IF, 2 MHz	P501	2100023	Plug, Phono, Short Shank
T108	5600018	Low IF, 2 MHz	CV101	2100018	Cover, for J101
T109	5600018	Low IF, 2 MHz	HS501	5300004	Heatsink, for Q507
T110	5600018	Low IF, 2 MHz	HS502	5300001	Heatsink, for Q508 & Q509
T111	5600018	Low IF, 2 MHz	K101	4500007	Relay
T112	5600018	Low IF, 2 MHz	SPK101	1320020	Speaker
T113	5600007	Audio Output	HARDWARE		
T401	5600029	LF Oscillator Tuning	2400020	Knob, Squelch & Volume	
T501	5600024	Balanced Mixer Input	2500811	Panel, Side, Left	
T502	5600025	Balanced Mixer Output	2500816	Panel, Side, Right	
TRANSISTORS			2500821	Panel, Rear	
Q101	4800024	Silicon, NPN, Blue, MPS-3563	2500830	Panel, Sub	
Q102	4800024	Silicon, NPN, Blue, MPS-3563	2500826	Cover, Top	
Q103	4800026	Silicon, NPN, White, MPS-3693	2501007	Panel, Trim	
Q104	4800026	Silicon, NPN, White, MPS-3693	2501016	Cover, Plate, Freq. Switch	
Q105	4800026	Silicon, NPN, White, MPS-3693	2501167	Knob, MHz	
Q106	4800026	Silicon, NPN, White, MPS-3693	2501472	Disc, KHz	
Q107	4800029	Silicon, NPN, Orange, MPS-6514S	2820005	Washer, Nylon, Freq. Switch	
Q108	4800029	Silicon, NPN, Orange, MPS-6514S	2500246	Knob, KHz	
Q109	4800008	Silicon, PNP, Black, 2N5086	9050005	Plug, Button	
Q110	4800033	Silicon, NPN, MPS-5172	2500946	Tray, Mounting	
Q111	4800002	Silicon, NPN, MPS-6532	2500045	Clip, Mounting	
Q112	4800033	Silicon, NPN, MPS-5172	2501216	Grille, Speaker	
Q113	4800002	Silicon, NPN, MPS-6532			
Q114	4800025	Silicon, PNP, MPS-A56 or MPS-6535			

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ALPHA/100 PARTS LIST

SUPPLEMENT No. 1

ALPHA/100-360

Ref. no.	GENAVE Part No.	Description	Ref. no.	GENAVE Part No.	Description
CAPACITORS			RESISTORS		
C304	1520061	Feedthrough, .001 mfd	R303	4710012	330 ohms, 1/4 W, 10%
C309	1520061	Feedthrough, .001 mfd	R304	4710012	330 ohms, 1/4 W, 10%
C311	1520061	Feedthrough, .001 mfd	R308	4710012	330 ohms, 1/4 W, 10%
C312	1520061	Feedthrough, .001 mfd	R311	4710012	330 ohms, 1/4 W, 10%
C315	1520061	Feedthrough, .001 mfd	R312	4710012	330 ohms, 1/4 W, 10%
C317	1520061	Feedthrough, .001 mfd	R313	4710012	330 ohms, 1/4 W, 10%
C319	1520061	Feedthrough, .001 mfd	R314	4710012	330 ohms, 1/4 W, 10%
C420	1520061	Feedthrough, .001 mfd	R414	4710008	100 ohms, 1/4 W, 10%
C421	1520061	Feedthrough, .001 mfd	R415	4710008	100 ohms, 1/4 W, 10%
C422	1520061	Feedthrough, .001 mfd	R416	4710008	100 ohms, 1/4 W, 10%
C423	1520061	Feedthrough, .001 mfd	R417	4710008	100 ohms, 1/4 W, 10%
C424	1520061	Feedthrough, .001 mfd	R418	4710008	100 ohms, 1/4 W, 10%
C425	1520061	Feedthrough, .001 mfd	R419	4710008	100 ohms, 1/4 W, 10%
C426	1520061	Feedthrough, .001 mfd	R420	4710008	100 ohms, 1/4 W, 10%
C427	1520061	Feedthrough, .001 mfd	R421	4710008	100 ohms, 1/4 W, 10%
C428	1520061	Feedthrough, .001 mfd	R422	4710008	100 ohms, 1/4 W, 10%
C429	1520061	Feedthrough, .001 mfd	R423	4710008	100 ohms, 1/4 W, 10%
C501	1520061	Feedthrough, .001 mfd	R519	4710011	220 ohms, 1/4 W, 10%
C520	1520033	NPO Disc, 220 pfd, 10%	R522	4710023	3.3K, 1/4 W, 10%
C522	1520061	Feedthrough, .001 mfd	R523	4710018	1.2K, 1/4 W, 10%
C531	1520061	Feedthrough, .001 mfd	R524	4710011	220 ohms, 1/4 W, 10%
C532	1520033	Z5F Disc, 220 pfd, 10%	R525	4710011	220 ohms, 1/4 W, 10%
C533	1520033	Z5F Disc, 220 pfd, 10%	R526	4710025	4.7K, 1/4 W, 10%
C534	1520008	NPO Disc, 12 pfd, 10%	R527	4710008	100 ohm, 1/4 W, 10%
C535	1570004	Trimmer, .8-6 pfd	TRANSISTORS		
C536	1520008	NPO Disc, 12 pfd, 10%	Q505	4800024	Silicon, NPN, Blue, MPS-3563
C537	1510013	NPO Gimmick, 1.5 pfd, 10%	CRYSTALS		
C538	1570004	Trimmer, .8-6 pfd	Y313	2300083	75.7185 MHz
C539	1510013	NPO Gimmick, 1.5 pfd, 10%	Y314	2300084	76.2185 MHz
C540	1520010	NPO Disc, 18 pfd, 10%	Y315	2300085	76.7185 MHz
C541	1570004	Trimmer, .8-6 pfd	Y316	2300086	77.2185 MHz
C548	1520004	NPO Disc, 4.7 pfd, 10%	Y317	2300087	77.7185 MHz
C549	1520011	NPO Disc, 22 pfd, 10%	Y318	2300088	78.2185 MHz
C573	1520061	Feedthrough, .001 mfd	Y319	2300089	78.7185 MHz
COILS			Y320	2300090	79.2185 MHz
L504	1800012	Exciter Filter	Y411	2300049	21.387 MHz
L507	1800012	Exciter Filter	Y412	2300047	21.287 MHz
L508	1800011	Exciter Filter	Y413	2300045	21.187 MHz
L509	1800004	Exciter Output	Y414	2300043	21.087 MHz
DIODES			Y415	2300041	20.987 MHz
CR301	4810017	Silicon, High Frequency Switching, FD 1936	Y416	2300039	20.887 MHz
CR302	4810017	Silicon, High Frequency Switching, FD 1936	Y417	2300037	20.787 MHz
CR303	4810017	Silicon, High Frequency Switching, FD 1936	Y418	2300035	20.687 MHz
CR304	4810017	Silicon, High Frequency Switching, FD 1936	Y419	2300033	20.587 MHz
CR305	4810017	Silicon, High Frequency Switching, FD 1936	Y420	2300031	20.487 MHz
CR306	4810017	Silicon, High Frequency Switching, FD 1936	SWITCHES		
CR307	4810017	Silicon, High Frequency Switching, FD 1936	SW101	5100047	Frequency Selector
CR411	4810017	Silicon, High Frequency Switching, FD 1936	MISCELLANEOUS		
CR412	4810017	Silicon, High Frequency Switching, FD 1936	6050030		Harness, Switch, MHz
CR413	4810017	Silicon, High Frequency Switching, FD 1936	6050031		Harness, Switch, KHz
CR414	4810017	Silicon, High Frequency Switching, FD 1936	2501168		Knob, MHz
CR415	4810017	Silicon, High Frequency Switching, FD 1936	2501472		Disc, KHz
CR416	4810017	Silicon, High Frequency Switching, FD 1936	2501026		Plate, Cover, Frequency Selector
CR417	4810017	Silicon, High Frequency Switching, FD 1936			
CR418	4810017	Silicon, High Frequency Switching, FD 1936			
CR419	4810017	Silicon, High Frequency Switching, FD 1936			
CR420	4810017	Silicon, High Frequency Switching, FD 1936			

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