

PALOMAR INSTRUMENT COMPANY

563 No. Citracado Parkway
Escondido, California 92065
Area 714 Phone 746-2666

Model 50 and 60 Bi-Linear Amplifiers Instruction Sheet

FREQUENCY RANGE---26 MHz to 54 MHz

OUTPUT POWER --- 50 watts into 50-72 ohm load with 3 watts R.F. drive FM or CW 100 watts PEP AM

INPUT POWER --- Receiving 12.6 VDC at 1.2 amps 15 watts

MODEL 50 --- Transmitting --- 13.6 VDC at 28 amps 230 watts

MODEL 60 --- 117 VAC 150 watts max.

DESCRIPTION --- Stable grounded grid circuitry provides a minimum transmitted power gain of 16 times throughout the tuning range. Will work on any signal of 1 watt or more. Silicon Transistor pre-selector provides an approximate gain of 3 dB of received signal. Automatic switching using R.F. power from your transceiver- no internal connections are required to your existing equipment. Self contained 12 VDC negative ground power supply or 117 VAC power supply. Illuminated front panel meter indicates relative R.F. strength of transceiver and Linear Amplifier. Dependable pi output circuitry for easy tune-up.

TUBE COMPLEMENT ---(2) 6JU6

TRANSISTORS AND DIODES --- Model 60

- (2) 2N2905-A
- (4) IN4005 or equiv.
- (1) IN4002 or equiv.
- (1) IN270 or equiv.

Model 50

All of above and (2) 2N1522 (2) IN4002 or equiv.

INSTALLATION

MODEL 50

As it comes from the factory the Model 50 is equipped for remote operation. Using a single pole single throw switch mounted on the dash gives full use of the amplifier. Connect Bi-Linear Amplifier to 12 Volt Battery using No. 10 wire or larger if distance to battery is 6 feet or less. Use No.8 wire or larger if distance is more than 6 feet. Observe polarity. Positive to fuse holder (red) and negative to black wire (GROUND). Reverse polarity protection incorporated to prevent the relay from closing and damaging the transistors.

REVERSING POLARITY MAY COUSE DAMAGE TO CAR WIRING. Install Bi-Linear Amplifier where adequate air flow is available to cool tubes and transistors. DO NOT BLOCK AIRFLOW at bottom and top

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MODEL 60

Connect line cord to 117 VAC source. Model 60 is protected by a 3 amp fuse. connect a good outside ground to grounding stud on rear of unit. Observe above precautions about airflow and cooling.

OPERATION

Connect coaxial cable from transmitter to top connector and antenna to bottom connector. Turn power switch ON for Model 60, or for Model 50, ground the blue wire extending from the rear of the set, through the use of the single pole single throw switch. Immediately you should hear an increase in noise or received signal strength and tube heaters should light. Wait approx. 30 seconds before depressing mike button. Set TUNE and LOAD knobs at 12 o'clock. Depress mike button and quickly adjust reading and then reset TUNE knob for maximum output. Repeat until maximum meter reading is obtained. The Amplifier is now tuned properly for FM,SSB or CW operation. AM operation will require over-coupling which is accomplished as follows; Speak normally into microphone and observe meter fluctuations. Turn LOAD CONTROL clockwise until meter needle fluctuations are reduced to minimum. A strong whistle may cause needle to deflect, but a normal speaking voice should cause needle to wiggle only slightly. The Amplifier is now properly tuned for AM operation and no further adjustment should be necessary unless operating frequency is changed more than 500 kHz. It may be necessary to peak coil L2 on a received signal, (located on bottom of unit). Use proper hex slug adjusting tool to prevent breaking slug---(GC-8606 or equiv.).

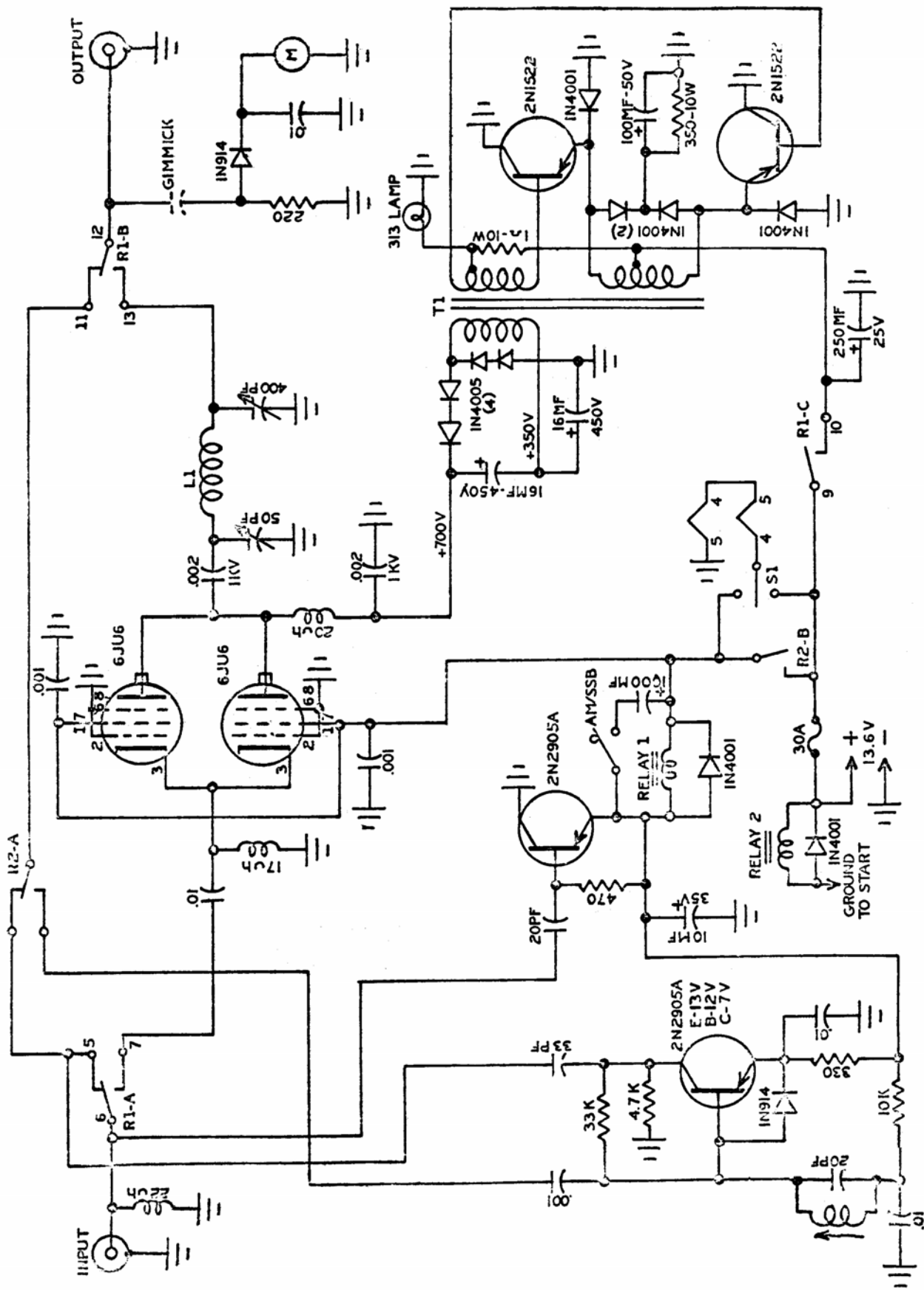
CONVERSION TO HIGHER FREQUENCIES

The Palomar Bi-Linear Amplifier covers a range of 25 to 30 MHz as it comes from the factory. Changing to a higher frequency is easily accomplished by removing turns from the tank coil L1 as follows:

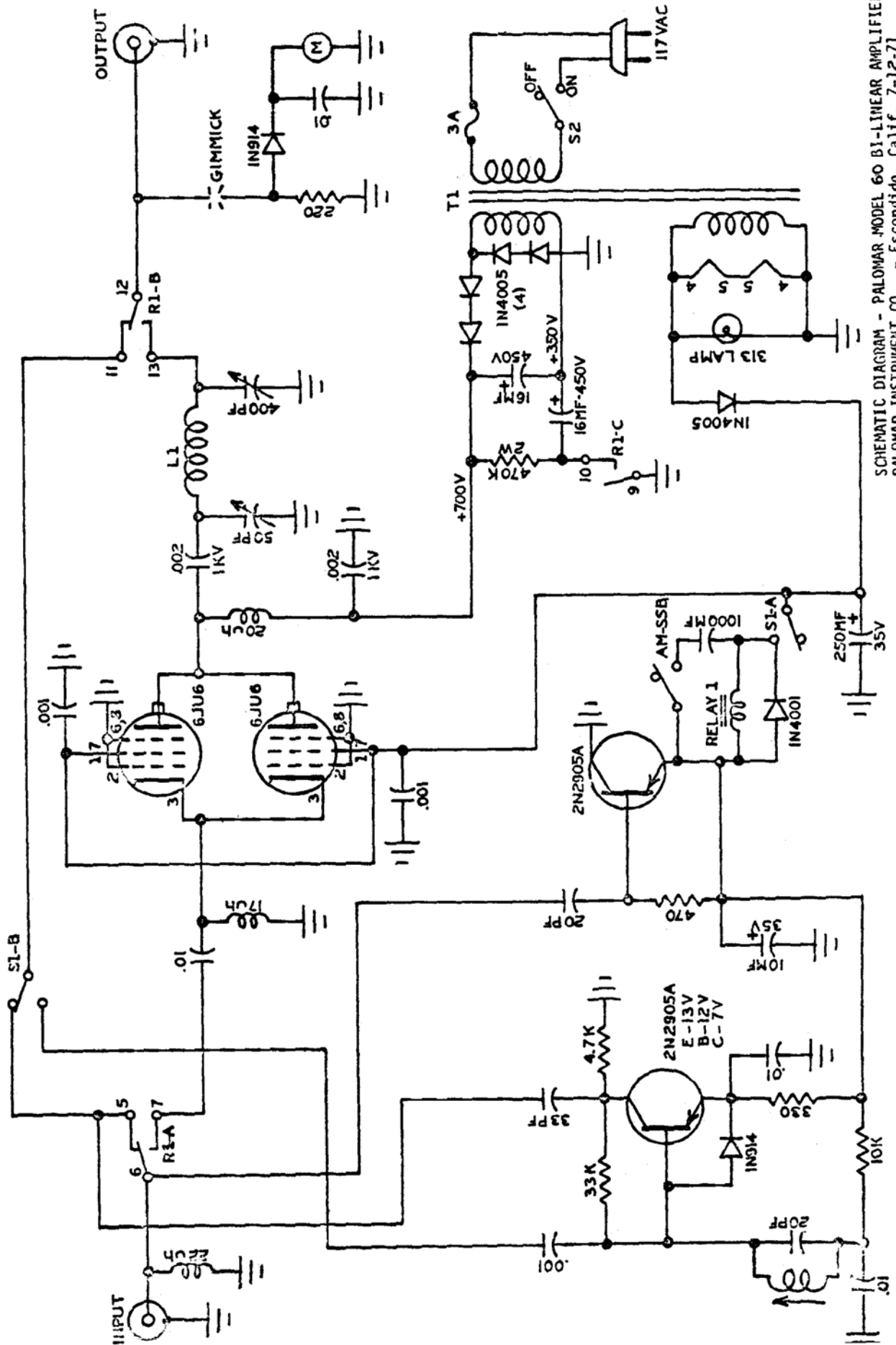
9 turns No. 14 3/4" dia. x 1 " long	(original) covers 25 to 30 MHz.
7 turns	covers 29 to 38 MHz (remove 2T)
5 turns	covers 36 to 48 MHz (remove 4T)
4 turns	covers 46 to 54 MHz (remove 5T)

It may be necessary to squeeze or spread the turns to cover the extreme ends of the range given above. The receiver pre-amplifier covers a range of 25 to 37Mhz as wired from the factory. Removing turns will give the following ranges:

11 1/2 turns No. 22 on 1/4 " diameter slug	tuned from (original) covers 25 to 37 MHz.
7 1/2 turns	covers 34 to 48 MHz (remove 4T)
5 1/2 turns	covers 45 to 54 MHz (remove 6T)



SCHEMATIC DIAGRAM - PALOMAR MODEL 50 BI-LINEAR AMPLIFIER
 PALOMAR INSTRUMENT CO., - Escondido, Calif. 7-13-71



SCHEMATIC DIAGRAM - PALOMAR MODEL 60 BI-LINEAR AMPLIFIER
PALOMAR INSTRUMENT CO., - Escondido, Calif. 7-12-71