

VHF HAND-HELD RF POWER AMPLIFIER

ELH-24B

INSTRUCTION MANUAL



ALINCO ELECTRONICS INC.,

ELH-24B

INSTRUCTION MANUAL, MODEL ELH-24B

The ALINCO model ELH-24B, is a small, high performance RF power amplifier for the 143 to 149 MHz amateur band, with a GaAs FET 10 db gain RX pre-amp

SPECIFICATIONS:

Frequency range	143 to 149 MHz
Mode	FM
Amplification	10 db minimum
RF Power out	5 W in 30 W out
RF Power out	1 W in 15 W out
Maximum input	5 W
FET RX pre-amp	10 db gain
Transmit switching	carrier operated or manual control
Matching Network	50 ohms
Antenna connectors	SO-239
Power Required	11 to 15 VDC
Current Required	4.5 Amp transmit 250 mA receive
Fuse	6 amp
Size	5 x 3-1/2" x 1-1/2"
Weight	1-1/5 lb.

The Model ELH-24B is supplied with the following:

- Mounting bracket
- Mounting hardware
- DC Power cord
- 6 amp fuse
- Instruction Manual

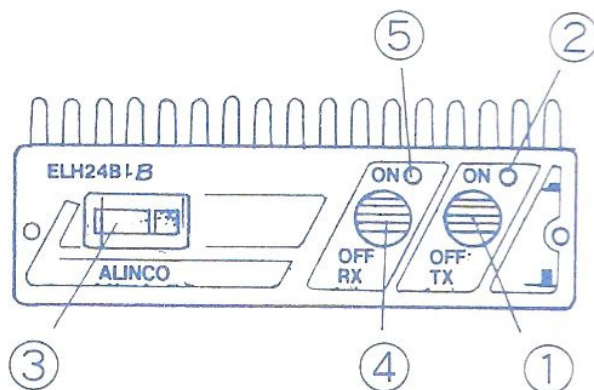
FEATURES:

The ALINCO AMPLIFIER is a compact, high performance, RF Power amplifier capable of 30 watts of output power at 143-149 MHz, FM.

For improved weak signal reception the ALINCO is equipped with a GaAs FET 10 db gain pre-amp.

A high sensitivity input carrier detection circuit automatically switches the ALINCO from receive to transmit when power is applied to the ALINCO RF input.

Front Panel:



The ALINCO has front panel mounted on/off switch ① status indicator LED lights and RF level meter.

The red (on air) LED ② indicates the ALINCO is ON and in transmit mode. The RX amp LED ⑤ lights when Receive pre-amp is selected. The meter ③ indicates RF output level the ALINCO when the TX amplifier is ON (level:abt 8), And when the TX amplifier is OFF, it indicates the output level of HT (level: 1-2).

INSTALLATION:

The installation of your NEW ALINCO AMPLIFIER should be done with the following guidelines for best results.

PLEASE OBSERVE THE FOLLOWING CAUTIONS:

The heatsink fins must have air space around them to provide adequate cooling for final transistors. Do not cover with clothing, papers, suitcases, etc.

This amplifier is designed to operate from 11 to 15VDC, using more than 15VDC will damage the ALINCO.

The ALINCO is designed to operate with input powers from 200 milliwatts to 5 watts, input of more than 5 watts will damage the ALINCO.

The output of the ALINCO is designed to operate into a 50 ohm antenna with a VSWR of less than 1.5:1 using an antenna with a VSWR greater than 1,5:1 will degrade your operation and possibly damage your ALINCO.

Connect the supplied DC power cables to your power source of 11 to 15 VDC. The red lead (positive) to + 11-15VDC

The black lead (negative) to ground.

If the power cables are accidentally reversed and connected to the ALINCO, the reverse protection circuit in ALINCO amplifiers will blow the inline fuse. Should this happen, correct the wiring error, replace the fuse and proceed.

Connect the radio to the ALINCO input "TX" connector.

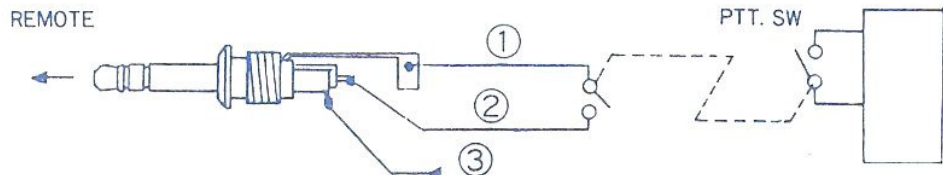
Connect the antenna to the ALINCO output "ANT" connector.

The importance of high quality RF cables and connectors cannot be over emphasized at VHF frequencies. Poor quality cables and incorrectly installed connectors can lead to many confusing problems. These problems can range from intermittent operation to actual equipment failures. Please take the time needed to create a

quality installation, the rewards of a reliable, trouble free operation are worth the time required at initial installation.

Manual Control:

If manual control of the ALINCO transmit/receive switching is desired, connect as the drawing shows.



For TX mode operation, connect 1 and 2, or supply DC 1.5–16V to 3 (ground: 1).

OPERATION OF ALINCO AMPLIFIERS:

First and Foremost !! Verify the ALINCO amplifier has been installed correctly as per the installation instructions.

With the amplifier in the ON or OFF mode the signal on TX or RX will not be affected as the through mode is independent.

CAUTION: do not transmit more than 5 watts into the amplifier.

CAUTION: check to be sure you have an antenna with a 1.5:1 or better connected to amplifier.

To save battery life use as little input power as possible, ie., 1 watt equals about 15 watts out.

TROUBLE SHOOTING:

TX/RX LED DOES NOT LIGHT:

1. Check power supply.
2. Check voltage, 11 to 15 VDC.
3. Check in-line fuse.
4. Check all power connections.

FUSE BLOWS WHEN POWER CONNECTED:

1. Check power cords for reverse polarity.

LOW POWER OUTPUT:

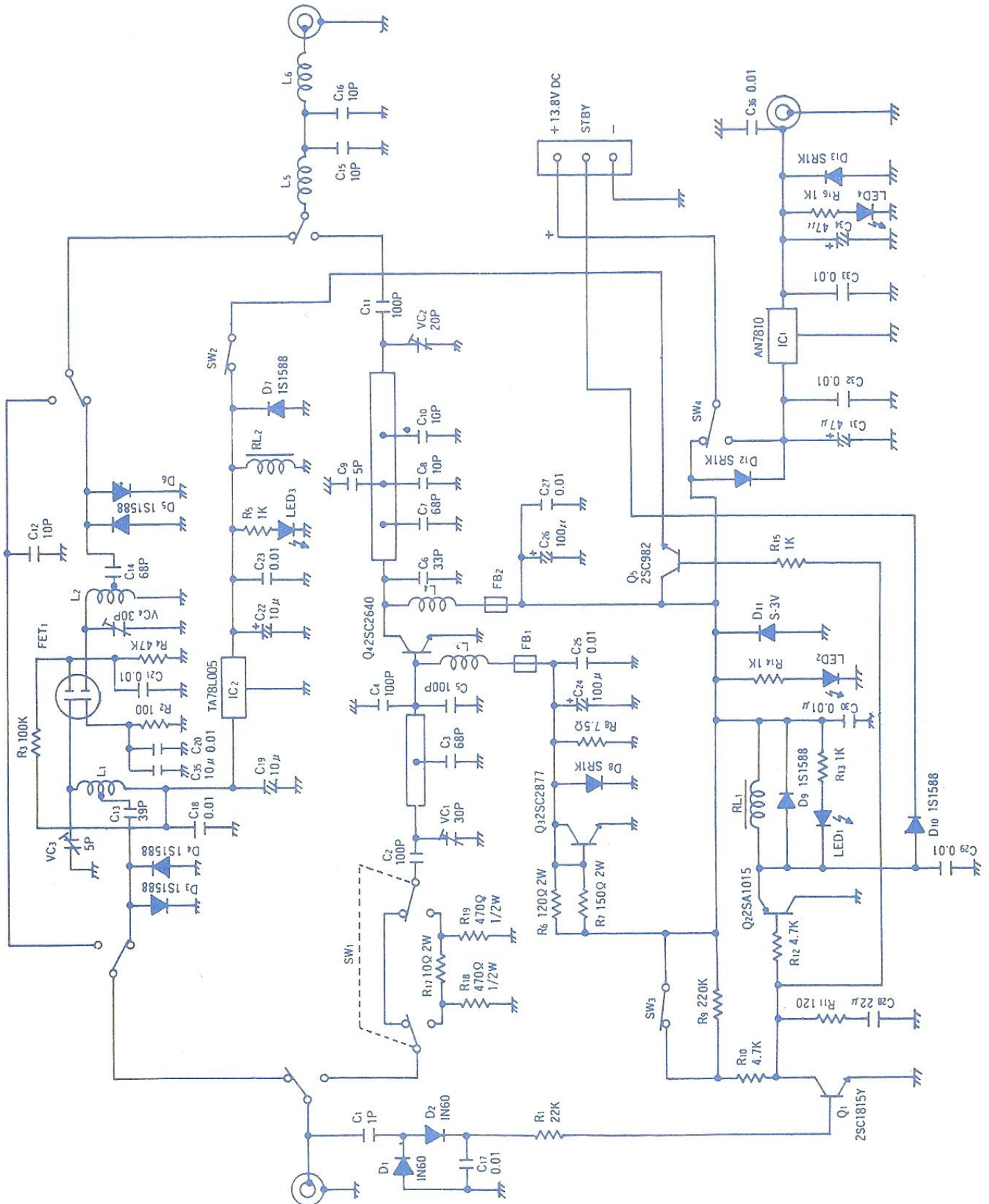
1. Check power supply voltage, 11 to 15 VDC.
2. Check antenna system VSWR should be below 1.5:1.

* Subject to change to allow for design improvements.

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Circuit Diagram



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