

INSTRUCTIONS - "POWERMITE" TT-1 SINGLE CHANNEL ALL TRANSISTOR TRANSMITTER

GENERAL INFORMATION

The Min-X all transistor transmitter represents a new step forward in the radio control field. This transmitter features light weight and convenient size along with high output and low battery drain. It has been designed as a companion unit to the Min-X single channel receiver line (Capri, Competition Convertible, Superhet Single, Sportsmaster Relayless) and when used with one of these receivers it will provide extreme range and trouble free operation. It can also be used with many other receivers on the market that accept a 800 CPS tone.

The circuitry is composed of 4 transistors in an M.O.P.A. (Master Oscillator Power Amplifier) circuit with a silicon transistor in the output stage for maximum stability and performance. A newly designed, extremely small, center loaded antenna is employed to give high output and long range.

BATTERY REQUIREMENTS

The transmitter operates from a single 9 volt battery with snap connector attachment terminals. Recommended types are the Burgess D-6, Eveready 276 or VS 306. The use of any other size or type of battery is not recommended. Normal life on the recommended battery will be from 50 to 70 hours of operating time. This will probably be a full years operation for the average user. Even the most active user will not consume more than three batteries in a year. Due to the long life of the dry battery the use of rechargeable type cells is neither necessary nor recommended. The battery should be replaced when it reaches 7.5 volts under load. That is with the switch on and the tone keyed.

INITIAL OPERATION

With the switch "OFF" and the battery on its side connect to the battery snaps provided. Improper hook up is prevented by the polarity of the snaps. Center the battery in the case to provide clearance on both sides for the sheet metal screws that hold the rear case in place. After installing the rear cover, the foam rubber pad will hold the battery firmly in position. Mount the antenna to the top of the case. At this point the receiver should be put into operation (refer to receiver instructions). After the receiver has been put into operation the transmitter may be checked with the receiver for proper operation. Only a good range check, and if necessary, retuning of the receiver to the transmitter should be required.

TUNING

Under normal circumstances the R.F. section of this transmitter should never require retuning. However, if you believe its output to be weak you may try tuning the amplifier section. With the transmitter standing on a table and the antenna fully extended, place a field strength meter at a point where about 1/2 scale reading is indicated. With one hand firmly on the transmitter case, slowly adjust the upper left trimmer for maximum output, using a non-metallic tuning wand. Then adjust the upper right trimmer, then the left trimmer again. Keep alternating from one to the other until maximum output is achieved. The output network is of the PI type and adjustment of one trimmer effects the other, therefore alternating from one to the other is necessary. (Trimmers are referred to as left and right when viewed from the rear of the case.)

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Shipping damage and rough or improper handling are the major causes of detuning, but whatever the cause, we must remind you that under F.C.C. regulations retuning and adjustment of the R.F. oscillator can only be accomplished by authorized persons. (The oscillator is controlled by the trimmer at the bottom center of the circuit board).

Due to the high out-put of this unit all shop testing of the receiver and short range work may be accomplished with the antenna collapsed or removed. No damage will result if the transmitter is operated with the antenna removed. However, maximum range will only be realized if the antenna is fully extended so that the center load coil is in use. With the antenna collapsed the output circuit is detuned and consequently the output is reduced proportionately.

SPECIAL NOTES

If an open circuit jack is to be installed for the use of a remote pulser or coding box, the jack must be completely insulated from the transmitter case. Failure to do so could result in damage to the transistors for a serious loss in output. Do not remove the existing key button as it serves as a mounting point between the circuit board and the case. Wire the extra keying device in parallel with the existing button. Also when using a remote keying device a long cord between the transmitter and keying device will result in poor radiation from the transmitter. Best results will be obtained if the device is attached directly to the transmitter and the whole system kept as a hand held package.

SPECIFICATIONS

Size: 2 $\frac{1}{2}$ " x 4 $\frac{3}{8}$ " x 6"

Weight: 2 lbs. with battery.

Voltage: 9 volts at 50 M.A. 50 to 70 hours of battery life.

Power input to the final: Almost 1/2 watt (450 milliwatts at 80% efficiency).

Modulation: Square wave - 100% at 800 cycles.

Features: Special design center loaded antenna. Positive action key button.

WARRANTY AND SERVICE

All Min-X equipment is completely checked and tuned before leaving the factory. Rigid requirements as to output and modulation must be met by each unit before final packaging. However, it is entirely possible that a defective component may not appear until after the unit has been in use. To cover such possibilities all transmitters are fully warranted against defective materials and workmanship for a period of 90 days from the date of purchase. Malfunction of any product as a result of reversed voltage, physical damage, re-working, altering or tampering is automatically excluded from the protection of this warranty. Transistors and crystals due to their delicate nature cannot be covered under this warranty. The warranty slip included with the transmitter must be on file before any requests for service will be recognized. This warranty applies only to the original purchaser. If service is required the unit should be returned directly to the factory. Extra care should be taken in packaging to insure safe arrival. A sturdy box with at least 3" of clearance on all sides must be used. Be sure of adequate packing both outside and inside the transmitter. Do not include the batteries, but do include the antenna. The antenna should be taped to a strong length of wood to prevent bending. Be sure your units are properly labeled and are accompanied by a letter clearly stating the nature of the problem. All units will be returned C.O.D. NOTE: This is a high power unit and as such, it requires an operating permit. This examination free license form may be obtained from the local F.C.C. district office for your area only. Request form 505A.

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