

Dentron

INTRODUCTION

The MLX series of radios from Dentron Radio Co., Inc. are constructed in a modular fashion using all solid state techniques and small rugged miniature construction with a low current drain so as to facilitate battery operation if desired. The case is heavy aluminum with a minimum of controls to make operating easy.

Some of the features include:

- Led display
- Low impedance mic input
- Analog meter lighted for dim or no light conditions
- Adjustable mic gain to control SSB power
- A RIT control for stations that are not completely on frequency
- Low power drain in receive and even lower drain with led display and Meter lamp turned off.

OPERATION PROCEDURES

POWER SOURCE

The power source should be regulated at 13.8 volts D.C. and capable of delivering 2 amps continuous and 3 amps peak.

ANTENNA SSB:

Turn the radio on at AF control and adjust volume for a comfortable level. To Transmit make sure that your antenna is showing an S.W.R. of 2 to 1 or less and is not a reactive load impedance below are the instructions for wiring the mic.

- Use standard 1/4 inch stereo phone plug
- TIP = PTT to ground
- RING = TX audio
- CASE = ground/shield

Once you have met the above requirements you should be ready to transmit. Adjust mic gain to produce approximately 10 watts output to antenna. Further increase may produce unwanted spurious emissions. The panel meter does not indicate power out on TX.

CW

To receive CW use the radio just as you would for SSB. To transmit CW rotate the mic control counterclockwise till you feel the CW transmit switch click and stop rotation. Be careful not to force the control beyond this position or damage will result. Note that you cannot receive in this position. Simply operate CW key that is plugged in mic jack as a PTT switch as you normally would, when you are done transmitting CW. Move the mic control clockwise until the switch disengages.

On the next few pages of this manual we will explain the basic operating theory behind the various modules inside the radio. Along with drawings and parts list for those who would like to service their own or to just become familiar with their rig.

DENTRON MLX MINI SERIES

The radio is divided into several modules. The power output module which contains the relay switching for RX TX and predrive, drive and power transistors for the transmitter. The signal from the transmitter is amplified by Q2 on the RF mixer board which also has the TX mixer.

The RX signal is amplified by Q-2 also and then fed to the RX mixer Q1.

The VFO board has its own buffer which feeds the signal to the RF/MIX board and the digital display.

The RX/TX/Af (SG-9) board has all the 9MHZ I.F. amps with AGC and carrier oscillator along with SSB detection and generation with the audio amp on this one board giving simplicity of construction and reliability in design.

This brief explanation is completed with the further discussions on the following pages, and again we hope that you will have many years of enjoyment with your hobby.

RF BOARD RX/TX/MIX

This board performs mixing for TX and RX and some amplification by Q2 which is used in both TX and RX modes. The VFO is injected to both Q1 and Q4. Q4 is biased on only during TX from P-24, which also biases the predriver on the power output module during TX through R-7, R6.

DIGITAL DISPLAY BOARD

Q1 and Q2 are amplifiers for the counter divider IC. IC2 which divides the signal by 10 and then feeds it to IC3, the 7216 counter chip, that performs the count and display multiplex/drive functions driving the LEDs through IC4 the segment buffer driver. Digit drive is provided by Q3-Q6.

POWER OUTPUT MODULE

This module contains the final RF power amp along with the driver and predriver, Q3, Q2, Q1. It also has the switching relay that moves the antenna on the receiver through D-2, to the RF/MIX board, T-4, T-3 and Q2.