EXPOSITORY STATEMENT/DESCRIPTION

The AEK971249R "Waveripper, 7.2VTMH, JET BOAT" is a **superheterodyne** receiver.

The RF input signal enters the LSI (Large Scale Integration) IC1 (TAIYO_98-R) via a permanently attached wire antenna. The antenna length is approximately 15".

The superheterodyne receiver operates with a LO frequency of 48.86 MHz to create an IF frequency of 1 MHz, 89.86 MHz carrier frequency minus 48.86 MHz LO. The LO oscillator frequency is generated by the following external circuit components:

- X1 - 48.86 MHz Xtal
- X2 - 2.2 uH Coil
- X5 - 56k resistor
- X3 - 0.68 uH Coil
- X4 - 100 pF Capacitor

The LSI IC then extracts, internally, the digital modulation control codes from the signal and supplies these control signals to the receivers motor drives for forward/reverse (propeller)and left/right vehicle functions (rudder).

The digital control codes are then delivered to the motor controls via the two digital comparitor circuits. These comparitors then control the one electric motor (propeller),to allow the vehicle (toy boat receiver) to advance forward and reverse (left/right), and the magnetic drive circuit (rudder) to allow left and right turns.

The receiver system operates on 7.2 VDC, supplied via one 7.2 VDC battery assembly. No external ground system is needed or used with this device.