

## **EXPOSITORY STATEMENT/DESCRIPTION**

The AEK992249R "The Beetle" is a superheterodyne receiver.

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

The superheterodyne receiver operates with an IF frequency of 1 MHz, 49.86 MHz carrier minus 48.86 MHz LO. The LO oscillator frequency is generated by the following external circuit components:

- X1 Xtal - 48.86 MHz
- 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 and left/right vehicle functions.

The digital control codes are then delivered to the motor controls via the two digital comparitors, IC2 and IC3. These comparitors then control the two electric motors, M1 and M2, to allow the vehicle (toy car receiver) to advance forward (left/right) and reverse (left/right).

The receiver system operates on 9 VDC, supplied via one 9 VDC battery. No external ground system is needed or used with this device.