

A. DEVICE UNDER TEST

The device is a low power receiver used to receive and decode commands from its companion transmitter (OB2-STDREM) and use those commands to control various functions. The product is a portable remote controlled baseball scoreboard. This product is designed to operate under the provisions of Part 15.109 of the FCC rules. The frequency of operation is 315 MHz. nominal.

Power for the device was provided by an internal 24 volt battery back consisting of 16 AA cells in series. The receiver and decode logic circuits are regulated at 3.75 volts. The higher supply voltage is used to operate servo relays. There are no provisions for external connection to any other source of power.

This receiver of this device is a TRF circuit using SAW filters to achieve the desired receive frequency. A SAW delay line is used to provide a time lag between two rf amplifiers so that the amplifiers may be alternately turned on and off (approx. 245kHz.) and thus realize a relative high gain without the risk of instability. The entire receiver circuit is contained in a single monolithic integrated circuit. The only external rf component is an internal dipole antenna. There are no adjustable components in this device.

B. MEASUREMENT PROCEDURE: RADIATED EMISSIONS

Field strength measurements were conducted according to the procedures set forth in ANSI C63.4 (1992). Testing was conducted with the device powered from

The device under test was placed on a rotating turntable 0.8 meters high, centered at 3 meters distant from the measurement antenna. The device was placed in the center of the turntable and tested in the position shown in the test setup photograph. This housing is designed to mount upright on a pole or tripod so that it may be viewed in a readable position.

The field strength measurements were taken using an HP8596E spectrum analyzer, an EMC0 3121C dipole set and an Avantek UJ210 preamp. The device was scanned from 30MHz. to 3.2GHz. and all emissions were noted. In this case, the only emissions detected

were those that were harmonically related to the clock oscillator fundamental frequency.

At each detected frequency of emission, the device was measured by rotating the turntable and adjusting the antenna height over a range of 1 to 4 meters to obtain the maximum output level. This procedure was performed with both horizontal and vertical antenna polarizations with the device in the positions described above. The peak reading for each frequency was recorded in the second column on the data sheet. No emissions were detected above 80 MHz.