

ENGINEERING STATEMENT

For Certification of

MS Sedco

Model No: TC26-B
FCC ID: OHRTC26

I am an Electronics Engineer, a principal in the firm of Hyak Laboratories, Inc., Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission.

Hyak Laboratories, Inc. has been authorized by MS Sedco to make measurements on the TC26-B field disturbance detector. These tests made by me or under my supervision in our Springfield laboratory.

Test data and documentation required by the FCC are included in this report.

Rowland S. Johnson

Dated: October 5, 2001

A. INTRODUCTION

The following data are submitted to establish compliance of the TC26-B transceiver in accordance with Part 2, Subpart J of the FCC Rules.

The TC26-B detector is a microwave field disturbance sensor used as a vehicle detection unit, designed to be used as part of a traffic management system. The detector signals the presence of a vehicle by activating a relay.

B. RESULTS SUMMARY

The TC26-B detector met all the applicable requirements of Part 15.245, including the provisions of 15.245(1)(ii)) in the restricted bands of 15.209.

C. DESCRIPTION OF RADIATED SPURIOUS MEASUREMENT FACILITIES

A description of the Hyak Laboratories' radiation test facility is a matter of record with the FCC. The facility was accepted for radiation measurements on October 1, 1976 and is currently listed as an accepted site.

D. FIELD STRENGTH MEASUREMENTS OF SPURIOUS RADIATION

The procedures of ANSI 63.4 (1992) were followed.

Field intensity measurements of radiated spurious emissions from the TC26-B detector were made with a Tektronix 494P spectrum analyzer with external mixers using Polarad CA-L or CA-S or EMCO 3115 or EMCO 3116 horns.

The transmitter was located in an open field 3 meters from the test antenna. Supply voltage was a terminal voltage under load of 18 Vdc.

The transmitter and test antennae were arranged to maximize pickup. Both vertical and horizontal test antenna polarization were employed.

Measurements were made from the lowest frequency generated within the unit (10.5 GHz), to the fifth harmonic (52.2 GHz) per FCC Rules 15.33(a)(2). Data after application of antenna factors and line loss corrections are shown in Table 1.

TABLE 1
RADIATED SPURIOUS EMISSIONS
Measured at 3 meters
PART 15(C) PARA. 15.245

<u>Frequency To Which Tuned (GHz)</u>	<u>Frequency of Emission (GHz)</u>	<u>Meter Reading (dBm)</u>	<u>Antenna Factor (dB)</u>	<u>Field¹ Intensity dBu @ 3m</u>	<u>FCC Limit dBu @ 3m</u>	<u>dB to to Limit</u>
10.5	10.526	-29.5	42.8	120.3	148	- 28
10.5	21.052	-74.3*	44.2	76.9	77.5	- 0.6
10.5	31.580	-77.5*	46.9	76.4	77.5	- 1.1

$$\text{dBu} = \text{dBm} + \text{antenna factor} + 107$$

* Measured @ 1 m, extrapolated to 3 m. All other spurious were below FCC limit or measurement system noise to the fifth harmonic.