



FOUNTAIN TECHNOLOGIES, INC.

COMPLIANCE LABORATORY

50 Randolph Rd.  
Somerset, NJ 08873

Tel: (732) 560-9010  
Fax: (732) 560-9173

**ELECTROMAGNETIC EMISSION COMPLIANCE REPORT**  
of

**BIRD MONITOR**  
**MODEL: MO10**  
**FCC ID: OK7MO10**

*May 18, 2000*

This report concerns (check one): Original grant <input checked="" type="checkbox"/> Class II change <input type="checkbox"/> Equipment type: <u>Low Power Intentional Radiator</u>	
Deferred grant requested per 47 CF 0.457(d)(1)(ii)? yes <input type="checkbox"/> no <input checked="" type="checkbox"/> If yes, defer until: _____ (date) Company agrees to notify the Commission by _____ (date) of the intended date of announcement of the product so that the grant can be issued on that date.	
Transition Rules Request per 15.37? yes <input type="checkbox"/> no <input checked="" type="checkbox"/> If no, assumed Part 15, Subpart B for unintentional radiators - the new 47 CFR [10-1-90 Edition] provision.	
Report prepared for: Report prepared by: Report number:	DAKA DEVELOPMENT LTD. Fountain Compliance Lab <b>0048-2K0501-03(Tx)</b>



The test result in this report IS supported and covered by the NVLAP accreditation



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# 1. GENERAL INFORMATION

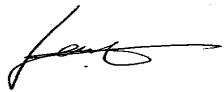
## 1.1 Verification of Compliance

EUT: BIRD MONITOR  
 Model: MO10  
 Applicant: DAKA DEVELOPMENT LTD.  
 Test Type: FCC Part 15C CERTIFICATION  
 Result: PASS  
 Tested by: FOUNTAIN COMPLIANCE LABORATORY  
 Test Date: May 4, 2000  
 Report Number: 0048-2K0501-03(Tx)

The above equipment was tested by Compliance Laboratory, Fountain Technologies, Inc. for compliance with the requirement set forth in the FCC rules and regulations Part 15, subpart C. This said equipment in the configuration described in the report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

The estimated uncertainty of the test result is given as following. The method of uncertainty calculation is provided in Fountain Compliance Lab. Doc. No. 0048-01-01.

	Prob. Dist.	Uncertainty(dB)	Uncertainty(dB)	Uncertainty(dB)
		30-1000MHz	1-6.5GHz	Conducted
Combined Std. Uncertainty $u_c$	norm.	$\pm 2.36$	$\pm 2.99$	$\pm 1.83$



Wei Li  
 Lab Manager  
 Fountain Compliance Lab  
 Fountain Technologies, Inc.

Date: May 18, 2000



## **1.2 Equipment Modifications**

N/A



### 1.3 Product Information

#### System Configuration

ITEM	DESCRIPTION	FCC ID	CABLE
Product	Bird Monitor <sup>(1)</sup> MO10	OK7MO10	
Housing	PLASTICS		
Power Supply	6V DC		
Clock/OSC Freq.	104/105/106/107 MHz		
Receiver	N/A		

(1) EUT submitted for grant.

### 1.4 Test Methodology

Radiated tests were performed according to the procedures in ANSI C63.4-1992 at an antenna to EUT distance of 3 meters.

### 1.5 Test Facility

The open area test site and conducted measurement facility used to collect the radiated and conducted data are located at 50 Randolph Road, Somerset, New Jersey. This site has been accepted by FCC to perform measurements under Part 15 or 18 in a letter dated May 19, 1997 (Refer to: 31040/PRV 1300F2). The NVLAP Lab code for accreditation of FCC EMC Test Method is: 200101-0.

### 1.6 Test Equipment

Manufacture	Model	Serial No.	Description	Last Cal dd/mm/yy	Cal Due dd/mm/yy
Hewlett-Packard	HP8546A	3625A00341	EMI Receiver	15/12/99	15/12/00
Fischer Custom	LISN-2	900-4-008	Line Impedance Stabilization Networks	20/05/99	20/05/00
Fischer Custom	LISN-2	900-4-009	Line Impedance Stabilization Networks	26/04/00	26/04/01
EMCO	3115	4945	Double Ridge Guide Horn Antenna	05/12/99	05/12/00
EMCO	3104C	4396	30-200MHz Biconical Antenna	02/05/00	02/05/01
EMCO	3146	3350	200-1000MHz Log-Periodic Antenna	02/05/00	02/05/01

All Test Equipment Used are Calibrated Traceable to NIST Standards.

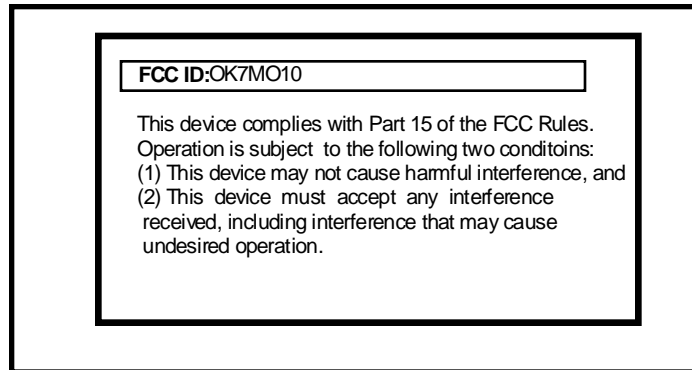
### 1.7 Statement for the Document Use



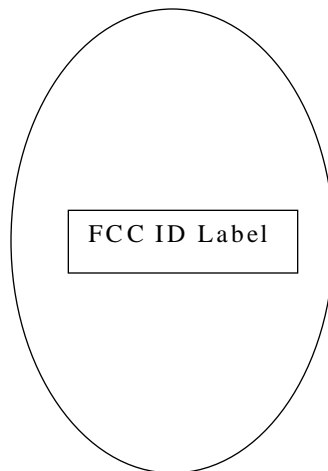
This report shall not be reproduced except in full, without the written approval of the laboratory. And this report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



## 2. PRODUCT LABELING



**Figure 2.1 FCC ID Label**



**Figure 2.2 Location of Label on Side of the EUT**



### **3. SYSTEM TEST CONFIGURATION**

#### **3.1 Justification**

The system was configured for testing in a typical fashion (as a customer would normally use it).  
And its antenna was permanently attached to the EUT .

Testing was performed in “ON” mode. It is the worst case.

#### **3.2 Special Accessories**

N/A

#### **3.3 Configuration of Tested System**

Figure 3.1 and Figure 3.2 illustrate this system, which is tested standing along.





**Figure 3.1 Radiated Test Setup, Front**

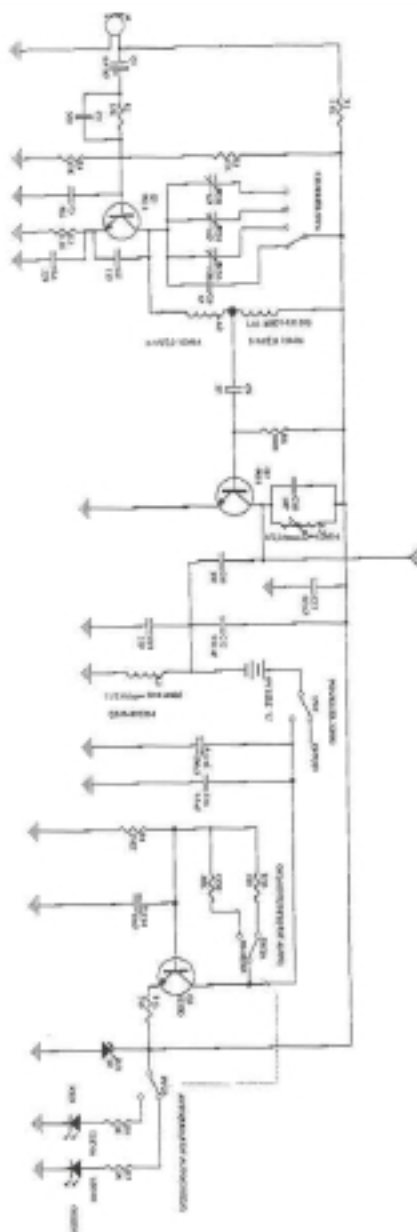




**Figure 3.2 Radiated Test Setup, Rear**



## 4. SYSTEM SCHEMATICS



### Figure 4.1 System Schematics



## 5. RADIATED EMISSION DATA

### 5.1 Field Strength Calculation

The corrected field strength is automatically calculated by EMI Receiver using following:

$$FS = RA - AF - CF - AG$$

where FS: Corrected Field Strength in dB $\mu$ V/m

RA: Amplitude of EMI Receiver before correction in dB $\mu$ V

AF: Antenna Factor in dB/m

CF: Cable Attenuation Factor in dB

AG: Built-in Preamplifier Gain in dB (Stored in receiver as part of the calibration data)

### 5.2 Test Methods and Conditions


The EUT exercise program was loaded during the radiated emission test. The initial step in collecting radiated data is a EMI Receiver scan of the measurement range 30MHz - 5GHz using peak detector. IF bandwidth is 120kHz and video bandwidth is 300kHz for measuring 30MHz-1GHz. Both bandwidth are 1MHz for above 1GHz measurement.

### 5.3 Test Data

The following data lists the significant emission frequencies, polarity and position, peak reading of the EMI Receiver, calculated average reading, the FCC limit, and the difference between the peak reading and the limit. Explanation of the correction and calculation are given in section 5.1.

4 operation channels: 104, 105, 106, 107MHz are investigated. The worst case is CH4, 107MHz.

Test Personnel:

Tester Signature: 

Date: 05-18-2000

Typed/Printed Name: David Tu



**Radiated Test Data (CH4)**

<b>Frequency (MHz)</b>	<b>Polarity [H, V] Position</b>	<b>Height (m)</b>	<b>Azimuth (Degree)</b>	<b>Peak(2) Reading (dBμV/m)</b>	<b>Class B(1) 3m Limit (dBμV/m)</b>	<b>Difference from limit (dB)</b>
106	H	2.5	180	41.3	43.5	<b>-2.2</b>
107	H	2.7	180	44.4	48.0	<b>-3.6</b>
104	V	1.0	180	39.7	43.5	<b>-3.8</b>
105	V	1.0	180	40.1	43.5	<b>-3.4</b>
106	V	1.0	180	41.9	43.5	<b>-1.6</b>
107	V	1.0	180	44.8	48.0	<b>-3.2</b>

(1) The limit for emissions within the permitted 200 kHz band is 250uV(48dB). Sec. 15.239. The limit for others is defined in Sec. 15.209.

(2) Because each peak reading is less than the FCC average limit, it is not necessary to show the calculated average reading based on the pulse train characteristic.

**5.4 Occupied Bandwidth**

The emission from EUT is confined within a band 200 kHz wide centered on the operating frequency. The 200kHz band lies wholly within the frequency range of 88-108 MHz.



## **6. PHOTOS OF TESTED EUT**

The following photos show the inside details of the EUT.

See Attachments: outside.jpg, inside.jpg, compnt.jpg, foil.jpg