



FOUNTAIN TECHNOLOGIES, INC.

COMPLIANCE LABORATORY

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ELECTROMAGNETIC EMISSION COMPLIANCE REPORT  
of

BIRD MONITOR  
MODEL: MO20  
FCC ID: OK7MO20

May 18, 2000

This report concerns (check one): Original grant  Class II change   
Equipment type: Low Power Intentional Radiator

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? yes  no   
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  no   
If no, assumed Part 15, Subpart B for unintentional radiators - the new 47 CFR  
[10-1-90 Edition] provision.

Report prepared for: DAKA DEVELOPMENT LTD.  
Report prepared by: Fountain Compliance Lab  
Report number: 0048-2K0501-02(Tx)



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

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## 1. GENERAL INFORMATION

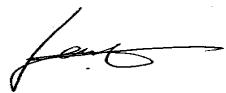
### 1.1 Verification of Compliance

EUT: **BIRD MONITOR**  
 Model: **MO20**  
 Applicant: **DAKA DEVELOPMENT LTD.**  
 Test Type: **FCC Part 15C CERTIFICATION**  
 Result: **PASS**  
 Tested by: **FOUNTAIN COMPLIANCE LABORATORY**  
 Test Date: **May 3, 2000**  
 Report Number: **0048-2K0501-02(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 MO20 (1)	OK7MO20	
Housing	PLASTICS		
Power Supply	6V DC		
Clock/OSC Freq.	49.830 MHz & 49.875 MHz		
Receiver	MO20 (RX) (FCC Part15 Class B DOC)		

(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

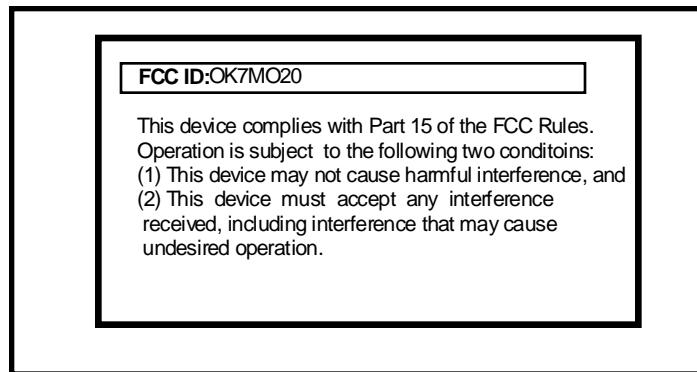
Manufacturer	Model	Serial No.	Description	Last Cal dd/mm/yy	Cal Due dd/mm/yy
Hewlett-Packard	HP8546A	3625A00341	EMI Receiver	15/12/99	15/12/00
Fischer Custom	LISN-2	900-4-008	Line Impedance Stabilization Networks	20/05/99	20/05/00
Fischer Custom	LISN-2	900-4-009	Line Impedance Stabilization Networks	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.

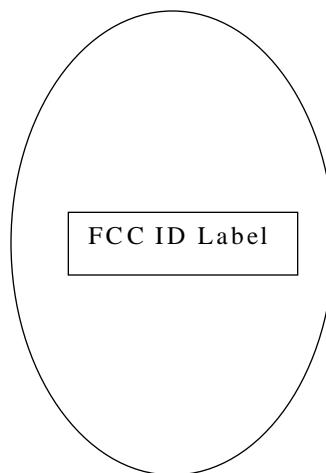
### **1.7 Statement for the Document Use**

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 the Side of 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.

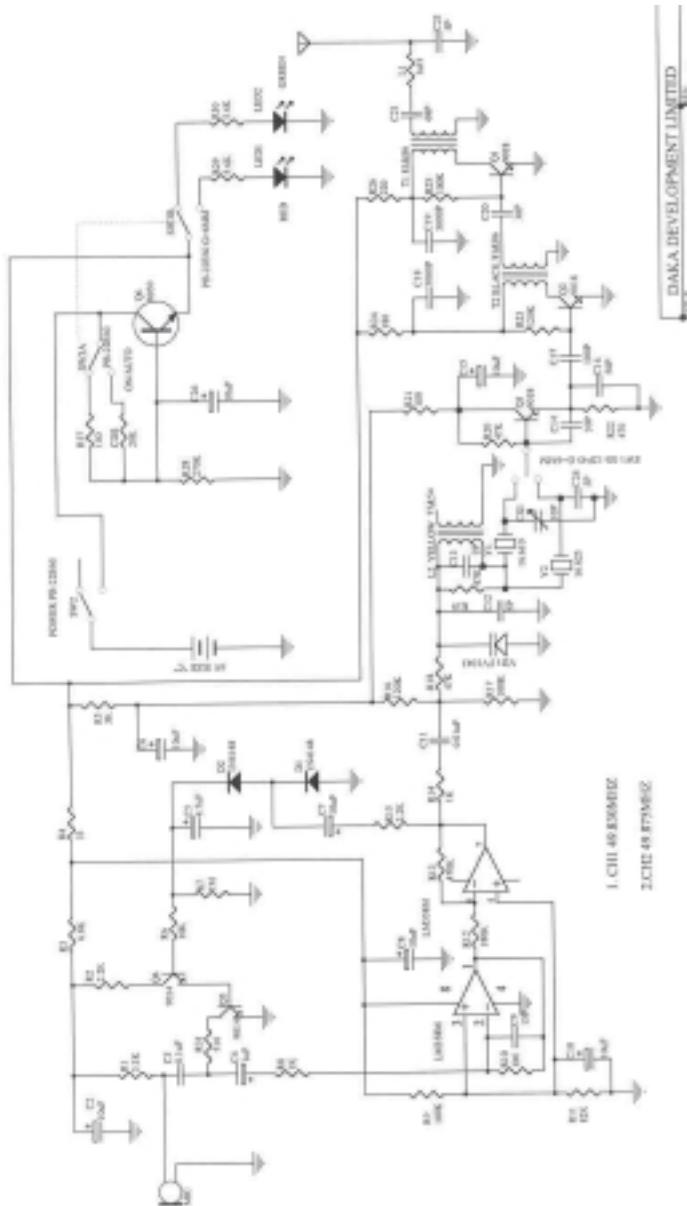


**Figure 3.1 Radiated Test Setup, Front**



**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

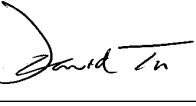
The EUT exercise program was loaded during the radiated emission test. The initial step in collecting radiated data is a EMI Receiver scan of the measurement range 30MHz - 5GHz using peak detector. IF bandwidth is 120kHz and video bandwidth is 300kHz for measuring 30MHz-1GHz. Both bandwidth are 1MHz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

Between 2 operation channels: CH1/49.830MHz and CH2/49.875MHz, the worse case is CH2.

Test Personnel:

Tester Signature: 

Date: 05-18-2000

Typed/Printed Name: David Tu

**Radiated Test Data (CH2—49.875MHz)**

Frequency (MHz)	Polarity [H, V] Position	Height (m)	Azimuth (Degree)	Peak(2) Reading (dB $\mu$ V/m)	Class B(1) 3m Limit (dB $\mu$ V/m)	Difference from limit (dB)
49.87	H	1.3	180	61.3	80	-18.7
399.0	H	1.0	235	33.8	40	-6.2
49.87	V	1.0	180	58.1	80	-21.9
149.62	V	1.0	190	29.0	40	-11
349.1	V	1.7	180	31.7	40	-8.3
399.0	V	1.5	045	38.5	40	-1.5
548.6	V	1.0	235	34.8	40	-5.2
598.5	V	1.0	235	37.3	40	-2.7
648.4	V	1.0	315	37.0	40	-3

(1) The limit for emissions within the 49.82-49.90MHz band is 10,000uV(80dB). Sec. 15.235. The limit for other emissions 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 characteristics.

## **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