

November 8, 1999

North American Technical Services  
30 Northport Road  
Sound Beach, NY 11789

Attention: Mr. Richard Lanzillotto

Dear Sir:

Enclosed you will find a hard copy of Retlif Test Report R-8263-1 (report of measurements) for your electronic filing which covers the Part 15, Subpart C Certification testing of the Knogo North America, 8 MHz Electronic Article Surveillance System, Model P-2000. Also enclosed you find the Conducted Emissions and the Occupied Bandwidth Data that you will need to scan. I will electronically send you the Test Report, Radiated Emissions and the Test Equipment Lists. This testing was performed in accordance with your Purchase Order Number 1099.

Thank you for the opportunity to be of service to you. Should you have any questions regarding the enclosed application please feel free to contact me.

Very truly yours,

RETLIF TESTING LABORATORIES

Michelle Tirado  
Administrative Coordinator

Enc. (as stated)

## EXHIBIT 4

### Report of Measurements

Para. 2.1033(b)(6)

<b>APPLICANT</b> Knogo North America 350 Wireless Boulevard Hauppauge, NY 11788	<b>MANUFACTURER</b>  Same
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TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C

TEST PROCEDURE: ANSI C63.4:1992

#### TEST SAMPLE DESCRIPTION

BRANDNAME: Knogo North America MODEL: P-2000

TYPE: Swept RF Transmitter

POWER REQUIREMENTS: 18VAC (derived from 115VAC Transformer)

FREQUENCY OF OPERATION: 7.45 MHz to 8.95 MHz

#### TESTS PERFORMED

Para. 15.207(a)	Conducted Emissions
Para. 15.209(a)	Radiated Emissions, Spurious
Para. 15.223(a)	Radiated Emissions, Fundamental Occupied Bandwidth

#### REPORT OF MEASUREMENTS

Applicant:	Knogo North America
Device:	8 MHz Swept RF, Electronic Article Surveillance System
FCC ID:	
Power Requirements:	18 VAC derived from a 115 VAC Transformer
Applicable Rule Section:	Part 15, Subpart C, Section 15.223

## TEST RESULTS

- 15.223(a) - The field strength of any emissions within the band of 1.705MHz to 10.0MHz did not exceed 100 $\mu$ V/M (10,000 $\mu$ V/M) at 30 meters (3 meters), average. The 6 dB Bandwidth of the device was found to be greater than 10% of the center frequency.
- 15.223(b) - The field strength of any emissions outside the 1.705 to 10 MHz band did not exceed the general radiated emissions limits of section 15.209. All signals within 10 dB of the limit at 3 meters are reported herein.

### Notes:

Since the device operates over a range greater than 1 MHz, all testing was performed with the Swept RF Output stopped at a low and high frequency (7.52 MHz and 8.89 MHz respectively).

## Exhibit 4

### Report of Measurements

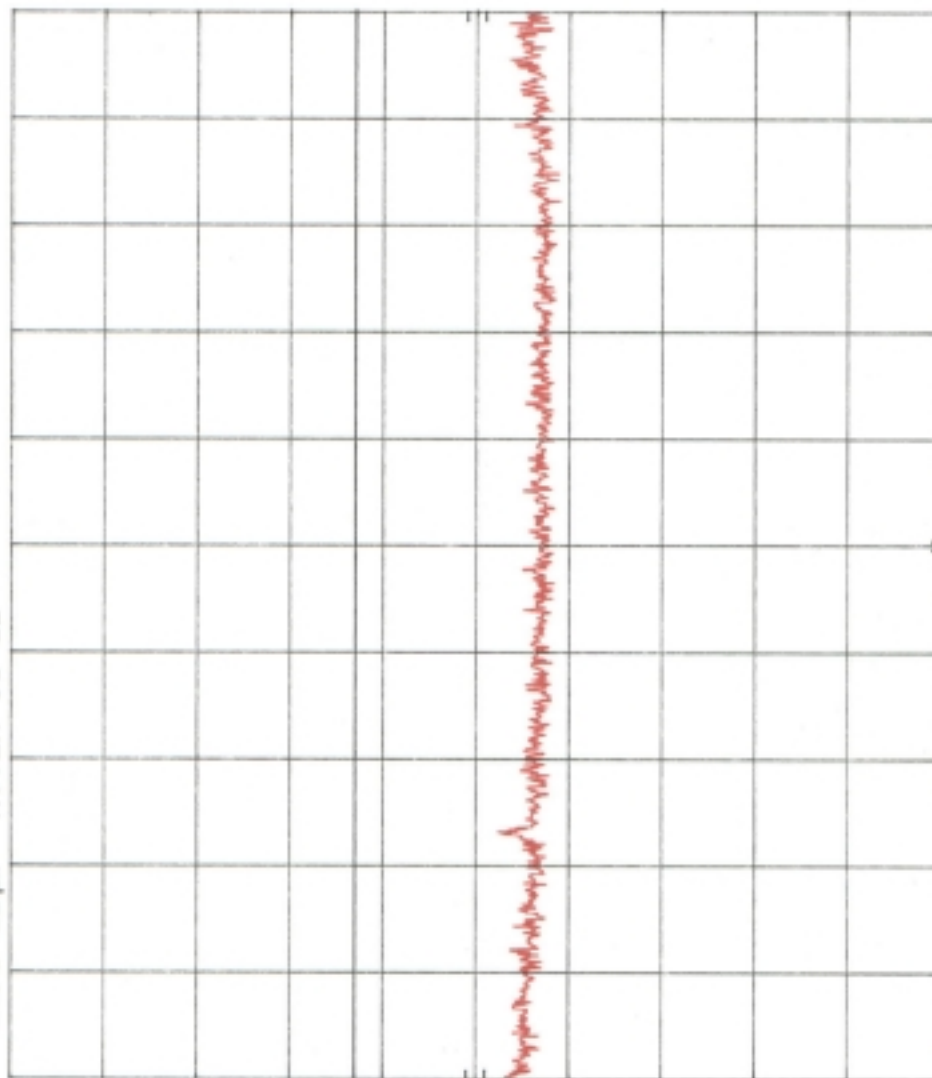
#### 15.207(a) Conducted Emissions Data

R-8263-1 P2000 FCC15.207 CE DC 10/15/99 LEAD-HOT  
 REF 85.0 dBμV ATTEN 10 dB

*hp*  
 10 dB/

OFFSET  
 10.0  
 dB

DL  
 48.0  
 dBμV



START 450 kHz RES BW 10 kHz VBW 30 kHz STOP 1.70 MHz SWP 20.0 sec

Customer:	NATS (Knogo North America)
Test Sample:	Electronic Article Surveillance System
Model No.:	P-2000
Test Method:	FCC 15.207 Conducted Emissions
Notes:	Lead Tested: Hot Detector Function: Peak
Date:	October 15, 1999
Tech:	Dennis Cortes
Sheet:	1 of 5



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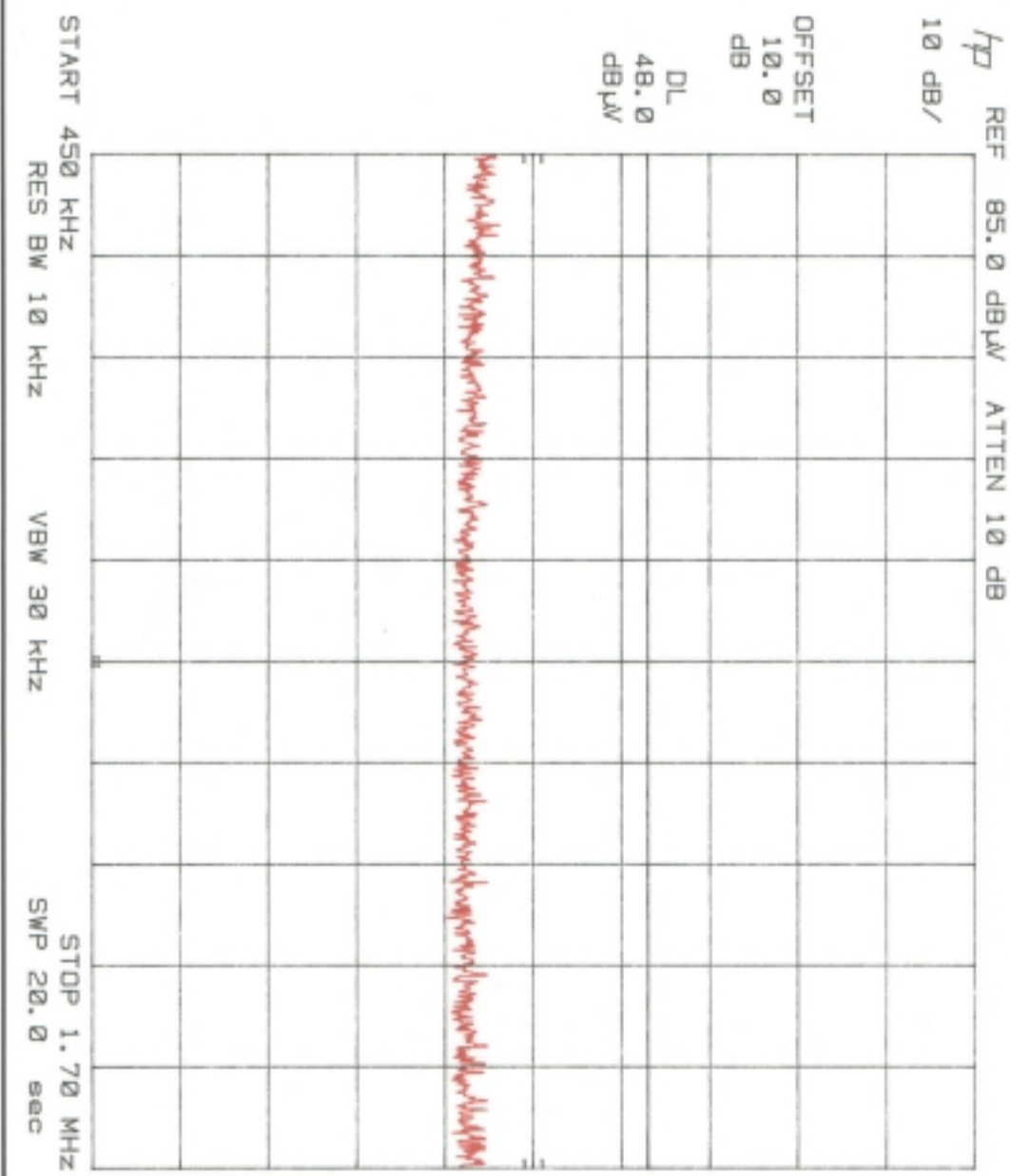
Report No. R-8263-1

Customer: MATS (Osaka North America)  
 Test Sample: Electronic Article Surveillance System  
 Model No.: P-2000  
 Test Method: FCC 15.207 Conducted Emissions  
 Lead Tester: Neutral  
 Detector Function: Peak  
 Date: October 15, 1999  
 Tech: Davis Corbin  
 Shift: 2  
 of: 6



Report No. R-8263-1  
 Retlif Testing Laboratories

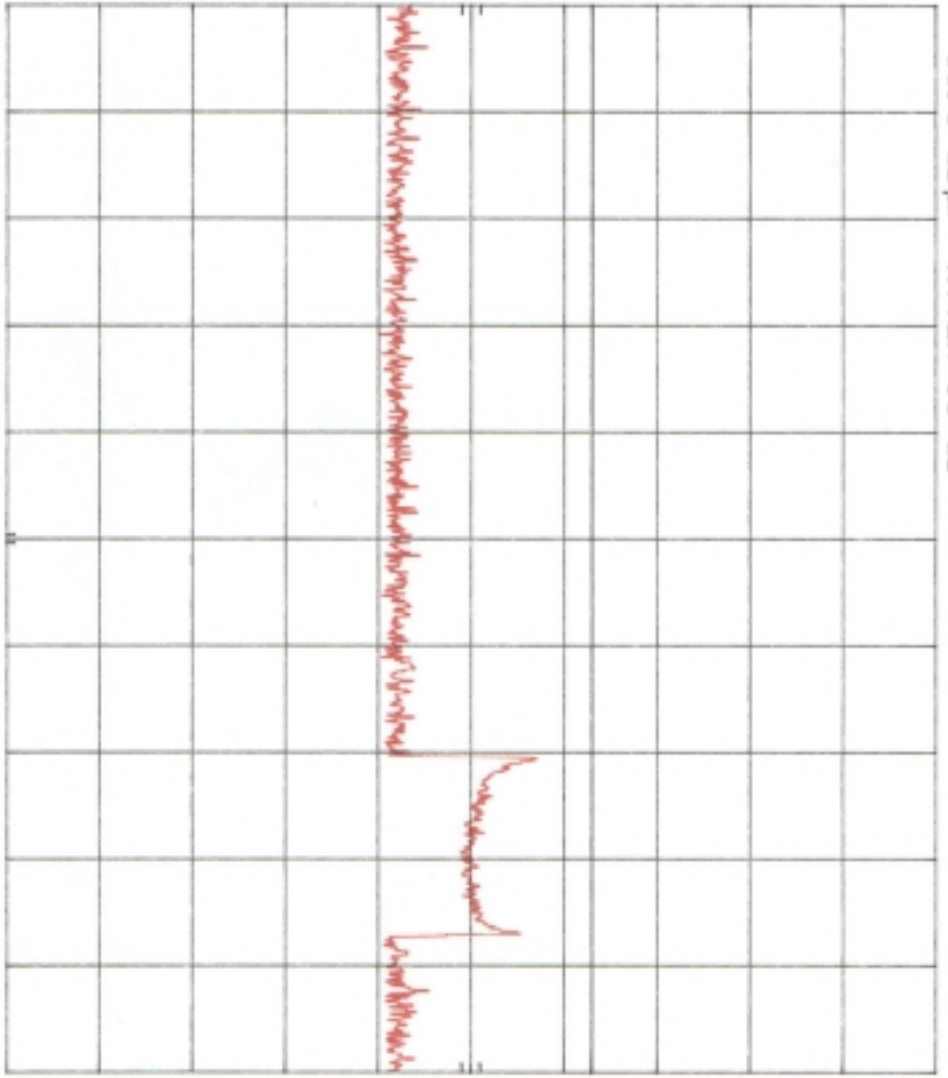
R-8263-1 P2000 FCC15.207 CE DC 10/15/99 LEAD-NEUTRAL  
 REF 85.0 dBμV ATTEN 10 dB



Date: October 15, 1999  
 Tech: David Curtis  
 Spec: 3  
 Lot: 5  
 Customer: NATS (Kroger North America)  
 Test Sample: Electronic Article Surveillance System  
 Model No.: P-2000  
 Test Method: FCC 15.207 Conducted Emissions  
 Lead Tested: Not  
 Detector Function: Peak

R-8263-1 P2000 FCC15.207 CE DC 10/15/99 LEAD-HOT  
 REF 85.0 dBμV ATTEN 10 dB

10 dB/  
 hP  
 OFFSET  
 10.0  
 dB  
 DL  
 49.0  
 dBμV



START 1.70 MHz  
 RES BW 10 kHz  
 VBW 30 kHz  
 STOP 10.00 MHz  
 SWP 20.0 sec



Customer:	MATS (Chicago North Area)
Test Sample:	Electronic Article Surveillance System
Model No.:	P-2000
Test Method:	FCC 15.207 Conducted Emissions
Lead Tested:	Neutral
Detector Function:	Peak
Date:	October 15, 1999
Tech:	Chris Cortes
Sheet:	4 of 5

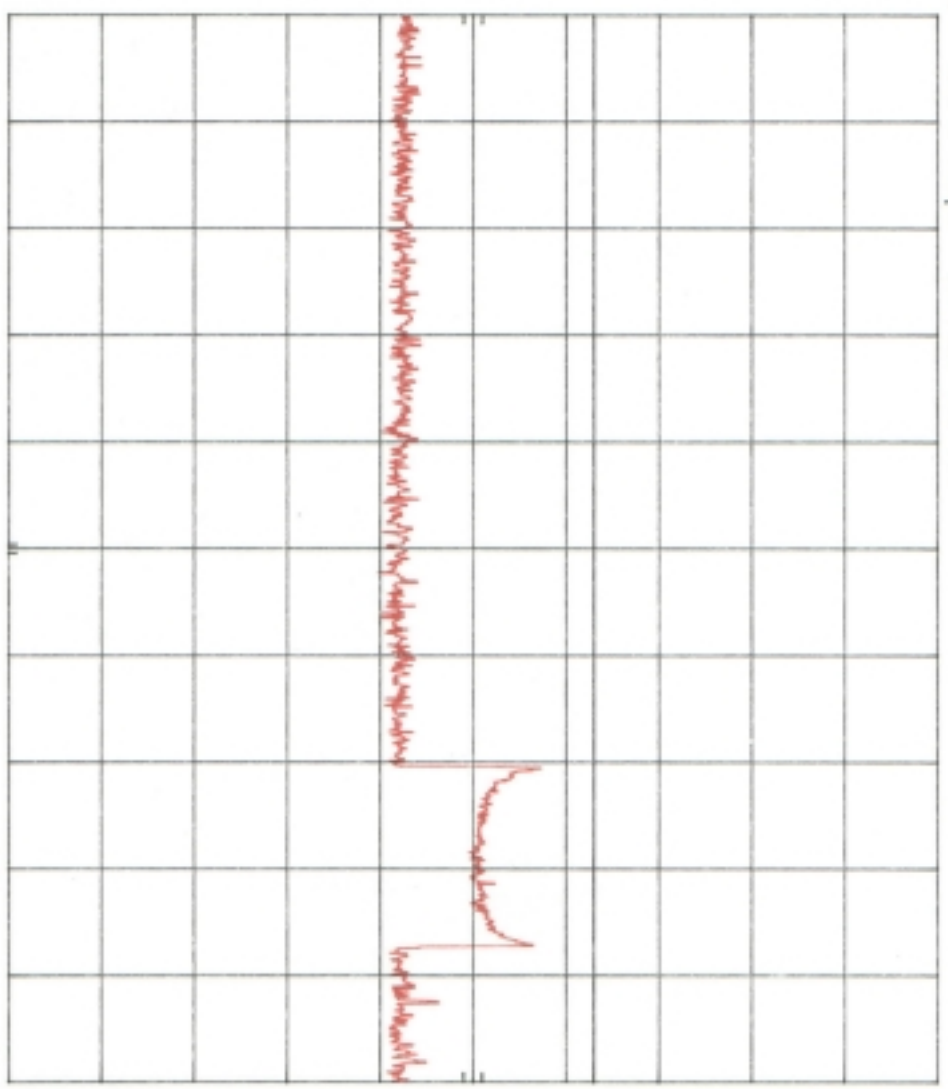


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Retliff Testing Laboratories

R-8263-1 P2000 FCC15.207 CE DC 10/15/99 LEAD-NEUTRAL  
 REF 85.0 dBμV ATTEN 10 dB

hp  
 10 dB/  
 OFFSET  
 10.0  
 dB  
 DL  
 48.0  
 dBμV



START 1.70 MHz  
 RES BW 10 kHz  
 VBW 30 kHz  
 STOP 10.00 MHz  
 SWP 20.0 sec

Customer:		NATS (Kings North America)	
Test Sample:		Electronic Article Surveillance System	
Model No:		P-2000	
Test Method:		FCC 15.227 Conducted Emissions	
Notes:		Lead Tested: Not	
Detector Function:		Peak	
Date:	October 15, 1999	Tech:	David Cortes
Sheet:	5 of 6		

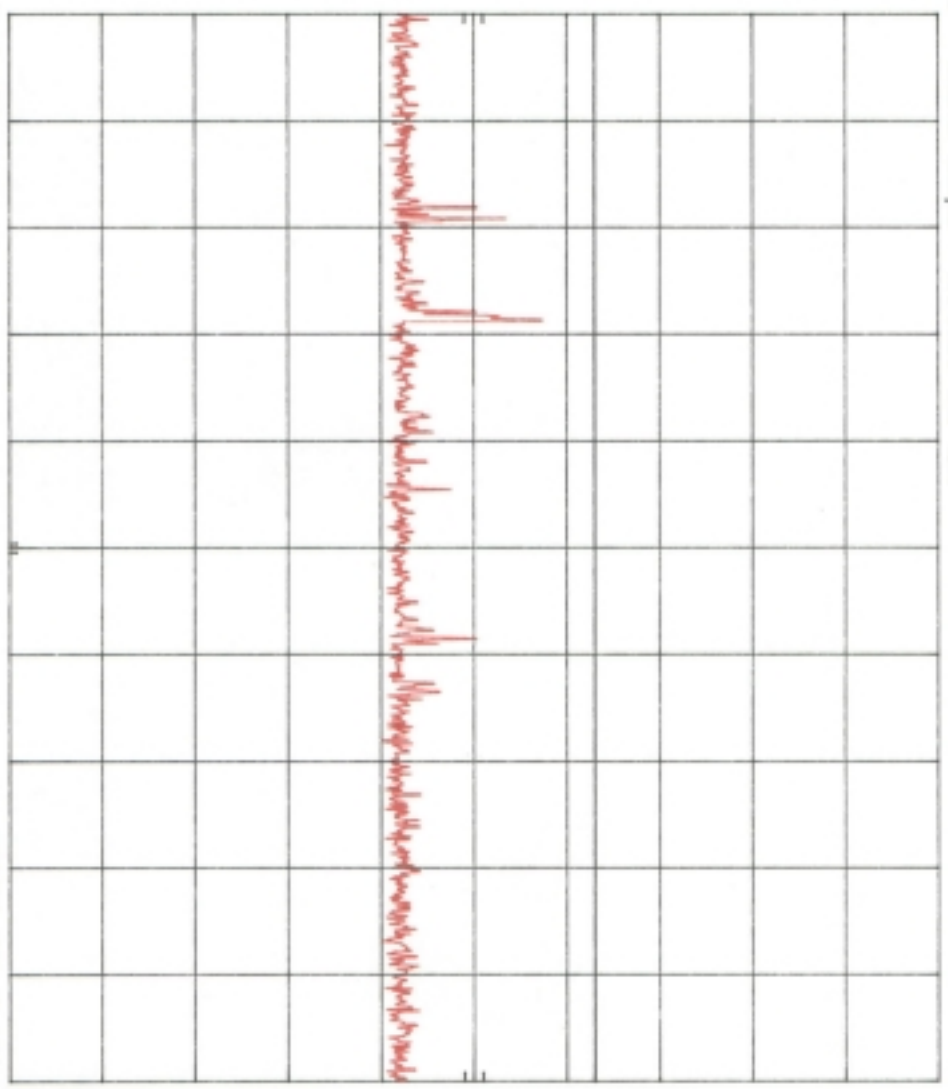


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Report No. R-8263-1

R-8263-1 P2000 FCC15.207 CE DC 10/15/99 LEAD-HOT  
 REF 85.0 dBμV ATTEN 10 dB

10 dB/  
 h  
 OFFSET  
 10.0  
 dB  
 DL  
 48.0  
 dBμV

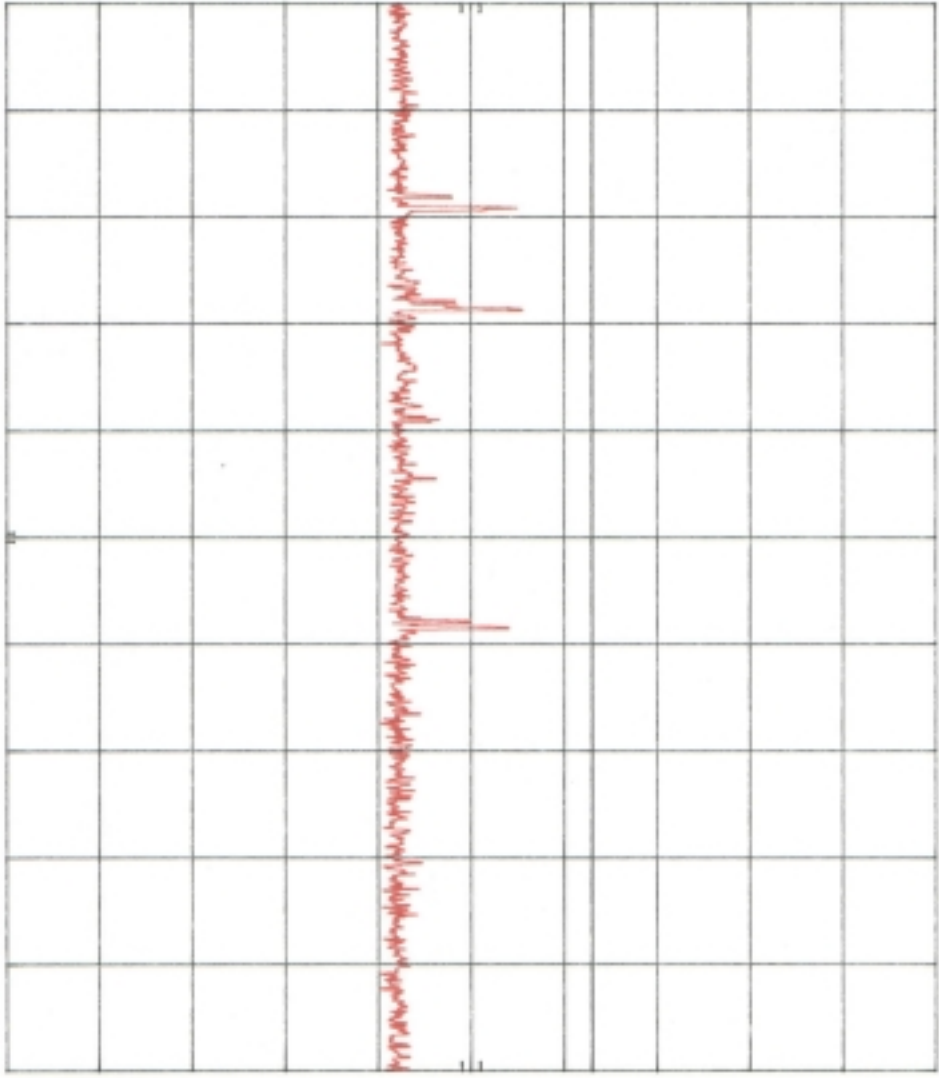


START 10.0 MHz  
 RES BW 10 kHz  
 VBW 30 kHz  
 STOP 30.0 MHz  
 SWP 20.0 sec

Customer:	NATS (Kings North America)
Test Sample:	Electronic Article Surveillance System
Model No.:	P-2000
Test Method:	FCC 15.207 Conducted Emissions
Name:	Lead Tested: Neutral
	Detector Function: Peak
Date:	October 15, 1999
Test:	Corvus Corvus
Sheet:	5 of 5

R-8263-1 P2000 FCC15.207 CE DC 10/15/99 LEAD-NEUTRAL  
 REF 85.0 dBμV ATEN 10 dB

10 dB/  
 h  
 OFFSET  
 10.0  
 dB  
 DL  
 48.0  
 dBμV



START 10.0 MHz STOP 30.0 MHz  
 RES BW 10 kHz VBW 30 kHz SWP 20.0 sec

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Exhibit 4

Report of Measurements

15.209(a), 15.223 Radiated Emissions Data

<b>Test Method:</b>	FCC Part 15 Radiated Emissions, 9Khz to 30 Mhz paragraph 15.223							
<b>Customer:</b>	NATS (Knogo North America)					<b>Job No.</b>	R-8263-1	
<b>Test Sample:</b>	Electronic Article Surveillance							
<b>Model No.:</b>	P-2000					<b>Serial</b>	N/A	
<b>Operating</b>	EUT continuously transmitting a signal at frequency specified below							
<b>Technician:</b>	Dennis Cortes					<b>Date:</b>	September 13, 1999	
<b>Notes:</b>	Test Distance: 10 Meters				Temp:18C		Humidity:25%	
	Detector: Peak				All readings were extrapolated			
Test Freq.	Antenna Pol./Rotation	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	30 Meter Equiv.	Converted Reading	Limit
Mhz	(V/H)/degr	Degrees	dBuv	dB			uV/m	
	<b>EUT continuously transmitting a 7.52 Mhz signal</b>							
7.52	V-158	315	40.3	10.5	50.8	31.7	38.5	100
	<b>EUT continuously transmitting a 8.89 Mhz signal</b>							
8.89	V-158	315	39.3	10.5	49.8	30.7	34.2	100
	The EUT was scanned from 9Khz to 30 Mhz							
	The emissions observed from the EUT do not exceed the specified limits.							
	were more than 10dB under the specified limit							

<b>Test Method:</b>	FCC Part 15 Radiated Emissions, 30 Mhz to 1 Ghz paragraph 15.223						
<b>Customer:</b>	NATS (Knogo North America)				<b>Job No.</b>	R-8263-1	
<b>Test Sample:</b>	Electronic Article Surveillance						
<b>Model No.:</b>	P-2000				<b>Serial</b>	N/A	
<b>Operating</b>	EUT continuously transmitting a signal at frequency specified below						
<b>Technician:</b>	Dennis Cortes				<b>Date:</b>	September 13, 1999	
<b>Notes:</b>	Test Distance: 3 Meters                      Temp:18C                      Humidity:25% Detector: Quasi-Peak.						
Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit
Mhz	(V/H)/	Degrees	dBuv	dB	dBuv/m	uV/m	uV/m
	<b>EUT continuously transmitting a 7.52Mhz signal</b>						
37.6	V-1.0	338	44.0	-5.5	38.5	84.1	100
45.1	V-1.0	338	28.0	-8.3	19.7	9.7	100
	<b>EUT continuously transmitting a 8.89Mhz signal</b>						
35.6	V-1.0	135	42.1	-4.5	37.6	75.9	100
44.4	V-1.0	338	47.6	-8.5	39.1	90.2	100
53.3	V-1.0	338	34.0	-10.8	23.2	14.5	100
62.2	V-1.0	338	39.0	-12.4	26.6	21.4	100
	The EUT was scanned from 30 Mhz to 1 Ghz						
	The emissions observed from the EUT do not exceed the specified limits.						
	were more than 10dB under the specified limit						

<b>Test Method:</b>	FCC Part 15 Radiated Emissions, 9 Khz to 1 Ghz paragraph 15.209						
<b>Customer:</b>	NATS (Knogo North America)				<b>Job No.</b>	R-8263-1	
<b>Test Sample:</b>	Electronic Article Surveillance						
<b>Model No.:</b>	P-2000				<b>Serial</b>	N/A	
<b>Operating</b>	EUT continuously transmitting a sweeping signal from 7.52 Mhz to						
<b>Technician:</b>	Dennis Cortes				<b>Date:</b>	October 15,1999	
<b>Notes:</b>	Test Distance: 3 Meters                      Temp: 18C                      Humidity: 25% Detector: Quasi-Peak						
Test Freq.	Antenna Position	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit
Mhz	V/H-	Degrees	dBuv	dB	dBuv/m	uv/m	uV/m
.009							266.7
V							
.490							4.89
.490							48.9
V							
1.705							14.1
1.705							30
V							
30.0							30
30.0							100
V							
88.0							100
88.0							150
V							
216.0							150
216.0							200
246.2	V-1.5	203	33.9	-6.9	27.0	22.4	
328.7	V-1.0	248	36.0	-4.2	31.8	38.9	
414.0	V-1.0	203	33.8	-1.8	32.0	39.8	
543.8	V-1.0	203	34.4	1.4	35.8	61.7	
653.8	V-1.3	135	33.1	3.7	36.8	69.2	
960.0							200
960.0							500
1000.0							500
	The EUT was scanned from 9 Khz to 1 Ghz						
	The emissions observed from the EUT do not exceed the specified limits.						
	were more than 10dB under the specified limit						



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## Exhibit 4

### Report of Measurements

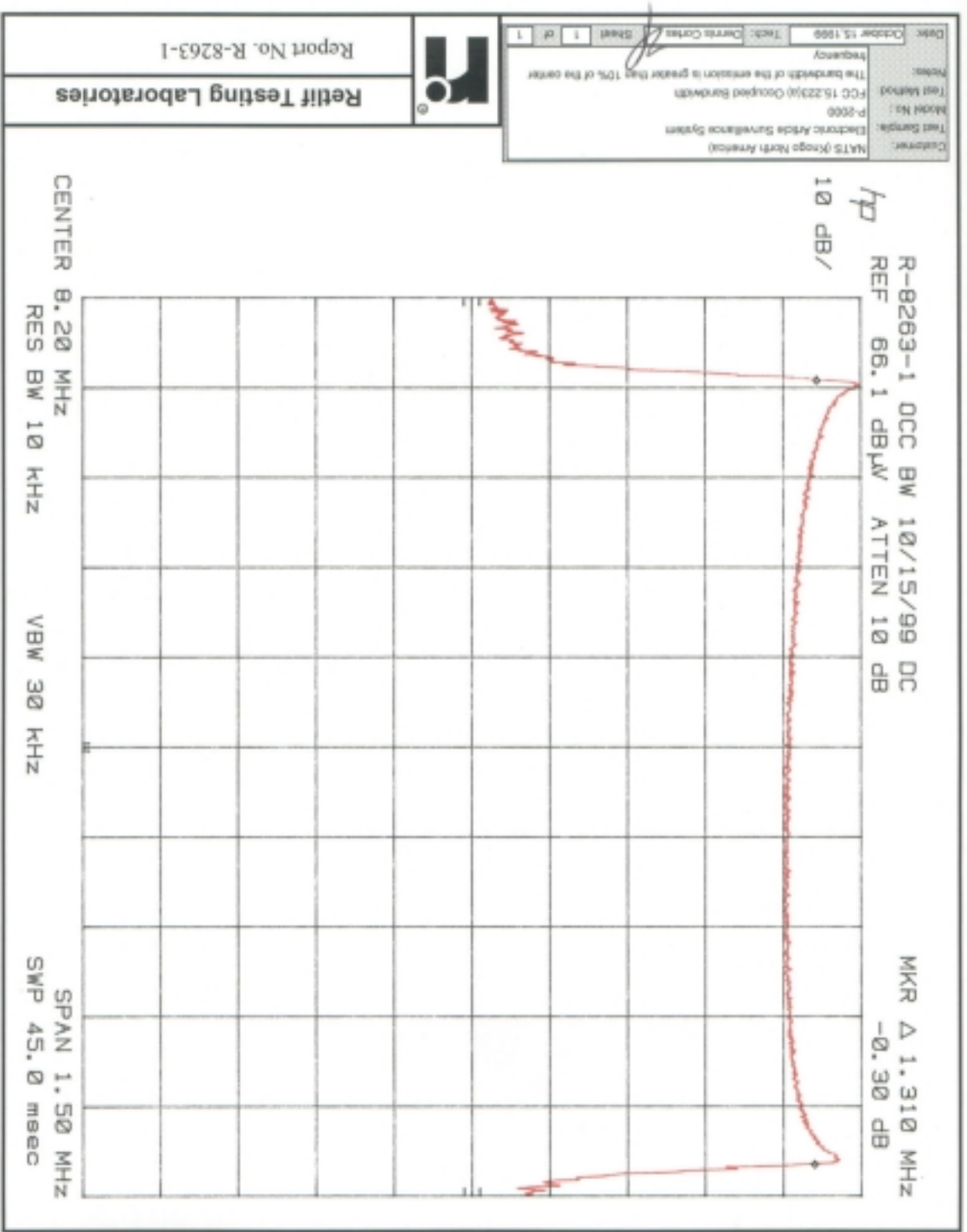
### Occupied Bandwidth Data

Date:	October 15, 1999
Test Method:	FCC 15.223(a) Occupied Bandwidth
Model No.:	P-2000
Test Sample:	Electronic Article Surveillance System
Customer:	MATS (Chicago North Airfield)
Notes:	The bandwidth of the emission is greater than 10% of the carrier frequency
Tech:	Charles Cortez
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## TEST EQUIPMENT LIST

## EQUIPMENT LIST

### FCC 15.207 Conducted Emissions

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
078	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	5/11/99	5/11/00
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	9/20/99	3/20/00
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/5/99	3/5/00
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	9/20/99	3/20/00
202	Transient Limiter	Hewlett Packard	.009 MHz - 200 MHz	11947A	7/19/99	7/19/00
513	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	11/2/98	11/2/99

### FCC Part 15 Radiated Emissions, 9 kHz to 1 GHz Paragraph 15.209

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
012	Loop Antenna, Active	EMCO	9 kHz - 30 MHz	6502	10/4/99	10/4/00
067	Open Area Test Site	Retlif	3 Meter	RNY	9/1/99	11/1/99
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/22/99	6/22/00
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	9/20/99	3/20/00
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/5/99	3/5/00
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	9/20/99	3/20/00
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/22/99	6/22/00
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	10/22/98	4/22/00