



INNOTEK PET PRODUCTS TEST REPORT

FOR THE

CONTAINMENT TRANSMITTER, M022900

FCC PART 15 SUBPART C
SECTIONS 15.207 & 15.209

COMPLIANCE

DATE OF ISSUE: AUGUST 29, 2000

PREPARED FOR:

Innotek Pet Products
One Innoway
Garrett, IN 46738

W.O. No: 75021

Report No: FC00-086

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Date of test: August 26, 2000

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ADMINISTRATIVE INFORMATION

DATE OF TEST: August 26, 2000

PURPOSE OF TEST: To demonstrate the compliance of the Containment Transmitter, M022900, with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.209 devices.

MANUFACTURER: Innotek Pet Products
One Innoway
Garrett, IN 46738

REPRESENTATIVE: Pete Johnson

TEST LOCATION: CKC Laboratories, Inc.
22105 Wilson River Hwy
Tillamook, OR 97141

TEST PERSONNEL: Mike Wilkinson

TEST METHOD: ANSI C63.4 1992

FREQUENCY RANGE TESTED: 9 kHz - 1000 MHz

EQUIPMENT UNDER TEST:

Pet Containment Transmitter

Manuf: Innotek Pet Products
Model: M022900
Serial: 022901 I 041633
FCC ID: KBS050229 (Pending)

Power Supply

Manuf: Innotek Pet Products
Model: HD01220
Serial: none
FCC ID: N/A

SUMMARY OF RESULTS

The Innotek Pet Products Containment Transmitter, M022900, was tested in accordance with ANSI C63.4 1992 for compliance with FCC Part 15 Subpart C Sections 15.207 & 15.209.

As received, the above equipment was found to be fully compliant with the limits of FCC Part 15 Subpart C Sections 15.207 & 15.209. The results in this report apply only to the items tested, as identified herein.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The units transmit a coded signal used by a receiving unit (normally worn by a dog) to determine position relative to the transmitting antenna.

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ± 4 dB measurement uncertainty.

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the Containment Transmitter, M022900. All readings taken are peak readings unless otherwise noted by a "Q" or "A". The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Fundamental Emission Level									
FREQUENCY	METER READING	CORRECTION FACTORS				CORRECTED READING	SPEC LIMIT	MARGIN	NOTES
		Mag	Amp	Cable	Dist				
MHz	dB μ V	L dB	dB	dB	dB	dB μ V/m	dB μ V/m	DB	
0.014	82.2	5.1		0.5		87.8	115.0	-27.2	NA

Test Method: ANSI C63.4 1992
Spec Limit: FCC Part 15.209
Test Distance: 10 Meters

N = No Polarization, Magnetic Loop Antenna Used
A = Average Reading

COMMENTS: EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 200 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle. The EUT and antenna measurement site was a flat field with short grass approximately 200 x 150 feet with no structures, underground cable or pipes. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 9 kHz to 30 MHz -11 dB correction factor used on the Transmitter Fundamental reading was derived from the measured 26% duty cycle over 100 msec. pulsed operation (20Log 0.26= 11dB).

Table 2: Six Highest Radiated Emission Levels - 9 kHz - 30 MHz

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN DB	NOTES
		Mag L dB	Amp dB	Cable dB	Dist dB				
0.025	78.0	12.7		0.5		91.2	109.8	-18.6	N
0.041	78.8	11.3		0.5		90.6	105.4	-14.8	N
0.068	75.0	10.5		0.5		86.0	101.0	-15.0	N
0.095	71.7	10.2		0.5		82.4	98.1	-15.7	N
0.109	70.4	10.1		0.5		81.0	96.9	-15.9	N
0.163	66.2	10.0		0.5		76.7	93.4	-16.7	N

Test Method: ANSI C63.4 1992
Spec Limit: FCC 15.209
Test Distance: 10 Meters

N = No Polarization, Magnetic Loop Antenna Used

COMMENTS: EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 200 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle. The EUT and antenna measurement site was a flat field with short grass approximately 200 x 150 feet with no structures, underground cable or pipes. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 9 kHz to 30 MHz -11 dB correction factor used on the Transmitter Fundamental reading was derived from the measured 26% duty cycle over 100 msec. pulsed operation ($20\log 0.26 = 11\text{dB}$).

Table 3: Six Highest Radiated Emission Levels - 30-1000 MHz									
FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN DB	NOTES
		Bilog dB	Amp- A dB	Cable dB	Dist dB				
40.013	29.1	13.8	-27.6	1.4		16.7	40.0	-23.3	V
44.013	28.9	11.4	-27.6	1.5		14.2	40.0	-25.8	V
48.013	29.9	9.2	-27.5	1.5		13.1	40.0	-26.9	V
52.013	30.9	7.6	-27.5	1.5		12.5	40.0	-27.5	V
56.013	31.6	6.6	-27.6	1.6		12.2	40.0	-27.8	V
60.026	34.5	5.7	-27.6	1.7		14.3	40.0	-25.7	V

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
Q = Quasi Peak Reading

COMMENTS: EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 14 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle on the test table. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 30 MHz to 1.0 GHz.

Table 4: Six Highest Conducted Emission Levels									
FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV	SPEC LIMIT dBμV	MARGIN dB	NOTES
		Cable dB		LISN dB					
1.699538	42.4	0.0		0.4		42.8	48.0	-5.2	W
1.792763	44.1	0.0		0.4		44.5	48.0	-3.5	W
1.893159	45.0	0.0				45.0	48.0	-3.0	W
2.044980	45.2	0.0		0.3		45.5	48.0	-2.5	WQ
2.166600	46.0	0.0		0.2		46.2	48.0	-1.8	WQ
2.247100	45.3	0.1		0.3		45.7	48.0	-2.3	WQ

Test Method:
Spec Limit:

ANSI C63.4 1992
FCC 15.207

NOTES: Q = Quasi Peak Reading
A = Average Reading
B = Black Lead
W = White Lead

COMMENTS: EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 14 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle on the test table. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 450 kHz to 30 MHz.

TABLE A
LIST OF TEST EQUIPMENT

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8574A EMI Receiver	3010A01076	07/25/2000	07/25/2001	0
EMCO 6502 Mag Loop Antenna	2156	01/26/2000	01/26/2001	52
HP 8447D Amplifier	2727A05392	02/14/2000	02/14/2001	10
Chase CBL6111C Bilog Antenna	2455	08/30/1999	08/30/2000	1992
Fischer LISN	none	12/28/1999	12/28/2000	13
Fischer LISN	none	12/28/1999	12/28/2000	14

EUT SETUP

The equipment under test (EUT) and the peripheral(s) listed were set up in a manner that represented their normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Tables 1-3 for radiated emissions and Table 4 for conducted emissions. Additionally, a complete description of the EUT is included on the information sheets contained in Appendix A.

During radiated emissions testing, the EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated emissions testing of table top devices.

During conducted emissions testing, the EUT was located 80 centimeters above the conducting ground plane on the same nonconducting table as was used for radiated testing. The metal plane was grounded to the earth through the green wire safety ground. Power to the EUT was provided via 3 meters of shielded power cable from a filter grounded to the metal plane to a LISN. The LISN was also grounded to the plane and attached to the LISN was a 4 ganged grounded outlet whose source was also shielded and 60 cm in length. All other objects were kept a minimum of 1 meter away from the EUT during the conducted test.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the Containment Transmitter, M022900. For radiated measurements below 30 MHz, the magnetic loop antenna was used. The bilog antenna was used for frequencies between 30-1000 MHz. The bilog antenna was located at a distance of 3 meters from the edge of the EUT. The magnetic loop antenna was located at a distance of 10 meters away from the edge of the EUT. Conducted emissions tests required the use of the FCC type LISN's.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dB μ V, and a vertical scale of 10 dB per division.

TABLE B: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
CONDUCTED EMISSIONS	450 kHz	30 MHz	9 kHz

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in Tables 1-4 indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the Containment Transmitter, M022900.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

Average measurements may be made for certain frequencies using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

TEST METHODS

The radiated and conducted emissions data of the Containment Transmitter, M022900, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the "Sample Calculations". The corrected data was then compared to the FCC Part 15 Subpart C Sections 15.207 & 15.209 emissions limits to determine compliance.

Preliminary and final measurements were taken in order to better ensure that all emissions from the EUT were found and maximized.

Radiated Emissions Testing

During the preliminary radiated scan, the EUT was powered up and operating in its defined test mode, with the cables facing the antenna. The magnetic loop antenna was used to scan the frequency range of 9 kHz to 30 MHz. The frequency range of 30 MHz - 1000 MHz was then scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks, which were at or near the limit, were recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

For the final radiated scan, the equipment was again positioned with its cables facing the antenna. A thorough scan of all frequencies was manually made using a small frequency span, rotating the turntable as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximized the readings with respect to the table rotation, antenna height and configuration of the cables. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

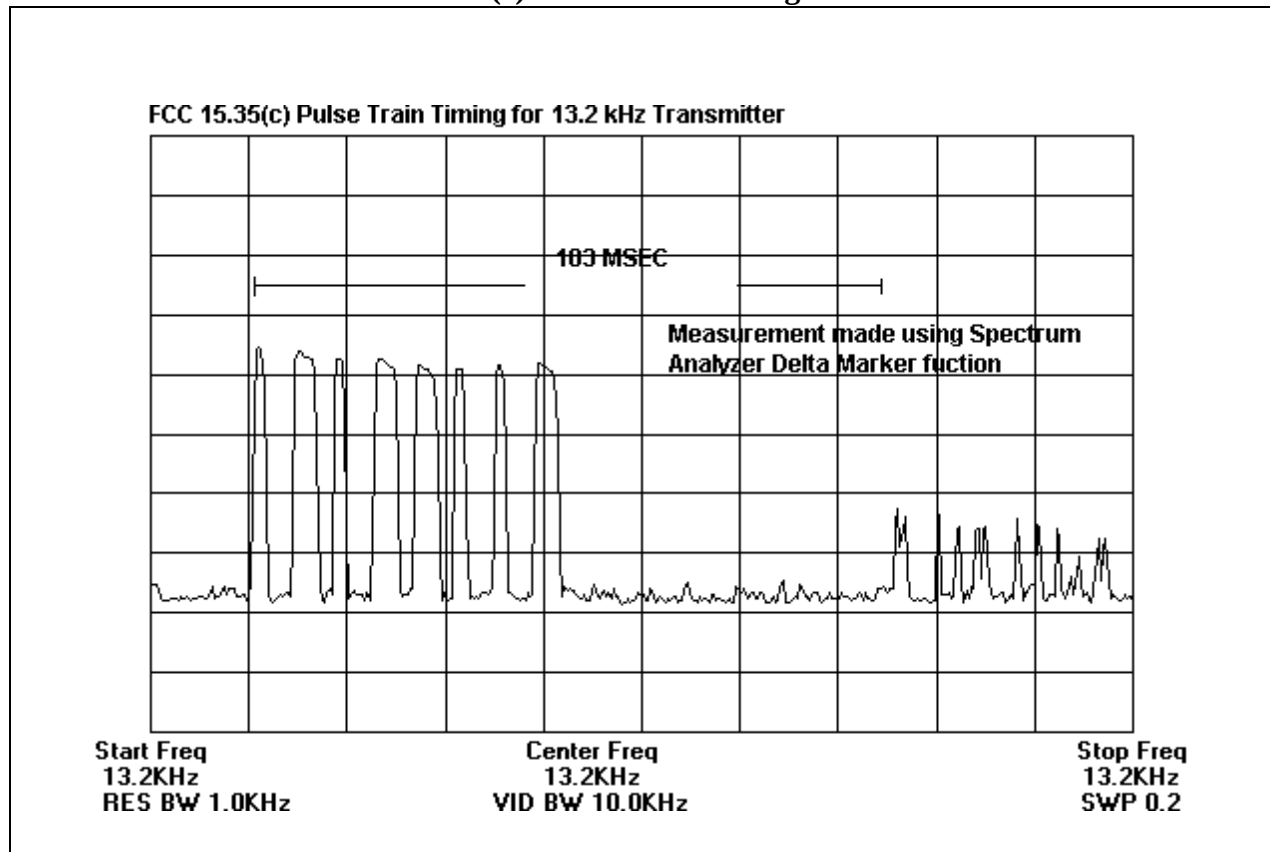
Conducted Emissions Testing

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

FCC Part 15.35(c) - Measurement Detector Functions and Bandwidths

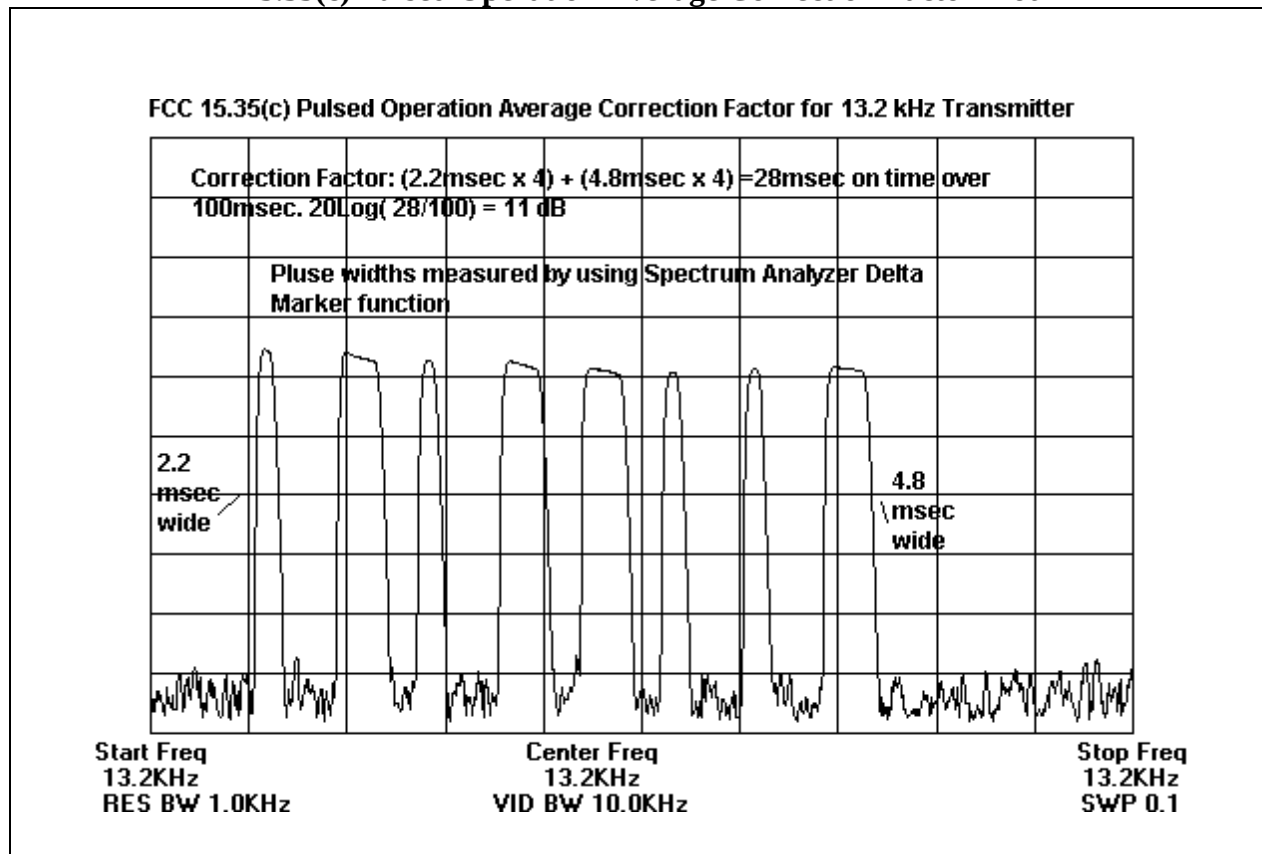
In accordance with Part 15.35(c), when the radiated emissions limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.

15.35(c) Pulse Train Timing Plot



15.35(c) Pulsed Operation Plot

15.35(c) Pulsed Operation Average Correction Factor Plot



15.35(c) Pulsed Operation Plot

SAMPLE CALCULATIONS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in Tables 1-4. For radiated emissions in dBμV/m, the spectrum analyzer reading in dBμV was corrected by using the following formula:

$$\begin{aligned}
 &\text{Meter reading (dB}\mu\text{V)} \\
 &+ \text{Antenna Factor (dB)} \\
 &+ \text{Cable Loss (dB)} \\
 &- \text{Distance Correction (dB)} \\
 &- \text{Pre-amplifier Gain (dB)} \\
 &= \text{Corrected Reading (dB}\mu\text{V/m)}
 \end{aligned}$$

This reading was then compared to the applicable specification limit to determine compliance.

A typical data sheet will display the following in column format:

#	Freq MHz	Rdng dBμV	Cbl- 2	Cable	T1 co	Ave F	Amp- A	Bilog	Mag L	Dist	Corr dBμV/m	Spec	Margin	Polar
	L13w	L14b												

means reading number

Freq MHz is the frequency in MHz of the obtained reading.

Rdng dBμV is the reading obtained on the spectrum analyzer in dBμV.

Cbl-2, Cable & T1 co are the cable loss factors in dB of the coaxial cable on the OATS.

Ave F is the correction factor for the fundamental reading, derived from the measured pulsed modulation called out in 15.35 (c).

Amp-A is short for the preamplifier factor or gain in dB.

Bilog is the biconilog antenna factor in dB.

MagL is the magnetic loop antenna factor in dB.

Dist is the distance factor (in dB). It is used when testing at a different test distance than the one stated in the spec.

Corr dBμV/m & Corr dBμV is the corrected reading, after taking into account all the appropriate transducer factors.

Spec is the specification limit (dB) stated in the agency's regulations.

Margin is the closeness to the specified limit in dB; + is over and - is under the limit.

Polar is the Polarity of the antenna with respect to earth.

L13w & L14b is the LISN factor

APPENDIX A

INFORMATION ABOUT THE EQUIPMENT UNDER TEST

INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	N/A
CRT was displaying:	N/A
Power Supply Manufacturer:	
Power Supply Part Number:	
AC Line Filter Manufacturer:	
AC Line Filter Part Number:	
Line voltage used during testing:	

I/O PORTS	
Type	#
None	

CRYSTAL OSCILLATORS	
Type	Freq In MHz
Ceramic Resonator	4MHz

PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
Containment Xmtr	M022901	4Mhz	2	

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View 9 kHz - 30 MHz

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View 9 kHz - 30 MHz w/antenna

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View 30-1000 MHz

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View 30-1000 MHz

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS



Conducted Emissions - Front View

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS



Conducted Emissions - Side View

APPENDIX B

MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **Innotek Pet Products**

Specification: **FCC15.209**

Work Order #: **75021**

Date: 8/24/2000

Test Type: **Maximized Emissions**

Time: 15:00:24

Equipment: **Pet Containment Transmitter**

Sequence#: 5

Manufacturer: Innotek Pet Products

Tested By: Mike Wilkinson

Model: M022900

S/N: 022901 I 041633

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Pet Containment Transmitter*	Innotek Pet Products	M022900	022901 I 041633
Power Supply	Innotek Pet Products	HD01220	none

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 200 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle. The EUT and antenna measurement site was a flat field with short grass approximately 200 x 150 feet with no structures, underground cable or pipes. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 9 kHz to 30 MHz -11 dB correction factor used on the Transmitter Fundamental reading was derived from the measured 26% duty cycle over 100 msec. pulsed operation (20Log 0.26= 11dB).

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dB μ V	Cbl-2 Mag L Ave F			Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
			dB	dB	dB					
1	40.900k	78.8	+0.5	+11.3	+0.0	+0.0	90.6	105.4	-14.8	None
2	67.830k	75.0	+0.5	+10.5	+0.0	+0.0	86.0	101.0	-15.0	None
3	94.870k	71.7	+0.5	+10.2	+0.0	+0.0	82.4	98.1	-15.7	None
4	108.550k	70.4	+0.5	+10.1	+0.0	+0.0	81.0	96.9	-15.9	None
5	162.960k	66.2	+0.5	+10.0	+0.0	+0.0	76.7	93.4	-16.7	None
6	24.550k	78.0	+0.5	+12.7	+0.0	+0.0	91.2	109.8	-18.6	None
7	190.220k	62.2	+0.5	+10.0	+0.0	+0.0	72.7	92.0	-19.3	None
8	54.300k	72.3	+0.5	+10.6	+0.0	+0.0	83.4	102.9	-19.5	None
9	488.000k	51.7	+0.5	+10.1	+0.0	+0.0	62.3	83.8	-21.5	None
10	27.030k	73.7	+0.5	+12.4	+0.0	+0.0	86.6	109.0	-22.4	None

11	4.140M	26.0	+0.5	+10.6	+0.0	+0.0	37.1	60.0	-22.9	None
12	32.440k	70.3	+0.5	+11.9	+0.0	+0.0	82.7	107.4	-24.7	None
13	6.585M	22.6	+0.5	+10.7	+0.0	+0.0	33.8	60.0	-26.2	None
14	13.518k Ave	82.2	+0.5	+16.1	-11.0	+0.0	87.8	115.0 Transmitter Fundamental	-27.2	None
^	13.518k	82.2	+0.5	+16.1	+0.0	+0.0	98.8	115.0 Transmitter Fundamental	-16.2	None
16	19.180k	59.0	+0.5	+13.6	+0.0	+0.0	73.1	111.9	-38.8	None
17	26.140M	8.3	+0.5	+9.5	+0.0	+0.0	18.3	60.0	-41.7	None

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **Innotek Pet Products**

Specification: **FCC15.209**

Work Order #: **75021**

Date: 8/24/2000

Test Type: **Maximized Emissions**

Time: 15:00:24

Equipment: **Pet Containment Transmitter**

Sequence#: 5

Manufacturer: Innotek Pet Products

Tested By: Mike Wilkinson

Model: M022900

S/N: 022901 I 041633

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Pet Containment Transmitter*	Innotek Pet Products	M022900	022901 I 041633
Power Supply	Innotek Pet Products	HD01220	none

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 200 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle. The EUT and antenna measurement site was a flat field with short grass approximately 200 x 150 feet with no structures, underground cable or pipes. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 9 kHz to 30 MHz -11 dB correction factor used on the Transmitter Fundamental reading was derived from the measured 26% duty cycle over 100 msec. pulsed operation (20Log 0.26= 11dB).

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dBμV	Cbl-2 dB	Mag L dB	Ave F dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	40.900k	78.8	+0.5	+11.3	+0.0	+0.0	90.6	105.4	-14.8	None
2	67.830k	75.0	+0.5	+10.5	+0.0	+0.0	86.0	101.0	-15.0	None
3	94.870k	71.7	+0.5	+10.2	+0.0	+0.0	82.4	98.1	-15.7	None
4	108.550k	70.4	+0.5	+10.1	+0.0	+0.0	81.0	96.9	-15.9	None
5	162.960k	66.2	+0.5	+10.0	+0.0	+0.0	76.7	93.4	-16.7	None
6	24.550k	78.0	+0.5	+12.7	+0.0	+0.0	91.2	109.8	-18.6	None
7	190.220k	62.2	+0.5	+10.0	+0.0	+0.0	72.7	92.0	-19.3	None
8	54.300k	72.3	+0.5	+10.6	+0.0	+0.0	83.4	102.9	-19.5	None
9	488.000k	51.7	+0.5	+10.1	+0.0	+0.0	62.3	83.8	-21.5	None
10	27.030k	73.7	+0.5	+12.4	+0.0	+0.0	86.6	109.0	-22.4	None

11	4.140M	26.0	+0.5	+10.6	+0.0	+0.0	37.1	60.0	-22.9	None
12	32.440k	70.3	+0.5	+11.9	+0.0	+0.0	82.7	107.4	-24.7	None
13	6.585M	22.6	+0.5	+10.7	+0.0	+0.0	33.8	60.0	-26.2	None
14	13.518k Ave	82.2	+0.5	+16.1	-11.0	+0.0	87.8	115.0 Transmitter Fundamental	-27.2	None
^	13.518k	82.2	+0.5	+16.1	+0.0	+0.0	98.8	115.0 Transmitter Fundamental	-16.2	None
16	19.180k	59.0	+0.5	+13.6	+0.0	+0.0	73.1	111.9	-38.8	None
17	26.140M	8.3	+0.5	+9.5	+0.0	+0.0	18.3	60.0	-41.7	None

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **Innotek Pet Products**

Specification: **FCC15.209**

Work Order #: **75021**

Date: 08/26/2000

Test Type: **Maximized Emissions**

Time: 08:45:06

Equipment: **Pet Containment Transmitter**

Sequence#: 7

Manufacturer: Innotek Pet Products

Tested By: Mike Wilkinson

Model: M022900

S/N: 022901 I 041633

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Pet Containment Transmitter*	Innotek Pet Products	M022900	022901 I 041633
Power Supply	Innotek Pet Products	HD01220	none

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 14 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle on the test table. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 30 MHz to 1.0 GHz.

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	Amp-A Bilog Cable			Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
			dB	dB	dB					
1	40.013M	29.1	-27.6	+13.8	+1.4	+0.0	16.7	40.0	-23.3	Vert
2	40.013M	27.3	-27.6	+13.8	+1.4	+0.0	14.9	40.0	-25.1	Horiz
3	60.026M	34.5	-27.6	+5.7	+1.7	+0.0	14.3	40.0	-25.7	Vert
4	44.013M	28.9	-27.6	+11.4	+1.5	+0.0	14.2	40.0	-25.8	Vert
5	48.013M	29.9	-27.5	+9.2	+1.5	+0.0	13.1	40.0	-26.9	Vert
6	52.013M	30.9	-27.5	+7.6	+1.5	+0.0	12.5	40.0	-27.5	Vert
7	56.013M	31.6	-27.6	+6.6	+1.6	+0.0	12.2	40.0	-27.8	Vert

Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **Innotek Pet Products**

Specification: **FCC 15.207 COND**

Work Order #: **75021**

Date: 08/26/2000

Test Type: **Conducted Emissions**

Time: 09:44:03

Equipment: **Pet Containment Transmitter**

Sequence#: 9

Manufacturer: Innotek Pet Products

Tested By: Mike Wilkinson

Model: M022900

S/N: 022901 I 041633

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Pet Containment Transmitter*	Innotek Pet Products	M022900	022901 I 041633
Power Supply	Innotek Pet Products	HD01220	none

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 14 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle on the test table. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 450 kHz to 30 MHz.

Measurement Data:

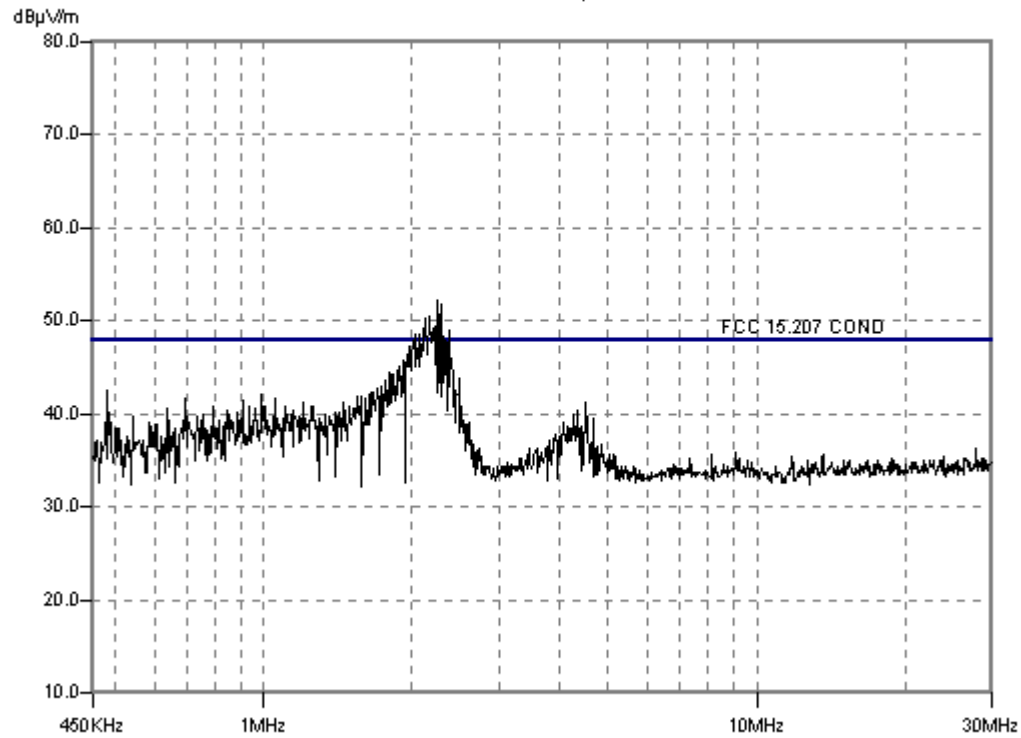
Reading listed by margin.

Test Lead: White

#	Freq MHz	Rdng dB μ V	T1 co		L13w		Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
			dB	dB	dB	dB					
1	2.167M	46.0	+0.2	+0.0			+0.0	46.2	48.0	-1.8	White
QP											
^	2.161M	50.3	+0.2	+0.0			+0.0	50.5	48.0	+2.5	White
3	2.407M	45.9	+0.0	+0.1			+0.0	46.0	48.0	-2.0	White
4	2.247M	45.3	+0.3	+0.1			+0.0	45.7	48.0	-2.3	White
QP											
^	2.256M	51.6	+0.4	+0.1			+0.0	52.1	48.0	+4.1	White
6	1.917M	45.6	+0.1	+0.0			+0.0	45.7	48.0	-2.3	White
7	2.045M	45.2	+0.3	+0.0			+0.0	45.5	48.0	-2.5	White
QP											
^	2.041M	48.2	+0.3	+0.0			+0.0	48.5	48.0	+0.5	White
9	1.893M	45.0	+0.0	+0.0			+0.0	45.0	48.0	-3.0	White
10	2.275M	44.2	+0.4	+0.1			+0.0	44.7	48.0	-3.3	White
QP											
^	2.285M	51.1	+0.5	+0.1			+0.0	51.7	48.0	+3.7	White

12	1.860M	44.5	+0.2	+0.0	+0.0	44.7	48.0	-3.3	White
13	1.793M	44.1	+0.4	+0.0	+0.0	44.5	48.0	-3.5	White
14	1.936M	44.0	+0.2	+0.0	+0.0	44.2	48.0	-3.8	White
15	1.824M	43.9	+0.3	+0.0	+0.0	44.2	48.0	-3.8	White
16	2.500M	43.4	+0.4	+0.1	+0.0	43.9	48.0	-4.1	White
17	1.769M	43.2	+0.4	+0.0	+0.0	43.6	48.0	-4.4	White
18	1.740M	42.5	+0.4	+0.0	+0.0	42.9	48.0	-5.1	White
19	1.700M	42.4	+0.4	+0.0	+0.0	42.8	48.0	-5.2	White
20	2.453M	42.2	+0.2	+0.1	+0.0	42.5	48.0	-5.5	White
21	481.792k	42.2	+0.3	+0.0	+0.0	42.5	48.0	-5.5	White
22	1.668M	42.0	+0.4	+0.0	+0.0	42.4	48.0	-5.6	White
23	1.645M	42.1	+0.3	+0.0	+0.0	42.4	48.0	-5.6	White
24	2.368M	40.5	+0.2	+0.1	+0.0	40.8	48.0	-7.2	White
QP									
^	2.376M	48.7	+0.1	+0.1	+0.0	48.9	48.0	+0.9	White

CKC Laboratories, Inc. Date: 08/26/2000 Time: 09:31:58 WO#: 75021
FCC 15.207 COND Test Lead: White Sequence#: 9



Test Location: CKC Laboratories, Inc. • 22105 Wilson River Hwy • Tillamook, OR 97141 • 800 500-4EMC

Customer: **Innotek Pet Products**

Specification: **FCC 15.207 COND**

Work Order #: **75021**

Date: 08/26/2000

Test Type: **Conducted Emissions**

Time: 09:44:45

Equipment: **Pet Containment Transmitter**

Sequence#: 8

Manufacturer: Innotek Pet Products

Tested By: Mike Wilkinson

Model: M022900

S/N: 022901 I 041633

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Pet Containment Transmitter*	Innotek Pet Products	M022900	022901 I 041633
Power Supply	Innotek Pet Products	HD01220	none

Support Devices:

Function	Manufacturer	Model #	S/N
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Test Conditions / Notes:

EUT is turned on and transmitting continuously with the Field Width adjustment at maximum. A 14 foot 14 gage solid copper wire antenna was connected to the EUT. The antenna was arranged in a circle on the test table. The temperature was 73°F and the humidity was 50%. AC input to Direct Plug In Transformer was 120V, 60 Hz. Frequency range investigated was 450 kHz to 30 MHz.

Measurement Data:

Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dB μ V	T1 co		L14b		Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
			dB	dB	dB	dB					
1	2.180M	45.1	+0.2		+0.0		+0.0	45.3	48.0	-2.7	Black
QP											
^	2.187M	49.7	+0.2		+0.0		+0.0	49.9	48.0	+1.9	Black
3	2.221M	44.6	+0.3		+0.0		+0.0	44.9	48.0	-3.1	Black
QP											
^	2.218M	50.6	+0.3		+0.0		+0.0	50.9	48.0	+2.9	Black
5	2.302M	42.9	+0.5		+0.0		+0.0	43.4	48.0	-4.6	Black
QP											
^	2.309M	50.3	+0.5		+0.0		+0.0	50.8	48.0	+2.8	Black
7	2.467M	42.5	+0.3		+0.0		+0.0	42.8	48.0	-5.2	Black
8	1.896M	42.8	+0.0		+0.0		+0.0	42.8	48.0	-5.2	Black
9	1.793M	42.4	+0.4		+0.0		+0.0	42.8	48.0	-5.2	Black
10	1.575M	41.7	+0.3		+0.0		+0.0	42.0	48.0	-6.0	Black
11	1.774M	41.4	+0.4		+0.0		+0.0	41.8	48.0	-6.2	Black

12	906.804k	41.2	+0.3	+0.2	+0.0	41.7	48.0	-6.3	Black
13	1.642M	41.3	+0.3	+0.0	+0.0	41.6	48.0	-6.4	Black
14	1.059M	41.2	+0.4	+0.0	+0.0	41.6	48.0	-6.4	Black
15	2.342M	41.0	+0.3	+0.0	+0.0	41.3	48.0	-6.7	Black
QP									
^	2.343M	49.4	+0.3	+0.0	+0.0	49.7	48.0	+1.7	Black

CKC Laboratories, Inc. Date: 08/26/2000 Time: 09:19:59 WO#: 75021
FCC 15.207 COND Test Lead: Black Sequence#: 8

