FCC TEST REPORT

FOR

Pet Mate Ltd

Microchip Cat Flap

Test Model: 360

Prepared for	:	Pet Mate Ltd
Address	:	Lyon Road, Hersham, Surrey, KT12 3PU

Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
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Web	:	www.LCS-cert.com
Mail	:	webmaster@LCS-cert.com

Date of receipt of test sample	:	April 13, 2015
Number of tested samples	:	1
Serial number	:	360/12296
Date of Test	:	April 13, 2015 – June 23, 2015
Date of Report	:	June 23, 2015

FCC TEST REPORT
FCC CFR 47 PART 15 C (15.209): 2014

Report Reference No.	**:**	**LCS1504130589E**
Date of Issue	:	June 23, 2015
Testing Laboratory Name..... :		**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure.....	:	Full application of Harmonised standards ■
		Partial application of Harmonised standards □
		Other standard testing method □
Applicant's Name ..... :		**Pet Mate Ltd**
Address	:	Lyon Road, Hersham, Surrey, KT12 3PU
Test Specification		
Standard	:	FCC CFR 47 PART 15 C (15.209): 2014
Test Report Form No.	:	LCSEMC-1.0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	:	Dated 2011-03

Test Item Description. ..... :		**Microchip Cat Flap**
Trade Mark	:	N/A
Test Model	:	360
Ratings	:	DC 6.0V by 4*AA batteries
Result	**:**	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Leo Lee/ File administrators	Glin Lu/ Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : LCS1504130589E	June 23, 2015 Date of issue

Test Model.....	: 360
EUT.....	: Microchip Cat Flap
Applicant.....	**: Pet Mate Ltd**
Address.....	: Lyon Road, Hersham, Surrey, KT12 3PU
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: Pet Mate Ltd**
Address.....	: Lyon Road, Hersham, Surrey, KT12 3PU
Telephone.....	: /
Fax.....	: /
Factory.....	: **Pet Mate Ltd**
Address.....	: Lyon Road, Hersham, Surrey, KT12 3PU
Telephone.....	: /
Fax.....	: /

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

TABLE OF CONTENTS

Description Page

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

EUT : Microchip Cat Flap

Test Model : 360

Hardware Version : 35903/0514

Software Version : V2:01

Power Supply : DC 6.0V by 4*AA batteries

Operating Frequency : 125KHz / 134KHz

Channel Number : 2

Modulation Type : AM-PSK & AM-FSK

Antenna Description : Integral Antenna; 0dBi(Max.)

1.2 Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
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1.3 External I/O

I/O Description	Quantity	Cable
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1.4 Description of Test Facility

CNAS Registration Number. is L4595.

FCC Registration Number. is 899208.

Industry Canada Registration Number. is 9642A-1.

VCCI Registration Number. is C-4260 and R-3804.

ESMD Registration Number. is ARCB0108.

UL Registration Number. is 100571-492.

TUV SUD Registration Number. is SCN1081.

TUV RH Registration Number. is UA 50296516-001

1.5 Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6 Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	9KHz~30MHz	3.10dB	(1)
		30MHz~200MHz	2.96dB	(1)
		200MHz~1000MHz	3.10dB	(1)
		1GHz~26.5GHz	3.80dB	(1)
		26.5GHz~40GHz	3.90dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	1.63dB	(1)
Power disturbance	:	30MHz~300MHz	1.60dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.7 Description Of Test Modes

The EUT was set to transmit at 100% duty cycle for testing and the worst case was record.

All the modulation types were tested and only the worst case(AM-FSK) was recorded in this report.

1.8 Summary Of Test Result

FCC Rules	Test Items	Result
15.207	Power-line Conducted Emissions	N/A
15.205 & 15.209	Radiated Emissions	PASS
15.215	20dB Bandwidth	PASS
15.203	Antenna Requirement	PASS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013 and FCC CFR PART 15C 15.209.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.209 under the FCC Rules Part 15 Subpart C.

2.3 General Test Procedures

2.3.1 Conducted Emissions (N/A)

According to the requirements in Section 6.2 of ANSI C63.10: 2013, AC power-line conducted emissions shall be measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table and the turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10: 2013

3. SYSTEM TEST CONFIGURATION

3.1 Justification

N/A.

3.2 EUT Exercise Software

N/A.

3.3 Special Accessories

N/A.

3.4 Block Diagram/Schematics

Please refer to the report.

3.5 Equipment Modifications

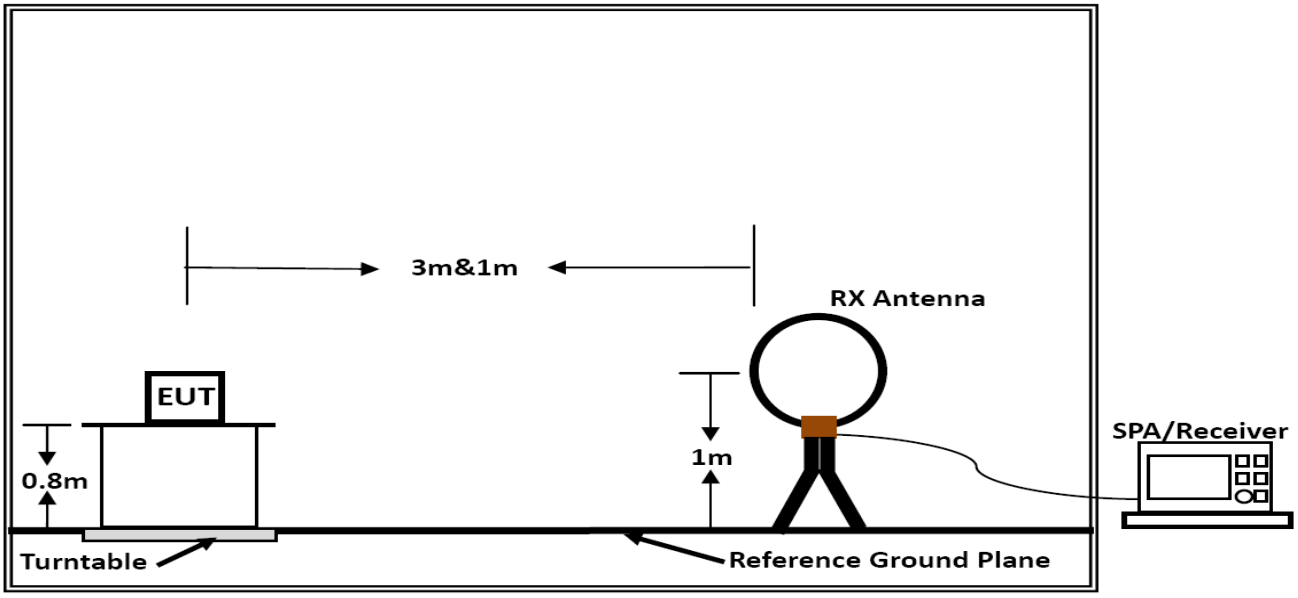
Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.6 Test Setup

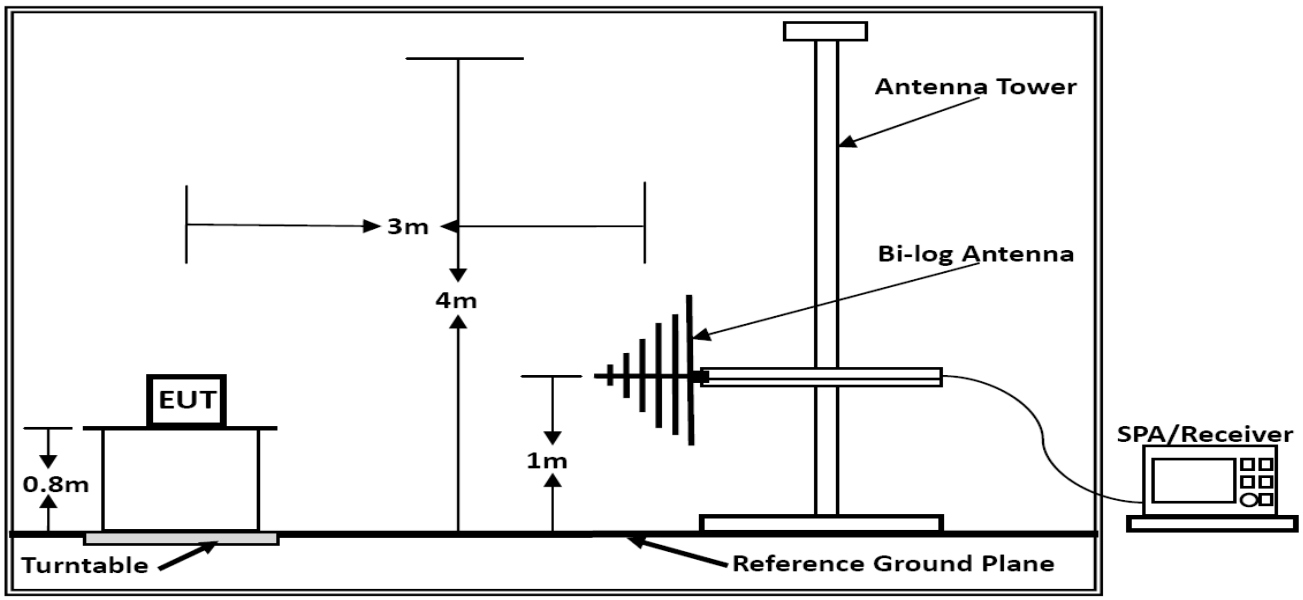
Please refer to the test setup photo.

4. RADIATED MEASUREMENT

4.1 Block Diagram of Test Setup



Below 30MHz



Below 1GHz

4.2 Radiated Emission Limit

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
\1\ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293.	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(\2\)
13.36-13.41			

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

\2\ Above 38.6

Part 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector.

Part 15.209 (a) except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

Limit calculation and transfer to 3m distance as showed in the following table:

Frequency (MHz)	Limit (dBuV/m)	Distance (m)
0.009-0.490	20log(2400/F(KHz))+40log(300/3)	3
0.490-1.705	20log(2400/F(KHz))+40log(30/3)	3
1.705-30.0	69.5	3
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

4.3 Test Results

PASS.

The test data please refer to following page:

9KHz ~ 30MHz (TX-125KHz)

Freq. MHz	Reading dBuV	Factor dB/m	Measured dBuV/m	Limit dBuV/m	Margin dB	Remark
0.125	60.16	12.01	72.17	105.67	-33.50	Peak
0.250	39.67	12.00	51.67	99.65	-47.98	Peak
0.375	35.22	11.89	47.11	96.12	-49.01	Peak
0.875	31.45	11.81	43.26	68.76	-25.50	Peak
1.000	31.88	11.77	43.65	67.76	-24.11	Peak
3.61	30.11	11.71	41.82	69.5	-27.68	Peak
11.04	27.64	11.04	38.68	69.5	-30.82	Peak
18.87	23.53	10.54	34.07	69.5	-35.43	Peak
24.31	25.78	9.60	35.38	69.5	-34.12	Peak
28.56	22.14	8.91	31.05	69.5	-38.45	Peak

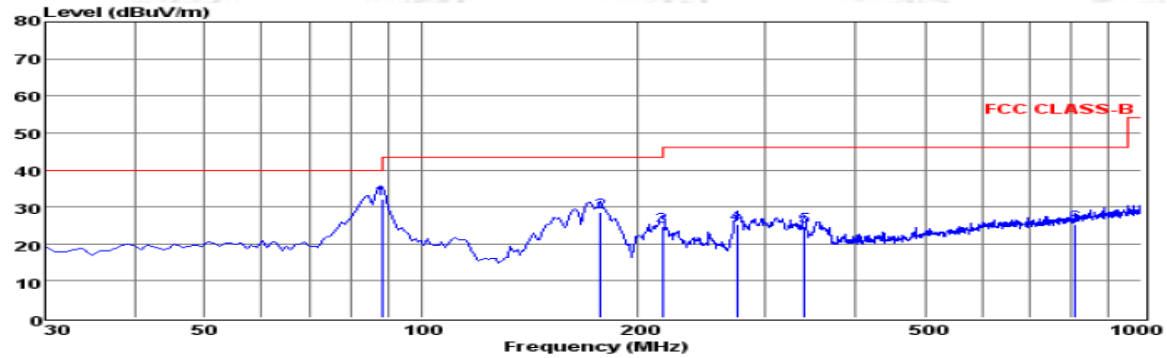
9KHz ~ 30MHz (TX-134KHz)

Freq. MHz	Reading dBuV	Factor dB/m	Measured dBuV/m	Limit dBuV/m	Margin dB	Remark
0.134	57.64	12.01	69.65	105.06	-35.41	Peak
0.268	36.89	12.00	48.89	99.04	-50.15	Peak
0.402	33.51	11.89	45.40	95.52	-50.12	Peak
0.536	30.66	11.87	42.53	53.02	-10.49	Peak
1.000	32.47	11.77	44.24	47.60	-3.36	Peak
3.79	31.47	11.71	43.18	69.5	-26.32	Peak
10.47	28.26	11.04	39.30	69.5	-30.20	Peak
15.33	24.73	10.87	35.60	69.5	-33.90	Peak
21.66	26.61	9.83	36.44	69.5	-33.06	Peak
25.48	25.57	9.77	35.34	69.5	-34.16	Peak

****Note:*

1) *Factor= Antenna Factor + Cable Loss – Amplifier Gain.*
2) *The EUT was configured as normal. The measurement antenna was positioned with its plane perpendicular to the ground at the specified distance(Antenna Position: Horizontal). Only record the worst test data in this report.*

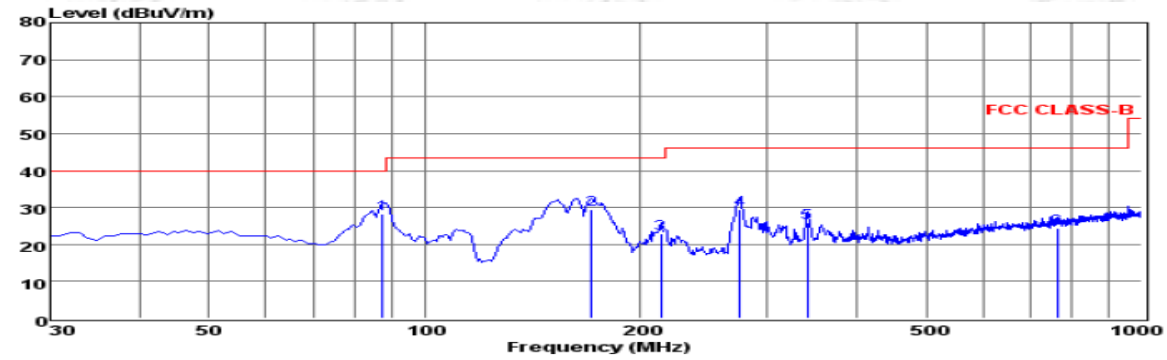
30MHz ~ 1GHz (TX-125KHz)



Env./Ins: 24℃/56%
EUT: Microchip Cat Flap
M/N: 360
Power Rating: DC 6.0V
Test Mode: TX-125KHz
Operator: Leo
Memo:
pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	88.20	20.24	0.68	11.33	32.25	43.50	-11.25	QP
2	177.44	18.24	0.89	9.50	28.63	43.50	-14.87	QP
3	216.24	12.83	0.88	11.08	24.79	46.00	-21.21	QP
4	274.44	11.71	1.04	12.50	25.25	46.00	-20.75	QP
5	340.40	9.55	1.12	14.13	24.80	46.00	-21.20	QP
6	807.94	3.36	1.76	20.14	25.26	46.00	-20.74	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

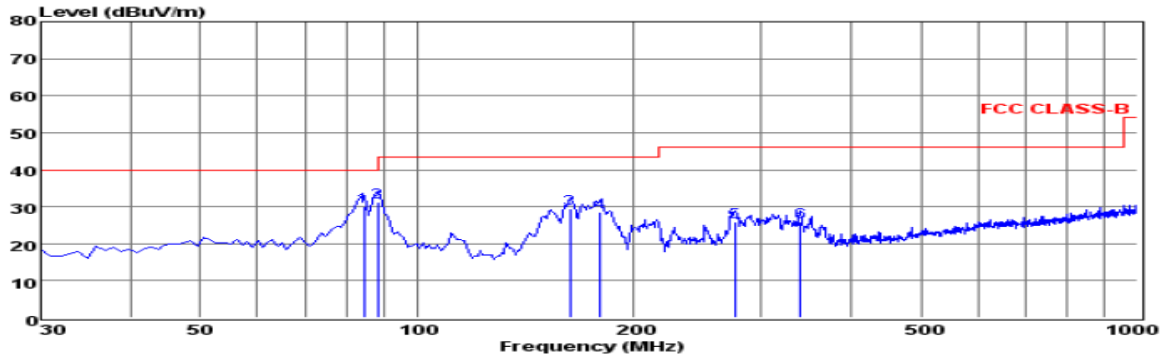


Env./Ins: 24℃/56%
EUT: Microchip Cat Flap
M/N: 360
Power Rating: DC 6.0V
Test Mode: TX-125KHz
Operator: Leo
Memo:
pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	87.23	16.81	0.47	11.02	28.30	40.00	-11.70	QP
2	170.65	19.66	0.80	9.02	29.48	43.50	-14.02	QP
3	213.33	10.91	0.95	10.99	22.85	43.50	-20.65	QP
4	275.41	16.04	1.00	12.53	29.57	46.00	-16.43	QP
5	341.37	10.70	1.12	14.14	25.96	46.00	-20.04	QP
6	761.38	3.14	1.77	19.58	24.49	46.00	-21.51	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

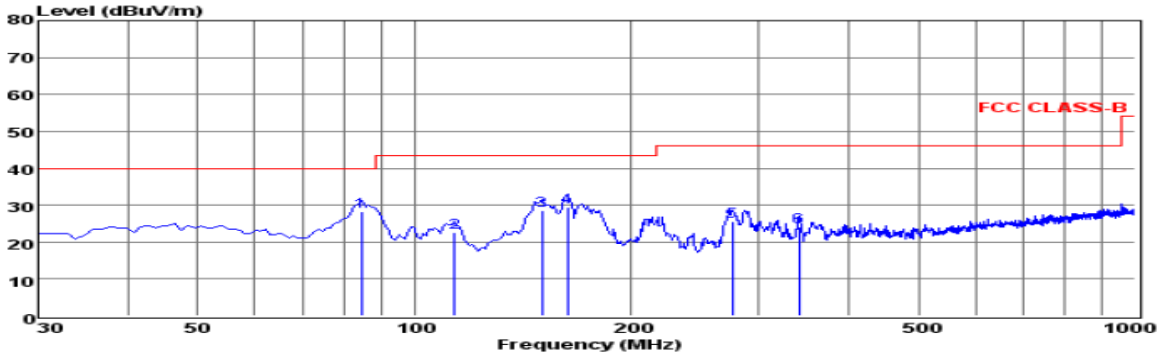
30MHz ~ 1GHz (TX-134KHz)



Env./Ins: 24℃/56%
EUT: Microchip Cat Flap
M/N: 360
Power Rating: DC 6.0V
Test Mode: TX-134KHz
Operator: Leo
Memo:
pol: HORIZONTAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	84.32	19.43	0.54	10.07	30.04	40.00	-9.96	QP
2	88.20	19.24	0.68	11.33	31.25	43.50	-12.25	QP
3	162.89	19.90	0.86	8.76	29.52	43.50	-13.98	QP
4	179.38	18.12	0.89	9.64	28.65	43.50	-14.85	QP
5	276.38	12.28	1.00	12.56	25.84	46.00	-20.16	QP
6	340.40	10.55	1.12	14.13	25.80	46.00	-20.20	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported



Env./Ins: 24℃/56%
EUT: Microchip Cat Flap
M/N: 360
Power Rating: DC 6.0V
Test Mode: TX-134KHz
Operator: Leo
Memo:
pol: VERTICAL

	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	84.32	17.53	0.54	10.07	28.14	40.00	-11.86	QP
2	113.42	10.39	0.65	11.64	22.68	43.50	-20.82	QP
3	150.28	19.38	0.86	8.27	28.51	43.50	-14.99	QP
4	162.89	19.72	0.86	8.76	29.34	43.50	-14.16	QP
5	276.38	12.09	1.00	12.56	25.65	46.00	-20.35	QP
6	341.37	8.70	1.12	14.14	23.96	46.00	-22.04	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

5. BANDWIDTH OF THE OPERATING FREQUENCY

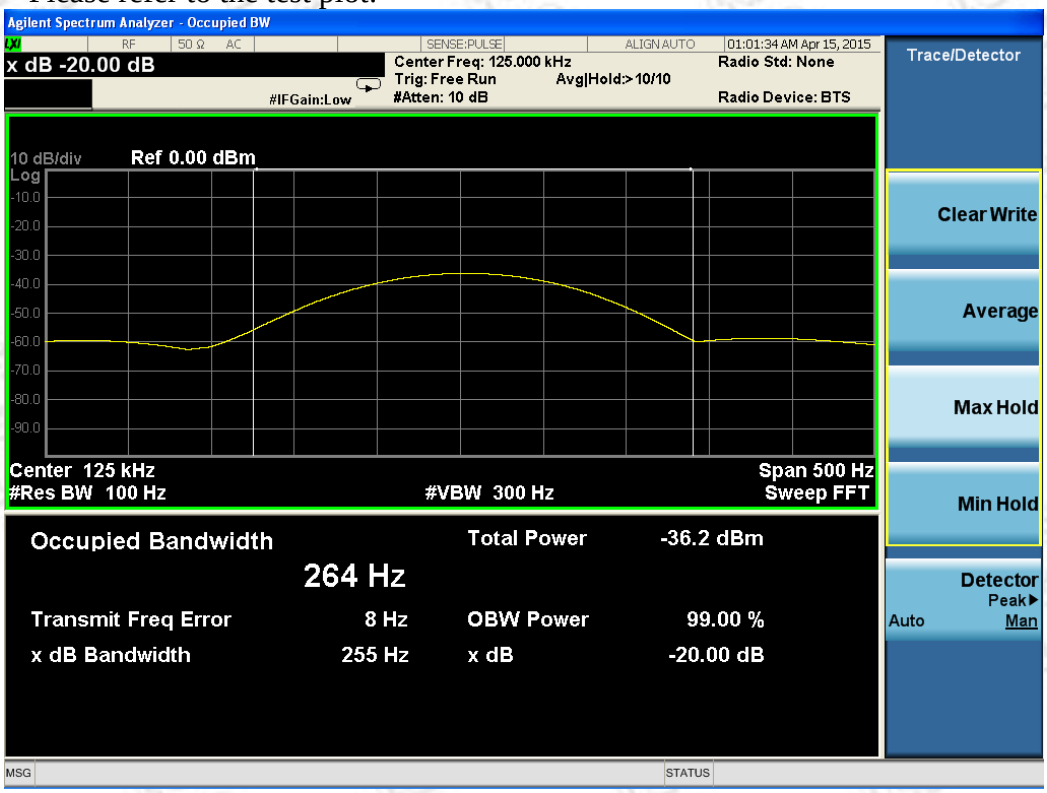
5.1 Standard Applicable

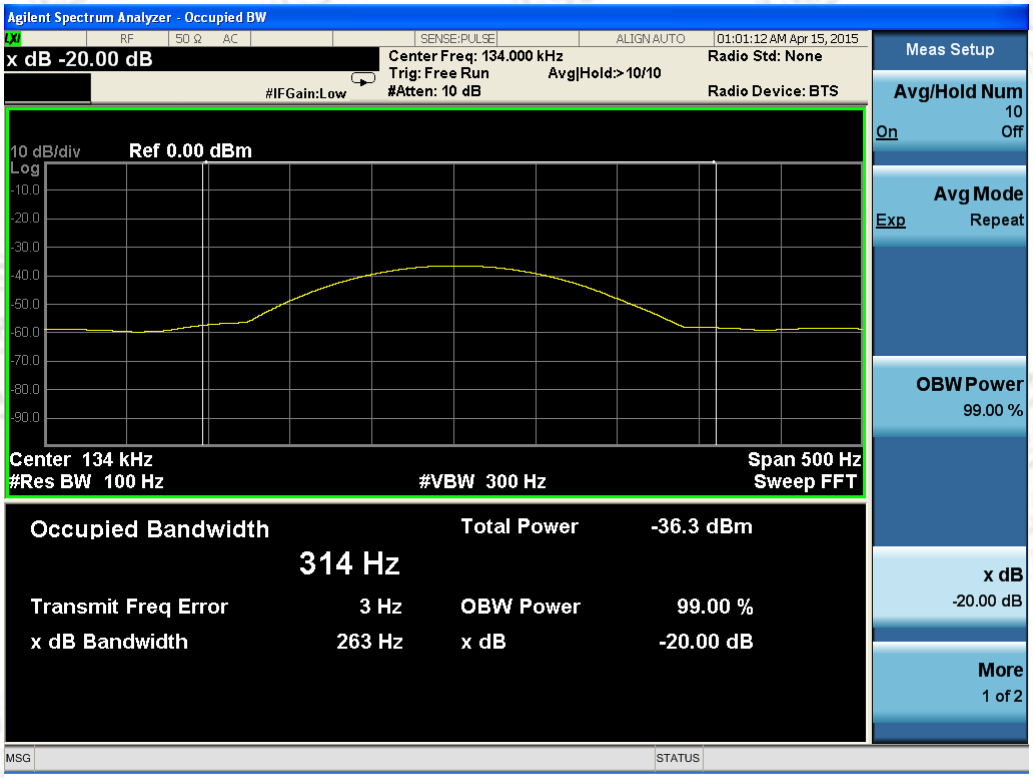
According to its specifications, the EUT must comply with the 20dB Bandwidth measurement of the Section 15.215 under the FCC Rules Part 15 Subpart C.

5.2 Test Result

EUT	Microchip Cat Flap	
RBW	100Hz	
VBW	300Hz	
SPAN	500Hz	
Carrier Freq. (KHz)	20dB Bandwidth (KHz)	Limit (KHz)
125	0.255	None
134	0.263	None

Please refer to the test plot:




Agilent Spectrum Analyzer - Occupied BW
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
01:01:12 AM Apr 15, 2015
x dB -20.00 dB
Center Freq: 134.000 kHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Meas Setup
Avg/Hold Num
10
On
Off
Avg Mode
Exp
Repeat
OBW Power
99.00 %
x dB
-20.00 dB
More
1 of 2
10 dB/div
Log
Ref 0.00 dBm
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
Center 134 kHz
#Res BW 100 Hz
#VBW 300 Hz
Span 500 Hz
Sweep FFT
Occupied Bandwidth
314 Hz
Total Power
-36.3 dBm
Transmit Freq Error
3 Hz
OBW Power
99.00 %
x dB Bandwidth
263 Hz
x dB
-20.00 dB
MSG
STATUS

6. ANTENNA REQUIREMENT

6.1 Standard Applicable

According to §15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

6.2 Antenna Connected Construction

The antenna used for transmitting is permanently attached and no consideration of replacement. Please see EUT photo for details.

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7. LIST OF MEASURING EQUIPMENT

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Cal Date	Due Date
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	June 18,2015	June 18,2016
Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	9kHz~40GHz	July 16,2014	July 15,2015
LISN	MESS Tec	NNB-2/16Z	99079	9KHz-30MHz	June 18,2015	June 18,2016
LISN (Support Unit)	EMCO	3819/2NM	9703-1839	9KHz-30MHz	June 18,2015	June 18,2016
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9KHz-30MHz	June 18,2015	June 18,2016
ISN	SCHAFFNER	ISN ST08	21653	9KHz-30MHz	June 18,2015	June 18,2016
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30M-1GHz 3m	June 18,2015	June 18,2016
Amplifier	SCHAFFNER	COA9231A	18667	9kHz-2GHzz	June 18,2015	June 18,2016
Amplifier	Agilent	8449B	3008A02120	1GHz-26.5GHz	July 16,2014	July 15,2015
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5GHz-40GHz	July 16,2014	July 15,2015
Spectrum Analyzer	Agilent	E4407B	MY41440292	9k-26.5GHz	July 16,2014	July 15,2015
MAX Signal Analyzer	Agilent	N9020A	MY50510140	20Hz~26.5GHz	Oct. 27, 2014	Oct. 26, 2015
Loop Antenna	R&S	HFH2-Z2	860004/001	9k-30MHz	June 18,2015	June 18,2016
By-log Antenna	SCHWARZBECK	VULB9163	9163-470	30MHz-1GHz	June 10,2015	June 09,2016
Horn Antenna	EMCO	3115	6741	1GHz-18GHz	June 10,2015	June 09,2016
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz-40GHz	June 10,2015	June 09,2016
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz-1GHz	June 18,2015	June 18,2016
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1GHz-40GHz	June 18,2015	June 18,2016
Spectrum Meter	R&S	FSP 30	100023	9kHz-30GHz	July 16,2014	July 15,2015
Power Meter	R&S	NRVS	100444	DC-40GHz	June 18,2015	June 18,2016
Power Sensor	R&S	NRV-Z51	100458	DC-30GHz	June 18,2015	June 18,2016
Power Sensor	R&S	NRV-Z32	10057	30MHz-6GHz	June 18,2015	June 18,2016
AC Power Source	HPC	HPA-500E	HPA-9100024	AC 0~300V	June 18,2015	June 18,2016
DC power Soure	GW	GPC-6030D	C671845	DC 1V-60V	June 18,2015	June 18,2016
Temp. and Humidigy Chamber	Giant Force	GTH-225-20-S	MAB0103-00	N/A	June 18,2015	June 18,2016
RF CABLE-1m	JYE Bao	RG142	CB034-1m	20MHz-7GHz	June 18,2015	June 18,2016
RF CABLE-2m	JYE Bao	RG142	CB)35-2m	20MHz-1GHz	June 18,2015	June 18,2016
Vector signal Generator	R&S	SMU200A	102098	100kHz~6GHz	June 18,2015	June 18,2016
Signal Generator	R&S	SMR40	10016	10MHz~40GHz	July 16,2014	July 15,2015
Note: All equipment through GRGT EST calibration						

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