APPLICATION FOR CERTIFICATION
On Behalf of

Measurement Ltd.

Tire Pressure Measuring System

Model Number: MS4378

FCC ID: UUIMS-4378

Prepared for : Measurement Ltd.
Block A,19/F, Prince Industrial Building, 106 King Fuk Street, San Po Kong, Kowloon

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block,
Shenzhen Science & Industrial Park,
Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number	:	ACS-F09190
Date of Test	:	Aug.29~Sep.03, 2009
Date of Report	:	Sep.08, 2009

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TEST REPORT CERTIFICATION

Applicant : Measurement Ltd.
EUT Description : Tire Pressure Measuring System
FCC ID : UUIMS-4378

(A)MODEL NO.	:	MS4378
(B)SERIAL NO.	:	N/A
(C)POWER SUPPLY	:	DC 12V
(D)TEST VOLTAGE	:	DC 12V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 2008

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B limits for radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

Date of Test : Aug.29~ Sep.03, 2009

Prepared by : Edie Huang
Edie Huang / Assistant

Reviewer : Jamy Yu
Jamy Yu / Senior Engineer

AUDIX® 信華科技(深圳)有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report
Signature: Ken Lu 9/16 09

Approved & Authorized Signer :
Ken Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	**Standard**	**Results**
Power Line Conducted Emission Test	FCC Part 15B: 15.107(a) ANSI C63.4-2003	N/A
Radiated Emission Test	FCC Part 15B: 15.109(a) ANSI C63.4-2003	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product name	:	Tire Pressure Measuring System
Model Number	:	MS4378
FCC ID	:	UUIMS-4378
Receive frequency	:	433.92MHz
Power Supply	:	DC 12V (Note: New batteries were used for all test)
Applicant	:	Measurement Ltd. Block A,19/F, Prince Industrial Building, 106 King Fuk Street, San Po Kong, Kowloon
Date of Test	:	Aug.29~Sep.03, 2009
Date of Receipt	:	Aug.28, 2009
Sample Type	:	Prototype production

2.2. Test Facility

Site Description

Name of Firm	:	Audix Technology (Shenzhen) Co., Ltd. No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China
3m Anechoic Chamber	:	Mar. 31, 2009 File on Federal Communication Commission Registration Number: 90454
3m & 10m Anechoic Chamber	:	Jan. 31, 2007 File on Federal Communication Commission Registration Number: 794232
EMC Lab.	:	Accredited by DATech, German Registration Number: DAT-P-091/99-01 Feb. 02, 2009 Accredited by NVLAP, USA NVLAP Code: 200372-0 Apr.01, 2009

2.3. Test Uncertainty (95% confidence levels, k=2)

Uncertainty for Radiation Emission test in 3m chamber	3.78 dB (Polarize: V)
	4.20 dB (Polarize: H)
Uncertainty for DC power test	0.042 %
Uncertainty for test site temperature and humidity	0.6℃
	3%

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (d) of FCC Part 15 section 15.107, Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

4. RADIATED EMISSION TEST

4.1. Test Equipment

Frequency rang: 30~1000MHz

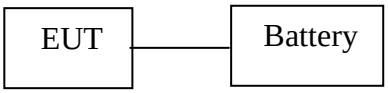
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Dec.05,08	1 Year
2.	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 09	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 09	1 Year
4.	Amplifier	HP	8447D	2648A04738	May.08, 09	1 Year
5.	Bilog Antenna	Schaffner	CBL6111C	2598	Nov.10, 08	1 Year
6.	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 09	1 Year
7.	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 09	1 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	May.27, 08	1.5 Year
3	Horn Antenna	EMCO	3116	00060088	May.27, 08	1.5Year
4	Amplifier	Agilent	8449B	3008A02495	Nov.24,08	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 09	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	271471/4	May.08, 09	1 Year
7	RF Cable	Hubersuhner	SUCOFLEX102	29086/2	May.08, 09	1 Year

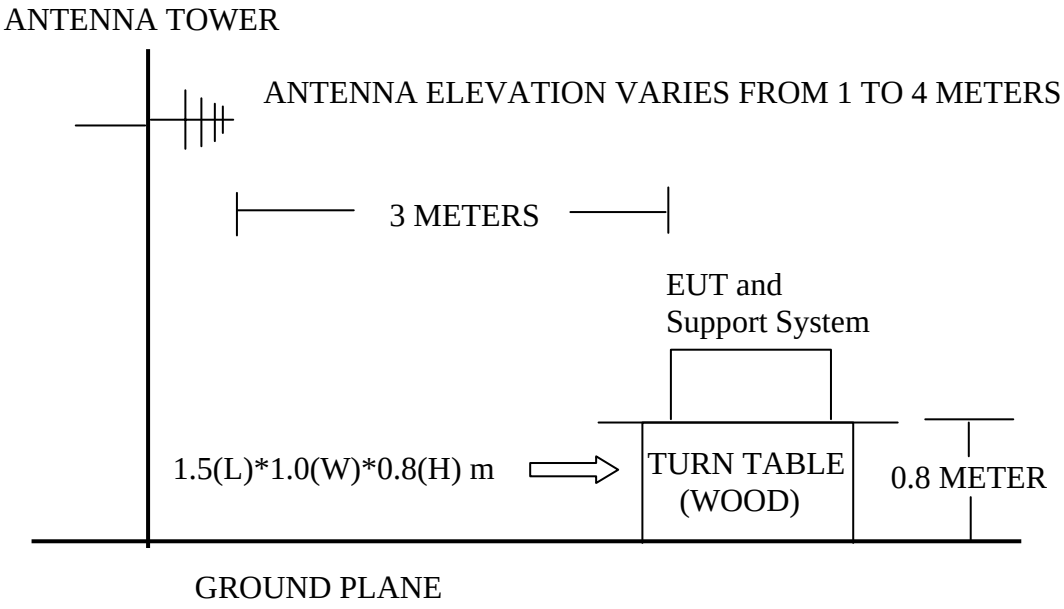
4.2. Block Diagram of Test Setup

4.2.1.Block Diagram of connection between EUT and simulators



(EUT: Tire Pressure Measuring System)

4.2.2.Anechoic Chamber Setup Diagram



4.3. Radiated Emission Limit Standard: FCC 15.109(a)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark： (1)Emission level dBμV = 20 log Emission level μV/m

(2)The smaller limit shall apply at the cross point between two frequency bands.

(3)Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

(4)The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

4.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1. Tire Pressure Measuring System (EUT)

Model Number : MS4378
Serial Number : N/A

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2..

4.5.2. Turned on the power of all equipment.

4.5.3. Let the EUT worked in test mode (Rx Mode) and tested it.

4.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2003 on radiated emission Test.

A Signal Generator was set to the test sample operating Frequency (433.92MHz). An un-Modulated continuous wave (CW) signal was radiated at the Super-regenerative Receiver operating frequency to cohere the characteristic broadband emission from the receiver.

Change EUT’s antenna position to find worse emissions and used for final test.

The bandwidth of the Spectrum’s VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

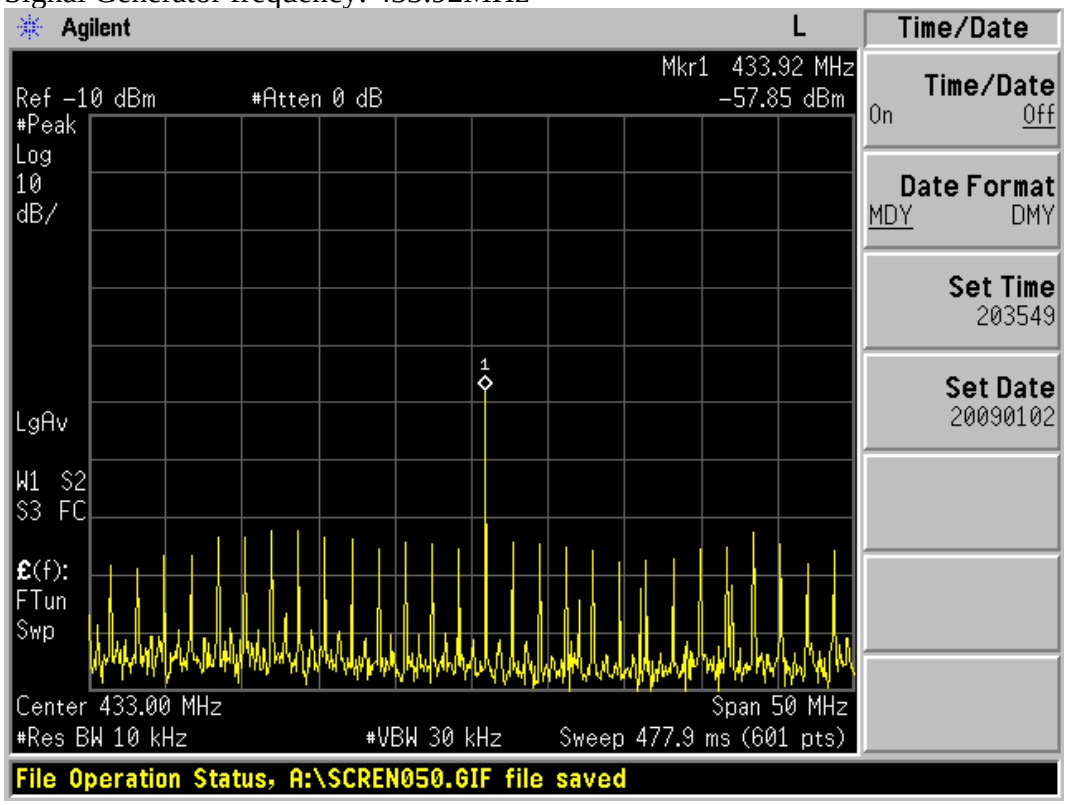
4.7. Radiated Emission Test Results

PASS.

The frequency range from 30MHz to 5000MHz was investigated. All the Peak emissions comply with Average limit, so average emissions were deemed to meet Average limit and measurements with the average detector is unnecessary.

All the emissions detected comply with 15.109 limit

Super-regenerative Receiver stabilization plot:
Signal Generator frequency: 433.92MHz



Test Frequency: 30MHz-1000MHz

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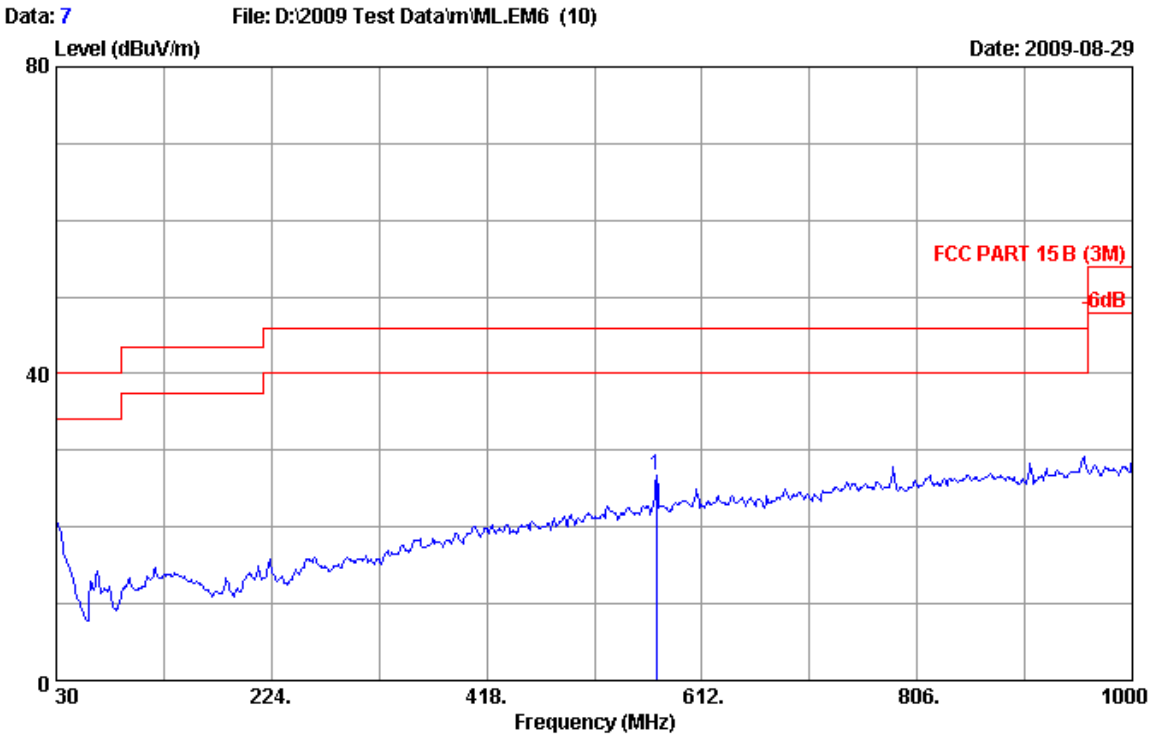

Site no. : 3m Chamber Data no. : 7
Dis. / Ant. : 3m CBL6111C Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B (3M)
Env. / Ins. : 24*C/56% Engineer : Victory CAO
EUT : Tire Pressure Measuring System
Power Rating : DC 12V
Test Mode : Rx mode
M/N:MS4378

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	571.260	19.35	2.42	5.08	26.85	46.00	19.15	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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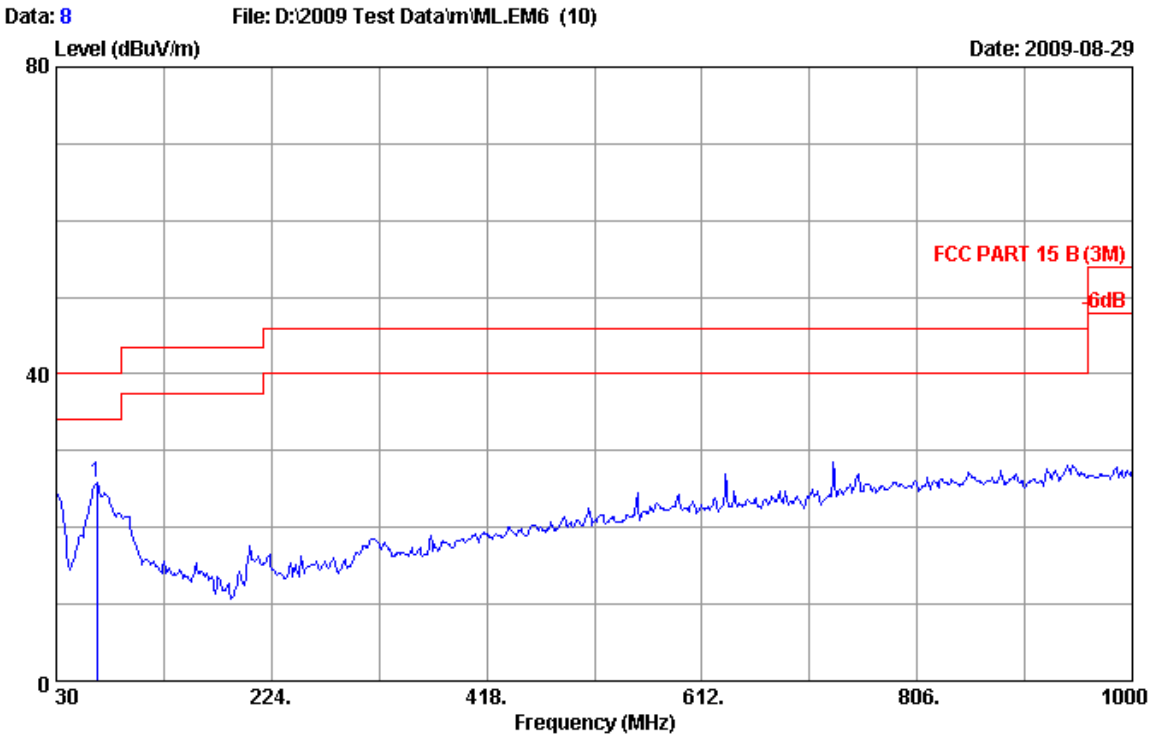

Site no. : 3m Chamber Data no. : 8
Dis. / Ant. : 3m CBL6111C Ant. pol. : VERTICAL
Limit : FCC PART 15 B (3M)
Env. / Ins. : 24*C/56% Engineer : Victory CAO
EUT : Tire Pressure Measuring System
Power Rating : DC 12V
Test Mode : Rx mode
M/N:MS4378

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	66.860	6.22	0.75	18.88	25.85	40.00	14.15	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Test Frequency: 1GHz-5GHz

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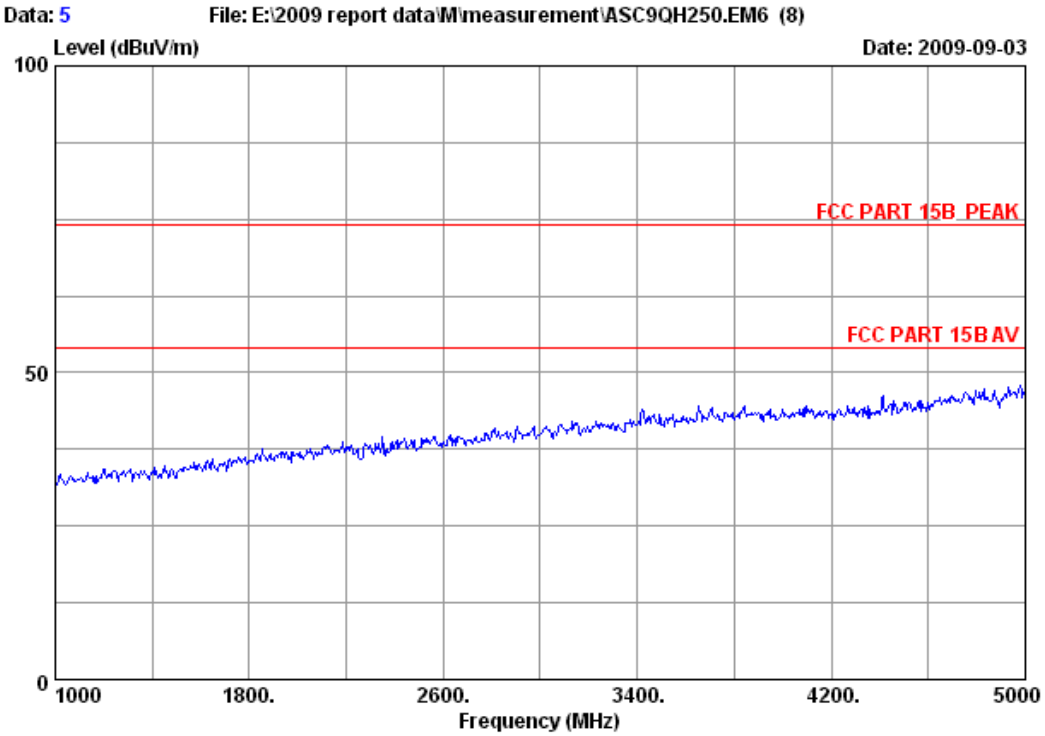


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Site no.      : 3m Chamber                Data no.   : 5
Dis. / Ant.   : 3m   3115(0905)           Ant. pol.  : VERTICAL
Limit         : FCC PART 15B  PEAK
Env. / Ins.   : 23*C/54%                  Engineer   : Power Feng
EUT           : Tire Pressure Measuring System
Power         : DC 12V
Test mode     : Rx mode
M/N           : M/N:MS4378
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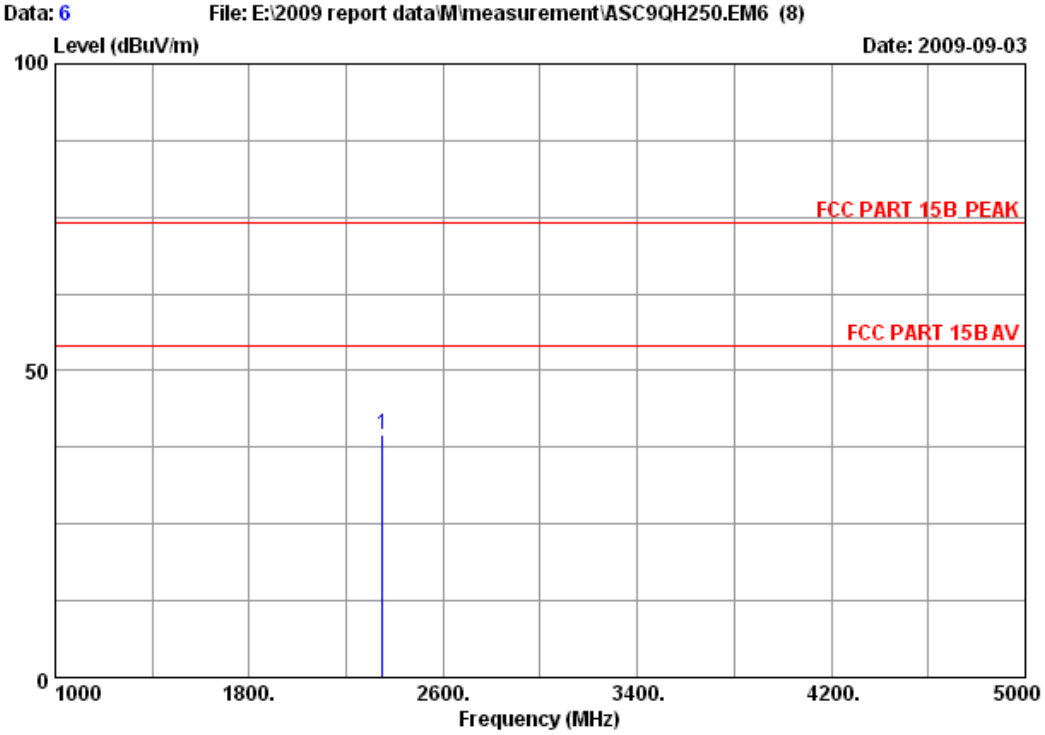

Site no. : 3m Chamber Data no. : 6
Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
Limit : FCC PART 15B PEAK
Env. / Ins. : 23*C/54% Engineer : Power Feng
EUT : Tire Pressure Measuring System
Power : DC 12V
Test mode : Rx mode
M/N : M/N:MS4378

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2348.000	28.38	8.57	35.99	38.70	39.66	74.00	34.34	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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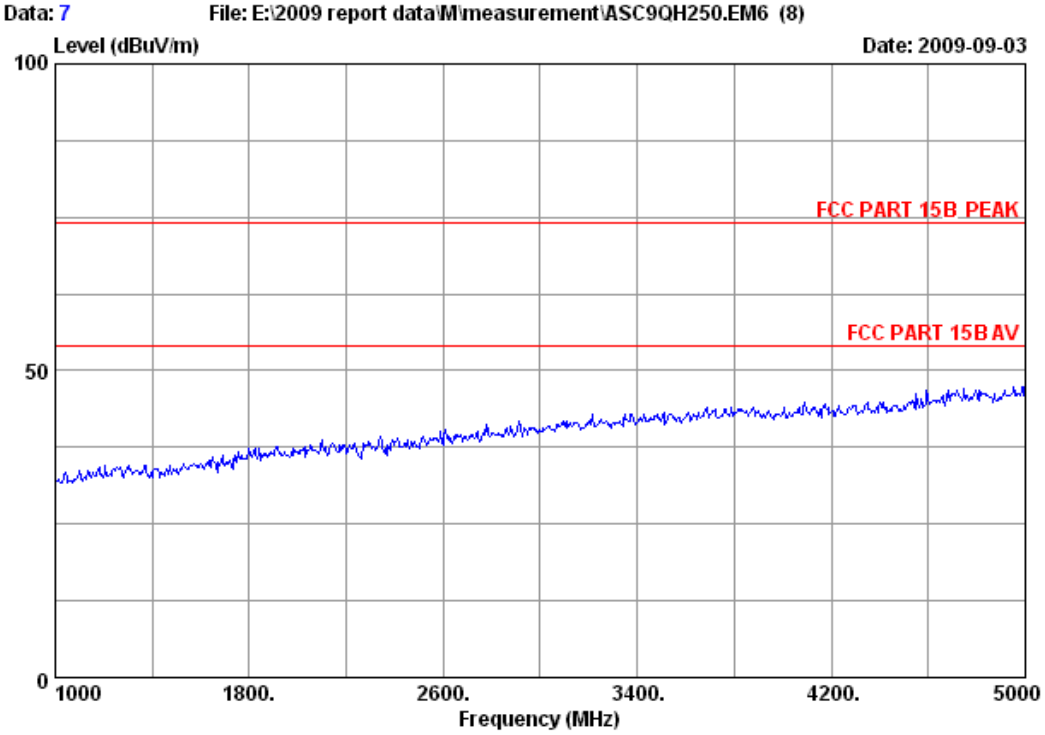

Site no.	: 3m Chamber	Data no.	: 7
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15B PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Power Feng
EUT	: Tire Pressure Measuring System		
Power	: DC 12V		
Test mode	: Rx mode		
M/N	: M/N:MS4378		

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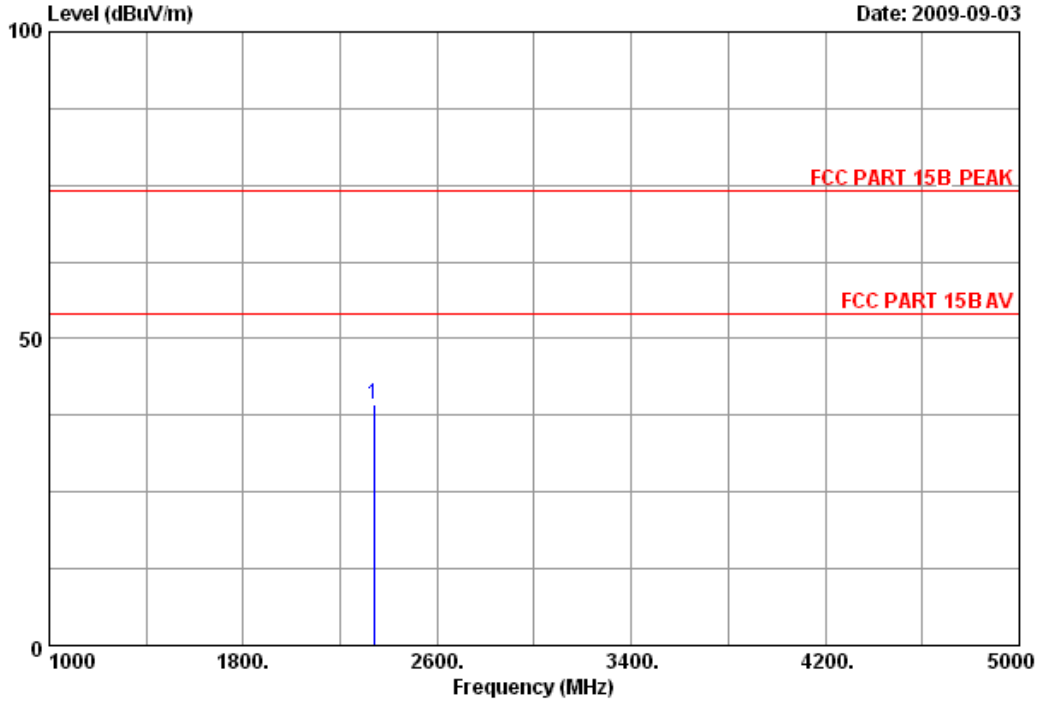

Site no. : 3m Chamber Data no. : 8
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15B PEAK
Env. / Ins. : 23*C/54% Engineer : Power Feng
EUT : Tire Pressure Measuring System
Power : DC 12V
Test mode : Rx mode
M/N : M/N:MS4378

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2340.000	28.38	8.57	35.99	38.33	39.29	74.00	34.71	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

5. DEVIATION TO TEST SPECIFICATIONS

[NONE]