47 CFR PART 15

TEST REPORT

of

Tire Pressure Monitoring System Sensor Module

Brand Name:	TireStat
Model Name:	MA-TPM-P3
Report No.:	SZ09100016E01
FCC ID.:	XUAMA001

prepared for

Mobile Awareness LLC.
31200 Solon Road Unit #12 Solon, Ohio 44139 USA

prepared by

Shenzhen Electronic Product Quality Testing Center
Morlab Laboratory
3/F, Electronic Testing Building, Shahe Road, Xili,
Nanshan District, Shenzhen, 518055 P. R. China
Tel: +86 755 86130398
Fax: +86 755 86130218

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Change History		
Issue	Date	Reason for change
1.0	October 30, 2009	First edition
2.0	November 19, 2009	Add the test plot of counts of transmission per hour after activation on page 12

1. TEST CERTIFICATION

Equipment under Test:	Tire Pressure Monitoring System Sensor Module
Brand Name:	TireStat
Model Name:	MA-TPM-P3
FCC ID:	XUAMA001
Applicant:	Mobile Awareness LLC. 31200 Solon Road Unit #12 Solon, Ohio 44139 USA
Manufacturer:	TOPCHEK System Co., Ltd. 2nd Floor, XiYiHao, BiBei Industrial Park 9# Wu Feng Si Lu, Foshan City, G.D. China
Test Standards:	47 CFR Part 15 Subpart C
Test Date(s):	October 26, 2009 - October 30, 2009
Test Result:	PASS

*** We Hereby Certify That:**

The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: Ni Yong Dated: 2009.11.12
Ni Yong

Reviewed by: Wei Yanquan Dated: 2009.11.12
Wei Yanquan

Approved by: Shu Luan Dated: 2009.11.12
Shu Luan

2. GENERAL INFORMATION

2.1 EUT Description

EUT Type ..... :	Tire Pressure Monitoring System Sensor Module
Model Name ..... :	MA-TPM-P3
Serial No. ..... :	(n.a, marked #1 by test site)
Channel ID ..... :	Single Channel
Channel Frequency ..... :	433.934MHz
Power Supply ..... :	Battery
	Brand Name: EVE
	Model Name: ER1860
	Capacitance: 250mAh
	Rated voltage: 3.6V
	Manufacturer: EVE BATTERY CO., LTD
	Manufacturer address: EVE INDUSTRIAL PARK, XIKENG INDUSTRIAL ZONE, HUIHUAN TOWN, HUIZHOU, GUANGDONG, CHINA

Note 1: The EUT is a Tire Pressure Monitoring System Sensor Module contained a battery and antenna. When the EUT was installed in tire, the pressure of the tire can switch the power on and EUT is in Standby Mode, the EUT will transmits information when the pressure of the tire was changing.

Note 2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C:

No.	Identity	Document Title
1	47 CFR Part 15.231: 2008 Subpart C	Code of Federal Regulations. (47CFR15) Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	C.F.R. 47 FCC Part 15: Section 15.231(b)	Transmitter Fundamental c	PASS
2	C.F.R. 47 FCC Part 15: Section 15.231(C)	Transmitter 20 dB Bandwidth	PASS
3	C.F.R. 47 FCC Part 15: Section 15.231(a)	Transmitter Timeout	PASS
4	C.F.R. 47 FCC Part 15: Section 15.231(b)&15.209	Transmitter Radiated Spurious Emissions	PASS

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

2.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	20 - 25
Relative Humidity (%):	40 - 60
Atmospheric Pressure (kPa):	96

3. 47 CFR PART 15C REQUIREMENTS

3.1 Transmitter Fundamental Fieldstrength

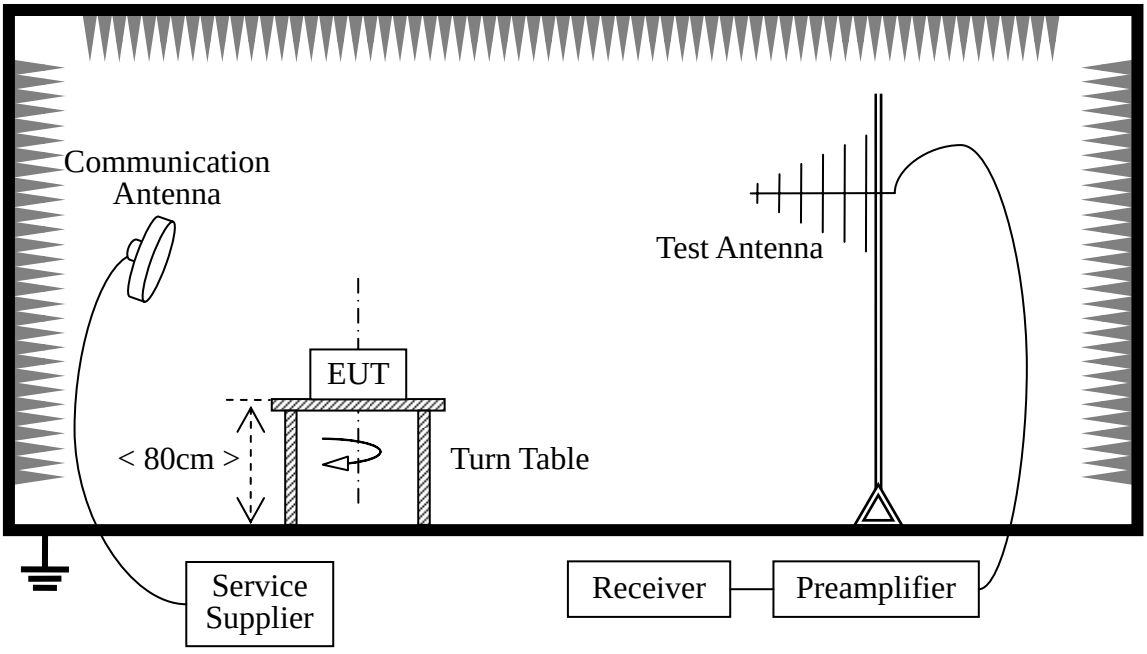
3.1.1 Requirement

According to FCC section 15.231(b), 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 (μV/m)	Field Strength (dBμV/m)	Measurement Distance (m)	Detector
Signal Channel	11000	80.8	3	PEAK

3.1.2 Test Description

A. Test Setup:



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2003). The EUT was set-up on insulator 80cm above the Ground Plane. The set-up and test methods were according to ANSI C63.4.

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength, the azimuth range of turntable was 0^o to 360^o, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2009.9	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.9	2year
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2009.9	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2009.9	1year

3.1.3 Test Result

A. Test Verdict

Frequency (MHz)	Test Field Strength (dBμV/m)	Field Strength (dBμV/m)	Margin (dB)	Test Result
Signal Channel	69.7	80.8	11.1	PASS

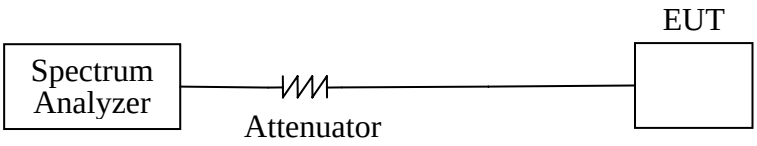
3.2 Transmitter 20 dB Bandwidth

3.2.1 Requirement

According to FCC section 231(C), The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

3.2.2 Test Description

A. Test Setup:



B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E7405A	US44210471	2009.8	1year
Attenuator	Resnet	20dB	(n.a.)	(n.a.)	(n.a.)

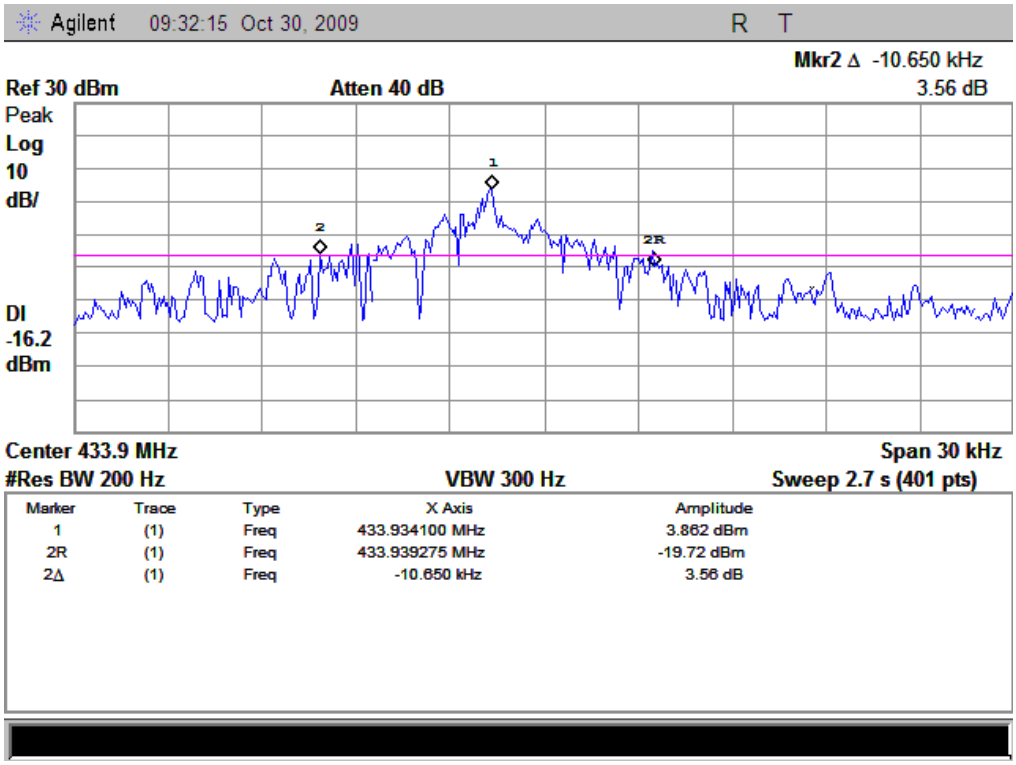
3.2.3 Test Result

The EUT was tested in the Transmit mode only operating mode.

A. Test Verdict:

Transmitter 20 dB Bandwidth (KHz)	Limit (MHz)	Margin (MHz)	Verdict
10.65	1.084	1.07	PASS

B. Test Plot:


Agilent 09:32:15 Oct 30, 2009
R T
Mkr2 Δ -10.650 kHz
Ref 30 dBm
Atten 40 dB
3.56 dB
Peak
Log
10
dB/
Dl
-16.2
dBm
Center 433.9 MHz
Span 30 kHz
#Res BW 200 Hz
VBW 300 Hz
Sweep 2.7 s (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 433.934100 MHz 3.862 dBm
2R (1) Freq 433.939275 MHz -19.72 dBm
2Δ (1) Freq -10.650 kHz 3.56 dB

3.3 Transmitter Timeout

3.3.1 Requirement

According to FCC section 15.231(a2), Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if a transmitter activated automatically shall cease transmission within 5 seconds after activation. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed 5 seconds per activation.

3.3.2 Test Description

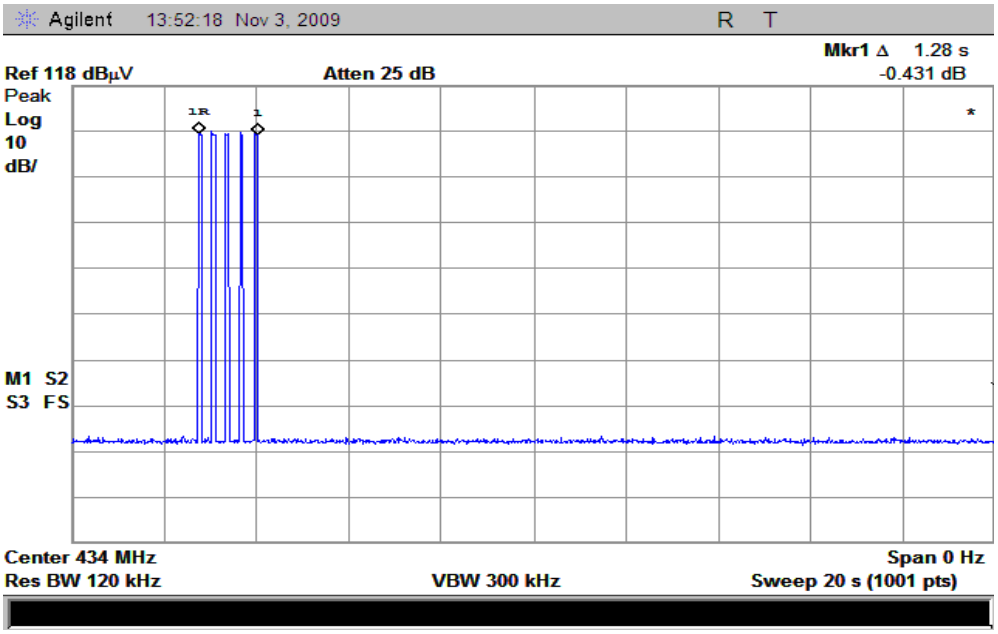
See section 3.2.2 of this report.

3.3.3 Test Result

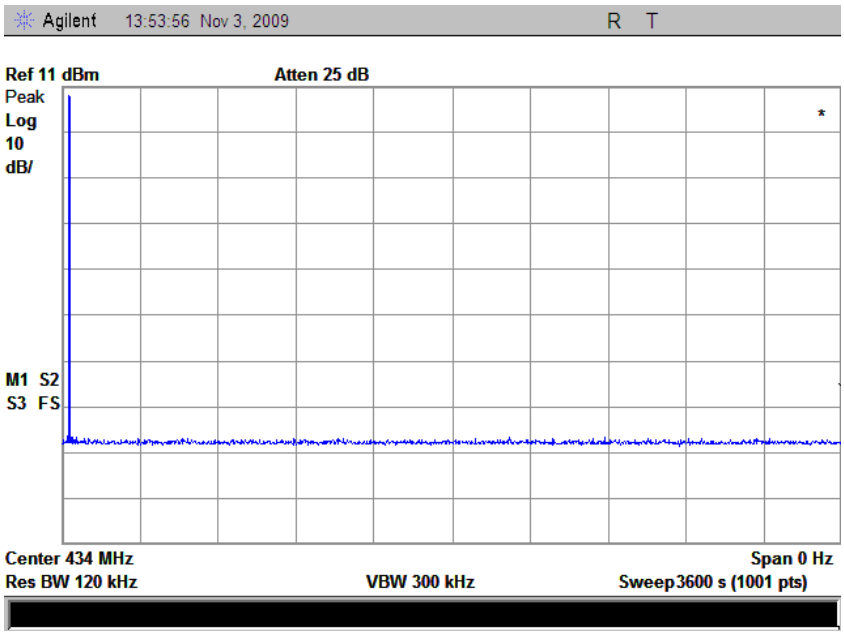
A. Test Verdict:

Transmission time (s) per activation in one hour	Limit
1.28	5 seconds

B. Test Plots:



(Plot A: Time of one individual activation transmission)



(Plot B: Counts of transmission per hour after activation)

3.4 Transmitter Radiated Spurious Emissions

3.4.1 Definition

According to FCC section 15.231 (b), spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in Section 15.209, whichever limit permits a higher field strength.

According to FCC section 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 (μV/m)	Measurement Distance (m)	Detector
30 - 88	100	3	QP
88 - 216	150	3	QP
216 - 960	200	3	QP
960 - 1000	500	3	QP
1000 - 4500	5000	3	PEAK
1000 - 4500	500	3	AV

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

3.4.2 Test Description

See section 3.2.2 of this report.

3.4.3 Test Result

The field strength of {Fundamental Emission} listed below is recorded, and used in the next table.

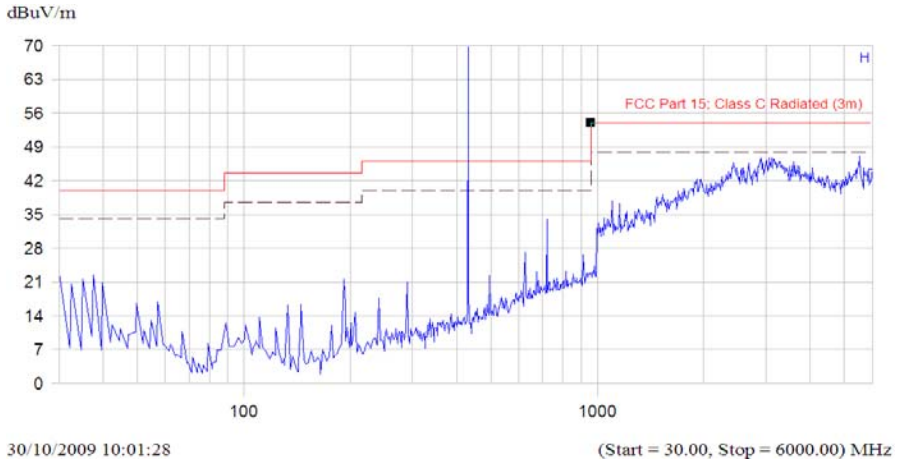
A. Test Verdict:

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Refer to Plot
0	2402	1.024	Plot A
39	2441	1.024	Plot B
78	2480	1.024	Plot C

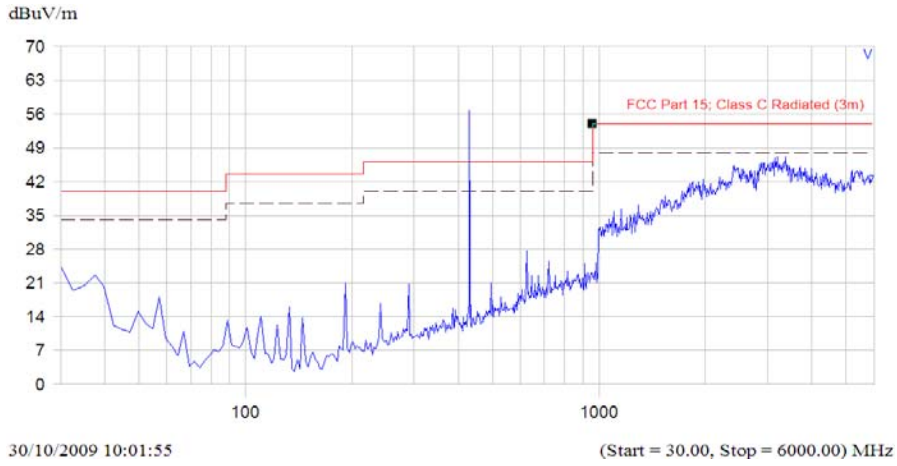
The un-wanted Emissions:

Frequency (MHz)	PK Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Height (cm)	Azimuth (deg)	Antenna Polarization
265.8	31.8	46	-14.2	120	189	Horizontal
4804	34.7	54	-19.3	110	360	Horizontal
7206	36.2	54	-17.8	100	353	Horizontal
9608	37.5	54	-16.5	100	38	Horizontal
24020	51.2	54	-2.8	100	260	Horizontal
38.9	26.1	40	-13.9	120	180	Vertical
705	32.7	46	-13.3	140	145	Vertical
7206	36.3	54	-17.7	100	246	Vertical
9608	35.8	54	-18.2	100	350	Vertical
24020	50.6	54	-3.4	100	360	Vertical

B. Test Plot:



(Plot A: Antenna Horizontal)



(Plot B: Antenna Vertical)

** END OF REPORT **