FCC Part 15
EMI TEST REPORT

of

E.U.T. : BAI Wireless Torque Cadence Sensor

MODEL : KIP1

FCC ID : 2ABUJKIP1

Frequency Range : 2457MHz

for

APPLICANT : Breakaway Innovations Pty. Ltd.

ADDRESS : 78 Guthrie Street, OSBORNE PARK WA 6017, Australia

Test Performed by

ELECTRONICS TESTING CENTER, TAIWAN

NO. 34. LIN 5, DINGFU VIL., LINKOU DIST.,

NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.

TEL : (02)26023052 FAX: (02)26010910

http：// www.etc.org.tw; e-mail：emc@etc.org.tw

Report Number : 14-04-RBF-047-03

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TEST REPORT CERTIFICATION

Applicant	: Breakaway Innovations Pty. Ltd.
	78 Guthrie Street, OSBORNE PARK WA 6017 ,Australia
Manufacturer	: Zentan Technology Co., Ltd
	10F-3, No. 260, Sec. 2 New Taipei Blvd., Sanchong District, 24158
	New Taipei City, Taiwan, R.O.C

Description of EUT

a) Type of EUT	: BAI Wireless Torque Cadence Sensor
b) Trade Name	: ----
c) Model No.	: KIP1
d) Power Supply	: DC 3.0V
e) Frequency Range	: 2457MHz

Regulation Applied : FCC Rules and Regulations Part 15 Subpart C

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Note: 1. The result of the testing report relate only to the item tested.
2. The testing report shall not be reproduced expect in full, without the written approval of ETC.

Summary of Tests

Test	Results
Radiated Emission	**Pass**
Conducted Emission	**N/A**
Band Edge Requirement	**Pass**

Date Test Item Received : *Apr. 23, 2014*
Date Test Campaign Completed : *Apr. 29, 2014*
Date of Issue : *Jun. 11, 2014*

Test Engineer : Jiapeng Chen
(Jiapeng Chen, Engineer)

Approve & Authorized Signer : S. S. Liou
S. S. Liou, Section Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN

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1 GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : BAI Wireless Torque Cadence Sensor
b) Trade Name : ----
c) Model No. : KIP1
d) Power Supply : DC 3.0V
e) Frequency Range : 2457MHz

1.2 Characteristics of Device

BAI WIRELESS TORQUE CADENCE SENSOR communicates directly with the user's smart phone via either ANT+.

ANT+: 2457MHz

1.3 Test Methodology

Both conducted and radiated emissions were performed according to the procedures illustrated in ANSI C63.4 (2003). Other required measurements were illustrated in separate sections of this test report for details.

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at No.34, Lin 5, Dingfu Vil., Linkou Dist., New Taipei City, Taiwan 24442, R.O.C.

This site is FCC 2.948 listed and accepted in a letter dated Jan. 29, 2014.

Registration Number: 90589

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:
A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:
A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :
A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business of industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

Intentional radiator:
A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50MH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency MHz	Quasi Peak dBμV	Average dBμV
0.15 - 0.5	66-56	56-46
0.5 - 5.0	56	46
5.0 - 30.0	60	50

(2) Radiated Emission Requirement

For unintentional device, according to §15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency MHz	**Distance Meters**	**Radiated dBμV/m**	**Radiated μV/m**
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to §15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

For intentional radiator device, per §15.249(a), the field strength of emissions shall comply with the following :

Frequency	Distance	Fundamental		Harmonic	
MHz	Meters	dBμV/m	mV/m	dBμV/m	μV/m
902 - 928	3	94	50	54	500
2400 - 2483.5	3	94	50	54	500
5725 - 5875	3	94	50	54	500
24000 - 24250	3	108	250	68	2500

In accordance with §15.249(e), limits shown in above table are based on average limits for frequencies above 1000 MHz, and frequencies below 1000 MHz are based on quasi peak. However, the peak field strength of any emission shall not exceed the maximum permitted average limits by more than 20 dB.

(3) Spurious in Out Band Requirement

For intentional device, according to §15.249 (d), emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emission limits in §15.209.

(4) Antenna Requirement

For intentional device, 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.

2.3 Restricted Bands of Operation

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	4.5-5.25
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	2655-2900	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	3360-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio / TV technician for help.

3. SYSTEM TEST CONFIGURATION

3.1 Justification

For both radiated and conducted emissions, the system was configured for testing in a typical fashion as a customer would normally use it. The peripherals other than EUT were connected in normally standing by situation.

All measurement were intentional to maximum the emissions from EUT by varying the connection cables, therefore, the test result is sure to meet the applicable requirement.

3.2 Devices for Tested System

Device	Manufacturer	Model / FCC ID	Description
* BAI Wireless Torque Cadence Sensor	Zentan Technology Co., Ltd	KIP1 / 2ABUJKIP1	---

Remark "*" means equipment under test.

4 RADIATED EMISSION MEASUREMENT

4.1 Applicable Standard

For intentional radiators, according to §15.249 (a), the fundamental field strength shall not exceed 94 dBuV/m and the harmonics shall not exceed 54 dBuV/m. For out band emission except for harmonics shall be comply with §15.209 or at least attenuated by 50 dB below the level of the fundamental.

4.2 Measurement Procedure

A. Preliminary Measurement For Portable Devices

For portable devices, the following procedure was performed to determine the maximum emission axis of EUT:

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving antenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. So, the axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.

B. Final Measurement

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively. Turn on EUT and make sure that it is in normal function.

2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a shielded chamber to determine the accurate frequencies of higher emissions will be checked on a open test site. As the same purpose, for emission frequencies measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.

3. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.

4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

5. Repeat step 4 until all frequencies need to be measured were complete.
6. Repeat step 5 with search antenna in vertical polarized orientations.
7. Check the three frequencies of highest emission with varying the placement of cables (if any) associated with EUT to obtain the worse case and record the result.

Figure 1 : Frequencies measured below 1 GHz configuration

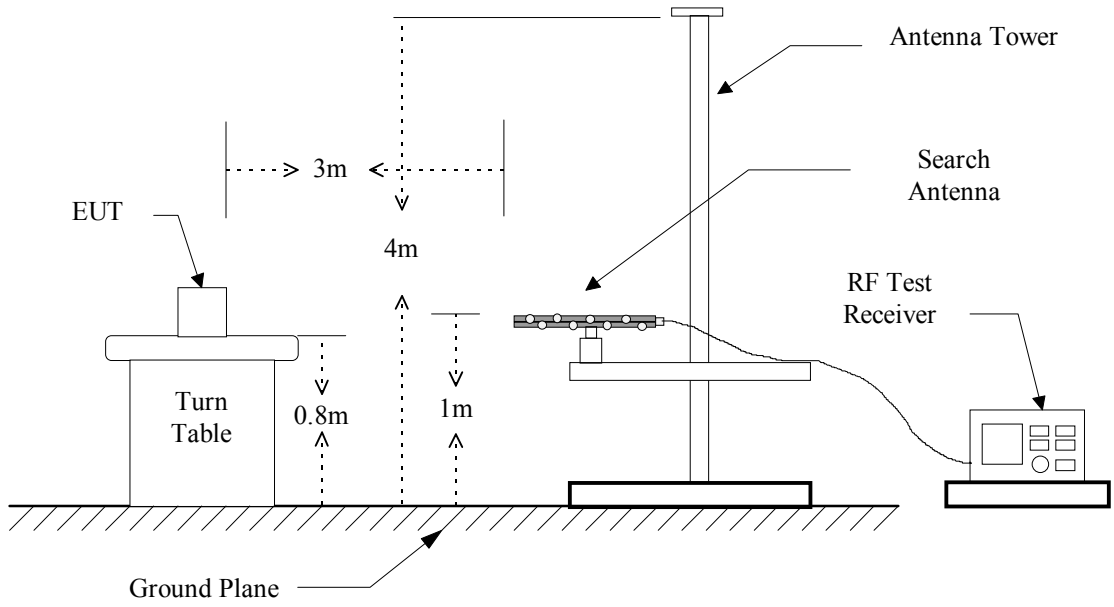
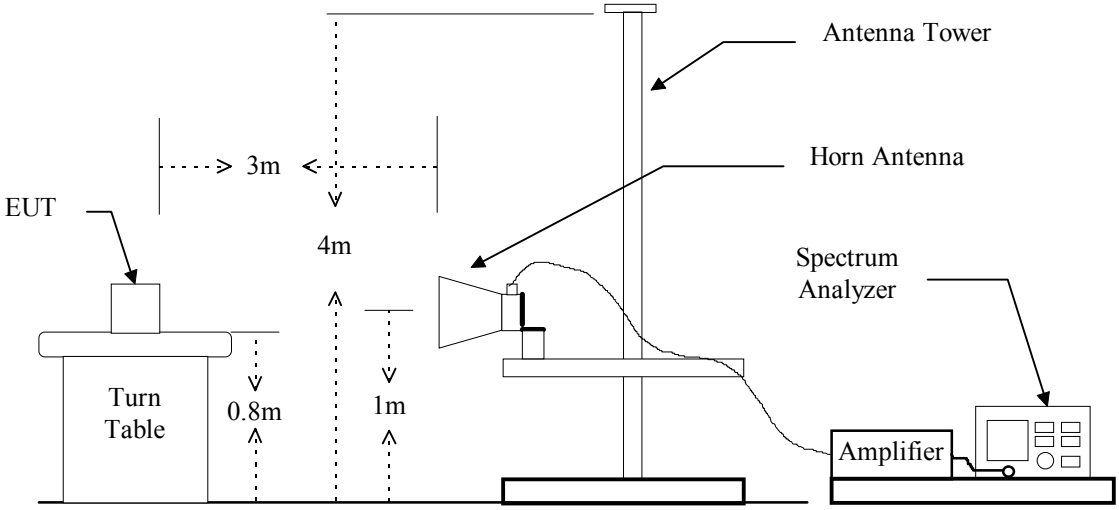


Figure 2 : Frequencies measured above 1 GHz configuration



4.3 Measuring Instrument

The following instrument are used for radiated emissions measurement:

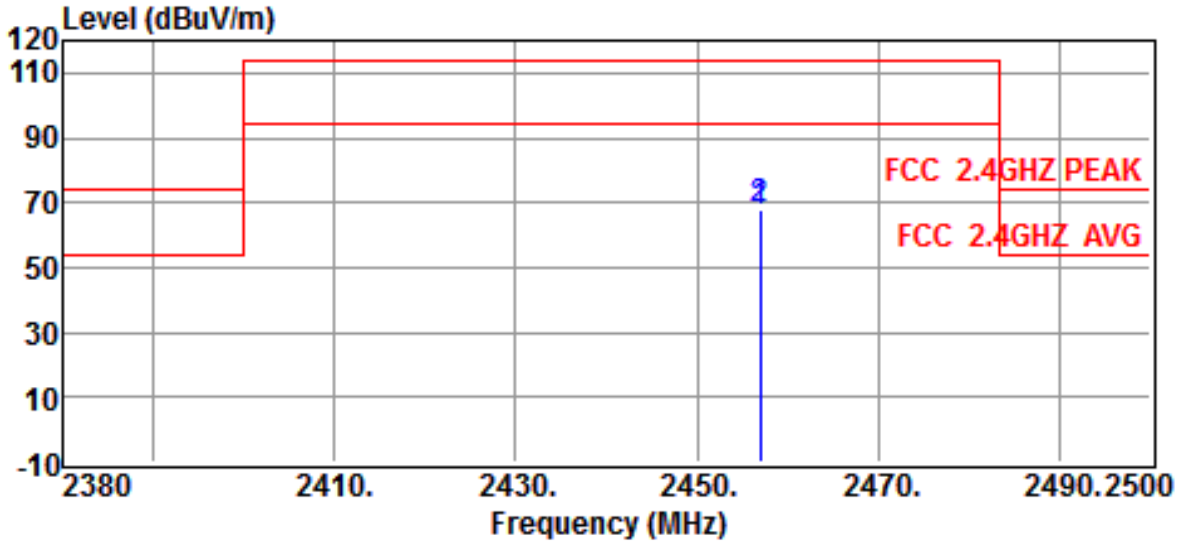
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Test Receiver	Rohde & Schwarz	ESVS30	2013/05/06	2014/05/05
EMI Test Receiver	Rohde & Schwarz	ESL	2013/09/11	2014/09/10
Bi-Log Antenna	ETC	MCTD 2756	2014/01/03	2015/01/02
Log-periodic Antenna	EMCO	3146	2013/10/25	2014/10/24
Double Ridged Guide Horn Antenna	EMCO	3116	2014/01/15	2015/01/14
Biconical Antenna	EMCO	3110	2013/10/25	2014/10/24
Double Ridged Antenna	EMCO	3115	2013/08/02	2014/08/01
Amplifier	HP	8449B	2014/01/15	2015/01/14
Amplifier	HP	83051A	2013/05/06	2014/05/05
Amplifier	HP	8447D	2013/05/03	2014/05/02
EMI Test Receiver	Rohde & Schwarz	ESU 40	2013/09/24	2014/09/23

Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	N/A
	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10Hz

4.4 Radiated Emission Data

4.4.1 RF Portion

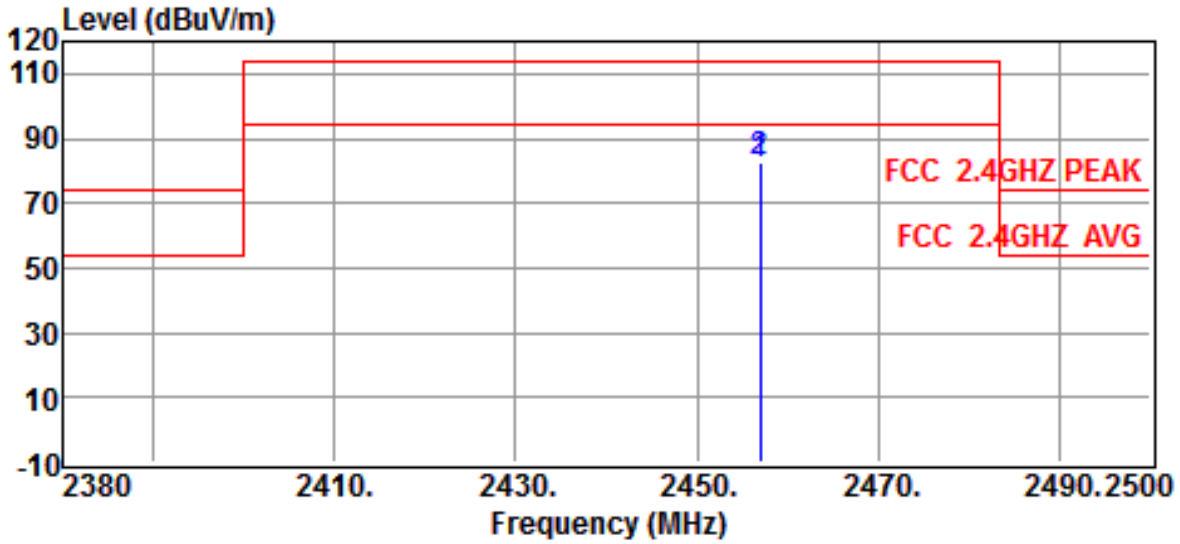


Site	:CHAMBER #2	Date	:2014-04-29
EUT	:BAI Wireless Torque Cadence Sensor	Ant. Pol.	:HORIZONTAL
Model	:KIP1	Detector	:Jiapeng
Power Rating	:DC 3.0V	Engineer	:fundamental
Limit	:FCC 2.4GHZ PEAK	Temp.	:22°C
Memo	:EUT put on table horizontally	Humi.	:58 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2457.0000	72.9	-5.5	67.4	94.0	-26.6	Average
2457.0000	73.4	-5.5	67.9	114.0	-46.1	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

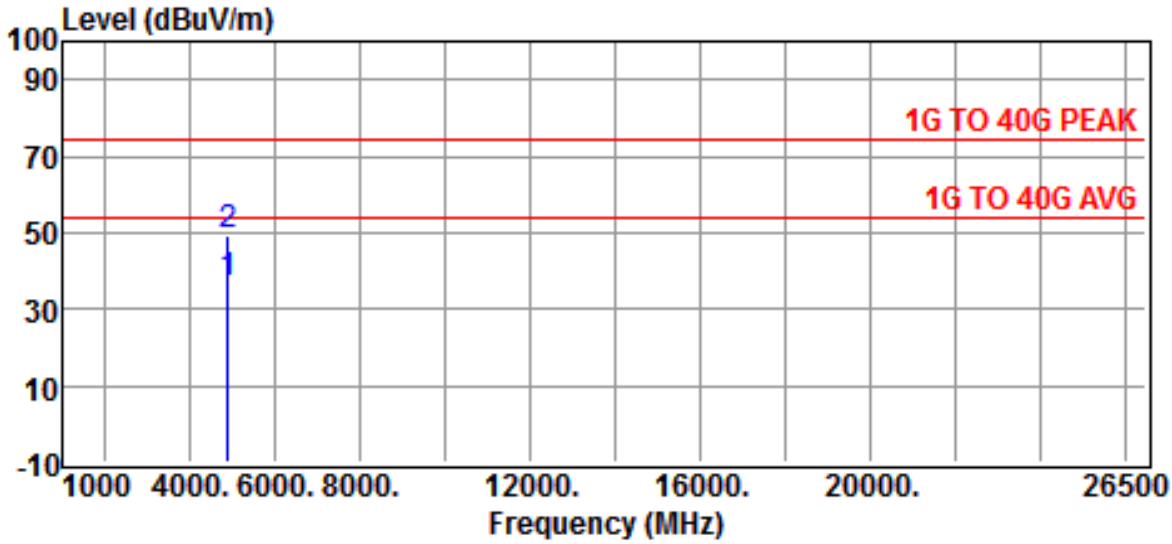


Site	:CHAMBER #2	Date	:2014-04-29
EUT	:BAI Wireless Torque Cadence Sensor	Ant. Pol.	:VERTICAL
Model	:KIP1	Detector	:Jiapeng
Power Rating	:DC 3.0V	Engineer	:fundamental
Limit	:FCC 2.4GHZ PEAK	Temp.	:22°C
Memo	:EUT put on table horizontally	Humi.	:58 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2457.0000	87.3	-5.5	81.8	94.0	-12.2	Average
2457.0000	87.8	-5.5	82.3	114.0	-31.7	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit – Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

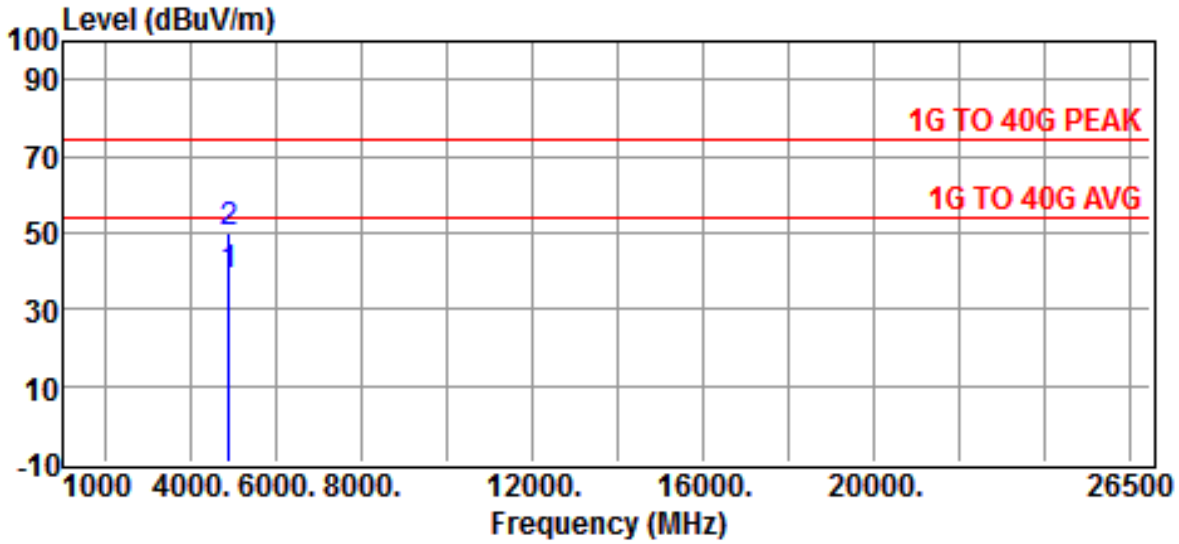


Site	:CHAMBER #2	Date	:2014-04-29
EUT	:BAI Wireless Torque Cadence Sensor	Ant. Pol.	:HORIZONTAL
Model	:KIP1	Detector	:Jiapeng
Power Rating	:DC 3.0V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:22°C
Memo	:EUT put on table horizontally	Humi.	:58 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4914.0000	35.0	1.5	36.5	54.0	-17.5	Average
4914.0000	47.8	1.5	49.3	74.0	-24.7	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

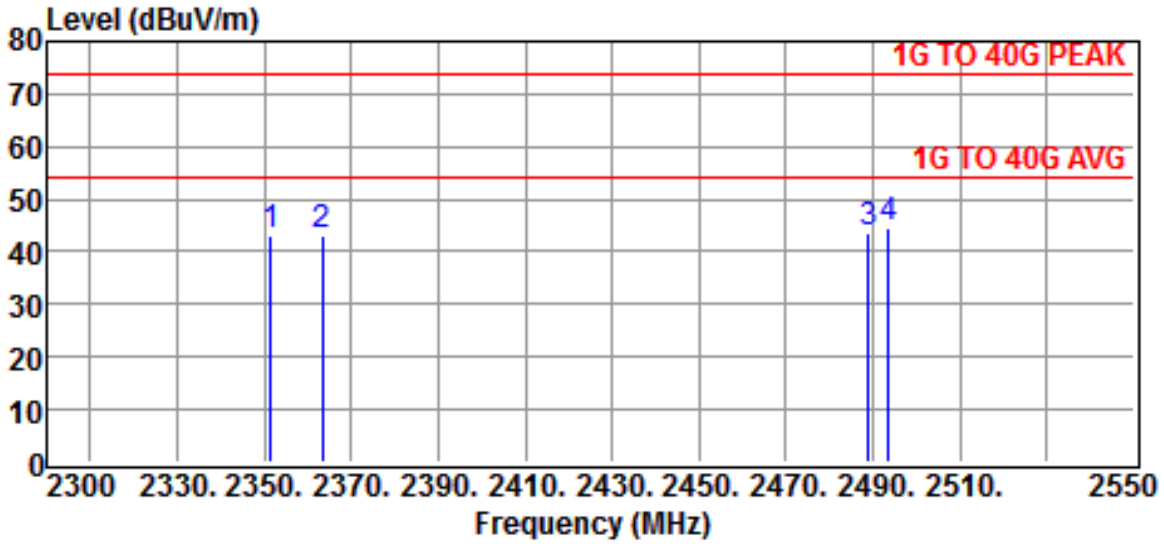


Site	:CHAMBER #2	Date	:2014-04-29
EUT	:BAI Wireless Torque Cadence Sensor	Ant. Pol.	:VERTICAL
Model	:KIP1	Detector	:Jiapeng
Power Rating	:DC 3.0V	Engineer	:
Limit	:1G TO 40G PEAK	Temp.	:22°C
Memo	:EUT put on table horizontally	Humi.	:58 %

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
4914.0000	37.5	1.5	39.0	54.0	-15.0	Average
4914.0000	48.7	1.5	50.2	74.0	-23.8	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

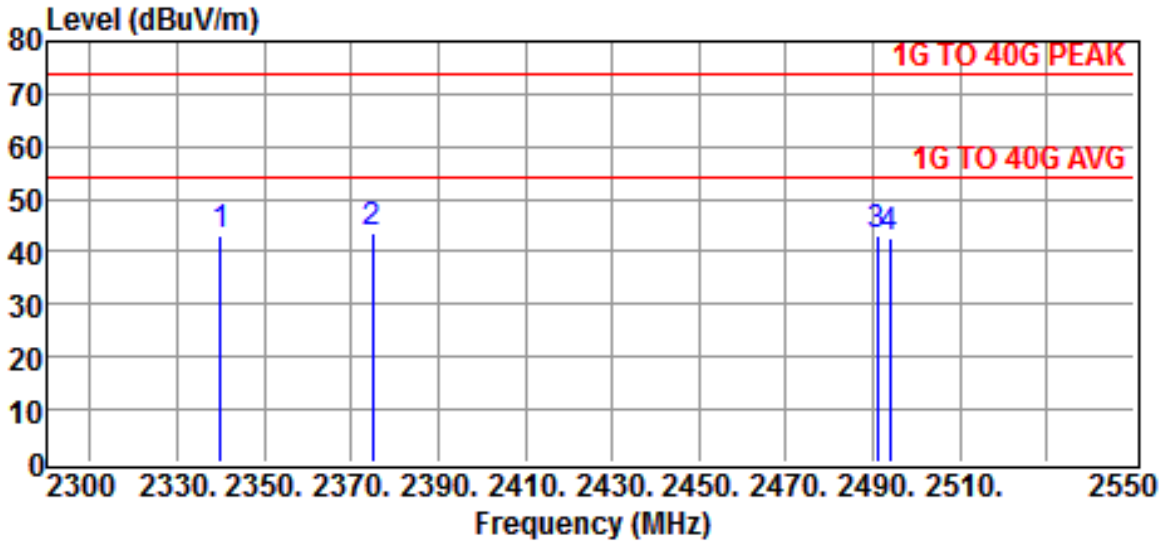


Site	:CHAMBER #2	Date	:2014-04-29
Limit	:1G TO 40G PEAK	Ant. Pol.	:HORIZONTAL
EUT	:BAI Wireless Torque Cadence Sensor	Temp.	:22°C
Power Rating	:DC 3.0V	Humi.	:62%
Model	:KIP1	Engineer.	:Jiapeng
Test Mode	:CH LO & HI - Restricted Bands		
Memo	:EUT put on table horizontally		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2351.5000	49.0	-5.8	43.2	74.0	-30.8	Peak
2363.5000	48.7	-5.8	42.9	74.0	-31.1	Peak
2489.0000	48.8	-5.4	43.4	74.0	-30.6	Peak
2493.5000	50.0	-5.4	44.6	74.0	-29.4	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.



Site	:CHAMBER #2	Date	:2014-04-29
Limit	:1G TO 40G PEAK	Ant. Pol.	:VERTICAL
EUT	:BAI Wireless Torque Cadence Sensor	Temp.	:22°C
Power Rating	:DC 3.0V	Humi.	:62%
Model	:KIP1	Engineer.	:Jiapeng
Test Mode	:CH LO & HI - Restricted Bands		
Memo	:EUT put on table horizontally		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2340.0000	48.9	-5.9	43.0	74.0	-31.0	Peak
2375.0000	49.4	-5.7	43.7	74.0	-30.3	Peak
2491.0000	48.7	-5.4	43.3	74.0	-30.7	Peak
2493.7500	48.2	-5.4	42.8	74.0	-31.2	Peak

Note :

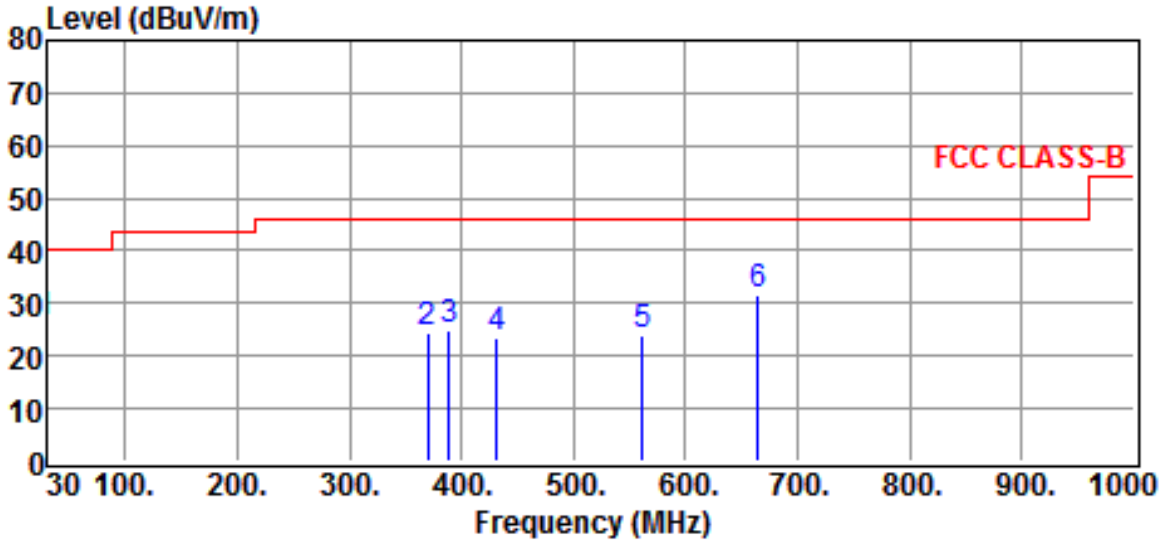
1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

4.4.2 Other Emissions

a) Emission frequencies below 1 GHz

Operation Mode : Operation

Test Date : May 21, 2014 Temperature : 20 °C Humidity : 62 %

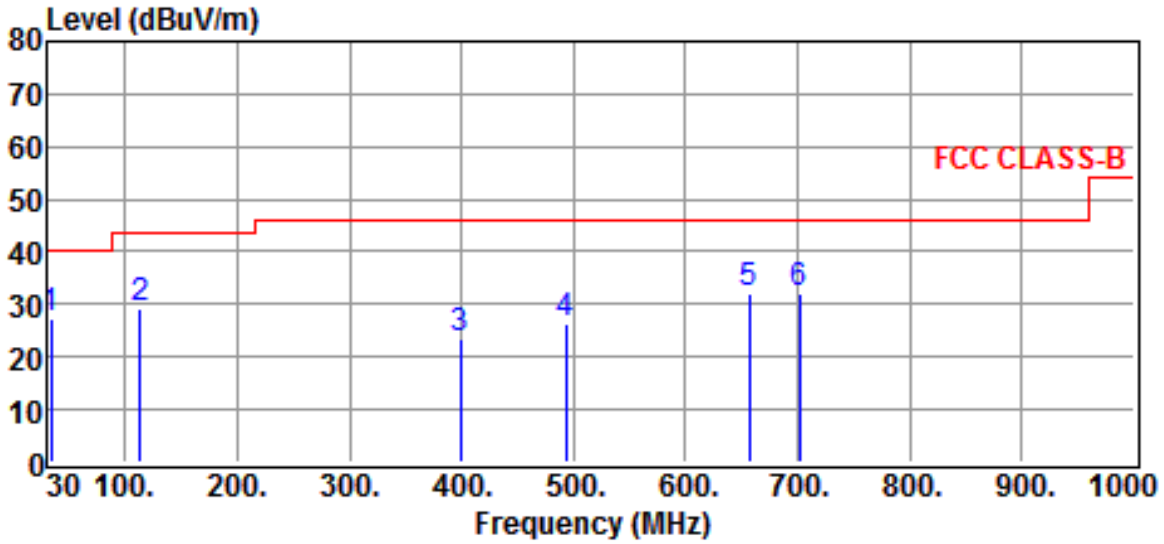


Site	:Open Site	Date	:2014-04-29
Limit	:FCC CLASS-B	Ant. Pol.	:HORIZONTAL
EUT	:BAI Wireless Torque Cadence Sensor	Temp.	:20°C
Power Rating	:DC 3.0V	Humi.	:62%
Model	:K1P1	Engineer.	:Jiapeng
Test Mode	:TX		
Memo	:EUT put on table horizontally		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
30.0000	10.3	15.9	26.2	40.0	-13.8	QP
369.5000	6.1	18.3	24.4	46.0	-21.6	QP
388.9000	6.0	18.9	24.9	46.0	-21.1	QP
431.5800	3.4	19.9	23.3	46.0	-22.7	QP
561.5600	1.5	22.4	23.9	46.0	-22.1	QP
664.3800	7.1	24.3	31.4	46.0	-14.6	QP

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.



Site	:Open Site	Date	:2014-04-29
Limit	:FCC CLASS-B	Ant. Pol.	:VERTICAL
EUT	:BAI Wireless Torque Cadence Sensor	Temp.	:20°C
Power Rating	:DC 3.0V	Humi.	:62%
Model	:K1P1	Engineer.	:Jiapeng
Test Mode	:TX		
Memo	:EUT put on table horizontally		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
33.8800	12.3	14.9	27.2	40.0	-12.8	QP
113.4200	17.0	12.2	29.2	43.5	-14.3	QP
398.6000	4.2	19.1	23.3	46.0	-22.7	QP
493.6600	4.9	21.4	26.3	46.0	-19.7	QP
656.6200	7.9	24.1	32.0	46.0	-14.0	QP
701.2400	7.2	25.1	32.3	46.0	-13.7	QP

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

b) Emission frequencies above 1 GHz

Radiated emission frequencies above 1 GHz to 26.5 GHz were too low to be measured with a pre-amplifier of 35 dB.

4.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss(if used) and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

where Corrected Factor

= Antenna FACTOR + Cable Loss + High Pass Filter Loss - Amplifier Gain

4.6 Photos of Radiation Measuring Setup

5 CONDUCTED EMISSION MEASUREMENT

5.1 Standard Applicable

This EUT is excused from investigation of conducted emission, for it is powered by DC battery only. According to §15.207 (d), measurements 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.

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.

6.2 Antenna Construction

The antenna is integrated on the device. No consideration of replacement. Please refer to the construction Photo for details.

7 BAND EDGES MEASUREMENT

7.1 Standard Applicable

According to 15.249(d), out band emission except for harmonics shall be comply with §15.209 or at least attenuated by 50 dB below the level of the fundamental.

7.2 Measurement Procedure

A) 50 dB attenuation method

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
4. Repeat above procedures until all measured frequencies were complete.

B) Radiated Emission method

1. Following the measurement procedures in section 4.2 with the EUT set to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
2. Measure the highest amplitude appearing on spectral displayed.
3. Repeat above procedures until all measured frequencies were complete.

Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	N/A
	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	10Hz

7.3 Measurement Equipment

A) 50 dB attenuation method

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESU 40	2013/09/24	2014/09/23

B) Radiated Emission method

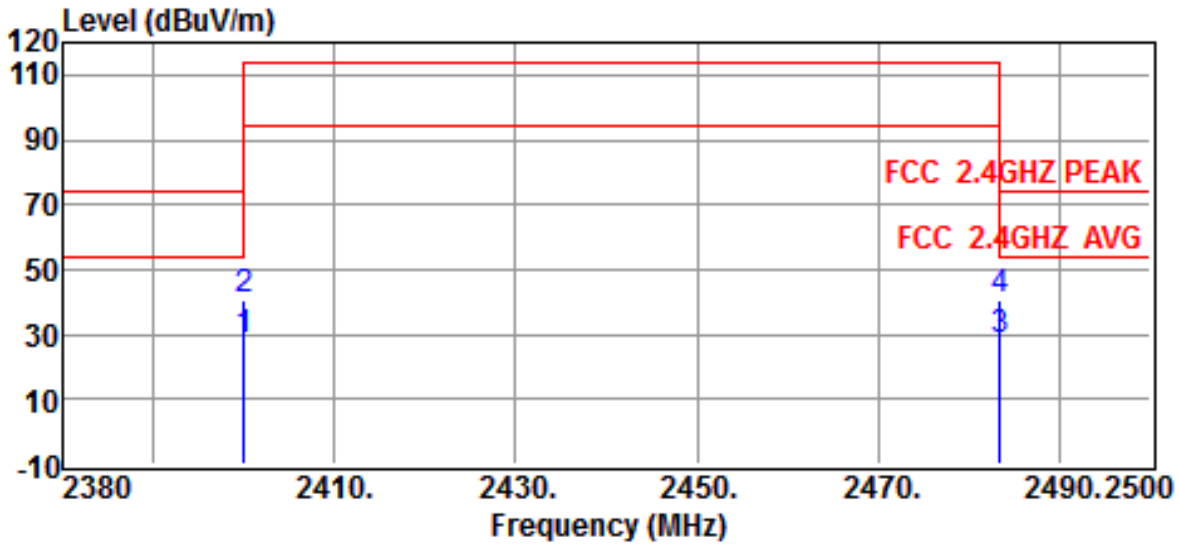
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Test Receiver	Rohde & Schwarz	ESVS30	2013/05/06	2014/05/05
EMI Test Receiver	Rohde & Schwarz	ESL	2013/09/11	2014/09/10
Bi-Log Antenna	ETC	MCTD 2756	2014/01/03	2015/01/02
Log-periodic Antenna	EMCO	3146	2013/10/25	2014/10/24
Double Ridged Guide Horn Antenna	EMCO	3116	2014/01/15	2015/01/14
Biconical Antenna	EMCO	3110	2013/10/25	2014/10/24
Double Ridged Antenna	EMCO	3115	2013/08/02	2014/08/01
Amplifier	HP	8449B	2014/01/15	2015/01/14
Amplifier	HP	83051A	2013/05/06	2014/05/05
Amplifier	HP	8447D	2013/05/03	2014/05/02
EMI Test Receiver	Rohde & Schwarz	ESU 40	2013/09/24	2014/09/23

7.4 Measurement Data

Test Result: (Radiated Emission method)

The radiated emission test results of the lower and the upper band edges were comply with §15.209. Please refer to the following pages for test results.

Radiated Emission Test Results of the Band Edges

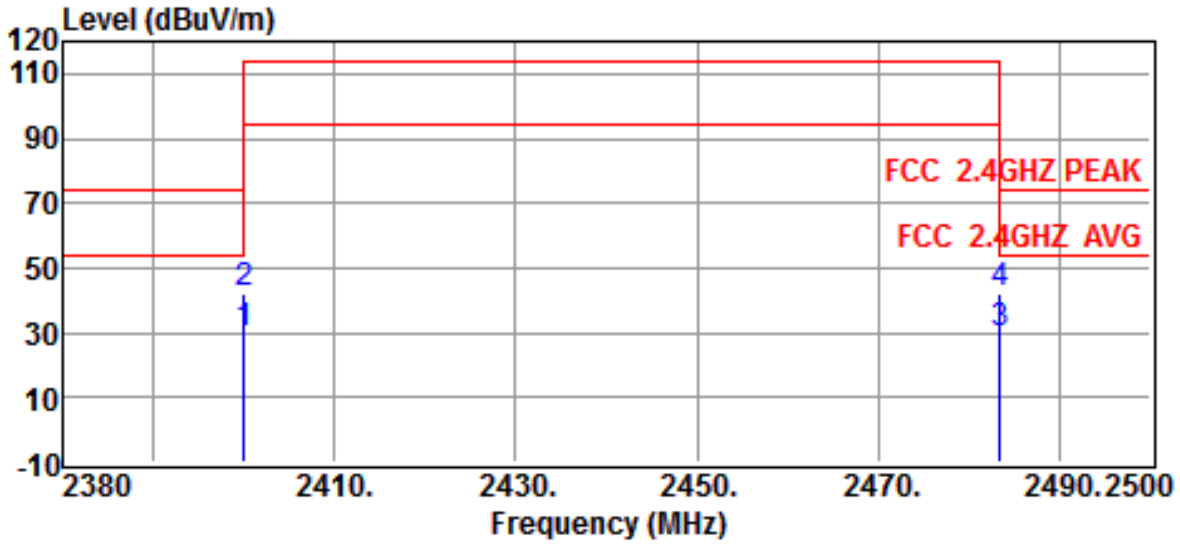


Site	:CHAMBER #2	Date	:2014-04-29
EUT	:BAI Wireless Torque Cadence Sensor	Ant. Pol.	:HORIZONTAL
Model	:KIP1	Detector	:Jiapeng
Power Rating	:DC 3.0V	Engineer	:band edge
Limit	:FCC 2.4GHZ PEAK	Temp.	:22°C
Memo	:	Humi.	:58 %
Memo	:		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2400.0000	33.5	-5.6	27.9	54.0	-26.1	Average
2400.0000	45.9	-5.6	40.3	74.0	-33.7	Peak
2483.5000	33.3	-5.4	27.9	54.0	-26.1	Average
2483.5000	45.7	-5.4	40.3	74.0	-33.7	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.



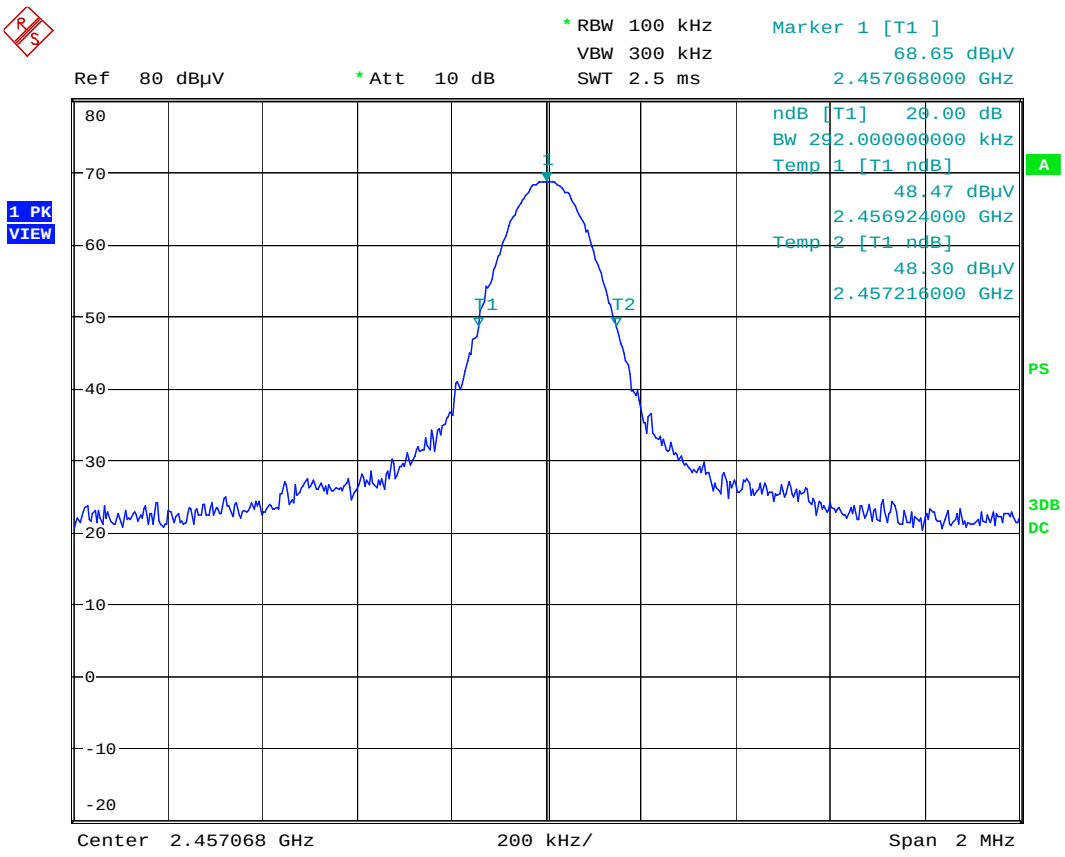
Site	:CHAMBER #2	Date	:2014-04-29
EUT	:BAI Wireless Torque Cadence Sensor	Ant. Pol.	:VERTICAL
Model	:KIP1	Detector	:Jiapeng
Power Rating	:DC 3.0V	Engineer	:band edge
Limit	:FCC 2.4GHZ PEAK	Temp.	:22°C
Memo	:	Humi.	:58 %
Memo	:		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
2400.0000	34.9	-5.6	29.3	54.0	-24.7	Average
2400.0000	48.0	-5.6	42.4	74.0	-31.6	Peak
2483.5000	34.8	-5.4	29.4	54.0	-24.6	Average
2483.5000	47.7	-5.4	42.3	74.0	-31.7	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
3. The margin value=Limit - Result
4. The expanded uncertainty of the radiated emission tests is 3.53 dB.

20dBc BW plot



Date: 29.APR.2014 10:35:16

The 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section 15.249.