

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Motionize Israel LTD.

Micro Sensor Rev E3
Model No.: AD-0100

FCC ID: 2AKJ2-AD-0100

Prepared for : Motionize Israel LTD.
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Prepared by : ACCURATE TECHNOLOGY CO., LTD
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Report No. : ATE20162509
Date of Test : November 28, 2016
Date of Report : December 1, 2016

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Test Report Certification

Applicant : Motionize Israel LTD.
Manufacturer : Motionize Israel LTD.
EUT Description : Micro Sensor Rev E3
(A) MODEL NO.: AD-0100
(B) TRADE NAME.: Micro Sensor Rev E3
(C) POWER SUPPLY: DC 5V (Power by USB Port)

Measurement Procedure Used:

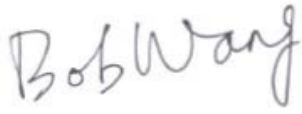
FCC Rules and Regulations Part 15 Subpart C Section 15.247: 2016
ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of KDB558074 D01 DTS Meas Guidance v03r03 June 2015 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :	November 28, 2016
Date of Report :	December 1, 2016

Prepared by : 
(Bob Wang, Engineer)

Approved & Authorized Signer : 
(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Micro Sensor Rev E3
Model Number	:	AD-0100
Trade Mark	:	Micro Sensor Rev E3
Bluetooth version	:	Bluetooth V4.1
Frequency Range	:	2402MHz-2480MHz
Number of Channels	:	40
Antenna Gain	:	0dBi
Antenna type	:	Integral Antenna
Power Supply	:	DC 5V (Power by USB Port)
Modulation mode	:	GFSK
Applicant	:	Motionize Israel LTD.
Address	:	Sderot Yehudit 35, Tel Aviv-Yafo 6701637, Israel
Manufacturer	:	Motionize Israel LTD.
Address	:	Sderot Yehudit 35, Tel Aviv-Yafo 6701637, Israel
Date of sample received	:	November 26, 2016
Date of Test	:	November 28, 2016

1.2.Carrier Frequency of Channels

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

1.3.Special Accessory and Auxiliary Equipment

Notebook PC : Manufacturer: LENOVO
M/N: 4290-RT8
S/N: R9-FW93G 11/08

1.4. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC
The Registration Number is 752051

Listed by Industry Canada
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee
for Laboratories
The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.
Science & Industry Park, Nanshan, Shenzhen, Guangdong
P.R. China

1.5. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2
(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2
(Above 1GHz)

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 9, 2016	Jan. 09, 2017
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 9, 2016	Jan. 09, 2017
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 9, 2016	Jan. 09, 2017
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 9, 2016	Jan. 09, 2017
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 14, 2016	Jan. 13, 2017
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 14, 2016	Jan. 13, 2017
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 14, 2016	Jan. 12, 2017
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 14, 2016	Jan. 13, 2017
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 9, 2016	Jan. 09, 2017
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 9, 2016	Jan. 09, 2017
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 9, 2016	Jan. 09, 2017
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 9, 2016	Jan. 09, 2017

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

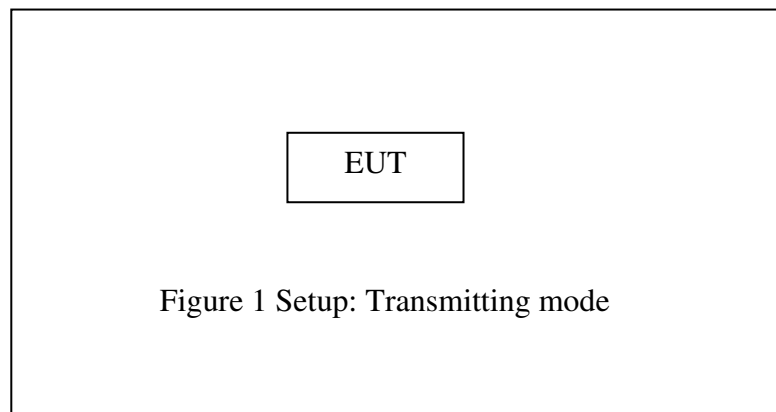
The mode is used: **BLE Transmitting mode**

Low Channel: 2402MHz

Middle Channel: 2440MHz

High Channel: 2480MHz

3.2.Configuration and peripherals

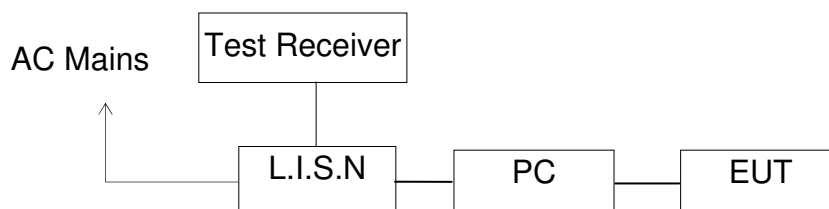


4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(2)	6dB Bandwidth Test	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.247(b)(3)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.247(d)	Conducted Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant

5. POWER LINE CONDUCTED MEASUREMENT

5.1. Block Diagram of Test Setup



(EUT: Micro Sensor Rev E3)

5.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies. NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

5.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3. Let the EUT work in test mode and measure it.

5.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

5.6.Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Test mode : On AC 120V; 60Hz								
MEASUREMENT RESULT: "MT-1128-04_fin"								
11/28/2016 10:47AM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	52.50	10.5	66	13.5	QP	N	GND	
0.500000	41.30	10.7	56	14.7	QP	N	GND	
1.650000	33.30	10.9	56	22.7	QP	N	GND	
3.860000	36.70	11.1	56	19.3	QP	N	GND	
5.140000	26.00	11.2	60	34.0	QP	N	GND	
17.635000	25.50	11.4	60	34.5	QP	N	GND	
MEASUREMENT RESULT: "MT-1128-04_fin2"								
11/28/2016 10:47AM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	39.20	10.5	56	16.8	AV	N	GND	
0.490000	38.10	10.7	46	8.1	AV	N	GND	
2.090000	28.20	11.0	46	17.8	AV	N	GND	
3.830000	28.50	11.1	46	17.5	AV	N	GND	
5.140000	20.00	11.2	50	30.0	AV	N	GND	
17.950000	18.20	11.4	50	31.8	AV	N	GND	
MEASUREMENT RESULT: "MT-1128-03_fin"								
11/28/2016 10:43AM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.150000	54.80	10.5	66	11.2	QP	L1	GND	
0.505000	40.90	10.7	56	15.1	QP	L1	GND	
1.955000	34.60	11.0	56	21.4	QP	L1	GND	
3.870000	37.70	11.1	56	18.3	QP	L1	GND	
5.160000	31.50	11.2	60	28.5	QP	L1	GND	
17.410000	24.10	11.4	60	35.9	QP	L1	GND	
MEASUREMENT RESULT: "MT-1128-03_fin2"								
11/28/2016 10:43AM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.190000	34.70	10.5	54	19.3	AV	L1	GND	
0.500000	37.00	10.7	46	9.0	AV	L1	GND	
2.000000	29.10	11.0	46	16.9	AV	L1	GND	
2.480000	29.70	11.0	46	16.3	AV	L1	GND	
5.140000	26.30	11.2	50	23.7	AV	L1	GND	
16.840000	16.80	11.4	50	33.2	AV	L1	GND	

Test mode : On

AC 240V; 60Hz

MEASUREMENT RESULT: "MT-1128-02_fin"

11/28/2016 10:39AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.155000	58.70	10.5	66	7.0	QP	L1	GND
0.495000	42.20	10.7	56	13.9	QP	L1	GND
2.040000	35.50	11.0	56	20.5	QP	L1	GND
2.270000	36.20	11.0	56	19.8	QP	L1	GND
5.300000	32.60	11.2	60	27.4	QP	L1	GND
17.710000	26.80	11.4	60	33.2	QP	L1	GND

MEASUREMENT RESULT: "MT-1128-02_fin2"

11/28/2016 10:39AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.170000	30.80	10.5	55	24.2	AV	L1	GND
0.475000	33.70	10.7	46	12.7	AV	L1	GND
2.040000	29.90	11.0	46	16.1	AV	L1	GND
2.650000	30.80	11.0	46	15.2	AV	L1	GND
5.390000	26.60	11.2	50	23.4	AV	L1	GND
17.425000	20.90	11.4	50	29.1	AV	L1	GND

MEASUREMENT RESULT: "MT-1128-01_fin"

11/28/2016 10:35AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.170000	59.80	10.5	65	5.2	QP	N	GND
0.540000	39.20	10.7	56	16.8	QP	N	GND
2.000000	37.10	11.0	56	18.9	QP	N	GND
3.460000	36.60	11.1	56	19.4	QP	N	GND
5.770000	31.90	11.2	60	28.1	QP	N	GND
22.030000	23.10	11.4	60	36.9	QP	N	GND

MEASUREMENT RESULT: "MT-1128-01_fin2"

11/28/2016 10:35AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.170000	46.60	10.5	55	8.4	AV	N	GND
0.545000	24.10	10.7	46	21.9	AV	N	GND
2.060000	30.60	11.0	46	15.4	AV	N	GND
4.910000	31.10	11.2	46	14.9	AV	N	GND
5.920000	25.80	11.2	50	24.2	AV	N	GND
29.125000	23.00	11.5	50	27.0	AV	N	GND

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

ACCURATE TECHNOLOGY CO., LTD

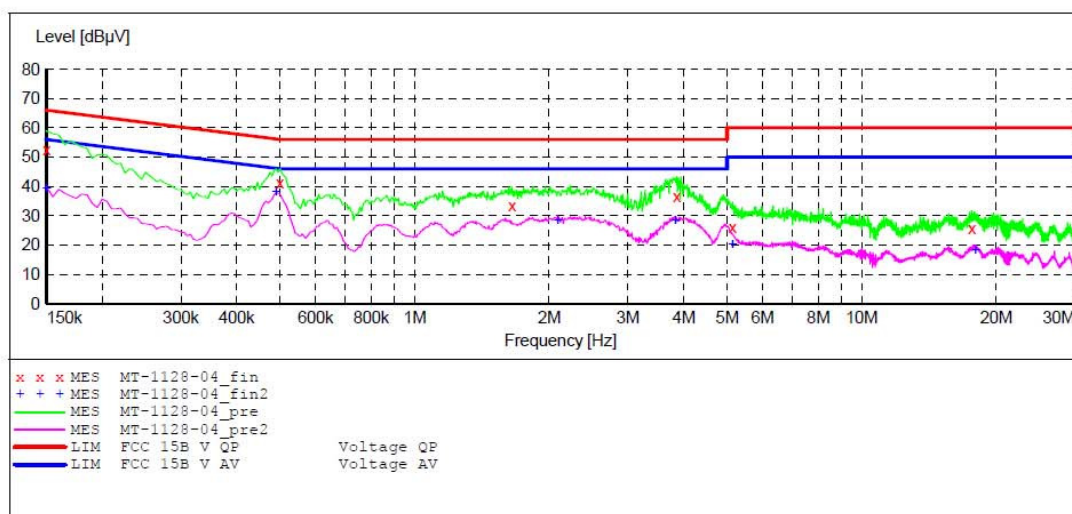
CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Micro Sensor Rev E3 M/N:AD-0100
 Manufacturer: MOTIONIZE
 Operating Condition: On
 Test Site: 1#Shielding Room
 Operator: DING
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20162509
 Start of Test: 11/28/2016 / 10:43:46AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	NSLK8126 2008
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "MT-1128-04_fin"

11/28/2016 10:47AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	52.50	10.5	66	13.5	QP	N	GND
0.500000	41.30	10.7	56	14.7	QP	N	GND
1.650000	33.30	10.9	56	22.7	QP	N	GND
3.860000	36.70	11.1	56	19.3	QP	N	GND
5.140000	26.00	11.2	60	34.0	QP	N	GND
17.635000	25.50	11.4	60	34.5	QP	N	GND

MEASUREMENT RESULT: "MT-1128-04_fin2"

11/28/2016 10:47AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	39.20	10.5	56	16.8	AV	N	GND
0.490000	38.10	10.7	46	8.1	AV	N	GND
2.090000	28.20	11.0	46	17.8	AV	N	GND
3.830000	28.50	11.1	46	17.5	AV	N	GND
5.140000	20.00	11.2	50	30.0	AV	N	GND
17.950000	18.20	11.4	50	31.8	AV	N	GND

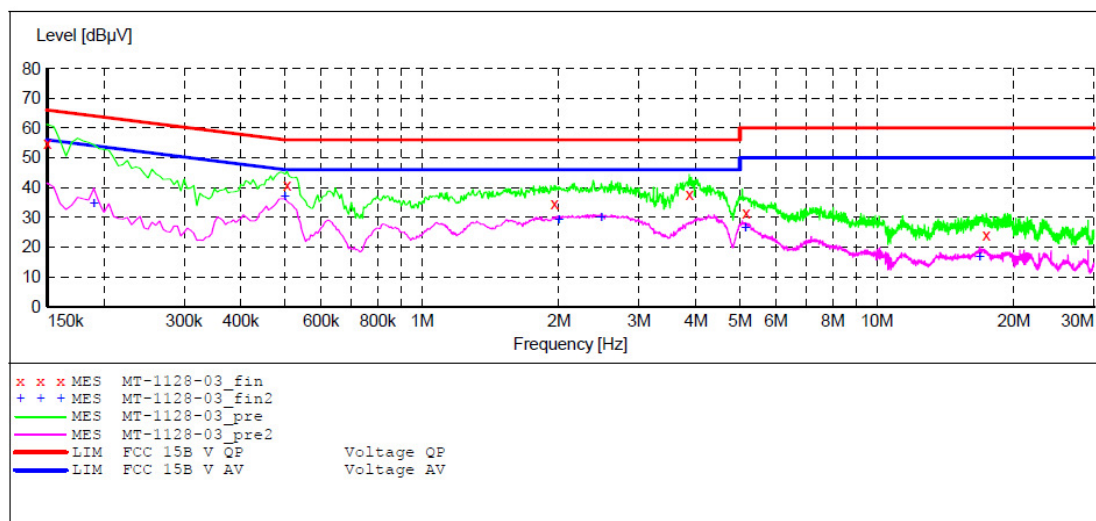
CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Micro Sensor Rev E3 M/N:AD-0100
 Manufacturer: MOTIONIZE
 Operating Condition: On
 Test Site: 1#Shielding Room
 Operator: DING
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20162509
 Start of Test: 11/28/2016 / 10:39:59AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency 9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	NSLK8126 2008
150.0 kHz	30.0 MHz	5.0 kHz	Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "MT-1128-03_fin"

11/28/2016 10:43AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	54.80	10.5	66	11.2	QP	L1	GND
0.505000	40.90	10.7	56	15.1	QP	L1	GND
1.955000	34.60	11.0	56	21.4	QP	L1	GND
3.870000	37.70	11.1	56	18.3	QP	L1	GND
5.160000	31.50	11.2	60	28.5	QP	L1	GND
17.410000	24.10	11.4	60	35.9	QP	L1	GND

MEASUREMENT RESULT: "MT-1128-03_fin2"

11/28/2016 10:43AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.190000	34.70	10.5	54	19.3	AV	L1	GND
0.500000	37.00	10.7	46	9.0	AV	L1	GND
2.000000	29.10	11.0	46	16.9	AV	L1	GND
2.480000	29.70	11.0	46	16.3	AV	L1	GND
5.140000	26.30	11.2	50	23.7	AV	L1	GND
16.840000	16.80	11.4	50	33.2	AV	L1	GND

ACCURATE TECHNOLOGY CO.,LTD

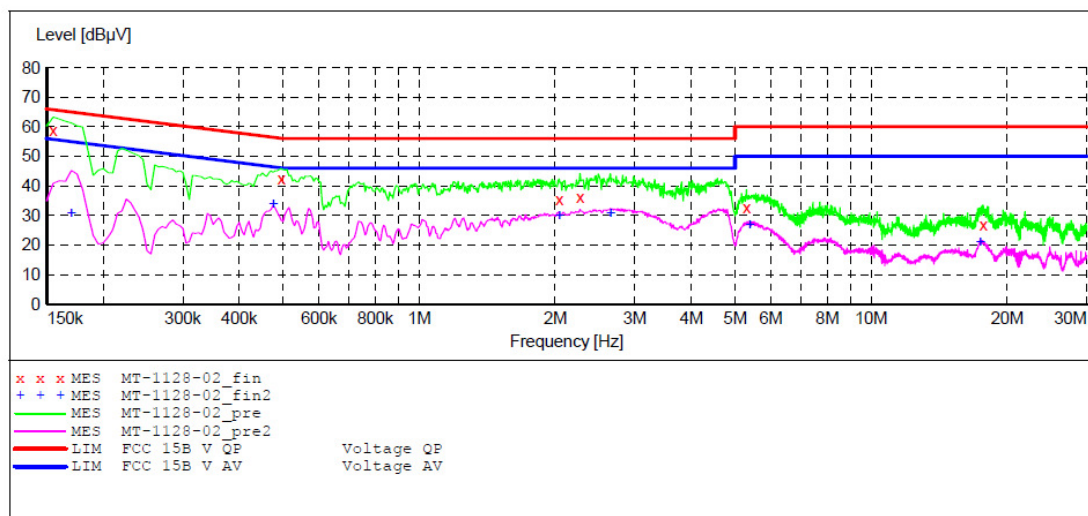
CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Micro Sensor Rev E3 M/N:AD-0100
 Manufacturer: MOTIONIZE
 Operating Condition: On
 Test Site: 1#Shielding Room
 Operator: DING
 Test Specification: L 240V/60Hz
 Comment: Report NO.:ATE20162509
 Start of Test: 11/28/2016 / 10:36:14AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	NSLK8126 2008
			Average			
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008
			Average			



MEASUREMENT RESULT: "MT-1128-02_fin"

11/28/2016 10:39AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.155000	58.70	10.5	66	7.0	QP	L1	GND
0.495000	42.20	10.7	56	13.9	QP	L1	GND
2.040000	35.50	11.0	56	20.5	QP	L1	GND
2.270000	36.20	11.0	56	19.8	QP	L1	GND
5.300000	32.60	11.2	60	27.4	QP	L1	GND
17.710000	26.80	11.4	60	33.2	QP	L1	GND

MEASUREMENT RESULT: "MT-1128-02_fin2"

11/28/2016 10:39AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.170000	30.80	10.5	55	24.2	AV	L1	GND
0.475000	33.70	10.7	46	12.7	AV	L1	GND
2.040000	29.90	11.0	46	16.1	AV	L1	GND
2.650000	30.80	11.0	46	15.2	AV	L1	GND
5.390000	26.60	11.2	50	23.4	AV	L1	GND
17.425000	20.90	11.4	50	29.1	AV	L1	GND

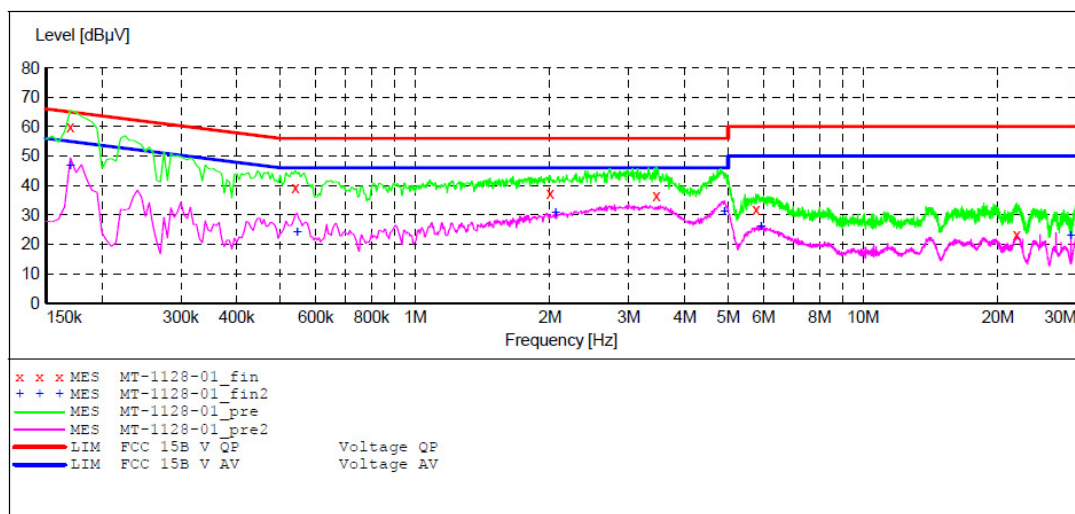
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: Micro Sensor Rev E3 M/N:AD-0100
 Manufacturer: MOTIONIZE
 Operating Condition: On
 Test Site: 1#Shielding Room
 Operator: DING
 Test Specification: N 240V/60Hz
 Comment: Report NO.:ATE20162509
 Start of Test: 11/28/2016 / 10:34:44AM

SCAN TABLE: "V 9K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008
 Average
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "MT-1128-01_fin"

11/28/2016 10:35AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.170000	59.80	10.5	65	5.2	QP	N	GND
0.540000	39.20	10.7	56	16.8	QP	N	GND
2.000000	37.10	11.0	56	18.9	QP	N	GND
3.460000	36.60	11.1	56	19.4	QP	N	GND
5.770000	31.90	11.2	60	28.1	QP	N	GND
22.030000	23.10	11.4	60	36.9	QP	N	GND

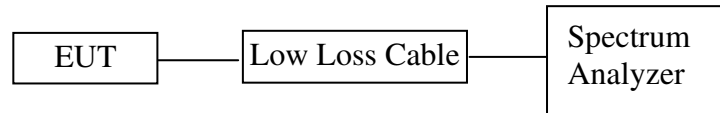
MEASUREMENT RESULT: "MT-1128-01_fin2"

11/28/2016 10:35AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.170000	46.60	10.5	55	8.4	AV	N	GND
0.545000	24.10	10.7	46	21.9	AV	N	GND
2.060000	30.60	11.0	46	15.4	AV	N	GND
4.910000	31.10	11.2	46	14.9	AV	N	GND
5.920000	25.80	11.2	50	24.2	AV	N	GND
29.125000	23.00	11.5	50	27.0	AV	N	GND

6. 6DB BANDWIDTH MEASUREMENT

6.1. Block Diagram of Test Setup



(EUT: Micro Sensor Rev E3)

6.2. The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.3. EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 5.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

6.5. Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

20dB bandwidth

1. Set resolution bandwidth (RBW) = 1%-5% OBW.

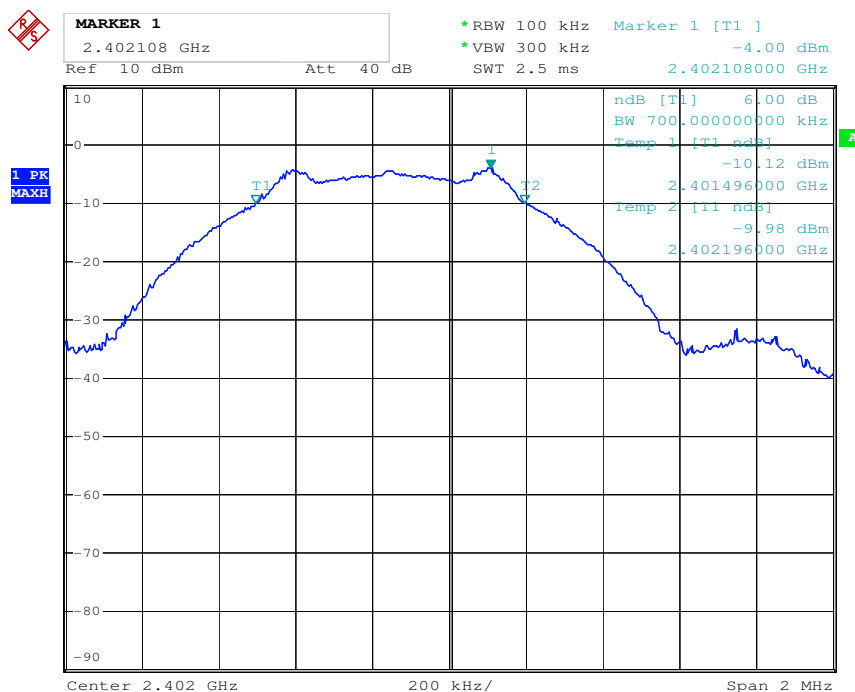
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst-case (i.e., the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the -20 dB levels with respect to the reference level

6.6.Test Result

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit(MHz)	PASS/FAIL
0	2402	0.700	0.5	PASS
19	2440	0.724	0.5	PASS
39	2480	0.728	0.5	PASS

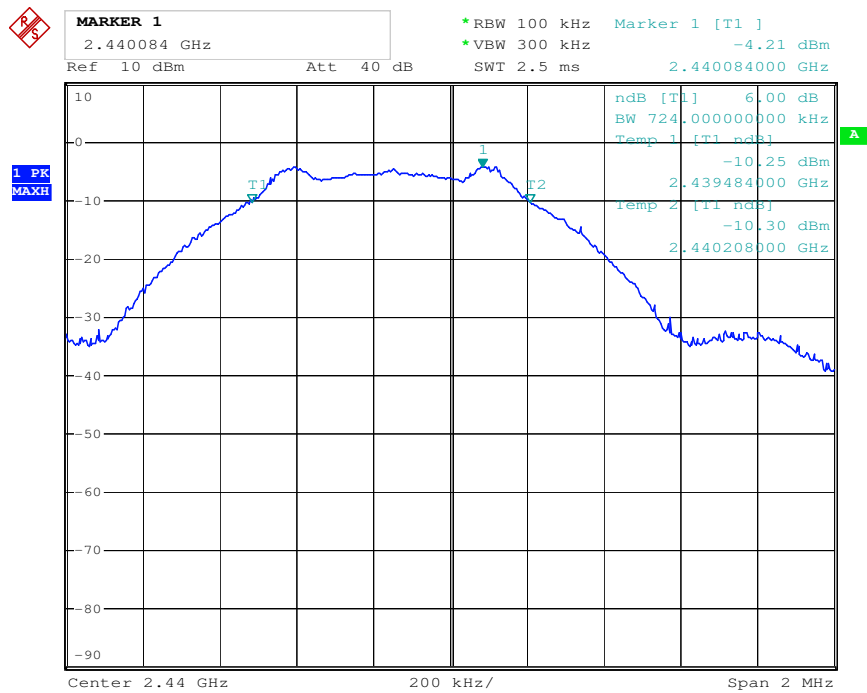
The spectrum analyzer plots are attached as below.

channel 0



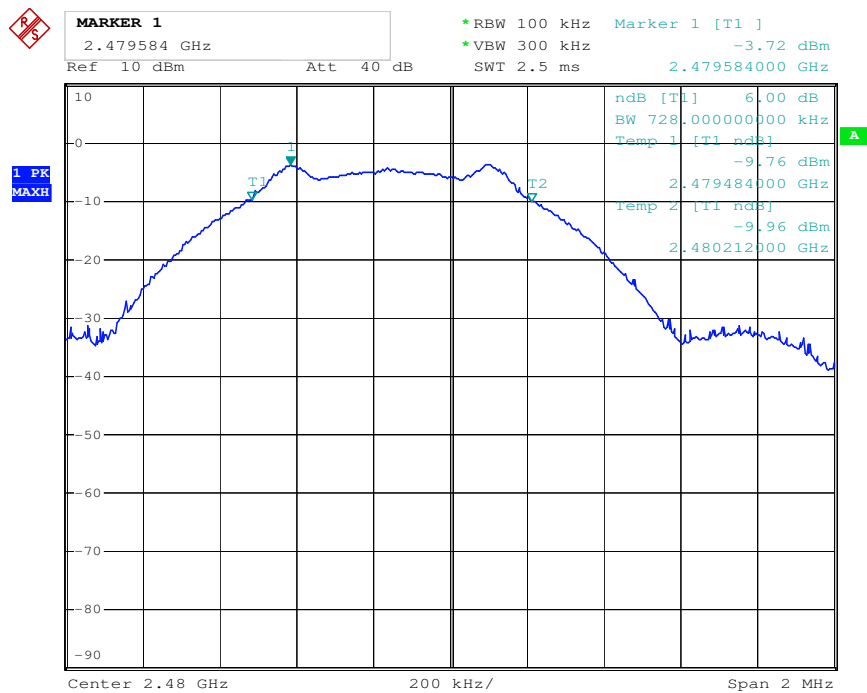
Date: 28.NOV.2016 12:34:12

channel 19



Date: 28.NOV.2016 12:38:24

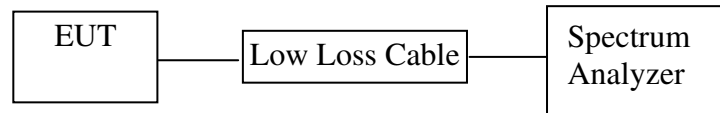
channel 39



Date: 28.NOV.2016 12:36:18

7. MAXIMUM PEAK OUTPUT POWER

7.1. Block Diagram of Test Setup



(EUT: Micro Sensor Rev E3)

7.2. The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

7.3. EUT Configuration on Measurement

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

7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 6.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set RBW of spectrum analyzer to 1 MHz and VBW to 3 MHz.

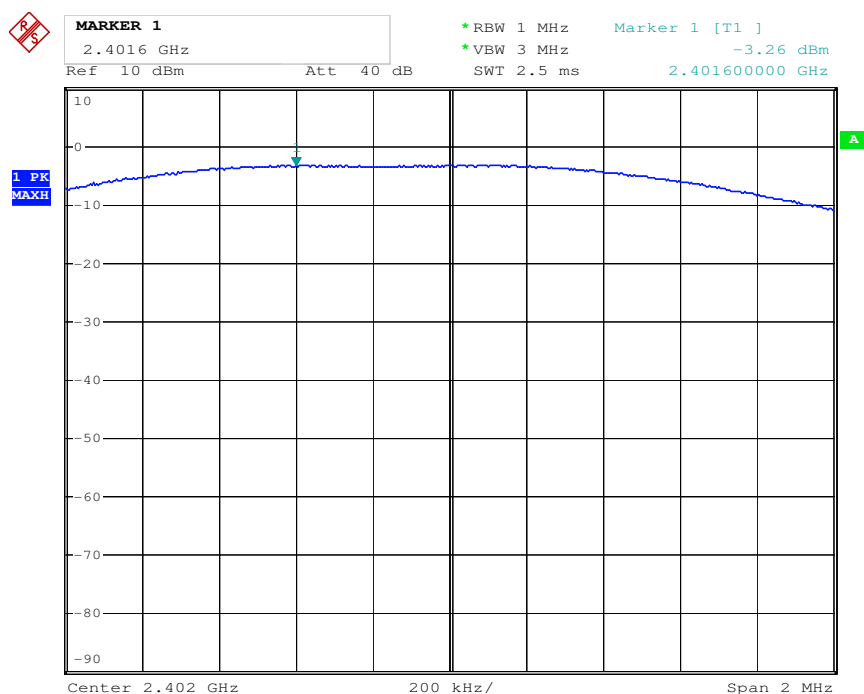
7.5.3. Measurement the maximum peak output power.

7.6. Test Result

Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass / Fail
0	2402	-3.26	30	PASS
19	2440	-3.34	30	PASS
39	2480	-3.62	30	PASS

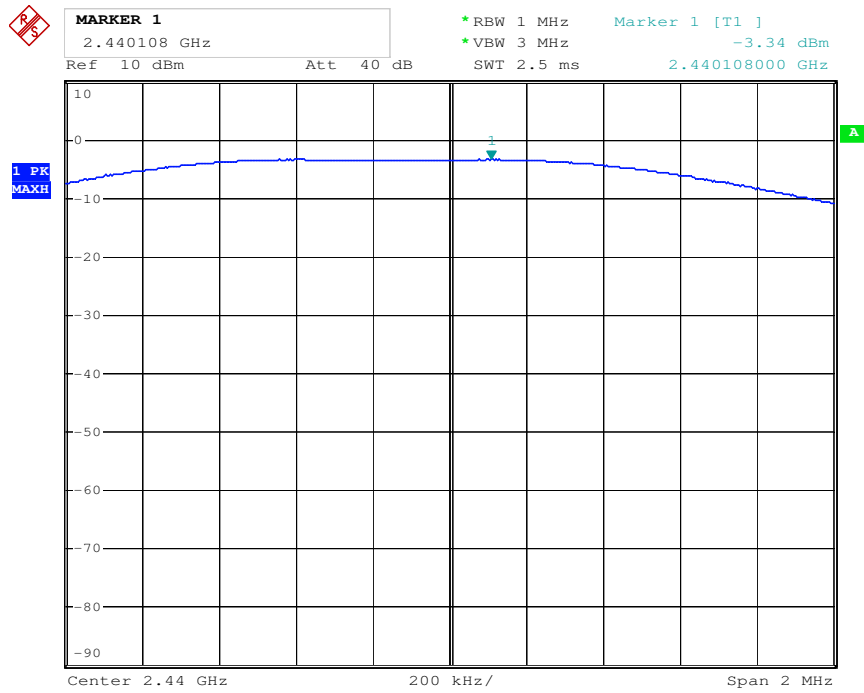
The spectrum analyzer plots are attached as below.

channel 0



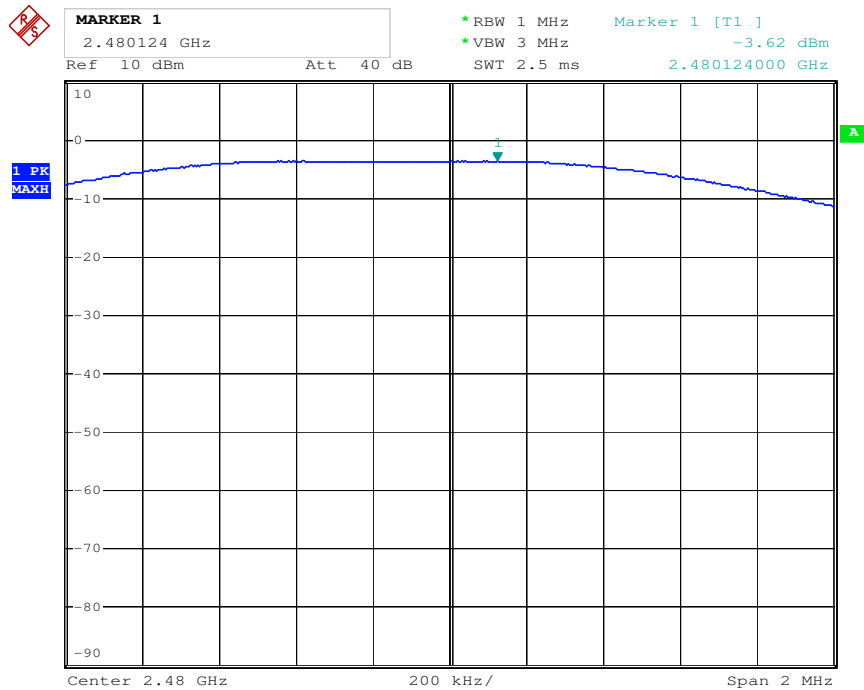
Date: 28.NOV.2016 12:31:38

channel 19



Date: 28.NOV.2016 12:24:15

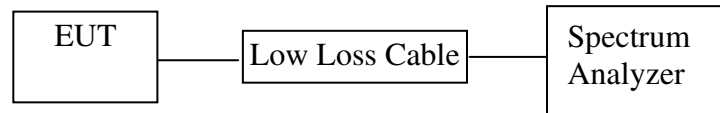
channel 39



Date: 28.NOV.2016 12:28:36

8. POWER SPECTRAL DENSITY MEASUREMENT

8.1. Block Diagram of Test Setup



(EUT: Micro Sensor Rev E3)

8.2. The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3. EUT Configuration on Measurement

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

8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 7.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

8.5. Test Procedure

8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2. Measurement Procedure PKPSD:

8.5.3. This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

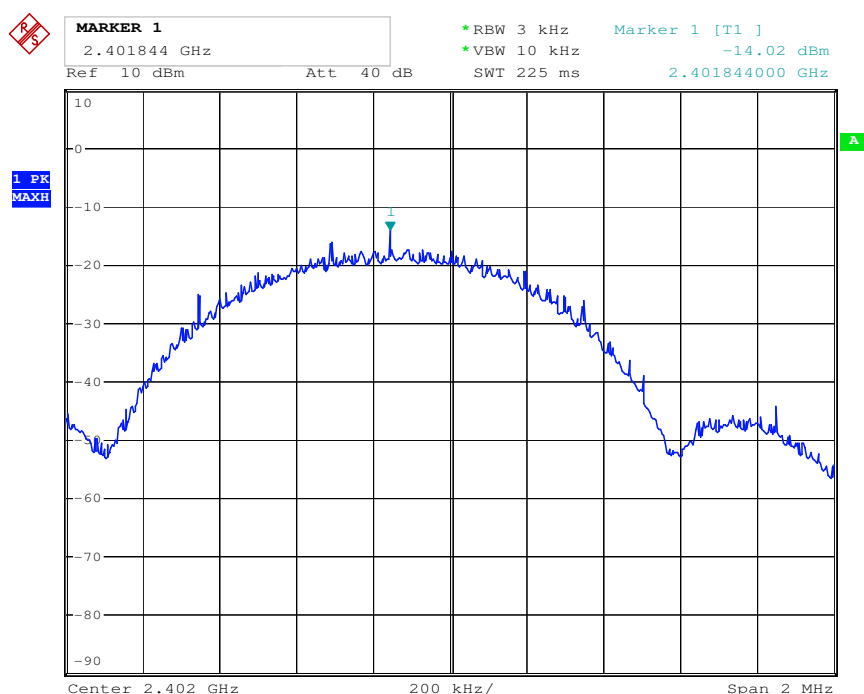
8.5.4. Measurement the maximum power spectral density.

8.6.Test Result

CHANNEL NUMBER	FREQUENCY (MHz)	PSD (dBm/3KHz)	LIMIT (dBm/3KHz)	PASS/FAIL
0	2402	-14.02	8	PASS
19	2440	-14.38	8	PASS
39	2480	-13.92	8	PASS

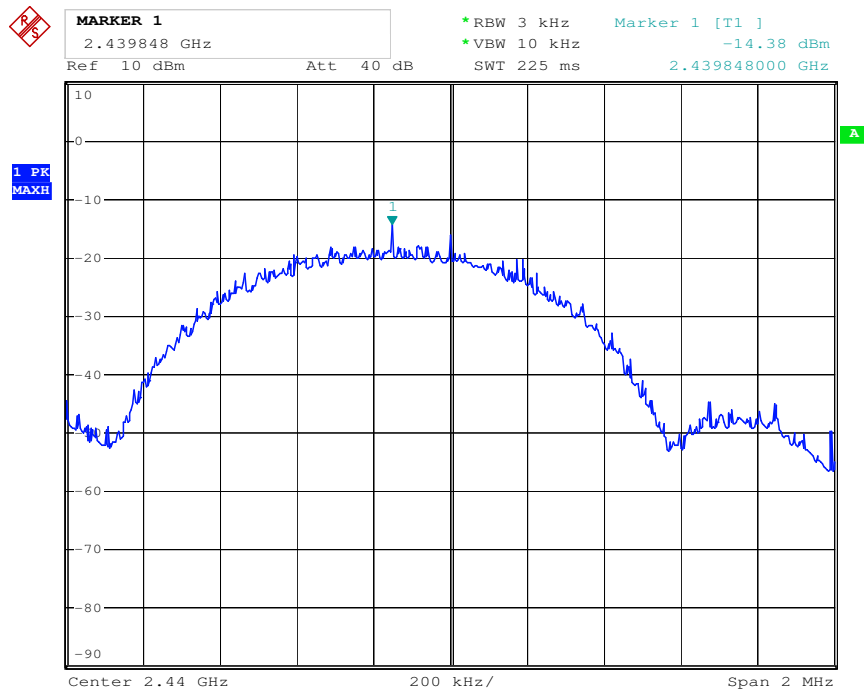
The spectrum analyzer plots are attached as below.

channel 0



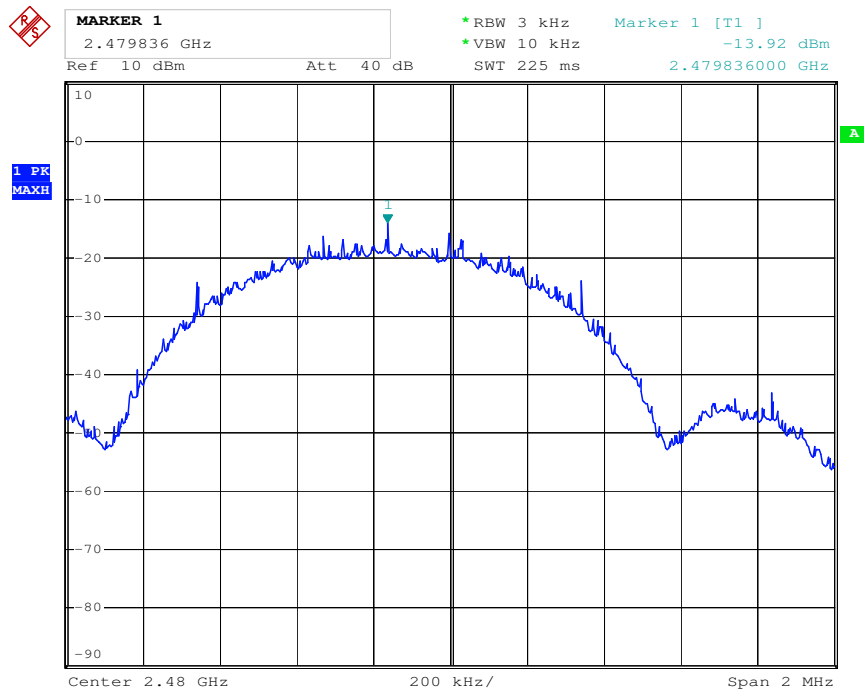
Date: 28.NOV.2016 12:42:07

channel 19



Date: 28.NOV.2016 12:40:52

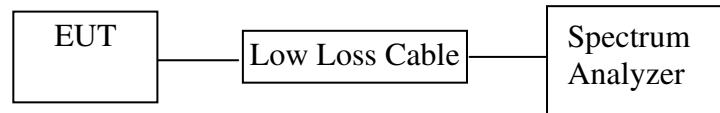
channel 39



Date: 28.NOV.2016 12:44:04

9. BAND EDGE COMPLIANCE TEST

9.1. Block Diagram of Test Setup



(EUT: Micro Sensor Rev E3)

9.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

9.3. EUT Configuration on Measurement

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

9.4.Operating Condition of EUT

9.4.1.Setup the EUT and simulator as shown as Section 8.1.

9.4.2.Turn on the power of all equipment.

9.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

9.5.Test Procedure

Conducted Band Edge:

9.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

9.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

9.5.3. Radiate Band Edge:

9.5.4.The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

9.5.5.The turntable was rotated for 360 degrees to determine the position of maximum emission level.

9.5.6.EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

9.5.7.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

9.5.8.RBW=1MHz, VBW=1MHz

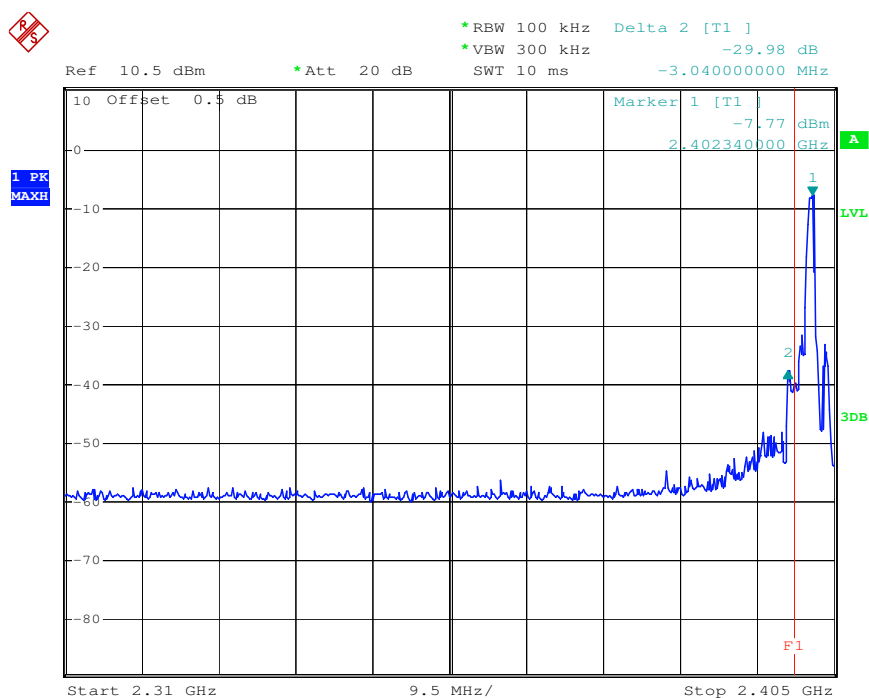
9.5.9.The band edges was measured and recorded.

9.6.Test Result

Pass

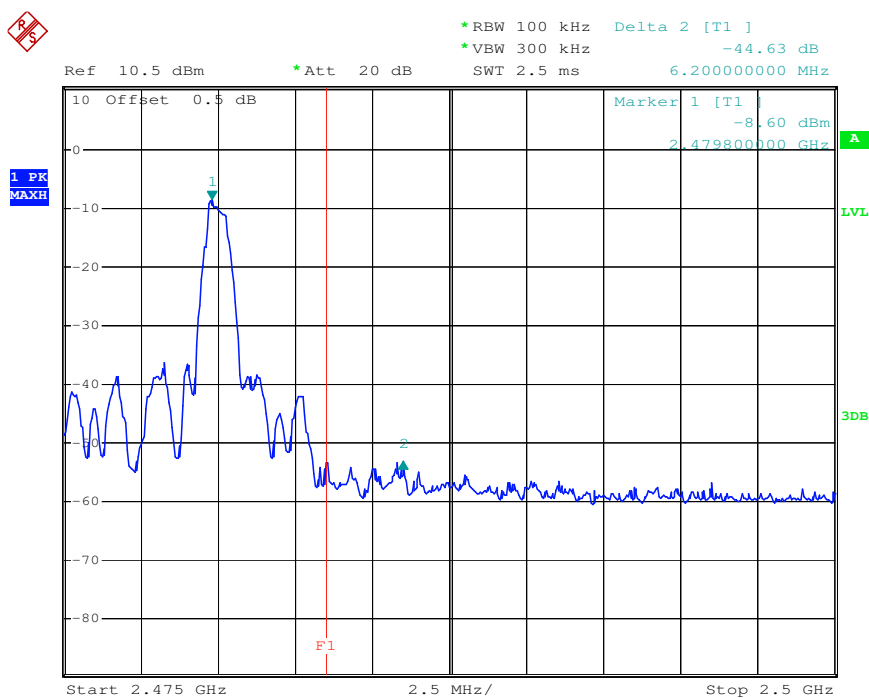
Channel	Frequency	Delta peak to band emission	Limit(dBc)
0	2399.3MHz	29.98	20
39	2486.0MHz	44.63	20

channel 0



Date: 28.NOV.2016 12:38:43

channel 39



Date: 28.NOV.2016 12:34:49

Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. 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

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX modes then measure it.

We select 2402MHz, 2480MHz TX frequency to transmit(GFSK mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 3.All modes of operation were investigated and the worst-case emissions are reported.

Job No.: DING1 #61

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2402MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

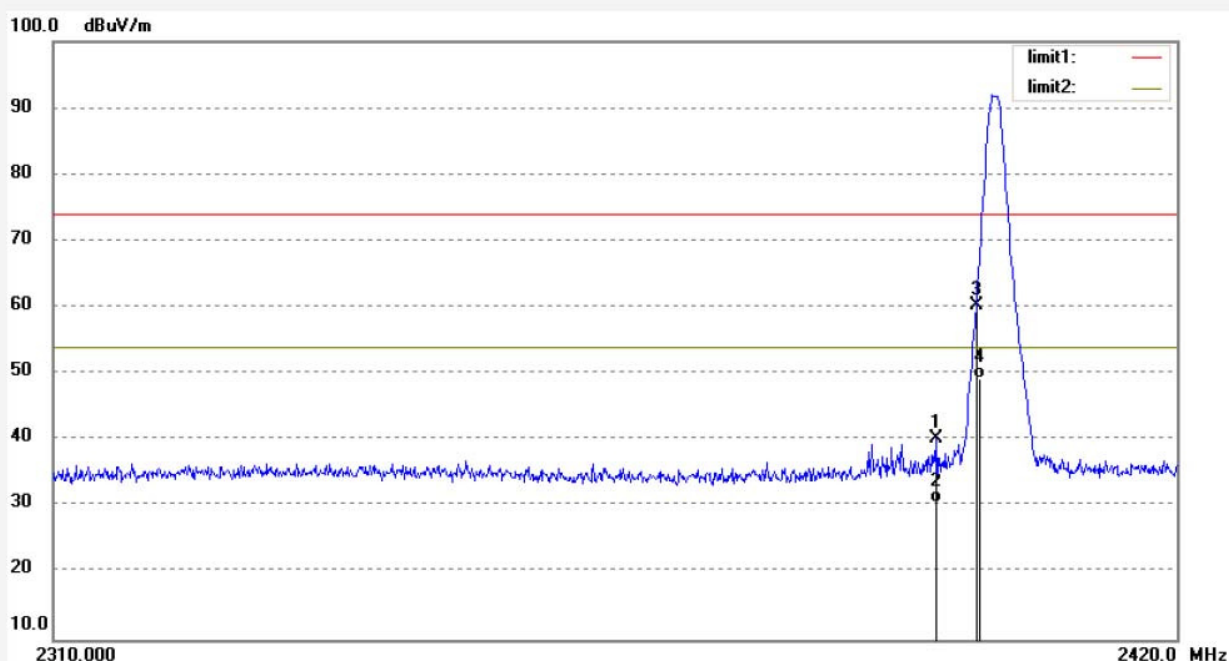
Date: 16/11/28/

Time: 9/42/59

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2396.092	46.14	-5.84	40.30	74.00	-33.70	peak			
2	2396.092	36.49	-5.84	30.65	54.00	-23.35	AVG			
3	2400.000	66.13	-5.80	60.33	74.00	-13.67	peak			
4	2400.000	55.04	-5.80	49.24	54.00	-4.76	AVG			

Job No.: DING1 #62

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2402MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

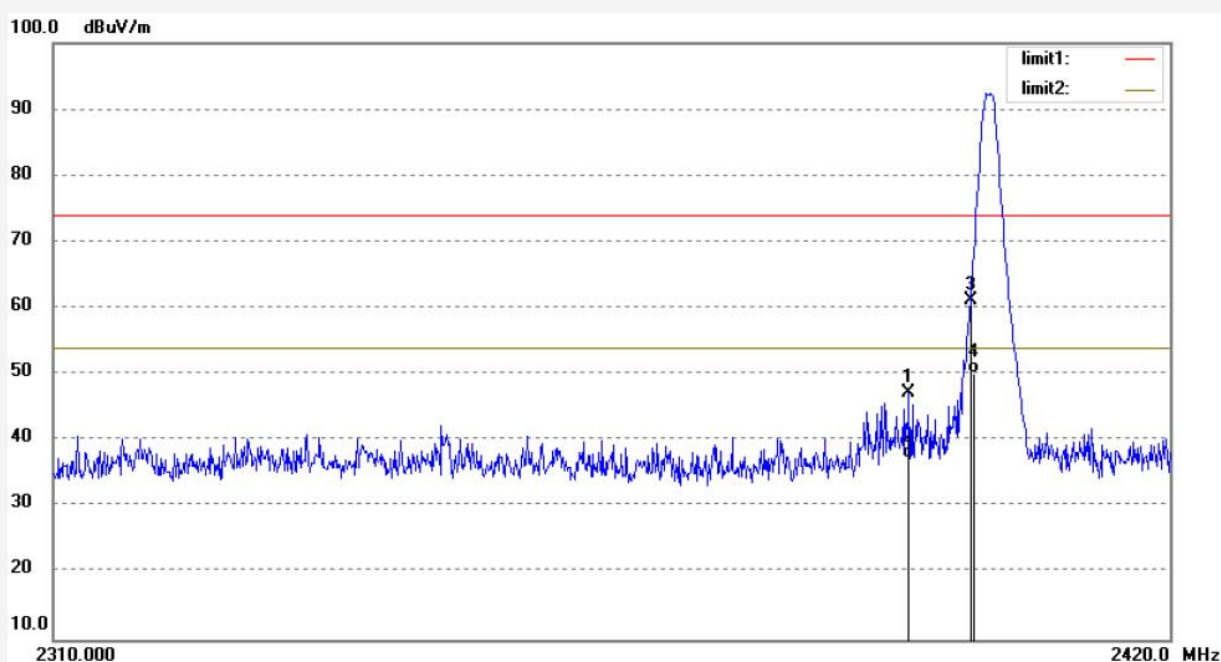
Date: 16/11/28/

Time: 9/45/29

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2393.859	53.17	-5.85	47.32	74.00	-26.68	peak			
2	2393.859	43.26	-5.85	37.41	54.00	-16.59	AVG			
3	2400.000	66.95	-5.80	61.15	74.00	-12.85	peak			
4	2400.000	56.07	-5.80	50.27	54.00	-3.73	AVG			

Job No.: DING1 #63

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2480MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

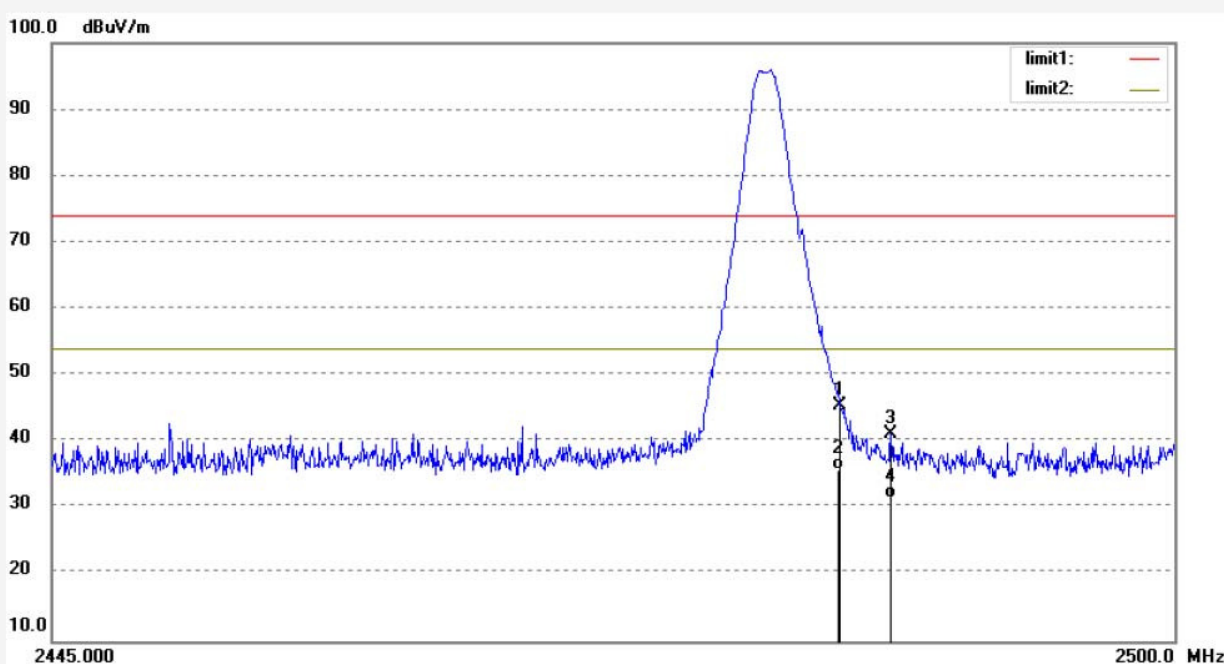
Date: 16/11/28/

Time: 9/48/49

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	51.03	-5.51	45.52	74.00	-28.48	peak			
2	2483.500	41.29	-5.51	35.78	54.00	-18.22	AVG			
3	2485.997	46.72	-5.51	41.21	74.00	-32.79	peak			
4	2485.997	36.94	-5.51	31.43	54.00	-22.57	AVG			

Job No.: DING1 #64

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2480MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

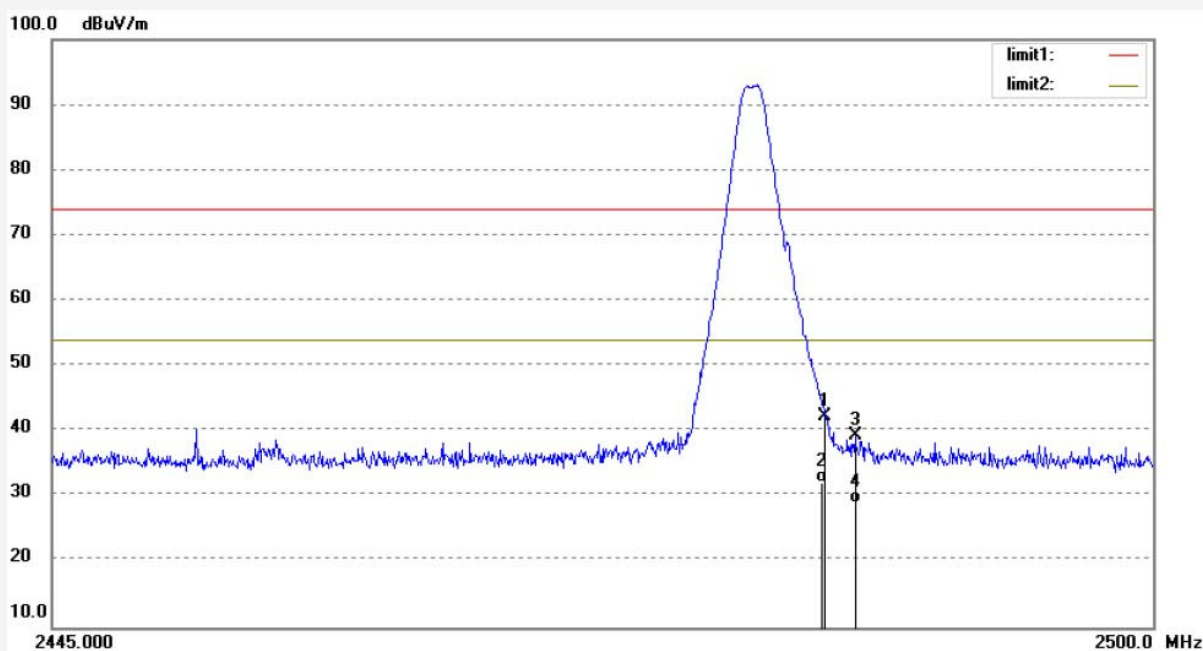
Date: 16/11/28/

Time: 9/50/46

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509

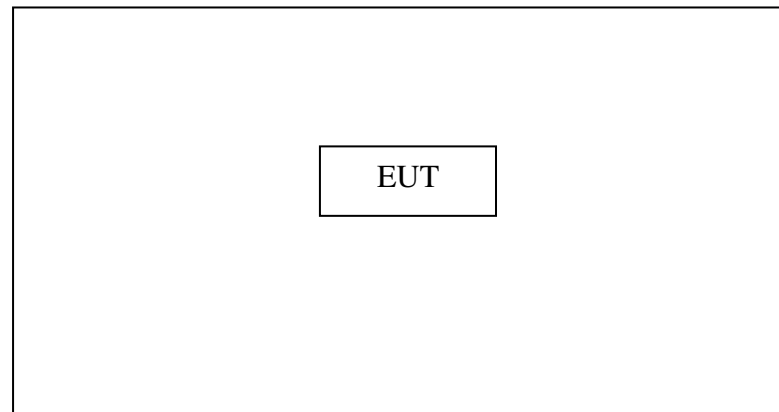


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	47.77	-5.51	42.26	74.00	-31.74	peak			
2	2483.500	37.65	-5.51	32.14	54.00	-21.86	AVG			
3	2484.999	44.97	-5.52	39.45	74.00	-34.55	peak			
4	2484.999	34.58	-5.52	29.06	54.00	-24.94	AVG			

10.RADIATED SPURIOUS EMISSION TEST

10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

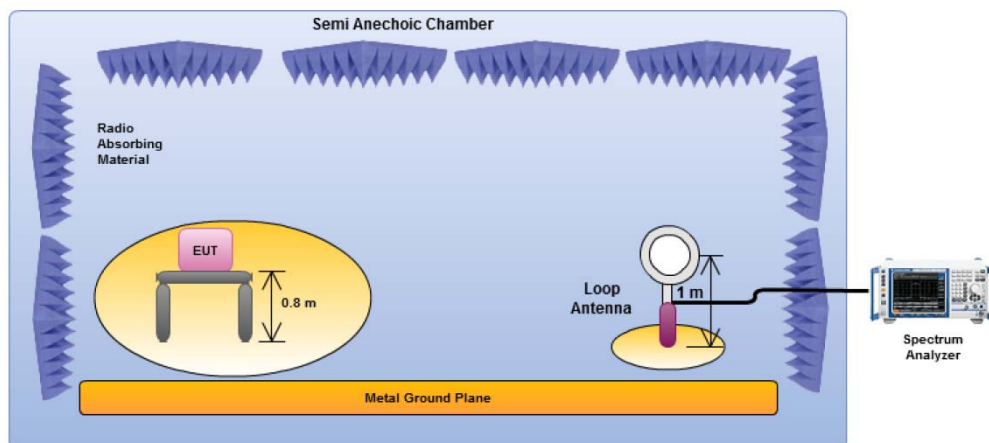


Setup: Transmitting mode

(EUT: Micro Sensor Rev E3)

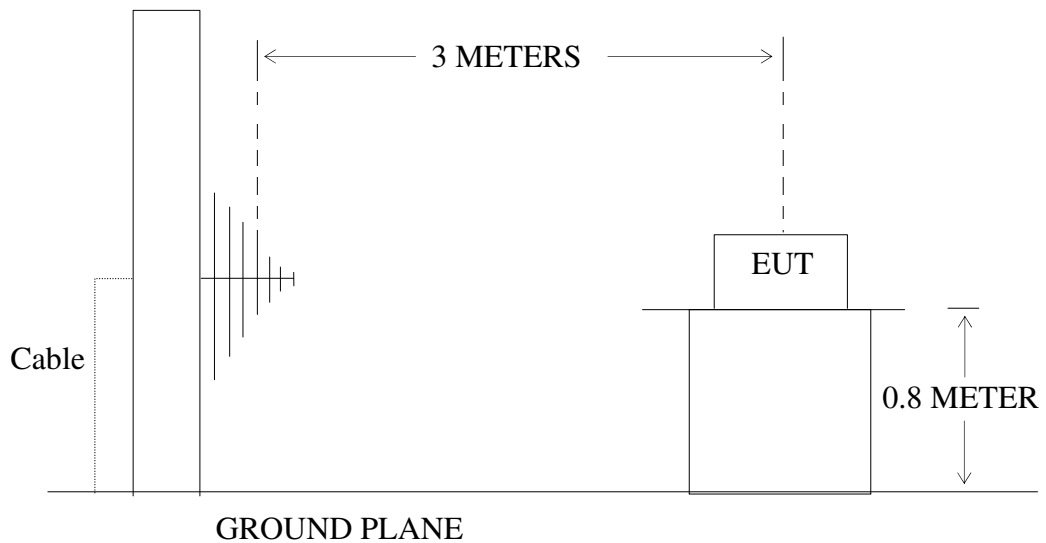
10.1.2.Semi-Anechoic Chamber Test Setup Diagram

Below 30MHz



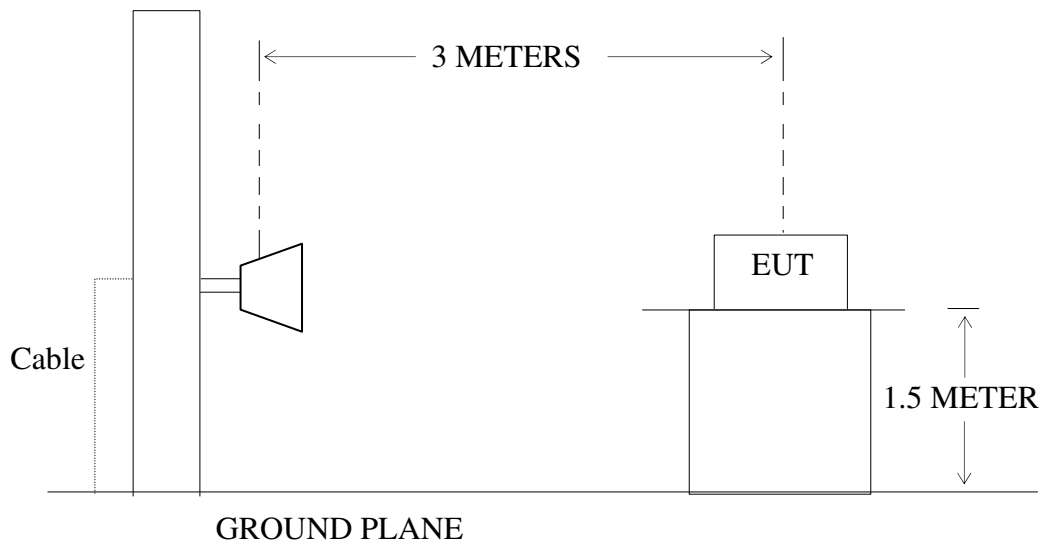
30MHz-1GHz

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



Above 1GHz

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated

emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(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			

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

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.Configuration of EUT on Measurement

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

10.5.Operating Condition of EUT

10.5.1.Setup the EUT and simulator as shown as Section 9.1.

10.5.2. Turn on the power of all equipment.

10.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2480 MHz. We select 2402MHz, 2440MHz, and 2480MHz TX frequency to transmit.

10.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 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 polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 25GHz is checked.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

10.7. The Field Strength of Radiation Emission Measurement Results

PASS.

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

3. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB.



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Job No.: DING1 #43

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2402MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

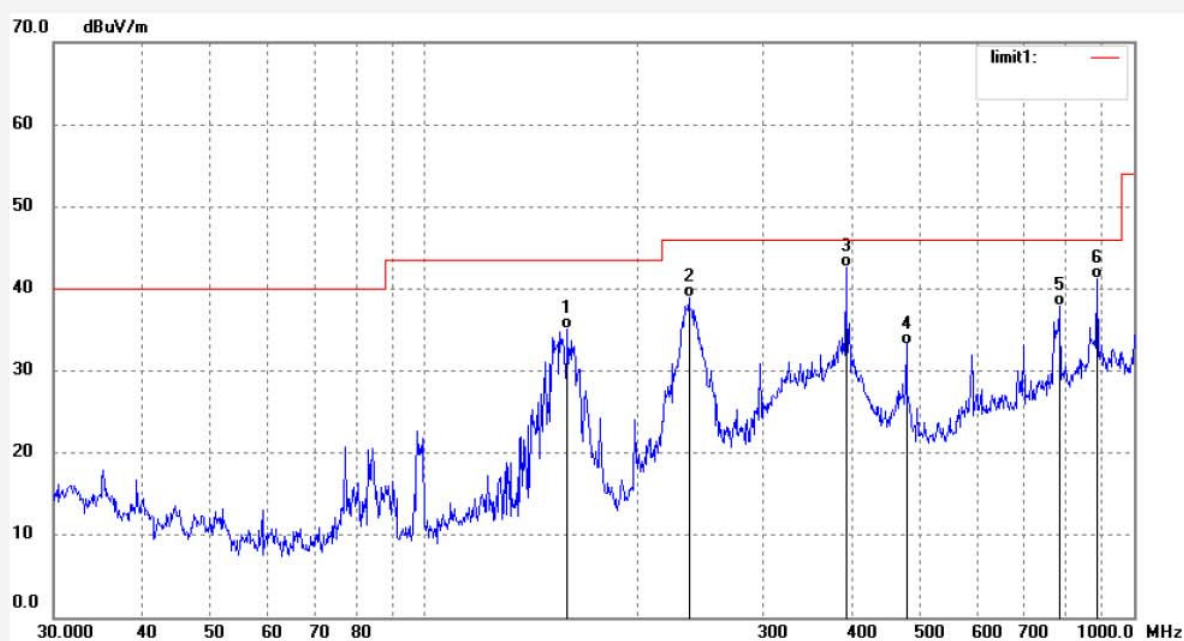
Date: 16/11/28/

Time: 8/34/17

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	159.1983	56.54	-21.45	35.09	43.50	-8.41	QP			
2	235.9622	57.10	-18.23	38.87	46.00	-7.13	QP			
3	392.7376	55.65	-13.10	42.55	46.00	-3.45	QP			
4	478.1394	44.50	-11.25	33.25	46.00	-12.75	QP			
5	784.7129	42.39	-4.45	37.94	46.00	-8.06	QP			
6	887.3978	43.72	-2.54	41.18	46.00	-4.82	QP			



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Job No.: DING1 #44

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2402MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

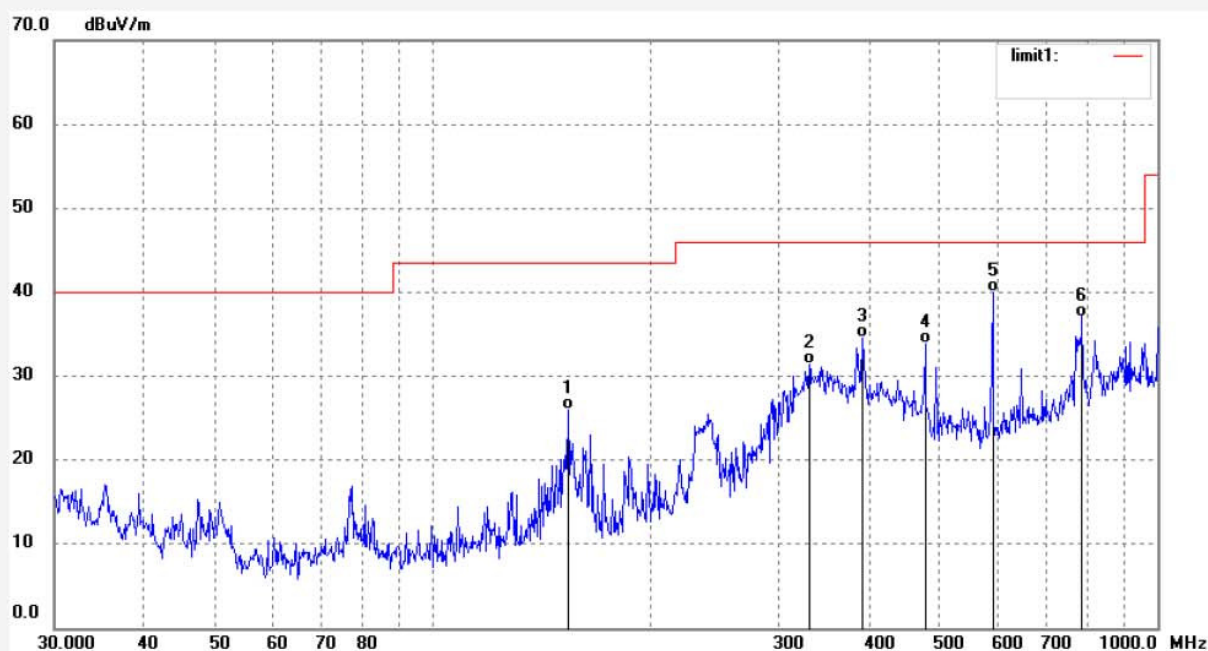
Date: 16/11/28/

Time: 8/35/53

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	153.7017	48.00	-22.02	25.98	43.50	-17.52	QP			
2	330.6220	46.12	-14.63	31.49	46.00	-14.51	QP			
3	391.3601	47.76	-13.12	34.64	46.00	-11.36	QP			
4	478.1394	45.15	-11.25	33.90	46.00	-12.10	QP			
5	592.4290	48.61	-8.59	40.02	46.00	-5.98	QP			
6	787.4749	41.50	-4.40	37.10	46.00	-8.90	QP			



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Job No.: DING1 #45

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2440MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

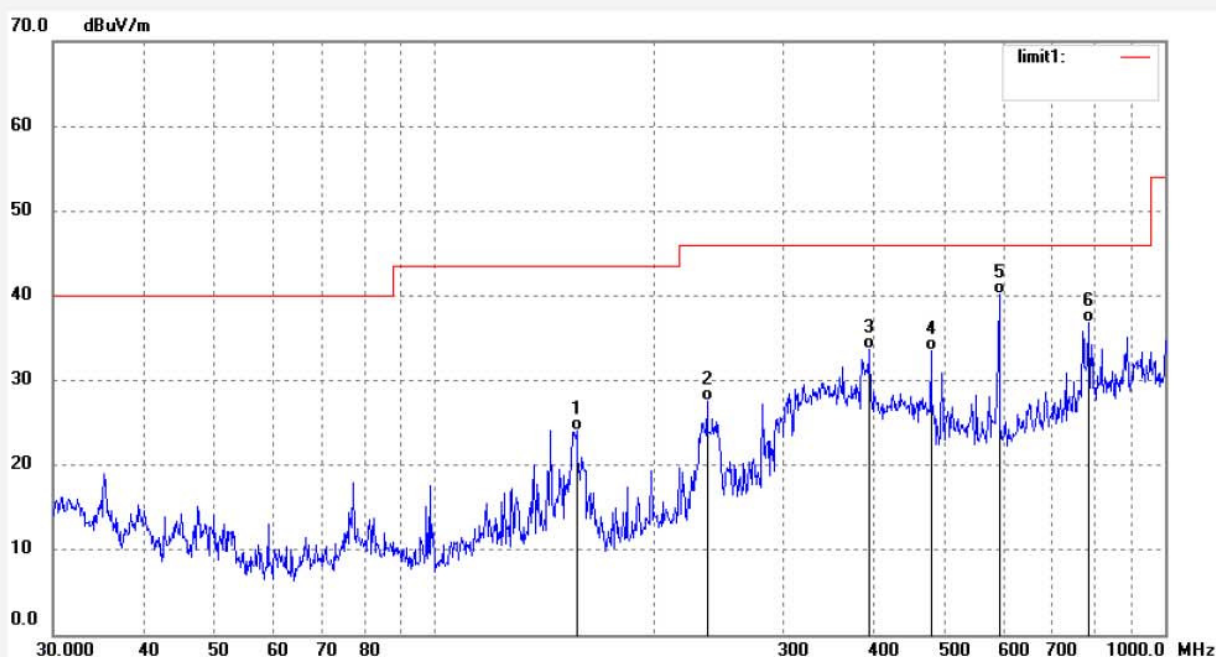
Date: 16/11/28/

Time: 8/38/33

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	156.4259	45.84	-21.76	24.08	43.50	-19.42	QP			
2	235.9621	45.73	-18.23	27.50	46.00	-18.50	QP			
3	394.1198	46.79	-13.09	33.70	46.00	-12.30	QP			
4	478.1394	44.81	-11.25	33.56	46.00	-12.44	QP			
5	592.4289	48.70	-8.59	40.11	46.00	-5.89	QP			
6	784.7128	41.37	-4.45	36.92	46.00	-9.08	QP			

Job No.: DING1 #46

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2440MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

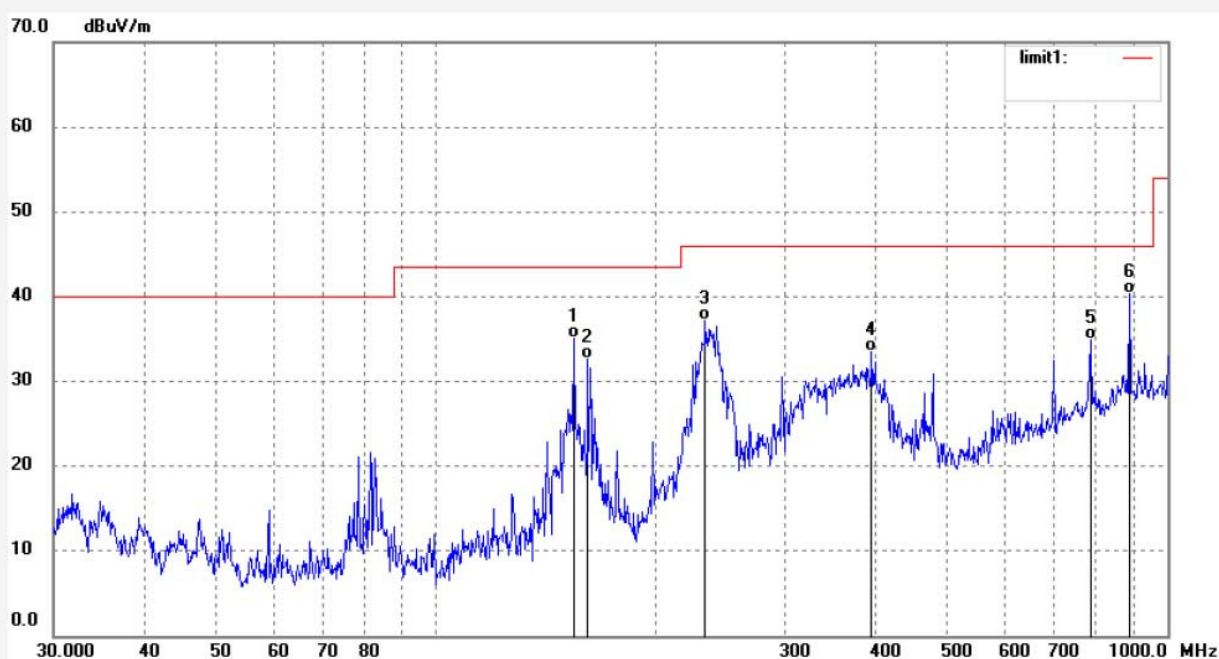
Date: 16/11/28/

Time: 8/39/33

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	154.2428	57.08	-21.98	35.10	43.50	-8.40	QP			
2	161.4515	53.89	-21.21	32.68	43.50	-10.82	QP			
3	233.4881	55.45	-18.24	37.21	46.00	-8.79	QP			
4	394.1199	46.58	-13.09	33.49	46.00	-12.51	QP			
5	784.7129	39.29	-4.45	34.84	46.00	-11.16	QP			
6	887.3978	42.81	-2.54	40.27	46.00	-5.73	QP			

Job No.: DING1 #47

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2480MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

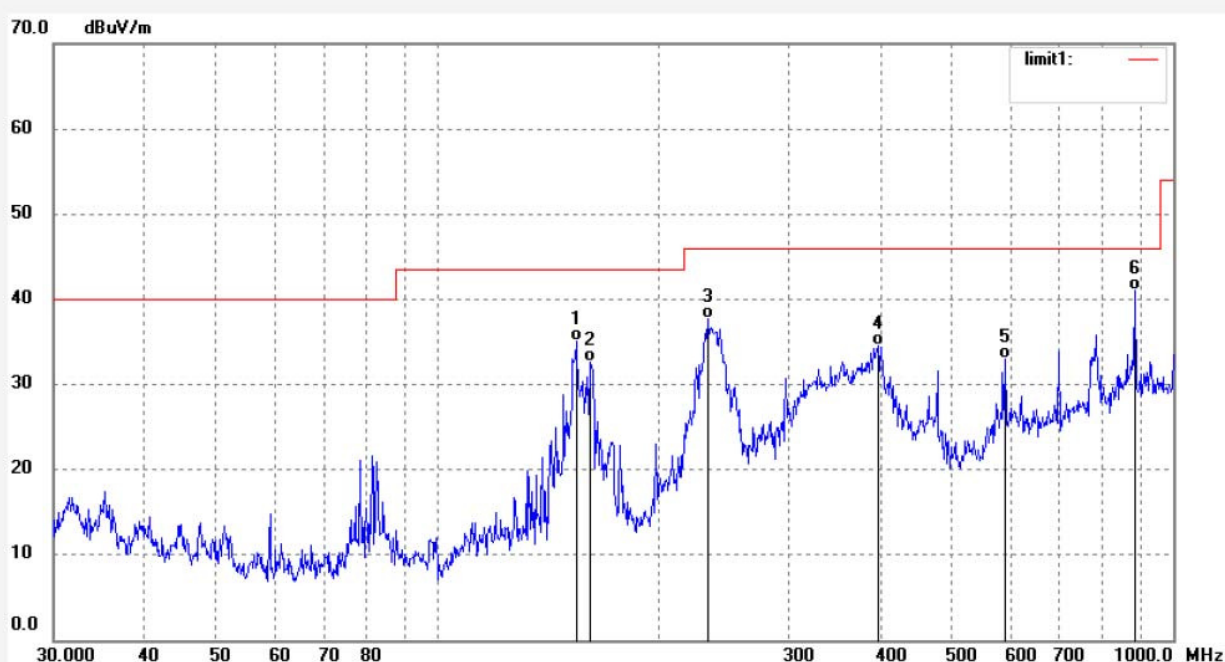
Date: 16/11/28/

Time: 8/40/07

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	154.2427	57.08	-21.98	35.10	43.50	-8.40	QP			
2	161.4515	53.89	-21.21	32.68	43.50	-10.82	QP			
3	232.6690	55.97	-18.25	37.72	46.00	-8.28	QP			
4	396.8992	47.52	-13.04	34.48	46.00	-11.52	QP			
5	590.3510	41.60	-8.63	32.97	46.00	-13.03	QP			
6	887.3977	43.57	-2.54	41.03	46.00	-4.97	QP			

Job No.: DING1 #48

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2480MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

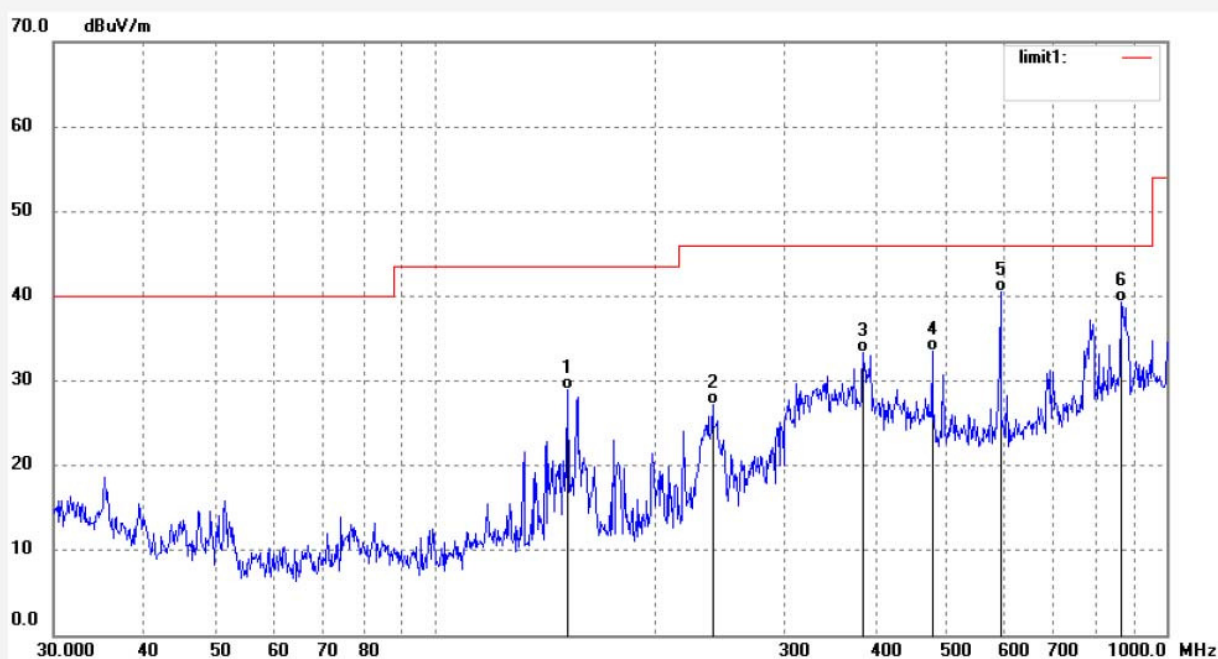
Date: 16/11/28/

Time: 8/41/18

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	151.5567	51.15	-22.22	28.93	43.50	-14.57	QP			
2	239.3020	45.43	-18.18	27.25	46.00	-18.75	QP			
3	384.5447	46.57	-13.21	33.36	46.00	-12.64	QP			
4	478.1394	44.72	-11.25	33.47	46.00	-12.53	QP			
5	592.4290	49.08	-8.59	40.49	46.00	-5.51	QP			
6	868.8860	42.08	-2.88	39.20	46.00	-6.80	QP			

Job No.: DING1 #49

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2402MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

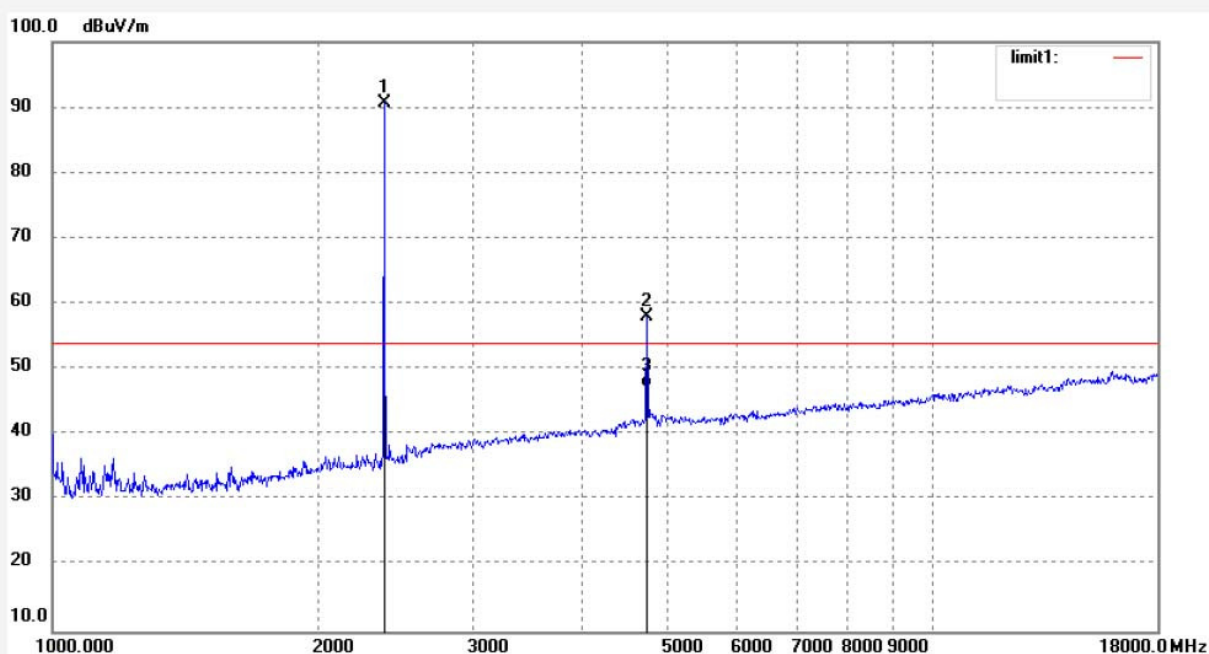
Date: 16/11/28/

Time: 8/46/59

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.719	96.75	-5.98	90.77	114.00	-23.23	peak			
2	4805.957	54.78	3.15	57.93	74.00	-16.07	peak			
3	4805.957	44.16	3.15	47.31	54.00	-6.69	AVG			

Job No.: DING1 #50

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2402MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

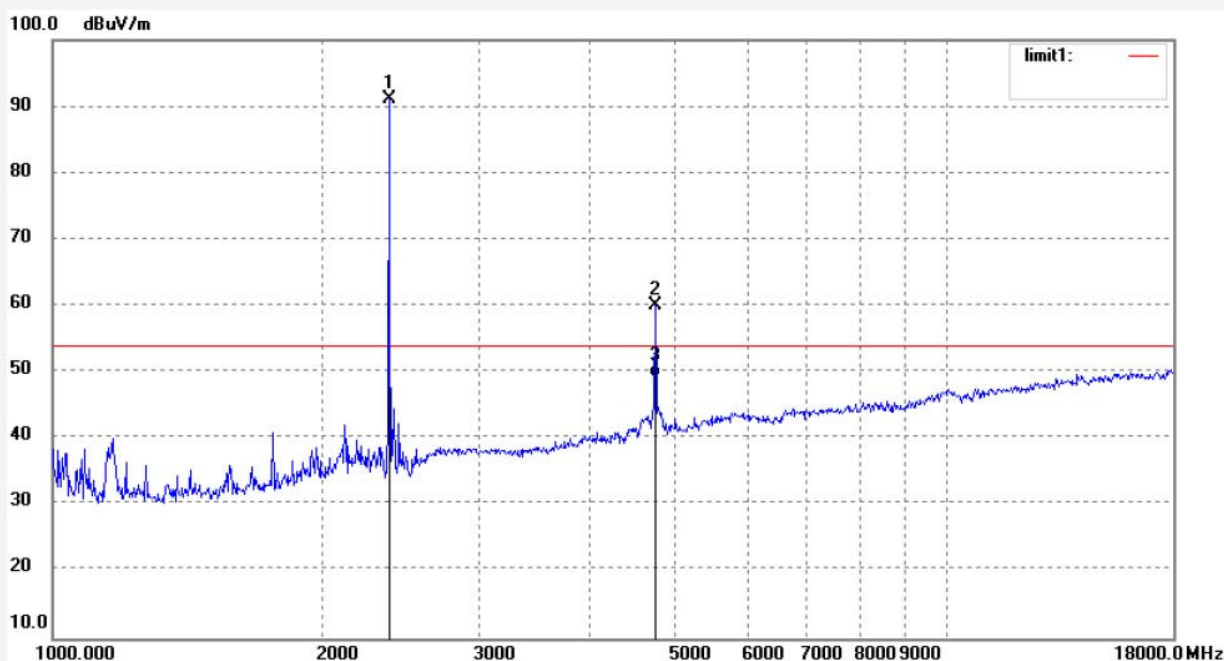
Date: 16/11/28/

Time: 8/49/58

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.719	97.10	-5.98	91.12	114.00	-22.88	peak			
2	4805.957	56.93	3.15	60.08	74.00	-13.92	peak			
3	4805.957	46.02	3.15	49.17	54.00	-4.83	AVG			



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Job No.: DING1 #51

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2440MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

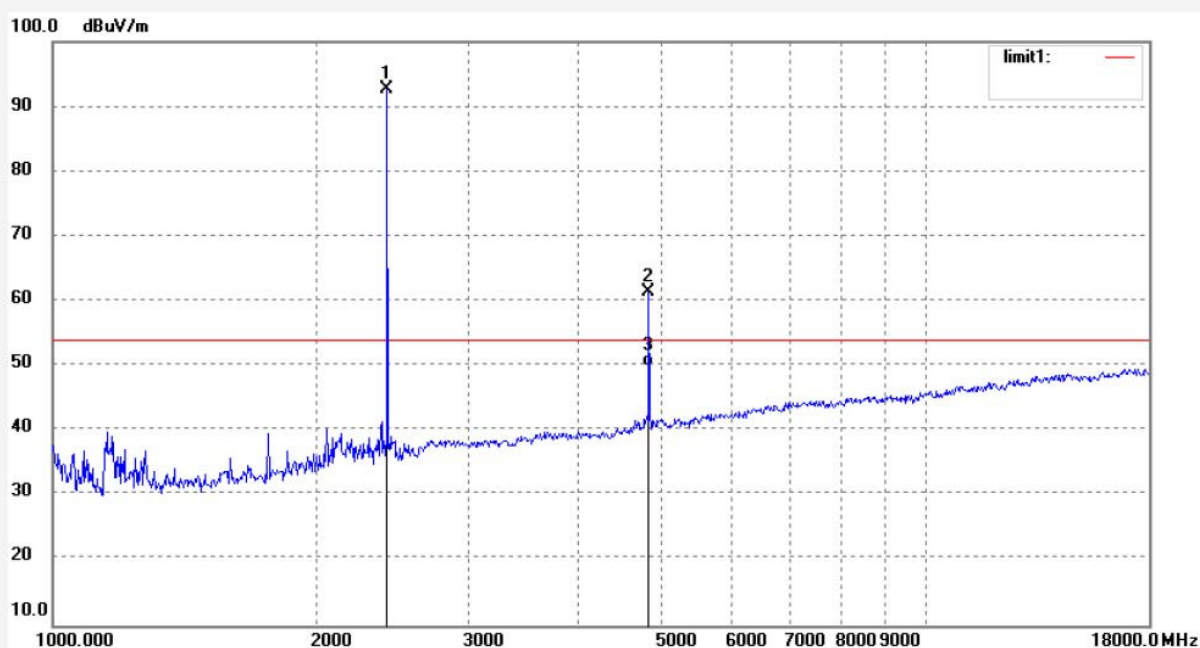
Date: 16/11/28/

Time: 8/52/50

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.621	98.48	-5.72	92.76	114.00	-21.24	peak			
2	4881.324	57.82	3.67	61.49	74.00	-12.51	peak			
3	4881.324	46.27	3.67	49.94	54.00	-4.06	AVG			

Job No.: DING1 #52

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2440MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

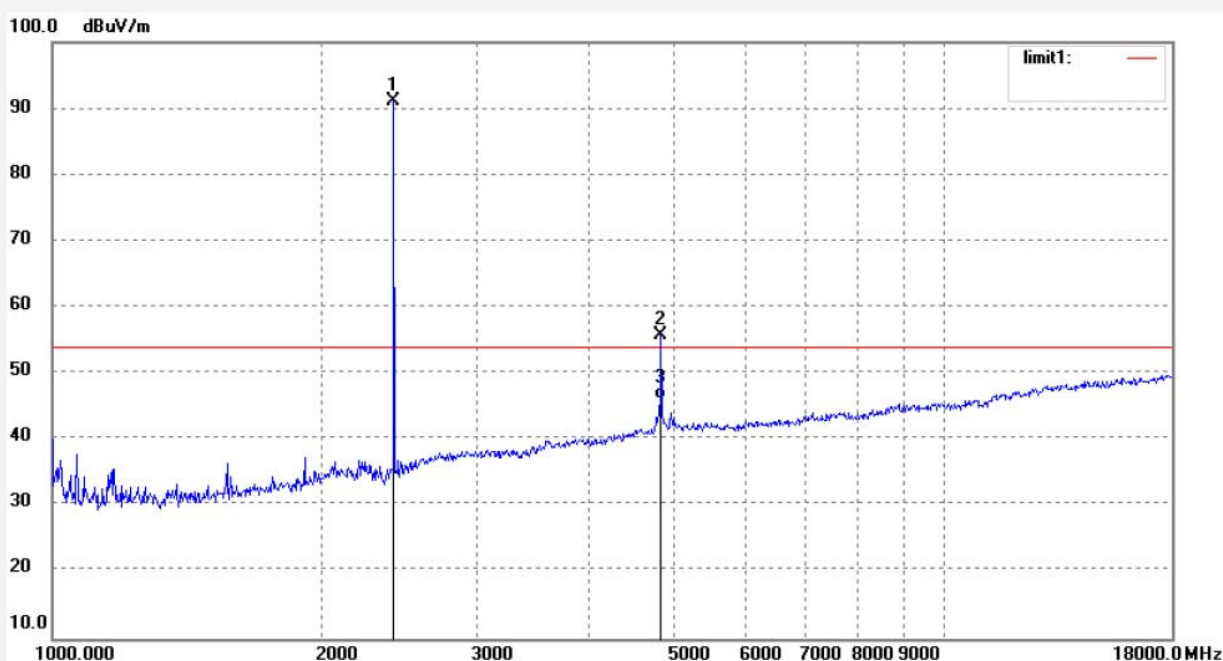
Date: 16/11/28/

Time: 8/57/05

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.621	96.86	-5.72	91.14	114.00	-22.86	peak			
2	4881.324	52.01	3.67	55.68	74.00	-18.32	peak			
3	4881.324	42.39	3.67	46.06	54.00	-7.94	AVG			



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Job No.: DING1 #53

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2480MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Horizontal

Power Source: DC 5V

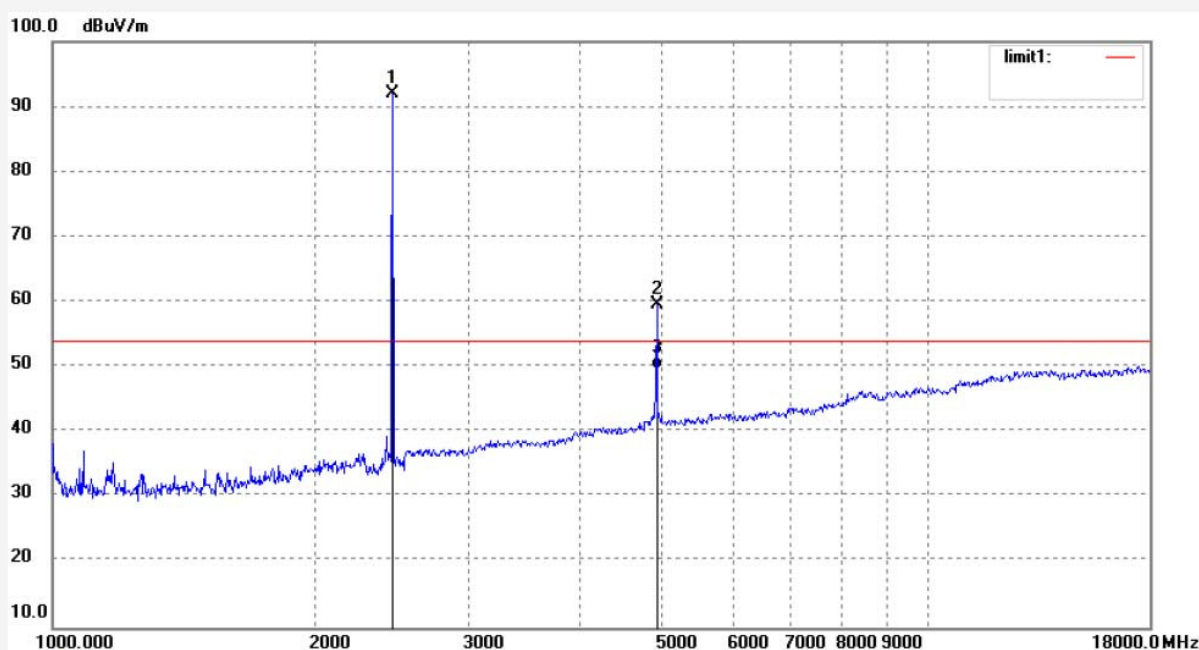
Date: 16/11/28/

Time: 8/59/41

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.034	97.60	-5.55	92.05	114.00	-21.95	peak			
2	4960.444	55.14	4.54	59.68	74.00	-13.32	peak			
3	4960.444	45.18	4.54	49.72	54.00	-4.28	AVG			

Job No.: DING1 #54

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Micro Sensor Rev E3

Mode: TX 2480MHz

Model: AD-0100

Manufacturer: MOTIONIZE

Polarization: Vertical

Power Source: DC 5V

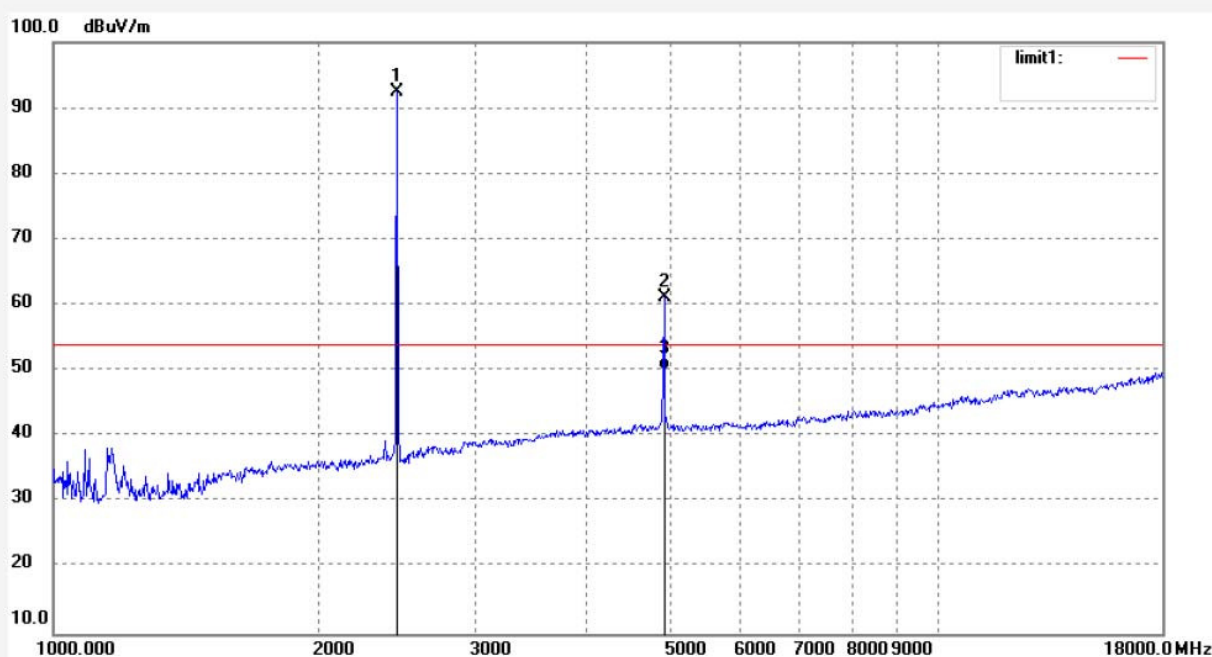
Date: 16/11/28/

Time: 9/02/25

Engineer Signature: DING

Distance: 3m

Note: Report NO:ATE20162509



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.034	98.08	-5.55	92.53	114.00	-21.47	peak			
2	4960.444	56.62	4.54	61.16	74.00	-13.84	peak			
3	4960.444	45.64	4.54	50.18	54.00	-3.82	AVG			

11.ANTENNA REQUIREMENT

11.1.The Requirement

According to Section 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.

11.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0 dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna