

APPLICATION FOR VERIFICATION  
On Behalf of  
THAMES & KOSMOS, LLC.

Sensor Alive

Model No.: 620486

FCC ID: 2AIAE-620486  
IC: 21634-620486

Prepared for : THAMES & KOSMOS, LLC  
Address : 301 FRIENDSHIP STREET, PROVIDENCE, RI 02903,  
United States

Prepared by : Shenzhen Accurate Technology Co., Ltd.  
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Report No. : ATE20181395  
Date of Test : June 08, 2018-July 21, 2018  
Date of Report : July 26, 2018

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## Test Report Declaration

Applicant : THAMES & KOSMOS, LLC  
Address : 301 FRIENDSHIP STREET, PROVIDENCE, RI 02903, United States  
Factory : NOA Labs Ltd.  
Address : 0712, Building C, Huangdu Guangchang, 3008 Yitian Road, Shenzhen, China.  
Product : Sensor Alive  
Model No. : 620486  
Trade name : KOSMOS (Germany) / THAMES & KOSMOS (USA)

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C 15.225**

**ANSI C63.10: 2013**

**RSS-210 Issue 9 August 2016**

**RSS-Gen Issue 5 April 2018**

The device described above is tested by Shenzhen 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 15.225 and RSS-210. The measurement results are contained in this test report and Shenzhen 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 Shenzhen Accurate Technology Co., Ltd.

Date of Test :

June 08, 2018-July 21, 2018

Date of Report:

July 26, 2018

Prepared by :

(Tim Zhang, Engineer)

Approved & Authorized  
Signer :

(Sean Liu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

EUT	:	Sensor Alive
Model Number	:	620486
HVIN	:	620486-00
Trade Name	:	KOSMOS (Germany) / THAMES & KOSMOS (USA)
NFC's Frequency Range	:	13.56MHz
Number of Channels	:	1
Max Antenna Gain of NFC	:	0.5dBi
NFC Antenna type	:	PCB Antenna
Power Supply	:	DC 3V via Battery
Modulation mode	:	ASK for NFC
Applicant	:	THAMES & KOSMOS, LLC
Address	:	301 FRIENDSHIP STREET, PROVIDENCE, RI 02903, United States
Manufacturer	:	NOA Labs Ltd.
Address	:	0712, Building C, Huangdu Guangchang, 3008 Yitian Road, Shenzhen, China
Date of sample received	:	June 08, 2018
Date of Test	:	June 08, 2018-July 21, 2018

### 1.2. Special Accessory and Auxiliary Equipment

Mobile phone	Manufacturer: Huawei
	M/N: DUK-AL20
	IMEI: 865579035006607

### 1.3. Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358
		Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2
		Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193
		Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd.
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

### 1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

## 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment**

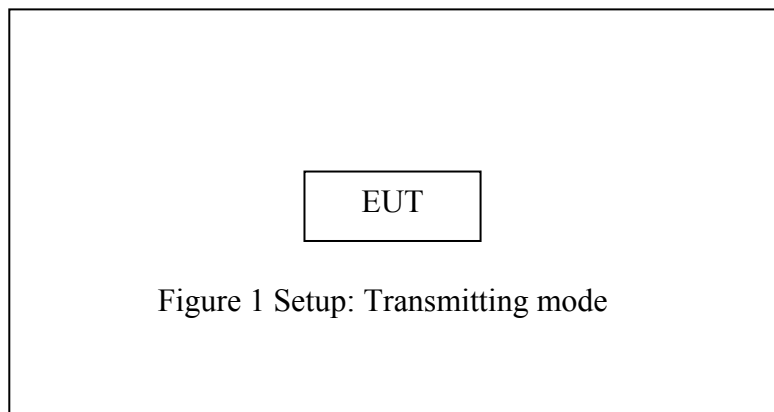
Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 06, 2018	Jan. 05, 2019
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 06, 2018	Jan. 05, 2019
Spectrum Analyzer	Rohde&Schwarz	FSV-40	101495	Jan. 06, 2018	Jan. 05, 2019
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 06, 2018	Jan. 05, 2019
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 06, 2018	Jan. 05, 2019
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 06, 2018	Jan. 05, 2019
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 06, 2018	Jan. 05, 2019
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 06, 2018	Jan. 05, 2019
Open Switch and Control Unit	Rohde&Schwarz	OSP120 + OSP-B157	101244 + 100866	Jan. 06, 2018	Jan. 05, 2019
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 06, 2018	Jan. 05, 2019
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 06, 2018	Jan. 05, 2019
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 06, 2018	Jan. 05, 2019
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 06, 2018	Jan. 05, 2019

### 3. OPERATION OF EUT DURING TESTING

#### 3.1. Operating Mode

The mode is used: **NFC Transmitting mode**  
Operate Channel: 13.56MHz

#### 3.2. Configuration and peripherals





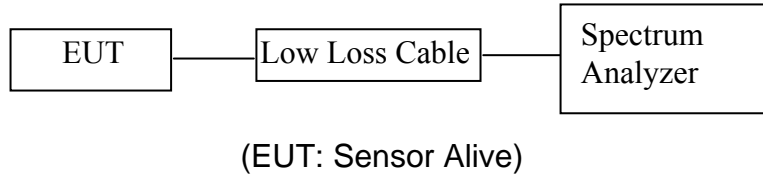
#### 4. TEST PROCEDURES AND RESULTS

FCC&IC Rules	Description of Test	Result
Section 15.215(c)	Emission Bandwidth	Compliant
Section 15.225	Field Strength of Fundamental Emissions and Spectrum Mask	Compliant
Section 15.225(d) Section 15.209 RSS-210 Section B.6 (a)	Radiated Spurious Emission Test	Compliant
Section 15.207 RSS-Gen 8.8	AC Power Line Conducted Emission Test	N/A
RSS-Gen Section 6.7	99% Occupied Bandwidth	Compliant
Section 15.225(e) RSS-210 Section B.6	Frequency Stability	Compliant
Section 15.203 RSS-Gen 6.8	Antenna Requirement	Compliant

Note: The power supply mode of the EUT is DC 3V, According to the FCC standard requirements, conducted emission is not applicable.

## 5. 20DB BANDWIDTH MEASUREMENT

### 5.1. Block Diagram of Test Setup



### 5.2. The Requirement For Section 15.225 and 15.215(c)

Intentional radiators must be designed to ensure that the 20db bandwidth of the emissions in the specific band(13.110-14.010MHz).

### 5.3. 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.

### 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 TX modes measure it. The TX frequency is 13.56MHz.

### 5.5. Test Procedure

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

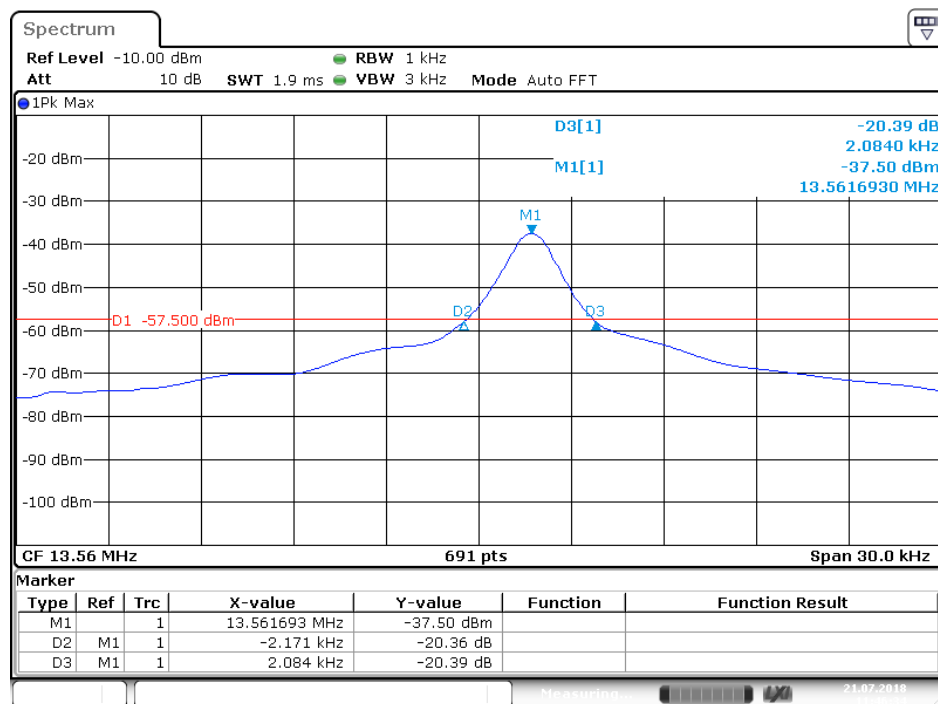
5.5.2. Set RBW of spectrum analyzer to 1 kHz and VBW to 3 kHz.

5.5.3. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

## 5.6. Test Result

Channel Frequency (MHz)	20dB Bandwidth (kHz)	PASS/FAIL
13.56	4.255	PASS

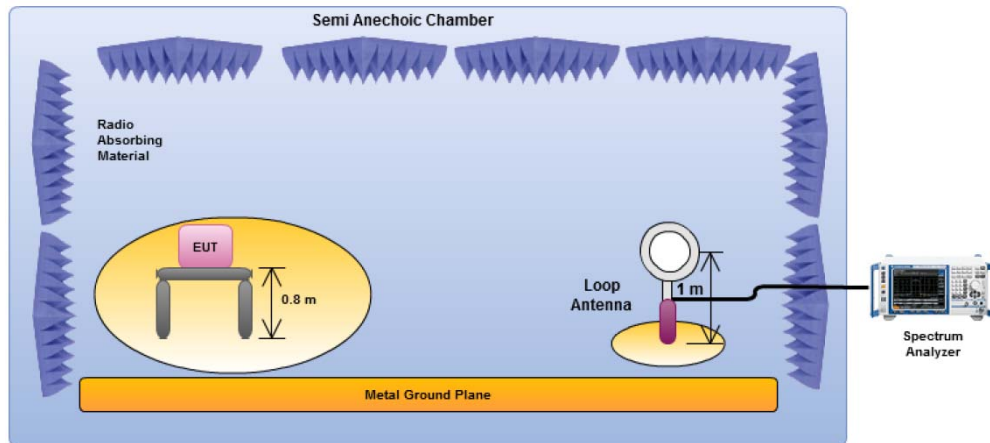
The spectrum analyzer plots are attached as below.



Date: 21.JUL.2018 11:46:34

## 6. FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND SPECTRUM MASK

### 6.1. Block Diagram of Test Setup



### 6.2. The Requirement For Section 15.225

Field Strength of Fundamental Emissions					
Emissions	(uV/m)@30m	(dBuV/m)@30m	(dBuV/m)@10m	(dBuV/m)@3m	(dBuV/m)@1m
Fundamental	15848	84.0	103.1	124.0	143.1

Quasi peak measurement of the fundamental.

Spectrum Mask					
Freq. of Emission (MHz)	(uV/m)@30m	(dBuV/m)@30m	(dBuV/m)@10m	(dBuV/m)@3m	(dBuV/m)@1m
1.705~13.110	30	29.5	48.6	69.5	88.6
13.110~13.410	106	40.5	59.6	80.5	99.6
13.410~13.553	334	50.5	69.6	90.5	109.6
13.553~13.567	15848	84.0	103.1	124.0	143.1
13.567~13.710	334	50.5	69.6	90.5	109.6
13.710~14.010	106	40.5	59.6	80.5	99.6
14.010~30.000	30	29.5	48.6	69.5	88.6

### 6.3. The Requirement For RSS-210 Section B.6 Band 13.110-14.010 MHz

The field strength of any emission shall not exceed the following limits:

- (a) 15.848 mV/m (84 dBuV/m) at 30 m, within the band 13.553-13.567 MHz;

#### 6.4.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.

#### 6.5.Operating Condition of EUT

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

6.5.2.Turn on the power of all equipment.

6.5.3.Let the EUT work in TX modes measure it. The TX frequency is 13.56MHz.

#### 6.6.Test Procedure

6.6.1.The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power. EUT is set 3m away from the receiving antenna

6.6.2.Set RBW of spectrum analyzer to 10 kHz and VBW to 30 kHz.

6.6.3.For radiated measurement. Loop antenna was rotated about the horizontal and vertical axis and the equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted field strength level.

## 6.7. Test Result

Frequency(MHz)	Fundamental (dBμV/m)@3m	Polarization	Margin(dB)	Limit (dBμV/m)@3m
13.56	55.62	Z	-68.38	124.00
Result		Complied		

Note: We tested 3 polarization directions(X,Y,Z) and recorded the worst mode values.

The spectrum analyzer plots are attached as below.

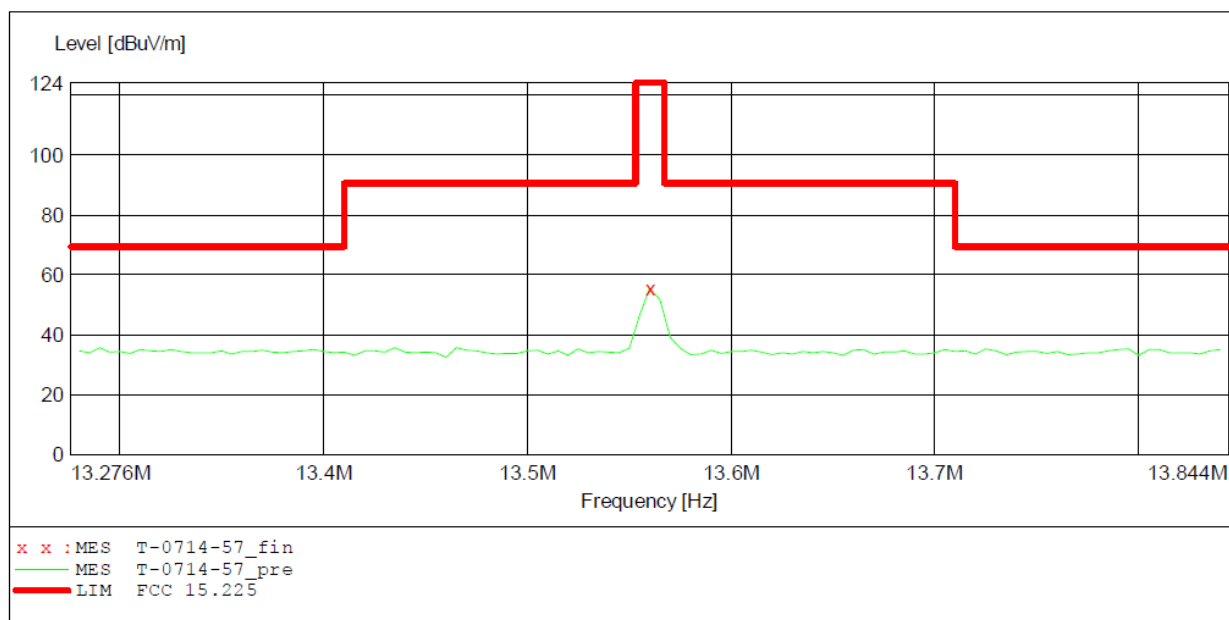
### ACCURATE TECHNOLOGY CO.,LTD

#### FCC Class B 3m Radiated

EUT: Sensor Alive M/N:620486  
Applicant: THAMES & KOSMOS, LLC.  
Operating Condition: TX  
Test Site: 2#Chamber  
Operator: WADE  
Test Specification: DC 3V  
Comment: EUT:MONSTER MAKER(GERMANY)/SENSORS ALIVE(USA)  
Start of Test: 2018-7-14 /

#### SCAN TABLE: "REFCC18 9K-30MHz Fin"

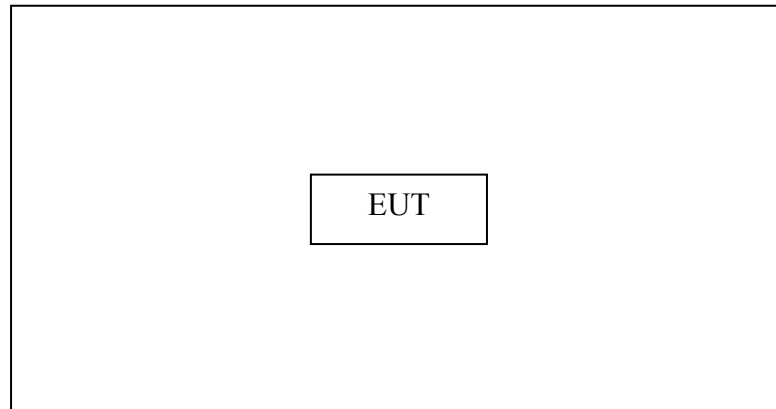
Short Description:			SUB STD VTERM2 1.70			
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
9.0 kHz	150.0 kHz	200.0 Hz	QuasiPeak	1.0 s	200 Hz	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



## 7. RADIATED EMISSION MEASUREMENT

### 7.1. Block Diagram of Test Setup

#### 7.1.1. Block diagram of connection between the EUT and peripherals

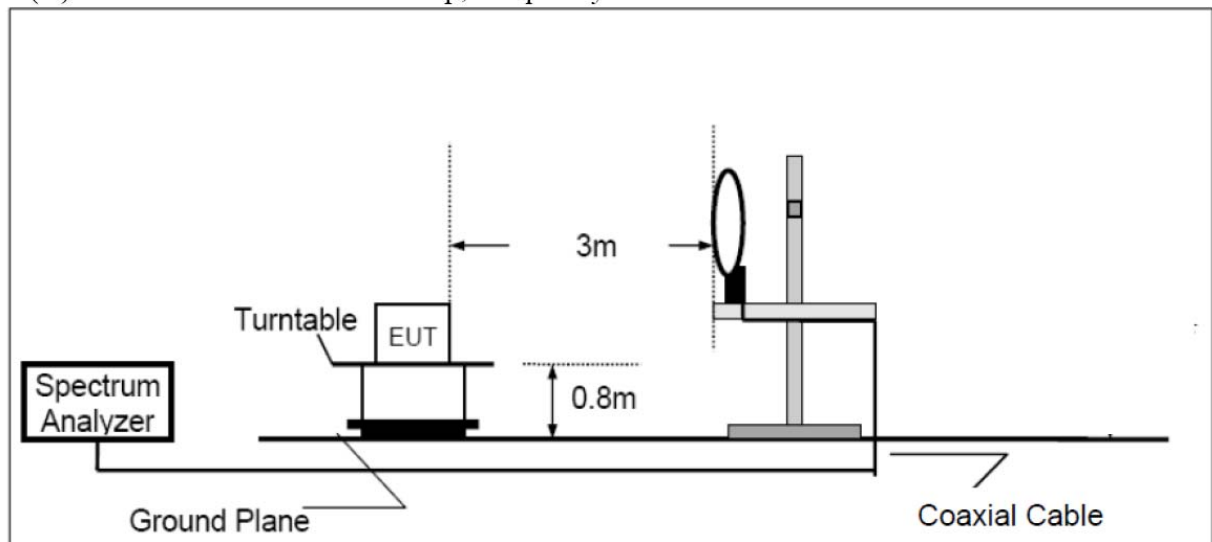


Setup: Transmitting mode

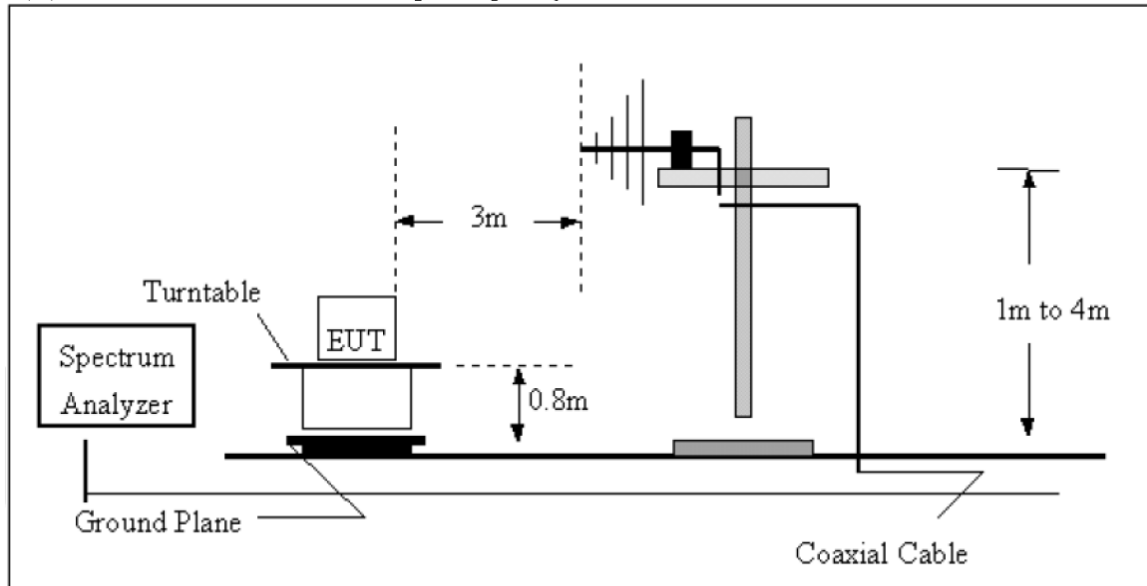
(EUT: Sensor Alive)

### 7.2. TEST CONFIGURATION

#### (A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



### 7.3. Radiated Emission Limit

Transmitter Radiated Unwanted Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

### 7.4. EUT Configuration on Measurement

The equipment is 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.



## 7.5. Operating Condition of EUT

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

7.5.2. Turn on the power of all equipment.

7.5.3. Let the EUT work in test mode and measure it.

## 7.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground (Below 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.

From 9kHz to 30MHz at distance 3m The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

From 30MHz to 1000MHz at distance 3m The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The final measurement will be performed with an EMI Receiver set to Quasi Peak detector for the frequency bands 9kHz to 90kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209(d)(2).

The final level, expressed in dBuV/m, is arrived at by taking the reading from the EMI receiver (Level dBuV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant FCC limit. The resolution bandwidth during the measurement is as follows:

9kHz – 150kHz: ResBW:200Hz

150kHz – 30MHz: ResBW:9kHz

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 1000MHz.

## 7.7. Radiated Emission Noise Measurement Result

**PASS.**

The spectrum analyzer plots are attached as below.

## ACCURATE TECHNOLOGY CO., LTD

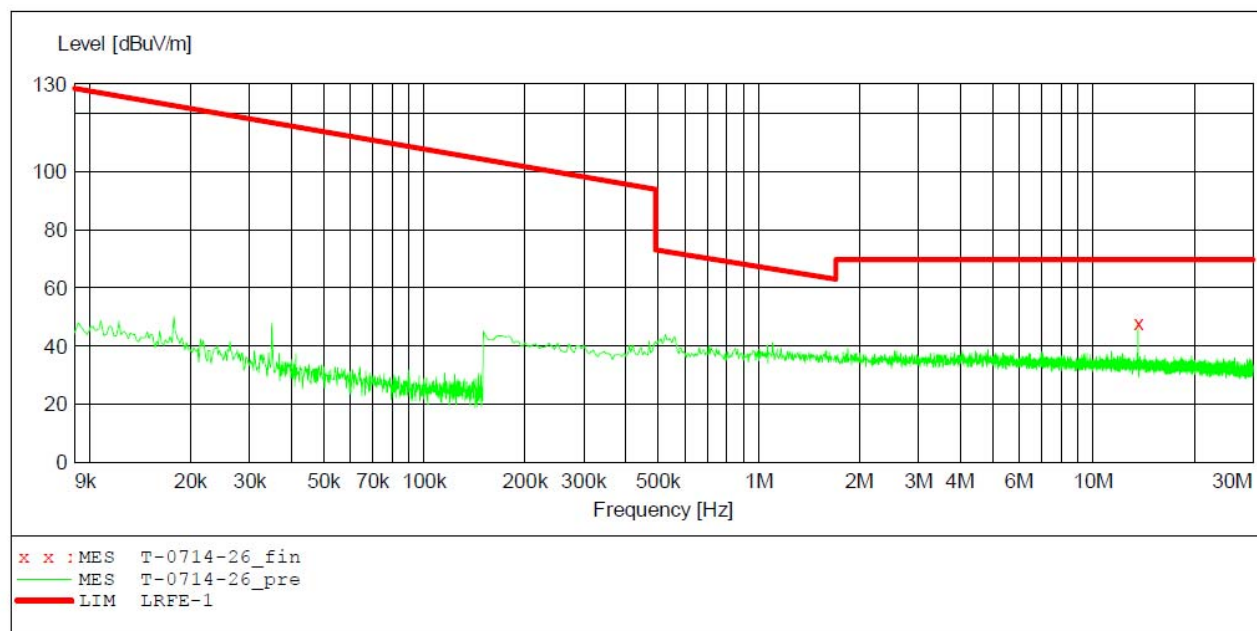
### FCC Class B 3m Radiated

EUT: Sensor Alive M/N:620486  
 Applicant: THAMES & KOSMOS, LLC.  
 Operating Condition: TX  
 Test Site: 2#Chamber  
 Operator: WADE  
 Test Specification: DC 3V  
 Comment: EUT:MONSTER MAKER(GERMANY)/SENSORS ALIVE(USA)  
 Start of Test: 2018-7-14 /

### SCAN TABLE: "LFRE(E) 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	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



### MEASUREMENT RESULT: "T-0714-26\_fin"

2018-7-14

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
13.560000	48.09	21.0	/	/	PK	/	/	X

## ACCURATE TECHNOLOGY CO., LTD

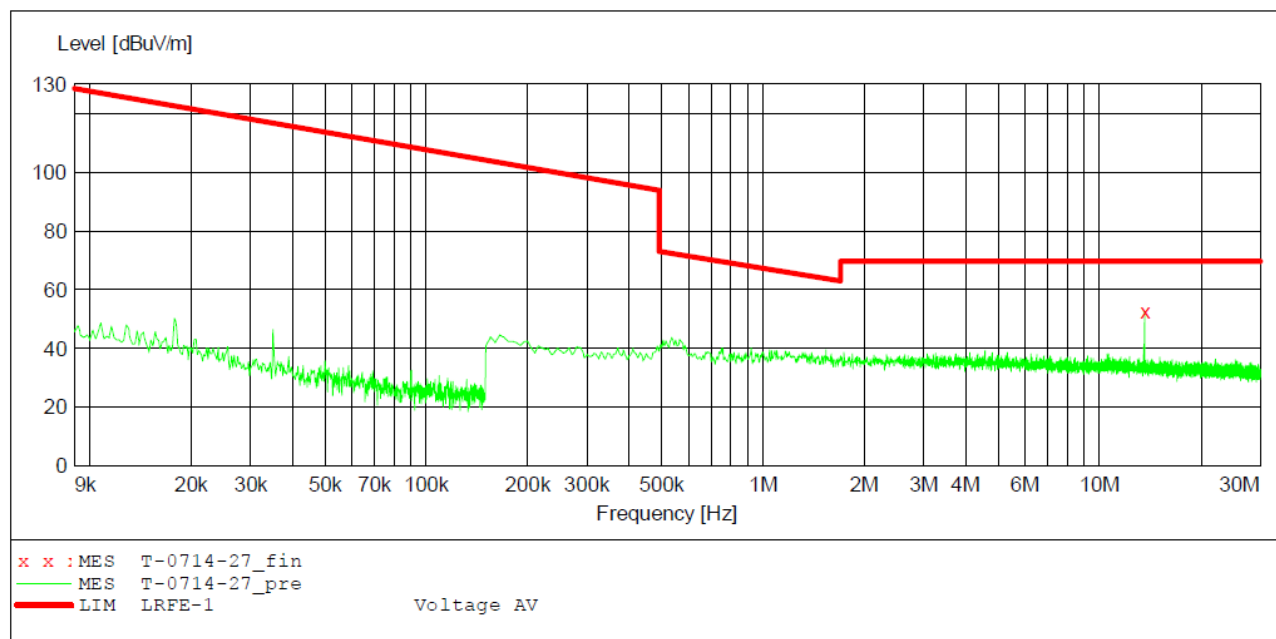
### FCC Class B 3m Radiated

EUT: Sensor Alive M/N:620486  
 Applicant: THAMES & KOSMOS, LLC.  
 Operating Condition: TX  
 Test Site: 2#Chamber  
 Operator: WADE  
 Test Specification: DC 3V  
 Comment: EUT:MONSTER MAKER (GERMANY) /SENSORS ALIVE (USA)  
 Start of Test: 2018-7-14 /

### SCAN TABLE: "LFRE(E) 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	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



### MEASUREMENT RESULT: "T-0714-27\_fin"

2018-7-14

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
13.560000	52.47	21.0	/	/	PK	/	/	Y

## ACCURATE TECHNOLOGY CO., LTD

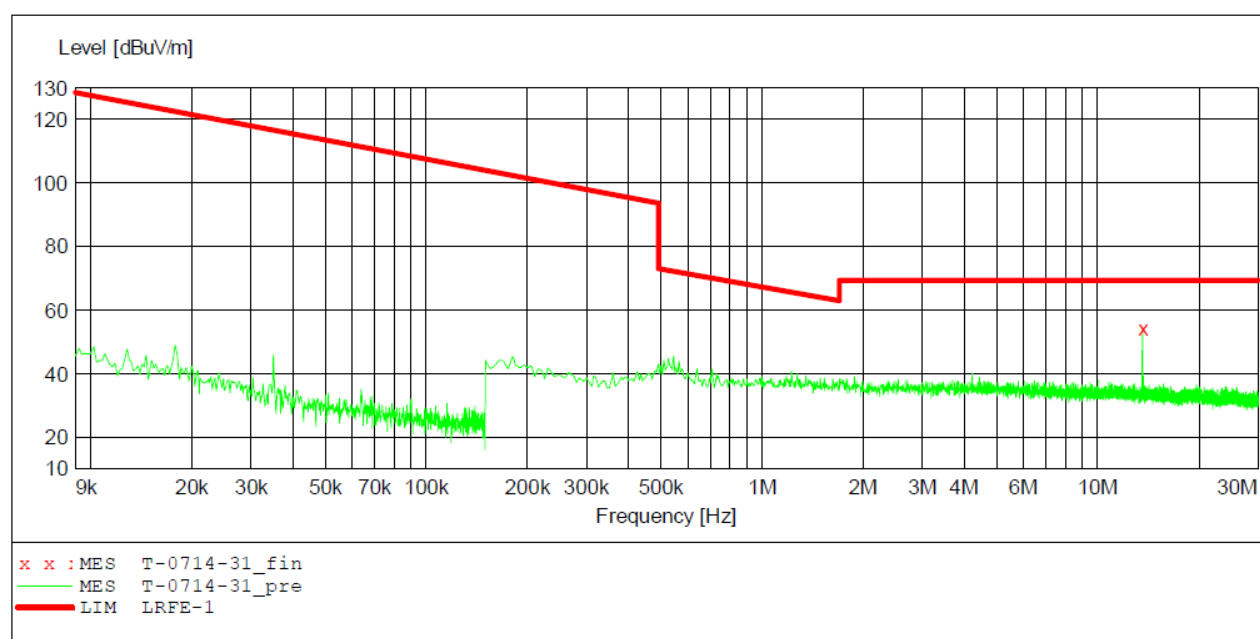
### FCC Class B 3m Radiated

EUT: Sensor Alive M/N:620486  
 Applicant: THAMES & KOSMOS, LLC.  
 Operating Condition: TX  
 Test Site: 2#Chamber  
 Operator: WADE  
 Test Specification: DC 3V  
 Comment: EUT:MONSTER MAKER (GERMANY) /SENSORS ALIVE (USA)  
 Start of Test: 2018-7-14 /

### SCAN TABLE: "LFRE(E) 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	1516E
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	1516E



### MEASUREMENT RESULT: "T-0714-31\_fin"

2018-7-14

Frequency MHz	Level dBuV/m	Height cm	Azimuth deg	Polarization
13.560000	54.20	/	/	Z

Job No.: LGW2018 #1651

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Sensor Alive

Mode: TX 13.56MHz

Model: 620486

Applicant: THAMES & KOSMOS, LLC.

Polarization: Horizontal

Power Source: DC 3V

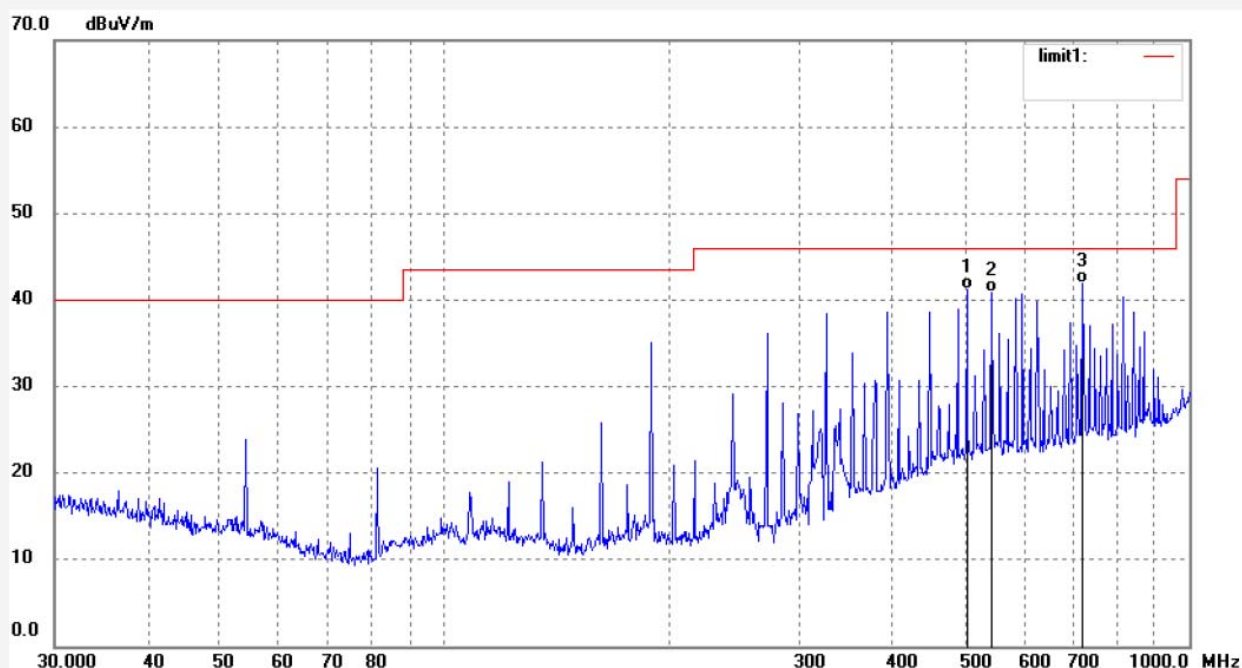
Date: 18/07/11/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	502.9395	45.46	-4.27	41.19	46.00	-4.81	QP			
2	543.2741	44.06	-3.27	40.79	46.00	-5.21	QP			
3	719.1994	42.73	-0.80	41.93	46.00	-4.07	QP			



Job No.: LGW2018 #1650

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Sensor Alive

Mode: TX 13.56MHz

Model: 620486

Applicant: THAMES & KOSMOS, LLC.

Polarization: Vertical

Power Source: DC 3V

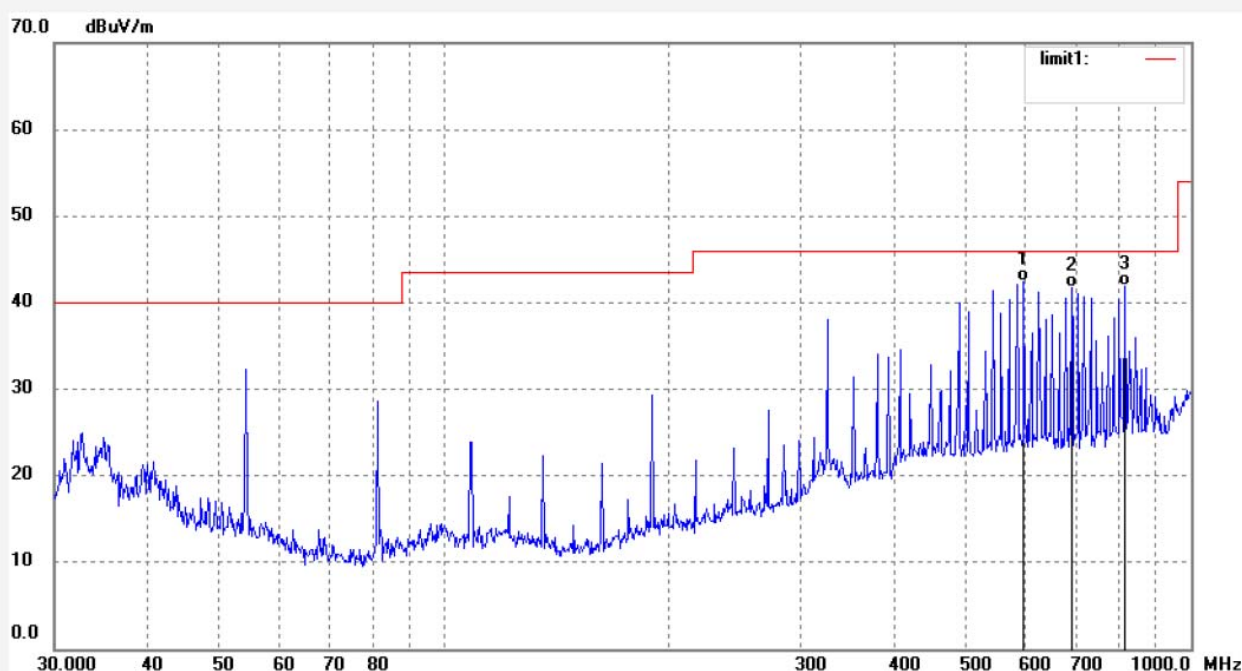
Date: 18/07/11/

Time:

Engineer Signature: WADE

Distance: 3m

Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	597.2232	44.90	-2.43	42.47	46.00	-3.53	QP			
2	691.9867	42.88	-1.22	41.66	46.00	-4.34	QP			
3	815.9678	40.85	1.08	41.93	46.00	-4.07	QP			

## **8. FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND SPECTRUM MASK**

### **8.1.The Requirement For FCC part 15C Section 15.225**

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### **8.2.The Requirement For RSS-210 Section B.6**

Carrier frequency stability shall be maintained to  $\pm 0.01\%$  ( $\pm 100$  ppm).

### **8.3.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.

### **8.4.Test Procedure**

#### **8.4.1.The EUT was turn-up.**

8.4.2. With all power removed, the temperature was decreased to -20°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.

#### **8.4.3.The temperature test were preformed for the worse case.**

8.4.4. Variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20°C. The maximum frequency change was recorded.

## 8.5. Test Result

Temperature Interval	Voltage	Fundamental Frequency (MHz)	Fundamental Frequency Deviation (%)	Limit	PASS/FAIL
-20 °C	3V DC	13.560201	0.000014	within ±0.01%	PASS
-10 °C	3V DC	13.560226	0.000017		PASS
0 °C	3V DC	13.560219	0.000016		PASS
+10 °C	3V DC	13.560182	0.000013		PASS
+20 °C	3V DC	13.560147	0.000011		PASS
+30 °C	3V DC	13.560122	0.000009		PASS
+40 °C	3V DC	13.560093	0.000007		PASS
+50 °C	3V DC	13.560077	0.000006		PASS
+20 °C	2.55V AC	13.560089	0.000007		PASS
+20 °C	3.45V AC	13.560095	0.000007		PASS



## 9. 99% OCCUPIED BANDWIDTH

### 9.1.The Requirement for RSS-Gen Clause 6.7

9.1.1.The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

9.1.2.In some cases, the “x dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

### 9.2.EUT Configuration on Measurement

The following 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.

### 9.3.Operating Condition of EUT

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

9.3.2.Turn on the power of all equipment.

9.3.3.Let the EUT work in TX mode then measure it. The transmit frequency is 13.56MHz.

### 9.4.Test Procedure

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

9.4.2.Set RBW of spectrum analyzer to 1 kHz and VBW to 3 kHz.

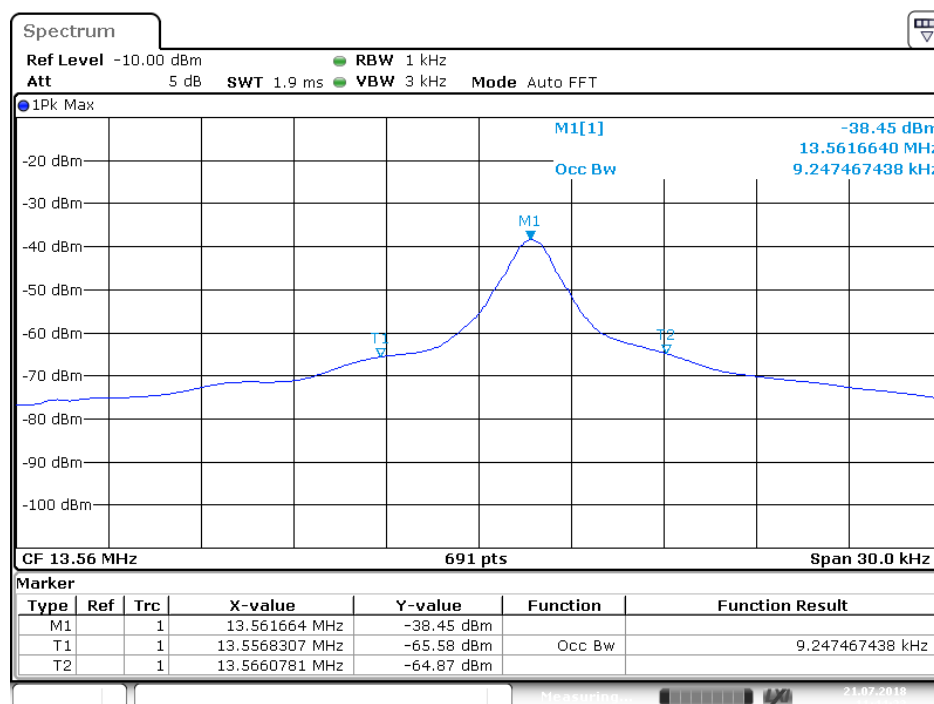
9.4.3.Set SPA “Meas” function, Select “Occupied Bandwidth” function, Select “99% Power Bandwidth”. The frequency of the upper and lower markers indicating the edges of the transmitters “99% Power” emission bandwidth shall be recorded to automate by SPA.

## 9.5.Measurement Result

The EUT does meet the RSS-Gen requirement.

Frequency (MHz)	99% Occupied Bandwidth (kHz)
13.56	9.247

The spectrum analyzer plots are attached as below.



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## **10.ANTENNA REQUIREMENT**

### **10.1.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.

### **10.2.Antenna Construction**

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0.5dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.