



## Test Report

Date : 2018-09-11  
No. : HMD18080018

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**Applicant** : Hancock Medical Inc.  
897 Independence Ave., Suite 3A, Mountain View, United States

**Supplier / Manufacturer** : Healthcare Technology International Ltd.  
Yin Yang Industrial Zone, Zhangmutou, Dongguan, Guangdong,  
China

**Description of Sample(s)** : Submitted sample(s) said to be  
Product: Sleep Tuner Sensor  
Brand Name: Beddr  
Model No.: SA01116  
FCC ID: 2APCY-SA01136

**Date Samples Received** : 2018-08-10

**Date Tested** : 2018-08-15 to 2018-09-10

**Investigation Requested** : Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2017 and ANSI C63.10: 2013 for FCC Certification.

**Conclusions** : The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

**Remarks** : ---

  
  
CHEUNG Chi, Kenneth  
Authorized Signatory

The Hong Kong Standards and Testing Centre Limited  
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### **1.0 General Details**

#### **1.1 Test Laboratory**

The Hong Kong Standards and Testing Centre Ltd.  
EMC Laboratory  
10 Dai Wang Street, Taipo Industrial Estate, New Territories, Hong Kong  
Telephone: 852 2666 1888  
Fax: 852 2664 4353

#### **1.2 Equipment Under Test [EUT]**

##### **Description of Sample(s)**

Product: Sleep Tuner Sensor  
Manufacturer: Healthcare Technology International Ltd.  
Yin Yang Industrial Zone, Zhangmutou, Dongguan, Guangdong,  
China  
Brand Name: Beddr  
Model Number: SA01116  
Rating: Input: 100-240V a.c. 50/60Hz 0.2A  
Output: 5V d.c. 1.0A

The AC/DC adaptor was provided by the applicant with following details:  
Brand name: N/A; Model no.: HNFL050100UU

#### **1.3 Description of EUT Operation**

The Equipment Under Test (EUT) is a Sleep Tuner Sensor. It is a transceiver operating at 2402MHz~2480MHz and the RF signal was modulated by IC.

#### **1.4 Date of Order**

2018-08-10

#### **1.5 Submitted Sample(s):**

1 Sample

#### **1.6 Test Duration**

2018-08-15 to 2018-09-10

#### **1.7 Country of Origin**

China

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### 2.0 Technical Details

#### **2.1 Investigations Requested**

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2017 Regulations and ANSI C63.10: 2013 for FCC Certification. The device was realized by test software.

#### **2.2 Test Standards and Results Summary Tables**

EMISSION Results Summary						
Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Failed	N/A
Field Strength of Fundamental & Harmonics Emissions	FCC 47CFR 15.249	ANSI C63.10: 2013	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10: 2013	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AC Mains Conducted Emissions	FCC 47CFR 15.207	ANSI C63.10: 2013	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Antenna requirement	FCC 47CFR 15.203	N/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: N/A - Not Applicable

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### **3.0 Test Results**

#### **3.1 Emission**

##### **3.1.1 Radiated Emissions**

Ambient temperature 25°C

Relative humidity 57%

Test Requirement:	FCC 47CFR 15.249 & FCC 47CFR 15.209
Test Method:	ANSI C63.10:2013
Test Date:	2018-08-15 to 2018-09-10
Mode of Operation:	Tx mode

#### **Test Method:**

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber\*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\* Semi-Anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

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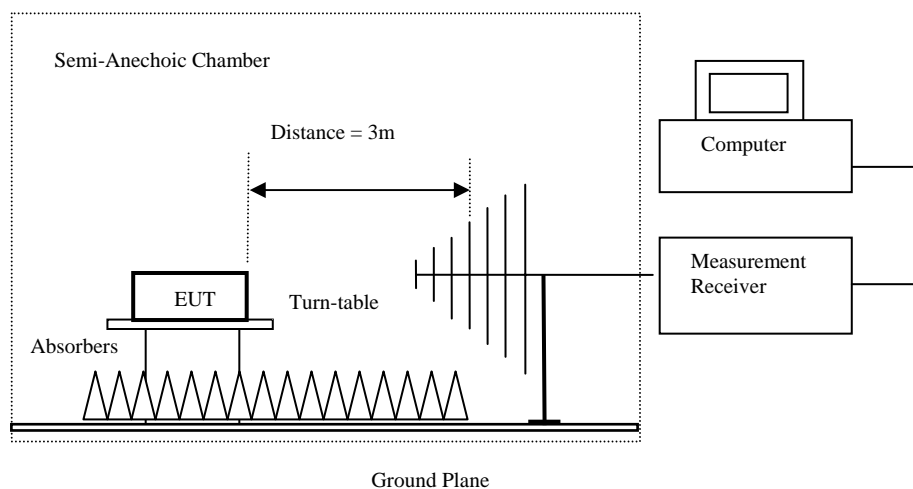
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**Spectrum Analyzer Setting:**

9KHz – 30MHz (Pk & Av)	RBW: 10kHz VBW: 30kHz Sweep: Auto Span: Fully capture the emissions being measured Trace: Max. hold
30MHz – 1GHz (QP)	RBW: 120kHz VBW: 120kHz Sweep: Auto Span: Fully capture the emissions being measured Trace: Max. hold
Above 1GHz (Pk)	RBW: 1MHz VBW: 1MHz Sweep: Auto Span: Fully capture the emissions being measured Trace: Max. hold
Above 1GHz (Av)	RBW: 1MHz VBW: 10Hz Sweep: Auto Span: Fully capture the emissions being measured Trace: Max. hold

**Test Setup:**



- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used, 9kHz to 30MHz loop antennas are used.



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**Limits for Field Strength of Fundamental & Harmonics Emissions [FCC 47CFR 15.249]:**

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [microvolts/meter]	Field Strength of Harmonics Emission [microvolts/meter]
902-928	50,000 [Quasi-Peak]	500 [Average]
2400-2483.5	50,000 [Average]	500 [Average]

**Results of Tx mode (Lowest Frequency Channel-2402 MHz): Pass**

<b>Field Strength of Fundamental Emissions Peak Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
2402.00	53.0	36.8	89.8	30,903.0	500,000	Vertical
2402.00	51.3	36.4	87.7	24,266.1	500,000	Horizontal

<b>Field Strength of Fundamental Emissions Average Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
2402.00	43.9	36.8	80.7	10,839.3	50,000	Vertical
2402.00	41.9	36.4	78.3	8,222.4	50,000	Horizontal

<b>Field Strength of Harmonics Emission Peak Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
4804.0	13.5	41.5	55.0	564.9	5,000	Vertical
4804.0	11.7	42.4	54.1	508.7	5,000	Horizontal
7206.0	9.0	45.1	54.1	504.1	5,000	Vertical
7206.0	8.6	46.2	54.8	547.0	5,000	Horizontal
9608.0	7.3	48.0	55.3	582.1	5,000	Vertical
9608.0	6.8	48.8	55.6	604.6	5,000	Horizontal
12010.0	4.07	51.8	55.9	621.6	5,000	Vertical
12010.0	3.9	52.4	56.3	650.1	5,000	Horizontal



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<b>Field Strength of Harmonics Emission</b>						
<b>Average Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
4804.0	-1.3	41.5	40.2	102.2	500	Vertical
4804.0	-3.6	42.4	38.9	87.6	500	Horizontal
7206.0	-5.5	45.1	39.6	95.5	500	Vertical
7206.0	-5.4	46.2	40.8	109.4	500	Horizontal
9608.0	-8.1	48.0	39.9	98.4	500	Vertical
9608.0	-10.5	48.8	38.3	81.9	500	Horizontal
12010.0	-11.6	51.8	40.2	101.9	500	Vertical
12010.0	-11.5	52.4	40.9	111.2	500	Horizontal

**Results of Tx mode (Middle Frequency Channel- 2442MHz): Pass**

<b>Field Strength of Fundamental Emissions</b>						
<b>Peak Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
2442.00	51.8	36.8	88.6	26,915.3	500,000	Vertical
2442.00	50.0	36.4	86.4	20,893.0	500,000	Horizontal

<b>Field Strength of Fundamental Emissions</b>						
<b>Average Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
2442.00	43.4	36.8	80.2	10,232.9	50,000	Vertical
2442.00	42.1	36.4	78.5	8,414.0	50,000	Horizontal





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<b>Field Strength of Harmonics Emission</b>						
<b>Peak Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
4884.0	13.3	41.6	54.9	555.3	5,000	Vertical
4884.0	11.8	42.5	54.3	521.2	5,000	Horizontal
7326.0	1.5	53.2	54.7	542.6	5,000	Vertical
7326.0	8.5	46.3	54.8	548.3	5,000	Horizontal
9768.0	6.1	48.1	54.2	514.6	5,000	Vertical
9768.0	6.3	48.9	55.2	576.1	5,000	Horizontal
12210.0	4.04	51.6	55.6	605.3	5,000	Vertical
12210.0	3.7	52.5	56.2	644.2	5,000	Horizontal

<b>Field Strength of Harmonics Emission</b>						
<b>Average Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
4884.0	-1.5	41.6	40.1	101.3	500	Vertical
4884.0	-3.0	42.5	39.5	94.2	500	Horizontal
7326.0	-5.0	45.2	40.2	102.8	500	Vertical
7326.0	-6.4	46.3	39.9	99.0	500	Horizontal
9768.0	-9.2	48.1	38.9	88.3	500	Vertical
9768.0	-8.3	48.9	40.6	107.2	500	Horizontal
12210.0	-11.4	51.6	40.2	102.8	500	Vertical
12210.0	-10.7	52.5	41.9	123.7	500	Horizontal

**Results of Tx mode (Highest Frequency Channel – 2480MHz): Pass**

<b>Field Strength of Fundamental Emissions</b>						
<b>Peak Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
2480.00	50.9	36.8	87.7	24,266.1	500,000	Vertical
2480.00	47.7	36.4	84.1	16,032.5	500,000	Horizontal



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<b>Field Strength of Fundamental Emissions</b>						
<b>Average Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
2480.00	42.3	36.8	79.1	9,015.7	50,000	Vertical
2480.00	39.9	36.4	76.3	6,531.3	50,000	Horizontal

<b>Field Strength of Harmonics Emission</b>						
<b>Peak Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
4960.0	13.6	41.4	55.0	560.4	5,000	Vertical
4960.0	11.7	42.7	54.4	525.4	5,000	Horizontal
7440.0	9.6	45.6	55.2	576.1	5,000	Vertical
7440.0	9.2	46.5	55.7	606.7	5,000	Horizontal
9920.0	7.3	48.6	55.9	624.5	5,000	Vertical
9920.0	6.2	49.7	55.9	621.6	5,000	Horizontal
12400.0	4.0	51.7	55.7	608.1	5,000	Vertical
12400.0	3.3	52.7	56.0	628.1	5,000	Horizontal

<b>Field Strength of Harmonics Emission</b>						
<b>Average Value</b>						
Frequency MHz	Measured Level @3m dB $\mu$ V/m	Correction Factor dB $\mu$ V/m	Field Strength dB $\mu$ V/m	Field Strength $\mu$ V/m	Limit @3m $\mu$ V/m	E-Field Polarity
4960.0	-0.9	41.4	40.6	106.5	500	Vertical
4960.0	-2.9	42.7	39.8	97.9	500	Horizontal
7440.0	-6.9	45.6	38.7	86.2	500	Vertical
7440.0	-6.2	46.5	40.3	103.4	500	Horizontal
9920.0	-10.4	48.6	38.2	80.9	500	Vertical
9920.0	-9.5	49.7	40.2	102.8	500	Horizontal
12400.0	-11.7	51.7	40.0	100.0	500	Vertical
12400.0	-12.4	52.7	40.3	103.3	500	Horizontal

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

Calculated measurement uncertainty (9kHz-30MHz): 2.0dB

(30MHz -1GHz): 4.9dB

(1GHz -6GHz): 4.02dB

(6GHz -26.5GHz): 4.03dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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### Radiated Emissions Measurement:

#### Limit :

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. 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) (see Section 5.205(c)).

### Result: RF Radiated Emissions (1GHz-26GHz) (Lowest)-GFSK

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2400.0	26.3	36.8	63.1	74.0	10.9	Vertical

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2400.0	11.3	36.8	48.1	54.0	5.9	Vertical

### Result: RF Radiated Emissions (1GHz-26GHz) (Highest) -GFSK

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2483.5	18.8	36.8	55.6	74.0	18.4	Vertical

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2483.5	2.3	36.8	39.1	54.0	15.0	Vertical

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### Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [ $\mu\text{V/m}$ ]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

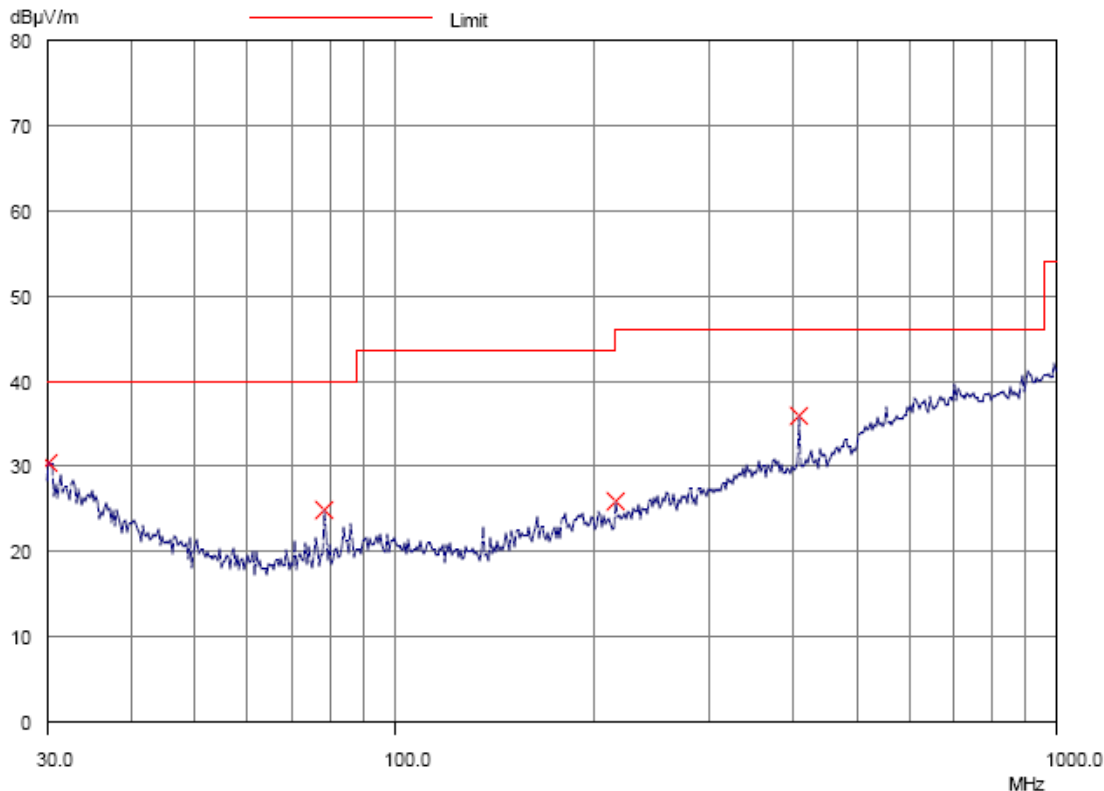
The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

### Results of TX mode (9kHz – 30MHz): PASS

Emissions detected are more than 20 dB below the FCC Limits

### Results of TX mode (30MHz – 1GHz)(2402MHz worst case): PASS

Horizontal



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Results of TX mode (30MHz – 1GHz) (2402MHz worst case): PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Level @3m $\mu$ V/m	Limit @3m $\mu$ V/m
30.1	Horizontal	30.5	40.0	33.6	100
78.5	Horizontal	25.0	40.0	17.7	100
216.0	Horizontal	26.1	46.0	20.1	200
408.0	Horizontal	36.0	46.0	63.1	200

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**Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:**

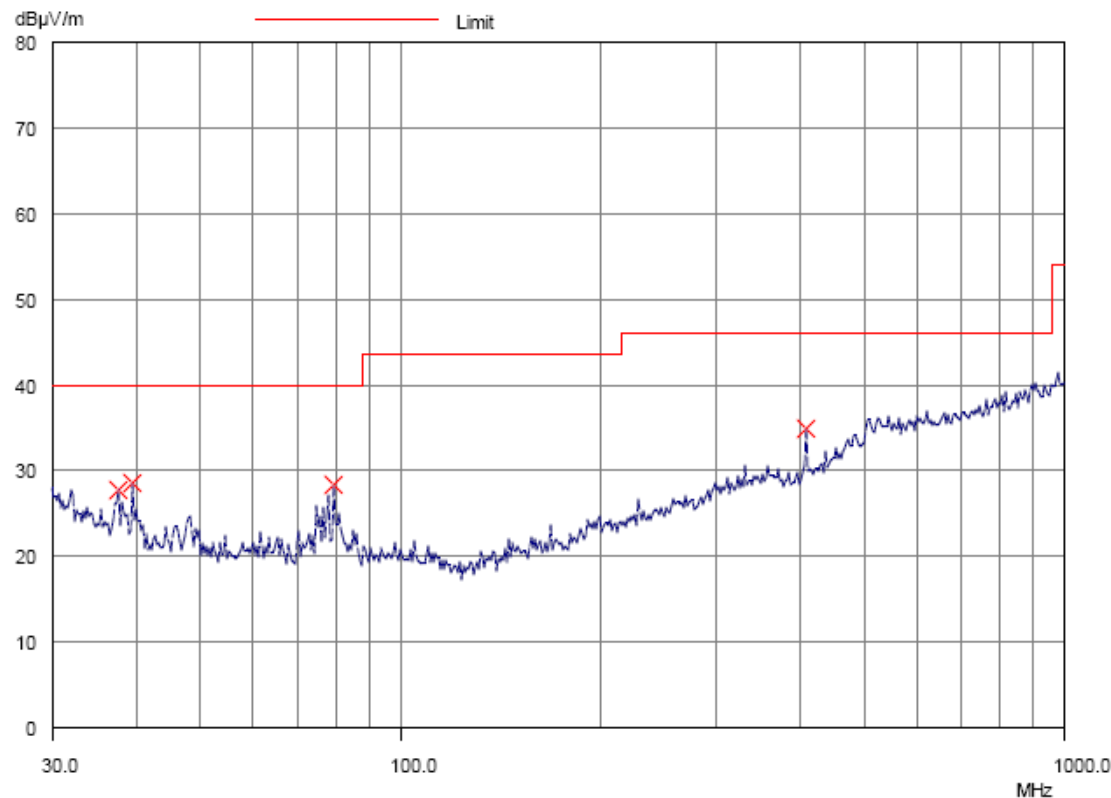
Frequency Range [MHz]	Quasi-Peak Limits [ $\mu$ V/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

**Results of TX mode (9kHz – 30MHz): PASS**  
 Emissions detected are more than 20 dB below the FCC Limits

**Results of TX mode (30MHz – 1GHz) (2402MHz worst case): PASS**

Vertical





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Results of TX mode (30MHz – 1GHz) (2402MHz worst case): PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Level @3m $\mu$ V/m	Limit @3m $\mu$ V/m
37.6	Vertical	27.9	40.0	24.8	100
39.6	Vertical	28.7	40.0	27.2	100
79.4	Vertical	28.5	40.0	26.5	100
408.0	Vertical	35.1	46.0	56.8	200

Remarks:

Calculated measurement uncertainty (30MHz – 1GHz): 4.9dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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### 3.1.2 AC Mains Conducted Emissions (0.15MHz to 30MHz)

Ambient temperature 25°C

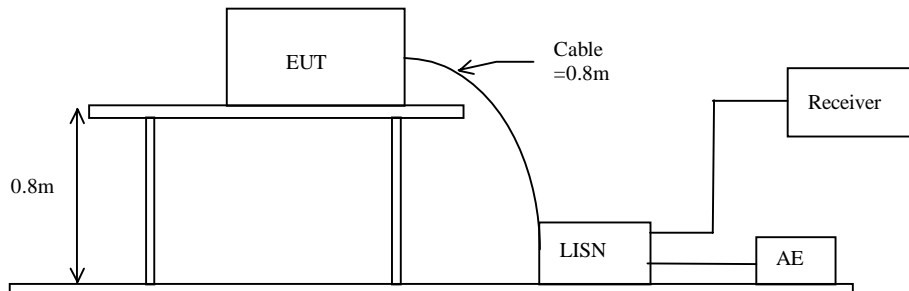
Relative humidity 57%

Test Requirement:	FCC 47CFR 15.249 & FCC 47CFR 15.207
Test Method:	ANSI C63.10:2013
Test Date:	2018-08-15
Mode of Operation:	TX mode
Test Voltage:	120V a.c. 60Hz

#### Test Method:

The test was performed in accordance with ANSI C63.10:2013, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

#### Test Setup:



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**Limits for Conducted Emissions (FCC 47 CFR 15.207):**

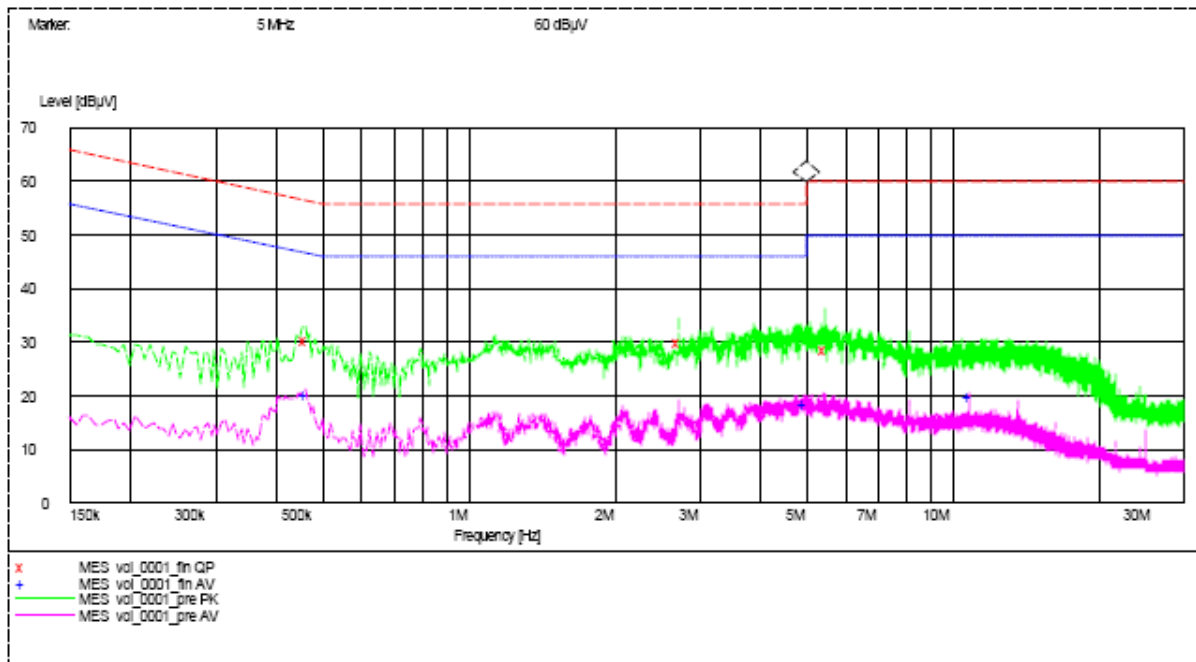
Frequency Range [MHz]	Quasi-Peak Limits [dB $\mu$ V]	Average [dB $\mu$ V]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

\* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

**Results of TX mode (L): PASS**

Please refer to the following diagram for individual results.



Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dB $\mu$ V	Limit dB $\mu$ V	Level dB $\mu$ V	Limit dB $\mu$ V
Live	0.460	30.5	57.0	_*-	_*-
Live	2.725	30.0	56.0	_*-	_*-
Live	5.450	28.6	60.0	_*-	_*-
Live	0.460	_*-	_*-	20.3	47.0
Live	4.960	_*-	_*-	18.6	46.0
Live	10.890	_*-	_*-	19.9	50.0

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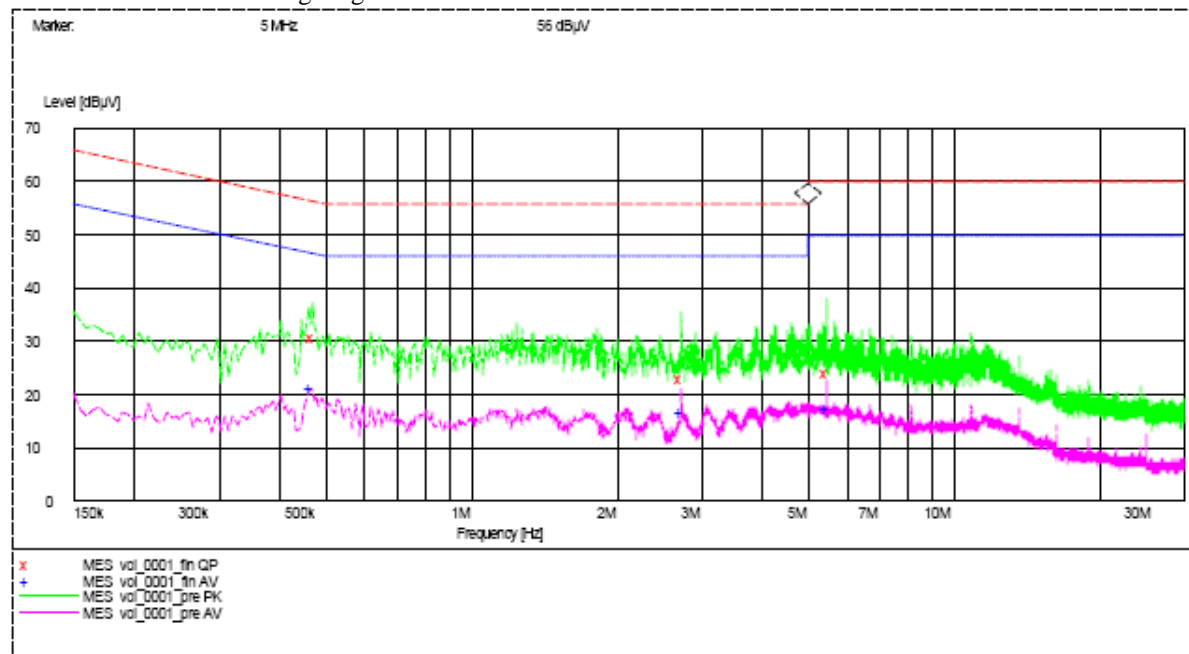
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Frequency Range [MHz]	Quasi-Peak Limits [dB $\mu$ V]	Average [dB $\mu$ V]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

\* Decreases with the logarithm of the frequency.  
 Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

### Results of TX mode (N): PASS

Please refer to the following diagram for individual results.



Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dB $\mu$ V	Limit dB $\mu$ V	Level dB $\mu$ V	Limit dB $\mu$ V
Neutral	0.470	30.8	57.0	-*-	-*-
Neutral	2.730	23.2	56.0	-*-	-*-
Neutral	5.455	24.0	60.0	-*-	-*-
Neutral	0.465	-*-	-*-	21.1	47.0
Neutral	2.730	-*-	-*-	16.7	46.0
Neutral	5.455	-*-	-*-	17.5	50.0

Remarks:  
 Calculated measurement uncertainty (0.15MHz – 30MHz): 3.2dB  
 -\*- Emission(s) that is far below the corresponding limit line.



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### **3.1.3 Antenna Requirement**

Ambient temperature 25°C

Relative humidity 57%

**Test Requirements: § 15.203**

#### **Test Specification:**

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### **Test Results:**

This is Integral antenna. There is no external antenna, the antenna gain =0.6dBi. User is unable to remove or changed the Antenna.

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### 3.1.4 20dB Bandwidth of Fundamental Emission

Ambient temperature 25°C

Relative humidity 57%

Test Requirement: FCC 47 CFR 15.249  
Test Method: ANSI C63.10:2013  
Test Date: 2018-08-17  
Mode of Operation: Tx mode

#### **Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

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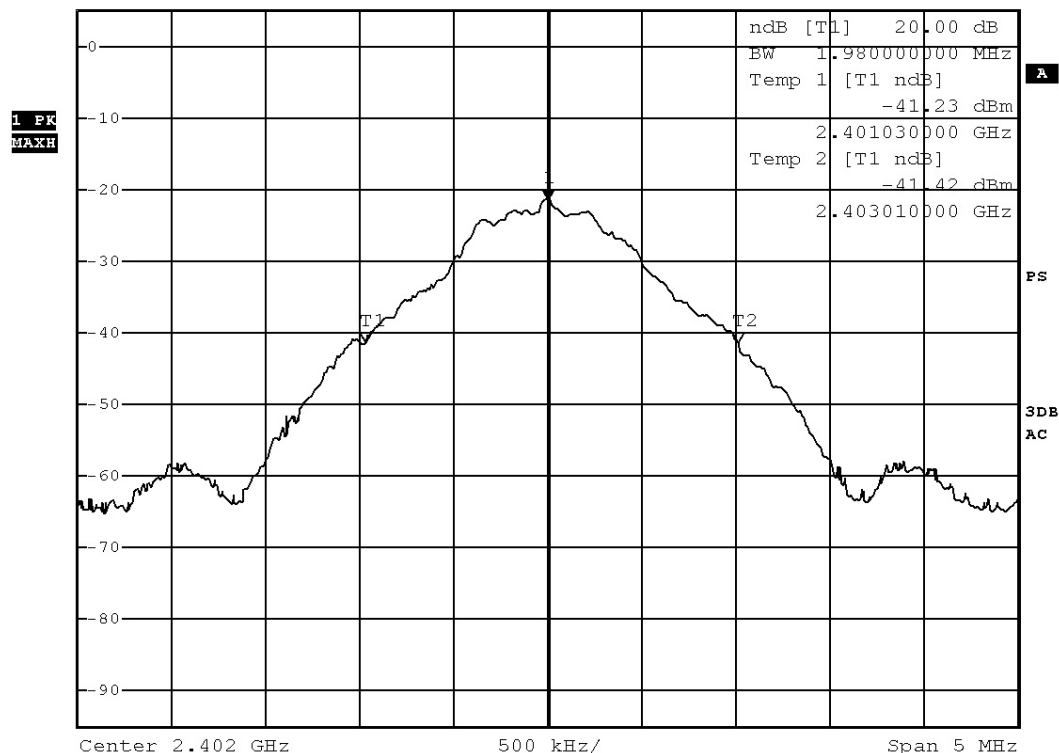
### Limits for 20dB Bandwidth of Fundamental Emission (Low Frequency Channel):

Frequency Range [MHz]	20dB Bandwidth [MHz]
2402.0	1.98

### 20dB Bandwidth of Fundamental Emission (2402MHz)



\*RBW 100 kHz    Marker 1 [T1]    -21.33 dBm  
 \*VBW 300 kHz  
 Ref 5 dBm    \*Att 25 dB    SWT 2.5 ms    2.402000000 GHz



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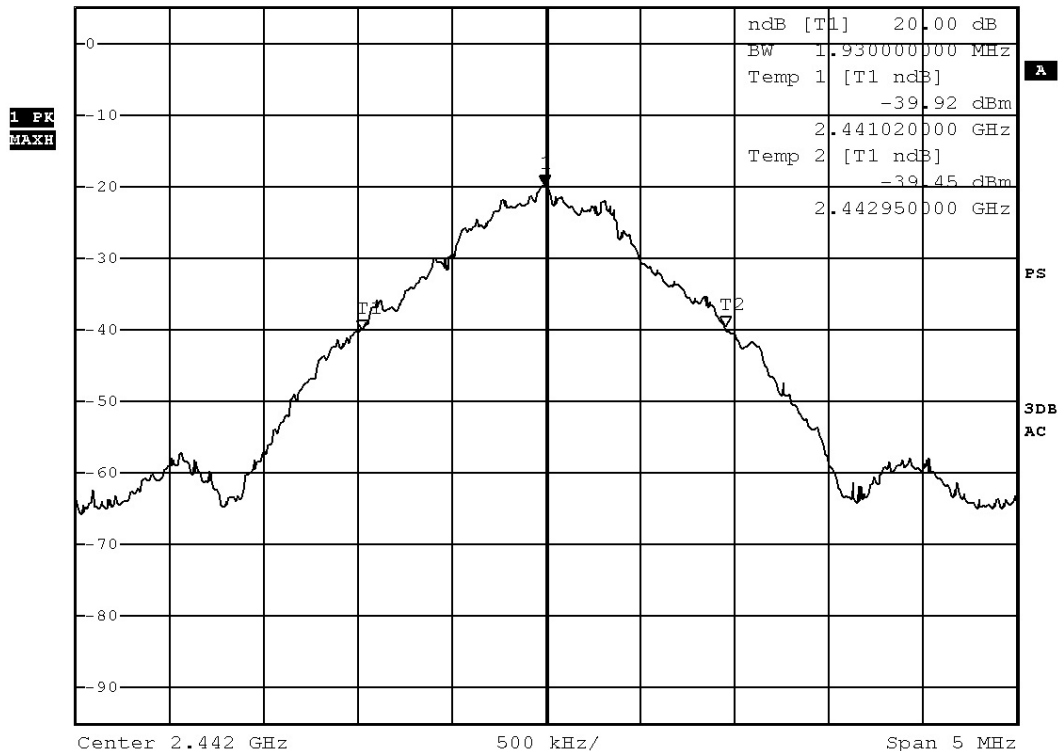
### Limits for 20dB Bandwidth of Fundamental Emission (Middle Frequency Channel):

Frequency Range [MHz]	20dB Bandwidth [MHz]
2442.0	1.93

### 20dB Bandwidth of Fundamental Emission (2442MHz)



\*RBW 100 kHz    Marker 1 [T1]    -19.83 dBm  
 \*VBW 300 kHz  
 Ref 5 dBm    \*Att 25 dB    SWT 2.5 ms    2.441990000 GHz



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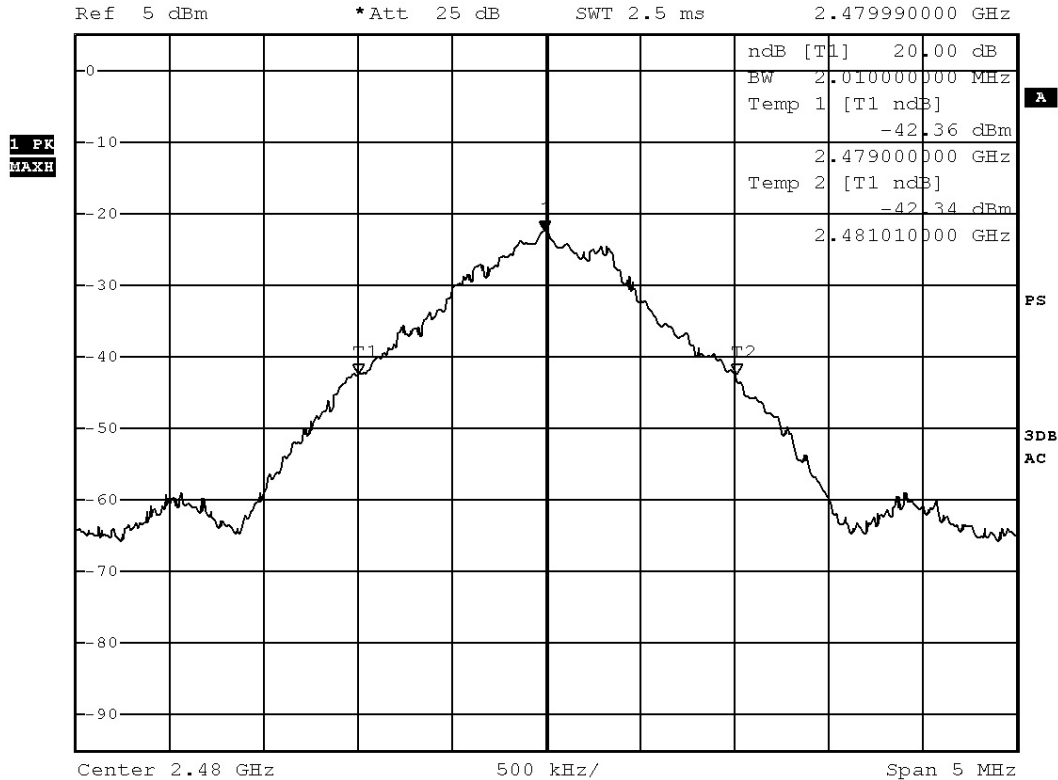
### Limits for 20dB Bandwidth of Fundamental Emission (High Frequency Channel):

Frequency Range [MHz]	20dB Bandwidth [MHz]
2480.0	2.01

### 20dB Bandwidth of Fundamental Emission (2480MHz)



\*RBW 100 kHz Marker 1 [T1 ]  
\*VBW 300 kHz -22.43 dBm  
Ref 5 dBm \*Att 25 dB SWT 2.5 ms 2.479990000 GHz





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### Appendix A

#### List of Measurement Equipment

##### Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3	--	2018/01/24	2019/01/24
EM356	ANTENNA POSITIONING TOWER	ETS-LINDGREN	2171B	00150346	N/A	N/A
EM354	BICONILOG ANTENNA	ETS-LINDGREN	3143B	00142073	2018/03/29	2020/03/29
EM229	EMI TEST RECEIVER	R&S	ESIB40	100248	2018/06/01	2019/06/01
EM276	BROADBAND HORN ANTENNA	A-INFOMW	JTXLB-10180-SF	J2031090903007	2018/04/27	2020/04/27
EM300	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	2018/05/13	2019/05/13
EM301	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-10	00130988	2018/05/13	2019/05/13
EM302	PRECISION OMNIDIRECTIONAL DIPOLE (1 – 6GHZ)	SEIBERSDORF LABORATORIES	POD 16	161806/L	2018/05/11	2020/05/11
EM303	PRECISION OMNIDIRECTIONAL DIPOLE (6 – 18GHZ)	SEIBERSDORF LABORATORIES	POD 618	6181908/L	2018/05/11	2020/05/11
EM353	LOOP ANTENNA	ETS LINDGREN	6502	00206533	2018/04/16	2020/04/16
EM045	POWER METER	ROHDE & SCHWARZ	NRVD	843246/028	2017/10/14	2018/10/14

##### Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM119	LISN	R & S	ESH3-Z5	0831.5518.52	2017/11/29	2018/11/29
EM145	EMI TEST RECEIVER	R & S	ESCS 30	830245/021	2018/06/01	2019/06/01
EM179	IMPULSE LIMITER	ROHDE & SCHWARZ	ESH3-Z2	357-8810.52/54	2018/01/11	2019/01/11
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057-99A	2017/02/02	2022/02/02
N/A	MEASUREMENT AND EVALUATION SOFTWARE	ROHDE & SCHWARZ	BSIB-K1	V1.20	N/A	N/A

Remarks:-

N/A Not Applicable or Not Available

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### Appendix B

#### Photographs of EUT

**Front View of the product**



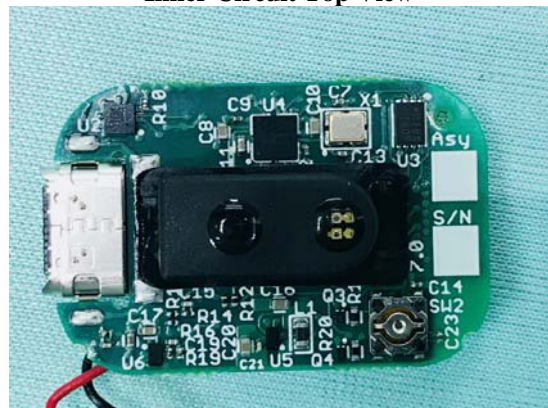
**Rear View of the product**



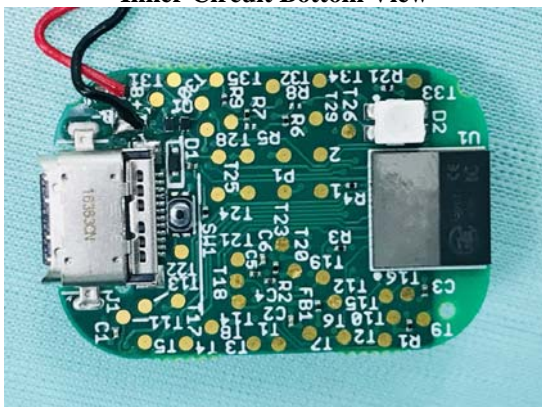
**Inside View of the product**



**Inner Circuit Top View**



**Inner Circuit Bottom View**



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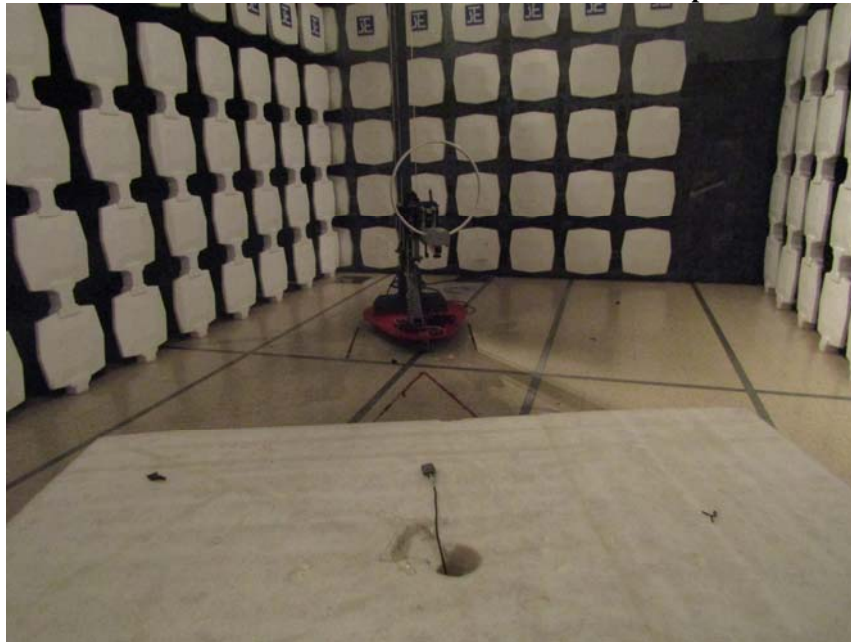
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### Photographs of EUT

**Measurement of Radiated Emission Test Set Up**



**Measurement of Radiated Emission Test Set Up**



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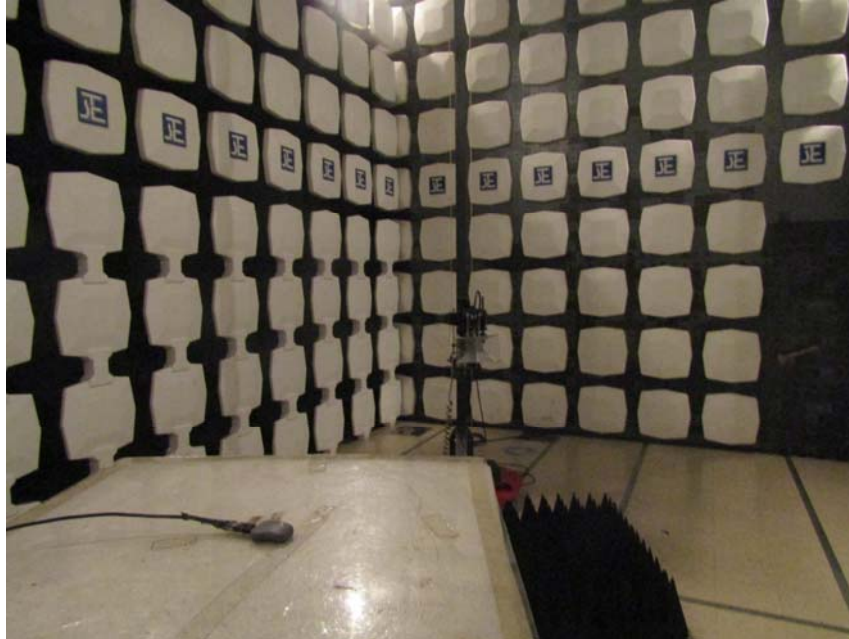
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### Photographs of EUT

**Measurement of Radiated Emission Test Set Up**



**Measurement of Conducted Emission Test Set Up**



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