

Report No.: AAEMT/EMC/201228-02-03

# FCC Test Report

## Part 15 subpart F

### Client Information:

Applicant: Noccela Oy

Applicant add.: Kaarinantie 700, 20540 Turku, Finland

### Product Information:

EUT Name: ID Badge

Model No.: BADGE-3A1-PU-B

Derivative Model No. : BADGE-3A1-U-B ,BADGE-3A1-P-B

FCC ID: 2AVRO-BADGE-3

### Standards:

FCC PART 15 Subpart F section 15.519

### Prepared By:

  
Vaishali

AA Electro Magnetic Test Laboratory Private Limited

Add. : Plot No 174, Udyog Vihar - Phase 4, Sector 18,  
Gurgaon, Haryana, India

Date of Receipt: Dec. 28, 2020

Date of Test: Dec.29~ Jan. 25, 2021

Date of Issue: April 19, 2021

Test Result: Pass

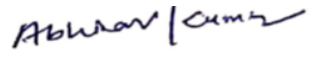
Declaration of Conformity: Declaration of conformity of the results is based as per the standard limits.

This device described above has been tested by AA Electro Magnetic Test Laboratory Private Limited, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

\*This test report must not be used by the client to claim product endorsement by any agency of the U.S. government.

Reviewed by: \_\_\_\_\_

Approved by: \_\_\_\_\_

  
Abhinav Kumar

Dr. Lenin Raja (Authorized Representative) (/ lenin83/)

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	--	Jan. 29, 2021	--	--



### 3 Test Summary

#### 3.1 Compliance with FCC Part 15 subpart F

TEST	TEST REQUIREMENT	RESULT
Operational Limitations	FCC PART 15 F Section 15.519(a)	PASS
Antenna Requirement	FCC PART 15 F Section 15.203	PASS
Conducted Emissions at Mains Terminals	CISPR11:2015	PASS
Radiated Emissions	FCC PART 15 F section 15.519(c)	PASS
Radiated Emissions in GPS Bands	FCC PART 15 F section 15.519(d)	PASS
UWB Bandwidth	FCC PART 15 F section 15.519(b)	PASS
Peak Emissions within a 50 MHz Bandwidth	FCC PART 15 F section 15.519(e)	PASS

**Remark:**

N/A: not applicable. Refer to the relative section for the details.

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radio Frequency.

### 3.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, the following measurements uncertainty Levels have estimated based on standards, the maximum value of the uncertainty as below:

No.	Item	Uncertainty
1	Conducted Emission Test	2.80dB
2	Radiated Emission Test	2.78dB

### 3.3 Test Location

All tests were performed at:

AA Electro Magnetic Test Laboratory Private Limited

Plot No 174, Udyog Vihar - Phase 4, Sector 18, Gurgaon, Haryana, India

Tel.: +91-0124-4235350

## 4 Test Facility

The test facility is recognized, certified or accredited by the following organizations:

**ILAC / NABL Accreditation No.: TC-8597**

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by National Accreditation Board for Testing and Calibration Laboratories (NABL).

**ILAC –A2LA Accreditation No.: 5593.01**

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered American Association of Laboratory Accreditation ( A2LA.)

**FCC- Recognition No.: 137777**

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Federal Communications Commission (FCC).

**ISED Recognition No.: 26046**

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Institute for Social and Economic Development.( ISED)

**VCCI- Registration No: 4053**

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Voluntary Control Council for Interference.(VCCI)

**TEC Designation No.: IND063**

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Telecommunication Engineering (TEC) Center.

**BIS Recognition No: 816586**

BIS recognized as per CRS scheme for IT electronics, LED control gears, Lamp, Inverter / UPS are recognized as per LRS 2020.

### 4.1 Deviation from standard

None

### 4.2 Abnormalities from standard conditions

None

## 5 General Information

### 5.1 General Description of EUT

Manufacturer:	VVDN Technologies Pvt. Ltd.
Manufacturer Address:	Plot No. 449-450, Sector 8, IMT Manesar, 122050, Gurugram (Haryana)
EUT Name:	ID Card
Model No:	BADGE-3A1-PU-B
Brand Name:	Noccela
Derivative model No.:	BADGE-3A1-U-B, BADGE-3A1-P-B
Operation frequency:	6 GHz -9 GHz
Antenna Type:	Integral antenna
Frequency(GHz):	6.4896 GHz
H/W No.:	3A1-U
S/W No.:	1.77.23
Power Supply Range:	Input : 5VDC Adapter: Input: 100-240VAC, 50/60Hz Output: 5VDC
Note:	
	1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

## 5.2 EUT Peripheral List

No .	Equipment	Manufacturer	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A

## 5.3 Test Peripheral List

No .	Equipment	Manufacturer	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A



## 6 Equipments List for All Test Items

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI TEST Receiver	Rohde and Schwarz	ESIB26	838786/010	2020/01/28	2021/01/27
2	Loop antenna	DAZE Beijing	ZN30900C	18052	2020/01/29	2021/01/28
3	Hi power horn antenna	DAZE Beijing	ZN30700	18012	2020/01/30	2021/01/29
4	Horn antenna	DAZE Beijing	ZN30702	18006	2020/01/30	2021/01/29
5	Horn antenna	DAZE Beijing	ZN30703	18005	2020/01/30	2021/01/29
6	Preamplifier	KELIANDA	LNA-0009295	-	2020/01/28	2021/01/29
7	Preamplifier	KELIANDA	CF-00218	-	2020/01/28	2021/01/27
8	Bi conical Antenna	DAZE Beijing	ZN30505C	17038	2020/01/28	2021/01/29
9	EMI-RECEIVER	Schwarzbeck	FCKL	1528194	2020/01/28	2021/01/27
10	Spectrum Analyzer	ADVANTEST	R3361	-	2020/05/15	2021/05/14
11	LISN	Kyoritsu	KNW-407	8-1789-5	2020/01/28	2021/01/27
12	Network-LISN	Schwarzbeck	NNBM8125	81251314	2020/01/28	2021/01/27
13	Network-LISN	Schwarzbeck	NNBM8125	81251315	2020/01/28	2021/01/27
14	PULSELIMITER	Rohde and Schwarz	ESH3-Z2	100681	2020/05/13	2021/05/12
15	50ΩCoaxialSwitch	DAIWA	1565157	-	2020/05/13	2021/05/12
16	50ΩCoaxialSwitch	-	-	-	2020/05/13	2021/05/12
17	Wireless signal power meter	DARE!!	RPR3006W	RFSW190220	2020/01/29	2021/01/28

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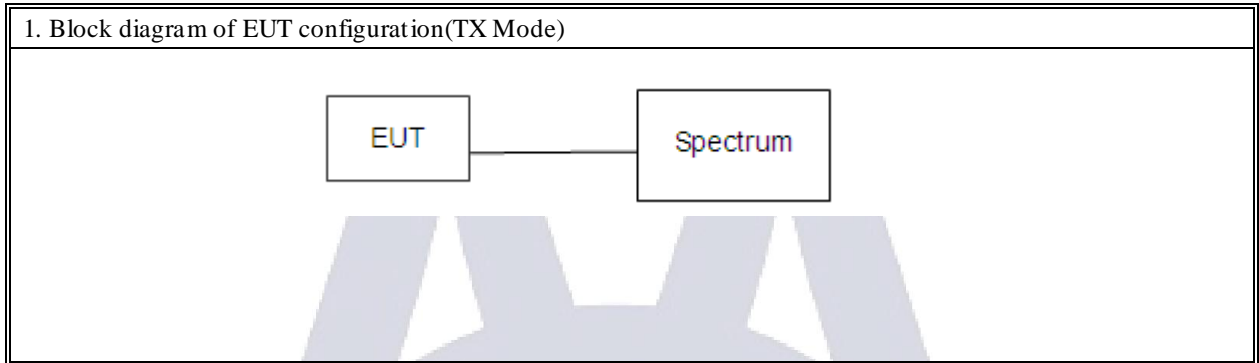
18	Signal Generator	KEYSIGHT	N5181A	512071	2020/01/29	2021/01/28
19	RF Vector Signal Generator	Keysight	N5182B	512094	2020/01/29	2021/01/28
20	Spectrum analyzer	R&S	FSV-40N	101385	2020/01/29	2021/01/28
21	Radio Communication Tester	R&S	CMW 500	124589	2020/5/15	2021/5/14
22	Signal Generator	R&S	SMP02	837017/004 836593/005	2020/5/15	2021/5/14
23	DC Power Supply	Guanker	JK15040K	TNC/ET/C/0 01/15	2020/2/2	2021/2/1
24	Pro. Temp & Humi. Chamber	MENTEK	MHP-150-1C	MAA081125 01	2020/2/2	2021/2/1
25	Attenuators	AGILENT	8494B	-	-	-
26	Attenuators	AGILENT	8495B	-	-	-

## 7 Test Result

### 7.1 Description of Test conditions

- (1) EUT was tested in normal configuration (Please See following Block diagram)

1. Block diagram of EUT configuration(TX Mode)



## 7.2 Operational Limitations

### FCC 47 CFR Section 15.519(a) (1)

A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

The EUT was tested for this requirement and found to comply, please see the datasheets in Appendix A for the measurement results.

### FCC 47 CFR Section 15.519(a) (2)

The use of antennas mounted on outdoor structures, e.g., antennas mounted on the outside of a building or on a telephone pole, or any fixed outdoors infrastructure is prohibited. Antennas may be mounted only on the hand held UWB device.

The client has been informed of this requirement.

### FCC 47 CFR Section 15.519(a) (3)

UWB devices operating under the provisions of this section may operate indoors or outdoors. The client has been informed of this requirement.

## 7.3 Antenna Requirement

### 7.3.1 Standard Requirement (FCC Part 15 Section 15.203)

15.203 requirements: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

### 7.3.2 EUT Antenna

The antenna is internal antenna (Using pogo pin connector to touch the metal area of antenna) and no consideration of replacement.

### 7.3.3 Test Result

The antenna is permanently attached.

## 7.4 Conduction Emissions Measurement

<b>Test Requirement:</b>	CISPR 11
<b>Test Method:</b>	Clause 7 of CISPR 16-2-1
<b>Frequency Range:</b>	150 kHz to 30 MHz
<b>Detector:</b>	Peak for pre-scan (9kHz Resolution Bandwidth)
<b>Test Limit</b>	

Limits for conducted disturbance at the mains ports of class B

Frequency Range (MHz)	Class B Limit (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

NOTE 1 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.

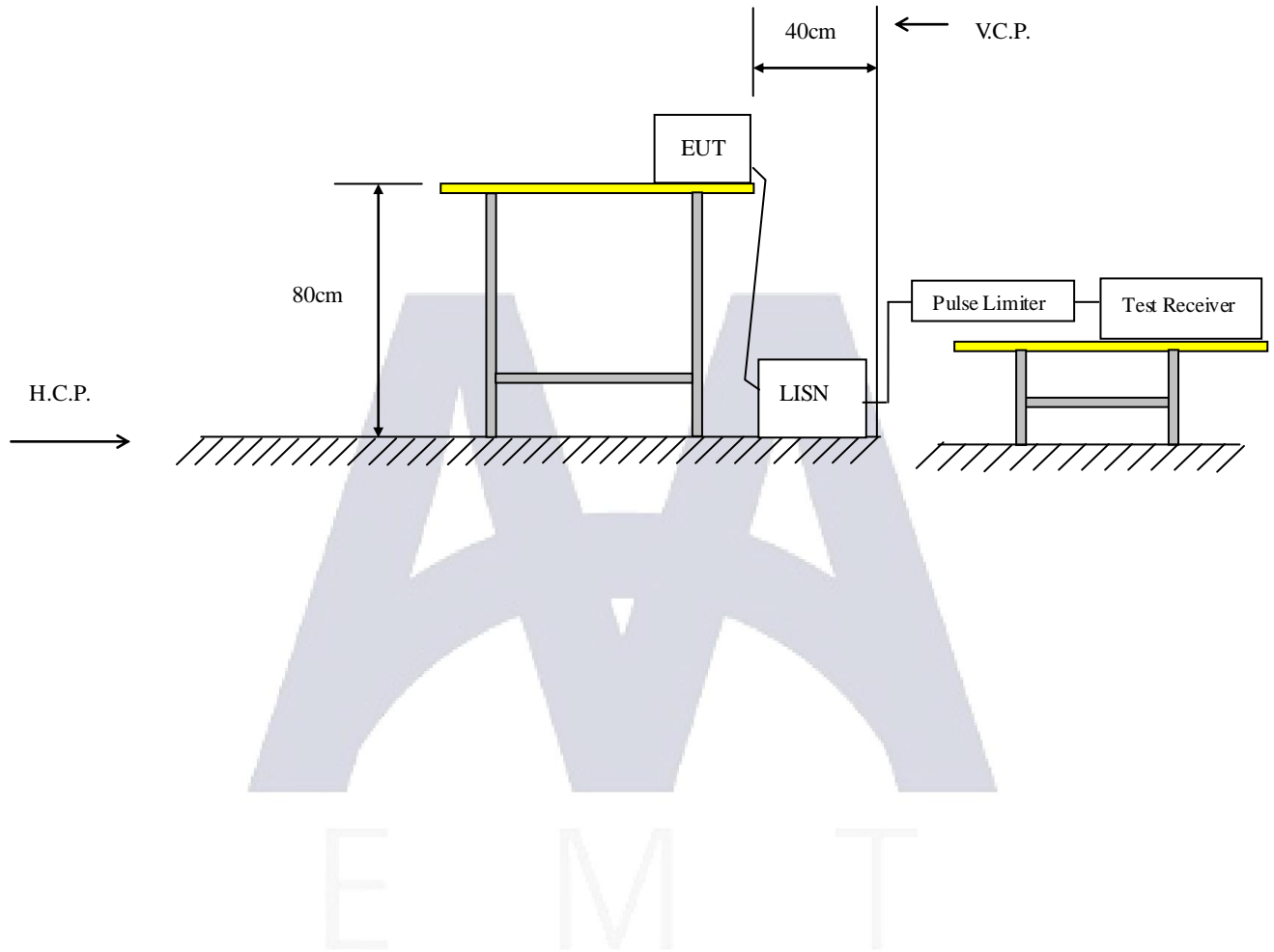
**EUT Operation:** Test in normal operating mode. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

### Test procedure

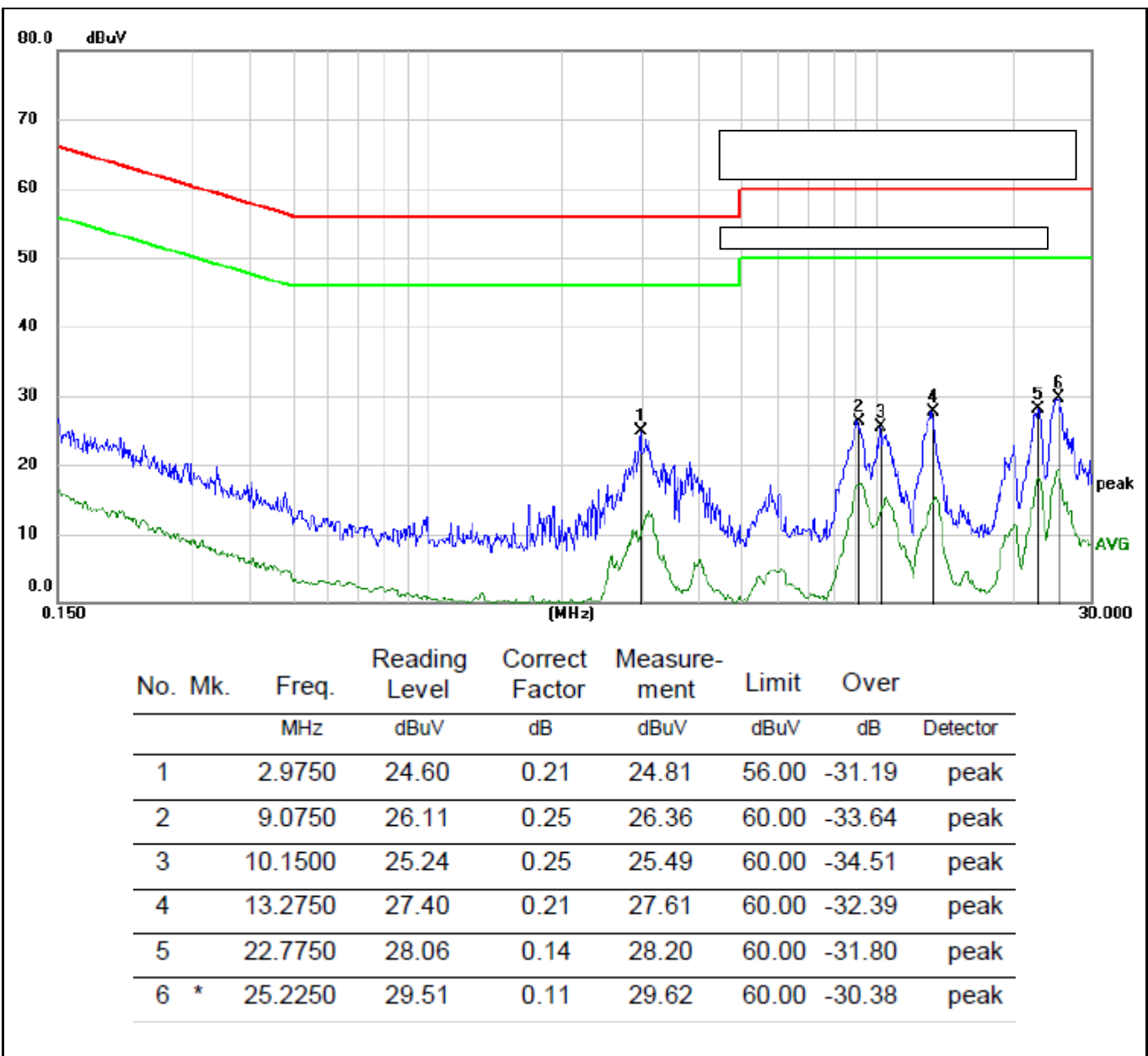
1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

Test setup



7.4.1 Test results

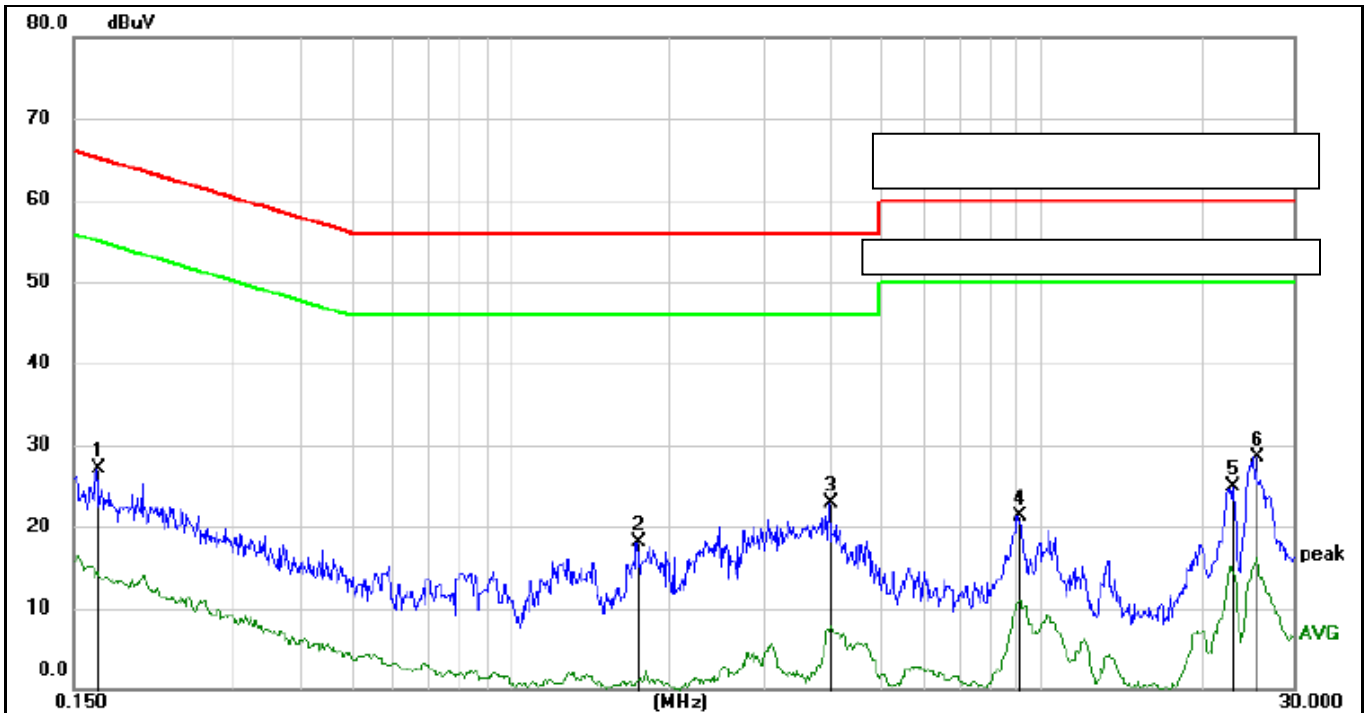
EUT:	ID Badge	Model Name. :	Noccela
Temperature:	26 °C	Relative Humidity :	54%
Pressure:	1010hPa	Test Date :	2020-12-29
Phase :	Line		
<b>Test Voltage :</b>	AC 120V/60Hz		





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EUT:	ID CARD	Model Name. :	Noccela
Temperature:	26 °C	Relative Humidity :	54%
Pressure:	1010hPa	Test Date :	2020-12-29
Phase :	Neutral		
<b>Test Voltage :</b>	AC 120V/60Hz		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1661	26.03	1.13	27.16	65.15	-37.99	peak
2		1.7375	17.55	0.61	18.16	56.00	-37.84	peak
3		3.9875	22.21	0.72	22.93	56.00	-33.07	peak
4		9.0750	20.49	0.75	21.24	60.00	-38.76	peak
5		22.9250	24.22	0.71	24.93	60.00	-35.07	peak
6	*	25.4750	27.73	0.81	28.54	60.00	-31.46	peak

## 7.5 Radiated Emissions Measurement

### 7.5.1 Limits

#### General Requirements Limit (FCC PART 15 Section 15.209(a)(1))

Frequency of Emission (MHz)	Field Strength		Measurement Distance (Meters)
	$\mu\text{V/m}$	$\text{dB } \mu\text{V/m}$	
0.009-0.49	2400/F(kHz)		300
0.49-1.705	24000/F(kHz)		30
1.705-30	30		30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960*	500*	54*	3*

\*Not applicable for above 960 MHz measurements

#### (FCC PART 15 Section 15.519(c))

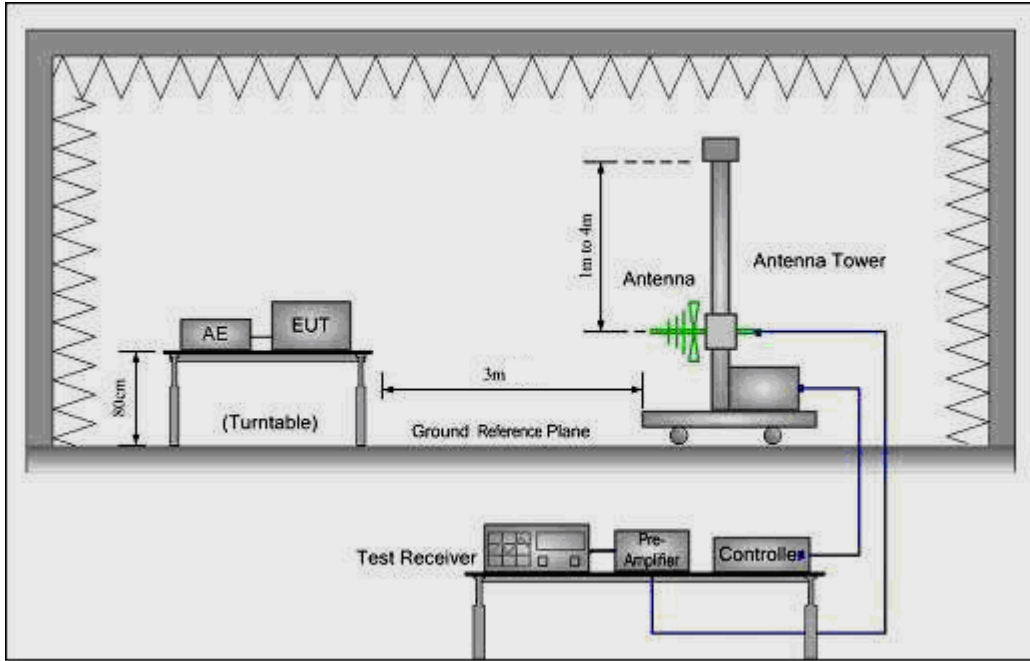
The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in §15.209. The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

Frequency in MHz	EIRP in dBm
960-1610	-75.3
1610-1990	-63.3
1990-3100	-61.3
3100-10600	-41.3
Above 10600	-61.3

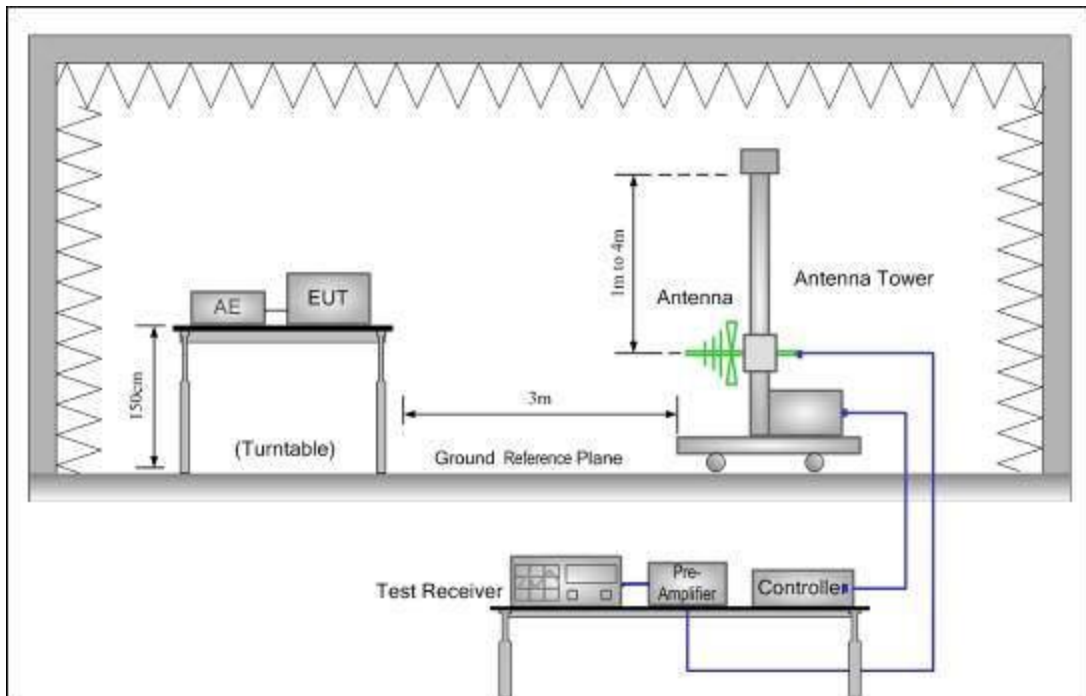
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Test Configuration:

- 1) 30 MHz to 1 GHz emissions:



- 2) 1 GHz to 40 GHz emissions:



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**Test procedure:**

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2007 was used to perform radiated emission test above 1 GHz.

The receiver was scanned from 30MHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

From 30MHz to 1GHz, read the Quasi-Peak field strength of the emissions with receiver QP detector RBW=120KHz.

Above 1GHz, read the Peak field strength and Average field strength.

Read the Peak field strength through RBW=1MHz, VBW=3MHz in spectrum analyzer setting;

Read the Average field strength through RBW=1MHz, VBW=10Hz in spectrum analyzer setting;

For measurement at frequency above 1GHz

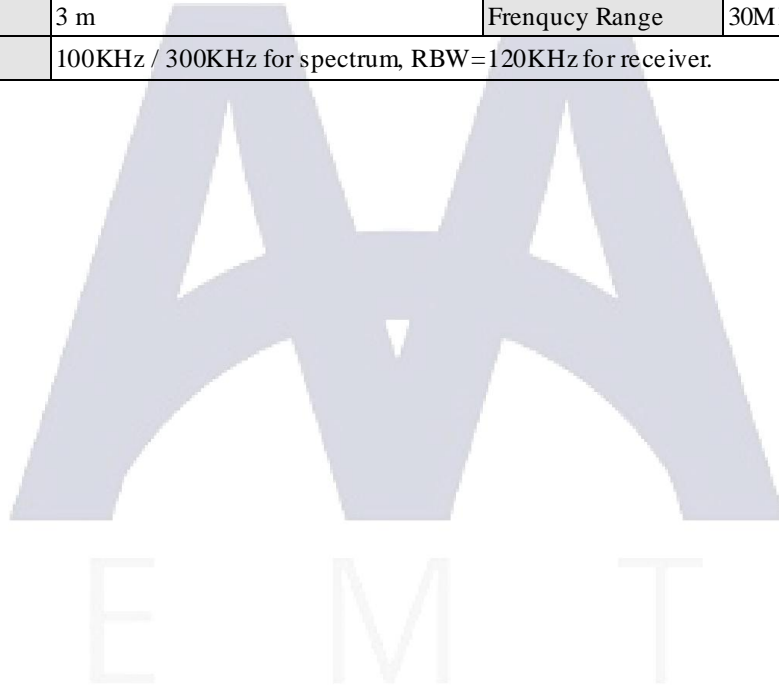
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

While maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209. If the dwell time per channel of the hopping signal is less than 100 ms, then the average field strength reading obtained with the 10 Hz VBW may be further adjusted by a "duty cycle correction factor", derived from  $20\log(\text{dwell time}/100 \text{ ms})$ , in an effort to demonstrate compliance with the 15.209 limit.

## 7.5.2 Test Result

### 7.5.2.1 Radiated Emissions Test Data 30MHz-1000MHz

EUT:	ID Badge	Model Name :	Noccela
Temperature:	25 °C	Test Data	2020-06-02
Pressure:	1010 hPa	Relative Humidity :	60%
		Test Voltage :	AC 120V/60Hz
Measurement Distance	3 m	Frenqucy Range	30MHz to 1GHz
RBW/VBW	100KHz / 300KHz for spectrum, RBW=120KHz for receiver.		



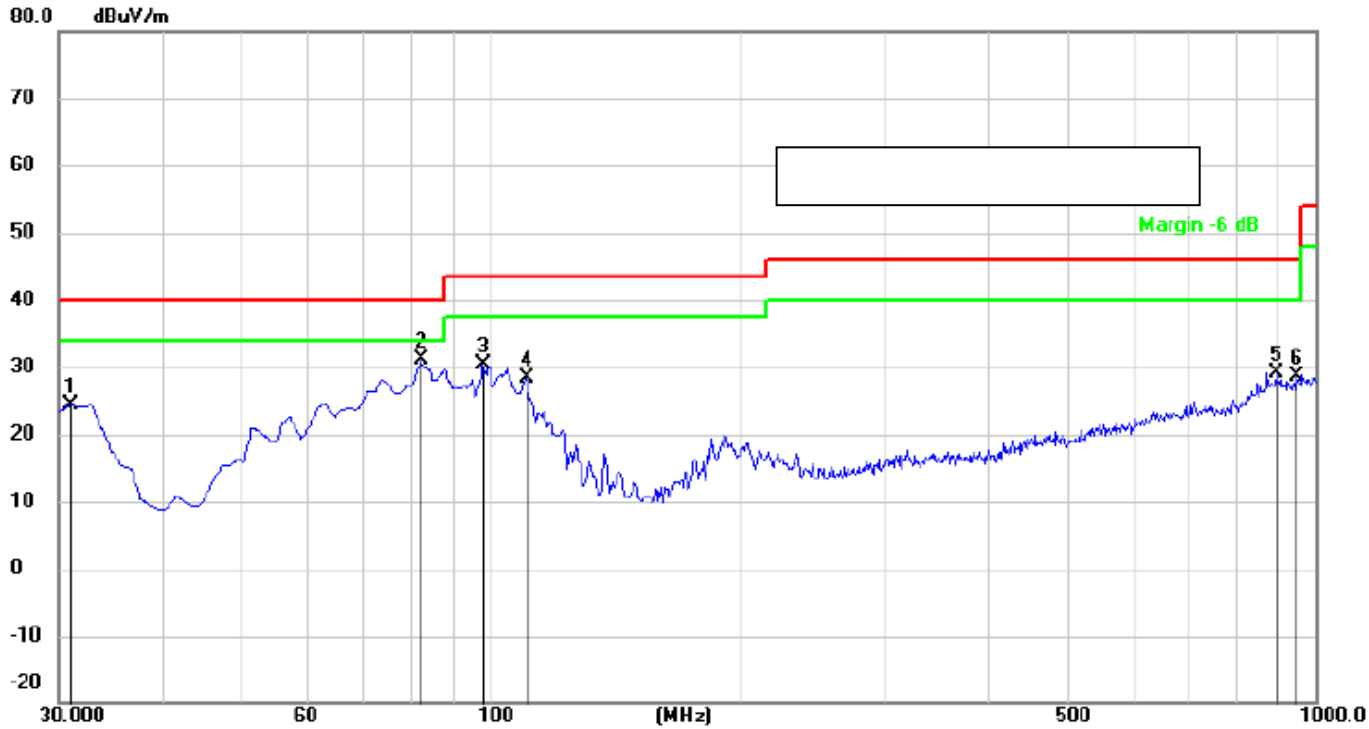
Report No.: AAEMT/EMC/201228-02-03

30 MHz~ 1 GHz Spurious Emissions .Quasi-Peak Measurement

Vertical:

Peak scan

Level (dBuV/m)



Quasi-peak measurement

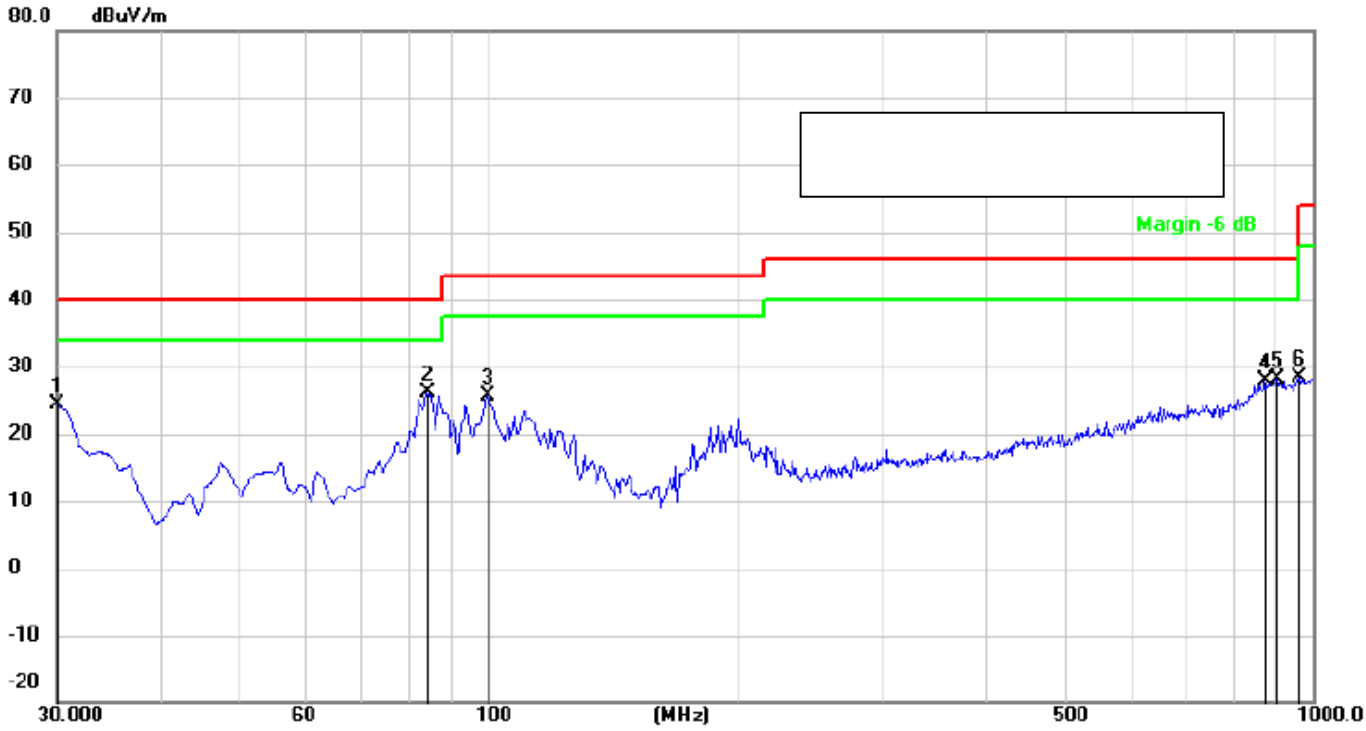
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		30.9700	35.71	-11.38	24.33	40.00	-15.67	QP
2	*	82.3800	48.51	-17.48	31.03	40.00	-8.97	QP
3		97.9000	45.87	-15.50	30.37	43.50	-13.13	QP
4		110.5100	44.72	-16.30	28.42	43.50	-15.08	QP
5		894.2700	26.86	2.37	29.23	46.00	-16.77	QP
6		947.6200	26.17	2.51	28.68	46.00	-17.32	QP

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**Horizontal:**

Peak scan

Level (dBuV/m)

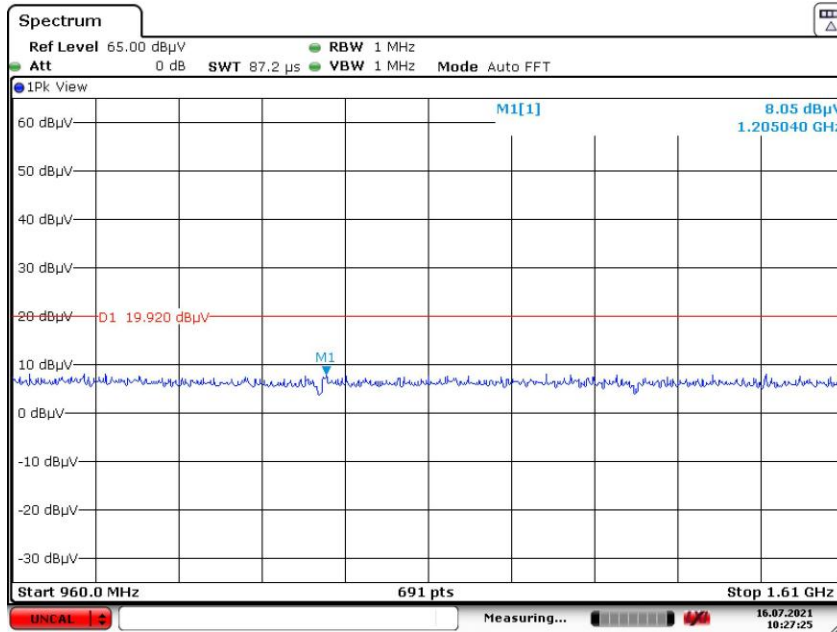


Quasi-peak measurement

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		30.0000	34.97	-10.50	24.47	40.00	-15.53	QP
2	*	84.3200	43.45	-17.44	26.01	40.00	-13.99	QP
3		99.8399	40.58	-15.06	25.52	43.50	-17.98	QP
4		873.9000	26.13	1.64	27.77	46.00	-18.23	QP
5		902.0300	25.58	2.57	28.15	46.00	-17.85	QP
6		959.2600	26.01	2.49	28.50	46.00	-17.50	QP

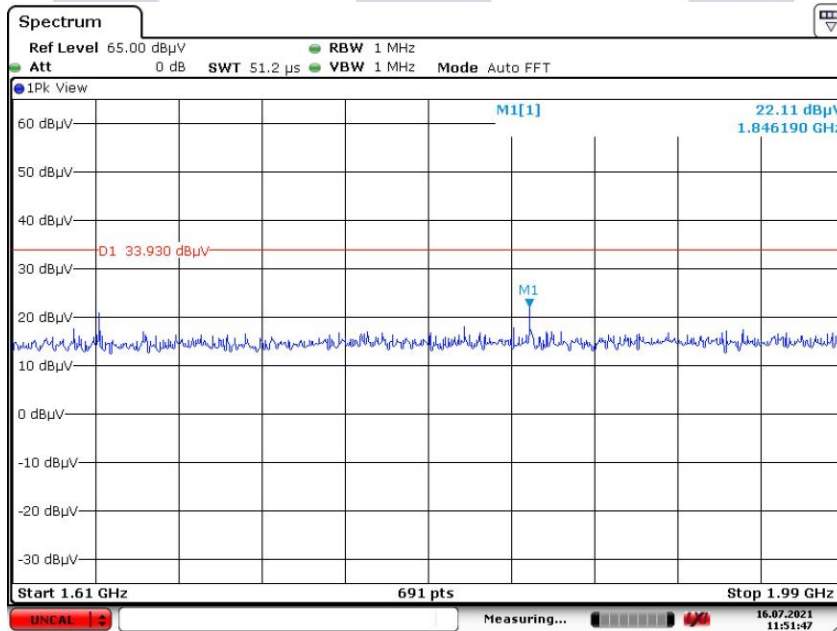
Report No.: AAEMT/EMC/201228-02-03

960-1610MHz



Date: 16.JUL.2021 10:27:25

1610-1990MHz

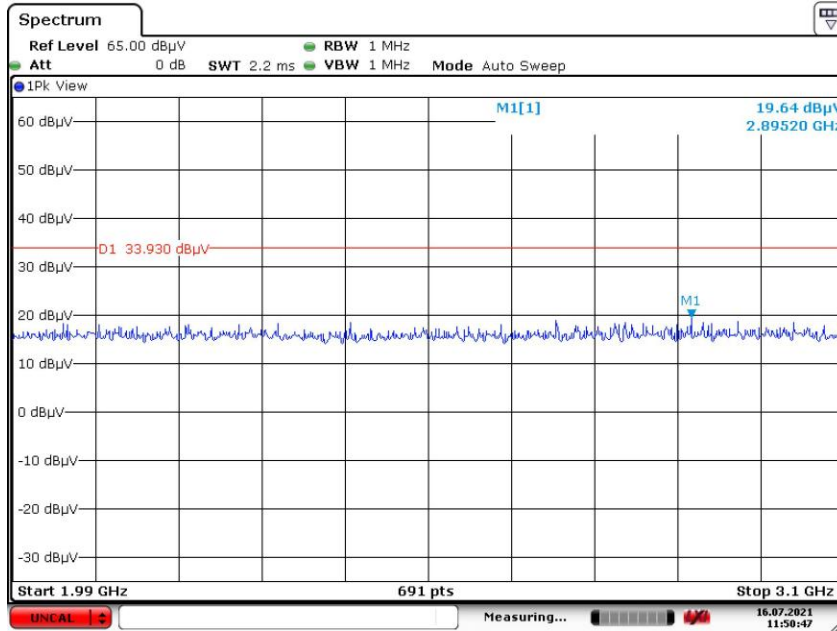


Date: 16.JUL.2021 11:51:47



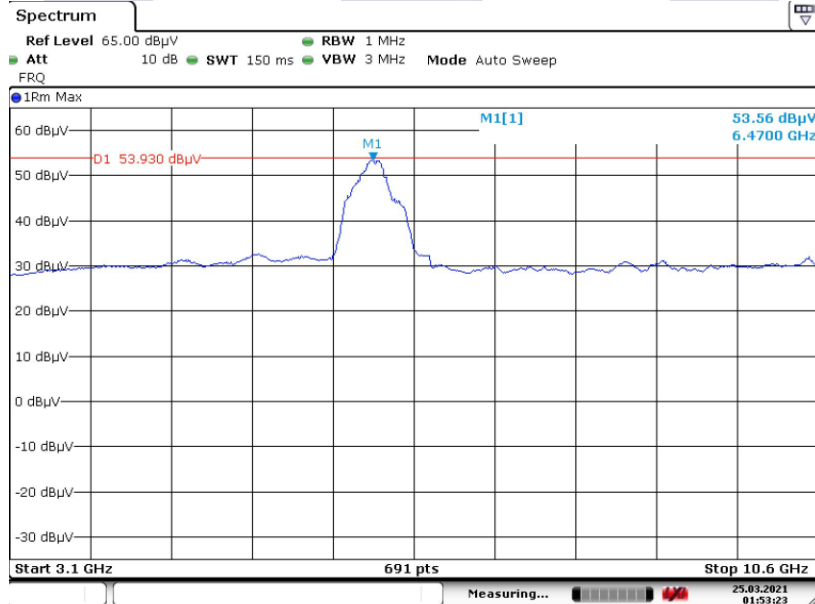
Report No.: AAEMT/EMC/201228-02-03

1990-3100MHz



Date: 16.JUL.2021 11:50:47

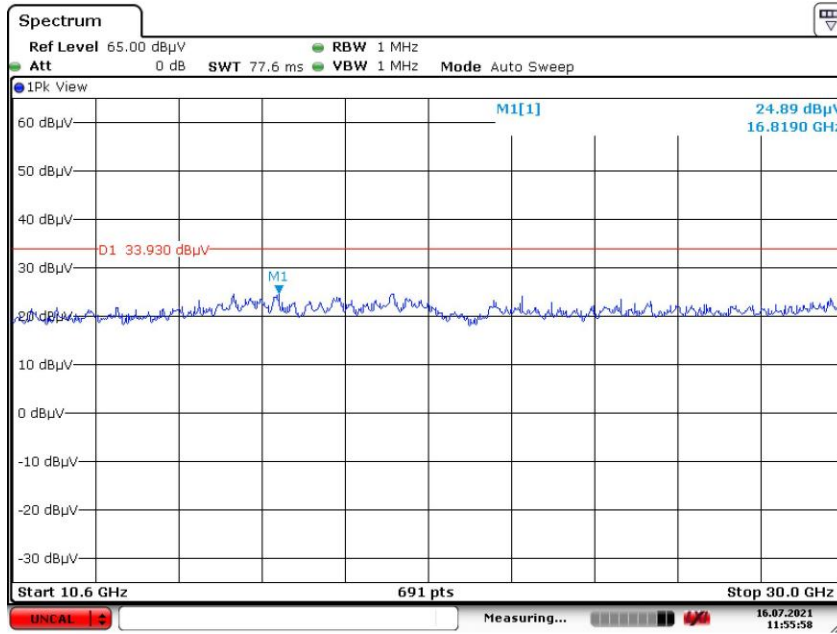
3100-10600MHz



Note: Maximum E.I.R.P=53.56dBµv/m=-41.67dBm

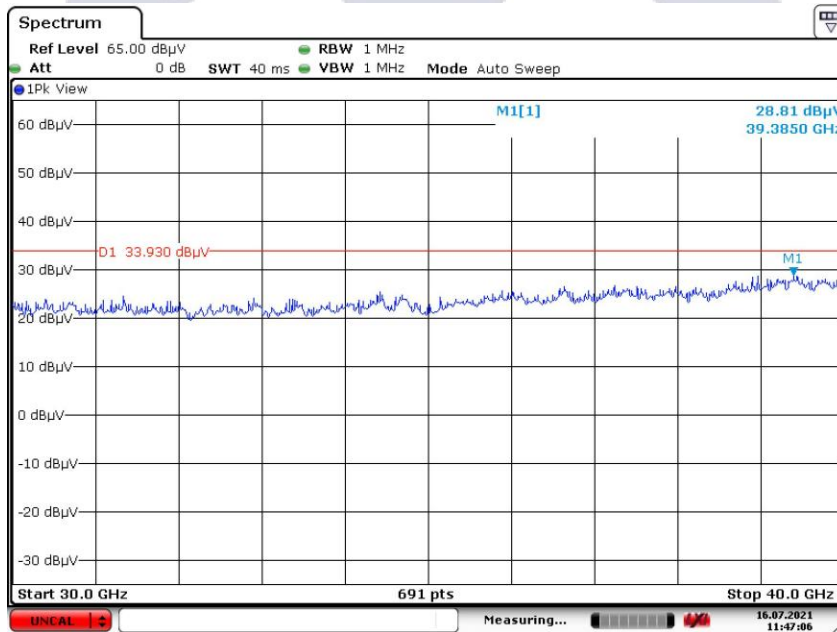
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10.6-30GHz



Date: 16.JUL.2021 11:55:58

30-40GHz



Date: 16.JUL.2021 11:47:06

## **7.6 Radiated Emissions in GPS Bands**

### **7.6.1 Limit (FCC PART 15 Section 15.519(b), 15.503(d))**

In addition to the radiated emission limits specified in the table in paragraph (c) of this section, UWB transmitters operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1 kHz:

<b>Frequency in MHz</b>	<b>EIRP in dBm</b>
1164-1240	-85.3
1559-1610	-85.3

### **7.6.2 Test Procedure**

Set EUT and test equipment as indicted in Radiated Emissions Procedure

RBW: 1 MHz

VBW:  $\geq 3 \times$  RBW

Detector: Peak

Trace Mode: Max Hold

- (1) Set analyzer center frequency to 1164-1240 MHz
- (2) Wait for the result to stabilize.
- (3) Repeat for Frequency range 1559-1610 MHz.

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7.6.3 Test Results

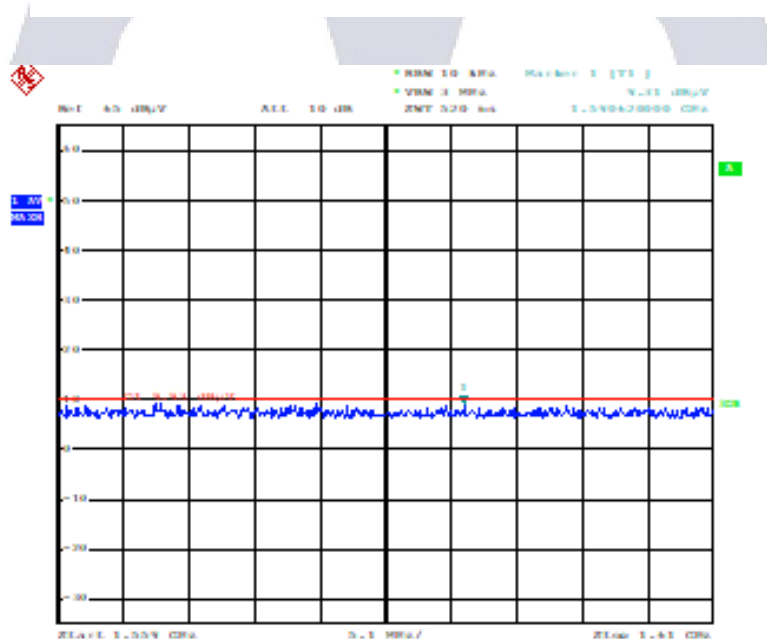
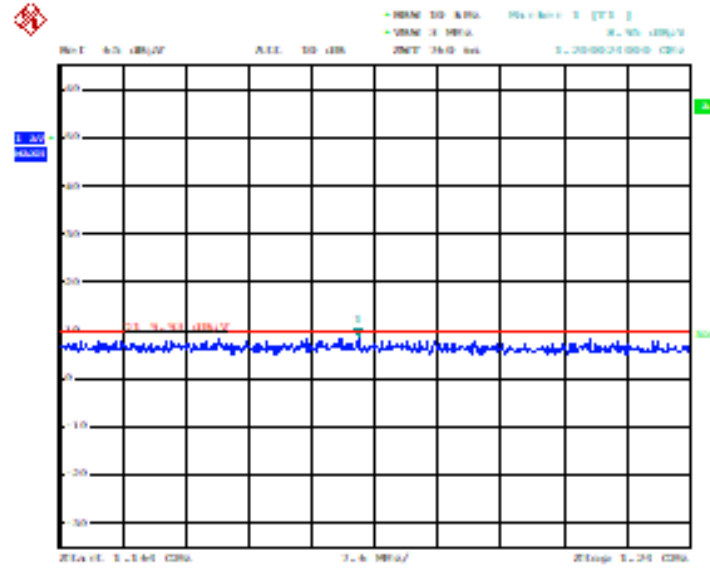
**Limit Calculation (1164-1240 MHz and 1559-1610 MHz); E(dBuV/m) =**

95.2 + EIRP(dBm)

Distance = 3 M

E(dBuV/m) = 95.2 + (-85.3)

E(dBuV/m) = 9.9



## 7.7 UWB Bandwidth

### 7.7.1 Limit (FCC PART 15 Section 15.519(b), 15.503(d))

#### FCC PART 15 Section 15.519(b)

The UWB bandwidth of a UWB system operating under the provisions of this section must be contained between 3100 MHz and 10600 MHz

Limit
UWB bandwidth within 3100 MHz and 10600 MHz

#### FCC PART 15 Section 15.503(d)

Ultra-wideband (UWB) transmitter. An intentional radiator that, at any point in time, has a fraction bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth

Limit
Fractional Bandwidth $\geq 0.20$ Or UWB Bandwidth (10 dB below highest radiated emission) $\geq 500$ MHz

### 7.7.2 Test Procedure

Set EUT and test equipment as indicted in Radiated Emissions Procedure RBW: 1 MHz

VBW:  $\geq 3 \times$  RBW

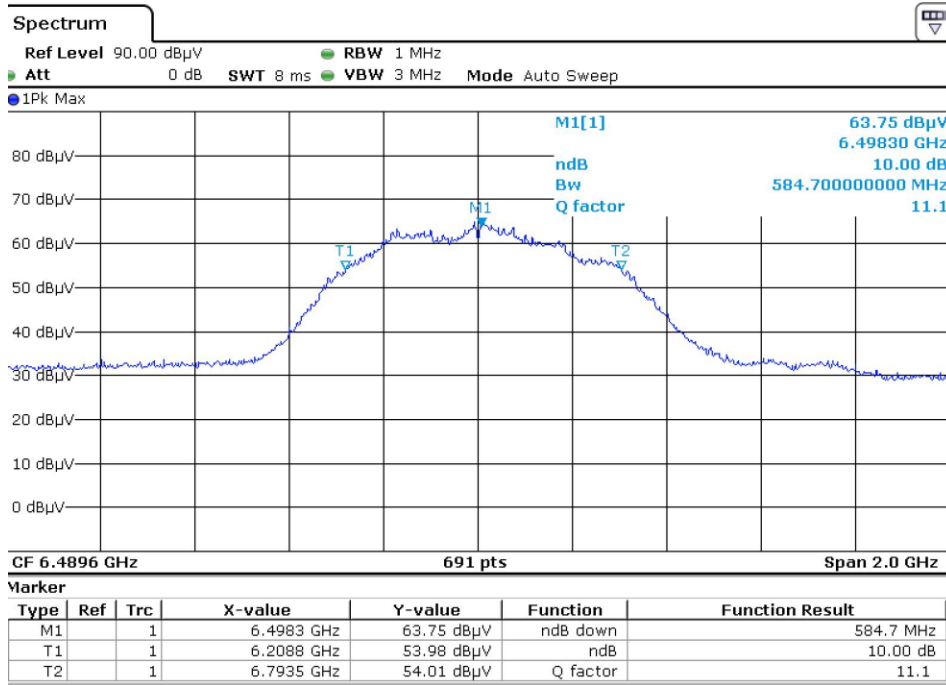
Detector: Peak

Trace Mode: Max Hold

1. Set analyzer center frequency to center of signal
2. Turn on marker peak search mode
3. Turn on ndb down
4. Set measurement to 10 db down

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5. Test Result



## 7.8 Peak Emission within a 50MHz Bandwidth

### 7.8.1 Limit (FCC PART 15 Section 15.519(e))

There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs,  $f(m)$ . That limit is 0 dBm EIRP. It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, follow the procedures described in 15.521

Limit
0 dBm EIRP when using 50 MHz measurement bandwidth

### 7.8.2 Test Procedure

Set EUT and test equipment as indicted in Radiated Emissions Procedure RBW: 1MHz

VBW:  $\geq$  RBW

Detector: Peak

Trace Mode: Max Hold

- (1) Set analyzer center frequency to center of signal
- (2) Let trace complete and turn on marker peak search mode
- (3) Apply correction factor as measurement cannot be done at 50 MHz bandwidth

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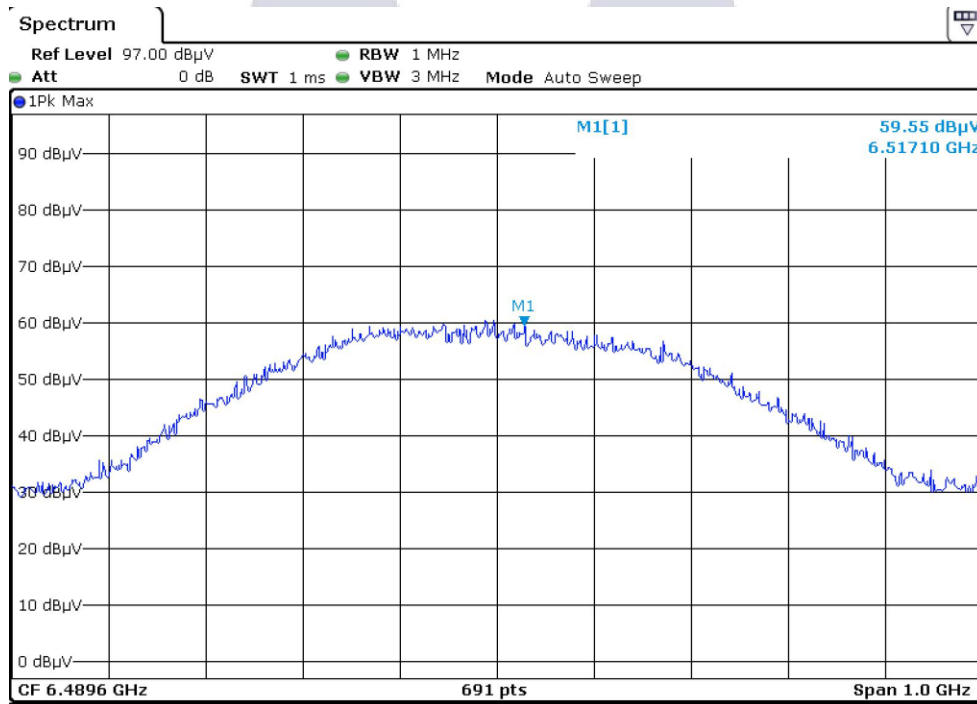
7.8.3 Test result

**Limit Calculation (Peak Emissions within a 50 MHz Bandwidths):**

$E \text{ (dBu V/m)} = 95.2 + \text{EIRP (dBm)}$

RBW = 1MHz

Frequency (MHz)	Reading Level (dBu V/m)	EIRP (dBm/MHz)	EIRP (dBm/50MHz)	Limit
				(dBm/50MHz)
6489.6	59.55	-35.65	-1.65	0





## 7.9 Transmission Requirements

### 7.9.1 Limit (FCC PART 15 Section 15.519(a)(1))

A UWB device operating under the provisions of this section shall transmit only when it is sending information to an associated receiver. The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device must cease transmitting.

Limit
The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received.

### 7.9.2 Test Procedure

Set EUT and test equipment as indicted in Radiated Emissions Procedure

RBW: 1 MHz

VBW:  $\geq$  RBW

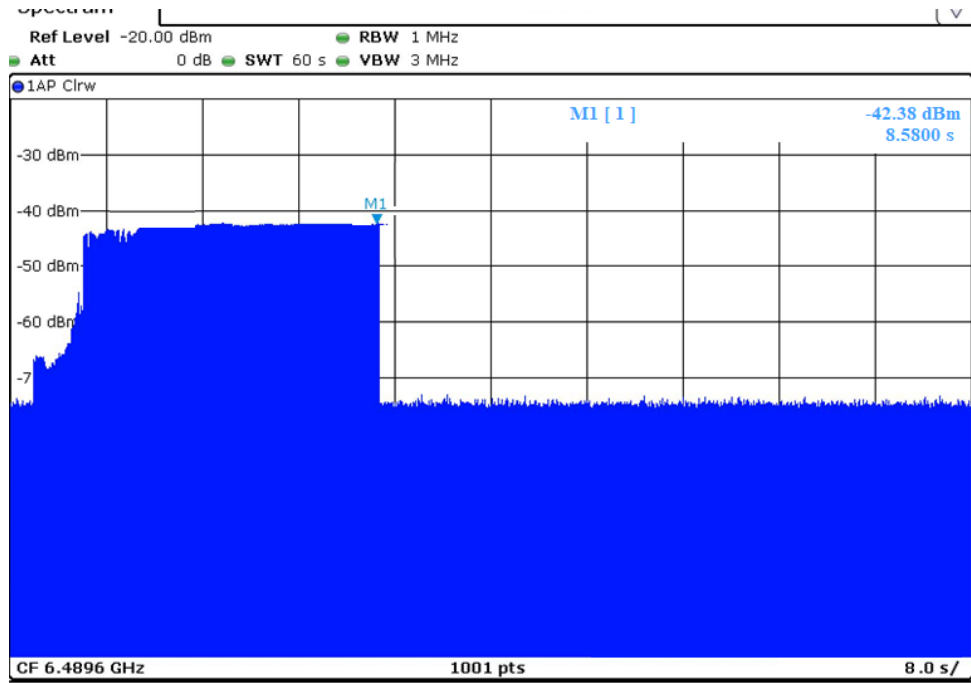
Detector: Peak

Trace Mode: Max Hold

- (1) Turn on EUT with associated receiver.
- (2) Set analyzer center frequency to center of signal.
- (3) Set analyzer span to 0MHz.
- (4) Set analyzer sweep time to 60 seconds.
- (5) Turn off EUT and associated receiver.
- (6) Restart scan on analyzer and turn on EUT but not the associated receiver.
- (7) Wait for EUT signal to stop broadcasting.
- (8) Measure delta on start of transmission and stopping of transmission.

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7.9.3 Test Result



Limit:	Test Result:	Conclusion:
An acknowledgment of reception must continue to be received by the UWB intentional radiator at least every 10 seconds or the UWB device	EUT stops transmission if it does not receive an acknowledgement within 10 seconds.	PASS

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## 8 Photographs

### 8.1 Radiated Spurious Emission Test Setup

Below 1 GHz:

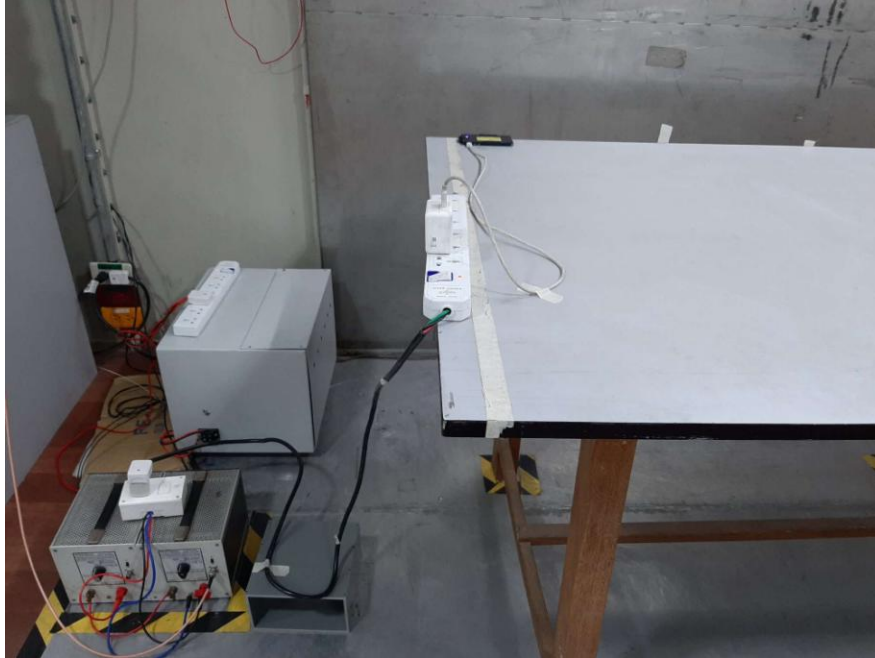


Above 1 GHz:



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## 8.2 Conducted Emission Test Setup



**\*\*End of report\*\***