VARIANT EMC TEST REPORT

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Product:	Tablet PC
Brand Name:	NOKIA
Model Name:	TA-1487
FCC ID:	2AJOTTA-1487
Date of tests:	Aug. 03, 2022 ~ Sep. 16, 2022

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

☐ **FCC Part 15, Subpart B, Class A**
☒ **FCC Part 15, Subpart B, Class B**
☒ **ANSI C63.4:2014**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Simon Wang Date: Sep. 16, 2022	Luke Lu Date: Sep. 16, 2022

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD 3

1 GENERAL INFORMATION 4

1.1 GENERAL DESCRIPTION OF EUT 4
1.2 SUMMARY OF TEST RESULTS 6
1.3 MEASUREMENT UNCERTAINTY 6
1.4 DESCRIPTION OF TEST MODES 7
1.5 DESCRIPTION OF SUPPORT UNITS 8

2 EMISSION TEST 9

2.1 CONDUCTED EMISSION MEASUREMENT 9
2.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT 9
2.1.2 TEST INSTRUMENTS 9
2.1.3 TEST PROCEDURES 10
2.1.4 DEVIATION FROM TEST STANDARD 10
2.1.5 TEST SETUP 11
2.1.6 EUT OPERATING CONDITIONS 11
2.1.7 TEST RESULTS 12
2.2 RADIATED EMISSION MEASUREMENT 14
2.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT 14
2.2.2 TEST INSTRUMENTS 15
2.2.3 TEST PROCEDURE 16
2.2.4 DEVIATION FROM TEST STANDARD 17
2.2.5 TEST SETUP 18
2.2.6 EUT OPERATING CONDITIONS 18
2.2.7 TEST RESULTS 19

3 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 23

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22070038EM01	Original release	Aug. 31, 2022
W7L-P22070039EM01	Based on the original product remove WWAN components, change model name, verify CE, RE data.	Sep. 16, 2022

1 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Tablet PC	
BRAND NAME	NOKIA	
MODEL NAME	TA-1487	
NOMINAL VOLTAGE	5.0Vdc(adapter or host equipment) 3.85Vdc (Li-ion, battery)	
MODULATION TYPE	**BT_LE**	GFSK
	Bluetooth	GFSK, π/4-DQPSK, 8DPSK
	FM	FM
	WLAN	DSSS, OFDM
	GPS/GALILEO/GLONASS	BPSK
OPERATING FREQUENCY **OPERATING FREQUENCY**	**Bluetooth/BT_LE**	2402MHz ~ 2480MHz
	FM	87.5MHz ~ 108MHz
	WLAN	2412 ~ 2462MHz for 11b/g/n(HT20/40) 5180 ~ 5240MHz, 5260 ~ 5320 MHz, 5500 ~ 5720MHz, 5745 ~ 5825 MHz for 11a/ n(HT20)/ n(HT40) / ac(VHT20)/ ac(VHT40) / ac(VHT80)
	GPS/GALILEO/GLONASS	1559MHz ~ 1610MHz
HW VERSION	EM_U1630_V1.2 L20	
SW VERSION	V0.492_B01	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	USB cable: non-shielded cable, with w/o ferrite core, 1 meter Earphone: non-shielded cable, with w/o ferrite core, 1.5 meter	
ACCESSORY DEVICES	Refer to note as below	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	NOKIA	Guangdong Fenghua New Energy Co., Ltd.	WTT80	Capacity：3.8 Vdc, 8000mAh
AC Adapter	NOKIA	Shenzhen Baijunda Electronic Co., Ltd	AD-010U	I/P: 100-240Vac, 0.35A, O/P: 5.0Vdc, 2.0A
Earphone	NOKIA	JUWEI ELECTRONICS CO., LTD	JWEP1242-W09H	Signal Line, 1.5meter
USB Cable	NOKIA	Saibao (Jiangxi) Industrial Co., Ltd	AC-2A	Signal Line, 1.0meter

1.2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart B		
Standard Section	**Test Item**	**Result**
FCC Part 15, Subpart B, Class B ANSI C63.4:2014	Conducted Test	Compliance
	Radiated Emission Test (30MHz ~ 1GHz)	Compliance
	Radiated Emission Test (Above 1GHz)	Compliance

1.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	±2.70dB
Radiated emissions	30MHz~1GMHz	±4.98dB
	1GMHz ~6GMHz	±4.70dB
	6GMHz ~18GMHz	±4.60dB

1.4 DESCRIPTION OF TEST MODES

Test Mode	Test Condition
Radiated emission test	
1	Adapter1 + USB cable + Earphone + Front Camera On + Sample 1(4+128)
2	Adapter1 + USB cable + Earphone + Back Camera On + Sample 1(4+128)
3	Adapter1 + USB cable + Earphone + FM RX + Sample 1(4+128)
4	Adapter1 + USB cable + Earphone + MPG4 + Sample 1(4+128)
5	USB Link + Data Transmission + USB cable + Earphone + PC to EUT + Sample1（4+128）
6	USB Link + Data Transmission + USB cable + Earphone + PC to SD + Sample1（4+128）
7	Powered by Battery + Earphone + MPG4 + Sample1（4+128）
8	Worse of 1-4 + Adapter 2 + Sample1（4+128）
9	Worst of 1-8 + Sample2（4+64）

Conducted emission test	
1	Adapter1 + USB cable + Earphone + Front Camera On + Sample 1(4+128)
2	Adapter1 + USB cable + Earphone + Back Camera On + Sample 1(4+128)
3	Adapter1 + USB cable + Earphone + FM RX + Sample 1(4+128)
4	Adapter1 + USB cable + Earphone + MPG4 + Sample 1(4+128)
5	USB Link + Data Transmission + USB cable + Earphone + PC to EUT + Sample1（4+128）
6	USB Link + Data Transmission + USB cable + Earphone + PC to SD + Sample1（4+128）
7	Worse of 1-4 + Adapter 2 + Sample1（4+128）
8	Worst of 1-7（mode 1）+ Sample2（4+64）

NOTE:

1. For conducted emission test, Pre-scan all mode, mode 2 was the worst case and only this mode was presented in this report.
2. For radiated emission test, Pre-scan all mode, test mode 6 was the worst case and only this mode was presented in this report
3. Sample1 is 4+128, Sample2 is 4+64(4 is 4g running memory, while 128/64 means 128g/64g storage memory)

1.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

FOR All TESTS

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Laptop	Lenovo	Thnikpad L440	R90FTFKP	N/A
2	Micro SD	SAM SUNG	N/A	N/A	N/A
3	FM signal generator	Rohde&Schwarz	SMB 100A	109279	N/A
4	GPS Simulator+Antenna	TOJOIN	GNSS-5000A	E1-010-010119	N/A
5	Universal radio communication tester	Rohde&Schwarz	CMW500	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Line: Shielded, Detachable 1m;
2	N/A
3	N/A
4	N/A
5	N/A

2 EMISSION TEST

2.1 CONDUCTED EMISSION MEASUREMENT

2.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107 a CLASS B)

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107 b CLASS A)

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	79	66
0.5 ~ 30	73	60

NOTE: 1.The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

2.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 15,22	Feb. 14,23
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Mar. 04,22	Mar. 03,23

NOTE: 1. The test was performed in CE shielded room.

.

2.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

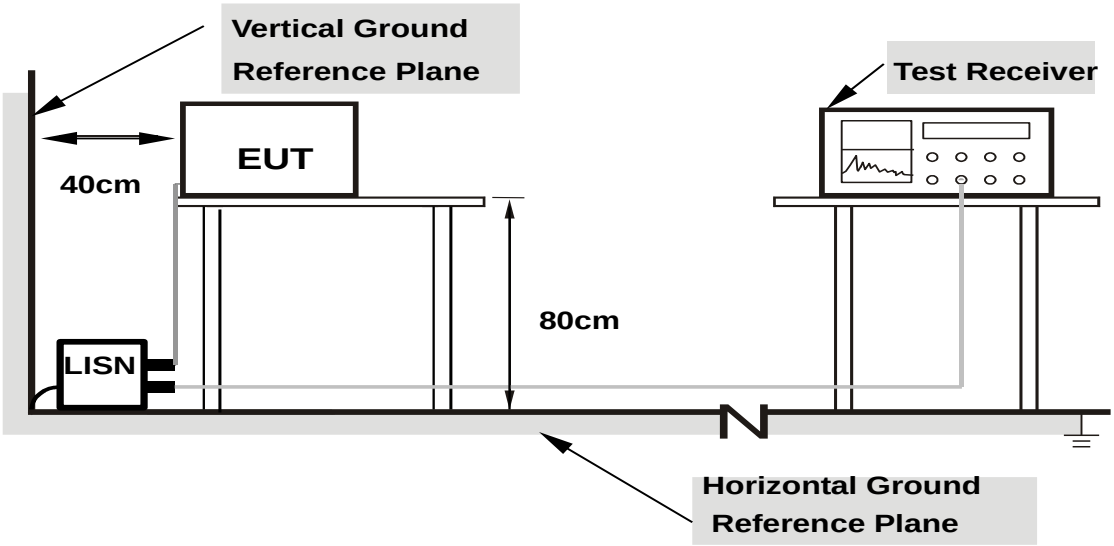
c. The frequency range from 150 kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

2.1.4 DEVIATION FROM TEST STANDARD

No deviation.

2.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

2.1.6 EUT OPERATING CONDITIONS

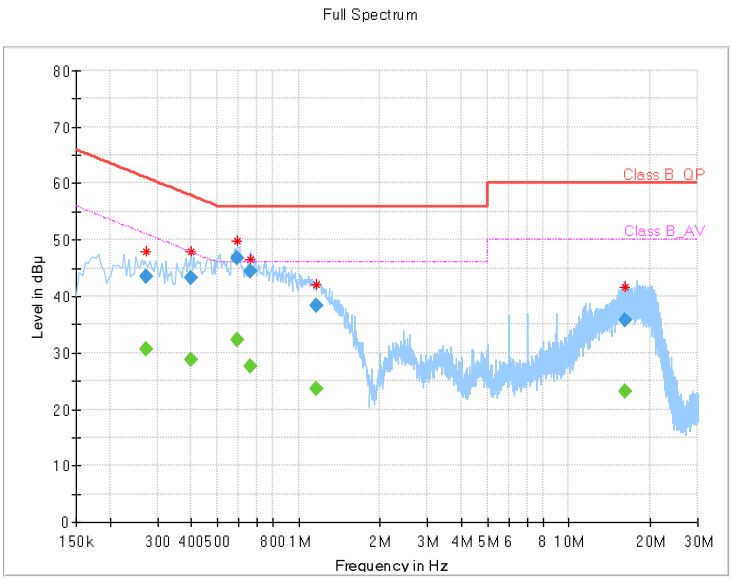
a. Turned on the power and connected of all equipment.
b. EUT was operated according to the use type described in the manufacturer's specifications or the user's manual.

2.1.7 TEST RESULTS

TEST VOLTAGE	Input 120 Vac, 60 Hz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 51%RH	**TESTED BY**	Carl xie

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.272000	---	30.53	51.06	20.53	L1	ON	9.7
0.272000	43.54	---	61.06	17.52	L1	ON	9.7
0.400000	---	28.67	47.85	19.18	L1	ON	9.7
0.400000	43.20	---	57.85	14.65	L1	ON	9.7
0.592000	---	32.31	46.00	13.69	L1	ON	9.7
0.592000	46.74	---	56.00	9.26	L1	ON	9.7
0.660000	---	27.65	46.00	18.35	L1	ON	9.7
0.660000	44.50	---	56.00	11.50	L1	ON	9.7
1.168000	---	23.72	46.00	22.28	L1	ON	9.7
1.168000	38.29	---	56.00	17.71	L1	ON	9.7
16.168000	---	23.22	50.00	26.78	L1	ON	9.8
16.168000	35.85	---	60.00	24.15	L1	ON	9.8

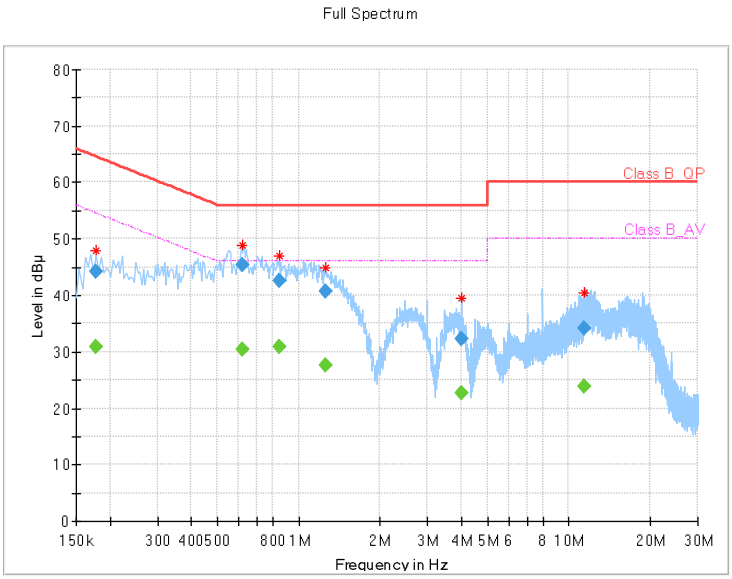
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Limit value - Emission level
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



TEST VOLTAGE	Input 120 Vac, 60 Hz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 51%RH	**TESTED BY**	Carl xie

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.178000	---	30.94	54.58	23.64	N	ON	9.7
0.178000	44.30	---	64.58	20.28	N	ON	9.7
0.616000	---	30.44	46.00	15.56	N	ON	9.7
0.616000	45.50	---	56.00	10.50	N	ON	9.7
0.844000	---	30.93	46.00	15.07	N	ON	9.7
0.844000	42.49	---	56.00	13.51	N	ON	9.7
1.256000	---	27.54	46.00	18.46	N	ON	9.8
1.256000	40.59	---	56.00	15.41	N	ON	9.8
4.000000	---	22.67	46.00	23.33	N	ON	9.8
4.000000	32.34	---	56.00	23.66	N	ON	9.8
11.460000	---	23.82	50.00	26.18	N	ON	9.8
11.460000	34.08	---	60.00	25.92	N	ON	9.8

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Limit value - Emission level
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



3.2 RADIATED EMISSION MEASUREMENT

2.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.109)

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 3 meters (dBμV/m)		
Frequencies (MHz)	**FCC 15B, Class A**	**FCC 15B, Class B**
30-88	49	40
88-216	53.5	43.5
216-960	56	46
960-1000	59.5	54
Above 1000	Avg: 59.5 Peak: 79.5	Avg: 54 Peak: 74

Frequency Range (For unintentional radiators)

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
4. QP detector shall be applied if not specified.

2.2.2 TEST INSTRUMENTS

Frequency range below1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 06,22	Mar. 05,23
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 18,22	Feb. 17,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May.12,22	May.11,23
E3 Test Software	E3	V 9.160323	N/A	N/A	N/A

Frequency range above 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Horn Antenna	ETS-LINDGREN	3117	00168728	Apr. 02,22	Apr. 01,23
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 18,22	Feb. 17,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,22	May.11,23
E3 Test Software	E3	V 9.160323	N/A	N/A	N/A

NOTE: 1. The test was performed in 3m chamber.
2. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2.2.3 TEST PROCEDURE

<Frequency Range below 1GHz>

The basic test procedure was in accordance with ANSI C63.4:2014 (section 12).

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from 1 meter to 4 meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1GHz.

NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
3. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) (if the raw value not contains the amplifier);
4. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB) (if the raw value contains the amplifier).
5. Margin value = Emission level – Limit value.

<Frequency Range above 1GHz>

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. The bore sight should be used during the test above 1GHz.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz

NOTE:

. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.

. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth of test receiver/spectrum analyzer is 1Hz for Average detection (AV) at frequency above 1GHz.

. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.

. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)

. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) (if the raw value not contains the amplifier);

. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB) (if the raw value contains the amplifier)

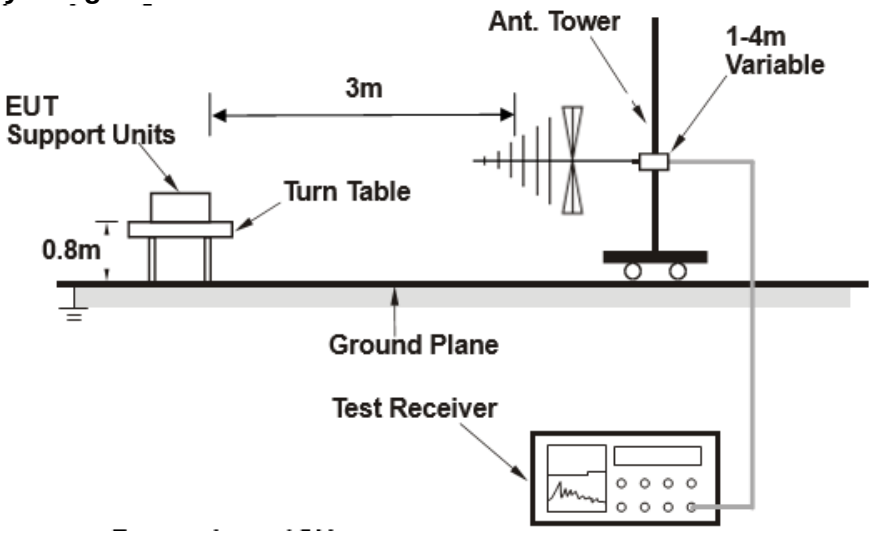
. Margin value = Emission level – Limit value.

2.2.4 DEVIATION FROM TEST STANDARD

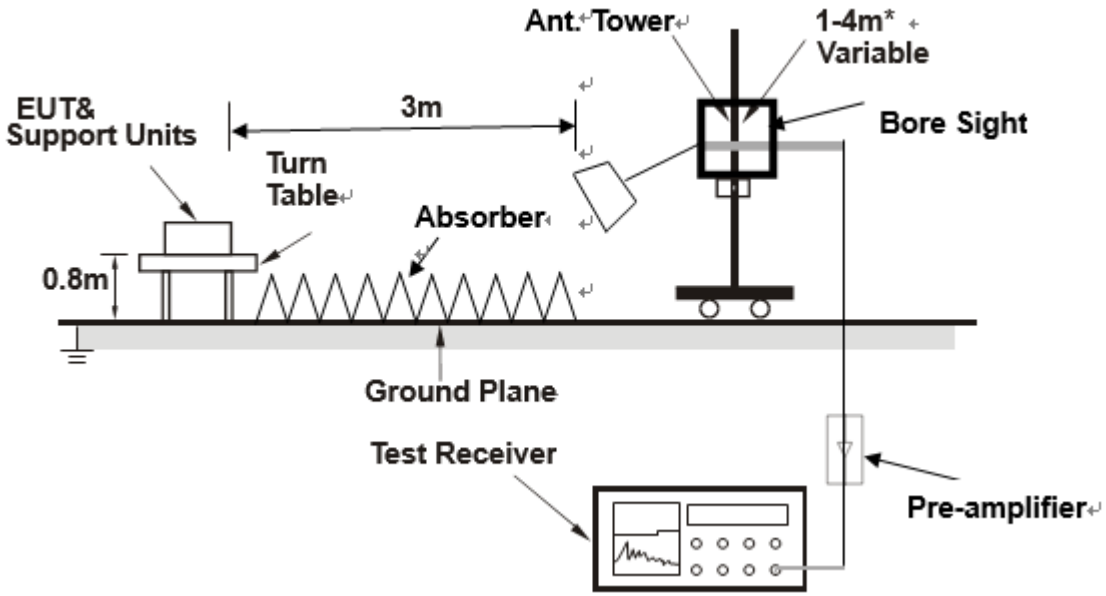
No deviation.

2.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

depends on the EUT height and the antenna 3dB bandwidth both, refer to section 7.3 of CISPR 16-2-3.

2.2.6 EUT OPERATING CONDITIONS

Same as item 2.1.6.

2.2.7 TEST RESULTS

Acceleromete alternative worst case:

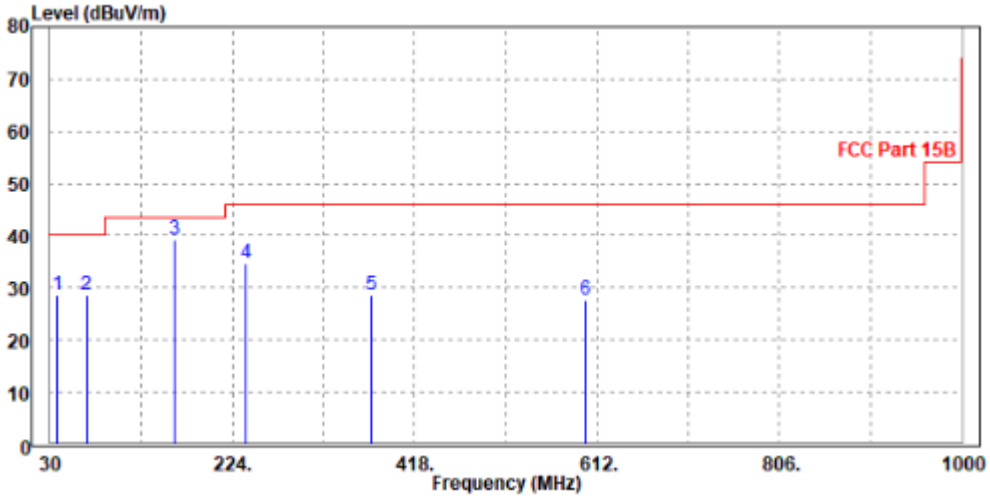
TEST VOLTAGE	Data Transmission Input 120 Vac, 60 Hz	**FREQUENCY RANGE**	30-1000 MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70 %RH	**DETECTOR FUNCTION & RESOLUTION BANDWIDTH**	Quasi-Peak, 120 kHz
TESTED BY	Jace Hu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1		37.760	28.58	49.95	40.00	-11.42	-21.37	Peak	Horizontal
2		68.800	28.62	57.23	40.00	-11.38	-28.61	Peak	Horizontal
3	PP	162.890	39.28	64.12	43.50	-4.22	-24.84	Peak	Horizontal
4		237.580	34.66	57.18	46.00	-11.34	-22.52	Peak	Horizontal
5		372.410	28.74	48.50	46.00	-17.26	-19.76	Peak	Horizontal
6		599.390	27.66	43.46	46.00	-18.34	-15.80	Peak	Horizontal

REMARKS: 1. Emission level(dBuV/m)=Read Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)- Amplifier Gain
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

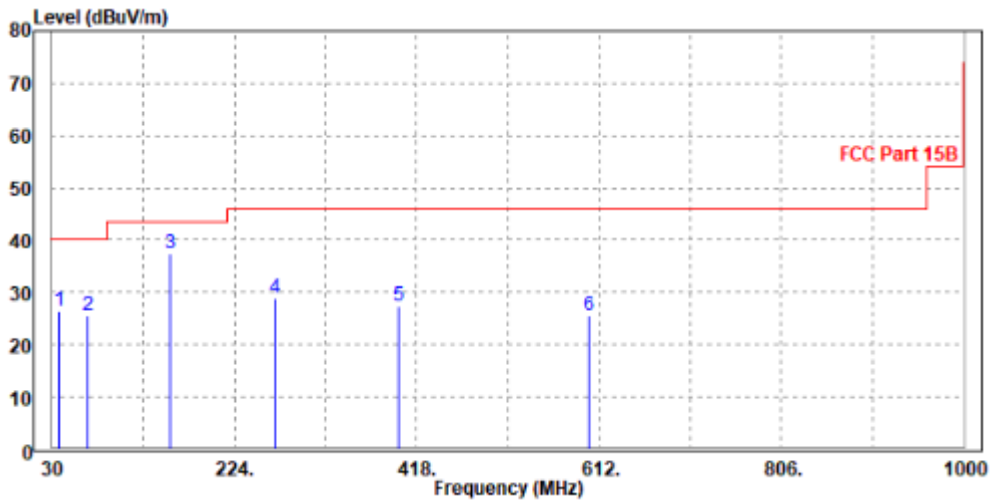


TEST VOLTAGE	Data Transmission Input 120 Vac, 60 Hz	**FREQUENCY RANGE**	30-1000 MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70% RH	**DETECTOR FUNCTION & RESOLUTION BANDWIDTH**	Quasi-Peak , 120 kHz
TESTED BY	Jace Hu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1		37.760	26.41	48.63	40.00	-13.59	-22.22	Peak	Vertical
2		67.830	25.53	53.82	40.00	-14.47	-28.29	Peak	Vertical
3	PP	155.130	37.33	62.48	43.50	-6.17	-25.15	Peak	Vertical
4		266.680	28.86	51.20	46.00	-17.14	-22.34	Peak	Vertical
5		398.600	27.24	46.32	46.00	-18.76	-19.08	Peak	Vertical
6		600.360	25.42	41.31	46.00	-20.58	-15.89	Peak	Vertical

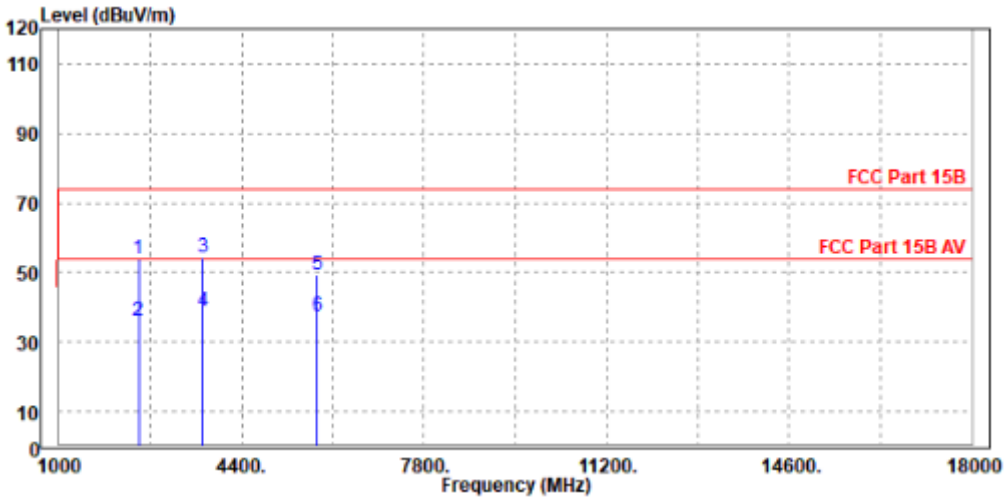
REMARKS:
1. Emission level(dBuV/m)=Read Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) -Amplifier Gain
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



TEST VOLTAGE	Data Transmission Input 120 Vac, 60 Hz	**FREQUENCY RANGE**	1-18 GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70 %RH	**DETECTOR FUNCTION & RESOLUTION BANDWIDTH**	Peak/Average, 1 MHz
TESTED BY	Jace Hu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2479	53.63	57.93	74	-20.37	35.33	6.3	45.93	100	100	Peak
2479	35.92	40.22	54	-18.08	35.33	6.3	45.93	100	100	Average
3669	54.11	55.75	74	-19.89	35.93	7.91	45.48	100	90	Peak
3669	38.91	40.55	54	-15.09	35.93	7.91	45.48	100	90	Average
5811	49.05	46.73	74	-24.95	37.91	9.91	45.5	100	0	Peak
5811	37.53	35.21	54	-16.47	37.91	9.91	45.5	100	0	Average

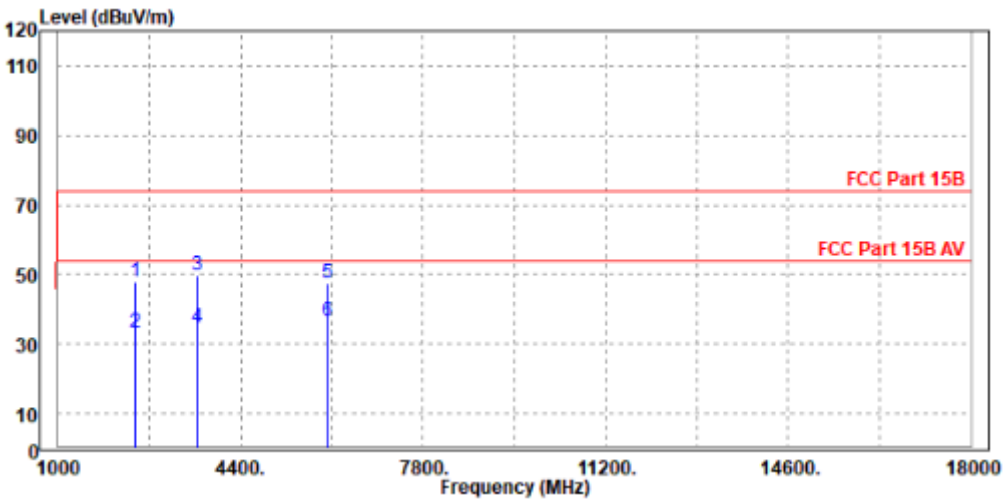
REMARKS:
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
2. Negative sign (-) in the margin column signify levels below the limit.
3. Frequency range scanned: 1GHz to 5th harmonic of the highest frequency or 40GHz, whichever is lower .For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.
4. Only emissions significantly above equipment noise floor are reported.



TEST VOLTAGE	Data Transmission Input 120 Vac, 60 Hz	**FREQUENCY RANGE**	1-18 GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70 %RH	**DETECTOR FUNCTION & RESOLUTION BANDWIDTH**	Peak/Average, 1 MHz
TESTED BY	Jace Hu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2428	47.97	54.76	74	-26.03	32.94	6.23	45.96	100	180	Peak
2428	33.37	40.16	54	-20.63	32.94	6.23	45.96	100	180	Average
3601	49.79	53.17	74	-24.21	34.2	7.93	45.51	100	35	Peak
3601	34.9	38.28	54	-19.1	34.2	7.93	45.51	100	35	Average
5998	47.33	46.17	74	-26.67	36.69	9.97	45.5	100	110	Peak
5998	36.42	35.26	54	-17.58	36.69	9.97	45.5	100	110	Average

REMARKS:
1. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.
2. Negative sign (-) in the margin column signify levels below the limit.
3. Frequency range scanned: 1GHz to 5th harmonic of the highest frequency or 40GHz, whichever is lower .For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.
4. Only emissions significantly above equipment noise floor are reported.



3 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---