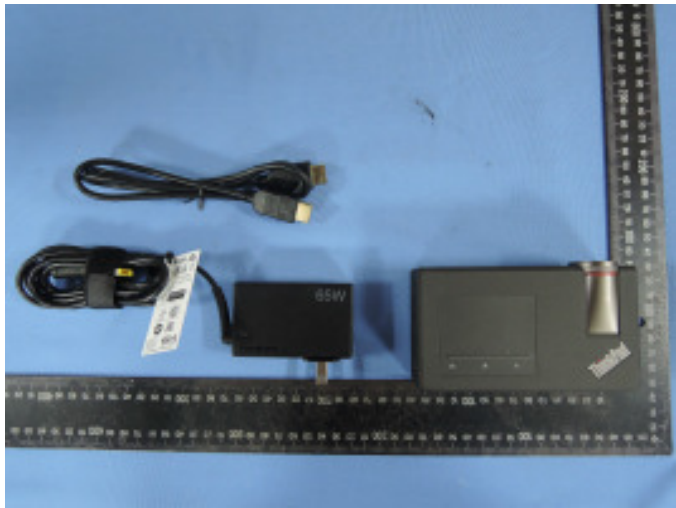


Prüfbericht-Nr.: <i>Test Report No.:</i>	10057136 001	Auftrags-Nr.: <i>Order No.:</i>	114054306	Seite 1 von 35 <i>Page 1 of 35</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	445339	Auftragsdatum: <i>Order date.:</i>	04 Aug. 2016	
Auftraggeber: <i>Client:</i>	Lenovo Information Products (Shenzhen) Co., Ltd. Futian free trade zone, 3 Guang Lan RD, Shenzhen Guangdong 518038, P.R. China			
Prüfgegenstand: <i>Test item:</i>	ThinkPad Stack Mobile Projector			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	M123			
Auftrags-Inhalt: <i>Order content:</i>	TUV Rheinland - EMC service			
Prüfgrundlage: <i>Test specification:</i>	FCC 47 CFR Part 15, Subpart B: 2015 ICES-003: Issue 6 (2016)			
Wareneingangsdatum: <i>Date of receipt:</i>	17 Mar. 2016			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000407629-001			
Prüfzeitraum: <i>Testing period:</i>	Refer to test report			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland Taiwan Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Taiwan Ltd. Taichung Branch Office			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
				
20 Sep. 2016	Neil J. N. Tsai/ Project Manager	20 Sep. 2016	Max Y. C. Yao/ Vice General Manager	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
				Unterschrift <i>Signature</i>
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Prüfbericht - Nr.: 10057136 001
Test Report No.

Seite 2 von 35
Page 2 of 35

TEST SUMMARY

5.1 CONDUCTED EMISSION PER SECTION 15.107, FCC 47 CFR PART 15 SUBPART B

RESULT: Pass

5.2 RADIATED EMISSION PER SECTION 15.109, FCC 47 CFR PART 15 SUBPART B

RESULT: Pass

Contents

1	GENERAL REMARKS	4
1.1	COMPLEMENTARY MATERIALS	4
2	TEST SITES	4
2.1	TEST FACILITIES.....	4
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	5
2.3	CALIBRATION.....	5
2.4	ABBREVIATIONS.....	6
2.5	MEASUREMENT UNCERTAINTY	6
3	GENERAL PRODUCT INFORMATION	7
3.1	PRODUCT FUNCTION AND INTENDED USE.....	7
3.2	RATING AND PHYSICAL CHARACTERISTICS	7
3.3	NOISE GENERATING OR SOURCES OF INTERFERENCE	7
3.4	NOISE SUPPRESSING PARTS.....	7
3.5	SUBMITTED DOCUMENTS.....	8
4	TEST SET-UP AND OPERATION MODES	9
4.1	TEST METHODOLOGY.....	9
4.2	INDEPENDENT AND TEST OPERATION MODES.....	9
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	10
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	10
4.5	TEST SETUP	11
5	TEST RESULTS EMISSION	12
5.1	CONDUCTED EMISSION PER SECTION 15.107, 47 CFR PART 15 SUBPART B.....	12
5.2	RADIATED EMISSION PER SECTION 15.109, 47 CFR PART 15 SUBPART B	17
6	PHOTOGRAPHS OF TEST SETUP.....	30
7	LIST OF TABLES	35
8	LIST OF FIGURES.....	35
9	LIST OF PICTURES.....	35

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report.

2 Test Sites

2.1 Test Facilities

Laboratory:

TUV Rheinland Taiwan Ltd. Taichung Branch Office
No.9, Lane 36, Minsheng Rd., Sec. 3, Daya District, Taichung City 428, Taiwan, R.O.C.

Test Facility:

TÜV Rheinland Taiwan Ltd.
11F., No.758, Sec. 4, Bade Rd., Songshan Dist., Taipei City 105, Taiwan, R.O.C.

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facilities and has found these test sites to be in compliance with the requirements under 47 CFR section 2.948. The registration number: 365730.

The Industry Canada has reviewed the technical characteristics of the radiated and conducted emission facilities and has found these test sites to be in compliance with the Canadian requirements. The filing number: 9465A.

The test facility is accredited by TAF (member of ILAC), under number 0759 according to ISO/IEC 17025:2005.

TÜV Rheinland Taiwan Ltd. is accredited by the Federal Communications Commission as a Conformity Assessment Body under Designation Number TW1065 and Test Firm Registration#: 799772.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

For EMI/ Conduction Measurement (Taipei: Shield Room)

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
1	Test Receiver	Rohde & Schwarz	ESC17	100797	2015/12/28	2016/12/28
2	LISN	Rohde & Schwarz	ENV216	101243	2016/06/02	2017/06/02
3	LISN	Rohde & Schwarz	ENV216	101262	2016/06/16	2017/06/16
4	Telecom ISN 2 Line	FCC	FCC-TLISN-T2-02-09	101169	2016/09/01	2017/09/01
5	Telecom ISN 8 Line	FCC	FCC-TLISN-T8-02-09	101167	2016/09/02	2017/09/02
6	4 balance telecom pair ISN	FCC	F-070306-1057-1	101166	2016/09/02	2017/09/02
7	Test Software	Farad	EZ EMC	Ver. TUV3A1	N/A	N/A
8	Test Software	Audix	e3	Ver. 9	N/A	N/A

For EMI/Radiation Measurement (Taipei: Semi-Anechoic Chamber B)

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
1	Test Receiver	Rohde & Schwarz	ESR7	101549	2015/09/22	2016/09/22
2	Spectrum Analyzer	Rohde & Schwarz	FSV-40	101112	2015/09/22	2016/09/22
3	Pre-Amplifier	Hewlett Packard	8447D	2944A09270	2016/08/09	2017/08/09
4	Pre-Amplifier	Com-Power	PAM-840	461257	2015/11/19	2016/11/19
5	Pre-Amplifier	EM Electronics	EM01G18G	060649	2016/07/29	2017/07/29
6	Bilog Antenna	TESEQ	CBL6111D	29804	2016/06/23	2017/06/23
7	Horn Antenna	ETS-Lindgren	3117	00201918	2016/08/12	2017/08/12
8	Horn Antenna	Com-Power	AH-840	101031	2015/11/02	2016/11/02
9	Loop Antenna	Schwarzbeck	FMZB 1513	1513-076	2016/05/11	2017/05/11
10	Test Software	Audix	e3	Ver. 9	N/A	N/A

Conformance of the used measurement and test equipment with the requirements of ISO/IEC 17025:2005 has been confirmed before testing.

2.3 Calibration

All equipment requiring calibration is calibrated periodically by the manufacturer or accredited calibration services according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.4 Abbreviations

PASS : Complied with requirement	N/A : Not applicable
FAIL : Not complied	N.C.R. : No calibration required

2.5 Measurement Uncertainty

Table 2: Measurement Uncertainty

Testing Item	Frequency Range	Uncertainty
Conducted Emission (LISN)	9kHz - 30MHz	2.69 dB
Conducted Emission (ISN)	150kHz - 30MHz	3.20 dB
Radiated Emission (966 Chamber: 3m)	30MHz - 1000MHz	2.82 dB
Radiated Emission (966 Chamber: 3m)	Above 1GHz	2.42 dB
Radiated Emission (10m OATS: 10m)	30MHz - 1000MHz	2.82 dB

Note:

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

3 General Product Information

3.1 Product Function and Intended Use

The tested sample is a "ThinkPad Stack Mobile Projector" with model numbers "M123" for new approval, which can work with ThinkPad Stack devices including BT speaker, hard drive and Power bank.

The tested sample provides wireless connection for Android, and Windows devices, and provides the video projection via attached HDMI cable.

3.2 Rating and Physical Characteristics

Type Designation:	M123
Adapter rating:	Input: 100-240Vac, 1.5A, 50-60Hz Output: 20Vdc, 3.25A, 65W Max
Battery rating:	7.6Vdc (3.8Vdc, 17Wh cell x2)
Protection Class:	II
Wireless Frequency:	2.402 - 2.480 GHz (Bluetooth & WIFI) & 5 GHz WIFI

3.3 Noise Generating or Sources of Interference

- 1) IC circuits
- 2) Crystal (X2: 32.768kHz, X1: 19.2MHz, XS4: 24MHz, PXS1000: 32.768kHz, PPXS1: 24MHz, PPXS2: 27MHz)

3.4 Noise Suppressing Parts

Please refer to attachment documentation for details.

3.5 Submitted Documents

- 1) Circuit diagram
- 2) Block diagram
- 3) User Guide
- 4) PCB Layout
- 5) Rating Label
- 6) Product Specification

4 Test Set-up and Operation Modes

4.1 Test Methodology

The test methodology used is based on the requirement of 47 CFR PART 15, section 15.31, 15.33, 15.35, 15.107 and 15.109 or ICES-003.

The test methods, which have been used, are based on ANSI C63.4 or CAN/CSA-CEI/IEC CISPR 22.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Independent and Test Operation Modes

A. The PC was connected with EUT via HDMI cable then PC run the H pattern, the EUT connected with earphone then audio out, power via battery.

B. The EUT was connected with USB HDD then run the H pattern from USB HDD, the EUT connected with "ThinkPad Stack Bluetooth Speaker" then audio out, and connected with "ThinkPad Stack Wireless Router" via WIFI function, power via AC adapter.

The final operation mode is:

A. HDMI in + Audio out + power via battery

B. USB in + BT speaker out + WIFI link + power via AC adapter

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C 63.4 or in CAN/CSA-CEI/IEC CISPR22.

Refer to Test setup in chapter 4.5.

4.3 Special Accessories and Auxiliary Equipment

The subject sample was tested as an independent unit with the following equipment:

Description	Manufacturer	Model No.	Remark	Certification
ThinkPad Stack Bluetooth Speaker	lenovo	S123	8SSSH0L12941AG 5000AD	DoC
ThinkPad Stack Wireless Router	lenovo	R123	8SSR80K86220NI5 0002E	DoC
PC	Lenovo	AD1	R8L45MN	DoC
Modem	Galileo	AL-56ERM	0MERM46A0156	DoC
HDD	SONY	HD-EG5	XCV0S5K2801316 1	DoC
HDD	SONY	HD-EG5	XCV0S5K2801317 E	DoC
Keyboard	Lenovo	KU-0225	1017037	DoC
Mouse	Lenovo	MO28UOA	4400779	DoC
Ear/Microphone	i-Acon	CW-010MV	N/A	N/A
Ear/Microphone	DENGEKI	SKM-X1	201303111722	N/A

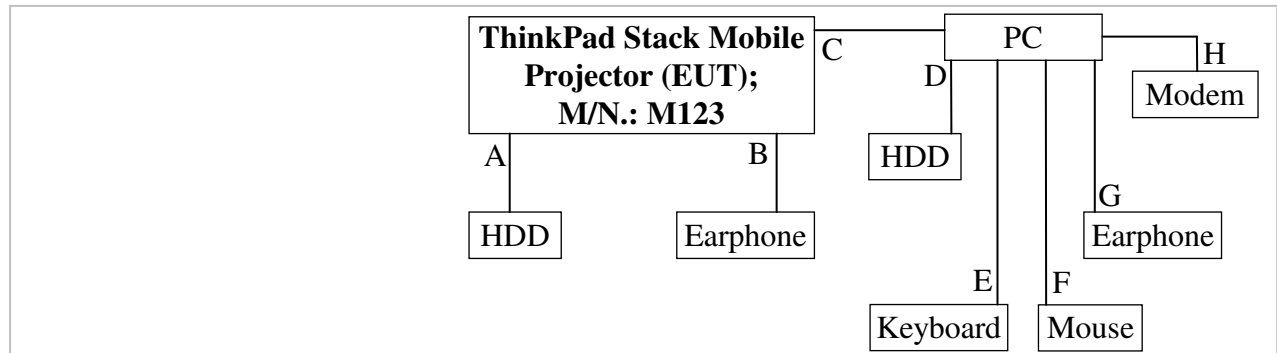
4.4 Countermeasures to achieve EMC compliance

The test sample which has been tested contained the noise suppression parts as described in the constructional data form or technical construction file or refer to the attachment photo document of test report. No additional measures were employed to achieve compliance.

4.5 Test Setup

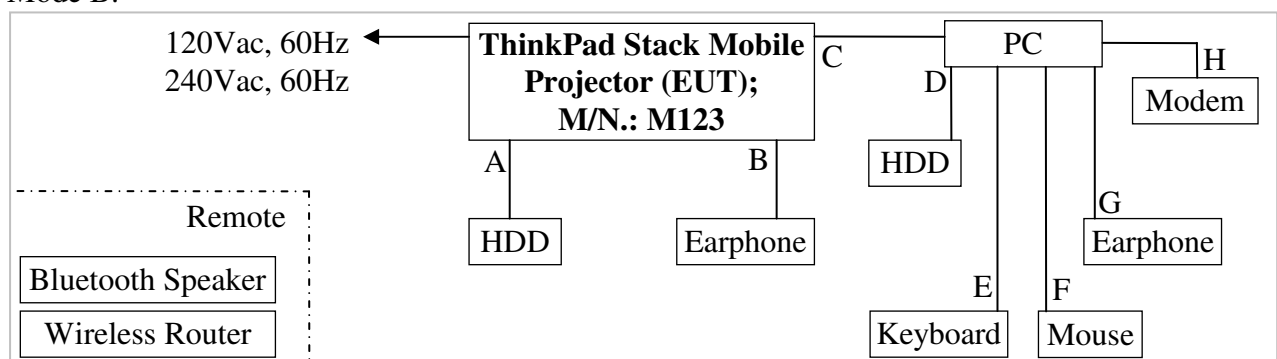
The test arrangement is configured and set according to manufacturer's installations.

Mode A:



Signal Cable Type		Signal Cable Description
A	USB cable	Shielding, 0.7m
B	Audio cable	Non Shielding, 1.7m
C	HDMI cable	Shielding, 1m
D	USB cable	Shielding, 0.7m
E	USB cable	Shielding, 1.8m
F	USB cable	Shielding, 1.8m
G	Audio cable	Non Shielding, 2m
H	RS232 cable	Shielding, 0.9m

Mode B:



Signal Cable Type		Signal Cable Description
A	USB cable	Shielding, 0.7m
B	Audio cable	Non Shielding, 1.7m
C	HDMI cable	Shielding, 1m
D	USB cable	Shielding, 0.7m
E	USB cable	Shielding, 1.8m
F	USB cable	Shielding, 1.8m
G	Audio cable	Non Shielding, 2m
H	RS232 cable	Shielding, 0.9m

5 Test Results EMISSION

5.1 Conducted Emission per section 15.107, 47 CFR part 15 subpart B

RESULT:	PASS
----------------	-------------

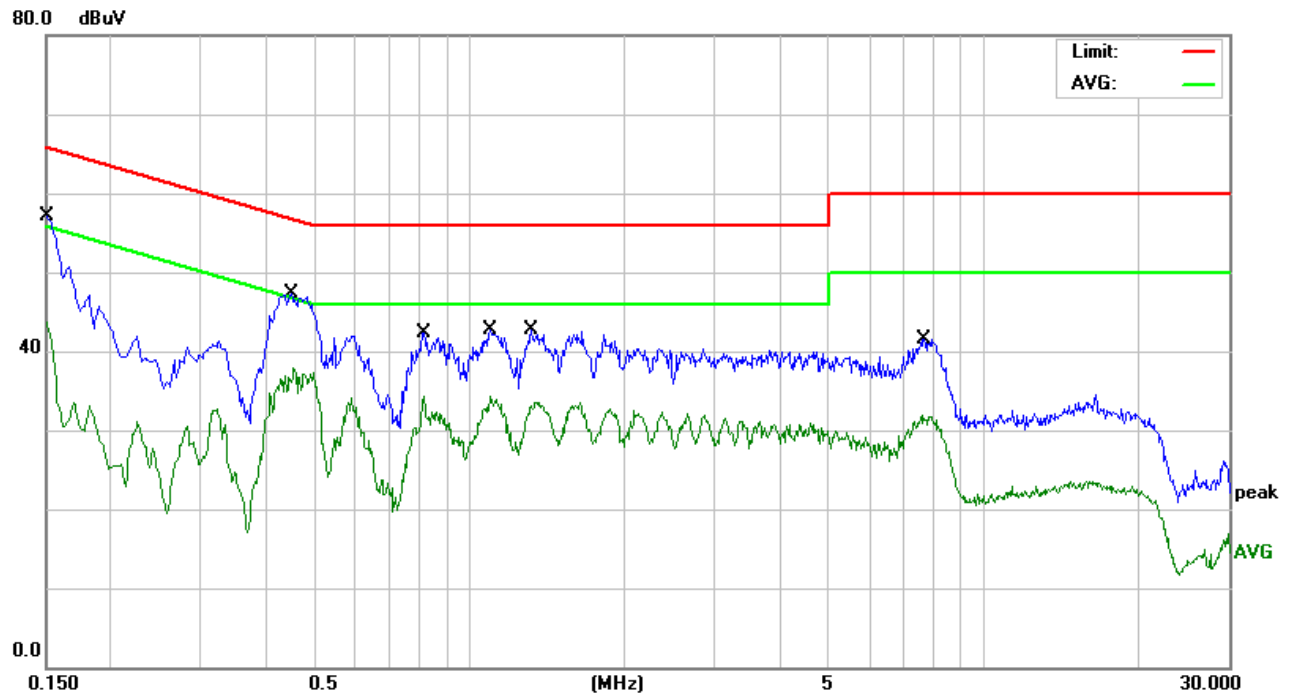
Port: AC Mains
Test Procedure : ANSI C63.4 (2014) Clause 7.3
Deviations from standard
test procedure : None
Frequency Range : 0.15 – 30MHz
Limits : FCC Part 15 Subpart B Section 15.107 (a) class B;
FCC KDB 174176 D01
Kind of Test Site : Conducted Room (Shield)

Test Setup

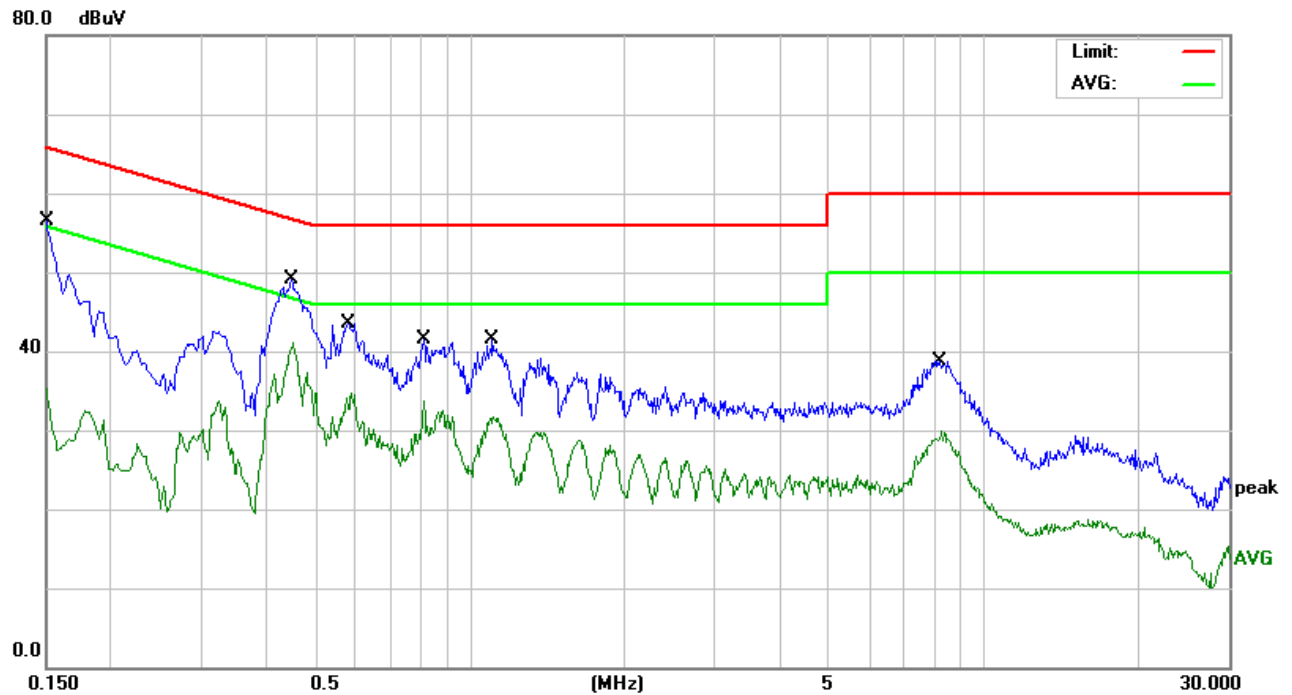
The following setup caused the highest disturbance:

Date of Testing : 31 Aug. 2016
Input Voltage : 120Vac, 60Hz & 240Vac, 60Hz
Operational Mode : See 4.2
Temperature 25.8 °C
Relative Humidity 41 %

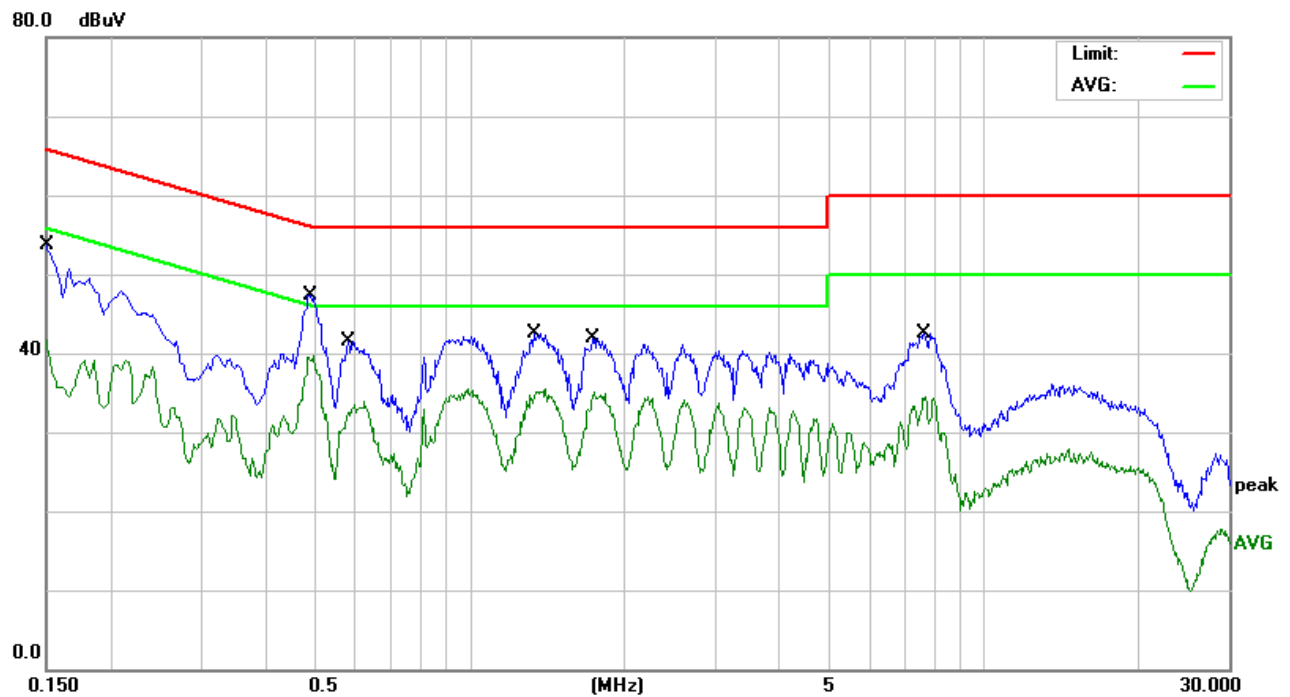
Note: Level = Reading + Factor;
Margin = Level - Limit.

Figure 1: Conducted Emission, AC Mains; 0.15 – 30 MHz (Mode B, 120Vac)
Phase L1


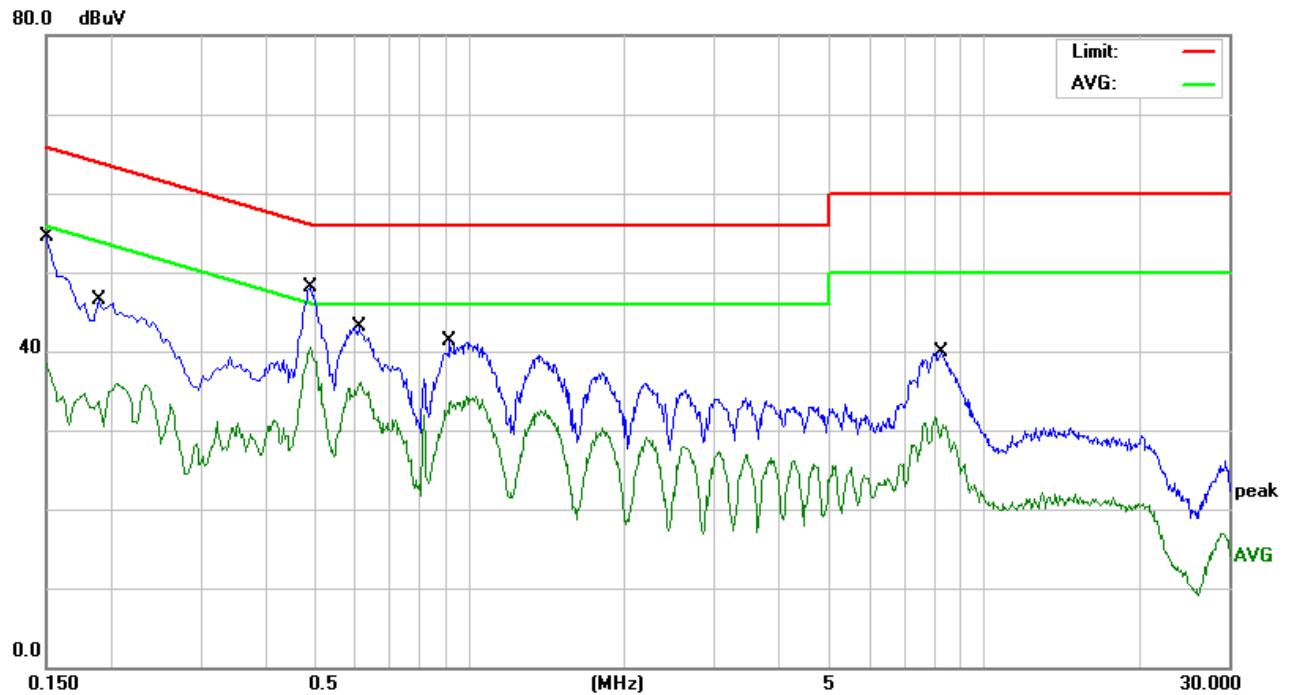
No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	9.78	40.14	49.92	65.99	-16.07	QP	P	
2	0.1500	9.78	23.30	33.08	55.99	-22.91	AVG	P	
3	0.4500	9.75	34.92	44.67	56.87	-12.20	QP	P	
4	0.4500	9.75	27.36	37.11	46.87	-9.76	AVG	P	
5	0.8139	9.75	29.84	39.59	56.00	-16.41	QP	P	
6	0.8139	9.75	24.28	34.03	46.00	-11.97	AVG	P	
7	1.0940	9.75	29.22	38.97	56.00	-17.03	QP	P	
8	1.0940	9.75	23.21	32.96	46.00	-13.04	AVG	P	
9	1.3220	9.76	28.50	38.26	56.00	-17.74	QP	P	
10	1.3220	9.76	22.73	32.49	46.00	-13.51	AVG	P	
11	7.6580	9.84	26.58	36.42	60.00	-23.58	QP	P	
12	7.6580	9.84	20.59	30.43	50.00	-19.57	AVG	P	

Phase N


No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	9.73	42.47	52.20	65.99	-13.79	QP	P	
2	0.1500	9.73	22.31	32.04	55.99	-23.95	AVG	P	
3	0.4500	9.68	35.96	45.64	56.87	-11.23	QP	P	
4	0.4500	9.68	29.07	38.75	46.87	-8.12	AVG	P	
5	0.5820	9.69	30.77	40.46	56.00	-15.54	QP	P	
6	0.5820	9.69	23.47	33.16	46.00	-12.84	AVG	P	
7	0.8139	9.69	29.09	38.78	56.00	-17.22	QP	P	
8	0.8139	9.69	23.67	33.36	46.00	-12.64	AVG	P	
9	1.1100	9.70	27.30	37.00	56.00	-19.00	QP	P	
10	1.1100	9.70	21.22	30.92	46.00	-15.08	AVG	P	
11	8.2020	9.79	24.02	33.81	60.00	-26.19	QP	P	
12	8.2020	9.79	18.09	27.88	50.00	-22.12	AVG	P	

Figure 2: Conducted Emission, AC Mains; 0.15 – 30 MHz (Mode B, 240Vac)
Phase L1


No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	9.78	42.83	52.61	65.99	-13.38	QP	P	
2	0.1500	9.78	30.71	40.49	55.99	-15.50	AVG	P	
3	0.4900	9.75	35.06	44.81	56.17	-11.36	QP	P	
4	0.4900	9.75	28.95	38.70	46.17	-7.47	AVG	P	
5	0.5820	9.75	27.92	37.67	56.00	-18.33	QP	P	
6	0.5820	9.75	22.16	31.91	46.00	-14.09	AVG	P	
7	1.3340	9.76	29.47	39.23	56.00	-16.77	QP	P	
8	1.3340	9.76	24.59	34.35	46.00	-11.65	AVG	P	
9	1.7380	9.76	28.24	38.00	56.00	-18.00	QP	P	
10	1.7380	9.76	23.44	33.20	46.00	-12.80	AVG	P	
11	7.6660	9.84	29.21	39.05	60.00	-20.95	QP	P	
12	7.6660	9.84	23.57	33.41	50.00	-16.59	AVG	P	

Phase N


No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	9.73	39.76	49.49	65.99	-16.50	QP	P	
2	0.1500	9.73	25.81	35.54	55.99	-20.45	AVG	P	
3	0.1900	9.70	33.71	43.41	64.03	-20.62	QP	P	
4	0.1900	9.70	22.87	32.57	54.03	-21.46	AVG	P	
5	0.4900	9.68	36.18	45.86	56.17	-10.31	QP	P	
6	0.4900	9.68	29.89	39.57	46.17	-6.60	AVG	P	
7	0.6100	9.69	30.99	40.68	56.00	-15.32	QP	P	
8	0.6100	9.69	25.29	34.98	46.00	-11.02	AVG	P	
9	0.9180	9.70	28.12	37.82	56.00	-18.18	QP	P	
10	0.9180	9.70	23.03	32.73	46.00	-13.27	AVG	P	
11	8.2540	9.79	25.00	34.79	60.00	-25.21	QP	P	
12	8.2540	9.79	17.96	27.75	50.00	-22.25	AVG	P	

5.2 Radiated Emission

per section 15.109, 47 CFR part 15 subpart B

RESULT:**PASS**

Port: Enclosure
Test Procedure : ANSI C63.4 (2014) Clause 8.3
Deviations from standard
test procedure : None
Frequency Range : 30 – 1000MHz, above 1GHz
Limits : FCC Part 15 Subpart B Section 15.109 (a) class B
Kind of Test Site : 966 Semi-anechoic chamber (3m distance)

Test Setup

The following setup caused the highest disturbance:

Date of Testing : 31 Aug. 2016
Input Voltage : See 3.2
Operational Mode : See 4.2
Temperature 24 °C
Relative Humidity 51 %

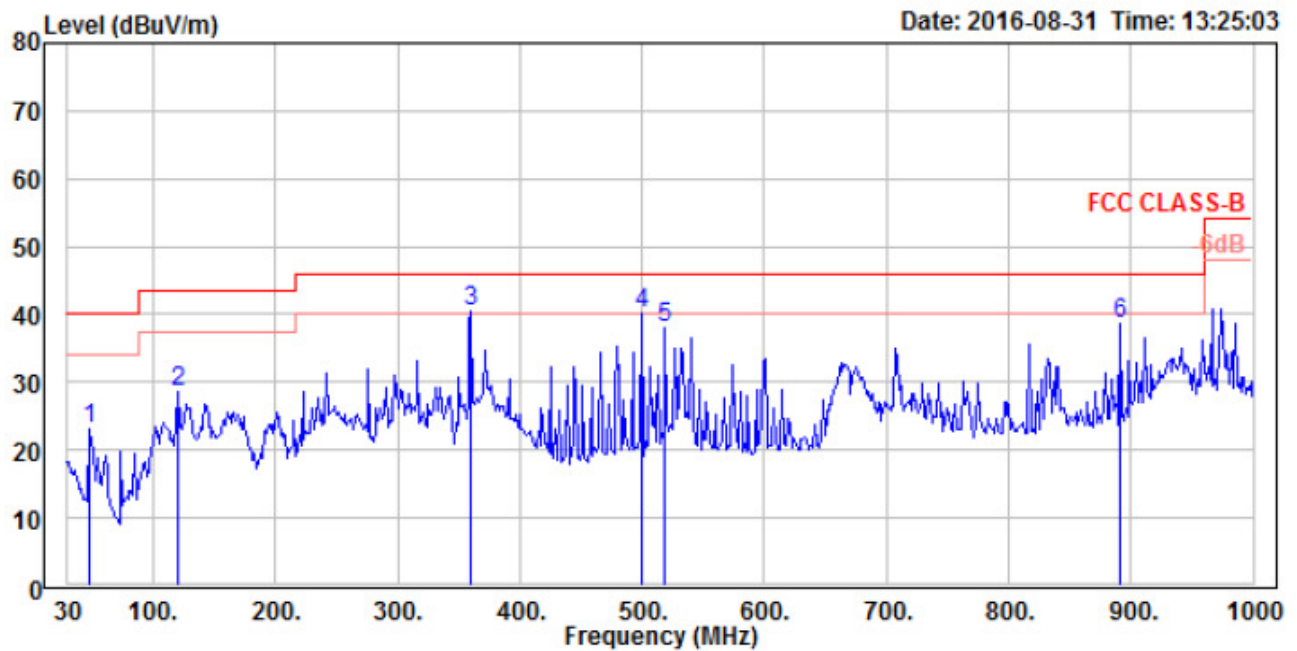
The highest frequency generated or used in the device or on which the operates or tunes of the EUT:

- ☐ below 1.705M, measuring up to 30MHz
☐ 1.705-108M, measuring up to 1000MHz
☐ 108-500MHz, measuring up to 2000MHz
☐ 500-1000MHz, measuring up to 5000MHz
☒ above 1000MHz, measuring up to 5th harmonic of the highest frequency or 40GHz, whichever is lower.

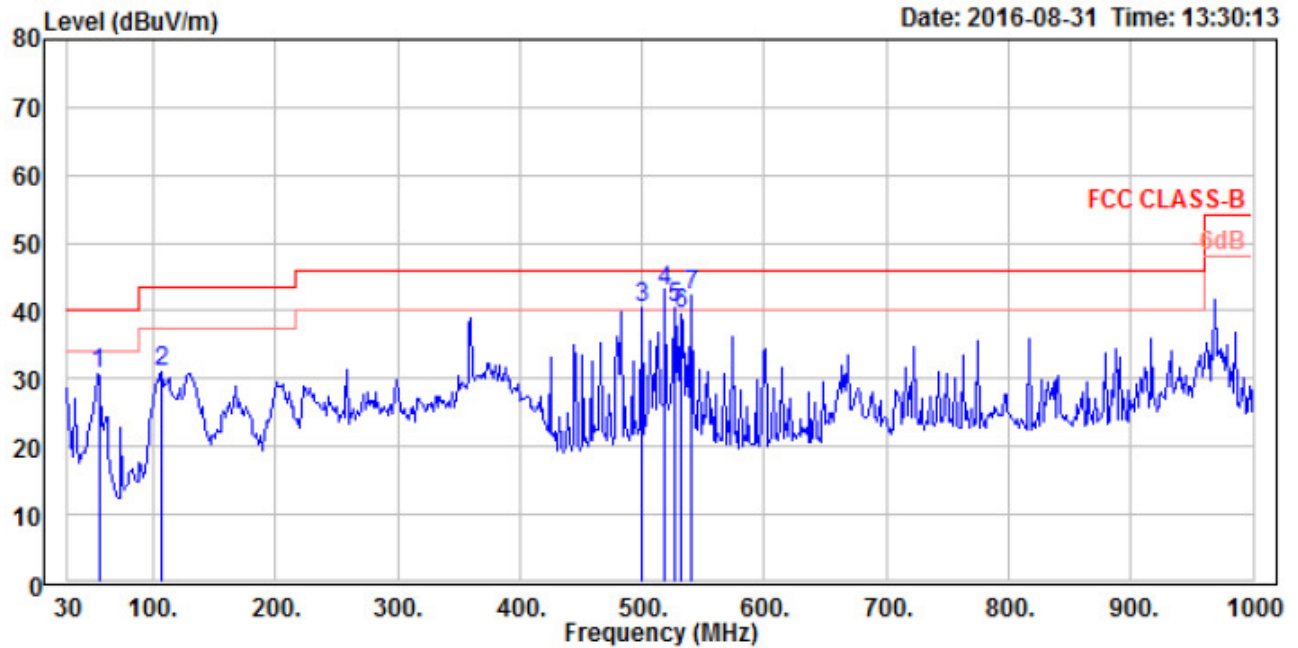
Note1: The highest frequency is 5GHz for WIFI function, measuring up to 40GHz.

Note2: Level = Reading + Factor;
Margin = Level - Limit.

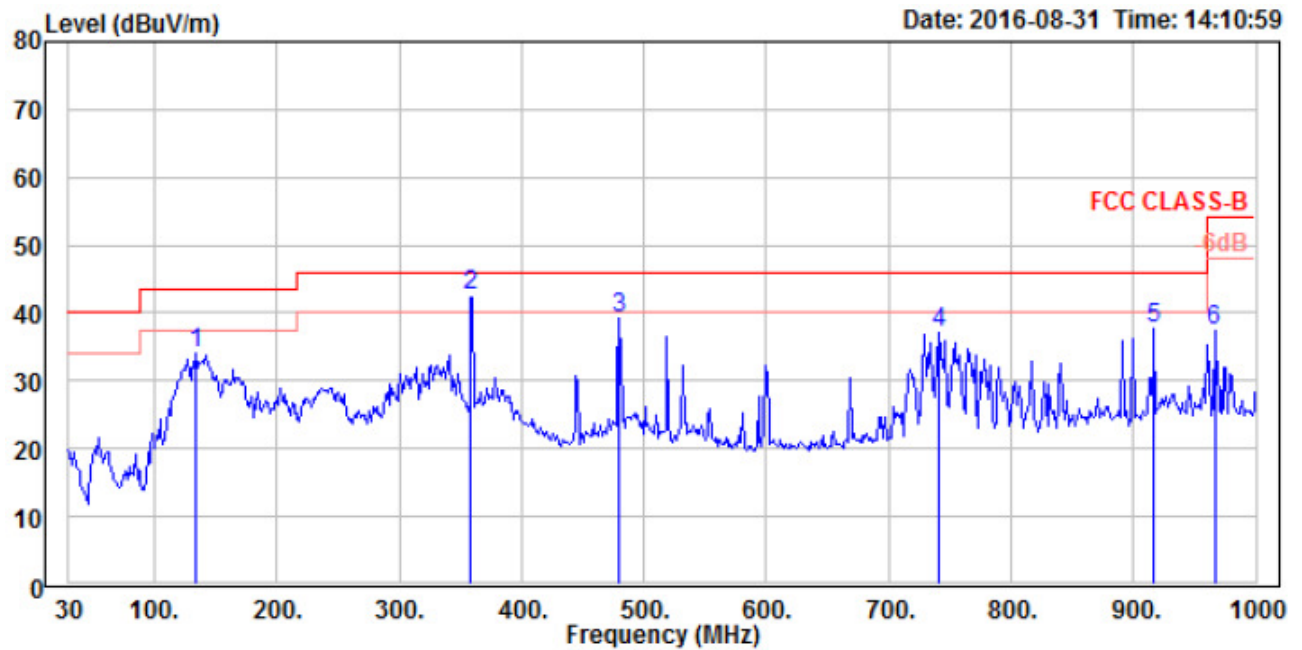
Note3: The worst AC mains (120Vac, 60Hz) was listed in this test item.

Figure 3: Radiated Emission; 30 – 1000 MHz (Mode A)
Horizontal


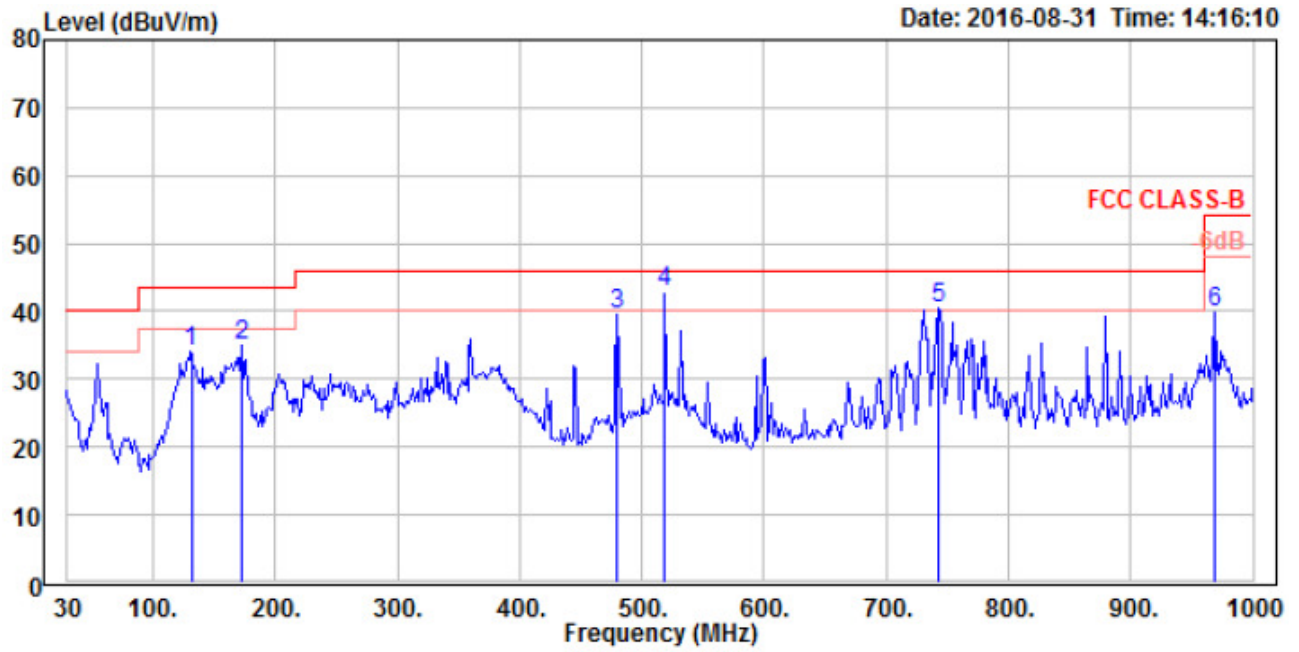
	Freq	Level	Read	Limit	Over		
	MHz	dBuV/m	Level	Factor	Line	Limit	Remark
			dBuV	dB/m	dBuV/m	dB	Note
1	48.275	23.07	42.15	-19.08	40.00	-16.93	QP
2	119.971	28.68	45.37	-16.69	43.50	-14.82	QP
3 !	360.362	40.52	52.93	-12.41	46.00	-5.48	QP
4 !	499.536	40.15	50.64	-10.49	46.00	-5.85	QP
5	519.217	38.14	48.34	-10.20	46.00	-7.86	QP
6	891.754	38.58	43.17	-4.59	46.00	-7.42	QP

Vertical


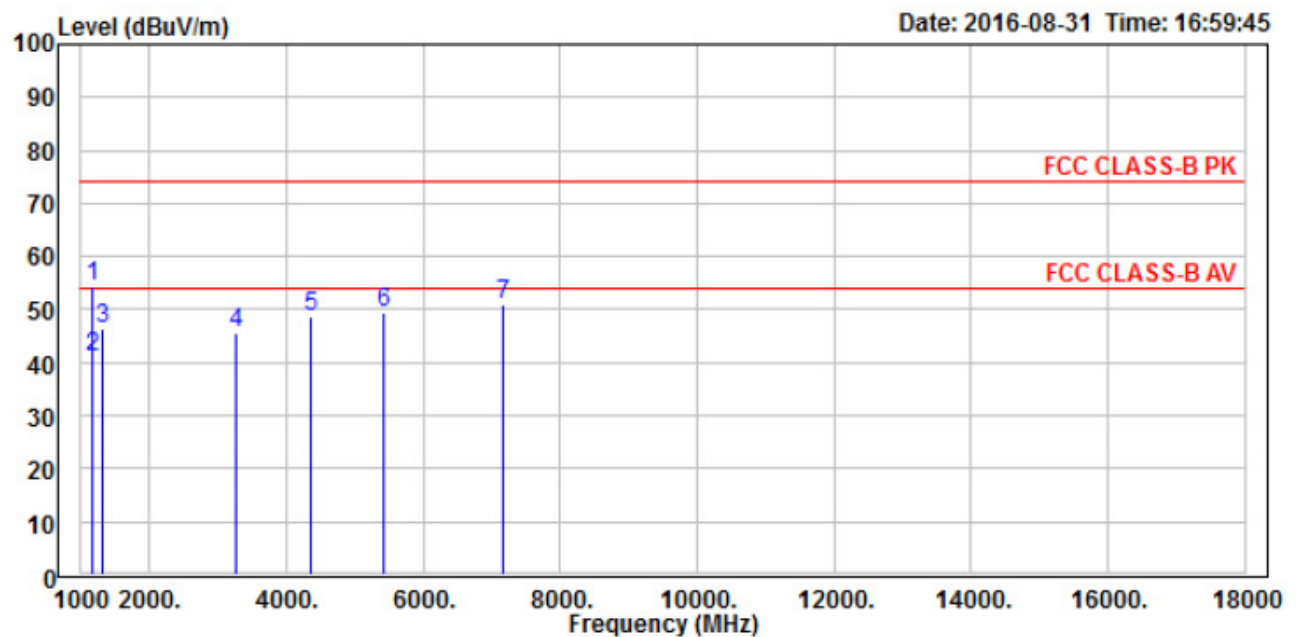
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	55.304	30.72	52.22	-21.50	40.00	-9.28	QP	
2	107.319	30.90	48.57	-17.67	43.50	-12.60	QP	
3 !	499.536	40.42	50.91	-10.49	46.00	-5.58	QP	
4 !	519.217	42.96	53.16	-10.20	46.00	-3.04	QP	
5 !	526.246	40.56	50.66	-10.10	46.00	-5.44	QP	
6	531.870	39.51	49.53	-10.02	46.00	-6.49	QP	
7 !	540.304	42.23	52.13	-9.90	46.00	-3.77	QP	

Figure 4: Radiated Emission; 30 – 1000 MHz (Mode B)
Horizontal


	Freq	Level	Read	Limit	Over		
	MHz	dBuV/m	Level	Factor	Line	Limit	Remark
			dBuV	dB/m	dBuV/m	dB	Note
1	134.029	34.04	50.42	-16.38	43.50	-9.46	QP
2 !	358.957	42.53	54.97	-12.44	46.00	-3.47	QP
3	479.855	39.18	49.94	-10.76	46.00	-6.82	QP
4	741.333	37.01	43.93	-6.92	46.00	-8.99	QP
5	917.058	37.62	41.59	-3.97	46.00	-8.38	QP
6	966.261	37.45	40.31	-2.86	54.00	-16.55	QP

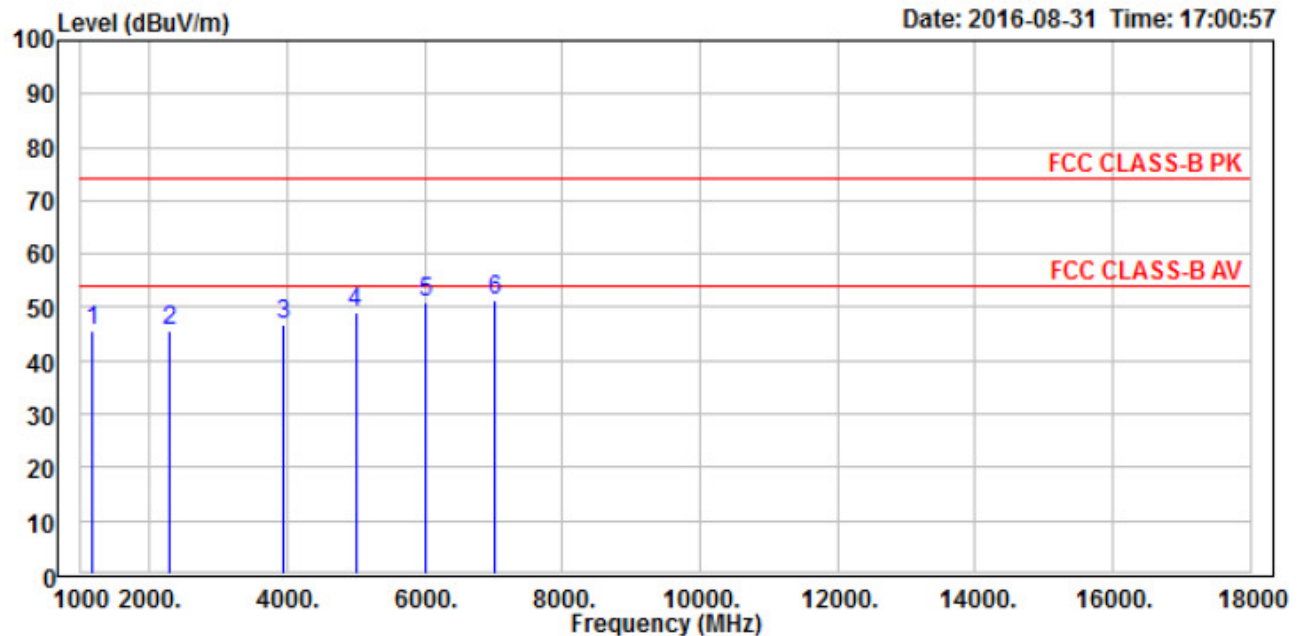
Vertical


	Freq	Level	Read		Limit	Over		
	MHz	dBuV/m	Level	Factor	Line	Limit	Remark	Note
			dBuV	dB/m	dBuV/m	dB		
1	131.217	34.20	50.54	-16.34	43.50	-9.30	QP	
2	171.986	34.84	53.14	-18.30	43.50	-8.66	QP	
3	479.855	39.40	50.16	-10.76	46.00	-6.60	QP	
4 !	519.217	42.80	53.00	-10.20	46.00	-3.20	QP	
5 !	742.739	40.45	47.34	-6.89	46.00	-5.55	QP	
6	969.072	39.94	42.80	-2.86	54.00	-14.06	QP	

Figure 5: Radiated Emission; Above 1 GHz (Mode A)
Horizontal


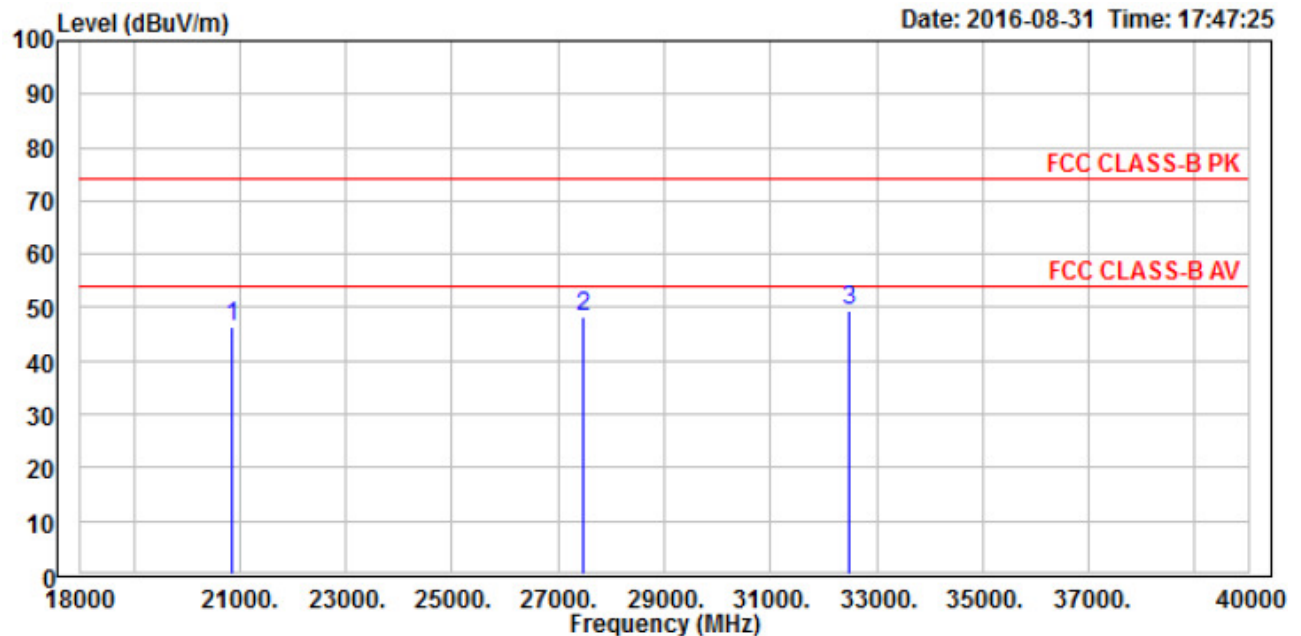
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	1172.464	54.53	64.49	-9.96	74.00	-19.47	Peak	
2	1172.464	41.24	51.20	-9.96	54.00	-12.76	Average	
3	1320.290	46.49	55.89	-9.40	74.00	-27.51	Peak	
4	3266.667	45.63	45.16	0.47	74.00	-28.37	Peak	
5	4350.725	48.64	44.90	3.74	74.00	-25.36	Peak	
6	5410.145	49.28	42.70	6.58	74.00	-24.72	Peak	
7	7159.420	51.00	43.66	7.34	74.00	-23.00	Peak	

Note: The other peak readings were below average limit, thus no average measuring required for those.

Vertical


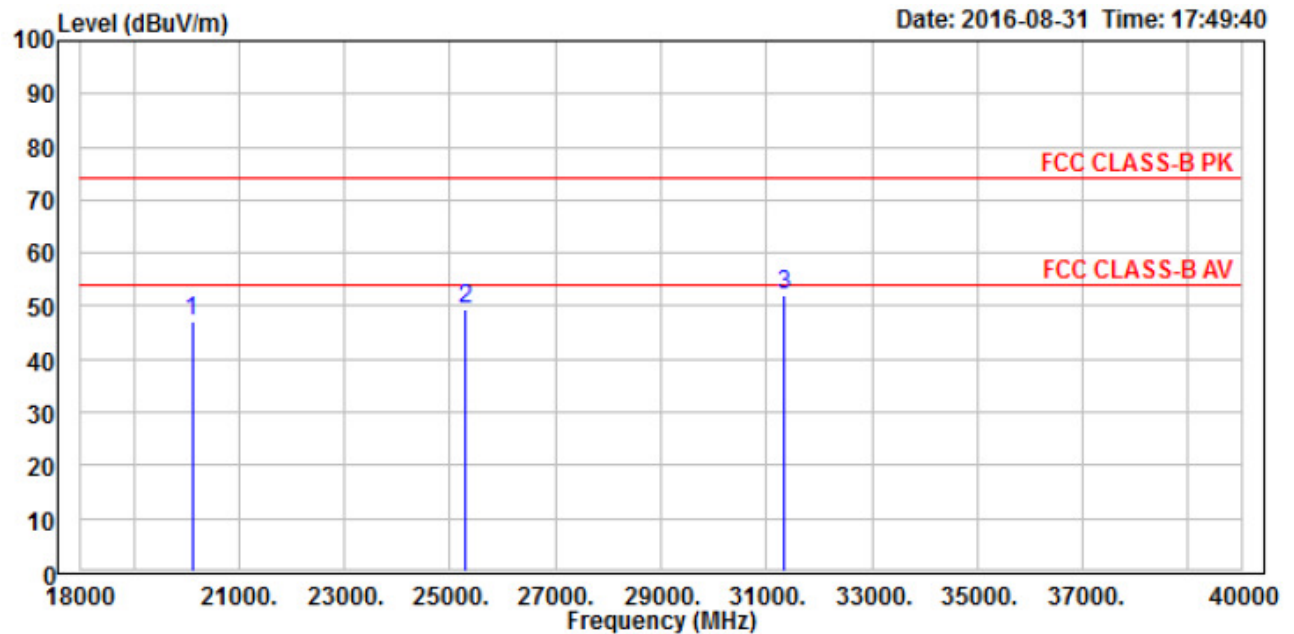
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	1172.464	45.65	55.61	-9.96	74.00	-28.35	Peak	
2	2281.159	45.45	48.08	-2.63	74.00	-28.55	Peak	
3	3931.884	46.89	44.61	2.28	74.00	-27.11	Peak	
4	4991.304	49.00	43.19	5.81	74.00	-25.00	Peak	
5	6001.449	50.88	42.98	7.90	74.00	-23.12	Peak	
6	7011.594	51.14	43.77	7.37	74.00	-22.86	Peak	

Note: The peak readings were below average limit, thus no average measuring required for those.

Horizontal


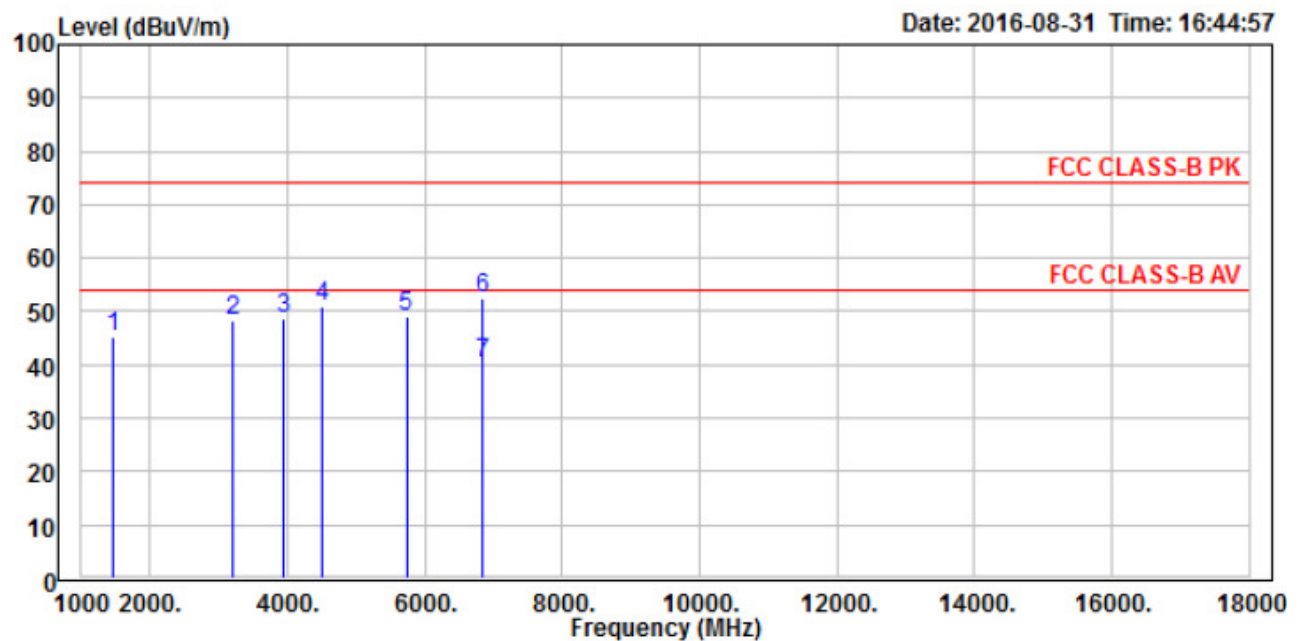
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	20837.680	46.21	18.26	27.95	74.00	-27.79	Peak	
2	27469.560	48.42	15.81	32.61	74.00	-25.58	Peak	
3	32475.360	49.26	12.90	36.36	74.00	-24.74	Peak	

Note: The peak readings were below average limit, thus no average measuring required for those.

Vertical


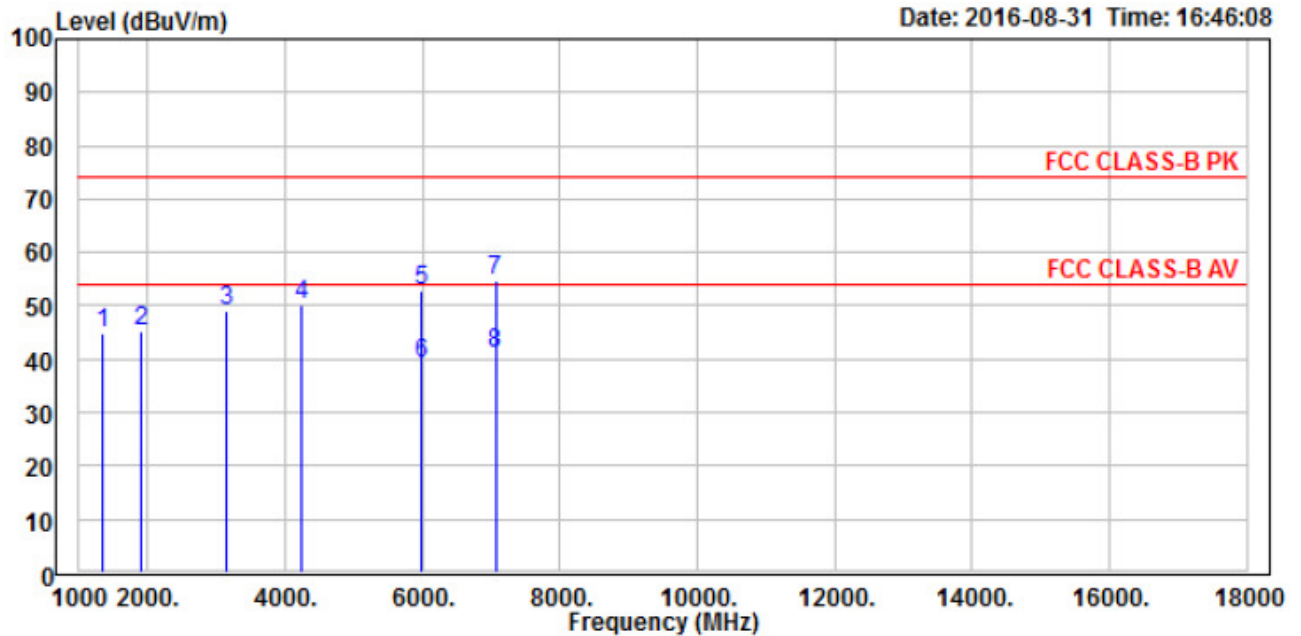
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	20104.350	47.29	18.27	29.02	74.00	-26.71	Peak	
2	25301.450	49.24	18.16	31.08	74.00	-24.76	Peak	
3	31327.540	51.96	16.40	35.56	74.00	-22.04	Peak	

Note: The peak readings were below average limit, thus no average measuring required for those.

Figure 6: Radiated Emission; Above 1 GHz (Mode B)
Horizontal


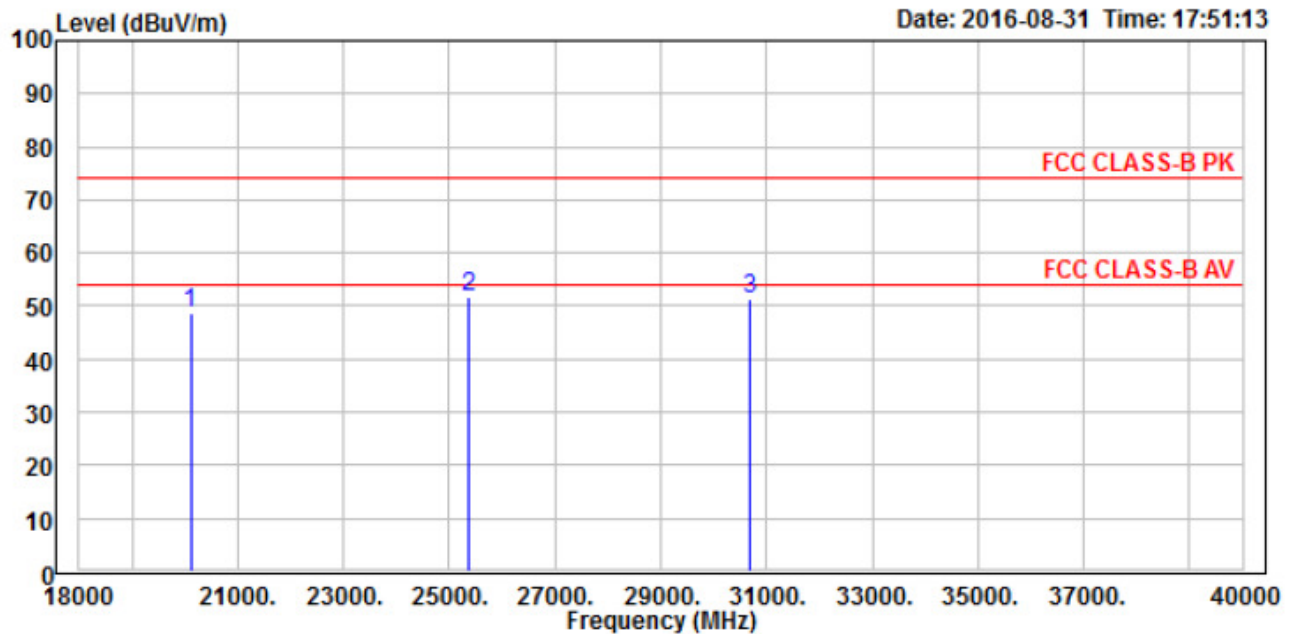
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	1468.116	45.32	54.15	-8.83	74.00	-28.68	Peak	
2	3217.391	48.16	47.76	0.40	74.00	-25.84	Peak	
3	3931.884	48.80	46.52	2.28	74.00	-25.20	Peak	
4	4498.551	50.79	46.54	4.25	74.00	-23.21	Peak	
5	5730.435	49.13	41.85	7.28	74.00	-24.87	Peak	
6	6839.130	52.51	44.90	7.61	74.00	-21.49	Peak	
7	6839.130	40.44	32.83	7.61	54.00	-13.56	Average	

Note: The other peak readings were below average limit, thus no average measuring required for those.

Vertical


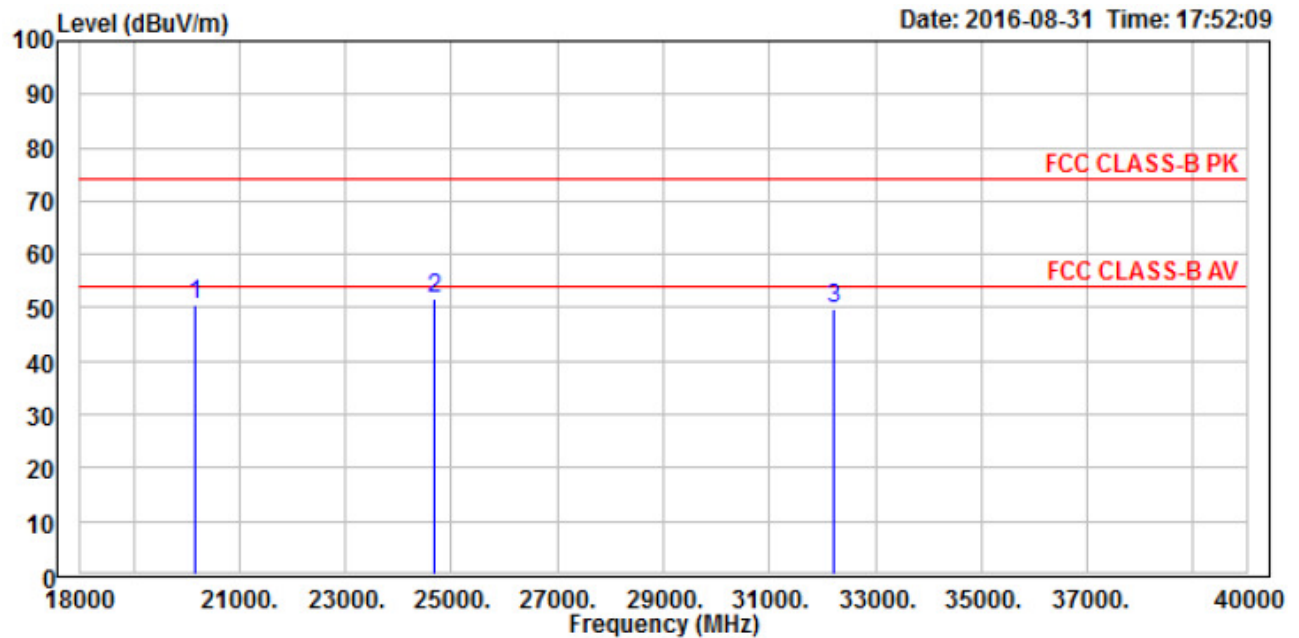
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	1344.927	44.84	54.15	-9.31	74.00	-29.16	Peak	
2	1911.594	45.06	49.81	-4.75	74.00	-28.94	Peak	
3	3143.478	48.88	48.57	0.31	74.00	-25.12	Peak	
4	4227.536	50.14	46.83	3.31	74.00	-23.86	Peak	
5	5976.812	52.70	44.86	7.84	74.00	-21.30	Peak	
6	5976.812	39.10	31.26	7.84	54.00	-14.90	Average	
7	7060.870	54.72	47.36	7.36	74.00	-19.28	Peak	
8	7060.870	41.15	33.79	7.36	54.00	-12.85	Average	

Note: The other peak readings were below average limit, thus no average measuring required for those.

Horizontal


	Freq	Level	Read	Limit	Over		
			Level	Factor	Line	Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	Note
1	20104.350	48.65	19.63	29.02	74.00	-25.35	Peak
2	25365.220	51.58	20.39	31.19	74.00	-22.42	Peak
3	30689.860	51.47	15.81	35.66	74.00	-22.53	Peak

Note: The peak readings were below average limit, thus no average measuring required for those.

Vertical


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		
1	20168.120	50.75	21.66	29.09	74.00	-23.25	Peak	
2	24695.650	51.87	21.61	30.26	74.00	-22.13	Peak	
3	32220.290	49.91	13.92	35.99	74.00	-24.09	Peak	

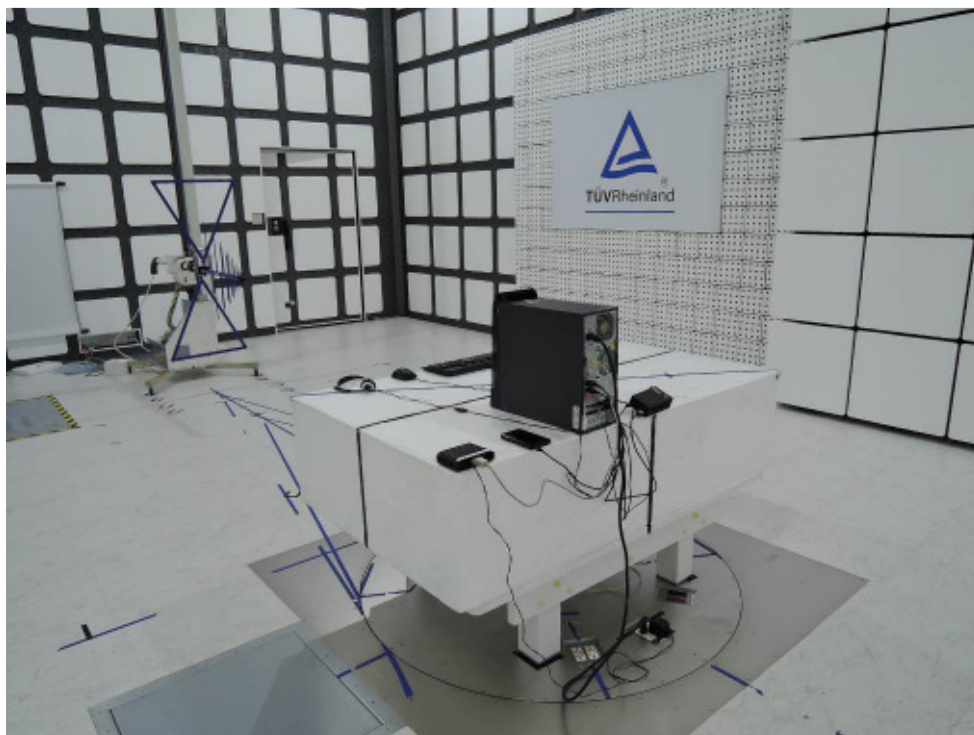
Note: The peak readings were below average limit, thus no average measuring required for those.

6 Photographs of Test Setup

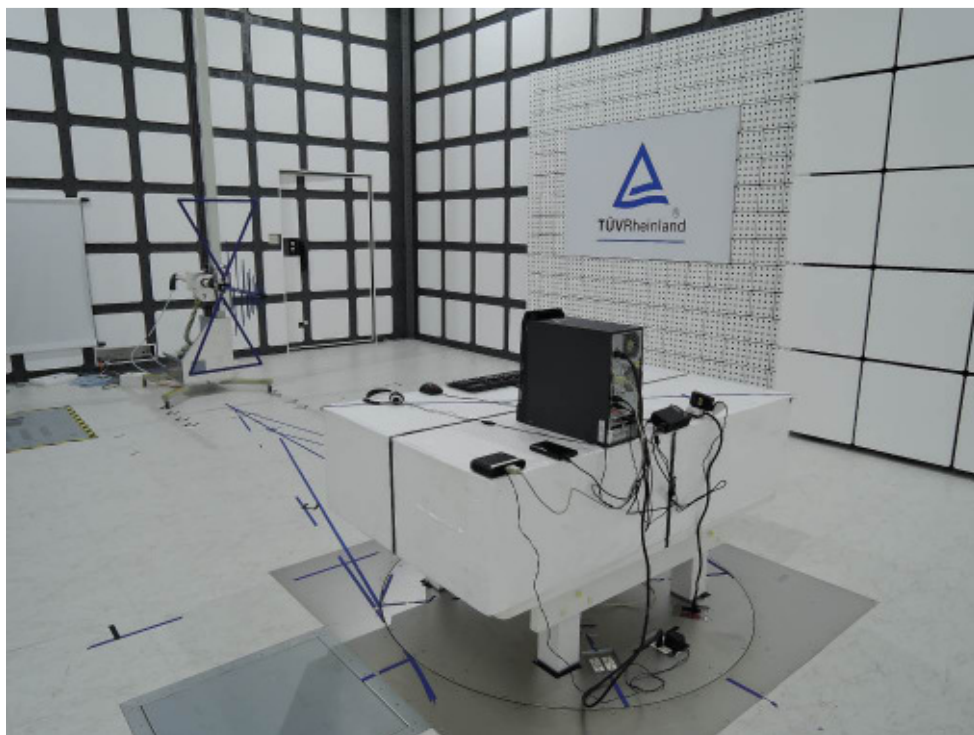
Picture 1: Conducted Emission, AC Mains; 0.15 – 30 MHz (Mode B)



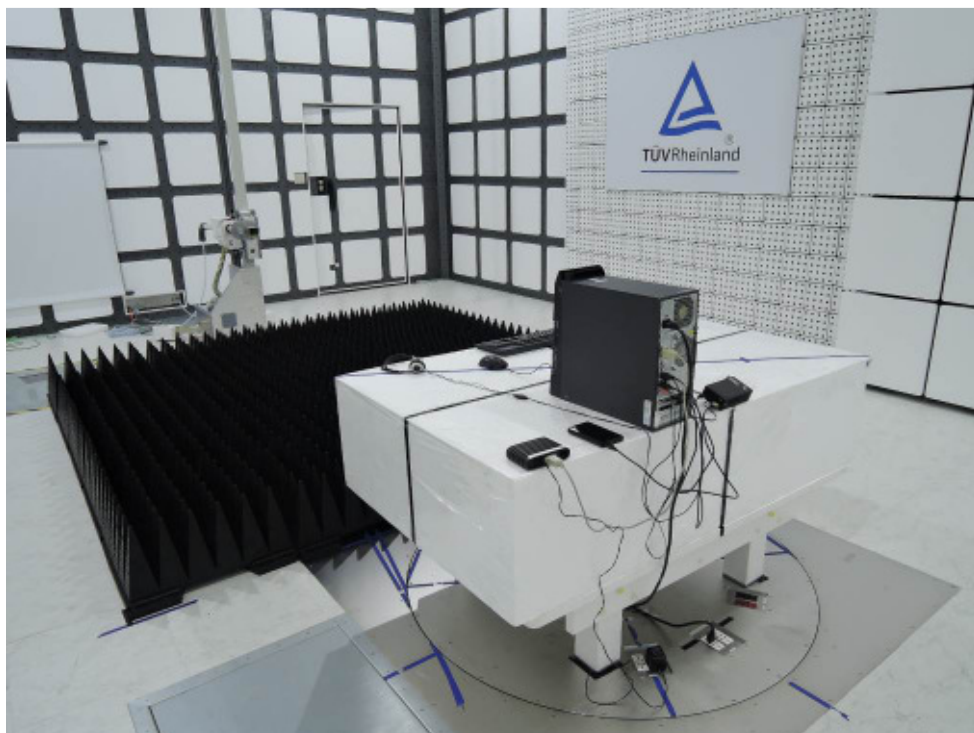
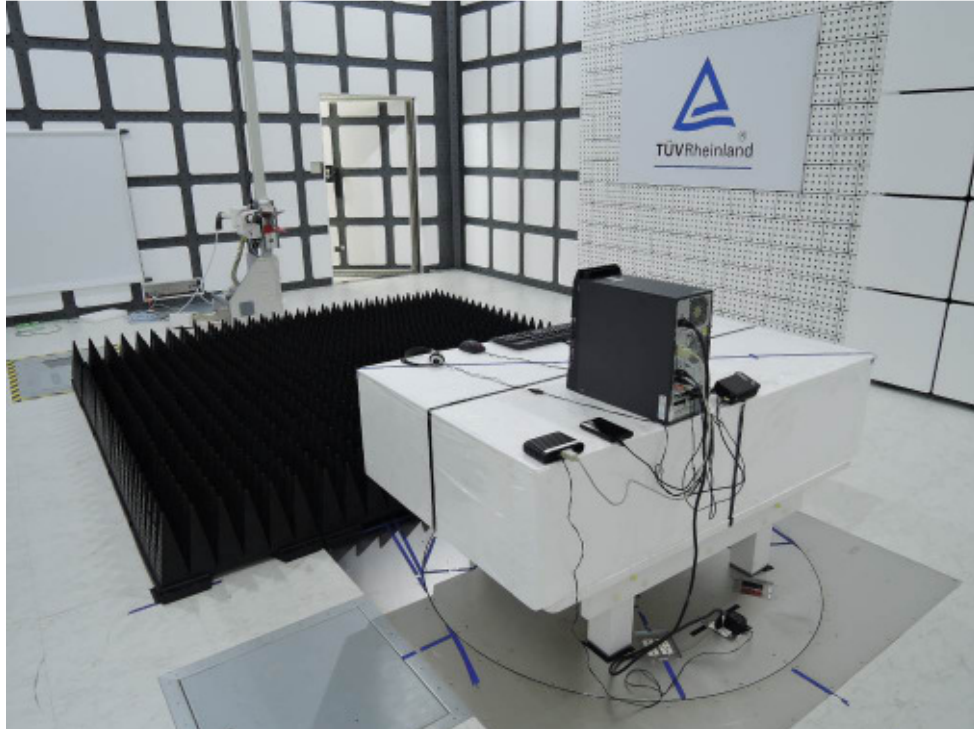
Picture 2: Radiated Emission, 30 - 1000 MHz (Mode A)



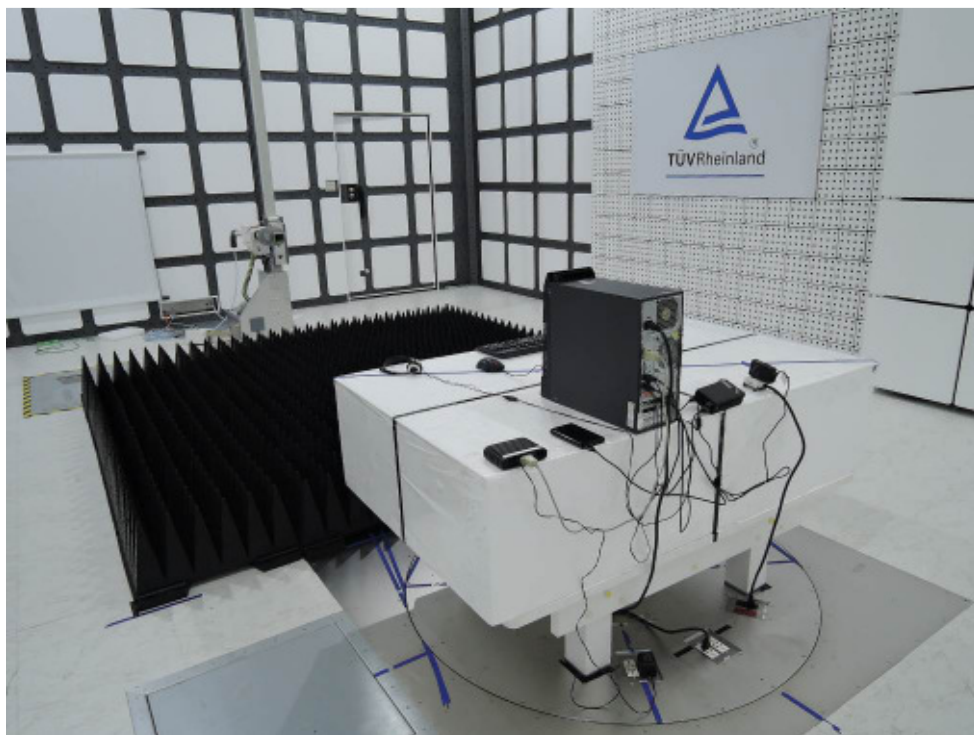
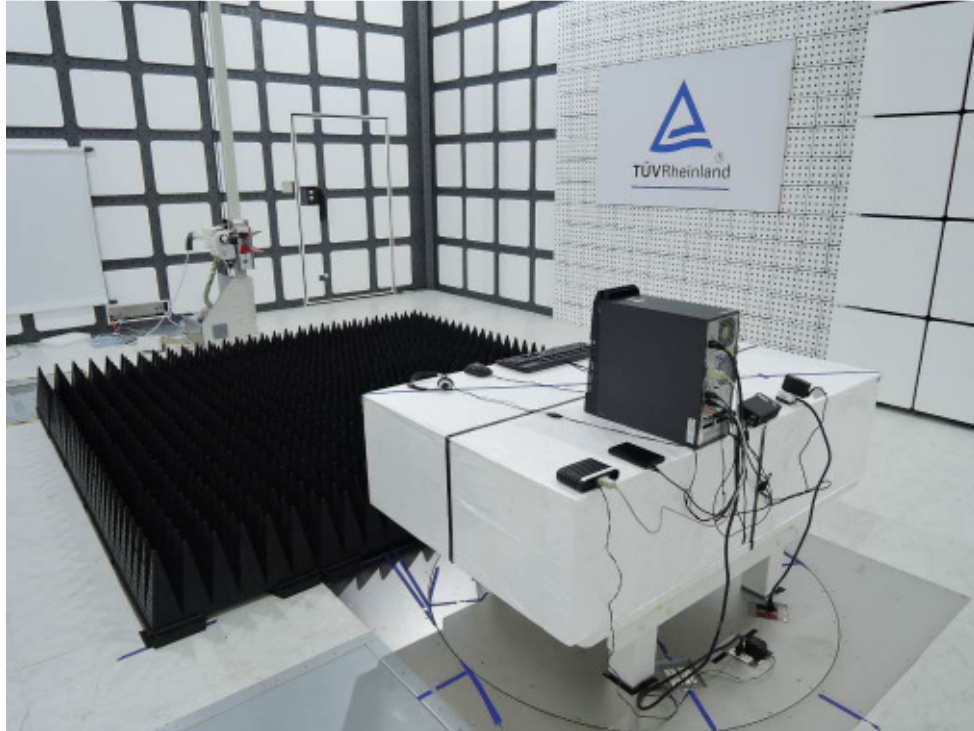
Picture 3: Radiated Emission, 30 - 1000 MHz (Mode B)



Picture 4: Radiated Emission, Above 1 GHz (Mode A)



Picture 5: Radiated Emission, Above 1 GHz (Mode B)



7 List of Tables

TABLE 1: LIST OF TEST AND MEASUREMENT EQUIPMENT	5
TABLE 2: MEASUREMENT UNCERTAINTY	6

8 List of Figures

FIGURE 1: CONDUCTED EMISSION, AC MAINS; 0.15 – 30 MHz (MODE B, 120VAC)	13
FIGURE 2: CONDUCTED EMISSION, AC MAINS; 0.15 – 30 MHz (MODE B, 240VAC)	15
FIGURE 3: RADIATED EMISSION; 30 – 1000 MHz (MODE A)	18
FIGURE 4: RADIATED EMISSION; 30 – 1000 MHz (MODE B).....	20
FIGURE 5: RADIATED EMISSION; ABOVE 1 GHz (MODE A)	22
FIGURE 6: RADIATED EMISSION; ABOVE 1 GHz (MODE B)	26

9 List of Pictures

PICTURE 1: CONDUCTED EMISSION, AC MAINS; 0.15 – 30 MHz (MODE B).....	30
PICTURE 2: RADIATED EMISSION, 30 - 1000 MHz (MODE A).....	31
PICTURE 3: RADIATED EMISSION, 30 - 1000 MHz (MODE B).....	32
PICTURE 4: RADIATED EMISSION, ABOVE 1 GHz (MODE A)	33
PICTURE 5: RADIATED EMISSION, ABOVE 1 GHz (MODE B).....	34