FCC Part 15B
Measurement and Test Report

For

Noodle Head, Inc./Minno Tablets

3905 State St. Suite 7-239 Santa Barbara, CA 93105 USA

FCC ID: 2AATG-MINNO10

FCC Rule(s):	FCC Part 15 Subpart B
Product Description:	Tablet PC
Tested Model:	Minno 10
Report No.:	STR13088182I-3
Tested Date:	2013-08-09 to 2013-09-09
Issued Date:	2013-09-09
Tested By:	Daniel Liu / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Noodle Head, Inc./Minno Tablets
Address of applicant:	3905 State St. Suite 7-239 Santa Barbara, CA 93105 USA
Manufacturer:	SHENZHEN ALLDOCUBE TECHNOLOGY AND SCIENCE CO.,LTD
Address of manufacturer:	4F/17Building,Pingshan Industrial Park,Middle of Liuxian Road,Xili Town,Nanshan District, Shenzhen,China.

General Description of EUT	
Product Name:	Tablet PC
Trade Name:	Minno
Model No.:	Minno 10
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	Charger: DC 12V Battery: DC 3.7V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	FJ-SW1202000U
	Input: AC 100-240V,50/60Hz Output: DC 12V
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	/
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the Noodle Head, Inc./Minno Tablets in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 994117**
  SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**
  The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**
  Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Charging & Playing	/
TM2	Downloading	Connected to Notebook
TM3	HDMI Out	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.8	Shielded	Without Core
Earphone Cable	1.2	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E23	EB12648265
Monitor	DELL	U2410f	50642P246601H(B) ZL

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
HDMI Cable	1.5	Shielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

N/A: not applicable

3. CONDUCTED EMISSIONS

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

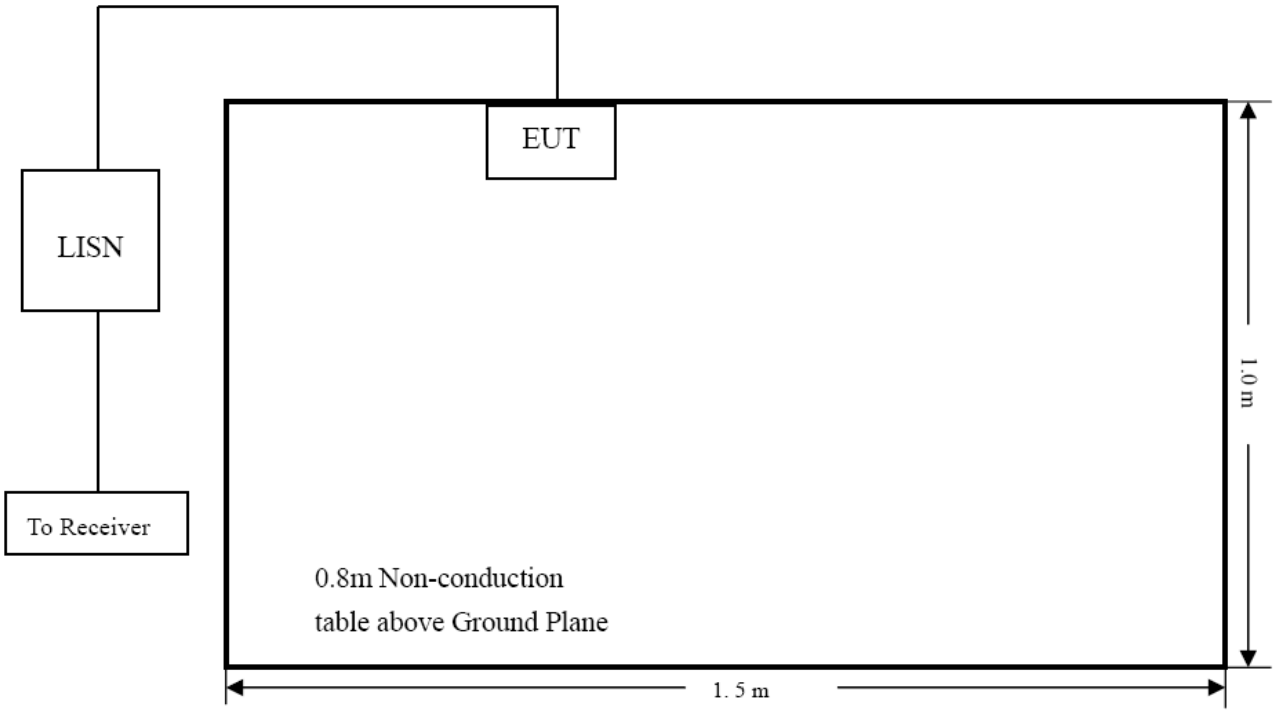
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

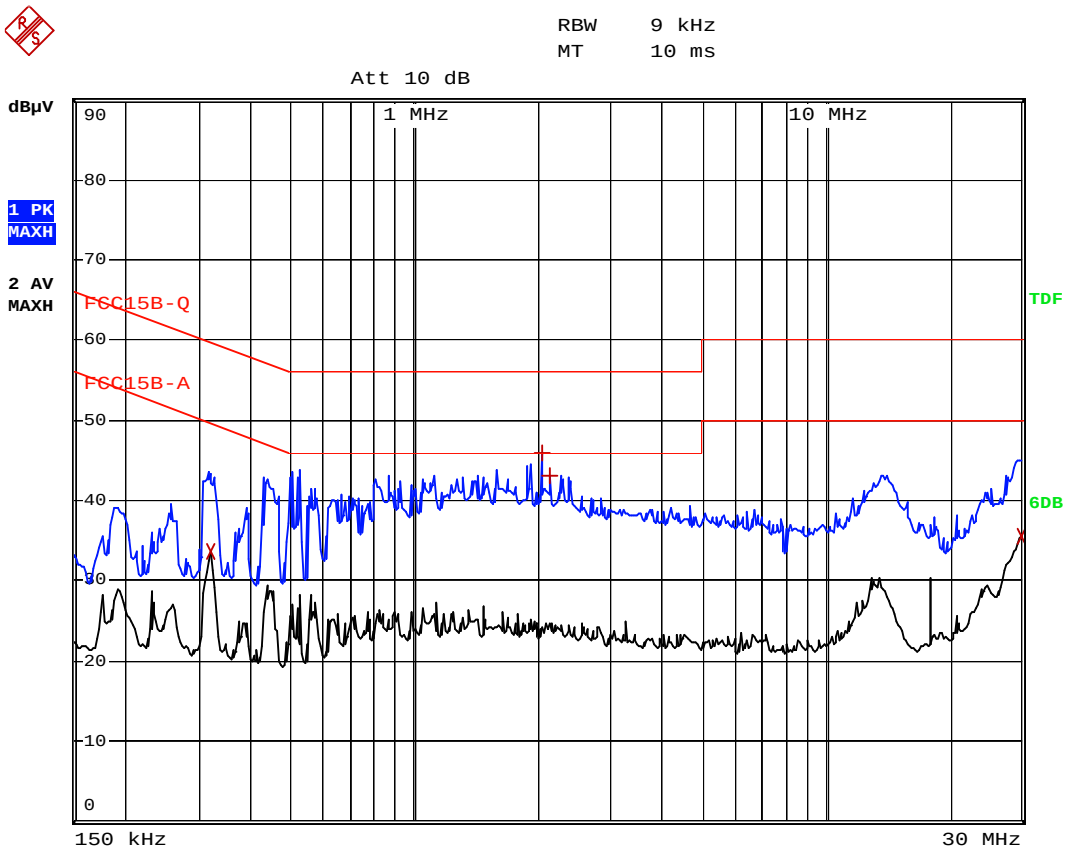
-9.42 dB at **3.074 MHz** in the **Neutral**, **Peak** detector, **TM4** Mode, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

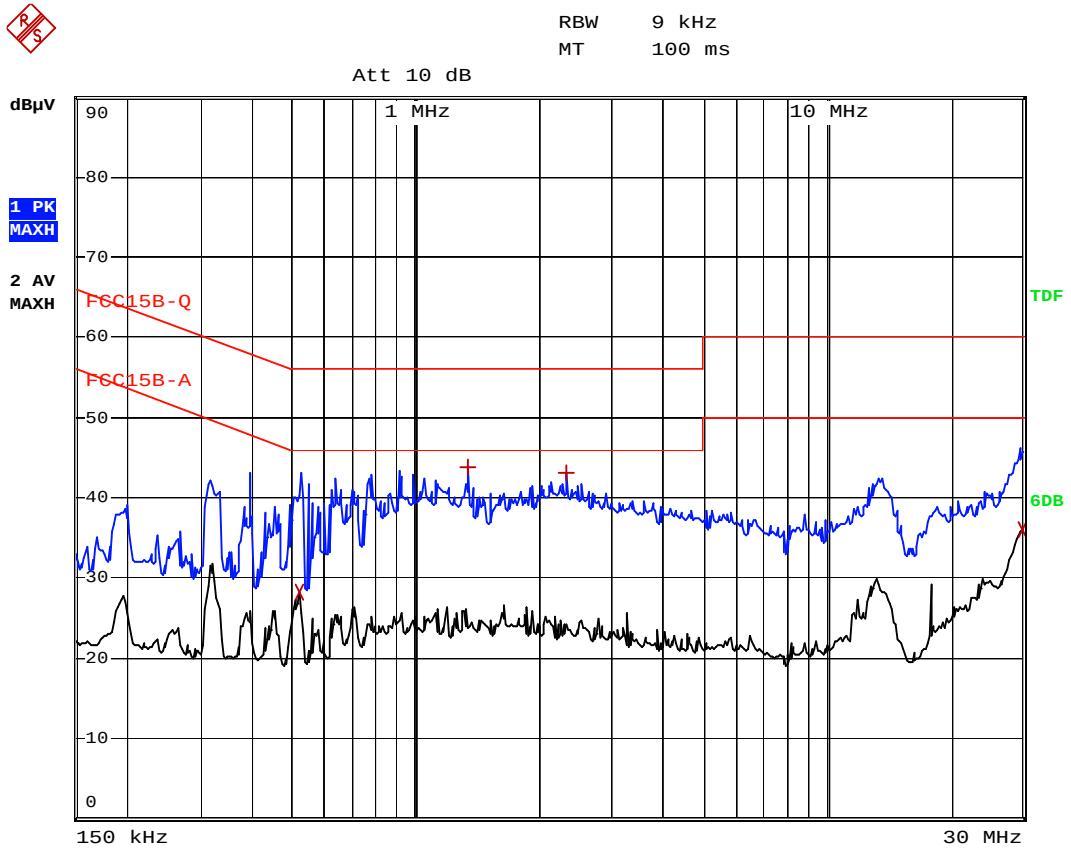
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 12V*

Test Specification: *Line*



EDIT PEAK LIST (Prescan Results)			
Trace1:	FCC15B-Q		
Trace2:	FCC15B-A		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	318 kHz	33.64	-16.11
1 Max Peak	2.058 MHz	45.86	-10.13
1 Max Peak	2.138 MHz	43.13	-12.86
2 Average	29.898 MHz	35.43	-14.56

Test Specification: *Neutral*



EDIT PEAK LIST (Prescan Results)

Trace1:	FCC15B-Q
Trace2:	FCC15B-A
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	522 kHz	28.20	-17.79
1 Max Peak	1.338 MHz	43.77	-12.22
1 Max Peak	2.33 MHz	43.03	-12.96
2 Average	29.858 MHz	36.04	-13.95

4. RADIATED EMISSION

4.1 Measurement Uncertainty

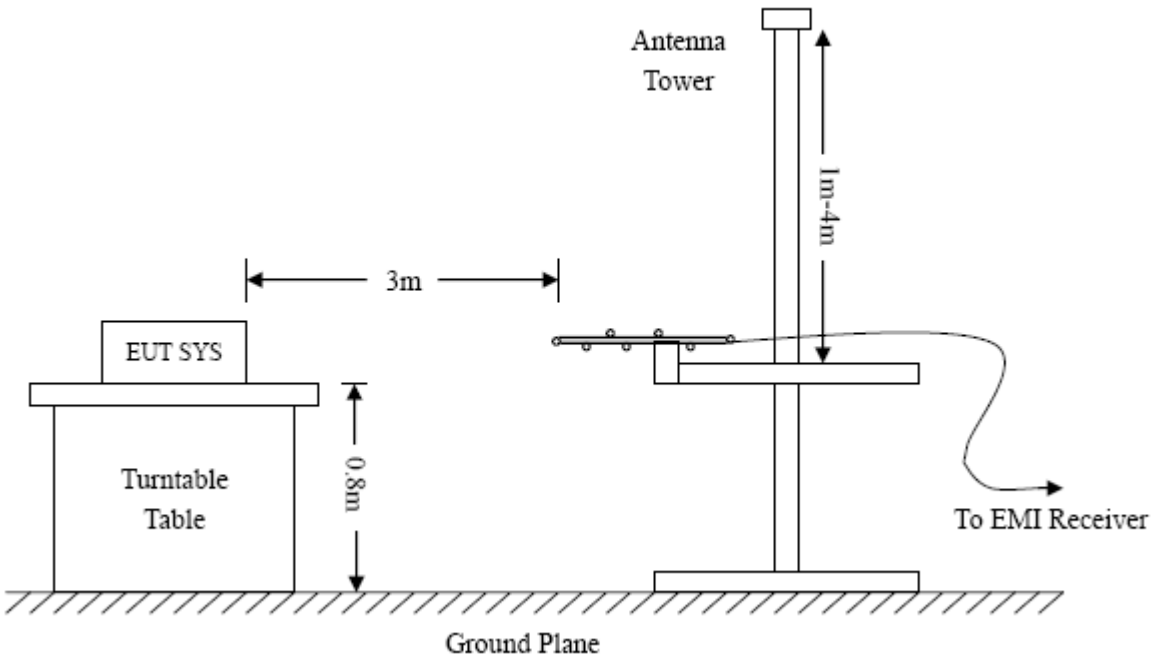
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-04-20	2014-04-19

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.



4.4 Test Receiver Setup

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a Class B device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15.109(a) Limit

4.6 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.7 Summary of Test Results/Plots

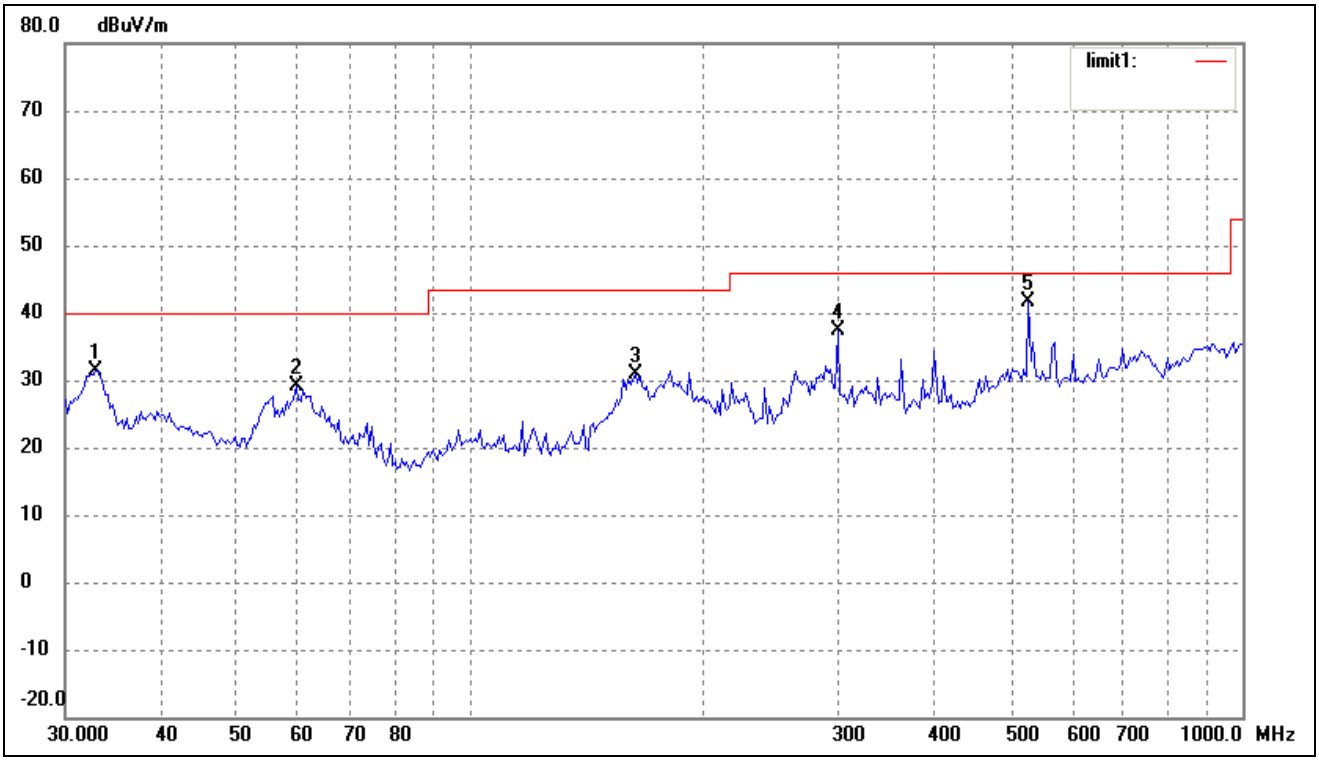
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-1.78 dB at **148.4410 MHz** in the **Horizontal** polarization, **TM5** Mode, **9 kHz** to **6 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

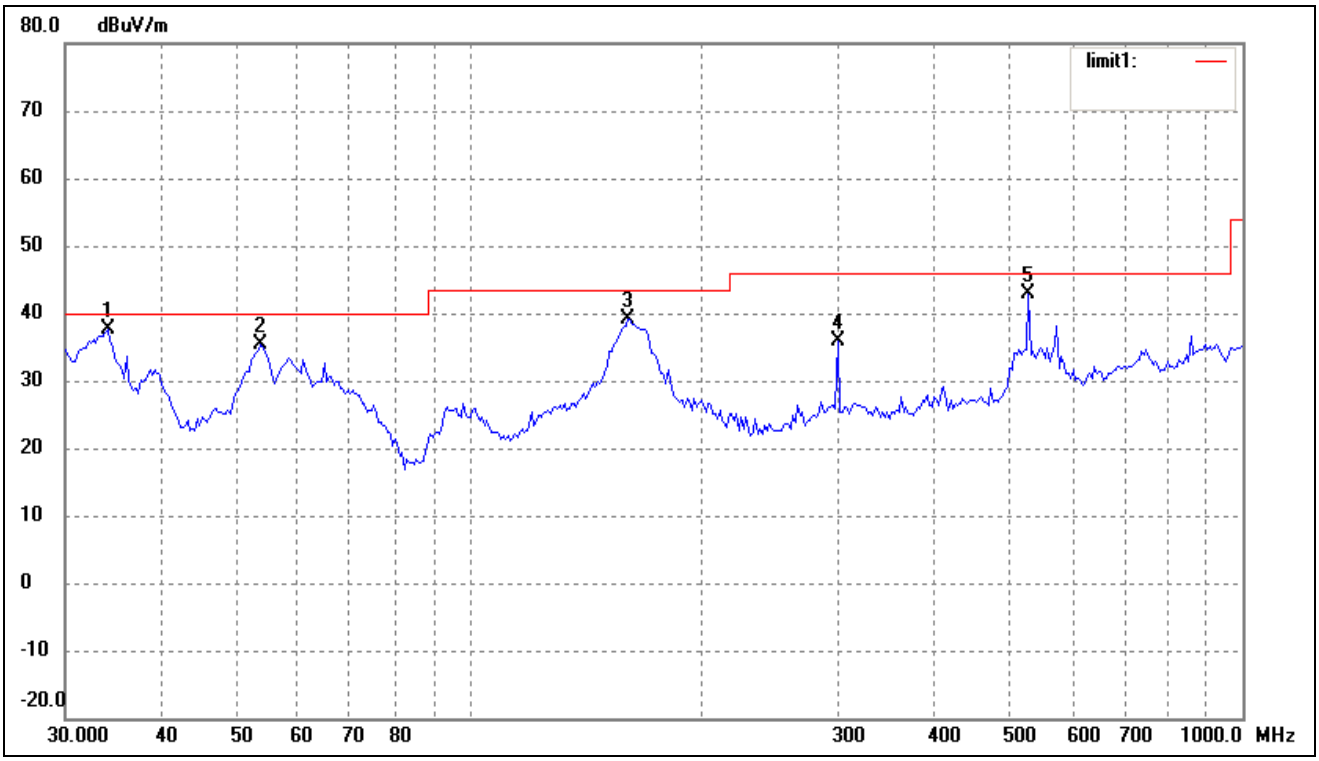
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 12V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.8637	22.96	8.52	31.48	40.00	-8.52	360	100	peak
2	59.6493	23.35	5.72	29.07	40.00	-10.93	360	100	peak
3	163.7550	27.11	3.67	30.78	43.50	-12.72	360	100	peak
4	299.3158	27.16	10.15	37.31	46.00	-8.69	360	100	peak
5	528.2458	28.73	12.97	41.70	46.00	-4.30	360	100	peak

Test Specification: *Vertical*

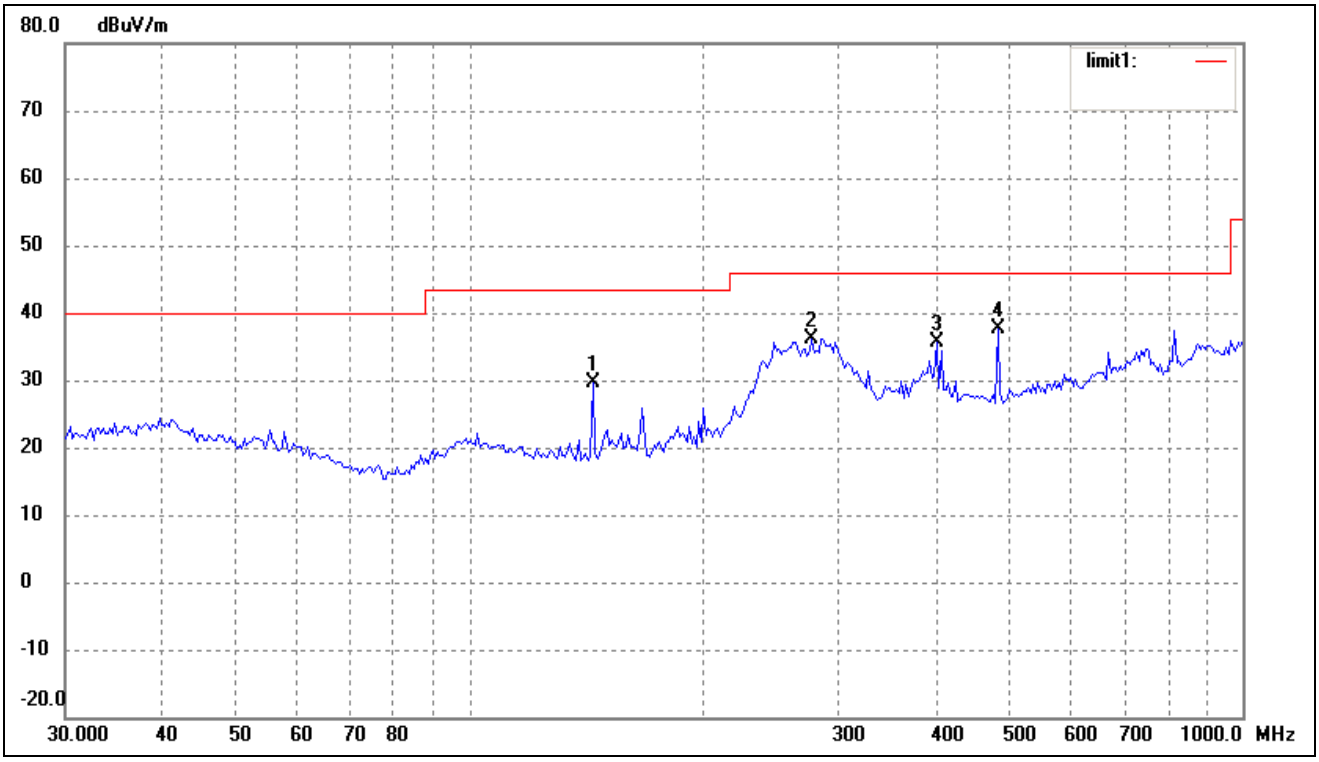


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	34.0364	28.80	8.72	37.52	40.00	-2.48	360	100	peak
2	53.6931	29.08	6.28	35.36	40.00	-4.64	360	100	peak
3	160.3456	35.51	3.65	39.16	43.50	-4.34	360	100	peak
4	299.3158	25.80	10.15	35.95	46.00	-10.05	360	100	peak
5	528.2458	29.97	12.97	42.94	46.00	-3.06	360	100	peak

Plot of Radiated Emissions Test Data

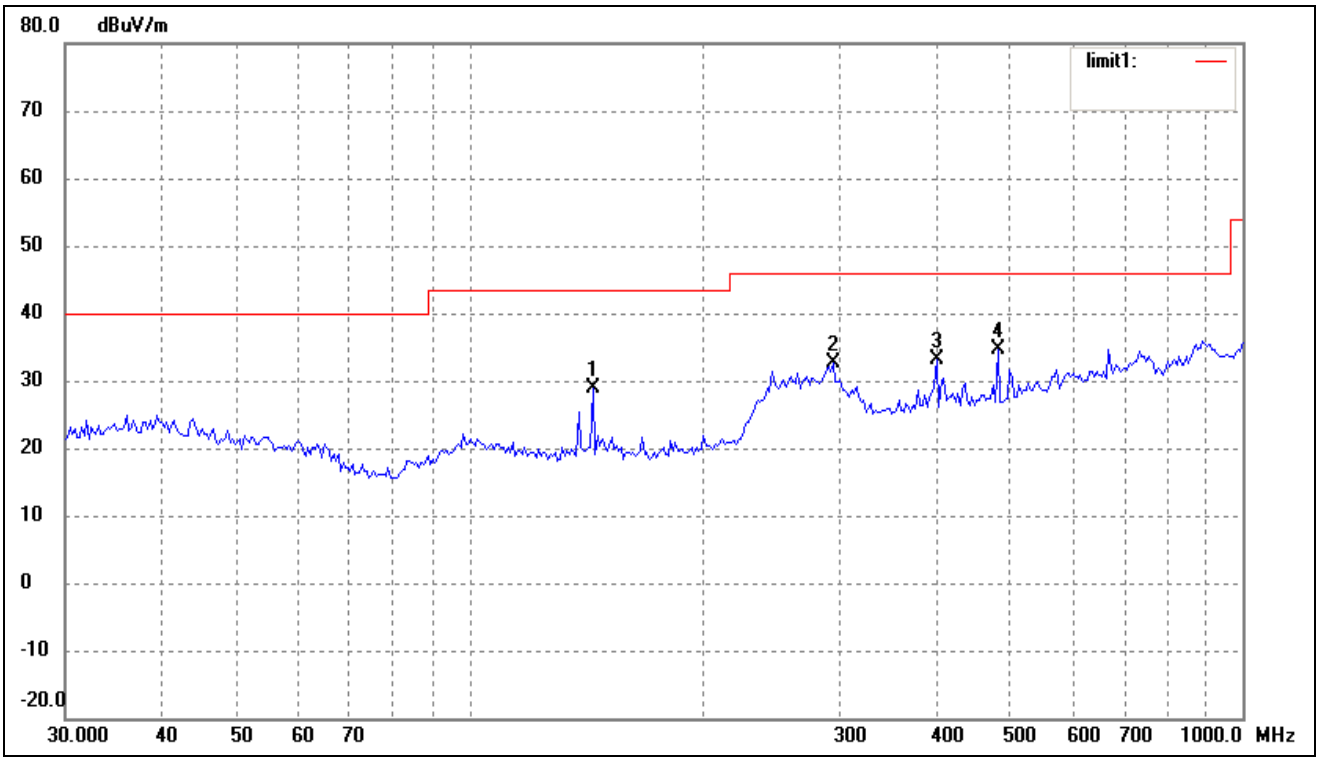
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; PC DC 12V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	144.3348	26.27	3.46	29.73	43.50	-13.77	360	100	peak
2	277.0935	27.20	9.01	36.21	46.00	-9.79	360	100	peak
3	401.8385	24.16	11.47	35.63	46.00	-10.37	360	100	peak
4	482.2156	26.07	11.49	37.56	46.00	-8.44	360	100	peak

Test Specification: *Vertical*

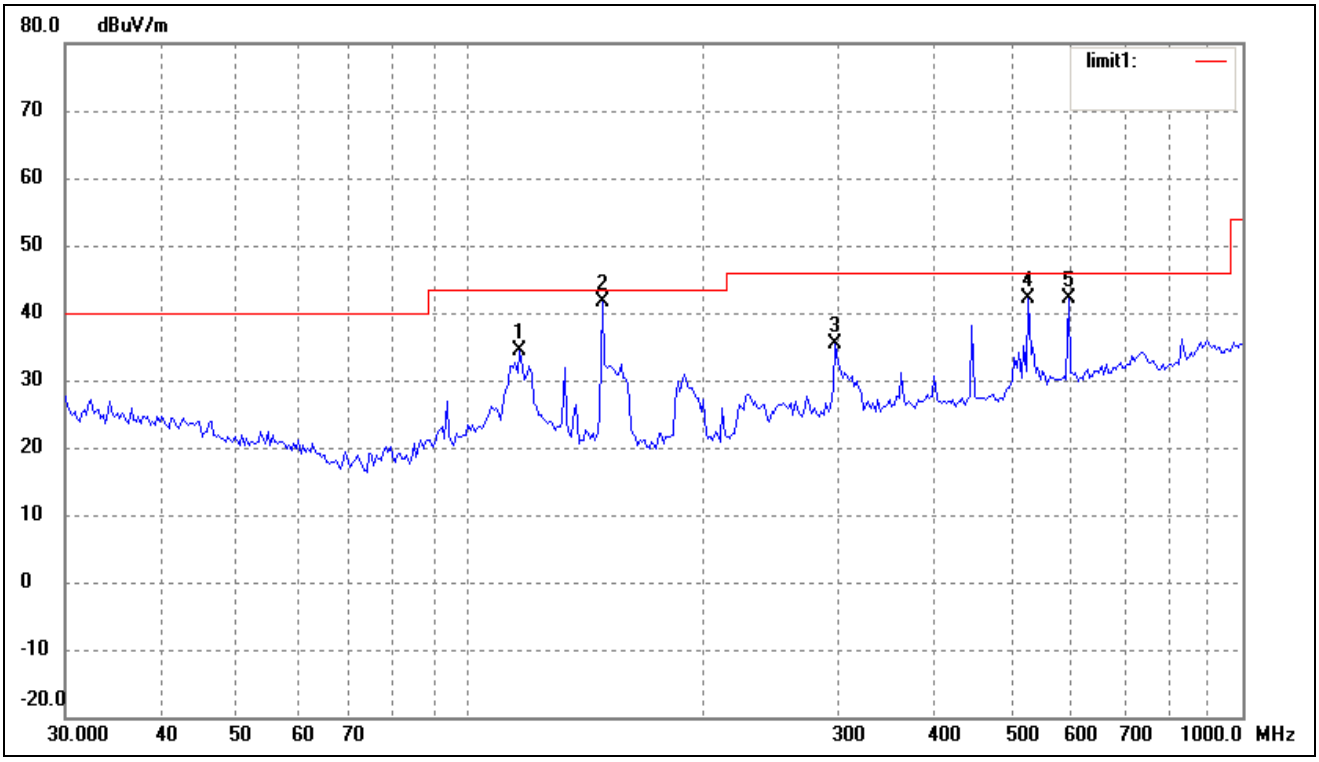


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	144.3348	25.51	3.46	28.97	43.50	-14.53	360	100	peak
2	295.1469	22.65	9.95	32.60	46.00	-13.40	360	100	peak
3	401.8385	21.78	11.47	33.25	46.00	-12.75	360	100	peak
4	482.2156	23.13	11.49	34.62	46.00	-11.38	360	100	peak

Plot of Radiated Emissions Test Data

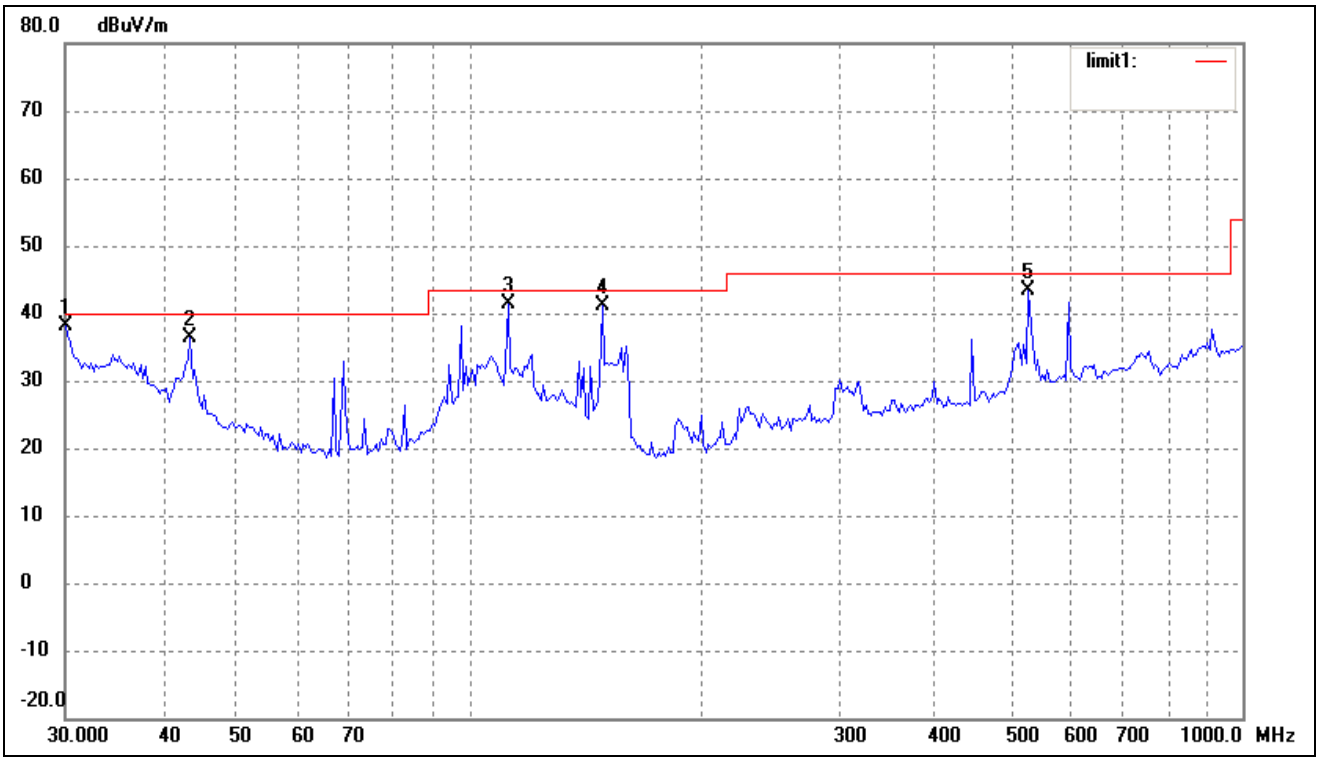
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Adapter DC 12V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	116.1321	29.06	5.25	34.31	43.50	-9.19	360	100	peak
2	148.4410	38.19	3.53	41.72	43.50	-1.78	360	100	peak
3	297.2241	25.43	10.04	35.47	46.00	-10.53	360	100	peak
4	528.2458	29.23	12.97	42.20	46.00	-3.80	360	100	peak
5	595.1329	27.45	14.63	42.08	46.00	-3.92	360	100	peak

Test Specification: *Vertical*

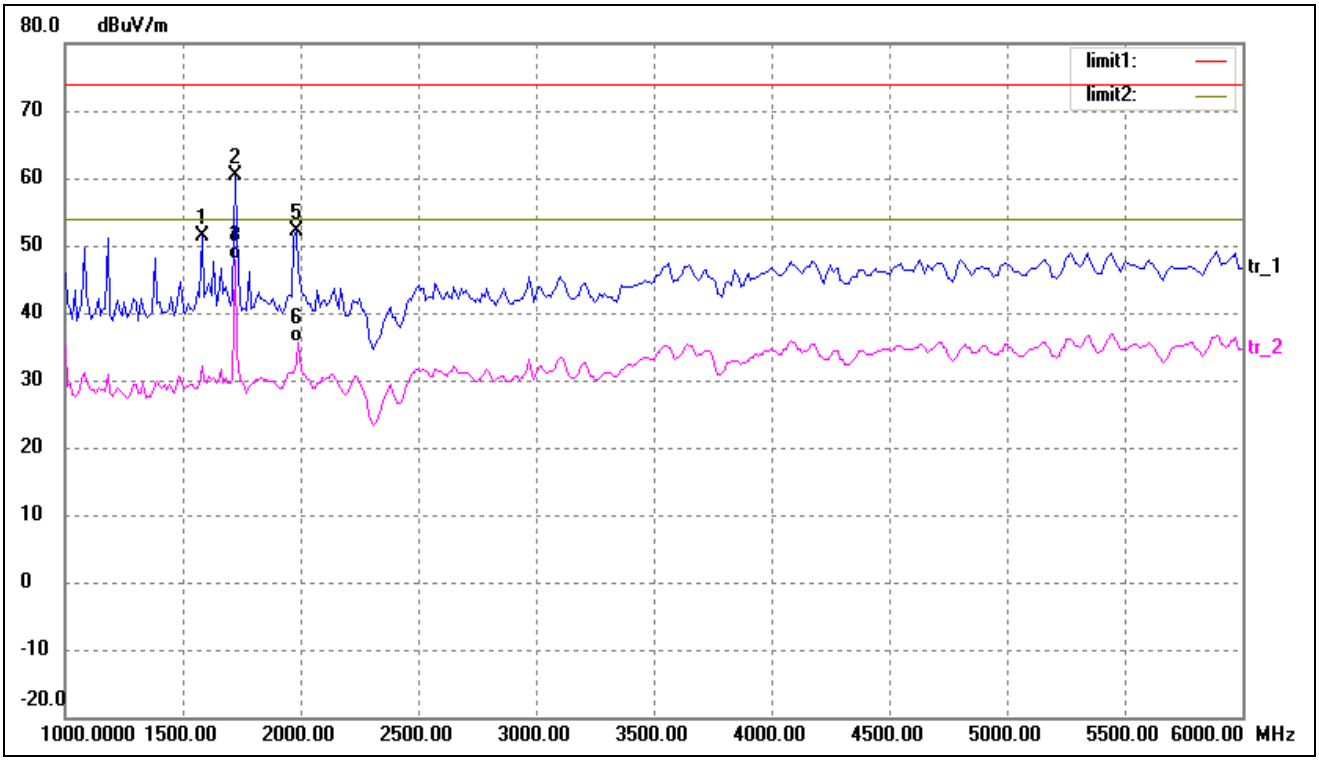


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	30.0000	30.12	8.04	38.16	40.00	-1.84	360	100	peak
2	43.5057	27.87	8.61	36.48	40.00	-3.52	360	100	peak
3	112.1305	35.75	5.65	41.40	43.50	-2.10	360	100	peak
4	148.4410	37.53	3.53	41.06	43.50	-2.44	360	100	peak
5	528.2458	30.37	12.97	43.34	46.00	-2.66	360	100	peak

Plot of Radiated Emissions Test Data

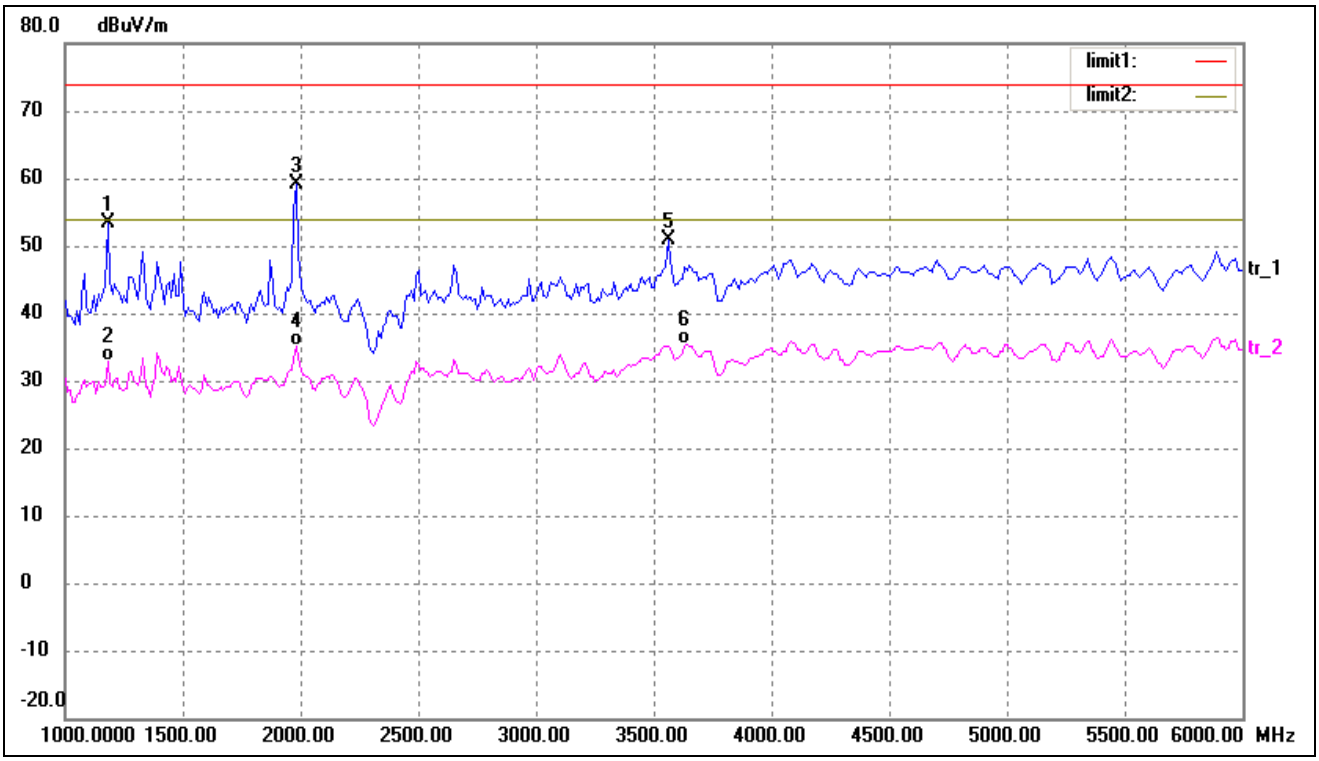
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 12V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1582.001	58.82	-7.33	51.49	74.00	-22.51	360	100	peak
2	1724.082	66.78	-6.34	60.44	74.00	-13.56	360	100	peak
3	1724.082	54.21	-6.34	47.87	54.00	-6.13	360	100	AVG
4	1724.082	54.21	-6.34	47.87	54.00	-6.13	360	100	AVG
5	1982.685	56.77	-4.55	52.22	74.00	-21.78	360	100	peak
6	1996.946	40.15	-4.45	35.70	54.00	-18.30	360	100	AVG

Test Specification: *Vertical*

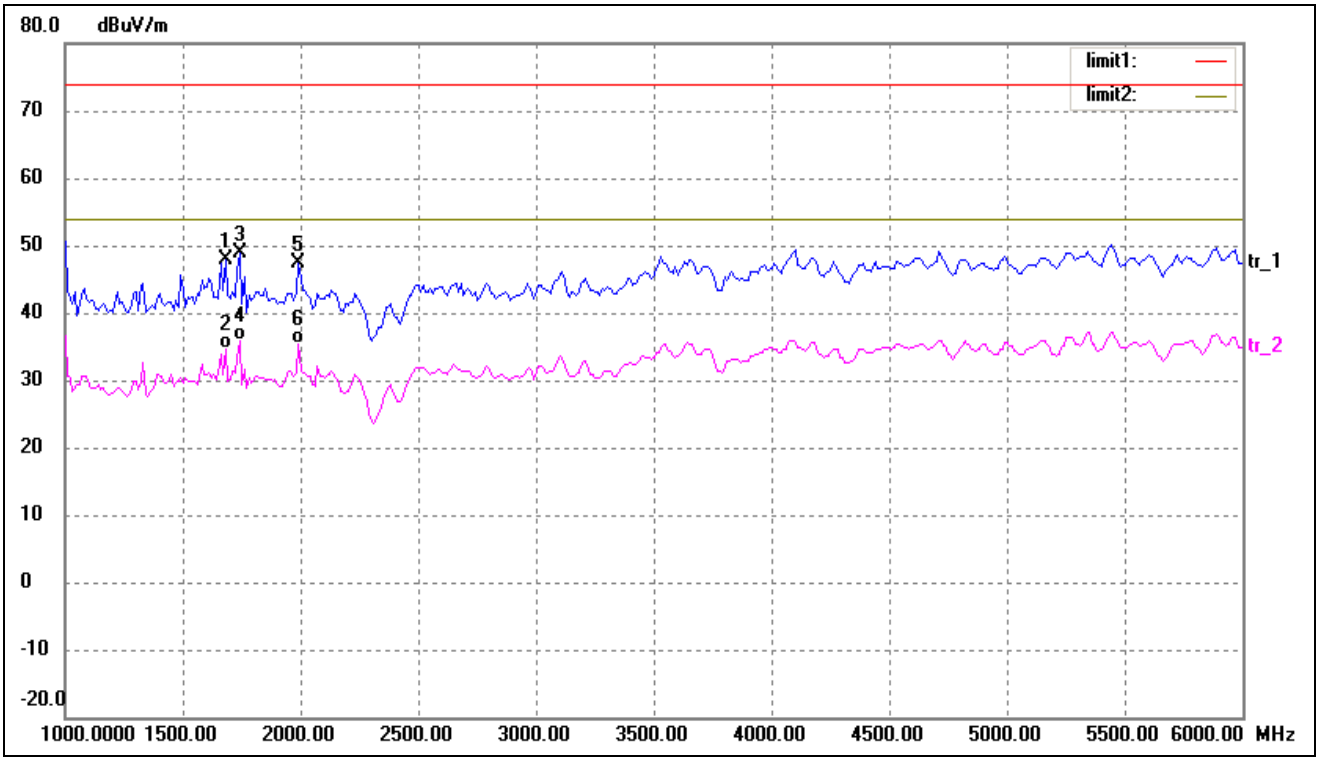


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1187.688	61.92	-8.58	53.34	74.00	-20.66	360	100	peak
2	1187.688	41.41	-8.58	32.83	54.00	-21.17	360	100	AVG
3	1982.685	63.63	-4.55	59.08	74.00	-14.92	360	100	peak
4	1982.685	39.71	-4.55	35.16	54.00	-18.84	360	100	AVG
5	3568.514	52.42	-1.48	50.94	74.00	-23.06	360	100	peak
6	3646.072	36.83	-1.35	35.48	54.00	-18.52	360	100	AVG

Plot of Radiated Emissions Test Data

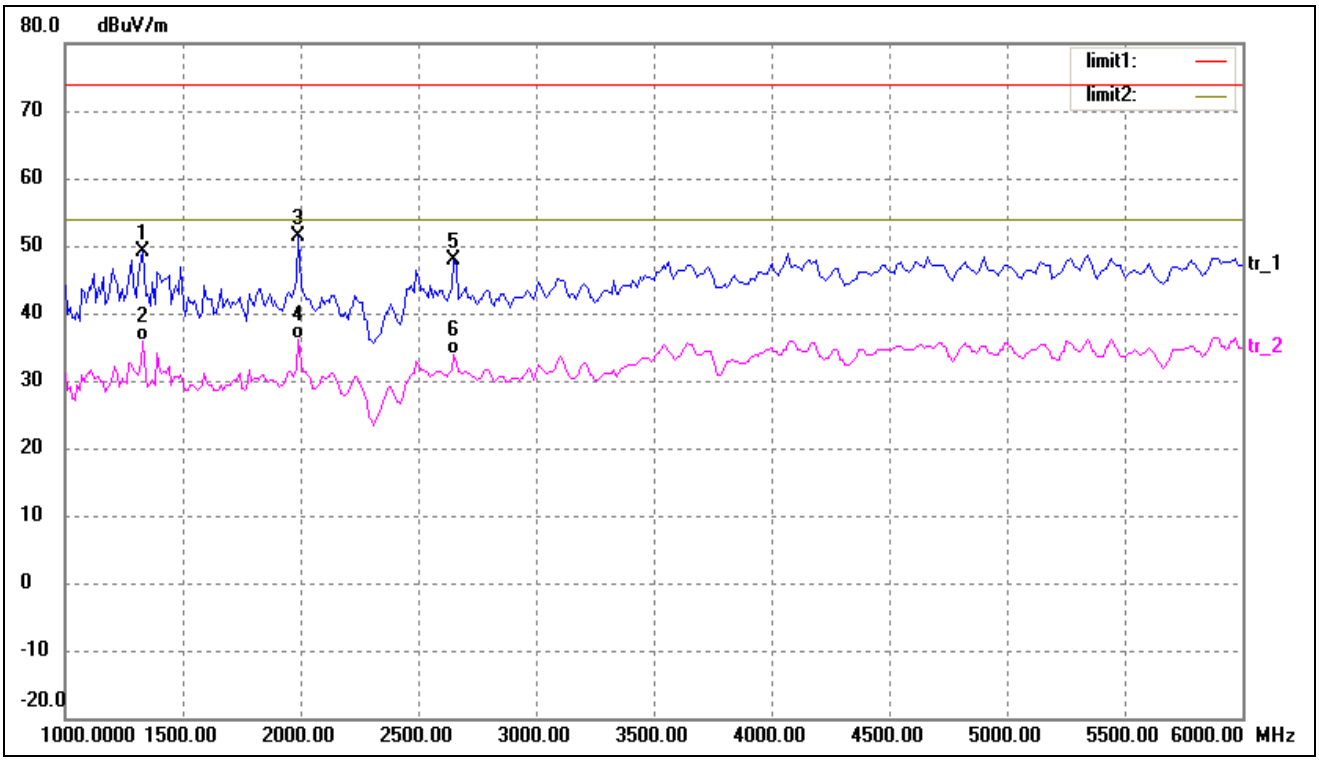
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; PC DC 12V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1681.372	54.45	-6.63	47.82	74.00	-26.18	360	100	peak
2	1681.372	41.14	-6.63	34.51	54.00	-19.49	360	100	AVG
3	1742.717	54.99	-6.20	48.79	74.00	-25.21	360	100	peak
4	1742.717	42.08	-6.20	35.88	54.00	-18.12	360	100	AVG
5	1996.946	51.91	-4.45	47.46	74.00	-26.54	360	100	peak
6	1996.946	39.81	-4.45	35.36	54.00	-18.64	360	100	AVG

Test Specification: *Vertical*

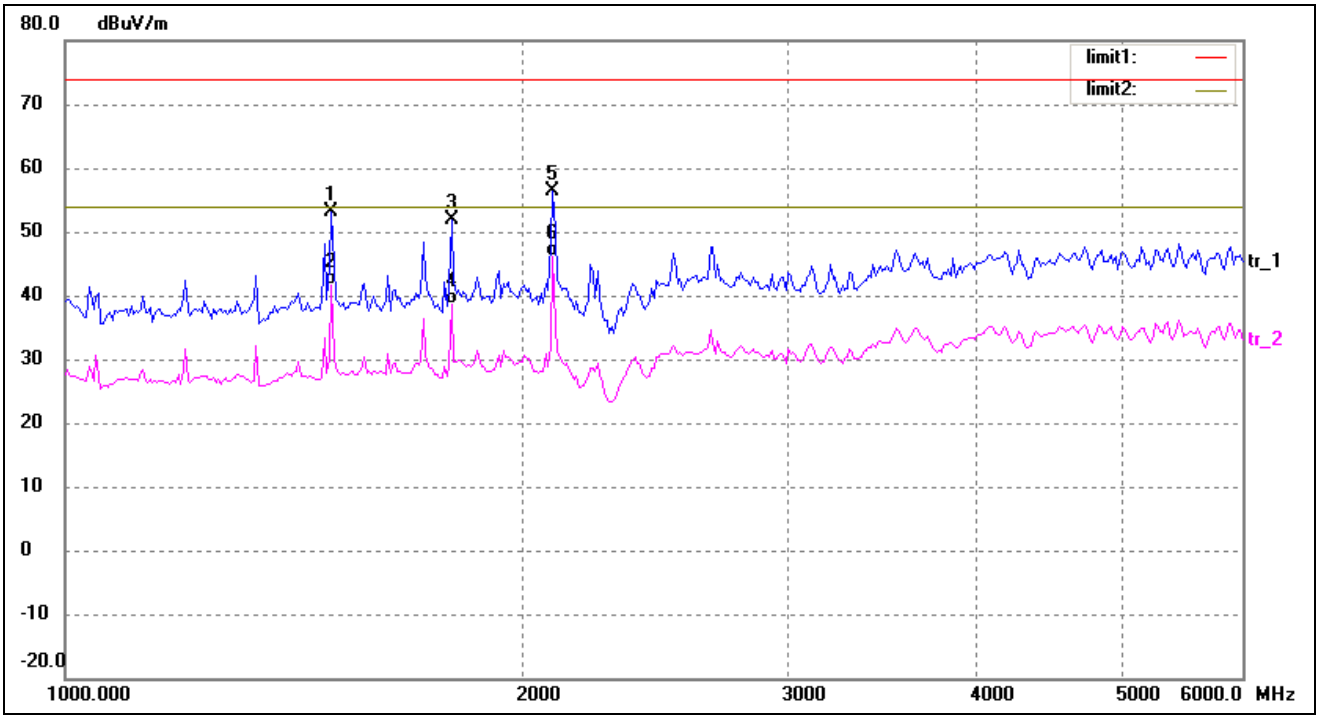


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1332.000	57.31	-8.27	49.04	74.00	-24.96	360	100	peak
2	1332.000	44.17	-8.27	35.90	54.00	-18.10	360	100	AVG
3	1996.946	55.88	-4.45	51.43	74.00	-22.57	360	100	peak
4	1996.946	40.62	-4.45	36.17	54.00	-17.83	360	100	AVG
5	2659.932	51.03	-3.04	47.99	74.00	-26.01	360	100	peak
6	2659.932	36.86	-3.04	33.82	54.00	-20.18	360	100	AVG

Plot of Radiated Emissions Test Data

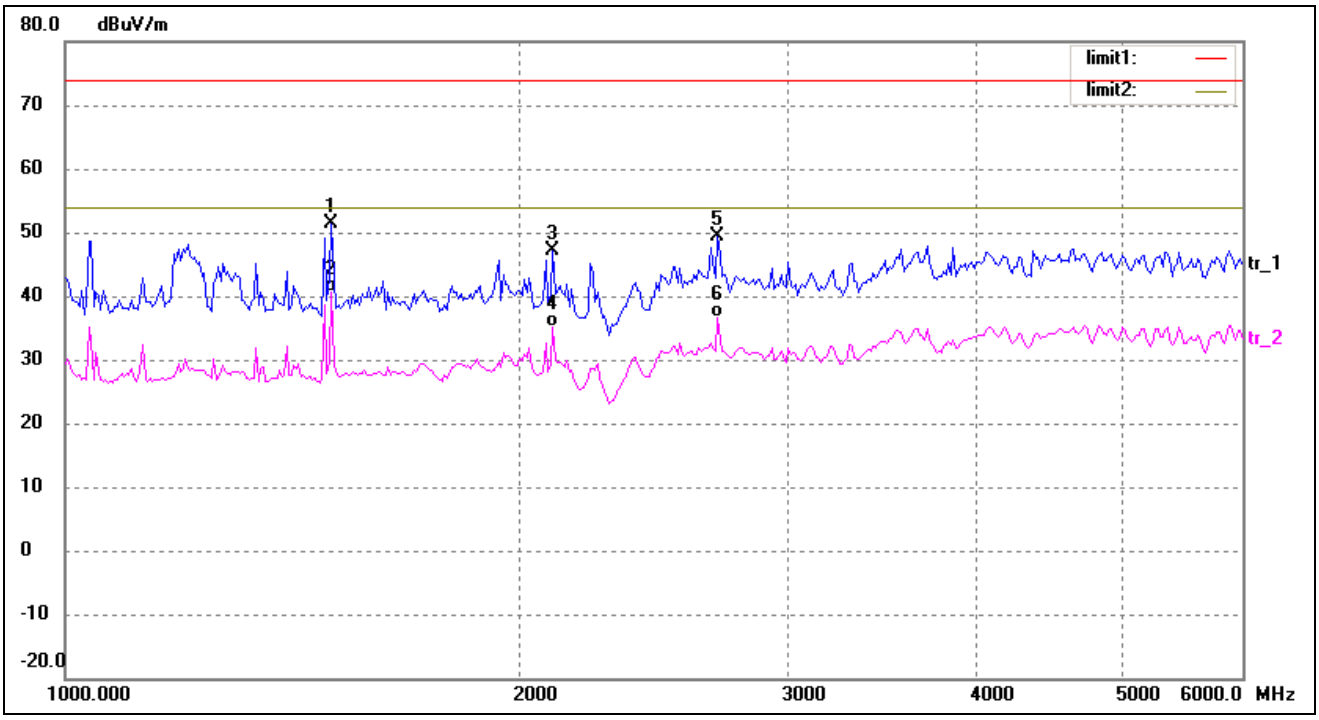
EUT: *Tablet PC*
Tested Model: *Minno 10*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Adapter DC 12V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1499.209	60.97	-7.90	53.07	74.00	-20.93	360	100	peak
2	1499.209	49.64	-7.90	41.74	54.00	-12.26	360	100	AVG
3	1799.839	57.56	-5.80	51.76	74.00	-22.24	360	100	peak
4	1799.839	44.52	-5.80	38.72	54.00	-15.28	360	100	AVG
5	2099.687	60.53	-4.20	56.33	74.00	-17.67	360	100	peak
6	2099.687	50.27	-4.20	46.07	54.00	-7.93	360	100	AVG

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1499.209	59.18	-7.90	51.28	74.00	-22.72	360	100	peak
2	1499.209	48.59	-7.90	40.69	54.00	-13.31	360	100	AVG
3	2099.687	51.35	-4.20	47.15	74.00	-26.85	360	100	peak
4	2099.687	39.40	-4.20	35.20	54.00	-18.80	360	100	AVG
5	2698.334	52.32	-2.99	49.33	74.00	-24.67	360	100	peak
6	2698.334	39.65	-2.99	36.66	54.00	-17.34	360	100	AVG

Note: The measurements greater than 20dB below the limit from 9kHz to 30MHz and the data is not report.

******* END OF REPORT *******