FCC Part 15B
Measurement and Test Report

For

ATID Co., Ltd.

(Gasan-dong, #1210 Byuksan/Kyungin Digitalvalley II),184,Gasandigital2-ro,

Geumcheon-gu, Seoul, Korea

FCC ID: VUJAT911N

FCC Rule(s):	FCC Part 15 Subpart B
Product Description:	WCDMA wireless data terminal
Tested Model:	AT911N
Report No.:	STR16038164I-1
Tested Date:	2016-03-26 to 2016-04-05
Issued Date:	2016-04-06
Tested By:	Iven Guo / Engineer
Reviewed By:	Silin Chen / EMC Manager
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Prepared By:

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	ATID Co., Ltd.
Address of applicant:	(Gasan-dong, #1210 Byuksan/Kyungin Digitalvalley II), 184, Gasandigital2-ro, Geumcheon-gu, Seoul, Korea
Manufacturer:	ATID Co., Ltd.
Address of manufacturer:	(Gasan-dong, #1210 Byuksan/Kyungin Digitalvalley II), 184, Gasandigital2-ro, Geumcheon-gu, Seoul, Korea

General Description of EUT	
Product Name:	WCDMA wireless data terminal
Trade Name:	Atid
Model No.:	AT911N
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V Battery; DC 5V charging
Battery capacity:	Main Battery:2200mAh Gun Battery :5200mAh
Rated Current:	3.0A
Rated Power:	/
Power Adaptor:	GT-46180-1505
	Input: 100-240V~50/60Hz 0.6A; Output: DC5V /3.0A
Lowest Internal Frequency:	32.768KHz
Highest Internal Frequency:	1.0GHz
Classification of ITE:	CLASS B

1.2 Test Standards

The following report is prepared on behalf of the ATID Co., Ltd. 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 C63.4-2014, 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.: 934118

Shenzhen SEM.Test Technology 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 934118.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

CNAS Registration No.: L4062

Shenzhen SEM.Test Technology 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 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd 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	Connect to adapter
TM2	Downloading	Connect to PC
TM3	Camera on	Powered by battery

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Adapter Cable	1.5	shielded	With Core
USB Cable	1.0	shielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R

Special Cable List and Details

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

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16

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

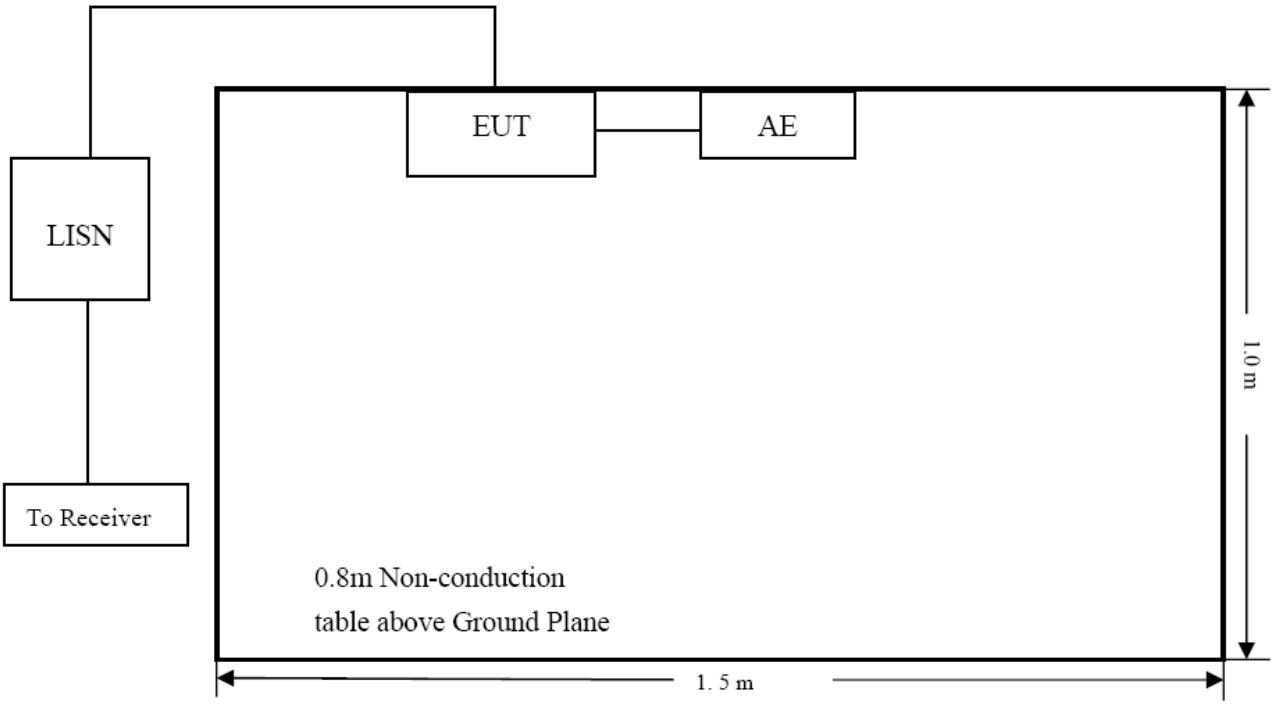
3.1 Measurement Uncertainty

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 Procedure

Test is conducting under the description of ANSI C63.4-2014, 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.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

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

3.5 Summary of Test Results/Plots

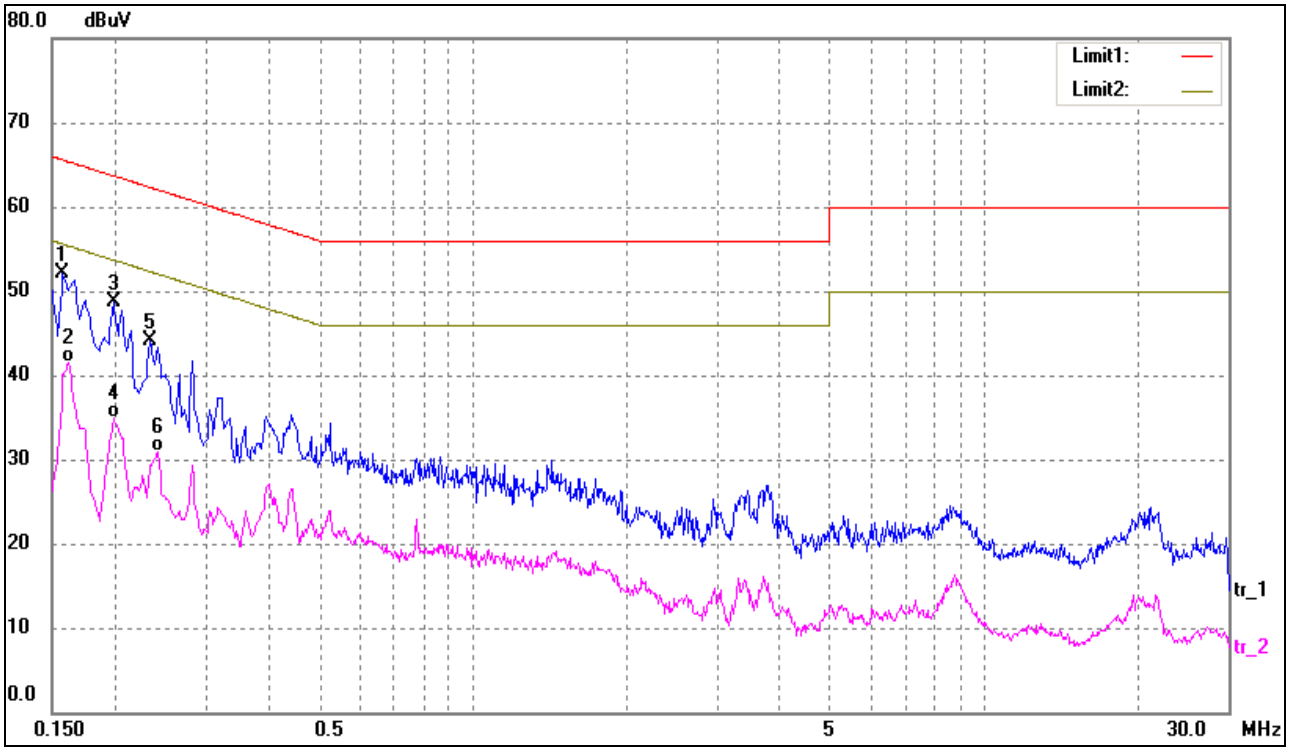
According to the data in section 3.6, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

-6.99 dB at **0.1980 MHz** in the **Line**, **Peak** detector, TM2, 0.15-30MHz

3.6 Conducted Emissions Test Data

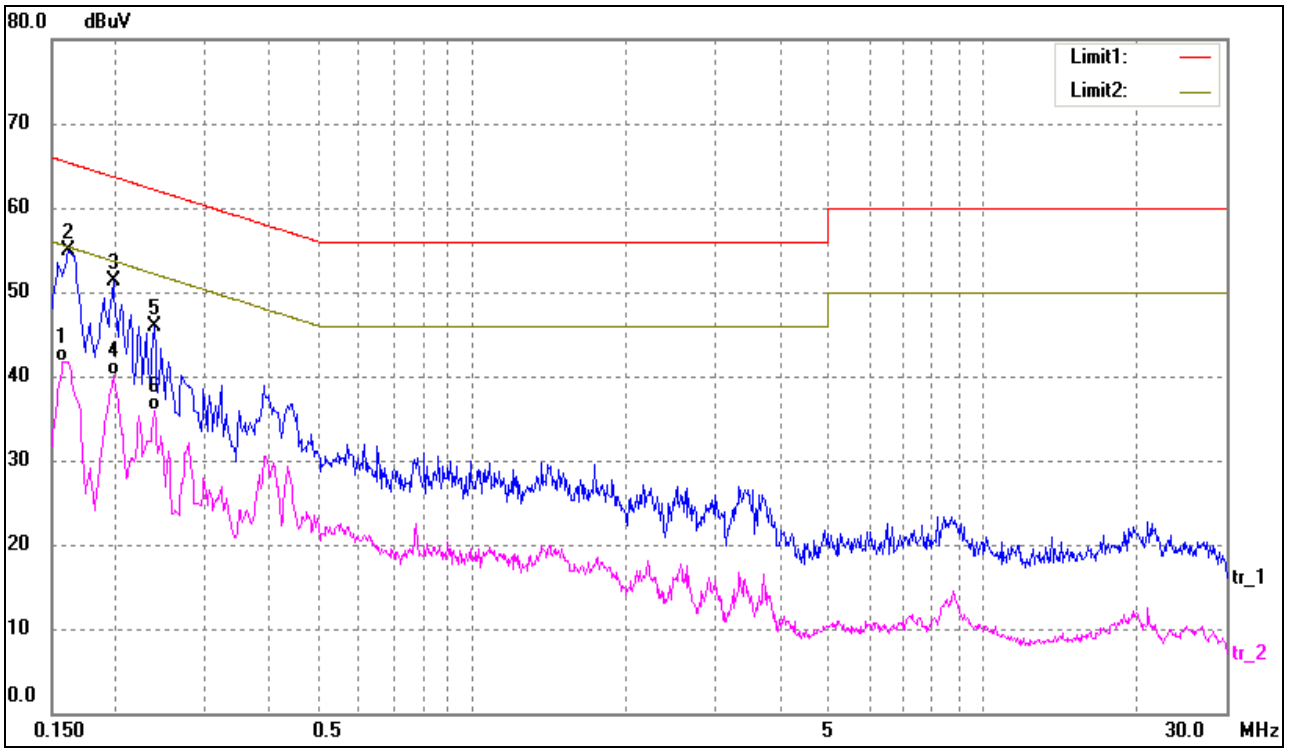
Plot of Conducted Emissions Test Data

EUT: *WCDMA wireless data terminal*
Tested Model: *AT911N*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*
Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1580	42.66	9.50	52.16	65.57	-13.41	peak
2	0.1620	32.01	9.50	41.51	55.36	-13.85	AVG
3	0.1980	39.25	9.50	48.75	63.69	-14.94	peak
4	0.1980	25.42	9.50	34.92	53.69	-18.77	AVG
5	0.2340	34.66	9.50	44.16	62.31	-18.15	peak
6	0.2420	21.34	9.50	30.84	52.03	-21.19	AVG

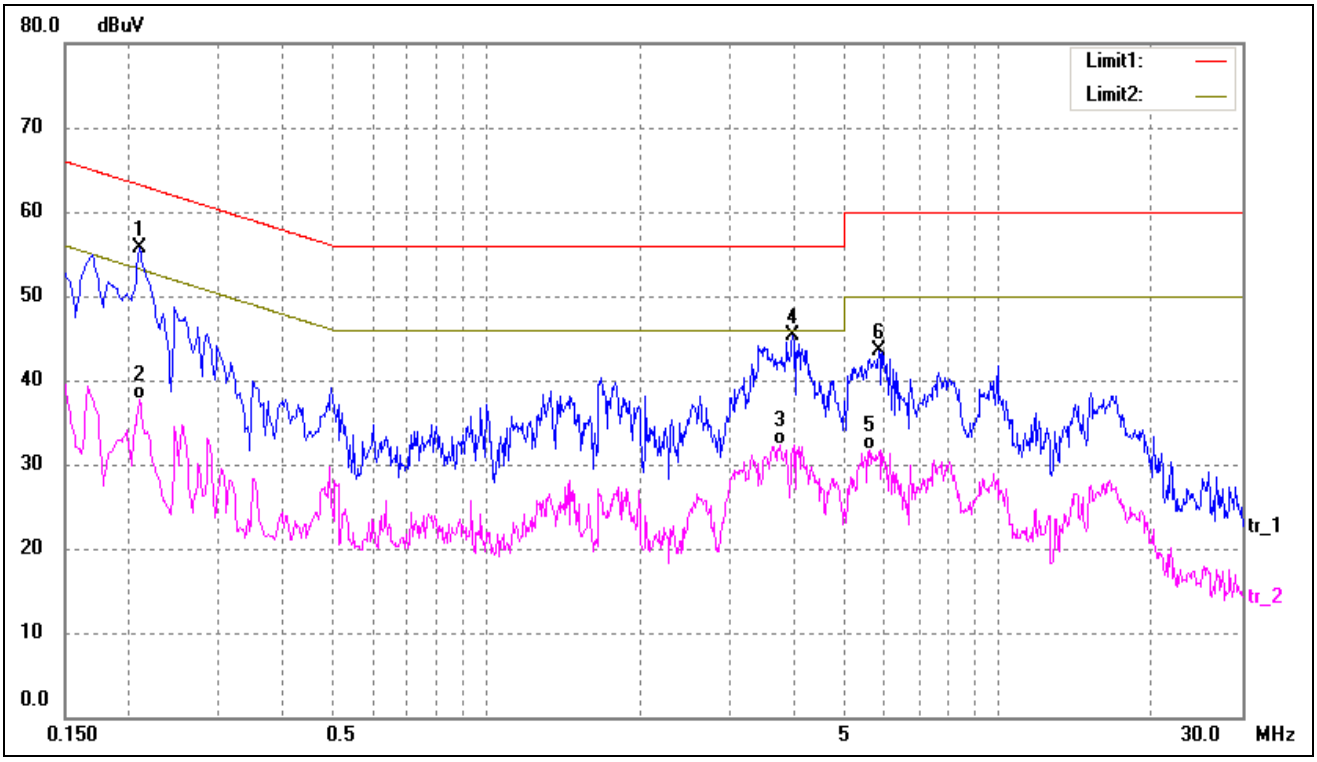
Test Specification: *Line*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1580	32.26	9.50	41.76	55.57	-13.81	AVG
2*	0.1620	45.31	9.50	54.81	65.36	-10.55	peak
3	0.1980	41.72	9.50	51.22	63.69	-12.47	peak
4	0.1980	30.59	9.50	40.09	53.69	-13.60	AVG
5	0.2380	36.34	9.50	45.84	62.17	-16.33	peak
6	0.2380	26.35	9.50	35.85	52.17	-16.32	AVG

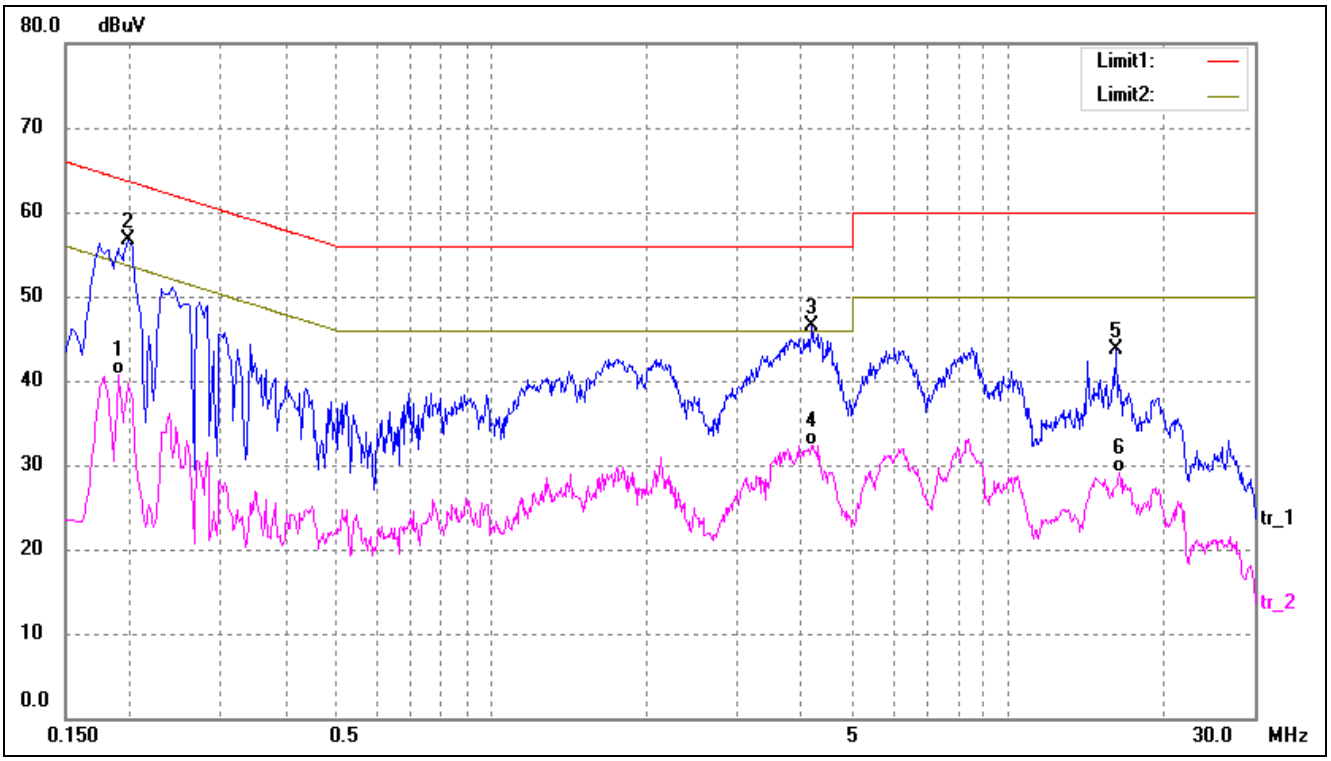
Plot of Conducted Emissions Test Data

EUT: *WCDMA wireless data terminal*
Tested Model: *AT911N*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB 5V*
Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2100	46.24	9.50	55.74	63.21	-7.47	peak
2	0.2100	28.14	9.50	37.64	53.21	-15.57	AVG
3	3.7580	22.28	10.07	32.35	46.00	-13.65	AVG
4	3.9700	35.29	10.10	45.39	56.00	-10.61	peak
5	5.5980	21.43	10.25	31.68	50.00	-18.32	AVG
6	5.8580	33.32	10.26	43.58	60.00	-16.42	peak

Test Specification: *Line*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1900	31.16	9.50	40.66	54.04	-13.38	AVG
2*	0.1980	47.20	9.50	56.70	63.69	-6.99	peak
3	4.1660	36.48	10.12	46.60	56.00	-9.40	peak
4	4.1660	22.24	10.12	32.36	46.00	-13.64	AVG
5	16.1540	33.25	10.43	43.68	60.00	-16.32	peak
6	16.4380	18.68	10.43	29.11	50.00	-20.89	AVG

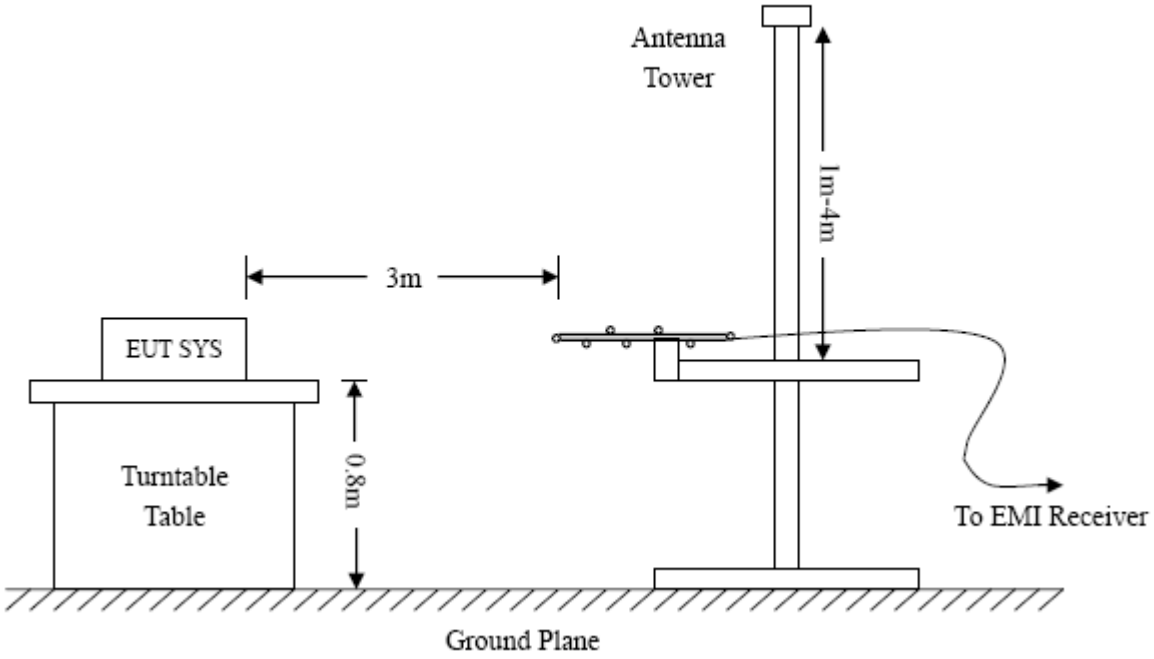
4. RADIATED EMISSION

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 Procedure

The setup of EUT is according with per ANSI C63.4-2014 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.



4.3 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

4.4 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

4.5 Environmental Conditions

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

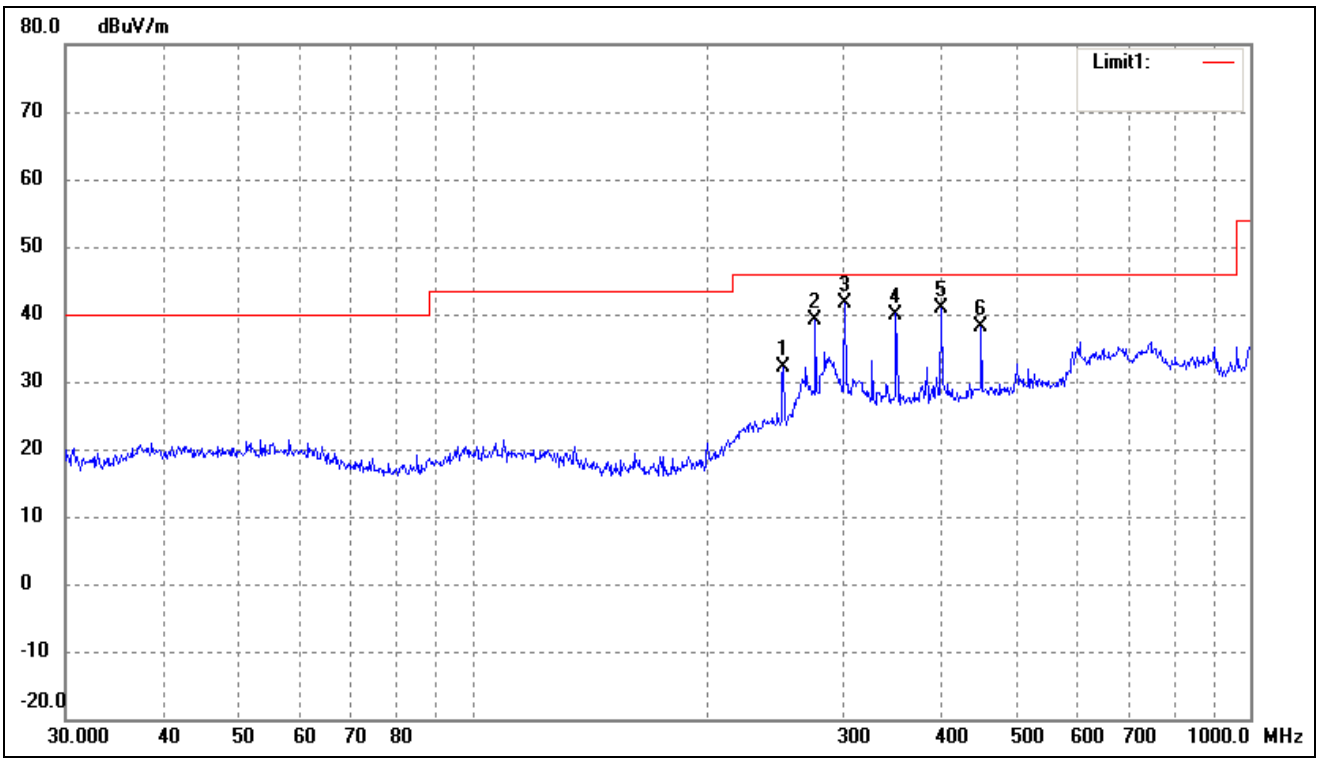
4.6 Summary of Test Results/Plots

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

-1.45 dB at **451.1350 MHz** in the **Vertical** polarization, **TM2** mode, **30 MHz** to **5 GHz**, **3Meters**

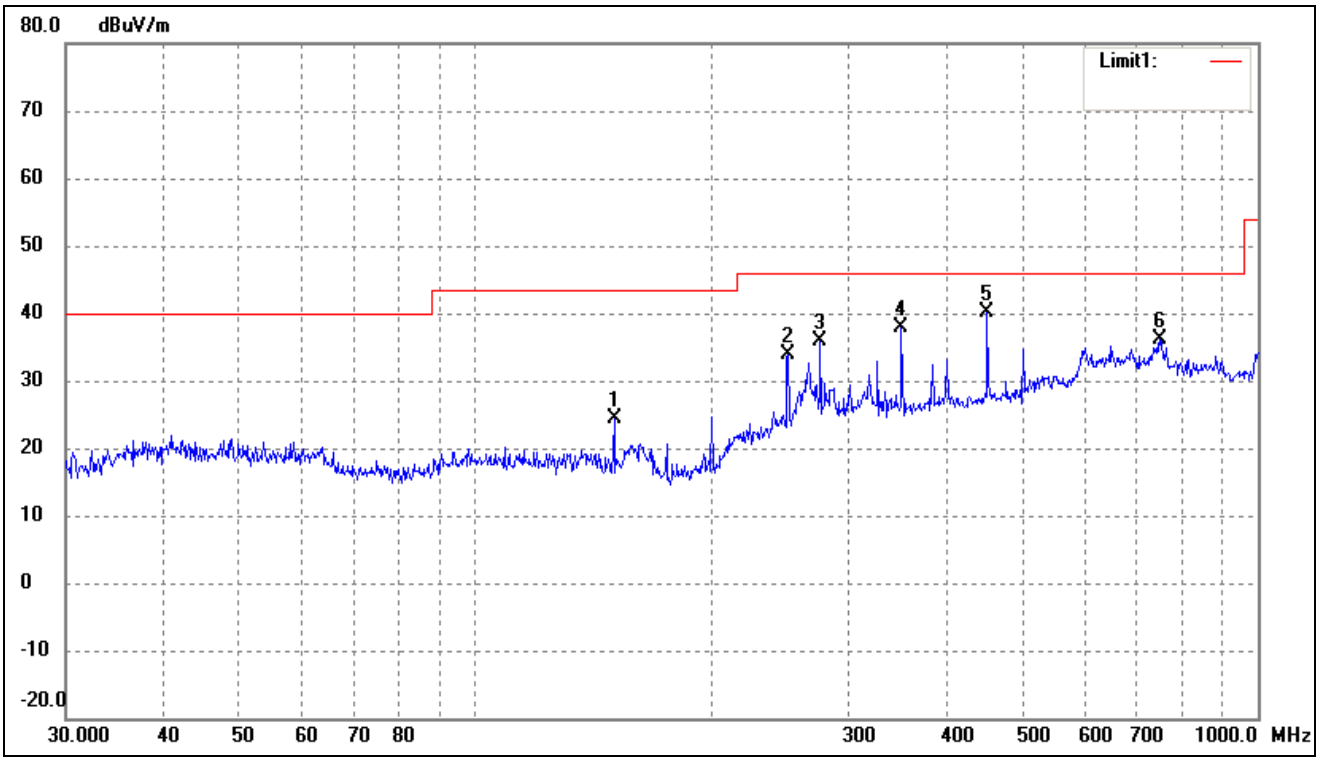
Plot of Radiated Emissions Test Data

EUT: *WCDMA wireless data terminal*
Tested Model: *AT911N*
Operating Condition: *TM1*
Comment: *AC 120V/60Hz; Adapter DC 5V*
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	251.1804	22.30	9.74	32.04	46.00	-13.96	58	100	peak
2	276.1236	27.94	11.14	39.08	46.00	-6.92	326	100	peak
3	301.4224	29.44	12.18	41.62	46.00	-4.38	29	100	QP
4	350.4768	28.01	11.99	40.00	46.00	-6.00	209	100	peak
5	400.4319	27.74	13.12	40.86	46.00	-5.14	148	100	peak
6	451.1350	24.88	13.32	38.20	46.00	-7.80	185	100	peak

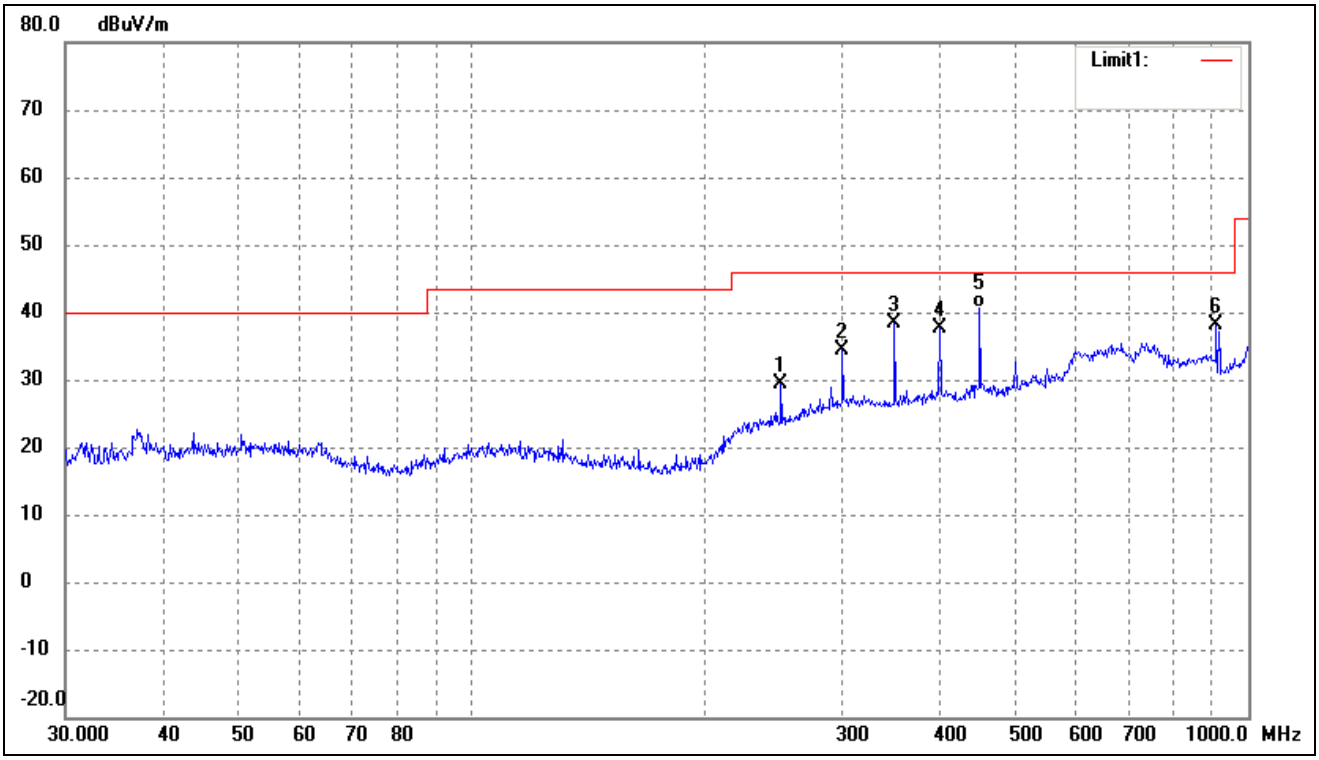
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	150.5378	21.31	2.98	24.29	43.50	-19.21	51	100	peak
2	251.1804	24.08	9.74	33.82	46.00	-12.18	308	100	peak
3	276.1236	24.76	11.14	35.90	46.00	-10.10	120	100	peak
4	350.4768	25.85	11.99	37.84	46.00	-8.16	359	100	peak
5	451.1350	26.75	13.32	40.07	46.00	-5.93	158	100	QP
6	750.1083	17.08	19.09	36.17	46.00	-9.83	182	100	peak

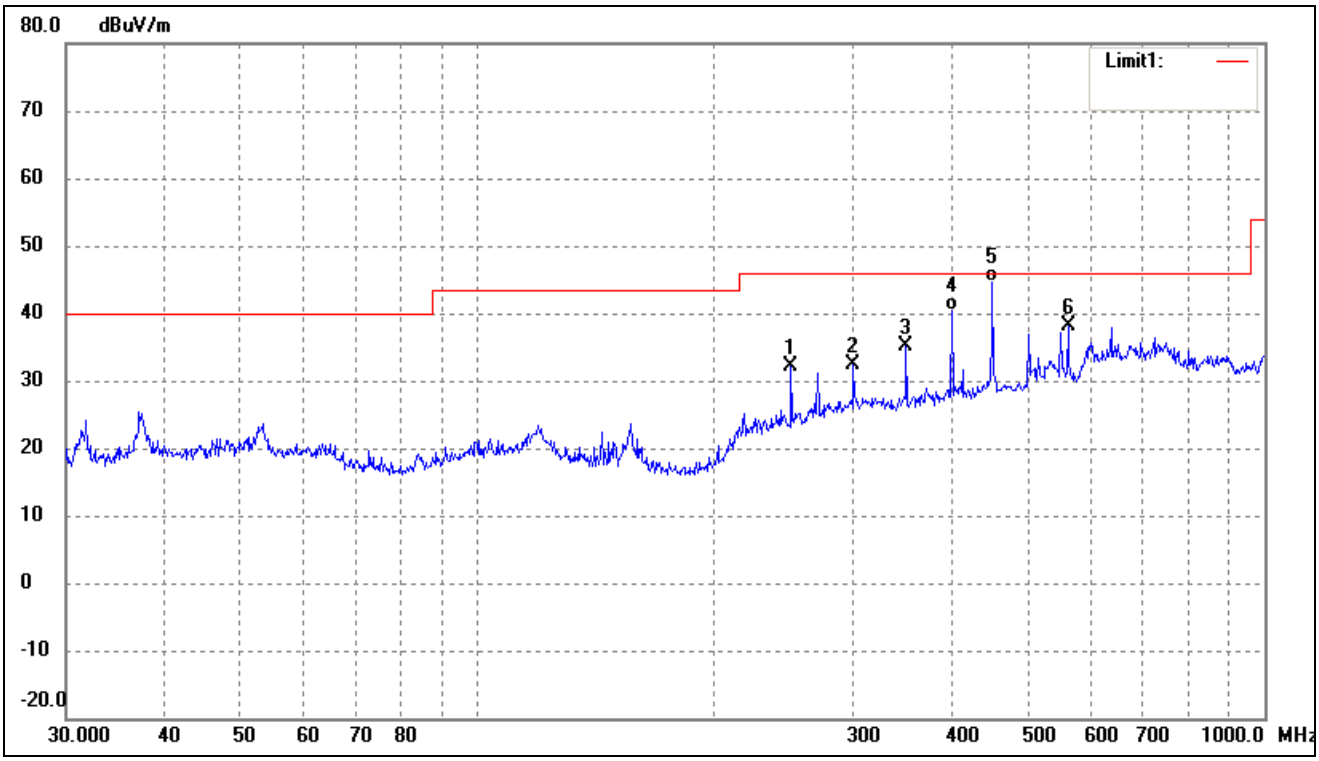
Plot of Radiated Emissions Test Data

EUT: *WCDMA wireless data terminal*
Tested Model: *AT911N*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; USB DC 5V*
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	250.3012	19.78	9.71	29.49	46.00	-16.51	158	100	peak
2	300.3673	22.26	12.18	34.44	46.00	-11.56	226	100	peak
3	350.4768	26.30	11.99	38.29	46.00	-7.71	129	100	peak
4	400.4319	24.40	13.12	37.52	46.00	-8.48	209	100	peak
5	451.1350	27.34	13.32	40.66	46.00	-5.34	158	100	peak

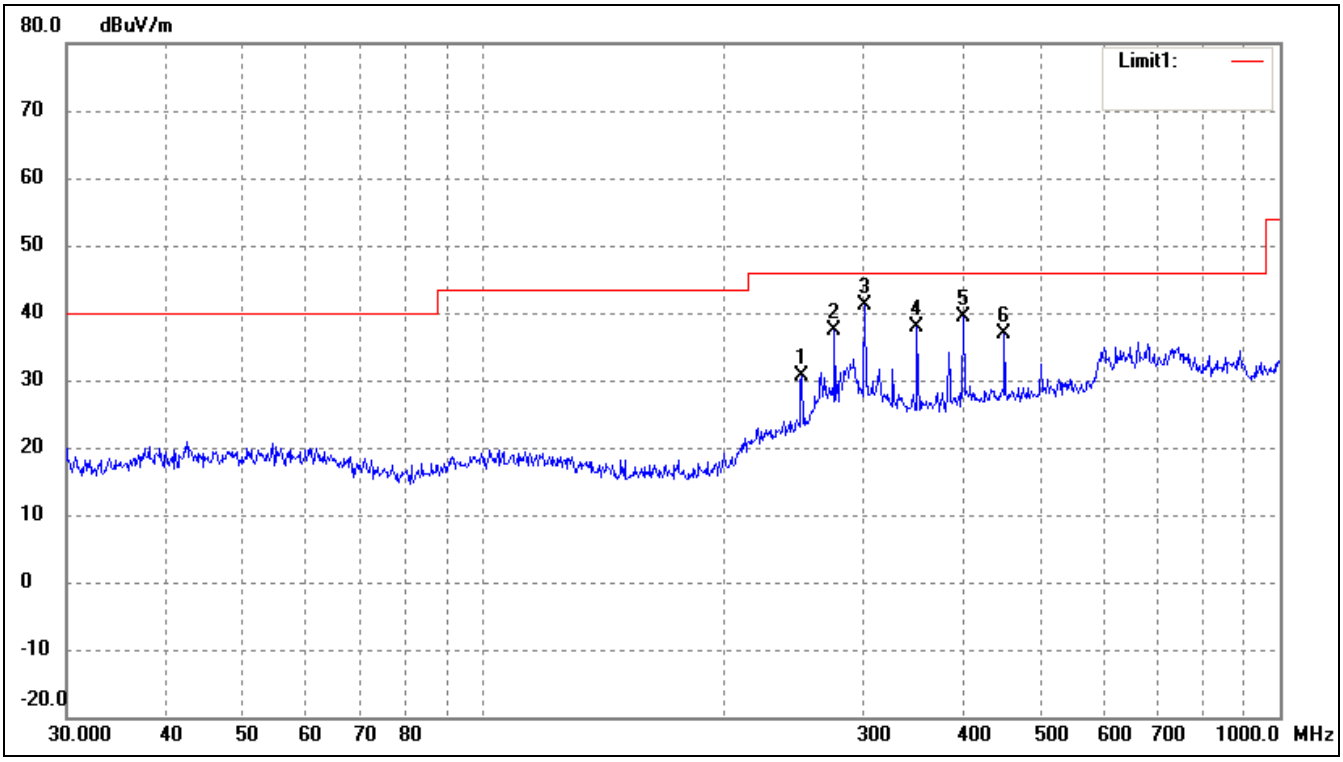
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	250.3012	22.31	9.71	32.02	46.00	-13.98	151	100	peak
2	300.3673	20.21	12.18	32.39	46.00	-13.61	18	100	peak
3	350.4768	23.07	11.99	35.06	46.00	-10.94	20	100	peak
4	400.4319	27.28	13.12	40.40	46.00	-5.60	359	100	peak
5	451.1350	31.23	13.32	44.55	46.00	-1.45	148	100	QP
6	562.6624	23.57	14.67	38.24	46.00	-7.76	185	100	peak

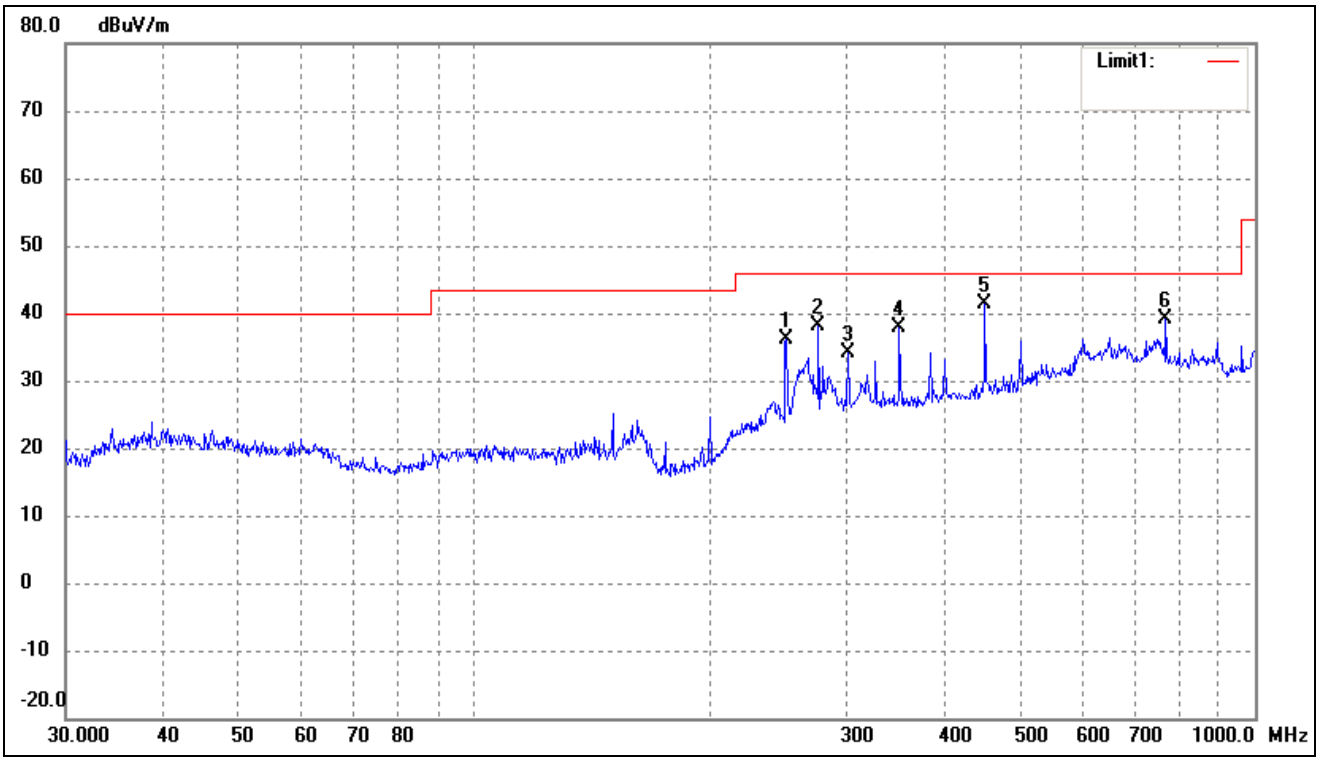
Plot of Radiated Emissions Test Data

EUT: *WCDMA wireless data terminal*
Tested Model: *AT911N*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Adapter DC 5V*
Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	251.1804	20.78	9.74	30.52	46.00	-15.48	158	100	peak
2	276.1236	26.12	11.14	37.26	46.00	-8.74	0	100	peak
3	301.4224	29.03	12.18	41.21	46.00	-4.79	147	100	peak
4	350.4768	25.95	11.99	37.94	46.00	-8.06	352	100	peak
5	400.4319	26.15	13.12	39.27	46.00	-6.73	180	100	peak
6	451.1350	23.59	13.32	36.91	46.00	-9.09	182	100	peak

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	251.1804	26.29	9.74	36.03	46.00	-9.97	76	100	peak
2	276.1236	26.91	11.14	38.05	46.00	-7.95	288	100	peak
3	301.4224	22.03	12.18	34.21	46.00	-11.79	27	100	peak
4	350.4768	25.85	11.99	37.84	46.00	-8.16	180	100	peak
5	451.1350	28.02	13.32	41.34	46.00	-4.66	148	100	peak
6	768.7482	20.90	18.15	39.05	46.00	-6.95	185	100	peak

Note: Testing is carried out with frequency rang 30MHz to the 5GHz, which above 1GHz is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

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