

FCC Part 15B Measurement and Test Report

For

ASK PROXIMA CO., LIMITED

Room 3, 21/F., Far East Consortium Building, 121 Des Voeux Road, Central,

Hong Kong

FCC ID: 2AALLWPJ2530C

Test Rule(s): FCC Part 15 Subpart B

Product Description: Zigbee Coordinator

Tested Model: WPJ2530C

Report No.: STR13128111E-2

Tested Date: 2013-12-10 to 2014-01-10

Issued Date: 2014-01-13

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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: ASK PROXIMA CO., LIMITED
Address of applicant: Room 3, 21/F., Far East Consortium Building, 121
Des Voeux Road, Central, Hong Kong
Manufacturer: ASK PROXIMA CO., LIMITED
Address of manufacturer: Room 3, 21/F., Far East Consortium Building, 121
Des Voeux Road, Central, Hong Kong

General Description of EUT	
Product Name:	Zigbee Coordinator
Trade Name:	/
Model No.:	WPJ2530C
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 5V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	32MHz
Highest Internal Frequency:	32MHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the ASK PROXIMA CO., LIMITED 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.: 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	Working	/

EUT Cable List and Details

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

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenove	E23	EB12648265

Special Cable List and Details

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

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	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.

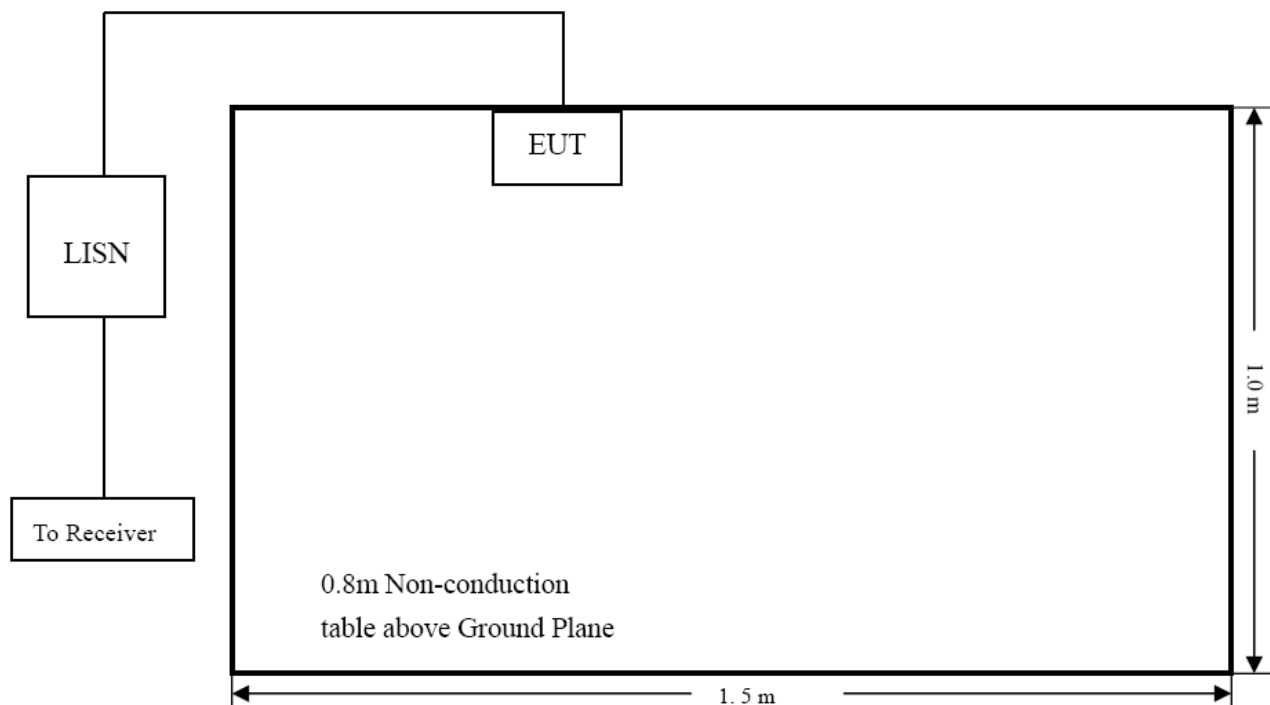
3.2 Test Equipment List and Details

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:

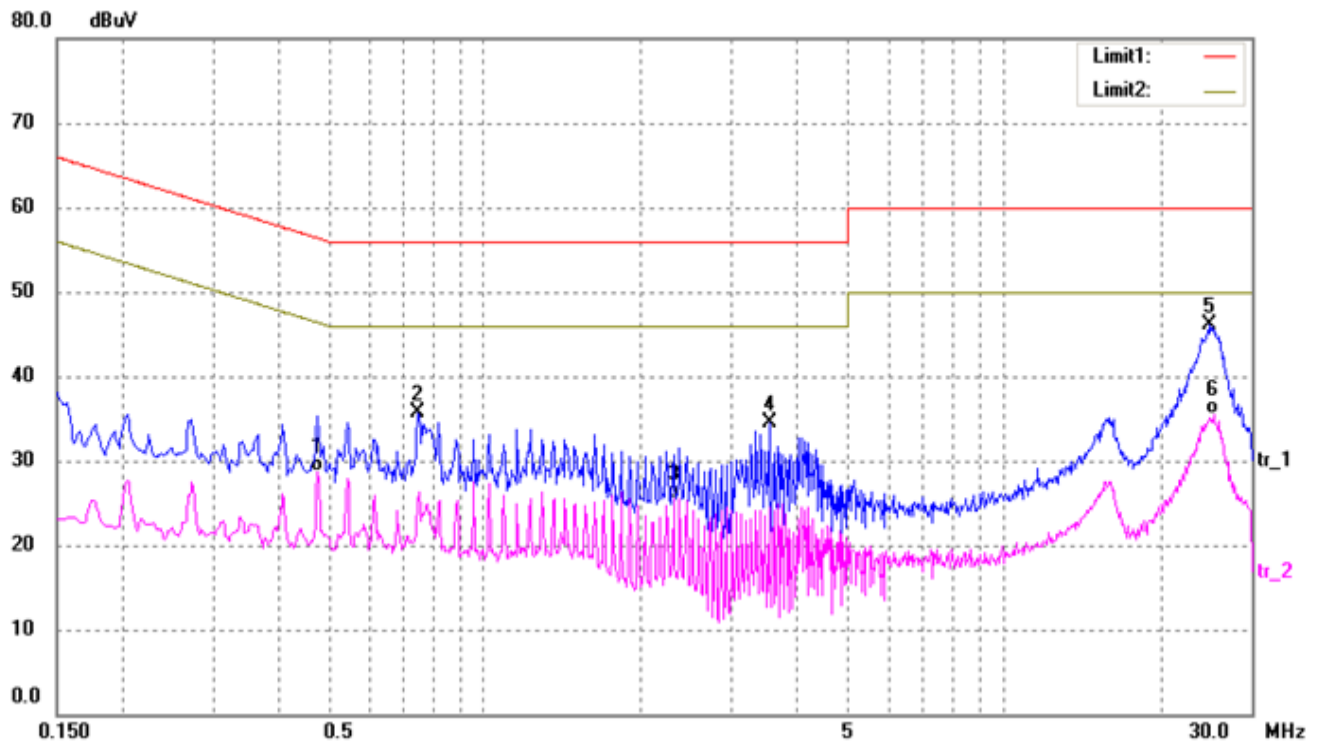
-11.40 dB at 26.5340 MHz in the **Line, Average** detector, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

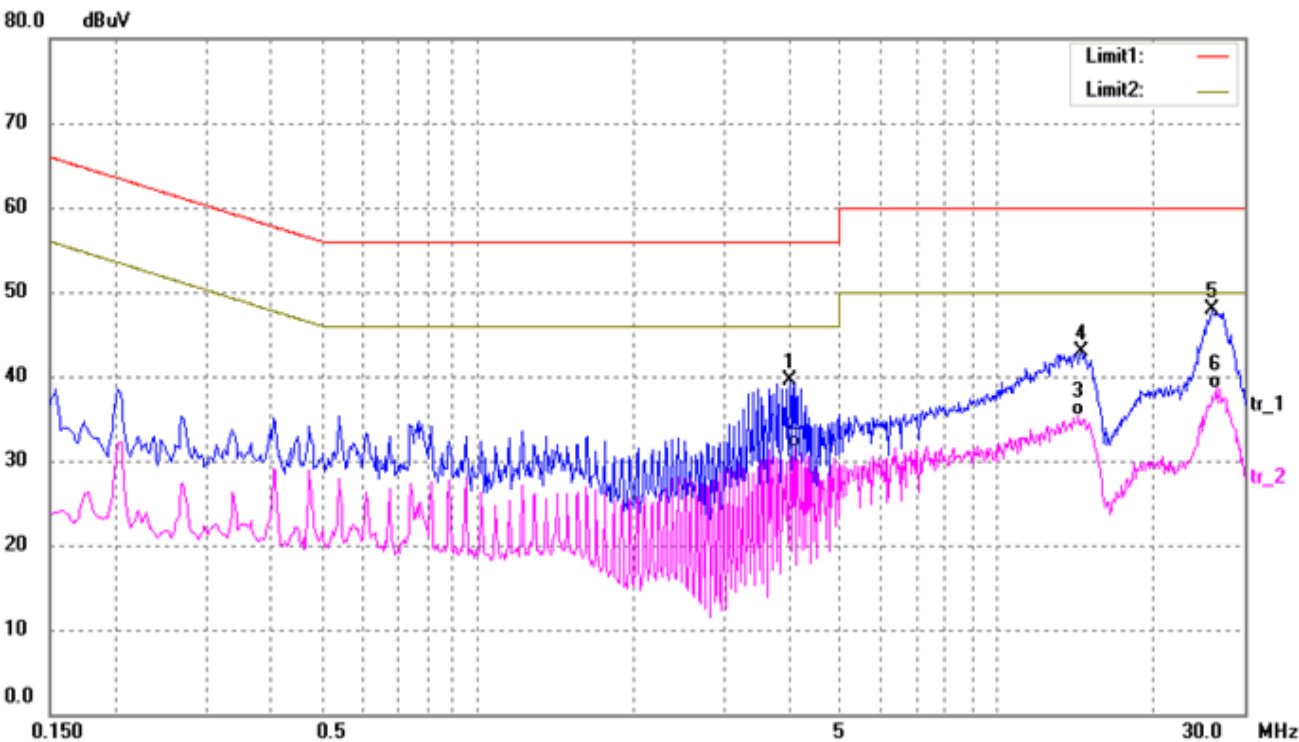
EUT: Zigbee Coordinator
 Tested Model: WPJ2530C
 Operating Condition: TM1
 Comment: AC120V/60Hz; USB 5V

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4780	19.22	9.50	28.72	46.37	-17.65	AVG
2	0.7460	25.90	9.75	35.65	56.00	-20.35	peak
3	2.3140	15.60	10.00	25.60	46.00	-20.40	AVG
4	3.5380	24.51	10.00	34.51	56.00	-21.49	peak
5	25.0460	33.12	13.00	46.12	60.00	-13.88	peak
6	25.3980	22.42	13.00	35.42	50.00	-14.58	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	4. 0060	29. 57	10. 00	39. 57	56. 00	-16. 43	peak
2	4. 0740	21. 57	10. 00	31. 57	46. 00	-14. 43	AVG
3	14. 4100	24. 40	10. 88	35. 28	50. 00	-14. 72	AVG
4	14. 5340	31. 96	10. 91	42. 87	60. 00	-17. 13	peak
5	25. 9140	34. 86	13. 00	47. 86	60. 00	-12. 14	peak
6	26. 5340	25. 60	13. 00	38. 60	50. 00	-11. 40	AVG

4. Radiated Emissions

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

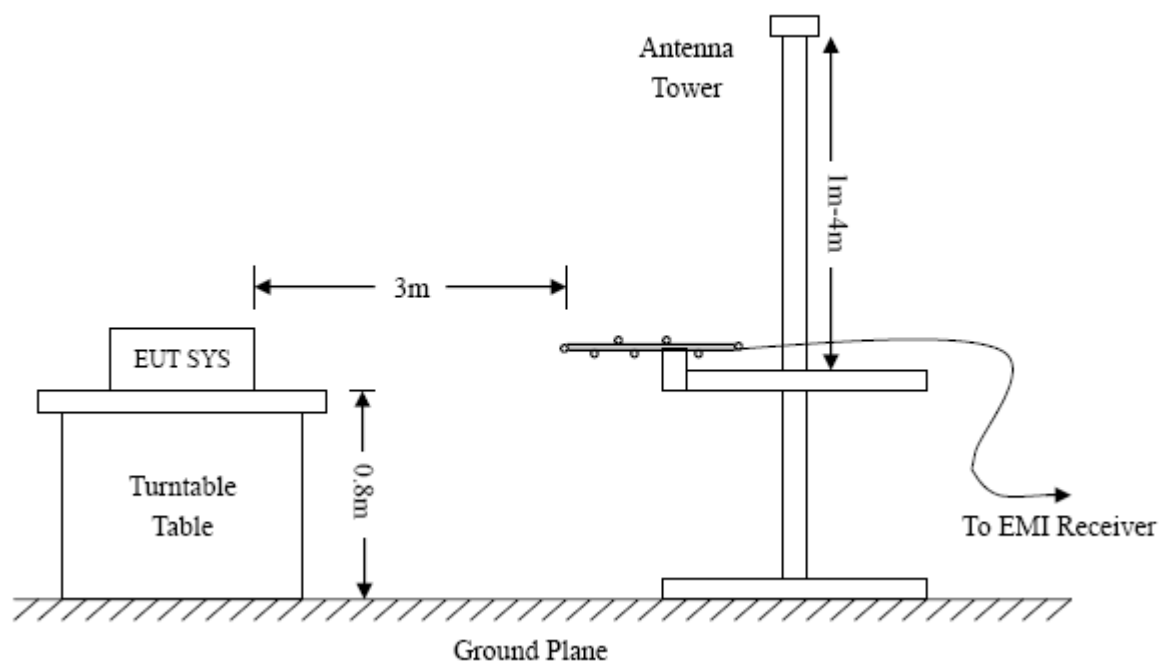
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	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

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

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:

-15.03 dB at 768.7482 MHz in the Vertical polarization, 30MHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data

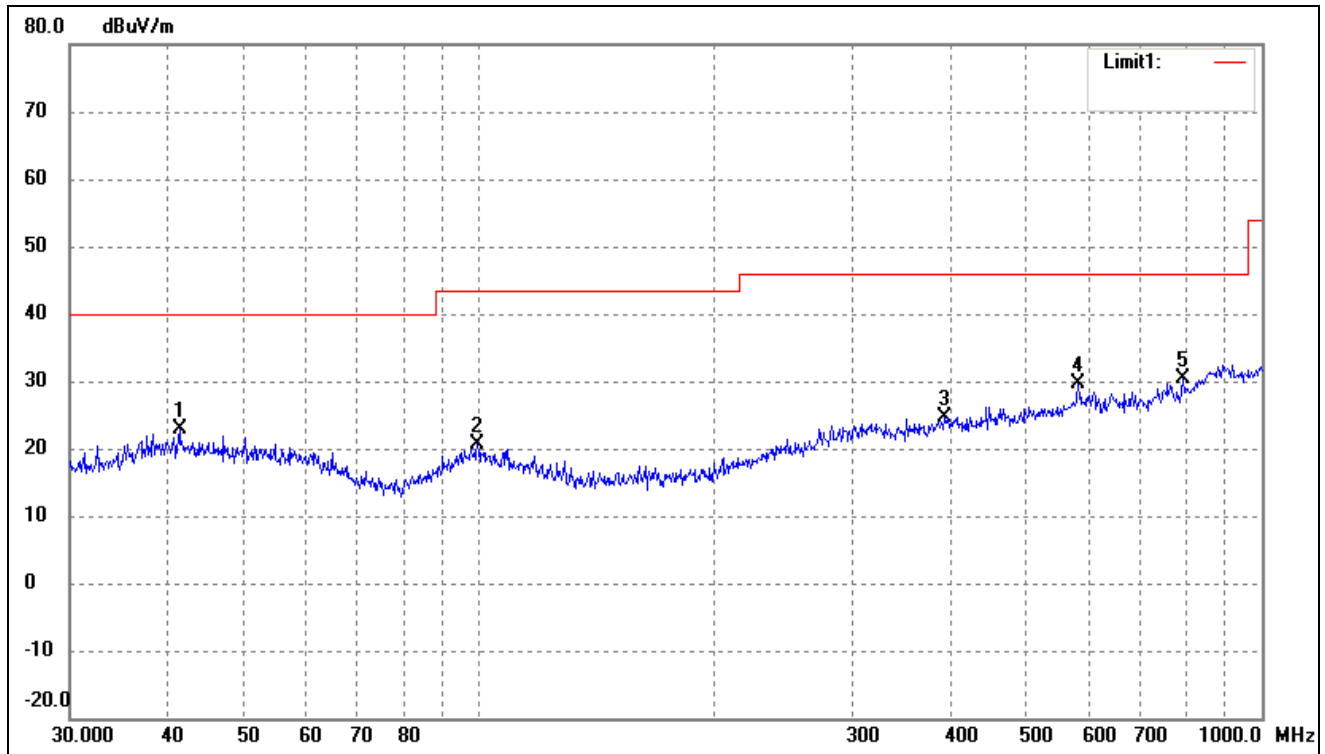
EUT: Zigbee Coordinator

Tested Model: WPJ2530C

Operating Condition: TM1

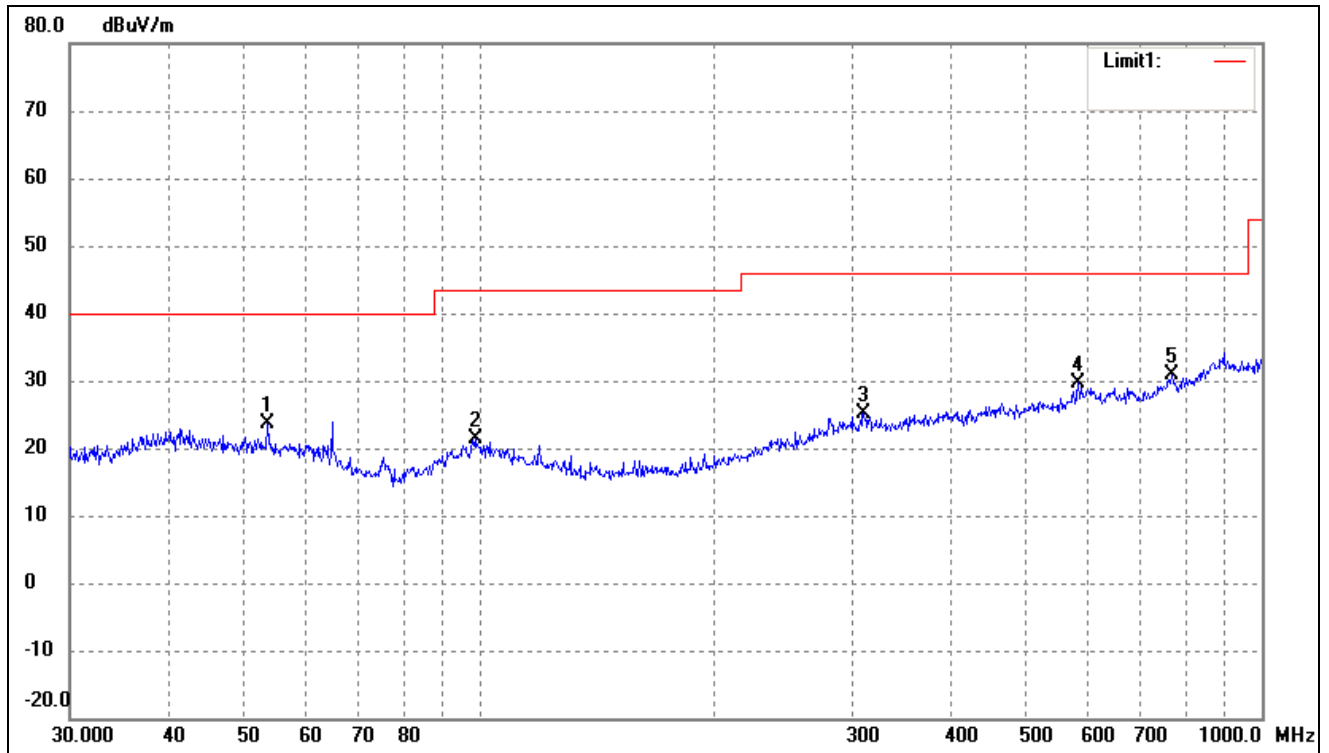
Comment: AC120V/60Hz; USB 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	41.4215	15.79	7.11	22.90	40.00	-17.10	58	150	peak
2	99.5281	14.60	6.01	20.61	43.50	-22.89	326	100	peak
3	393.4724	14.89	9.83	24.72	46.00	-21.28	29	120	peak
4	582.7425	16.86	12.68	29.54	46.00	-16.46	209	100	peak
5	793.3960	16.23	14.04	30.27	46.00	-15.73	359	200	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	53.6932	17.70	5.94	23.64	40.00	-16.36	51	100	peak
2	98.8326	15.47	5.84	21.31	43.50	-22.19	308	100	peak
3	309.9977	15.91	9.23	25.14	46.00	-20.86	120	100	peak
4	582.7425	16.86	12.68	29.54	46.00	-16.46	359	100	peak
5	768.7482	16.82	14.15	30.97	46.00	-15.03	359	100	peak

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