

TEST REPORT

Reference No...... : WTH25X04109656W002
FCC ID : 2A6J8-EPK0011
Applicant : Shenzhen TuoZhu Technology Co., Ltd.
903,West Zone,Hengchang Science and Technology Building,
Address : No.2228 Linhai Avenue,Nanshan Street,Qianhai Shengang Cooperation
Zone,Shenzhen
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : CyberBrick Lift n Load Combo - ZK001
CyberBrick Soccer Game Combo - ZK002
Model No...... : ZK001
Standards : FCC Part 15.247
Date of Receipt sample : 2025-04-28
Date of Test..... : 2025-04-28 to 2025-05-21
Date of Issue : 2025-05-21
Test Report Form No. : WTX_Part 15_247W
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

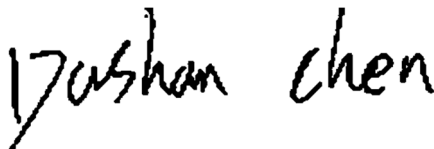
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Tested by:



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Approved by:



Jason Su/Manager

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Report version

Version No.	Date of issue	Description
Rev.00	2025-05-21	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	CyberBrick Lift n Load Combo - ZK001 CyberBrick Soccer Game Combo - ZK002
Trade Name:	CyberBrick
Model No.:	ZK001
Adding Model(s):	ZK002
Rated Voltage:	DC7.4V
Battery Capacity	800mAh
Power Adapter Model:	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model ZK001, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Bluetooth Version:	V5.0 (BLE mode)
Frequency Range:	2402-2480MHz
RF Output Power:	1Mbps:5.40dBm (Conducted) 2Mbps:3.40dBm (Conducted)
Data Rate:	1Mbps, 2Mbps
Modulation:	GFSK
Quantity of Channels:	40
Channel Separation:	2MHz
Type of Antenna:	PCB Antenna
Antenna Gain:	3.64dBi
<i>Note The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

558074 D01 15.247 Meas Guidance v05r02: Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under section 15.247 of the Fcc rules.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

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 C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02.

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

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) 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. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A and the CAB identifier is CN0057.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, with a duty cycle equal to 100%, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	Low	2402MHz
TM2	Middle	2440MHz
TM3	High	2480MHz

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~75 %
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Remote control car	Tuozhu	B-ZK001	/
Remote control car	Tuozhu	B-ZK002	/
Car assembly	Tuozhu	B-ZK003	/
Car assembly	Tuozhu	B-ZK004	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	0.57dB
Occupied Bandwidth	Conducted	0.015MHz
Power Spectral Density	Conducted	1.8dB
Conducted Spurious Emission	Conducted	2.17dB
Conducted Emissions	Conducted	9-150kHz, 3.74dB
		0.15-30MHz, 3.34dB
Transmitter Spurious Emissions	Radiated	30-200MHz, 4.52dB
		0.2-1GHz 5.56dB
		1-6GHz, 3.84dB
		6-18GHz, 3.92dB

1.7 Test Equipment List and Details

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1041A 1001	Communication Tester	Rohde & Schwarz	CMW500	148650	2025-02-23	2026-02-22
WTXE1005A 1005	Spectrum Analyzer	Agilent	N9020A	US471401 02	2025-02-23	2026-02-22
WTXE1084A 1001	Spectrum Analyzer	Agilent	N9020A	MY543205 48	2025-02-23	2026-02-22
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2025-02-23	2026-02-22
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2025-02-23	2026-02-22
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2025-02-23	2026-02-22
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1007A 1001	Amplifier	HP	8447F	2805A034 75	2025-02-23	2026-02-22
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2025-02-23	2026-02-22
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1032-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	2002	2025-02-23	2026-02-22
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2025-02-23	2026-02-22

WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A104 57	2025-02-23	2026-02-22
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2025-02-23	2026-02-22
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2025-02-23	2026-02-22
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2025-02-23	2026-02-22
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☒ Chamber C: Above 1GHz						
WTXE1093A	EMI Test	Rohde &	ESIB 26	100401	2025-02-23	2026-02-22

1001	Receiver	Schwarz				
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2025-02-23	2026-02-22
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
☐ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2024-12-08	2025-12-07
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2025-02-23	2026-02-22
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2025-02-23	2026-02-22
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2025-02-23	2026-02-22
☐ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2025-02-23	2026-02-22
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2025-02-23	2026-02-22
WTXE1104A 1037	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203; §15.247(b)(4)(i)	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	N/A
§15.207(a)	Conducted Emission	N/A
§15.247(e)	Power Spectral Density	N/A
§15.247(a)(2)	DTS Bandwidth	N/A
§15.247(b)(3)	RF Output Power	N/A
§15.209(a)	Radiated Emission	Compliant
§15.247(d)	Band Edge (Out of Band Emissions)	N/A

Class II Permissive Change:

- 1) The evaluation distance of this device has been changed from fixed use to portable use, and SAR testing has been added. Please refer to the SAR testing report.
- 2) Compared to the original model, ZK001&ZK002 have an additional matching casing, but the circuit board has no functional differences.

Note: Report is for Class II Permissive Change only. Updated test data include Antenna Requirement and Radiated Emission. The test data refer to Original equipment (FCC ID: 2A6J8-EPK0011), the original FCC ID issue date: 10/11/2024.

3. Antenna Requirement

3.1 Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.2 Evaluation Information

This product has a PCB antenna, fulfill the requirement of this section.

4. Field Strength of Spurious Emissions

4.1 Standard Applicable

According to §15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

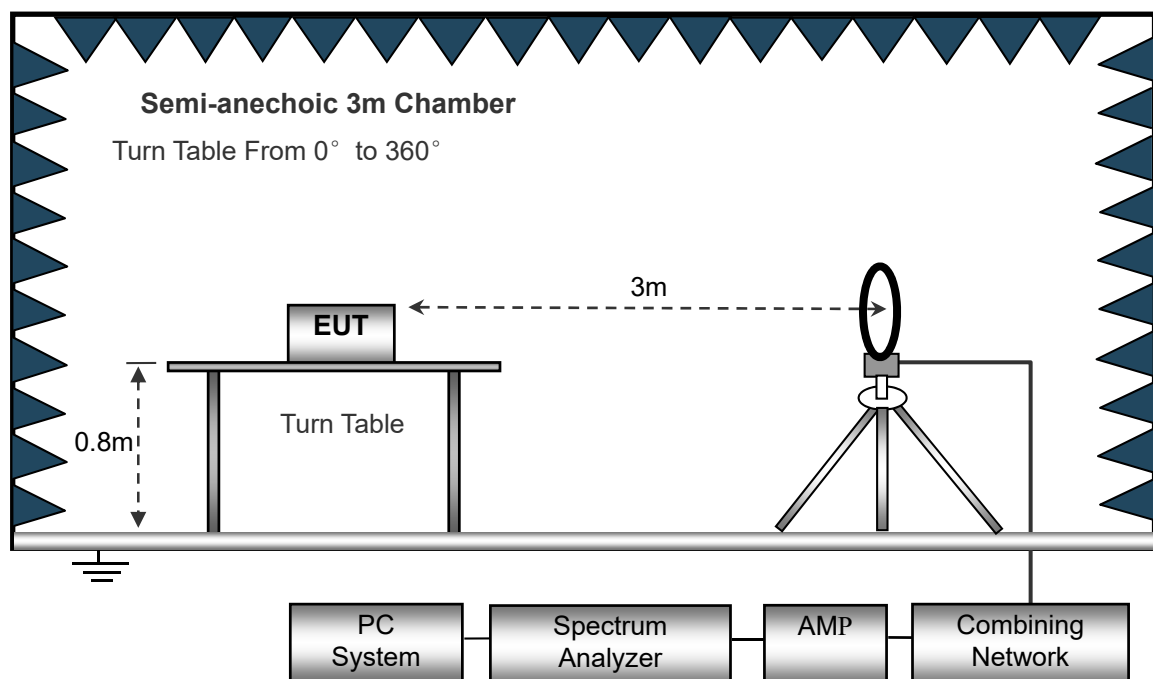
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

4.2 Test Procedure

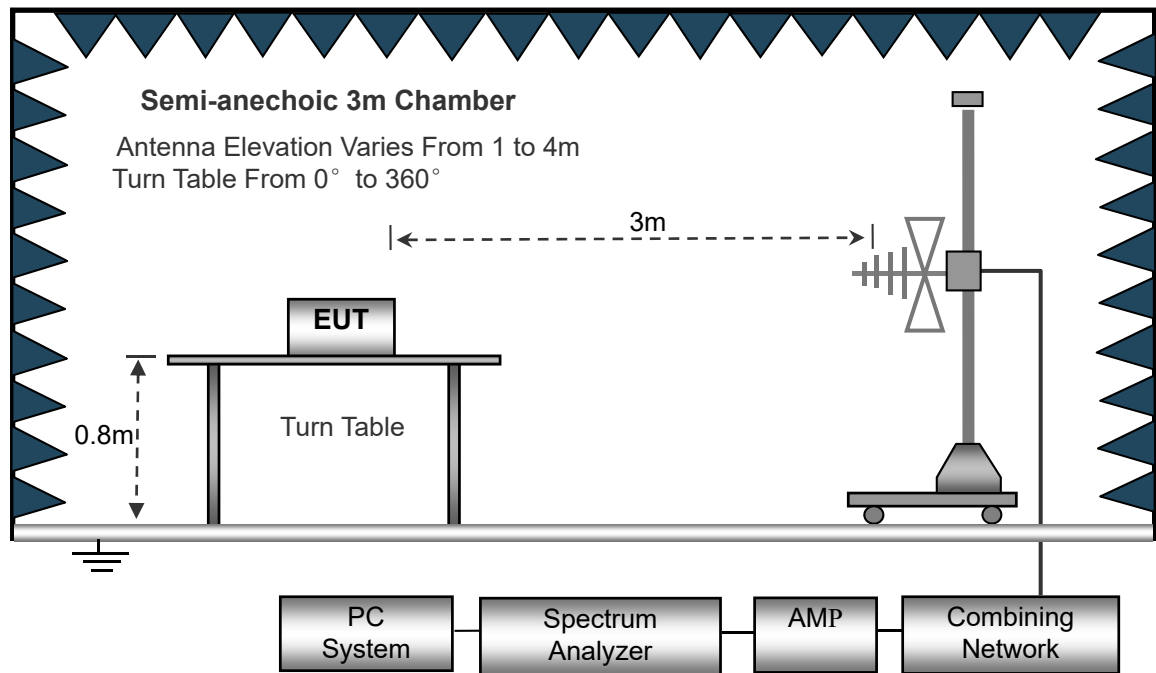
The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle. The spacing between the peripherals was 10cm.

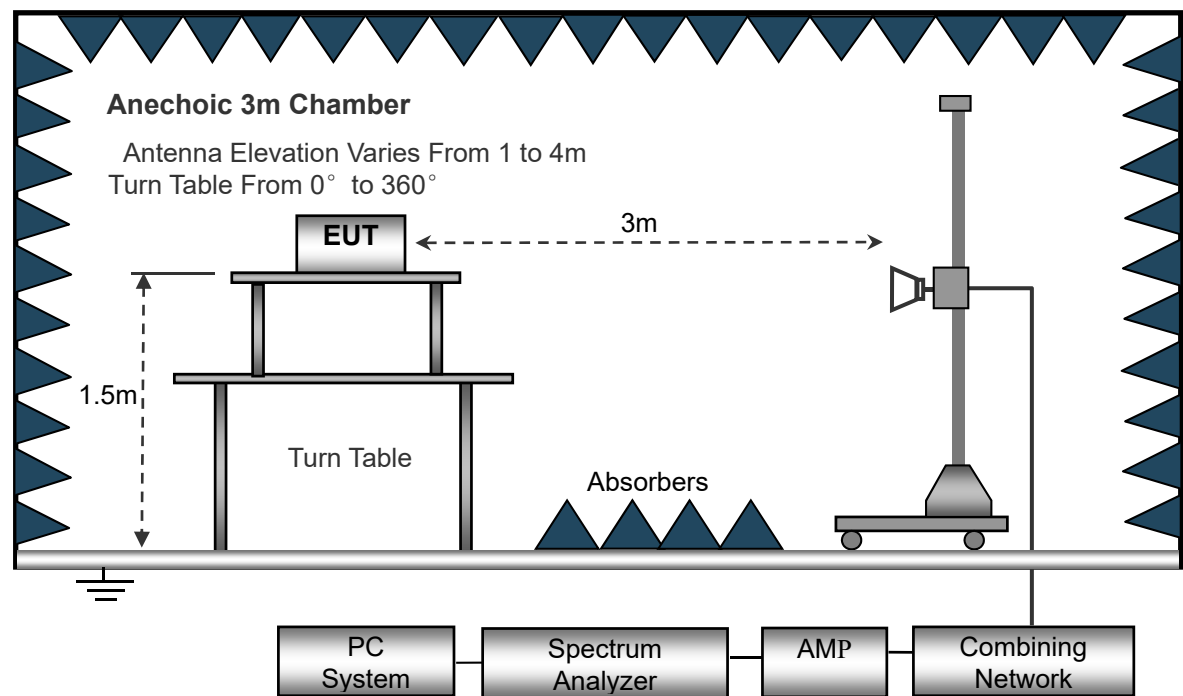
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1GHz.



Frequency :9kHz-30MHz
RBW=10kHz,
VBW =30kHz
Sweep time= Auto
Trace = max hold

Frequency :30MHz-1GHz
RBW=120kHz,
VBW=300kHz
Sweep time= Auto
Trace = max hold

Frequency :Above 1GHz
RBW=1MHz,
VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto
Trace = max hold

Detector function = peak

Detector function = peak, QP

Detector function = peak, AV

4.3 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

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. The equation for margin calculation is as follows:

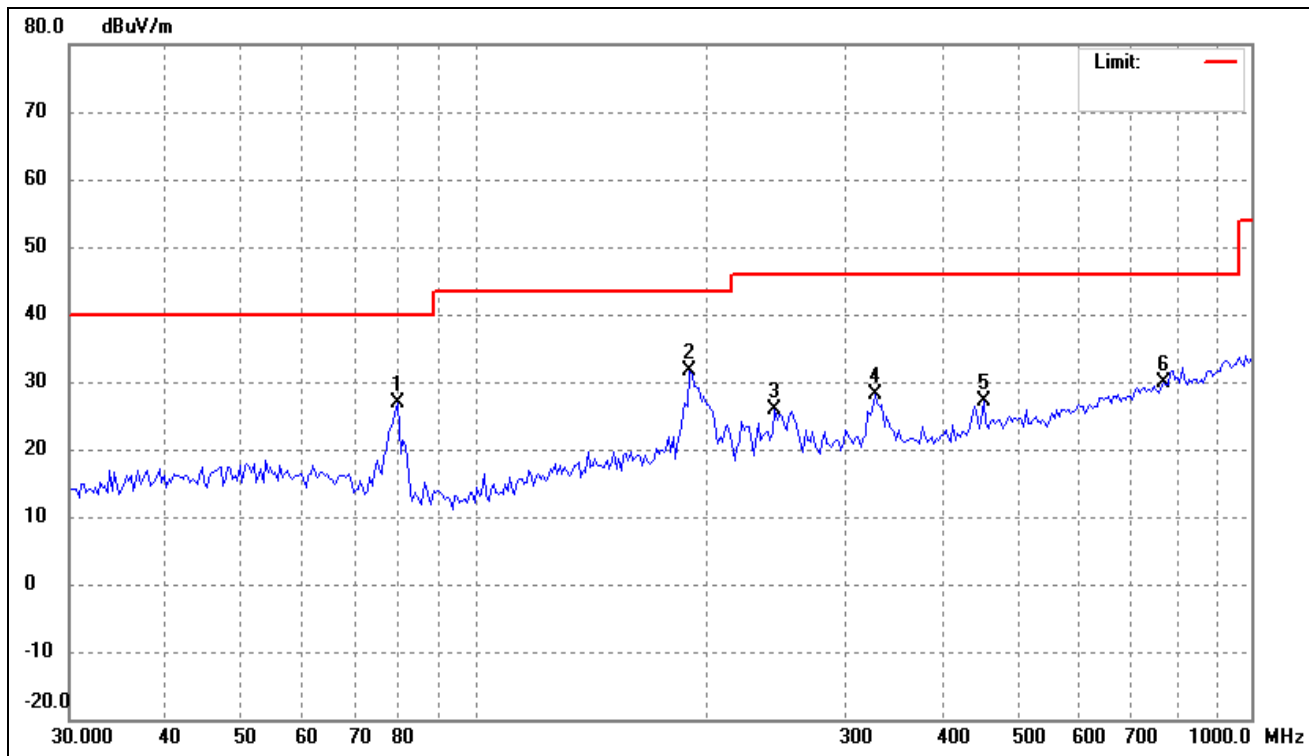
$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

4.4 Summary of Test Results/Plots

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

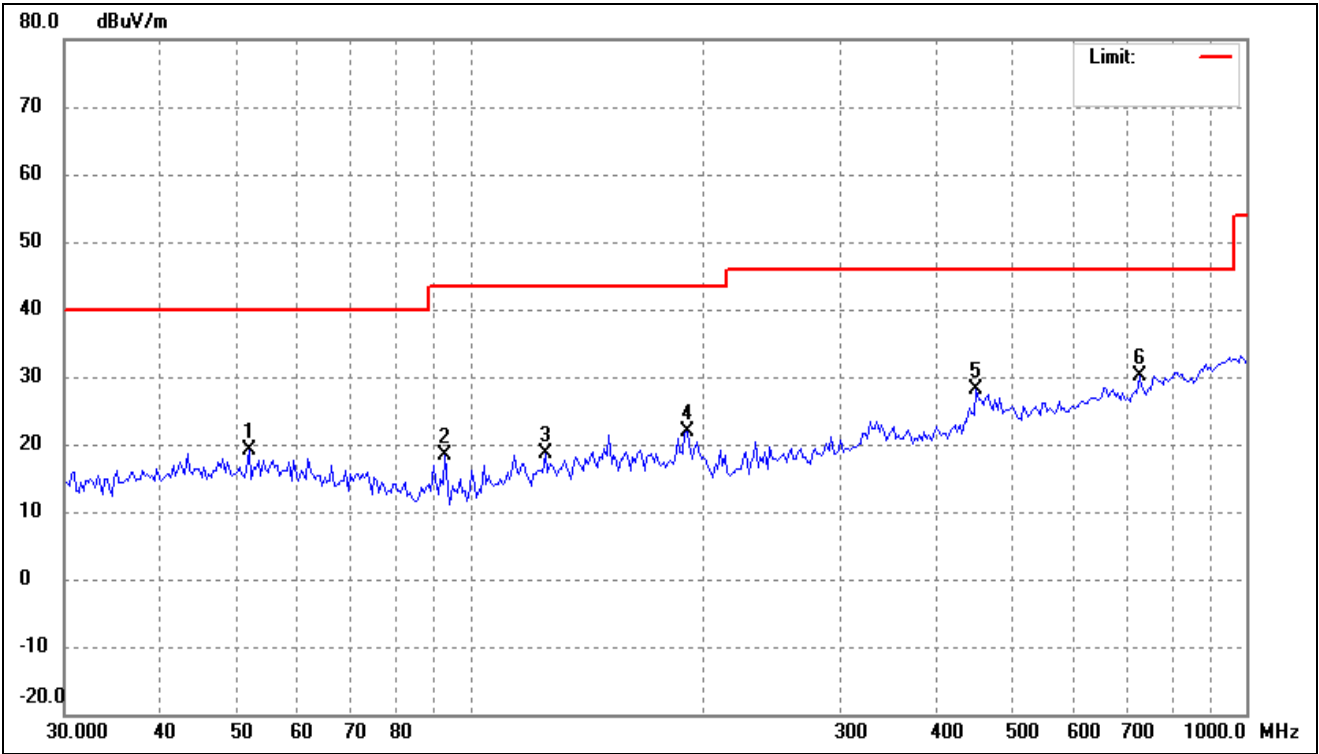
- Spurious Emissions Below 1GHz
- Model: ZK001
- BLE 1Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	79.6764	39.89	-12.96	26.93	40.00	-13.07	-	-	peak
2	189.1076	42.53	-10.97	31.56	43.50	-11.94	-	-	peak
3	243.5431	35.81	-9.83	25.98	46.00	-20.02	-	-	peak
4	327.1554	35.35	-7.15	28.20	46.00	-17.80	-	-	peak
5	452.0013	32.17	-4.96	27.21	46.00	-18.79	-	-	peak
6	771.0475	29.34	0.53	29.87	46.00	-16.13	-	-	peak

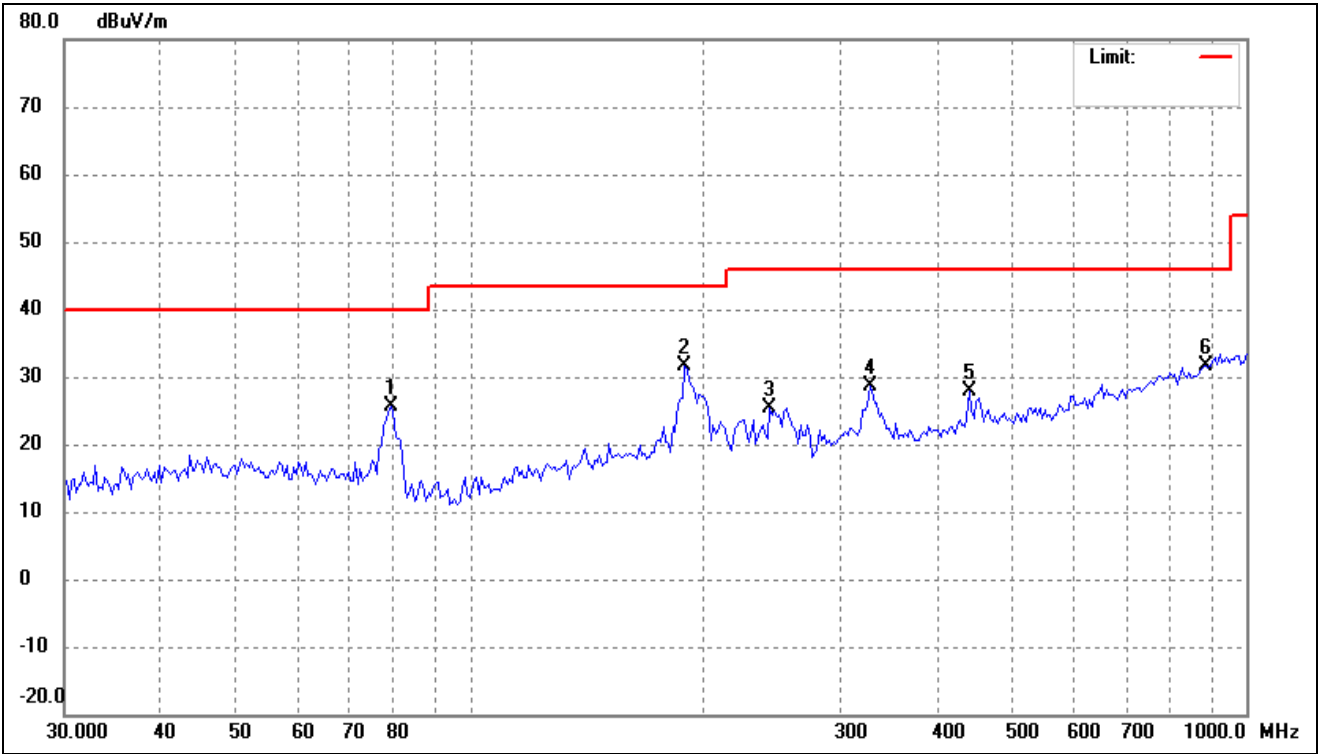
Test Channel	Low(worst case)	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	51.8999	28.18	-9.00	19.18	40.00	-20.82	-	-	peak
2	92.9974	32.85	-14.44	18.41	43.50	-25.09	-	-	peak
3	124.9249	29.07	-10.50	18.57	43.50	-24.93	-	-	peak
4	190.4411	32.92	-11.13	21.79	43.50	-21.71	-	-	peak
5	448.8361	33.18	-5.00	28.18	46.00	-17.82	-	-	peak
6	728.8971	30.41	-0.30	30.11	46.00	-15.89	-	-	peak

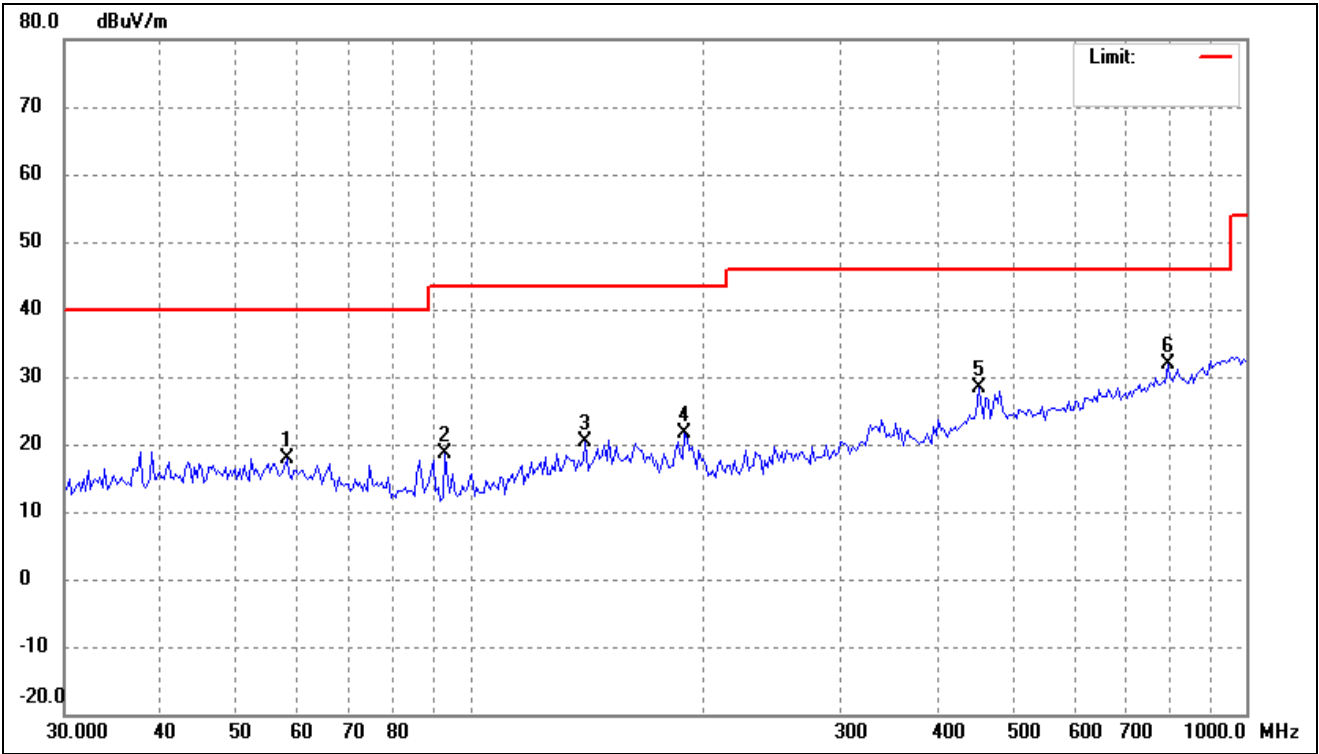
➤ BLE 2Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	79.1185	38.35	-12.84	25.51	40.00	-14.49	-	-	peak
2	189.1076	42.71	-10.97	31.74	43.50	-11.76	-	-	peak
3	243.5431	35.24	-9.83	25.41	46.00	-20.59	-	-	peak
4	327.1554	35.75	-7.15	28.60	46.00	-17.40	-	-	peak
5	439.4730	33.10	-5.31	27.79	46.00	-18.21	-	-	peak
6	887.3978	29.85	1.70	31.55	46.00	-14.45	-	-	peak

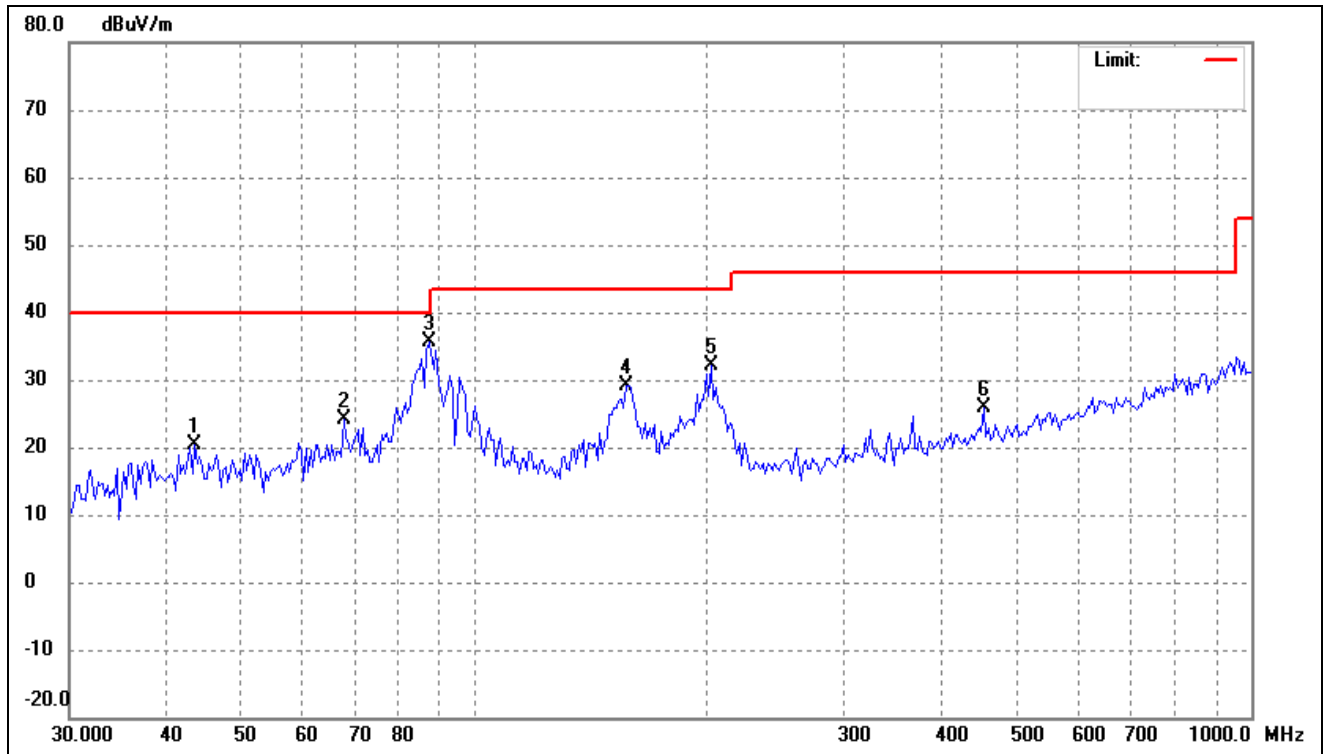
Test Channel	Low(worst case)	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	58.0759	27.37	-9.39	17.98	40.00	-22.02	-	-	peak
2	92.9974	32.96	-14.44	18.52	43.50	-24.98	-	-	peak
3	140.7767	29.77	-9.32	20.45	43.50	-23.05	-	-	peak
4	189.1076	32.67	-10.97	21.70	43.50	-21.80	-	-	peak
5	452.0013	33.24	-4.96	28.28	46.00	-17.72	-	-	peak
6	793.0281	30.87	0.89	31.76	46.00	-14.24	-	-	peak

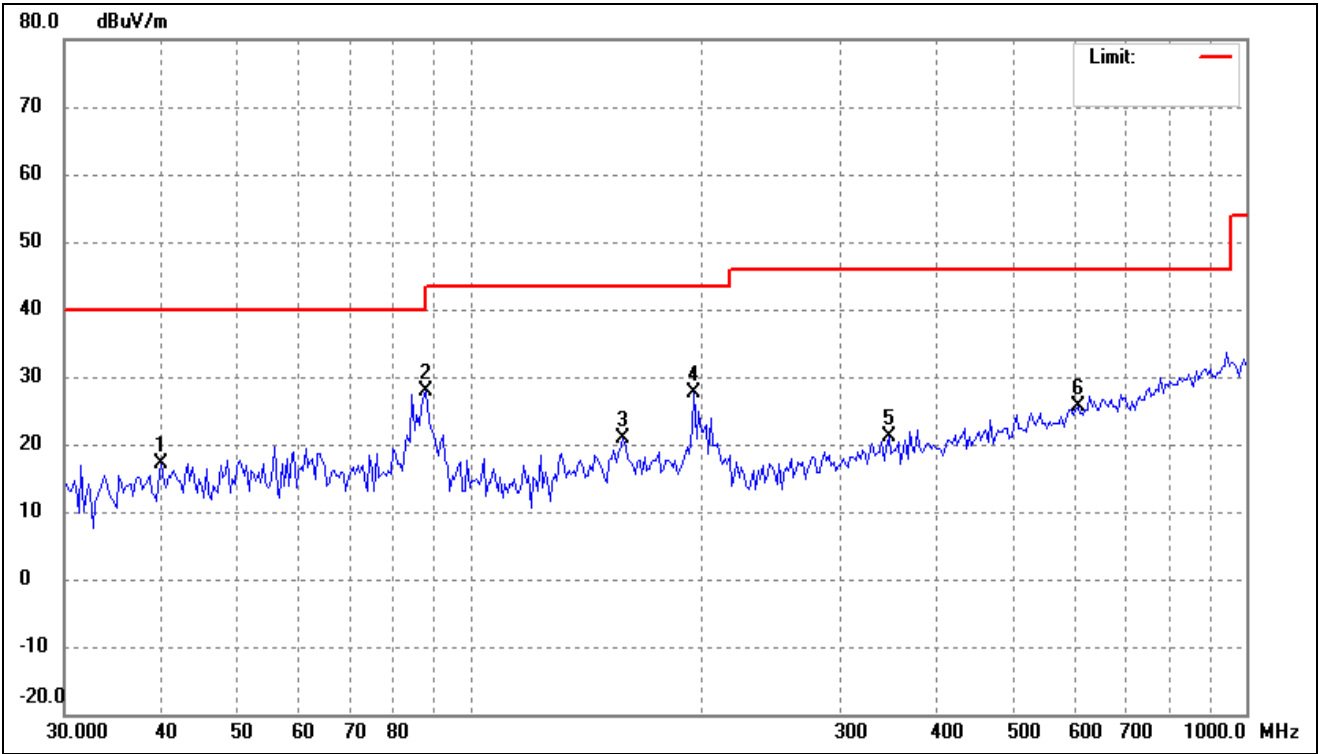
- Model: ZK002
- BLE 1Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.5380	28.39	-7.95	20.44	40.00	-19.56	-	-	peak
2	67.7854	34.09	-9.85	24.24	40.00	-15.76	-	-	peak
3	87.2979	48.30	-12.56	35.74	40.00	-4.26	-	-	peak
4	156.4258	37.17	-8.05	29.12	43.50	-14.38	-	-	peak
5	201.4538	43.53	-11.42	32.11	43.50	-11.39	-	-	peak
6	452.0012	31.11	-5.17	25.94	46.00	-20.06	-	-	peak

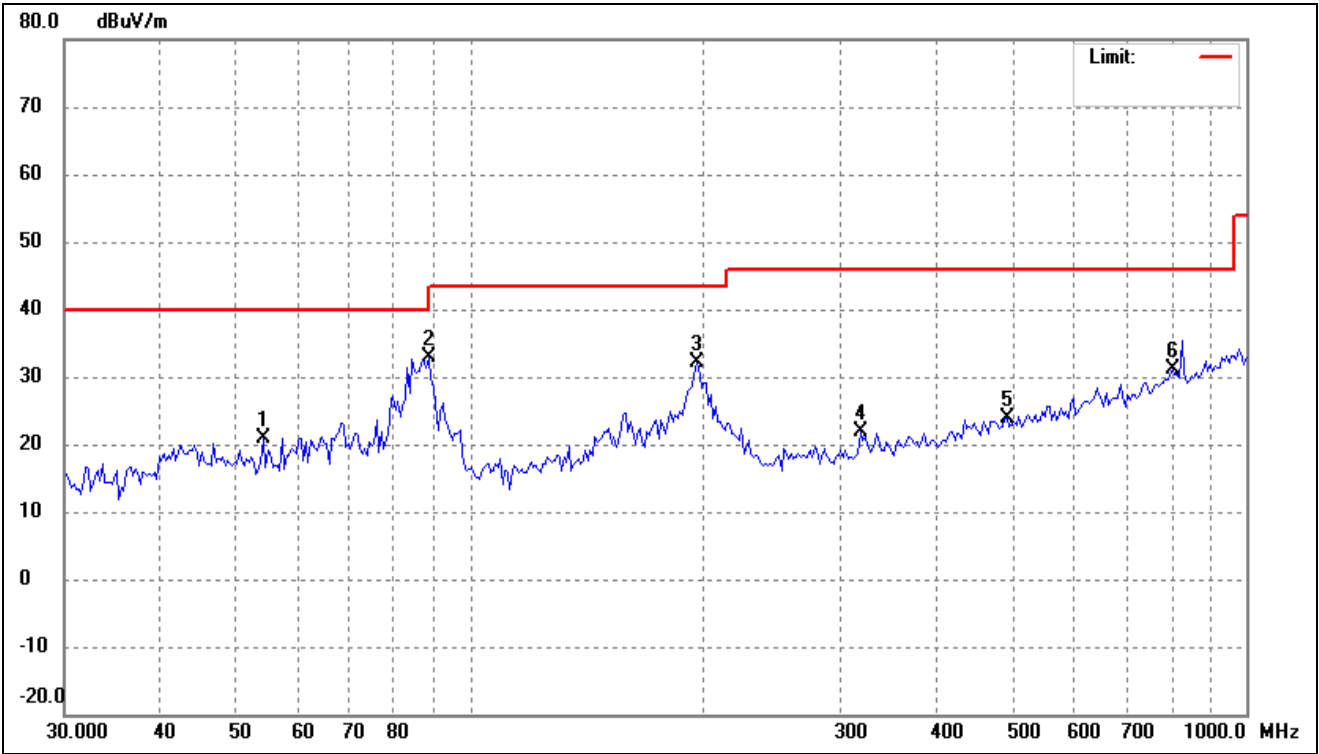
Test Channel	Low(worst case)	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.0172	25.14	-7.95	17.19	40.00	-22.81	-	-	peak
2	87.9135	40.56	-12.56	28.00	40.00	-12.00	-	-	peak
3	157.5289	28.88	-8.05	20.83	43.50	-22.67	-	-	peak
4	194.4985	38.62	-11.08	27.54	43.50	-15.96	-	-	peak
5	346.0739	28.12	-7.10	21.02	46.00	-24.98	-	-	peak
6	607.1805	27.62	-2.11	25.51	46.00	-20.49	-	-	peak

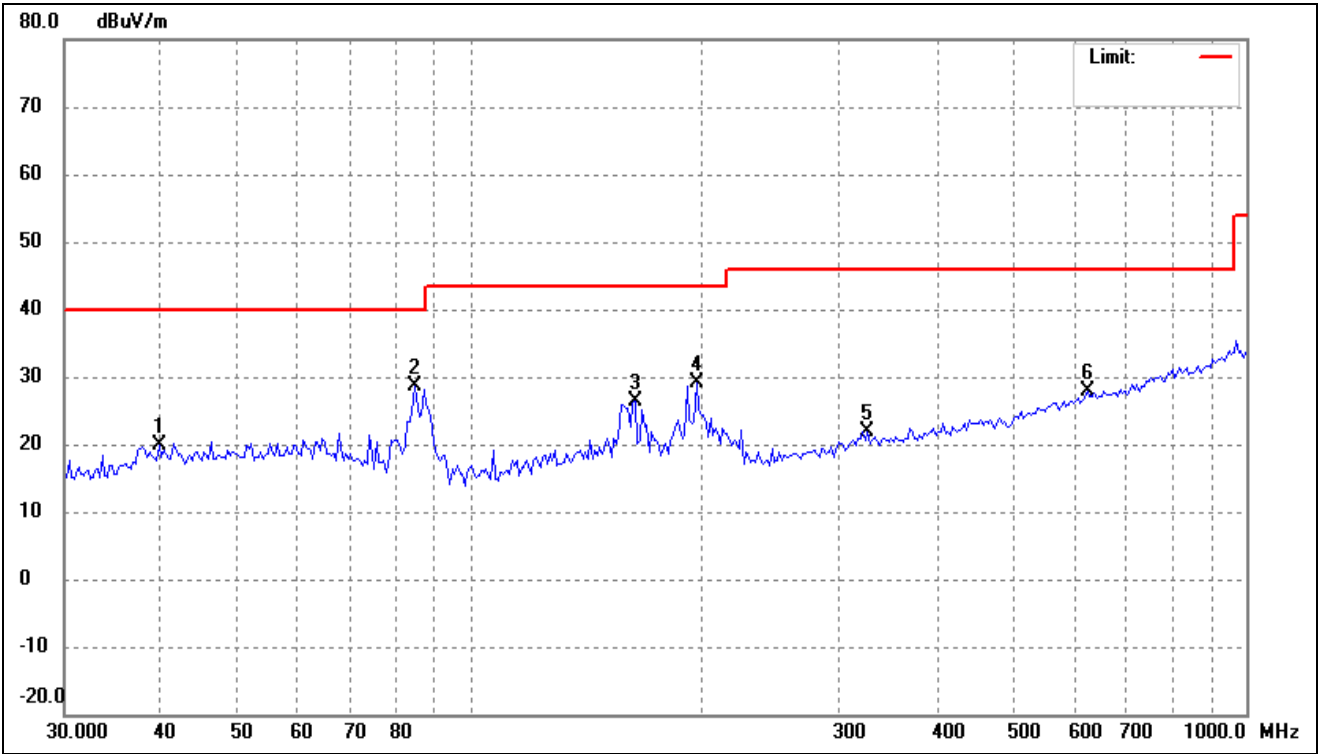
➤ BLE 2Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	54.1349	28.97	-8.03	20.94	40.00	-19.06	-	-	peak
2	88.5335	45.53	-12.58	32.95	43.50	-10.55	-	-	peak
3	195.8701	43.25	-11.15	32.10	43.50	-11.40	-	-	peak
4	318.0875	29.27	-7.47	21.80	46.00	-24.20	-	-	peak
5	491.7699	28.85	-4.87	23.98	46.00	-22.02	-	-	peak
6	804.2522	30.08	1.05	31.13	46.00	-14.87	-	-	peak

Test Channel	Low(worst case)	Polarity:	Vertical
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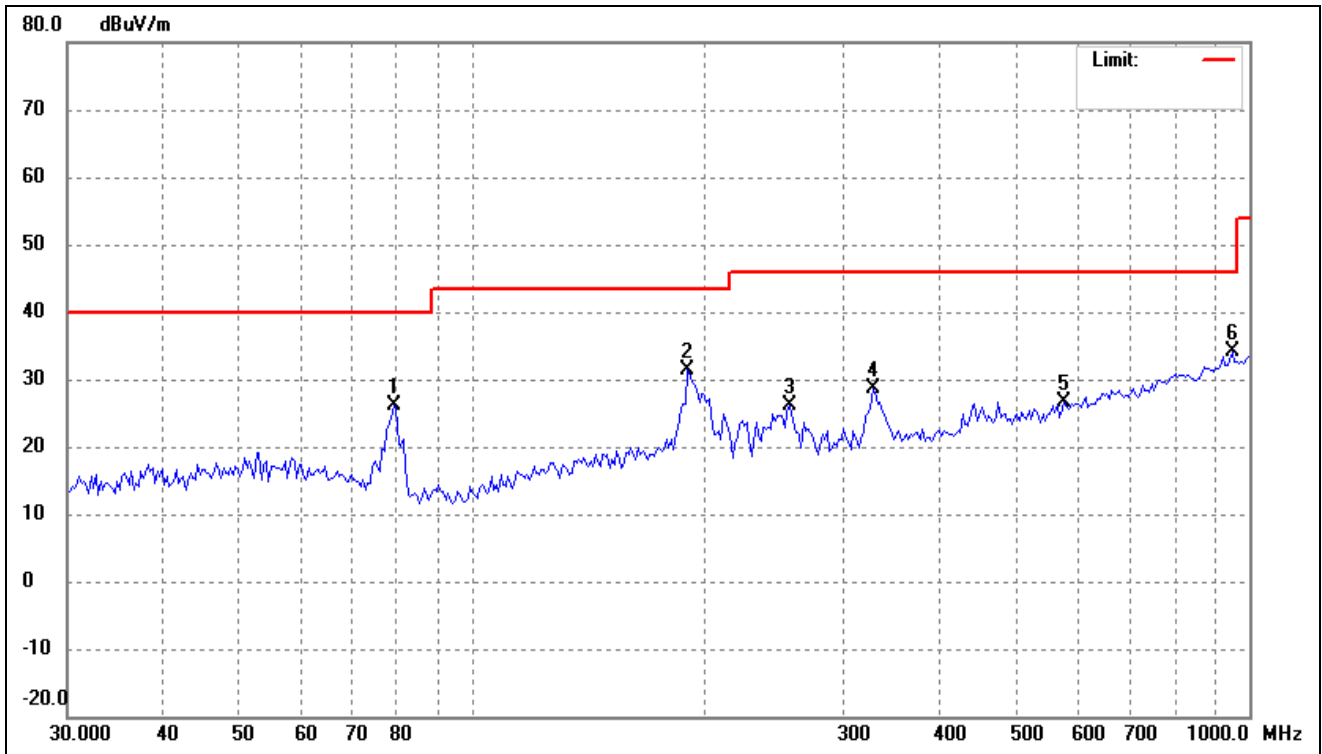


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.7370	27.78	-8.01	19.77	40.00	-20.23	-	-	peak
2	84.8783	41.26	-12.51	28.75	40.00	-11.25	-	-	peak
3	163.1622	34.60	-8.13	26.47	43.50	-17.03	-	-	peak
4	195.8701	40.36	-11.15	29.21	43.50	-14.29	-	-	peak
5	324.8644	29.11	-7.33	21.78	46.00	-24.22	-	-	peak
6	624.4897	29.56	-1.78	27.78	46.00	-18.22	-	-	peak

Reference No.: WTH25X04109656W002

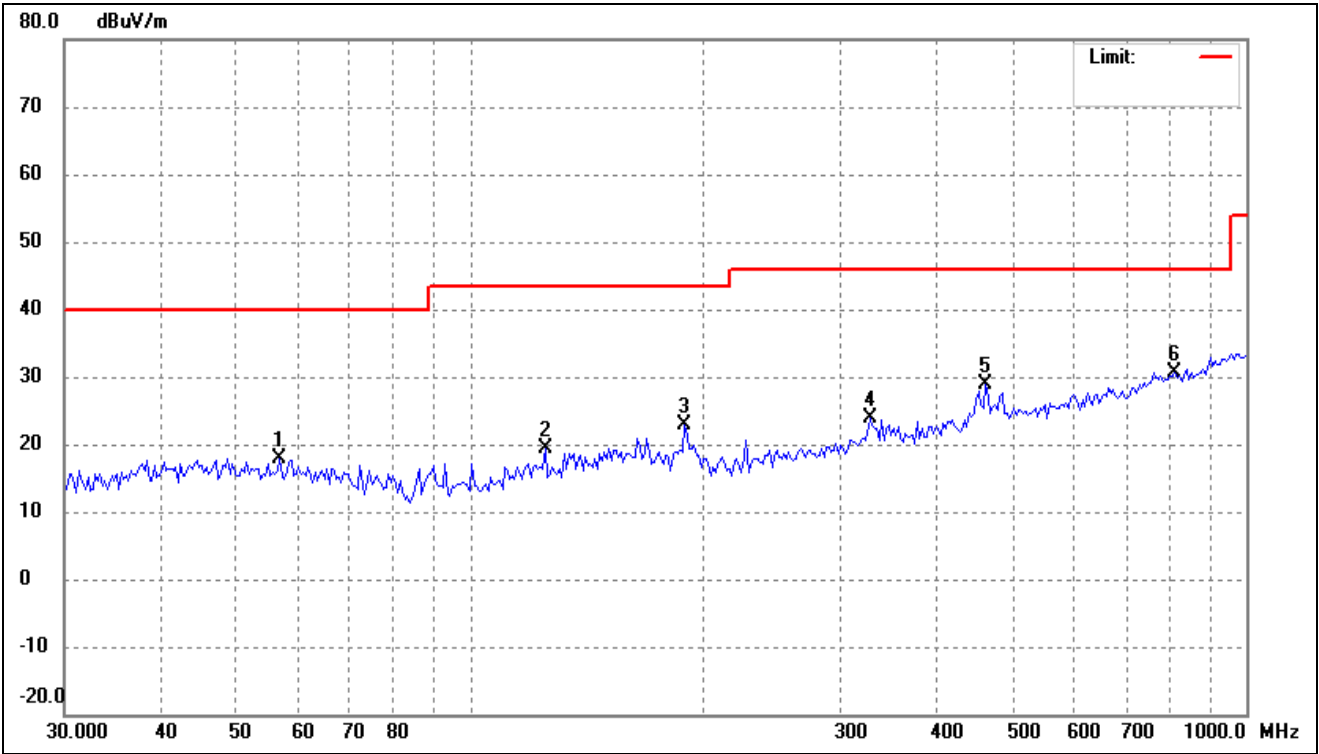
- Model: ZK001(Bare products)
- BLE 1Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	79.1185	38.95	-12.84	26.11	40.00	-13.89	-	-	peak
2	189.1076	42.27	-10.97	31.30	43.50	-12.20	-	-	peak
3	255.8226	35.44	-9.38	26.06	46.00	-19.94	-	-	peak
4	327.1554	35.87	-7.15	28.72	46.00	-17.28	-	-	peak
5	578.0359	29.43	-2.76	26.67	46.00	-19.33	-	-	peak
6	952.0001	31.20	2.95	34.15	46.00	-11.85	-	-	peak

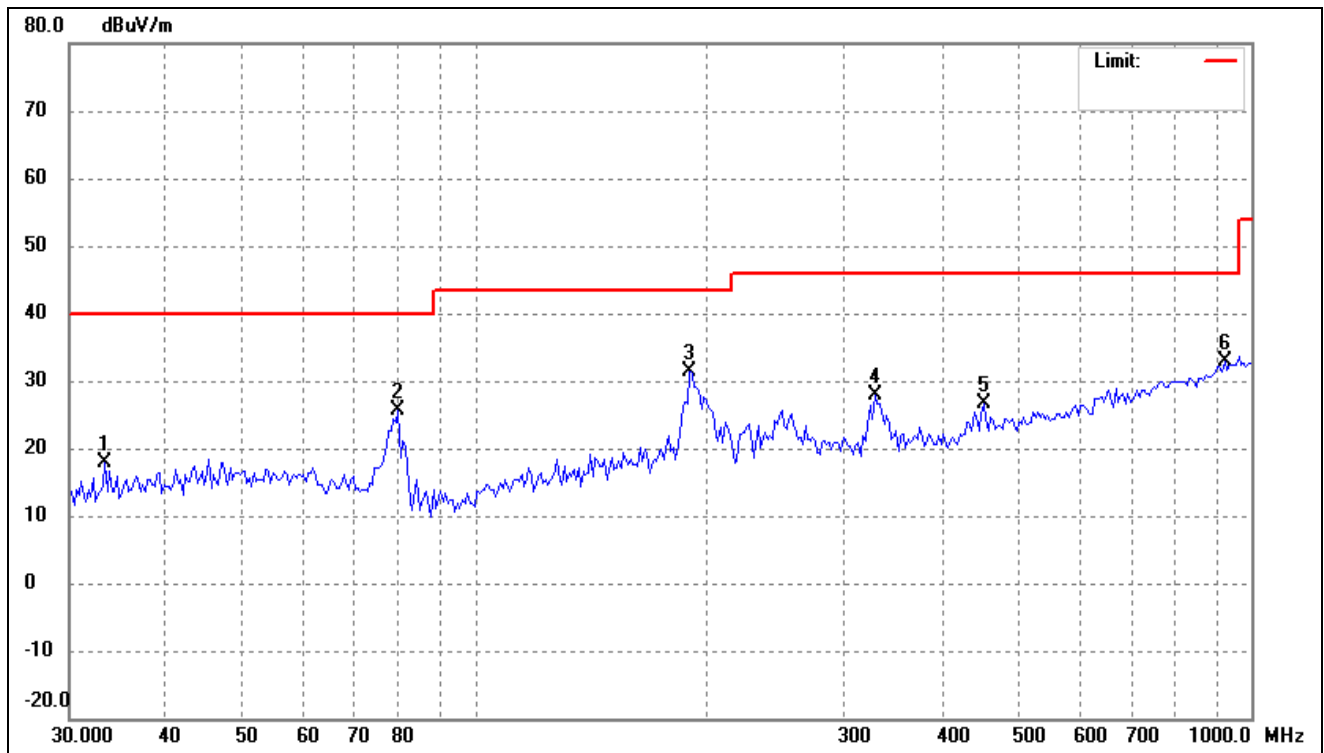
Test Channel	Low(worst case)	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	56.8644	27.21	-9.30	17.91	40.00	-22.09	-	-	peak
2	124.9249	29.90	-10.50	19.40	43.50	-24.10	-	-	peak
3	189.1076	33.74	-10.97	22.77	43.50	-20.73	-	-	peak
4	327.1554	31.05	-7.15	23.90	46.00	-22.10	-	-	peak
5	461.6313	33.83	-4.92	28.91	46.00	-17.09	-	-	peak
6	809.9238	29.72	1.00	30.72	46.00	-15.28	-	-	peak

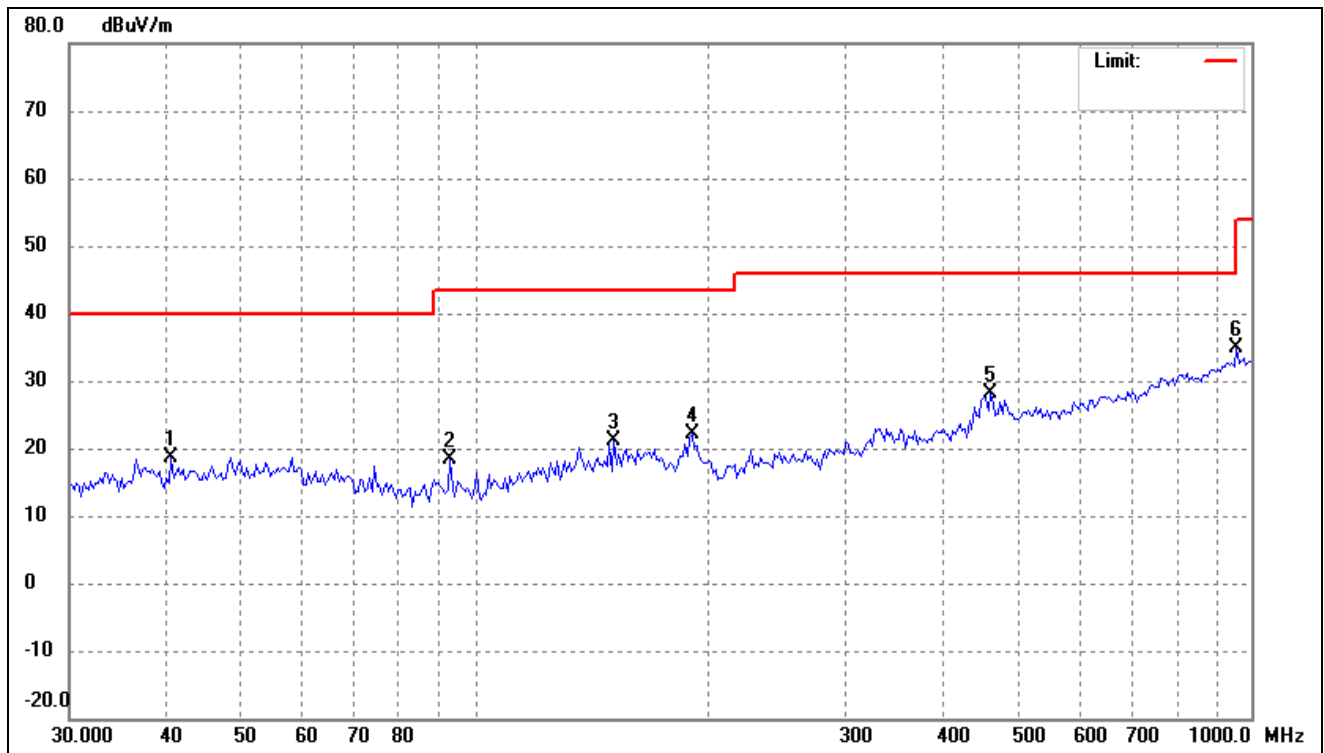
➤ BLE 2Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.3349	28.33	-10.35	17.98	40.00	-22.02	-	-	peak
2	79.6764	38.66	-12.96	25.70	40.00	-14.30	-	-	peak
3	189.1076	42.36	-10.97	31.39	43.50	-12.11	-	-	peak
4	327.1554	35.10	-7.15	27.95	46.00	-18.05	-	-	peak
5	452.0013	31.63	-4.96	26.67	46.00	-19.33	-	-	peak
6	925.6132	30.36	2.46	32.82	46.00	-13.18	-	-	peak

Test Channel	Low(worst case)	Polarity:	Vertical
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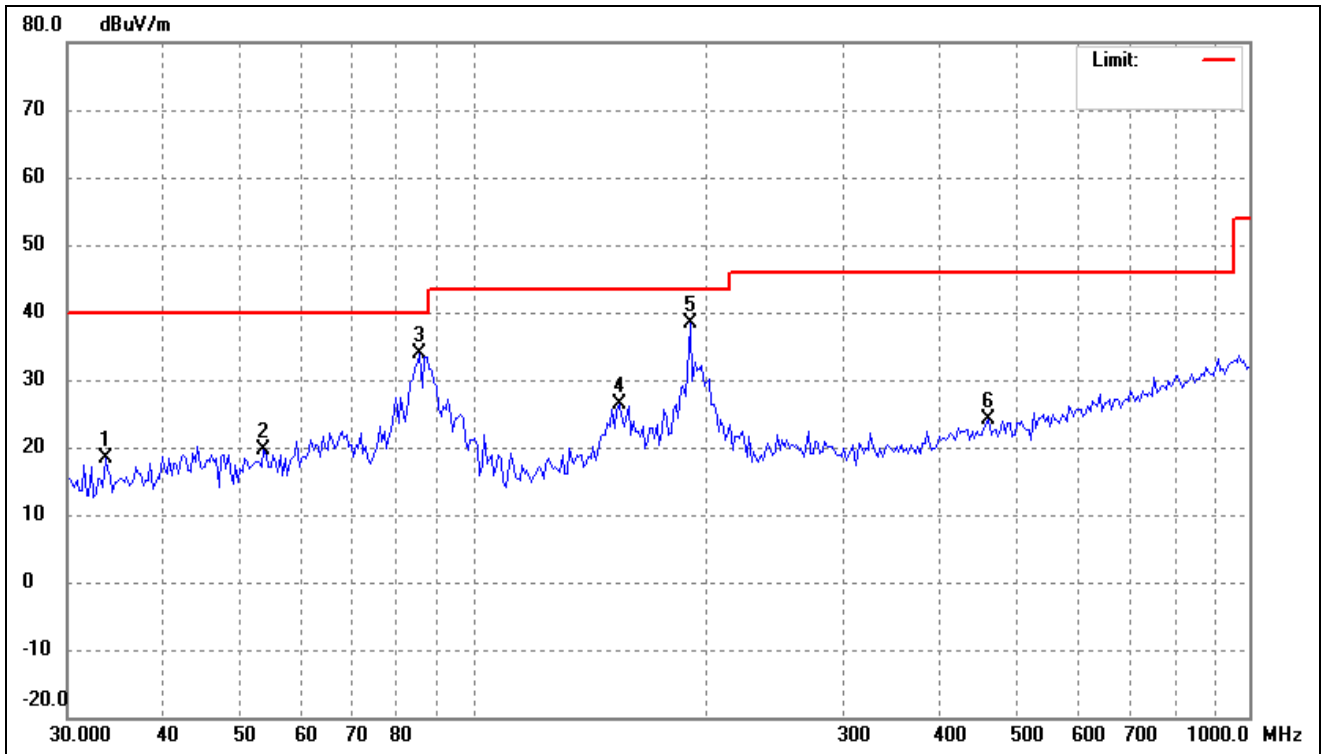


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.5837	28.12	-9.53	18.59	40.00	-21.41	-	-	peak
2	92.9974	32.70	-14.44	18.26	43.50	-25.24	-	-	peak
3	151.0252	30.09	-8.90	21.19	43.50	-22.31	-	-	peak
4	190.4411	33.32	-11.13	22.19	43.50	-21.31	-	-	peak
5	461.6313	32.97	-4.92	28.05	46.00	-17.95	-	-	peak
6	958.7135	31.79	2.97	34.76	46.00	-11.24	-	-	peak

Reference No.: WTH25X04109656W002

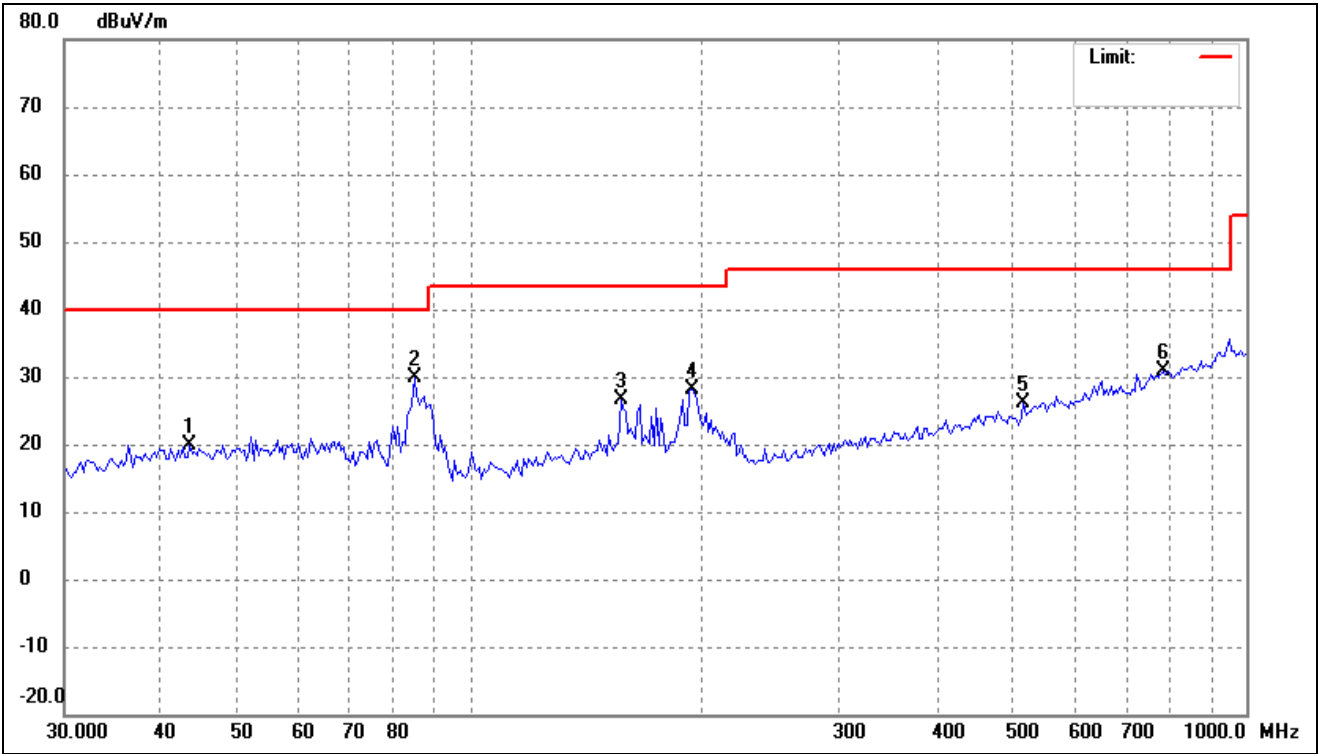
- Model: ZK002(Bare products)
- BLE 1Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	33.5699	27.52	-9.19	18.33	40.00	-21.67	-	-	peak
2	53.7558	27.52	-7.99	19.53	40.00	-20.47	-	-	peak
3	85.4768	46.47	-12.53	33.94	40.00	-6.06	-	-	peak
4	154.2428	34.42	-8.05	26.37	43.50	-17.13	-	-	peak
5	190.4411	49.24	-10.86	38.38	43.50	-5.12	-	-	peak
6	461.6313	29.33	-5.09	24.24	46.00	-21.76	-	-	peak

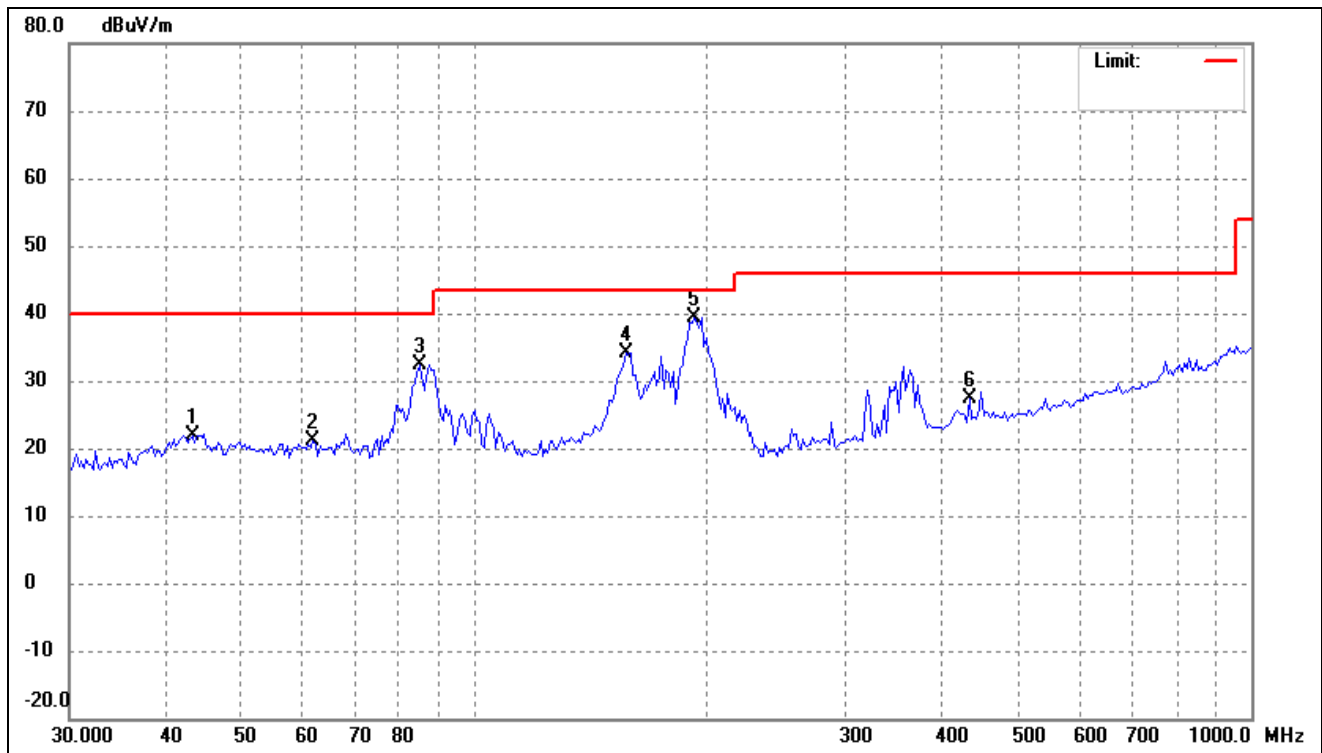
Test Channel	Low(worst case)	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.5380	27.82	-7.95	19.87	40.00	-20.13	-	-	peak
2	84.8783	42.29	-12.51	29.78	40.00	-10.22	-	-	peak
3	156.4258	34.70	-8.05	26.65	43.50	-16.85	-	-	peak
4	193.1365	39.05	-11.00	28.05	43.50	-15.45	-	-	peak
5	516.5650	30.57	-4.48	26.09	46.00	-19.91	-	-	peak
6	781.9605	30.09	0.70	30.79	46.00	-15.21	-	-	peak

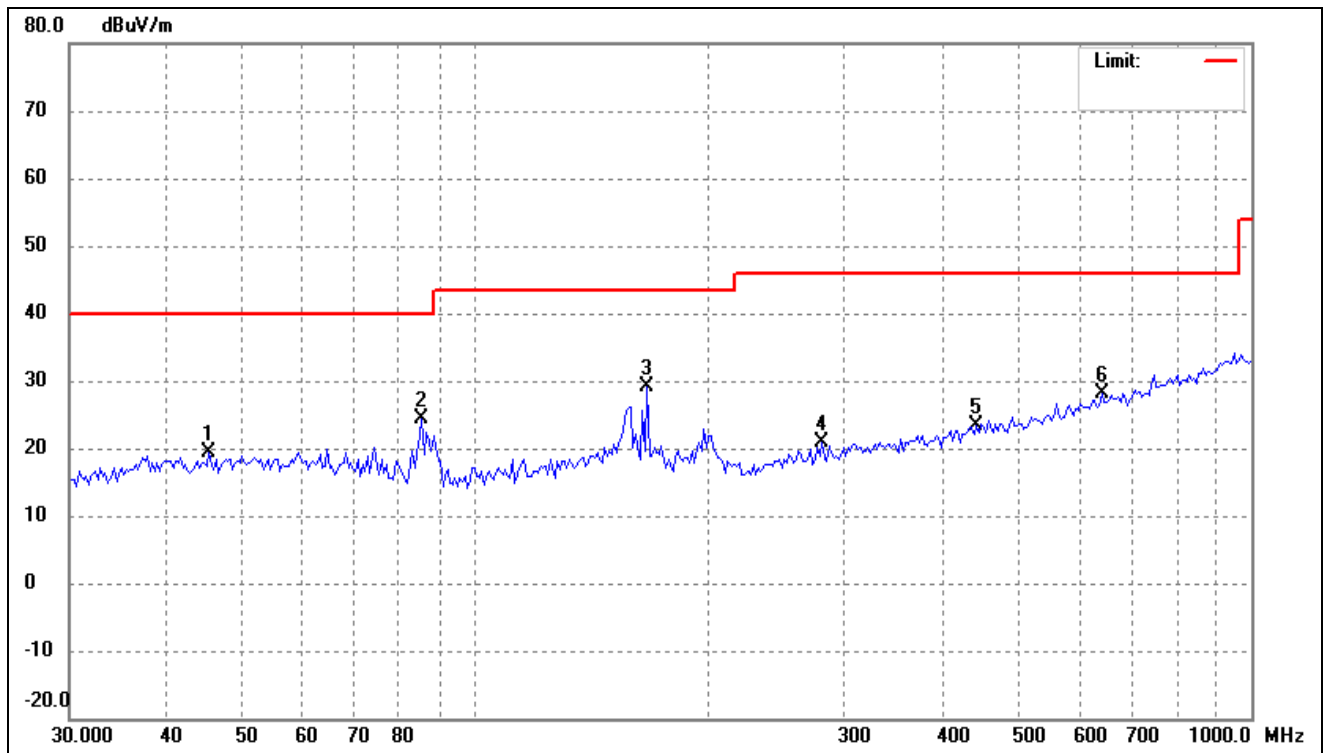
➤ BLE 2Mbps

Test Channel	Low(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.2333	29.94	-7.95	21.99	40.00	-18.01	-	-	peak
2	61.8676	29.87	-8.77	21.10	40.00	-18.90	-	-	peak
3	84.8783	44.97	-12.51	32.46	40.00	-7.54	-	-	peak
4	156.4259	42.30	-8.05	34.25	43.50	-9.25	-	-	peak
5	191.7841	50.37	-10.93	39.44	43.50	-4.06	-	-	peak
6	433.3397	32.88	-5.55	27.33	46.00	-18.67	-	-	peak

Test Channel	Low(worst case)	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.4130	27.37	-7.92	19.45	40.00	-20.55	-	-	peak
2	85.4768	37.03	-12.53	24.50	40.00	-15.50	-	-	peak
3	166.6385	37.43	-8.23	29.20	43.50	-14.30	-	-	peak
4	280.2935	29.49	-8.49	21.00	46.00	-25.00	-	-	peak
5	442.5721	28.79	-5.35	23.44	46.00	-22.56	-	-	peak
6	642.2923	29.67	-1.62	28.05	46.00	-17.95	-	-	peak

Remark: '-' Means the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

- Spurious Emissions Above 1GHz
- Model: ZK001
- 1Mbps

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2402MHz							
4795.868	63.19	-13.23	49.96	74.00	-24.04	H	PK
7206.000	54.30	-6.85	47.45	74.00	-26.55	H	PK
4804.000	54.71	-13.23	41.48	74.00	-32.52	V	PK
7206.000	54.37	-6.85	47.52	74.00	-26.48	V	PK
Middle Channel-2440MHz							
4960.000	63.60	-13.03	50.57	74.00	-23.43	H	PK
7440.000	56.81	-7.52	49.29	74.00	-24.71	H	PK
4960.000	57.52	-13.03	44.49	74.00	-29.51	V	PK
7440.000	54.16	-7.52	46.64	74.00	-27.36	V	PK
High Channel-2480MHz							
4960.000	63.60	-13.03	50.57	74.00	-23.43	H	PK
7440.000	56.81	-7.52	49.29	74.00	-24.71	H	PK
4960.000	57.52	-13.03	44.49	74.00	-29.51	V	PK
7440.000	54.16	-7.52	46.64	74.00	-27.36	V	PK

- 2Mbps

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2402MHz							
4870.396	62.39	-13.15	49.24	74.00	-24.76	H	PK
7320.000	54.60	-7.18	47.42	74.00	-26.58	H	PK
4804.000	55.62	-13.23	42.39	74.00	-31.61	V	PK
7206.000	54.73	-6.85	47.88	74.00	-26.12	V	PK
Middle Channel-2440MHz							
4870.396	62.39	-13.15	49.24	74.00	-24.76	H	PK
7320.000	54.60	-7.18	47.42	74.00	-26.58	H	PK
4880.000	55.00	-13.13	41.87	74.00	-32.13	V	PK
7320.000	54.90	-7.18	47.72	74.00	-26.28	V	PK
High Channel-2480MHz							
4960.000	63.20	-13.03	50.17	74.00	-23.83	H	PK
7440.000	54.77	-7.52	47.25	74.00	-26.75	H	PK
4960.000	56.85	-13.03	43.82	74.00	-30.18	V	PK
7440.000	54.36	-7.52	46.84	74.00	-27.16	V	PK

- Model: ZK001(Bare products)
- 1Mbps

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2402MHz							
4795.868	66.35	-13.23	53.12	74.00	-20.88	H	PK
7206.000	54.38	-6.85	47.53	74.00	-26.47	H	PK
4795.868	62.52	-13.23	49.29	74.00	-24.71	V	PK
7206.000	54.76	-6.85	47.91	74.00	-26.09	V	PK
Middle Channel-2440MHz							
4870.396	61.70	-13.15	48.55	74.00	-25.45	H	PK
7320.000	54.39	-7.18	47.21	74.00	-26.79	H	PK
4870.396	58.44	-13.15	45.29	74.00	-28.71	V	PK
7320.000	54.54	-7.18	47.36	74.00	-26.64	V	PK
High Channel-2480MHz							
4960.000	63.48	-13.03	50.45	74.00	-23.55	H	PK
7440.000	55.60	-7.52	48.08	74.00	-25.92	H	PK
4960.000	59.15	-13.03	46.12	74.00	-27.88	V	PK
7440.000	54.44	-7.52	46.92	74.00	-27.08	V	PK

- 2Mbps

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2402MHz							
4795.868	65.29	-13.23	52.06	74.00	-21.94	H	PK
7206.000	54.12	-6.85	47.27	74.00	-26.73	H	PK
4795.868	64.06	-13.23	50.83	74.00	-23.17	V	PK
7206.000	53.67	-6.85	46.82	74.00	-27.18	V	PK
Middle Channel-2440MHz							
4870.396	61.70	-13.15	48.55	74.00	-25.45	H	PK
7320.000	54.84	-7.18	47.66	74.00	-26.34	H	PK
4870.396	57.07	-13.15	43.92	74.00	-30.08	V	PK
7320.000	54.63	-7.18	47.45	74.00	-26.55	V	PK
High Channel-2480MHz							
4960.000	65.36	-13.03	52.33	74.00	-21.67	H	PK
7440.000	55.43	-7.52	47.91	74.00	-26.09	H	PK
4960.000	59.53	-13.03	46.50	74.00	-27.50	V	PK
7440.000	55.19	-7.52	47.67	74.00	-26.33	V	PK

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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