

FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.249

Report Reference No..... : AiTDG-241209004W1

FCC ID..... : 2BMJ6-JK020

Compiled by
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Date of issue..... : December 2, 2024

Emiya Lin
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Testing Laboratory Name..... : Dongguan Yaxu (AiT) Technology Limited

Address..... : No.22, Jinqianling 3rd Street, Jitigang, Huangjiang, Dongguan,
Guangdong, China

Applicant's name..... : Juntian Health Technology (Zhejiang) Co.,Ltd

Address..... : No, 71-131, Yifeng Road, Xincheng Times Avenue, Longgang City,
Wenzhou City

Test specification..... :

Standard..... : FCC CFR Title 47 Part 15 Subpart C Section 15.249
ANSI C63.10:2013

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Equipment description..... : Vibrating sex toy

Trade Mark..... : N/A

Manufacturer..... : Juntian Health Technology (Zhejiang) Co.,Ltd

Model/Type reference..... : JK020

Listed Models : JK016, JK017, JK019, JK021, JK023, JK024, JK025, JK031, JK032

Modulation : GFSK

Frequency..... : 2402MHz

Rating..... : DC 3.7V from Battery
Charging Mode: DC 5V from adapter for USB-DC line

Result..... : PASS

TEST REPORT

Equipment under Test : **Vibrating sex toy**

Model /Type : **JK020**

Listed Models : **JK016, JK017, JK019, JK021, JK023, JK024, JK025, JK031, JK032**

Model Declaration : All the models are electrical identical including the same software parameter and hardware design, same mechanical structure and design, the difference are appearances and the motor models and batteries

Model	Motor model	Battery Model
JK020	M010	601225
JK016	1215	601230
JK017	1215	601230
JK019	1215	601230
JK021	M010	601225
JK023	1215	602030
JK024	030	602030
JK025	130,1215	802035
JK031	030	601525
JK032	1215	602030
Note: Difference Test is performed on model:JK020, JK017, JK024, JK025		

Applicant : **Juntian Health Technology (Zhejiang) Co.,Ltd**

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Manufacturer : **Juntian Health Technology (Zhejiang) Co.,Ltd**

Address : No, 71-131, Yifeng Road, Xincheng Times Avenue, Longgang City, Wenzhou City

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

[FCC Rules Part 15.249](#): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz and 24.0-24.25 GHz
[ANSI C63.10-2013](#): American National Standard for Testing Unlicensed Wireless Devices

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	November 18, 2024
Testing commenced on	:	November 18, 2024
Testing concluded on	:	December 2, 2024

2.2 Product Description

Product Description:	Vibrating sex toy
Model/Type reference:	JK020
Listed Models:	JK016, JK017, JK019, JK021, JK023, JK024, JK025, JK031, JK032
Power supply:	DC 3.7V from Battery Charging Mode: DC 5V from adapter for USB-DC line
Hardware Version:	V1.0
Software Version:	V1.0
Testing sample ID:	AiTDG-241209004W1-1# (Engineer sample) AiTDG-241209004W1-2# (Normal sample)
2.4G	
Supported type:	2.4G
Modulation:	GFSK
Operation frequency:	2402MHz
Channel number:	1
Channel separation:	/
Antenna type:	Metal Antenna
Antenna gain:	0 dBi

2.3 Equipment Under Test

Power supply system utilised

Power supply voltage	:	<input type="radio"/> 230V / 50 Hz	<input type="radio"/> 120V / 60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input checked="" type="radio"/> Other (specified in blank below) DC 3.7V	

2.4 Short description of the Equipment under Test (EUT)

This is a Vibrating sex toy.
For more details, refer to the user's manual of the EUT.

2.5 EUT operation mode

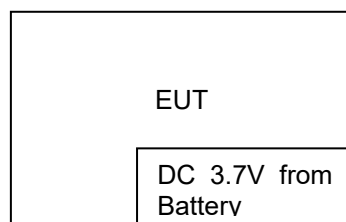
The Applicant use Key to control the EUT for staying in continuous transmitting and receiving mode for testing .There is 1 channels provided to the EUT.

Operation Frequency:

Channel	Frequency (MHz)
01	2402

2.6 Block Diagram of Test Setup

Radiated Spurious Emission Test



2.7 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for the device filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

2.8 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Dongguan Yaxu (AiT) Technology Limited

No.22, Jinqianling 3rd Street, Jitigang, Huangjiang, Dongguan, Guangdong, China

Tel.: +86-769-8202 0499

Fax.: +86-769-8202 0495

3.2 Test Facility

FCC-Registration No.: 703111 Designation Number: CN1313

Dongguan Yaxu (AiT) technology Limited 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.

IC —Registration No.: 6819A CAB identifier: CN0122

The 3m Semi-anechoic chamber of Dongguan Yaxu (AiT) technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6819A

A2LA-Lab Cert. No.: 6317.01

Dongguan Yaxu (AiT) technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing..

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Radiated Emission:

Temperature:	23 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

AC Main Conducted testing:

Temperature:	24 ° C
Humidity:	47 %
Atmospheric pressure:	950-1050mbar

Conducted testing:

Temperature:	24 ° C
Humidity:	46 %
Atmospheric pressure:	950-1050mbar

3.4 Summary of measurement results

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
FCC part 15.203	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emission	PASS	
FCC part 15.249	Fundamental & Radiated Spurious Emission Measurement	PASS	
FCC part 15.215	20dB Channel Bandwidth	PASS	
FCC part 15.205	Band Edge	PASS	

Remark:

1. The measurement uncertainty is not included in the test result.
2. We tested all test mode and recorded worst case in report
3. "N/A" denotes test is not applicable in this Test Report

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Dongguan Yaxu (AiT) Technology Limited quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Dongguan Yaxu (AiT) Technology Limited:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.82 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18~40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Transmitter power conducted	1~40GHz	0.57 dB	(1)
Conducted spurious emission	1~40GHz	1.60 dB	(1)
OBW	1~40GHz	25 Hz	(1)
Occupied Bandwidth	1~40GHz	2%	(1)
Band Edge	1~40GHz	2%	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6 Equipments Used during the Test

Conducted Emission					
Test Equipment	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	BSL252	2024-10-27	2025-10-26
EMI Test Receiver	R&S	ESCI 7	BSL552	2024-10-27	2025-10-26
Coaxial Switch	ANRITSU CORP	MP59B	BSL225	2024-10-27	2025-10-26
ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	BSL226	2024-10-27	2025-10-26
Coaxial Cable	BSL	N/A	BSL227	N/A	N/A
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Thermo meter	KTJ	TA328	BSL233	2024-10-27	2025-10-26
Absorbing clamp	Elektronik-Feinmechanik	MDS21	BSL229	2024-10-27	2025-10-26
LISN	R&S	ENV216	308	2024-10-27	2025-10-26
LISN	R&S	ENV216	314	2024-10-27	2025-10-26

Radiation Test equipment					
Test Equipment	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	BSL250	2024-10-27	2025-10-26
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	BSL251	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESU26	BSL203	2024-10-27	2025-10-26
BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	BSL214	2024-10-27	2025-10-26
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	BSL208	2024-10-27	2025-10-26
Horn Antenna	ETS-LINDGREN	3160	BSL217	2024-10-27	2025-10-26
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Coaxial Cable	BSL	N/A	BSL213	2024-10-27	2025-10-26
Coaxial Cable	BSL	N/A	BSL211	2024-10-27	2025-10-26
Coaxial cable	BSL	N/A	BSL210	2024-10-27	2025-10-26
Coaxial Cable	BSL	N/A	BSL212	2024-10-27	2025-10-26
Amplifier(100kHz-3GHz)	HP	8347A	BSL204	2024-10-27	2025-10-26
Amplifier(2GHz-20GHz)	HP	84722A	BSL206	2024-10-27	2025-10-26
Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	BSL218	2024-10-27	2025-10-26
Band filter	Amindeon	82346	BSL219	2024-10-27	2025-10-26
Power Meter	Anritsu	ML2495A	BSL540	2024-10-27	2025-10-26
Power Sensor	Anritsu	MA2411B	BSL541	2024-10-27	2025-10-26
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	BSL575	2024-10-27	2025-10-26

Splitter	Agilent	11636B	BSL237	2024-10-27	2025-10-26
Loop Antenna	ZHINAN	ZN30900A	BSL534	2024-10-27	2025-10-26
Breitband hornantenne	SCHWARZBECK	BBHA 9170	BSL579	2024-10-27	2025-10-26
Amplifier	TDK	PA-02-02	BSL574	2024-10-27	2025-10-26
Amplifier	TDK	PA-02-03	BSL576	2024-10-27	2025-10-26
PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	BSL578	2024-10-27	2025-10-26
Antenna tower	SKET	BK-4AT	BSL589	2024-10-27	2025-10-26

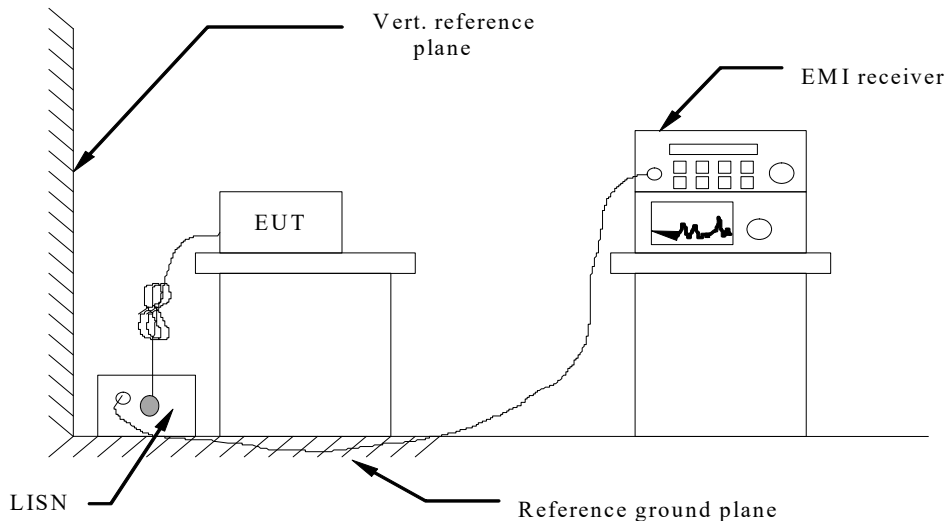
RF Conducted Test:

Test Equipment	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
MXA Signal Analyzer	Agilent	N9020A	BSL566	2024-10-27	2025-10-26
EMI Test Receiver	R&S	ESCI 7	BSL552	2024-10-27	2025-10-26
Spectrum Analyzer	Agilent	E4440A	BSL533	2024-10-27	2025-10-26
MXG vector Signal Generator	Agilent	N5182A	BSL567	2024-10-27	2025-10-26
ESG Analog Signal Generator	Agilent	E4428C	BSL568	2024-10-27	2025-10-26
USB RF Power Sensor	DARE	RPR3006W	BSL569	2024-10-27	2025-10-26
RF Switch Box	Shongyi	RFSW3003328	BSL571	2024-10-27	2025-10-26
Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	BSL572	2024-10-27	2025-10-26

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10-2013.
- 2 Support equipment, if needed, was placed as per ANSI C63.10-2013
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
- 4 The EUT received power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5 All support equipments received AC power from a second LISN, if any.
- 6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

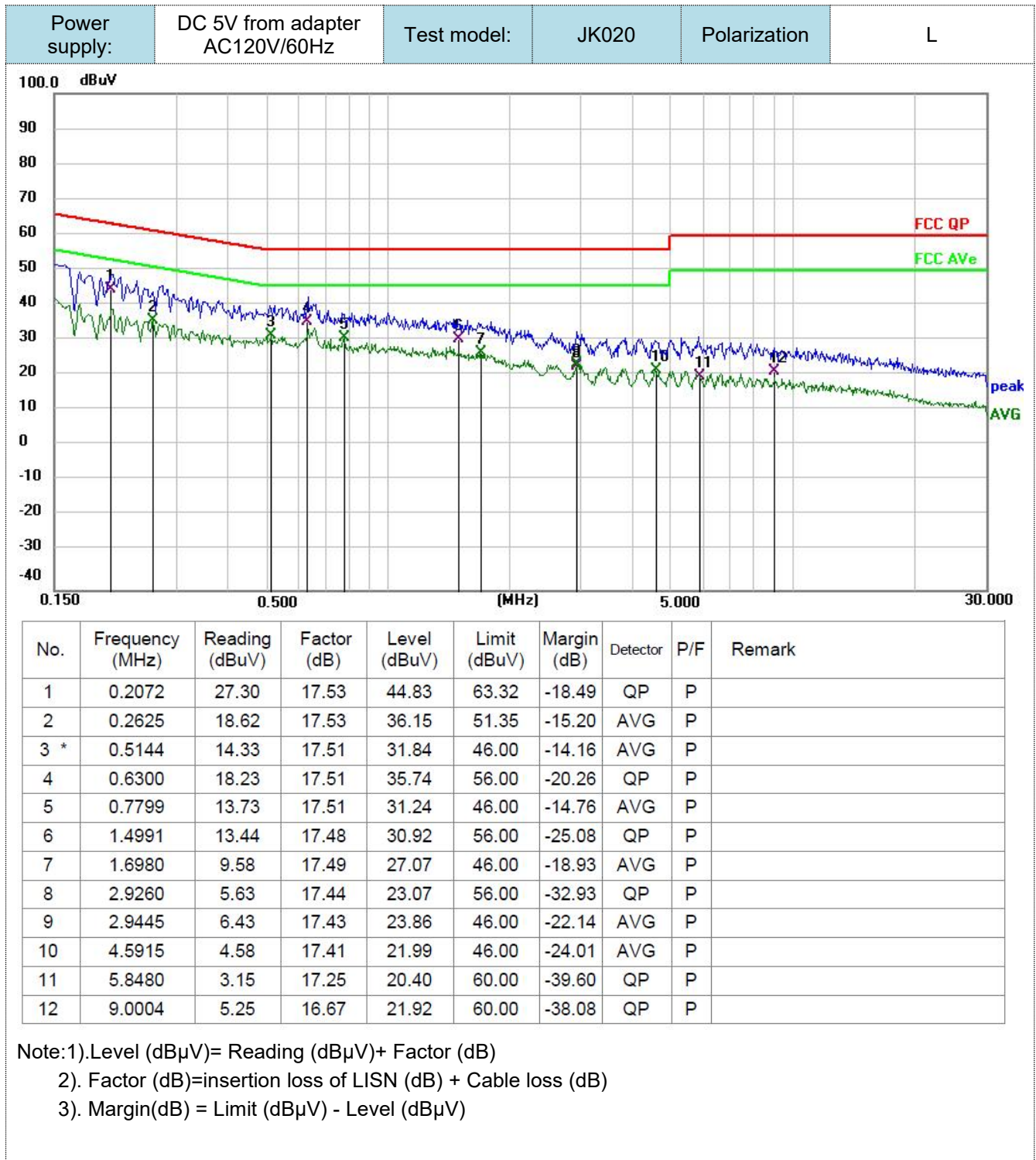
AC Power Conducted Emission Limit

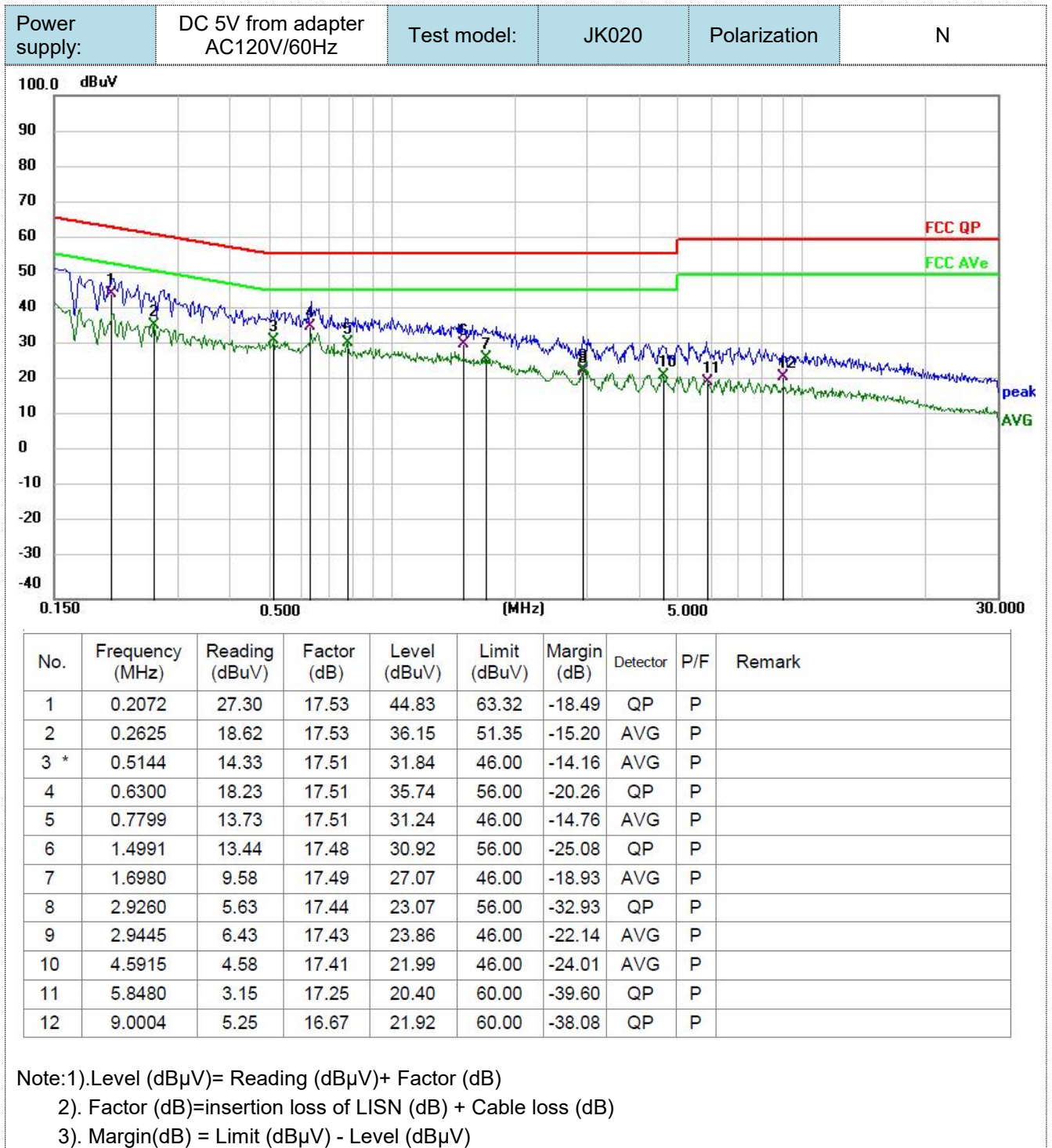
For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following:

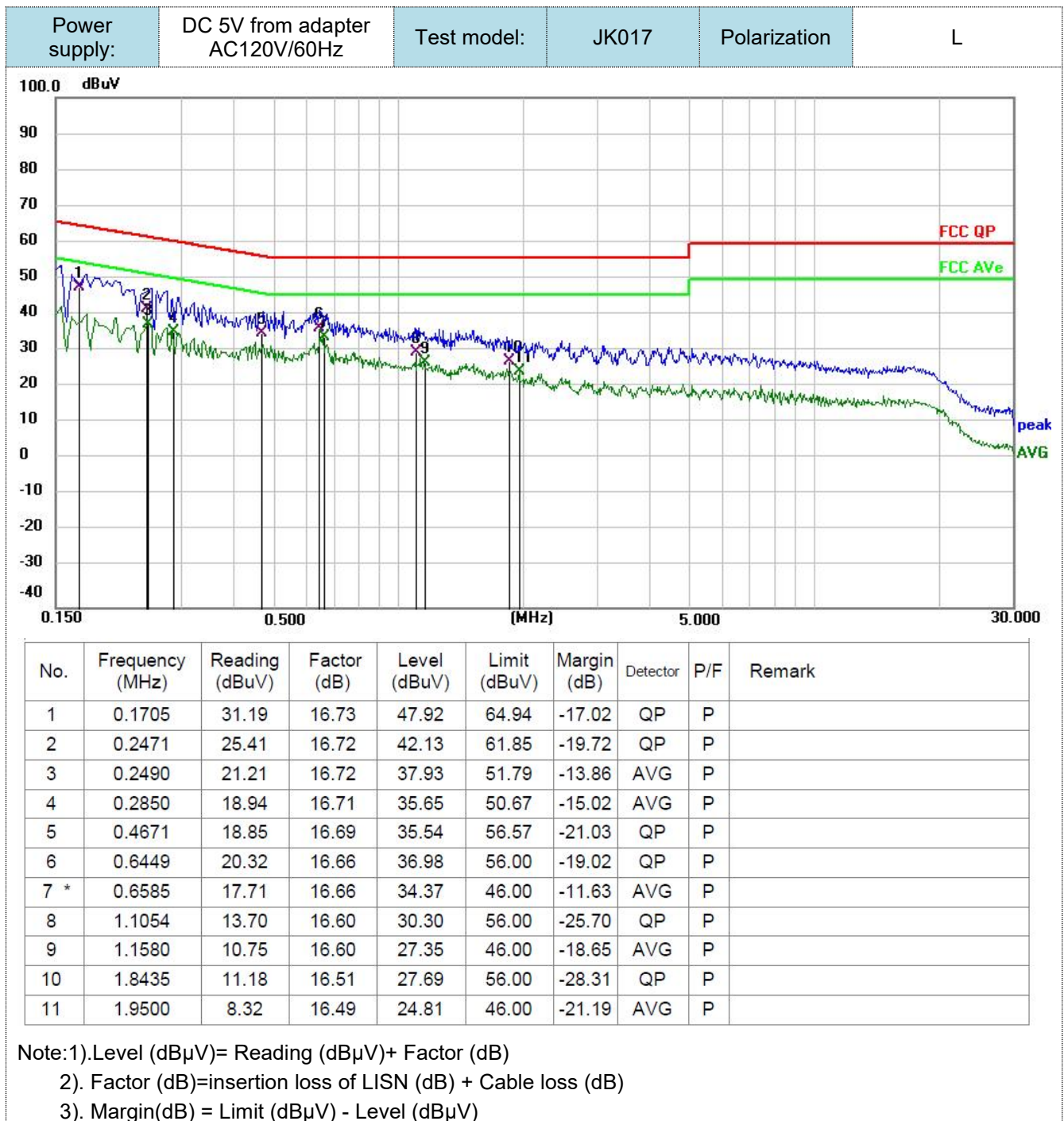
Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

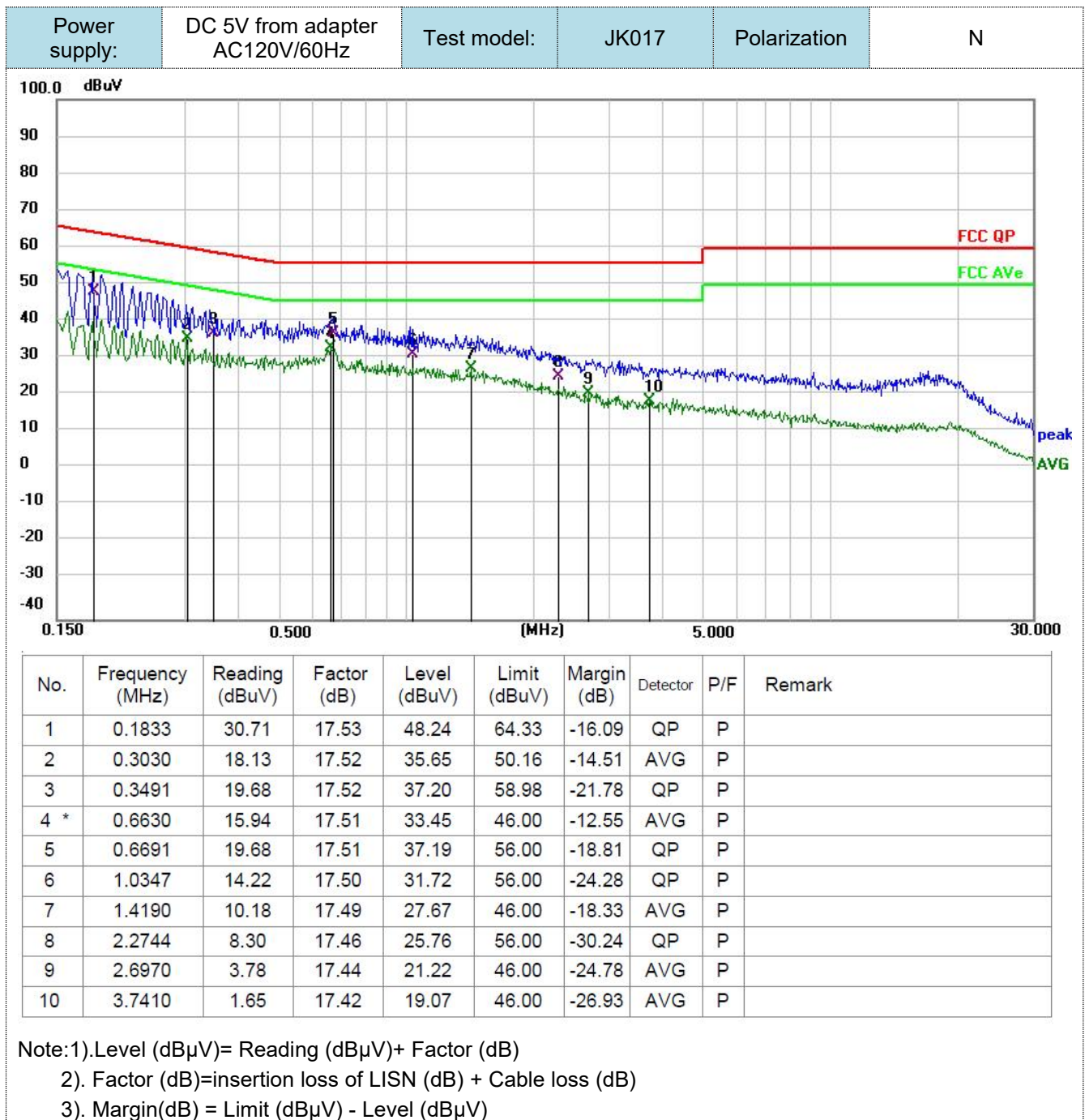
* Decreases with the logarithm of the frequency.

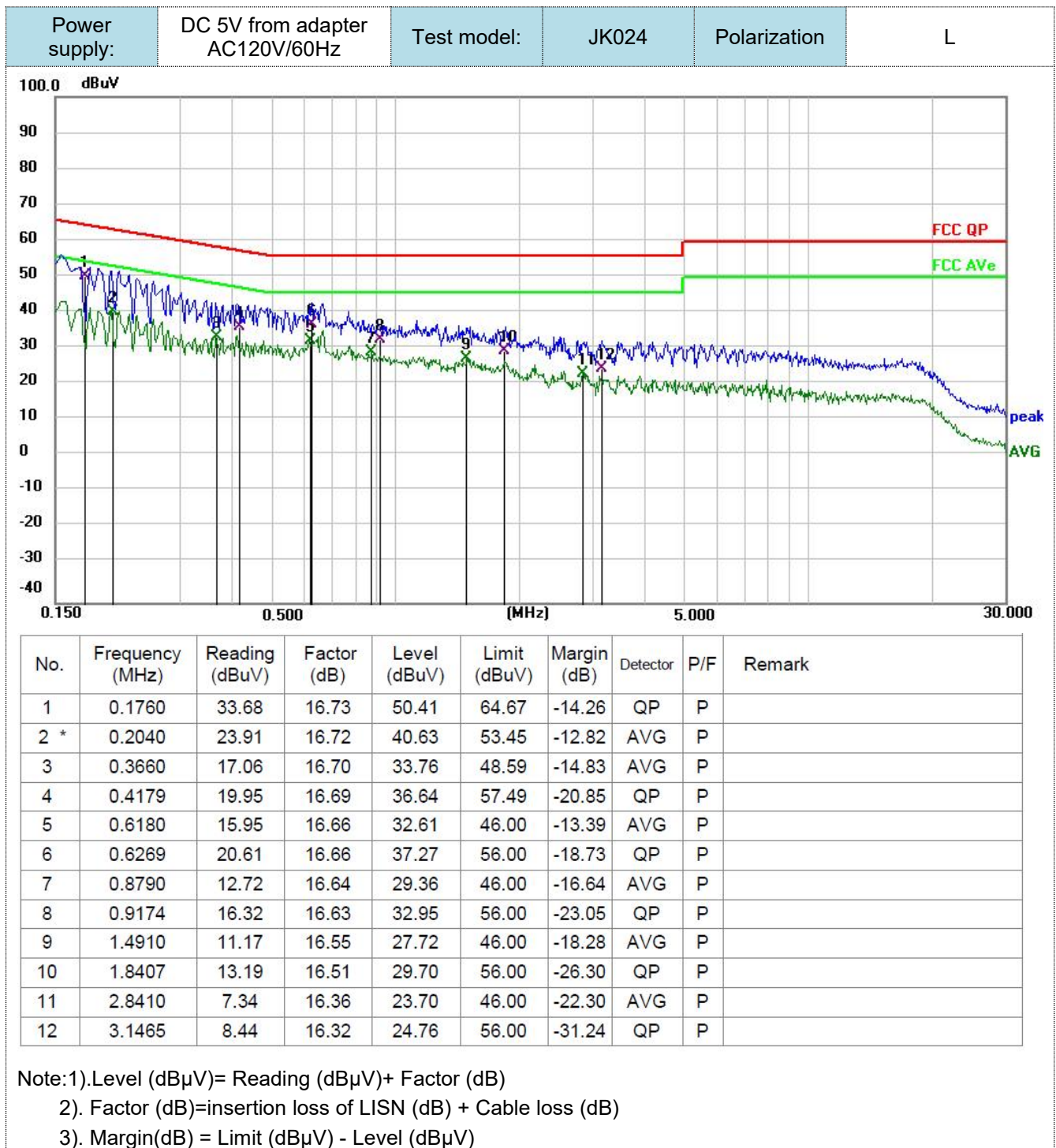
TEST RESULTS

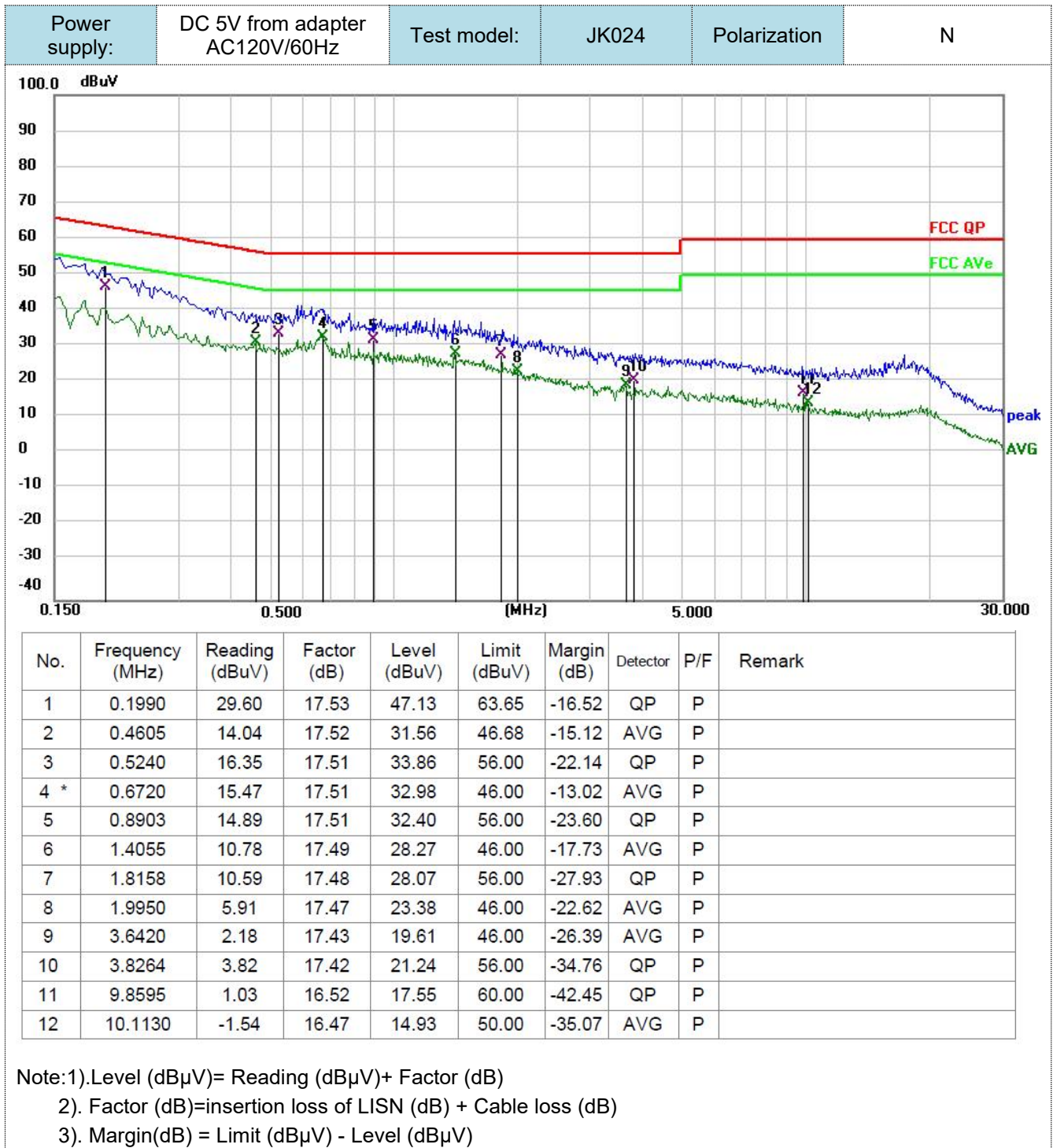


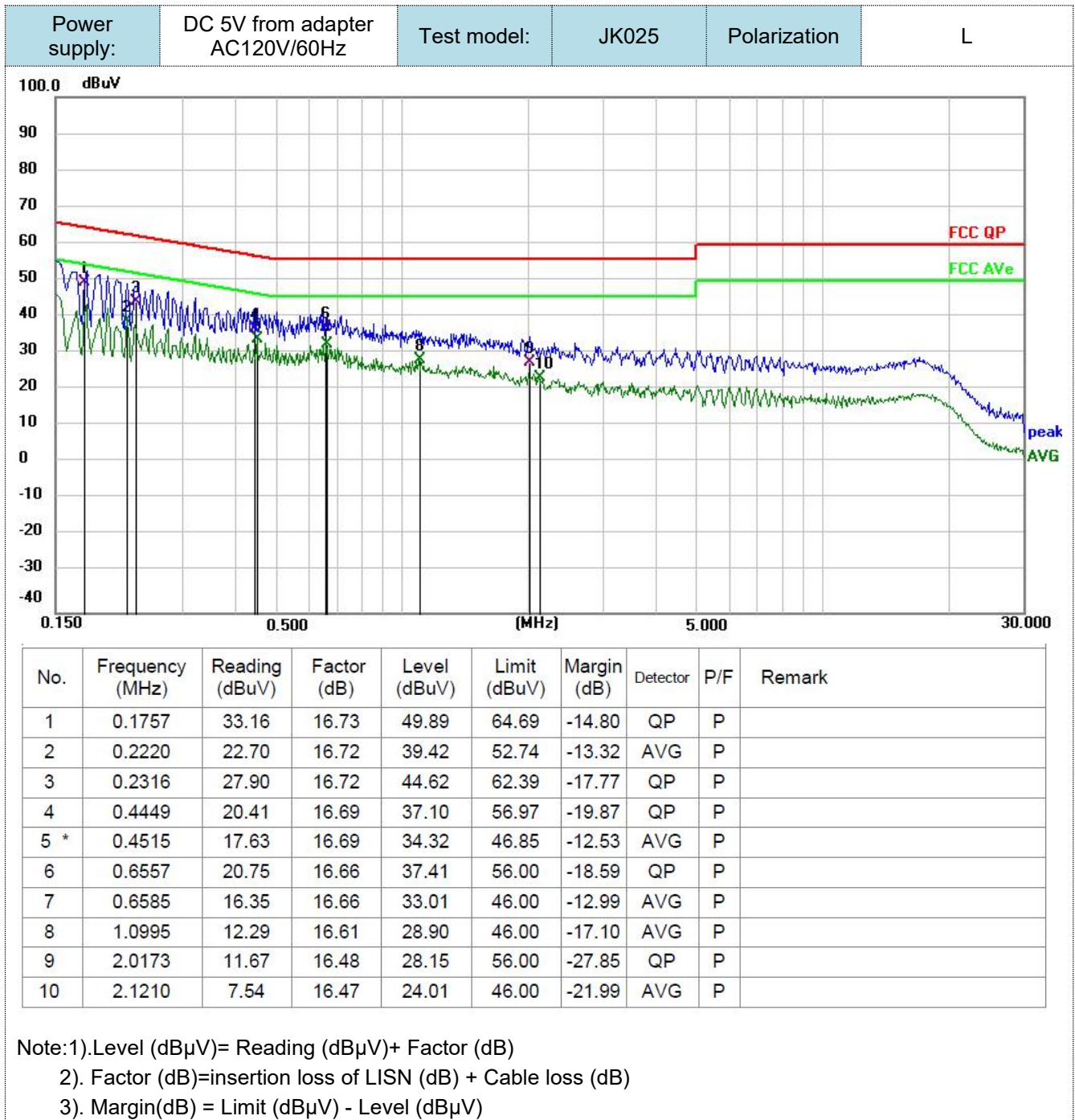


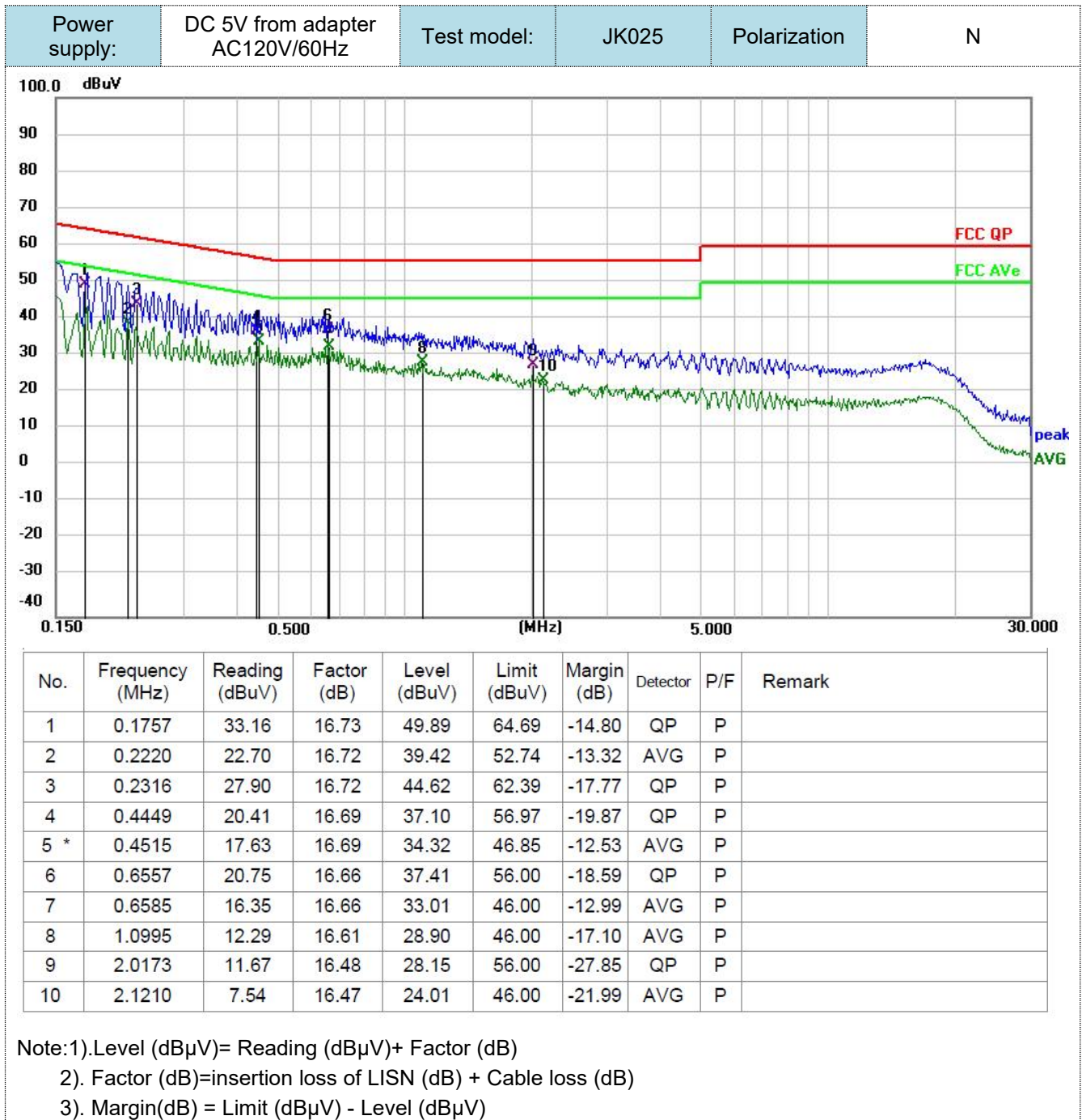








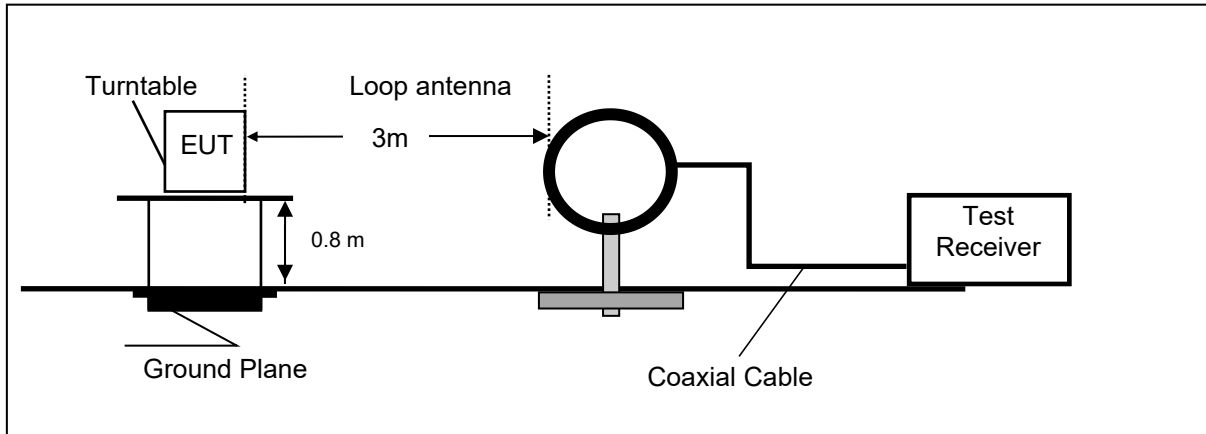




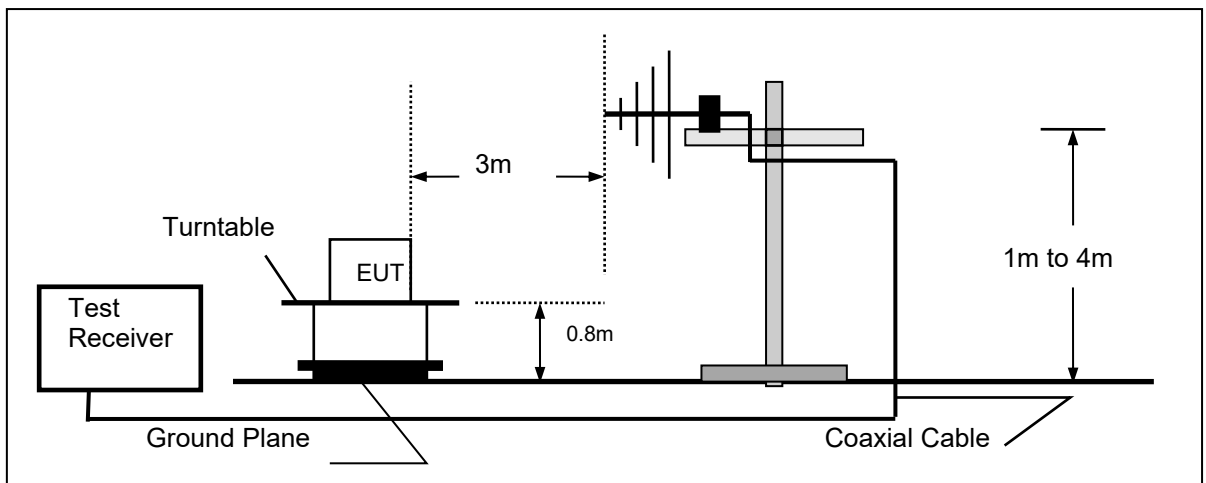
4.2 Radiated Emissions and Band Edge

TEST CONFIGURATION

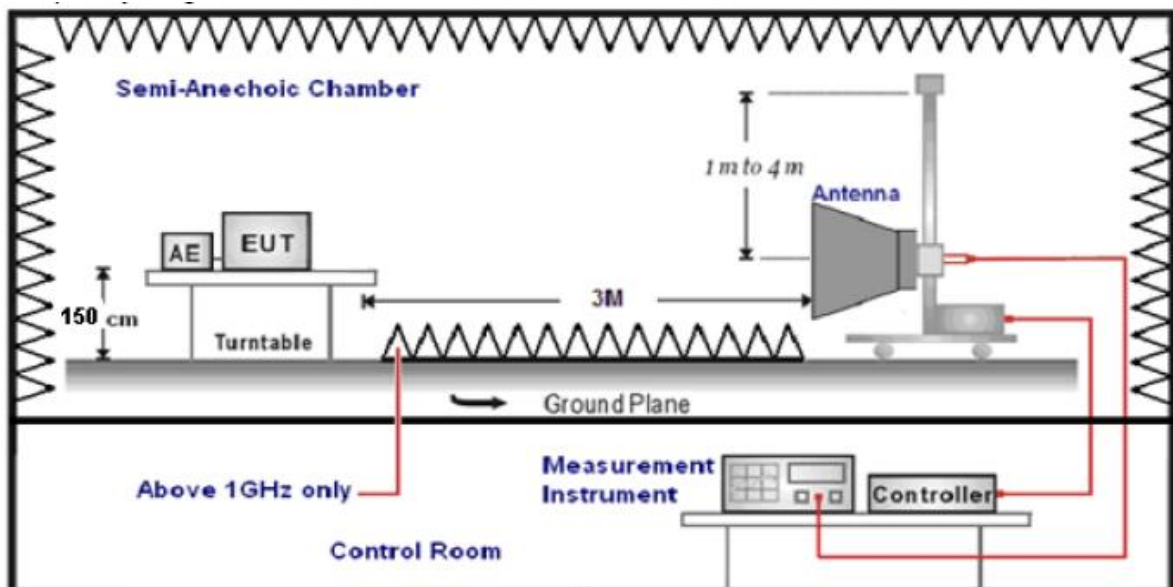
Frequency range 9 KHz – 30MHz



Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz



TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –1GHz;the EUT was placed on a turn table which is 1.5m above ground plane when testing frequency range 1GHz – 25GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT minimum operation frequency was 32.768KHz and maximum operation frequency was 2480MHz.so radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Antenna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

$$\text{Transd}=AF +CL-AG$$

RADIATION LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the100kHz bandwidth within the band that contains the highest level of desired power.

The pre-test have done for the EUT in three axes and found the worst emission at position shown in test setup photos.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz}))+40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz}))+ 40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30)+ 40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST RESULTS

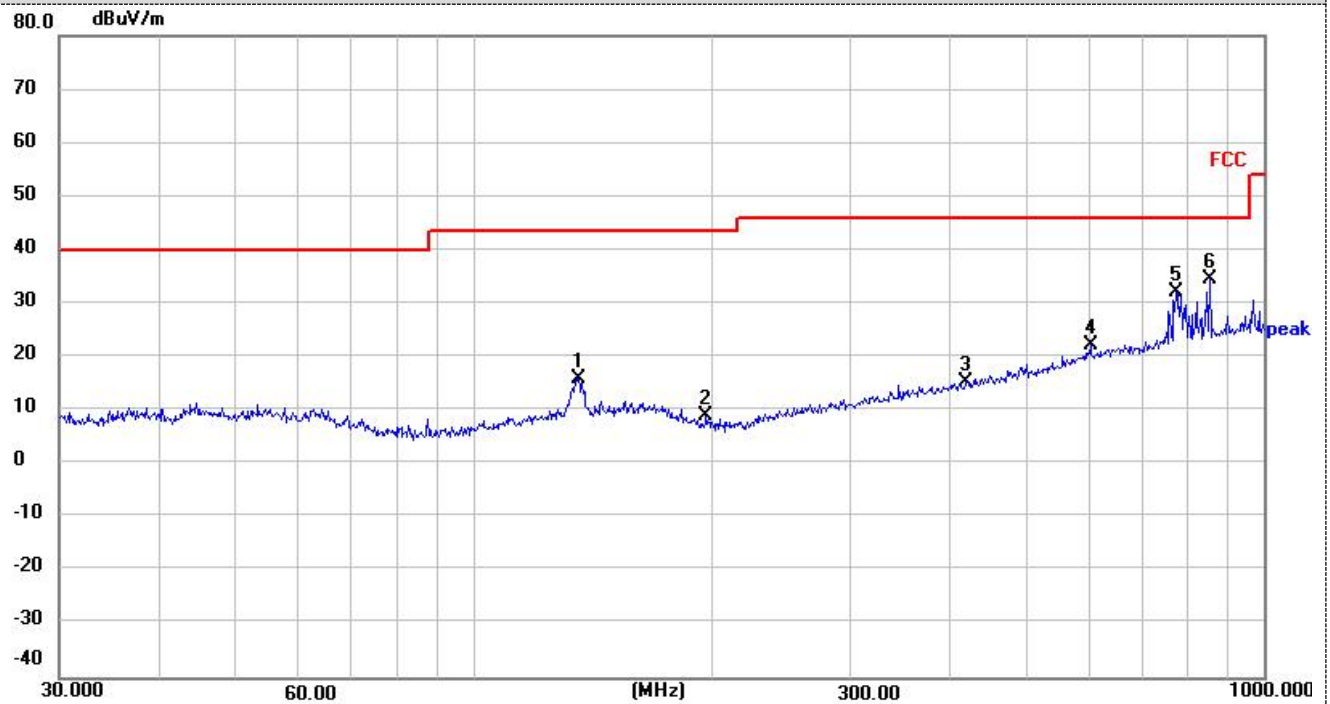
Remark:

1. This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2. 2.4G were tested at Low, Middle, and High channel and recorded worst mode at 2.4G 1Mbps.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

For 30MHz-1GHz

TEST MODEL:JK020

Horizontal

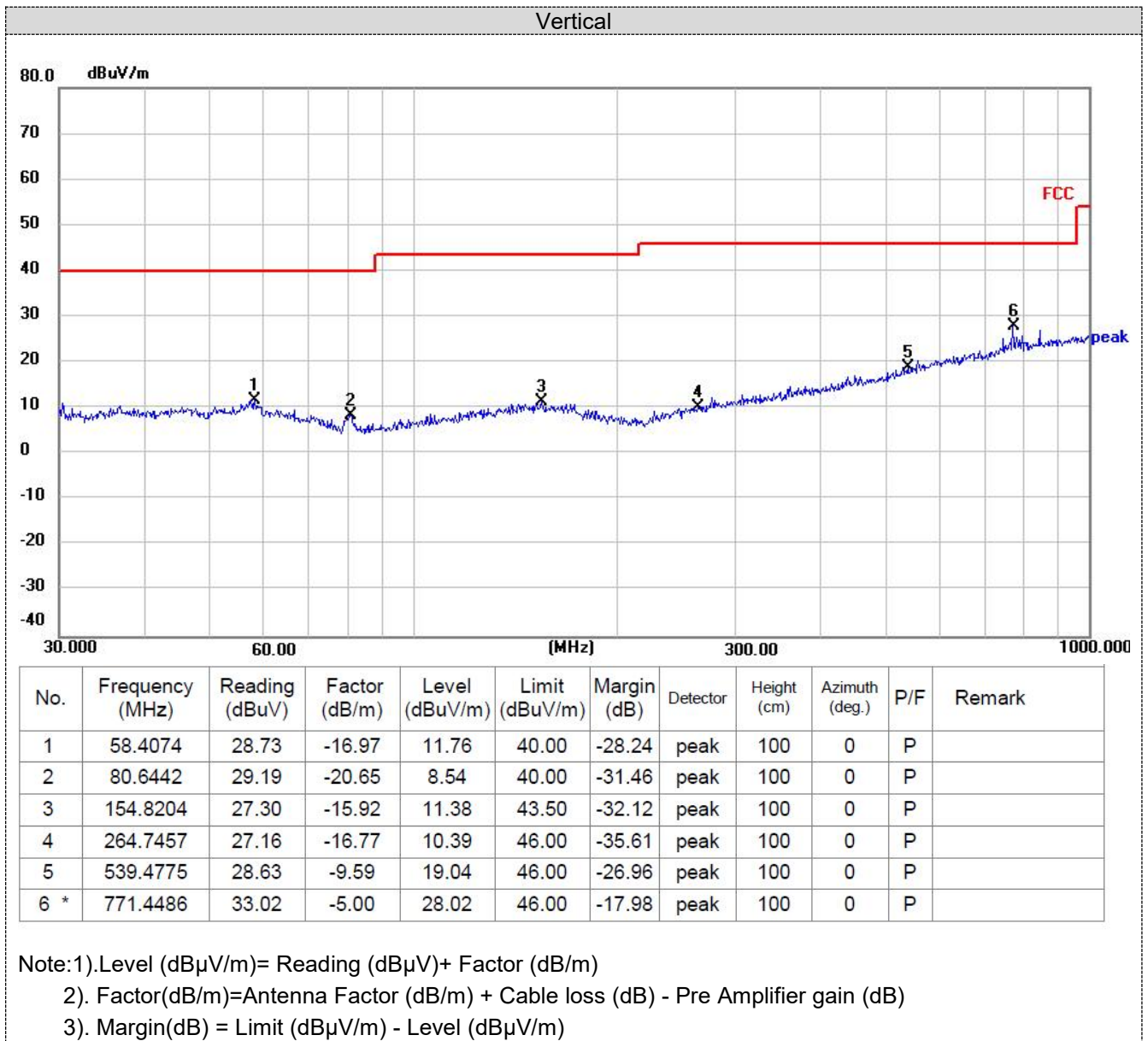


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	135.5062	32.89	-16.96	15.93	43.50	-27.57	peak	100	360	P	
2	197.2001	28.07	-19.16	8.91	43.50	-34.59	peak	100	360	P	
3	420.5803	27.91	-12.50	15.41	46.00	-30.59	peak	100	360	P	
4	603.5392	30.06	-7.79	22.27	46.00	-23.73	peak	100	360	P	
5	774.1584	37.04	-4.98	32.06	46.00	-13.94	peak	100	360	P	
6 *	854.0247	38.72	-4.16	34.56	46.00	-11.44	peak	100	360	P	

Note:1).Level (dBuV/m)= Reading (dBuV)+ Factor (dB/m)

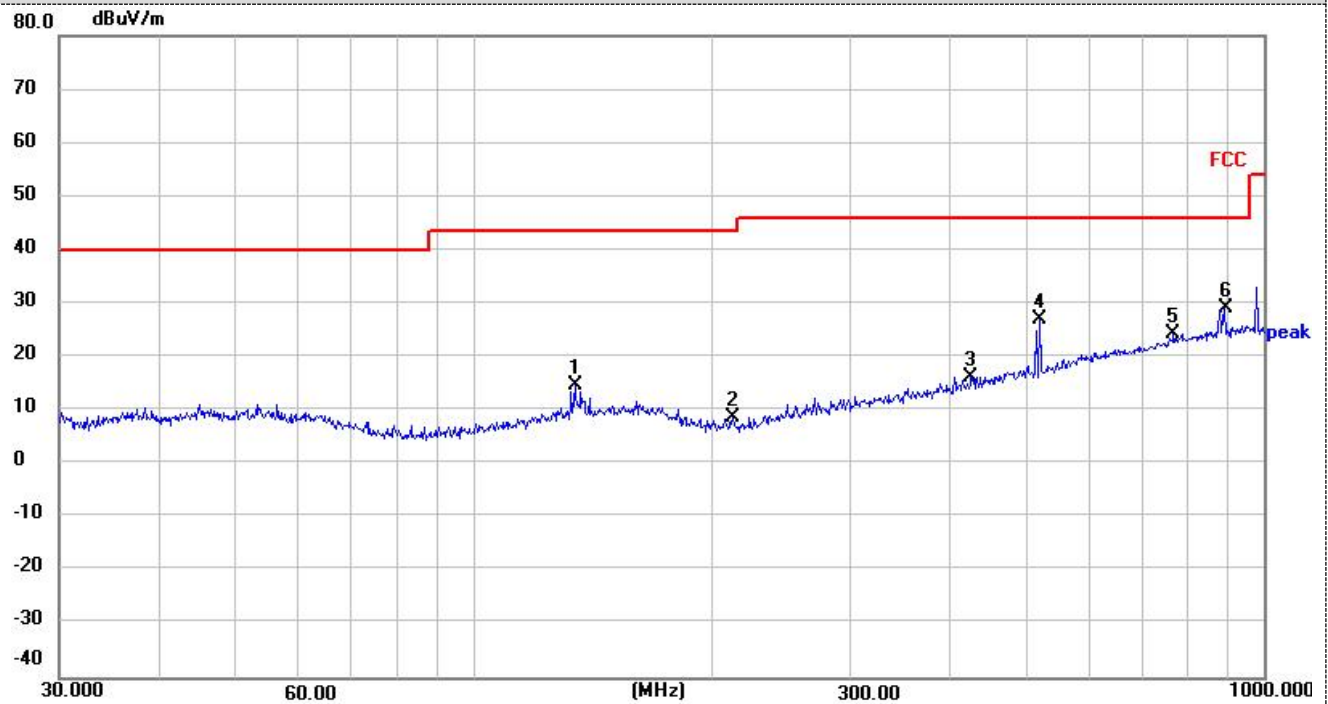
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBuV/m) - Level (dBuV/m)



TEST MODEL:JK017

Horizontal

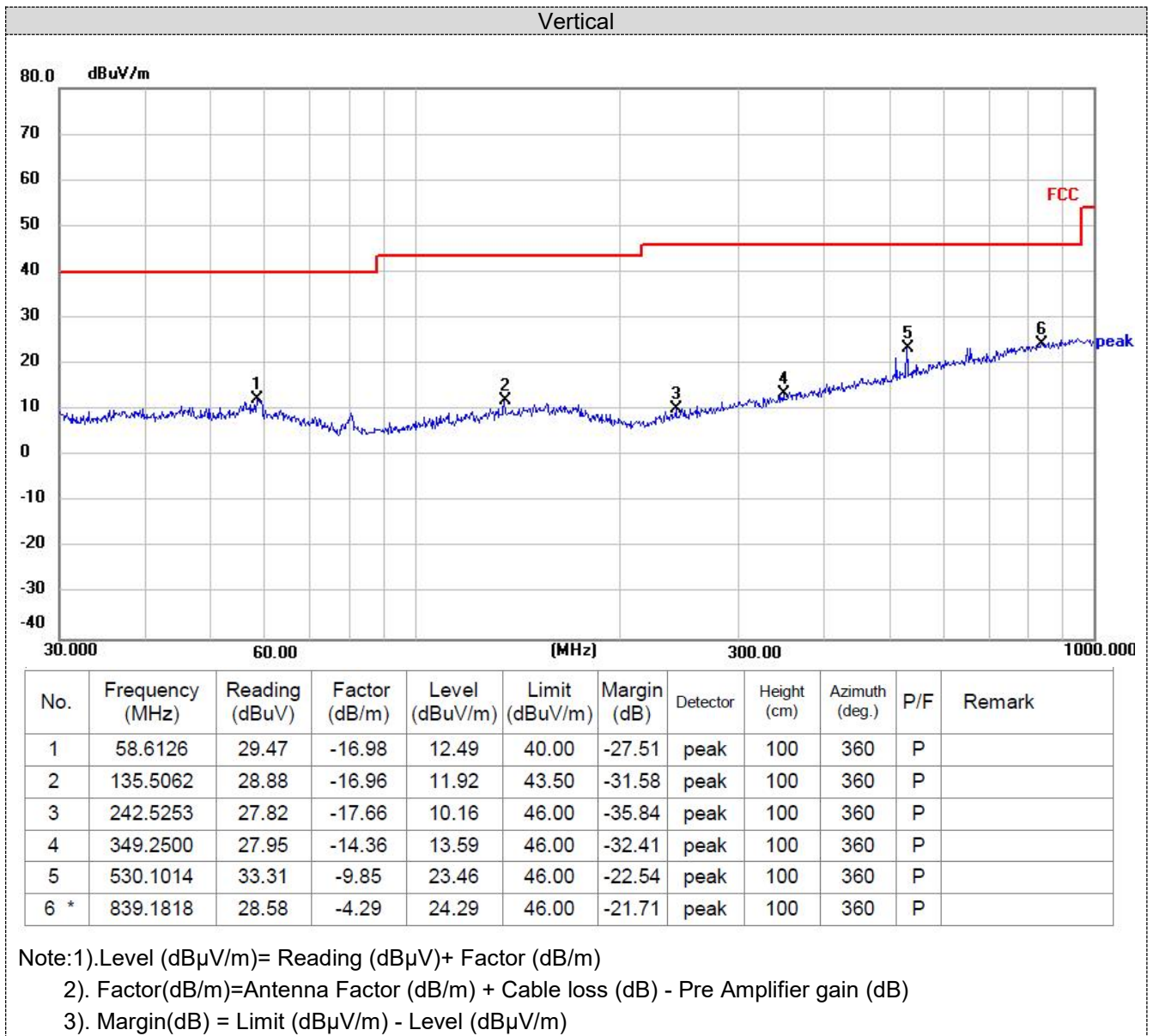


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	134.5592	31.71	-17.01	14.70	43.50	-28.80	peak	100	0	P	
2	213.0151	28.14	-19.34	8.80	43.50	-34.70	peak	100	0	P	
3	426.5210	28.54	-12.33	16.21	46.00	-29.79	peak	100	0	P	
4	520.8882	37.07	-10.11	26.96	46.00	-19.04	peak	100	0	P	
5	768.7481	29.39	-5.05	24.34	46.00	-21.66	peak	100	0	P	
6 *	890.7278	32.95	-3.86	29.09	46.00	-16.91	peak	100	0	P	

Note:1).Level (dBuV/m)= Reading (dBuV)+ Factor (dB/m)

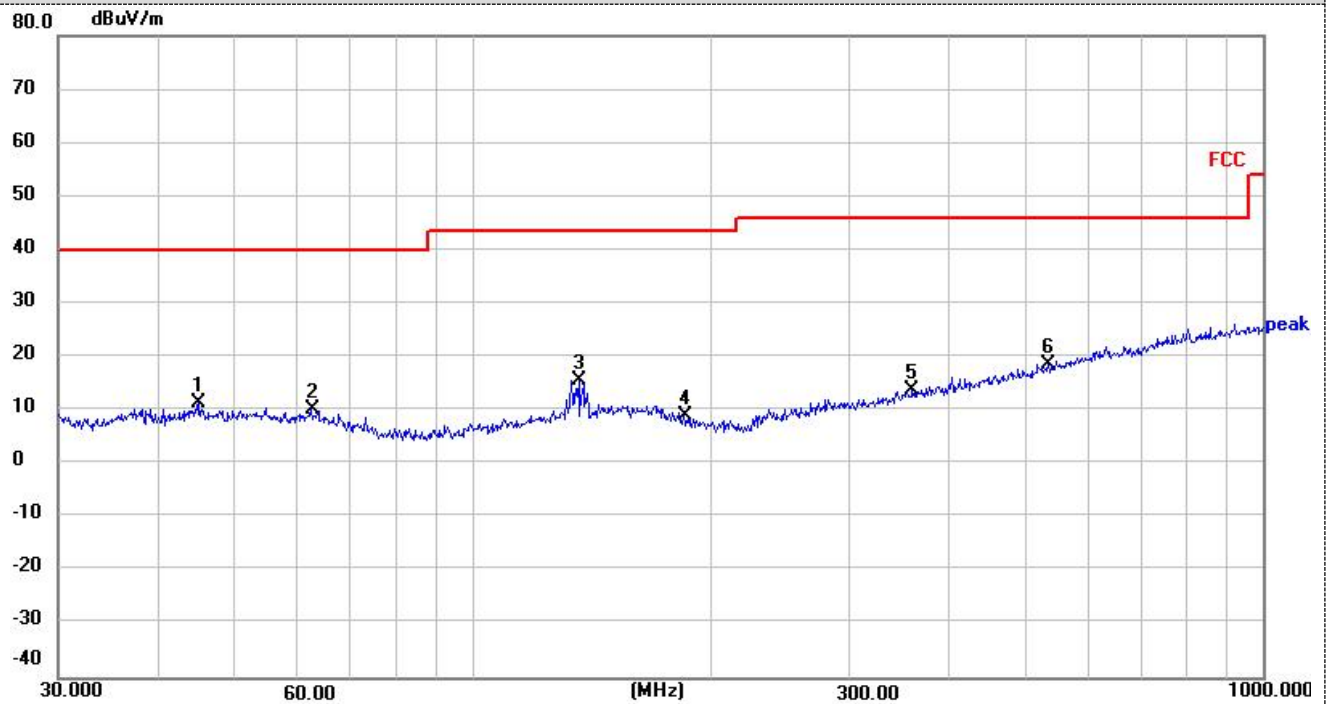
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBuV/m) - Level (dBuV/m)



TEST MODEL:JK024

Horizontal

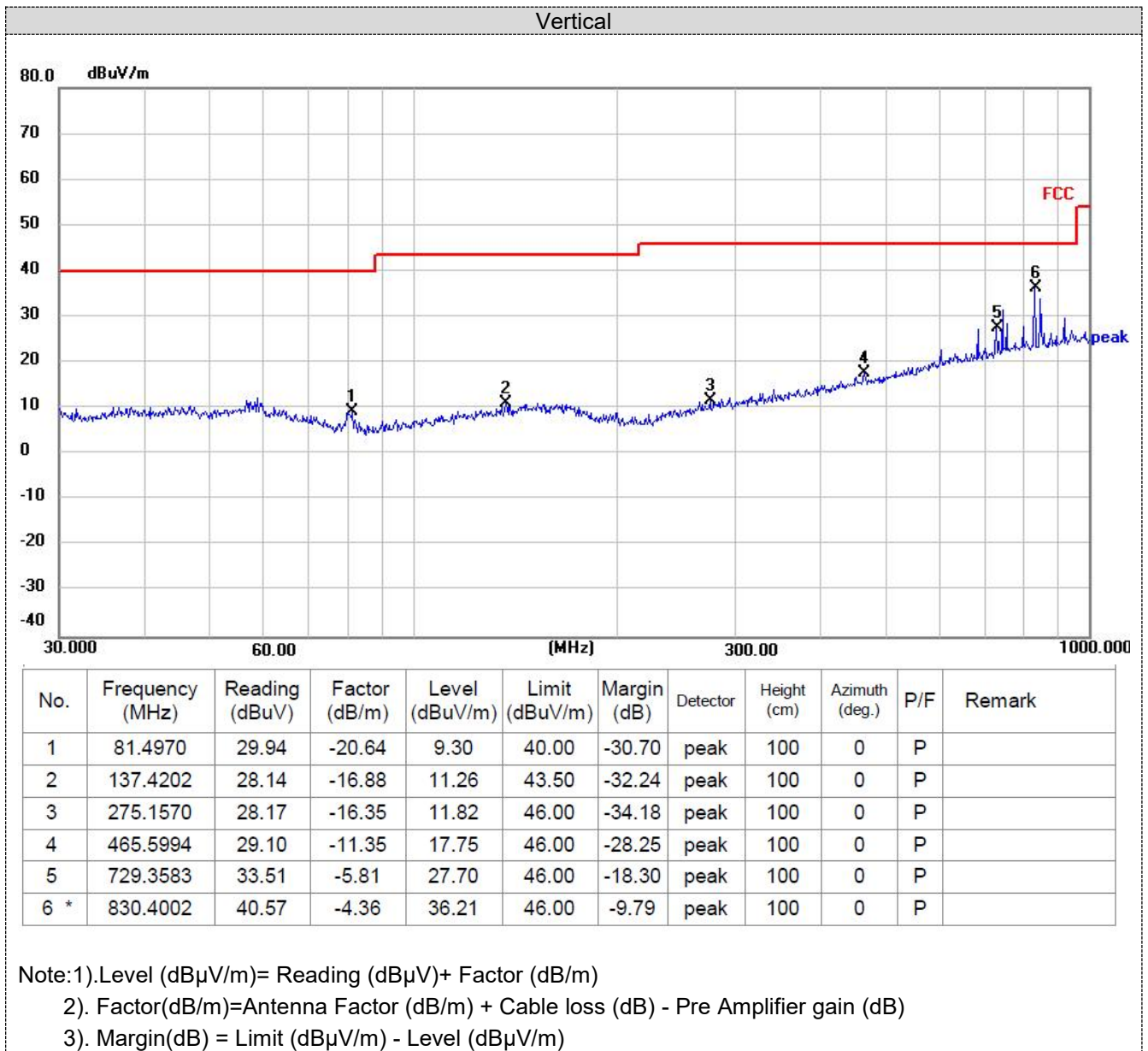


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.2166	27.95	-16.52	11.43	40.00	-28.57	peak	100	360	P	
2	62.6507	27.74	-17.47	10.27	40.00	-29.73	peak	100	360	P	
3	136.4598	32.70	-16.92	15.78	43.50	-27.72	peak	100	360	P	
4	185.1379	27.25	-18.23	9.02	43.50	-34.48	peak	100	360	P	
5	360.4476	28.07	-14.08	13.99	46.00	-32.01	peak	100	360	P	
6 *	535.7073	28.40	-9.70	18.70	46.00	-27.30	peak	100	360	P	

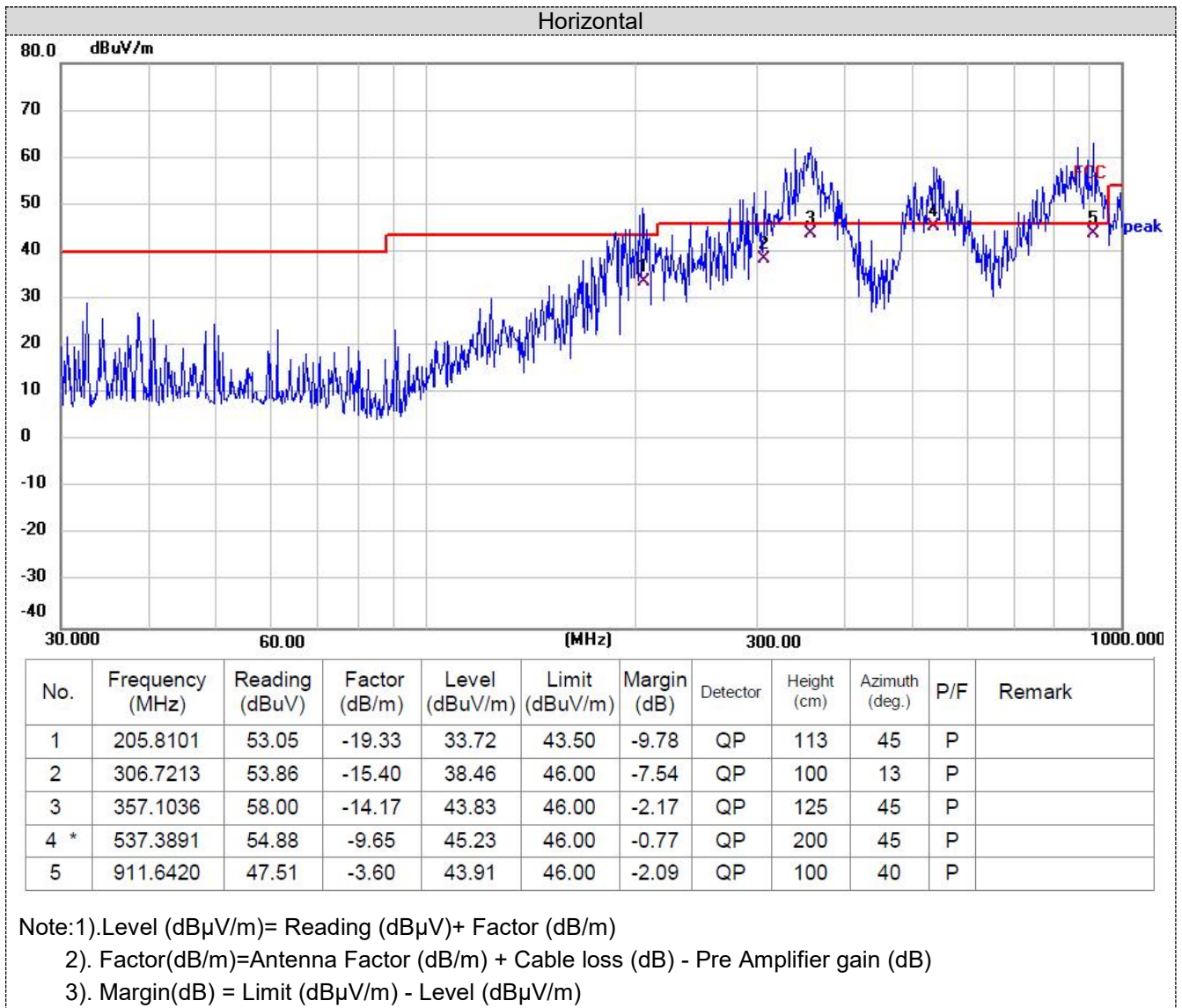
Note:1).Level (dBuV/m)= Reading (dBuV)+ Factor (dB/m)

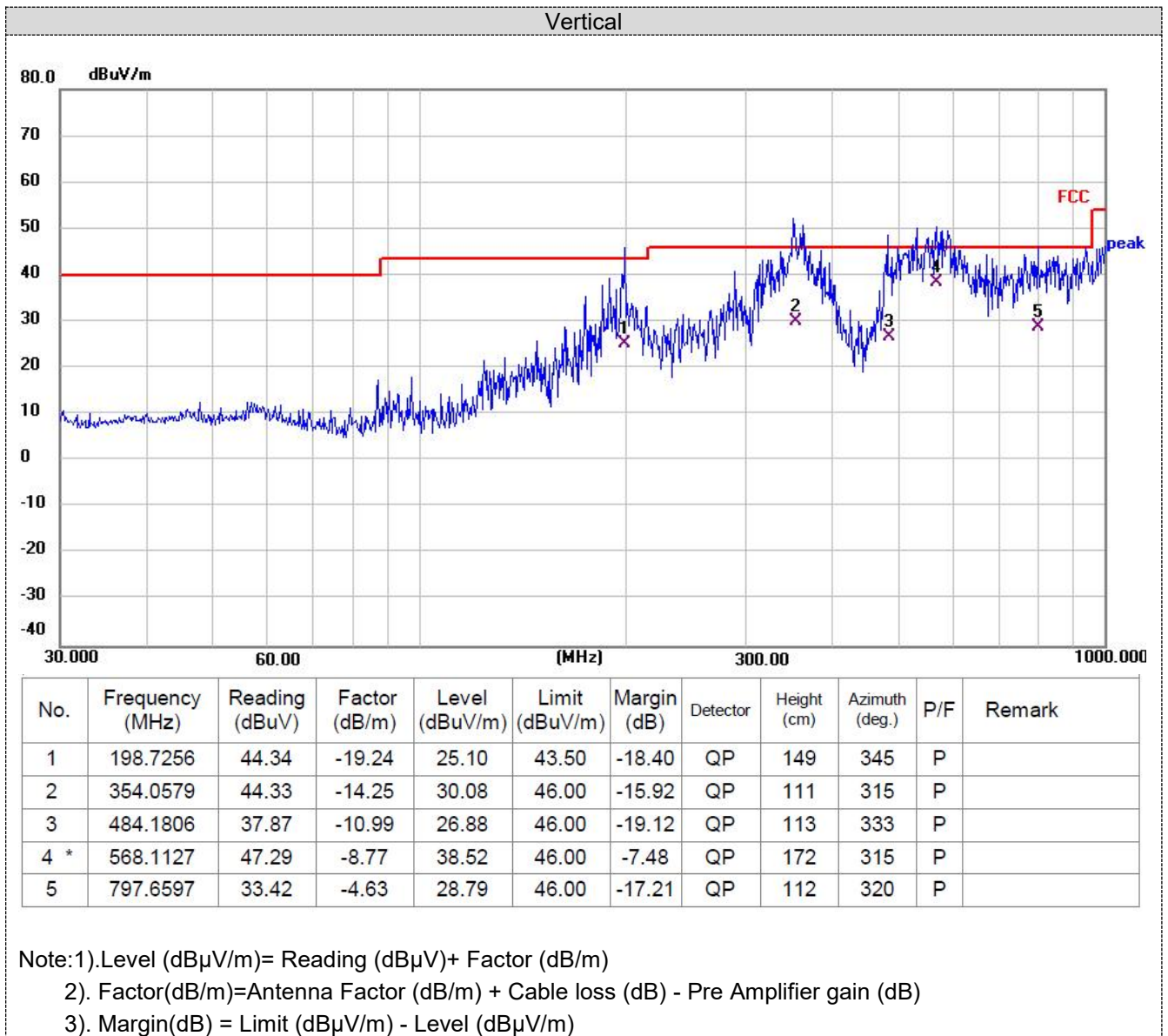
2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dBuV/m) - Level (dBuV/m)



TEST MODEL:JK025





For 1GHz to 25GHz

GFSK (above 1GHz)

Frequency(MHz):			2402			Peak value		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	55.85	21.52	3.52	33.12	47.77	74	-26.23	Horizontal
4804.00	50.42	23.65	4.56	33.08	45.55	74	-28.45	Vertical
7206.00	45.31	25.58	6.15	33.57	43.47	74	-30.53	Horizontal
7206.00	40.19	27.68	6.98	33.26	41.59	74	-32.41	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	45.25	21.52	3.52	33.12	37.17	54	-16.83	Horizontal
4804.00	40.31	23.65	4.56	33.08	35.44	54	-18.56	Vertical
7206.00	35.26	25.58	6.15	33.57	33.42	54	-20.58	Horizontal
7206.00	30.15	27.68	6.98	33.26	31.55	54	-22.45	Vertical

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

4.3 BANDWIDTH OF FREQUENCY BAND EDGE

4.3.1 Test Requirement:

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Average	1MHz	3MHz	Average

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation

4.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the Highest channel

Note:

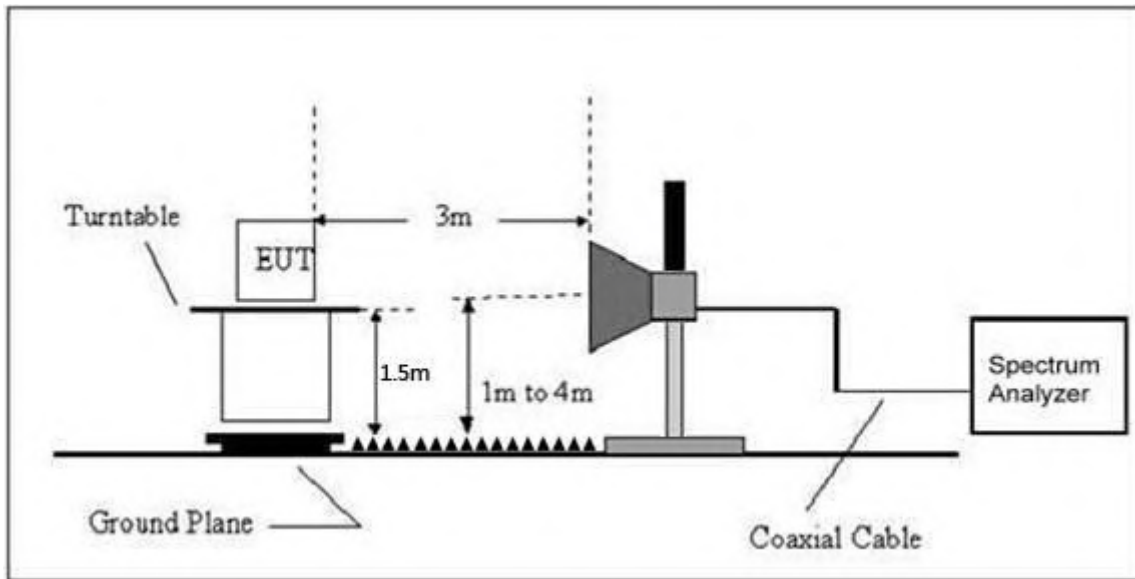
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

4.3.3 DEVIATION FROM TEST STANDARD

No deviation

4.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



4.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

4.3.6 TEST RESULT

2402MHz
Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310	55.24	21.25	3.26	33.14	46.61	74	-27.39	Horizontal
2390	53.12	21.54	3.42	33.26	44.82	74	-29.18	Horizontal
2400	51.46	21.75	3.54	33.42	43.33	74	-30.67	Horizontal
2310	49.85	21.54	3.42	33.26	41.55	74	-32.45	Vertical
2390	47.61	21.25	3.26	33.14	38.98	74	-35.02	Vertical
2400	45.52	21.75	3.54	33.42	37.39	74	-36.61	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310	52.36	21.25	3.26	33.14	43.73	54	-10.27	Horizontal
2390	50.14	21.54	3.42	33.26	41.84	54	-12.16	Horizontal
2400	48.75	21.75	3.54	33.42	40.62	54	-13.38	Horizontal
2310	46.35	21.25	3.26	33.14	37.72	54	-16.28	Vertical
2390	44.52	21.54	3.42	33.26	36.22	54	-17.78	Vertical
2400	42.32	21.75	3.54	33.42	34.19	54	-19.81	Vertical

Remark: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
All of the restriction bands were tested, and only the data of worst case was exhibited.

Measurement data:

Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402	100.23	22.55	3.25	33.45	92.58	114	-21.42	Vertical
2402	98.63	22.55	3.25	33.45	90.98	114	-23.02	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402	90.14	22.55	3.25	33.45	82.49	94	-11.51	Vertical
2402	88.35	22.55	3.25	33.45	80.7	94	-13.30	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*

4.4 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.215
Test Method:	ANSI C63.10: 2013

4.4.1 Applied procedures / limit

FCC Part15 (15.215) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.215	Bandwidth	2400-2483.5	PASS

4.4.2 TEST PROCEDURE

- 1) Span equal to approximately 1.5 times the OBW, centered on the carrier frequency
- 2) RBW, prefer 1% to 5% of OBW, or a minimum of 1 MHz if this is not possible due to a large OBW
- 3) VBW approximately $3 \times$ RBW
- 4) Set the reference level of the instrument as required to reduce the chance of the signal amplitude exceeding the maximum spectrum analyzer input mixer level for linear operation.
See guidance provided in 4.1.6.
- 5) Sweep = No faster than coupled (auto) time.
- 6) Detector function = peak.
- 7) Trace = max-hold.

4.4.3 DEVIATION FROM STANDARD

No deviation.

4.4.4 TEST SETUP



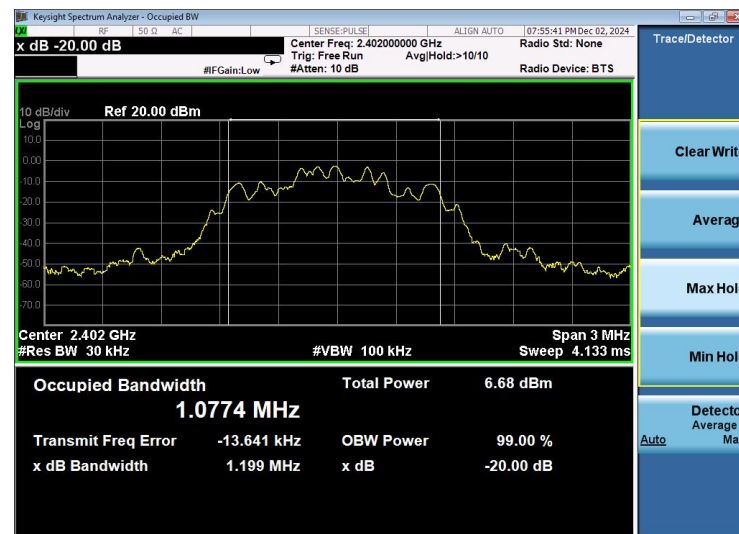
4.4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.4.6 TEST RESULTS

Temperature:	26°C	Relative Humidity:	54%
Test Mode :	GFSK	Test Voltage :	DC 3.7V from Battery

Test channel	Channel Bandwidth (MHz)	Result
2402MHz	1.199	Pass



2402MHz

4.5 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited

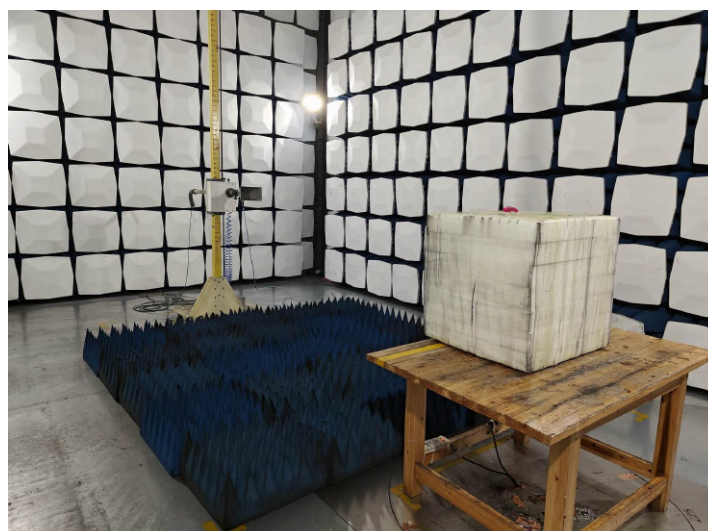
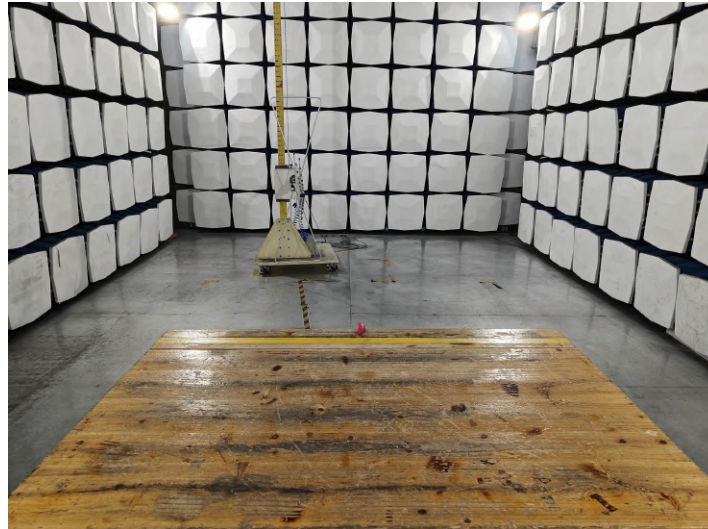
Antenna Connected Construction

The maximum gain of antenna was 0 dBi.

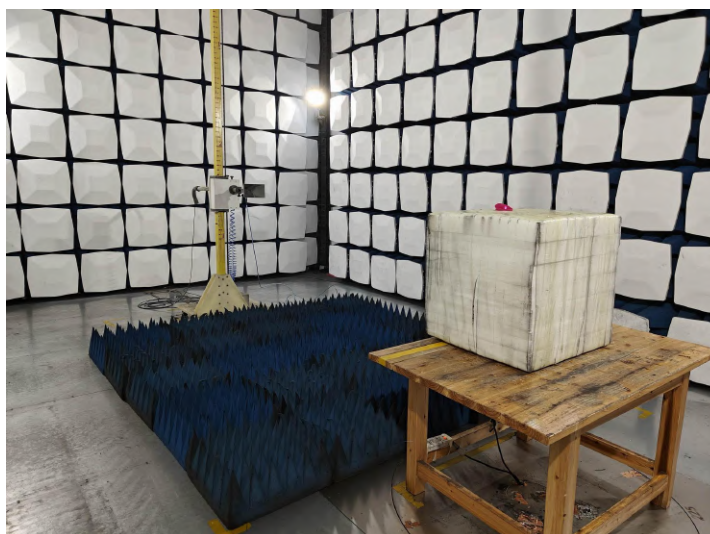
Remark: The antenna gain is provided by the customer, if the data provided by the customer is not accurate, Dongguan Yaxu (AiT) Technology Limited does not assume any responsibility.

5 Test Setup Photos of the EUT

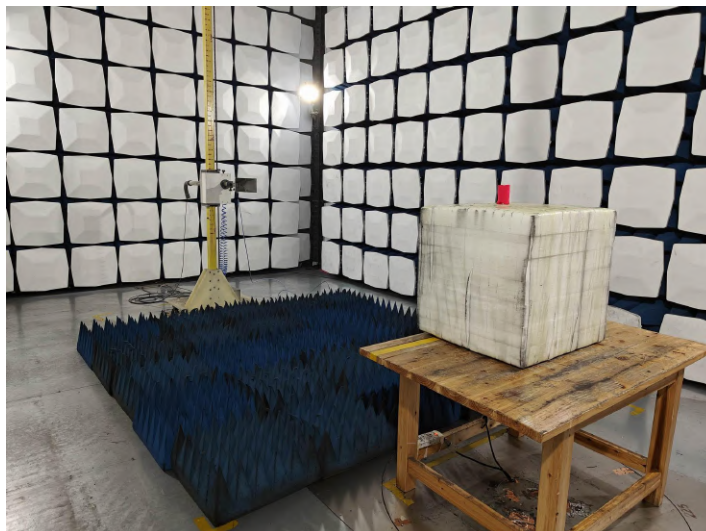
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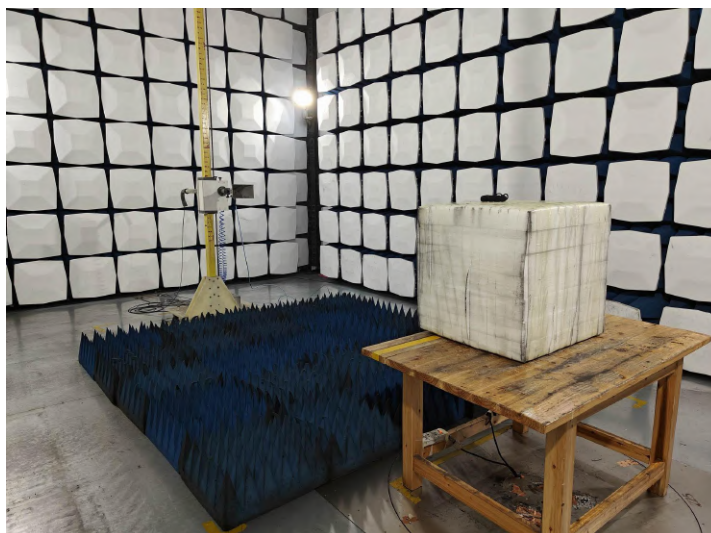
model:JK017



model:JK024



model:JK025



6 Photos of the EUT

Reference to the report ANNEX A of external photos and ANNEX B of internal photos.

******* End of Report *******