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TEST REPORT

Report No.: **CTC20222157E02**

FCC ID.....: **2AGKB-KM7PLUS**

Applicant.....: **VIDEOSTRONG TECHNOLOGY CO.,LTD**

Address.....: 604, Lushi industrial Building, 28 District, Bao'an District, Shenzhen, China

Manufacturer.....: VIDEOSTRONG TECHNOLOGY CO.,LTD

Address.....: 604, Lushi industrial Building, 28 District, Bao'an District, Shenzhen, China

Product Name.....: **Android TV Box**

Trade Mark.....: MECOOL

Model/Type reference.....: KM7 PLUS

Listed Model(s): 9MAX,10MAX, KM2, KM2 PRO, KM2 PLUS, KD3, KD5, KM6, KM7,9S,10S,9P,10P, KM10, KM11, KD6, KD7, IPx1, IPx2

Standard.....: **FCC CFR Title 47 Part 15 Subpart C Section 15.247**

Date of receipt of test sample...: Dec. 20, 2022

Date of testing.....: Dec. 20, 2022 ~ Dec. 20, 2022

Date of issue.....: Dec. 21, 2022

Result.....: **PASS**

Compiled by:

(Printed name+signature) Lucy Lan

Supervised by:

(Printed name+signature) Eric Zhang

Approved by:

(Printed name+signature) Totti Zhao

Testing Laboratory Name.....: **CTC Laboratories, Inc.**

Address.....: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

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1. 7TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

[RSS 247 Issue 2](#): Standard Specifications for Frequency Hopping Systems (FHSs) and Digital Transmission Systems (DTSS) Operating in the Bands 902-928MHz, 2400-2483.5MHz and 5725-5850MHz.

[ANSI C63.10-2013](#): American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report version

Revised No.	Date of issue	Description
01	Dec. 21, 2022	Original



1.3. Test Description

FCC Part 15 Subpart C (15.247) / RSS 247 Issue 2			
Test Item	Standard Section	Result	Test Engineer
	FCC		
Radiated Spurious Emissions	15.205&15.209& 15.247(d)	Pass	Lucy Lan

Note: The measurement uncertainty is not included in the test result.



1.4. Test Facility

CTC Laboratories, Inc.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory 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.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. 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. Registration 951311, Aug 26, 2017.

1.5. 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 CTC Laboratories, Inc. 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.

Below is the best measurement capability for CTC Laboratories, Inc.



Test Items	Measurement Uncertainty	Notes
Radiated Emissions 30~1000MHz	4.51 dB	(1)
Radiated Emissions 1~18GHz	5.84 dB	(1)
Radiated Emissions 18~40GHz	6.12 dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

1.6. Environmental conditions

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

Temperature:	21°C ~ 27°C
Relative Humidity:	40% ~ 60%
Air Pressure:	101kPa



2. GENERAL INFORMATION

2.1. Client Information

Applicant:	VIDEOSTRONG TECHNOLOGY CO.,LTD
Address:	604, Lushi industrial Building, 28 District, Bao'an District, Shenzhen, China
Manufacturer:	VIDEOSTRONG TECHNOLOGY CO.,LTD
Address:	604, Lushi industrial Building, 28 District, Bao'an District, Shenzhen, China

2.2. General Description of EUT

Product Name:	Android TV Box
Trade Mark:	MECOOL
Model/Type reference:	KM7 PLUS
Listed Model(s):	9MAX,10MAX, KM2, KM2 PRO, KM2 PLUS, KD3, KD5, KM6, KM7,9S,10S,9P,10P, KM10, KM11, KD6, KD7, IPx1, IPx2
Model Difference:	All these models are identical in the same PCB, layout and electrical circuit, Different is model number.
Power supply:	DC12V 1A from AC/DC Adapter
Adapter model 1:	RJ-SKY120100U60S ^{Note1} Input: 100-240V~ 50/60Hz 0.5A Output: 12Vdc/1A
Adapter model 2:	YS-SKY120100U00P ^{Note2} Input: 100-240V~ 50/60Hz 0.5A Output: 12Vdc/1A
Adapter model 3:	TEKA-TB120100US Input: 100-240V~ 50/60Hz 0.35A Output: 12Vdc/1A
Hardware version:	54024
Software version:	P2.0.3_20220929
BT 5.0/ BLE	
Modulation:	GFSK
Operation frequency:	2402MHz~2480MHz
Channel number:	40
Channel separation:	2MHz
Data rate:	1Mbps
Antenna type:	Onboard Antenna
Antenna gain:	1.2dBi

Note:

1. RJ-SKY120100AXXS, (A = E or B , stands for different plug, E means for Europe plug, B means for UK plug, M or U means for US plug.XX = 00-99. stands for customer code)
2. YS-SKY120100N0XP (N = E, B , 1character indicate difference plug type: E denote EU plug, B denote UK plug,X = 0-9, 1 digit, only for marketing purpose, no impact on safety)



2.3. Accessory Equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
Displayer	EW3270-T	EW3270U	BenQ
Notebook	ThinkBook 14G3 ACL	---	Lenovo
Cable Information			
Name	Shielded Type	Ferrite Core	Length
Lan Cable	Without	Without	1.5M
HDMI	Without	Without	1.5M
Test Software Information			
Name	/	/	/
adb.exe	/	/	/



2.4. Operation state

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing. BT BLE, 40 channels are provided to the EUT. Channels 00/19/39 were selected for testing. Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2404
:	:
18	2438
19	2440
20	2442
:	:
38	2478
39	2480

Note: The display in grey were the channel selected for testing.

Test mode

For RF test items:
The engineering test program was provided and enabled to make EUT continuous transmit.
For AC power line conducted emissions:
The EUT was set to connect with the Bluetooth instrument under large package sizes transmission.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.



2.5. Measurement Instruments List

Radiated emission(3m chamber 2)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Jan. 12, 2023
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 16, 2023
3	Loop Antenna	LAPLAC	RF300	9138	Dec. 16, 2023
4	Spectrum Analyzer	R&S	FSU26	100105	Dec. 16, 2023
5	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 15, 2023
6	Pre-Amplifier	SONOMA	310	186194	Dec. 16, 2023
7	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 16, 2023
8	Test Receiver	R&S	ESCI7	100967	Dec. 16, 2023
9	3m chamber 2	Frankonia	EE025	/	Oct. 23, 2024

Note:1. The Cal. Interval was one year.

2. The cable loss has calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

3.1. Radiated Emission

Limit

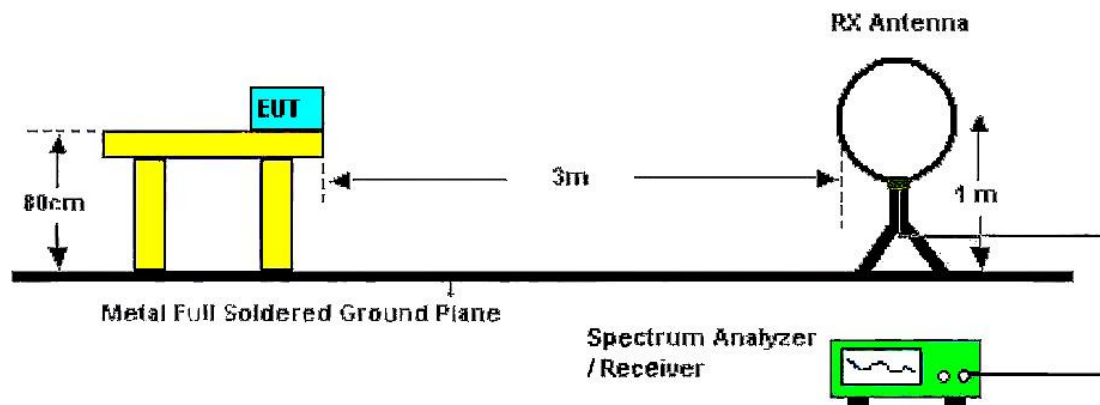
FCC CFR Title 47 Part 15 Subpart C Section 15.209/ RSS – Gen 8.9

Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

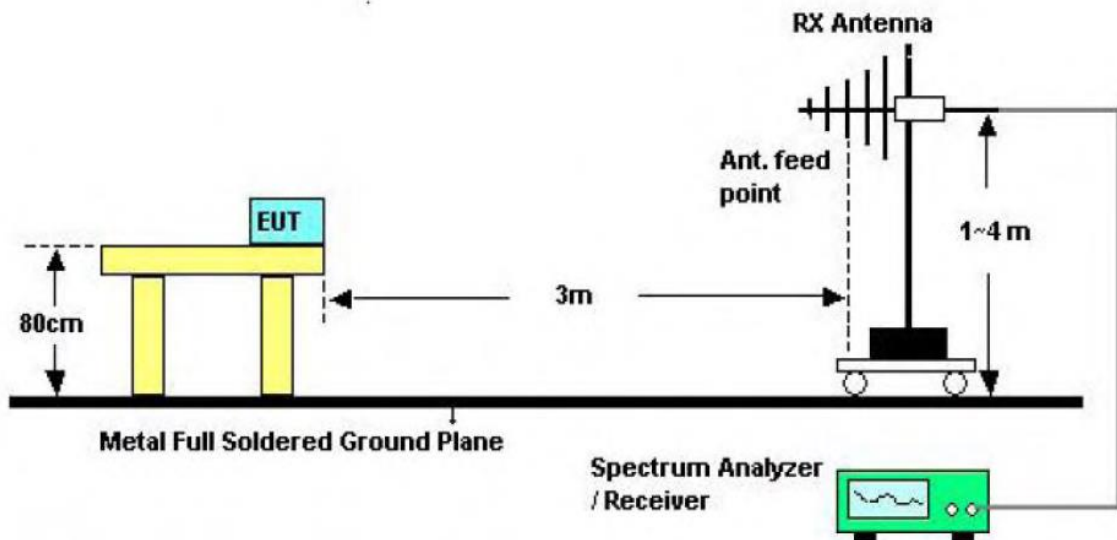
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

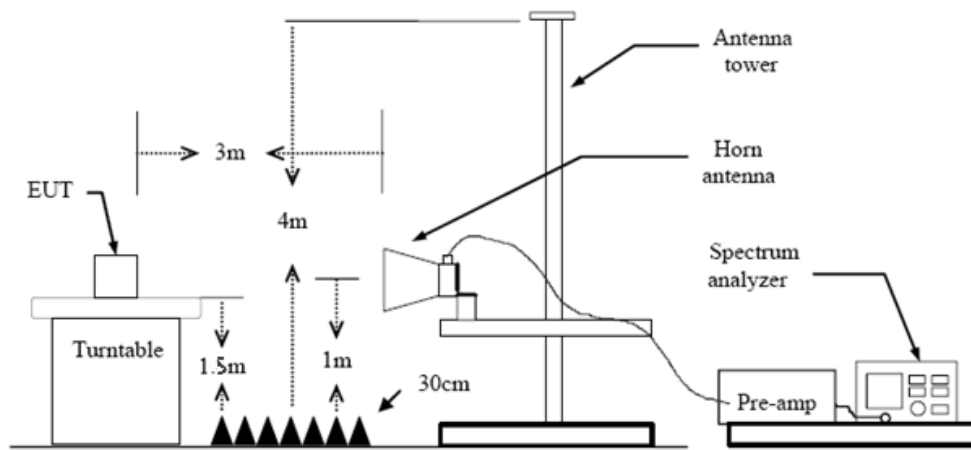
Test Configuration



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013
 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
 5. Set to the maximum power setting and enable the EUT transmit continuously.
 6. Use the following spectrum analyzer settings
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Below 1 GHz:
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - (3) From 1 GHz to 10th harmonic:
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW≥1/T Peak detector for Average value.
- Note 1: For the 1/T & Duty Cycle please refer to clause 3.8 Duty Cycle.

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Test Mode

Please refer to the clause 2.4.

Test Result

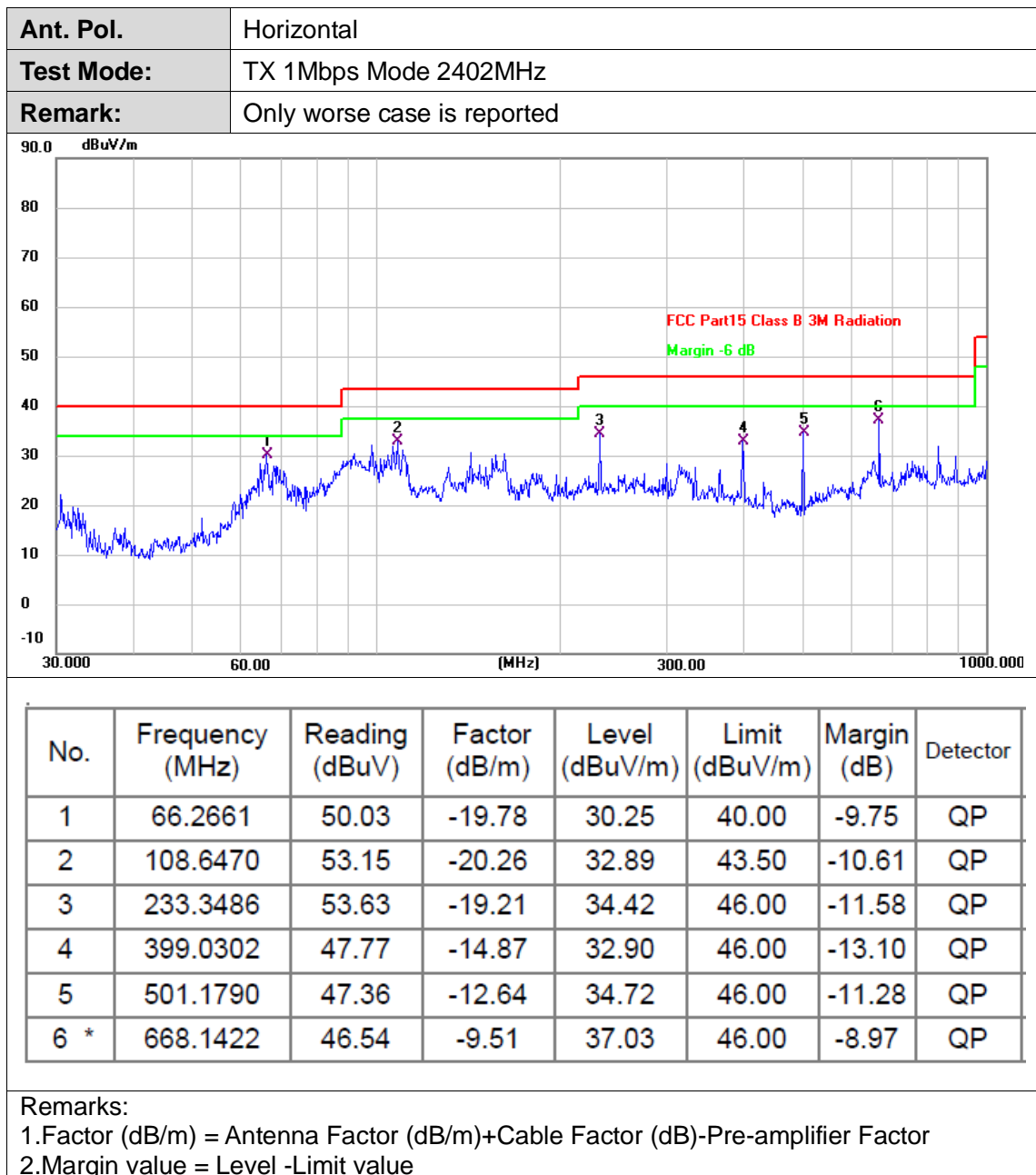
9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

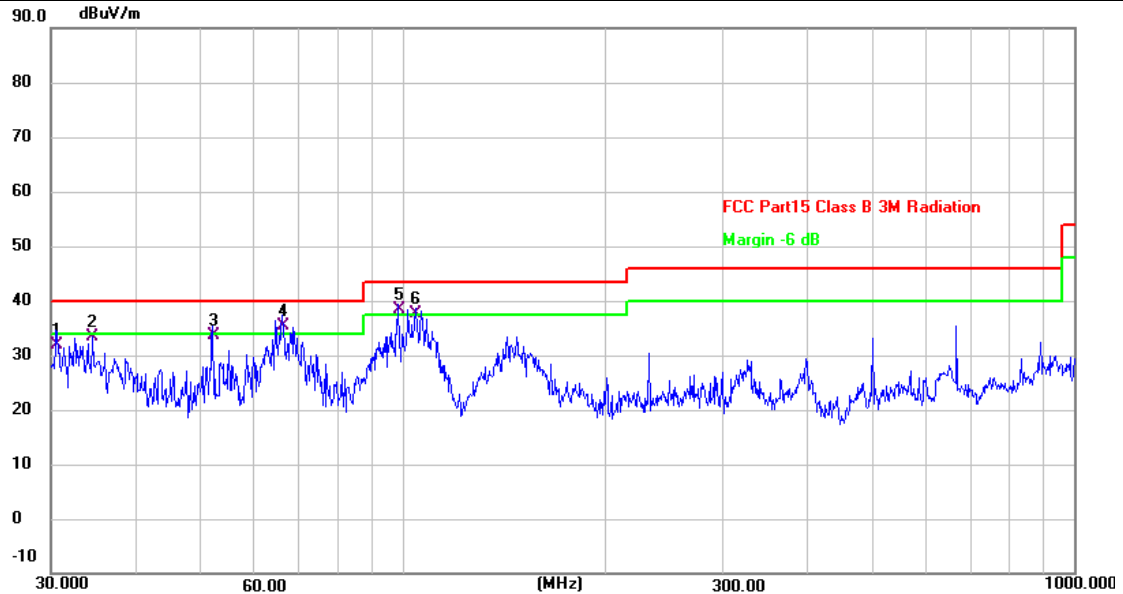


30MHz-1GHz

Original test data:



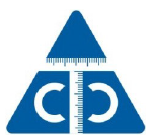
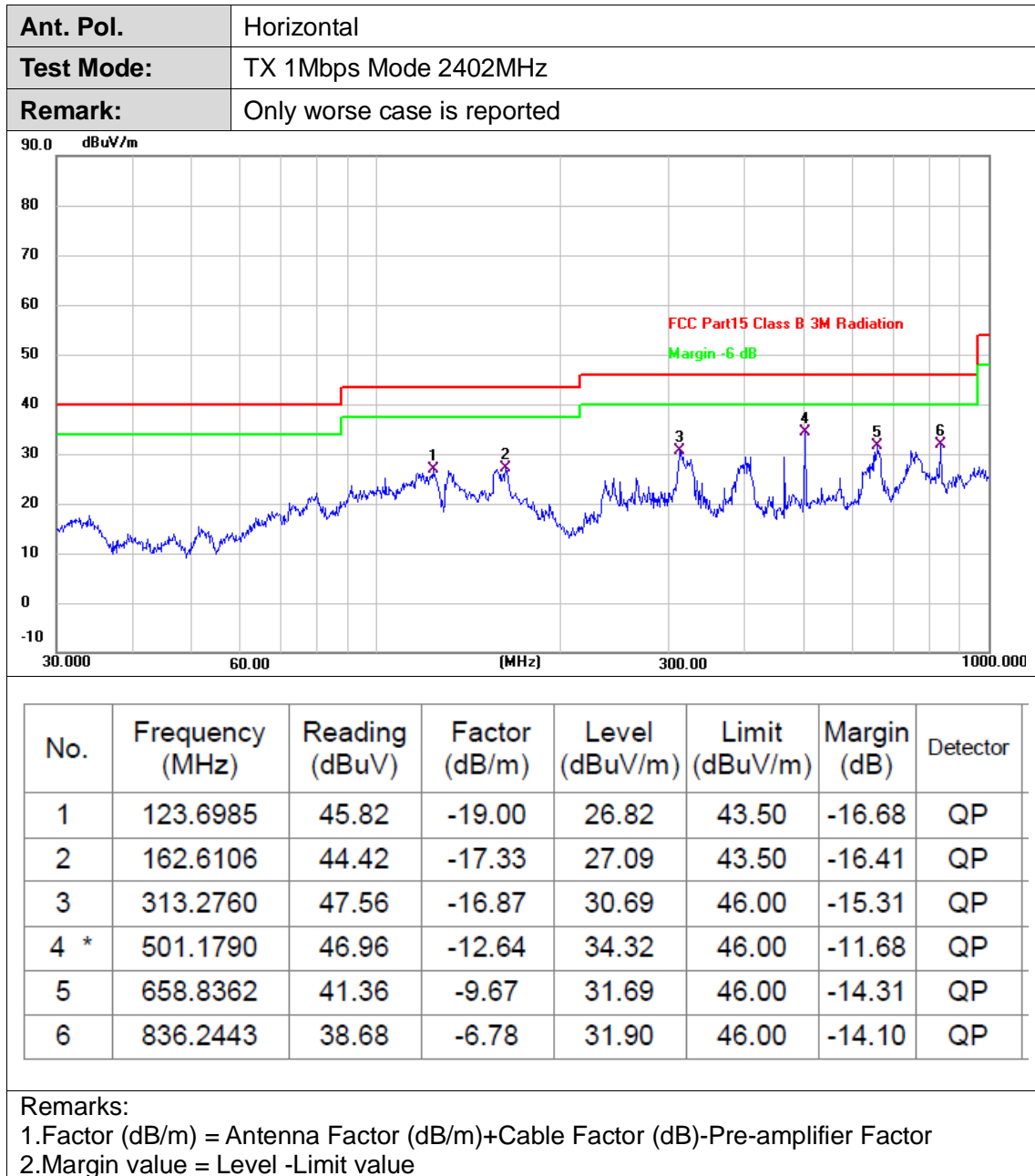
Ant. Pol.	Vertical
Test Mode:	TX 1Mbps Mode 2402MHz
Remark:	Only worse case is reported



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.5306	50.07	-18.22	31.85	40.00	-8.15	QP
2	34.6385	51.33	-18.07	33.26	40.00	-6.74	QP
3	52.2079	51.50	-17.86	33.64	40.00	-6.36	QP
4 *	66.2662	55.22	-19.78	35.44	40.00	-4.56	QP
5 !	98.4866	59.38	-20.98	38.40	43.50	-5.10	QP
6 !	104.5361	58.05	-20.54	37.51	43.50	-5.99	QP

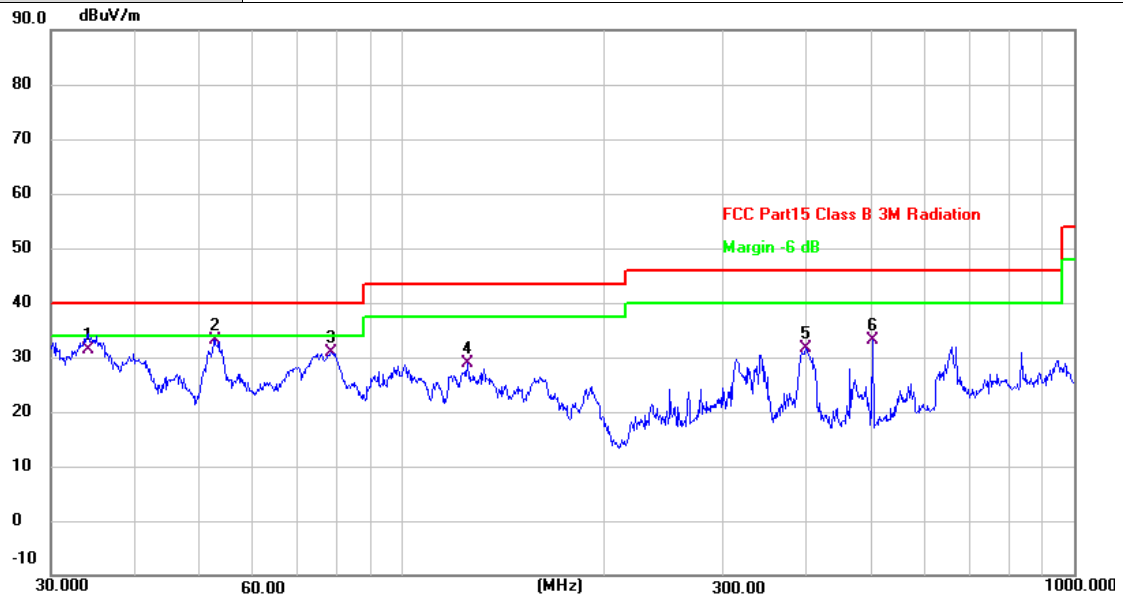
Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value

**New test data:**



Ant. Pol.	Vertical
Test Mode:	TX 1Mbps Mode 2402MHz
Remark:	Only worse case is reported



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	34.1560	49.49	-18.09	31.40	40.00	-8.60	QP
2 *	52.5753	51.09	-17.91	33.18	40.00	-6.82	QP
3	78.4133	52.65	-21.78	30.87	40.00	-9.13	QP
4	125.0065	47.88	-18.88	29.00	43.50	-14.50	QP
5	399.0302	46.54	-14.87	31.67	46.00	-14.33	QP
6	501.1790	45.88	-12.64	33.24	46.00	-12.76	QP

Remarks:

- Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
- Margin value = Level -Limit value



Above 1GHz

Original test data:

Ant. Pol.	Horizontal						
Test Mode:	TX BLE 1Mbps Mode 2402MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	4803.711	31.27	2.16	33.43	54.00	-20.57	AVG
2	4803.950	42.69	2.16	44.85	74.00	-29.15	peak
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

Ant. Pol.	Vertical						
Test Mode:	TX BLE 1Mbps Mode 2402MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4803.617	41.85	2.16	44.01	74.00	-29.99	peak
2 *	4803.979	27.92	2.16	30.08	54.00	-23.92	AVG
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							



Ant. Pol.	Horizontal						
Test Mode:	TX BLE 1Mbps Mode 2440MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1 *	4879.653	33.37	2.31	35.68	54.00	-18.32	AVG
2	4880.515	43.52	2.31	45.83	74.00	-28.17	peak
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

Ant. Pol.	Vertical						
Test Mode:	TX BLE 1Mbps Mode 2440MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1 *	4879.505	26.00	2.31	28.31	54.00	-25.69	AVG
2	4879.877	40.63	2.31	42.94	74.00	-31.06	peak
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							



Ant. Pol.	Horizontal						
Test Mode:	TX BLE 1Mbps Mode 2480MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	4959.586	43.58	2.48	46.06	74.00	-27.94	peak
2 *	4959.775	32.29	2.48	34.77	54.00	-19.23	AVG
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

Ant. Pol.	Vertical						
Test Mode:	TX BLE 1Mbps Mode 2480MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1 *	4959.626	25.17	2.48	27.65	54.00	-26.35	AVG
2	4960.243	40.81	2.48	43.29	74.00	-30.71	peak
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

**New test data:**

Ant. Pol.	Horizontal						
Test Mode:	TX BLE 1Mbps Mode 2402MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	4803.888	47.43	-3.48	43.95	74.00	-30.05	peak
2 *	4803.965	36.72	-3.48	33.24	54.00	-20.76	AVG
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

Ant. Pol.	Vertical						
Test Mode:	TX BLE 1Mbps Mode 2402MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1 *	4803.958	33.54	-3.48	30.06	54.00	-23.94	AVG
2	4804.394	46.70	-3.48	43.22	74.00	-30.78	peak
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							



Ant. Pol.	Horizontal						
Test Mode:	TX BLE 1Mbps Mode 2440MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1 *	4879.970	38.77	-3.30	35.47	54.00	-18.53	AVG
2	4880.401	48.97	-3.30	45.67	74.00	-28.33	peak
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

Ant. Pol.	Vertical						
Test Mode:	TX BLE 1Mbps Mode 2440MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	4879.662	45.91	-3.30	42.61	74.00	-31.39	peak
2 *	4879.761	31.50	-3.30	28.20	54.00	-25.80	AVG
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							



Ant. Pol.	Horizontal						
Test Mode:	TX BLE 1Mbps Mode 2480MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	4959.913	48.97	-3.12	45.85	74.00	-28.15	peak
2 *	4960.042	37.34	-3.12	34.22	54.00	-19.78	AVG
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

Ant. Pol.	Vertical						
Test Mode:	TX BLE 1Mbps Mode 2480MHz						
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
No.	Frequency (MHz)	Reading (dBUV)	Factor (dB/m)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector
1	4959.527	46.09	-3.12	42.97	74.00	-31.03	peak
2 *	4959.974	30.16	-3.12	27.04	54.00	-26.96	AVG
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							