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GRGTEST®

TEST REPORT

Verified Code: 857880

Report No.:	E20200904990101-1-G2	Application No.:	E20200904990101
Client:	OnePlus Technology (Shenzhen) Co., Ltd.		
Address:	18C02,18C03,18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian Distict, Shenzhen,Guangdong, China		
Sample Description:	Watch		
Model:	W301GB		
Test Specification:	FCC 47 CFR Part 15 Subpart B RADIO FREQUENCY DEVICES: Subpart B—Unintentional Radiators		
Receipt Date:	2020-09-08		
Test Date:	2020-09-14 to 2021-03-16		
Issue Date:	2021-03-31		
Test Result:	Pass		
Prepared By: Test Engineer Xie Jiang	Reviewed By: Technical Manager Wu Haoming	Approved By: Manager John Lee	
Other Aspects:			
Note: This report instead the report E20200904990101-1-G1, and from the date of issuance of this report, the report which being replaced become invalid.			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable;			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			



DIRECTIONS OF TEST

- 1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.**
- 2. 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.**
- 3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.**

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1. TEST RESULT SUMMARY

Test Item	Test mode	Test Requirement	Test Method	Class / Severity	Test Result
Conduction Emission	mode 1 mode 2 mode 3	FCC 47 CFR Part 15 Subpart B	ANSI C63.4:2014	Meet standard limits	PASS
Radiated Emission	mode 1 mode 2 mode 3 mode 4 mode 5 mode 6	FCC 47 CFR Part 15 Subpart B	ANSI C63.4:2014	Meet standard limits	PASS

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: OnePlus Technology (Shenzhen) Co., Ltd.
Address: 18C02,18C03,18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian Distict, Shenzhen,Guangdong, China

2.2 MANUFACTURER

Name: OnePlus Technology (Shenzhen) Co., Ltd.
Address: 18C02,18C03,18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian Distict, Shenzhen,Guangdong, China

2.3 FACTORY

Name : Longcheer Electronic (HuiZhou) Co., Ltd.
Address : Building 1, No.28 (west) Hechang Six Road, Zhongkai High-Tech Zone, Huizhou, Guangdong,China.

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: Watch
Model No.: W301GB
Adding Model: W501GB

The difference between Model: W301GB and Model: W501GB are the screen TP and the material of the middle frame, and the two watches are the same software, but in order to distinguish, the software version numbers of the two watches are named differently.:
Models discrepancy: For W301GB, the screen TP is aluminosilicate glass and the middle frame is stainless steel. And the software version number is W301GB_11_A.01.
For W501GB, the screen TP is sapphire glass and the middle frame is cobalt alloy. And the software version number is W501GB_11_A.01.
Except for the above, all others is the same.

Trade Name: ONEPLUS
Work Frequency: 2402MHz~2480MHz
Power Supply: DC3.87V power supplied by battery
DC5V power supplied by adapter
Rechargeable Li-ion Battery/XE202
Battery specification: Limited Charge Voltage:4.45Vdc
Rated Capacity: 402mAh/1.56Wh
Nominal Voltage:3.87Vdc
Typical Capacity: 410mAh/1.59Wh

Sample submitting way: ☒ Provided by customer ☐ Sampling

Sample No: E20200904990101-0001, E20200904990101-0012,
E20200904990101-0015

Note: /

2.5 TEST MODE

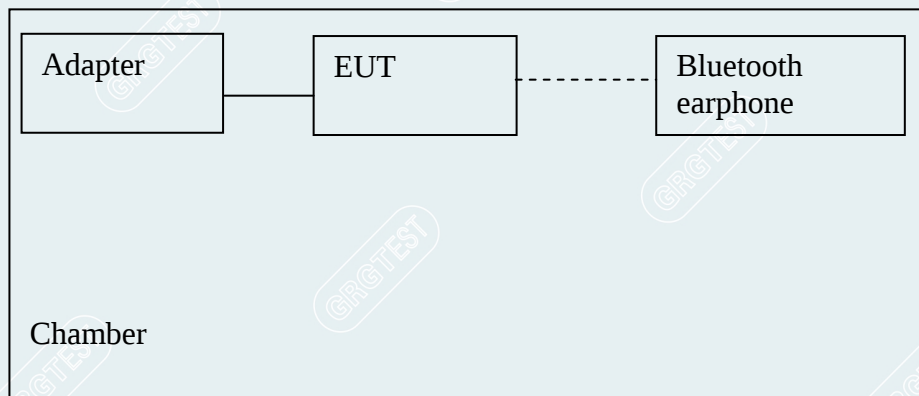
Mode No.	Description of the modes
Mode 1	The EUT is charged through the adapter and plays 1kHz
Mode 2	The EUT is connected to the phone via Bluetooth while it is charging
Mode 3	The EUT turns on the GPS function while charging
Mode 4	The EUT plays 1kHz.
Mode 5	The EUT is connected to the phone via Bluetooth
Mode 6	The EUT turns on the GPS function

2.6 LOCAL SUPPORTIVE INSTRUMENTS

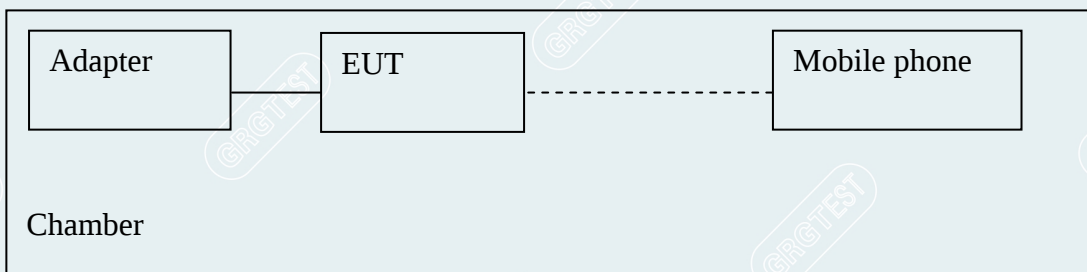
Name of Equipment	Manufacturer	Model	Serial Number	Note
Adapter	APPLE	A1443	/	/
Mobile phone	OPPO	PDKM00	7HQKYL8DJ BS48LDQ	/
EDIFIER W280BT Headset	EDIFIER	W280BT	/	/
Vector Signalgenerator	R&S	SMBV100B	101965	2021-09-22
Induction Antenna	/	/	/	/
Cable				
Coxial cable	/	/	/	Unshielded, 6.00m

2.7 CONFIGURATION OF SYSTEM UNDER TEST

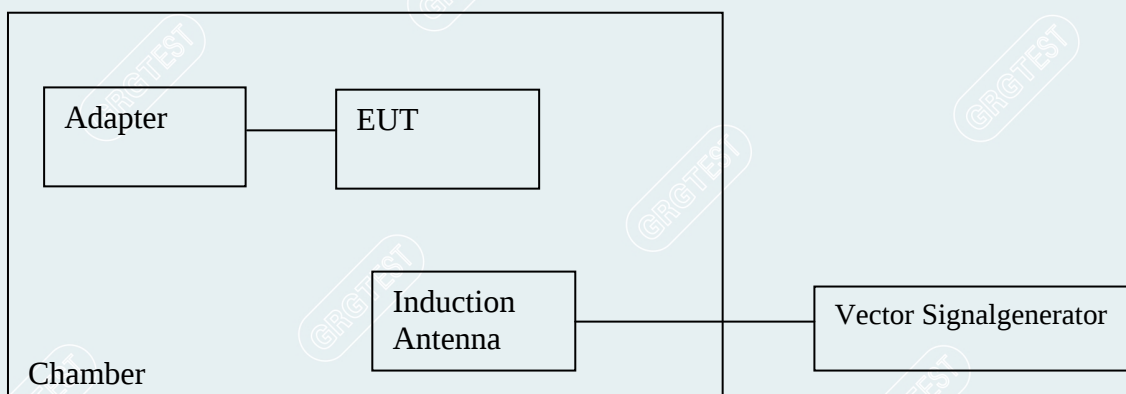
Mode 1



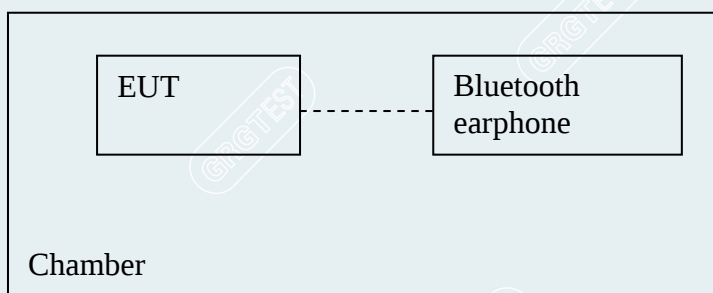
Mode 2



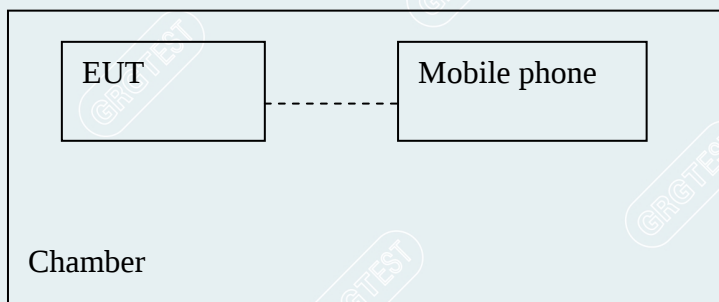
Mode 3



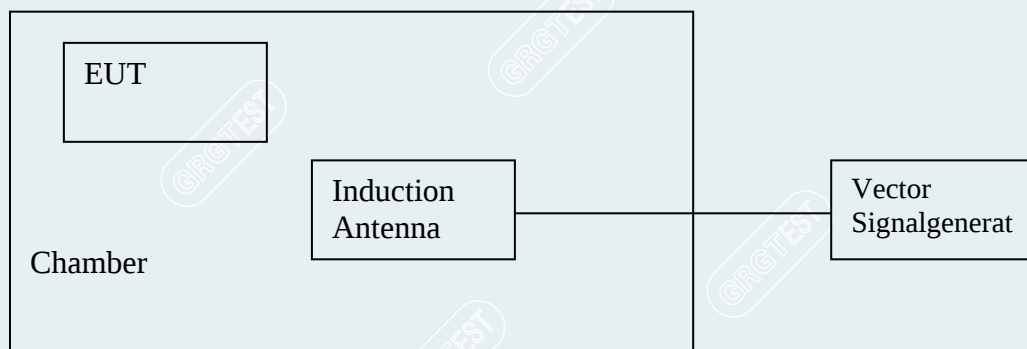
Mode 4



Mode 5



Mode 6



3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add.: No.1301 Guanguang Road Xinlan Community, Guanlan Street, Longhua District Shenzhen, 518110, People's Republic of China.
P.C.: 518000
Tel : 0755-61180008
Fax: 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA A2LA(Certificate #:2861.01)
China CNAS(L0446)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada Industry Canada
USA FCC

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.grgtest.com>

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conduction Emission	9 kHz ~ 150 kHz	2.2 dB
	150 kHz ~ 30 MHz	2.8 dB
Radiated Emission (3m)	30MHz~200MHz(H)	4.3 dB
	200MHz~1000MHz(H)	4.5 dB
	30MHz~200MHz(V)	4.4 dB
	200MHz~1000MHz(V)	4.5 dB
	1GHz~18GHz(H)	4.5 dB
	1GHz~18GHz(V)	4.5 dB

4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conduction Emission				
Test S/W	EZ	CCS-3A1-CE	/	/
EMI Receiver	R&S	ESCI	100783	2021-10-08
LISN(EUT)	R&S	ENV216	101543	2022-03-21
Radiated Emission (Below 1GHz)				
Test S/W	EZ	CCS-A-2ANT	/	/
Test Receiver	R&S	ESCI	100145	2021-10-07
Preamplifier	EMEC	EM330	/	2021-04-04
Bi-log Antenna	TESEQ	CBL6143A	26039	2021-11-25
Radiated Emission (Above 1GHz)				
Test S/W	Tonscend	JS32-RE	/	/
Spectrum analyzer	Agilent	N9010A	MY52221469	2021-05-16
Preamplifier	Tonscend	TAP01018048	AP20E8060075	2021-06-28
Horn Antenna	Schwarzbeck	BBHA 9120D	02143	2021-12-17

5. EMISSION TEST

5.1 CONDUCTION EMISSION MEASUREMENT

5.1.1 LIMITS

Frequency range (MHz)	Class B Limits (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 - 56	56 - 46
0.50 ~ 5	56	46
5 ~ 30	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

(3) All emanations from a class B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.1.2 TEST PROCEDURE

Procedure of Preliminary Test

- The EUT and Support equipment, if needed, was set up as per the test configuration to simulate typical usage per the user's manual. When 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 C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment received AC120V/60Hz main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power received from a second LISN.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

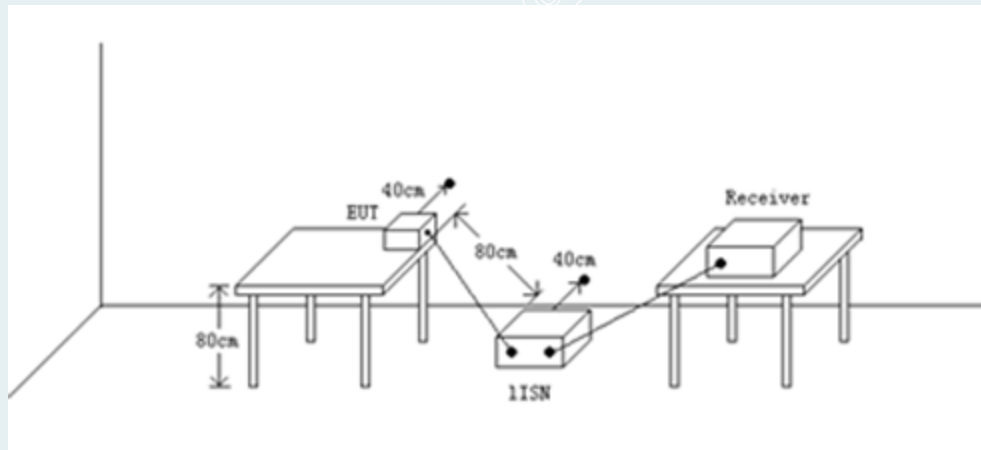
Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest

emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

- The test data of the worst-case condition(s) was recorded.

5.1.3 TEST SETUP



5.1.4 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	24.60	10.97	19.90	44.50	30.87	56.00	46.00	-11.50	-15.13	Pass

Factor = Insertion loss of LISN + Cable Loss

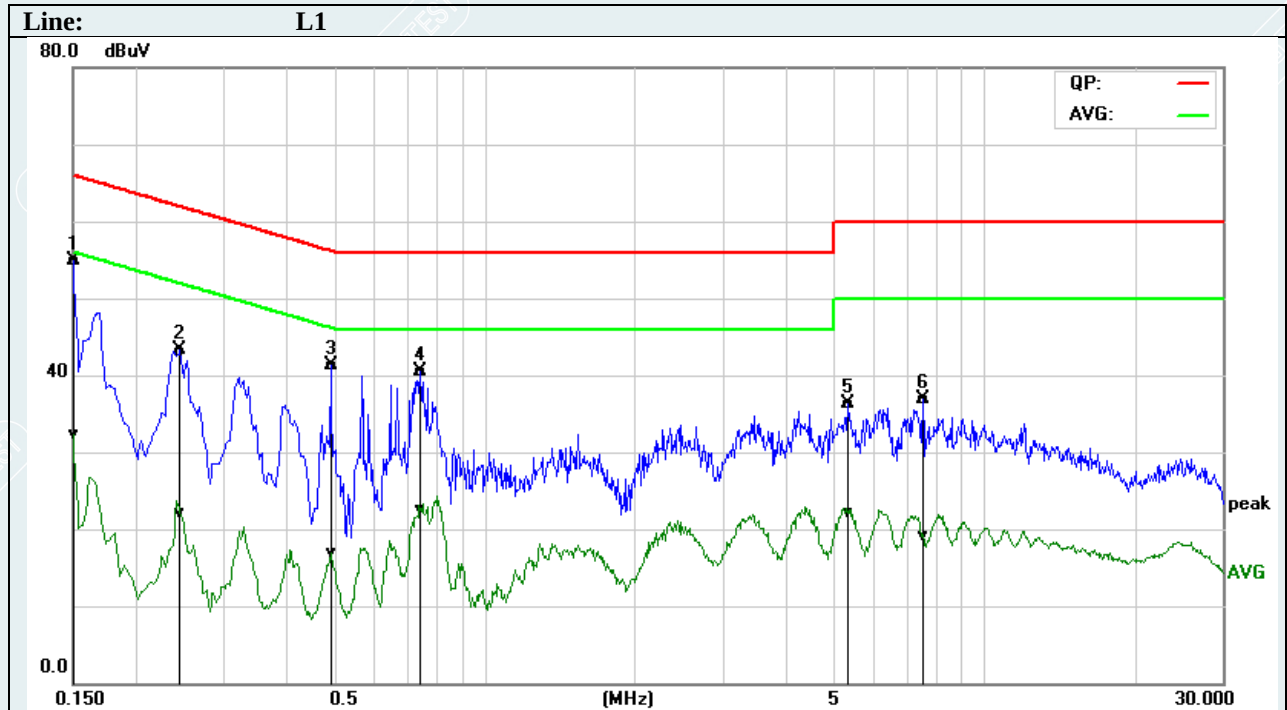
Result = Quasi-peak Reading/ Average Reading + Factor

Limit = Limit stated in standard

Margin = Result (dBuV) – Limit (dBuV)

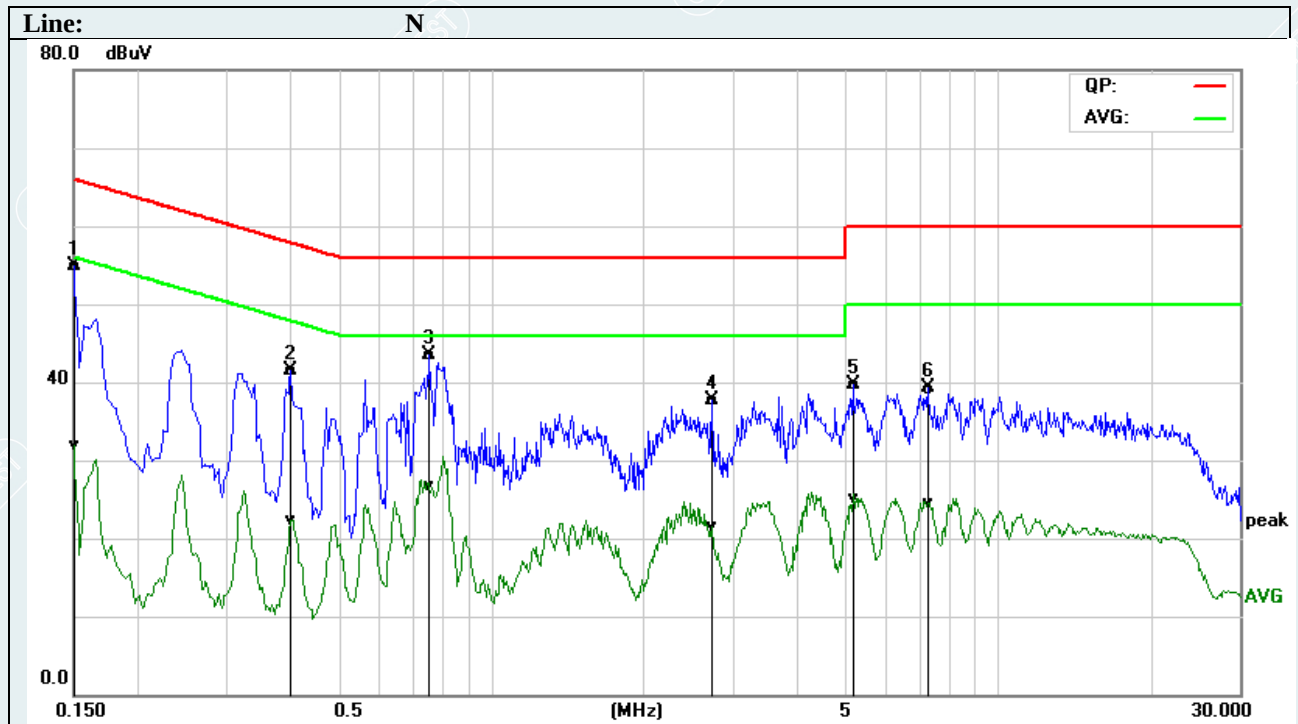
5.1.5 TEST RESULTS

EUT Name	Watch	Model	W301GB
Environmental Conditions	23.6°C/47%RH/100kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-14	Sample No.	E20200904990101-0001



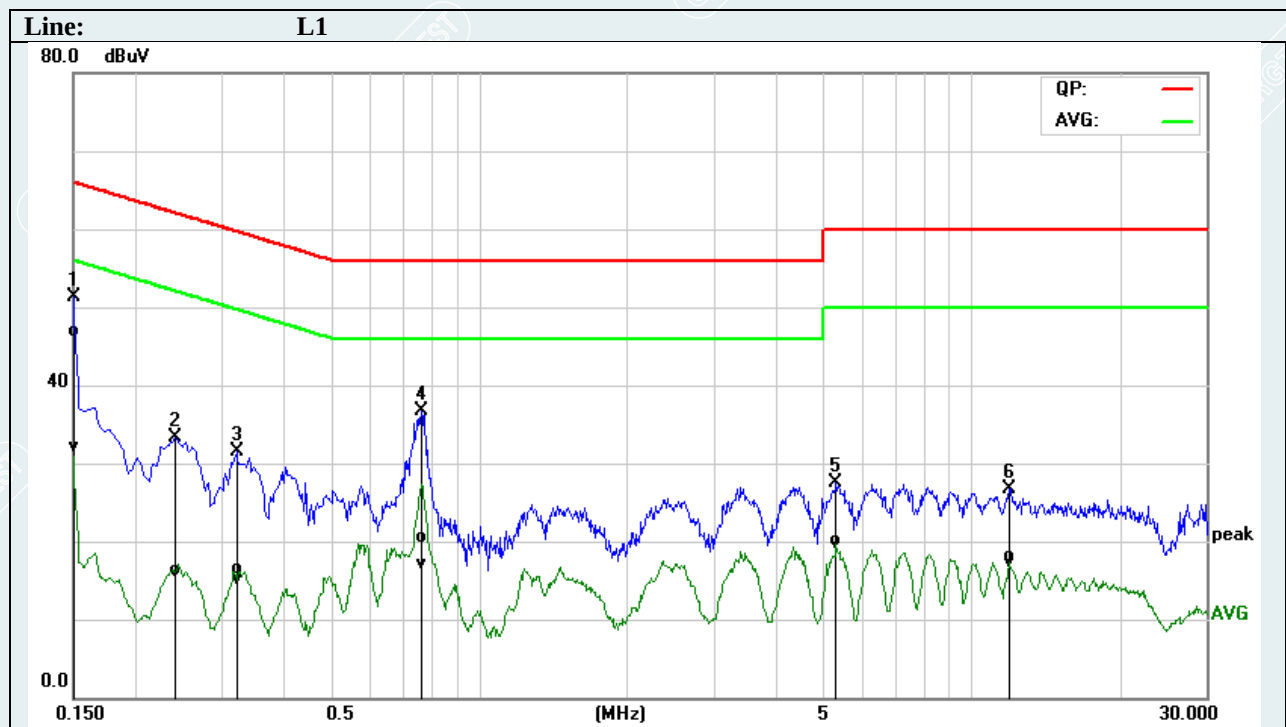
No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	45.29	22.70	9.67	54.96	32.37	65.99	56.00	-11.03	-23.63	Pass
2	0.2460	33.52	12.37	9.68	43.20	22.05	61.89	51.89	-18.69	-29.84	Pass
3	0.4940	31.65	7.19	9.67	41.32	16.86	56.10	46.10	-14.78	-29.24	Pass
4	0.7460	30.82	12.86	9.68	40.50	22.54	56.00	46.00	-15.50	-23.46	Pass
5	5.3460	26.46	12.39	9.80	36.26	22.19	60.00	50.00	-23.74	-27.81	Pass
6	7.5460	26.99	9.38	9.82	36.81	19.20	60.00	50.00	-23.19	-30.80	Pass

EUT Name	Watch	Model	W301GB
Environmental Conditions	23.6°C/47%RH/100kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-14	Sample No.	E20200904990101-0001



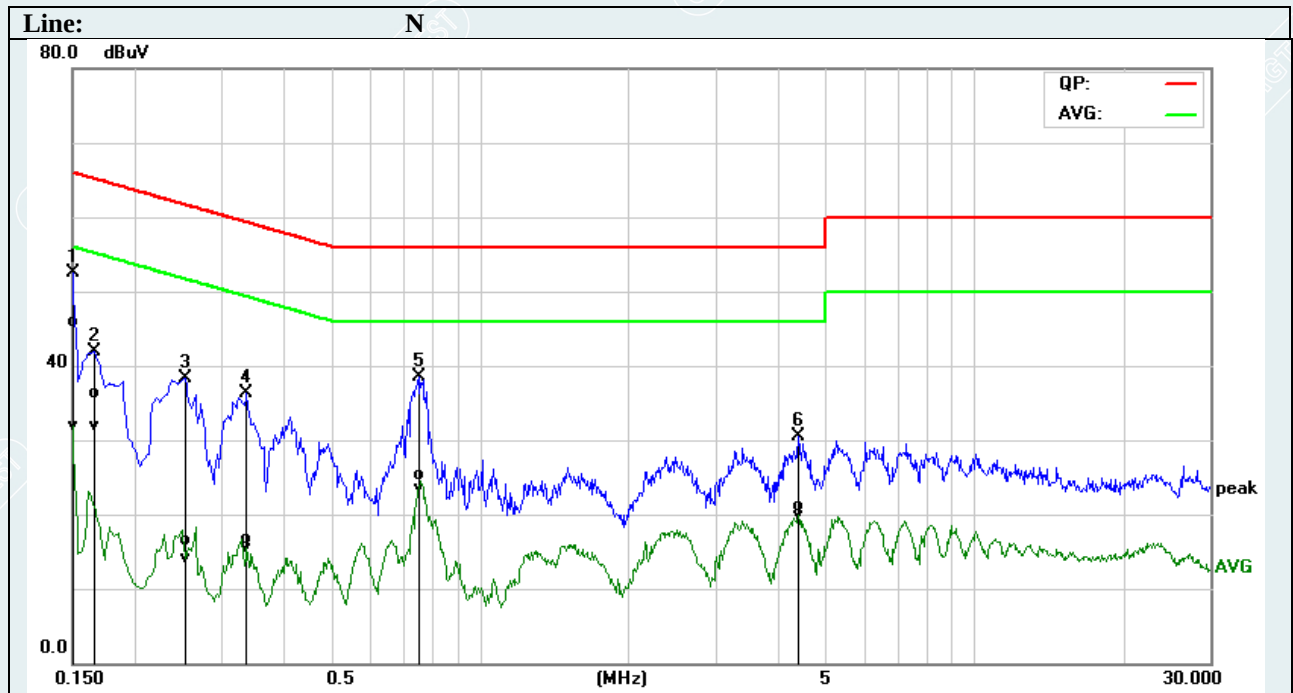
No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	45.28	22.29	9.67	54.95	31.96	65.99	56.00	-11.04	-24.04	Pass
2	0.4020	31.92	12.60	9.67	41.59	22.27	57.81	47.81	-16.22	-25.54	Pass
3	0.7580	33.80	17.00	9.68	43.48	26.68	56.00	46.00	-12.52	-19.32	Pass
4	2.7260	27.99	11.82	9.75	37.74	21.57	56.00	46.00	-18.26	-24.43	Pass
5	5.1900	30.00	15.37	9.80	39.80	25.17	60.00	50.00	-20.20	-24.83	Pass
6	7.2700	29.38	14.63	9.82	39.20	24.45	60.00	50.00	-20.80	-25.55	Pass

EUT Name	Watch	Model	W501GB
Environmental Conditions	24.8°C/57%RH/101kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Chen Xiacong
Test Date	2021-03-14	Sample No.	E20200904990101-0015



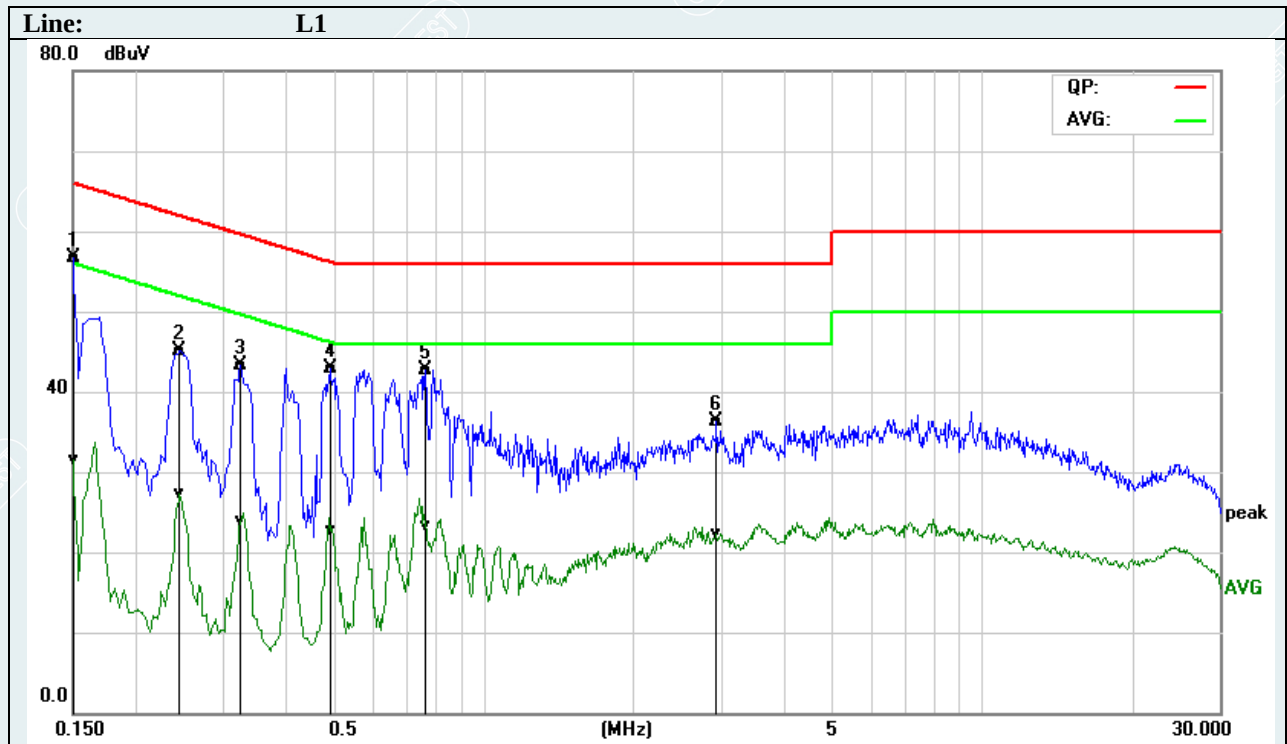
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	37.29	22.49	9.61	46.90	32.10	65.99	56.00	-19.09	-23.90	Pass
2	0.2420	6.69	6.47	9.61	16.30	16.08	62.02	52.03	-45.72	-35.95	Pass
3	0.3220	6.89	5.48	9.61	16.50	15.09	59.65	49.66	-43.15	-34.57	Pass
4	0.7660	10.99	7.59	9.61	20.60	17.20	56.00	46.00	-35.40	-28.80	Pass
5	5.3260	10.44	10.11	9.66	20.10	19.77	60.00	50.00	-39.90	-30.23	Pass
6	11.9819	8.44	7.51	9.76	18.20	17.27	60.00	50.00	-41.80	-32.73	Pass

EUT Name	Watch	Model	W501GB
Environmental Conditions	24.8°C/57%RH/101kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Chen Xiacong
Test Date	2021-03-14	Sample No.	E20200904990101-0015



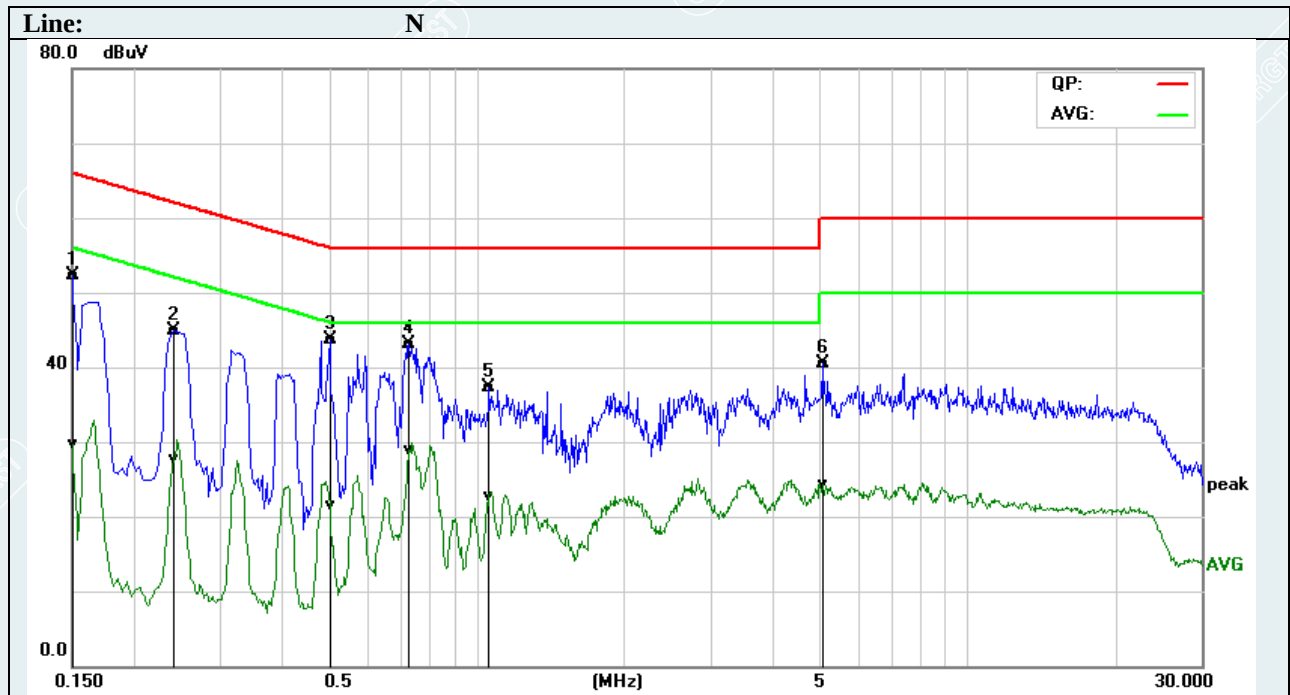
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	36.30	22.35	9.60	45.90	31.95	65.99	56.00	-20.09	-24.05	Pass
2	0.1660	26.80	22.35	9.60	36.40	31.95	65.15	55.16	-28.75	-23.21	Pass
3	0.2540	7.00	4.58	9.60	16.60	14.18	61.62	51.63	-45.02	-37.45	Pass
4	0.3379	7.20	5.96	9.60	16.80	15.56	59.25	49.25	-42.45	-33.69	Pass
5	0.7539	15.79	13.80	9.61	25.40	23.41	56.00	46.00	-30.60	-22.59	Pass
6	4.4260	11.44	10.22	9.66	21.10	19.88	56.00	46.00	-34.90	-26.12	Pass

EUT Name	Watch	Model	W301GB
Environmental Conditions	23.6°C/47%RH/100kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-14	Sample No.	E20200904990101-0001



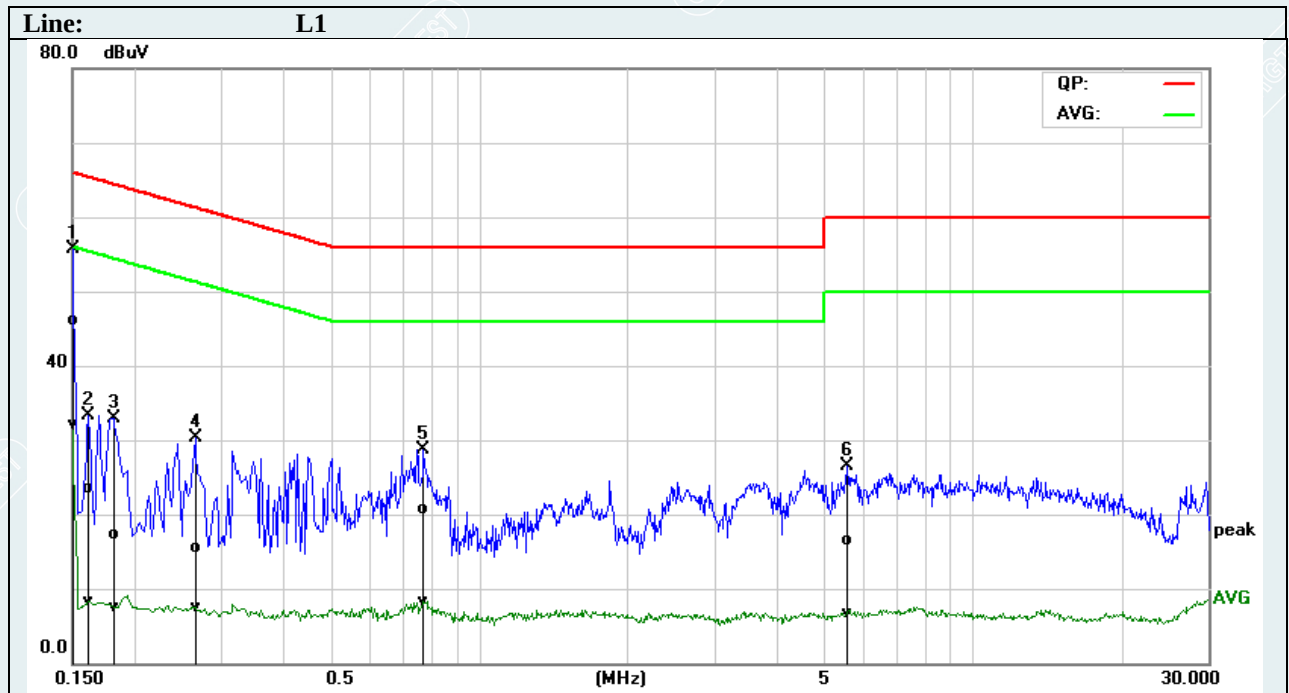
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	46.94	21.91	9.67	56.61	31.58	65.99	56.00	-9.38	-24.42	Pass
2	0.2460	35.49	17.68	9.68	45.17	27.36	61.89	51.89	-16.72	-24.53	Pass
3	0.3260	33.61	14.18	9.68	43.29	23.86	59.55	49.55	-16.26	-25.69	Pass
4	0.4940	33.24	13.03	9.67	42.91	22.70	56.10	46.10	-13.19	-23.40	Pass
5	0.7660	33.07	13.71	9.68	42.75	23.39	56.00	46.00	-13.25	-22.61	Pass
6	2.9460	26.59	12.46	9.76	36.35	22.22	56.00	46.00	-19.65	-23.78	Pass

EUT Name	Watch	Model	W301GB
Environmental Conditions	23.6°C/47%RH/100kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-14	Sample No.	E20200904990101-0001



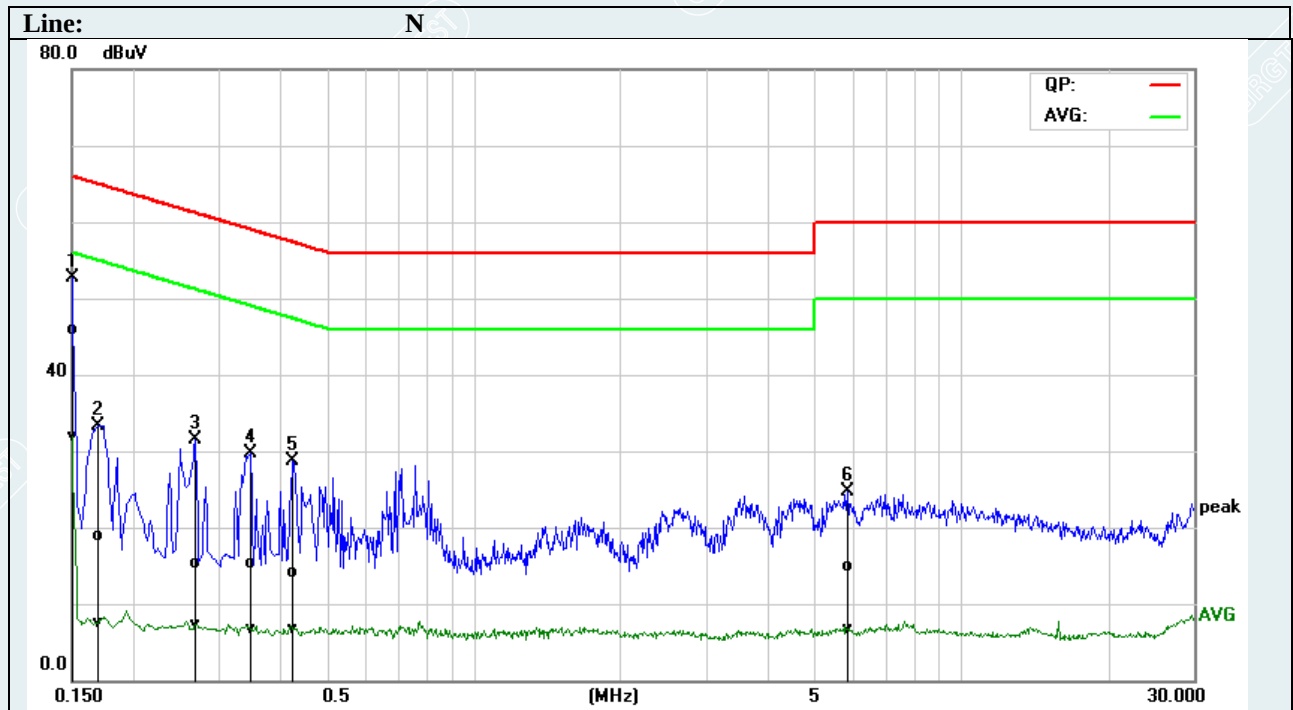
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1500	42.64	19.97	9.67	52.31	29.64	65.99	56.00	-13.68	-26.36	Pass
2	0.2420	35.22	18.02	9.68	44.90	27.70	62.02	52.03	-17.12	-24.33	Pass
3*	0.5020	33.99	11.84	9.67	43.66	21.51	56.00	46.00	-12.34	-24.49	Pass
4	0.7300	33.45	19.20	9.68	43.13	28.88	56.00	46.00	-12.87	-17.12	Pass
5	1.0620	27.54	12.97	9.71	37.25	22.68	56.00	46.00	-18.75	-23.32	Pass
6	5.0820	30.70	14.52	9.80	40.50	24.32	60.00	50.00	-19.50	-25.68	Pass

EUT Name	Watch	Model	W501GB
Environmental Conditions	24.8°C/57%RH/101kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	Chen Xiacong
Test Date	2021-03-14	Sample No.	E20200904990101-0015



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	36.59	22.49	9.61	46.20	32.10	65.99	56.00	-19.79	-23.90	Pass
2	0.1620	13.89	-1.34	9.61	23.50	8.27	65.36	55.36	-41.86	-47.09	Pass
3	0.1819	7.69	-2.02	9.61	17.30	7.59	64.39	54.40	-47.09	-46.81	Pass
4	0.2660	5.89	-2.19	9.61	15.50	7.42	61.24	51.24	-45.74	-43.82	Pass
5	0.7740	11.19	-1.28	9.61	20.80	8.33	56.00	46.00	-35.20	-37.67	Pass
6	5.5700	6.93	-2.87	9.67	16.60	6.80	60.00	50.00	-43.40	-43.20	Pass

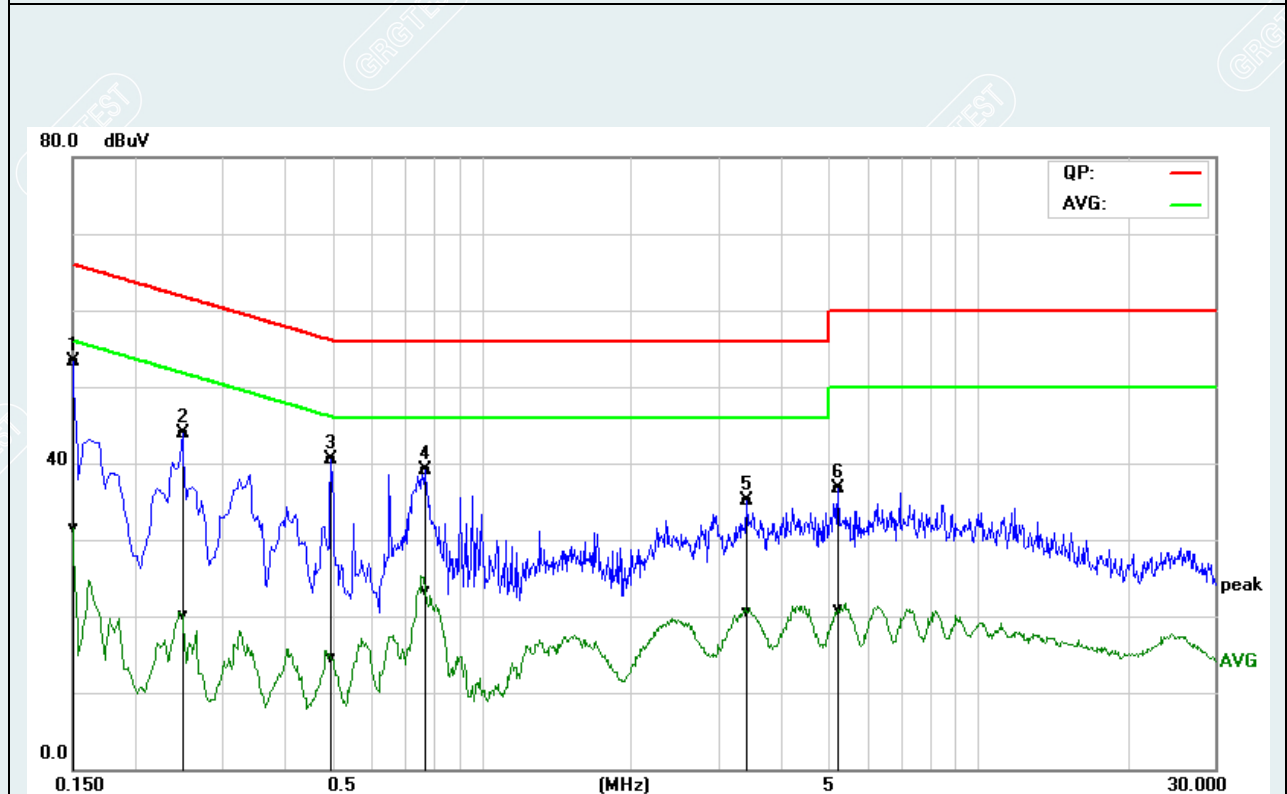
EUT Name	Watch	Model	W501GB
Environmental Conditions	24.8°C/57%RH/101kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	Chen Xiacong
Test Date	2021-03-14	Sample No.	E20200904990101-0015



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	36.40	22.28	9.60	46.00	31.88	65.99	56.00	-19.99	-24.12	Pass
2	0.1700	9.30	-2.03	9.60	18.90	7.57	64.96	54.96	-46.06	-47.39	Pass
3	0.2700	5.63	-2.33	9.60	15.23	7.27	61.12	51.12	-45.89	-43.85	Pass
4	0.3500	5.80	-2.94	9.60	15.40	6.66	58.96	48.96	-43.56	-42.30	Pass
5	0.4260	4.58	-2.93	9.62	14.20	6.69	57.33	47.33	-43.13	-40.64	Pass
6	5.8420	5.23	-3.05	9.67	14.90	6.62	60.00	50.00	-45.10	-43.38	Pass

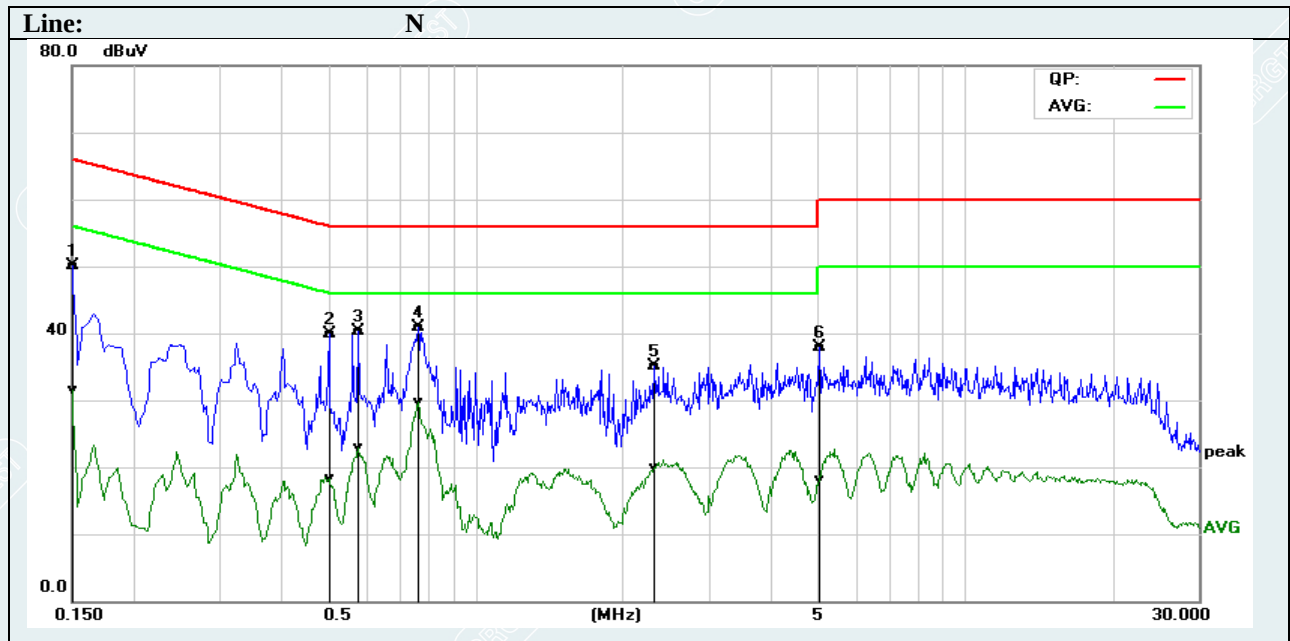
EUT Name	Watch	Model	W301GB
Environmental Conditions	23.6°C/47%RH/100kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-14	Sample No.	E20200904990101-0001

Line: L1



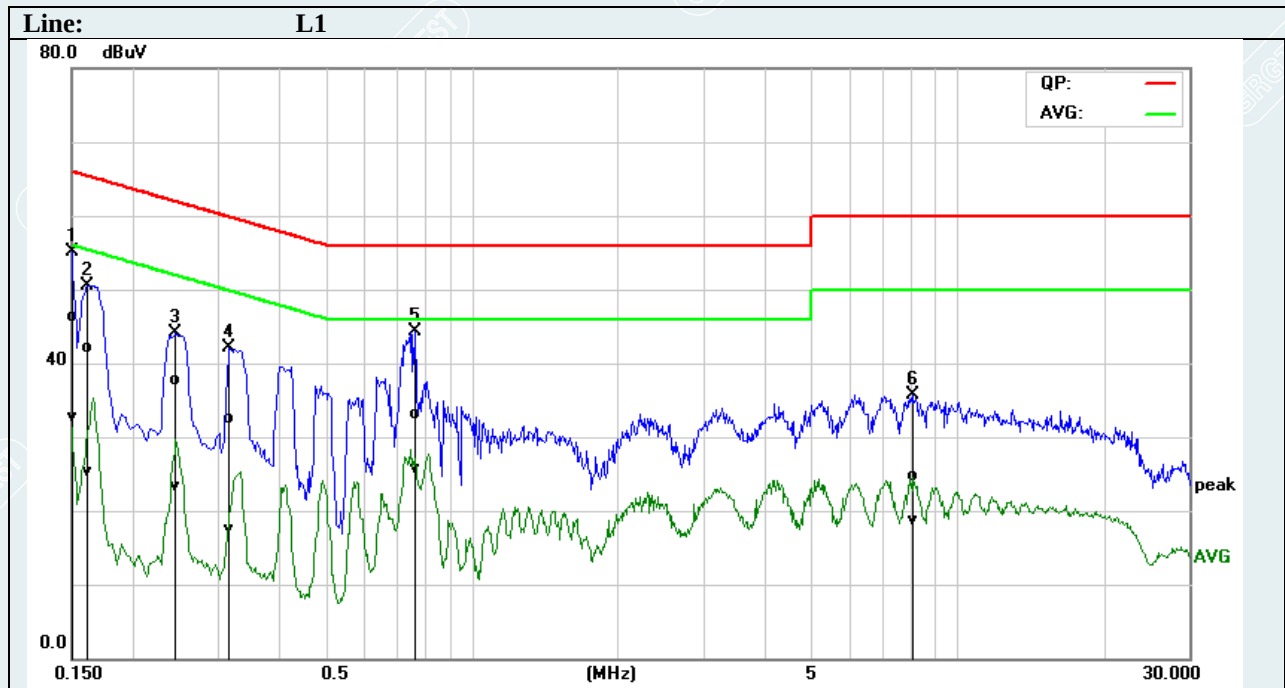
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1*	0.1500	43.65	21.86	9.67	53.32	31.53	65.99	56.00	-12.67	-24.47	Pass
2	0.2500	34.24	10.42	9.68	43.92	20.10	61.75	51.76	-17.83	-31.66	Pass
3	0.4980	30.87	4.78	9.67	40.54	14.45	56.03	46.03	-15.49	-31.58	Pass
4	0.7700	29.51	13.71	9.68	39.19	23.39	56.00	46.00	-16.81	-22.61	Pass
5	3.4260	25.36	10.70	9.76	35.12	20.46	56.00	46.00	-20.88	-25.54	Pass
6	5.2380	26.89	11.20	9.80	36.69	21.00	60.00	50.00	-23.31	-29.00	Pass

EUT Name	Watch	Model	W301GB
Environmental Conditions	23.6°C/47%RH/100kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-14	Sample No.	E20200904990101-0001



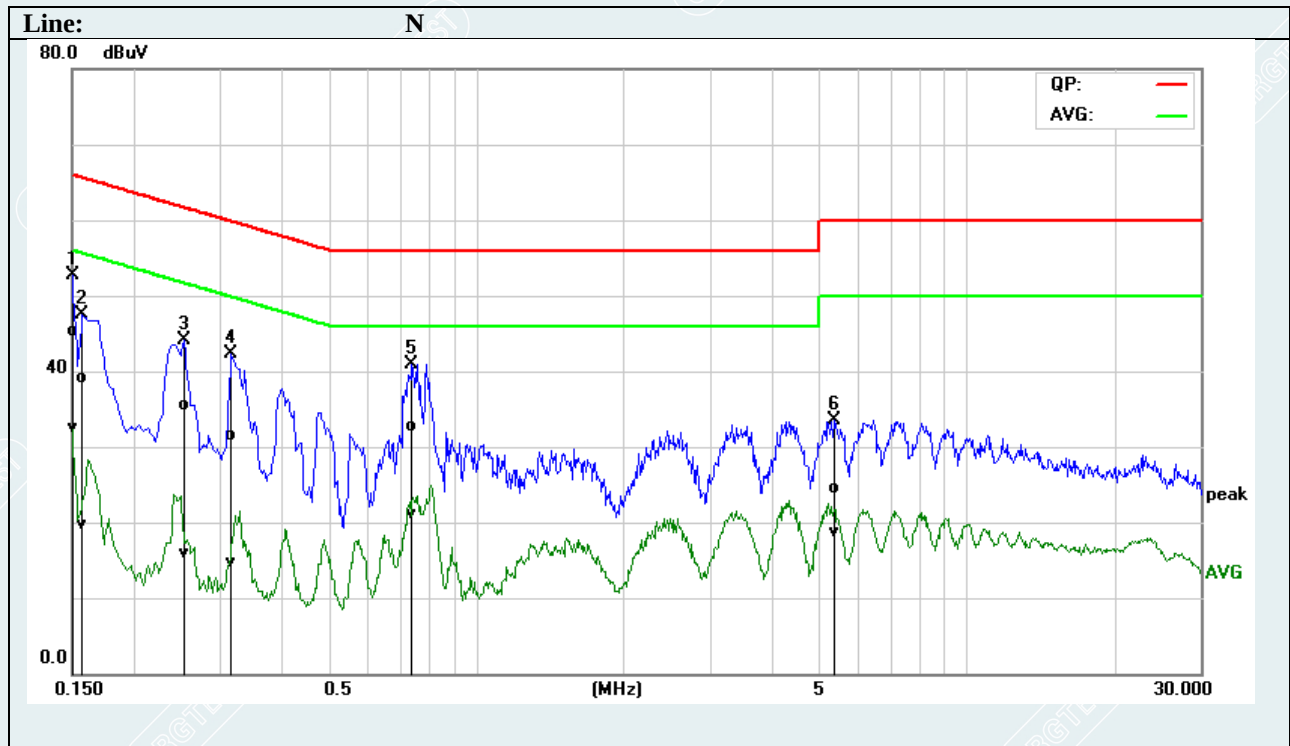
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1500	40.52	21.77	9.67	50.19	31.44	65.99	56.00	-15.80	-24.56	Pass
2	0.5020	30.28	8.71	9.67	39.95	18.38	56.00	46.00	-16.05	-27.62	Pass
3	0.5780	30.63	13.18	9.67	40.30	22.85	56.00	46.00	-15.70	-23.15	Pass
4*	0.7660	31.28	19.98	9.68	40.96	29.66	56.00	46.00	-15.04	-16.34	Pass
5	2.3220	25.32	10.07	9.74	35.06	19.81	56.00	46.00	-20.94	-26.19	Pass
6	5.0580	28.15	8.34	9.80	37.95	18.14	60.00	50.00	-22.05	-31.86	Pass

EUT Name	Watch	Model	W501GB
Environmental Conditions	24.8°C/57%RH/101kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	Chen Xiacong
Test Date	2021-03-14	Sample No.	E20200904990101-0015



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	36.69	23.19	9.61	46.30	32.80	65.99	56.00	-19.69	-23.20	Pass
2	0.1620	32.59	15.79	9.61	42.20	25.40	65.36	55.36	-23.16	-29.96	Pass
3	0.2460	28.19	13.69	9.61	37.80	23.30	61.89	51.89	-24.09	-28.59	Pass
4	0.3180	22.99	7.99	9.61	32.60	17.60	59.76	49.76	-27.16	-32.16	Pass
5	0.7660	23.49	16.19	9.61	33.10	25.80	56.00	46.00	-22.90	-20.20	Pass
6	8.0940	15.09	9.09	9.71	24.80	18.80	60.00	50.00	-35.20	-31.20	Pass

EUT Name	Watch	Model	W501GB
Environmental Conditions	24.8°C/57%RH/101kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	Chen Xiacong
Test Date	2021-03-14	Sample No.	E20200904990101-0015



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	35.80	23.00	9.60	45.40	32.60	65.99	56.00	-20.59	-23.40	Pass
2	0.1580	29.60	10.10	9.60	39.20	19.70	65.56	55.57	-26.36	-35.87	Pass
3	0.2540	25.90	6.30	9.60	35.50	15.90	61.62	51.63	-26.12	-35.73	Pass
4	0.3180	21.90	5.10	9.60	31.50	14.70	59.76	49.76	-28.26	-35.06	Pass
5	0.7420	23.19	11.59	9.61	32.80	21.20	56.00	46.00	-23.20	-24.80	Pass
6	5.3780	14.94	9.04	9.66	24.60	18.70	60.00	50.00	-35.40	-31.30	Pass

5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS

Below 1G

Frequency range (MHz)	Class B Limits dB(μ V/m)
	Distance: 3m
$30 \leq F \leq 88$	40.00
$88 \leq F \leq 216$	43.50
$216 \leq F \leq 960$	46.00
$960 \leq F \leq 1000$	54.00

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m)

Above 1G

Frequency range (MHz)	Class B Limits (dB μ V)	
	Distance: 3m	
	Peak	Average
$1000 \leq F \leq 18000$	74	54

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

According to FCC Part 15.33 (b), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or in which the device operated or tunes (MHz)	Upper frequency of measurement range (MHz)
$F \leq 1.705$	30
$1.705 \leq F \leq 108$	1000
$108 \leq F \leq 500$	2000
$500 \leq F \leq 1000$	5000
$1000 \leq F$	5th harmonic of the highest frequency or 40GHz, whichever is lower

5.2.2 TEST PROCEDURE

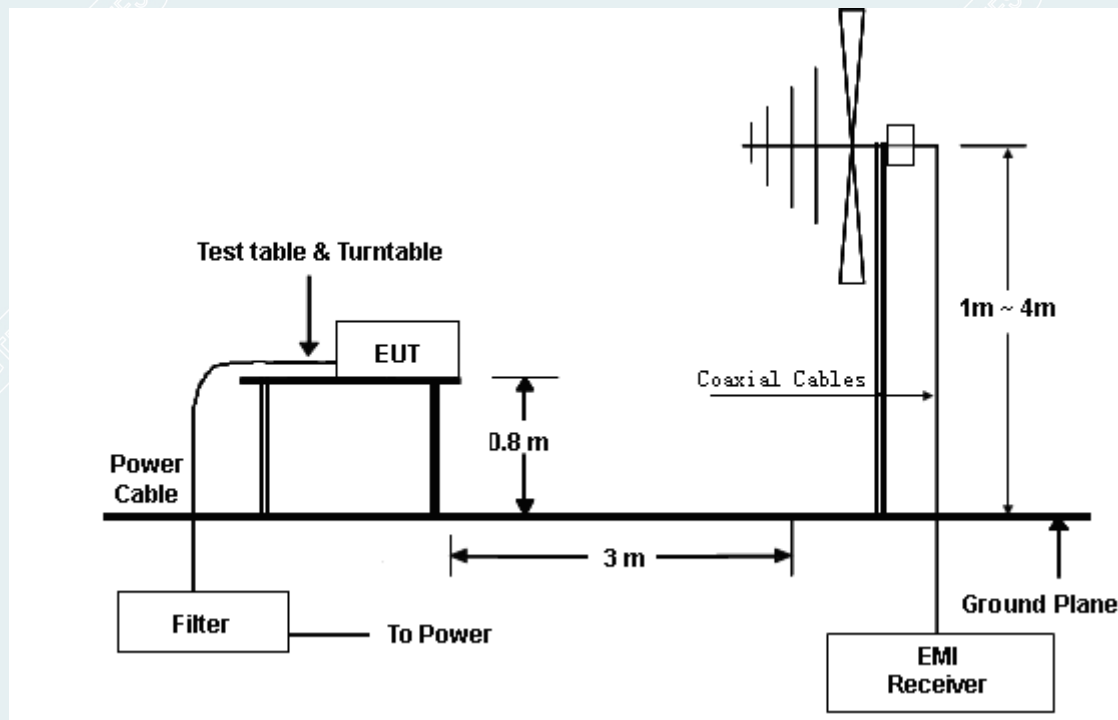
Procedure of Preliminary Test

- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC120V/60Hz power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

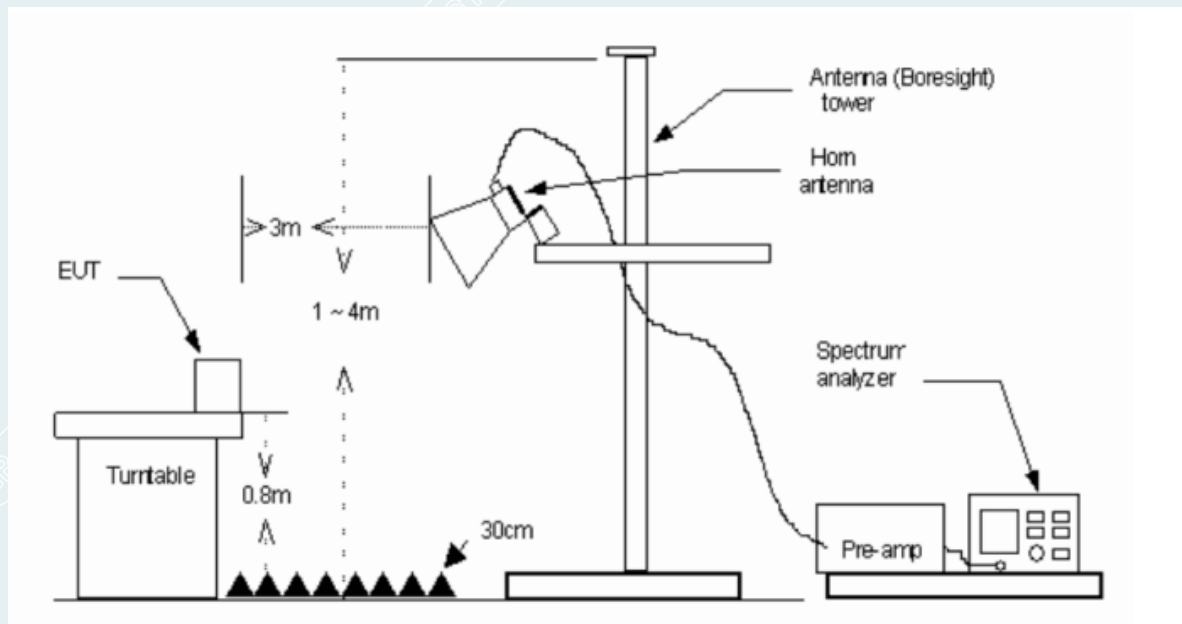
Procedure of Final Test

- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 or 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. (For Below 1GHz) or Peak/Average (For Above 1GHz) reading is presented.
- The test data of the worst-case condition(s) was recorded.

5.2.3 TEST SETUP



Below the frequency of 1GHz



Above the frequency of 1GHz(1GHz-18GHz)

5.2.4 DATA SAMPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
XXXX	63.53	-27.15	36.38	43.50	-7.12	QP

Frequency (MHz)	= Emission frequency in MHz
Reading (dBuV)	= Uncorrected Analyzer / Receiver reading
Correct Factor (dB/m)	= Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m)	= Reading (dBuV) + Corr. Factor (dB/m)
Limit (dBuV/m)	= Limit stated in standard
Margin (dB)	= Result (dBuV/m) – Limit (dBuV/m)
QP	= Quasi-peak Reading

Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
XXXX	53.82	0.90	54.72	74.00	-19.28	Peak
XXXX	43.88	0.90	44.78	54.00	-9.22	AVG

Frequency (MHz)	= Emission frequency in MHz
Reading (dBuV)	= Uncorrected Analyzer / Receiver reading
Correction Factor (dB/m)	= Antenna factor + Cable loss – Amplifier gain
Result (dBuV/m)	= Reading (dBuV) + Correction Factor (dB/m)
Limit (dBuV/m)	= Limit stated in standard
Margin (dB)	= Result (dBuV/m) – Limit (dBuV/m)
Peak	= Peak Reading
AVG	= Average Reading

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m)

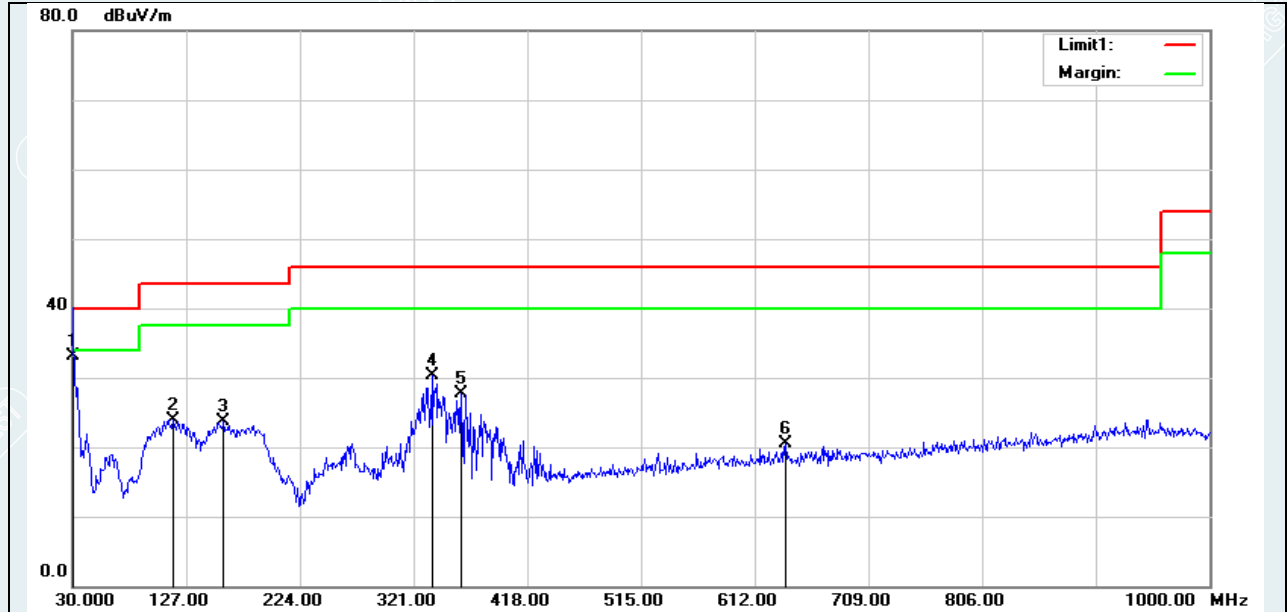
Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

5.2.5 TEST RESULTS

Below 1G

EUT Name	Watch	Model	W301GB
Environmental Conditions	24.6°C/57%RH/101kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-16	Sample No.	E20200904990101-0001

Polar.: Vertical

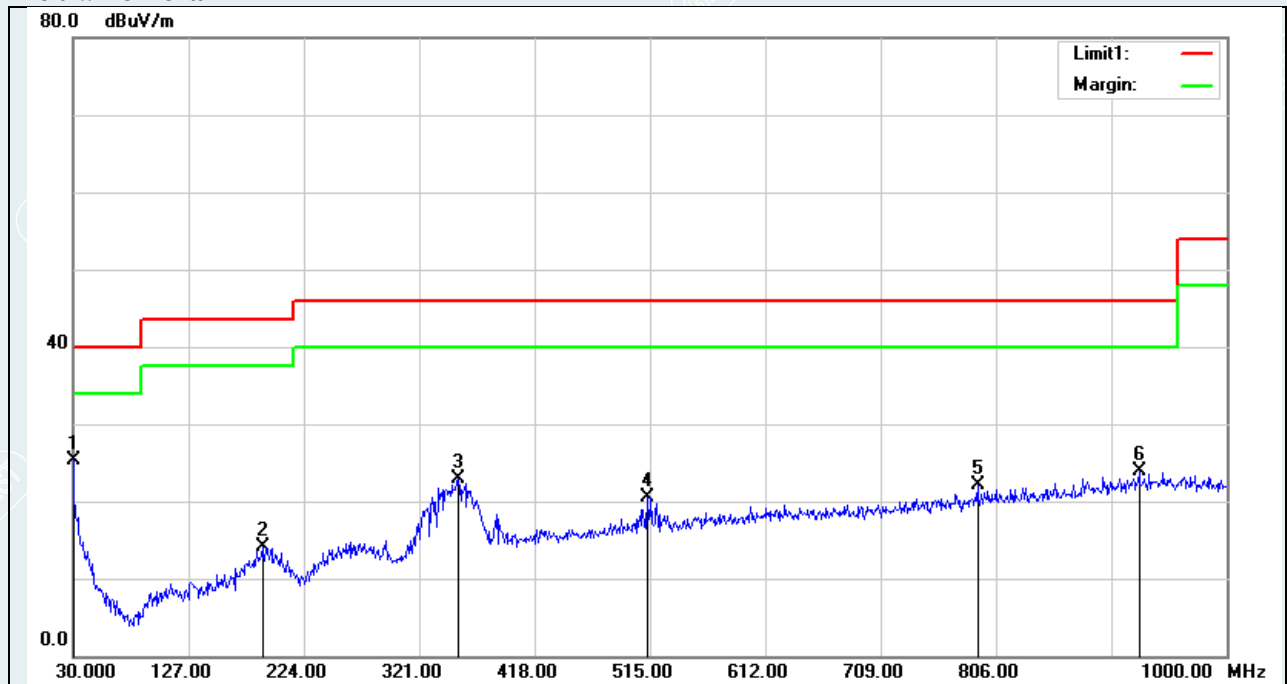


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1*	30.0000	50.41	-17.31	33.10	40.00	-6.90	199	66	QP
2	116.3300	50.53	-26.57	23.96	43.50	-19.54	100	12	peak
3	159.0100	51.23	-27.59	23.64	43.50	-19.86	100	45	peak
4	336.5200	53.41	-23.04	30.37	46.00	-15.63	199	263	peak
5	361.7400	49.89	-22.16	27.73	46.00	-18.27	100	133	peak
6	638.1900	37.80	-17.29	20.51	46.00	-25.49	199	140	peak

Note: Data of measurement within this frequency range in the table above the reading of PK detector are more 6dB than QP limit, therefore it's unnecessary to performed QP scan.

EUT Name	Watch	Model	W301GB
Environmental Conditions	24.6°C/57%RH/101kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-16	Sample No.	E20200904990101-0001

Polar.: Horizontal

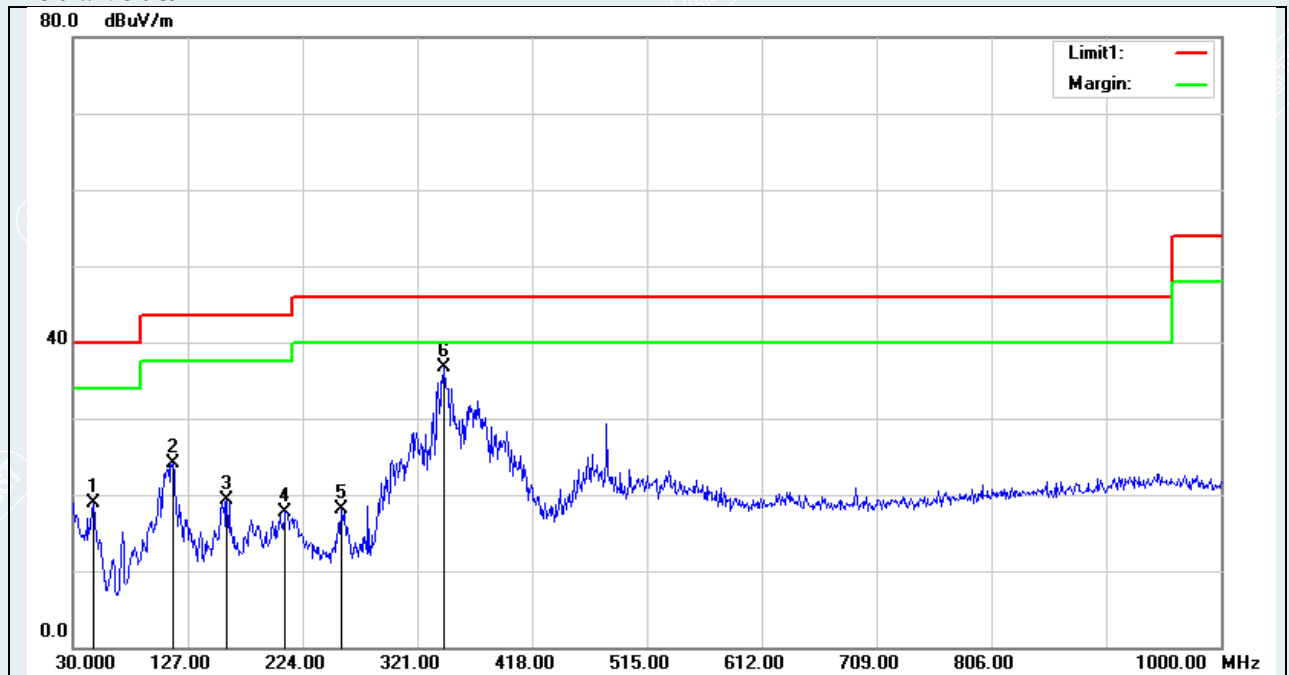


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1*	30.0000	42.65	-17.31	25.34	40.00	-14.66	199	56	peak
2	189.0800	41.58	-27.41	14.17	43.50	-29.33	199	79	peak
3	353.9800	45.25	-22.44	22.81	46.00	-23.19	100	98	peak
4	513.0600	39.67	-19.07	20.60	46.00	-25.40	199	247	peak
5	790.4800	37.77	-15.63	22.14	46.00	-23.86	199	60	peak
6	926.2800	38.52	-14.54	23.98	46.00	-22.02	100	344	peak

Note: Data of measurement within this frequency range in the table above the reading of PK detector are more 6dB than QP limit, therefore it's unnecessary to performed QP scan.

EUT Name	Watch	Model	W501GB
Environmental Conditions	23.7°C/45%RH/101.0kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Tang Shenghui
Test Date	2021-03-14	Sample No.	E20200904990101-0015

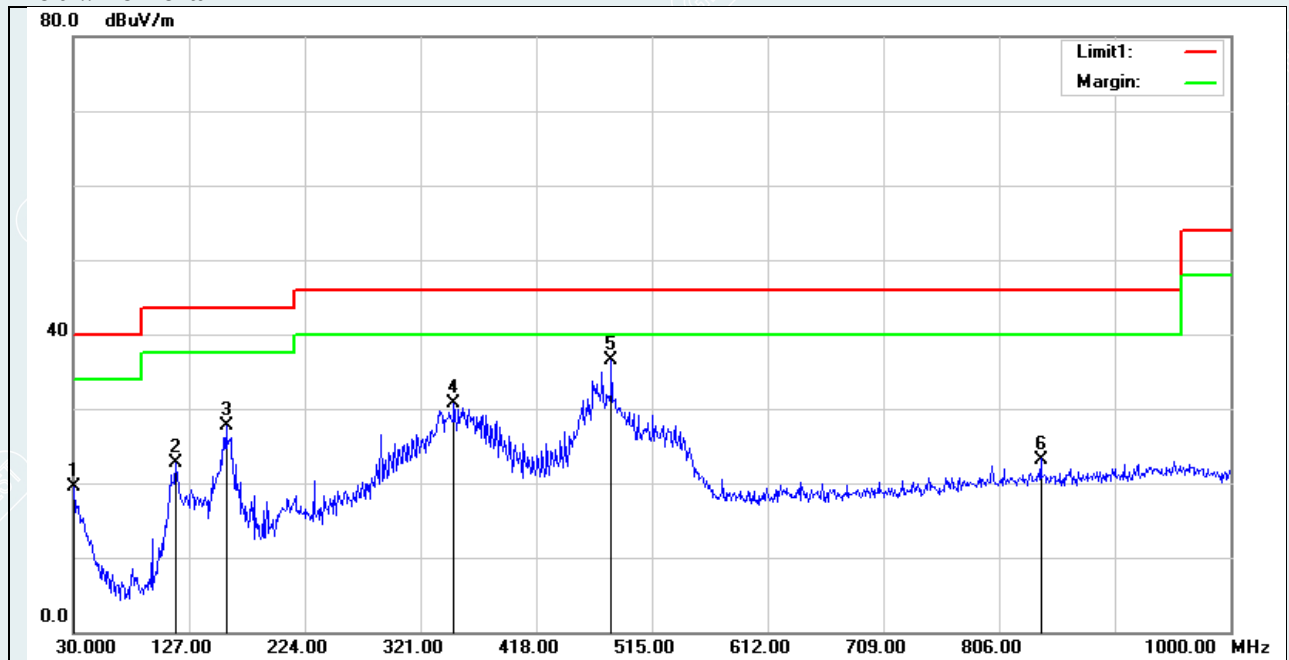
Polar.: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	47.4600	44.30	-25.40	18.90	40.00	-21.10	100	22	QP
2	114.3900	50.70	-26.51	24.19	43.50	-19.31	100	0	QP
3	159.9800	47.01	-27.69	19.32	43.50	-24.18	200	84	QP
4	209.4500	43.99	-26.23	17.76	43.50	-25.74	100	94	QP
5	256.9800	43.17	-25.10	18.07	46.00	-27.93	300	62	QP
6*	343.3100	60.08	-23.39	36.69	46.00	-9.31	100	338	QP

EUT Name	Watch	Model	W501GB
Environmental Conditions	23.7°C/45%RH/101.0kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Tang Shenghui
Test Date	2021-03-14	Sample No.	E20200904990101-0015

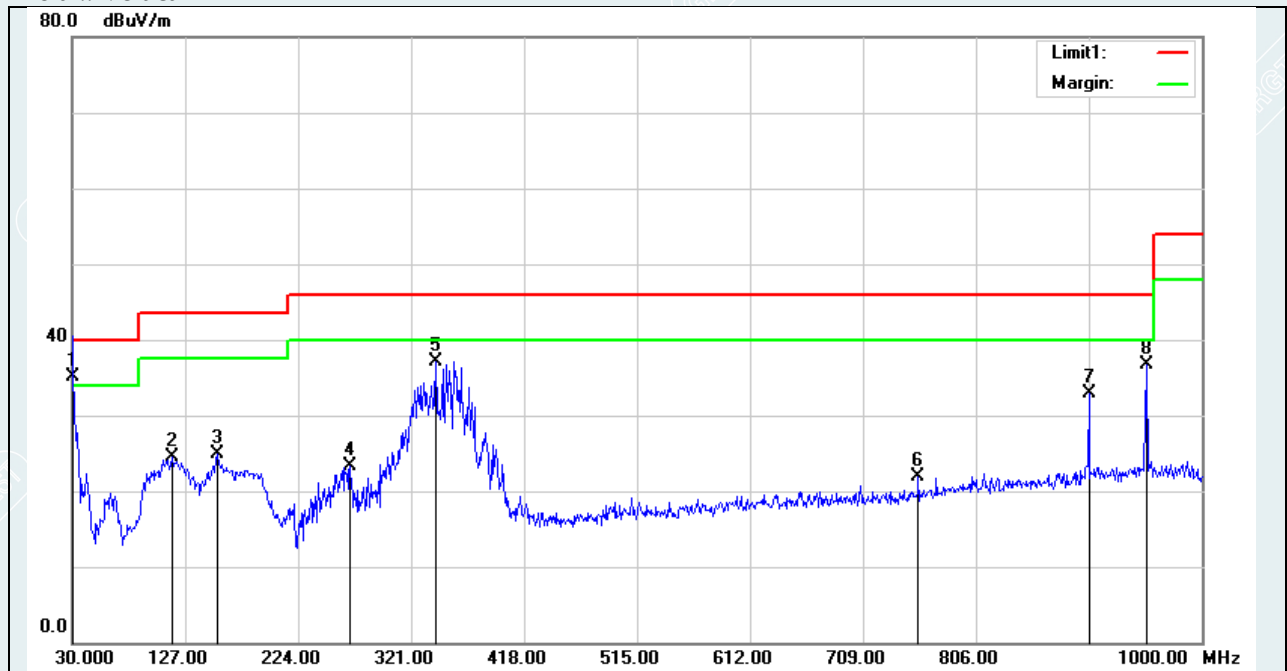
Polar.: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	30.9700	36.84	-17.43	19.41	40.00	-20.59	397	23	QP
2	115.3600	49.22	-26.43	22.79	43.50	-20.71	223	360	QP
3	158.0400	55.31	-27.55	27.76	43.50	-15.74	199	173	QP
4	349.1300	53.79	-23.14	30.65	46.00	-15.35	100	239	QP
5*	481.0500	56.28	-19.78	36.50	46.00	-9.50	199	108	QP
6	840.9200	38.26	-15.06	23.20	46.00	-22.80	100	107	QP

EUT Name	Watch	Model	W301GB
Environmental Conditions	24.6°C/57%RH/101kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-16	Sample No.	E20200904990101-0001

Polar.: Vertical

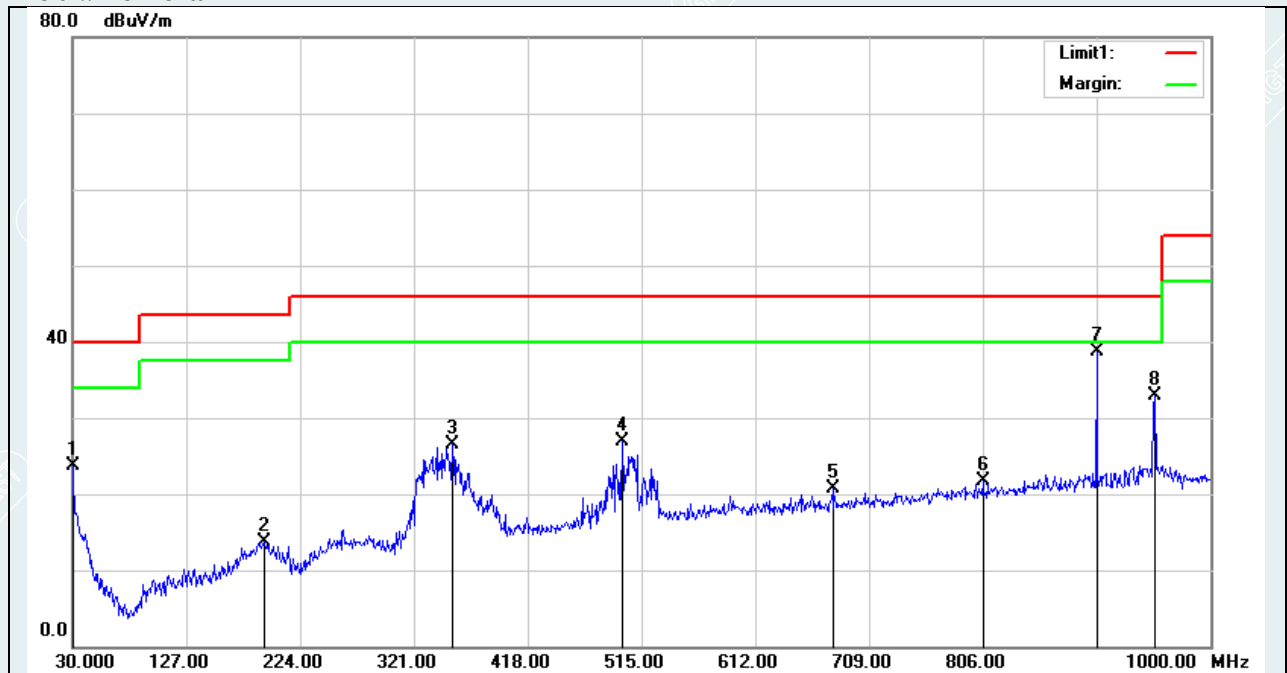


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1*	30.0000	52.41	-17.31	35.10	40.00	-4.90	163	360	QP
2	115.3600	51.16	-26.70	24.46	43.50	-19.04	100	359	peak
3	154.1600	52.16	-27.27	24.89	43.50	-18.61	100	157	peak
4	268.6200	48.10	-24.86	23.24	46.00	-22.76	100	157	peak
5	342.3400	60.03	-22.85	37.18	46.00	-8.82	100	157	peak
6	756.5300	37.98	-16.12	21.86	46.00	-24.14	100	157	peak
7	903.0000	47.57	-14.70	32.87	46.00	-13.13	128	350	peak
8	952.4700	50.97	-14.36	36.61	46.00	-9.39	100	255	peak

Note: Data of measurement within this frequency range in the table above the reading of PK detector are more 6dB than QP limit, therefore it's unnecessary to performed QP scan.

EUT Name	Watch	Model	W301GB
Environmental Conditions	24.6°C/57%RH/101kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-16	Sample No.	E20200904990101-0001

Polar.: Horizontal

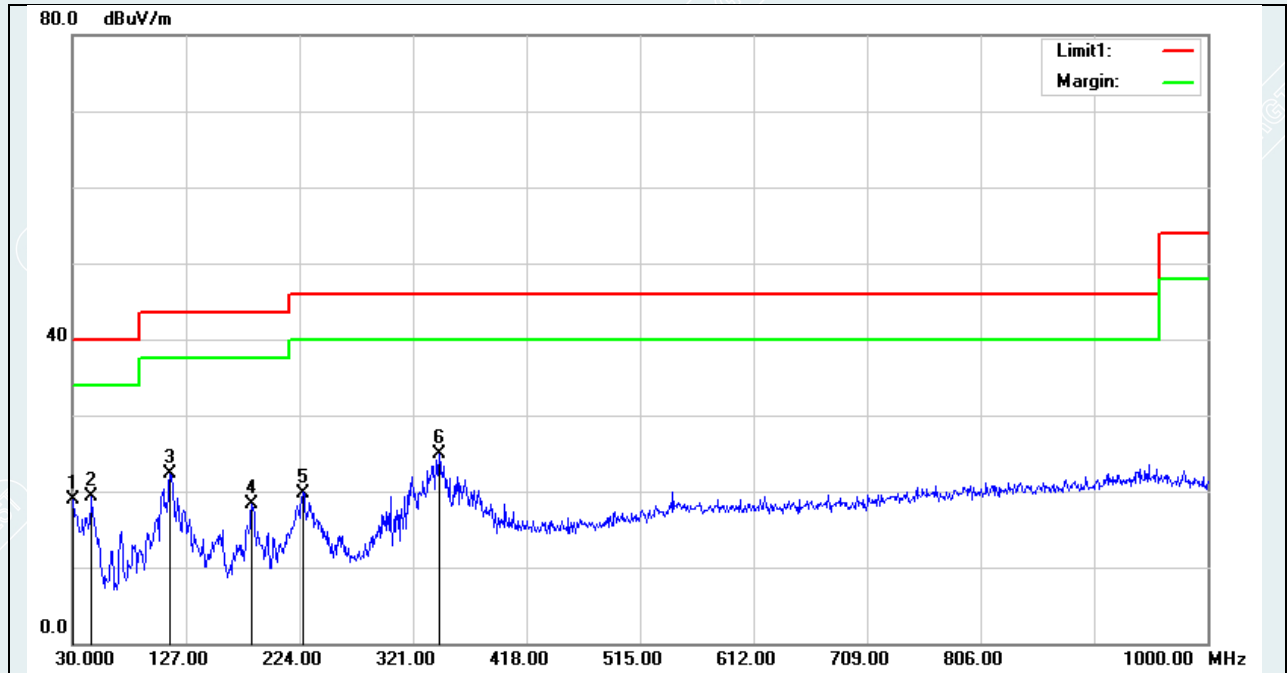


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	30.0000	41.02	-17.31	23.71	40.00	-16.29	199	26	peak
2	192.9600	40.83	-27.17	13.66	43.50	-29.84	100	95	peak
3	353.9800	48.88	-22.44	26.44	46.00	-19.56	199	16	peak
4	498.5100	46.17	-19.33	26.84	46.00	-19.16	199	293	peak
5	677.9600	37.70	-16.99	20.71	46.00	-25.29	199	360	peak
6	806.0000	37.14	-15.43	21.71	46.00	-24.29	199	115	peak
7*	903.0000	53.39	-14.70	38.69	46.00	-7.31	100	188	peak
8	952.4700	47.29	-14.36	32.93	46.00	-13.07	199	333	peak

Note: Data of measurement within this frequency range in the table above the reading of PK detector are more 6dB than QP limit, therefore it's unnecessary to performed QP scan.

EUT Name	Watch	Model	W501GB
Environmental Conditions	23.7°C/45%RH/101.0kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	Tang Shenghui
Test Date	2021-03-14	Sample No.	E20200904990101-0015

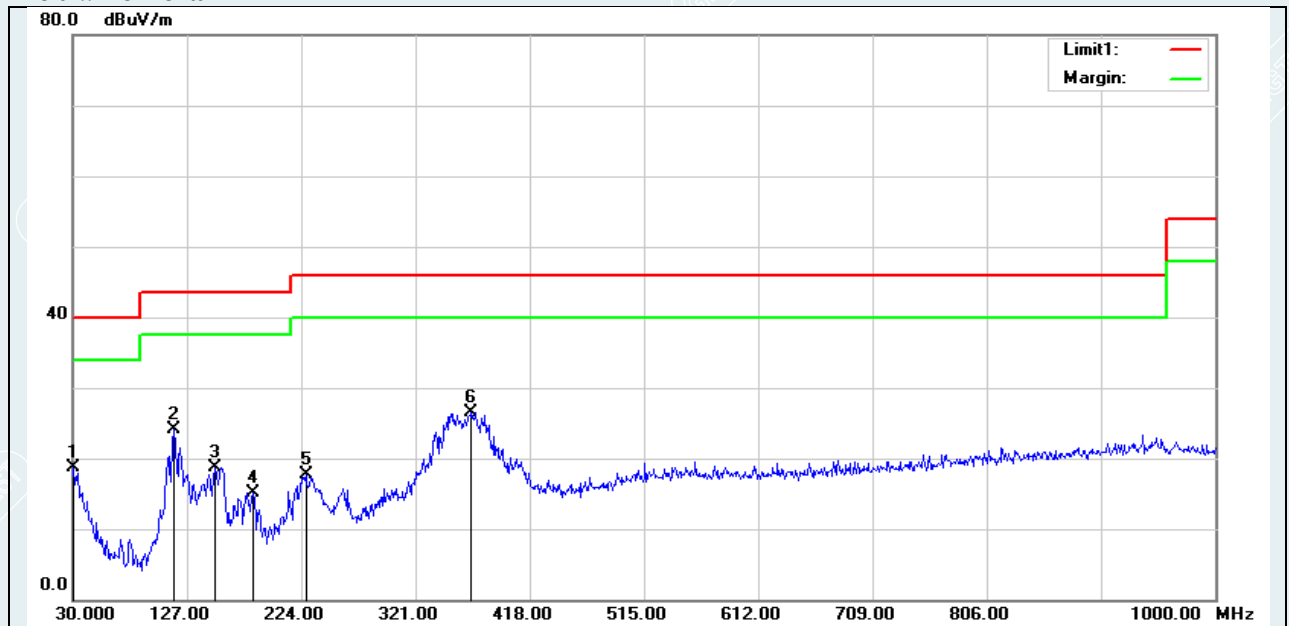
Polar.: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	30.9700	36.24	-17.43	18.81	40.00	-21.19	397	289	QP
2*	46.4900	44.24	-24.94	19.30	40.00	-20.70	100	246	QP
3	113.4200	48.92	-26.60	22.32	43.50	-21.18	100	328	QP
4	183.2600	46.12	-27.87	18.25	43.50	-25.25	300	70	QP
5	226.9100	45.45	-25.65	19.80	46.00	-26.20	100	0	QP
6	343.3100	48.34	-23.39	24.95	46.00	-21.05	100	360	QP

EUT Name	Watch	Model	W501GB
Environmental Conditions	23.7°C/45%RH/101.0kPa	Test Mode	Mode 2
Power supply	AC120V/60Hz	Tested By	Tang Shenghui
Test Date	2021-03-14	Sample No.	E20200904990101-0015

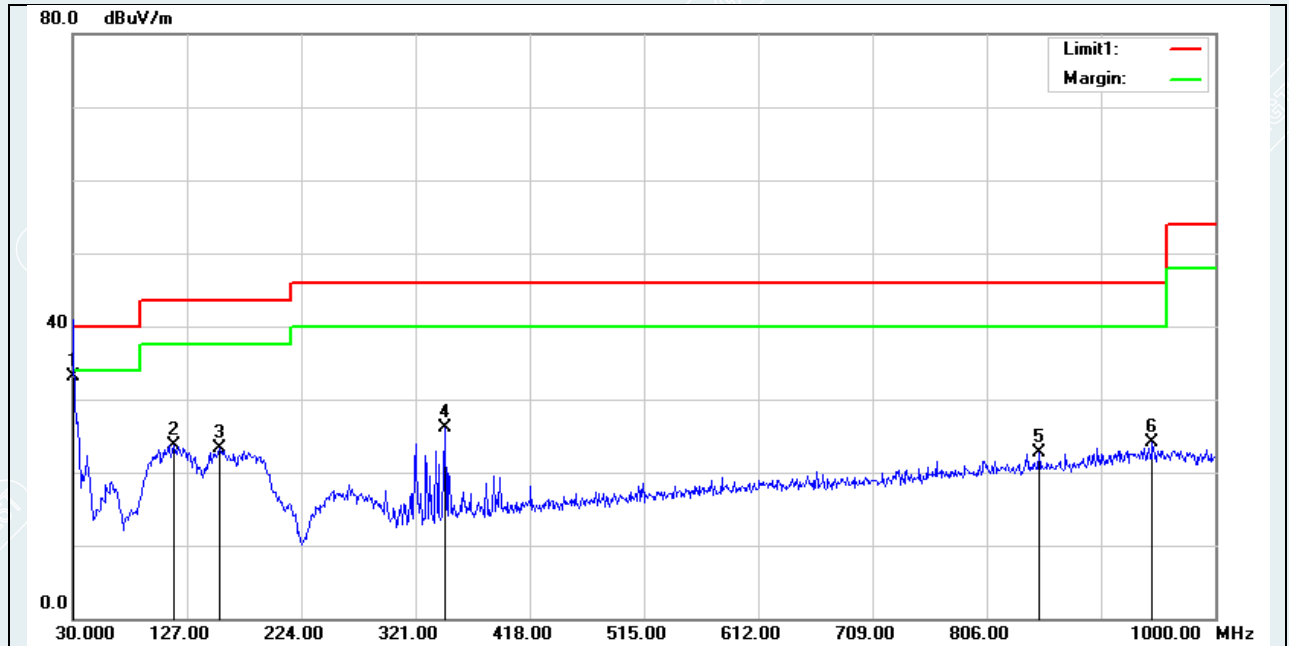
Polar.: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	30.0000	35.59	-16.96	18.63	40.00	-21.37	397	20	QP
2*	116.3300	50.53	-26.34	24.19	43.50	-19.31	237	360	QP
3	151.2500	45.85	-27.06	18.79	43.50	-24.71	200	360	QP
4	183.2600	42.97	-27.87	15.10	43.50	-28.40	200	31	QP
5	227.8800	43.30	-25.66	17.64	46.00	-28.36	100	44	QP
6	368.5300	49.04	-22.45	26.59	46.00	-19.41	100	105	QP

EUT Name	Watch	Model	W301GB
Environmental Conditions	24.6°C/57%RH/101kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-16	Sample No.	E20200904990101-0001

Polar.: Vertical

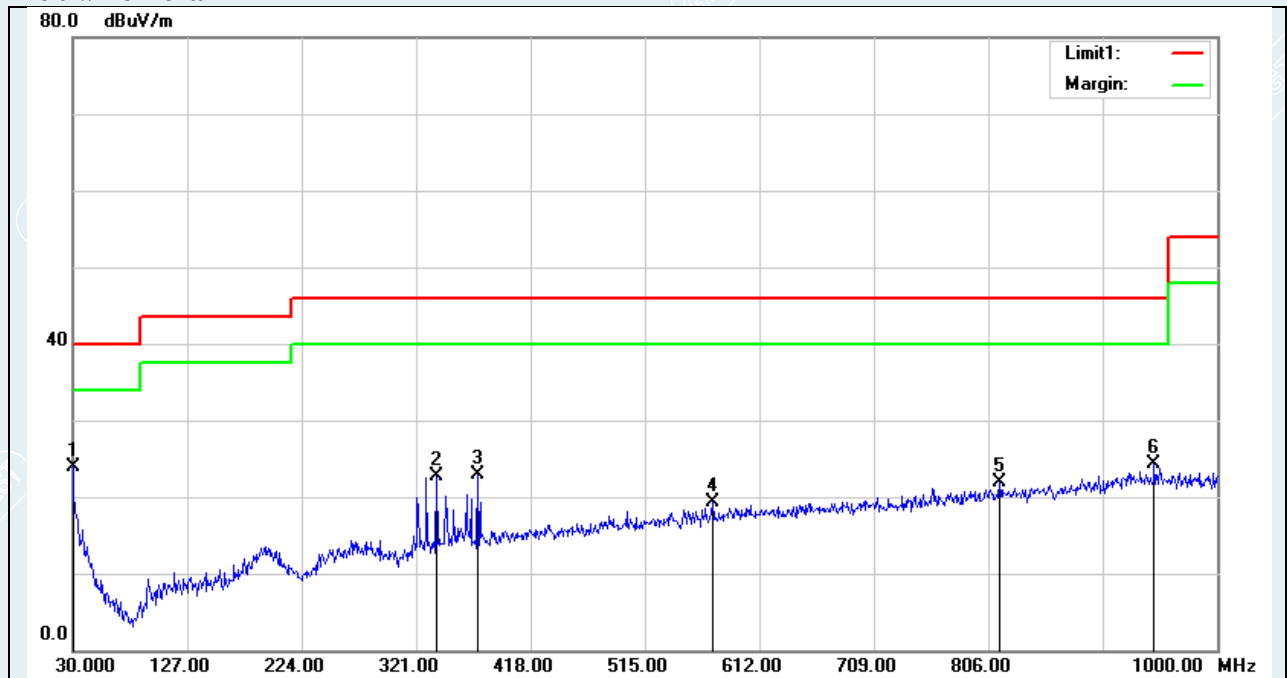


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1*	30.0000	50.51	-17.31	33.20	40.00	-6.80	199	299	QP
2	115.3600	50.45	-26.70	23.75	43.50	-19.75	100	41	peak
3	154.1600	50.59	-27.27	23.32	43.50	-20.18	100	0	peak
4	346.2200	48.75	-22.71	26.04	46.00	-19.96	199	264	peak
5	850.6200	37.81	-15.08	22.73	46.00	-23.27	100	213	peak
6	946.6500	38.42	-14.40	24.02	46.00	-21.98	167	0	peak

Note: Data of measurement within this frequency range in the table above the reading of PK detector are more 6dB than QP limit, therefore it's unnecessary to performed QP scan.

EUT Name	Watch	Model	W301GB
Environmental Conditions	24.6°C/57%RH/101kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	LingYuMei
Test Date	2020-09-16	Sample No.	E20200904990101-0001

Polar.: Horizontal

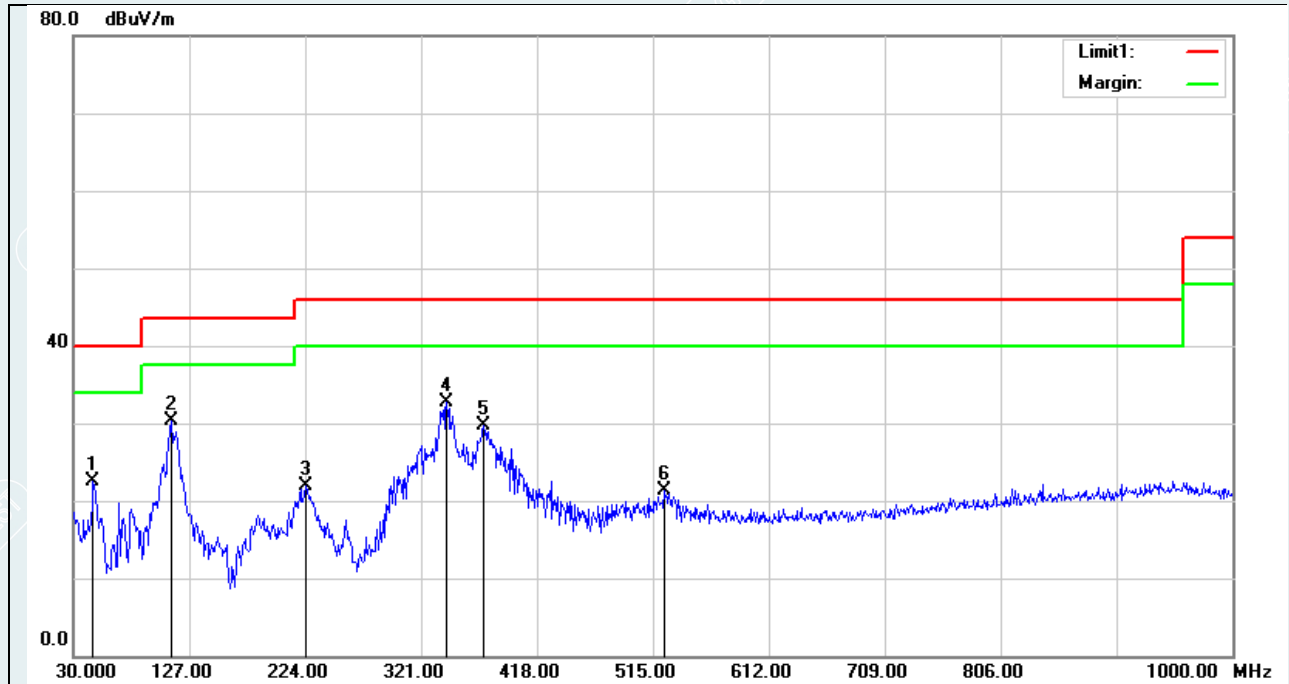


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1*	30.0000	41.28	-17.31	23.97	40.00	-16.03	100	0	peak
2	338.4600	45.67	-22.98	22.69	46.00	-23.31	100	61	peak
3	373.3800	44.64	-21.75	22.89	46.00	-23.11	100	289	peak
4	572.2300	37.39	-18.02	19.37	46.00	-26.63	199	199	peak
5	815.7000	37.29	-15.36	21.93	46.00	-24.07	199	44	peak
6	946.6500	38.69	-14.40	24.29	46.00	-21.71	199	192	peak

Note: Data of measurement within this frequency range in the table above the reading of PK detector are more 6dB than QP limit, therefore it's unnecessary to performed QP scan.

EUT Name	Watch	Model	W501GB
Environmental Conditions	23.7°C/45%RH/101.0kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	Tang Shenghui
Test Date	2021-03-14	Sample No.	E20200904990101-0015

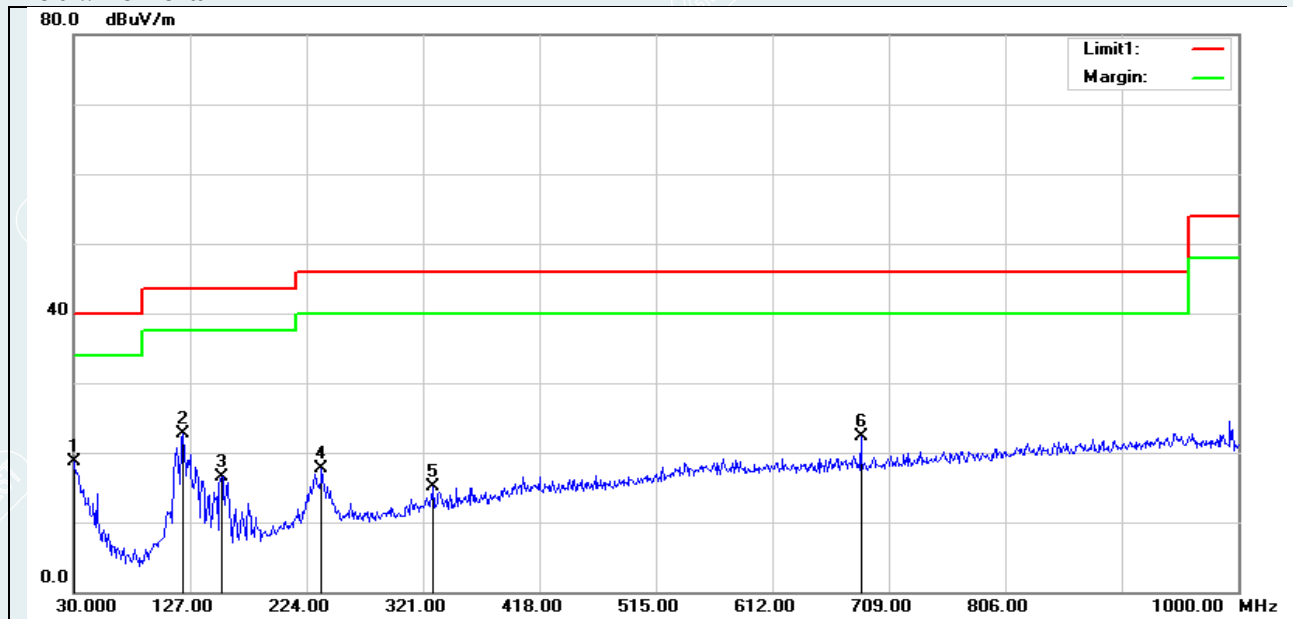
Polar.: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	46.4900	47.48	-24.94	22.54	40.00	-17.46	100	288	QP
2*	111.4800	57.13	-26.78	30.35	43.50	-13.15	100	330	QP
3	224.0000	47.62	-25.62	22.00	46.00	-24.00	100	82	QP
4	342.3400	56.19	-23.42	32.77	46.00	-13.23	100	359	QP
5	373.3800	51.92	-22.31	29.61	46.00	-16.39	100	306	QP
6	524.7000	39.88	-18.53	21.35	46.00	-24.65	100	308	QP

EUT Name	Watch	Model	W501GB
Environmental Conditions	23.7°C/45%RH/101.0kPa	Test Mode	Mode 3
Power supply	AC120V/60Hz	Tested By	Tang Shenghui
Test Date	2021-03-14	Sample No.	E20200904990101-0015

Polar.: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg)	Remark
1	30.0000	35.74	-16.96	18.78	40.00	-21.22	199	0	QP
2*	121.1800	48.74	-26.01	22.73	43.50	-20.77	234	360	QP
3	153.1900	43.74	-27.20	16.54	43.50	-26.96	202	360	QP
4	236.6100	43.41	-25.76	17.65	46.00	-28.35	161	0	QP
5	329.7300	38.63	-23.49	15.14	46.00	-30.86	100	263	QP
6	685.7200	39.40	-17.01	22.39	46.00	-23.61	299	251	QP