

FCC EMC Test Report

Project No. : 1911C006
Equipment : Smart Watch
Brand Name : VitalThec
Test Model : VB2
Series Model : N/A
Applicant : Borqs BeiJing Ltd
Address : TowerA BuildingB23 Universal Business Park No 10 jiuxianqiao Road
 Chaoyang District Beijing China
Manufacturer : Borqs BeiJing Ltd
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Factory : Borqs BeiJing Ltd
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 Chaoyang District Beijing China
Date of Receipt : Oct. 21, 2021
Date of Test : Oct. 27, 2021 ~ Dec. 06, 2021
Issued Date : Jan. 10, 2022
Report Version : R00
Test Sample : Engineering Sample No.: DG20211022169
Standard(s) : FCC CFR Title 47, Part 15, Subpart B

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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TESTING CERT #5123.02

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 31, 2021
R01	Modified the comments of Nemko.	Jan. 10, 2022

1. SUMMARY OF TEST RESULTS

Emission		
Standard(s)	Test Item	Result
FCC CFR Title 47, Part 15, Subpart B ANSI C63.4-2014	AC Power Line Conducted Emissions	PASS
	Radiated Emissions 30 MHz to 1 GHz	PASS
	Radiated Emissions Above 1 GHz	PASS

1.1 TEST FACILITY

The test facilities used to collect the test data in this report at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China.

BTL's Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-C01	CISPR	150kHz ~ 30MHz	2.86

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB01 (3m)	CISPR	30MHz ~ 200MHz	V	4.62
		30MHz ~ 200MHz	H	3.58
		200MHz ~ 1,000MHz	V	4.44
		200MHz ~ 1,000MHz	H	4.36

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB01 (3m)	CISPR	1GHz ~ 6GHz	3.72
		6GHz ~ 18GHz	4.62

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB01 (1m)	CISPR	18 ~ 26.5 GHz	3.62
		26.5 ~ 40 GHz	4.00

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Tested By
AC Power Line Conducted Emissions	25°C	53%	Chelito Chen
Radiated emissions 30 MHz to 1 GHz	25°C	60%	Farun Liang
Radiated emissions above 1 GHz	25°C	60%	Farun Liang

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Smart Watch
Brand Name	VitalThec
Test Model	VB2
Series Model	N/A
Model Difference(s)	N/A
Power Source	1# Supplied from USB port. 2# Battery supplied. Model: ZWD462527V
Power Rating	1# DC 5V 2# DC 3.8V, 400mAh
Connecting I/O Port(s)	1* USB port 1* SIM Card port
Classification of EU	Class B
Highest Internal Frequency(Fx)	2480MHz

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Charing+Idle+Playing
Mode 2	Charing+Idle+2.4G WIFI+BT+GPS+NFC
Mode 3	Charing+Traffic(WCDMA)(BAND B2,B5)
Mode 4	Charing+Traffic(LTE)(BAND B2,B4,B5,B12)

AC Power Line Conducted Emissions test	
Final Test Mode	Description
Mode 4	Charing+Traffic(LTE)(BAND B2)

Radiated Emissions 30 MHz to 1 GHz test	
Final Test Mode	Description
Mode 3	Charing+Traffic(WCDMA)(BAND B2)

Radiated emissions above 1 GHz test	
Final Test Mode	Description
Mode 1	Charing+Idle+Playing

Note:

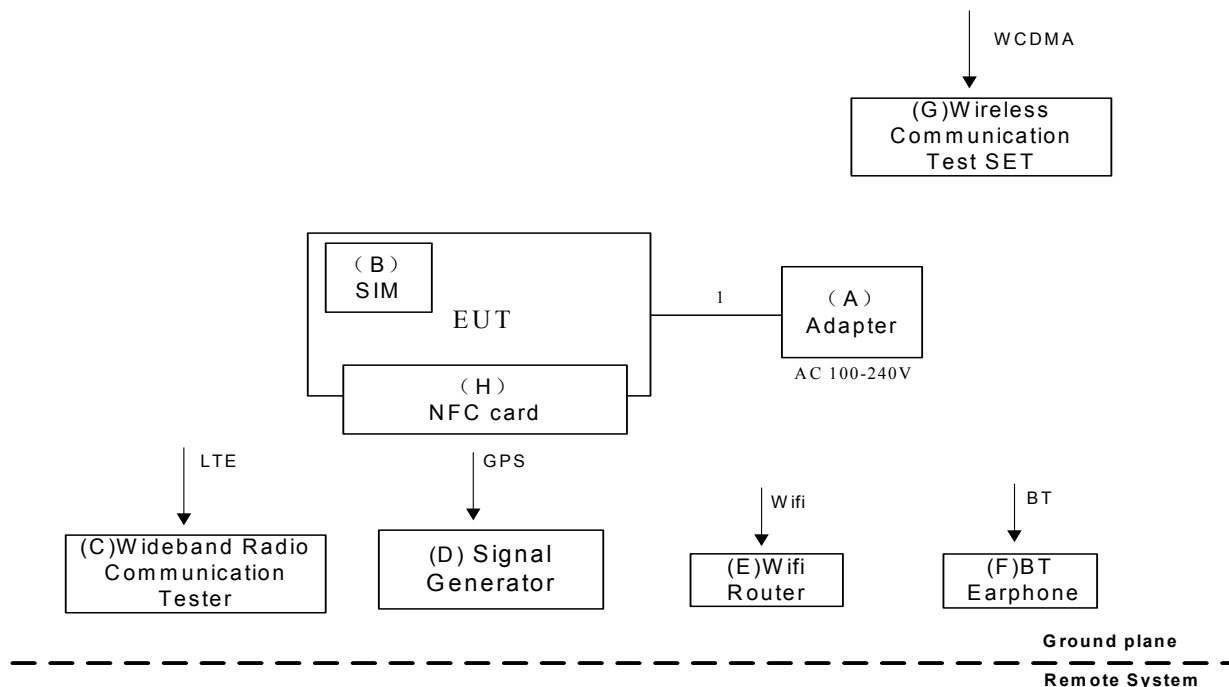
1. Evaluated Mode 1-4. The worst case is recorded in the test report.
2. Mode 3 tested the Traffic(WCDMA: B2,B5), mode 4 tested the Traffic(LTE: B2,B4,B5,B12), the worst case band is WCDMA:B2, LTE: B2 and recorded in the test report.
3. The product support 2.4G WIFI function.
The frequency exemption is 2400 MHz ~ 2483.5 MHz.
4. Radiated emission above 1GHz tested with 2.4G filter.

2.3 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The standard test signals and output signal as following:

1. EUT connected to the Adapter via USB cable.
2. The SIM is plugged into the EUT.
3. EUT connected to Wideband Radio Communication Tester via LTE function.
4. EUT connected to Signal Generator via GPS function.
5. EUT connected to Wifi Router via Wifi function.
6. EUT connected to BT Earphone via BT function.
7. The NFC card is plugged into the EUT.
8. EUT connected to Wireless Communication Test SET via WCDMA function.

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	Adapter	Apple	A1443	N/A
B	SIM	N/A	N/A	N/A
C	Wideband Radio Communication Tester	RS	CMW500	122125
D	Signal Generator	Agilent	E4438C	MY49071316
E	Wifi Router	ASUS	RT-AC66U	E8ICGG000138
F	BT Earphone	MICROKIA	M9	N/A
G	Wireless Communication Test SET	Agilent	RT-AC66U	N/A
H	NFC card	N/A	N/A	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	NO	NO	1.8m

3. EMC EMISSION TEST

3.1 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1.1 LIMIT

Frequency of Emission (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.5 - 5	56	46
5 - 30	60	50

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
 Margin Level = Measurement Value - Limit Value

3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	100526	Jul. 10, 2022
2	EMI Test Receiver	R&S	ESR3	101862	Jun. 15, 2022
3	Artificial-Mains Network	SCHWARZBECK	NSLK 8127	8127685	Feb. 28, 2022
4	Cable	N/A	RG400	N/A(12m)	Mar. 09, 2022
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

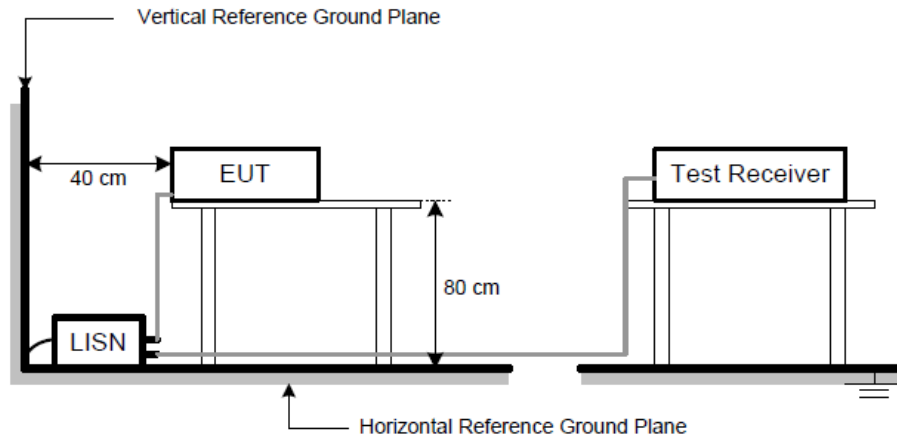
3.1.3 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- f. Measuring frequency range from 150KHz to 30MHz.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation

3.1.5 TEST SETUP

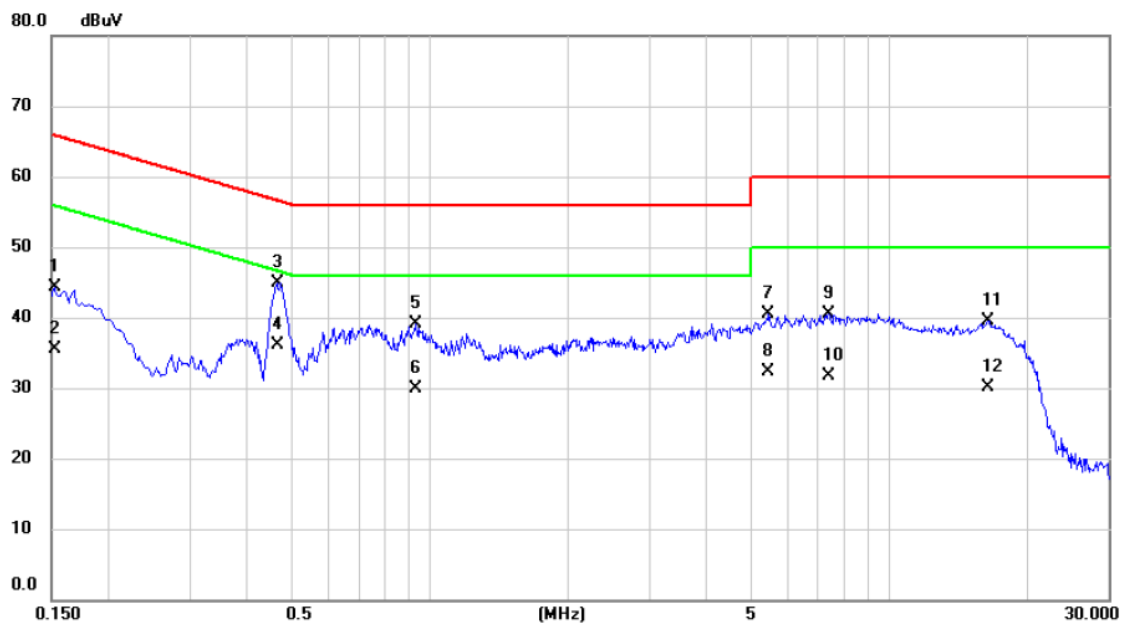


3.1.6 TEST RESULTS

Remark:

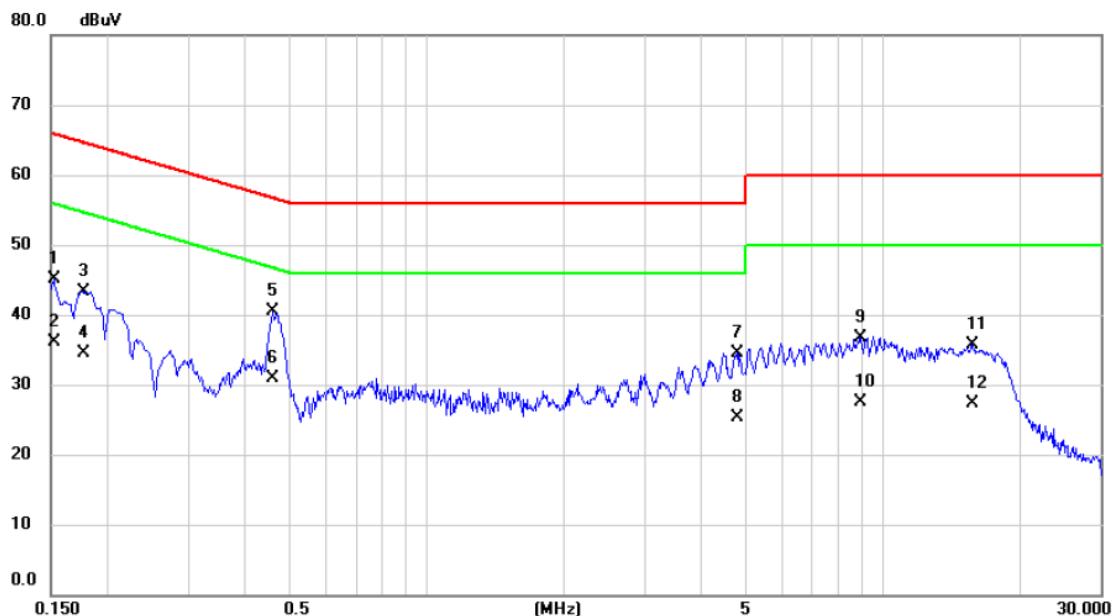
- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=10 kHz, VBW=10 kHz, Swp. Time =0.3 sec./MHz.
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a “*” marked in AVG Mode column of Interference Voltage Measured.

Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 4		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.1522	34.56	9.66	44.22	65.88	-21.66	QP	
2	0.1522	25.90	9.66	35.56	55.88	-20.32	AVG	
3	0.4650	35.10	9.73	44.83	56.60	-11.77	QP	
4 *	0.4650	26.40	9.73	36.13	46.60	-10.47	AVG	
5	0.9285	29.38	9.77	39.15	56.00	-16.85	QP	
6	0.9285	20.10	9.77	29.87	46.00	-16.13	AVG	
7	5.4488	30.36	10.08	40.44	60.00	-19.56	QP	
8	5.4488	22.30	10.08	32.38	50.00	-17.62	AVG	
9	7.4063	30.41	10.17	40.58	60.00	-19.42	QP	
10	7.4063	21.50	10.17	31.67	50.00	-18.33	AVG	
11	16.3815	29.02	10.44	39.46	60.00	-20.54	QP	
12	16.3815	19.60	10.44	30.04	50.00	-19.96	AVG	

Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 4		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1522	35.51	9.63	45.14	65.88	-20.74	QP	
2		0.1522	26.40	9.63	36.03	55.88	-19.85	AVG	
3		0.1770	33.60	9.62	43.22	64.63	-21.41	QP	
4		0.1770	24.90	9.62	34.52	54.63	-20.11	AVG	
5		0.4604	30.81	9.69	40.50	56.69	-16.19	QP	
6	*	0.4604	21.30	9.69	30.99	46.69	-15.70	AVG	
7		4.7940	24.54	10.05	34.59	56.00	-21.41	QP	
8		4.7940	15.20	10.05	25.25	46.00	-20.75	AVG	
9		8.9496	26.40	10.29	36.69	60.00	-23.31	QP	
10		8.9496	17.30	10.29	27.59	50.00	-22.41	AVG	
11		15.7357	25.13	10.61	35.74	60.00	-24.26	QP	
12		15.7357	16.70	10.61	27.31	50.00	-22.69	AVG	

3.2 RADIATED EMISSIONS 30 MHZ TO 1 GHZ

3.2.1 LIMIT

Frequency (MHz)	Class B (at 3m)	
	(uV/m) Quasi-peak	(dBuV/m) Quasi-peak
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
960 - 1000	500	54

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m) = 20log Emission level (uV/m).
3m Emission level = 10m Emission level + 20log(10m/3m).
- (3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	ETS	3142B	26419	Apr. 14, 2022
2	Amplifier	SONOMA	310N	186128	Feb. 28, 2022
3	MXE EMI Receiver	Keysight	N9038A	MY56400091	Feb. 27, 2022
4	Cable	emci	LMR-400(30MHz-1GHz) (7m+7m)	N/A	Sep. 23, 2022
5	Controller	ETS-Lindgren	2090	N/A	N/A
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

All calibration period of equipment list is one year.

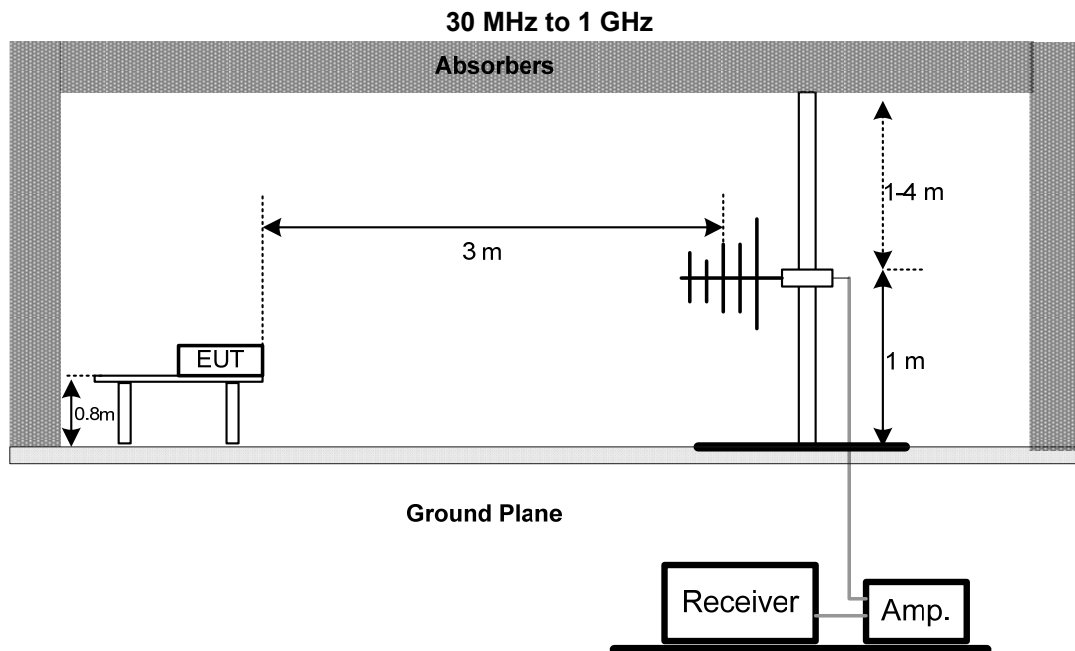
3.2.3 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- f. For the actual test configuration, please refer to the related Item - EUT Test Photos.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

3.2.5 TEST SETUP

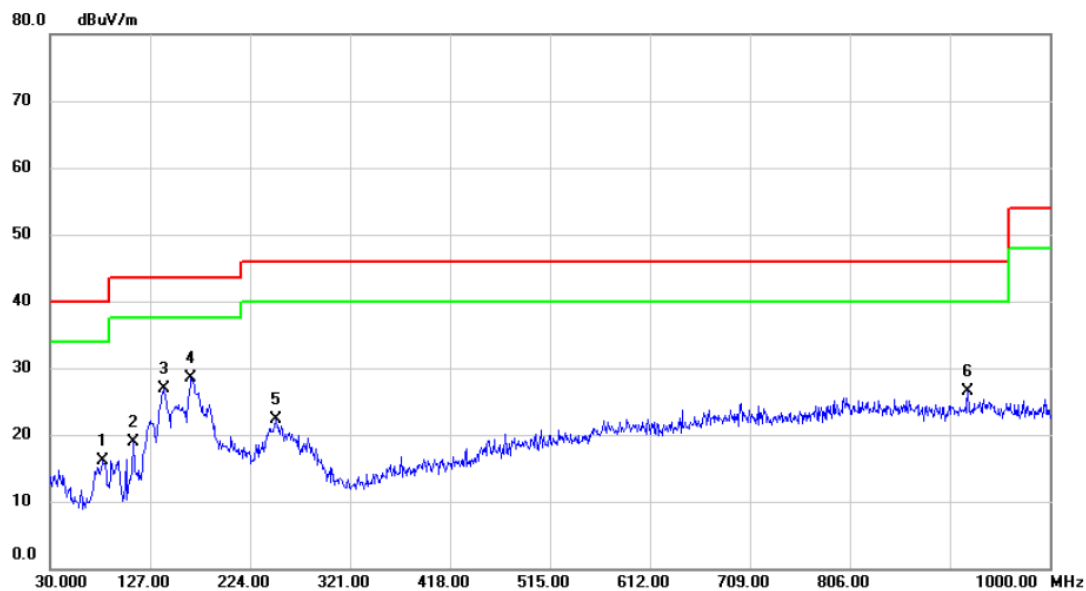


3.2.6 TEST RESULTS

Remark:

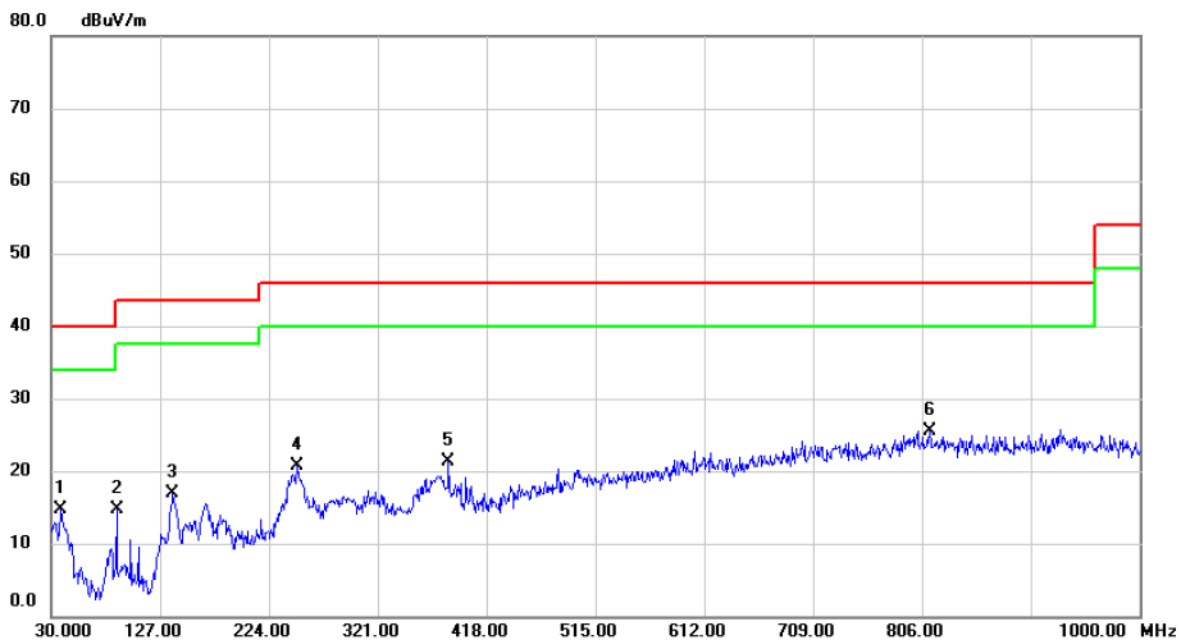
- (1) Measuring frequency range from 30 MHz to 1000 MHz
- (2) If the peak scan value lower limit more than 20 dB, then this signal data does not show in table.

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 3		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		81.4100	40.06	-23.87	16.19	40.00	-23.81	QP	
2		110.5100	41.74	-22.77	18.97	43.50	-24.53	QP	
3		140.5800	49.41	-22.51	26.90	43.50	-16.60	QP	
4	*	166.7700	49.06	-20.58	28.48	43.50	-15.02	QP	
5		249.2200	39.37	-17.06	22.31	46.00	-23.69	QP	
6		920.4600	30.51	-4.02	26.49	46.00	-19.51	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 3		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		38.7300	32.63	-17.85	14.78	40.00	-25.22	QP	
2		88.2000	37.86	-23.07	14.79	43.50	-28.71	QP	
3		138.6400	39.51	-22.68	16.83	43.50	-26.67	QP	
4		249.2200	37.69	-17.06	20.63	46.00	-25.37	QP	
5		384.0500	34.02	-12.73	21.29	46.00	-24.71	QP	
6	*	812.7900	29.70	-4.22	25.48	46.00	-20.52	QP	

3.3 RADIATED EMISSIONS ABOVE 1 GHZ

3.3.1 LIMIT

Frequency (MHz)	Class B	
	(dBuV/m) (at 3m)	
	Peak	Average
Above 1000	74	54

Frequency (MHz)	Class B	
	(dBuV/m) (at 1m)	
	Peak	Average
Above 18000	83.5	63.5

FREQUENCY RANGE OF RADIATED MEASUREMENT (FOR UNINTENTIONAL RADIATORS)

Highest internal frequency (F _x)	Highest measurement frequency (F _M)
F _x ≤ 108 MHz	1 GHz
108 MHz < F _x ≤ 500 MHz	2 GHz
500 MHz < F _x ≤ 1 GHz	5 GHz
F _x > 1 GHz	5 x F _x up to a maximum of 40 GHz
Note: F _x is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.	

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m) = 20log Emission level (uV/m).
1m Emission level = 3m Emission level + 20log(3m/1m).
- (3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

3.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Cable	Mlcable Inc.	B10-01-01-15M (10MHz~26.5GHz)	18047122	Jan. 06, 2022
2	Controller	ETS-Lindgren	2090	N/A	N/A
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
4	Double-Ridged Waveguide Horn Antennas	ETS-LINDGREN	3117-PA	224991	Apr. 21, 2022
5	MXA Signal Analyzer	Keysight	N9020B	MY57100162	Feb. 28, 2022
6	Cable	Mlcable Inc.	B10-01-01-2M	18072745	Jan. 06, 2022
7	Preamplifier	ETS-LINDGREN	3117-PA	224991	Jul. 10, 2022
8	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2022
9	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Feb. 28, 2022
10	MXE EMI Receiver	Agilent	N9038A	MY53220133	Feb. 28, 2022
11	Cable	emci	SUCOFLEX 102_8m(0.01GHz— 40GHz)	N/A	Mar. 23, 2022
12	Band Reject Filter	Wairwright Instruments GmbH	WRCG 2400/2483-2375/2505-5 0/10SS	16	Feb. 28, 2022

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

All calibration period of equipment list is one year.

3.3.3 TEST PROCEDURE

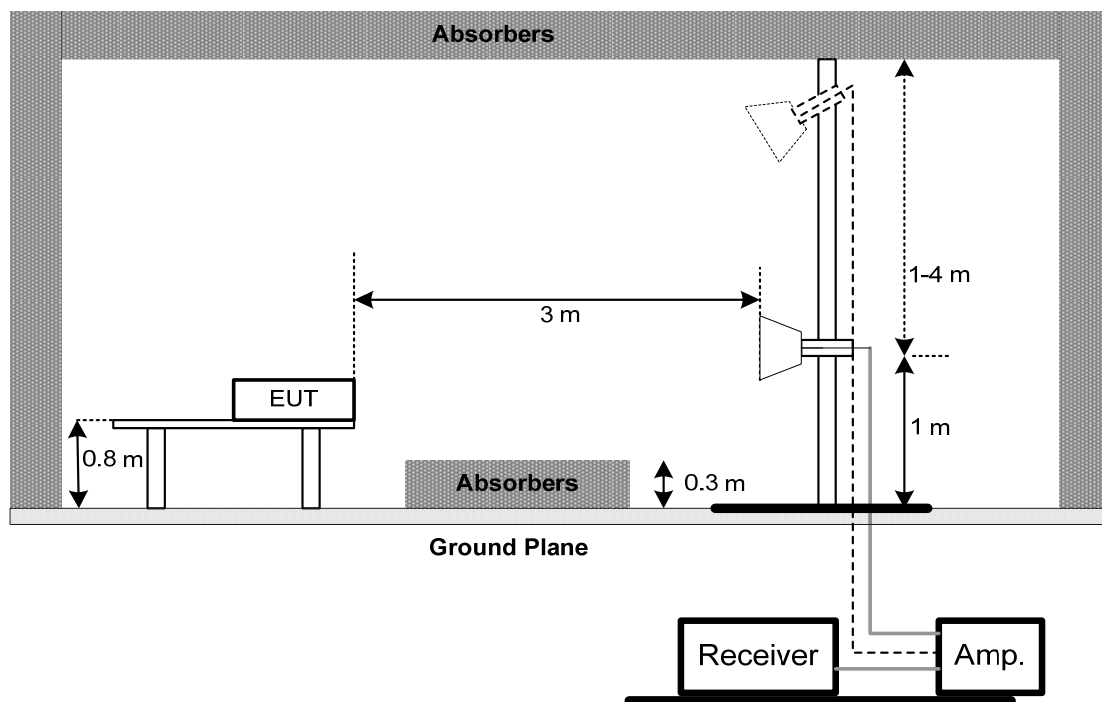
- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
Note:
For measurement of frequency 1GHz -18GHz, the EUT was set 3 meters away from the receiver antenna. For 18G – 40GHz, the EUT was set 1 meter.
Emission level (dBuV/m)=20log Emission level (uV/m).
The limits above 18GHz shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1m
Distance extrapolation factor = $20 \log (3\text{m}/1\text{m})$ dB ;
Limit line = specific limits (dBuV) + 9.5 dB.
- b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then AVG detector mode re-measured.
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.
- g. For the actual test configuration, please refer to the related Item - EUT Test Photos.

3.3.4 DEVIATION FROM TEST STANDARD

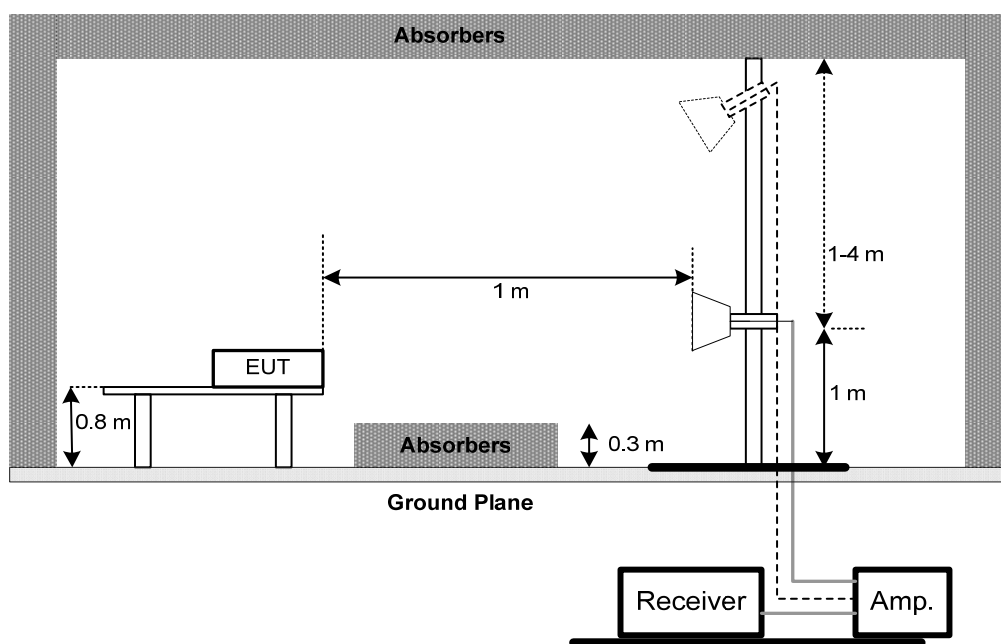
No deviation

3.3.5 TEST SETUP

1 GHz-18 GHz



18 GHz-40 GHz

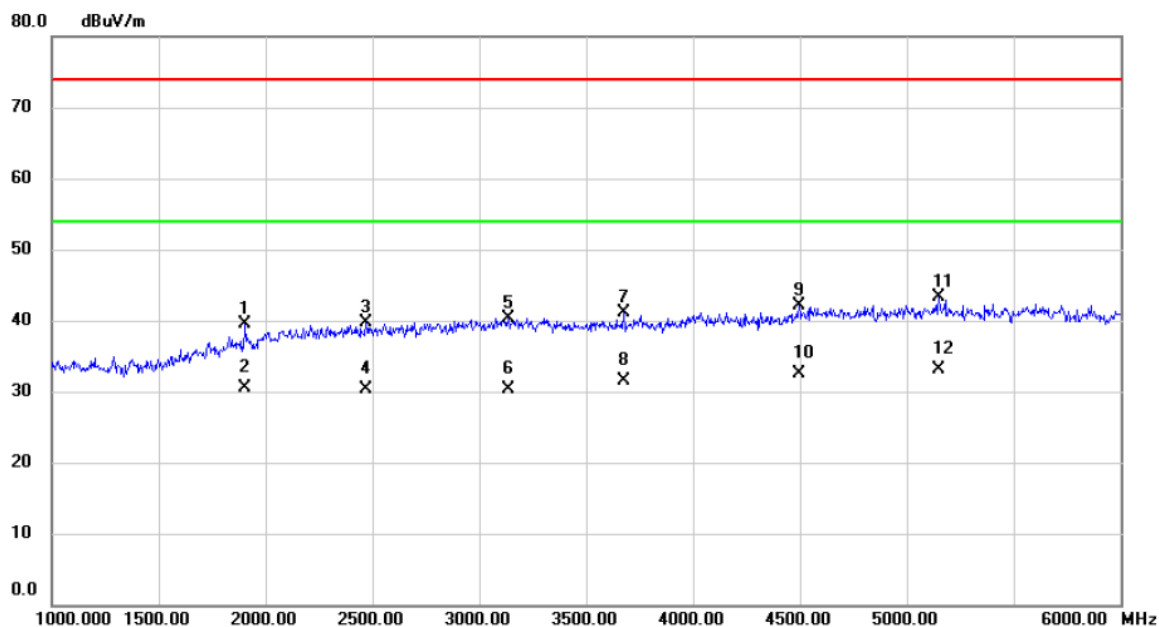


3.3.6 TEST RESULTS

Remark:

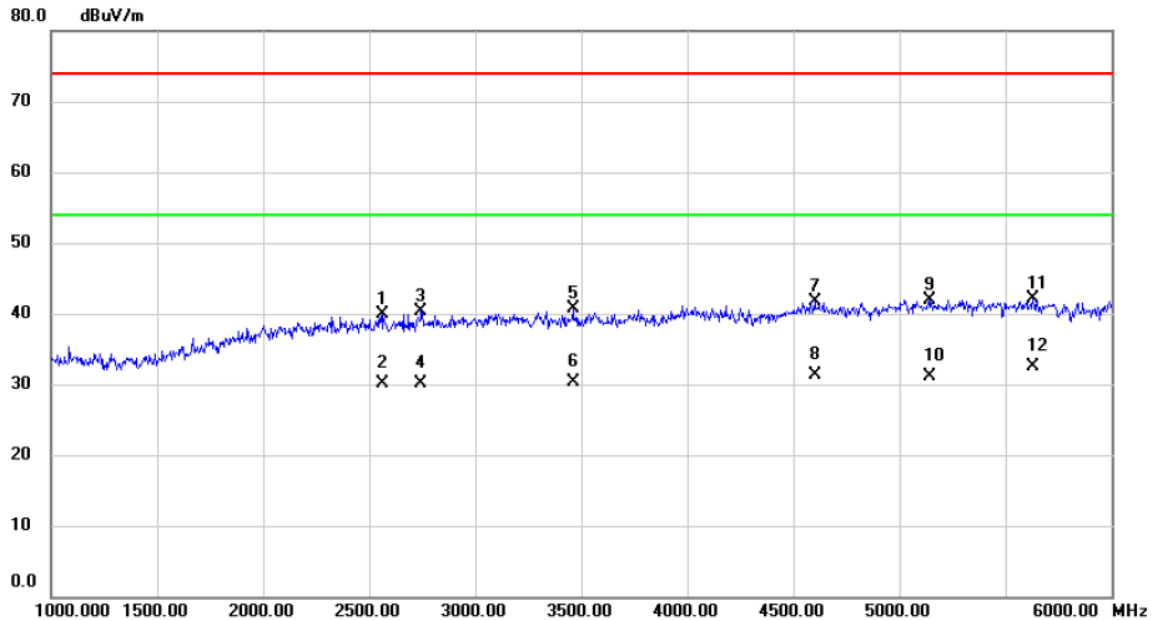
- (1) Radiated emissions measured in frequency range above 1000 MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (2) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
- (3) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		



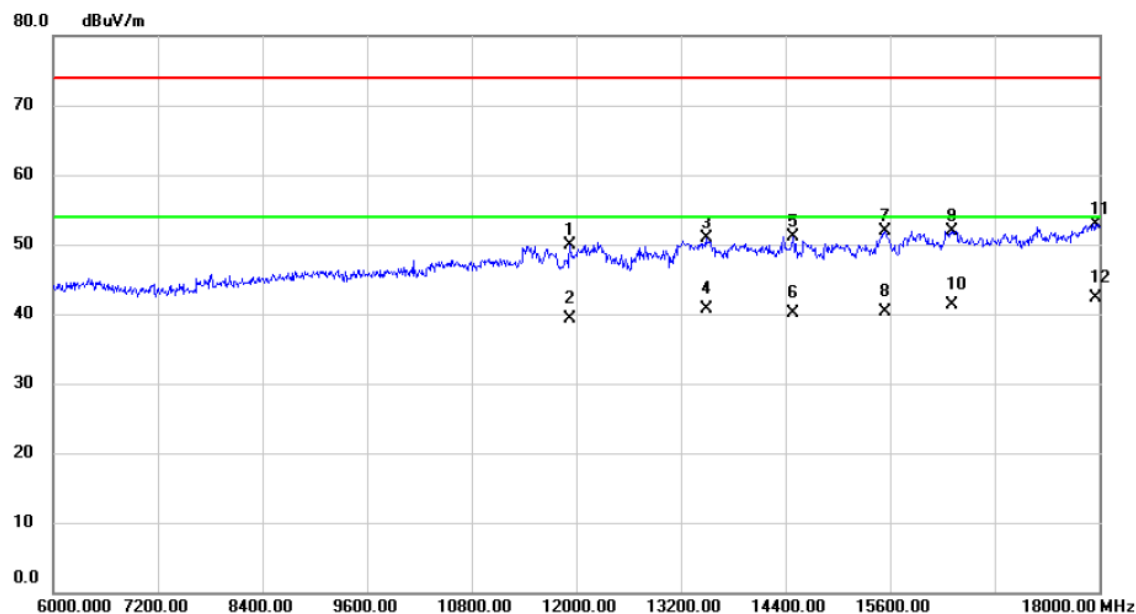
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	1905.000	51.48	-11.99	39.49	74.00	-34.51	peak	
2	1905.000	42.48	-11.99	30.49	54.00	-23.51	AVG	
3	2470.000	49.21	-9.49	39.72	74.00	-34.28	peak	
4	2470.000	39.77	-9.49	30.28	54.00	-23.72	AVG	
5	3135.000	47.70	-7.39	40.31	74.00	-33.69	peak	
6	3135.000	37.65	-7.39	30.26	54.00	-23.74	AVG	
7	3675.000	47.39	-6.20	41.19	74.00	-32.81	peak	
8	3675.000	37.65	-6.20	31.45	54.00	-22.55	AVG	
9	4495.000	46.28	-4.13	42.15	74.00	-31.85	peak	
10	4495.000	36.63	-4.13	32.50	54.00	-21.50	AVG	
11	5150.000	46.20	-2.88	43.32	74.00	-30.68	peak	
12 *	5150.000	36.03	-2.88	33.15	54.00	-20.85	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		



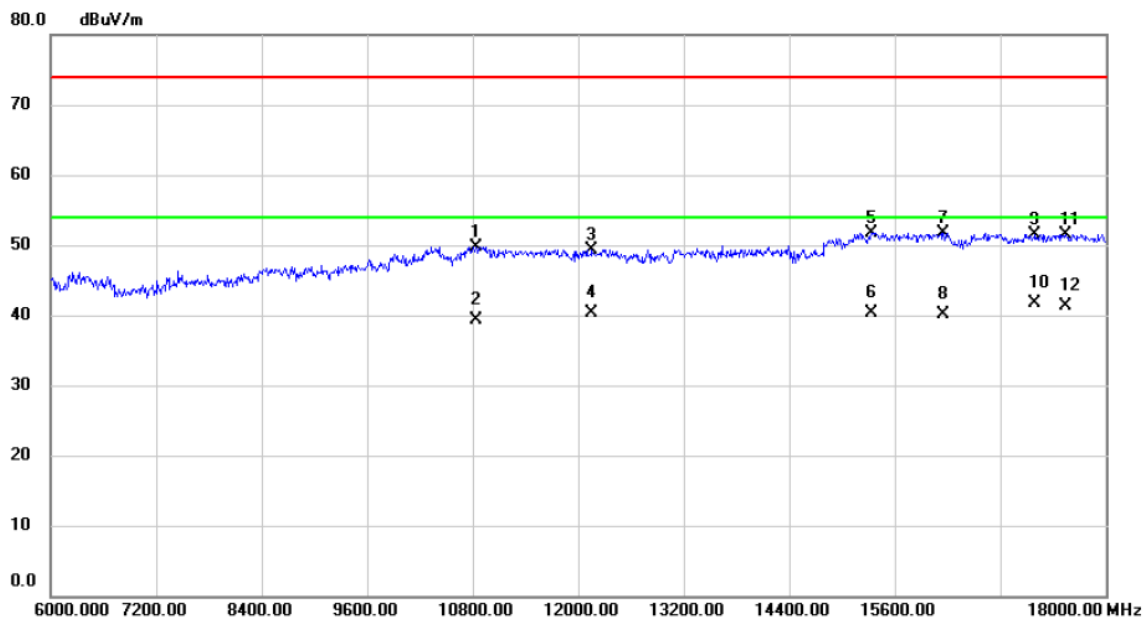
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		2565.000	48.98	-9.16	39.82	74.00	-34.18	peak	
2		2565.000	39.31	-9.16	30.15	54.00	-23.85	AVG	
3		2745.000	48.85	-8.53	40.32	74.00	-33.68	peak	
4		2745.000	38.68	-8.53	30.15	54.00	-23.85	AVG	
5		3460.000	47.59	-6.80	40.79	74.00	-33.21	peak	
6		3460.000	37.06	-6.80	30.26	54.00	-23.74	AVG	
7		4600.000	45.59	-3.84	41.75	74.00	-32.25	peak	
8		4600.000	35.24	-3.84	31.40	54.00	-22.60	AVG	
9		5140.000	44.87	-2.89	41.98	74.00	-32.02	peak	
10		5140.000	33.94	-2.89	31.05	54.00	-22.95	AVG	
11		5630.000	45.16	-2.98	42.18	74.00	-31.82	peak	
12	*	5630.000	35.43	-2.98	32.45	54.00	-21.55	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		



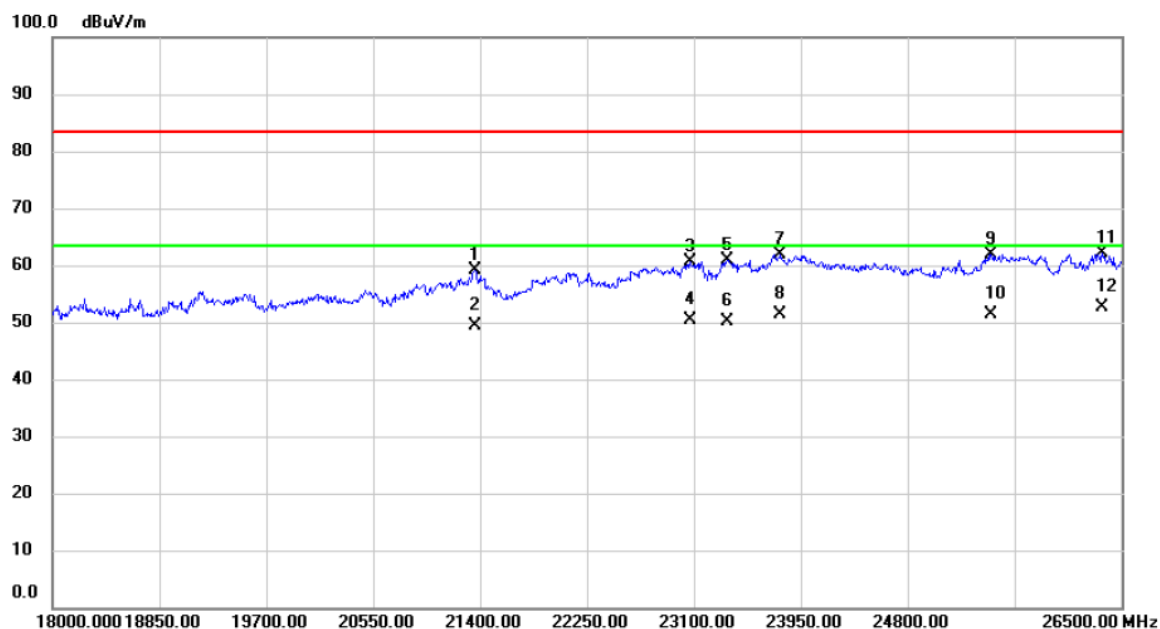
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		11928.00	32.18	17.71	49.89	74.00	-24.11	peak	
2		11928.00	21.55	17.71	39.26	54.00	-14.74	AVG	
3		13488.00	32.20	18.73	50.93	74.00	-23.07	peak	
4		13488.00	21.89	18.73	40.62	54.00	-13.38	AVG	
5		14484.00	30.27	20.92	51.19	74.00	-22.81	peak	
6		14484.00	19.23	20.92	40.15	54.00	-13.85	AVG	
7		15540.00	34.41	17.50	51.91	74.00	-22.09	peak	
8		15540.00	22.82	17.50	40.32	54.00	-13.68	AVG	
9		16308.00	33.81	18.18	51.99	74.00	-22.01	peak	
10		16308.00	23.07	18.18	41.25	54.00	-12.75	AVG	
11		17952.00	30.21	22.72	52.93	74.00	-21.07	peak	
12	*	17952.00	19.60	22.72	42.32	54.00	-11.68	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		



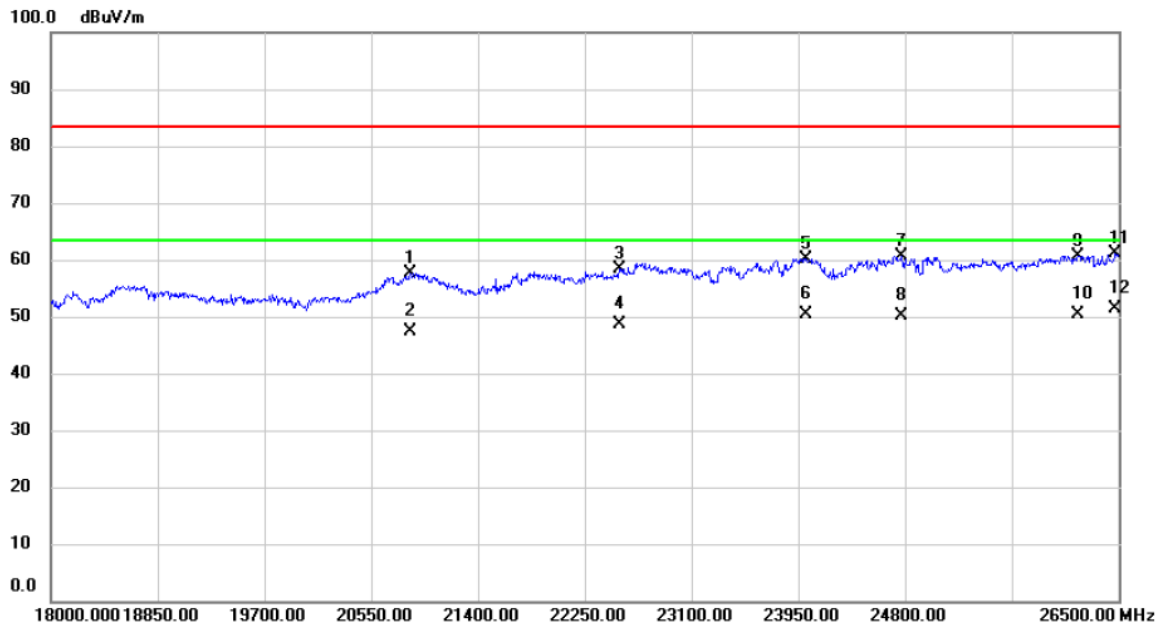
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		10836.00	34.30	15.49	49.79	74.00	-24.21	peak	
2		10836.00	23.77	15.49	39.26	54.00	-14.74	AVG	
3		12156.00	31.60	17.74	49.34	74.00	-24.66	peak	
4		12156.00	22.52	17.74	40.26	54.00	-13.74	AVG	
5		15336.00	33.33	18.33	51.66	74.00	-22.34	peak	
6		15336.00	21.92	18.33	40.25	54.00	-13.75	AVG	
7		16152.00	33.69	17.97	51.66	74.00	-22.34	peak	
8		16152.00	22.15	17.97	40.12	54.00	-13.88	AVG	
9		17196.00	31.15	20.34	51.49	74.00	-22.51	peak	
10	*	17196.00	21.28	20.34	41.62	54.00	-12.38	AVG	
11		17544.00	30.20	21.29	51.49	74.00	-22.51	peak	
12		17544.00	20.03	21.29	41.32	54.00	-12.68	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		



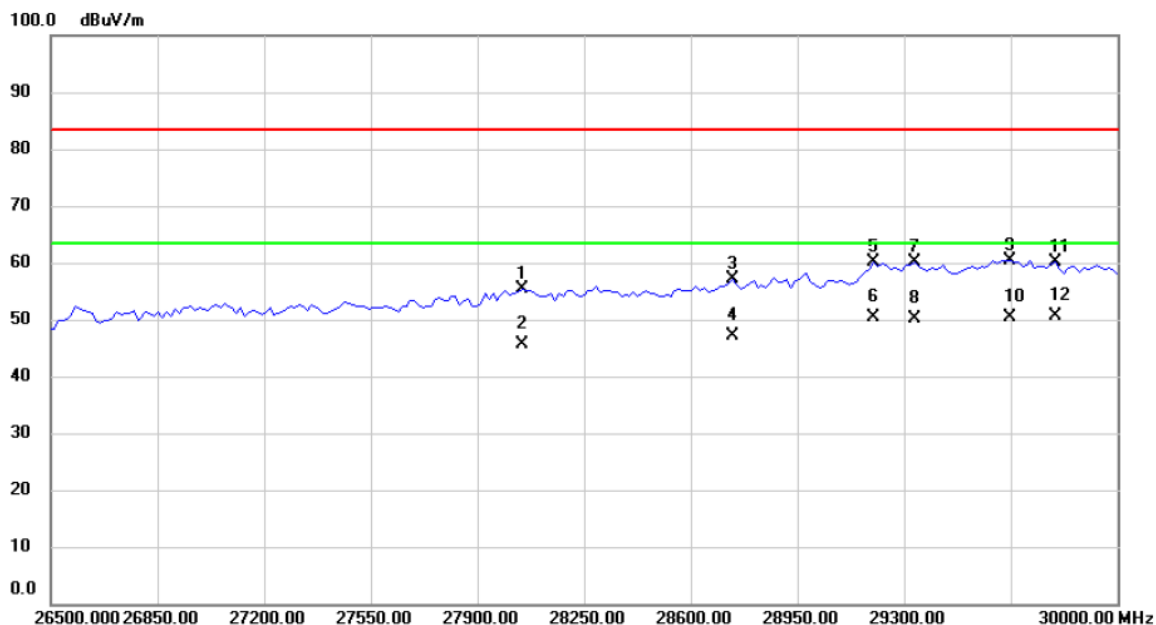
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		21357.50	32.79	26.43	59.22	83.50	-24.28	peak	
2		21357.50	22.83	26.43	49.26	63.50	-14.24	AVG	
3		23066.00	31.78	28.97	60.75	83.50	-22.75	peak	
4		23066.00	21.35	28.97	50.32	63.50	-13.18	AVG	
5		23363.50	31.77	29.13	60.90	83.50	-22.60	peak	
6		23363.50	21.02	29.13	50.15	63.50	-13.35	AVG	
7		23788.50	33.60	28.35	61.95	83.50	-21.55	peak	
8		23788.50	22.97	28.35	51.32	63.50	-12.18	AVG	
9		25463.00	34.92	27.04	61.96	83.50	-21.54	peak	
10		25463.00	24.22	27.04	51.26	63.50	-12.24	AVG	
11		26347.00	35.02	27.16	62.18	83.50	-21.32	peak	
12	*	26347.00	25.46	27.16	52.62	63.50	-10.88	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		



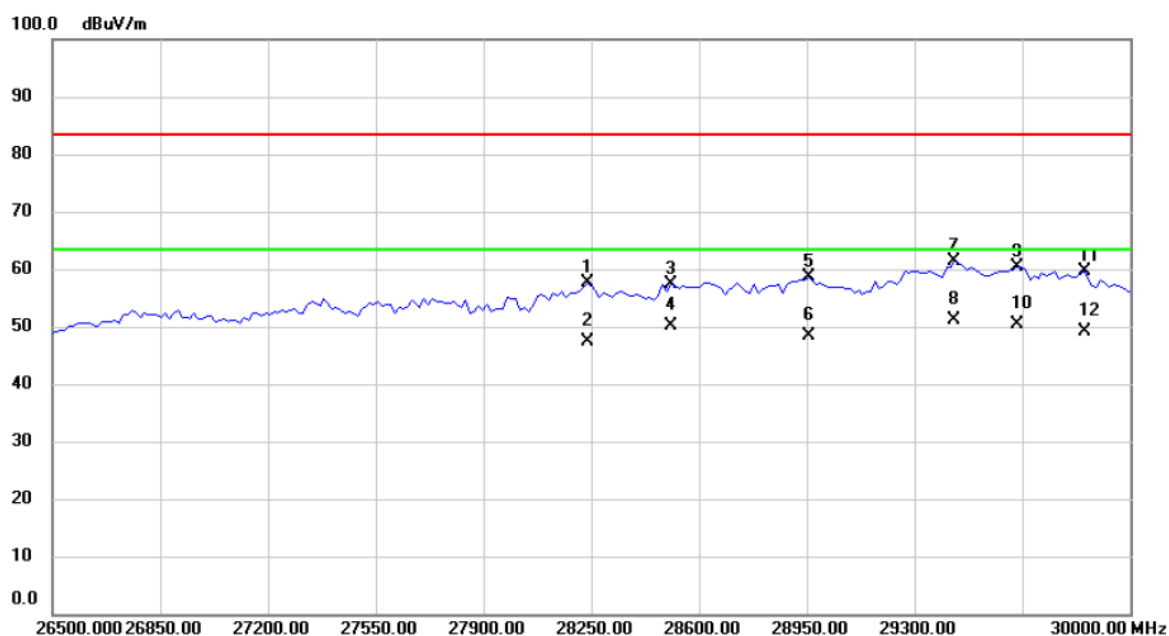
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	20856.00	32.55	25.11	57.66	83.50	-25.84	peak	
2	20856.00	22.15	25.11	47.26	63.50	-16.24	AVG	
3	22530.50	33.21	25.25	58.46	83.50	-25.04	peak	
4	22530.50	23.37	25.25	48.62	63.50	-14.88	AVG	
5	24009.50	32.51	27.73	60.24	83.50	-23.26	peak	
6	24009.50	22.53	27.73	50.26	63.50	-13.24	AVG	
7	24774.50	33.52	27.06	60.58	83.50	-22.92	peak	
8	24774.50	23.09	27.06	50.15	63.50	-13.35	AVG	
9	26177.00	32.62	28.07	60.69	83.50	-22.81	peak	
10	26177.00	22.25	28.07	50.32	63.50	-13.18	AVG	
11	26474.50	34.67	26.48	61.15	83.50	-22.35	peak	
12 *	26474.50	24.87	26.48	51.35	63.50	-12.15	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		28046.51	50.95	4.33	55.28	83.50	-28.22	peak	
2		28046.51	41.29	4.33	45.62	63.50	-17.88	AVG	
3		28738.37	51.17	6.06	57.23	83.50	-26.27	peak	
4		28738.37	41.09	6.06	47.15	63.50	-16.35	AVG	
5		29199.61	53.27	6.77	60.04	83.50	-23.46	peak	
6		29199.61	43.49	6.77	50.26	63.50	-13.24	AVG	
7		29335.27	53.26	6.85	60.11	83.50	-23.39	peak	
8		29335.27	43.30	6.85	50.15	63.50	-13.35	AVG	
9		29647.28	53.32	7.09	60.41	83.50	-23.09	peak	
10		29647.28	43.23	7.09	50.32	63.50	-13.18	AVG	
11		29796.51	52.83	7.21	60.04	83.50	-23.46	peak	
12	*	29796.51	43.41	7.21	50.62	63.50	-12.88	AVG	

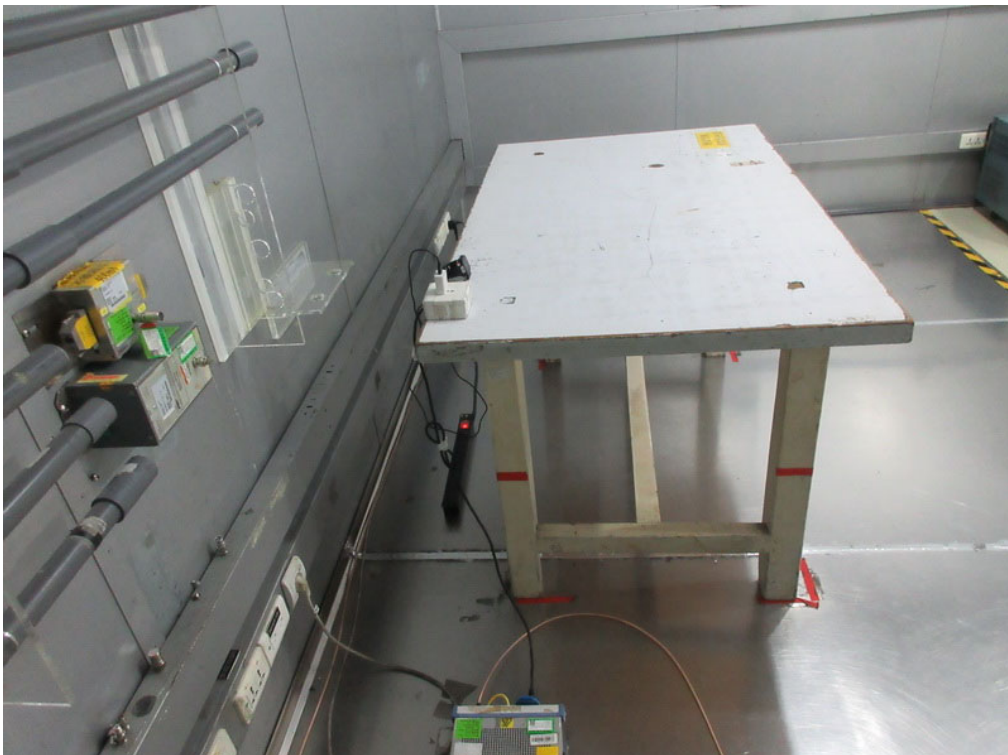
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		



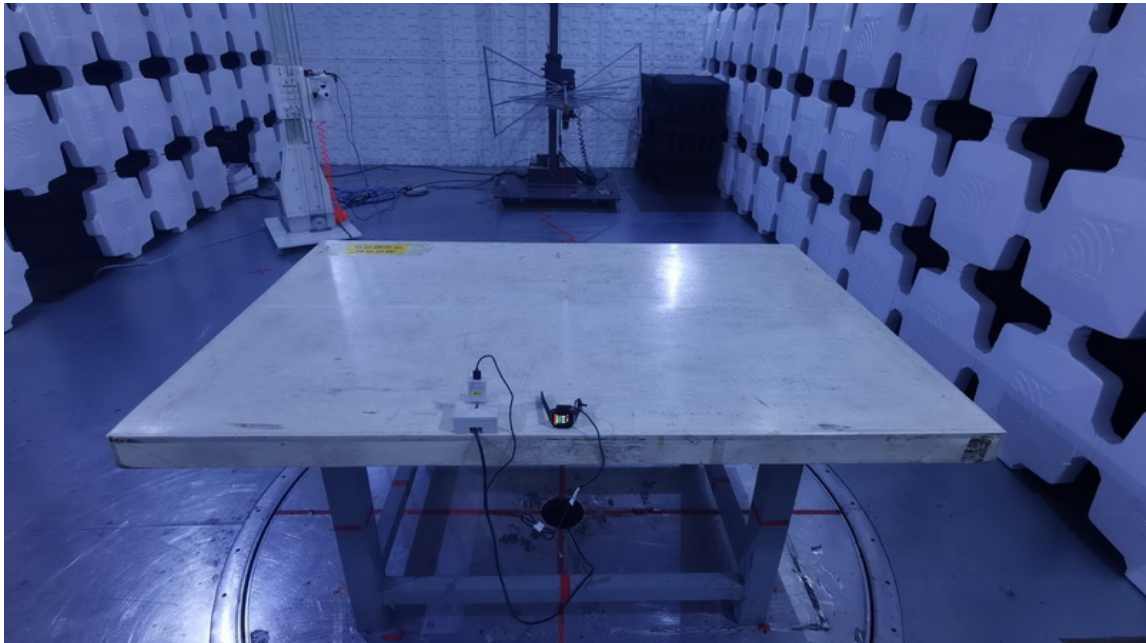
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		28236.43	52.87	4.84	57.71	83.50	-25.79	peak	
2		28236.43	42.42	4.84	47.26	63.50	-16.24	AVG	
3		28507.75	51.83	5.54	57.37	83.50	-26.13	peak	
4		28507.75	44.61	5.54	50.15	63.50	-13.35	AVG	
5		28955.42	51.98	6.54	58.52	83.50	-24.98	peak	
6		28955.42	41.78	6.54	48.32	63.50	-15.18	AVG	
7		29430.23	54.49	6.92	61.41	83.50	-22.09	peak	
8	*	29430.23	44.31	6.92	51.23	63.50	-12.27	AVG	
9		29633.72	53.24	7.07	60.31	83.50	-23.19	peak	
10		29633.72	43.25	7.07	50.32	63.50	-13.18	AVG	
11		29850.77	52.29	7.25	59.54	83.50	-23.96	peak	
12		29850.77	42.00	7.25	49.25	63.50	-14.25	AVG	

4. EUT TEST PHOTO

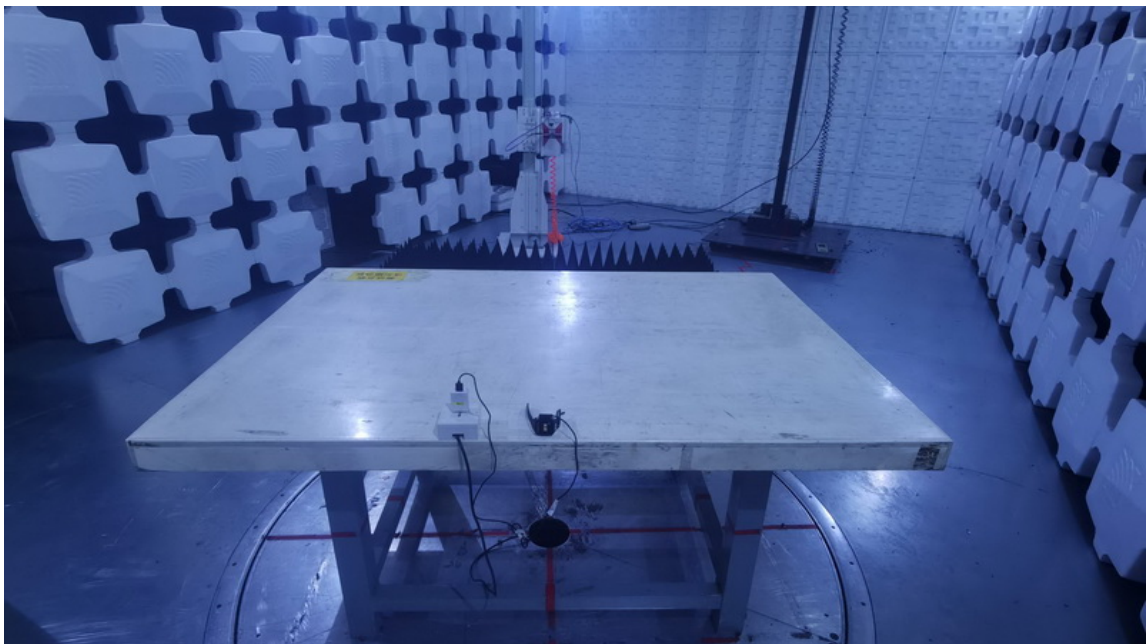
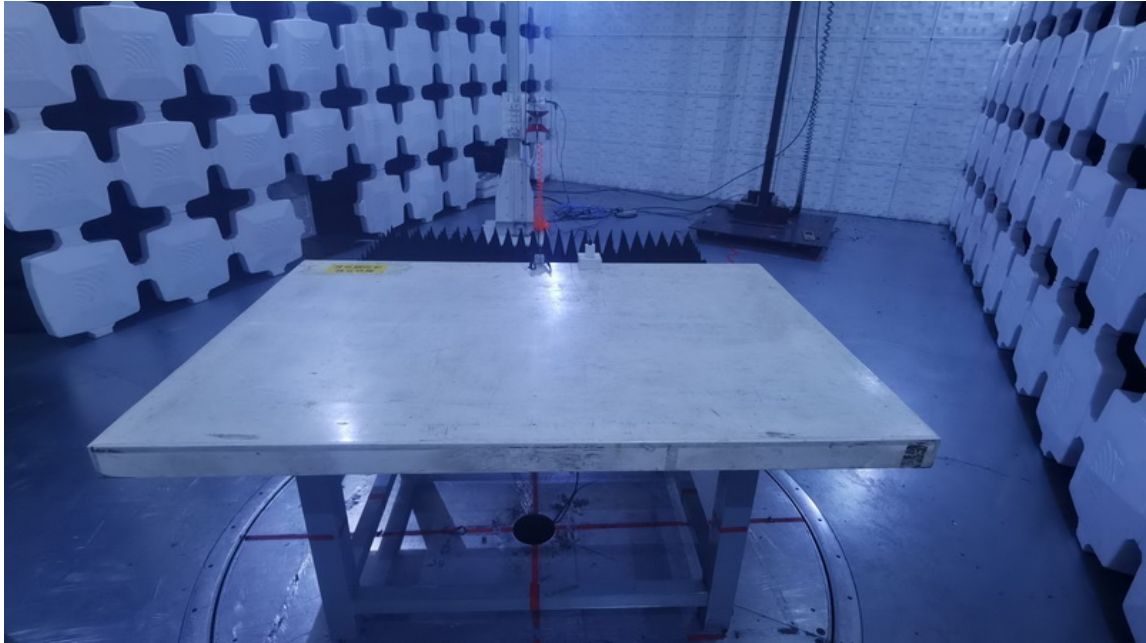
AC Power Line Conducted Emissions



Radiated Emissions 30 MHz to 1 GHz



Radiated Emissions Above 1 GHz



End of Test Report