



# FCC TEST REPORT

## FCC ID:2BH8E-OC21

**Applicant:** Shenzhen Ouchao Technology Co., Ltd  
**Address:** 303, Building 34, Longzhu Garden, Xixiang Street, Bao'an District, ShenZhen China  
**Manufacturer:** Shenzhen Ouchao Technology Co., Ltd  
**Address:** 303, Building 34, Longzhu Garden, Xixiang Street, Bao'an District, ShenZhen China  
**EUT:** Four in one wireless charging  
**Trade Mark:** N/A  
**Model Number:** OC21  
**Date of Receipt:** Jun. 21, 2025  
**Test Date:** Jun. 21, 2025 to Jul. 09, 2025  
**Date of Report:** Jul. 09, 2025  
**Prepared By:** Shenzhen DL Testing Technology Co., Ltd.  
**Address:** 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China  
**Applicable Standards:** FCC CFR Title 47 Part 15 Subpart C  
**Test Result:** Pass  
**Report Number:** DLE-250709010R

Prepared (Test Engineer): Dimon Tan

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



*This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.*



## TABLE OF CONTENTS

<b>1. VERSION .....</b>	<b>3</b>
<b>2. TEST SUMMARY .....</b>	<b>4</b>
2.1 TEST FACILITY .....	5
2.2 MEASUREMENT UNCERTAINTY .....	5
<b>3. GENERAL INFORMATION .....</b>	<b>6</b>
3.1 GENERAL DESCRIPTION OF EUT .....	6
3.2 TEST MODE .....	7
3.3 BLOCK DIAGRAM OF EUT CONFIGURATION .....	12
3.4 TEST CONDITIONS .....	13
3.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE) .....	13
3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS .....	14
<b>4. CONDUCTED EMISSION TEST .....</b>	<b>15</b>
4.1 CONDUCTED EMISSION MEASUREMENT .....	15
4.1.1 POWER LINE CONDUCTED EMISSION Limits .....	15
4.1.2 TEST PROCEDURE .....	15
4.1.3 DEVIATION FROM TEST STANDARD .....	15
4.1.4 TEST SETUP .....	16
4.1.5 EUT OPERATING CONDITIONS .....	16
4.1.6 TEST RESULT .....	17
<b>5. RADIATED EMISSION MEASUREMENT .....</b>	<b>19</b>
5.1 RADIATED EMISSION LIMITS .....	19
5.2 ANECHOIC CHAMBER TEST SETUP DIAGRAM .....	20
5.3 TEST PROCEDURE .....	21
5.4 DEVIATION FROM TEST STANDARD .....	21
5.5 TEST RESULT .....	21
<b>6. 20DB BANDWIDTH TEST .....</b>	<b>42</b>
6.1 TEST PROCEDURE .....	42
6.2 LIMIT .....	42
6.3 TEST SETUP .....	42
6.4 DEVIATION FROM STANDARD .....	42
6.5 TEST RESULT .....	43
<b>7. ANTENNA REQUIREMENT .....</b>	<b>45</b>
<b>8. TEST SETUP PHOTO .....</b>	<b>46</b>
<b>9. EUT CONSTRUCTIONAL DETAILS .....</b>	<b>46</b>



**1. VERSION**

Report No.	Version	Description	Approved
DLE-250709010R	Rev.01	Initial issue of report	Jul. 09, 2025



## 2. TEST SUMMARY

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Spurious Emission	15.209(a)(f)	Pass
20dB Bandwidth	15.215	Pass

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report



## 2.1 TEST FACILITY

Shenzhen DL Testing Technology Co., Ltd.

Add. : 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Stree  
Longgang Shenzhen, Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB identifier: CN0118

## 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	3m camber Radiated spurious emission (9KHz-30MHz)	U=4.5dB
2	3m camber Radiated spurious emission (30MHz-1GHz)	U=4.8dB
3	3m chamber Radiated spurious emission (1GHz-6GHz)	U=4.9dB
4	3m chamber Radiated spurious emission (6GHz-40GHz)	U=5.0dB
5	Conducted Disturbance	U=3.2dB
6	RF Conducted Spurious Emission	U=2.2dB
7	RF Occupied Bandwidth	U=1.8MHz
8	Humidity Uncertainty	U=5.3%
9	Temperature Uncertainty	U=0.59°C



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Four in one wireless charging
Model No.:	OC21
Serial No.:	N/A
Model Difference:	N/A
Hardware Version:	V 1.0
Software Version:	V 1.1
Operation Frequency:	ANT 1&2&3: 110kHz ~ 205kHz ANT 4: 320kHz ~ 360kHz
Modulation Type:	ASK
Antenna Type:	Loop Coil Antenna
Antenna Gain:	0dBi
Ratings:	Input: 5V---3A, 9V---2A, 9V---3A Phone Output 1: 15W/10W/7.5W/5W Phone Output 2: 15W/10W/7.5W/5W Earphone Output: 3W Watch Output: 2.5W
Transmitting Mode:	Keep the EUT in continuously wireless charging mode



### 3.2 TEST MODE

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.

The EUT is divided into two open modes. Mode a is the non-fold mode, in which the EUT can output wirelessly to both the phone and the headset at the same time; mode b is the fold mode, in which the EUT can only output wirelessly to the phone.

Note: Since the EUT operates in the same mode before and after folding, the report only reflects the test data before folding.



a.EUT mode of operation before folding:

Test Modes:	Test Coil:	Description:
Mode 1a Mode 2a Mode 3a	ANT 1	AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: >98%)
Mode 1b Mode 2b Mode 3b		AC/DC Adapter (9V/2A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 (Battery Status: >98%)
Mode 1c Mode 2c Mode 3c		AC/DC Adapter (5V/3A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone1 (Battery Status: >98%)
Mode 4a Mode 5a Mode 6a		AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: >98%)
Mode 4b Mode 5b Mode 6b		AC/DC Adapter (9V/2A) + EUT + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone2 (Battery Status: >98%)
Mode 4c Mode 5c Mode 6c		AC/DC Adapter (5V/3A) + EUT + Phone2 (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone2 (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone2 (Battery Status: >98%)
Mode 7a Mode 8a Mode 9a		AC/DC Adapter (9V/3A) + EUT + Earphone (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Earphone (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Earphone (Battery Status: >98%)
Mode 7b Mode 8b Mode 9b		AC/DC Adapter (9V/2A) + EUT + Earphone (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Earphone (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Earphone (Battery Status: >98%)
Mode 7c Mode 8c Mode 9c		AC/DC Adapter (5V/3A) + EUT + Earphone (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Earphone (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Earphone (Battery Status: >98%)
Mode 10a Mode 11a Mode 12a	ANT 4	AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: >98%)
Mode 10b Mode 11b Mode 12b		AC/DC Adapter (9V/2A) + EUT + Watch (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Watch (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Watch (Battery Status: >98%)
Mode 10c Mode 11c Mode 12c		AC/DC Adapter (5V/3A) + EUT + Watch (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Watch (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Watch (Battery Status: >98%)



Test Modes:	Test Coil:	Description:
Mode 13a Mode 14a Mode 15a	ANT 1 + ANT 2	AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: >98%)
Mode 13b Mode 14b Mode 15b		AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 (Battery Status: >98%)
Mode 13c Mode 14c Mode 15c		AC/DC Adapter (5V/3A) + EUT + Phone1 + Phone2 (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Phone2 (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Phone2 (Battery Status: >98%)
Mode 16a Mode 17a Mode 18a	ANT 1 + ANT 3	AC/DC Adapter (9V/3A) + EUT + Phone1 + Earphone (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Earphone (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Earphone (Battery Status: >98%)
Mode 16b Mode 17b Mode 18b		AC/DC Adapter (9V/2A) + EUT + Phone1 + Earphone (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Earphone (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Earphone (Battery Status: >98%)
Mode 16c Mode 17c Mode 18c		AC/DC Adapter (5V/3A) + EUT + Phone1 + Earphone (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Earphone (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Earphone (Battery Status: >98%)
Mode 19a Mode 20a Mode 21a	ANT 1 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Phone1 + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Watch (Battery Status: >98%)
Mode 19b Mode 20b Mode 21b		AC/DC Adapter (9V/2A) + EUT + Phone1 + Watch (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Watch (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Watch (Battery Status: >98%)
Mode 19c Mode 20c Mode 21c		AC/DC Adapter (5V/3A) + EUT + Phone1 + Watch (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Watch (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Watch (Battery Status: >98%)
Mode 22a Mode 23a Mode 24a	ANT 2 + ANT 3	AC/DC Adapter (9V/3A) + EUT + Phone2 + Earphone (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone2 + Earphone (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone2 + Earphone (Battery Status: >98%)
Mode 22b Mode 23b Mode 24b		AC/DC Adapter (9V/2A) + EUT + Phone2 + Earphone (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone2 + Earphone (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone2 + Earphone (Battery Status: >98%)
Mode 22c Mode 23c Mode 24c		AC/DC Adapter (5V/3A) + EUT + Phone2 + Earphone (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone2 + Earphone (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone2 + Earphone (Battery Status: >98%)



Test Modes:	Test Coil:	Description:
Mode 25a Mode 26a Mode 27a	ANT 3 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Phone2 + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone2 + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone2 + Watch (Battery Status: >98%)
Mode 25b Mode 26b Mode 27b		AC/DC Adapter (9V/2A) + EUT + Phone2 + Watch (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone2 + Watch (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone2 + Watch (Battery Status: >98%)
Mode 25c Mode 26c Mode 27c		AC/DC Adapter (5V/3A) + EUT + Phone2 + Watch (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone2 + Watch (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone2 + Watch (Battery Status: >98%)
Mode 28a Mode 29a Mode 30a	ANT 3 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Earphone + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Earphone + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Earphone + Watch (Battery Status: >98%)
Mode 28b Mode 29b Mode 30b		AC/DC Adapter (9V/2A) + EUT + Earphone + Watch (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Earphone + Watch (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Earphone + Watch (Battery Status: >98%)
Mode 28c Mode 29c Mode 30c		AC/DC Adapter (5V/3A) + EUT + Earphone + Watch (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Earphone + Watch (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Earphone + Watch (Battery Status: >98%)
Mode 31a Mode 32a Mode 33a	ANT 1 + ANT 2 + ANT 3 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + Earphone + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + Earphone + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + Earphone + Watch (Battery Status: >98%)
Mode 31ab Mode 32b Mode 33b		AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 + Earphone + Watch (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 + Earphone + Watch (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 + Earphone + Watch (Battery Status: >98%)



b.EUT works in folded mode:

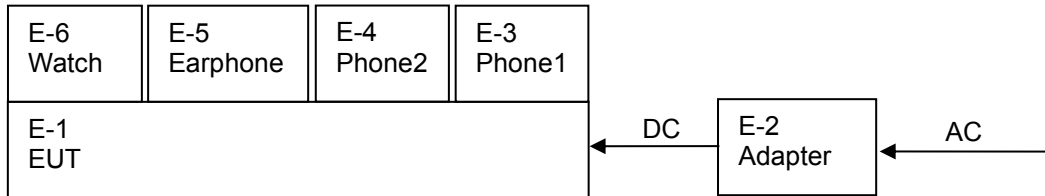
Test Modes:	Test Coil:	Description:
Mode 34a Mode 35a Mode 36a	ANT 1	AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: >98%)
Mode 34b Mode 35b Mode 36b		AC/DC Adapter (9V/2A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 (Battery Status: >98%)
Mode 34c Mode 35c Mode 36c		AC/DC Adapter (5V/3A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone1 (Battery Status: >98%)
Mode 37a Mode 38a Mode 39a	ANT 2	AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: >98%)
Mode 37b Mode 38b Mode 39b		AC/DC Adapter (9V/2A) + EUT + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone2 (Battery Status: >98%)
Mode 37c Mode 38c Mode 39c		AC/DC Adapter (5V/3A) + EUT + Phone2 (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone2 (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone2 (Battery Status: >98%)
Mode 40a Mode 41a Mode 42a	ANT 1 + ANT 2	AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: >98%)
Mode 40b Mode 41b Mode 42b		AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 (Battery Status: <1%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 (Battery Status: 50%) AC/DC Adapter (9V/2A) + EUT + Phone1 + Phone2 (Battery Status: >98%)
Mode 40c Mode 41c Mode 42c		AC/DC Adapter (5V/3A) + EUT + Phone1 + Phone2 (Battery Status: <1%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Phone2 (Battery Status: 50%) AC/DC Adapter (5V/3A) + EUT + Phone1 + Phone2 (Battery Status: >98%)



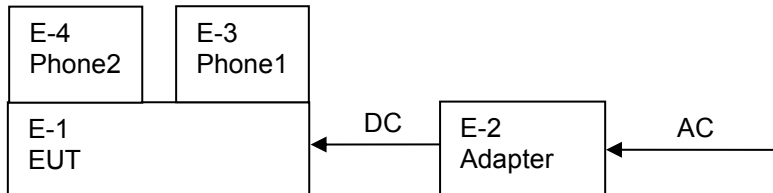
### 3.3 BLOCK DIAGRAM OF EUT CONFIGURATION

#### Conducted Emission

a. EUT mode of operation before folding:

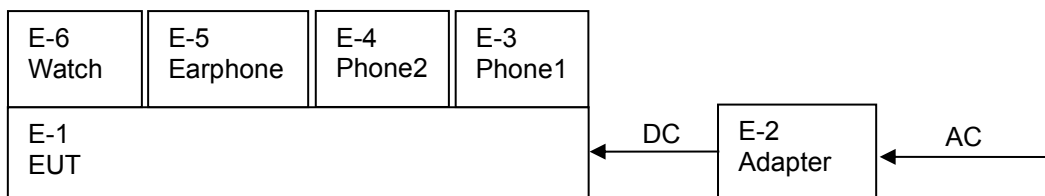


b. EUT works in folded mode:

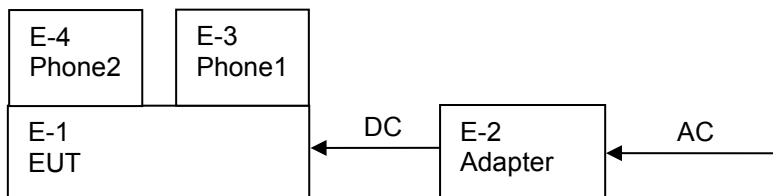


#### Radiated Emission

a. EUT mode of operation before folding:



b. EUT works in folded mode:





### 3.4 TEST CONDITIONS

Temperature: 23~26℃

Relative Humidity: 54~63 %

### 3.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

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.	Note
E-1	Four in one wireless charging	N/A	OC21	N/A	EUT
E-2	AC/DC Adapter	SAMSUNG	EP-T4510	N/A	Auxiliary
E-3	Phone1	Apple	iPhone 16 Pro	N/A	Auxiliary
E-4	Phone2	Apple	iPhone 13 Pro	N/A	Auxiliary
E-5	Earphone	Apple	Airpods 2	N/A	Auxiliary
E-6	Watch	Apple	iWatch S2	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.8M	DC cable unshielded

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.



### 3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

#### Radiation test, Band-edge test and 6db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 01, 2024	Oct. 31, 2025
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 01, 2024	Oct. 31, 2025
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 01, 2024	Oct. 31, 2025
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 01, 2024	Oct. 31, 2025
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 01, 2024	Oct. 31, 2025
6	Amplifier (9kHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 01, 2024	Oct. 31, 2025
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 01, 2024	Oct. 31, 2025
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 01, 2024	Oct. 31, 2025
9	Loop Antenna (9kHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 01, 2024	Oct. 31, 2025
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 01, 2024	Oct. 31, 2025
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 01, 2024	Oct. 31, 2025
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 01, 2024	Oct. 31, 2025
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 01, 2024	Oct. 31, 2025
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 01, 2024	Oct. 31, 2025
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 01, 2024	Oct. 31, 2025
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 01, 2024	Oct. 31, 2025

#### Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	EMI Receiver	R&S	ESR	101421	Nov. 01, 2024	Oct. 31, 2025
3	LISN	R&S	ENV216	102417	Nov. 01, 2024	Oct. 31, 2025
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 01, 2024	Oct. 31, 2025

#### Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



#### 4. CONDUCTED EMISSION TEST

##### 4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

##### 4.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) \*Decreases with the logarithm of the frequency.

##### 4.1.2 TEST PROCEDURE

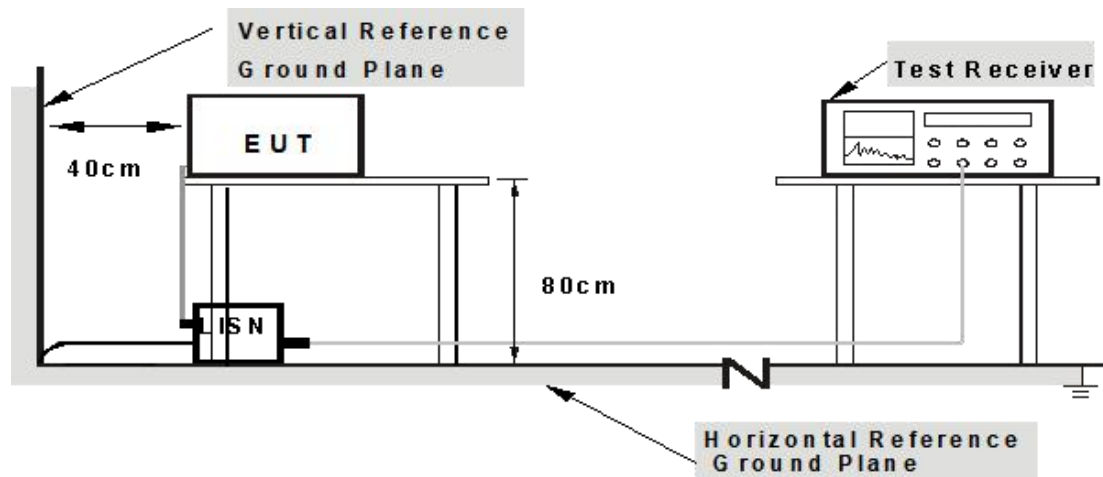
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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.
- 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.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

##### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation



#### 4.1.4 TEST SETUP



- Note:** 1.Support units were connected to second LISN.  
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

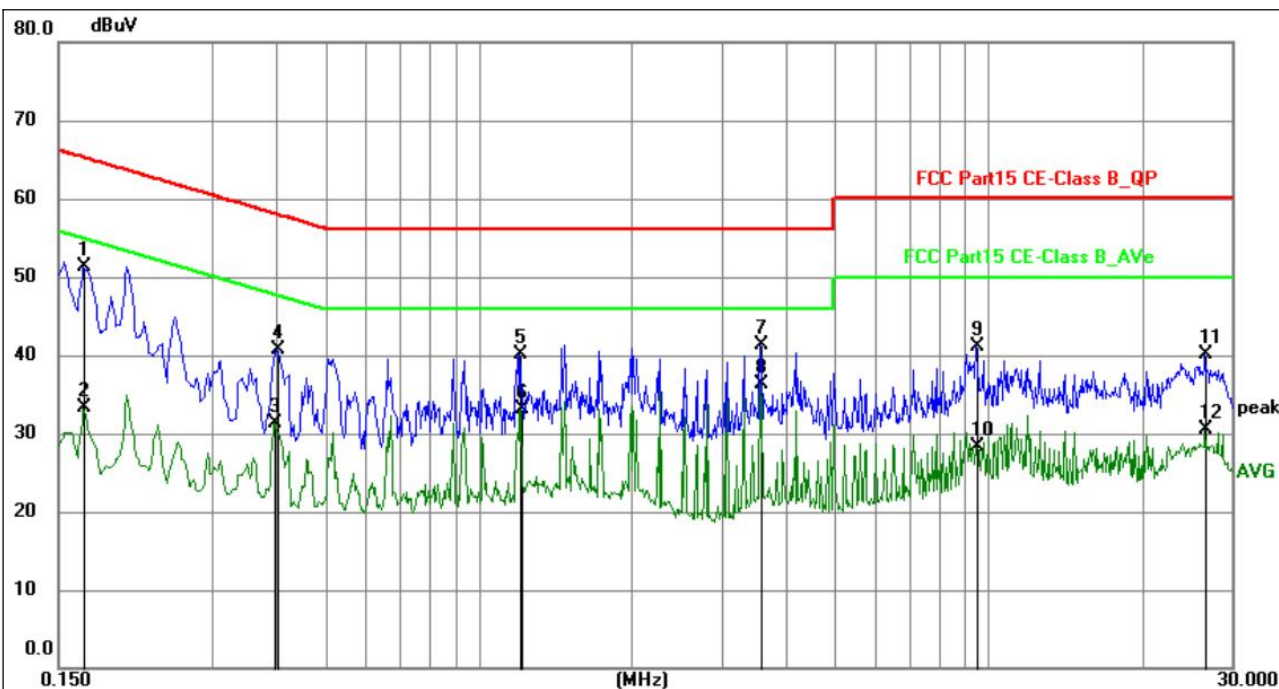
#### 4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



#### 4.1.6 TEST RESULT

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 31aa



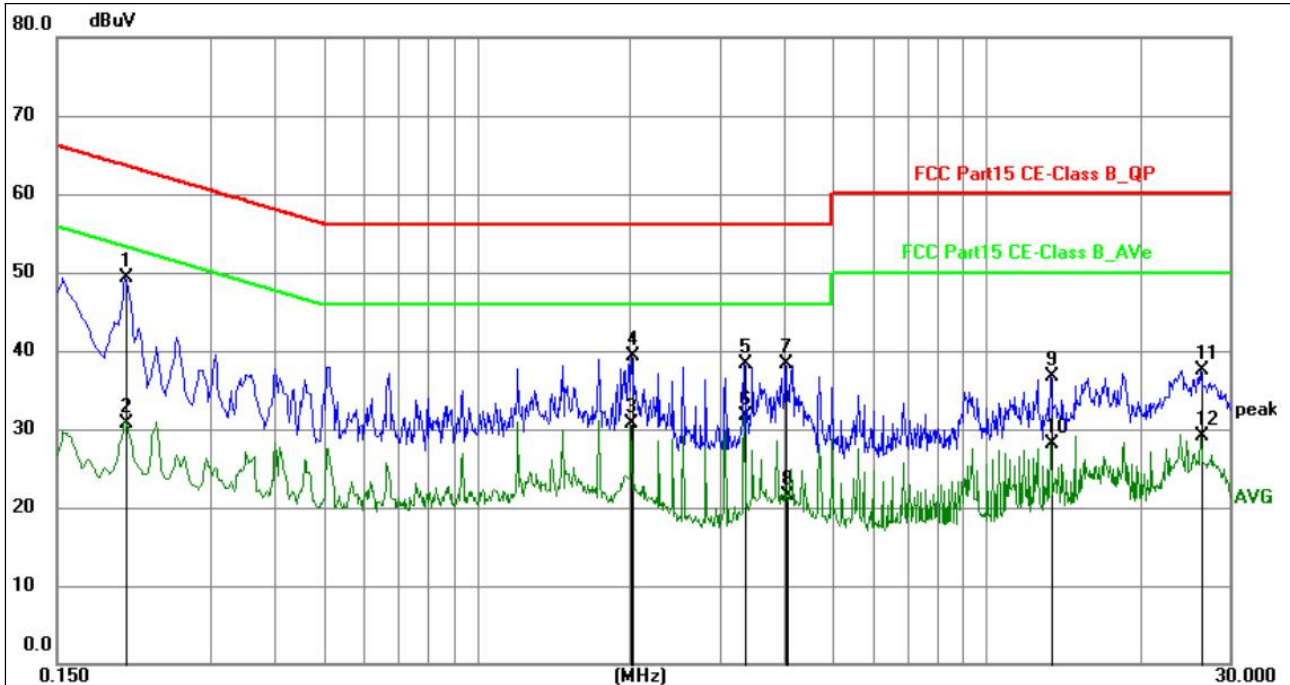
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1680	31.05	20.25	51.30	65.06	-13.76	QP	P	
2	0.1680	13.15	20.25	33.40	55.06	-21.66	AVG	P	
3	0.3975	10.92	20.32	31.24	47.91	-16.67	AVG	P	
4	0.4020	20.40	20.32	40.72	57.81	-17.09	QP	P	
5	1.2074	19.75	20.30	40.05	56.00	-15.95	QP	P	
6	1.2119	12.83	20.30	33.13	46.00	-12.87	AVG	P	
7	3.5790	21.02	20.34	41.36	56.00	-14.64	QP	P	
8	3.5790	15.91	20.34	36.25	46.00	-9.75	AVG	P	
9	9.4515	20.76	20.44	41.20	60.00	-18.80	QP	P	
10	9.4515	7.94	20.44	28.38	50.00	-21.62	AVG	P	
11	26.6640	19.48	20.67	40.15	60.00	-19.85	QP	P	
12	26.6640	9.76	20.67	30.43	50.00	-19.57	AVG	P	

#### Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Lisn factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 31a recorded.



Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 31a



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2040	28.93	20.37	49.30	63.45	-14.15	QP	P	
2	0.2050	10.40	20.37	30.77	53.41	-22.64	AVG	P	
3	2.0084	10.36	20.31	30.67	46.00	-15.33	AVG	P	
4	2.0129	18.94	20.31	39.25	56.00	-16.75	QP	P	
5	3.3495	18.06	20.32	38.38	56.00	-17.62	QP	P	
6	3.3495	11.44	20.32	31.76	46.00	-14.24	AVG	P	
7	4.0380	17.88	20.33	38.21	56.00	-17.79	QP	P	
8	4.0695	1.08	20.34	21.42	46.00	-24.58	AVG	P	
9	13.3980	16.27	20.49	36.76	60.00	-23.24	QP	P	
10	13.3980	7.65	20.49	28.14	50.00	-21.86	AVG	P	
11	26.2950	16.91	20.69	37.60	60.00	-22.40	QP	P	
12	26.2950	8.33	20.69	29.02	50.00	-20.98	AVG	P	

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi - Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Liss factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 31a recorded.



## 5. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 1GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average

### 5.1 RADIATED EMISSION LIMITS

#### Limits for frequency below 30MHz

Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Quasi-peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

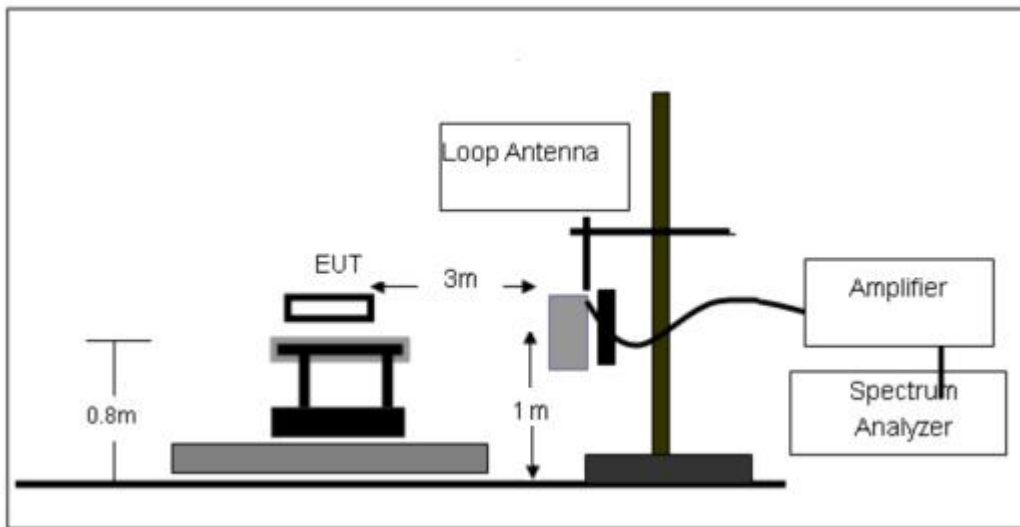
#### Limits for frequency Above 30MHz

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

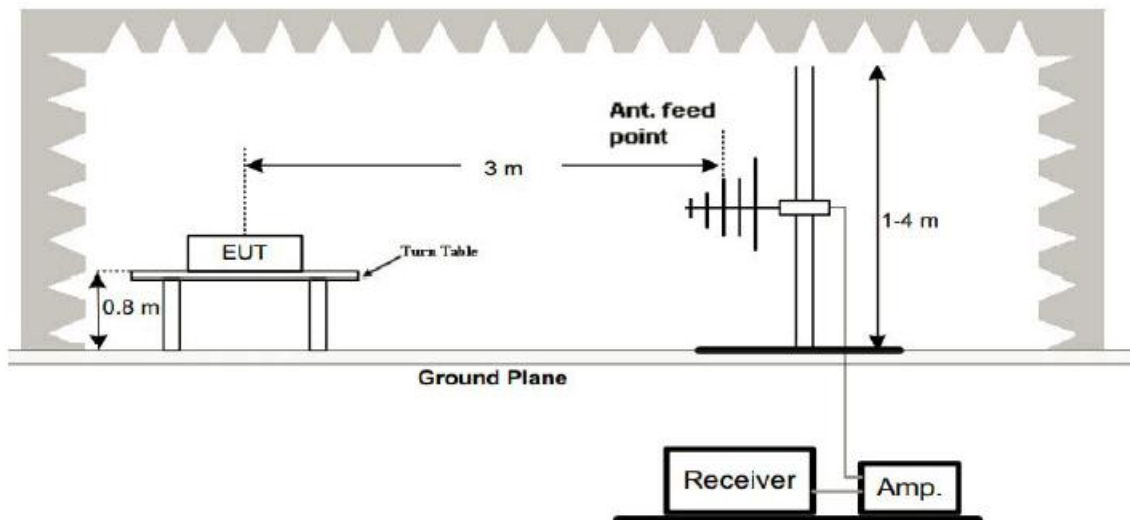


## 5.2 ANECHOIC CHAMBER TEST SETUP DIAGRAM

### (A) Radiated Emission Test-Up Frequency Below 30MHz



### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.



### 5.3 TEST PROCEDURE

#### Below 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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 loop antenna and in the center of a loop antenna, which was mounted on the top of a variable-height antenna tower.
- For each suspected emission, the EUT was arranged to its worst case, the height of interference-receiving loop antenna centre is 1 meter above the ground, and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- Both coaxial (loop plane perpendicular to the ground plane and to the measurement axis) and coplanar (loop plane perpendicular to the ground plane and coplanar with the measurement axis) polarizations of the antenna are set to make the measurement.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

#### 30MHz-1GHz

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. 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 is a broadband antenna, and its 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

### 5.4 DEVIATION FROM TEST STANDARD

No deviation

### 5.5 TEST RESULT

#### Measurement data:

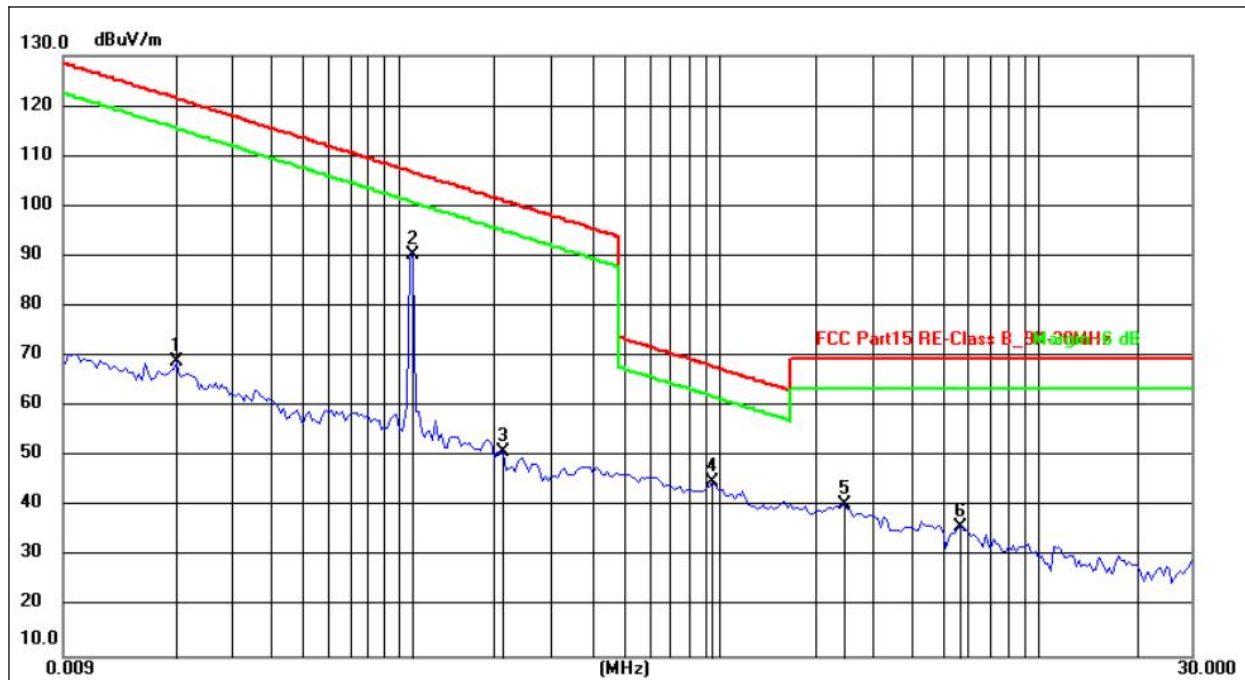
Note: Limit dBuV/m @3m = Limit dBuV/m @300m + 80

Limit dBuV/m @3m = Limit dBuV/m @30m + 40



ANT-1 - 9 kHz~30 MHz

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 1a



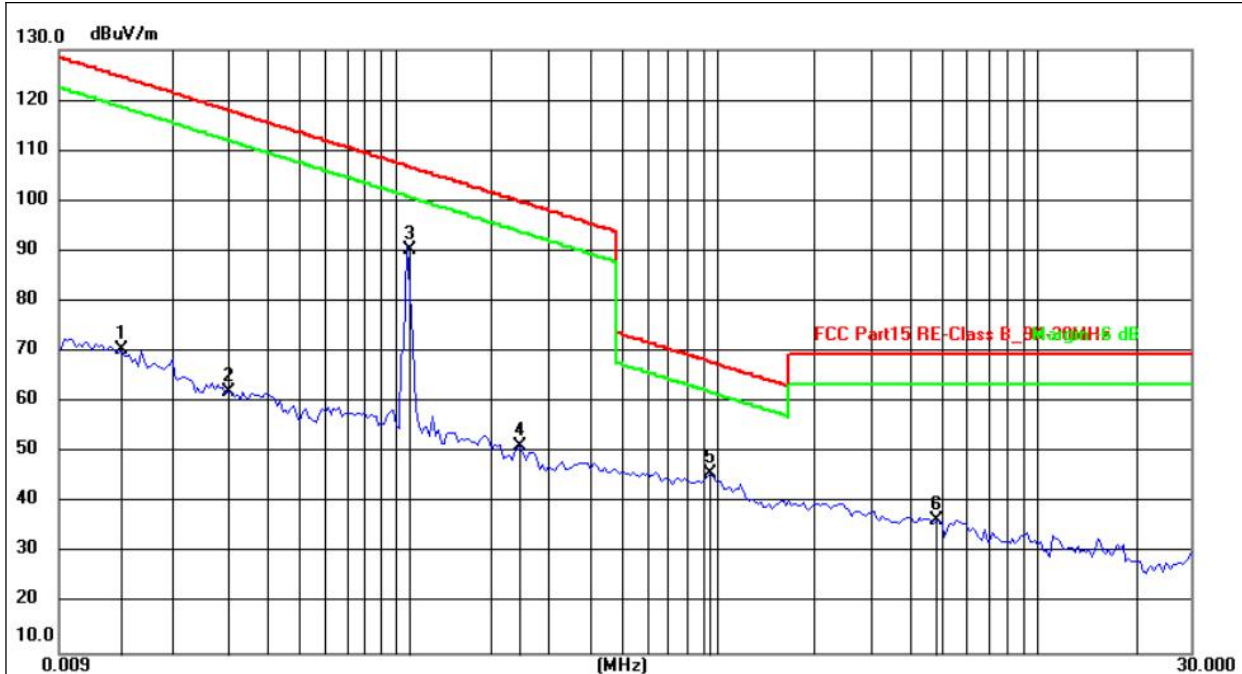
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0200	48.56	20.45	69.01	121.58	-52.57	peak
2	0.1110	70.35	19.82	90.17	106.78	-16.61	peak
3	0.2127	30.91	20.09	51.00	101.05	-50.05	peak
4	0.9546	24.86	20.04	44.90	68.01	-23.11	peak
5	2.4763	20.69	19.73	40.42	69.54	-29.12	peak
6	5.6875	16.42	19.41	35.83	69.54	-33.71	peak

Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
5. Margin= Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 1a recorded.



Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Coplanar
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 1a



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0140	49.85	20.51	70.36	124.68	-54.32	peak
2	0.0303	41.81	20.21	62.02	117.98	-55.96	peak
3	0.1110	70.39	19.82	90.21	106.78	-16.57	peak
4	0.2452	31.20	20.10	51.30	99.81	-48.51	peak
5	0.9546	25.86	20.04	45.90	68.01	-22.11	peak
6	4.8357	17.14	19.49	36.63	69.54	-32.91	peak

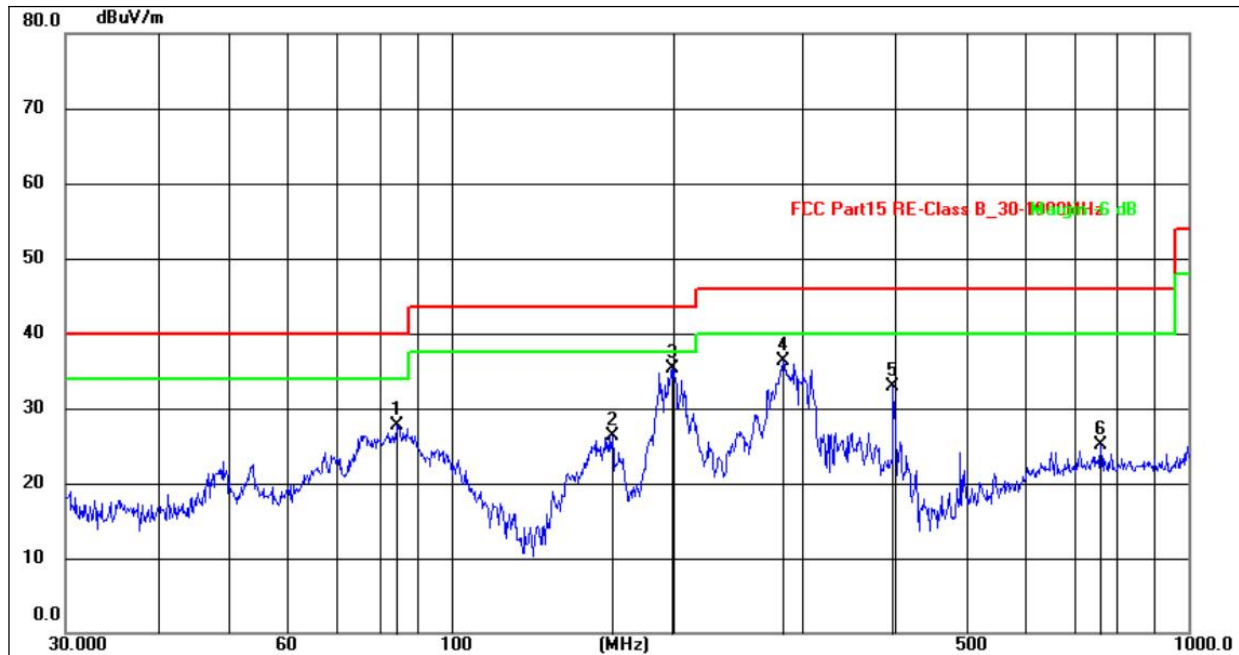
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 1a recorded.



ANT-1 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 1a



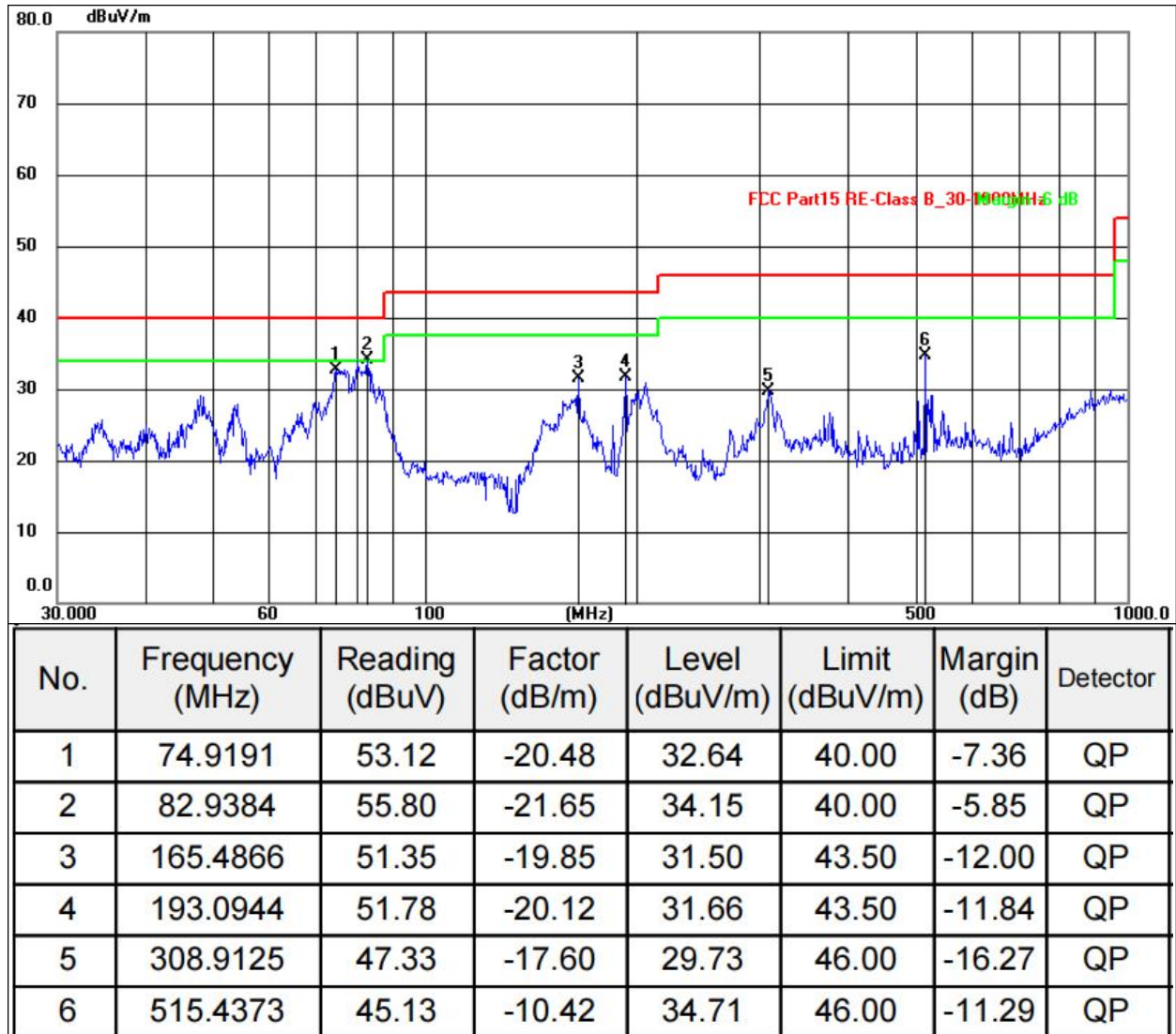
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	84.4054	47.37	-19.67	27.70	40.00	-12.30	QP
2	165.4866	42.70	-16.40	26.30	43.50	-17.20	QP
3	199.2855	53.82	-18.46	35.36	43.50	-8.14	QP
4	281.9945	50.45	-14.20	36.25	46.00	-9.75	QP
5	397.6333	48.92	-16.07	32.85	46.00	-13.15	QP
6	760.7033	31.68	-6.57	25.11	46.00	-20.89	QP

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 1a recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 1a



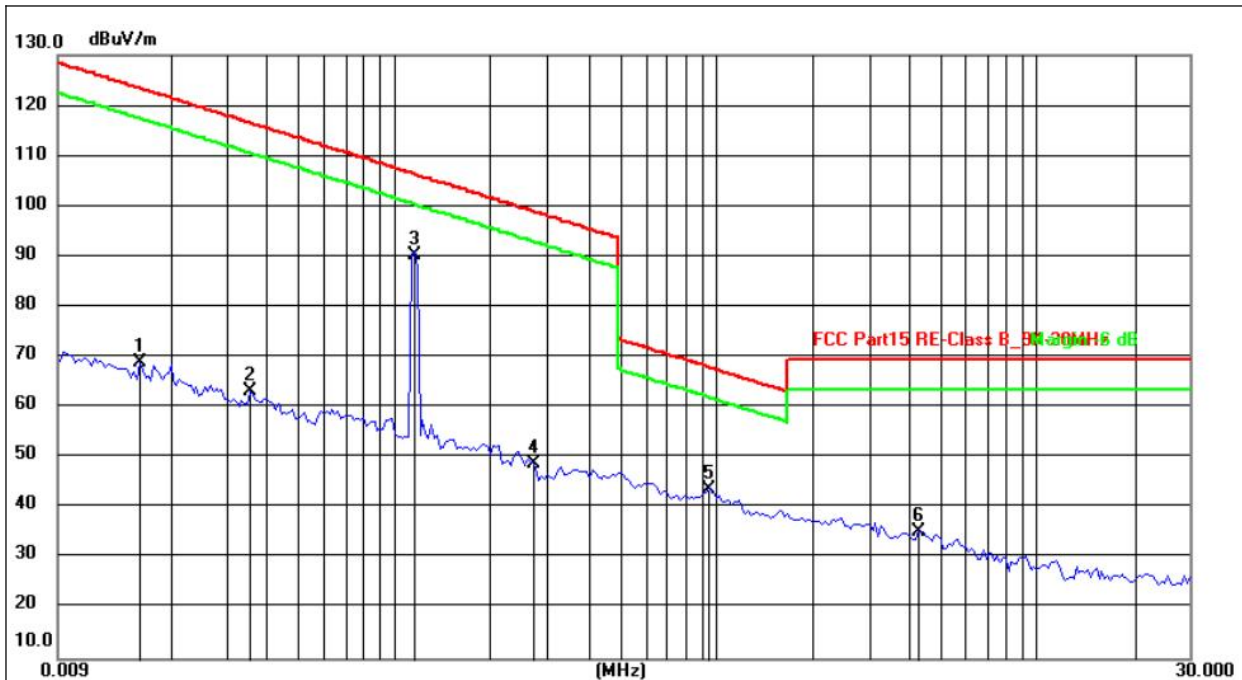
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 1a recorded.



ANT-2 - 9 kHz~30 MHz

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 4a



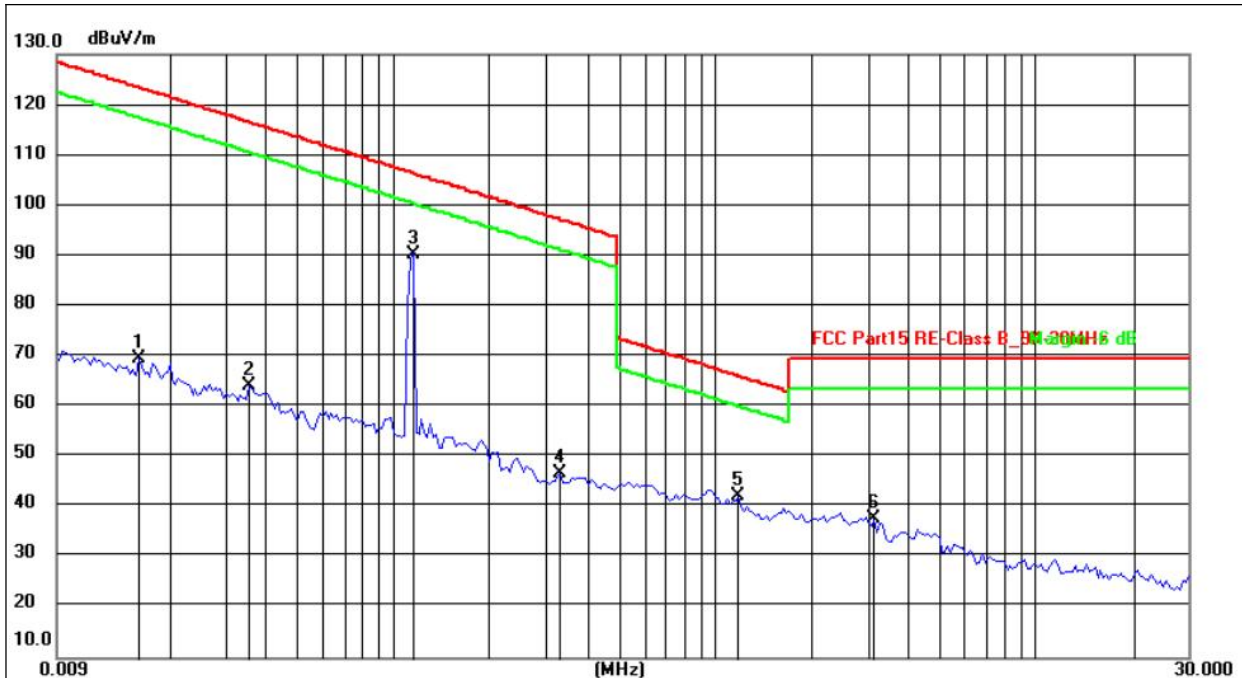
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0160	48.57	20.49	69.06	123.52	-54.46	peak
2	0.0357	43.11	20.08	63.19	116.55	-53.36	peak
3	0.1150	70.51	19.85	90.36	106.39	-16.03	peak
4	0.2714	28.59	20.11	48.70	98.93	-50.23	peak
5	0.9546	23.86	20.04	43.90	68.01	-24.11	peak
6	4.2816	15.96	19.54	35.50	69.54	-34.04	peak

Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
5. Margin= Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 4a recorded.



Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Coplanar
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 4a



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0160	49.07	20.49	69.56	123.52	-53.96	peak
2	0.0357	44.11	20.08	64.19	116.55	-52.36	peak
3	0.1150	70.46	19.85	90.31	106.39	-16.08	peak
4	0.3326	26.59	20.13	46.72	97.17	-50.45	peak
5	1.1933	22.36	19.92	42.28	66.07	-23.79	peak
6	3.1587	18.01	19.64	37.65	69.54	-31.89	peak

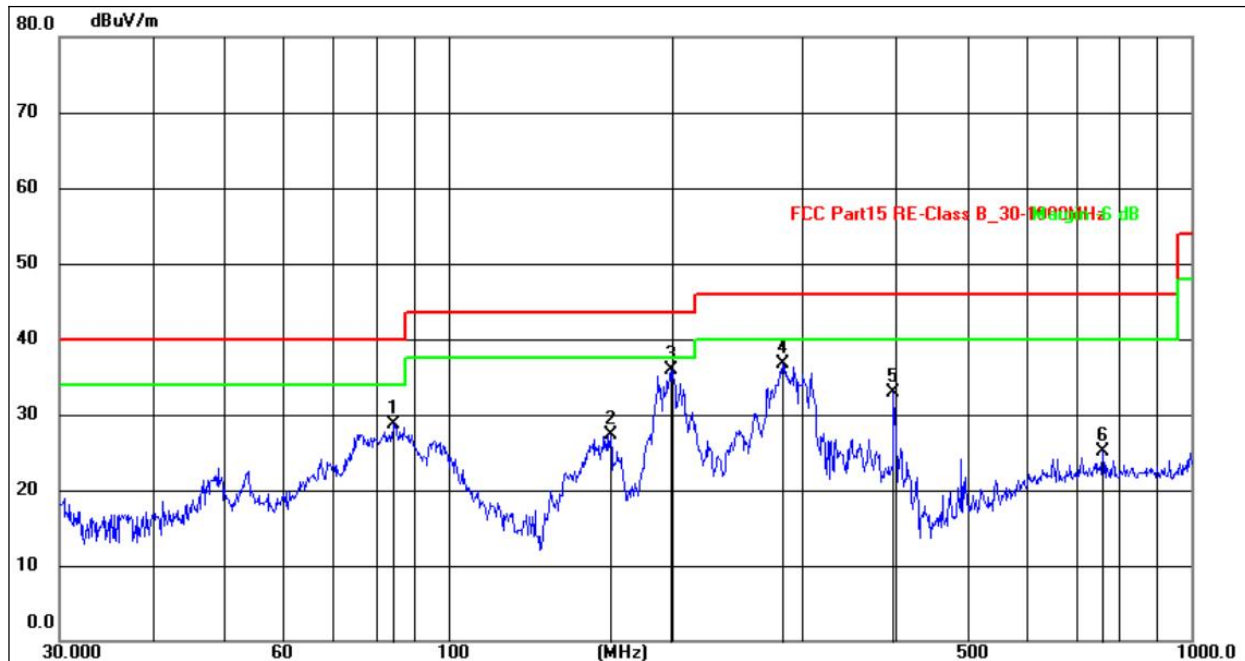
Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
5. Margin= Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 4a recorded.



ANT-2 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 4a



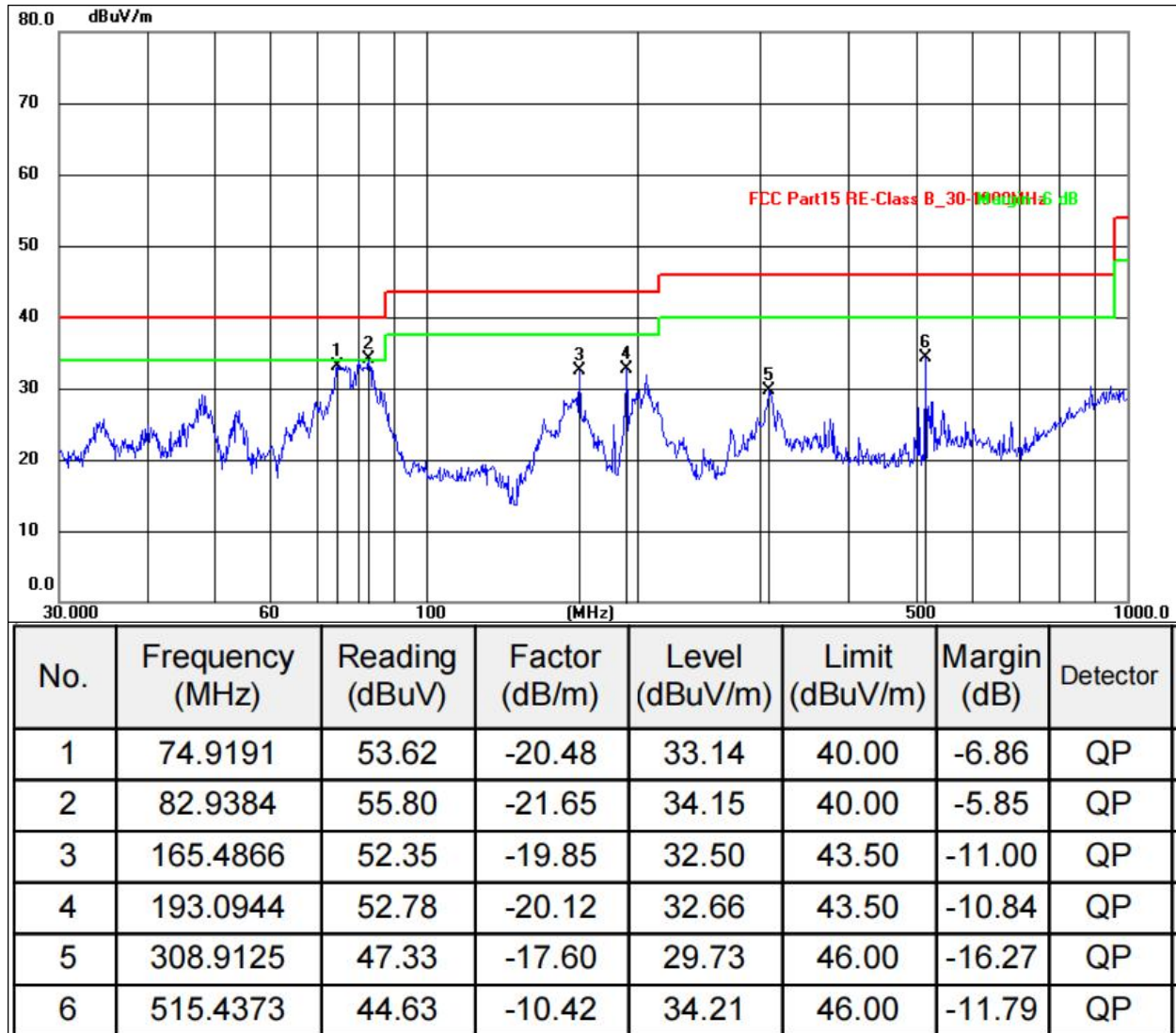
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	84.4054	48.37	-19.67	28.70	40.00	-11.30	QP
2	165.4866	43.70	-16.40	27.30	43.50	-16.20	QP
3	199.2855	54.32	-18.46	35.86	43.50	-7.64	QP
4	281.9945	50.95	-14.20	36.75	46.00	-9.25	QP
5	397.6333	48.92	-16.07	32.85	46.00	-13.15	QP
6	760.7033	31.68	-6.57	25.11	46.00	-20.89	QP

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 4a recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 4a



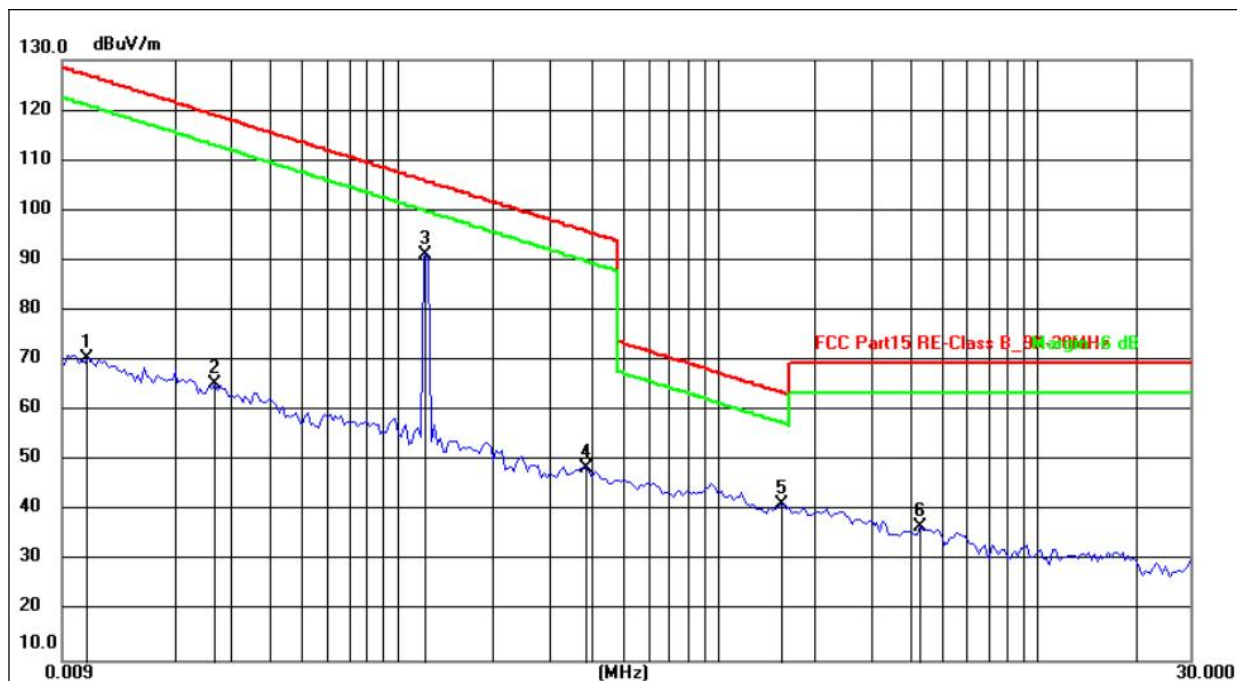
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 4a recorded.



ANT3 - 9 kHz~30 MHz

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 7a



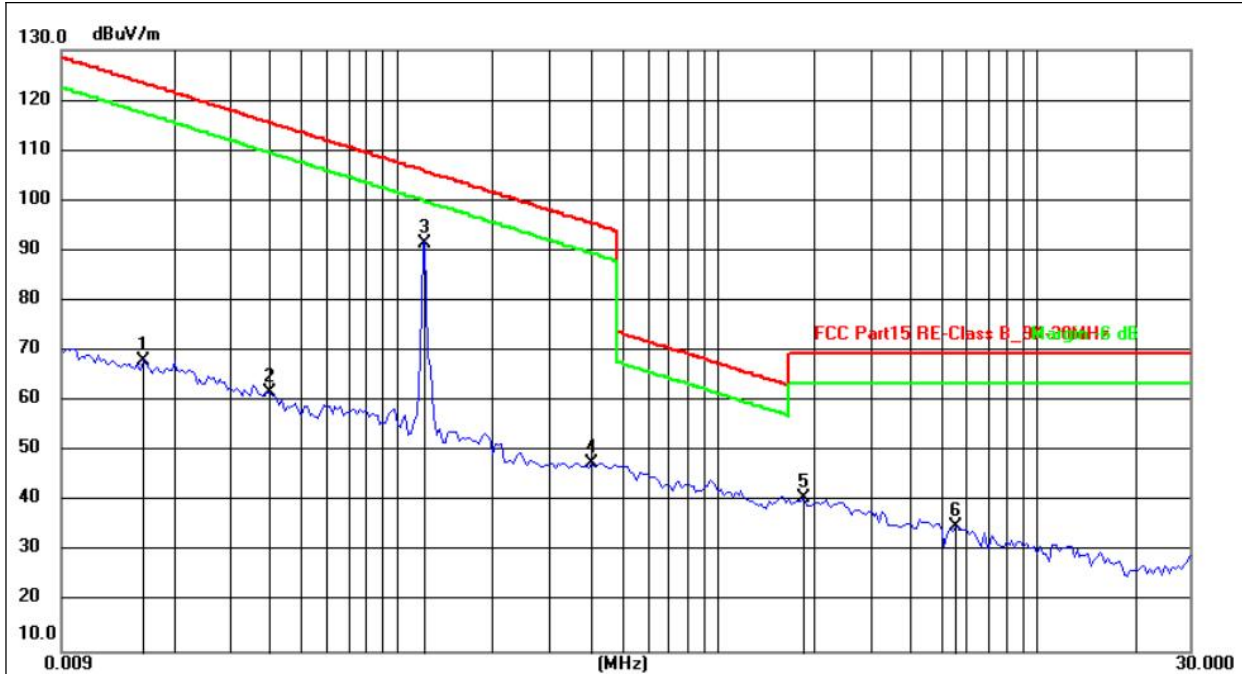
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0108	49.84	20.54	70.38	126.94	-56.56	peak
2	0.0269	45.05	20.29	65.34	119.01	-53.67	peak
3	0.1220	71.34	19.89	91.23	105.88	-14.65	peak
4	0.3911	28.29	20.16	48.45	95.76	-47.31	peak
5	1.5846	21.56	19.86	41.42	63.61	-22.19	peak
6	4.2816	17.46	19.54	37.00	69.54	-32.54	peak

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 7a recorded.



Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Coplanar
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 7a



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0160	47.57	20.49	68.06	123.52	-55.46	peak
2	0.0403	41.81	19.98	61.79	115.50	-53.71	peak
3	0.1220	71.42	19.89	91.31	105.88	-14.57	peak
4	0.4072	27.60	20.16	47.76	95.41	-47.65	peak
5	1.8643	20.79	19.82	40.61	69.54	-28.93	peak
6	5.5734	15.61	19.41	35.02	69.54	-34.52	peak

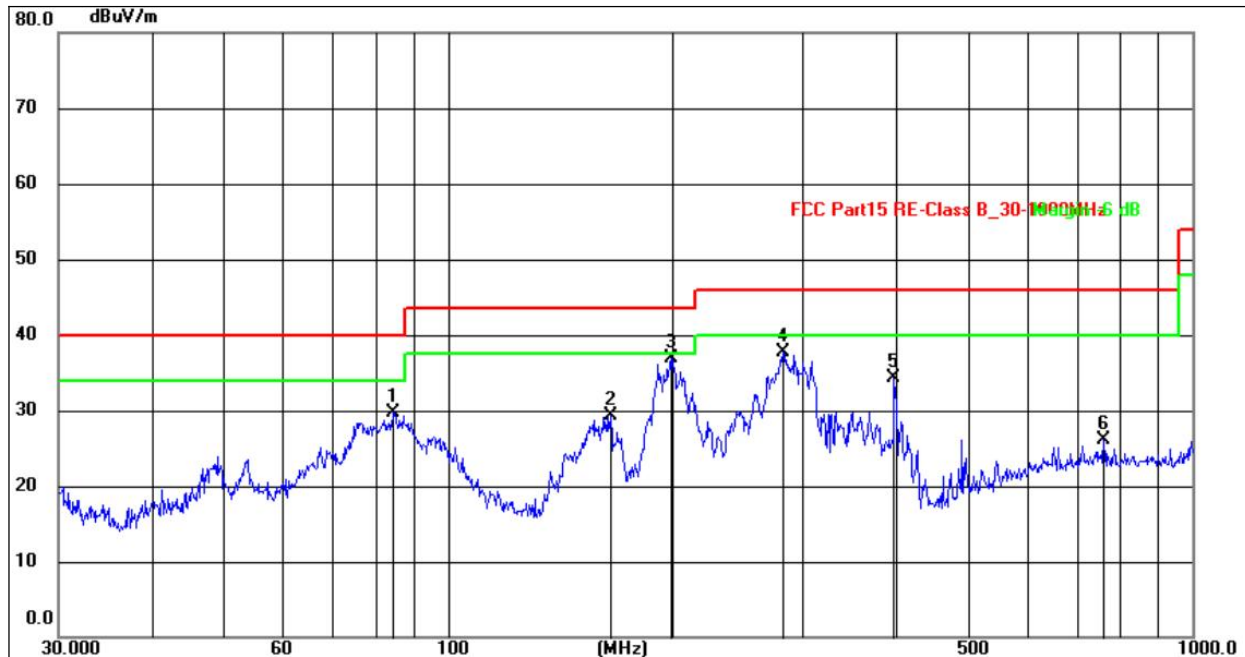
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 7a recorded.



ANT-3 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 7a



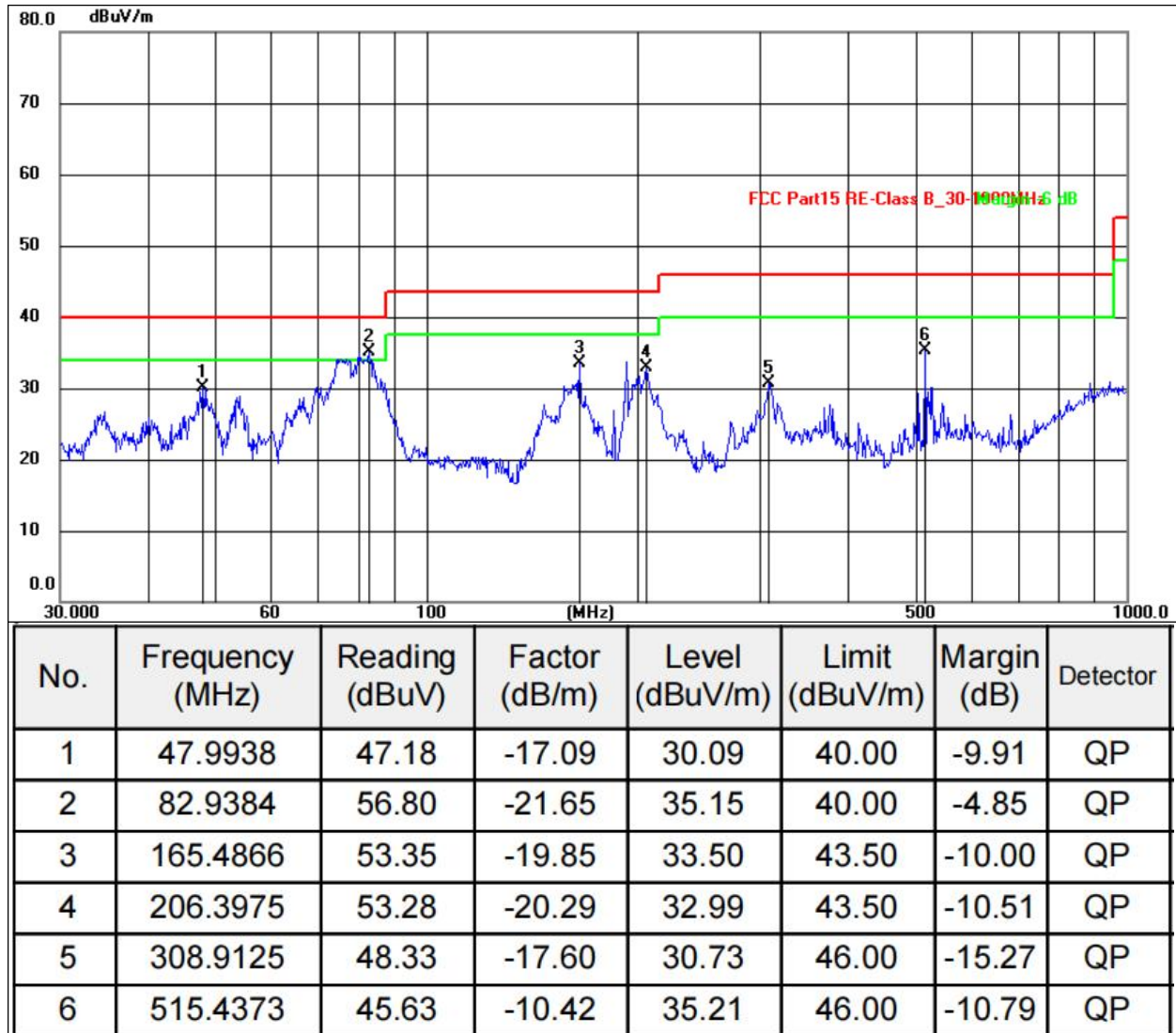
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	84.4054	49.37	-19.67	29.70	40.00	-10.30	QP
2	165.4866	45.70	-16.40	29.30	43.50	-14.20	QP
3	199.2855	55.32	-18.46	36.86	43.50	-6.64	QP
4	281.9945	51.95	-14.20	37.75	46.00	-8.25	QP
5	397.6333	50.42	-16.07	34.35	46.00	-11.65	QP
6	760.7033	32.68	-6.57	26.11	46.00	-19.89	QP

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 7a recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 7a



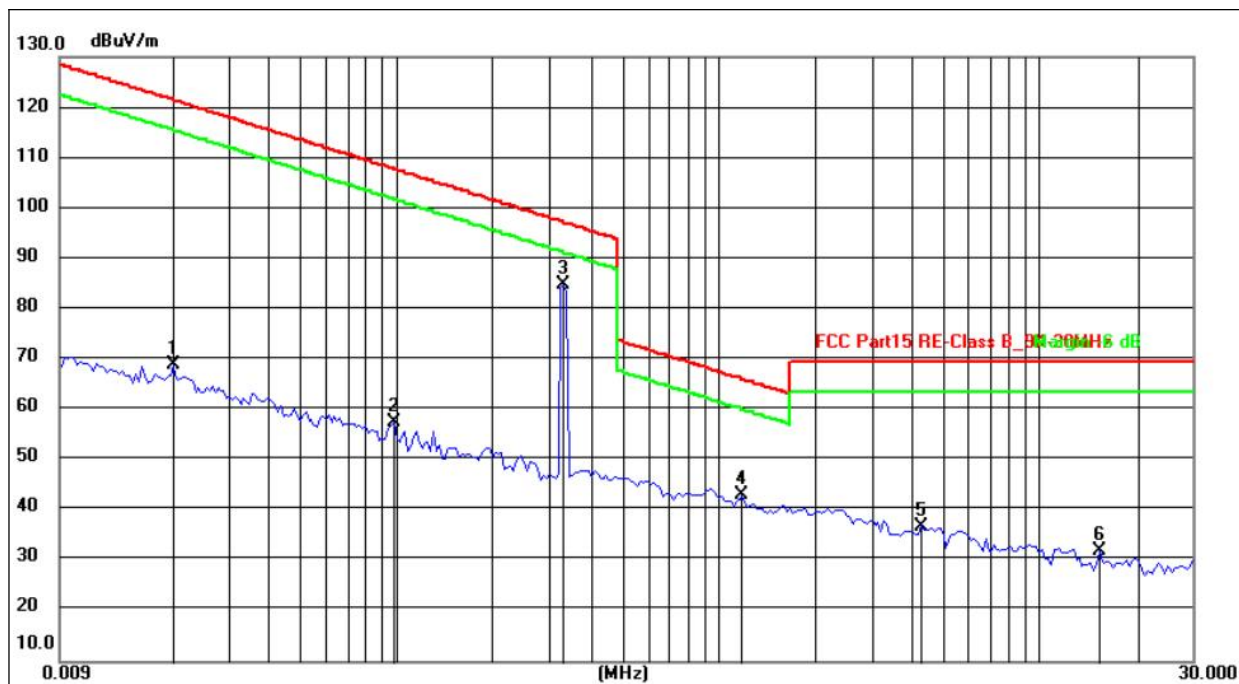
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 7a recorded.



ANT4 - 9 kHz~30 MHz

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 10a



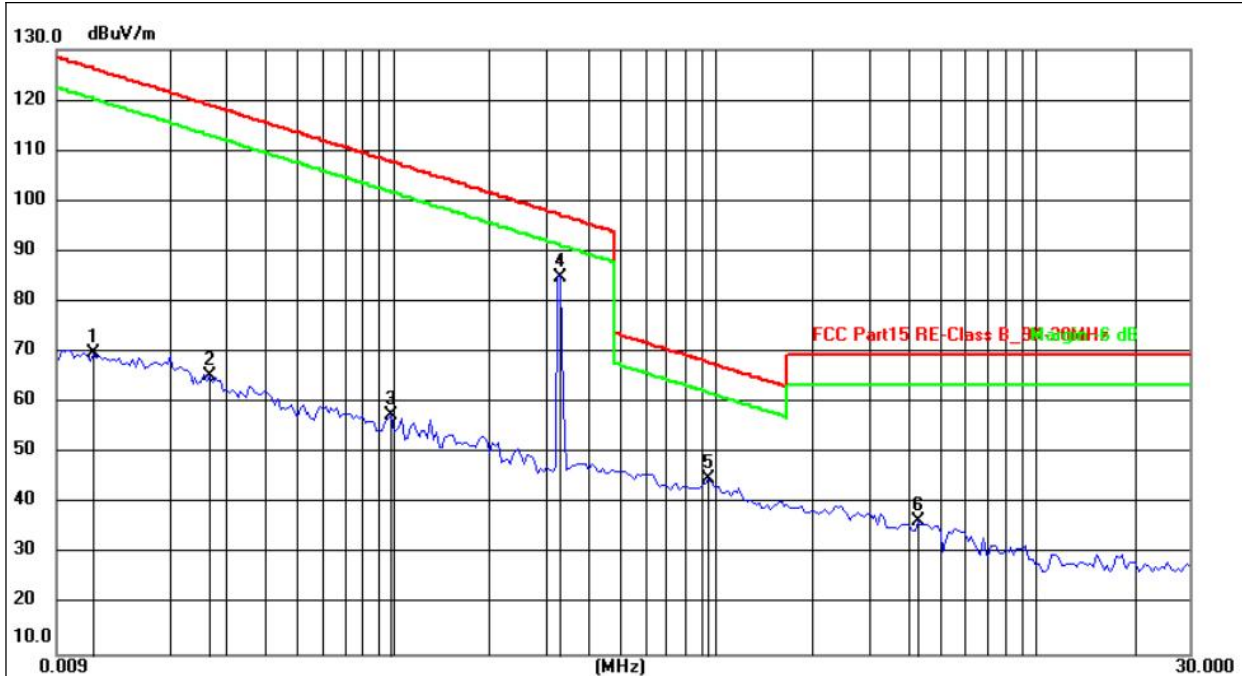
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0200	48.56	20.45	69.01	121.58	-52.57	peak
2	0.0985	37.72	19.77	57.49	107.74	-50.25	peak
3	0.3270	64.59	20.13	84.72	97.31	-12.59	peak
4	1.1933	23.36	19.92	43.28	66.07	-22.79	peak
5	4.2816	17.46	19.54	37.00	69.54	-32.54	peak
6	15.3632	13.20	18.89	32.09	69.54	-37.45	peak

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 10a recorded.



Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Coplanar
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 10a



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0117	49.23	20.53	69.76	126.24	-56.48	peak
2	0.0269	45.05	20.29	65.34	119.01	-53.67	peak
3	0.0985	37.72	19.77	57.49	107.74	-50.25	peak
4	0.3270	64.68	20.13	84.81	97.31	-12.50	peak
5	0.9546	24.86	20.04	44.90	68.01	-23.11	peak
6	4.2816	16.96	19.54	36.50	69.54	-33.04	peak

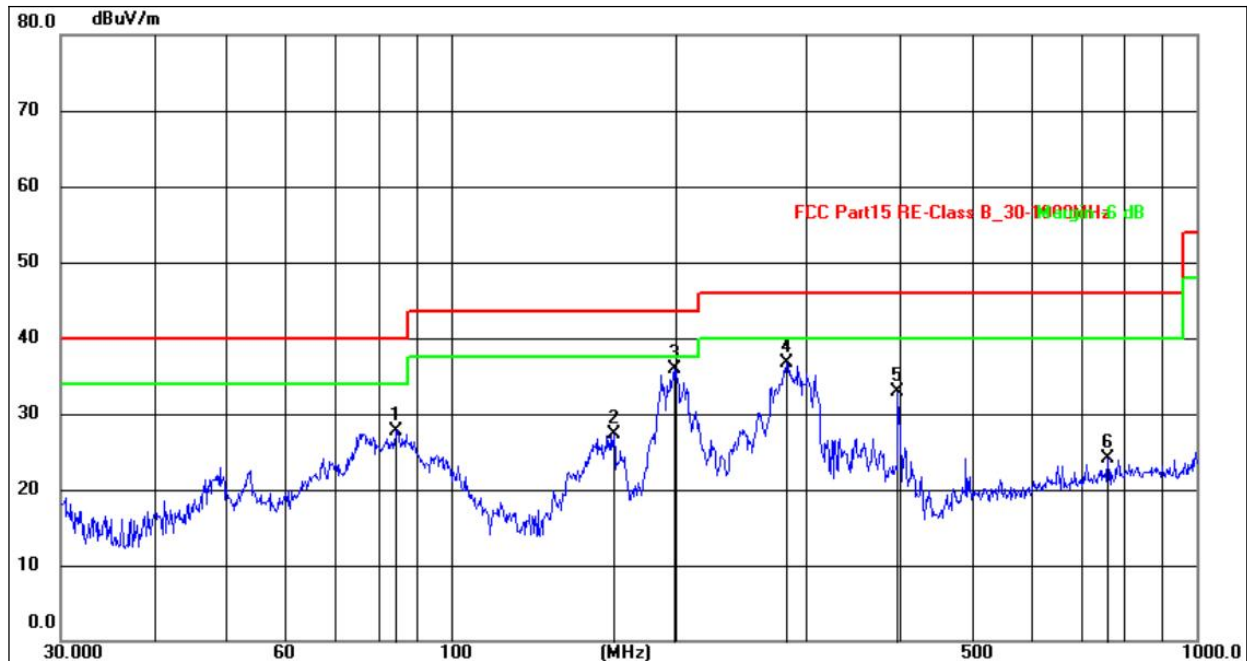
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 10a recorded.



ANT-4 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 10a



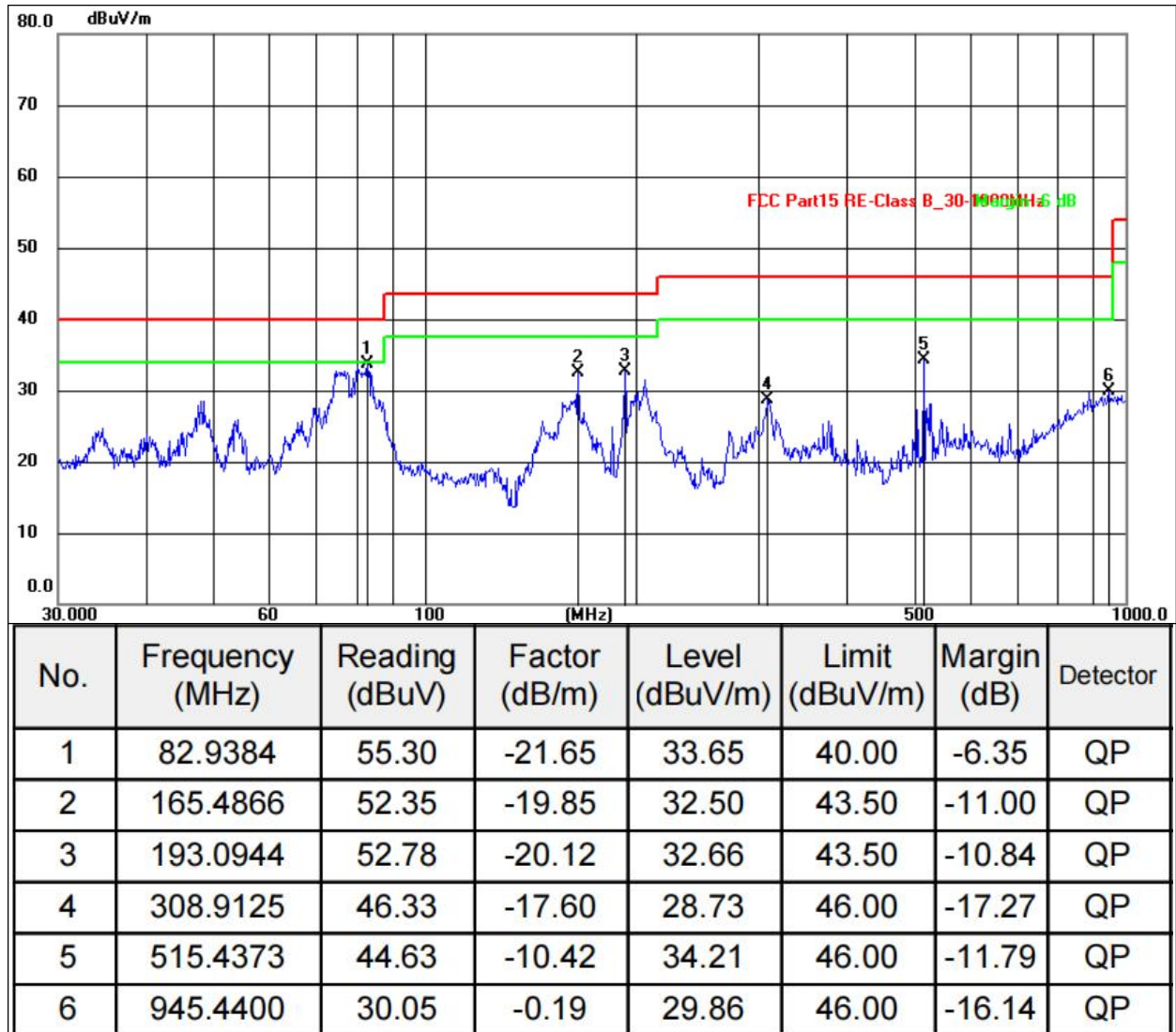
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	84.4054	47.37	-19.67	27.70	40.00	-12.30	QP
2	165.4866	43.70	-16.40	27.30	43.50	-16.20	QP
3	199.2855	54.32	-18.46	35.86	43.50	-7.64	QP
4	281.9945	50.95	-14.20	36.75	46.00	-9.25	QP
5	397.6333	48.92	-16.07	32.85	46.00	-13.15	QP
6	760.7033	30.68	-6.57	24.11	46.00	-21.89	QP

Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
5. Margin= Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 10a recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 10a



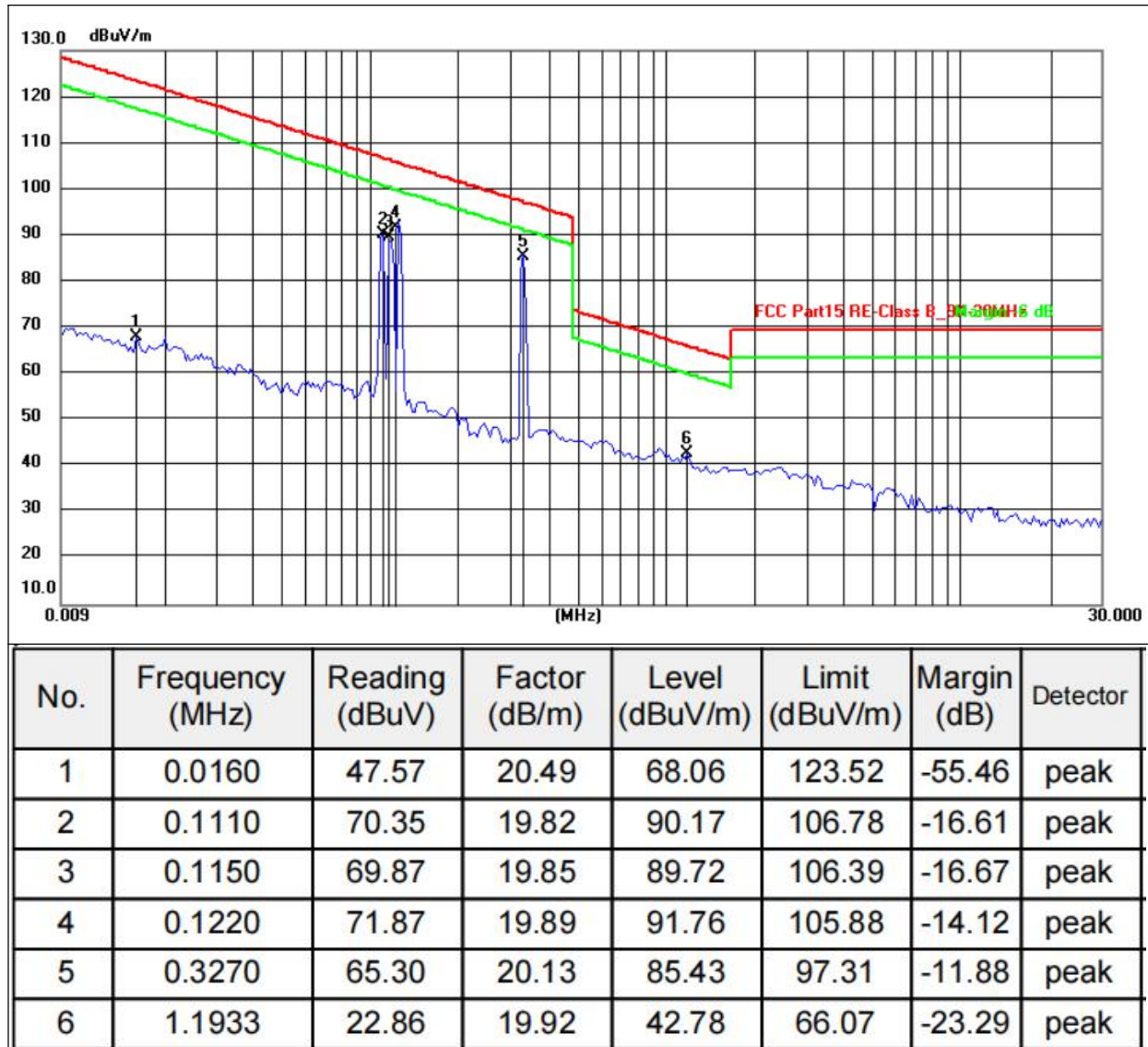
Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi-Peak measurements were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Antenna factor + Cable loss factor - Amplifier factor.
5. Margin = Measurement Level - Limit.
6. All test modes were tested, with only the worst Mode 10a recorded.



ANT1+2+3+4 - 9 kHz~30 MHz

Temperature :	26℃	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 31a

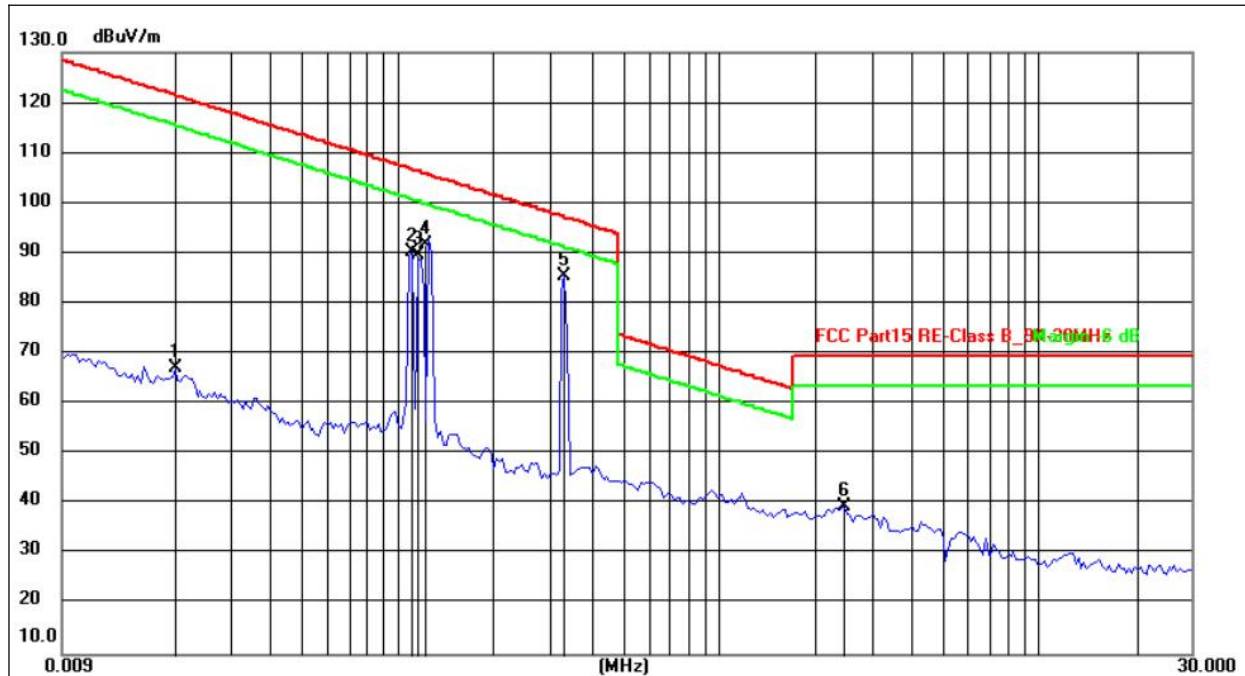


Remarks:

1. An initial pre-scan was performed on the peak detector.
2. Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Reading level + Correct Factor.
4. Correct Factor = Antenna factor + Cable loss factor - Amplifier factor.
5. Margin = Measurement Level - Limit.
6. All test modes were tested, with only the worst Mode 31a recorded.



Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Coplanar
Test Voltage :	DC 9V From Adapter AC 120V/60Hz	Test Mode :	Mode 31a



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0200	46.56	20.45	67.01	121.58	-54.57	peak
2	0.1110	70.39	19.82	90.21	106.78	-16.57	peak
3	0.1150	69.89	19.85	89.74	106.39	-16.65	peak
4	0.1220	71.78	19.89	91.67	105.88	-14.21	peak
5	0.3270	65.36	20.13	85.49	97.31	-11.82	peak
6	2.4763	19.69	19.73	39.42	69.54	-30.12	peak

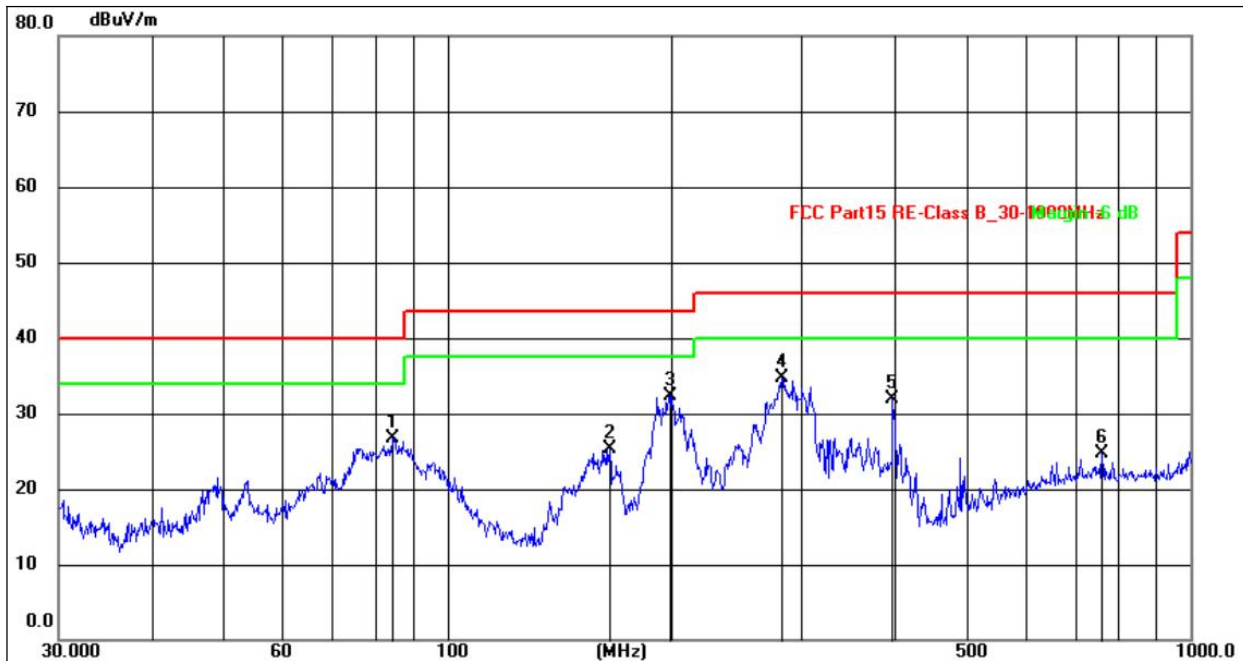
Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 31a recorded.



ANT1+2+3+4 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 31a



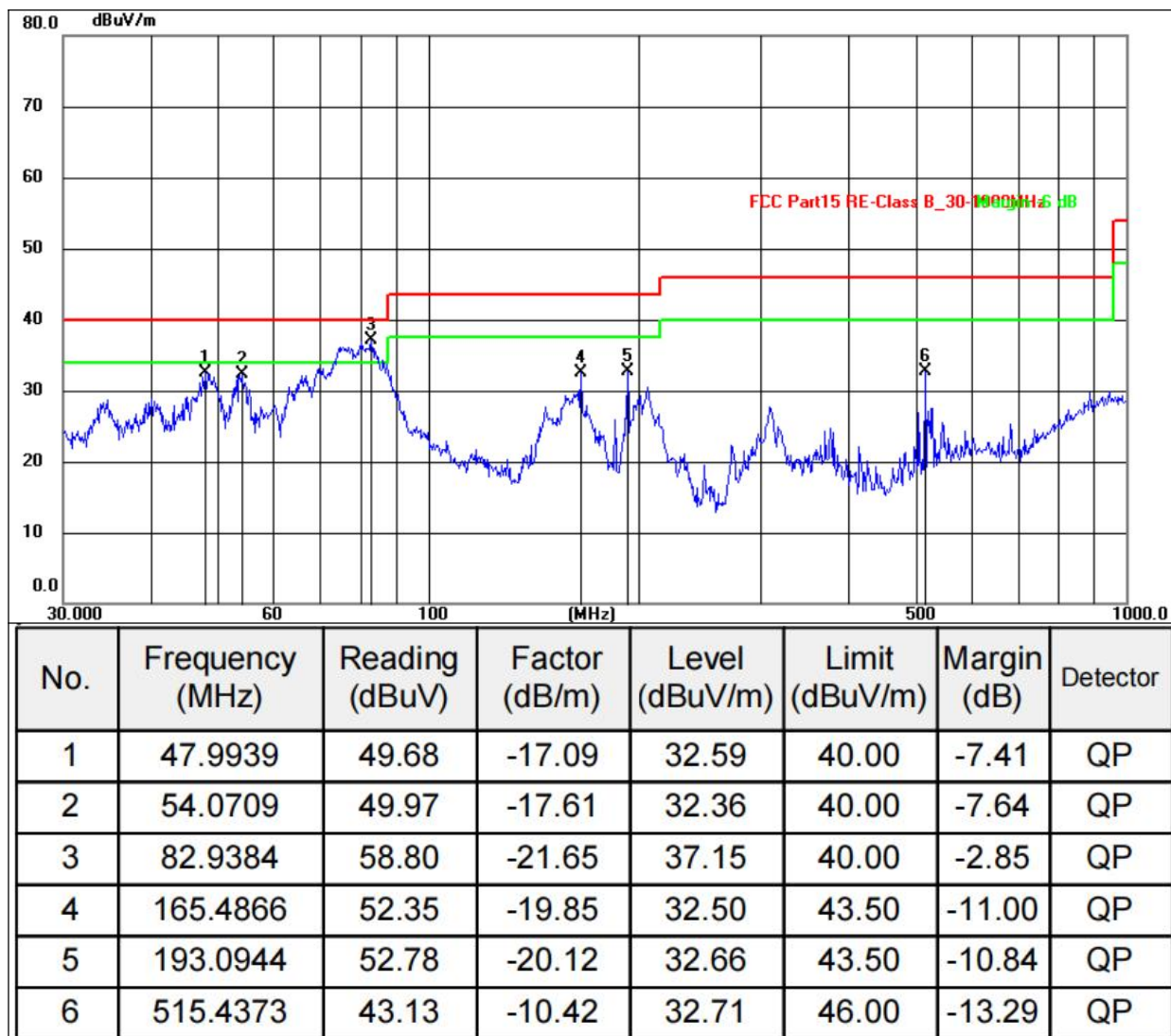
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	84.4054	46.37	-19.67	26.70	40.00	-13.30	QP
2	165.4866	41.70	-16.40	25.30	43.50	-18.20	QP
3	199.2855	50.82	-18.46	32.36	43.50	-11.14	QP
4	281.9945	48.95	-14.20	34.75	46.00	-11.25	QP
5	397.6333	47.92	-16.07	31.85	46.00	-14.15	QP
6	760.7034	31.18	-6.57	24.61	46.00	-21.39	QP

Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 31a recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V From Adapter AC 120V/60Hz	Test Mode:	Mode 31a



Remarks:

- 1.An initial pre-scan was performed on the peak detector.
- 2.Quasi-Peak measurement were performed at the frequencies with maximized peak emission.
- 3.Final Level = Reading level + Correct Factor.
- 4.Correct Factor = Antenna factor+ Cable loss factor - Amplifier factor.
- 5.Margin= Measurement Level-Limit.
- 6.All test modes were tested, with only the worst Mode 31a recorded.



## 6. 20DB BANDWIDTH TEST

### 6.1 TEST PROCEDURE

1. Se span = 1.5 ~ 5 times OBW.
2. Set RBW = 1%~5% OBW.
3. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
4. Detector = peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

### 6.2 LIMIT

N/A

### 6.3 TEST SETUP



### 6.4 DEVIATION FROM STANDARD

No deviation.

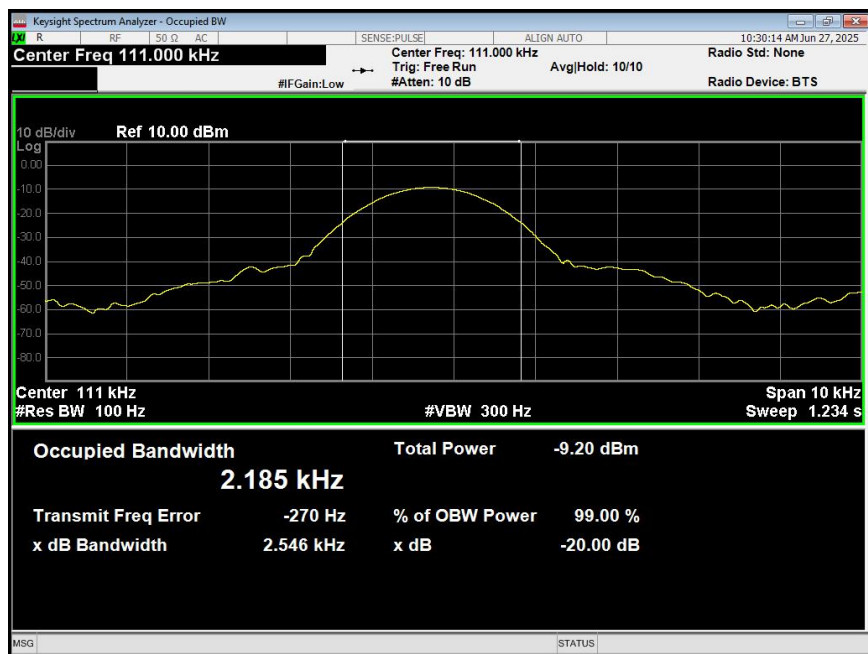


## 6.5 TEST RESULT

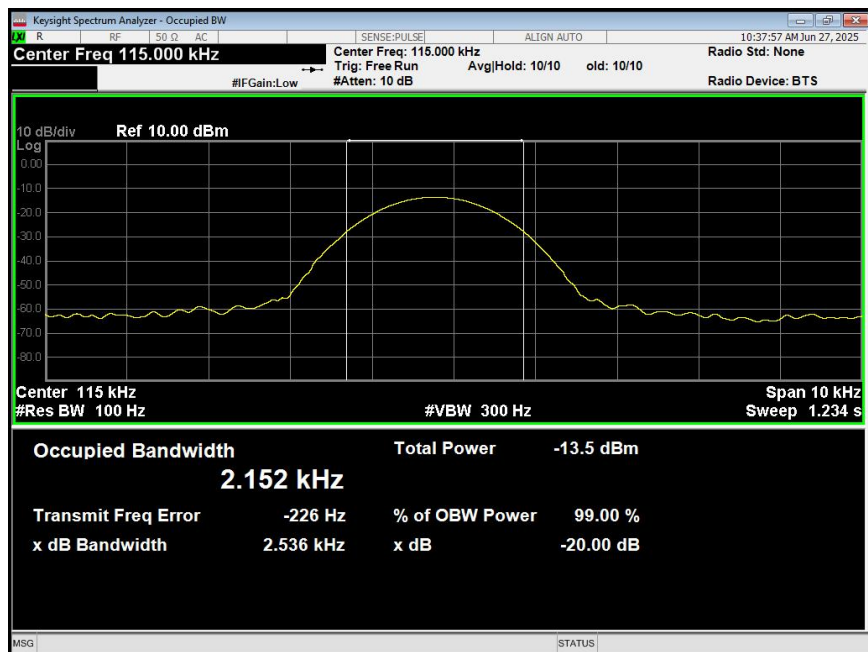
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 9V From Adapter AC 120V/60Hz

Test Coil	Frequency (kHz)	20dB Bandwidth (kHz)	Result
ANT 1	111.00	2.546	Pass
ANT 2	115.60	2.536	Pass
ANT 3	122.30	2.522	Pass
ANT 4	327.00	2.530	Pass

ANT1:

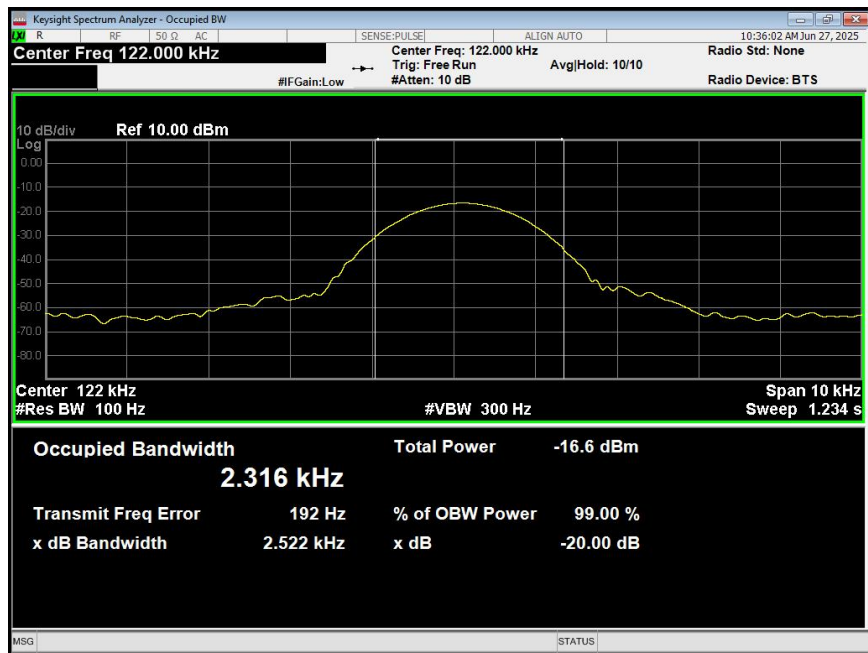


ANT2:

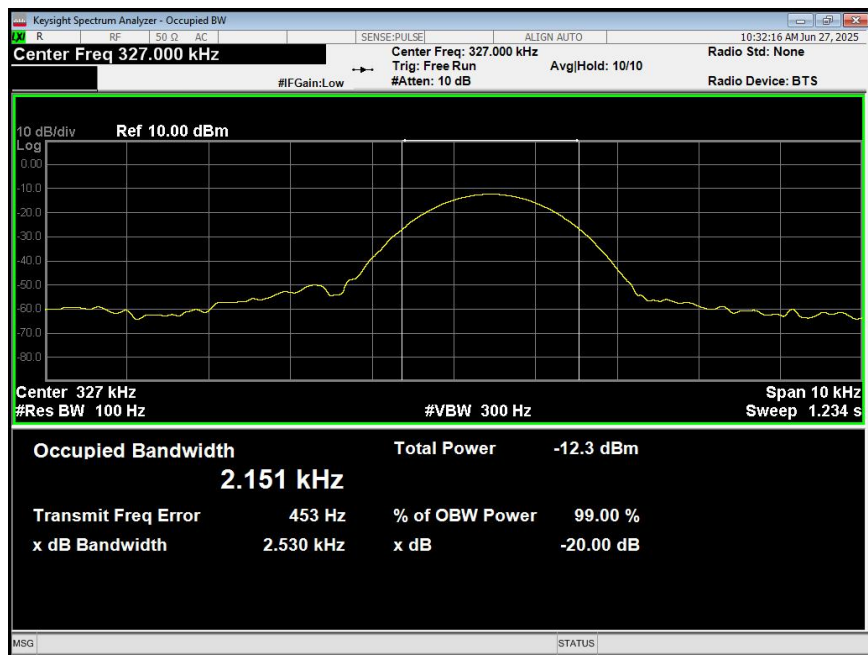




ANT3:



ANT4:





## 7. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: 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.	
EUT Antenna:	
The antenna is Loop Coil antenna, the best case gain of the antennas is 0dBi, reference to the appendix II for details.	



## 8. TEST SETUP PHOTO

Reference to the appendix I for details.

## 9. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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