



FCC TEST REPORT

FCC ID:2BB8Q-Y23

Applicant: Shenzhen Yixing Electronic Technology Co., Ltd.
Address: 7th Floor, Building 5, Baokun Industrial Zone, Dalang Street, Longhua New District, Shenzhen

Manufacturer: Shenzhen Yixing Electronic Technology Co., Ltd.
Address: 7th Floor, Building 5, Baokun Industrial Zone, Dalang Street, Longhua New District, Shenzhen

EUT: 6-IN-1 Wireless Charger

Trade Mark: N/A

Model Number: Y23

Date of Receipt: May. 21, 2025

Test Date: May. 21, 2025 to May. 28, 2025

Date of Report: May. 28, 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-250606008R

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.



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1. VERSION

Report No.	Version	Description	Approved
DLE-250606008R	Rev.01	Initial issue of report	May. 28, 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:	6 -IN- 1 Wireless Charger
Model No.:	Y23
Serial No.:	N/A
Model Difference:	N/A
Hardware Version:	V 1.0
Software Version:	V 1.1
Operation Frequency:	ANT 1&2&3: 115kHz ~ 205kHz ANT 4: 300kHz ~ 360kHz
Modulation Type:	ASK
Antenna Type:	Loop Coil Antenna
Antenna Gain:	0dBi
Ratings:	Input: 9V $\overline{=}$ 3A Mobile phone 1 magnetic output :5W/7.5W/10W/15W Mobile phone 2 Non-magnetic output :5W/7.5W/10W/15W Airpods output :5W Apple Watch output :3W (support 1-9 generation) Clock power :0.3W Atmosphere lamp power :3W
Transmitting Mode:	Keep the EUT in continuously wireless charging mode



3.2 TEST MODE

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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 1	ANT 1	AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: <1%)
Mode 2		AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: 50%)
Mode 3		AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: >98%)
Mode 4	ANT 2	AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: <1%)
Mode 5		AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: 50%)
Mode 6		AC/DC Adapter (9V/3A) + EUT + Phone2 (Battery Status: >98%)
Mode 7	ANT 3	AC/DC Adapter (9V/3A) + EUT + AirPods (Battery Status: <1%)
Mode 8		AC/DC Adapter (9V/3A) + EUT + AirPods (Battery Status: 50%)
Mode 9		AC/DC Adapter (9V/3A) + EUT + AirPods (Battery Status: >98%)
Mode 10	ANT 4	AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: <1%)
Mode 11		AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: 50%)
Mode 12		AC/DC Adapter (9V/3A) + EUT + Watch (Battery Status: >98%)
Mode 13	ANT 1 + ANT 2	AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: <1%)
Mode 14		AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: 50%)
Mode 15		AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 (Battery Status: >98%)
Mode 16	ANT 1 + ANT 3	AC/DC Adapter (9V/3A) + EUT + Phone1 + AirPods (Battery Status: <1%)
Mode 17		AC/DC Adapter (9V/3A) + EUT + Phone1 + AirPods (Battery Status: 50%)
Mode 18		AC/DC Adapter (9V/3A) + EUT + Phone1 + AirPods (Battery Status: >98%)
Mode 19	ANT 1 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Phone1 + Watch (Battery Status: <1%)
Mode 20		AC/DC Adapter (9V/3A) + EUT + Phone1 + Watch (Battery Status: 50%)
Mode 21		AC/DC Adapter (9V/3A) + EUT + Phone1 + Watch (Battery Status: >98%)
Mode 22	ANT 2 + ANT 3	AC/DC Adapter (9V/3A) + EUT + Phone2 + AirPods (Battery Status: <1%)
Mode 23		AC/DC Adapter (9V/3A) + EUT + Phone2 + AirPods (Battery Status: 50%)
Mode 24		AC/DC Adapter (9V/3A) + EUT + Phone2 + AirPods (Battery Status: >98%)
Mode 25	ANT 2 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Phone2 + Watch (Battery Status: <1%)
Mode 26		AC/DC Adapter (9V/3A) + EUT + Phone2 + Watch (Battery Status: 50%)
Mode 27		AC/DC Adapter (9V/3A) + EUT + Phone2 + Watch (Battery Status: >98%)
Mode 28	ANT 3 + ANT 4	AC/DC Adapter (9V/3A) + EUT + AirPods + Watch (Battery Status: <1%)
Mode 29		AC/DC Adapter (9V/3A) + EUT + AirPods + Watch (Battery Status: 50%)
Mode 30		AC/DC Adapter (9V/3A) + EUT + AirPods + Watch (Battery Status: >98%)
Mode 31	ANT 1 + ANT 2 + ANT 3 + ANT 4	AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + AirPods + Watch (Battery Status: <1%)
Mode 32		AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + AirPods + Watch (Battery Status: 50%)
Mode 33		AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + AirPods + Watch (Battery Status: >98%)



b.EUT works in folded mode:

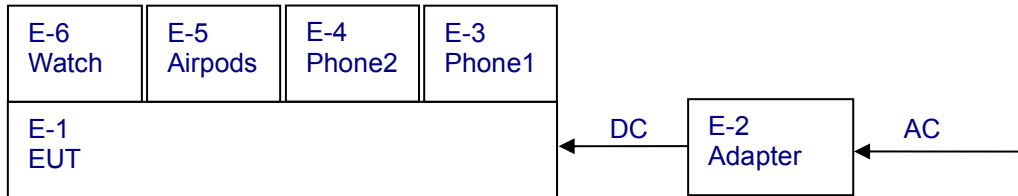
Test Modes:	Test Coil:	Description:
Mode 1a Mode 2a Mode 3a	ANT 1	AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 (Battery Status: >98%)
Mode 4a Mode 5a Mode 6a	ANT 2	AC/DC Adapter (9V/3A) + EUT + 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 7a Mode 8a Mode 9a	ANT 3	AC/DC Adapter (9V/3A) + EUT + AirPods (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + AirPods (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + AirPods (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 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 16a Mode 17a Mode 18a	ANT 1 + ANT 3	AC/DC Adapter (9V/3A) + EUT + Phone1 + AirPods (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + AirPods (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + AirPods (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 22a Mode 23a Mode 24a	ANT 2 + ANT 3	AC/DC Adapter (9V/3A) + EUT + Phone2 + AirPods (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone2 + AirPods (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone2 + AirPods (Battery Status: >98%)
Mode 25a Mode 26a Mode 27a	ANT 2 + 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 28a Mode 29a Mode 30a	ANT 3 + ANT 4	AC/DC Adapter (9V/3A) + EUT + AirPods + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + AirPods + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + AirPods + 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 + AirPods + Watch (Battery Status: <1%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + AirPods + Watch (Battery Status: 50%) AC/DC Adapter (9V/3A) + EUT + Phone1 + Phone2 + AirPods + Watch (Battery Status: >98%)



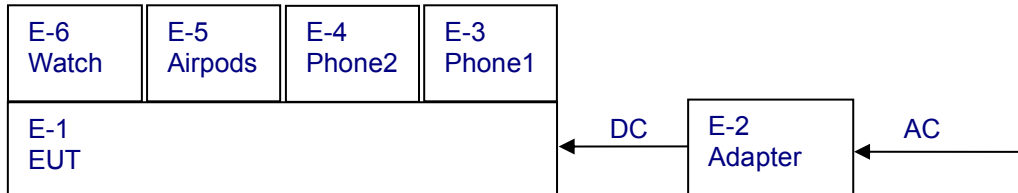
3.3 BLOCK DIAGRAM OF EUT CONFIGURATION

Conducted Emission

a. EUT mode of operation before folding:

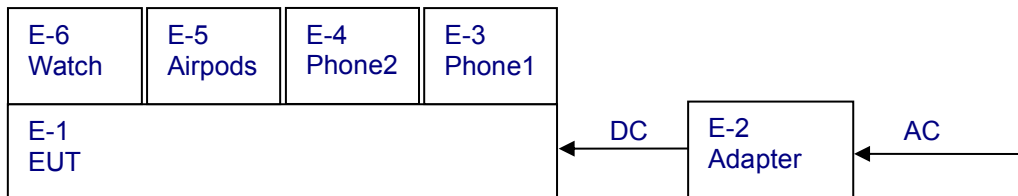


b.EUT works in folded mode:

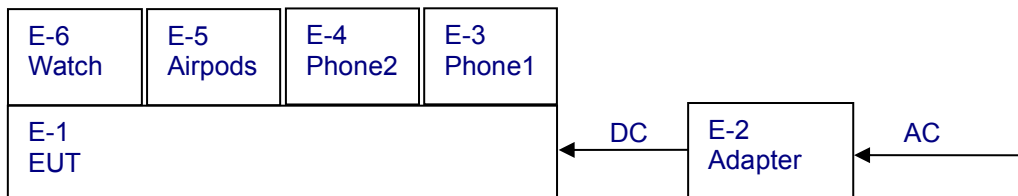


Radiated Emission

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	6 -IN- 1 Wireless Charger	N/A	Y23	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	AirPods	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

Conduction Emissions Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Sep. 30, 2024	Sep. 29, 2025
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	C-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
4	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Sep. 29, 2024	Sep. 28, 2025
5	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

Radiation Emissions & Radiation Spurious Emissions Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 29, 2024	Sep. 28, 2025
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 30, 2024	Sep. 29, 2025
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Sep. 29, 2024	Sep. 28, 2025
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Sep. 30, 2024	Sep. 29, 2025
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Sep. 30, 2024	Sep. 29, 2025
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Oct. 11, 2024	Oct. 10, 2025
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Sep. 29, 2024	Sep. 28, 2025
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Sep. 29, 2024	Sep. 28, 2025
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Sep. 30, 2024	Sep. 29, 2025
11	Test Cable	N/A	R-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
12	Test Cable	N/A	R-02	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
13	Test Cable	N/A	R-03	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
14	D.C. Power Supply	LongWei	TPR-6405D	GQ7516	N/A	Sep. 29, 2024	Sep. 28, 2025
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
16	Turntable	MF	MF-7802BS	N/A	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\



RF Conducted Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 29, 2024	Sep. 28, 2025
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 30, 2024	Sep. 29, 2025
3	Test Cable	N/A	RF-01	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
4	Test Cable	N/A	RF-02	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
5	Test Cable	N/A	RF-03	N/A	N/A	Sep. 30, 2024	Sep. 29, 2025
6	ESG Signal Generator	Agilent	E4421B	GB40051203	B.03.84	Sep. 29, 2024	Sep. 28, 2025
7	Signal Generator	Agilent	N5182A	MY47420215	A.01.87	Sep. 29, 2024	Sep. 28, 2025
8	Magnetic Field Probe Tester	Narda	ELT-400	0-0344/M-1752	N/A	Sep. 29, 2024	Sep. 28, 2025
9	Van der Hoofden measuring head	Schwarzbeck Mess-elektronik	VDHH 9502	9502-039	N/A	Sep. 30, 2024	Sep. 29, 2025
10	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Sep. 30, 2024	Sep. 29, 2025
11	MWRF Power Meter Test system	MW	MW100-RF CB	10371	N/A	Sep. 29, 2024	Sep. 28, 2025
12	D.C. Power Supply	LongWei	TPR-6405D	GQ7516	N/A	Sep. 29, 2024	Sep. 28, 2025
13	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\



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

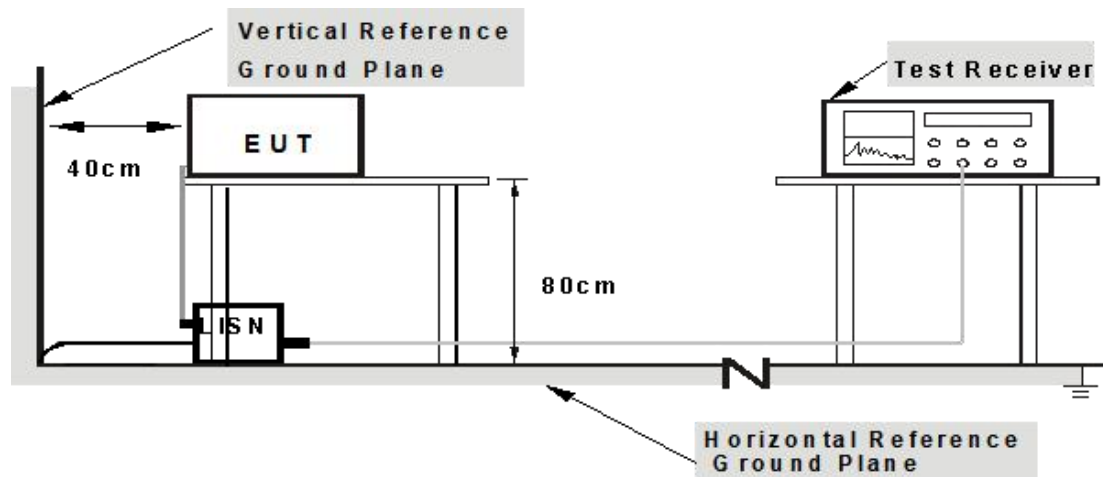
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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 cm from other units and other metal planes

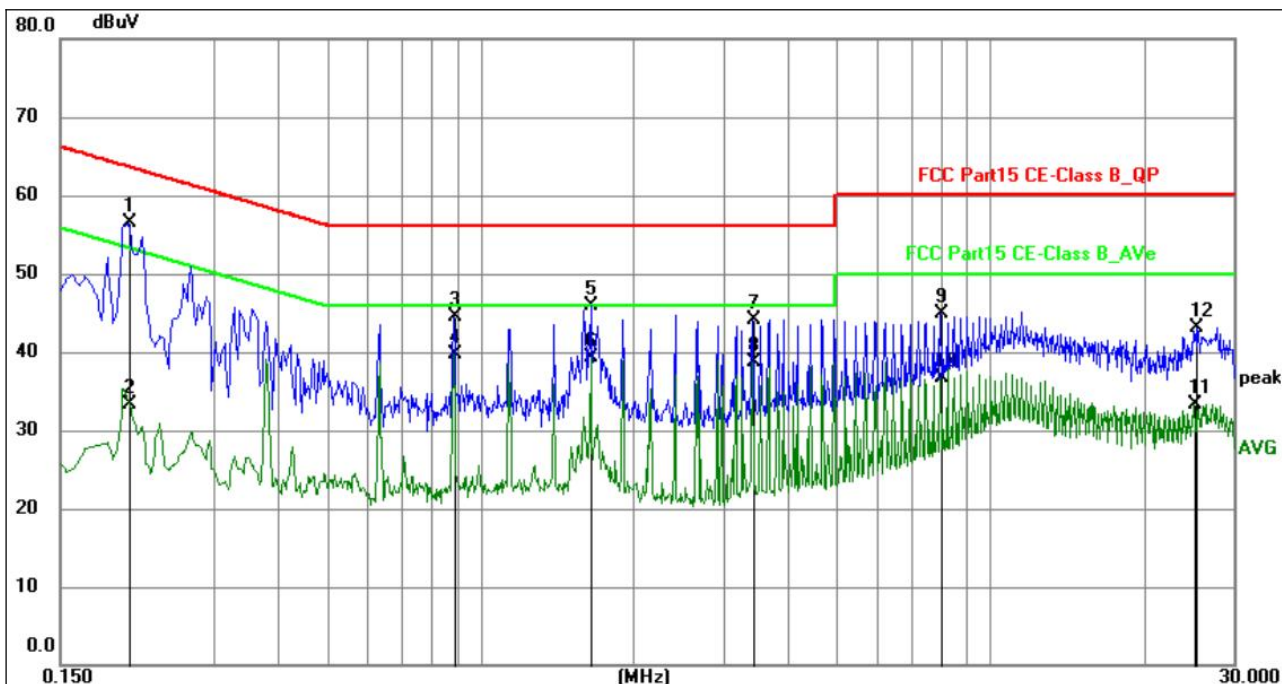
4.1.5 EUT OPERATING CONDITIONS

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 31



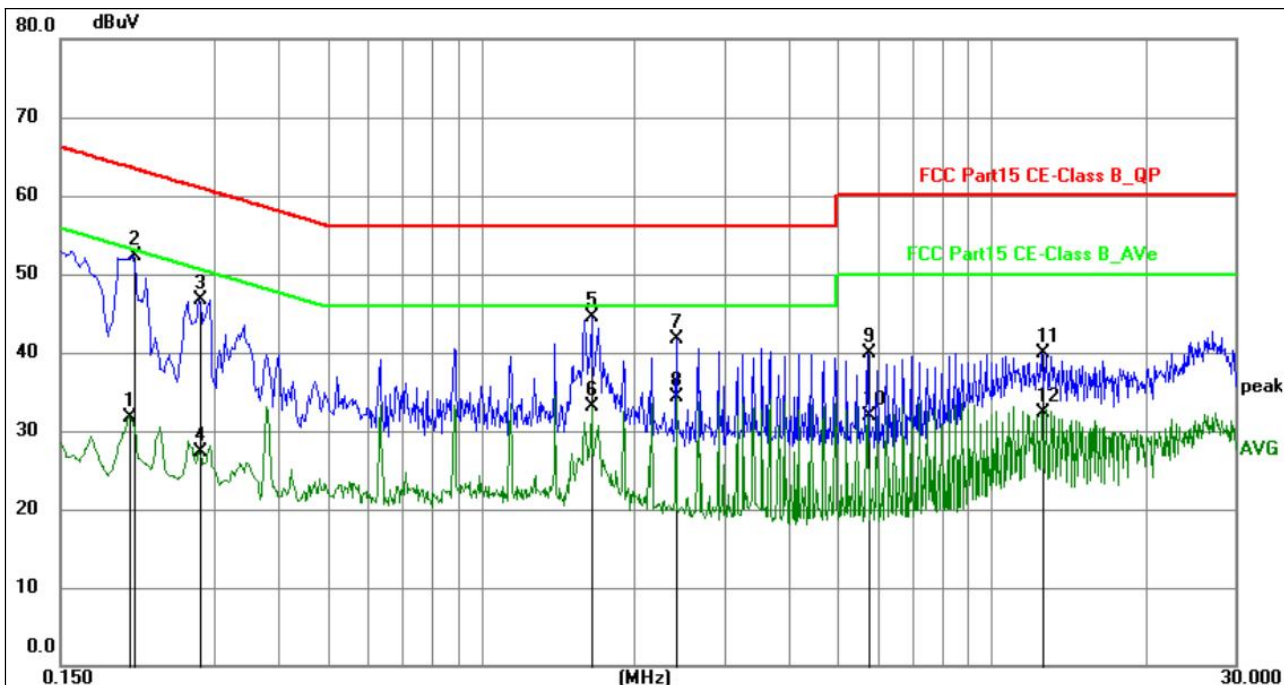
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2040	36.11	20.38	56.49	63.45	-6.96	QP	P	
2	0.2050	12.91	20.38	33.29	53.41	-20.12	AVG	P	
3	0.8879	24.23	20.30	44.53	56.00	-11.47	QP	P	
4	0.8879	19.38	20.30	39.68	46.00	-6.32	AVG	P	
5	1.6484	25.59	20.30	45.89	56.00	-10.11	QP	P	
6	1.6484	19.06	20.30	39.36	46.00	-6.64	AVG	P	
7	3.4260	23.80	20.34	44.14	56.00	-11.86	QP	P	
8	3.4260	18.44	20.34	38.78	46.00	-7.22	AVG	P	
9	7.9980	24.50	20.41	44.91	60.00	-15.09	QP	P	
10	7.9980	16.27	20.41	36.68	50.00	-13.32	AVG	P	
11	25.1250	12.63	20.63	33.26	50.00	-16.74	AVG	P	
12	25.3815	22.43	20.64	43.07	60.00	-16.93	QP	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 = Lisen factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 31 recorded.



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



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2050	11.30	20.37	31.67	53.41	-21.74	AVG	P	
2	0.2085	31.99	20.37	52.36	63.26	-10.90	QP	P	
3	0.2805	26.35	20.35	46.70	60.80	-14.10	QP	P	
4	0.2805	7.01	20.35	27.36	50.80	-23.44	AVG	P	
5	1.6485	24.28	20.30	44.58	56.00	-11.42	QP	P	
6	1.6485	12.75	20.30	33.05	46.00	-12.95	AVG	P	
7	2.4135	21.46	20.32	41.78	56.00	-14.22	QP	P	
8	2.4135	13.95	20.32	34.27	46.00	-11.73	AVG	P	
9	5.7165	19.48	20.37	39.85	60.00	-20.15	QP	P	
10	5.7165	11.45	20.37	31.82	50.00	-18.18	AVG	P	
11	12.5700	19.35	20.49	39.84	60.00	-20.16	QP	P	
12	12.5700	11.91	20.49	32.40	50.00	-17.60	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 = Lisen factor+ Cable loss factor + limiter factor.
5. Margin = Measurement Level-Limit.
6. All test modes were tested, with only the worst Mode 31 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	100KHz	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

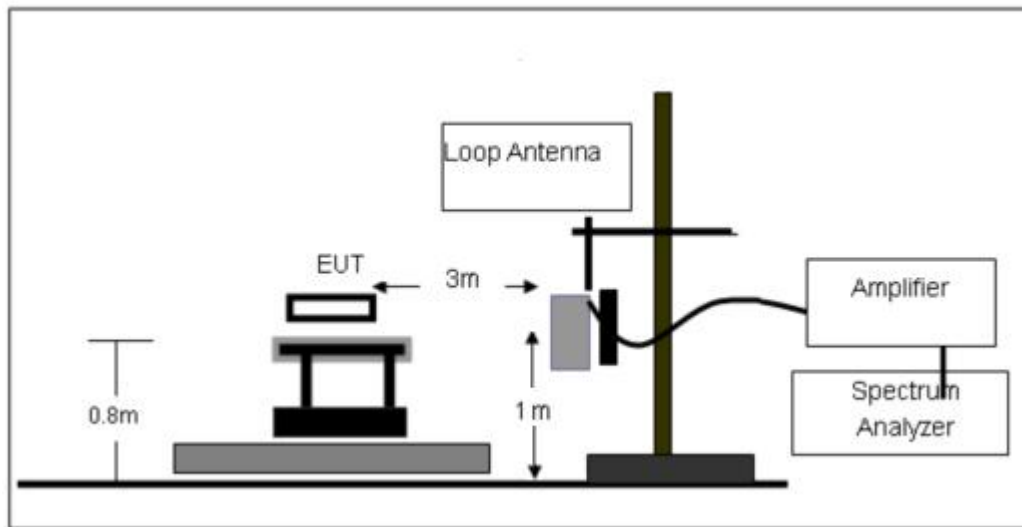
Limits for frequency Above 30MHz

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

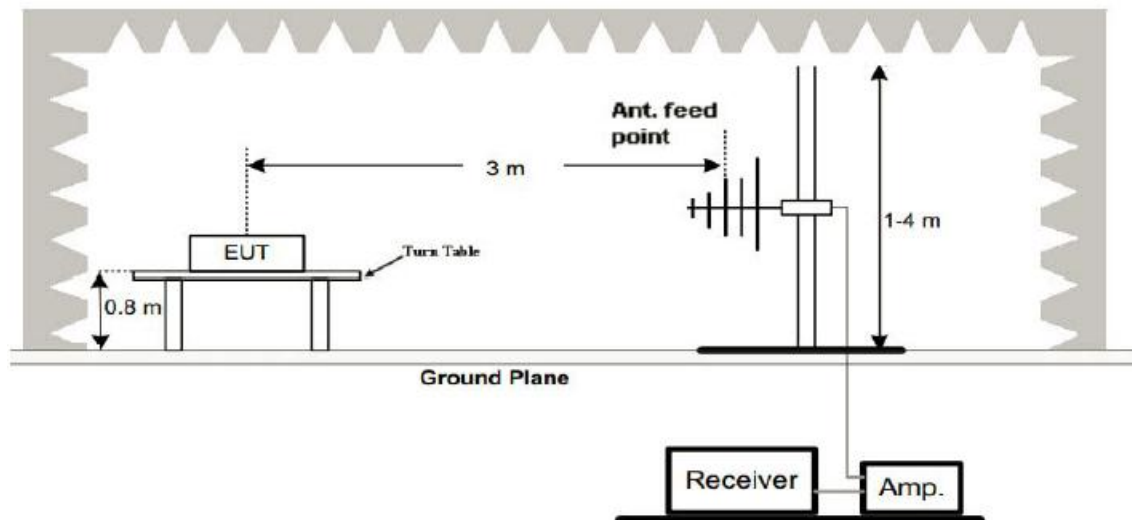


5.2 ANECHOIC CHAMBER TEST SETUP DIAGRAM

(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:

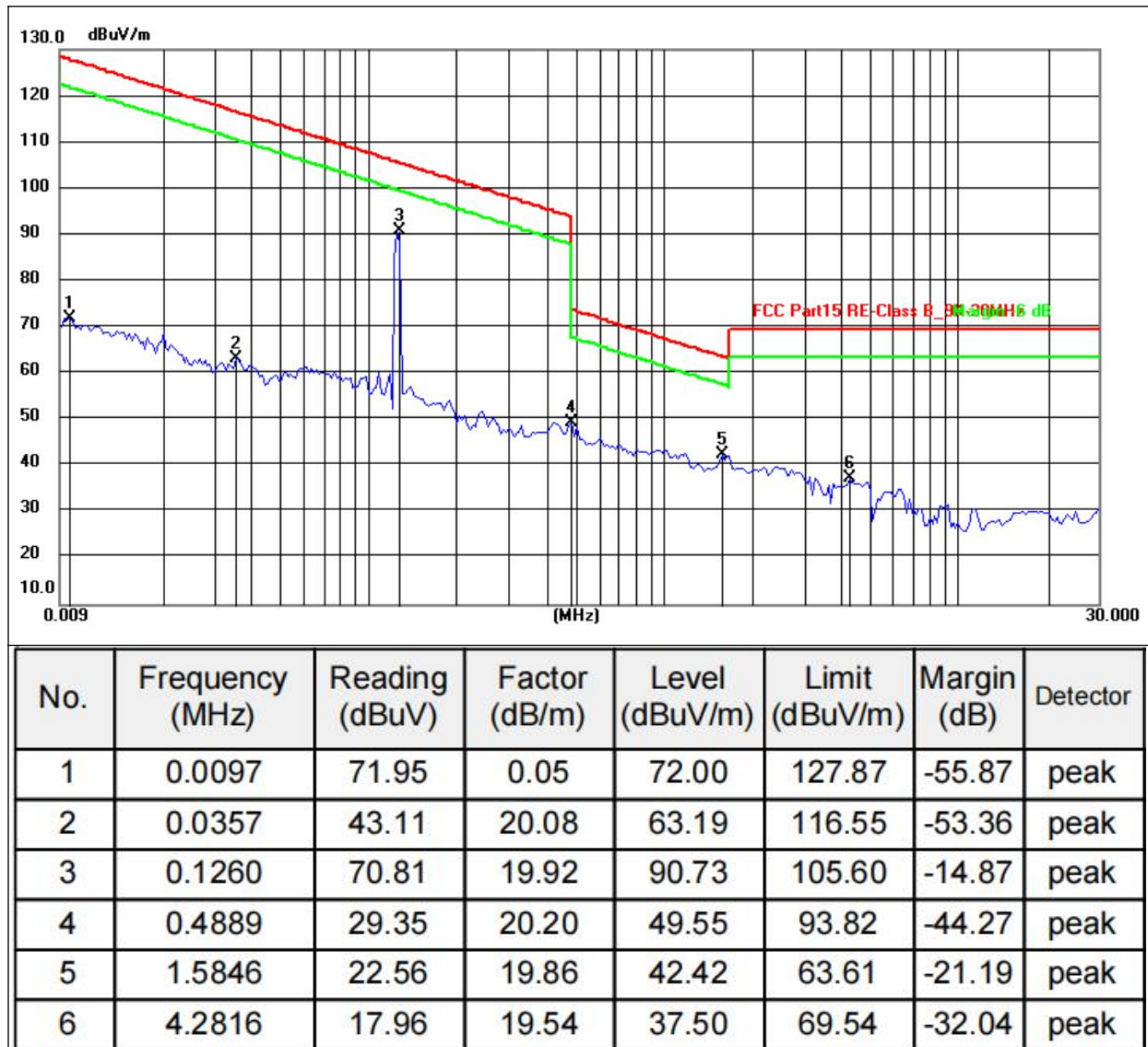
Note: Limit dBuV/m @3m = Limit dBuV/m @300m + 80

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



ANT-1 - 9 kHz~30 MHz

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V	Test Mode :	Mode 1



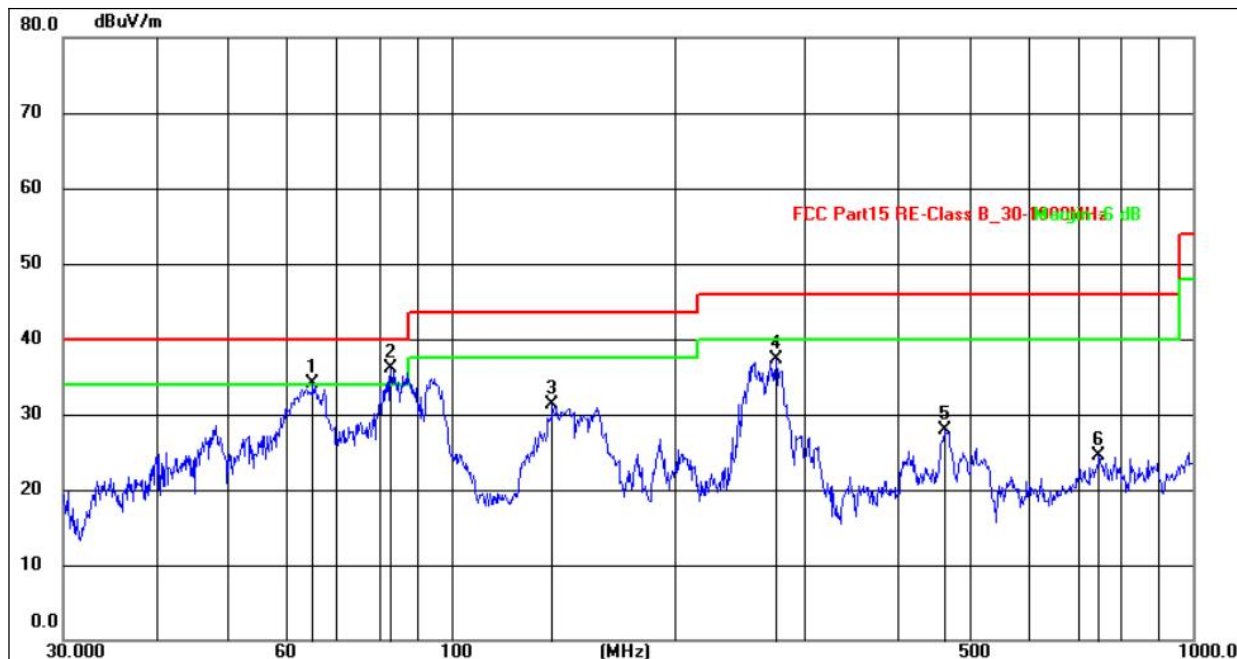
Remarks:

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 1 recorded.



ANT-1 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V	Test Mode:	Mode 1



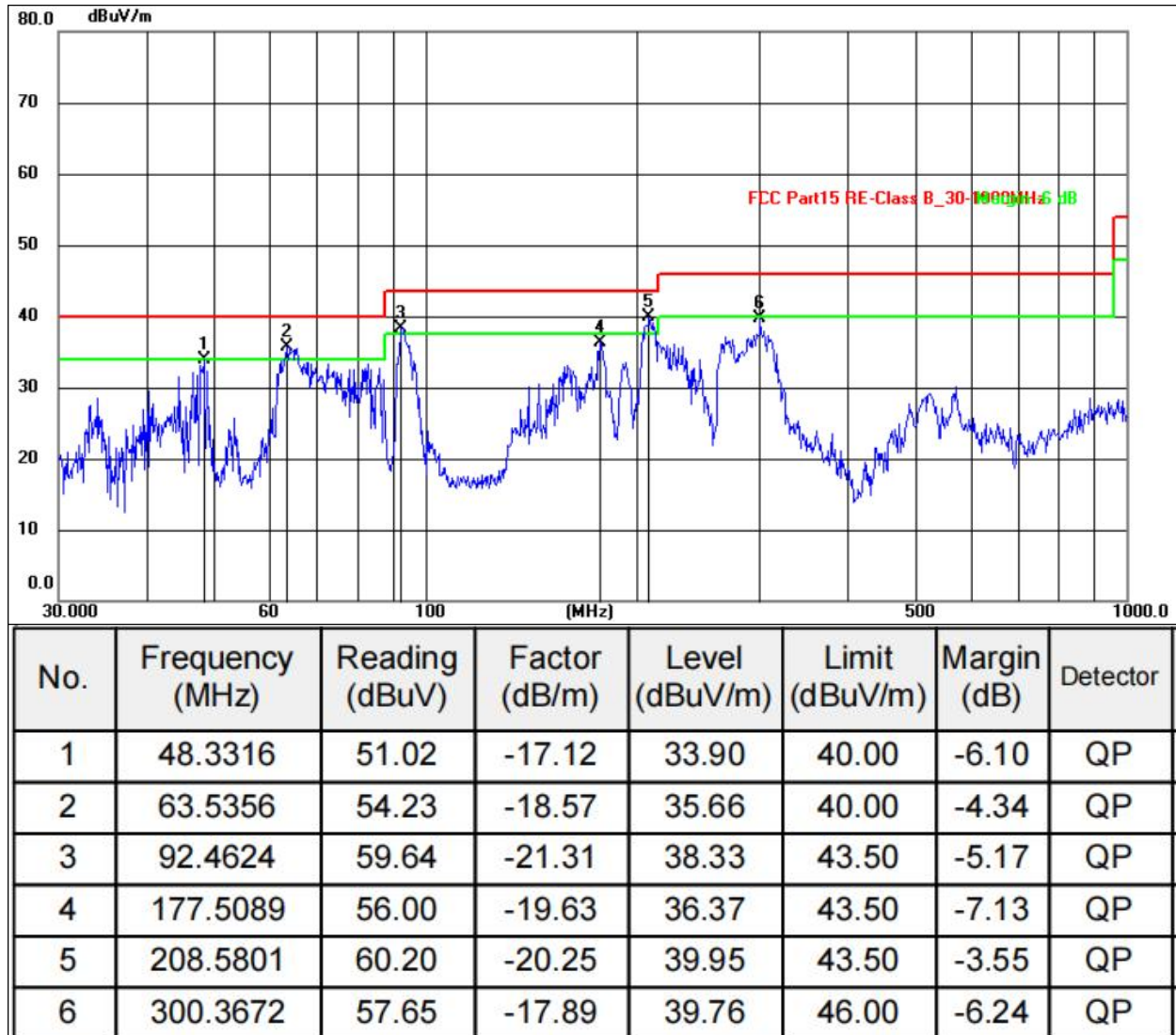
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	65.1144	49.50	-15.49	34.01	40.00	-5.99	QP
2	82.9384	55.77	-19.58	36.19	40.00	-3.81	QP
3	136.9389	48.39	-17.00	31.39	43.50	-12.11	QP
4	274.1938	51.53	-14.30	37.23	46.00	-8.77	QP
5	462.3455	40.76	-12.92	27.84	46.00	-18.16	QP
6	747.4823	31.10	-6.54	24.56	46.00	-21.44	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 1 recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V	Test Mode:	Mode 1



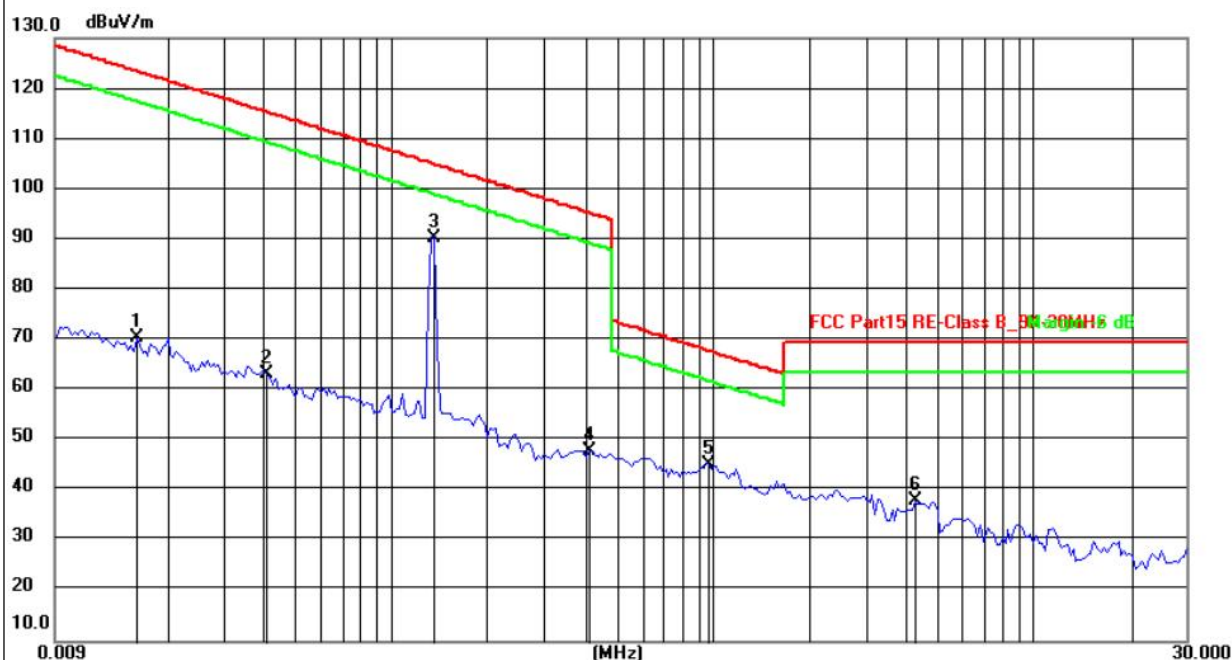
Remarks:

- 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 1 recorded.



ANT-2 - 9 kHz~30 MHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	coaxial
Test Voltage:	DC 9V	Test Mode:	Mode 4



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0160	50.07	20.49	70.56	123.52	-52.96	peak
2	0.0410	43.26	19.96	63.22	115.35	-52.13	peak
3	0.1346	70.42	19.97	90.39	105.02	-14.63	peak
4	0.4157	27.83	20.17	48.00	95.23	-47.23	peak
5	0.9743	25.38	20.00	45.38	67.83	-22.45	peak
6	4.2816	18.46	19.54	38.00	69.54	-31.54	peak

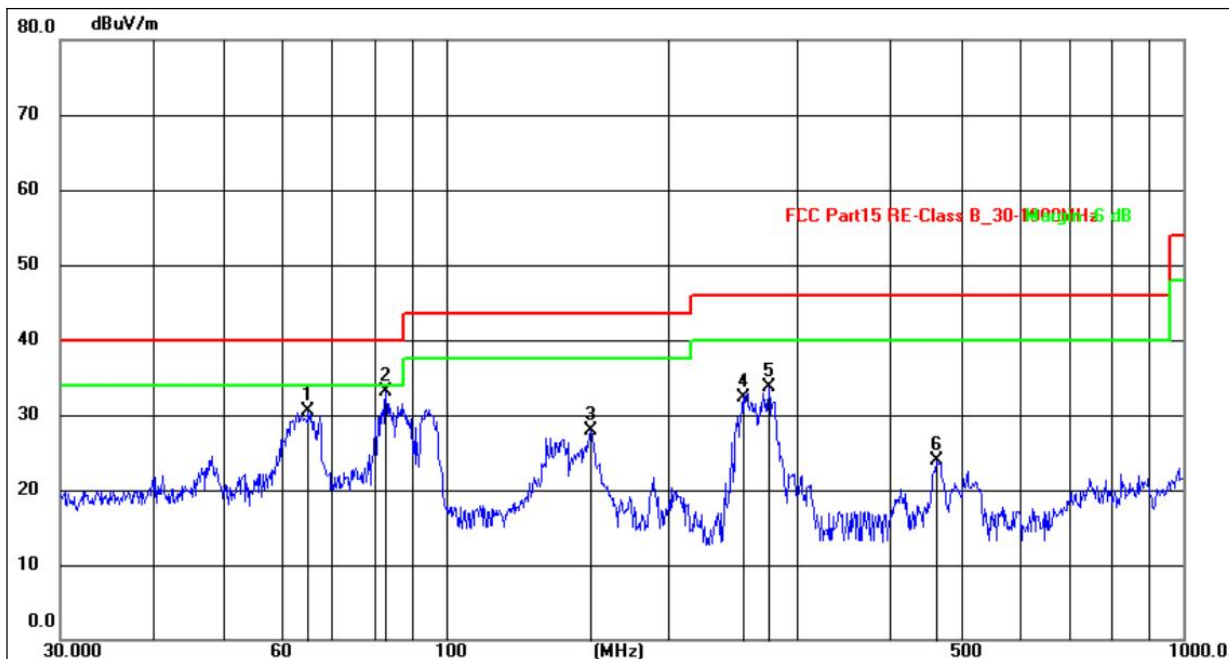
Remarks:

- 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 4 recorded.



ANT-2 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V	Test Mode:	Mode 4



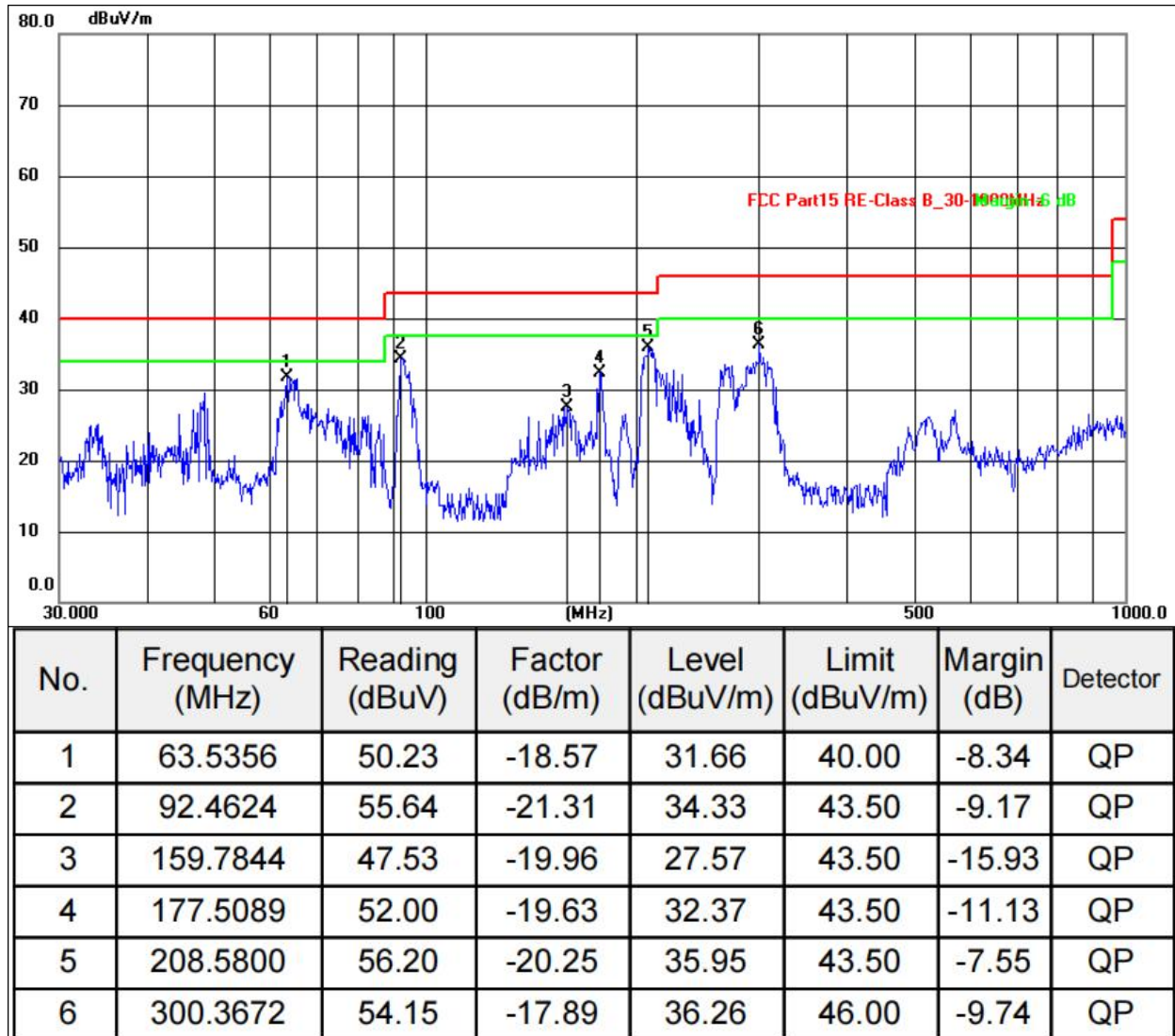
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	65.1144	46.00	-15.49	30.51	40.00	-9.49	QP
2	82.9384	52.77	-19.58	33.19	40.00	-6.81	QP
3	157.0072	44.04	-16.08	27.96	43.50	-15.54	QP
4	252.9481	47.81	-15.44	32.37	46.00	-13.63	QP
5	274.1938	48.03	-14.30	33.73	46.00	-12.27	QP
6	462.3455	36.76	-12.92	23.84	46.00	-22.16	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 4 recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V	Test Mode:	Mode 4



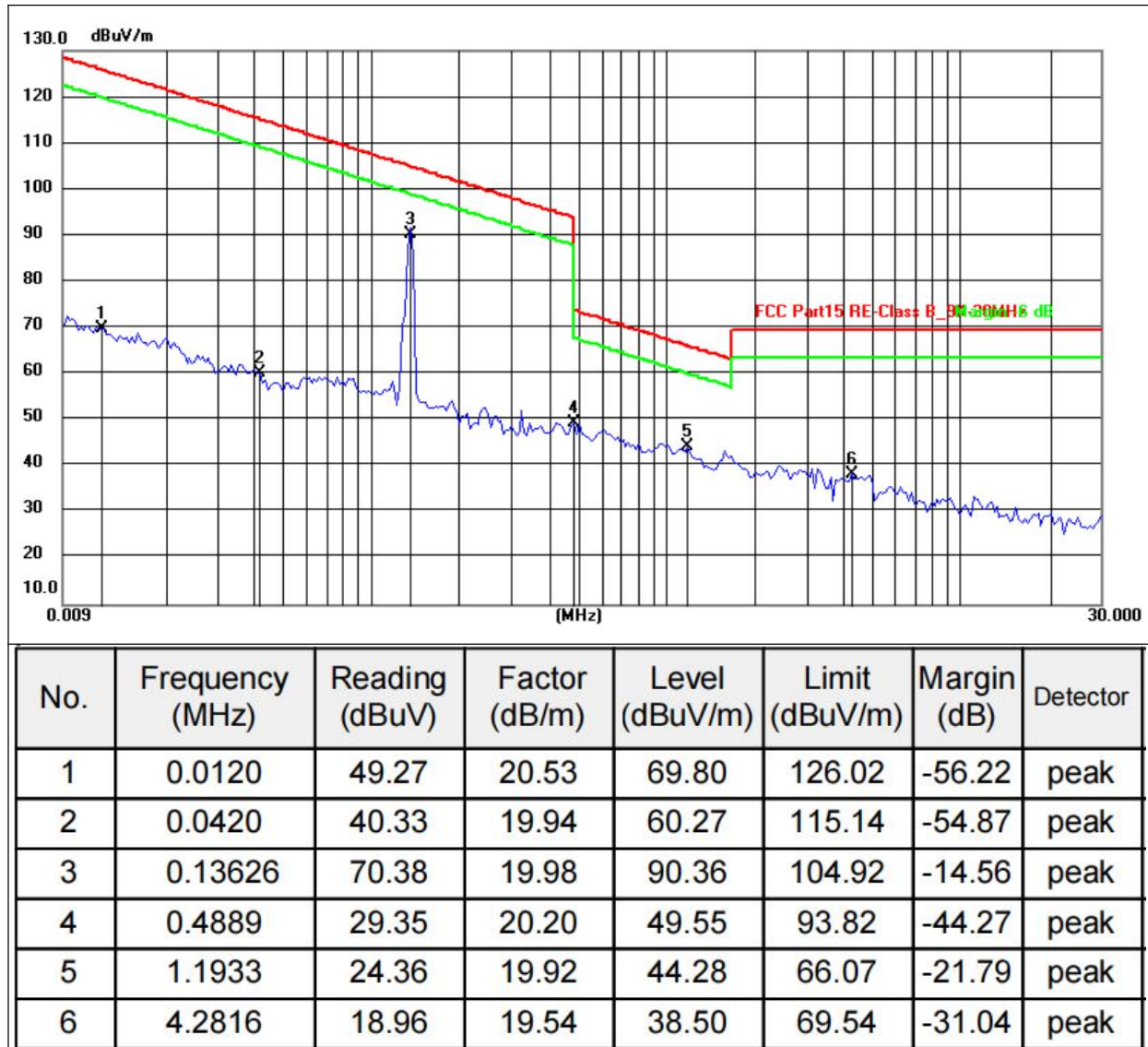
Remarks:

- 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 4 recorded.



ANT3 - 9 kHz~30 MHz

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V	Test Mode :	Mode 7



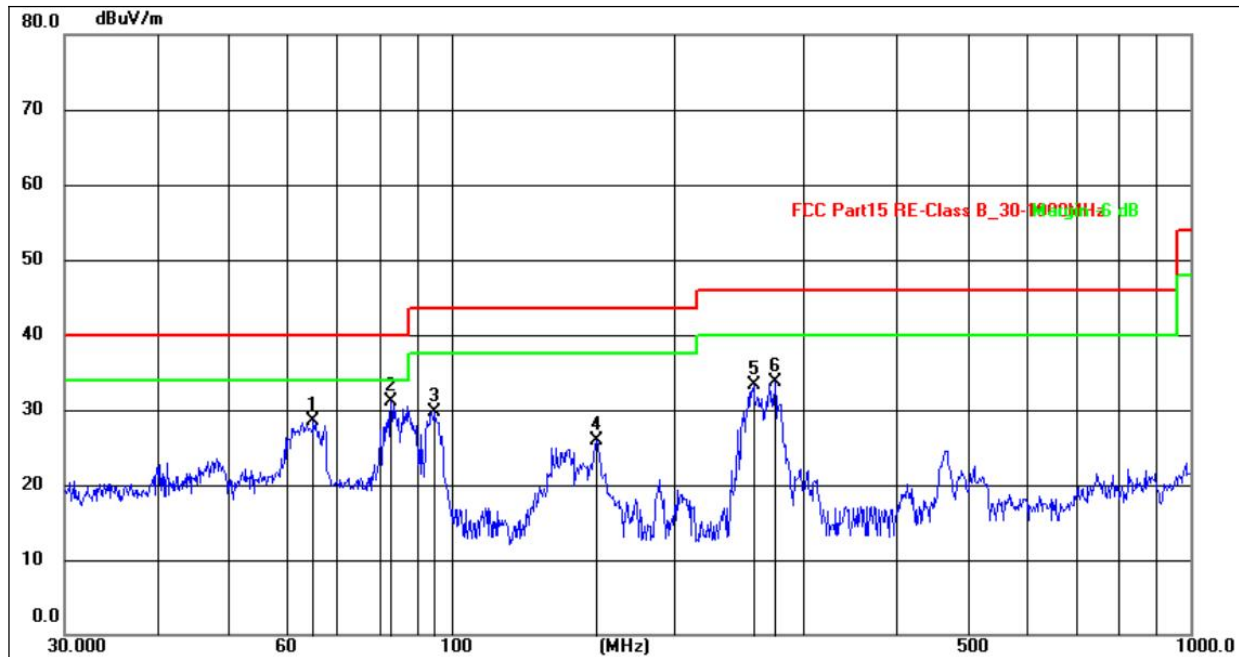
Remarks:

- 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 7 recorded.



ANT3 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V	Test Mode:	Mode 7



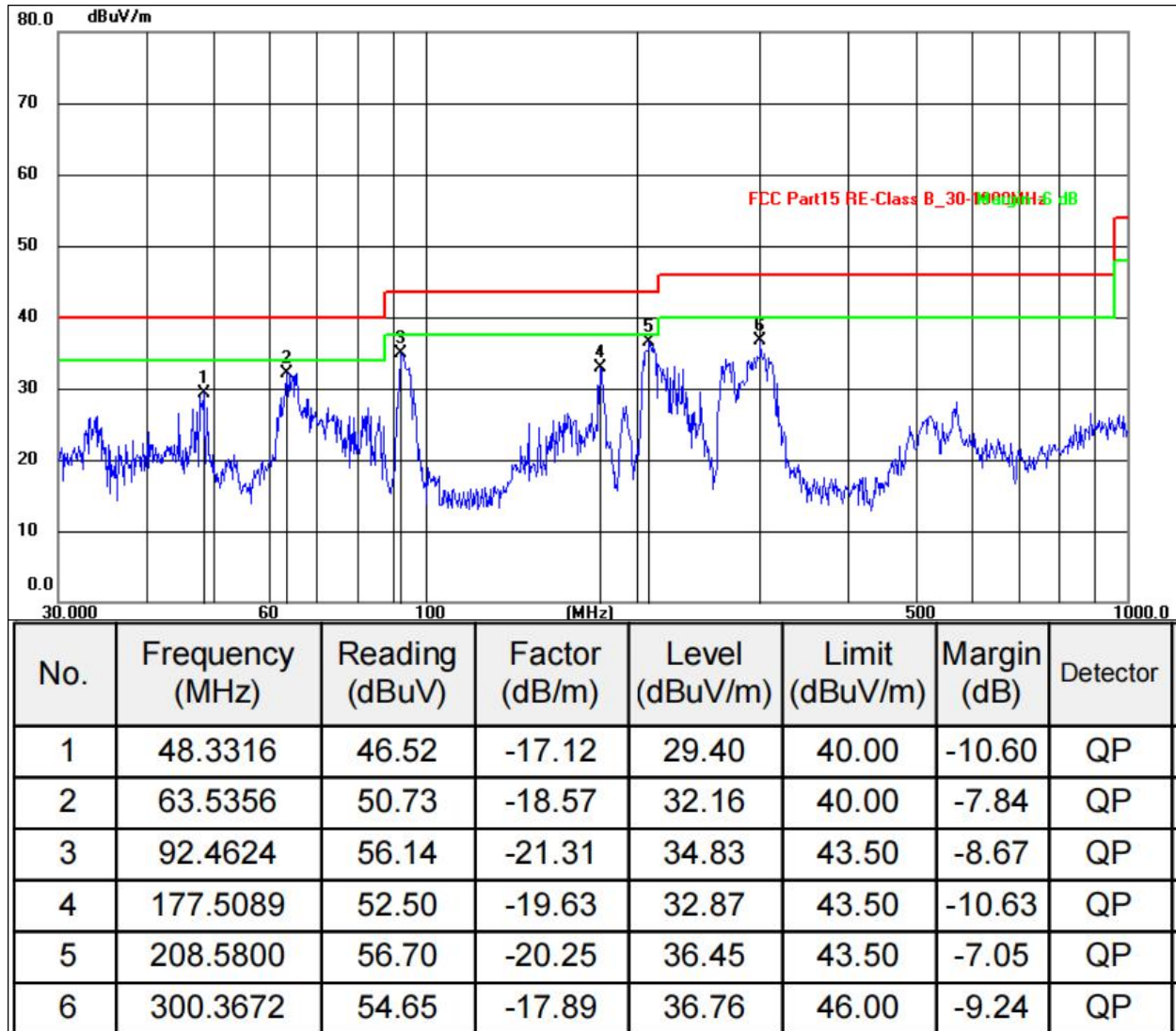
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	65.1144	44.00	-15.49	28.51	40.00	-11.49	QP
2	82.9384	50.77	-19.58	31.19	40.00	-8.81	QP
3	95.0929	49.55	-19.89	29.66	43.50	-13.84	QP
4	157.0072	42.04	-16.08	25.96	43.50	-17.54	QP
5	256.5210	48.65	-15.31	33.34	46.00	-12.66	QP
6	274.1938	48.03	-14.30	33.73	46.00	-12.27	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 7 recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V	Test Mode:	Mode 7



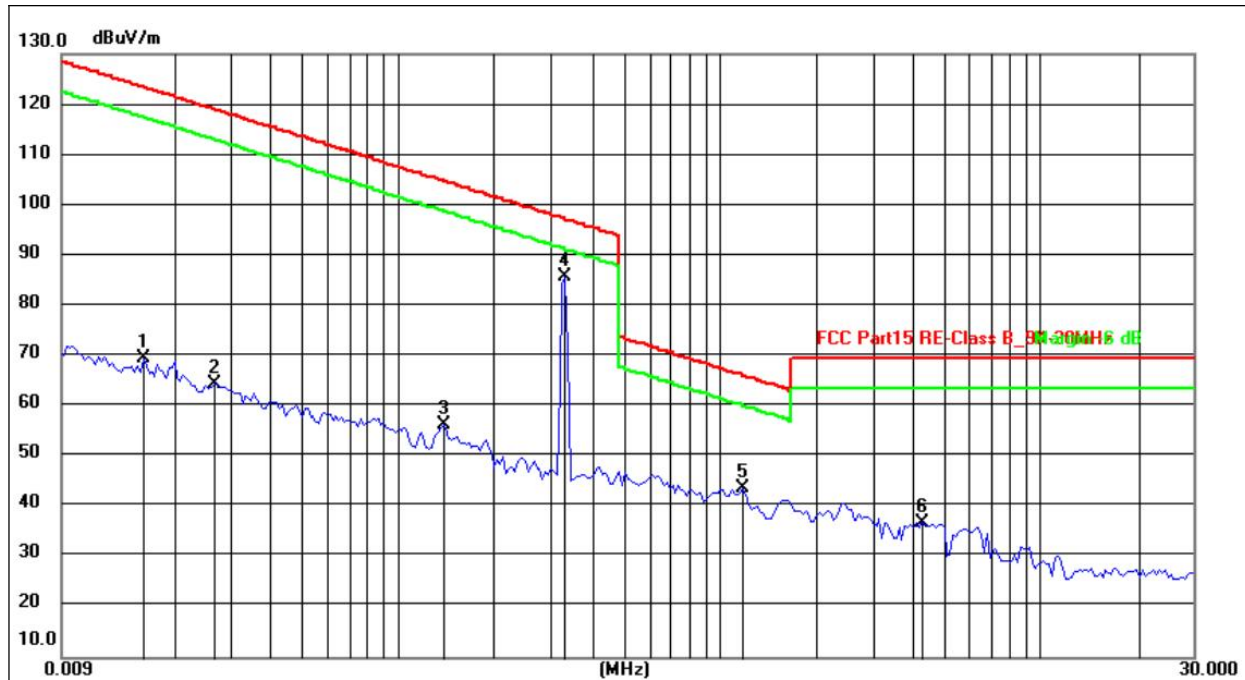
Remarks:

- 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 7 recorded.



ANT4 - 9 kHz~30 MHz

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V	Test Mode :	Mode 10



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	0.0269	44.05	20.29	64.34	119.01	-54.67	peak
3	0.1389	36.35	19.99	56.34	104.75	-48.41	peak
4	0.3280	65.60	20.13	85.73	97.29	-11.56	peak
5	1.1933	23.86	19.92	43.78	66.07	-22.29	peak
6	4.2816	17.46	19.54	37.00	69.54	-32.54	peak

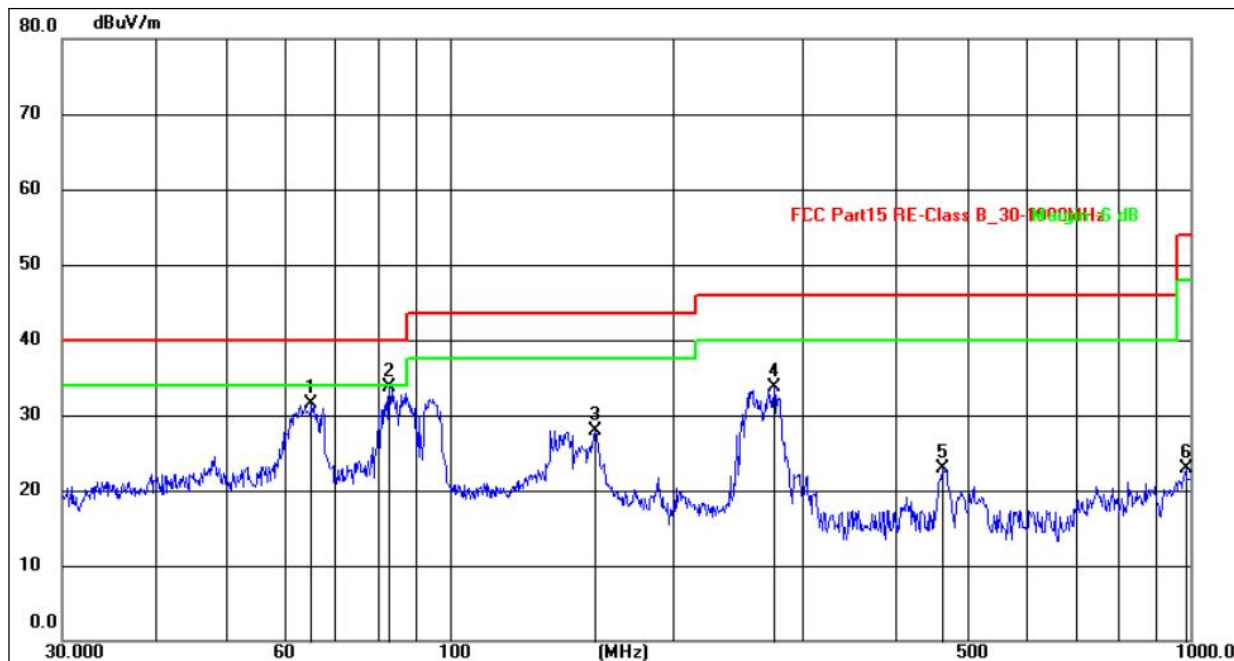
Remarks:

- 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 10 recorded.



ANT4 - 30MHz-1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V	Test Mode:	Mode 10



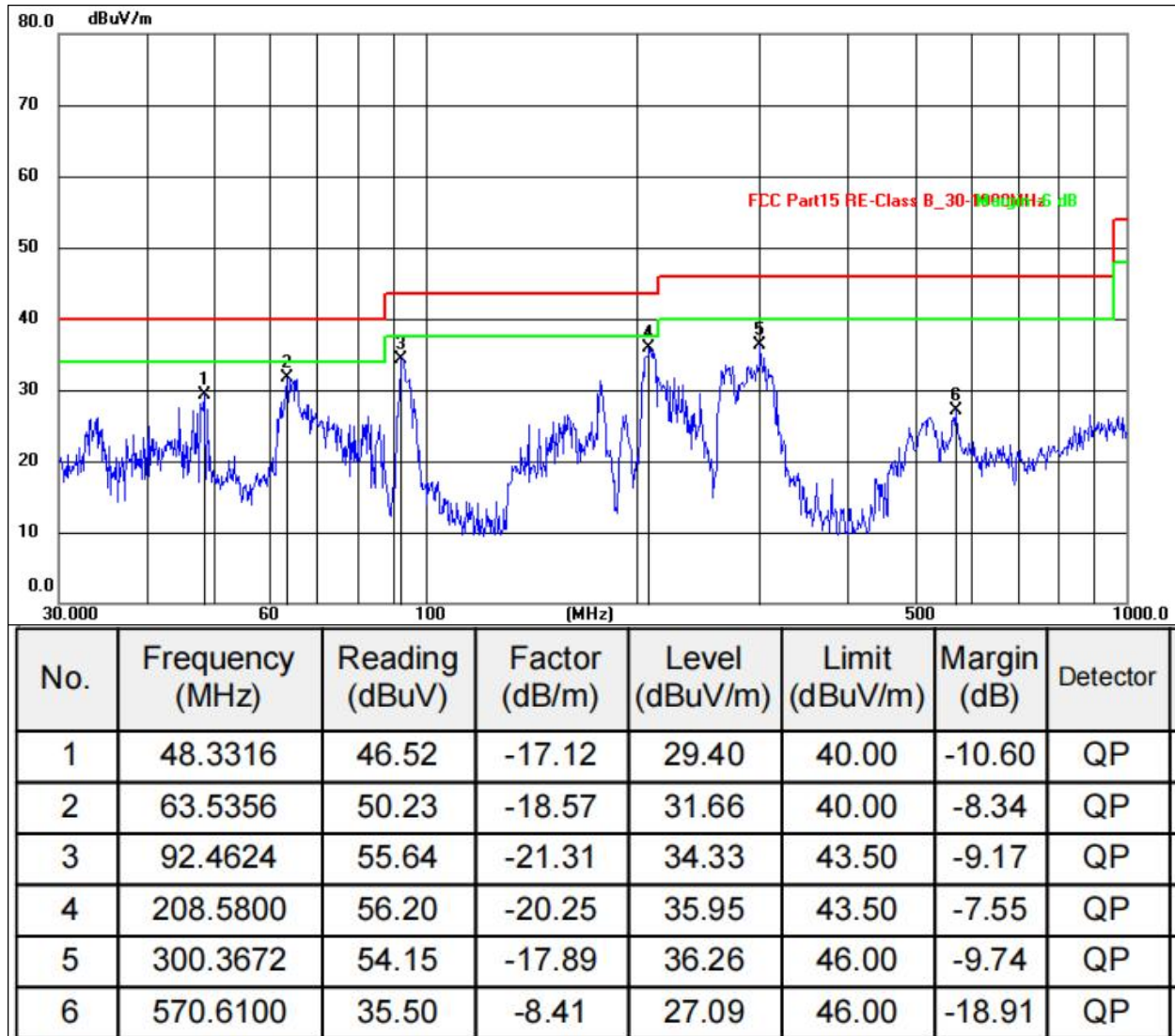
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	65.1144	47.00	-15.49	31.51	40.00	-8.49	QP
2	82.9384	53.27	-19.58	33.69	40.00	-6.31	QP
3	157.0072	44.04	-16.08	27.96	43.50	-15.54	QP
4	274.1938	48.03	-14.30	33.73	46.00	-12.27	QP
5	462.3455	35.76	-12.92	22.84	46.00	-23.16	QP
6	986.0715	27.73	-4.86	22.87	54.00	-31.13	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 10 recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V	Test Mode:	Mode 10



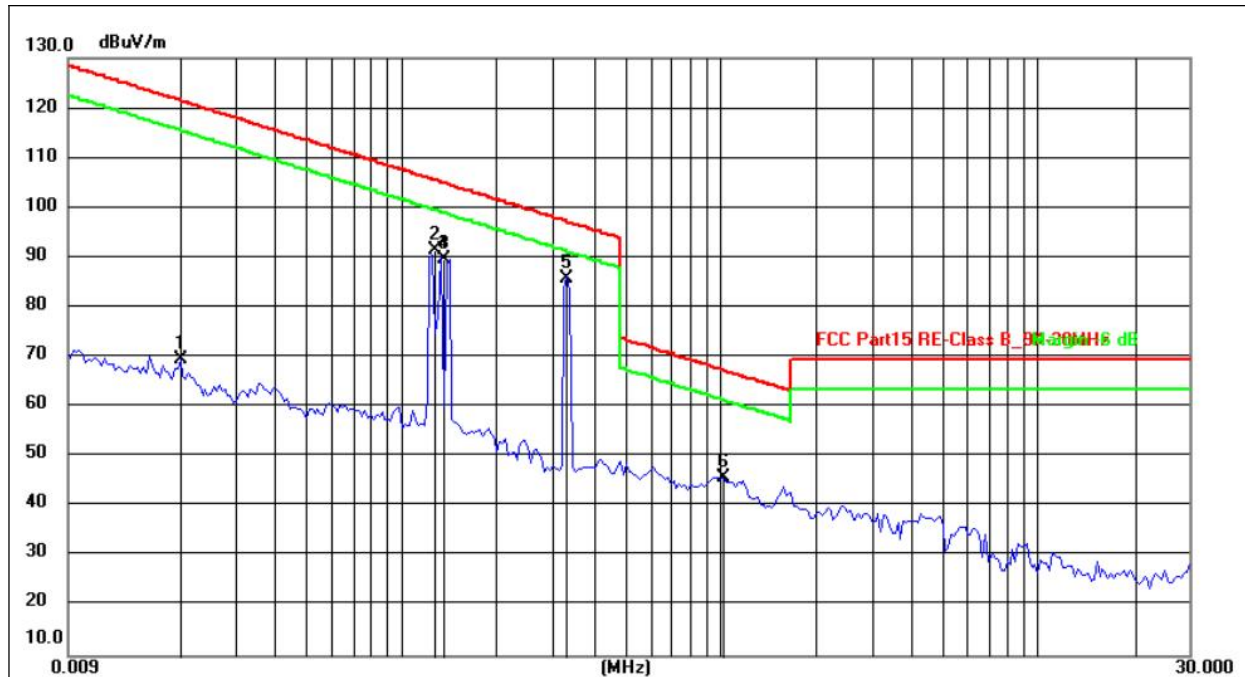
Remarks:

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 10 recorded.



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

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	coaxial
Test Voltage :	DC 9V	Test Mode :	Mode 31



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0200	49.06	20.45	69.51	121.58	-52.07	peak
2	0.1260	71.64	19.92	91.56	105.60	-14.04	peak
3	0.1346	69.82	19.97	89.79	105.02	-15.23	peak
4	0.13626	69.69	19.98	89.67	104.92	-15.25	peak
5	0.3280	65.60	20.13	85.73	97.29	-11.56	peak
6	1.0354	26.01	19.94	45.95	67.30	-21.35	peak

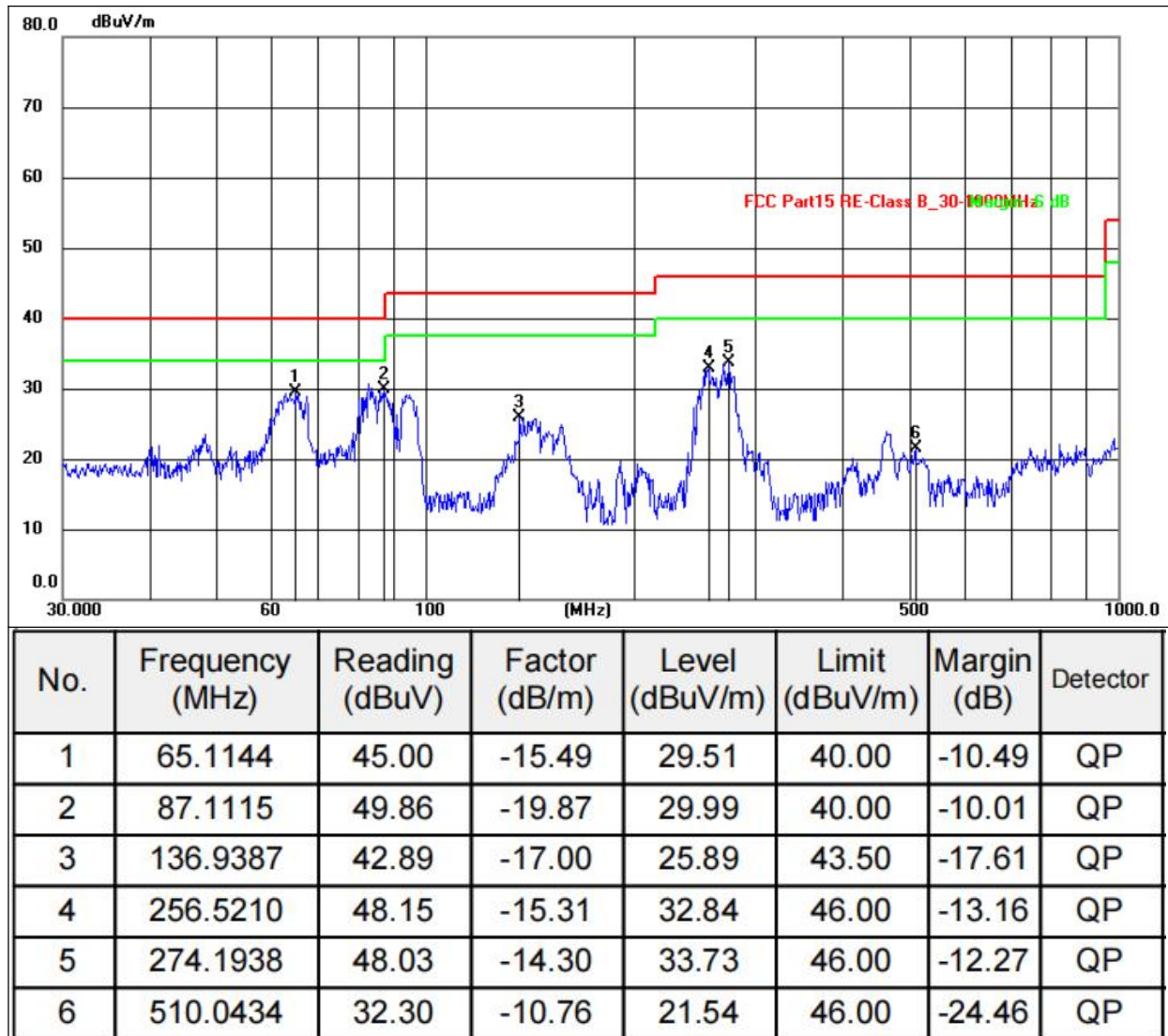
Remarks:

- 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 31 recorded.



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

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 9V	Test Mode:	Mode 31

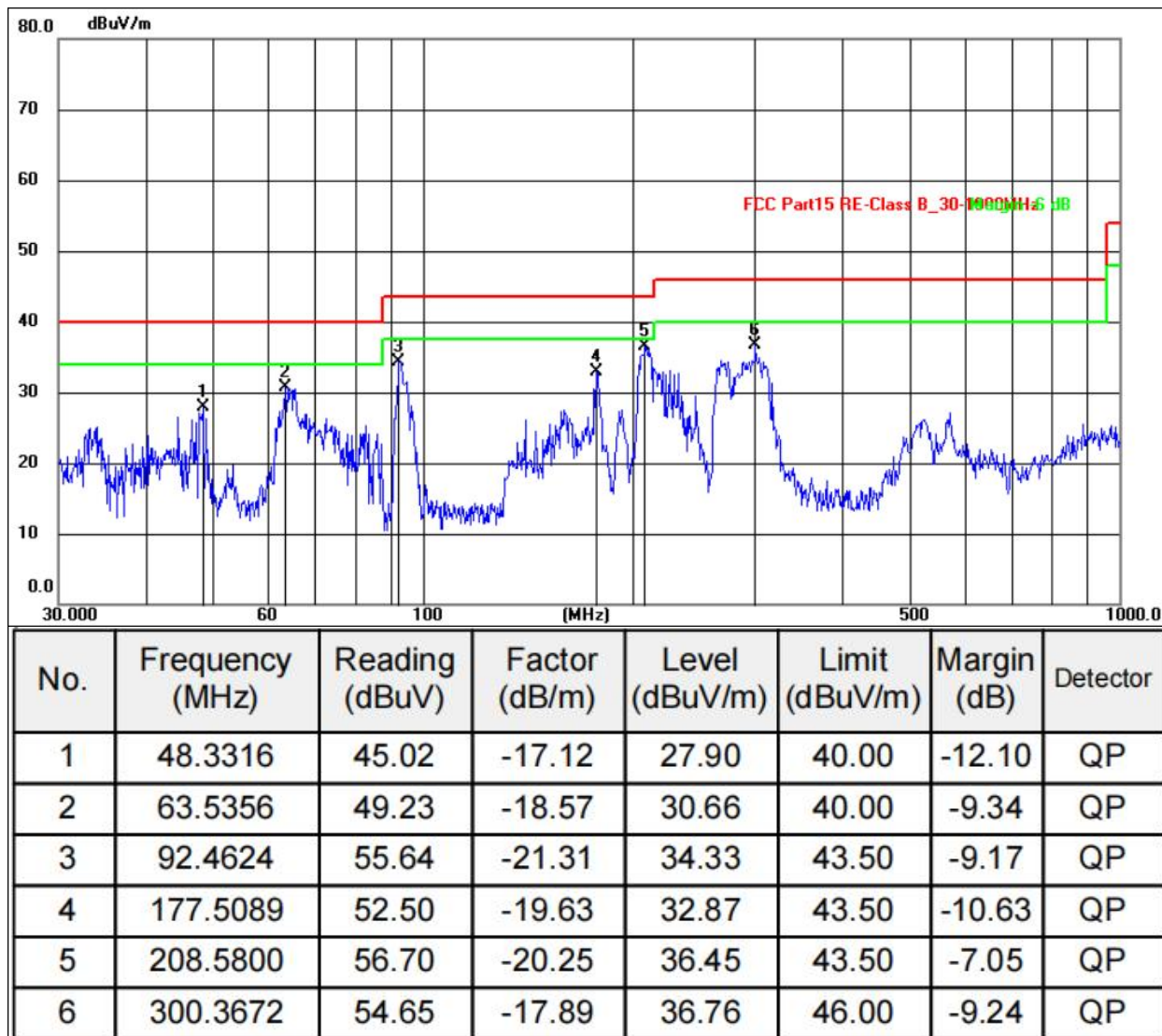


Remarks:

- 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 31 recorded.



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 9V	Test Mode:	Mode 31



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 31 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.

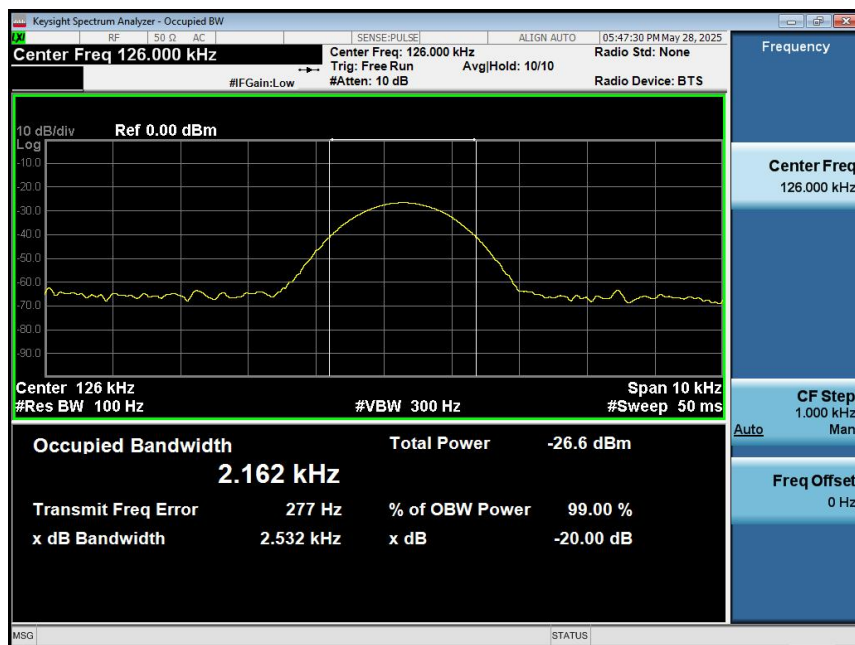


6.5 TEST RESULT

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage:	DC 9V

Test Coil	Frequency (kHz)	20dB Bandwidth (kHz)	Result
ANT 1	126.00	2.532	Pass
ANT 2	134.60	2.577	Pass
ANT 3	136.30	2.512	Pass
ANT 4	328.00	2.537	Pass

ANT1:

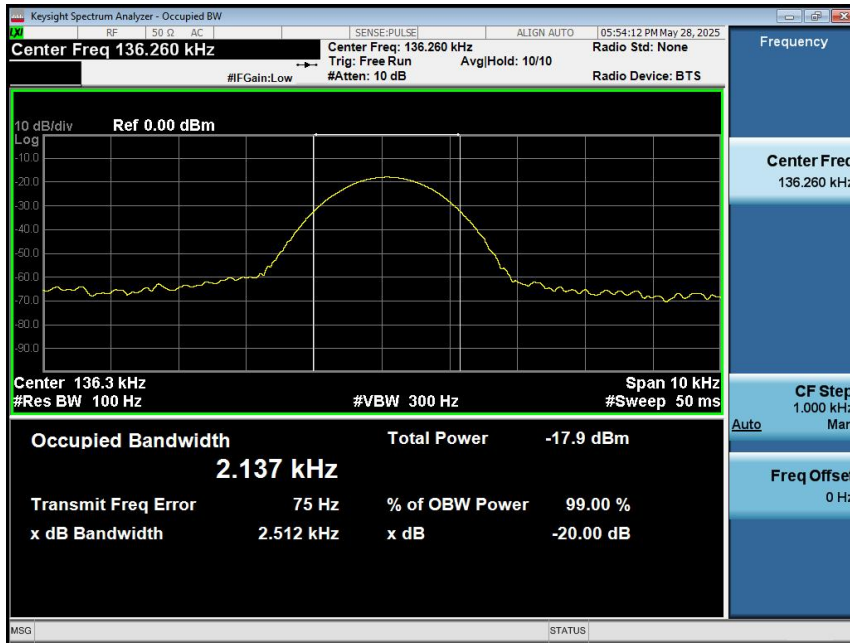


ANT2:

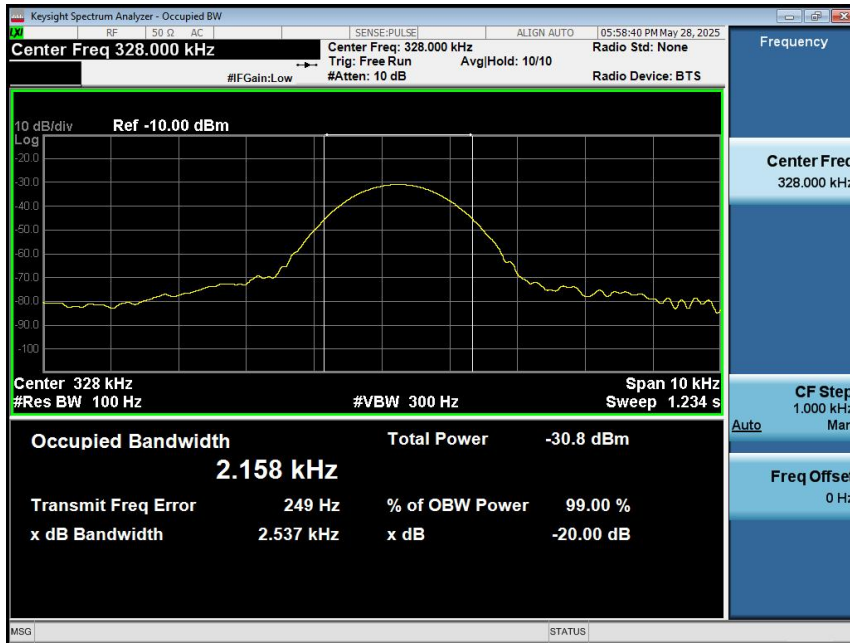




ANT3:



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 *****