

RF TEST REPORT

For

Shenzhen Zhenpin Technology Co.,Ltd

Product Name: Wireless charger

Model(s): D2

Report Reference No. : POCE231212004RF001

FCC ID : 2BD8P-WC02

Applicant's Name : Shenzhen Zhenpin Technology Co.,Ltd

Address : South 3F Block 2, Tongfuyu Industrial Park, Zhenmei Community, Xinhua Street, Guanming District, Shenzhen City

Testing Laboratory : Shenzhen POCE Technology Co., Ltd.

Address : 102 Building H1 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China

Test Specification Standard : FCC CFR Title 47 Part 15 Subpart C

Date of Receipt : December 12, 2023

Date of Test : December 12, 2023 to December 22, 2023

Data of Issue : December 22, 2023

Result : Pass

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Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	POCE231212004RF001	December 22, 2023

NOTE1:

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15.209: Radiated emission limits; general requirements

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result
Antenna requirement	FCC CFR Title 47 Part 15.203	/	Part 15.203	Pass
Conducted Emission at AC power line	FCC CFR Title 47 Part 15 Subpart C	ANSI C63.10-2013 section 6.2	47 CFR 15.207(a)	Pass
20dB Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C	ANSI C63.10-2013, section 6.9.2	47 CFR 15.215(c)	Pass
Emissions in frequency bands (below 30MHz)	FCC CFR Title 47 Part 15 Subpart C	ANSI C63.10-2013 section 6.6.4	47 CFR 15.209	Pass
Emissions in frequency bands (30MHz - 1GHz)	FCC CFR Title 47 Part 15 Subpart C	ANSI C63.10-2013 section 6.6.4	47 CFR 15.209	Pass

2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name : Shenzhen Zhenpin Technology Co.,Ltd
Address : South 3F Block 2, Tongfuyu Industrial Park, Zhenmei Community, Xinhua Street, Guanming District, Shenzhen City

Manufacturer : Shenzhen Zhenpin Technology Co.,Ltd
Address : South 3F Block 2, Tongfuyu Industrial Park, Zhenmei Community, Xinhua Street, Guanming District, Shenzhen City

2.2 Description of Device (EUT)

Product Name:	Wireless charger
Model/Type reference:	D2
Series Model:	D2S,D1,D3,D3S,D5S,D6,D6S,D7,D8,D9,D10,D11,D12,D13,D13S,D15,D16,D17,D18,D19,D20
Model Different:	The product has many models, only the model name is different, and the other parts such as the circuit principle, pcb and electrical structure are the same.
Trade Mark:	N/A
Power Supply:	DC 9V/3A from adapter
Operation Frequency:	mobile phone/Airpods:115KHz~205KHz lwatch:321.9KHz~336.9KHz
Number of Channels:	N/A
Modulation Type:	MSK
Antenna Type:	Inductive loop coil Antenna
Antenna Gain:	0dBi (Max)
Hardware Version:	V1.0
Software Version:	V1.0

2.3 Description of Test Modes

No	Title	Description
TM1	Full load test(Folding triad)	Keep the EUT in wireless charging mode
TM2	half load test(Folding triad)	Keep the EUT in wireless charging mode
TM3	No-load load test(Folding triad)	Keep the EUT in wireless charging mode
TM4	Full load test(mobile phone)	Keep the EUT in wireless charging mode
TM5	half load test(mobile phone)	Keep the EUT in wireless charging mode
TM6	No-load load test(mobile phone)	Keep the EUT in wireless charging mode
TM7	Full load test(Watch)	Keep the EUT in wireless charging mode
TM8	half load test(Watch)	Keep the EUT in wireless charging mode
TM9	No-load load test(Watch)	Keep the EUT in wireless charging mode
TM10	Full load test(Earbuds)	Keep the EUT in wireless charging mode
TM11	half load test(Earbuds)	Keep the EUT in wireless charging mode
TM12	No-load load test(Earbuds)	Keep the EUT in wireless charging mode
Remark:TM1 is the full load mode, and the full load mode is the worst mode,Only the data of the worst mode would be recorded in this report.		

Test channel	Frequency (KHz)
Cellphone loop coil Antenna/Airpods	144.6
lwatch	325.5KHz

2.4 Description of Support Units

Title	Manufacturer	Model No.	Serial No.
AC Adapter	UGREEN	CD212	N/A
Wireless Charging Load Module	N/A	N/A	Wireless Input Power:5W/7.5W/10W//15W
Watch	Apple	Apple watch	N/A
mobile phone	Huawei	p40pro	N/A
Earbuds	Apple	/	N/A

2.5 Equipments Used During The Test

Conducted Emission at AC power line

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
loop antenna	EVERFINE	LLA-2	80900L-C	2023-02-27	2024-02-26
Power absorbing clamp	SCHWARZ BECK	MESS-ELEKTRONIK	/	2023-02-28	2024-02-27
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207	/	/
Cable	SCHWARZ BECK	/	/	2023-12-27	2024-12-27
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Ateennator	561-G071	2023-02-27	2024-02-26
50ΩCoaxial Switch	Anritsu	MP59B	M20531	/	/
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	ID:1164.6607K 03-102109-MH	2023-06-13	2024-06-12
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2023-12-29	2024-12-28

20dB Occupied Bandwidth

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Test Software	TACHOY	RTS-01	V2.0.0.0	/	/
High Pass filter	ZHINAN	OQHPF1-M1.5-18G-224	6210075	/	/
Power divider	MIDEWEST	PWD-2533	SMA-79	2023-05-11	2026-05-10
DC power	HP	66311B	38444359	/	/
RF Sensor Unit	Tachoy Information Technology(she nzen) Co.,Ltd.	TR1029-2	000001	/	/
Wideband radio communication tester	R&S	CMW500	113410	2023-06-13	2024-06-12
Vector signal generator	Keysight	N5181A	MY48180415	2023-12-29	2024-12-28
Signal generator	Keysight	N5182A	MY50143455	2023-12-29	2024-12-28
Spectrum Analyzer	Keysight	N9020A	MY53420323	2023-12-29	2024-12-28

Emissions in frequency bands (below 30MHz)
Emissions in frequency bands (30MHz - 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test software	Farad	EZ -EMC	V1.1.42	/	/
Positioning Controller	/	MF-7802	/	/	/
High Pass filter	ZHINAN	OQHPF1-M1.5-18G-224	6210075	/	/
Amplifier(18-40G)	COM-POWER	AH-1840	10100008-1	2022-04-05	2025-04-04
Horn antenna	COM-POWER	AH-1840 (18-40G)	10100008	2023-04-05	2025-04-04
Loop antenna	ZHINAN	ZN30900C	ZN30900C	2021-07-05	2024-07-04
Cable(LF)#2	Schwarzbeck	/	/	2023-02-27	2024-02-26
Cable(LF)#1	Schwarzbeck	/	/	2023-02-27	2024-02-26
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2023-02-28	2024-02-27
Cable(HF)#1	Schwarzbeck	SYV-50-3-1	/	2023-02-27	2024-02-26
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2023-06-13	2024-06-12
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2023-06-13	2024-06-12
Wideband radio communication tester	R&S	CMW500	113410	2023-06-13	2024-06-12
Spectrum Analyzer	R&S	FSP30	1321.3008K40-101729-jR	2023-06-14	2024-06-13
Horn Antenna	Sunol Sciences	DRH-118	A091114	2023-05-13	2025-05-12
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2023-05-21	2025-05-20
Test Receiver	R&S	ESCI	102109	2023-06-13	2024-06-12

2.6 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Disturbance (0.15~30MHz)	±3.41dB
Occupied Bandwidth	±3.63%
Radiated Emission (Below 1GHz)	±5.79dB
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

2.7 Identification of Testing Laboratory

Company Name:	Shenzhen POCE Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252

Identification of the Responsible Testing Location

Company Name:	Shenzhen POCE Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252
FCC Registration Number:	0032847402
Designation Number:	CN1342

2.8 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by POCE and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

3 Evaluation Results (Evaluation)

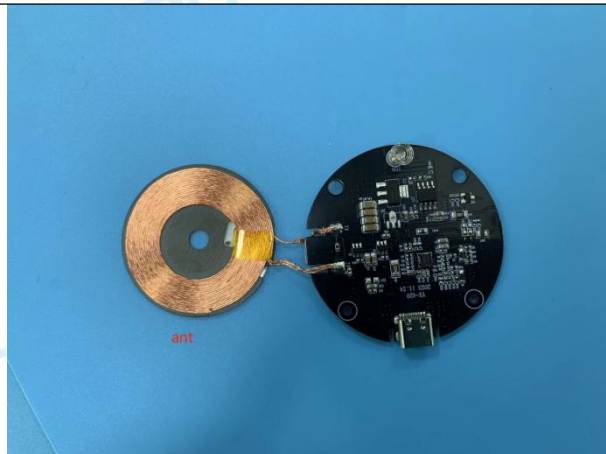
3.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 15.203, 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 shall be considered sufficient to comply with the provisions of this section.
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3.1.1 Conclusion:



lwatch-ant



Airpods-ant



mobile phone-ant

4 Radio Spectrum Matter Test Results (RF)

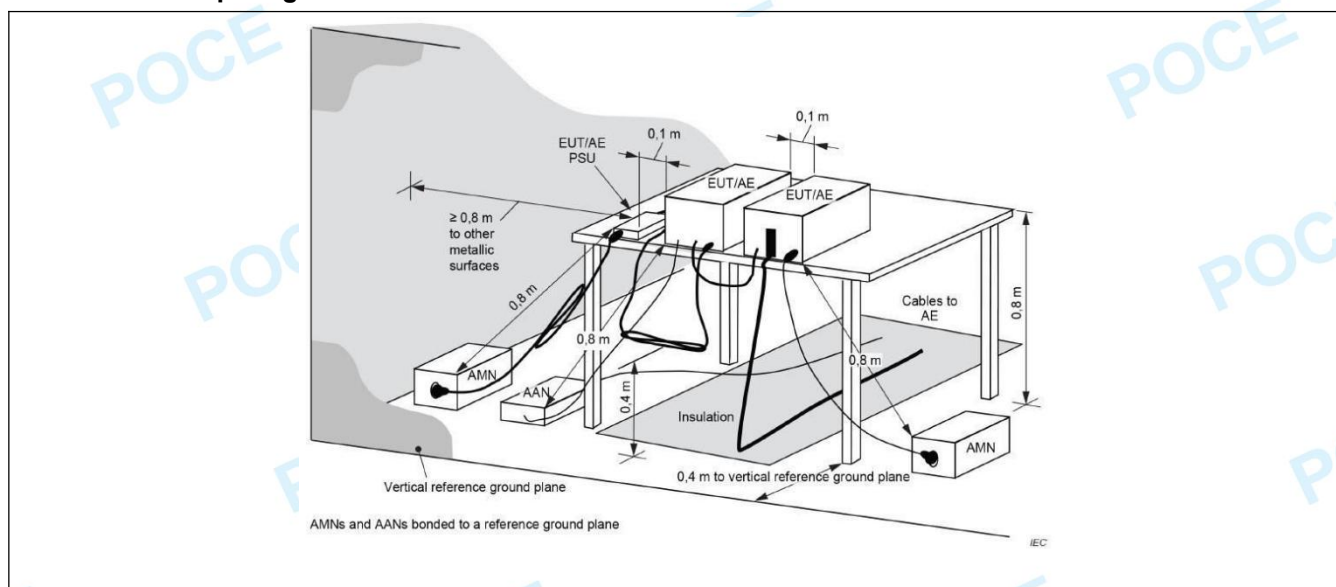
4.1 Conducted Emission at AC power line

Test Requirement:	Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

4.1.1 E.U.T. Operation:

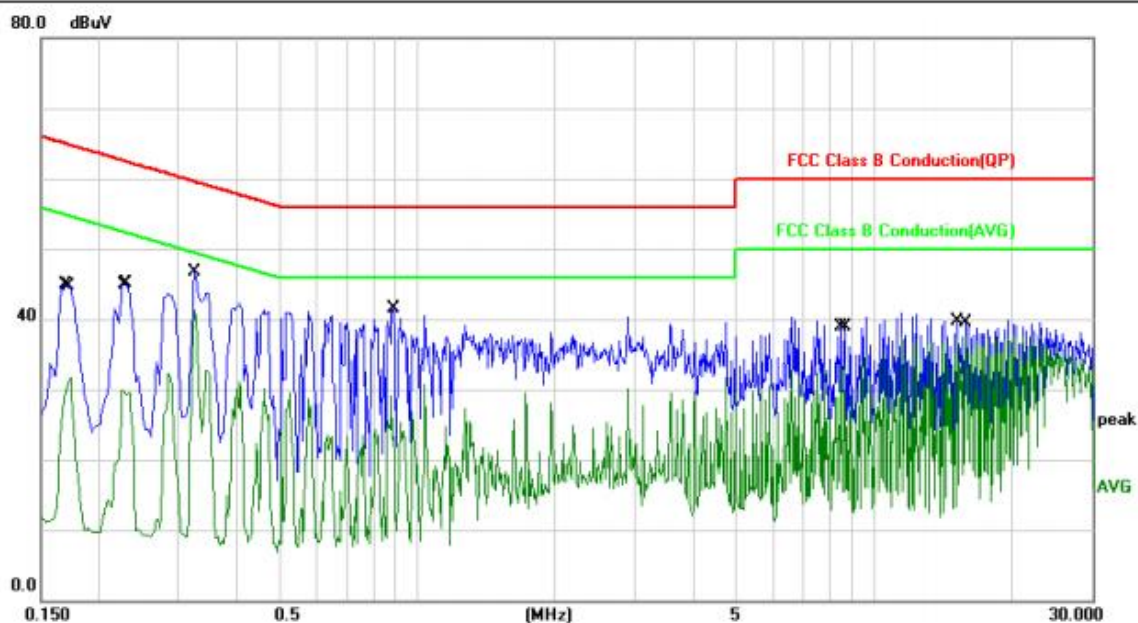
Operating Environment:					
Temperature:	23.2 °C	Humidity:	51.9 %	Atmospheric Pressure:	102 kPa
Pre test mode:		TM1			
Final test mode:		TM1			

4.1.2 Test Setup Diagram:



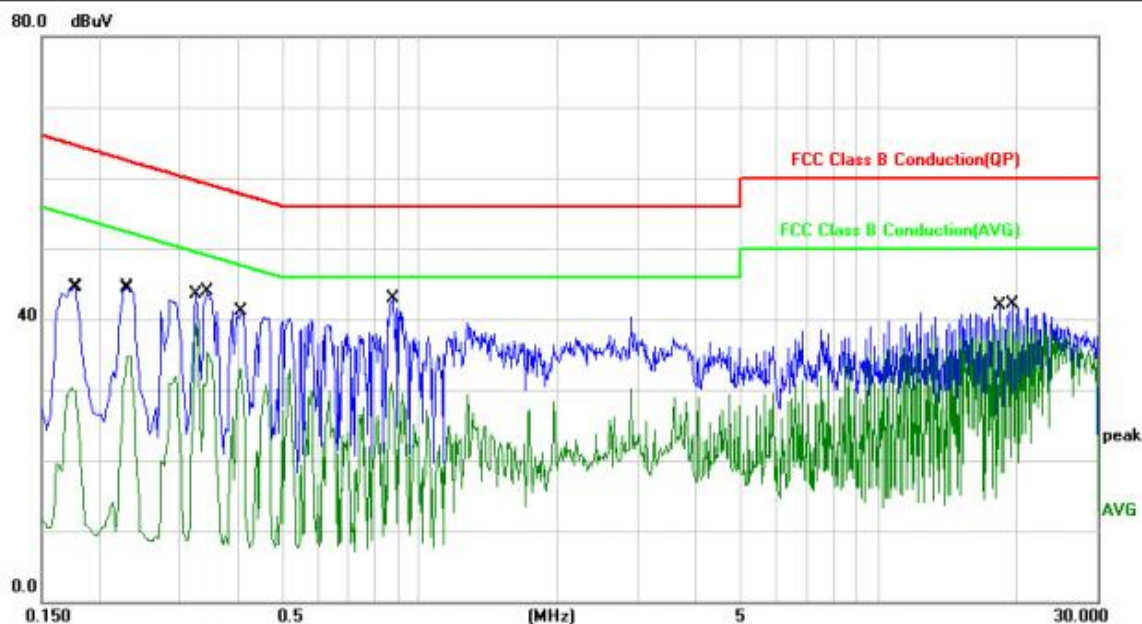
4.1.3 Test Data:

TM1 / Line: Line



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1700	34.87	10.03	44.90	64.96	-20.06	QP	
2		0.1740	21.70	10.03	31.73	54.76	-23.03	AVG	
3		0.2260	19.90	10.03	29.93	52.59	-22.66	AVG	
4		0.2300	35.02	10.03	45.05	62.45	-17.40	QP	
5		0.3260	36.64	10.01	46.65	59.55	-12.90	QP	
6	*	0.3260	31.28	10.01	41.29	49.55	-8.26	AVG	
7		0.8780	19.18	9.93	29.11	46.00	-16.89	AVG	
8		0.8860	31.55	9.93	41.48	56.00	-14.52	QP	
9		8.4459	28.61	10.33	38.94	60.00	-21.06	QP	
10		8.6779	23.36	10.34	33.70	50.00	-16.30	AVG	
11		15.1539	29.34	10.45	39.79	60.00	-20.21	QP	
12		15.8499	27.08	10.46	37.54	50.00	-12.46	AVG	

TM1 / Line: Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1740	20.19	10.03	30.22	54.76	-24.54	AVG	
2		0.1780	34.54	10.03	44.57	64.57	-20.00	QP	
3		0.2300	34.42	10.03	44.45	62.45	-18.00	QP	
4		0.2340	24.72	10.03	34.75	52.30	-17.55	AVG	
5		0.3260	29.24	10.01	39.25	49.55	-10.30	AVG	
6		0.3460	33.90	10.01	43.91	59.06	-15.15	QP	
7		0.4060	22.88	10.00	32.88	47.73	-14.85	AVG	
8		0.4100	31.02	10.00	41.02	57.65	-16.63	QP	
9		0.8700	20.63	10.21	30.84	46.00	-15.16	AVG	
10		0.8780	32.68	10.13	42.81	56.00	-13.19	QP	
11	*	18.3980	29.20	10.50	39.70	50.00	-10.30	AVG	
12		19.5540	31.57	10.50	42.07	60.00	-17.93	QP	

4.2 20dB Occupied Bandwidth

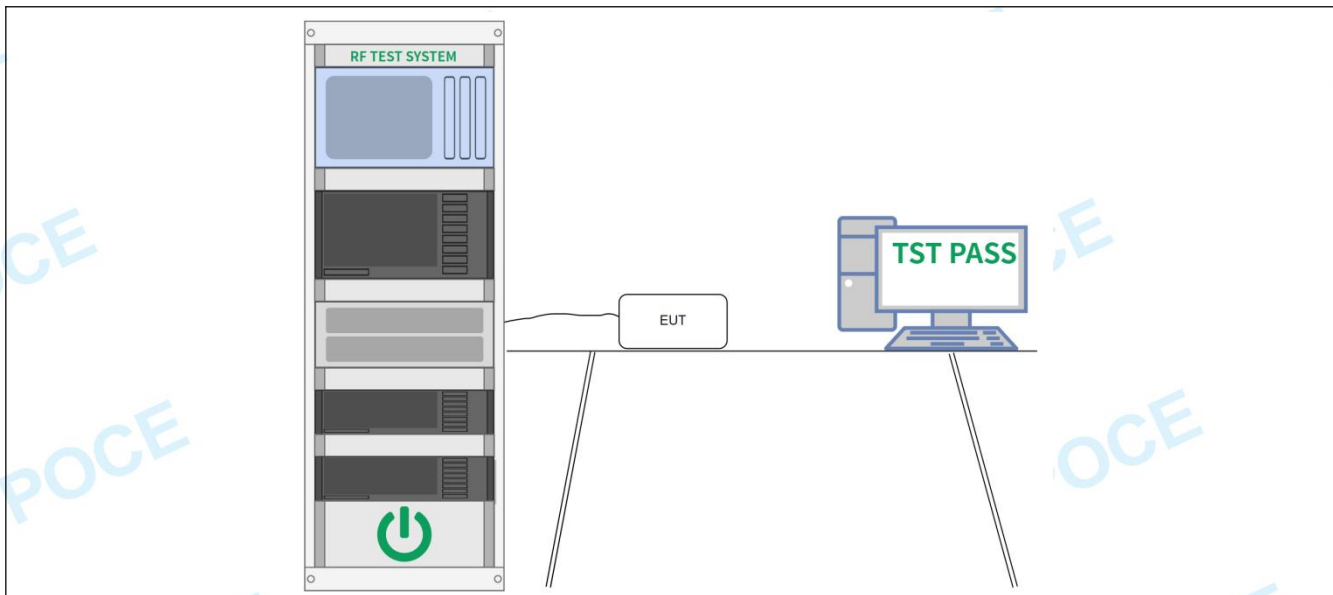
Test Requirement:	Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Limit:	Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	Occupied bandwidth—relative measurement procedure
Procedure:	a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2. d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value. f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the “-xx dB down amplitude” using $[(\text{reference value}) - xx]$. Alternatively, this calculation may be made by using the marker-delta function of the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j). j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

4.2.1 E.U.T. Operation:

Operating Environment:

Temperature:	23.4 °C	Humidity:	52.7 %	Atmospheric Pressure:	102 kPa
Pre test mode:	TM1				
Final test mode:	TM1				

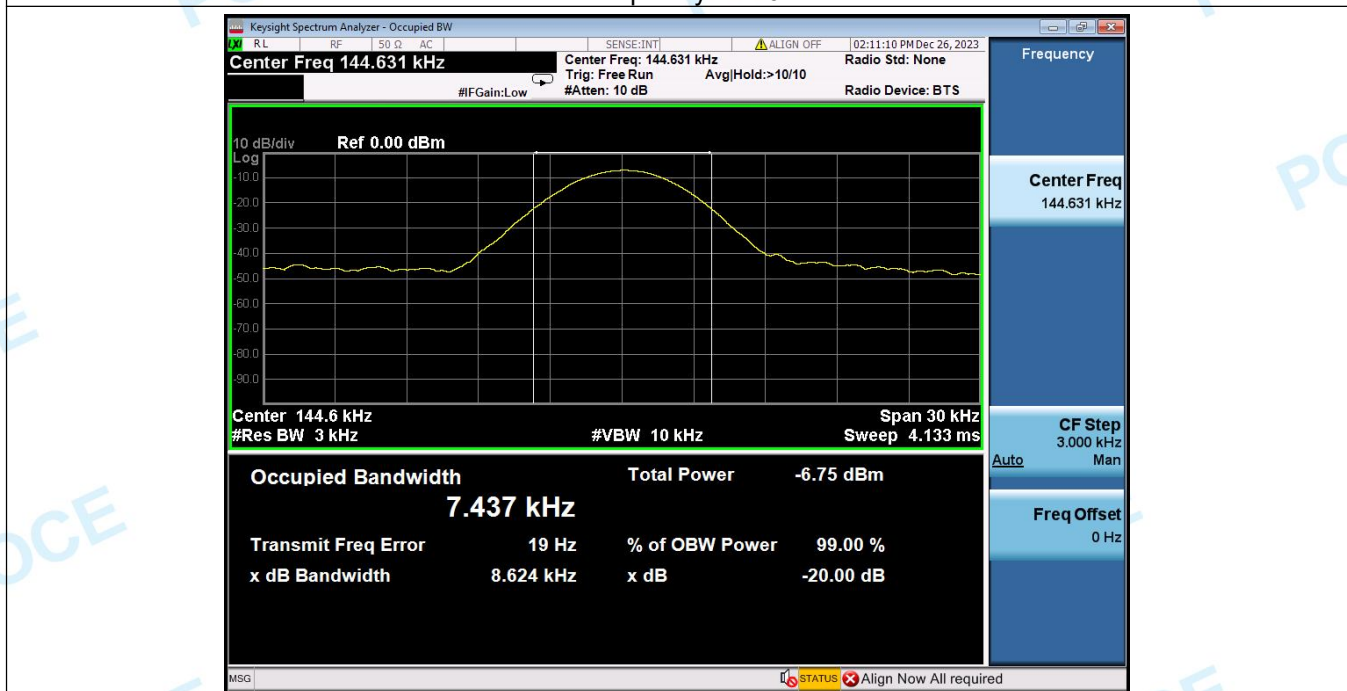
4.2.2 Test Setup Diagram:



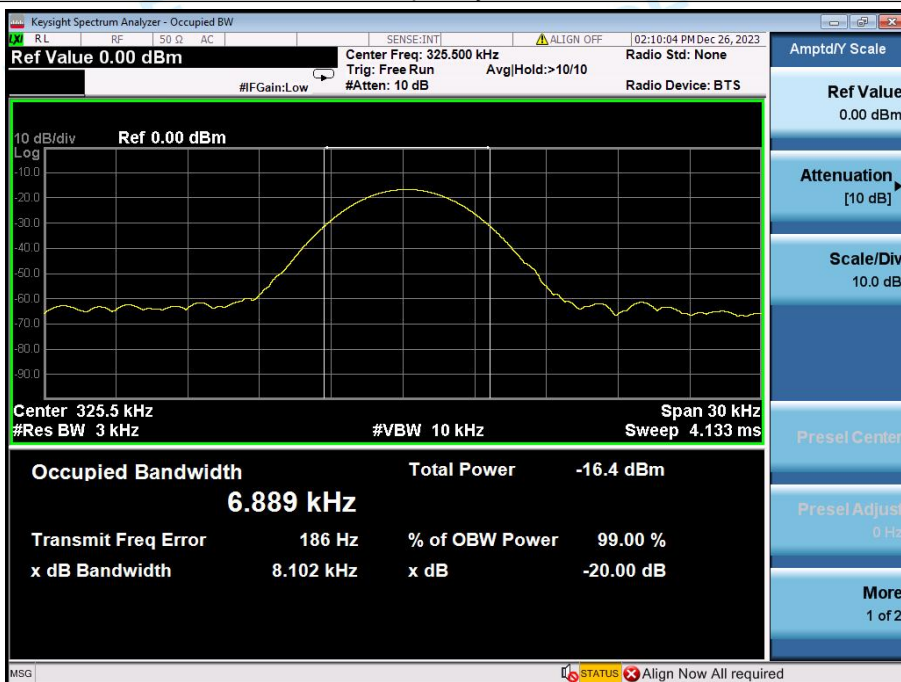
4.2.3 Test Data:

Frequency (KHz)	Antenna	-20dB_Emission_Bandwidth (KHz)	Occupied Bandwidth(KHz)
144.6KHz	Airpods/ mobile phone	8.624	7.437
325.5KHz	iwatch	8.102	6.889

Test Frequency:144.6KHz



Test Frequency: 325.5 KHz



4.3 Emissions in frequency bands (below 30MHz)

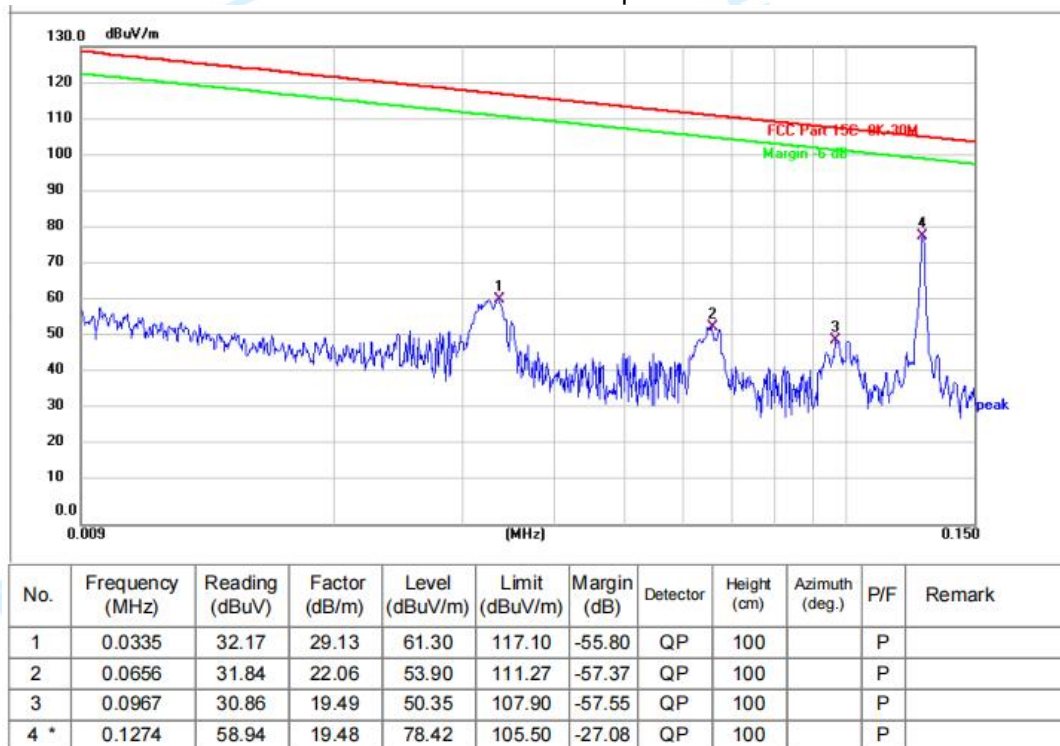
Test Requirement:	47 CFR 15.209																																																
Test Limit:	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Field Strength</th><th colspan="2">Field Strength Limit at 3m Measurement Dist</th></tr><tr><th>uV/m</th><th>Distance (m)</th><th>uV/m</th><th>dBuV/m</th></tr><tr><td>0.009 ~ 0.490</td><td>2400/F(kHz)</td><td>300</td><td>10000 * 2400/F(kHz)</td><td>$20\log^{(2400/F(kHz))} + 80$</td></tr><tr><td>0.490 ~ 1.705</td><td>24000/F(kHz)</td><td>30</td><td>100 * 24000/F(kHz)</td><td>$20\log^{(24000/F(kHz))} + 40$</td></tr><tr><td>1.705 ~ 30</td><td>30</td><td>30</td><td>100 * 30</td><td>$20\log^{(30)} + 40$</td></tr><tr><td>30 ~ 88</td><td>100</td><td>3</td><td>100</td><td>$20\log^{(100)}$</td></tr><tr><td>88 ~ 216</td><td>150</td><td>3</td><td>150</td><td>$20\log^{(150)}$</td></tr><tr><td>216 ~ 960</td><td>200</td><td>3</td><td>200</td><td>$20\log^{(200)}$</td></tr><tr><td>Above 960</td><td>500</td><td>3</td><td>500</td><td>$20\log^{(500)}$</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.					Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist		uV/m	Distance (m)	uV/m	dBuV/m	0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$	0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$	1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$	30 ~ 88	100	3	100	$20\log^{(100)}$	88 ~ 216	150	3	150	$20\log^{(150)}$	216 ~ 960	200	3	200	$20\log^{(200)}$	Above 960	500	3	500	$20\log^{(500)}$
Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist																																														
	uV/m	Distance (m)	uV/m	dBuV/m																																													
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$																																													
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$																																													
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$																																													
30 ~ 88	100	3	100	$20\log^{(100)}$																																													
88 ~ 216	150	3	150	$20\log^{(150)}$																																													
216 ~ 960	200	3	200	$20\log^{(200)}$																																													
Above 960	500	3	500	$20\log^{(500)}$																																													
Test Method:	Radiated emissions tests																																																
Procedure:	ANSI C63.10-2013 section 6.6.4																																																

4.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.4 °C	Humidity:	52.7 %	Atmospheric Pressure:	102 kPa
Pre test mode:	TM1,TM4,TM7,TM10				
Final test mode:	TM1,TM4,TM7,TM10				

4.3.2 Test Data:

Concentric--mobile phone

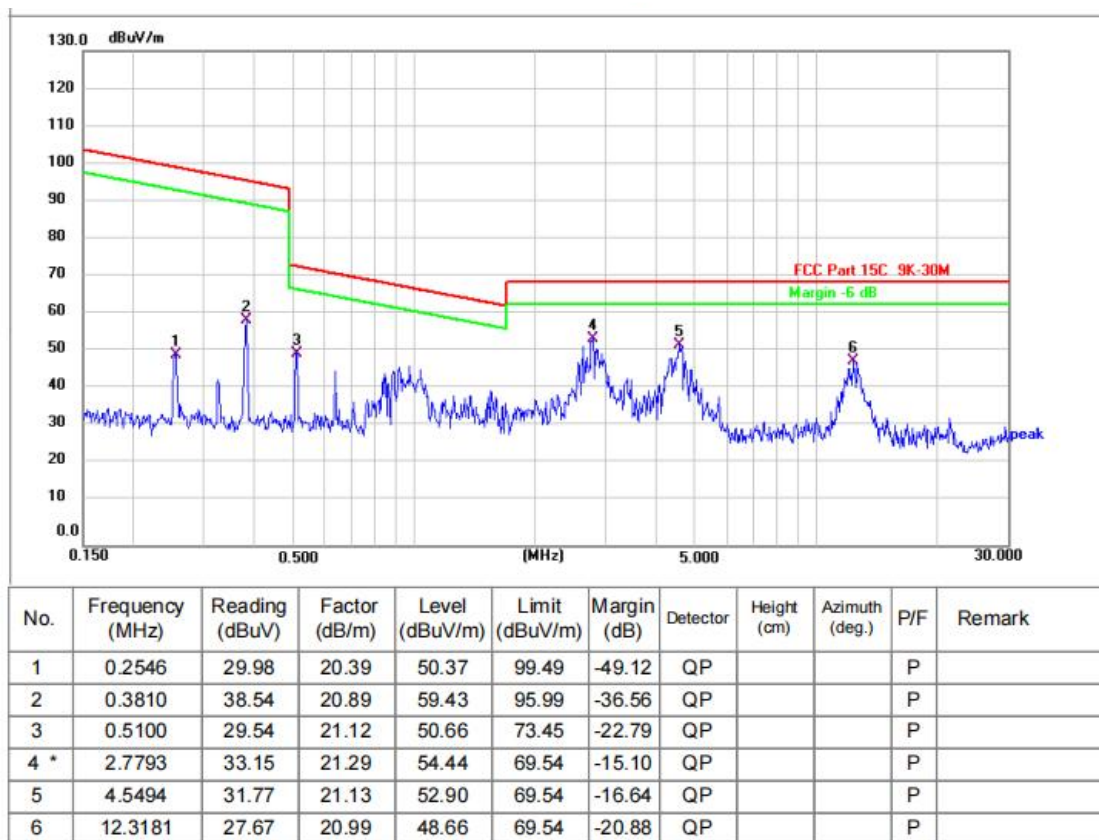
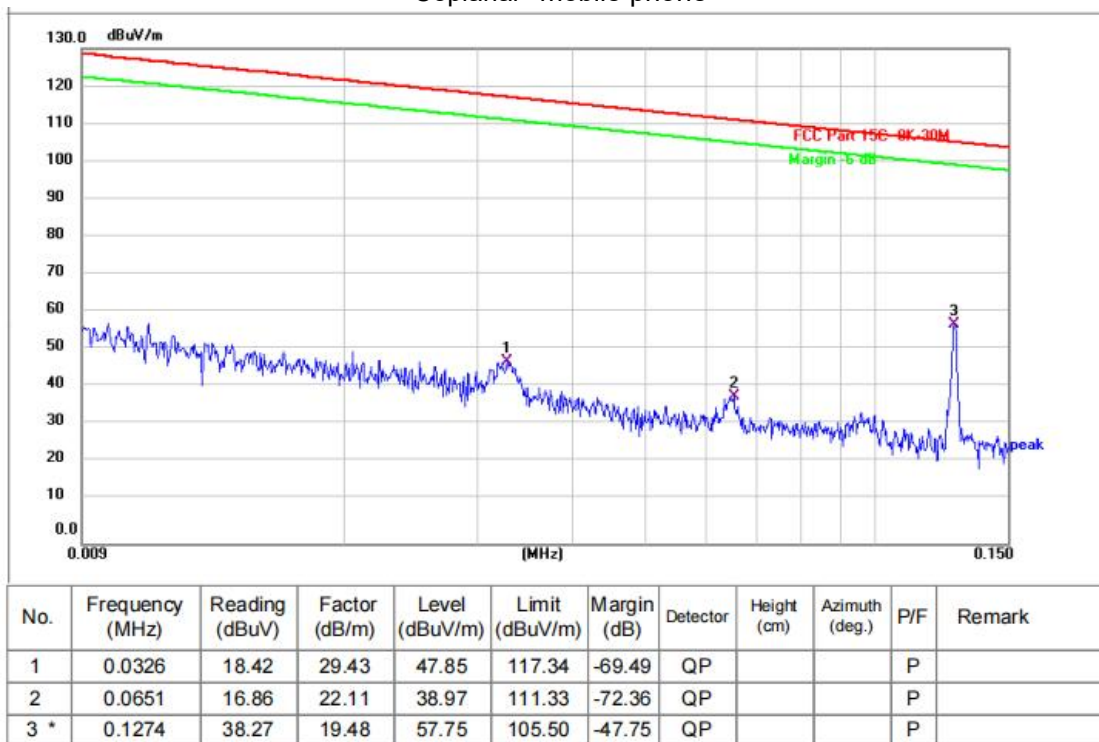


Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Coplanar--mobile phone

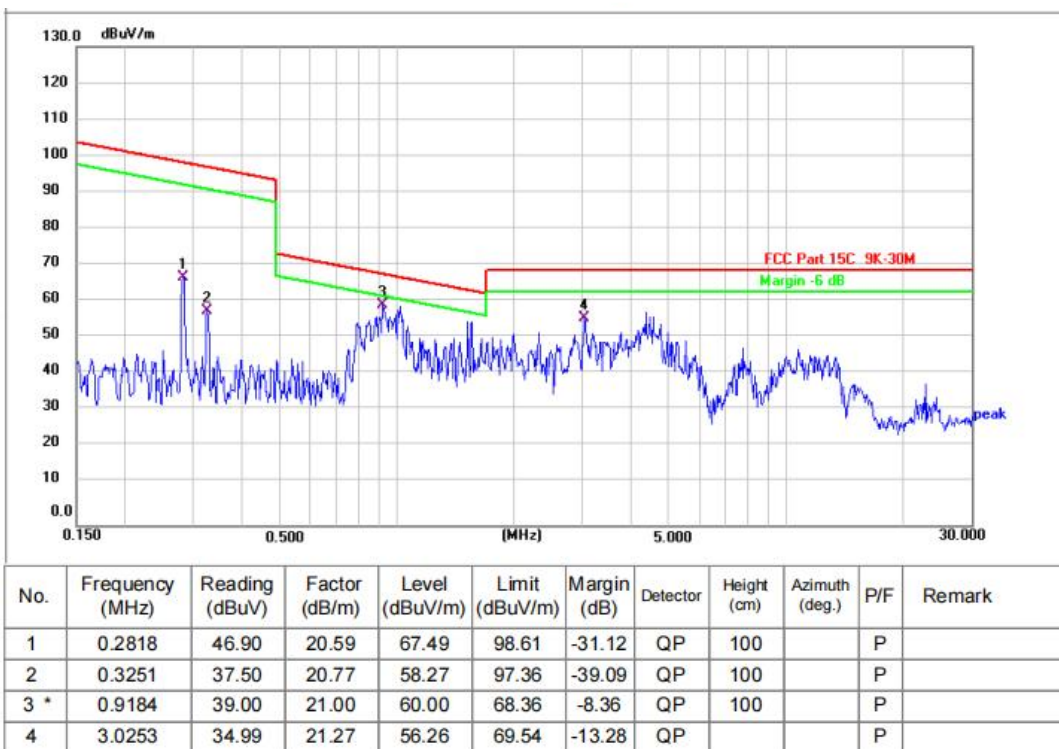
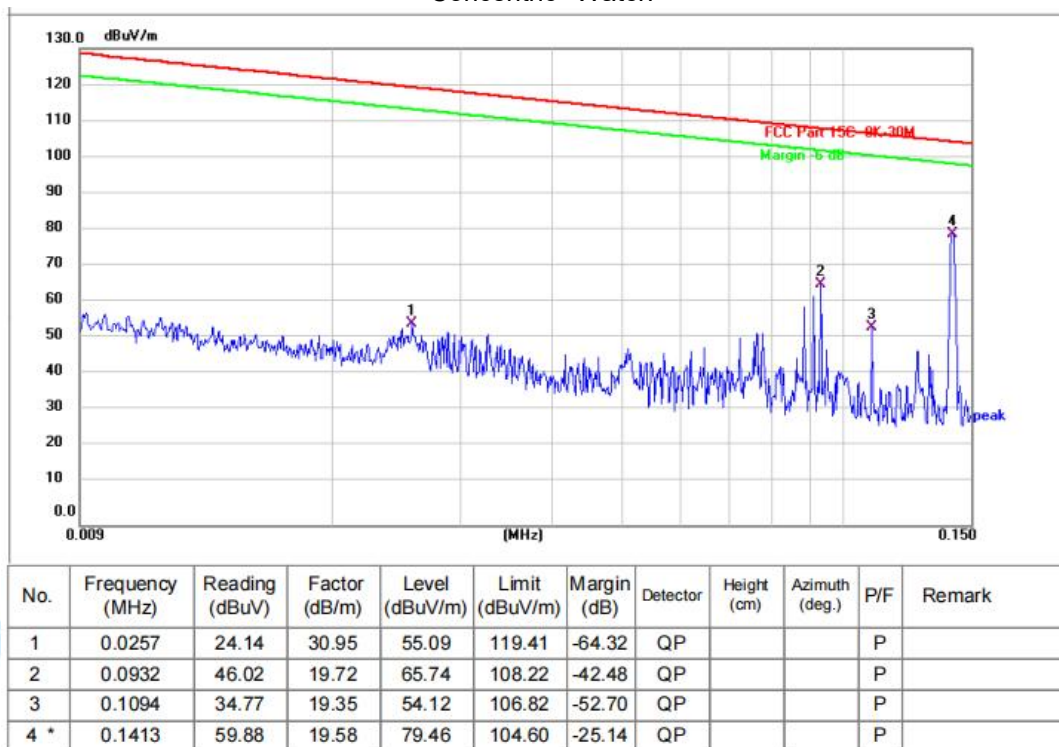


Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Concentric--Watch

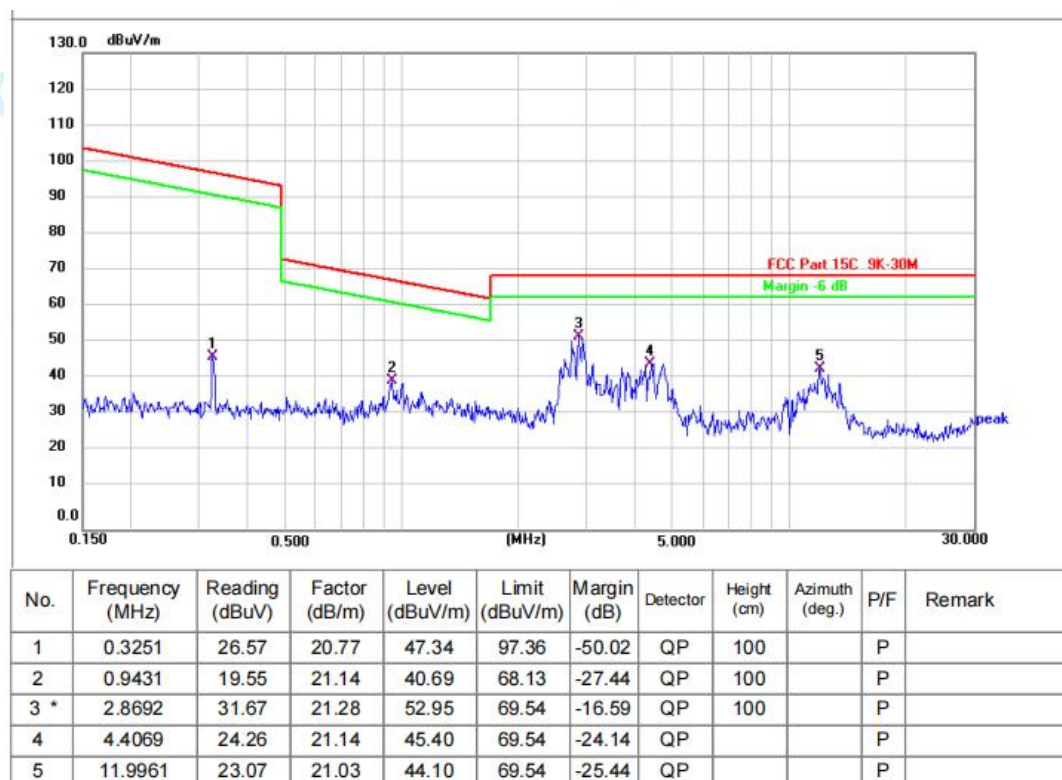
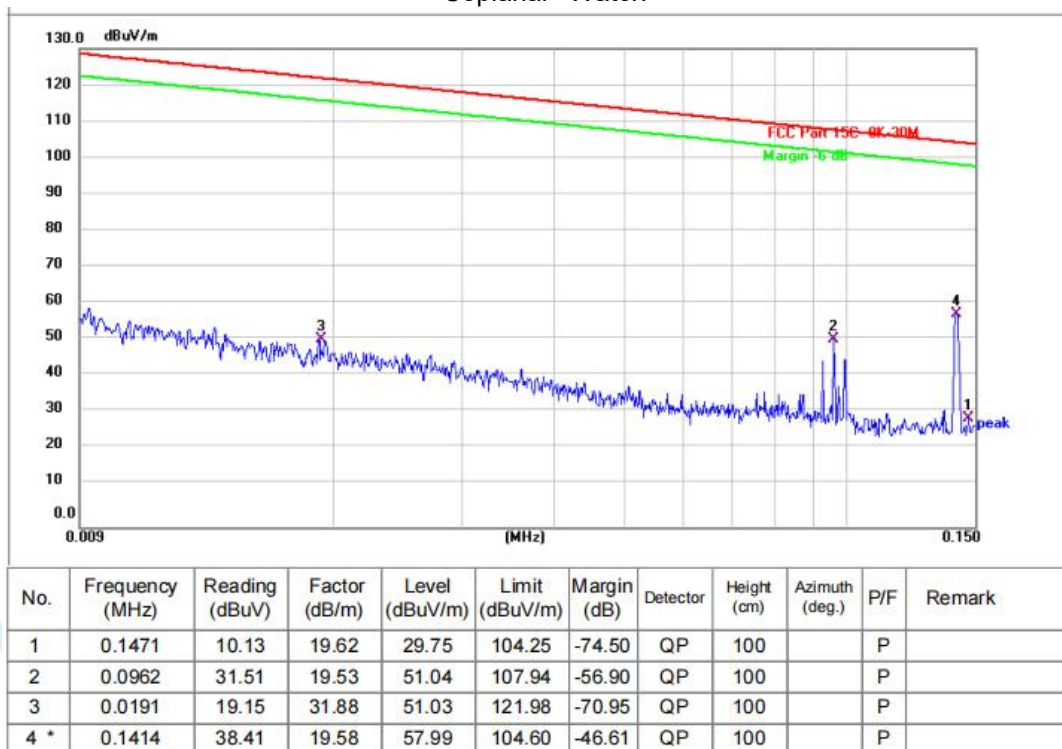


Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Coplanar--Watch

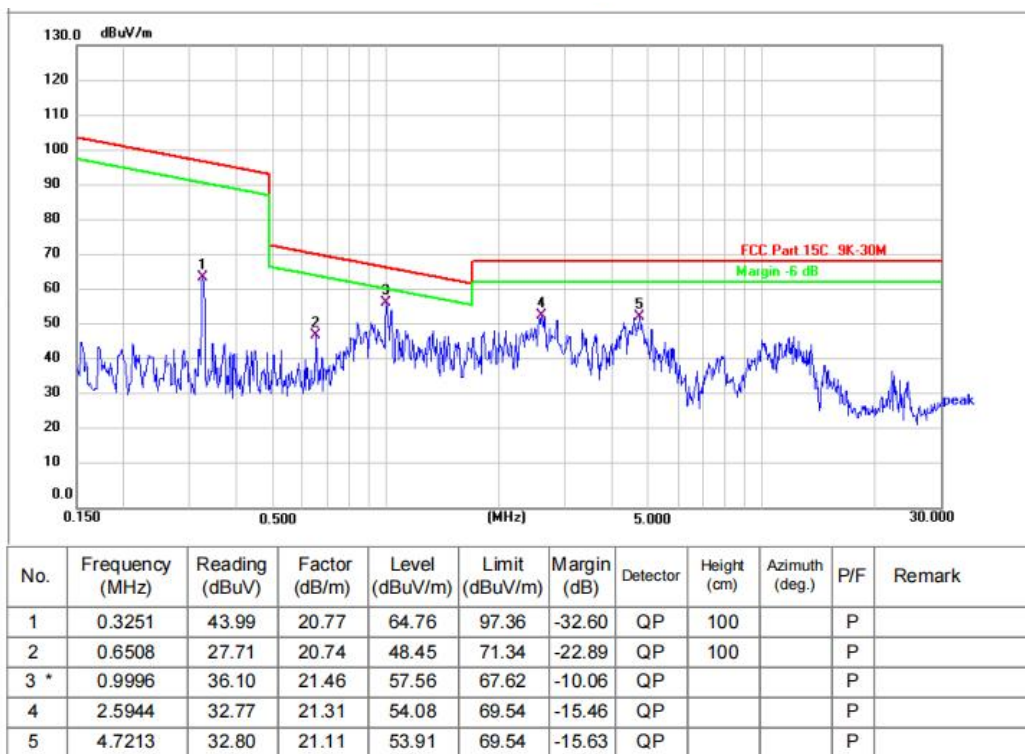
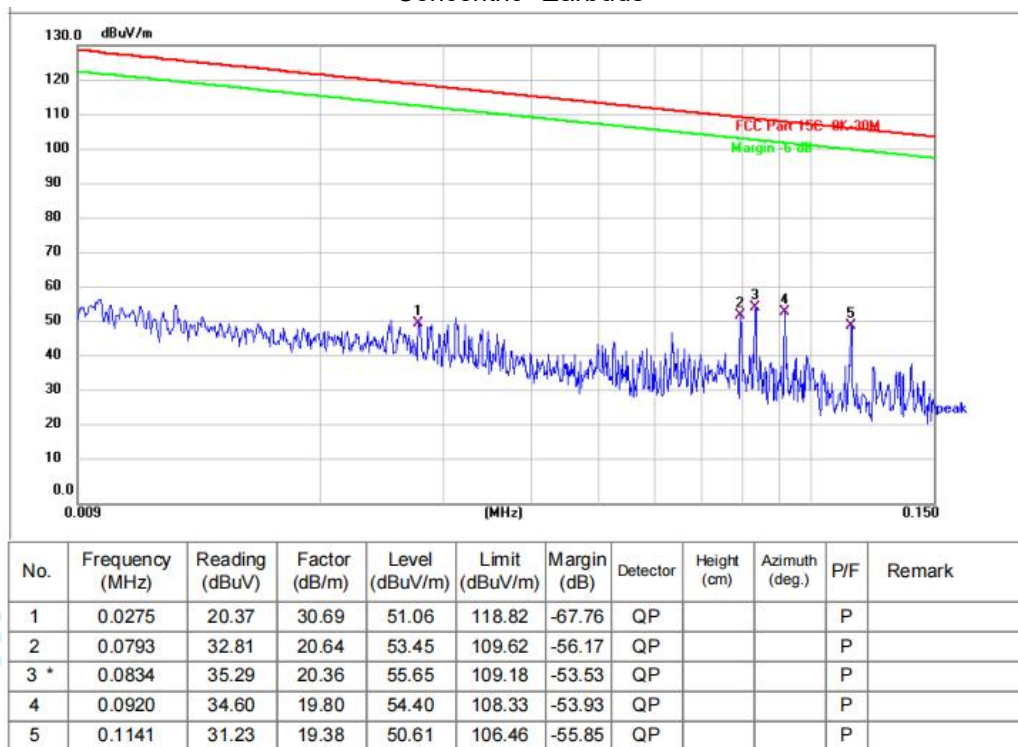


Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Concentric--Earbuds

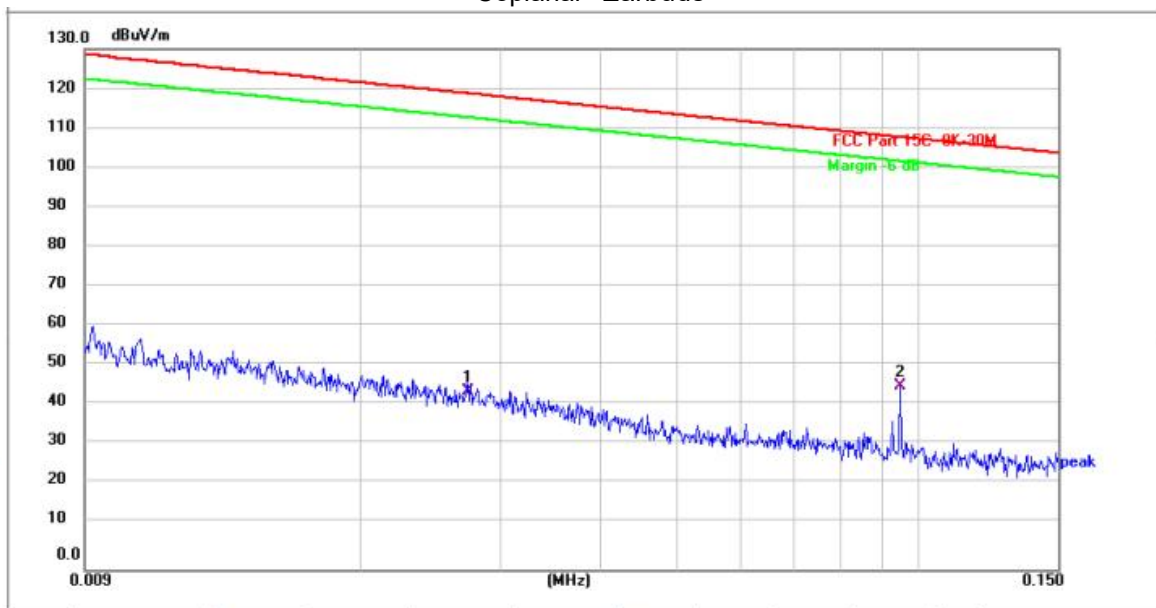


Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Coplanar--Earbuds



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.0271	13.90	30.75	44.65	118.95	-74.30	QP			P	
2 *	0.0950	26.31	19.60	45.91	108.05	-62.14	QP			P	



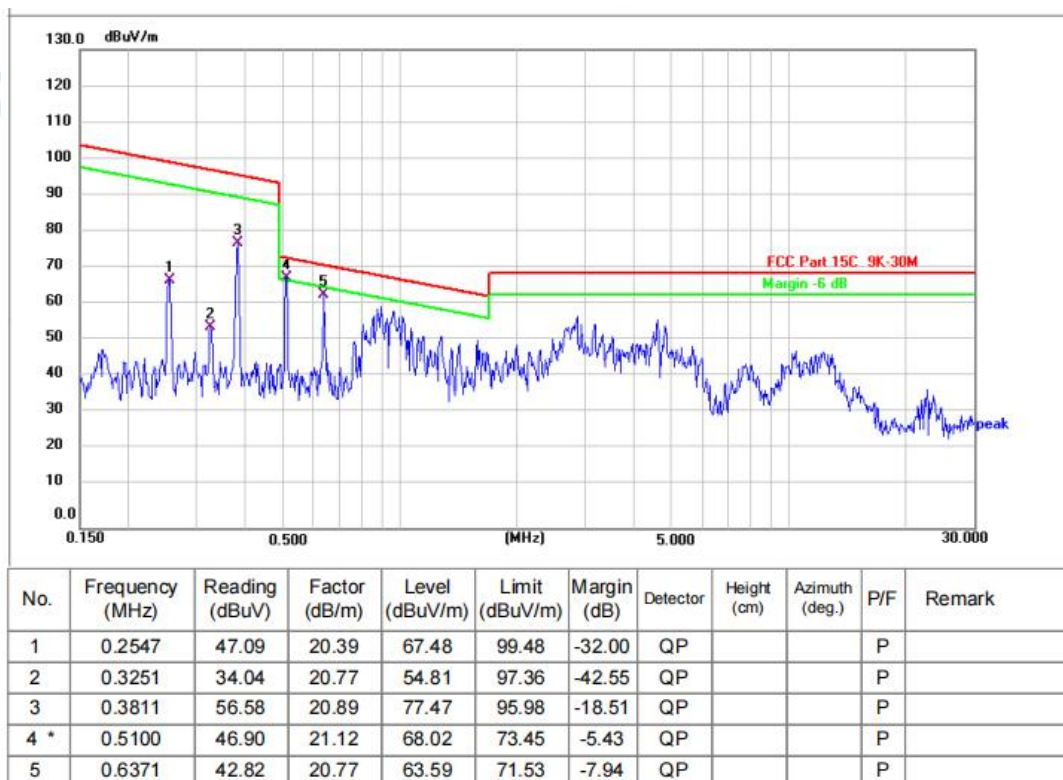
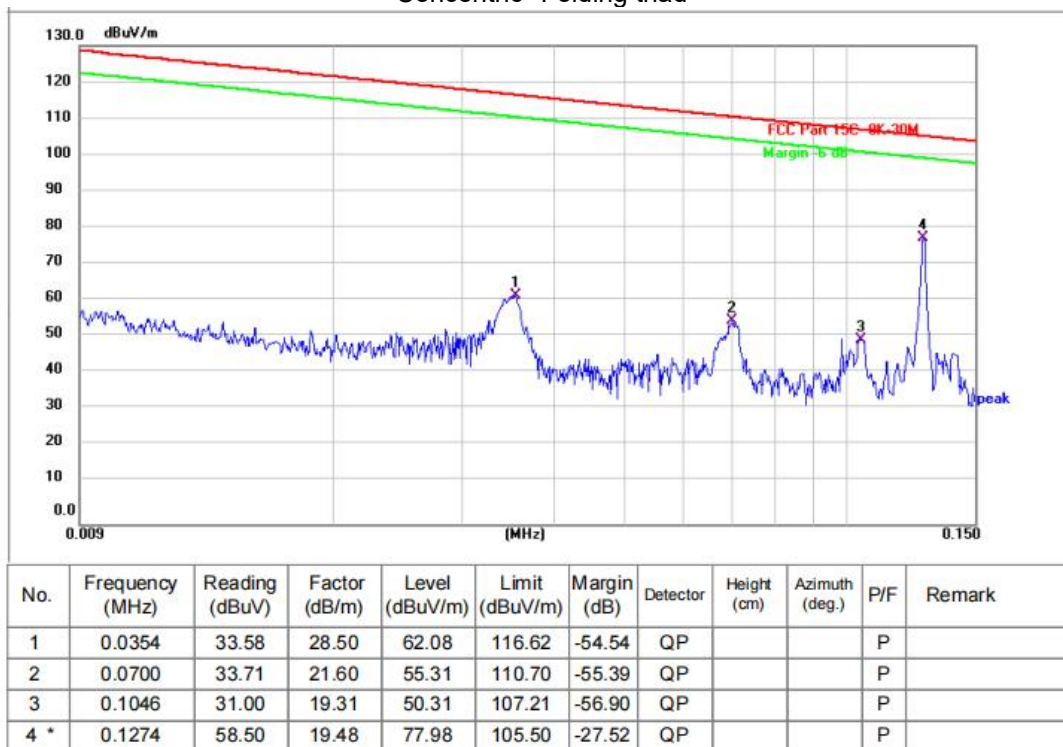
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.2816	27.39	20.59	47.98	98.61	-50.63	QP			P	
2	0.3251	32.82	20.77	53.59	97.36	-43.77	QP			P	
3	2.8389	23.23	21.29	44.52	69.54	-25.02	QP			P	
4 *	12.1882	25.70	21.00	46.70	69.54	-22.84	QP			P	

Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Concentric--Folding triad

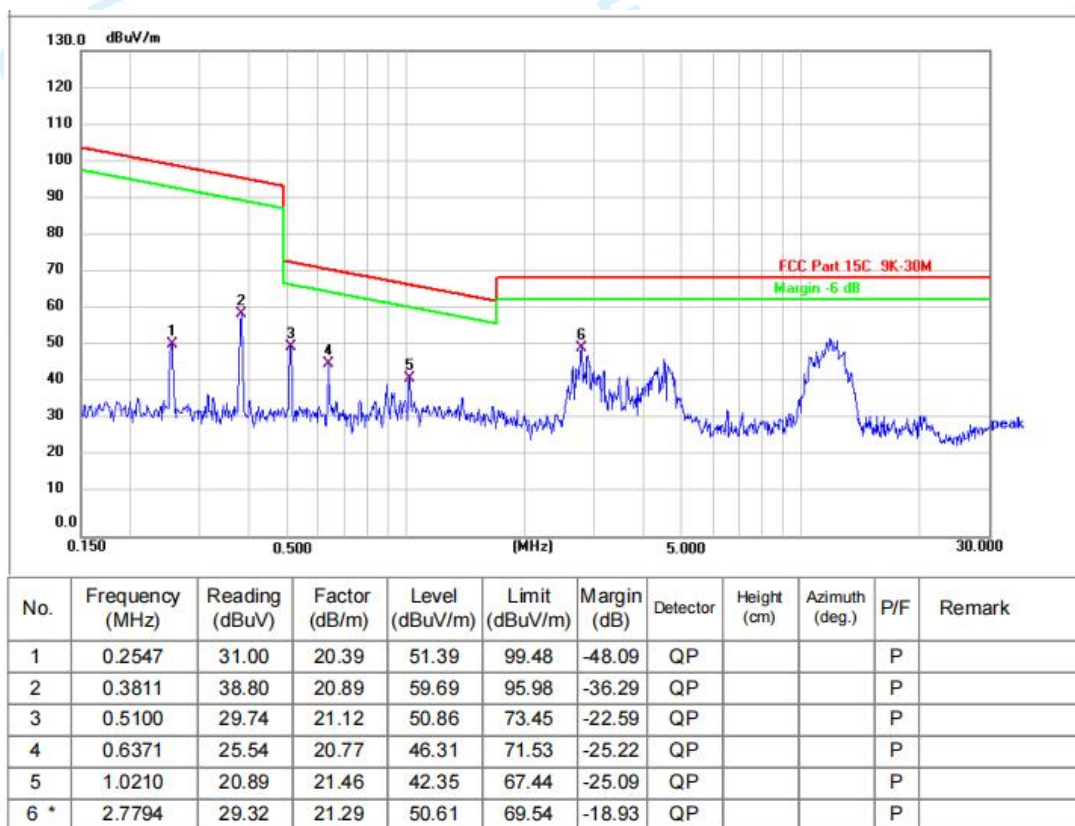
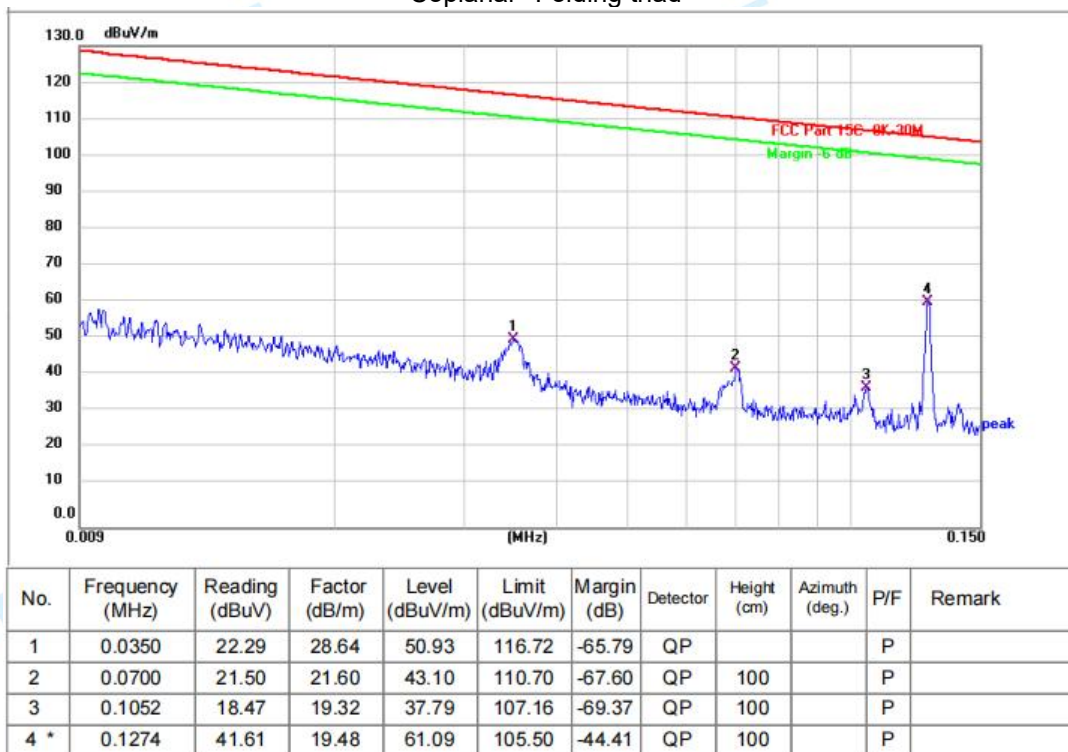


Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Coplanar--Folding triad



Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

4.4 Emissions in frequency bands (30MHz - 1GHz)

Test Requirement:	47 CFR 15.209		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.		
Test Method:	Radiated emissions tests		
Procedure:	ANSI C63.10-2013 section 6.6.4		

4.4.1 E.U.T. Operation:

Operating Environment:			
Temperature:	23.4 °C	Humidity:	52.7 %
Atmospheric Pressure:	102 kPa		
Pre test mode:	TM1		
Final test mode:	TM1		

4.4.2 Test Data:

TM1 / Polarization: Horizontal



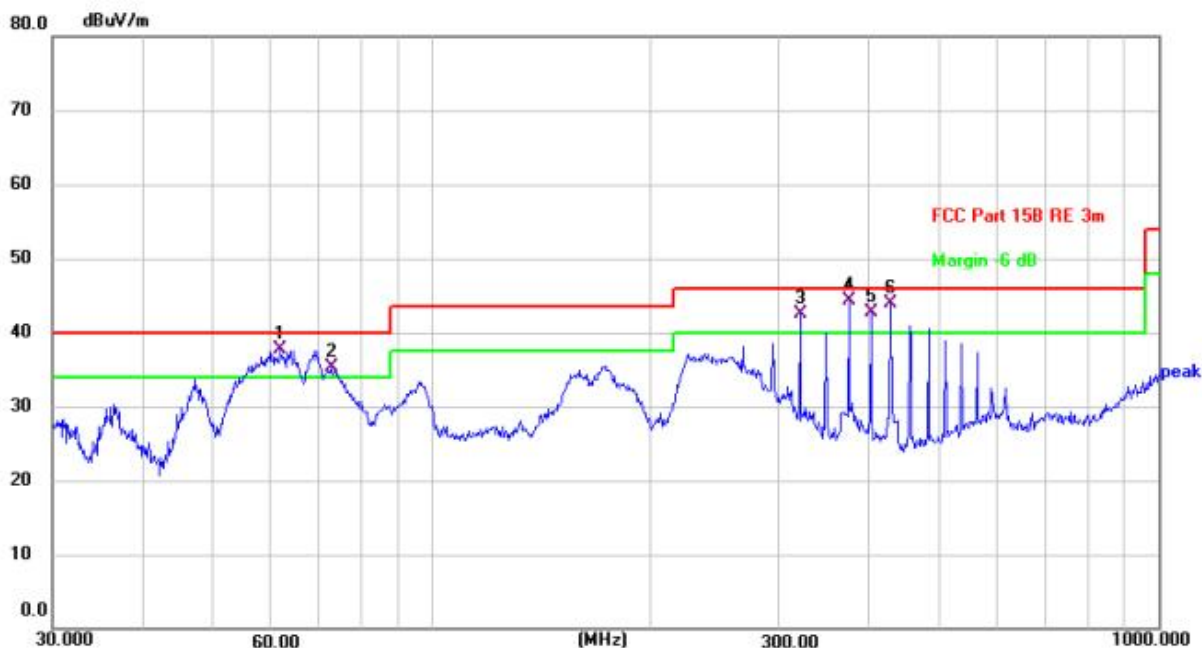
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	239.9874	47.09	-2.29	44.80	46.00	-1.20	QP	100	245	P	
2 !	294.1137	44.03	0.36	44.39	46.00	-1.61	QP	100	154	P	
3 !	348.0274	42.11	1.72	43.83	46.00	-2.17	QP	100	168	P	
4 !	374.6225	42.43	1.58	44.01	46.00	-1.99	QP	100	248	P	
5 !	401.8385	40.98	1.36	42.34	46.00	-3.66	QP	100	354	P	
6 !	428.0193	41.17	1.24	42.41	46.00	-3.59	QP	100	147	P	

Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

TM1 / Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 !	61.7781	46.65	-8.94	37.71	40.00	-2.29	QP	100	241	P	
2 !	72.5916	43.71	-8.36	35.35	40.00	-4.65	QP	100	154	P	
3 !	321.0608	42.25	0.26	42.51	46.00	-3.49	QP	100	365	P	
4 *	374.6225	43.26	1.07	44.33	46.00	-1.67	QP	100	147	P	
5 !	401.8385	41.42	1.36	42.78	46.00	-3.22	QP	100	245	P	
6 !	428.0193	42.74	1.24	43.98	46.00	-2.02	QP	100	156	P	

Remark: Margin=Level - Limit

Level=Test receiver reading + correction factor

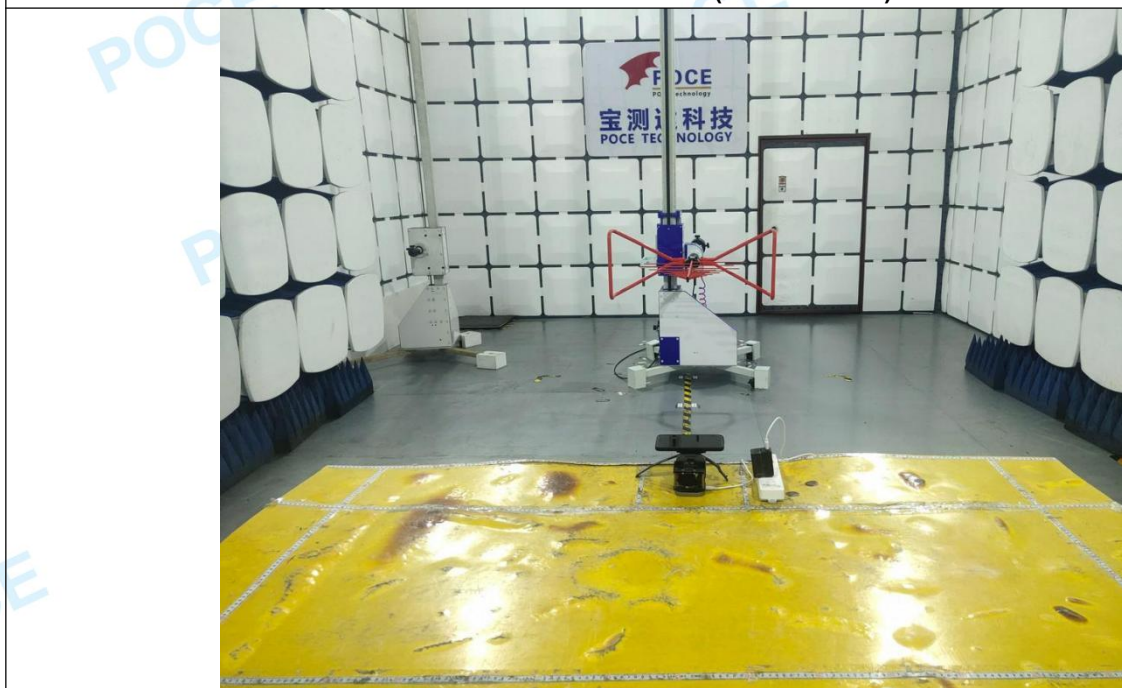
Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

5 TEST SETUP PHOTOS

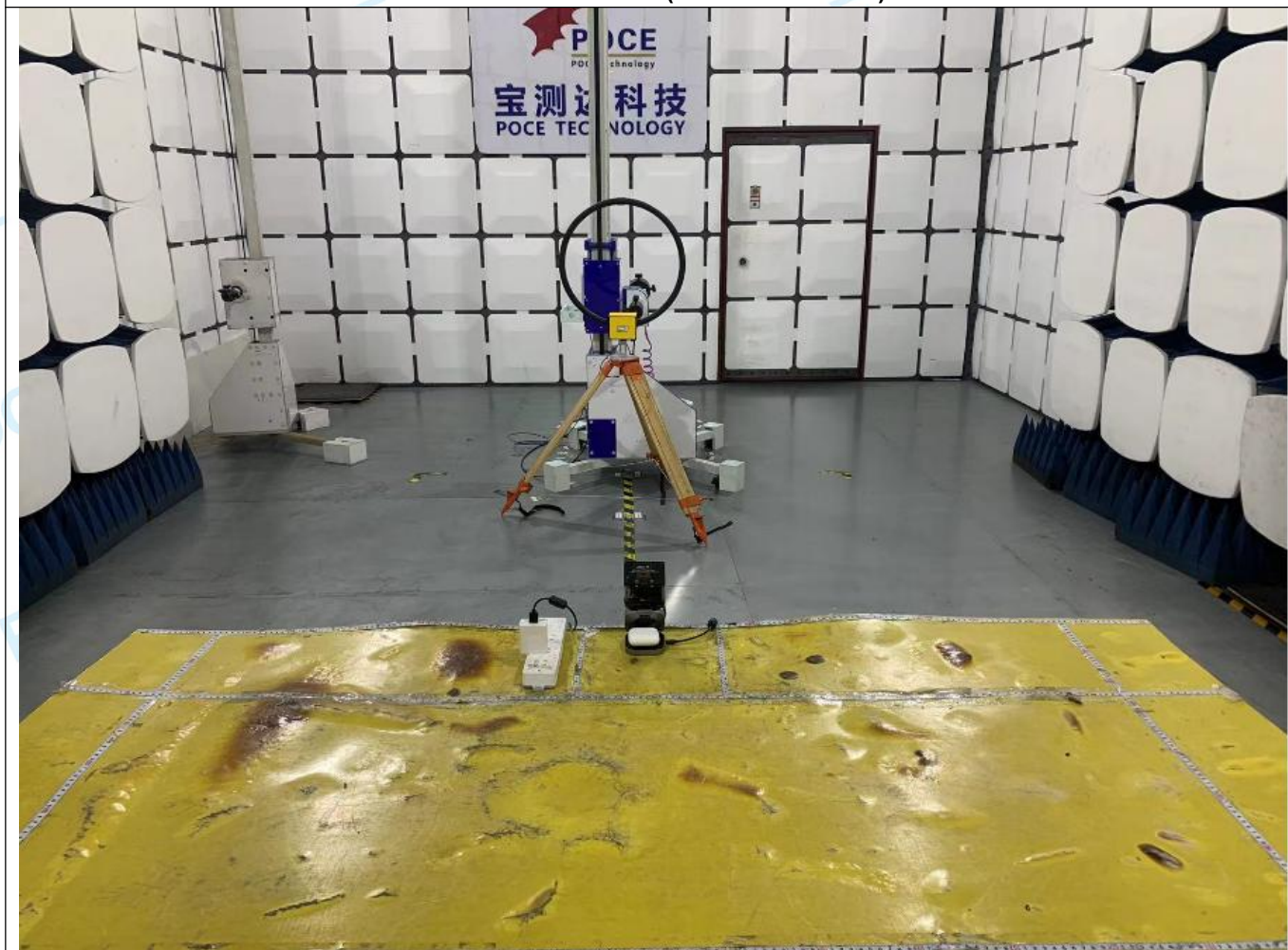
Conducted emissions (AC power port)



Radiated emissions (30MHz-1GHz)



Radiated emissions (0.009MHz-30MHz)



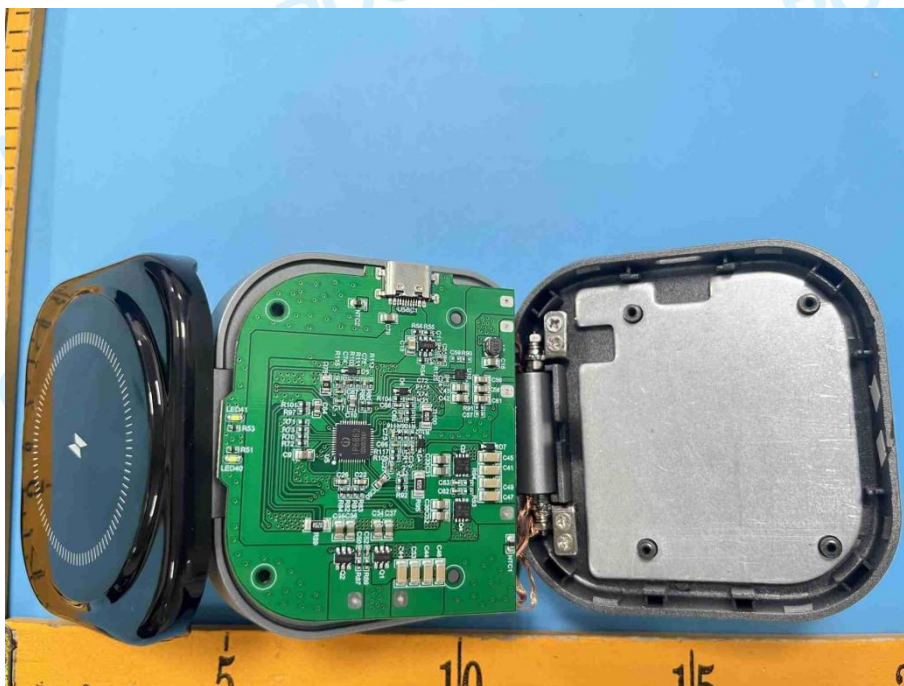
6 PHOTOS OF THE EUT

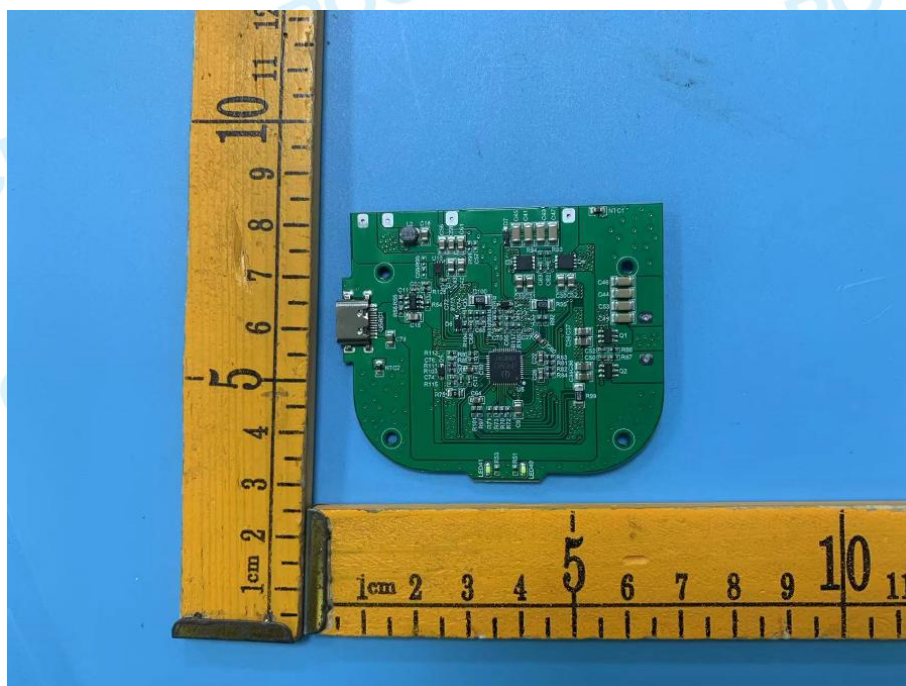
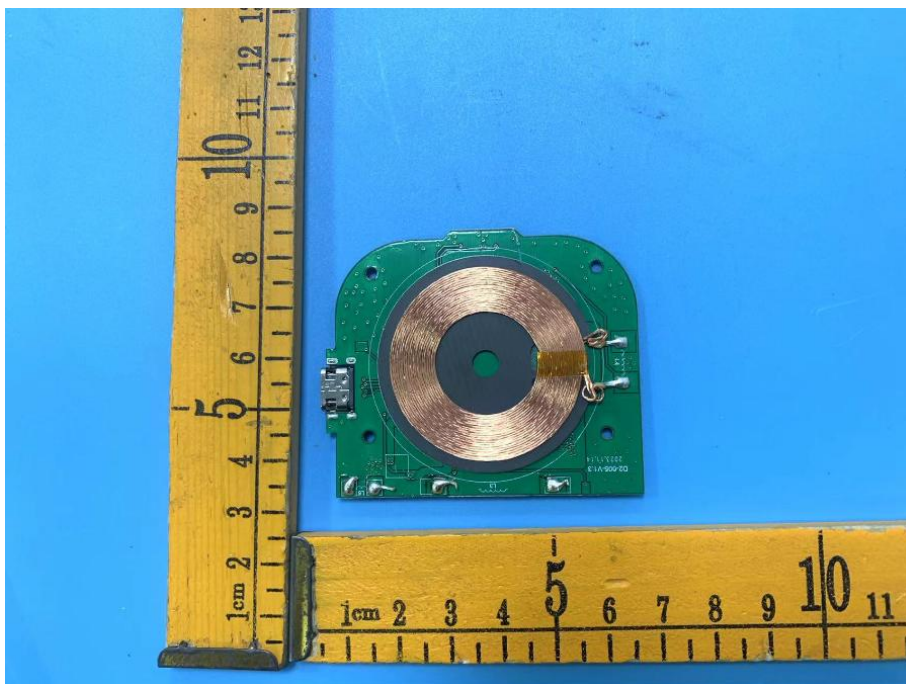
















***** End of Report *****