FCC Test Report

Report No.	:	**1812C50483212501**
Applicant	:	**Excelsecu Data Technology Co., Ltd.**
Address	:	**Unit 701-708, South 7/F, SDGI Building A No.2 Kefeng Rd., Nanshan District, Shenzhen, Guangdong, 518057, China**
Product Name	:	**Dual Interface Card Reader**
Report Date	:	**2025-10-14**

Shenzhen Anbotek Compliance Laboratory Limited

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TEST REPORT

Applicant	:	Excelsecu Data Technology Co., Ltd.
Manufacturer	:	Excelsecu Data Technology Co., Ltd.
Product Name	:	Dual Interface Card Reader
Model No.	:	eSecuRD-05
Trade Mark	:	excelsecu
Rating(s)	:	Input: 5V⎓200mA
Test Standard(s)	**:**	**47 CFR Part 15.225**
Test Method(s)	**:**	**ANSI C63.10: 2020**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the 47 CFR Part 15.225 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	2025-09-12
Date of Test	2025-09-12 to 2025-09-25
Prepared By	(Cecilia Chen)
Approved & Authorized Signer	(Hugo Chen)

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Revision History

Report Version	Description	Issued Date
R00	Original Issue.	2025-10-14

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1. General Information

1.1. Client Information

Applicant	:	Excelsecu Data Technology Co., Ltd.
Address	:	Unit 701-708, South 7/F, SDGI Building A No.2 Kefeng Rd., Nanshan District, Shenzhen, Guangdong, 518057, China
Manufacturer	:	Excelsecu Data Technology Co., Ltd.
Address	:	Unit 701-708, South 7/F, SDGI Building A No.2 Kefeng Rd., Nanshan District, Shenzhen, Guangdong, 518057, China
Factory	:	Shenzhen Excelsecu Data Technology Co., Ltd Dongguan Branch
Address	:	Room 301, Building 2, No. 136, Yongjun Road, Dalingshan Town, Dongguan, Guangdong Province, CHINA

1.2. Description of Device (EUT)

Product Name	:	Dual Interface Card Reader
Model No.	:	eSecuRD-05
Trade Mark	:	excelsecu
Test Power Supply	:	DC 5V via PC from adapter input AC 120V/60Hz
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A
RF Specification		
Operation Frequency	:	13.56MHz
Number of Channel	:	1 Channel
Modulation Type	:	ASK
Antenna Type	:	PCB Antenna
Remark: 1) All of the RF specification are provided by customer. 2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

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1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
Acer Computer	acer	N19W3	2020AJ3862
Acer Computer Adapter（65W）	Lite-On Technology Corporation	PA-1650-58	KP06503020

1.4. Description of Test Configuration

The engineering test program was provided and the EUT was programmed to be in transmitting mode.

Channel	Freq.(MHz)
01	13.56

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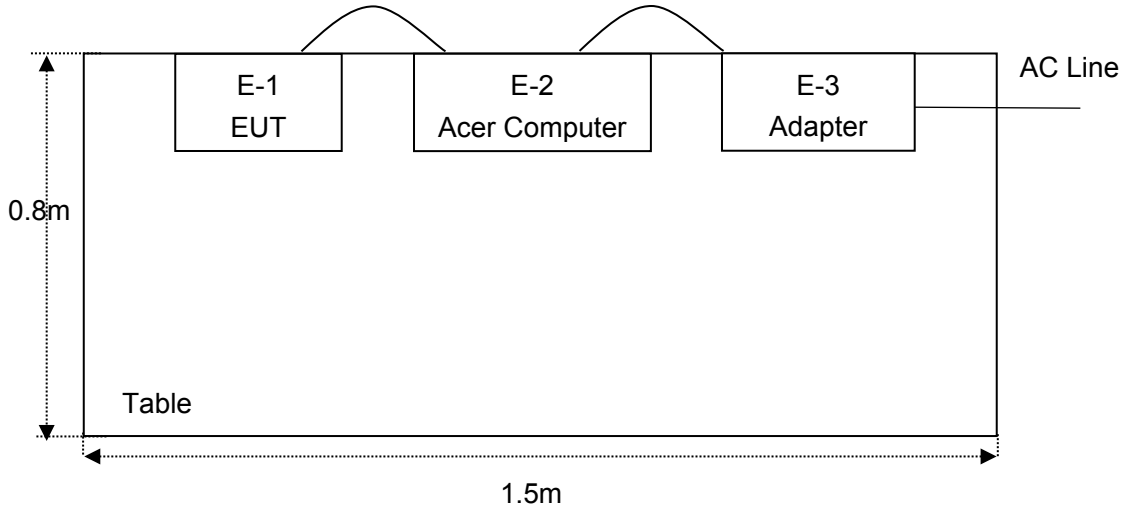
1.5. Description Of Test Setup

RE



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1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	2025-09-05	1 Year
2.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	2025-01-13	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	2025-01-13	1 Year
4.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2025-01-14	1 Year
5.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	2025-09-05	1 Year
6.	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	SKET-PA-002	2025-01-13	1 Year
7.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	2022-10-16	3 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-13	3 Year
9.	Loop Antenna(9K-30M)	Schwarzbeck	FMZB1519B	00053	2025-09-05	1 Year
10.	Horn Antenna	A-INFO	LB-180400-KF	J211060628	2024-01-22	3 Year
11.	Pre-amplifier	SONOMA	310N	186860	2025-01-14	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY53280032	2025-09-05	1 Year
14.	MXG RF Vector Signal Generator	Agilent	N5182A	MY47420647	2025-01-14	1 Year
15.	Signal Generator	Agilent	E4421B	MY41000743	2025-02-21	1 Year
16.	DC Power Supply	IVYTECH	IV3605	1804D360510	2025-09-05	1 Year
17.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	2024-10-14	1 Year
18.	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102150	2024-05-06	1 Year

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1.7. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.2dB
Occupied Bandwidth	925Hz
Frequency tolerance	74.60Hz
Conducted Spurious Emission	1.24dB
Radiated spurious emissions (Below 30MHz)	3.26dB
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.70dB; Vertical: 4.42dB
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.64dB 6G-18GHz: 4.82dB 18G-40GHz: 5.62dB
The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 279531

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 279531.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.

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1.9. Disclaimer

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek 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 authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.
7. The data in this report will be synchronized with the corresponding national market supervision and management departments and cross-border e-commerce platforms as required by regulatory agencies.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

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2. Summary of Test Results

Standard Section	Test Item	Result
15.203	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.205/15.209/15.225	Spurious Emission	PASS
15.215(c)	20dB Occupied Bandwidth	PASS
15.225(e)	Frequency Tolerance	PASS
Remark: “N/A” is an abbreviation for Not Applicable.		

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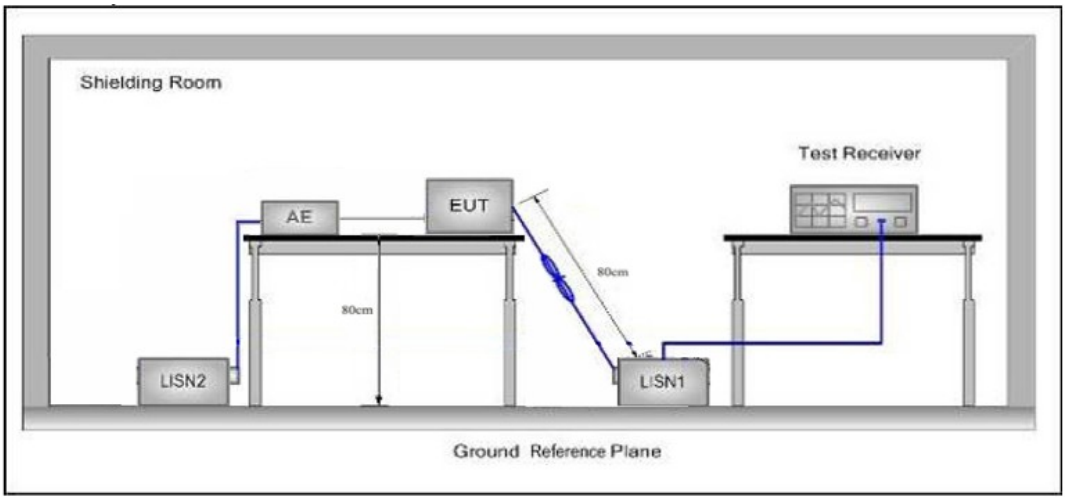
3. Conducted Emission Test

3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
Test Limit	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequency.			

3.2. Test Setup



3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10: 2020 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

3.4. Test Data

Please to see the following pages.

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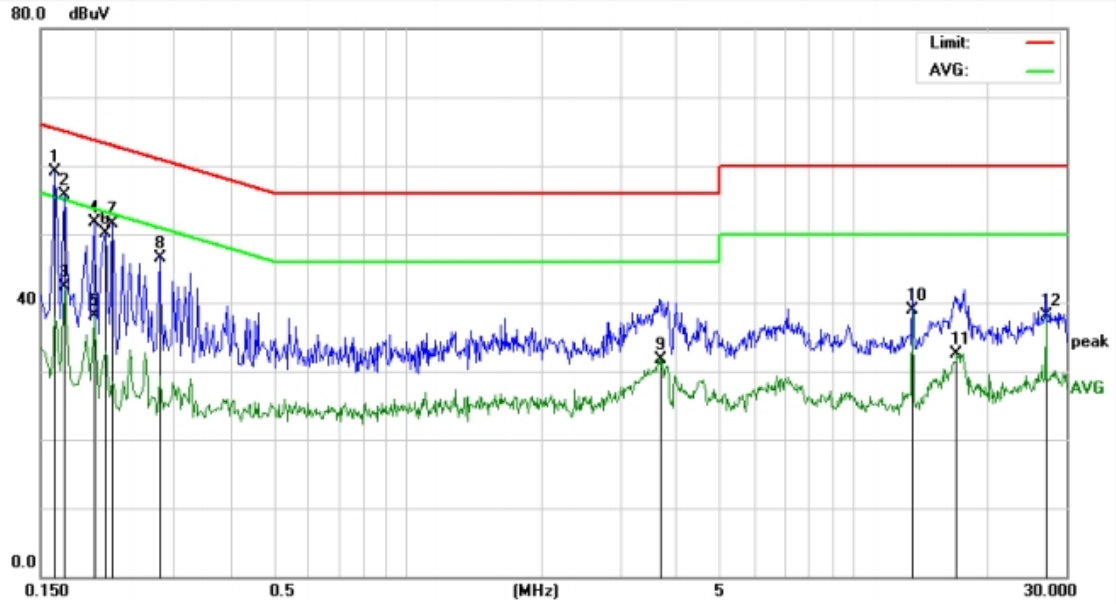
Conducted Emission Test Data

Test Site: 1# Shielded Room
Operating Condition: 13.56MHz
Test Specification: DC 5V via PC from adapter input AC 120V/60Hz
Comment: Live Line
Temp.(℃)/Hum.(%RH): 26.3℃/59%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1620	31.20	27.84	59.04	65.36	-6.32	QP	
2	0.1700	27.88	27.84	55.72	64.96	-9.24	QP	
3	0.1700	14.37	27.84	42.21	54.96	-12.75	AVG	
4	0.1980	23.78	27.84	51.62	63.69	-12.07	QP	
5	0.1980	10.34	27.84	38.18	53.69	-15.51	AVG	
6	0.2100	22.32	27.84	50.16	63.20	-13.04	QP	
7	0.2180	23.66	27.84	51.50	62.89	-11.39	QP	
8	0.2779	18.76	27.84	46.60	60.88	-14.28	QP	
9	3.7020	3.88	27.86	31.74	46.00	-14.26	AVG	
10	13.5620	10.79	28.14	38.93	50.00	-11.07	AVG	
11	17.0340	4.24	28.24	32.48	50.00	-17.52	AVG	
12	27.1220	8.98	29.03	38.01	50.00	-11.99	AVG	

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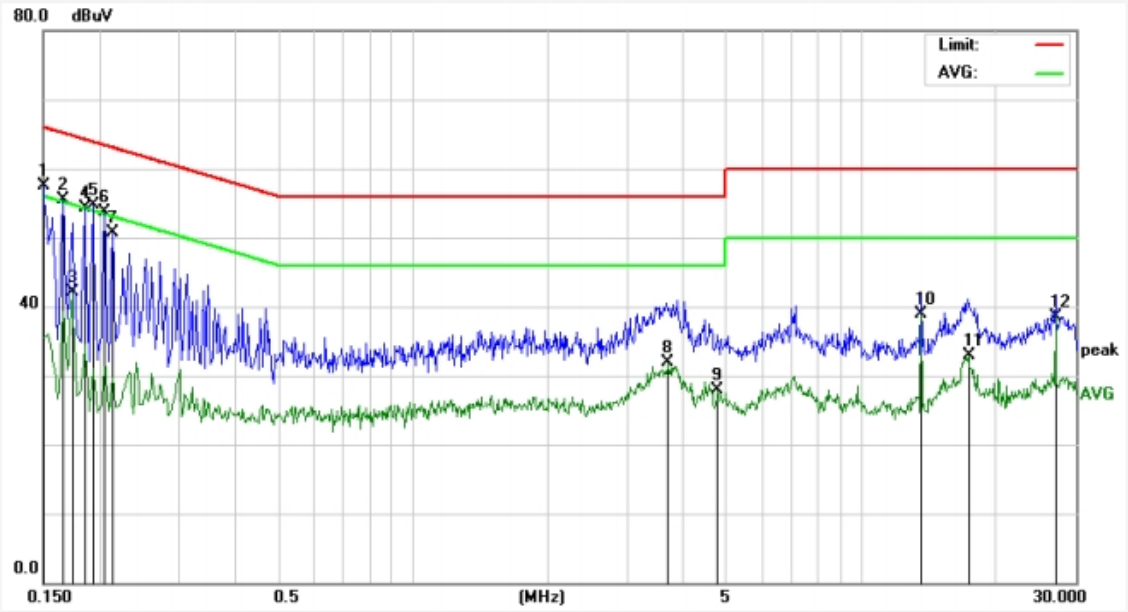
Conducted Emission Test Data

Test Site:	1# Shielded Room
Operating Condition:	13.56MHz
Test Specification:	DC 5V via PC from adapter input AC 120V/60Hz
Comment:	Neutral Line
Temp.(℃)/Hum.(%RH):	26.3℃/59%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	29.61	27.83	57.44	65.99	-8.55	QP	
2	0.1660	27.65	27.84	55.49	65.15	-9.66	QP	
3	0.1740	14.32	27.84	42.16	54.76	-12.60	AVG	
4	0.1860	26.38	27.84	54.22	64.21	-9.99	QP	
5	0.1940	26.94	27.84	54.78	63.86	-9.08	QP	
6	0.2060	25.90	27.84	53.74	63.36	-9.62	QP	
7	0.2140	22.89	27.84	50.73	63.04	-12.31	QP	
8	3.7100	4.04	27.86	31.90	46.00	-14.10	AVG	
9	4.7780	0.11	27.86	27.97	46.00	-18.03	AVG	
10	13.5620	10.80	28.14	38.94	50.00	-11.06	AVG	
11	17.3580	4.59	28.24	32.83	50.00	-17.17	AVG	
12	27.1220	9.38	29.03	38.41	50.00	-11.59	AVG	

Note:
Result(dBμV) = Reading(dBμV) + Factor(dB);
Over Limit(dB) = Result(dBμV) - Limit(dBμV)

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4. Radiation Spurious Emission and Band Edge

4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.205, 15.209 and 15.225				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
		-	74.0	Peak	3
Remark: (1)The lower limit shall apply at the transition frequency. (2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.					

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

Note:

(1) The tighter limit shall apply at the boundary between two frequency range.

(2) Limitation expressed in dBuV/m is calculated by 20log Emission Level (uV/m).

(3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of Ld1 = Ld2 * (d2/d1)2.

Example:

F.S Limit at 30m distance is 30uV/m, then F.S Limitation at 3m distance is adjusted as

Ld1 = L1 = 30uV/m * (10)2 = 100 * 30 uV/m

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4.2. Test Setup

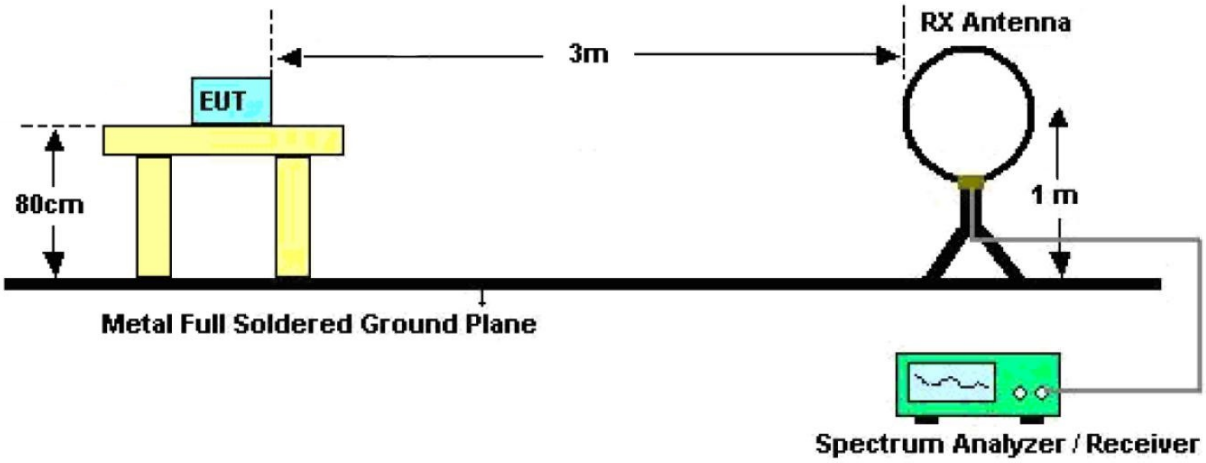

Figure 1. Below 30MHz

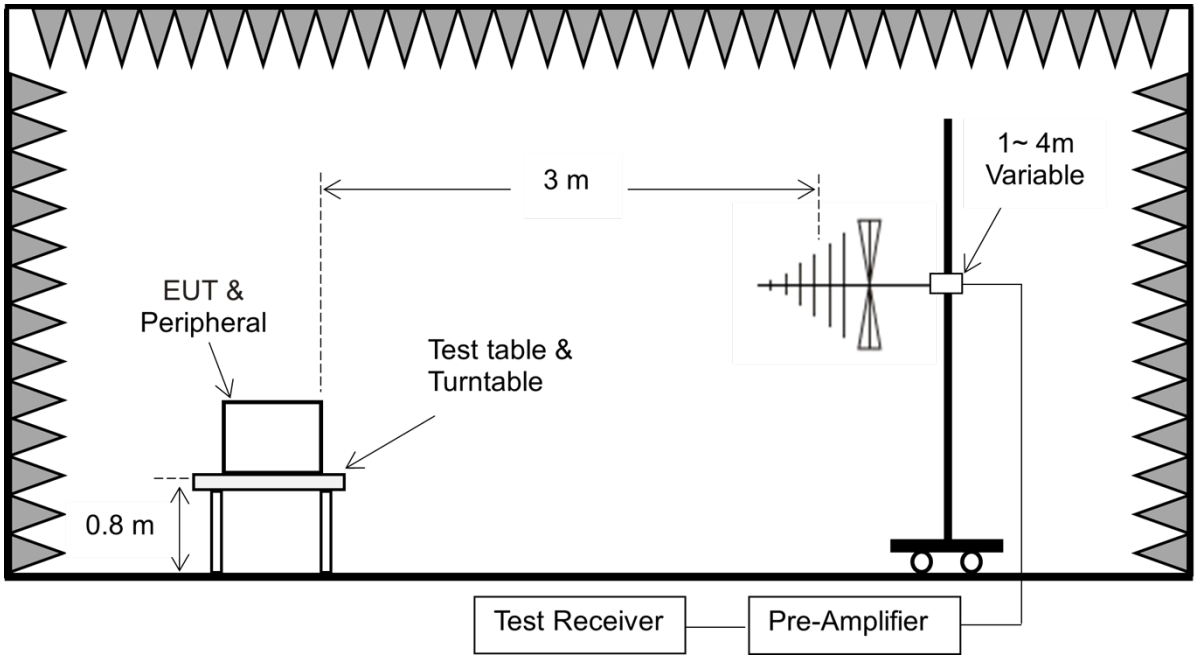

Figure 2. 30MHz to 1GHz

4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9*6*6 Chamber. The device is evaluated in xyz orientation.

For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

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For 150kHz to 30MHz, Set the spectrum analyzer as:
RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:
RBW = 100kHz, VBW =300kHz,Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

4.4. Test Data

PASS

During the test, Pre-scan all kind of the place mode (coplane, coaxial), and found the coplane is the worst case.

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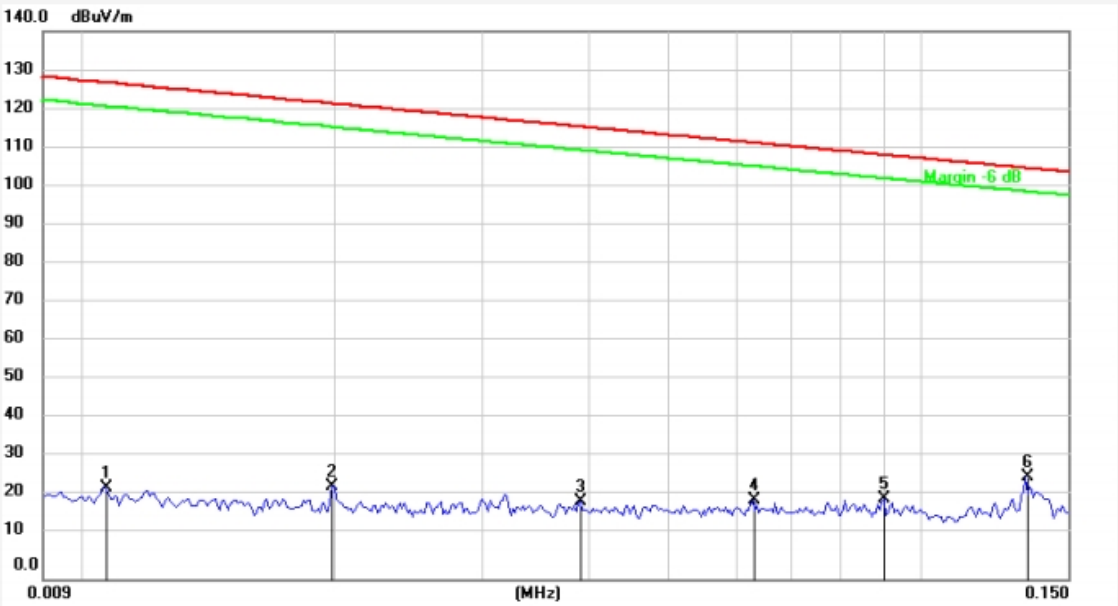
Test Results (9KHz~0.15MHz)

Test Mode:	13.56MHz
Power Source:	DC 5V via PC from adapter input AC 120V/60Hz
Polarization:	Coplane
Temp.(℃)/Hum.(%RH):	24.4℃/47%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Remark
1	0.0107	3.33	20.06	23.39	126.81	-103.42	QP	
2	0.0199	3.35	20.29	23.64	121.46	-97.82	QP	
3	0.0393	-0.76	20.43	19.67	115.58	-95.91	QP	
4	0.0631	-0.34	20.38	20.04	111.49	-91.45	QP	
5	0.0904	0.04	20.36	20.40	108.39	-87.99	QP	
6	0.1333	5.75	20.34	26.09	105.04	-78.95	QP	

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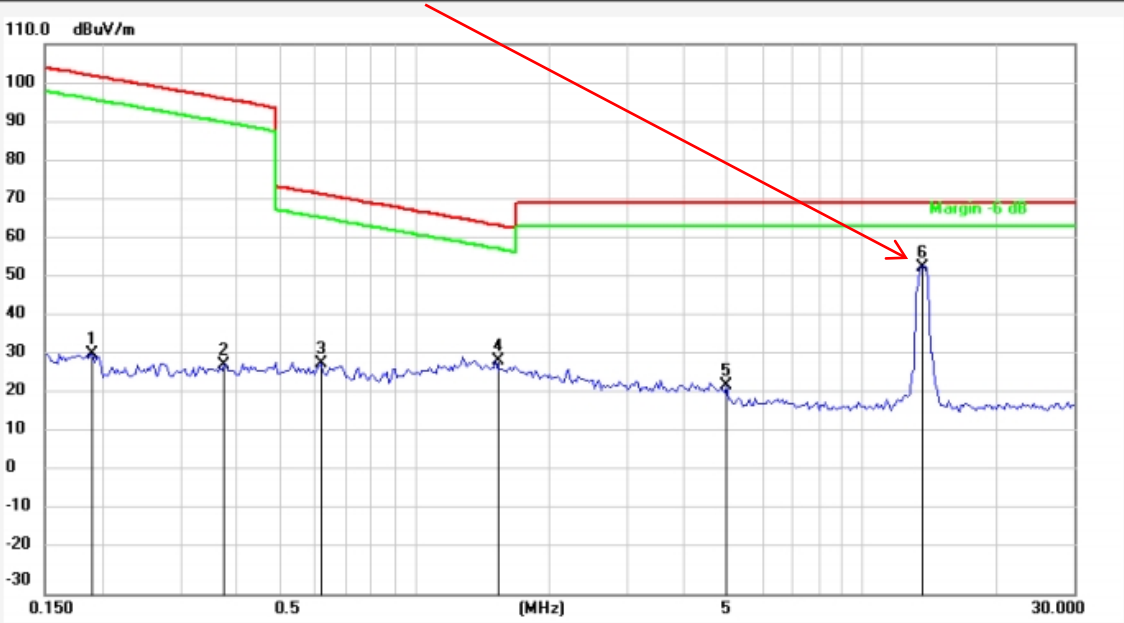
Test Results (0.15MHz~30MHz)

Test Mode:	13.56MHz
Power Source:	DC 5V via PC from adapter input AC 120V/60Hz
Polarization:	Coplane
Temp.(℃)/Hum.(%RH):	24.4℃/47%RH
	Fundamental



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Remark
1	0.1914	10.92	20.32	31.24	101.91	-70.67	QP	
2	0.3771	8.07	20.28	28.35	96.06	-67.71	QP	
3	0.6205	8.38	20.27	28.65	71.75	-43.10	QP	
4	1.5274	9.21	20.27	29.48	63.95	-34.47	QP	
5	5.0046	2.64	20.41	23.05	69.50	-46.45	QP	
6	13.5600	32.62	20.53	53.15	69.50	-16.35	QP	

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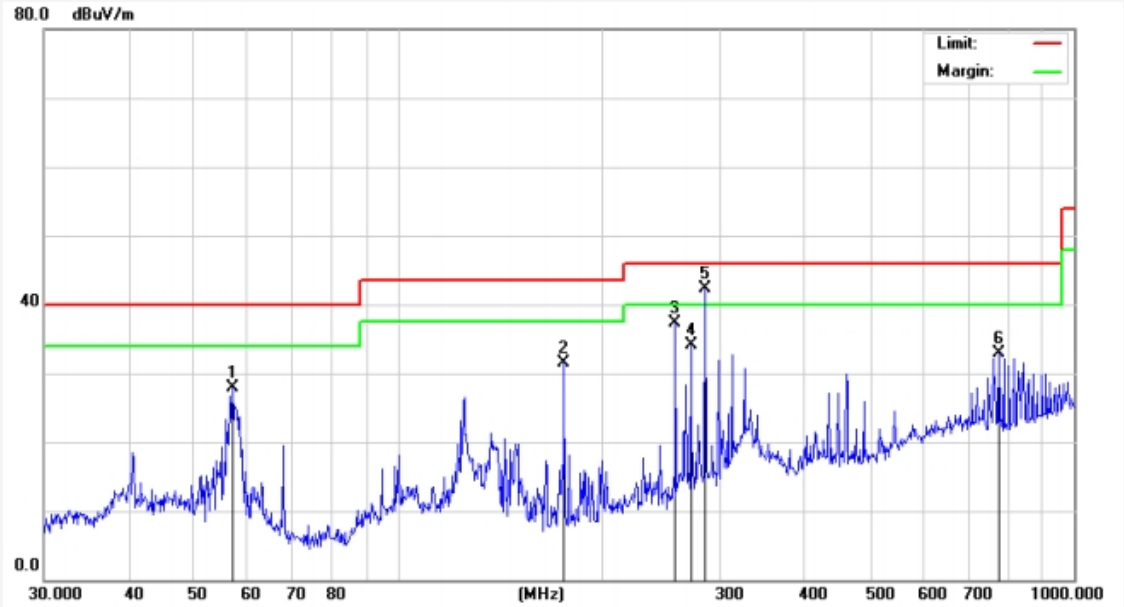
Test Results (30~1000MHz)

Test Mode:	13.56MHz
Power Source:	DC 5V via PC from adapter input AC 120V/60Hz
Polarization:	Horizontal
Temp.(℃)/Hum.(%RH):	22.5℃/55%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Remark
1	56.9912	45.77	-17.86	27.91	40.00	-12.09	QP	
2	176.2686	53.01	-21.46	31.55	43.50	-11.95	QP	
3	257.4222	55.41	-18.12	37.29	46.00	-8.71	QP	
4	271.3246	51.70	-17.66	34.04	46.00	-11.96	QP	
5	284.9767	59.60	-17.21	42.39	46.00	-3.61	QP	
6	774.1584	41.49	-8.50	32.99	46.00	-13.01	QP	

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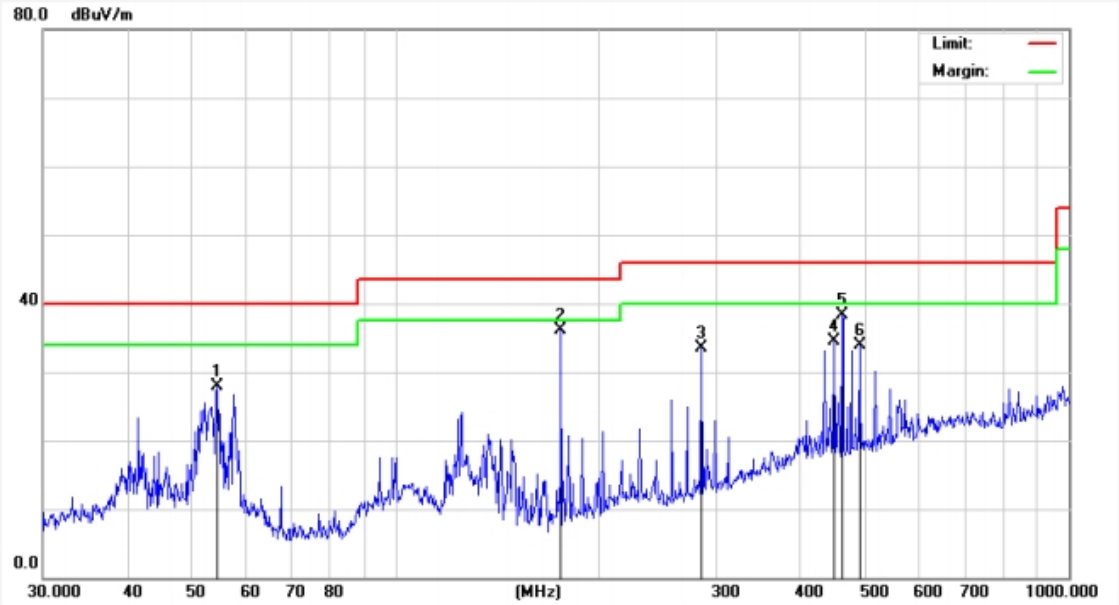
Test Results (30~1000MHz)

Test Mode:	13.56MHz
Power Source:	DC 5V via PC from adapter input AC 120V/60Hz
Polarization:	Vertical
Temp.(℃)/Hum.(%RH):	22.5℃/55%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Remark
1	54.4516	45.54	-17.68	27.86	40.00	-12.14	QP	
2	176.2686	57.36	-21.18	36.18	43.50	-7.32	QP	
3	284.9767	50.79	-17.21	33.58	46.00	-12.42	QP	
4	447.9822	47.15	-12.59	34.56	46.00	-11.44	QP	
5	460.7271	50.67	-12.39	38.28	46.00	-7.72	QP	
6	489.0269	45.92	-11.95	33.97	46.00	-12.03	QP	

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Test Results (Inband)

Indicated			Table Angle Degree	Antenna Height (m)	Detector	Correction Factor			Corrected Amplitude (dBuV/m) @3m	FCC part 15.225	
Frequency Range（MHz）	Mark Point (MHz)	Corrected Amplitude (dBuV/m) @3m				Ant. Factor (dB)	Cable Loss (dB)	Pre-Amp. Gain (dB)		Limit (dBuV/m)@3m	Result
13.110~13.410	13.388	46.32	0	1.0	QP	20.8	0.2	30.2	37.12	80.5	PASS
13.410~13.553	13.544	50.28	0	1.0	QP	20.9	0.2	30.2	41.18	90.5	PASS
13.553~13.567	13.558	55.78	0	1.0	QP	20.9	0.2	30.2	46.68	124	PASS
13.567~13.710	13.574	49.02	0	1.0	QP	21.1	0.2	30.2	40.12	90.5	PASS
13.710~14.010	13.885	46.76	0	1.0	QP	21.2	0.2	30.2	37.96	80.5	PASS

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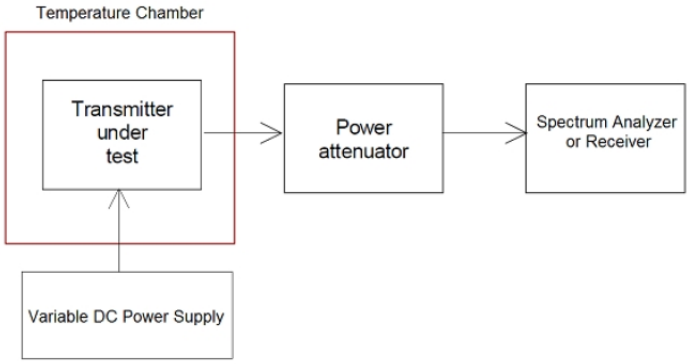
5. Frequency Tolerance

5.1. Test Requirement

Test Standard	FCC Part15 C Section 15.225(e)
Test Limit	±0.01% (100ppm)

5.2. Test Setup



5.3. Test Procedure

Let the EUT works on temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

5.4. Test Data

Temperature:	25.3 °C	Humidity:	48 %	Atmospheric Pressure:	101 kPa

Voltage (VDC)	Temperature (℃)	Frequency Measured (MHz)	Test data (ppm)	Limit (ppm)	Verdict
5	-20	13.561037	76.48	±100	PASS
	-10	13.560960	70.78	±100	PASS
	0	13.560911	67.15	±100	PASS
	+10	13.561041	76.74	±100	PASS
	+20	13.560988	72.85	±100	PASS
	+30	13.561153	85.06	±100	PASS
	+40	13.561067	78.72	±100	PASS
	+50	13.561013	74.68	±100	PASS
4.5	+20	13.561157	85.35	±100	PASS
5.5	+20	13.561099	81.02	±100	PASS

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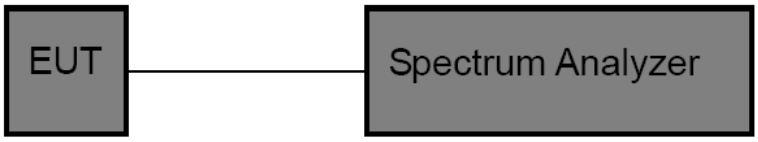
6. 20dB Occupy Bandwidth Test

6.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.215(c)
Test Limit	N/A

6.2. Test Setup



6.3. Test Procedure

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 3kHz RBW and VBW≥3*RBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

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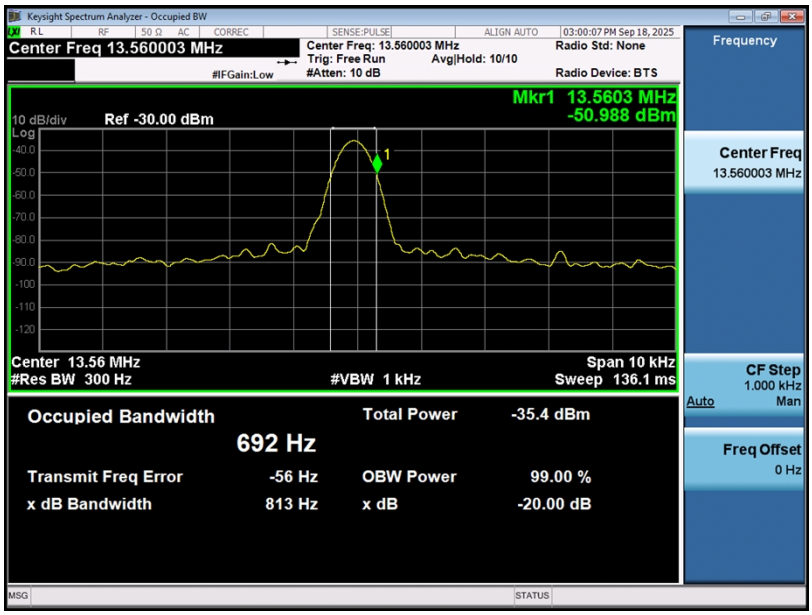
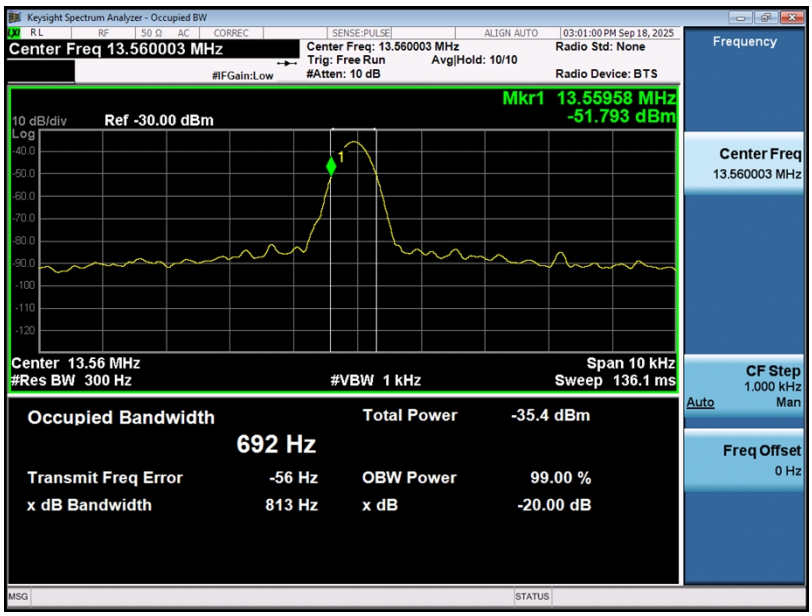
6.4. Test Data

Temperature:	25.3 °C	Humidity:	48 %	Atmospheric Pressure:	101 kPa

Freq.(MHz)	Bandwidth (kHz)	Results
13.56	0.813	PASS





Note: The measured signal is Cw-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 300Hz to perfomm the occupied bandwidth test.

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7. Antenna Requirement

7.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 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.

7.2. Antenna Connected Construction

The antenna is a PCB Antenna which permanently attached. It complies with the standard requirement.

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APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_RF

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

---------- End of Report ----------

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