FCC PART 15.225

TEST REPORT

For

Fujian LANDI Commercial Equipment Co.,Ltd.

Building 17, Section A, Software Park, No. 89 Software Road, Gulou District, Fuzhou Municipality, Fujian Province, China

FCC ID: 2AG6N-C20PROA1

Report Type:	**Product Name:**
Original Report	POS Terminal

Report Number:	2407T77013E-RF-01
Report Date:	2024-09-27
Reviewed By:	Stein Peng
Approved By:	Miles Chen
Prepared By:	Bay Area Compliance Laboratories Corp. (Xiamen) Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen Tel: +86-592-3200111 www.baclcorp.com.cn

TABLE OF CONTENTS

REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2407T77013E-RF-01	R1V1	2024-09-27	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:		Fujian LANDI Commercial Equipment Co.,Ltd.
Product Name:		POS Terminal
Tested Model:		C20Pro
Power Supply:		DC 19.0V, 3.42A from adapter
Adapter Information	Model:	PA-1650-90
	Input:	100-240V~50-60Hz 1.6A
	Output:	DC 19.0V 3.42A
RF Function:		NFC
Operating Band/Frequency:		13.56 MHz
Antenna Type:		COIL Antenna
★Maximum Antenna Gain:		0 dBi

Note:
1. The Maximum Antenna Gain was declared by the manufacturer.
2. The EUT contains a variety of configurations, the difference of the configurations show as below

Model Name	Configuration(SN)	Certified RF Module
C20Pro	3 (245TCCM00114)	SLM927 (FCC ID: 2AG6N-SLM927AM4MG)
	6 (244HCCM00080)	SNM927 (FCC ID: 2AG6N-SLM927WF4MG)

3. All measurement and test data in this report was gathered from production sample serial number: 2M7A-8, 2M7A-9. (Assigned by the BACL (Xiamen). The EUT supplied by the applicant was received on 2024-06-12)

Objective

This Type approval report is prepared for *Fujian LANDI Commercial Equipment Co.,Ltd.* in accordance with Part 2- Subpart J, and Part 15-Subparts A and C of the Federal Communication Commission's rules.

The objective is to determine the Compliance of the EUT with FCC rules, sec 15.203, 15.205, 15.207, 15.209 and 15.225.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Measurement Uncertainty

Item		U_{lab}
Radiated Disturbance	9kHz~30MHz	2.59 dB
	30MHz~200MHz	4.38 dB
	200MHz~1GHz	4.50 dB
Occupied Bandwidth		±0.10MHz
Frequency Error(RF Frequency)		0.082×10^{6}
Temperature		±1℃
Humidity		±5%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

SYSTEM TEST CONFIGURATION

Test Mode and Voltage

The system was configured for testing in a typical mode (as normally used by a typical user).	
Test mode:	Test Mode 1: Transmitting
Test voltage:	DC 19.0V from adapter
Remark:	During all emission tests, the EUT was configured to measure its highest possible emission level and the worst case's test data was presented in this test report.

Justification

The system was configured in testing mode which was provided by manufacturer.

Channel List:

Channel	Frequency (MHz)
1	13.56

EUT Exercise Software

The EUT is tested in the engineering mode.

Equipment Modifications

No modification on the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
PHILIPS	Keyboard	SPK6234	K234210510745
PHILIPS	Mouse	SPK7214	M214BQ210411119
N/A	USB load	N/A	N/A
N/A	RJ11 Load	N/A	N/A
OPPO	Earphone	find x5	N/A
Lenovo	PC	T480	PF1P5K4F

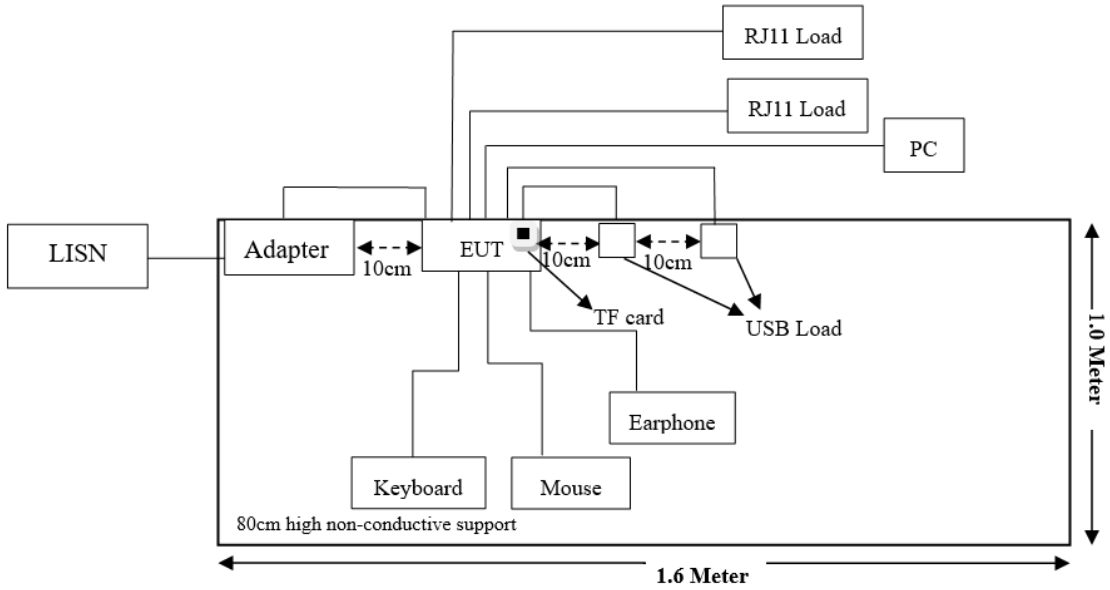
External Cable

Cable Description	Length (m)	From Port	To
USB cable*2	1	USB Load	EUT
Keyboard cable	1.5	Keyboard	EUT
Mouse cable	1.5	Mouse	EUT
Earphone cable	1.2	Earphone	EUT
RJ11 cable*2	8	RJ11 Load	EUT
RJ45 cable	10	PC	EUT

Block Diagram of Test Setup

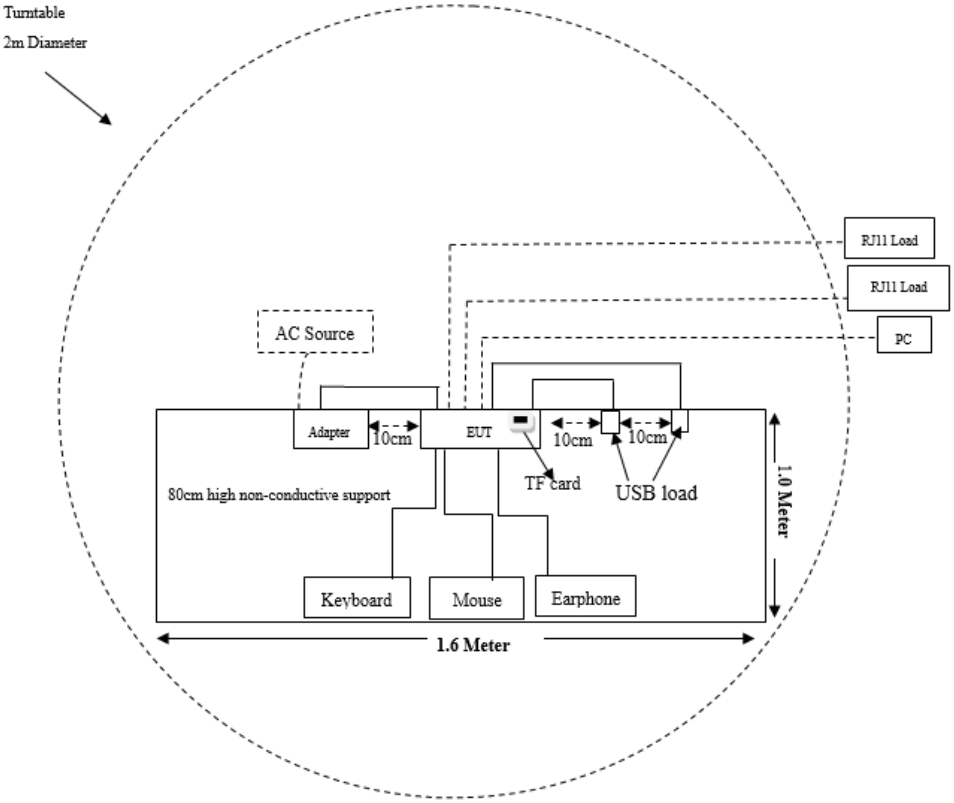
Conducted Emission:

Test Mode 1: Transmitting



Radiated Emission：

Test Mode 1: Transmitting



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.225 §15.209 §15.205	Radiated Emission Test	Compliant
§15.225(e)	Frequency Stability	Compliant
§15.215(c)	20dB Emission Bandwidth Testing	Compliant

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions					
EMI Test Receiver	Rohde & Schwarz	ESR	103105	2024/03/29	2025/03/28
LISN	Rohde & Schwarz	ENV216	100129	2024/03/29	2025/03/28
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC001	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2024/03/29	2025/03/28
Loop Antenna	Rohde & Schwarz	HFH2-Z2	830749/001	2023/07/27	2026/07/26
Antenna	Sunol Sciences	JB6	A122022-5	2023/07/27	2026/07/26
Amplifier	Sonoma	310B	120903	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	HFH2-CC	335.3609	2023/09/20	2026/09/19
Test Software	Audix	E3	18621a	N/A	N/A
Frequency Stability & 20dB OBW test					
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2024/03/29	2025/03/28
constant temperature and humidity testing machine	BACL	BTH-150	30211	2024/03/29	2025/03/28

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Xiamen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

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.

Antenna Connected Construction

The EUT has an COIL antenna for 13.56 MHz which the antenna gain is 0dBi, the antenna was permanently attached, fulfill the requirement of this section, please refer to the EUT photos.

Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

(a) 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 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

	Conducted limit (dBμV)	
Frequency of emission (MHz)	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.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

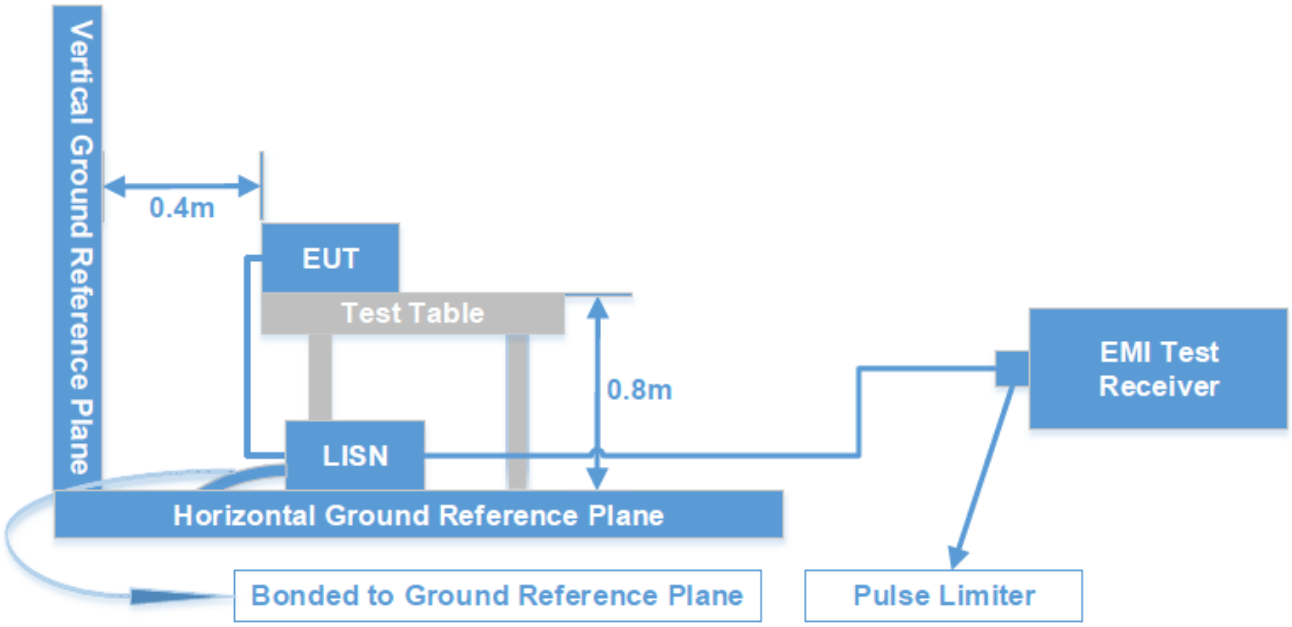
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μV within the frequency band 535-1705 kHz, as measured using a 50 μH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtainig their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

Test System Setup



The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	VBW	Detector
150 kHz - 30 MHz	9 kHz	30 kHz	AV/QP

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

According FCC publication number 174176,for a device with a permanent antenna operating at or below 30 MHz, the measurements done with a suitable dummy load, in lieu of the permanent antenna under the following conditions: (1) perform the AC line conducted tests with the permanent antenna to determine compliance with the Section 15.207 limits outside the transmitter's fundamental emission band; (2) retest with a dummy load in lieu of the permanent antenna to determine compliance with the Section 15.207 limits within the transmitter's fundamental emission band.

Level &Margin Calculation

The Level is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Level (dBμV) = Reading (dBμV) + Factor (dB)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV) – Level (dBμV)

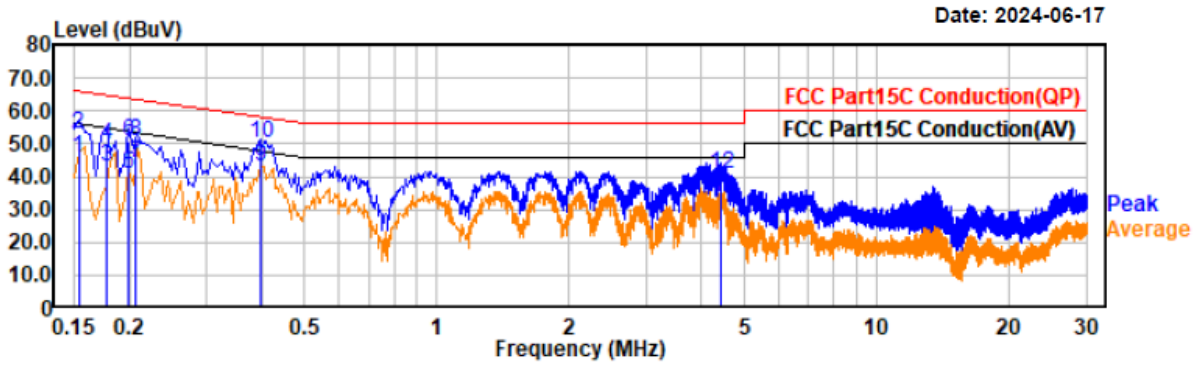
Test Data

Temperature:	22.3℃	23.5℃
Relative Humidity:	53%	54%
ATM Pressure:	101.1kPa	101.1kPa
Test Date:	2024-06-17	2024-09-26
Test Engineer:	Wlif Wu	Toby Chen

Configuration 3:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro

Temp/Humi/ATM: 22.3℃/53%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

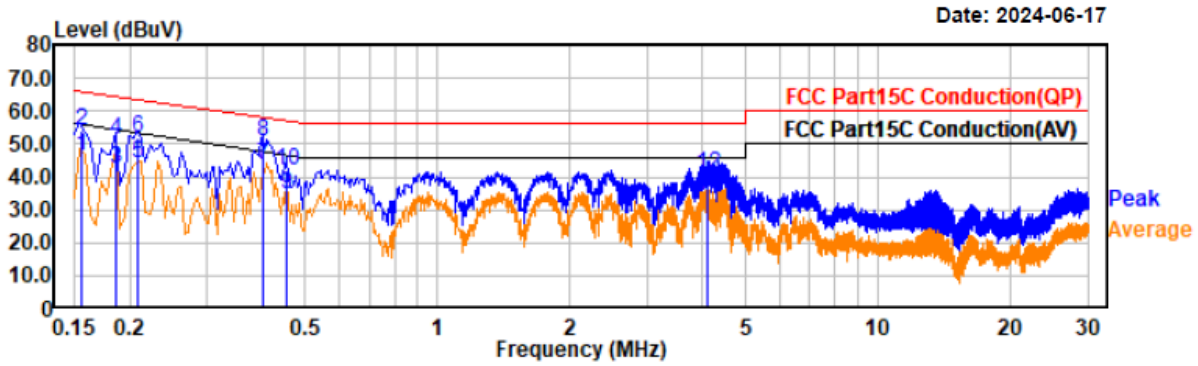


Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.15	26.44	19.51	45.95	55.82	9.87	Line	Average
0.15	33.66	19.51	53.17	65.82	12.65	Line	QP
0.18	23.33	19.51	42.84	54.60	11.76	Line	Average
0.18	29.88	19.51	49.39	64.60	15.21	Line	QP
0.20	21.06	19.52	40.58	53.66	13.08	Line	Average
0.20	31.42	19.52	50.94	63.66	12.72	Line	QP
0.21	24.62	19.52	44.14	53.33	9.19	Line	Average
0.21	31.26	19.52	50.78	63.33	12.55	Line	QP
0.40	23.33	19.59	42.92	47.87	4.95	Line	Average
0.40	30.78	19.59	50.37	57.87	7.50	Line	QP
4.43	13.79	19.60	33.39	46.00	12.61	Line	Average
4.43	21.37	19.60	40.97	56.00	15.03	Line	QP

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro

Temp/Humi/ATM: 22.3℃/53%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



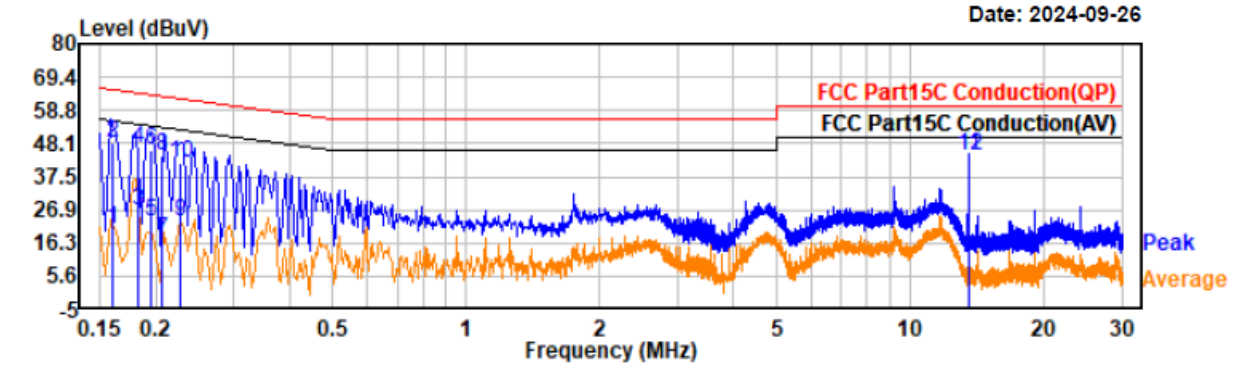
Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.16	27.01	19.48	46.49	55.70	9.21	Neutral	Average
0.16	34.75	19.48	54.23	65.70	11.47	Neutral	QP
0.19	22.83	19.48	42.31	54.21	11.90	Neutral	Average
0.19	31.58	19.48	51.06	64.21	13.15	Neutral	QP
0.21	24.64	19.50	44.14	53.29	9.15	Neutral	Average
0.21	32.11	19.50	51.61	63.29	11.68	Neutral	QP
0.40	23.99	19.60	43.59	47.85	4.26	Neutral	Average
0.40	31.13	19.60	50.73	57.85	7.12	Neutral	QP
0.45	15.20	19.62	34.82	46.81	11.99	Neutral	Average
0.45	22.35	19.62	41.97	56.81	14.84	Neutral	QP
4.10	14.67	19.63	34.30	46.00	11.70	Neutral	Average
4.10	21.04	19.63	40.67	56.00	15.33	Neutral	QP

Configuration 6:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro

Temp/Humi/ATM: 23.5℃/54%/101.1kPa
Tested by: Toby Chen
Power Source: AC 120V/60Hz

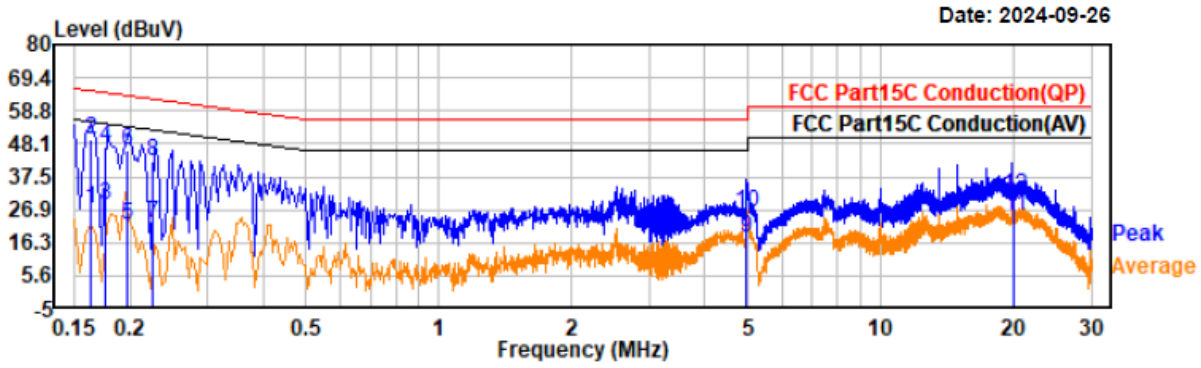


Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.16	1.20	19.51	20.71	55.48	34.77	Line	Average
0.16	29.07	19.51	48.58	65.48	16.90	Line	QP
0.18	7.12	19.50	26.62	54.39	27.77	Line	Average
0.18	27.29	19.50	46.79	64.39	17.60	Line	QP
0.19	3.67	19.51	23.18	53.82	30.64	Line	Average
0.19	26.70	19.51	46.21	63.82	17.61	Line	QP
0.21	-2.52	19.52	17.00	53.35	36.35	Line	Average
0.21	24.44	19.52	43.96	63.35	19.39	Line	QP
0.23	3.37	19.53	22.90	52.56	29.66	Line	Average
0.23	22.49	19.53	42.02	62.56	20.54	Line	QP
13.56	24.42	19.96	44.38	50.00	5.62	Line	Average
13.56	24.46	19.96	44.42	60.00	15.58	Line	QP

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro

Temp/Humi/ATM: 23.5℃/54%/101.1kPa
Tested by: Toby Chen
Power Source: AC 120V/60Hz



Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.16	7.66	19.48	27.14	55.28	28.14	Neutral	Average
0.16	29.79	19.48	49.27	65.28	16.01	Neutral	QP
0.18	9.18	19.48	28.66	54.70	26.04	Neutral	Average
0.18	27.78	19.48	47.26	64.70	17.44	Neutral	QP
0.20	2.34	19.49	21.83	53.70	31.87	Neutral	Average
0.20	26.32	19.49	45.81	63.70	17.89	Neutral	QP
0.23	3.03	19.51	22.54	52.62	30.08	Neutral	Average
0.23	22.93	19.51	42.44	62.62	20.18	Neutral	QP
4.96	-1.70	19.60	17.90	46.00	28.10	Neutral	Average
4.96	6.58	19.60	26.18	56.00	29.82	Neutral	QP
20.05	5.16	19.87	25.03	50.00	24.97	Neutral	Average
20.05	11.46	19.87	31.33	60.00	28.67	Neutral	QP

FCC §15.225, §15.205 & §15.209 - RADIATED EMISSIONS TEST

Applicable Standard

As per FCC Part 15.225

(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.

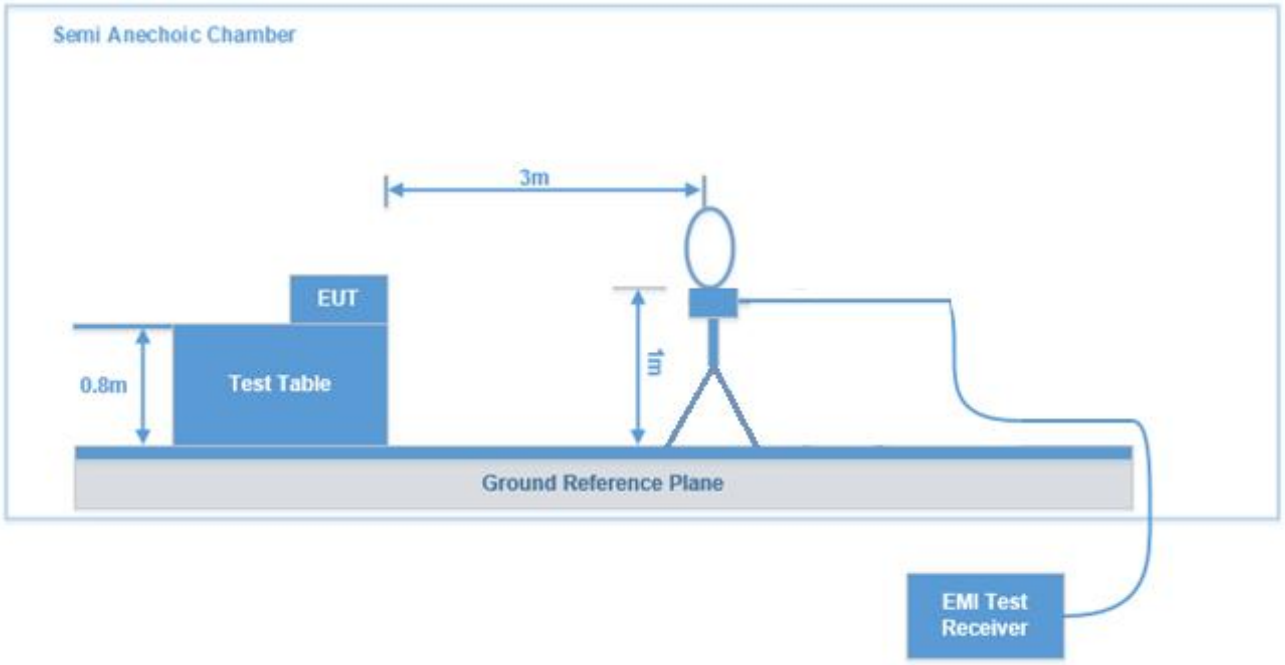
(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(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.

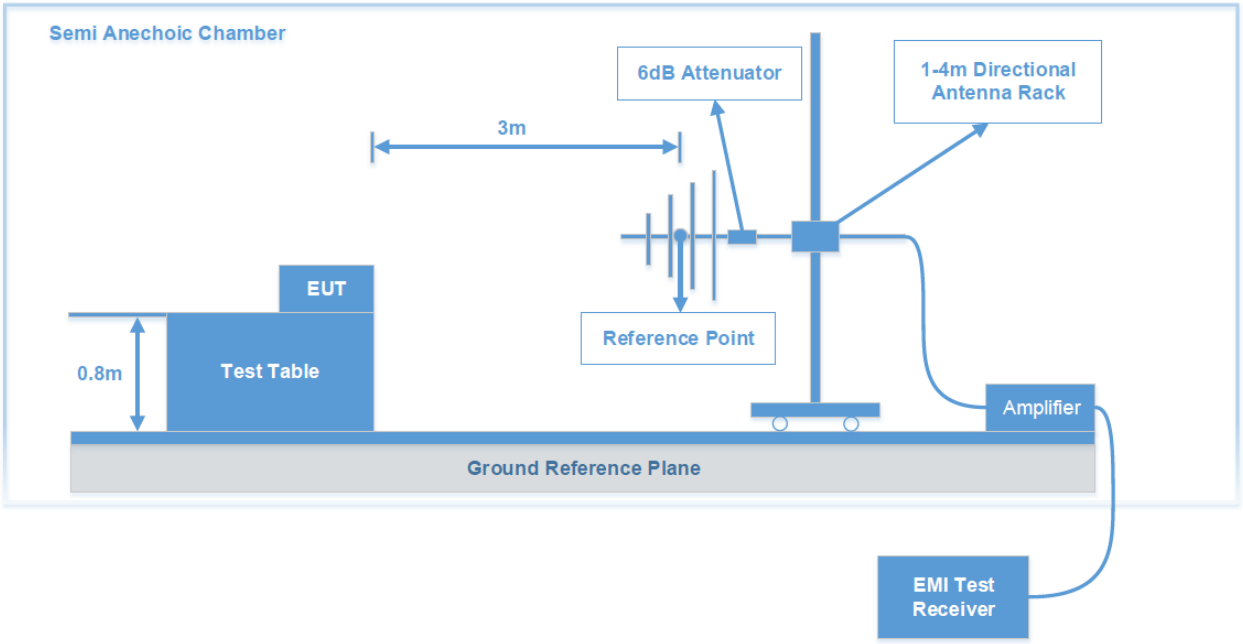
(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

Test System Setup

9 kHz-30MHz:



30MHz-1GHz:



The radiated emission tests were performed in the 3-meter chamber a test site, using the setup accordance with the ANSI C63.10. The specification used was the FCC Part Subpart C limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

According to FCC Rules, 47 CFR 15.33, the EUT emissions were investigated up to 1000 MHz.

During the radiated emission test, the EMI test Receiver was set with the following configurations:

Frequency Range	RBW	VBW	Measurement
9 kHz – 150 kHz	200Hz	1 kHz	PK
	200Hz	/	QP/AV
150 kHz – 30 MHz	10 kHz	30 kHz	PK
	9kHz	/	QP/AV
30 MHz – 1000 MHz	100 kHz	300 kHz	PK
	120kHz	/	QP

4.2.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 9 kHz-1 GHz except 9-90 kHz, 110-490 kHz, employing an average detector, peak and Average detection modes for frequencies above 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

Level &Margin Calculation

The Level is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)
Level (dBμV/m) = Reading (dBμV) + Factor (dB/m)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) –Level (dBμV/m)

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209, 15.205, 15.225.

Test Data

Frequency Range:	9k-30MHz	9k-150kHz	150kHz-30MHz
Temperature:	20.0℃	23.5℃	23.6℃
Relative Humidity:	62 %	54 %	56 %
ATM Pressure:	101.1 kPa	100.5 kPa	100.5 kPa
Test Date:	2024-06-13	2024-09-26	2024-09-27
Test Engineer:	Wlif Wu	Wlif Wu	Ash Lin

Frequency Range:	30MHz-1GHz	30MHz-1GHz
Temperature:	22.3℃	23.5℃
Relative Humidity:	53 %	54 %
ATM Pressure:	101.1 kPa	100.5 kPa
Test Date:	2024-06-14~2024-06-15	2024-09-26
Test Engineer:	Wlif Wu	Toby Chen

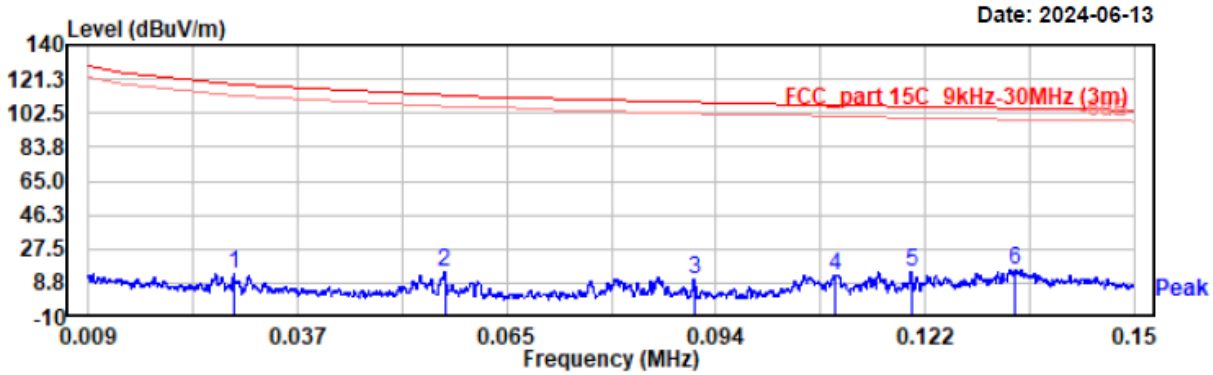
Pre-scan in parallel, ground-parallel and perpendicular of orientation of loop antenna, the **parallel orientation** is the worst case.

1) 9 kHz~150 kHz (worst case):

Configuration 3:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz X axis
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 20.0℃/62%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

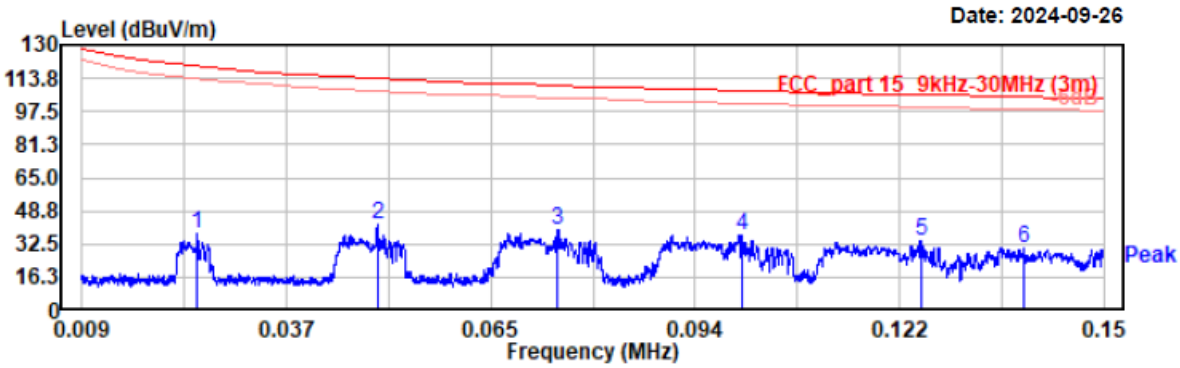


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.03	-6.45	19.90	13.45	118.06	104.61	Peak
0.06	-5.55	19.91	14.36	112.04	97.68	Peak
0.09	-9.07	19.80	10.73	108.52	97.79	Peak
0.11	-6.51	19.73	13.22	106.78	93.56	Peak
0.12	-4.84	19.73	14.89	106.02	91.13	Peak
0.13	-3.85	19.73	15.88	105.33	89.45	Peak

Configuration 6:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 23.5℃/54%/100.5kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



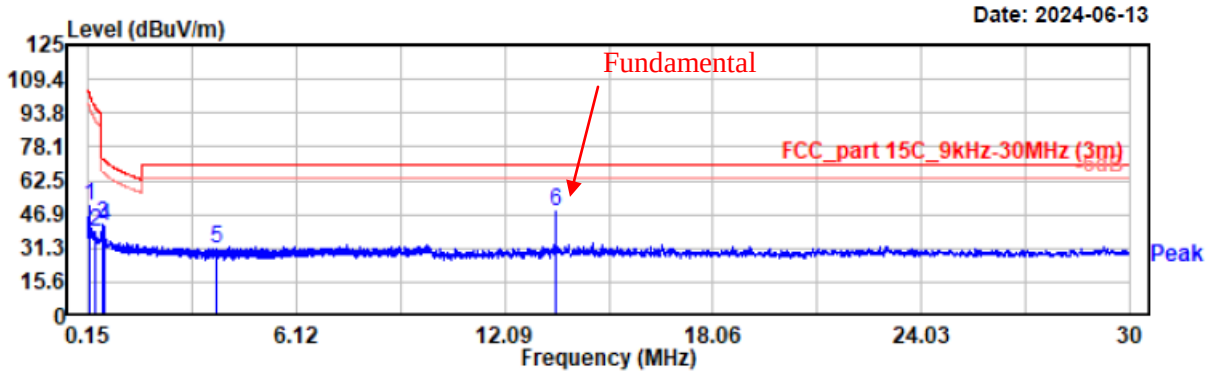
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.02	17.59	19.86	37.45	121.58	84.13	Peak
0.05	21.80	19.91	41.71	113.62	71.91	Peak
0.07	19.95	19.76	39.71	110.70	70.99	Peak
0.10	17.39	19.73	37.12	107.60	70.48	Peak
0.12	14.00	19.73	33.73	106.02	72.29	Peak
0.14	10.55	19.73	30.28	104.68	74.40	Peak

2) 150 kHz ~30MHz (worst case):

Configuration 3:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz X axis
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 20.0℃/62%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

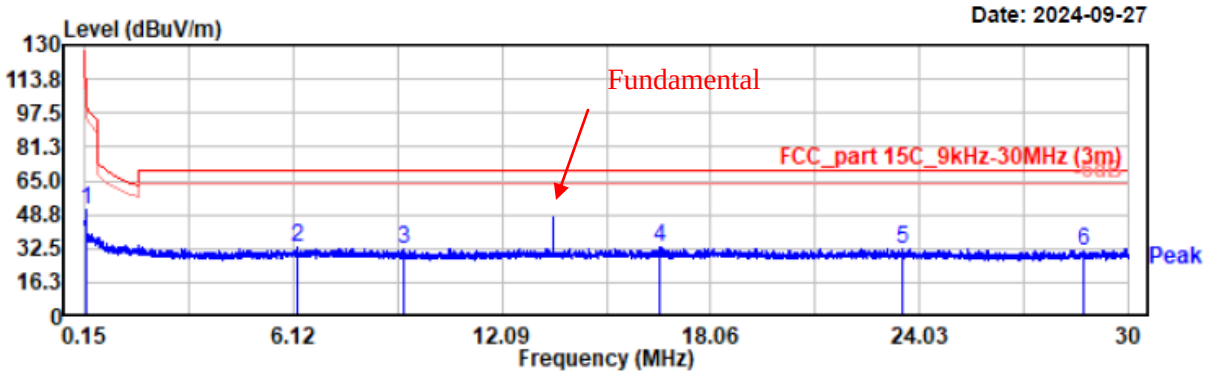


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.20	31.37	19.72	51.09	101.58	50.49	Peak
0.35	19.33	19.74	39.07	96.72	57.65	Peak
0.59	22.22	19.78	42.00	72.19	30.19	Peak
0.63	21.18	19.81	40.99	71.62	30.63	Peak
3.81	11.40	19.78	31.18	69.54	38.36	Peak
13.57	28.54	19.74	48.28	69.54	21.26	Peak

Configuration 6:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 23.6℃/56%/100.5kPa
Tested by: Ash Lin
Power Source: AC 120V/60Hz



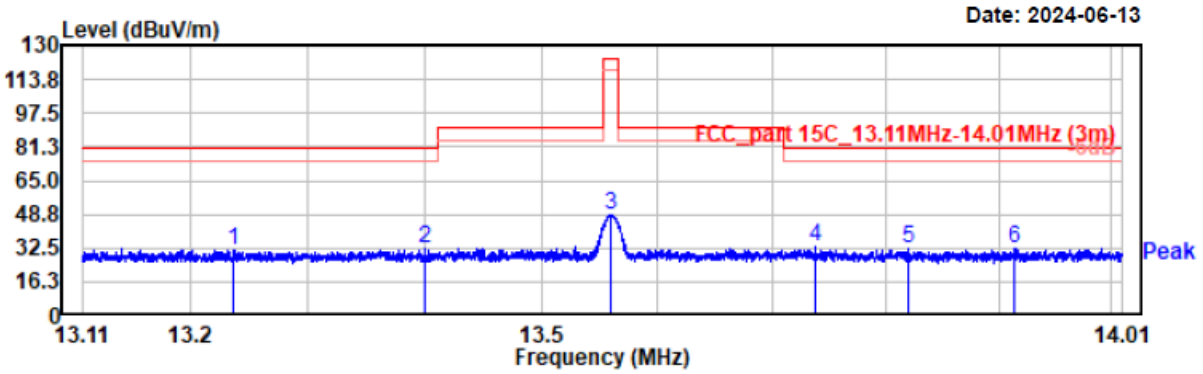
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.21	30.95	19.72	50.67	101.35	50.68	Peak
6.24	13.04	19.78	32.82	69.54	36.72	Peak
9.26	12.98	19.70	32.68	69.54	36.86	Peak
16.62	13.64	19.87	33.51	69.54	36.03	Peak
23.55	12.25	20.18	32.43	69.54	37.11	Peak
28.71	11.71	20.02	31.73	69.54	37.81	Peak

3) 13.11M-14.01M (worst case):

Configuration 3:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz X axis
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 20.0℃/62%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

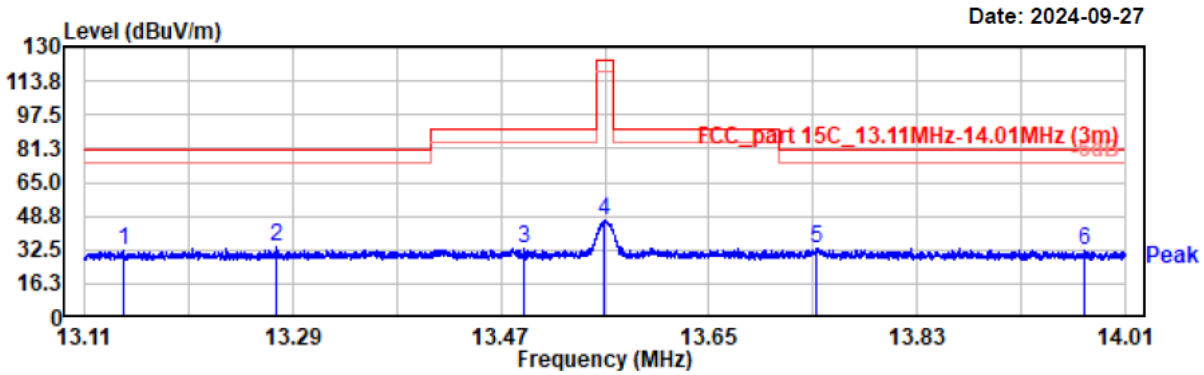


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
13.24	11.55	19.74	31.29	80.51	49.22	Peak
13.40	12.74	19.74	32.48	80.51	48.03	Peak
13.56	28.76	19.74	48.50	124.00	75.50	Peak
13.74	13.48	19.74	33.22	80.51	47.29	Peak
13.82	12.53	19.75	32.28	80.51	48.23	Peak
13.91	12.89	19.75	32.64	80.51	47.87	Peak

Configuration 6:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 23.6℃/56%/100.5kPa
Tested by: Ash Lin
Power Source: AC 120V/60Hz



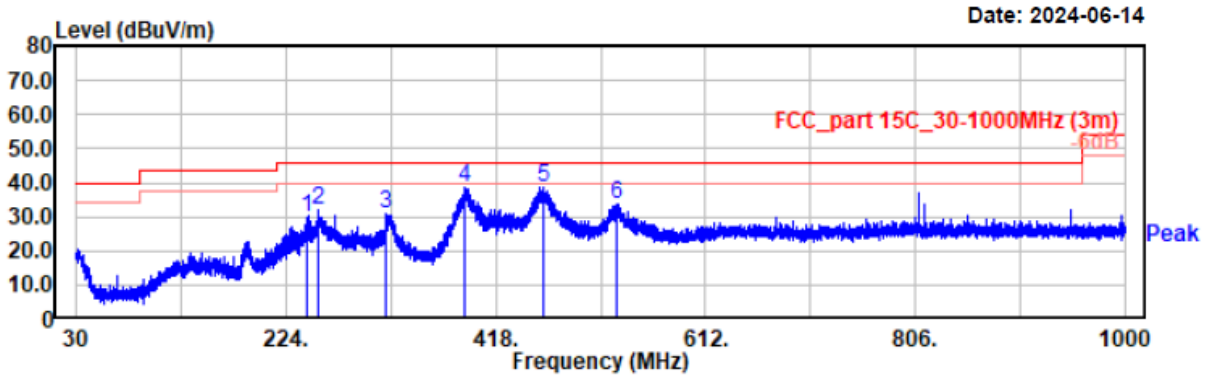
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
13.14	12.59	19.74	32.33	80.51	48.18	Peak
13.28	14.27	19.74	34.01	80.51	46.50	Peak
13.49	13.19	19.74	32.93	90.47	57.54	Peak
13.56	26.51	19.74	46.25	124.00	77.75	Peak
13.74	13.68	19.74	33.42	80.51	47.09	Peak
13.98	12.40	19.75	32.15	80.51	48.36	Peak

4) 30MHz-1000MHz:

Configuration 3:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

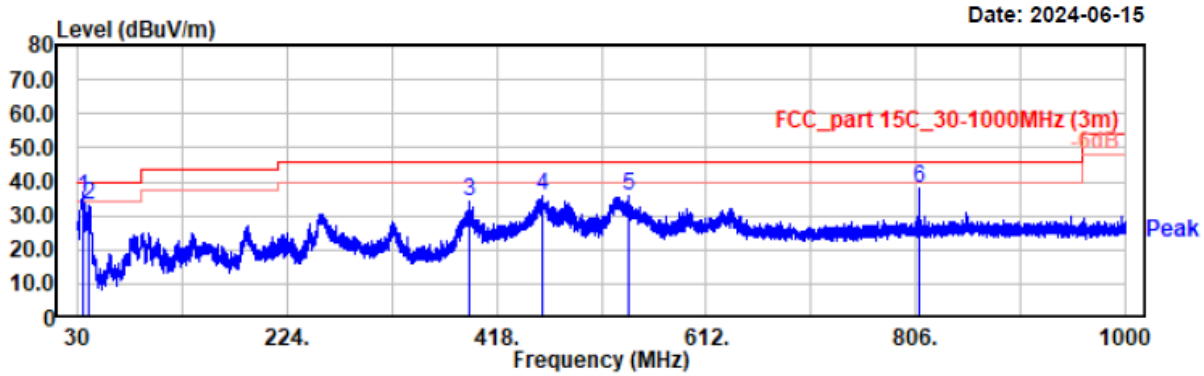
Temp/Humi/ATM: 22.3℃/53%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
244.08	41.42	-11.49	29.93	46.00	16.07	Horizontal	Peak
253.39	43.17	-11.39	31.78	46.00	14.22	Horizontal	Peak
316.93	39.50	-8.84	30.66	46.00	15.34	Horizontal	Peak
388.71	45.56	-6.71	38.85	46.00	7.15	Horizontal	Peak
461.46	43.43	-4.56	38.87	46.00	7.13	Horizontal	Peak
530.62	36.78	-3.23	33.55	46.00	12.45	Horizontal	Peak

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

Temp/Humi/ATM: 22.3℃/53%/101.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

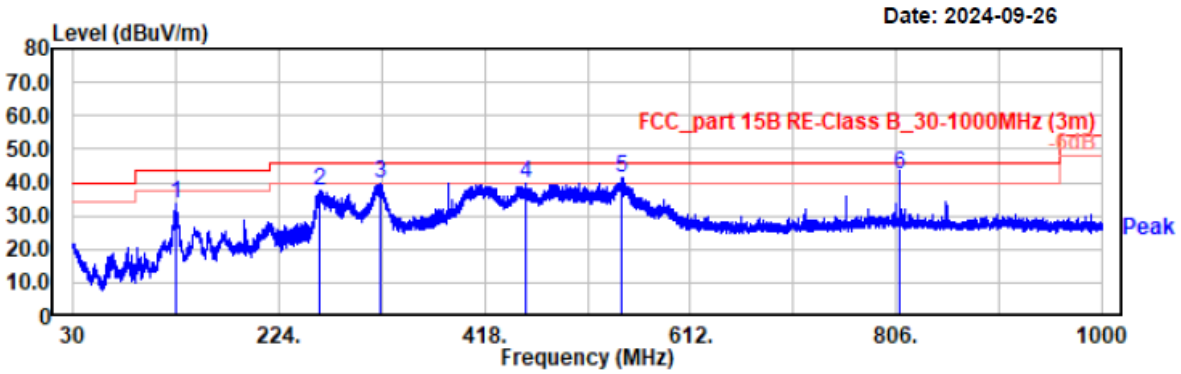


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
34.56	43.20	-7.81	35.39	40.00	4.61	Vertical	QP
40.86	45.52	-12.24	33.28	40.00	6.72	Vertical	Peak
391.91	40.84	-6.64	34.20	46.00	11.80	Vertical	Peak
460.10	40.68	-4.65	36.03	46.00	9.97	Vertical	Peak
540.03	39.07	-3.00	36.07	46.00	9.93	Vertical	Peak
810.07	36.41	1.39	37.80	46.00	8.20	Vertical	Peak

Configuration 6:

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

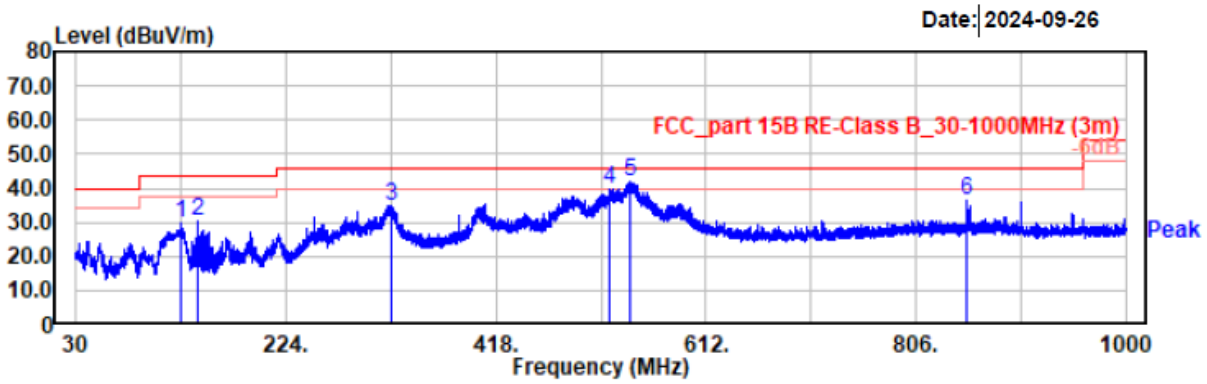
Temp/Humi/ATM: 23.5℃/57%/100.5kPa
Tested by: Toby Chen
Power Source: AC 120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
126.32	43.71	-9.96	33.75	43.50	9.75	Horizontal	QP
262.61	48.29	-10.67	37.62	46.00	8.38	Horizontal	QP
319.06	48.73	-8.79	39.94	46.00	6.06	Horizontal	QP
457.48	44.60	-4.69	39.91	46.00	6.09	Horizontal	QP
547.30	43.99	-2.87	41.12	46.00	4.88	Horizontal	QP
810.01	41.26	1.39	42.65	46.00	3.35	Horizontal	QP

Project No.: 2407T77013E-RF
Test Mode: NFC 13.56MHz
EUT Model: C20Pro
Test distance: 3m

Temp/Humi: 23.5℃/57%/100.5kPa
Tested by: Toby Chen
Power Source: AC 120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
127.78	39.56	-9.94	29.62	43.50	13.88	Vertical	QP
141.94	41.01	-10.88	30.13	43.50	13.37	Vertical	QP
320.90	43.75	-8.74	35.01	46.00	10.99	Vertical	QP
523.25	43.28	-3.39	39.89	46.00	6.11	Vertical	QP
542.16	44.80	-2.99	41.81	46.00	4.19	Vertical	QP
853.53	34.66	1.95	36.61	46.00	9.39	Vertical	QP

FCC §15.225(e) - FREQUENCY STABILITY

Applicable Standard

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a 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.

Test Procedure

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary. NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

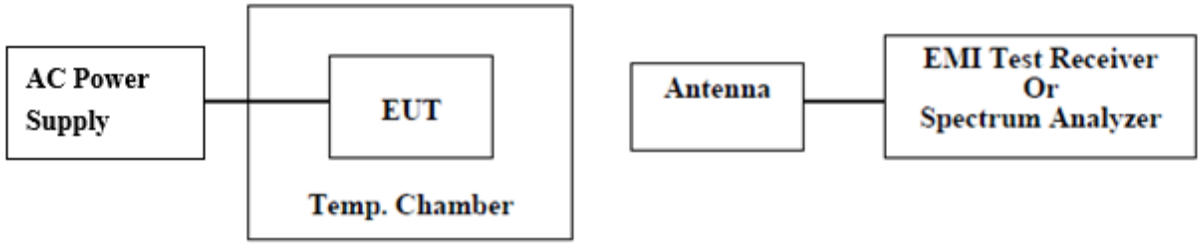
g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10 ℃, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

EUT Setup



Test Data

Test Mode:	Transmitting	Test Engineer:	Stein Peng
Test Date:	2024-06-14	Environment:	Temp.: 25.9℃ Humi.: 60% Atm:100.2kPa

Test Result: Compliant

F_0 =13.56MHz				
Power Supply(V_{AC})	**Temperature (℃)**	**Measured Frequency (MHz)**	**Frequency Error (%)**	**Part 15.225 Limit**
120	-20	13.5602002	0.0015	±0.01%
	-10	13.5601258	0.0009	±0.01%
	0	13.5601006	0.0007	±0.01%
	10	13.560116	0.0009	±0.01%
	20	13.560203	0.0015	±0.01%
	30	13.5601002	0.0007	±0.01%
	40	13.5601014	0.0007	±0.01%
	50	13.560124	0.0009	±0.01%
102	20	13.56015	0.0011	±0.01%
138	20	13.5602003	0.0015	±0.01%

Note: Only Configuration 3 test

§15.215(c) - 20dB EMISSION BANDWIDTH TESTING

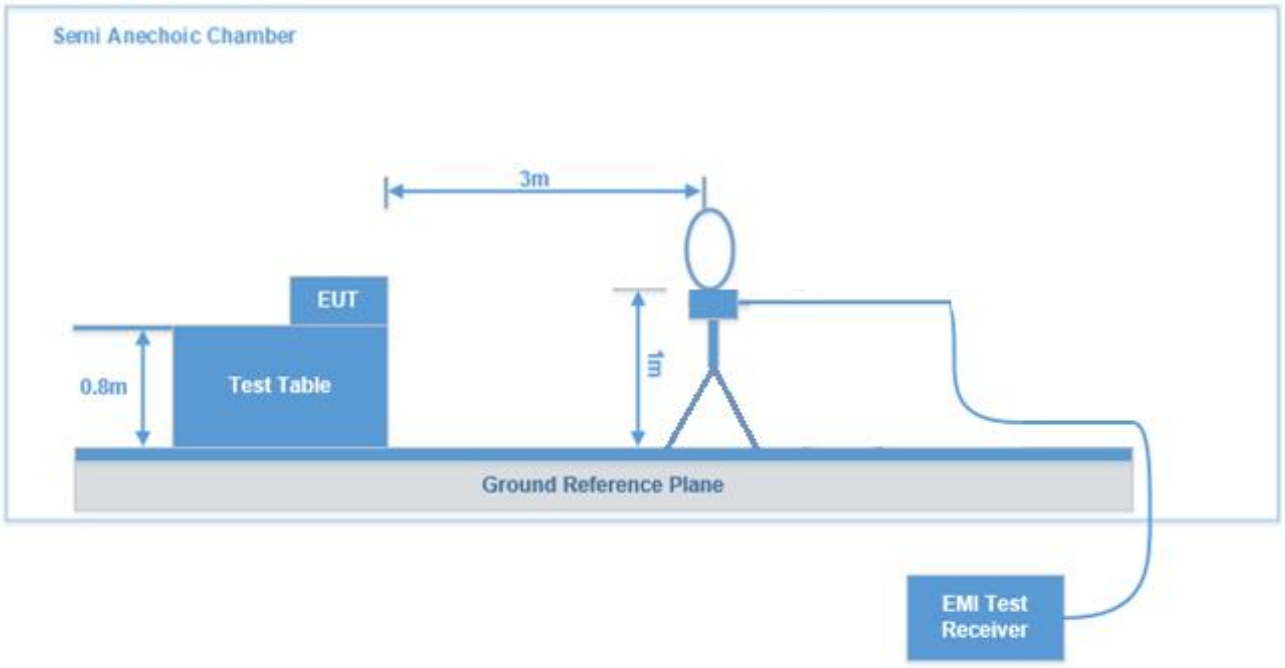
Requirement

Per 15.215 (c) 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. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

Test Setup



Test Data

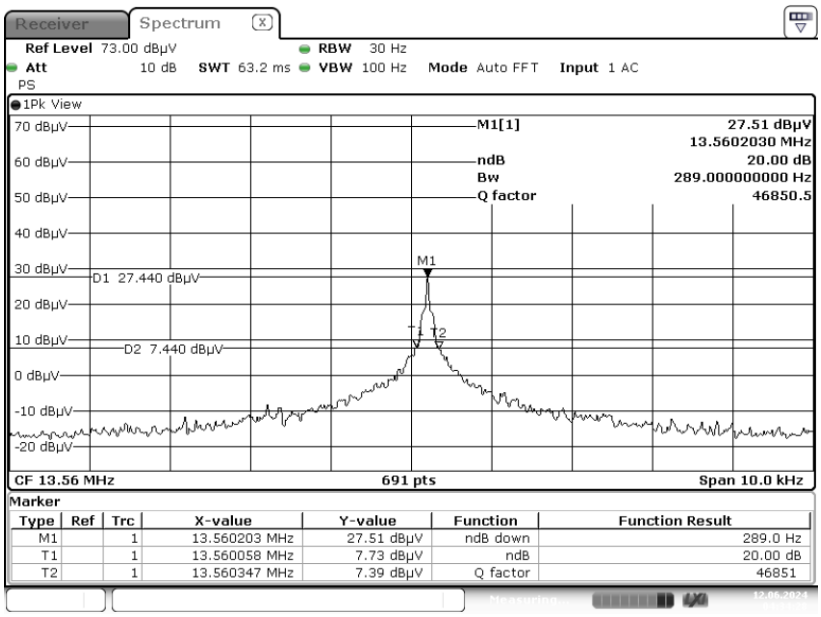
Test Mode:	Transmitting	**Test Engineer:**	Ash Lin
Test Date:	2024-06-12	**Environment:**	Temp.: 25.9℃ Humi.: 60% Atm:100.2kPa

Test Result: Compliant

Frequency (MHz)	**20 dB Bandwidth (kHz)**
13.56	0.289

Note: Only Configuration 3 test

20 dB Emission Bandwidth-13.56MHz



EUT PHOTOGRAPHS

Please refer to the attachment 2407T77013E-RF-EXP_EUT EXTERNAL PHOTOGRAPHS and 2407T77013E-RF-INP _EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2407T77013E-RF-TSP_TEST SETUP PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".

2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

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