

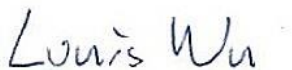


# FCC RADIO TEST REPORT

**FCC ID** : 2AFZZ211G  
**Equipment** : Mobile Phone  
**Brand Name** : POCO  
**Model Name** : 22011211G  
**Applicant** : Xiaomi Communications Co., Ltd.  
#019, 9th Floor, Building 6, 33 Xi'erqi  
Middle Road, Haidian District, Beijing,  
China, 100085  
**Manufacturer** : Xiaomi Communications Co., Ltd.  
#019, 9th Floor, Building 6, 33 Xi'erqi  
Middle Road, Haidian District, Beijing,  
China, 100085  
**Standard** : FCC Part 15 Subpart C §15.225

The product was received on Jan. 06, 2022 and testing was performed from Jan. 13, 2022 to Jan. 27, 2022. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

**Sporton International Inc. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan



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## History of this test report

Report No.	Version	Description	Issue Date
FR210628D	01	Initial issue of report	Feb. 16, 2022

## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.207	AC Power Line Conducted Emissions	Pass	5.28 dB under the limit at 0.191 MHz
3.2	15.215(c)	20dB Spectrum Bandwidth	Pass	-
	2.1049	99% OBW Spectrum Bandwidth	Reporting only	-
3.3	15.225(e)	Frequency Stability	Pass	-
3.4	15.225(a)(b)(c)	Field Strength of Fundamental Emissions	Pass	Max level 23.71 dB $\mu$ V/m at 13.560 MHz
3.5	15.225(d) 15.209	Radiated Spurious Emissions	Pass	3.51 dB under the limit at 40.670 MHz
3.6	15.203	Antenna Requirements	Pass	-

**Declaration of Conformity:**

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- The measurement uncertainty please refer to this report "Uncertainty of Evaluation".

**Comments and Explanations:**

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

**Reviewed by: Danny Lee**

**Report Producer: Lucy Wu**

## 1. General Description

### 1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE/5G NR, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, NFC, and GNSS.

Product Feature	
Sample 1	EUT with RAM (Micron)
Sample 2	EUT with RAM (Samsung)
Antenna Type	WWAN: PIFA Antenna <b>WLAN 2.4GHz</b> <Ant. 16>: PIFA Antenna <Ant. 18>: PIFA Antenna <b>WLAN 5GHz</b> <Ant. 17>: PIFA Antenna <Ant. 18>: PIFA Antenna Bluetooth: PIFA Antenna GPS / Glonass / BDS / Galileo / SBAS / QZSS / NavIC: PIFA Antenna NFC: Coil Antenna

**Remark:** The EUT's information above is declared by manufacturer. Please refer to Comments and Explanations in report summary.

### 1.2 Modification of EUT

No modifications made to the EUT during the testing.

### 1.3 Testing Location

<b>Test Site</b>	Sporton International Inc. EMC & Wireless Communications Laboratory	
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan TEL: +886-3-327-3456 FAX: +886-3-328-4978	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	TH03-HY	CO05-HY
<b>Test Engineer</b>	Oscar Chi	Calvin Wang
<b>Temperature</b>	22~24°C	23~26°C
<b>Relative Humidity</b>	53~55%	45~55%

**Note:** The test site complies with ANSI C63.4 2014 requirement.

<b>Test Site</b>	Sporton International Inc. Wensan Laboratory	
<b>Test Site Location</b>	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan TEL: +886-3-327-0868 FAX: +886-3-327-0855	
<b>Test Site No.</b>	<b>Sporton Site No.</b>	
	03CH11-HY (TAF Code: 3786)	
<b>Test Engineer</b>	James Chiu	
<b>Temperature</b>	20.2~20.8°C	
<b>Relative Humidity</b>	58.2~61.2%	
<b>Remark</b>	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.	

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW3786

### 1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.225
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01
- ♦ ANSI C63.10-2013

**Remark:**

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.

## 2. Test Configuration of Equipment Under Test

### 2.1 Descriptions of Test Mode

Investigation has been done on all the possible configurations.

The following table is a list of the test modes shown in this test report.

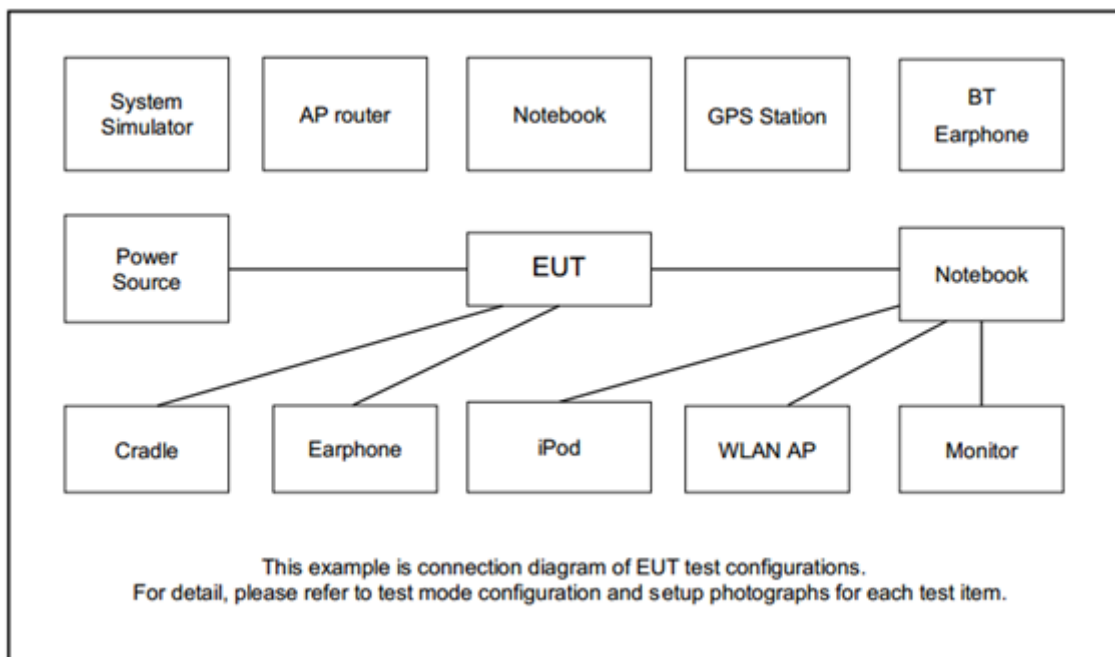
Test Items	
AC Power Line Conducted Emissions	Field Strength of Fundamental Emissions
20dB Spectrum Bandwidth	Frequency Stability
Radiated Emissions 9kHz~30MHz	Radiated Emissions 30MHz~1GHz

The EUT pre-scanned in reader mode with NFC tag (three NFC type A, B, F) and without reading tag. Based on the highest field strength of fundamental and spurious emissions, the worst case type (type F) was recorded in this report.

The measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find Y plane as worst plane.

Test Cases	
<b>AC Conducted Emission</b>	Mode 1 : LTE Band 26 Rx + Bluetooth Idle + WLAN (2.4GHz) Idle + NFC Link + Battery + USB Cable 1 (Data Link with Notebook) + SIM 2 for Sample 1
<b>Remark:</b> 1. For Radiated Test Cases, the tests were performed with Adapter 2, USB Cable 1 and Sample 1. 2. Data Link with Notebook means data application transferred mode between EUT and Notebook.	

## 2.2 Connection Diagram of Test System



## 2.3 Table for Supporting Units

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
4.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
5.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	NFC Card	N/A	N/A	N/A	N/A	N/A

## 2.4 EUT Operation Test Setup

The EUT is programmed to be in continuously transmitting mode.

The ancillary equipment, NFC card, is used to make the EUT (NFC) continuously transmitting signal (Power Level: Default) at 13.56MHz and is placed around 1 cm gap to the EUT.



### 3. Test Results

#### 3.1 AC Power Line Conducted Emissions Measurement

##### 3.1.1 Limit of AC Conducted Emission

For equipment 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.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	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.

For terminal test result, the testing follows FCC KDB 174176.

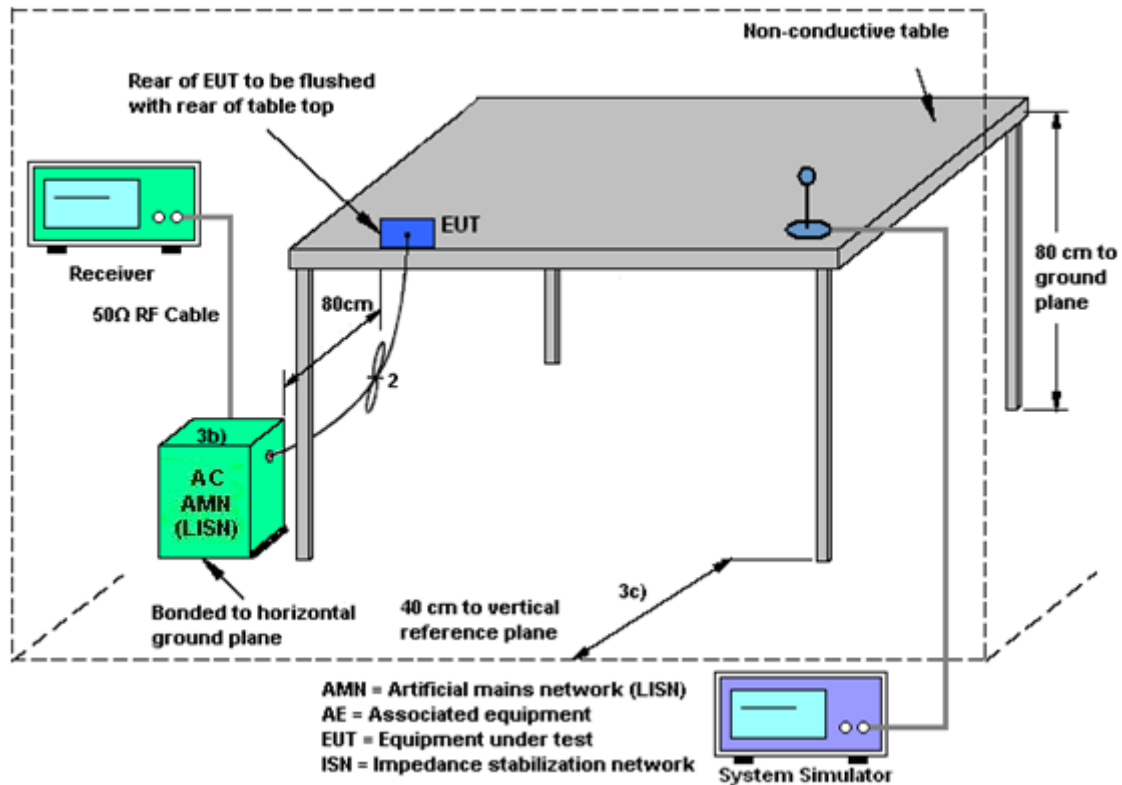
##### 3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

##### 3.1.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9 kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

### 3.1.4 Test setup



### 3.1.5 Test Result of AC Conducted Emission

Please refer to Appendix A.

**Note:**

(1) with antenna

Remark: 13.560MHz is the NFC RF fundamental signal.

(2) with dummy load

Remark: Only the fundamental NFC signal needs to be retested per C63.4.

## 3.2 20dB and 99% OBW Spectrum Bandwidth Measurement

### 3.2.1 Limit

Intentional radiators must be designed to ensure that the 20 dB and 99% emission bandwidth in the specific band 13.553~13.567 MHz.

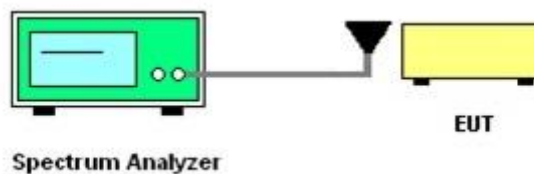
### 3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

### 3.2.3 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max Hold Mode.
2. The resolution bandwidth of 1 kHz and the video bandwidth of 3 kHz were used.
3. Measured the spectrum width with power higher than 20 dB below carrier.
4. Measured the 99% OBW.

### 3.2.4 Test Setup



### 3.2.5 Test Result of RF Near Field Test Items

Please refer to Appendix B.

### 3.3 Frequency Stability Measurement

#### 3.3.1 Limit

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) 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 by using a new battery.

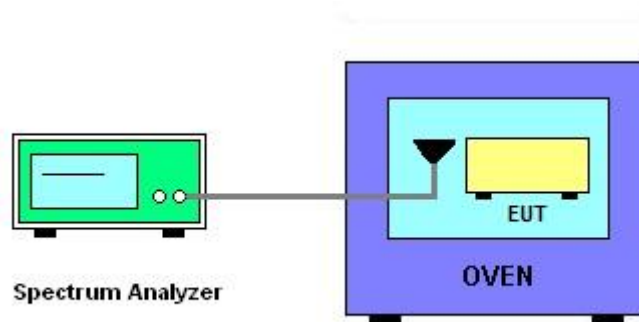
#### 3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

#### 3.3.3 Test Procedures

1. The spectrum analyzer connected via a receive antenna placed near the EUT.
2. EUT has transmitted signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire emissions bandwidth.
4. Set RBW = 1 kHz, VBW = 3 kHz with peak detector and maxhold settings.
5. The  $f_c$  is declaring of channel frequency. Then the frequency error formula is  $(f_c - f)/f_c \times 10^6$  ppm and the limit is less than  $\pm 100$ ppm.
6. Extreme temperature rule is -20°C~50°C.

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of RF Near Field Test Items

Please refer to Appendix B.

### 3.4 Field Strength of Fundamental Emissions and Mask Measurement

#### 3.4.1 Limit

Rules and specifications	FCC CFR 47 Part 15 section 15.225			
Description	Compliance with the spectrum mask is tested with RBW set to 9kHz.			
Freq. of Emission (MHz)	Field Strength ( $\mu$ V/m) at 30m	Field Strength (dB $\mu$ V/m) at 30m	Field Strength (dB $\mu$ V/m) at 10m	Field Strength (dB $\mu$ V/m) at 3m
1.705~13.110	30	29.5	48.58	69.5
13.110~13.410	106	40.5	59.58	80.5
13.410~13.553	334	50.5	69.58	90.5
13.553~13.567	15848	84.0	103.08	124.0
13.567~13.710	334	50.5	69.58	90.5
13.710~14.010	106	40.5	59.58	80.5
14.010~30.000	30	29.5	48.58	69.5

**Remark:**

1. The field strength test result is in 3m test distance, follow test rules the test data use distance extrapolation factor and reported in this report at 30m test result.
2. Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB)

#### 3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

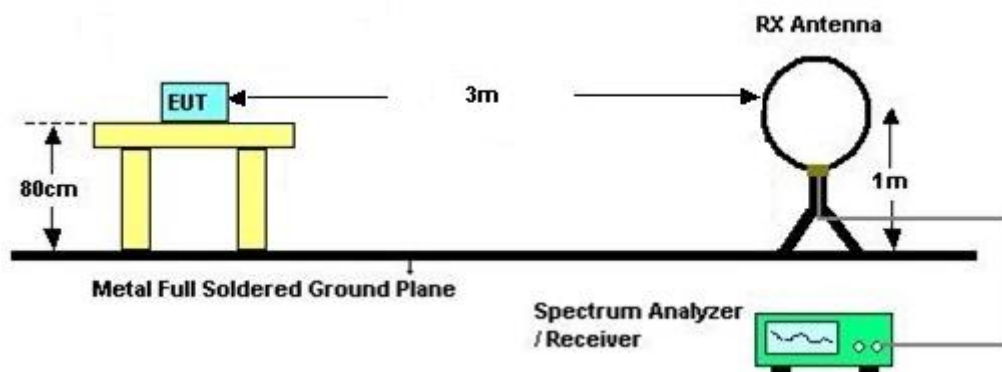
### 3.4.3 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT is placed on the top of the turntable 0.8 meter above ground. The phase center of the loop receiving antenna mounted antenna tower is placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable is rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the receiving antenna is fixed at one meter above ground to find the maximum emissions field strength.
4. For Fundamental emissions, use the receiver to measure QP reading.
5. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
6. Compliance with the spectrum mask is tested with RBW set to 9 kHz.

Note: Emission level (dBμV/m) = 20 log Emission level (μV/m).

### 3.4.4 Test Setup

For radiated test below 30MHz



### 3.4.5 Test Result of Field Strength of Fundamental Emissions and Mask

Please refer to Appendix C.

### 3.5 Radiated Emissions Measurement

#### 3.5.1 Limit

The field strength of any emissions which appear outside of 13.110 ~14.010MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength ( $\mu$ V/m)	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

#### 3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

#### 3.5.3 Measuring Instrument Setting

The following table is the setting of receiver:

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

**Note:** The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz and 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

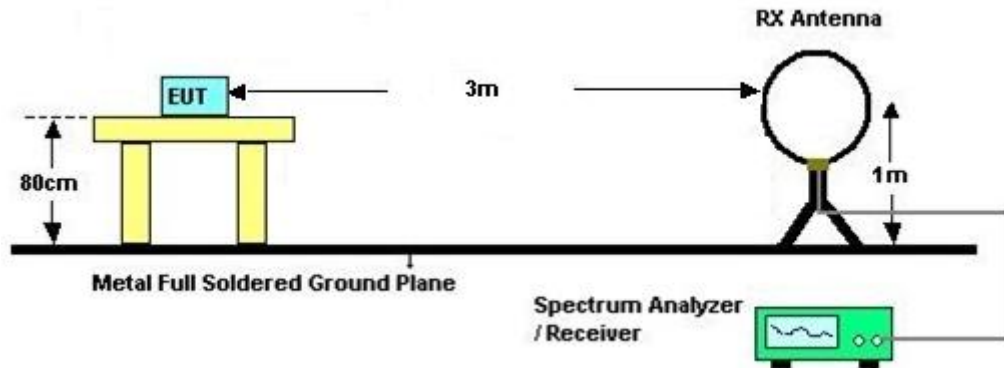
### 3.5.4 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT is placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower is placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable is rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna is varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower is scanned (from 1 M to 4 M) and then the turntable is rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
7. In case the emission is lower than 30 MHz, loop antenna has to be used for measurement and the recorded data shall be QP measured by receiver.

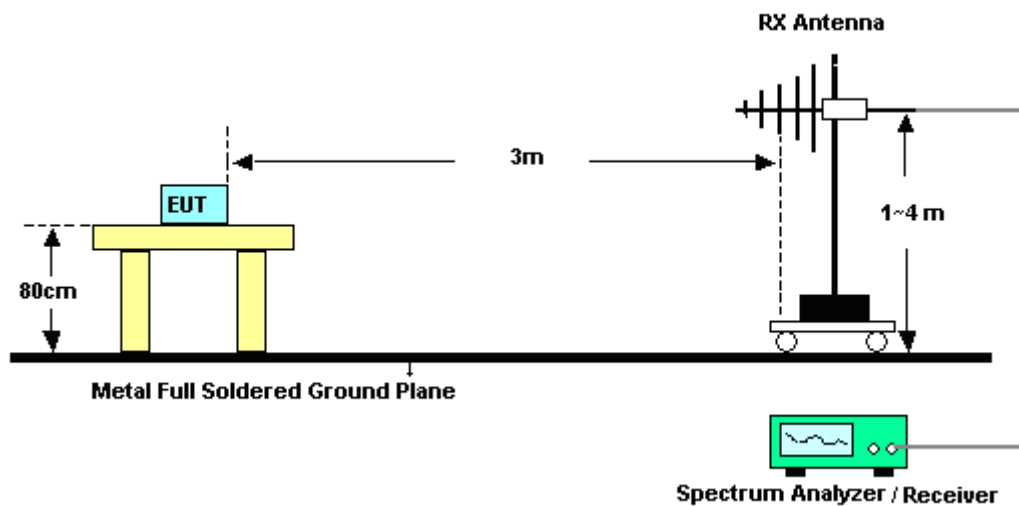


### 3.5.5 Test Setup

For radiated test below 30MHz



For radiated test above 30MHz



### 3.5.6 Test Result of Radiated Emissions Measurement

Please refer to Appendix C.

**Remark:** There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



## **3.6 Antenna Requirements**

### **3.6.1 Standard Applicable**

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

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 rule.

### **3.6.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.



## 4. List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~50 MHz	Sep. 07, 2021	Jan. 17, 2022~ Jan. 18, 2022	Sep. 06, 2022	Radiation (03CH11-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 09, 2021	Jan. 17, 2022~ Jan. 18, 2022	Oct. 08, 2022	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 10, 2021	Jan. 17, 2022~ Jan. 18, 2022	Dec. 09, 2022	Radiation (03CH11-HY)
Filter	Wainwright	WHK20/1000C 7/40SS	SN2	20M High Pass	Sep. 13, 2021	Jan. 17, 2022~ Jan. 18, 2022	Sep. 12, 2022	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-001053	N/A	N/A	Jan. 17, 2022~ Jan. 18, 2022	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Jan. 17, 2022~ Jan. 18, 2022	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Jan. 17, 2022~ Jan. 18, 2022	N/A	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 15, 2021	Jan. 17, 2022~ Jan. 18, 2022	Oct. 14, 2022	Radiation (03CH11-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY55420170	20MHz~8.4GHz	Jul. 15, 2021	Jan. 17, 2022~ Jan. 18, 2022	Jul. 14, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	Jan. 17, 2022~ Jan. 18, 2022	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz~40GHz	Mar. 11, 2021	Jan. 17, 2022~ Jan. 18, 2022	Mar. 10, 2022	Radiation (03CH11-HY)
5kVA AC Power Source	TESEQ	NSG 1007	1521A01677	N/A	Jun. 08, 2021	Jan. 13, 2022	Jun. 07, 2022	RF Near Field (TH03-HY)
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 01, 2021	Jan. 13, 2022	Feb. 28, 2022	RF Near Field (TH03-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Sep. 30, 2021	Jan. 13, 2022	Sep. 29, 2022	RF Near Field (TH03-HY)
Temperature & Humidity Cabinet Chamber	ESPEC	LHU-113	1012005860	-20℃~85℃	Dec. 09, 2021	Jan. 13, 2022	Dec. 08, 2022	RF Near Field (TH03-HY)
Coupling loop antenna	EMCI	LF R 400	N/A	100KHz~50MHz	N/A	Jan. 13, 2022	N/A	RF Near Field (TH03-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jan. 27, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Jan. 27, 2022	Nov. 30, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Jan. 27, 2022	Dec. 02, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2021	Jan. 27, 2022	Nov. 15, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Jan. 27, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Jan. 27, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Jan. 27, 2022	Dec. 29, 2022	Conduction (CO05-HY)

## 5. Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2U_c(y)$ )	3.1 dB
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### Uncertainty of Radiated Emission Measurement (9 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2U_c(y)$ )	3.7 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2U_c(y)$ )	5.8 dB
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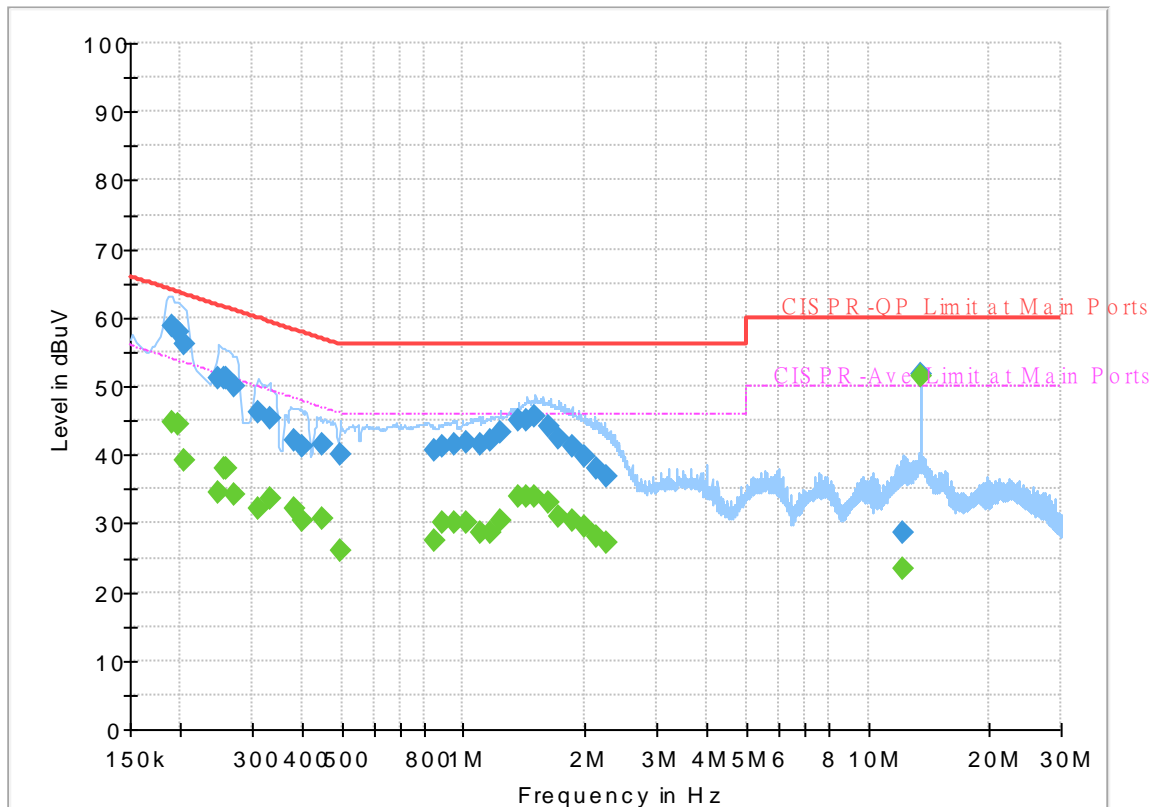
## Appendix A. Test Results of Conducted Emission Test

Test Engineer :	Calvin Wang	Temperature :	23~26°C
		Relative Humidity :	45~55%

# <Original> EUT Information

Report NO : 210628  
 Test Mode : Mode 1  
 Test Voltage : Power From System  
 Phase : Line

Full Spectrum



## Final\_Result

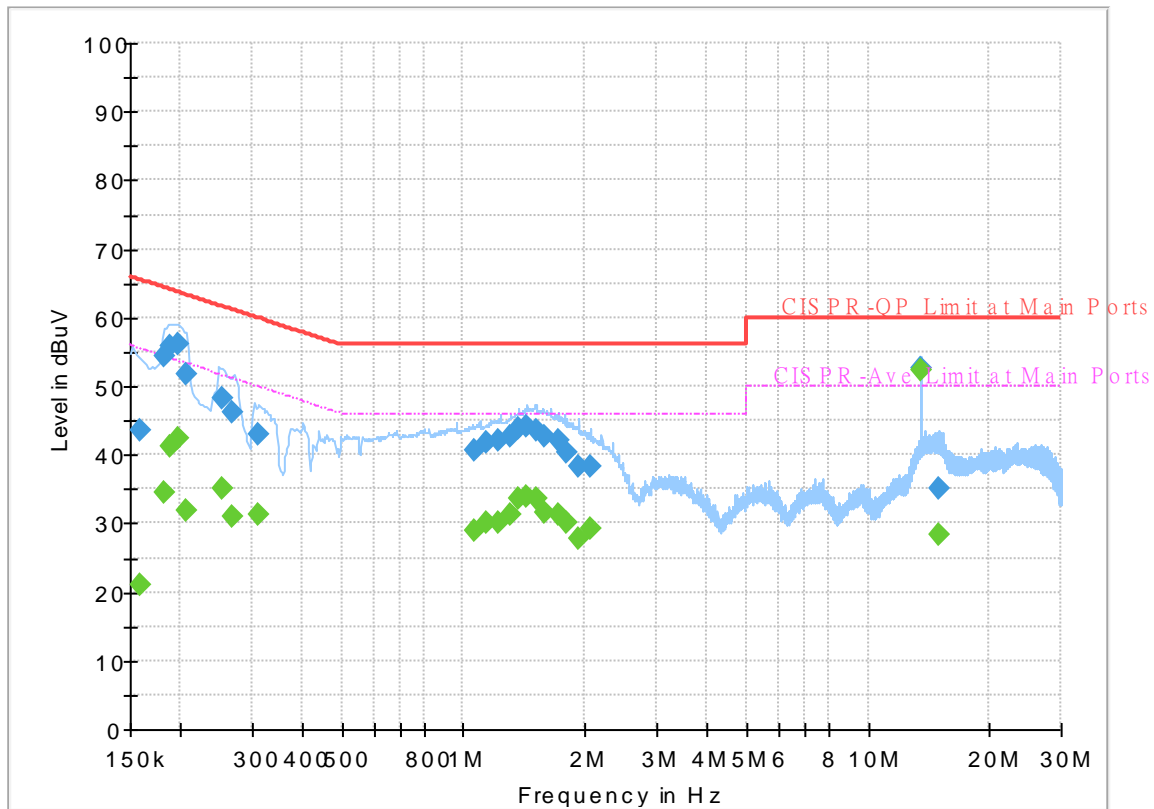
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.190500	---	44.74	54.02	9.28	L1	OFF	19.6
0.190500	58.74	---	64.02	5.28	L1	OFF	19.6
0.197250	---	44.41	53.73	9.32	L1	OFF	19.6
0.197250	57.86	---	63.73	5.87	L1	OFF	19.6
0.204000	---	39.11	53.45	14.34	L1	OFF	19.6
0.204000	56.17	---	63.45	7.28	L1	OFF	19.6
0.249000	---	34.61	51.79	17.18	L1	OFF	19.6
0.249000	51.26	---	61.79	10.53	L1	OFF	19.6
0.255750	---	37.92	51.57	13.65	L1	OFF	19.6
0.255750	51.21	---	61.57	10.36	L1	OFF	19.6
0.260250	---	37.94	51.42	13.48	L1	OFF	19.6
0.260250	51.09	---	61.42	10.33	L1	OFF	19.6
0.271500	---	34.09	51.07	16.98	L1	OFF	19.6
0.271500	50.00	---	61.07	11.07	L1	OFF	19.6
0.312000	---	32.11	49.92	17.81	L1	OFF	19.6
0.312000	46.24	---	59.92	13.68	L1	OFF	19.6
0.332250	---	33.77	49.40	15.63	L1	OFF	19.6
0.332250	45.29	---	59.40	14.11	L1	OFF	19.6
0.384000	---	32.02	48.19	16.17	L1	OFF	19.6
0.384000	42.07	---	58.19	16.12	L1	OFF	19.6
0.399750	---	30.51	47.86	17.35	L1	OFF	19.6

0.399750	41.32	---	57.86	16.54	L1	OFF	19.6
0.449250	---	30.58	46.89	16.31	L1	OFF	19.6
0.449250	41.44	---	56.89	15.45	L1	OFF	19.6
0.496500	---	25.92	46.06	20.14	L1	OFF	19.6
0.496500	40.20	---	56.06	15.86	L1	OFF	19.6
0.845250	---	27.56	46.00	18.44	L1	OFF	19.6
0.845250	40.78	---	56.00	15.22	L1	OFF	19.6
0.883500	---	30.22	46.00	15.78	L1	OFF	19.6
0.883500	41.32	---	56.00	14.68	L1	OFF	19.6
0.948750	---	30.05	46.00	15.95	L1	OFF	19.6
0.948750	41.48	---	56.00	14.52	L1	OFF	19.6
1.018500	---	30.10	46.00	15.90	L1	OFF	19.6
1.018500	41.81	---	56.00	14.19	L1	OFF	19.6
1.099500	---	28.58	46.00	17.42	L1	OFF	19.6
1.099500	41.63	---	56.00	14.37	L1	OFF	19.6
1.169250	---	28.60	46.00	17.40	L1	OFF	19.6
1.169250	42.04	---	56.00	13.96	L1	OFF	19.6
1.232250	---	30.54	46.00	15.46	L1	OFF	19.6
1.232250	43.16	---	56.00	12.84	L1	OFF	19.6
1.369500	---	33.95	46.00	12.05	L1	OFF	19.6
1.369500	44.90	---	56.00	11.10	L1	OFF	19.6
1.439250	---	33.88	46.00	12.12	L1	OFF	19.6
1.439250	44.97	---	56.00	11.03	L1	OFF	19.6
1.506750	---	34.05	46.00	11.95	L1	OFF	19.6
1.506750	45.49	---	56.00	10.51	L1	OFF	19.6
1.614750	---	33.03	46.00	12.97	L1	OFF	19.6
1.614750	44.13	---	56.00	11.87	L1	OFF	19.6
1.713750	---	30.96	46.00	15.04	L1	OFF	19.6
1.713750	42.39	---	56.00	13.61	L1	OFF	19.6
1.851000	---	30.35	46.00	15.65	L1	OFF	19.6
1.851000	41.25	---	56.00	14.75	L1	OFF	19.6
1.986000	---	29.41	46.00	16.59	L1	OFF	19.6
1.986000	39.84	---	56.00	16.16	L1	OFF	19.6
2.123250	---	28.02	46.00	17.98	L1	OFF	19.6
2.123250	38.01	---	56.00	17.99	L1	OFF	19.6
2.260500	---	27.27	46.00	18.73	L1	OFF	19.6
2.260500	36.99	---	56.00	19.01	L1	OFF	19.6
12.264000	---	23.35	50.00	26.65	L1	OFF	19.8
12.264000	28.54	---	60.00	31.46	L1	OFF	19.8
13.560000	---	51.51	50.00	-1.51	L1	OFF	19.8
13.560000	51.65	---	60.00	8.35	L1	OFF	19.8

## EUT Information

Report NO : 210628  
Test Mode : Mode 1  
Test Voltage : Power From System  
Phase : Neutral

Full Spectrum



## Final\_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.159000	---	21.18	55.52	34.34	N	OFF	19.6
0.159000	43.54	---	65.52	21.98	N	OFF	19.6
0.181500	---	34.38	54.42	20.04	N	OFF	19.6
0.181500	54.37	---	64.42	10.05	N	OFF	19.6
0.188250	---	41.25	54.11	12.86	N	OFF	19.6
0.188250	55.72	---	64.11	8.39	N	OFF	19.6
0.197250	---	42.34	53.73	11.39	N	OFF	19.6
0.197250	56.27	---	63.73	7.46	N	OFF	19.6
0.206250	---	31.75	53.36	21.61	N	OFF	19.6
0.206250	51.84	---	63.36	11.52	N	OFF	19.6
0.253500	---	34.98	51.64	16.66	N	OFF	19.6
0.253500	48.13	---	61.64	13.51	N	OFF	19.6
0.269250	---	31.11	51.14	20.03	N	OFF	19.6
0.269250	46.10	---	61.14	15.04	N	OFF	19.6
0.312000	---	31.28	49.92	18.64	N	OFF	19.6
0.312000	43.11	---	59.92	16.81	N	OFF	19.6
1.068000	---	28.88	46.00	17.12	N	OFF	19.6
1.068000	40.73	---	56.00	15.27	N	OFF	19.6
1.144500	---	30.21	46.00	15.79	N	OFF	19.6
1.144500	41.68	---	56.00	14.32	N	OFF	19.6
1.216500	---	30.09	46.00	15.91	N	OFF	19.6

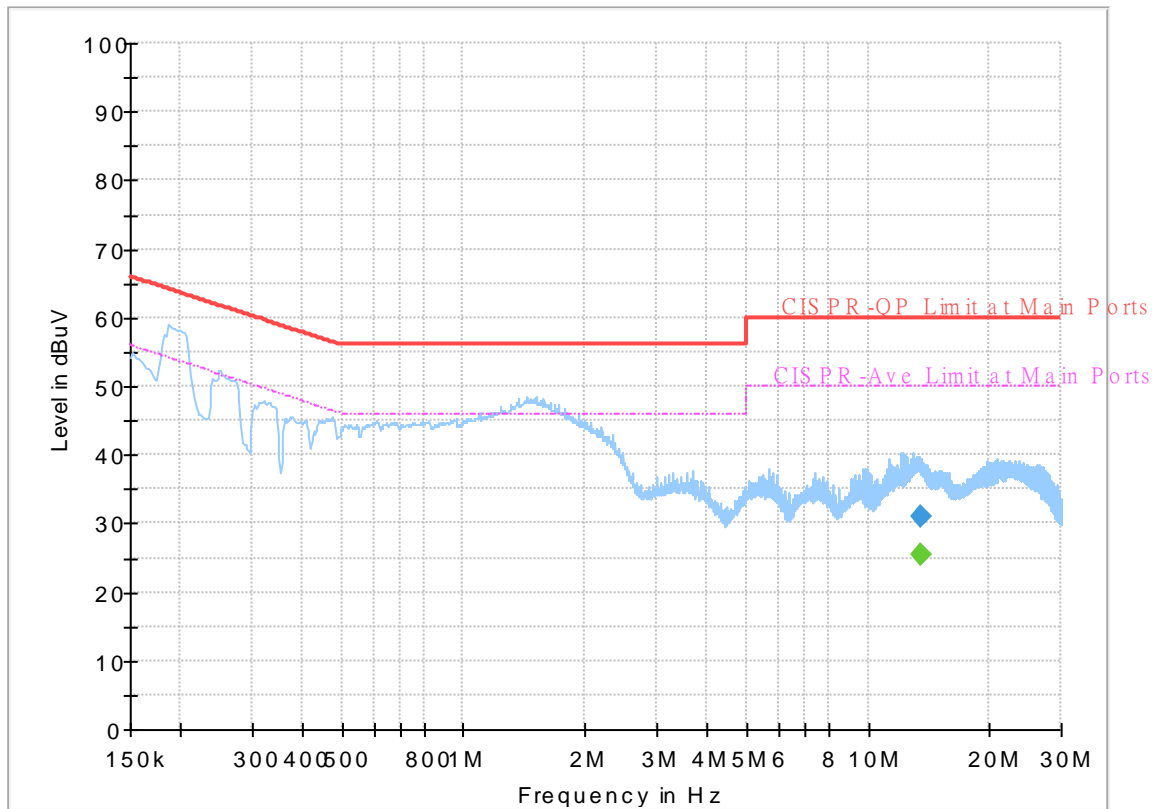


1.216500	42.11	---	56.00	13.89	N	OFF	19.6
1.302000	---	31.22	46.00	14.78	N	OFF	19.6
1.302000	42.67	---	56.00	13.33	N	OFF	19.6
1.369500	---	33.53	46.00	12.47	N	OFF	19.6
1.369500	43.90	---	56.00	12.10	N	OFF	19.6
1.439250	---	34.03	46.00	11.97	N	OFF	19.6
1.439250	44.20	---	56.00	11.80	N	OFF	19.6
1.509000	---	33.51	46.00	12.49	N	OFF	19.6
1.509000	43.70	---	56.00	12.30	N	OFF	19.6
1.594500	---	31.53	46.00	14.47	N	OFF	19.6
1.594500	42.70	---	56.00	13.30	N	OFF	19.6
1.713750	---	31.30	46.00	14.70	N	OFF	19.6
1.713750	42.12	---	56.00	13.88	N	OFF	19.6
1.801500	---	30.13	46.00	15.87	N	OFF	19.6
1.801500	40.46	---	56.00	15.54	N	OFF	19.6
1.920750	---	27.64	46.00	18.36	N	OFF	19.6
1.920750	38.32	---	56.00	17.68	N	OFF	19.6
2.055750	---	29.14	46.00	16.86	N	OFF	19.6
2.055750	38.44	---	56.00	17.56	N	OFF	19.6
13.560000	---	52.38	50.00	-2.38	N	OFF	19.9
13.560000	52.64	---	60.00	7.36	N	OFF	19.9
14.946000	---	28.43	50.00	21.57	N	OFF	19.9
14.946000	34.99	---	60.00	25.01	N	OFF	19.9

## <Terminal> EUT Information

Report NO : 210628  
Test Mode : Mode 1  
Test Voltage : Power From System  
Phase : Line

Full Spectrum



## Final\_Result

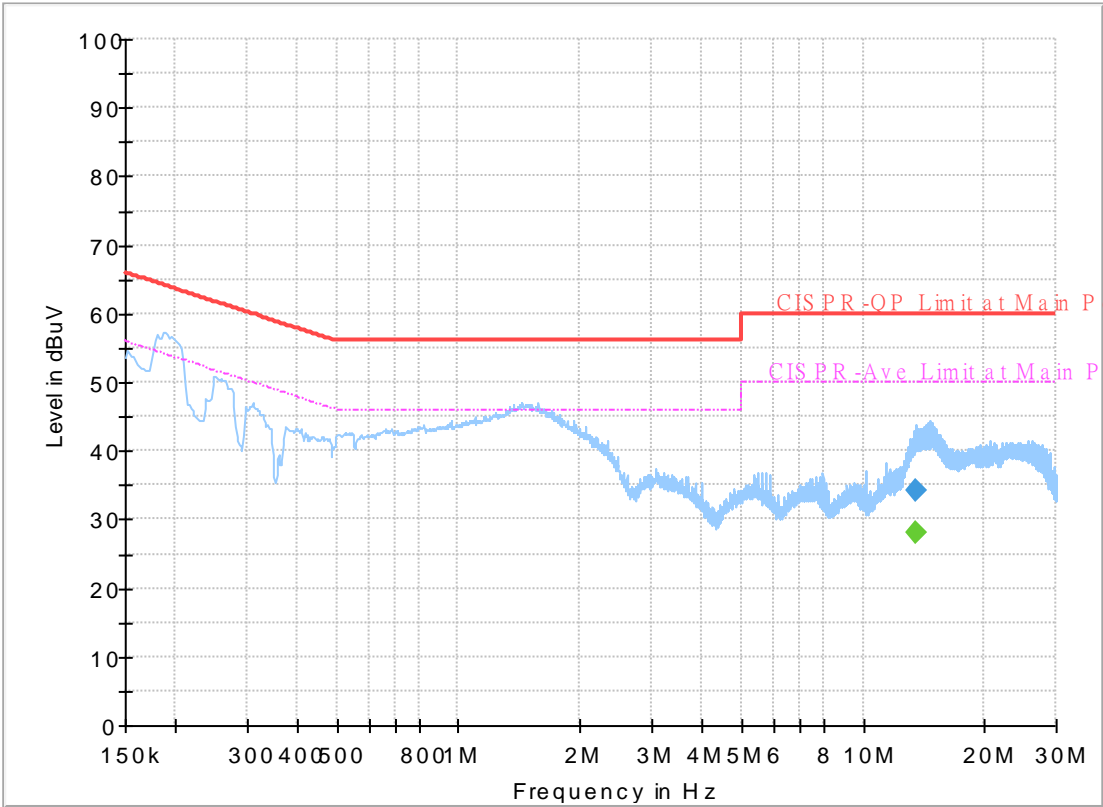
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
13.560000	---	25.50	50.00	24.50	L1	OFF	19.8
13.560000	31.11	---	60.00	28.89	L1	OFF	19.8

EUT Information

Report NO :  
Test Mode :  
Test Voltage :  
Phase :

210628  
Mode 1  
Power From System  
Neutral

Full Spectrum

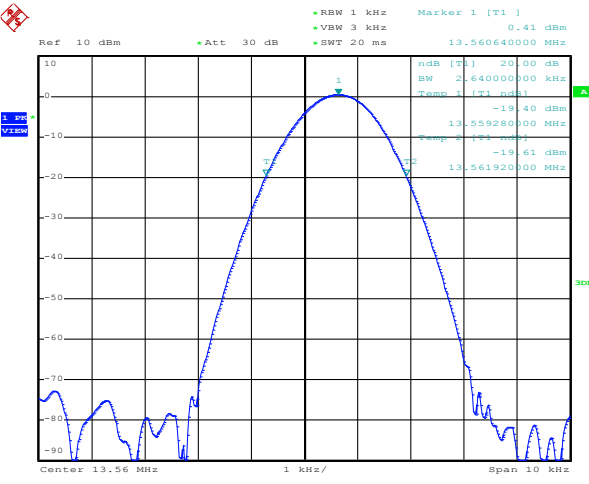
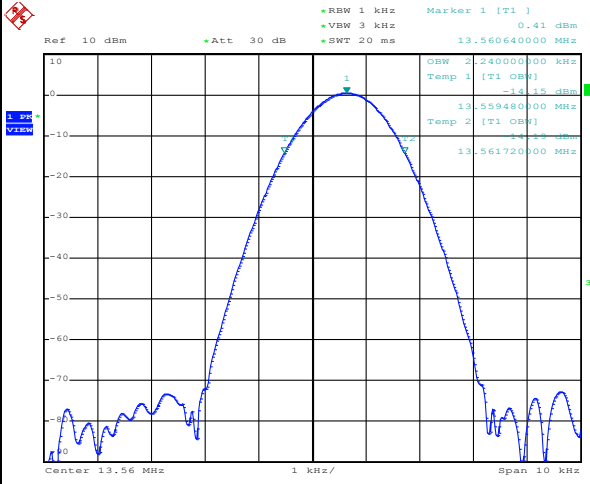


Final\_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
13.560000	---	27.98	50.00	22.02	N	OFF	19.9
13.560000	34.24	---	60.00	25.76	N	OFF	19.9

## Appendix B. Test Results of RF Near Field Test Items

### B1. Test Result of 20dB Spectrum Bandwidth

Test mode		NFC Tx		Test Frequency (MHz)	13.56
				<p>Ref 10 dBm Att 30 dB RBW 1 kHz VBW 3 kHz SWT 20 ms</p> <p>Marker 1 [T1] 0.41 dBm</p> <p>13.56064000 MHz</p> <p>ndB [T1] 20.00 dB</p> <p>BW 2.64000000 kHz</p> <p>Temp 1 [T1] ndB</p> <p>13.55928000 MHz</p> <p>Temp 2 [T1] ndB</p> <p>13.56192000 MHz</p> <p>Center 13.56 MHz 1 kHz/ Span 10 kHz</p> <p>Date: 13.JAN.2022 13:42:08</p>	
20dB Bandwidth (kHz)		2.640		99% OccupiedBW(kHz)	2.240
Frequency range (MHz)		$f_L > 13.553$		13.55928	Test Result
		$f_H < 13.567$		13.56192	Complies

**Remark:** Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

**B2. Test Result of Frequency Stability**

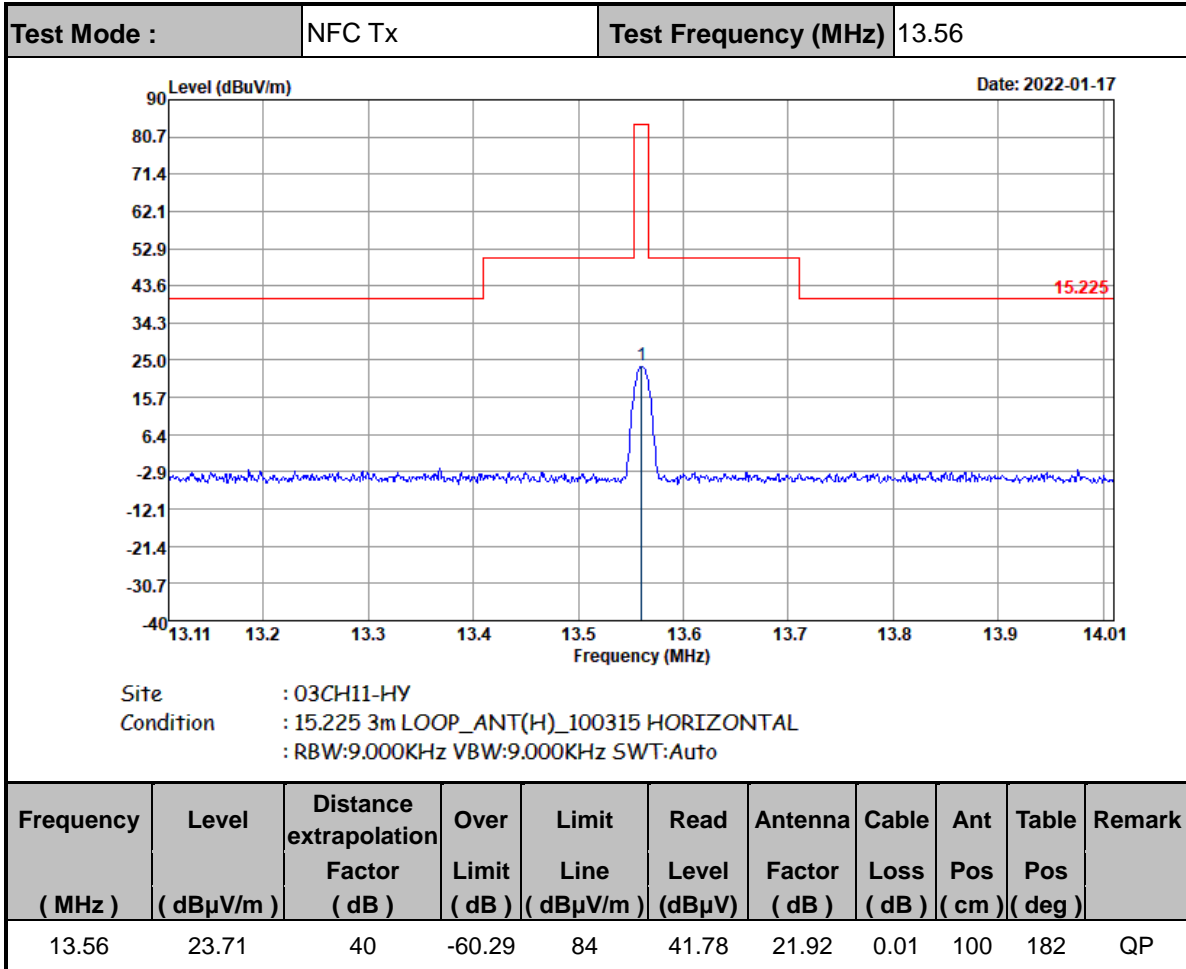
Voltage vs. Frequency Stability		Temperature vs. Frequency Stability		
Voltage (Vac)	Measurement Frequency (MHz)	Temperature (°C)	Time	Measurement Frequency (MHz)
120	13.560600	-20	0	13.560640
102	13.560600		2	13.560640
138	13.560600		5	13.560640
			10	13.560640
		-10	0	13.560640
			2	13.560640
			5	13.560640
			10	13.560640
		0	0	13.560620
			2	13.560620
			5	13.560620
			10	13.560620
		10	0	13.560600
			2	13.560600
			5	13.560600
			10	13.560610
		20	0	13.560600
			2	13.560600
			5	13.560600
			10	13.560600
		30	0	13.560560
			2	13.560560
			5	13.560560
			10	13.560560
		40	0	13.560560
			2	13.560560
			5	13.560550
			10	13.560560

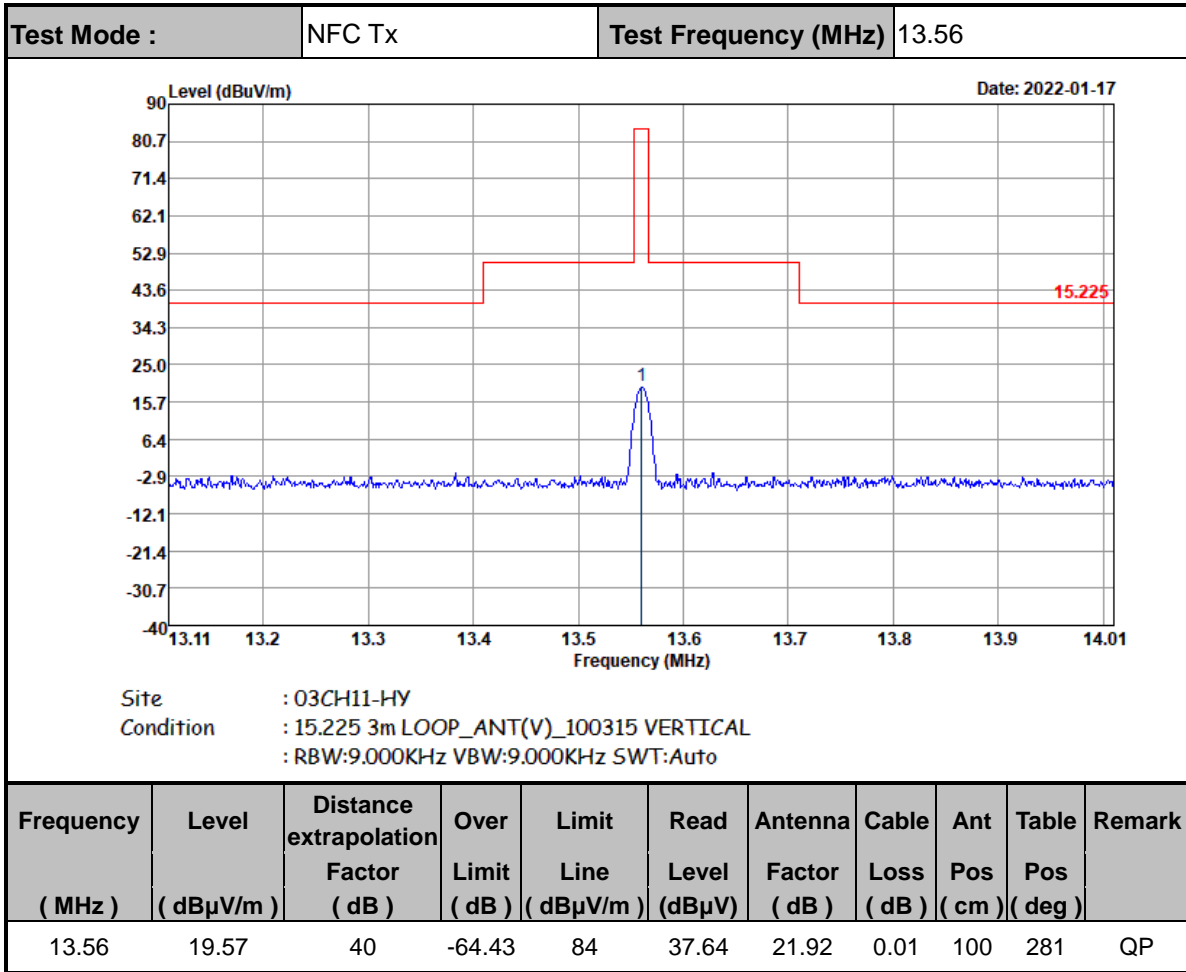


Voltage vs. Frequency Stability		Temperature vs. Frequency Stability		
Voltage (Vac)	Measurement Frequency (MHz)	Temperature (°C)	Time	Measurement Frequency (MHz)
		50	0	13.560590
			2	13.560580
			5	13.560580
			10	13.560580
Max.Deviation (MHz)	0.000600	Max.Deviation (MHz)		0.000640
Max.Deviation (ppm)	44.2478	Max.Deviation (ppm)		47.1976
Limit	FS < ±100 ppm	Limit		FS < ±100 ppm
Test Result	PASS	Test Result		PASS

## Appendix C. Test Results of Radiated Test Items

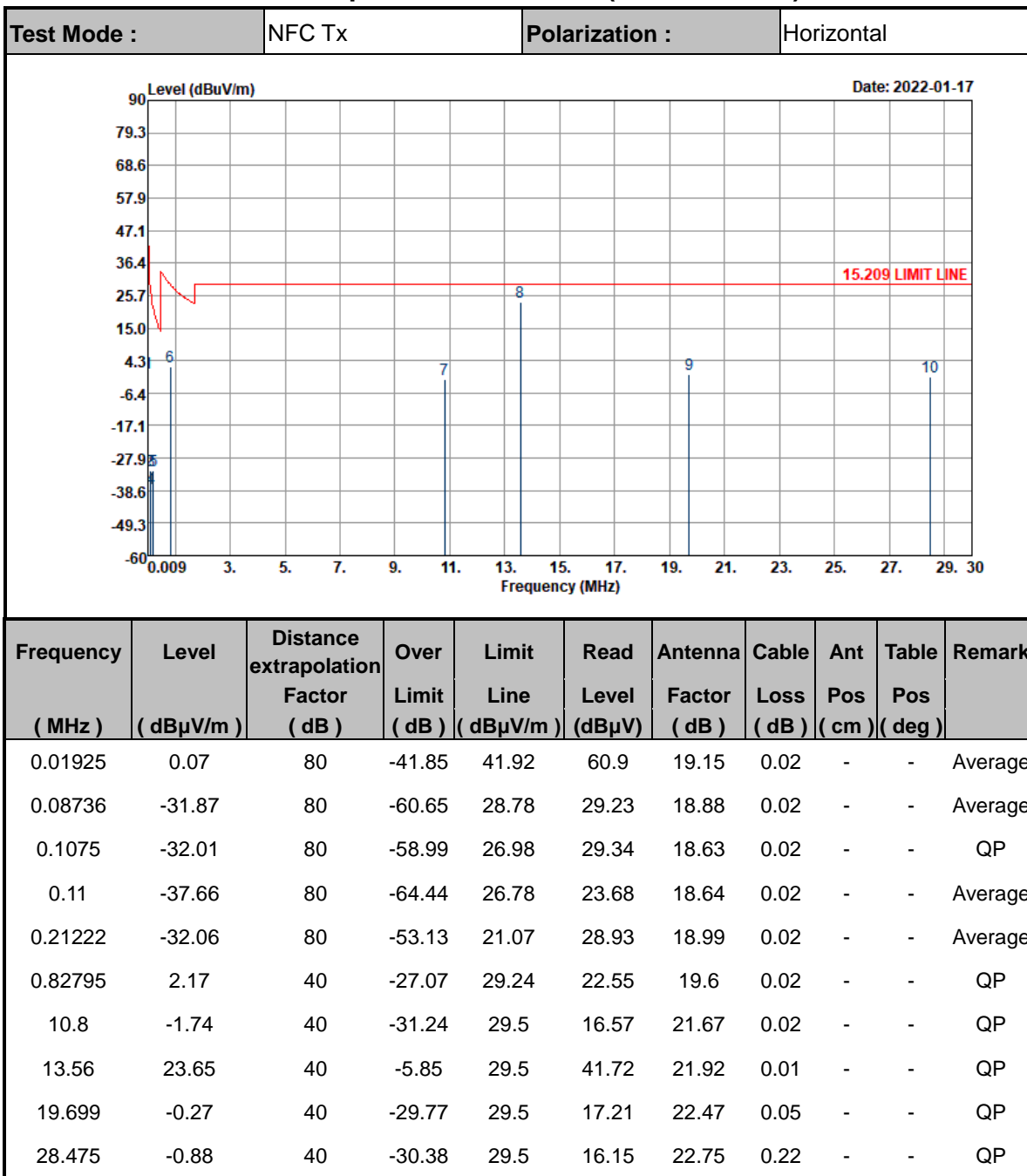
### C1. Test Result of Field Strength of Fundamental Emissions

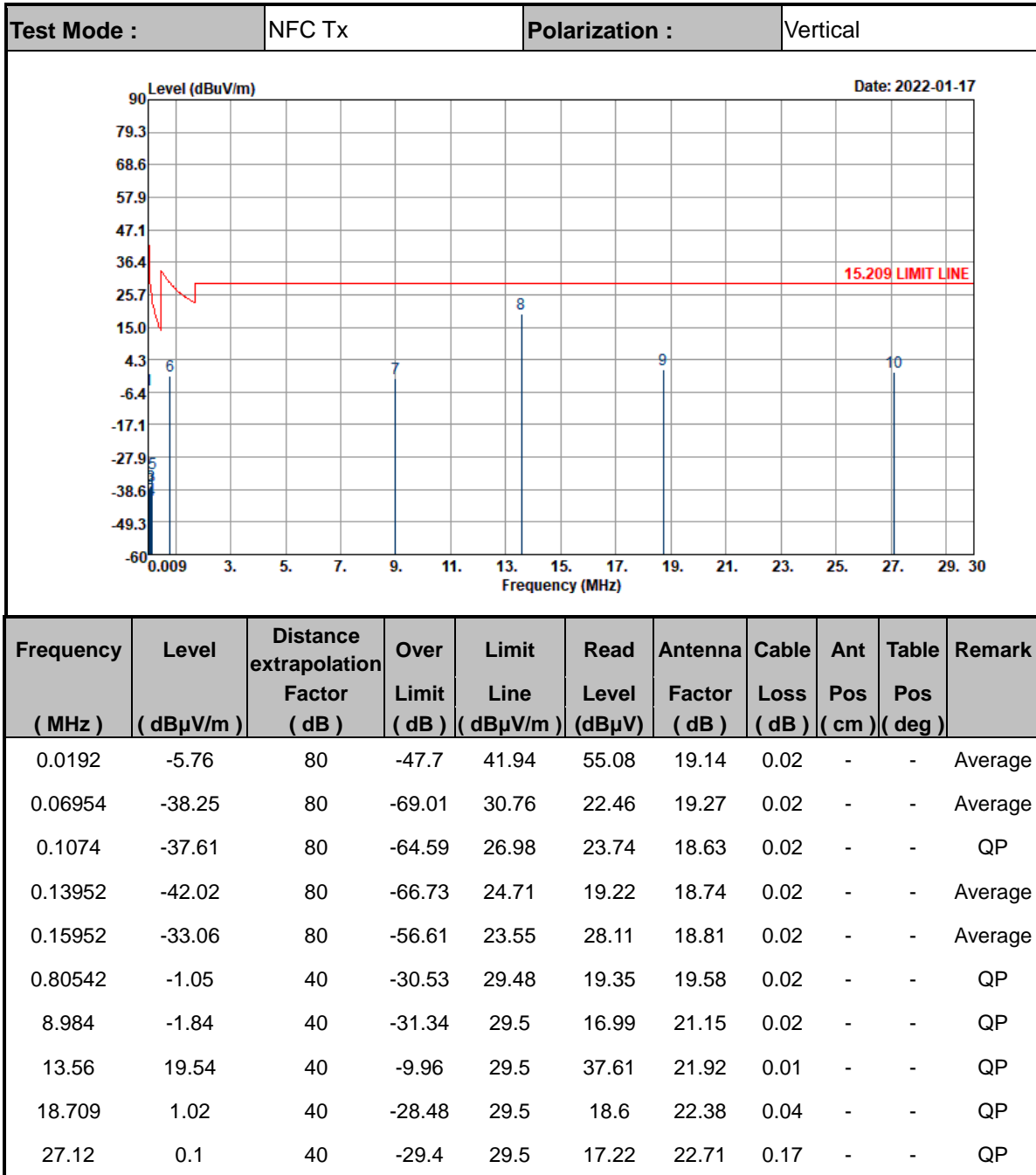



**Note :**

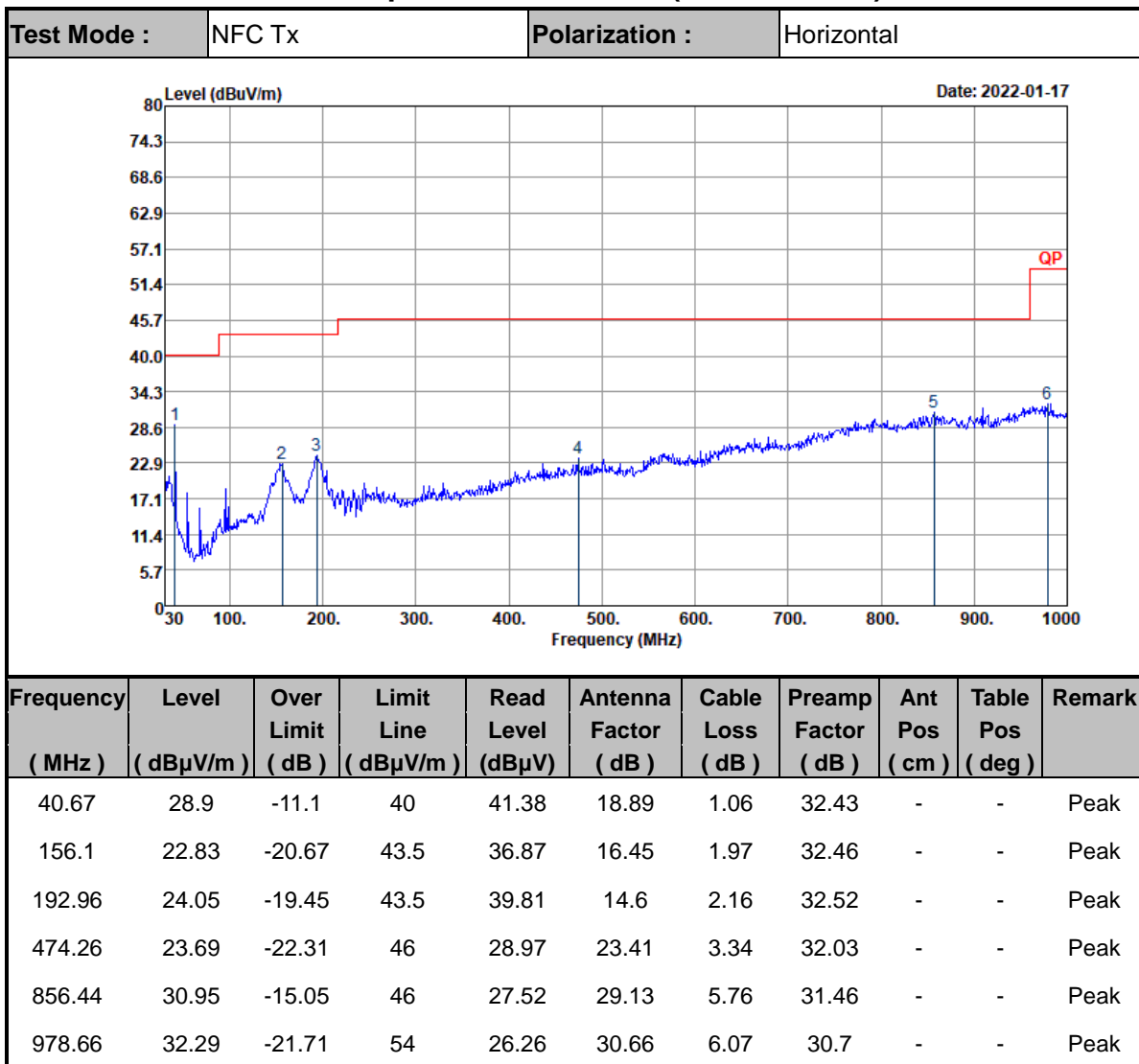
1. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
2. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.

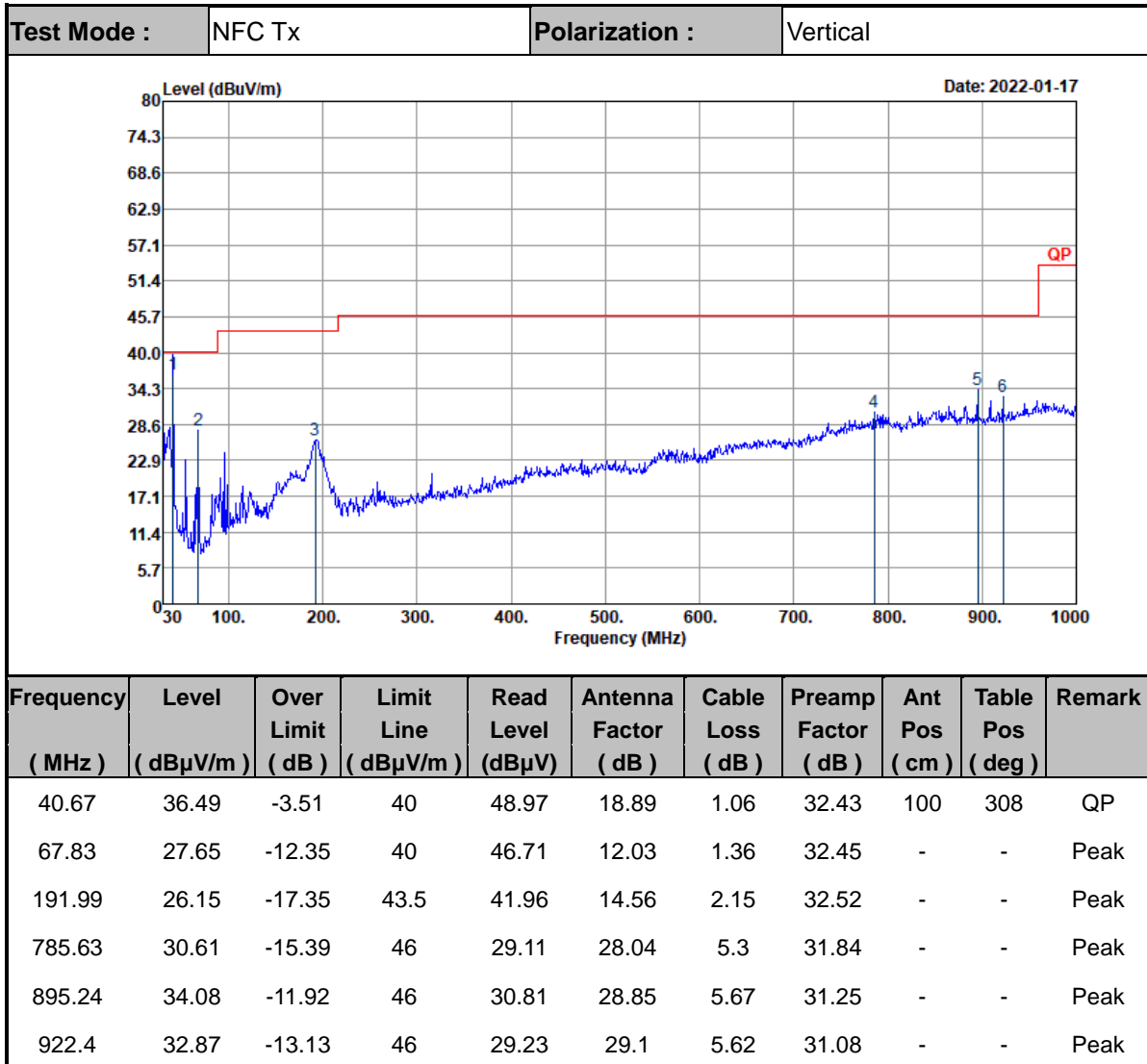


**C2. Results of Radiated Spurious Emissions (9 kHz~30MHz)**



**Note :**

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
3. Level = Antenna Factor + Cable Loss + Read Level - Distance extrapolation factor.
4. 13.56 MHz is fundamental signal which can be ignored

**C3. Results of Radiated Spurious Emissions (30MHz~1GHz)**



**Note:**

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Emission level (dBμV/m) = 20 log Emission level (μV/m).
3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor= Level.
4. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.