



NFC TEST REPORT

No.I22Z61952-IOT07

for

Honor Device Co., Ltd.

Smart Phone

Model Name: RMO-NX1

FCC ID: 2AYGCRMO-NX1

with

Hardware Version: HN2RMOM

Software Version: 6.1.0.21(C900E21R1P1)

Issued Date: 2022-11-11

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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No. I22Z61952-IOT07

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z61952-IOT07	Rev.0	1 st edition	2022-11-11

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China 100191

Location 2: CTTL (BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology Development
Area, Beijing, P. R. China 100176

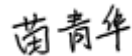
1.3. Testing Environment

Normal Temperature: 15-35°C
Extreme Temperature: -20/+55°C
Normal Relative Humidity: 10-75%
Normal Air Pressure 86Kpa-106Kpa

1.4. Project data

Testing Start Date: 2022-10-19
Testing End Date: 2022-11-10

1.5. Signature



Miao Qinghua

(Prepared this test report)



Zhou Bin

(Reviewed this test report)



Pang Shuai

(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Honor Device Co., Ltd.
Address: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Contact: /
Telephone: /
Email: /

2.2. Manufacturer Information

Company Name: Honor Device Co., Ltd.
Address: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Contact: /
Telephone: /
Email: /

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Smart Phone
Model Name	RMO-NX1
FCC ID	2AYGCRM0-NX1
GSM Frequency bands	850/1900
WCDMA Frequency bands	FDD II/V
LTE Frequency bands	2/4/5/7/38/41
5G NR Frequency bands	n7/n38/n41/n78
Operating temperature	0/+35°C
Extreme low voltage	3.6 V
Normal voltage	3.87 V
Extreme high voltage	4.45 V

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version
UT03a	867370060000600/ 867370060005401	HN2RMOM	6.1.0.21(C900E21R1P1)
UT08a	867370060002101/ 867370060006904	HN2RMOM	6.1.0.21(C900E21R1P1)
UT10a	867370060000493/ 867370060005294	HN2RMOM	6.1.0.21(C900E21R1P1)
UT11a	867370060003117/ 86737006007910	HN2RMOM	6.1.0.21(C900E21R1P1)
UT04a	867370060002200/ 867370060007001	HN2RMOM	6.1.0.21(C900E21R1P1)
UT18a	867370060001640/ 867370060006441	HN2RMOM	6.1.0.21(C900E21R1P1)
UT19a	867370060001707/ 867370060006508	HN2RMOM	6.1.0.21(C900E21R1P1)

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Name	Model	Manufacturer
AE1-1	Adapter	HW-100400E01	Honor Device Co., Ltd.
AE1-2	Adapter	HW-100400B01	Honor Device Co., Ltd.
AE1-3	Adapter	HW-100400U01	Honor Device Co., Ltd.
AE2-1	USB Cable	WA0052	Broad
AE2-2	USB Cable	CUDU01B-HC385-EH	FOXCONN
AE2-3	USB Cable	L99UC144-CS-H	LUXSHARE

AE2-4	USB Cable	AU2-CRO009HF	Freeport
AE2-5	USB Cable	2120-00062-0	MING JI
AE2-6	USB Cable	2120-00060-0	MING JI
AE2-7	USB Cable	L99UC139-CS-H	LUXSHARE
AE3-1	Headset	1293-3283-3.5mm-339	Quancheng
AE3-2	Headset	EPAB542-2WH05-DH	FOXCONN
AE3-3	Headset	MEND1532B528C00	Lianchuang
AE4-1	Battery	HB506492EFW	Honor Device Co., Ltd. (Sunwoda)
AE4-2	Battery	HB506492EFW	Honor Device Co., Ltd. (Desay)
AE4-3	Battery	HB506492EFW	Honor Device Co., Ltd. (CosMX)
AE5-1	Type-C to 3.5mm	USB042020090AW7	Lianchuang
AE5-2	Type-C to 3.5mm	6001-7001-TC-348	Quancheng

*AE ID: is used to identify the ancillary equipment in the lab internally.

3.4. EUT Set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.NFC1-1	UT10a/UT18a + AE4-2 + AE5-1 + AE3-1 + NFC Card	NFC + Headset
Set.NFC1-2	UT11a/UT19a + AE4-3 + AE5-2 + AE3-2 + NFC Card	NFC + Headset
Set.NFC1-3	UT08a/UT04a + AE4-1 + AE5-1 + AE3-3 + NFC Card	NFC + Headset
Set.NFC2-1	UT08a/UT04a + AE4-1 + AE2-1 + AE1-3 + NFC Card	NFC + Charger
Set.NFC2-2	UT10a/UT18a + AE4-2 + AE2-2 + AE1-3 + NFC Card	NFC + Charger
Set.NFC2-3	UT11a/UT19a + AE4-3 + AE2-3 + AE1-3 + NFC Card	NFC + Charger
Set.NFC2-4	UT08a/UT04a + AE4-1 + AE2-4 + AE1-3 + NFC Card	NFC + Charger
Set.NFC2-5	UT08a/UT04a + AE4-1 + AE2-5 + AE1-3 + NFC Card	NFC + Charger
Set.NFC03	UT03a	---

The Transmit State of NFC: the NFC function is on. The EUT will transmit the NFC data and command continuously during the test.

The Transmit state without modulation: The EUT will transmit the CW signal at the operating frequency.

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters, referring to Annex A for detailed information, are supplied by the client or manufacturer, which are the bases of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
CFR 47 Part 2	Part 2 — Frequency Allocations and Radio Treaty Matters; General Rules and Regulations.	2019
CFR 47 Part 15	Part 15 — Radio Frequency Devices. Subpart C — Intentional Radiators. § 15.35 Measurement detector functions and bandwidths. § 15.207 Conducted limits. § 15.209 Radiated emission limits, general requirements. § 15.215 Additional provisions to the general radiated emission limitations. § 15.225 Operation within the band 13.110–14.010 MHz.	2019
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013

5. Test Results

5.1. Summary of Test Results

No	Test Cases	Clause in Regulation	Section in This Report	Verdict
1	Electric Field Strength of Fundamental Emissions	CFR 47 § 15.225(a)	B.1	P (Set. NFC1-1, Set. NFC1-2, Set. NFC1-3)
2	Electric Field Strength of Outside the Allocated Bands	CFR 47 § 15.225(b) CFR 47 § 15.225(c)		
3	Electric Field Radiated Emissions	CFR 47 § 15.209 CFR 47 § 15.225(d)	B.2	P (Set. NFC1-1, Set. NFC1-2, Set. NFC1-3)
			B.3	P (Set. NFC1-1, Set. NFC1-2, Set. NFC1-3, Set. NFC2-1, Set. NFC2-2, Set. NFC2-3, Set. NFC2-4, Set. NFC2-5)
4	Frequency Tolerance	CFR 47 § 15.225(e)	B.4	P(Set. NFC03)
5	20dB Bandwidth	CFR 47 § 15.215(c)	B.5	P(Set. NFC03)
6	Conducted Emissions	CFR 47 § 15.207	B.6	P (Set. NFC2-1, Set. NFC2-2, Set. NFC2-3, Set. NFC2-4, Set. NFC2-5)
The measurement is carried out according to ANSI C63.10. See ANNEX B for details.				

Test Conditions:

For this report, all the test cases listed above were tested under normal Temperature, Voltage, humidity and Air Pressure except the Frequency Tolerance test case. The specific conditions of Frequency Tolerance test case are listed in section B.4.3

See Table 3 for terms for result verdict:

Table 1 Terms for result verdict

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

5.2. Statements

The test cases listed in Section 5.1 of this report for the EUT specified in Section 3 were performed by CTTL according to the reference documents in Section 4.

The EUT meets all applicable requirements of the regulations and standards in Section 4.2.

6. Test Facilities Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1.	Spectrum Analyzer	FSL 6	100869	Rohde & Schwarz	2023-10-21	1 Year
2.	Climatic chamber	SH242	93008658	ESPEC	2023-02-21	2 Year
3.	Spectrum Analyzer	ESW 44	103015	R&S	2023-01-23	1 Year
4.	H-field Antenna	HFH2-Z2	829324/007	R&S	2022-12-23	1 Year
5.	EMI Antenna	VULB 9163	01223	Schwarzbeck	2023-07-25	1 Year
6.	Test Receiver	ESCI	100766	Rohde & Schwarz	2023-03-02	1 Year
7.	LISN	ENV216	101459	Rohde & Schwarz	2023-03-16	1 Year

7. Measurement Uncertainty

Item	Uncertainty
Frequency Tolerance	$U = 73 \text{ Hz}, k=2$
20dB Bandwidth	$U = 73 \text{ Hz}, k=2$
Radiated Emissions(9kHz-30MHz)	$U = 4.92 \text{ dB}, k=2$
Radiated Emissions (30MHz-1GHz)	$U = 5.18 \text{ dB}, k=2$
Conducted emission	$U = 3.10 \text{ dB}, k=2$



ANNEX A: EUT parameters

/

ANNEX B: Detailed Test Results

B.1. Electric Field Strength of Fundamental and Outside the Allocated bands

B.1.1. Reference

See CFR 47 Part 15 § 15.209

See CFR 47 Part 15 § 15.225

See Clause 4, Clause 5 of ANSI C63.10-2013 generally.

B.1.2. Measurement Methods

The transmitter carrier output levels (E-Field) from the EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The E-field is measured with a shielded loop antenna connected to a measurement receiver. Detected E-field was maximized by rotating the EUT through 360° and adjusting the receiving antenna polarizations. The maximization processes were repeated with the EUT positioned respectively in its three orthogonal axes. The measurements were performed with the peak detector and if required, the quasi-peak detector.

The measurement bandwidth is:

Table B-1: Measurement bandwidth

Frequency of Emission (MHz)	RBW/VBW
12.56-14.56	10/30 kHz

The E-field measured at 3m is calculated as:

$$\text{E-field (dB}\mu\text{V/m)} = \text{Rx (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{AF@3m (dB/m)}$$

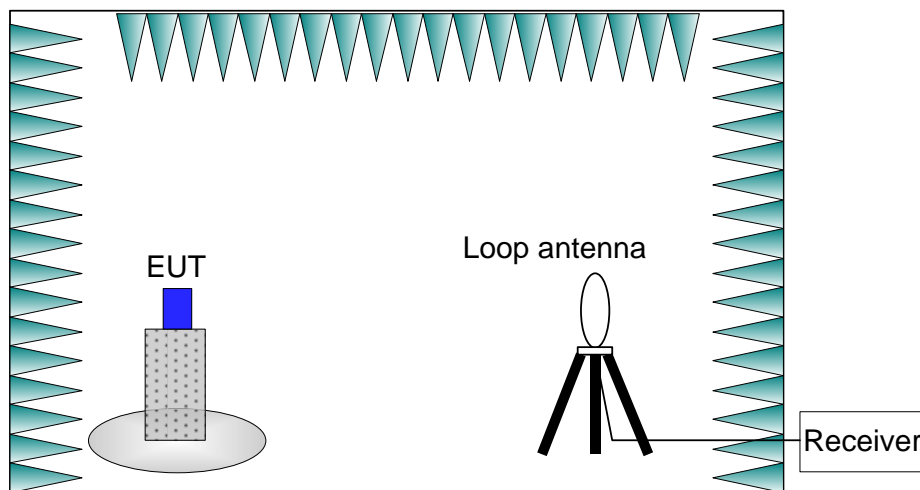


Figure B-1: Measurement Setup

B.1.3. EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state of NFC(See 3.4).

The EUT is powered by a travel adapter.

During the measurements, the ambient temperature of the electromagnetic anechoic chamber is

in the range of 15 ~ 25 °C.

B.1.4. Limits

Table B-2: Limits

Frequency Range (MHz)	E-field Strength Limit @ 30 m (μV/m)	E-field Strength Limit @ 3 m (dBμV/m)
13.560 ± 0.007	+15,848	124
13.410 to 13.553 13.567 to 13.710	+334	90
13.110 to 13.410 13.710 to 14.010	+106	81

Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula:

$$\text{Extrapolation(dB)} = 40\log_{10}(\text{Measurement Distance} / \text{Specification Distance})$$

B.1.5. Measurement Results

Measurement results of normal conditions see Figure B-2 for different set-ups of EUT. The results displayed take into account applicable antenna factors and cable losses.

Conclusions: PASS.

Full Spectrum

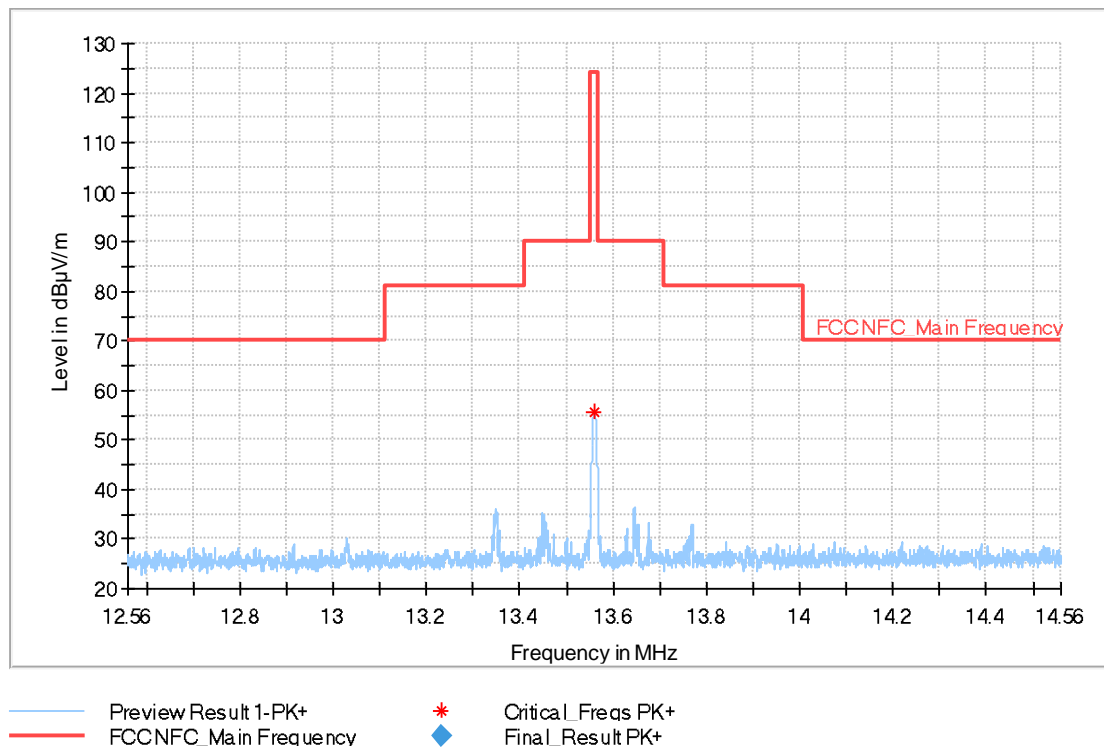


Figure B-2: Measurement results for Electric Field Strength of Fundamental and Outside the Allocated bands(Set.NFC1-1: UT10a+AE4-2+AE5-1+AE3-1 + NFC Card)

Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560000	55.62	124.00	68.38	V	320.0	17.9

Full Spectrum

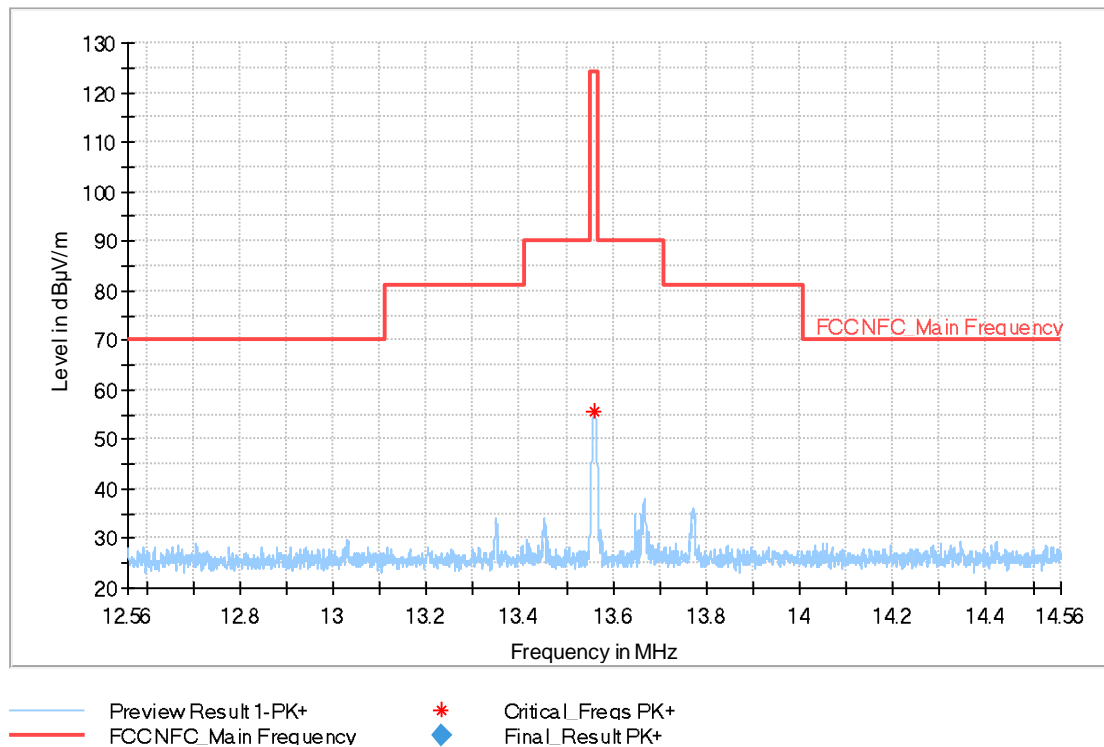


Figure B-3: Measurement results for Electric Field Strength of Fundamental and Outside the Allocated bands(Set.NFC1-2: UT11a+AE4-3+AE5-2+AE3-2 + NFC Card)

Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560000	55.71	124.00	68.29	V	321.0	17.9

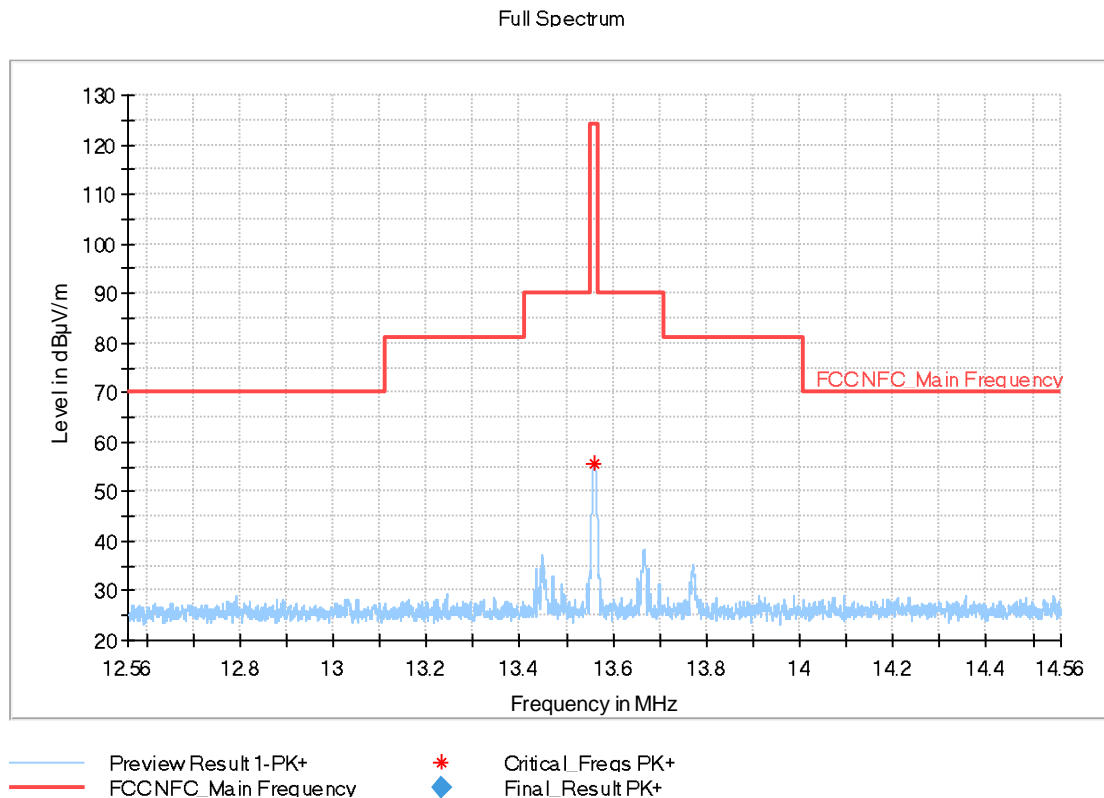


Figure B-4: Measurement results for Electric Field Strength of Fundamental and Outside the Allocated bands(Set.NFC1-3: UT08a+AE4-1+AE5-1+AE3-3 + NFC Card)

Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560000	55.59	124.00	68.41	V	326.0	17.9

B.2. Electric Field Radiated Emissions (< 30MHz)

B.2.1. Reference

See CFR 47 Part 15 § 15.209

See Clause 6.4 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

B.2.2. Measurement Methods

The transmitter carrier output levels (E-Field) from the EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The E-field is measured with a shielded loop antenna connected to a measurement receiver. Detected E-field was maximized by rotating the EUT through 360° and adjusting the receiving antenna polarizations. The maximization processes were repeated with the EUT positioned respectively in its three orthogonal axes. The measurements were performed with

the peak detector and if required, the quasi-peak detector.

The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/VBW
0.009-0.15	100/300 Hz
0.15-30	10/30 kHz

The E-field measured at 3m is calculated as:

$$\text{E-field (dB}\mu\text{V/m)} = \text{Rx (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{AF@3m (dB/m)}$$

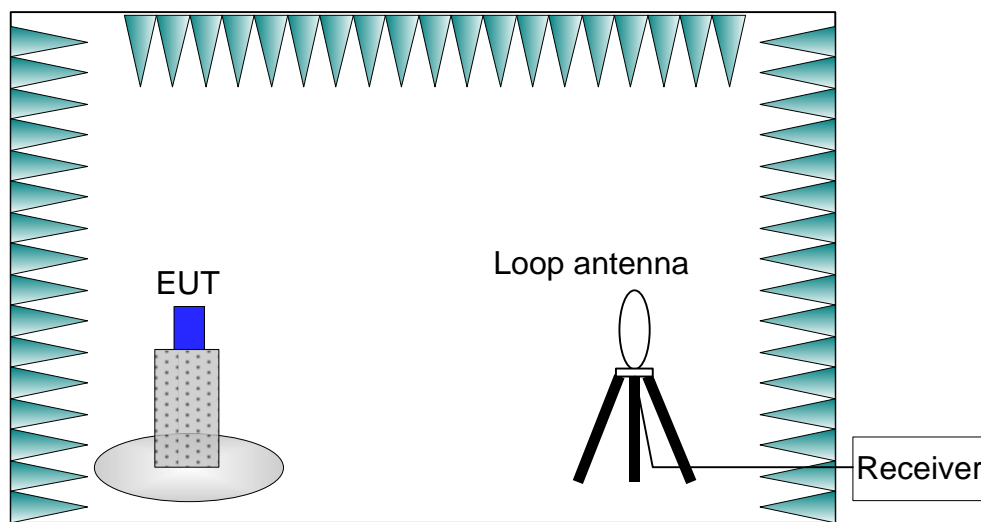


Figure B-5: Measurement Setup

B.2.3. EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state of NFC(See 3.4).

The EUT is powered by a travel adapter.

During the measurements, the ambient temperature of the electromagnetic anechoic chamber is in the range of 15 ~ 25 °C.

B.2.4. Limits

Frequency Range (MHz)	E-field Strength Limit @ 30m (mV/m)	E-field Strength Limit @ 3m (dB μ V/m)
0.009-0.490	2400/F(kHz)	129-94
0.490-1.705	24000/F(kHz)	74-63
1.705-30	30	70

Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula:

$$\text{Extrapolation(dB)} = 40\log_{10}(\text{Measurement Distance / Specification Distance})$$

B.2.5. Measurement Results

Measurement results of normal conditions see Figure B-4 for different set-ups of EUT. The results displayed take into account applicable antenna factors and cable losses.

Conclusions: PASS.

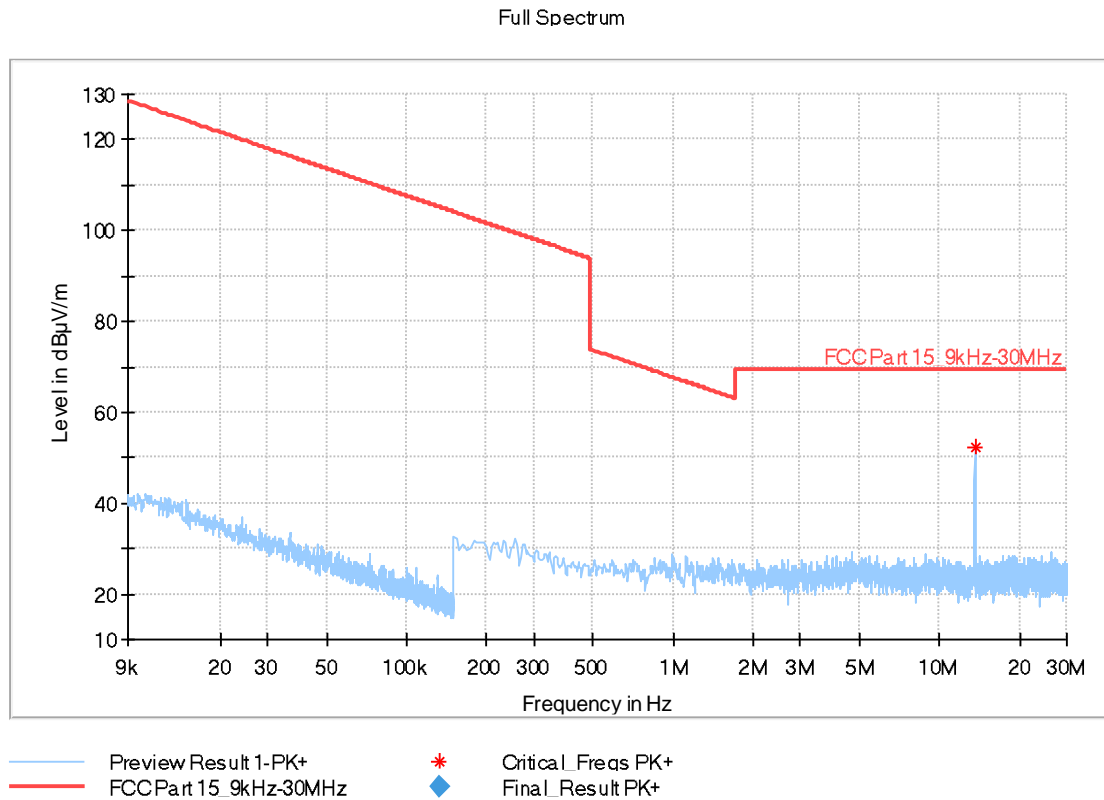


Figure B-6: Measurement results for Electric Field Radiated Emissions (< 30MHz)
(Set.NFC1-1: UT10a+AE4-2+AE5-1+AE3-1 + NFC Card)

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560113	52.43	69.50	17.07	V	90.0	17.9

Full Spectrum

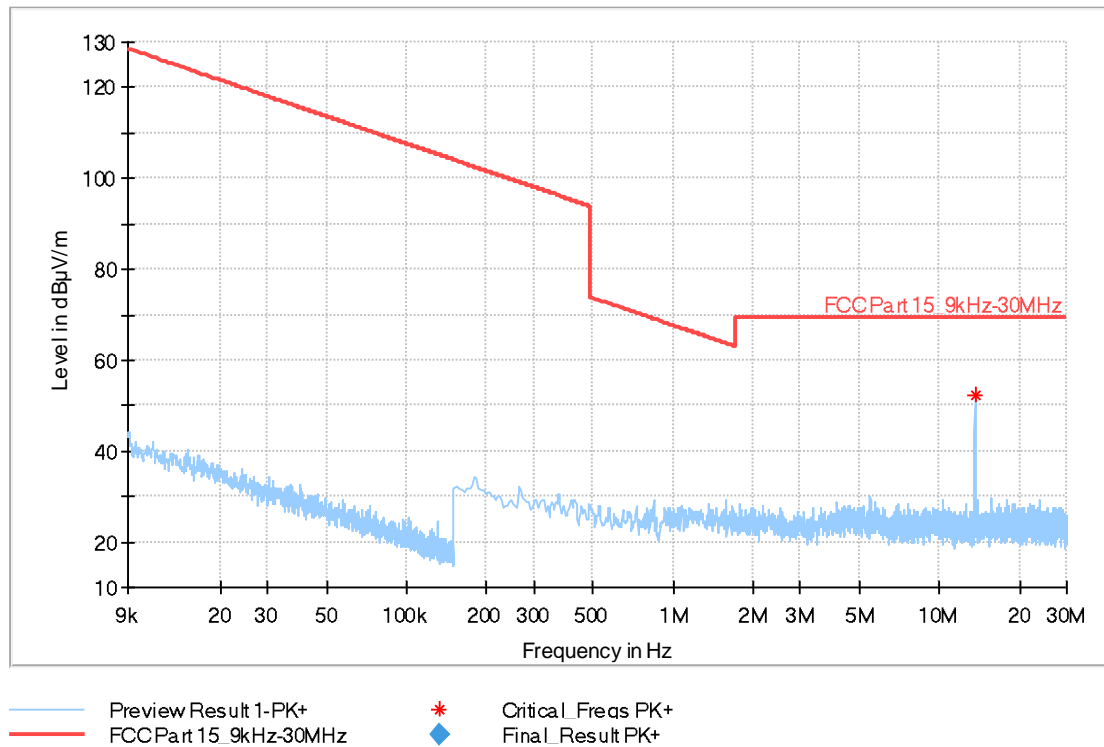


Figure B-7: Measurement results for Electric Field Radiated Emissions (< 30MHz)(Set.NFC1-2: UT11a+AE4-3+AE5-2+AE3-2 + NFC Card)

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560113	52.13	69.50	17.37	V	270.0	17.9

Full Spectrum

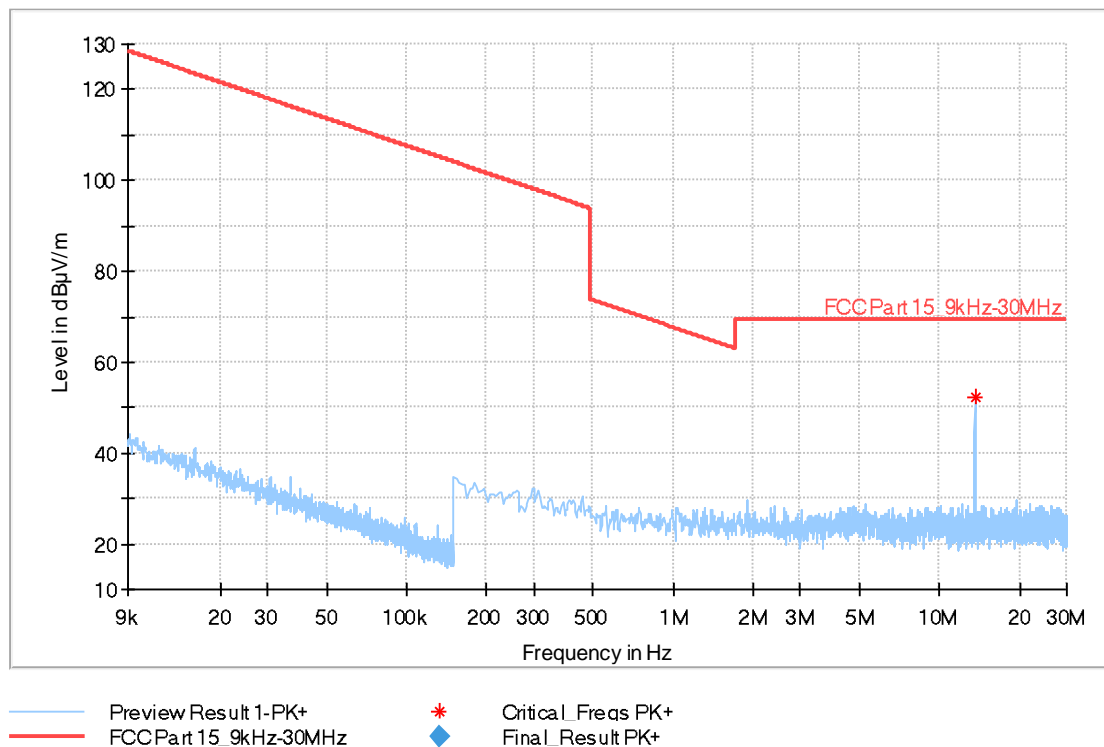


Figure B-8: Measurement results for Electric Field Radiated Emissions (< 30MHz)(Set.NFC1-3: UT08a+AE4-1+AE5-1+AE3-3 + NFC Card)

Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560113	52.27	69.50	17.23	V	90.0	17.9

B.3. Electric Field Radiated Emissions (≥30MHz)

B.3.1. Reference

See CFR 47 Part 15 § 15.209

See Clause 6.5 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

B.3.2. Measurement Methods

The electric field radiated emissions from the EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 10m from the receiving antenna. The receiving antennas connected to a measurement receiver. In order to search for maximum field strength emitted from the EUT, the receiving antenna can be moved between the height of 1.0 m to 4.0 m. Detected E-field was maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna positions for both vertical and horizontal antenna polarizations. The maximization processes were repeated with the EUT positioned respectively in its three orthogonal axes. The measurements were performed with the peak detector

and if required, the quasi-peak detector.

The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/VBW
30-1000	120kHz

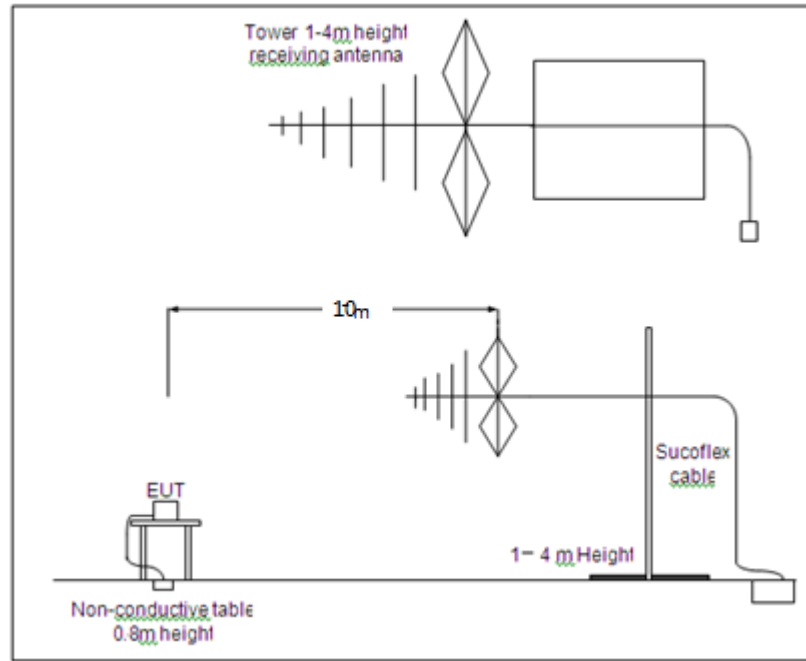


Figure B-9: Measurement Setup

B.3.3. EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state of NFC(See 3.4).

The EUT had been connected to a travel adapter.

During the measurements, the ambient temperature of the electromagnetic anechoic chamber is in the range of 15 ~ 25 °C.

B.3.4. Limits

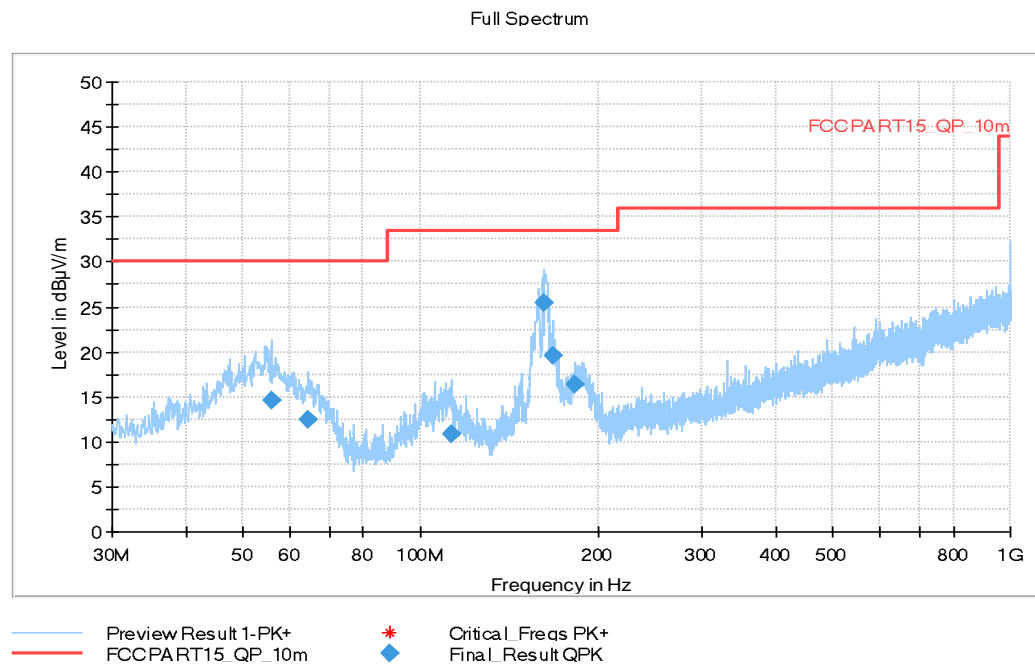
Frequency Range (MHz)	E-field Strength Limit @ 3m (mV/m)	E-field Strength Limit @ 3m (dBμV/m)	E-field Strength Limit @ 10m (dBμV/m)
30-88	100	40	30
88-216	150	43.5	33.5
216-960	200	46	36
960-1000	500	54	44

B.3.5. Measurement Results

Measurement results of normal conditions see Figure B-6 for different set-ups of EUT. The results displayed take into account applicable antenna factors and cable losses.

We tested configurations of Set.NFC1-1, Set.NFC1-2, Set.NFC1-3, Set.NFC2-1, Set.NFC2-2, Set.NFC2-3, Set.NFC2-4 and Set.NFC2-5, only the worst cases were shown in test report.

Conclusions: PASS.



**Figure B-10: Measurement results for Electric Field Radiated Emissions ($\geq 30\text{MHz}$)
(Set.NFC2-3: UT19a+AE4-3+AE2-3+AE1-3 + NFC Card)**

Final_Result1

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
55.802000	14.58	30.00	15.42	2000.0	120.000	283.0	V	-31.0
64.435000	12.42	30.00	17.58	2000.0	120.000	275.0	V	36.0
112.741000	10.93	33.52	22.59	2000.0	120.000	183.0	V	188.0
162.405000	25.40	33.52	8.12	2000.0	120.000	125.0	V	-18.0
168.128000	19.54	33.52	13.98	2000.0	120.000	100.0	V	-17.0
183.260000	16.30	33.52	17.22	2000.0	120.000	108.0	V	73.0

B.4. Frequency Tolerance

B.4.1. Reference

See CFR 47 Part 15 § 15.225(e)

See Clause 6.8 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

B.4.2. Measurement Methods

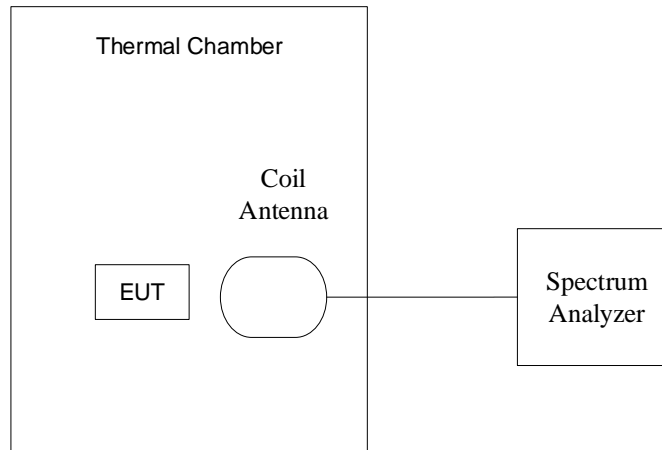


Figure B-11: Measurement Setup

The transmitter output signal was picked up by coil antenna connected to the spectrum analyzer. The center frequency was measured with 30Hz RBW and 1kHz span.

During the test, the EUT was placed in a thermal chamber until thermal balance and lasting appropriate time.

B.4.3. EUT Operating Mode and Test Conditions

The measurement of EUT was carried out under the transmit state of without modulation(See 3.4). EUT had not been connected to a travel adapter. The frequency stability was measured with the different voltage and temperature combinations:

- The nominal voltage 3.87V(See 3.1)was used and the temperature was varied from -20℃ to +50℃ in 10℃ increments using an environmental chamber.
- The 20℃ was used and the voltages were 3.6V, 3.87V and 4.45V (The extreme low voltage ,the normal voltage and the normal voltage defined in section 3.1).

The details were as following:

Table B-3: Combinations of Voltage andTemperature

Test items	Voltage	Temperature
Frequency stability with respect to ambient temperature	3.87V	-20℃
		-10℃
		0℃
		10℃
		20℃
		30℃

Frequency stability when varying supply voltage	3.6 V	40°C
		50°C
	3.87V	20°C
	4.45V	

B.4.4. Test Layouts

See B.4.2.

B.4.5. Limits

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

B.4.6. Measurement Results

Measurement results see Table B-4 for different test conditions.

Conclusions: Set.NFC03, **PASS**.

Table B-4: Measurement results for Frequency Tolerance

Temperature	Voltage	Frequency (MHz)			
		Startup	2 Min Later	5 Min Later	10 Min Later
-20°C	3.87V	13.560120000	13.560120000	13.560112000	13.560012000
-10°C	3.87V	13.560120000	13.560140000	13.560140000	13.560140000
0°C	3.87V	13.560080000	13.560112000	13.560112000	13.560112000
10°C	3.87V	13.560028000	13.560056000	13.560084000	13.560084000
20°C	3.87V	13.560056000	13.560040000	13.560028000	13.560020000
30°C	3.87V	13.559972000	13.559972000	13.559980000	13.559980000
40°C	3.87V	13.559960000	13.559944000	13.559944000	13.559920000
50°C	3.87V	13.559916000	13.559916000	13.559920000	13.559920000
20°C	3.6V	13.559972000	13.559980000	13.559980000	13.559980000
20°C	4.45V	13.550020000	13.560020000	13.560028000	13.560028000

Temperature	Voltage	Frequency Error (%)			
		Startup	2 Min Later	5 Min Later	10 Min Later
-20°C	3.87V	0.001	0.001	0.001	0.000
-10°C	3.87V	0.001	0.001	0.001	0.001
0°C	3.87V	0.001	0.001	0.001	0.001
10°C	3.87V	0.000	0.000	0.001	0.001
20°C	3.87V	0.000	0.000	0.000	0.000
30°C	3.87V	0.000	0.000	0.000	0.000
40°C	3.87V	0.000	0.000	0.000	-0.001
50°C	3.87V	-0.001	-0.001	-0.001	-0.001
20°C	3.6V	0.000	0.000	0.000	0.000
20°C	4.45V	0.000	0.000	0.000	0.000

B.4.7. Measurement Uncertainty

Measurement uncertainty: $U = 73 \text{ Hz}$, $k=2$

B.5. 20dB Bandwidth

B.5.1. Reference

See CFR 47 Part 15 § 15.215(c)

See Clause 6.9 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

B.5.2. Measurement Methods

The transmitter output signal was picked up by coil antenna connected to the spectrum analyzer. The bandwidth of the center frequency was measured with 100Hz RBW, 300Hz VBW and 15kHz span.

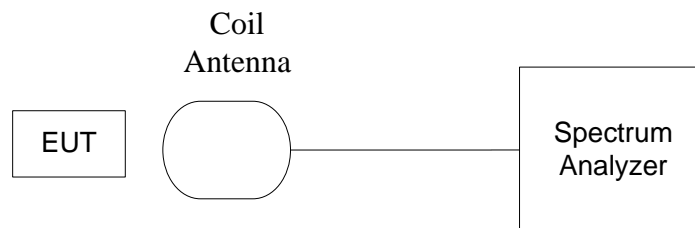


Figure B-12: Measurement Setup

B.5.3. EUT Operating Mode and Test Conditions

The measurement of EUT was carried out under the transmit state of NFC (See 3.4).

EUT had not been connected to a travel adapter.

During the measurements, the ambient temperature was in the range of 15 ~ 25 °C.

B.5.4. Test Layouts

See B.5.2.

B.5.5. Limits

The 20dB bandwidth shall be less than 80% of the permitted frequency band. For 13.56 MHz NFC, the permitted frequency band is 14kHz, so the limit is 11.2 kHz.

B.5.6. Measurement Results

Measurement results see Figure B-9.

Conclusions: Set.NFC03, **PASS**.

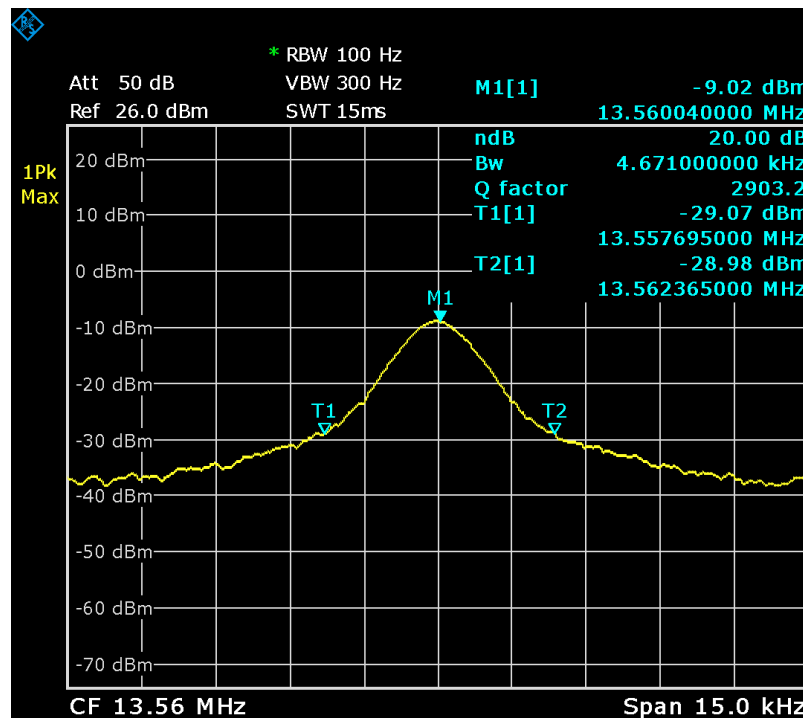


Figure B-13: Measurement results for 20dB Bandwidth

B.5.7. Measurement Uncertainty

Measurement uncertainty: $U = 73 \text{ Hz}$, $k=2$

B.6. Conducted emission

B.6.1. Reference

See CFR 47 Part 15 § 15.207

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

B.6.2. Measurement Methods

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

The measurement bandwidth is:

Table B-5: Measurement Bandwidth

Frequency of Emission (MHz)	RBW/VBW
0.15-30	9kHz

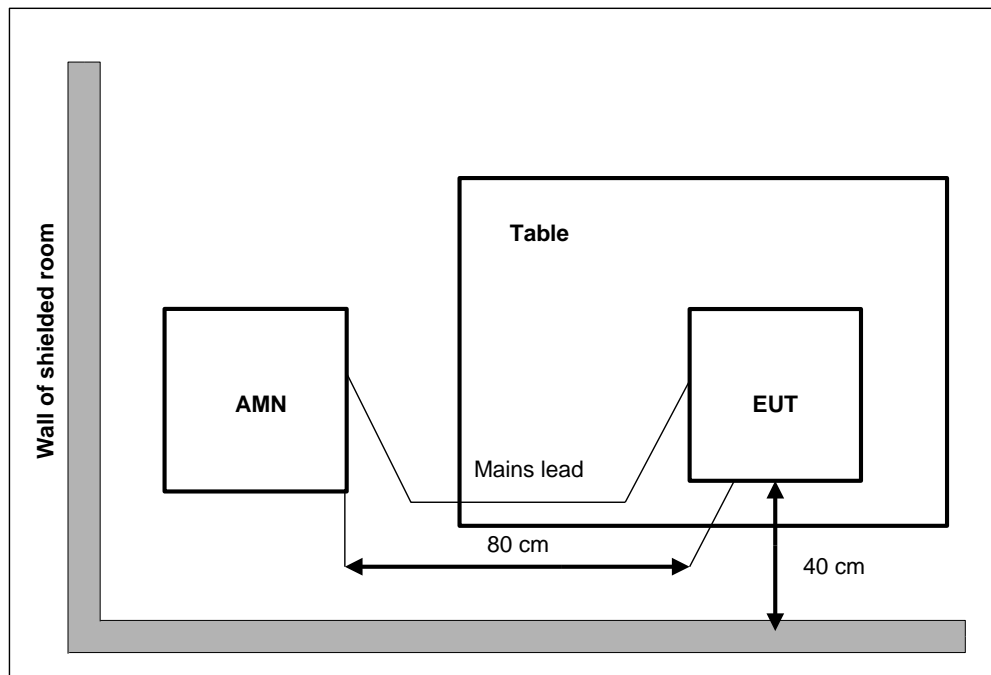


Figure B-14: Measurement Setup

B.6.3. EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state of NFC(See 3.4).

The EUT is powered by a travel adapter.

During the measurements, the ambient temperature is in the range of 15 ~ 25 °C.

B.6.4. Limits

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Average Limit (dB μ V)
0.15 to 0.5	66 to 56	56 to 46
0.5 to 5	56	46
5 to 30	60	50

B.6.5. Measurement Results

We tested configurations of Set.NFC2-1, Set.NFC2-2, Set.NFC2-3, Set.NFC2-4 and Set.NFC2-5, only the worst cases were shown in test report.

Measurement results see Figure B-15.

Conclusions: PASS.

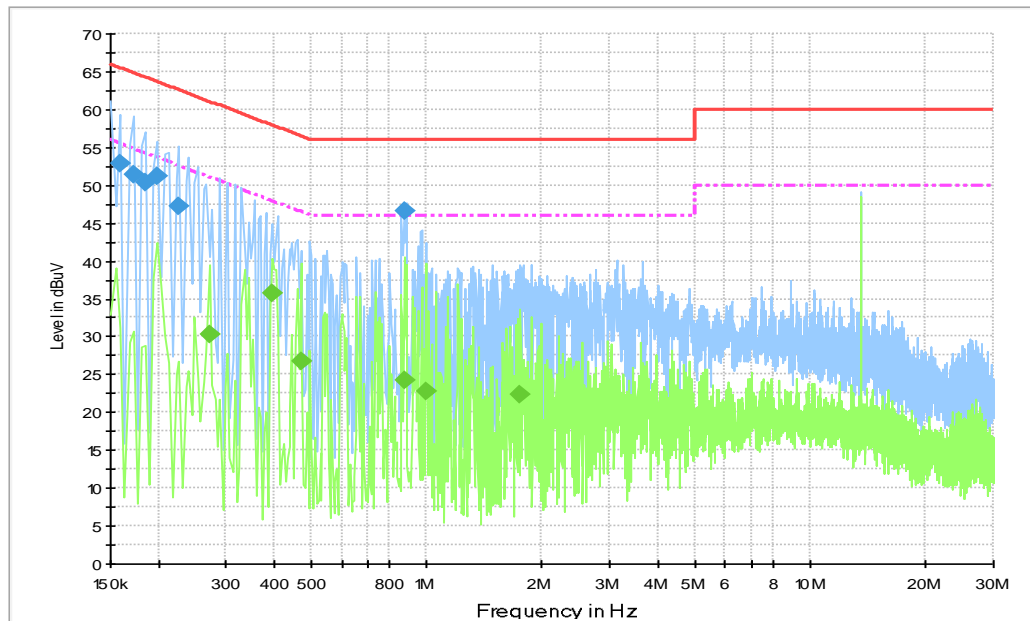


Figure B-15: Measurement results for Conducted Emission (Set.NFC2-3: UT11a+AE4-3+AE2-3+AE1-3 + NFC Card)

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	53.0	2000.0	9.000	On	L1	19.9	12.6	65.5
0.172500	51.4	2000.0	9.000	On	N	19.8	13.5	64.8
0.186000	50.3	2000.0	9.000	On	N	19.8	13.9	64.2
0.199500	51.1	2000.0	9.000	On	L1	19.7	12.5	63.6
0.226500	47.3	2000.0	9.000	On	N	19.8	15.3	62.6
0.874500	46.7	2000.0	9.000	On	N	19.7	9.3	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.271500	30.3	2000.0	9.000	On	L1	19.8	20.8	51.1
0.397500	35.8	2000.0	9.000	On	N	19.8	12.1	47.9
0.469500	26.7	2000.0	9.000	On	L1	19.8	19.8	46.5
0.874500	24.3	2000.0	9.000	On	L1	19.7	21.7	46.0
0.996000	22.8	2000.0	9.000	On	L1	19.7	23.2	46.0
1.756500	22.4	2000.0	9.000	On	N	19.6	23.6	46.0

ANNEX C: Persons involved in this testing

Test Item	Tester
20dB Bandwidth	Miao Qinghua
Frequency Tolerance	Miao Qinghua
Electric Field Strength of Fundamental and Outside the Allocated bands	Ding Zai
Electric Field Radiated Emissions (< 30MHz)	Ding Zai
Electric Field Radiated Emissions (≥ 30 MHz)	Ding Zai & Zhang Tianli
Conducted Emissions	Yan Xiaorui

ANNEX D: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p> <p>NVLAP </p>	
<p>Certificate of Accreditation to ISO/IEC 17025:2017</p>	
<p>NVLAP LAB CODE: 600118-0</p>	
<p>Telecommunication Technology Labs, CAICT Beijing China</p>	
<p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p>	
<p>Electromagnetic Compatibility & Telecommunications</p>	
<p><i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i></p>	
<p>2022-10-01 through 2023-09-30 <i>Effective Dates</i></p>	<div><p><i>For the National Voluntary Laboratory Accreditation Program</i></p></div>

END OF REPORT