NFC TEST REPORT

No.24T04Z101721-002

for

HMD Global Oy

Mobile Phone

MODEL NAME: TA-1658

FCC ID: 2AJOTTA-1658

with

Hardware Version: V1.0

Software Version: 000T_0_362

Issued Date: 2024-08-30

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.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
24T04Z101721-002	Rev.0	1st edition	2024-08-30

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

CONTENTS

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA 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(Cui Hu)

Address:	CuiHu Cloud Center No.1 Gaolizhang Road,Wenquan Town,Haidian District,Beijing,China

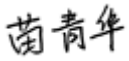
1.3. Testing Environment

Normal Temperature:	15-35℃
Extreme Temperature:	-20/+50℃
Normal Relative Humidity:	20-75%
Normal Air Pressure	86Kpa-106Kpa

1.4. Project data

Testing Start Date:	2024-08-07
Testing End Date:	2024-08-19

1.5. Signature

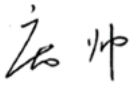


Miao Qinghua

(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:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Contact:	Reza Serafat
Email:	reza.serafat@hmdglobal.com
Telephone:	+491735287964

2.2. Manufacturer Information

Company Name:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Contact:	Reza Serafat
Email:	reza.serafat@hmdglobal.com
Telephone:	+491735287964

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

3.1. About EUT

Description	Mobile Phone
Model Name	TA-1658
FCC ID	2AJOTTA-1658
GSM Frequency bands	900/1800/1900/850
UMTS Frequency bands	FDD I/II/IV/V
E-UTRA Frequency bands	FDD 2/4/5/7/8/12/17/25/26/28A+B/66/71 TDD 41
5G_NR Frequency bands	SA n2/n5/n7/n8/n25/n41/n66/n71/n77/n78 NSA n25/n41/n66/n71
Operating temperature	-10/+55℃
Extreme low voltage	3.6V
Normal voltage	3.87 V
Extreme high voltage	4.45V

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
UT24a	353401640000405/ 353401640000413	V1.0	000T_0_362	2024-07-24
UT25a	353401640000520/ 353401640000538	V1.0	000T_0_362	2024-07-31

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

3.3. Internal Identification of AE

AE ID*	Description	Model	Manufacturer
AE1-1	Battery	HBA5033AA	Huizhou Highpower Technology Co., Ltd.
AE1-2	Battery	HBA5033AA	HuiZhou GanFeng LiEnergy Battery Technology Co., Ltd.
AE2-1	Charger US	HAD-020U	Shenzhen BaiJunDa Electronic Co.,Ltd.
AE2-2	Charger EU	HAD-020E	Shenzhen BaiJunDa Electronic Co.,Ltd.
AE2-3	Charger UK	HAD-020X	Shenzhen BaiJunDa Electronic Co.,Ltd.
AE2-4	Charger AU	HAD-020A	Shenzhen BaiJunDa Electronic Co.,Ltd.
AE3-1	USB cable	CC-3A	Saibao(jiangxi)Communication industrial Co.,Ltd.
AE3-2	USB cable	CC-3A	Huizhou Juwei Electronics Co.,Ltd

*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.NFC01	UT25a+ AE1-1/AE1-2 + AE2-1 + AE3-1 + NFC Card	NFC Charger +USB

Set.NFC02	UT25a + NFC card	NFC
Set.NFC03	UT24a	---

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. NFC02)
2	Electric Field Strength of Outside the Allocated Bands	CFR 47 § 15.225(b) CFR 47 § 15.225(c)		P(Set. NFC02)
3	Electric Field Radiated Emissions	CFR 47 § 15.209	B.2	P(Set. NFC02)
		CFR 47 § 15.225(d)	B.3	P(Set. NFC01)
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. NFC01)
7	Antenna Requirement	CFR 47 § 15.203	B.7	P(Set. NFC03)
The measurement is carried out according to ANSI C63.10. See **ANNEX B** for details.				

Note:
The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

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	N9030A	MY49432143	Keysight Technologies	2024-12-16	1 Year
2.	Climatic chamber	WK3-340/70	58226117510010	WEISS	2025-06-16	1 Year
3.	Test Receiver	ESW44	103144	R&S	2024-11-26	1 Year
4.	H-field Antenna	HFH2-Z2	829324/007	R&S	2025-01-14	1 Year
5.	EMI Antenna	VULB 9163	01222	SCHWARZBECK	2025-01-28	2 years
6.	Test Receiver	ESCI	100344	R&S	2025-04-01	1 Year
7.	LISN	ENV216	101200	R&S	2025-05-16	1 year

Note: The test cases for conducted emission and radiated emission utilize the EMC32 software from the R&S manufacturer, specifically version V8.53.0 for conducted emissions and version V11.50.00 for radiated emissions.

7. Measurement Uncertainty

Item	Uncertainty
Frequency Tolerance	*U =74 Hz, k=2*
20dB Bandwidth	*U* =74 Hz, k=2
Radiated Emissions(9kHz-30MHz)	*U* =4.92 dB, k=2
Radiated Emissions (30MHz-1GHz)	*U* =4.72 dB, k=2
Radiated Emissions (>1GHz)	*U* =4.84 dB, k=2
Conducted emission	*U* = 3.08 dB, k=2

ANNEX A: EUT parameters

Disclaimer: The antenna gain provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX B: Detailed Test Results

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

B.1.1. Reference

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:

E-field (dBμV/m) = Rx (dBμV) + Cable Loss (dB) + AF@3m (dB/m)

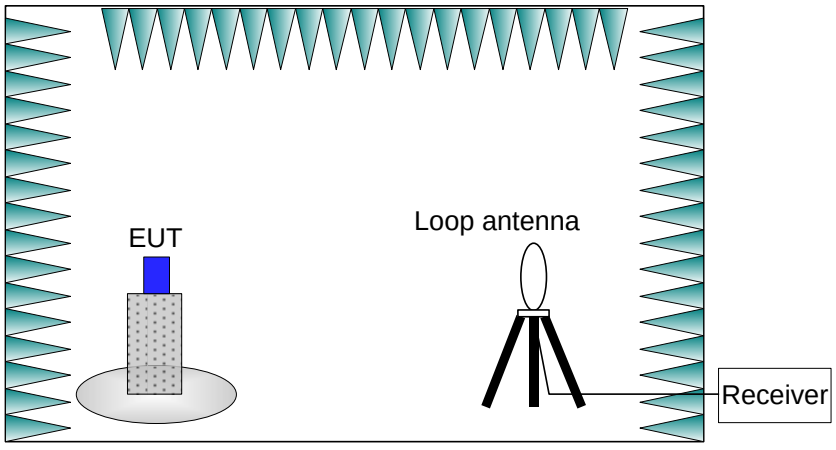


Figure B-1: Measurement Setup

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 ℃.

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: Set.NFC02, **PASS**.

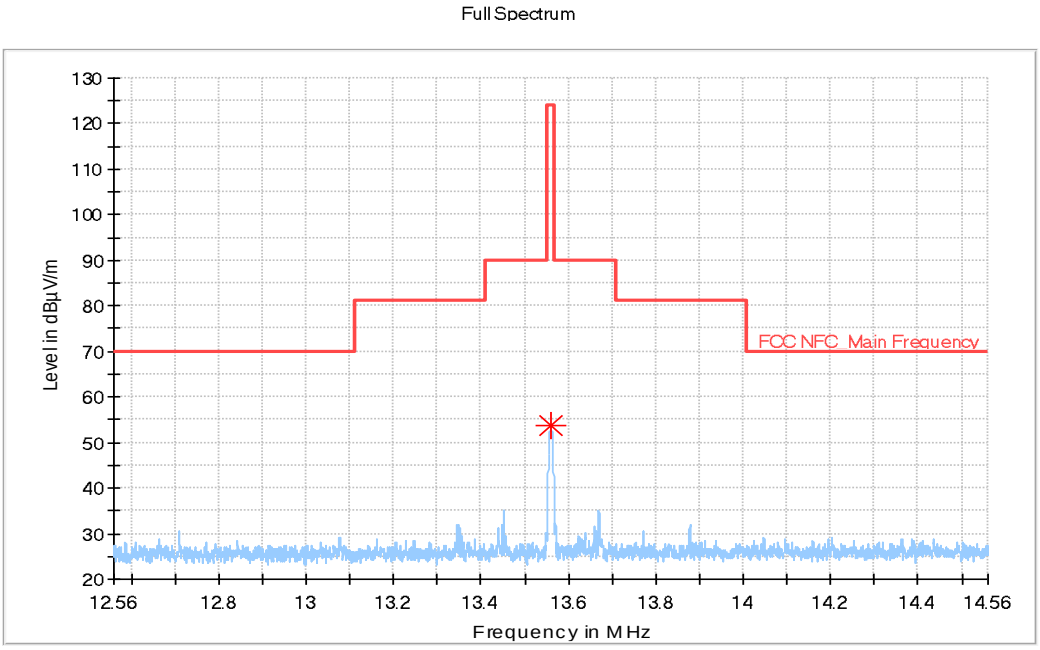


Figure B-2: Measurement results for Electric Field Strength of Fundamental and Outside the Allocated bands

Frequency (MHz)	MaxPeak (dBμA/m)	Limit (dBμA/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.559250	53.73	124.00	70.27	Coaxial	184.0	18.0

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

B.2.1. Reference

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:
E-field (dBμV/m) = Rx (dBμV) + Cable Loss (dB) + AF@3m (dB/m)

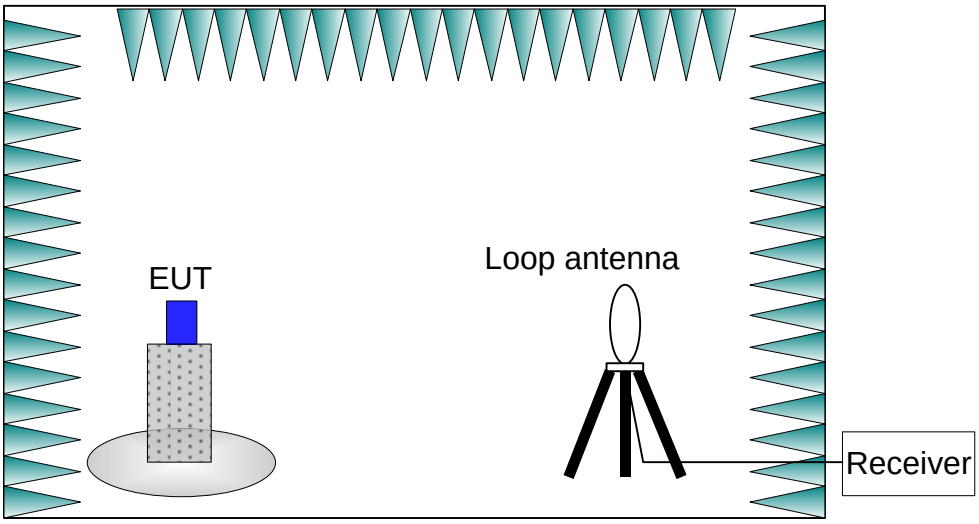


Figure B-3: Measurement Setup

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 ℃.

B.2.4. Limits

Frequency Range (MHz)	E-field Strength Limit @ 30m (mV/m)	E-field Strength Limit @ 3m (dBμV/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: $Extrapolation(dB) = 40\log_{10}(Measurement\ \ Distance/Specification\ \ Distance)$		

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: Set.NFC02, **PASS**.

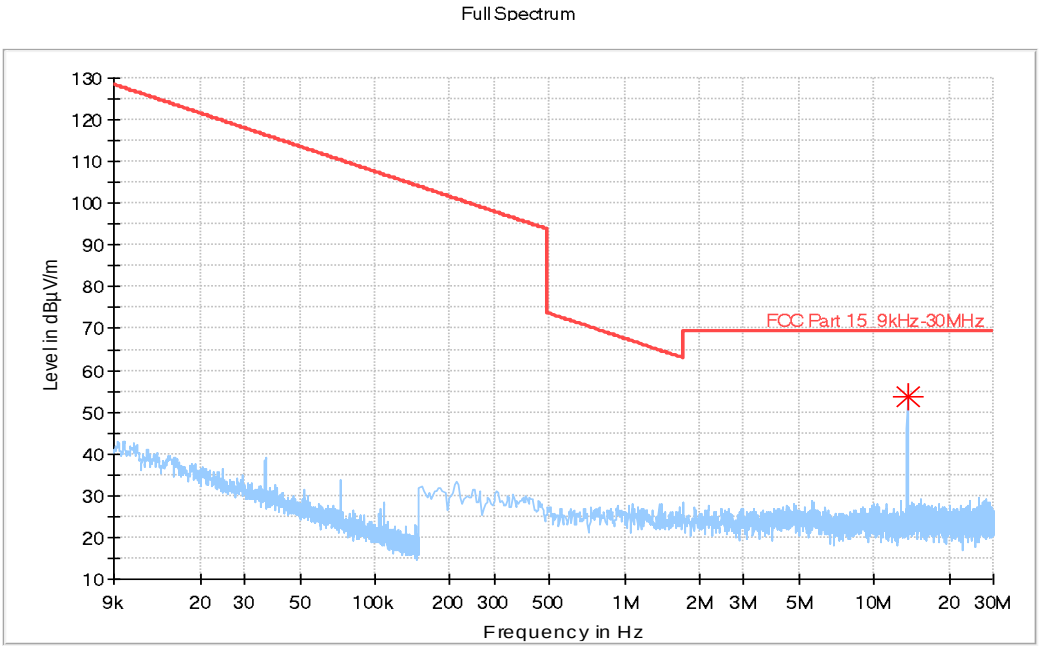


Figure B-4: Measurement results for Electric Field Radiated Emissions (< 30MHz)

Frequency (MHz)	MaxPeak (dBμA/m)	Limit (dBμA/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.560113	53.71	69.50	15.79	Coaxial	180.0	18.0

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

B.3.1. Reference

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

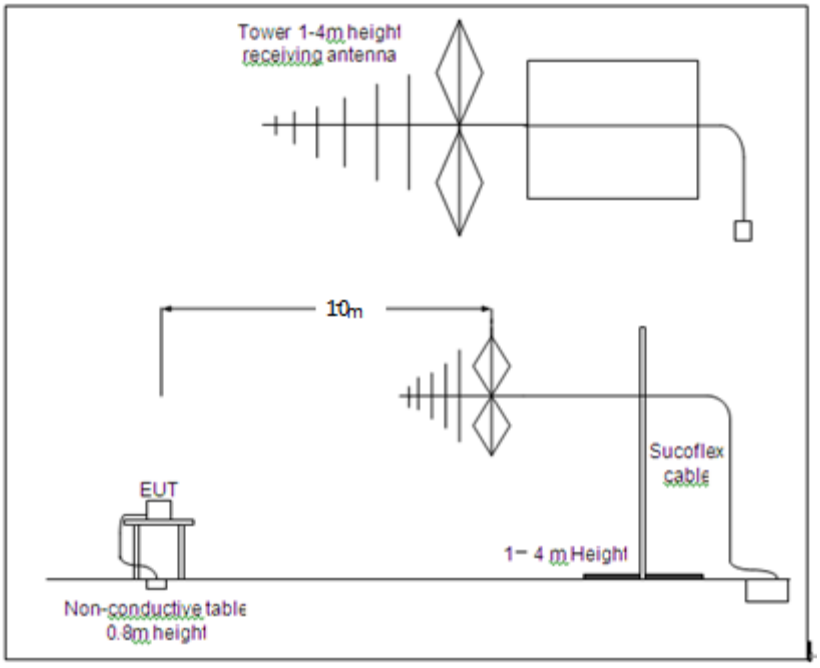


Figure B-5: Measurement Setup

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 ℃.

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.

Conclusions: Set.NFC01, **PASS**.

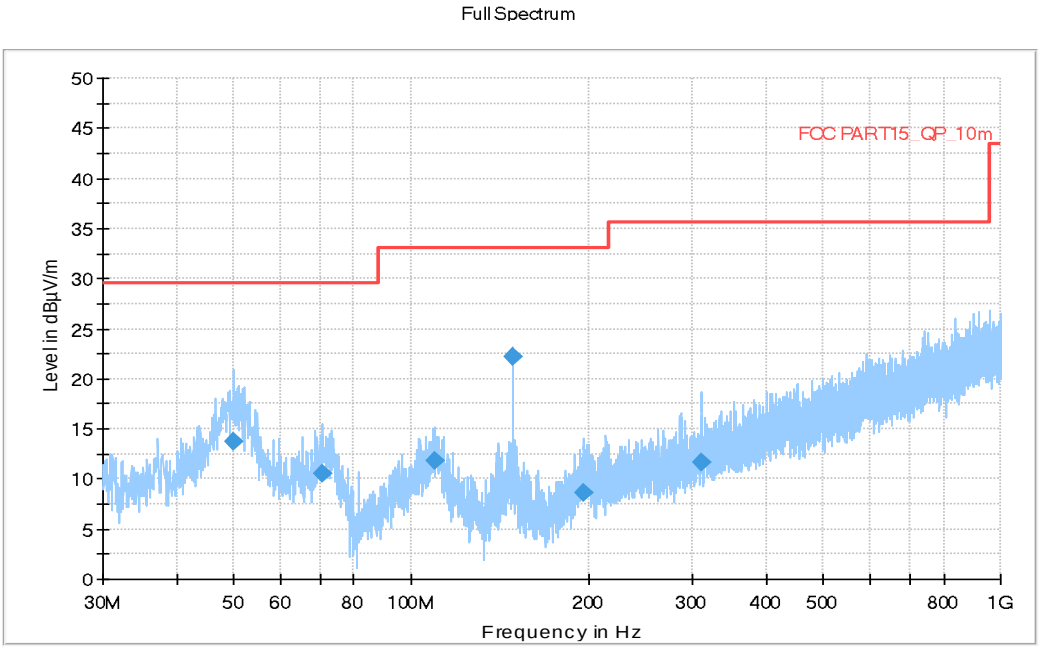


Figure B-6: Measurement results for Electric Field Radiated Emissions (≥30MHz)

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.079000	13.81	29.54	15.73	120.000	100.0	V	223.0	-10.7
70.643000	10.48	29.54	19.06	120.000	208.0	V	47.0	-15.5
109.928000	11.76	33.06	21.30	120.000	125.0	V	17.0	-12.7
149.116000	22.16	33.06	10.90	120.000	179.0	V	2.0	-15.6
196.015500	8.70	33.06	24.36	120.000	325.0	V	16.0	-11.4
310.766500	11.69	35.56	23.87	120.000	125.0	V	-14.0	-8.5

B.4. Frequency Tolerance

B.4.1. Reference

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

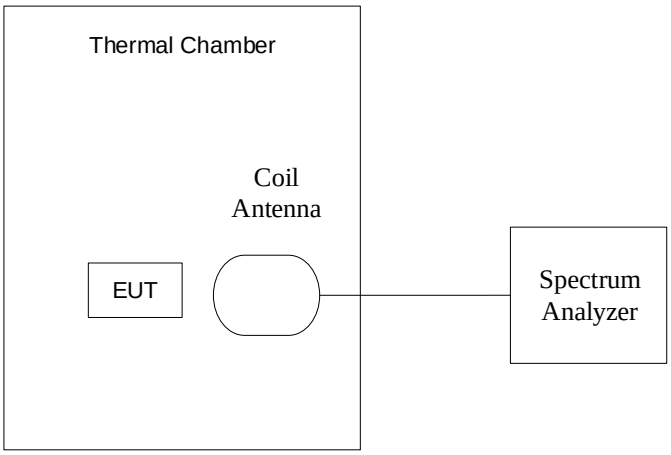


Figure B-7: Measurement Setup

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:

a) 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.
b) The 20℃ was used and the voltages were 3.6V, 3.87V and 4.45V (The extreme low voltage ,the normal voltage and the extreme high voltage).

The details were as following:

Table B-3: Combinations of Voltage and Temperature

Test items	Voltage	Temperature
Frequency stability with respect to ambient temperature	3.87V	-20℃
		-10℃
		0℃
		10℃
		20℃
		30℃
		40℃

		50℃
Frequency stability when varying supply voltage	3.6V	20℃
	3.87V	
	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℃	3.87V	13.560112179	13.560112179	13.560128205	13.560128205
-10℃	3.87V	13.560096154	13.560112179	13.560112179	13.560115385
0℃	3.87V	13.560064103	13.560080128	13.560096154	13.560096154
10℃	3.87V	13.560043269	13.560048077	13.560064103	13.560064103
20℃	3.87V	13.560012821	13.560014423	13.560028846	13.560028846
30℃	3.87V	13.560014423	13.559987179	13.559985577	13.559985577
40℃	3.87V	13.560048077	13.560032051	13.560016026	13.559987179
50℃	3.87V	13.559983974	13.559967949	13.559967949	13.559967949
20℃	3.6V	13.559983974	13.560014423	13.560014423	13.560028846
20℃	4.45V	13.560014423	13.560014423	13.560025641	13.560028846

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

B.4.7. Measurement Uncertainty

Measurement uncertainty: *U =74 Hz, k=2*

B.5. 20dB Bandwidth

B.5.1. Reference

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 300Hz RBW, 1kHz VBW and 10kHz span.

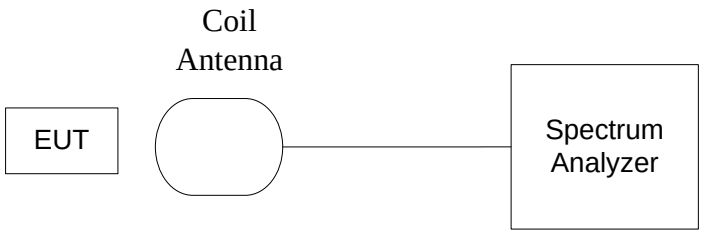


Figure B-8: Measurement Setup

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 ℃.

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**.

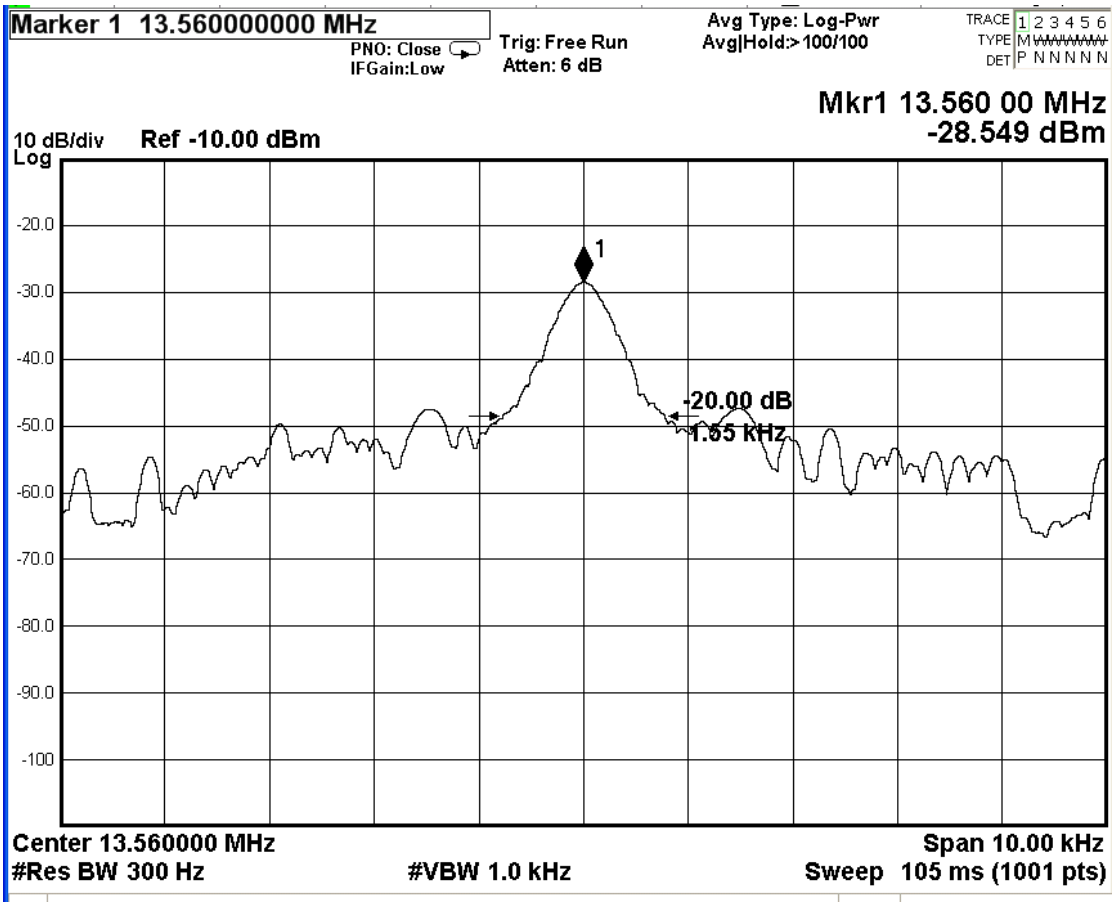


Figure B-9: Measurement results for 20dB Bandwidth

B.5.7. Measurement Uncertainty

Measurement uncertainty: *U* =74 Hz, k=2

B.6. Conducted emission

B.6.1. Reference

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

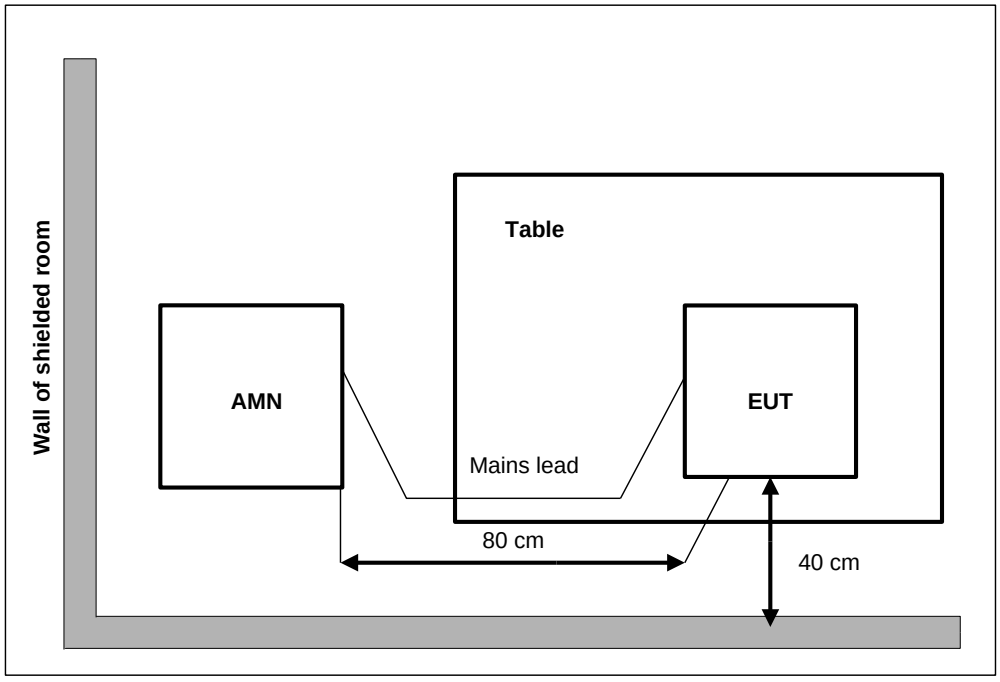


Figure B-10: Measurement Setup

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 ℃.

B.6.4. Limits

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Average Limit (dBμV)
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

Measurement results see Figure B-11.

Conclusions: Set.NFC01, **PASS**.

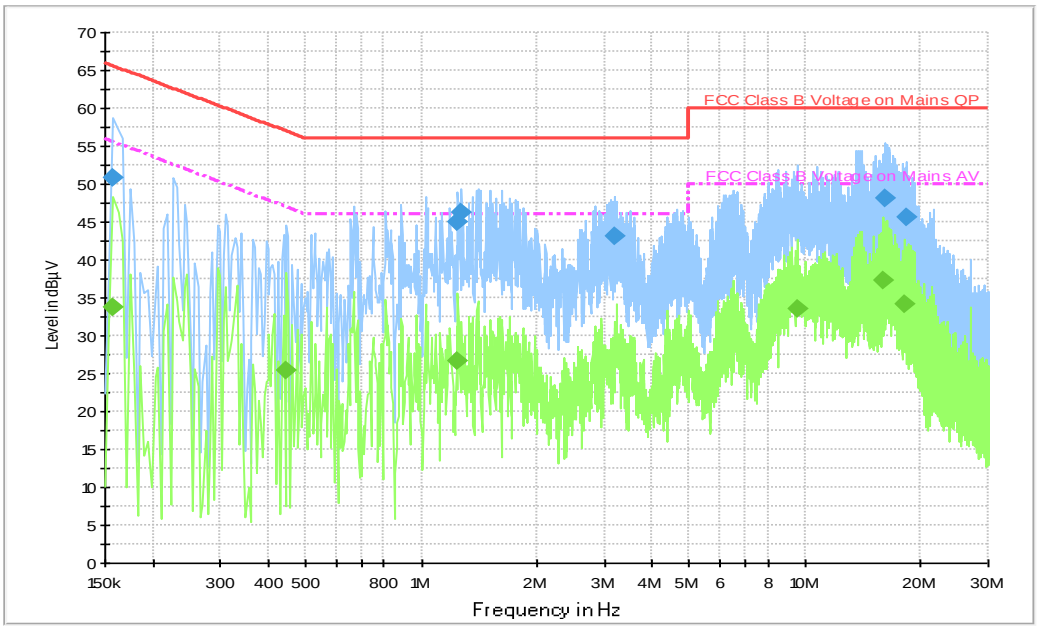


Figure B-11: Measurement results for Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	50.7	2000.0	9.000	On	L1	19.9	14.8	65.6
1.246000	45.0	2000.0	9.000	On	L1	19.9	11.0	56.0
1.274000	46.3	2000.0	9.000	On	L1	19.9	9.7	56.0
3.178000	43.2	2000.0	9.000	On	L1	19.8	12.8	56.0
16.226000	48.1	2000.0	9.000	On	L1	20.0	11.9	60.0
18.302000	45.5	2000.0	9.000	On	L1	20.0	14.5	60.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	33.8	2000.0	9.000	On	L1	19.9	21.8	55.6
0.446000	25.5	2000.0	9.000	On	L1	20.0	21.5	46.9
1.246000	26.7	2000.0	9.000	On	L1	19.9	19.3	46.0
9.566000	33.6	2000.0	9.000	On	L1	19.9	16.4	50.0
15.982000	37.3	2000.0	9.000	On	L1	20.0	12.7	50.0
18.086000	34.1	2000.0	9.000	On	L1	20.0	15.9	50.0

B.7. Antenna Requirement

B.7.1 Reference

See CFR 47 Part 15 § 15.203

B.7.2. Excerpt from §15.203 of the FCC Rules/Regulations

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of the device is permanently attached.
There are no provisions for connection to an external antenna.

B.7.3. Results

The unit complies with the requirement of FCC Part 15.203.
Conclusions: Set.NFC03, **PASS.**

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	Zhang Tianli
Electric Field Radiated Emissions (< 30MHz)	Zhang Tianli
Electric Field Radiated Emissions (≥30MHz)	Zhang Tianli
Conducted Emissions	Zhang Tianli
Antenna Requirement	Miao Qinghua

ANNEX D: Accreditation Certificate

Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 23rd day of July 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2026

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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