NFC TEST REPORT

No.I21Z70530-IOT13

for

Samsung Electronics Co.,Ltd

Smart Phone

SM-A035G/DSN

FCC ID : ZCASMA035G

with

Hardware Version: REV1.0

Software Version: A035G.001

Issued Date: 2021-11-18

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

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

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z70530-IOT13	Rev.0	1st edition	2021-11-18

CONTENTS

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(BDA)

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

Location 2: CTTL(huayuan North Road)

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

1.3. Testing Environment

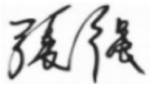
Normal Temperature:	15-35℃
Extreme Temperature:	-20/+50℃
Normal Relative Humidity:	20-75%
Normal Air Pressure:	86Kpa-106Kpa

1.4. Project data

Testing Start Date:	2021-10-25
Testing End Date:	2021-11-15

1.5. Signature

Zhou Bin
(Prepared this test report)



Zhang Qiang
(Reviewed this test report)

Zhu Liang
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Samsung Electronics Co.,Ltd
Address:	Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea
Contact:	Sunghoon Cho
Email:	ggobi.cho@samsung.com
Telephone:	+82-10-2722-4159
Fax:	/

2.2. Manufacturer Information

Company Name:	Samsung Electronics Co.,Ltd
Address:	Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea
Contact:	Sunghoon Cho
Email:	ggobi.cho@samsung.com
Telephone:	+82-10-2722-4159
Fax:	/

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

3.1. About EUT

Description	Smart Phone
Model name/HVIN	SM-A035G/DSN
FCC ID	ZCASMA035G
GSM Frequency Bands	900/1800/850
UMTS Frequency Bands	FDD I/ V/ VIII
E-UTRA Frequency Bands	FDD 1/3/5/7/8/20/28/28a/28b TDD 38/40/41
Operating Temperature	-10/+55℃
Nominal Voltage	3.85V
Extreme High Voltage	4.4 V
Extreme Low Voltage	3.6V

3.2. Internal Identification of EUT

EUT ID*	SN	HW Version	SW Version	Date of receipt
UT14a	2170530UT14a	REV1.0	A035G.001	2021-10-10
UT25a	2170530UT25a	REV1.0	A035G.001	2021-10-20

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

3.3. Internal Identification of AE

AE ID*	Description	SN	Note
AE1	Adapter1	/	
AE2	Adapter2	/	
AE3	Adapter3	/	
AE4	Adapter4	/	
AE5	Adapter5	/	
AE6	Adapter6	/	
AE7	Adapter7	/	
AE8	Adapter8	/	
AE9	USB Cable	/	
AE10	Headset1	/	
AE11	Headset2	/	
AE12	Battery1	/	
AE13	Battery2	/	

AE1

Model	EP-TA50JWS

Manufacturer	RFTECH Co., Ltd.
Length of cable	/

AE2

Model	EP-TA50JWS
Manufacturer	HAMEN
Length of cable	/

AE3

Model	EP-TA50EWE
Manufacturer	DY
Length of cable	/

AE4

Model	EP-TA50EWE
Manufacturer	HAMEN
Length of cable	/

AE5

Model	EP-TA50EWE
Manufacturer	Salcomp
Length of cable	/

AE6

Model	EP-TA50UWE
Manufacturer	DY
Length of cable	/

AE7

Model	EP-TA50UWE
Manufacturer	HAMEN
Length of cable	/

AE8

Model	EP- TA50UWE
Manufacturer	Salcomp
Length of cable	/

AE9

Model	ECB-DU68WE
Manufacturer	Samsung Electronics Co., Ltd.
Length	/

AE10

Model	EHS61ASFWE
Manufacturer	CRESYN HANOI Co., Ltd
Length	/

AE11

Model	EHS61ASFWE
Manufacturer	DONGGUAN YOUNGBO ELECTRONICS CO.,LTD
Length	/

AE12

TYPE	Secondary Li-ion Battery
SN	HQ-50SD
Manufacturer	SCUD (Fujian) Electronics CO.,LTD

AE13

TYPE	Secondary Li-ion Battery
SN	HQ-50N
Manufacturer	SCUD (Fujian) Electronics CO.,LTD

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

3.4. EUT Set-ups

Table 1：Eut Set-ups

EUT Set-up No.	Combination of EUT and AE	Remarks
Set.NFC01	UT25a + AE1+AE9+AE12/AE13	Charging
Set.NFC02	UT25a	--
Set.NFC03	UT14a	--

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.	2019
	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.	
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

Table 2：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. NFC01)
		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)
The measurement is carried out according to ANSI C63.10. See **ANNEX B** for details.				

Note：All combinations were tested，and only the worst results are shown in this report.

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 3 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

Table 4：Test Facilities Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1.	PXA Signal Analyzer	N9030A	MY49432143	Agilent	2022-10-14	1 Year
2.	Climatic chamber	SH242	93008658	ESPEC	2022-01-22	1 Year
3.	Test Receiver	ESU26	100235	Rohde & Schwarz	2022-03-23	1 Year
4.	BiLog Antenna	VULB9163	01223	Schwarzbeck	2022-03-22	1 Year
5.	LISN	ENV216	101459	R&S	2022-03-22	1 Year
6.	Test Receiver	ESCI	100766	R&S	2022-03-09	1 Year
7.	H-field Antenna	HFH2-Z2	829324/007	R&S	2021-12-10	1 Year

7. Measurement Uncertainty

Table 5: Measurement Uncertainty

Item	Uncertainty
Frequency Tolerance	*U* =73 Hz, k=2
20dB Bandwidth	*U* =73 Hz, k=2
Radiated Emissions (<300MHz)	*U* =4.86 dB, k=2
Radiated Emissions (≥300MHz)	*U* =5.16 dB, k=2
Conducted emission	*U* = 3.08 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 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)

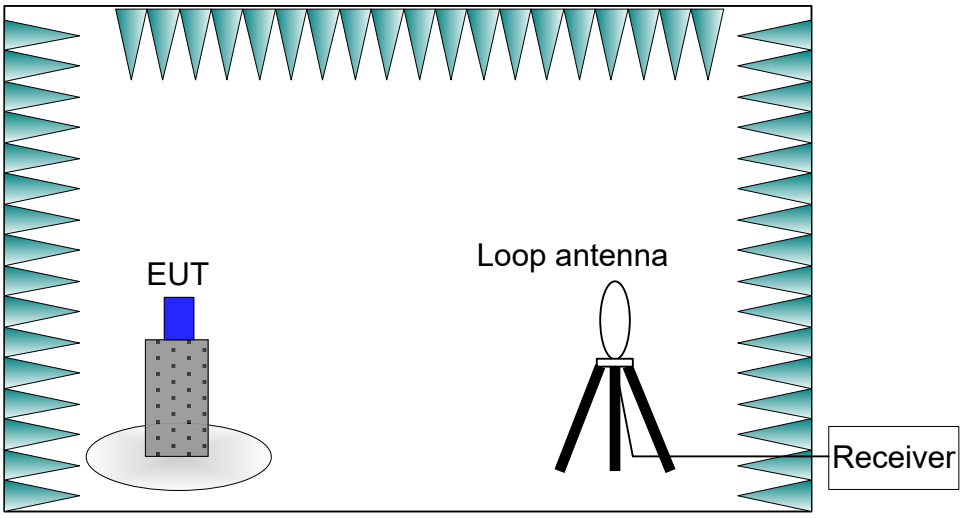


Figure B-1: Measurement Setup

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.

All possible configurations were investigated and only the worst case is reported.

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**.

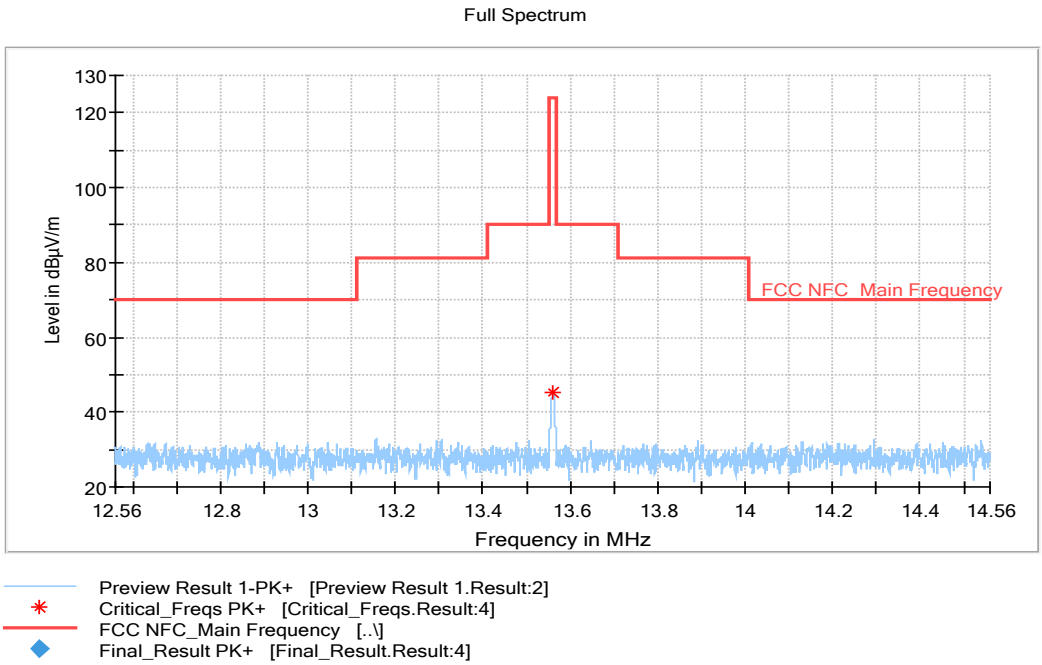


Figure B-2: Measurement results for Electric Field Strength of Fundamental and Outside the Allocated bands

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.561000	45.36	124.00	78.64	V	0.0	17.9

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:

Table B-3: Measurement bandwidth

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)

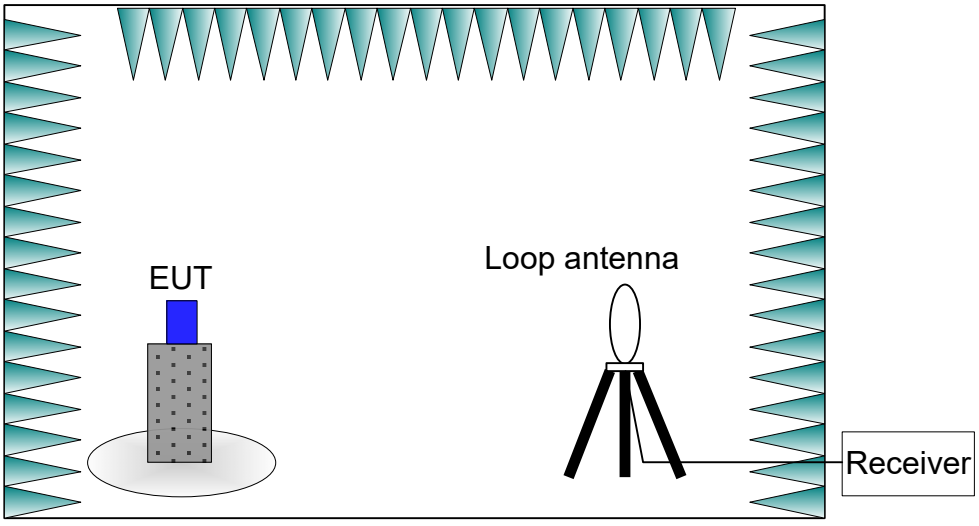


Figure B-3: Measurement Setup

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.

All possible configurations were investigated and only the worst case is reported.

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

B.2.4. Limits

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

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.NFC01, **PASS**.

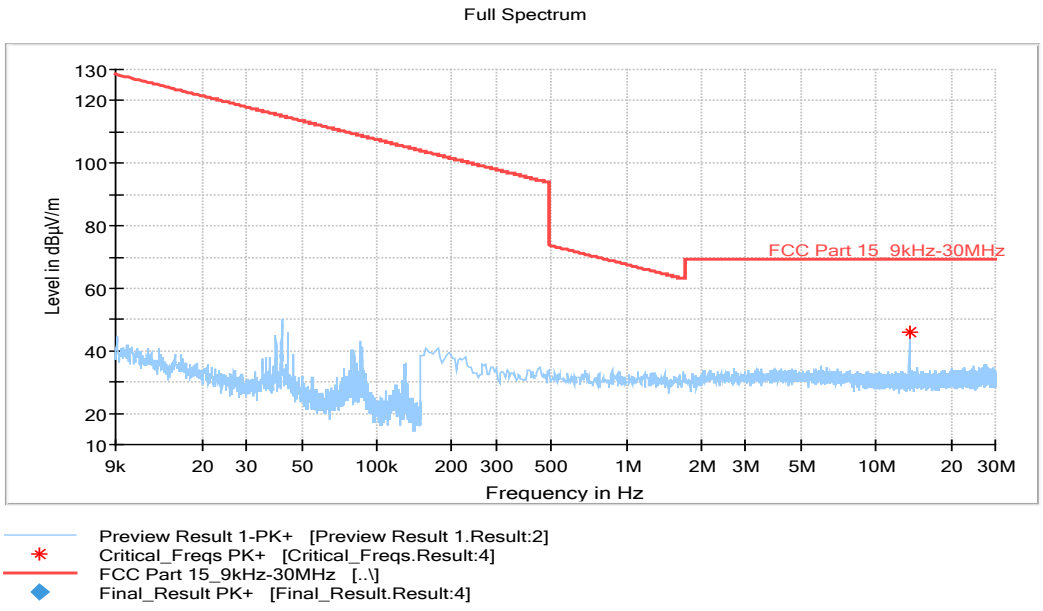


Figure B-4: Measurement results for Electric Field Radiated Emissions (< 30MHz)

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
13.561000	45.36	124.00	78.64	V	0.0	17.9

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 3m 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:

Table B-5: Measurement bandwidth

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

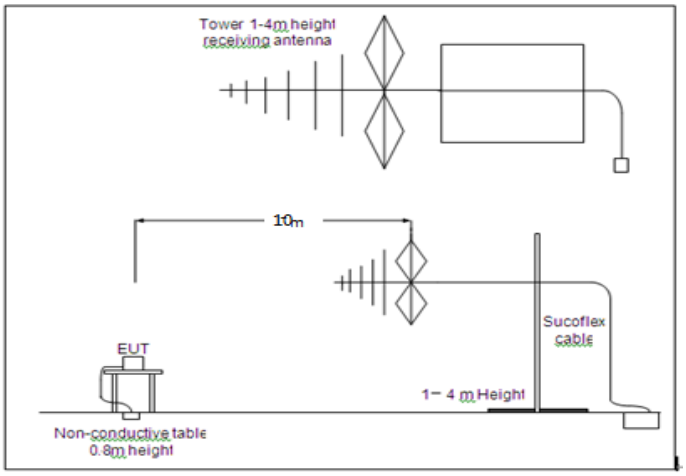


Figure B-5: Measurement Setup

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.

All possible configurations were investigated and only the worst case is reported.

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

B.3.4. Limits

Table B-6: 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**.

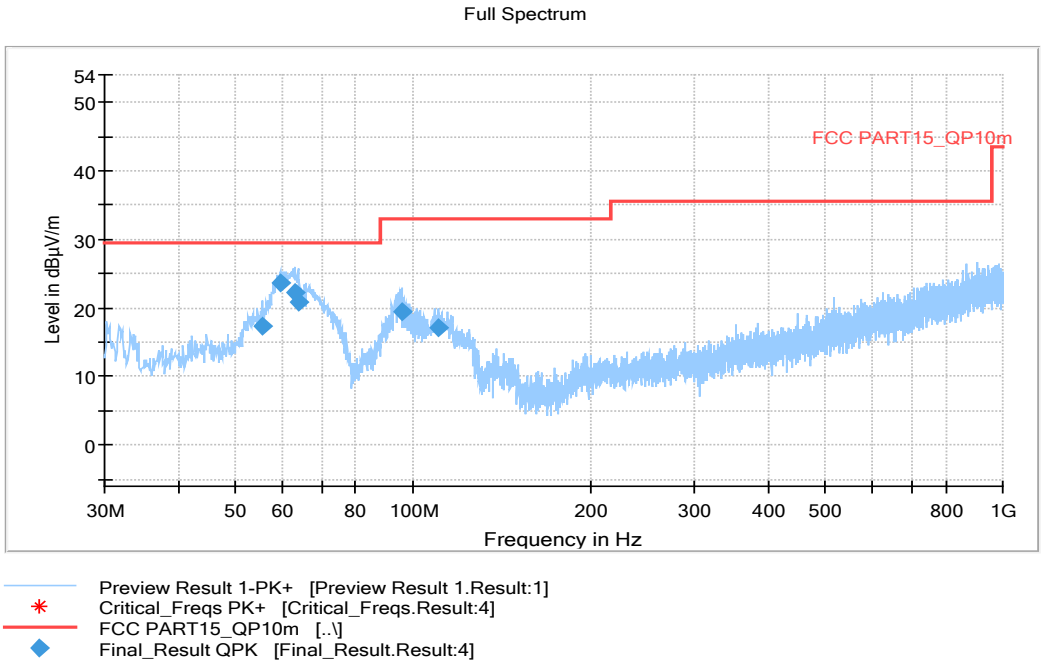


Figure B-6: Measurement results for Electric Field Radiated Emissions (≥30MHz)

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
55.511000	17.30	29.54	12.24	2000.0	120.000	334.0	V	300.0	-11.3
59.488000	23.66	29.54	5.88	2000.0	120.000	186.0	V	30.0	-11.9
62.980000	22.21	29.54	7.33	2000.0	120.000	230.0	V	106.0	-13.1
63.853000	20.85	29.54	8.69	2000.0	120.000	125.0	V	82.0	-13.3
95.766000	19.35	33.06	13.71	2000.0	120.000	109.0	V	273.0	-13.2
110.316000	17.08	33.06	15.98	2000.0	120.000	189.0	V	177.0	-12.9

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

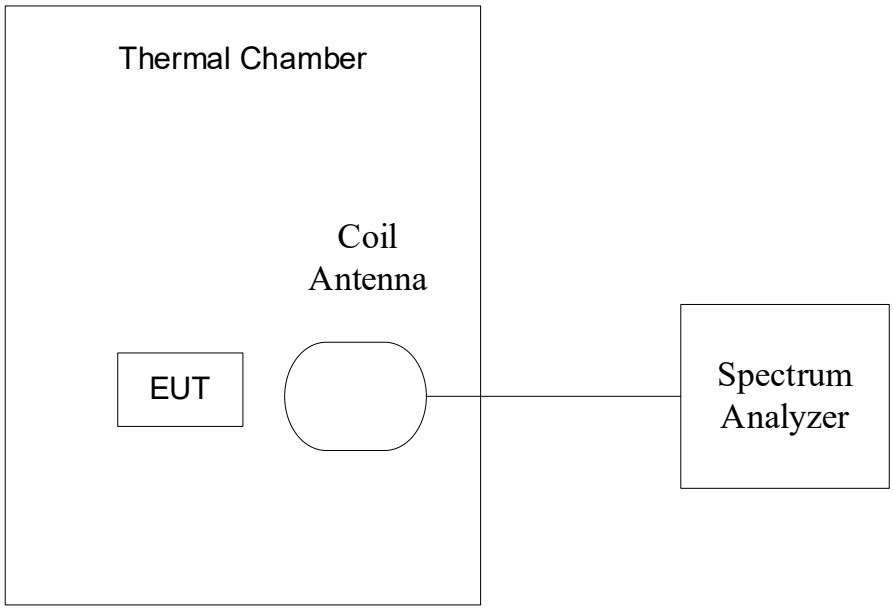


Figure B-7: Measurement Setup

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 3.85V(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, 3.85V and 4.4V (The extreme low voltage , the nominal voltage and the extreme high voltage).

Note: The extreme low voltage , the nominal voltage and the extreme high voltage were defined in section 3.1

The details were as following:

Table B-7: Combinations of Voltage and Temperature

Test items	Voltage	Temperature
Frequency stability with respect to ambient temperature	3.85V	-20℃
		-10℃
		0℃
		10℃
		20℃
		30℃
		40℃
		50℃
Frequency stability when varying supply voltage	3.6V	20℃
	3.85V	
	4.4V	

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-8 for different test conditions.

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

Table B-8: Measurement results for Frequency Tolerance

Temperature	Voltage	Frequency (MHz)			
		Startup	2 Min Later	5 Min Later	10 Min Later
-20℃	3.85V	13.560037000	13.560042000	13.560051000	13.560054000
-10℃	3.85V	13.560062000	13.560067000	13.560071000	13.560073000
0℃	3.85V	13.560073000	13.560069000	13.560067000	13.560061000
10℃	3.85V	13.560051000	13.560045000	13.560040000	13.560036000
20℃	3.85V	13.560018000	13.560013000	13.560009000	13.560005000
30℃	3.85V	13.559985000	13.559979000	13.559974000	13.559973000
40℃	3.85V	13.559959000	13.559952000	13.559948000	13.559946000
50℃	3.85V	13.559939000	13.559937000	13.559934000	13.559928000
20℃	3.6V	13.559981000	13.559974000	13.559971000	13.559967000
20℃	4.4V	13.560006000	13.560004000	13.560001000	13.559997000

Temperature	Voltage	Frequency Error (%)			
		Startup	2 Min Later	5 Min Later	10 Min Later
-20℃	3.85V	0.000	0.000	0.000	0.000
-10℃	3.85V	0.000	0.000	0.001	0.001
0℃	3.85V	0.001	0.001	0.000	0.000
10℃	3.85V	0.000	0.000	0.000	0.000
20℃	3.85V	0.000	0.000	0.000	0.000
30℃	3.85V	0.000	0.000	0.000	0.000
40℃	3.85V	0.000	0.000	0.000	0.000
50℃	3.85V	0.000	0.000	0.000	-0.001
20℃	3.6V	0.000	0.000	0.000	0.000
20℃	4.4V	0.000	0.000	0.000	0.000

B.4.7. Measurement Uncertainty

Measurement uncertainty: *U =73 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 150Hz RBW, 470Hz VBW and 15kHz span.

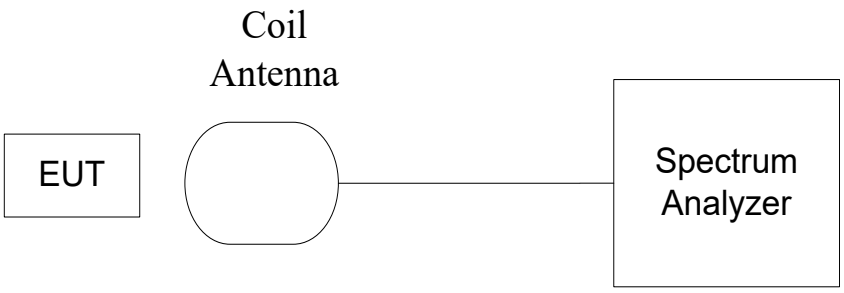


Figure B-8: Measurement Setup

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**.

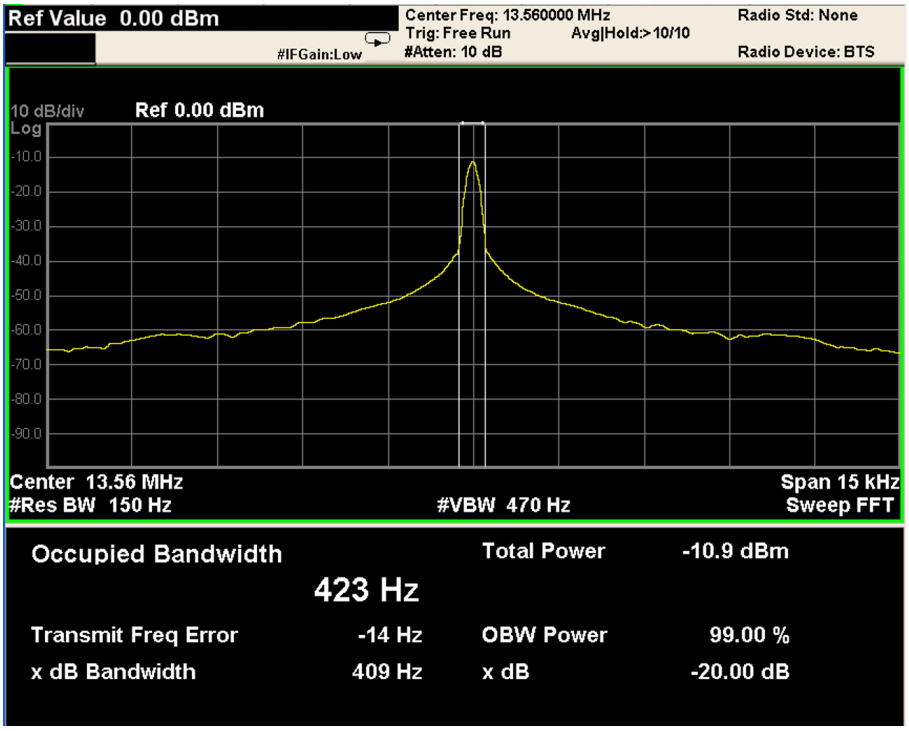


Figure B-9: Measurement results for 20dB Bandwidth

B.5.7. Measurement Uncertainty

Measurement uncertainty: *U* =73 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-9: Measurement Bandwidth

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

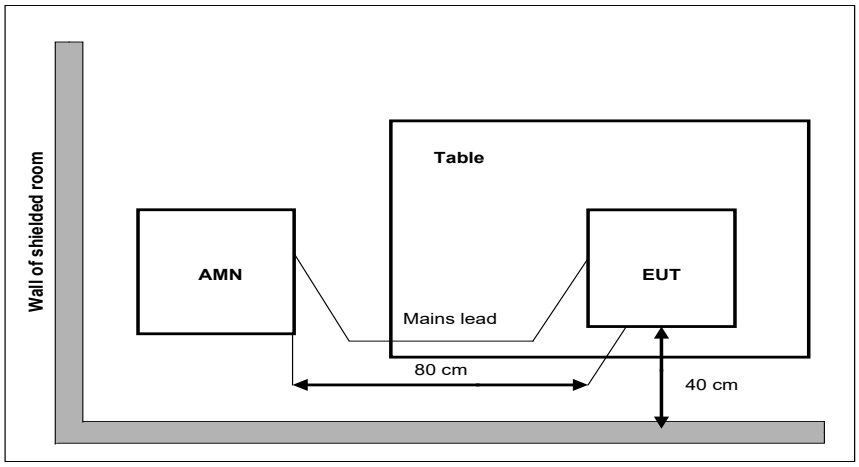


Figure B-10: Measurement Setup

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.

All possible configurations were investigated and only the worst case is reported.

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

B.6.4. Limits

Table B-10: 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 Result = Receiver Reading + Votage diviation factor + Cable loss

Measurement results see Figure B-11.

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

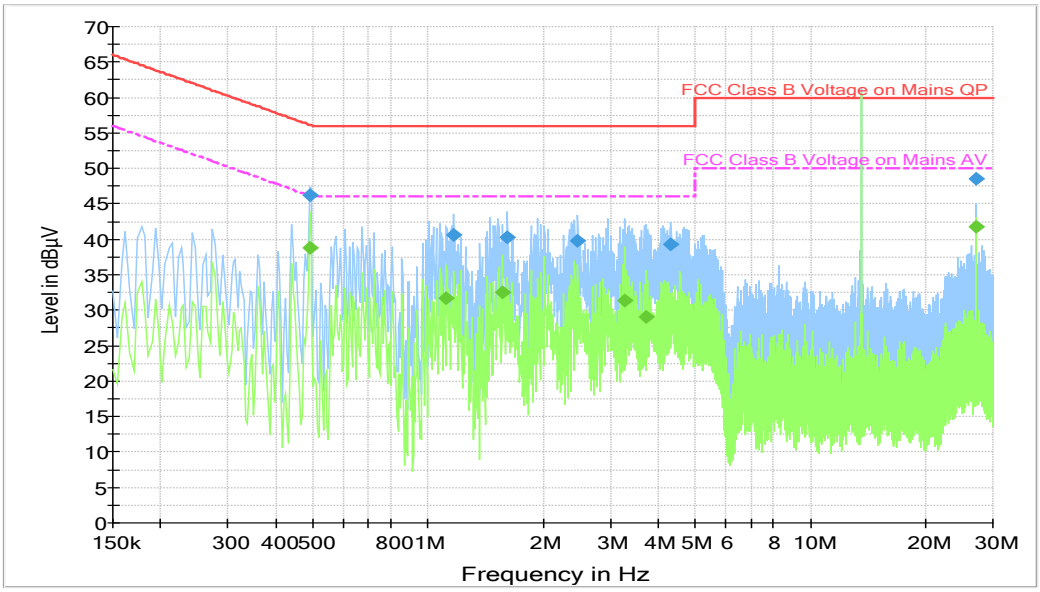


Figure B-11: Measurement results for Conducted Emission

Note: 13.56MHz is NFC operating frequency

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.490000	46.3	2000.0	9.000	L1	19.9	9.9	56.2
1.166000	40.6	2000.0	9.000	L1	19.6	15.4	56.0
1.614000	40.2	2000.0	9.000	L1	19.5	15.8	56.0
2.466000	39.8	2000.0	9.000	L1	19.5	16.2	56.0
4.326000	39.4	2000.0	9.000	L1	19.6	16.6	56.0
27.122000	48.5	2000.0	9.000	L1	20.2	11.5	60.0

Final Result 2

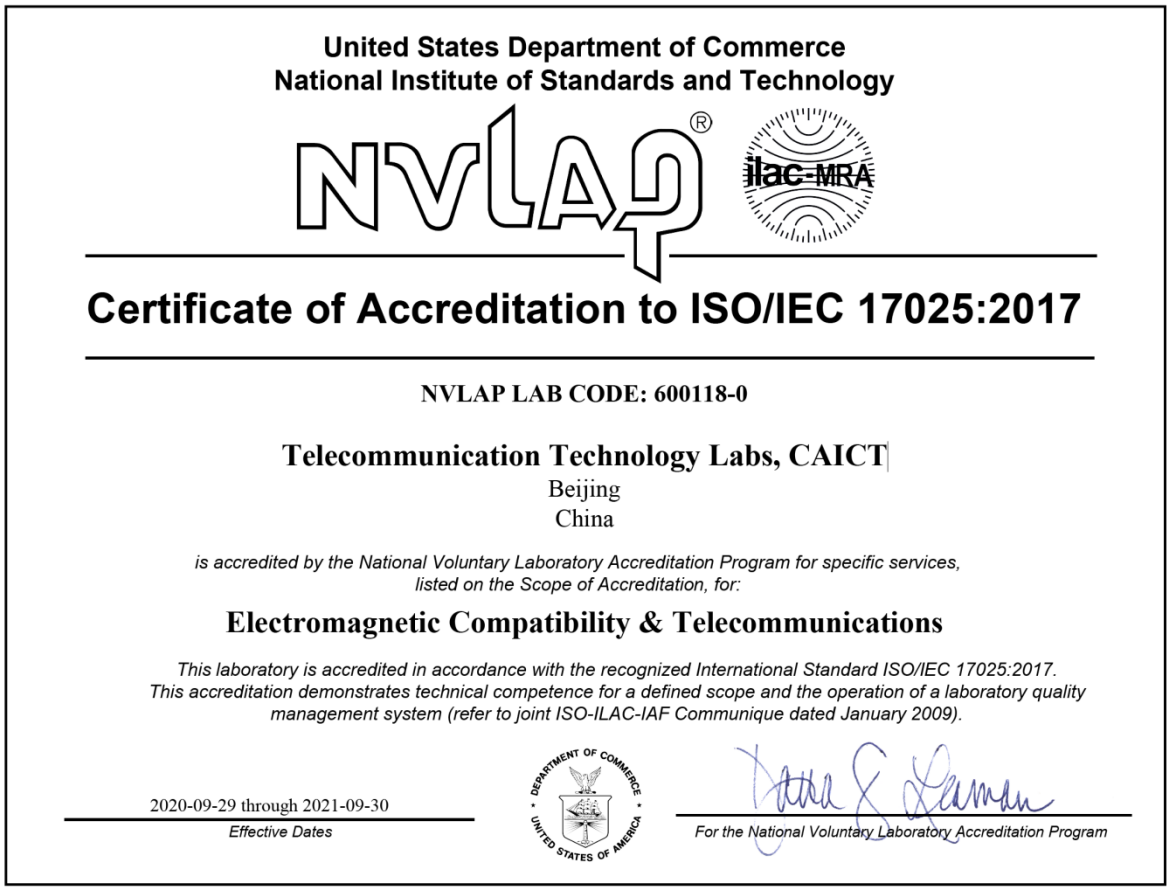
Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.490000	38.7	2000.0	9.000	L1	19.9	7.4	46.2
1.118000	31.7	2000.0	9.000	L1	19.5	14.3	46.0
1.566000	32.6	2000.0	9.000	L1	19.5	13.4	46.0
3.270000	31.3	2000.0	9.000	L1	19.5	14.7	46.0
3.714000	29.1	2000.0	9.000	L1	19.5	16.9	46.0
27.122000	41.8	2000.0	9.000	L1	20.2	8.2	50.0

ANNEX C: Persons involved in this testing

Table C-1: Persons involved

Test Item	Tester
20dB Bandwidth	Zhou Bin
Frequency Tolerance	Zhou Bin
Electric Field Strength of Fundamental and Outside the Allocated bands	Zhang Tianli
Electric Field Radiated Emissions (< 30MHz)	Li Pengfei
Electric Field Radiated Emissions (≥30MHz)	Li Pengfei
Conducted Emissions	Zhang Tianli

ANNEX D: Accreditation Certificate



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is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

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).

2020-09-29 through 2021-09-30
Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

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