



# NFC TEST REPORT

No.I19Z60700- IOT01

for

**Hytera Communications Corporation Limited**

**Smart LTE Terminal**

**PNC550**

**FCC ID: YAMPNC550B9**

with

**Hardware Version: 1.01**

**Software Version: V1.0.01.001.01**

**Issued Date: 2019-07-24**



**Note:**

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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.

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I19Z60700-IOT01	Rev.0	1st edition	2019-05-15
I19Z60700-IOT01	Rev.1	2nd edition	2019-07-20
I19Z60700-IOT01	Rev.2	Marked the E-field value on Figure C-1	2019-07-24

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## **1. Test Laboratory**

### **1.1. Introduction & Accreditation**

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2005 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 (CN0066). 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(Shouxiang)

Address: No. 51 Shouxiang Science Building, Xueyuan Road,  
Haidian District, Beijing, P. R. China 100191

### 1.3. Testing Environment

Normal Temperature: 15-35°C  
Extreme Temperature: -20/+55°C  
Relative Humidity: 20-75%

### 1.4. Project data

Testing Start Date: 2019-04-22  
Testing End Date: 2019-05-14

### 1.5. Signature



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Zhang Qiang  
(Prepared this test report)



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Zhu Liang  
(Reviewed this test report)



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Gao Hong  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: Hytera Communications Corporation Limited  
Address: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road,  
Nanshan District, Shenzhen, People's Republic of China  
City: SHENZHEN  
Postal Code: 518054  
Country: CHINA  
Telephone: 13717055929  
Fax: /

### **2.2. Manufacturer Information**

Company Name: Hytera Communications Corporation Limited  
Address: Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road,  
Nanshan District, Shenzhen, People's Republic of China  
City: SHENZHEN  
Postal Code: 518054  
Country: CHINA  
Telephone: 13717055929  
Fax: /

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

#### **3.1. About EUT**

Description	Smart LTE Terminal
Model name/HVIN	PNC550
Marketing Name/PMN	PNC550
Brand name	Hyteta
FCC ID	YAMPNC550B9
UMTS Frequency Band(s)	FDD II/IV/V
GSM Frequency Band(s)	GSM900/1800/1900/850
E-UTRA Frequency Band(s)	FDD02/03/04/05/07/12/13/17/26/28/38
Extreme Temperature	-20/+60°C
Nominal Voltage	3.8V
Extreme High Voltage	4.35V
Extreme Low Voltage	3.5V

Note: Photographs of EUT are shown in ANNEX A of this test report.

#### **3.2. Internal Identification of EUT**

<b>EUT ID*</b>	<b>SN or IMEI</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Date of receipt</b>
EUT1	864608040026119	1.01	V1.0.01.001.01	2019-04-22
EUT4	864608040026069	1.01	V1.0.01.001.01	2019-04-22

#### **3.3. Internal Identification of AE**

<b>AE ID*</b>	<b>Description</b>	<b>SN</b>
AE1	Battery	/
AE2	Charger	/
AE3	USB Cable	/
AE13	NFC Card	/

##### **AE1**

Model	BP4003
Manufacturer	FPR Connectivity Technology Inc.
Capacitance	4000mAh
Nominal voltage	/

##### **AE2**

Model	PS2032
Manufacturer	TENPAO
Length of cable	/

##### **AE3**

Model	PC143(C-type)
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Manufacturer                                      TENPAO  
Length of cable                                    /

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

**3.4. EUT Set-ups**

EUT Set-up No.	Combination of EUT and AE	Remarks
Set. NFC01	EUT1 + AE1 + AE2 + AE3+ AE13	--
Set. NFC02	EUT1 + AE1 + AE13	--
Set. NFC03	EUT4	--

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 of 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 B for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

##### **4.2. Reference Documents for testing**

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

<b>Reference</b>	<b>Title</b>	<b>Version</b>
CFR 47 Part 2	Part 2 — Frequency Allocations and Radio Treaty Matters; General Rules and Regulations.	2016
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.	2016
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)	C.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	C.2	P(Set. NFC01)
		CFR 47 § 15.225(d)	C.3	P(Set. NFC01)
4	Frequency Tolerance	CFR 47 § 15.225(e)	C.4	P(Set. NFC03)
5	20dB Bandwidth	CFR 47 § 15.215(c)	C.5	P(Set. NFC03)
6	Conducted Emissions	CFR 47 § 15.207	C.6	P(Set. NFC01)

The measurement is carried out according to ANSI C63.4. See **ANNEX C** for details.

#### Test Conditions:

For this report, all the test case listed above were tested under normal Humidity and Air Pressure. And except the Frequency Tolerance case, all the other cases were tested with Temperature in the range of 15~25 °C and under normal Voltage. The specific conditions used are as following:

Temperature	T min	-20 (only for Frequency Tolerance test )
	T nom	20°C (only for Frequency Tolerance test )
	T max	50 °C (only for Frequency Tolerance test )
Voltage	V min	3.5 V (only for Frequency Tolerance test )
	V nom	3.8 V
	V max	4.35 V (only for Frequency Tolerance test )
Humidity	H nom	44%
Air Pressure	A nom	1010 mbar

### 5.2. Terms Used in the Summary of Test Results

#### Terms Used in Condition Column:

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage
V min	Low Voltage



V max	High voltage
H nom	Norm Humidity
A nom	Norm Air Pressure

**Terms Used in Verdict Column:**

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

## 6. Test Facilities Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1.	Spectrum Analyzer	RSA3408A	B010277	Tektronix	2019-09-20	1 Year
2.	Climatic chamber	SH242	93008658	Key sight	2020-02-27	1 Year
3.	H-field Antenna	HFH2-Z2	829324/007	R&S	2020-12-03	1 Year
4.	Test Receiver	ESCI	100344	R&S	2020.02.14	1 Year
5.	Universal Radio Communication Tester	CMW500	150344	R&S	2019-12-27	1 Year
6.	Universal Radio Communication Tester	CMW500	116588	R&S	2019-12-26	1 Year
7.	LISN	ENY216	101459	R&S	2020-04-10	1 Year
8.	Test Receiver	ESU26	100235	Rohde & Schwarz	2020-03-01	1 Year
9.	BiLog Antenna	VULB9163	483	Schwarzbeck	2021-08-21	3 years

## 7. Measurement Uncertainty

<u>Item</u>	<u>Uncertainty</u>
Frequency Tolerance	$U = 77 \text{ Hz, } k=2$
20dB Bandwidth	$U = 77 \text{ Hz, } k=2$
Radiated Emissions (<1GHz)	$U = 4.86 \text{ dB, } k=2$
Radiated Emissions (>1GHz)	$U = 5.26 \text{ dB, } k=2$
Conducted emission	$U = 3.38 \text{ dB, } k=2$



**ANNEX A: EUT photograph**

/



**ANNEX B: EUT parameters**

/



## **ANNEX C: Detailed Test Results**

### **C.1. Electric Field Strength of Fundamental and Outside the Allocated bands**

#### **C.1.1. Reference**

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

#### **C.1.2. Measurement Methods**

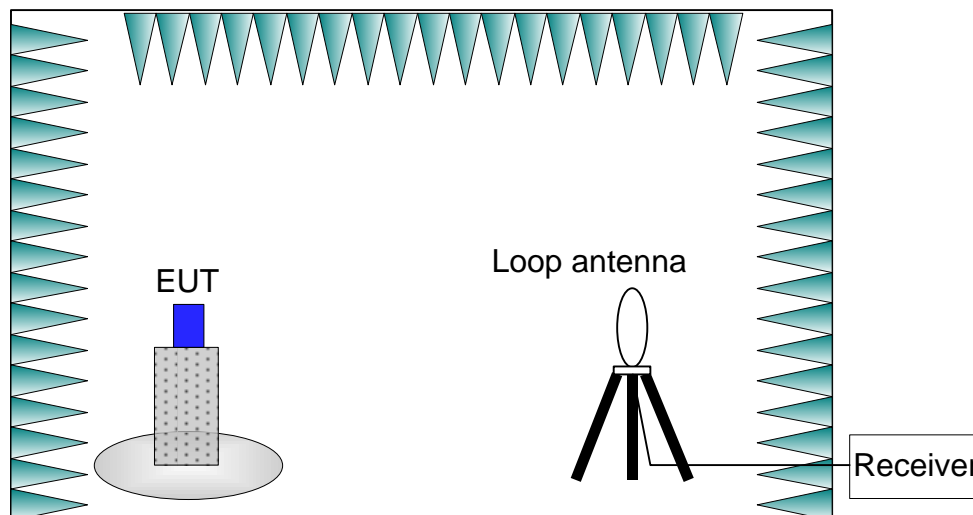
The transmitter carrier output levels (E-Field) from the EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The E-field 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:

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

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

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



#### **C.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.

### C.1.4. 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

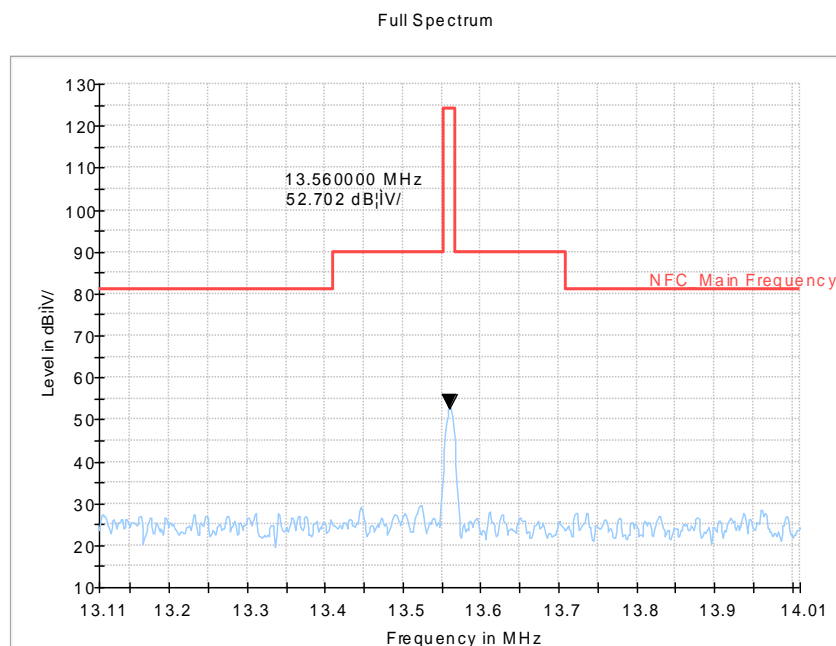
Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula:

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

### C.1.5. Measurement Results

Measurement results of normal conditions see Figure C-1 for different set-ups of EUT. The result displayed take into account applicable antenna factors and cable losses.

**Conclusions:** Set.NFC02, **PASS.**



**Figure C-1:** Set.NFC02

## C.2. Electric Field Radiated Emissions (< 30MHz)

### C.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.

### C.2.2. Measurement Methods

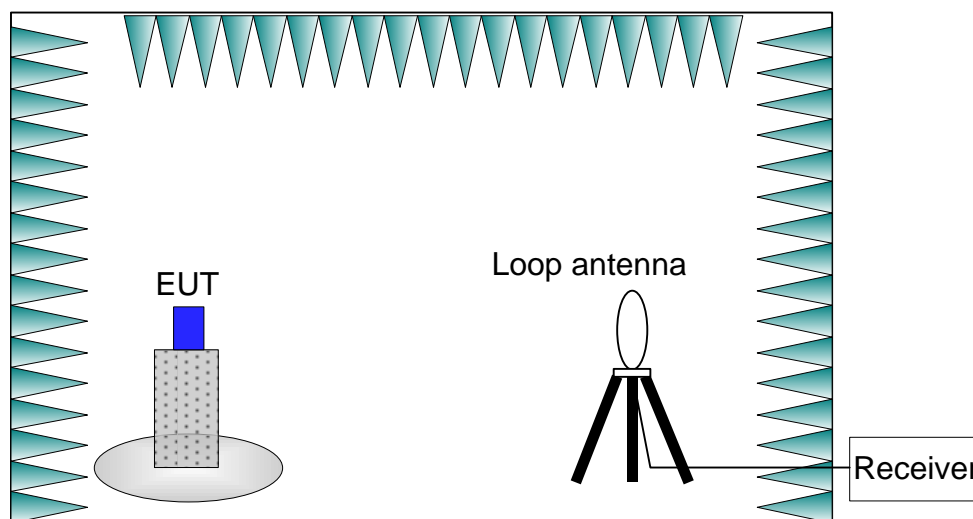
The transmitter carrier output levels (E-Field) from the EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The E-field 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:

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



### C.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.

### C.2.4. Limits

Frequency Range (MHz)	E-field Strength Limit @ 30m (mV/m)	E-field Strength Limit @ 3m (dB $\mu$ 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:

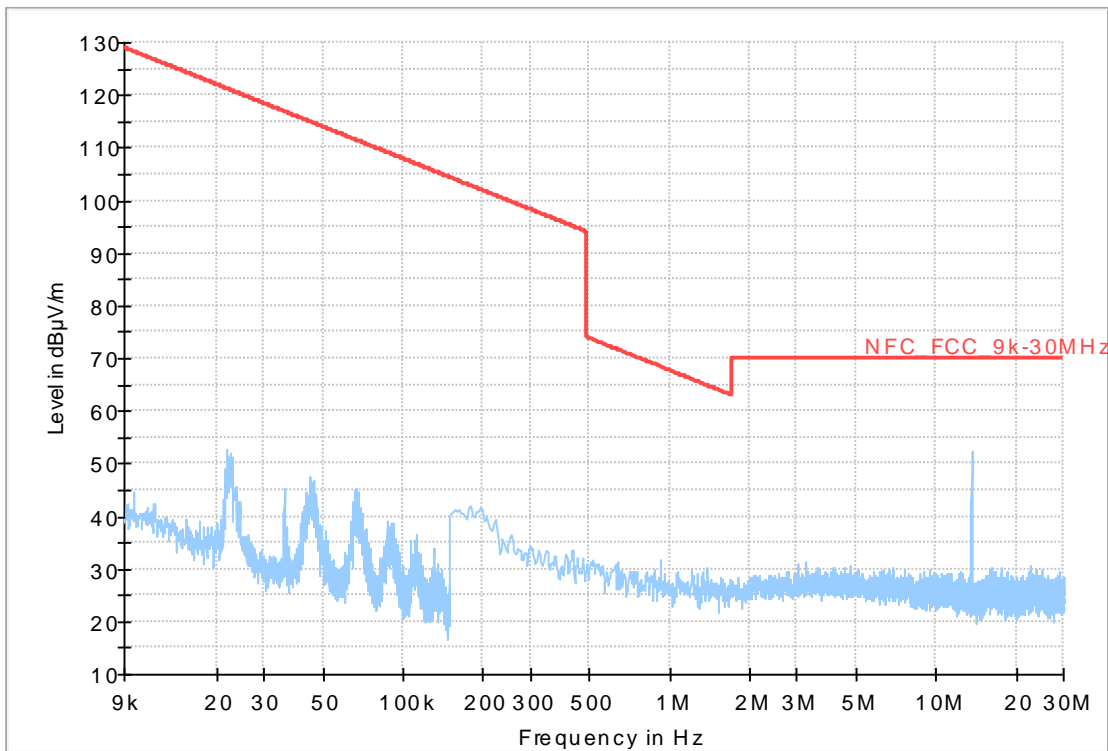
$$\text{Extrapolation(dB)} = 40\log_{10}(\text{Measurement Distance}/\text{Specification Distance})$$

### C.2.5. Measurement Results

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

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

Full Spectrum



**Figure C-2: Set.NFC01**

### **C.3. Electric Field Radiated Emissions ( $\geq 30\text{MHz}$ )**

#### **C.3.1. Reference**

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

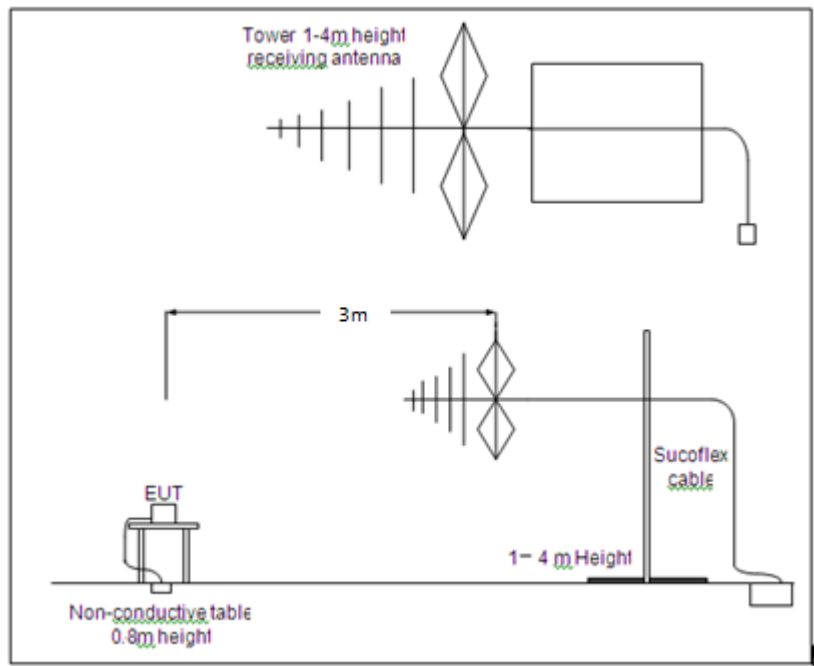
See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

#### **C.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



#### **C.3.3. EUT Operating Mode and Test Conditions**

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

EUT1 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.

### C.3.4. Limits

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

### C.3.5. Measurement Results

Measurement results of normal conditions see Figure C-3 for different set-ups of EUT. The result displayed take into account applicable antenna factors and cable losses.

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

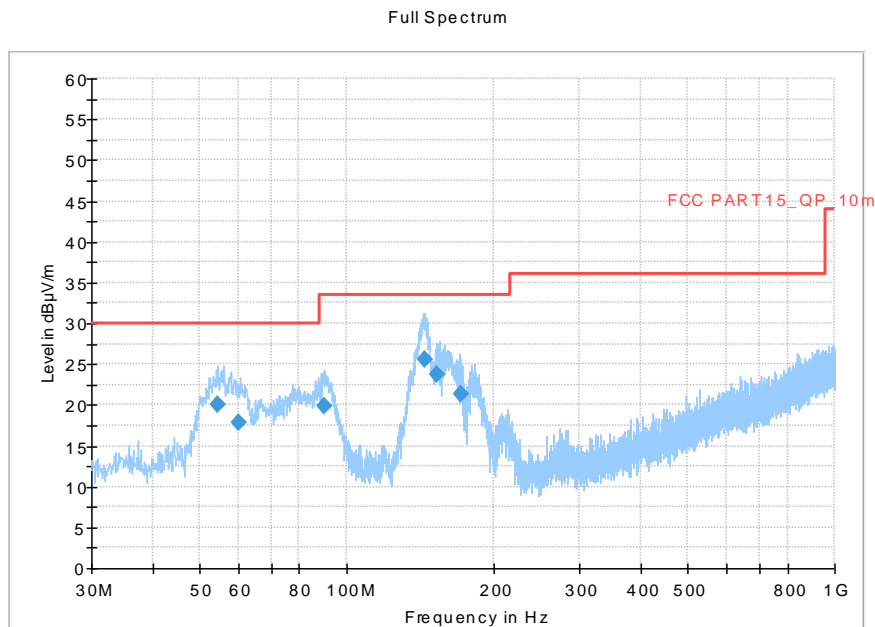


Figure C-3: Set.NFC01

### Final Result 1

Frequency (MHz)	QuasiPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	PoI	Azimuth (deg)
54.250000	20.05	30.00	9.95	1000.0	120.000	125.0	V	199.0
59.955000	17.87	30.00	12.13	1000.0	120.000	114.0	V	187.0
90.112000	19.81	33.50	13.71	1000.0	120.000	175.0	V	-27.0
144.529000	25.66	33.50	7.86	1000.0	120.000	187.0	V	96.0
152.816000	23.79	33.50	9.73	1000.0	120.000	121.0	V	72.0
171.347000	21.27	33.50	12.25	1000.0	120.000	109.0	V	26.0

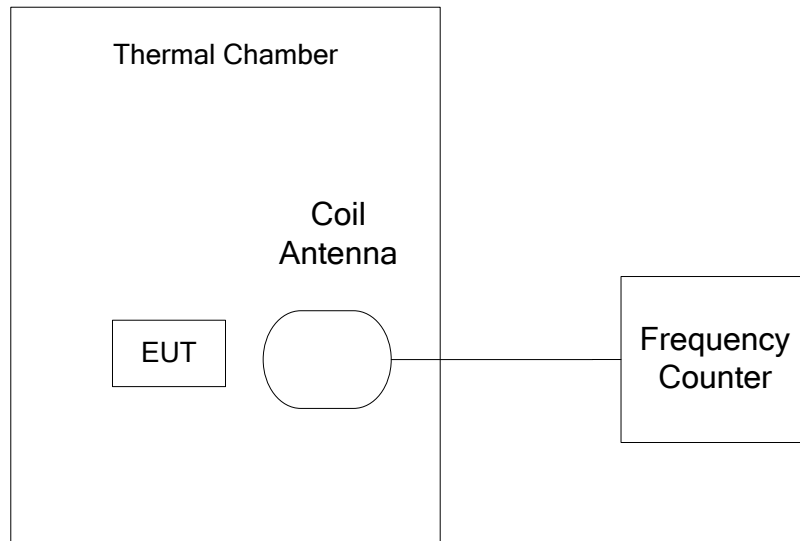
## **C.4. Frequency Tolerance**

### **C.4.1. Reference**

See Clause 13.6 of ANSI C63.10-2013 specifically.

See Clause 4, Clause 5, and Clause 6 of ANSI C63.10-2013 generally.

### **C.4.2. Measurement Methods**



The transmitter output signal was picked up by coil antenna connected to the frequency counter. 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.

### **C.4.3. EUT Operating Mode and Test Conditions**

The measurement of EUT is carried out under the transmit state of without modulation(See 3.4).

EUT4 had been not connected to a travel adapter.

Operation Temperature: T min, T nom, and T max with V nom.

Operation Voltage: V min and V max with T nom.

### **C.4.4. Test Layouts**

See C.4.2.

### **C.4.5. Limits**

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

### **C.4.6. Measurement Results**

Measurement results see Table C-1 for different test conditions.

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

**Table C-1: Frequency Stability VS Temperature and Voltage**

Temperature	Voltage	Frequency Error (MHz)			
		Startup	2 Min Later	5 Min Later	10 Min Later
T min	V nom	13.559833125	13.55985625	13.559953125	13.55995875
T max	V nom	13.559849375	13.559841875	13.559825625	13.55981625
T nom	V nom	13.55983625	13.559836875	13.559835	13.559831875
T nom	V min	13.559875	13.559874375	13.55987375	13.559873125
T nom	V max	13.559825	13.559825625	13.559824375	13.55982625

Temperature	Voltage	Frequency Error (%)			
		Startup	2 Min Later	5 Min Later	10 Min Later
T min	V nom	-0.001	-0.001	0.000	0.000
T max	V nom	-0.001	-0.001	-0.001	-0.001
T nom	V nom	-0.001	-0.001	-0.001	-0.001
T nom	V min	-0.001	-0.001	-0.001	-0.001
T nom	V max	-0.001	-0.001	-0.001	-0.001

#### C.4.7. Measurement Uncertainty

Measurement uncertainty:  $U = 77$  Hz,  $k=2$

### C.5. 20dB Bandwidth

#### C.5.1. Reference

See Clause 13.7 of ANSI C63.10-2013 specifically.

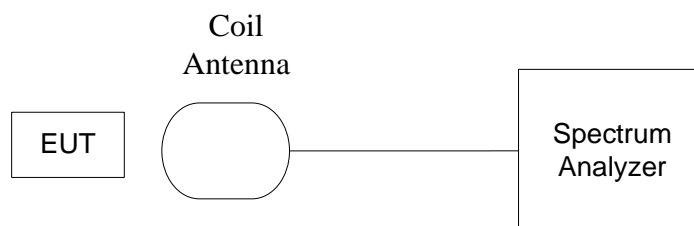
See Clause 4, Clause 5, and Clause 6 of ANSI C63.10-2013 generally.

#### C.5.2. Measurement Methods

The transmitter output signal was picked up by coil antenna to the spectrum analyzer.

The transmitter output signal was picked up by coil antenna connected to the spectrum analyzer.

The bandwidth of the center frequency was measured with 140Hz RBW, 420Hz VBW and 14kHz span.





### C.5.3. EUT Operating Mode and Test Conditions

The measurement of EUT is carried out under the transmit state of NFC and without modulation(See 3.4).

EUT4 had been not connected to a travel adapter..

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

### C.5.4. Test Layouts

See C.5.2.

### C.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.

### C.5.6. Measurement Results

Measurement results see Figure C-4.

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

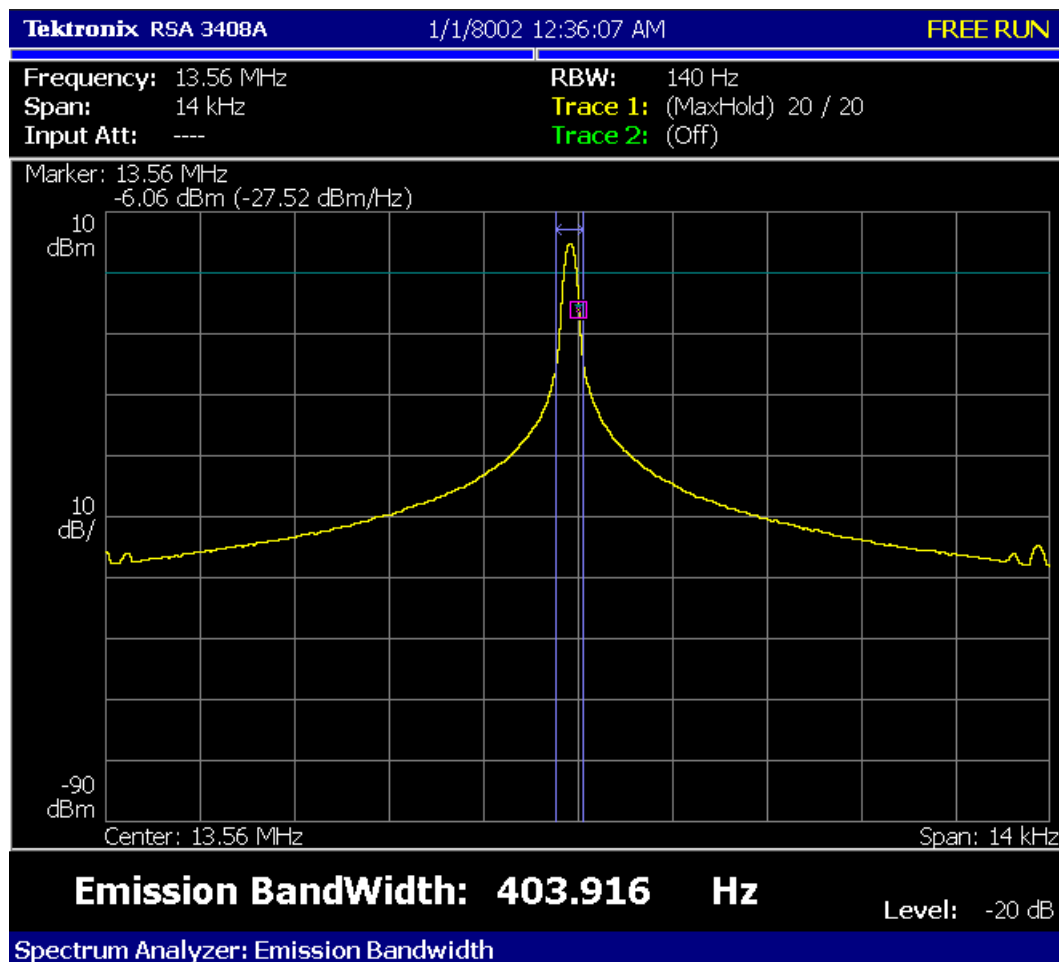


Figure C-4: Set.NFC01

### C.5.7. Measurement Uncertainty

Measurement uncertainty:  $U = 77$  Hz,  $k=2$

## **C.6. Conducted emission**

### **C.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.

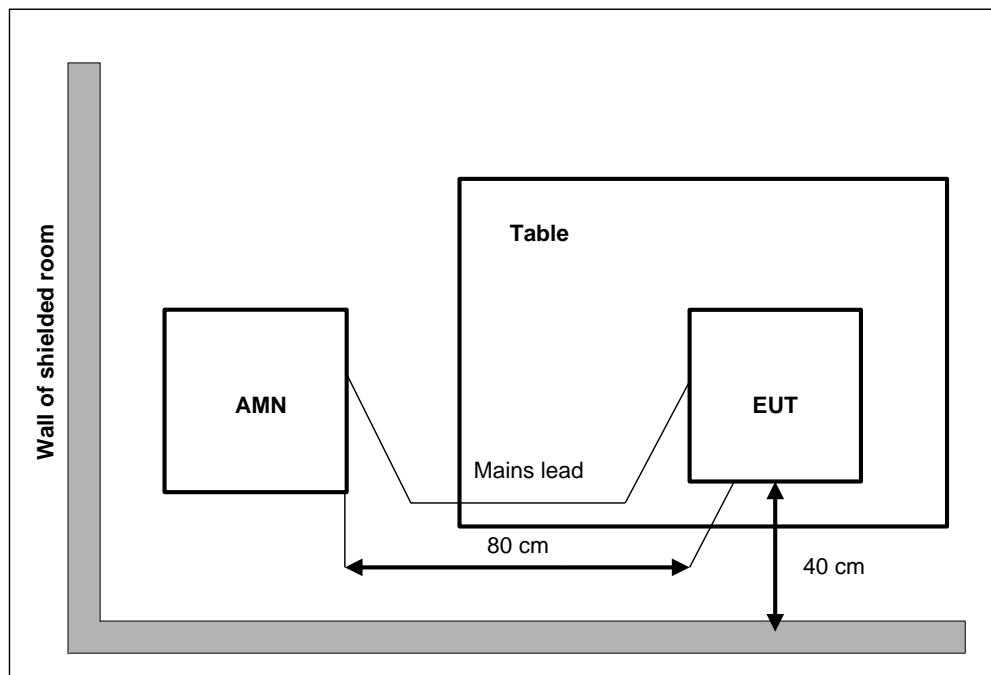
### **C.6.2. Measurement Methods**

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:

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



### **C.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.

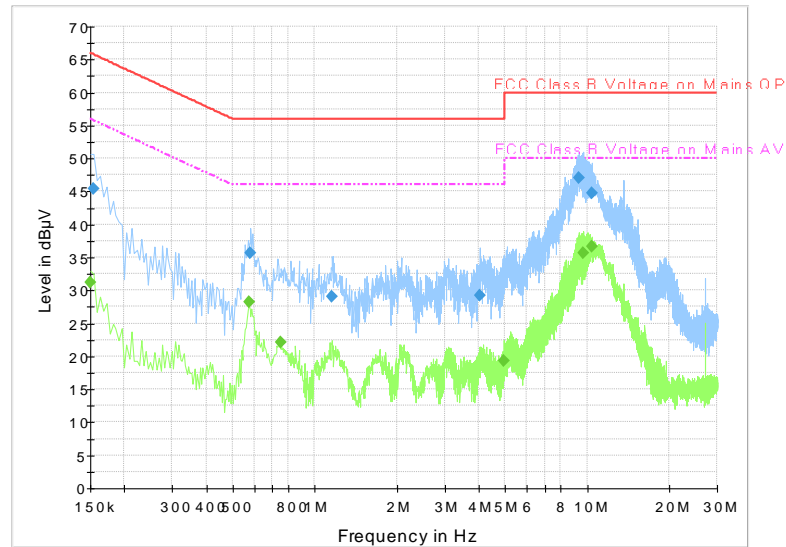
### **C.6.4. Limits**

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

### C.6.5. Measurement Results

Measurement results see Figure C-5.

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



**Figure C-5: Conducted Emission**

### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	45.4	2000.0	9.000	L1	29.7	20.3	65.8
0.582000	35.6	2000.0	9.000	L1	19.8	20.4	56.0
1.158000	29.0	2000.0	9.000	N	19.7	27.0	56.0
4.051500	29.2	2000.0	9.000	N	19.6	26.8	56.0
9.339000	47.0	2000.0	9.000	L1	19.7	13.0	60.0
10.414500	44.7	2000.0	9.000	L1	19.7	15.3	60.0



### Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	31.1	2000.0	9.000	L1	30.7	24.9	56.0
0.573000	28.2	2000.0	9.000	L1	19.8	17.8	46.0
0.753000	22.1	2000.0	9.000	L1	19.8	23.9	46.0
4.960500	19.3	2000.0	9.000	L1	19.6	26.7	46.0
9.708000	35.7	2000.0	9.000	L1	19.7	14.3	50.0
10.414500	36.6	2000.0	9.000	L1	19.7	13.4	50.0

**ANNEX D: Persons involved in this testing**

<b>Test Item</b>	<b>Tester</b>
20dB Bandwidth	Zhou Bin
Frequency Tolerance	Zhang Qiang
Electric Field Strength of Fundamental and Outside the Allocated bands	Li Pengfei
Electric Field Radiated Emissions (< 30MHz)	Li Pengfei
Electric Field Radiated Emissions ( $\geq 30$ MHz)	Li Pengfei
Conducted Emissions	Li Jinpeng

## ANNEX E: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p> 	
<hr/> <p><b>Certificate of Accreditation to ISO/IEC 17025:2005</b></p> <hr/>	
<p>NVLAP LAB CODE: 600118-0</p>	
<p><b>Telecommunication Technology Labs, CAICT</b> 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><b>Electromagnetic Compatibility &amp; Telecommunications</b></p>	
<p><i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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>	
<hr/> <p>2018-09-28 through 2019-09-30 <i>Effective Dates</i></p>	 <hr/> <p><i>[Signature]</i> For the National Voluntary Laboratory Accreditation Program</p>

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