Industrial Internet Innovation Center (Shanghai) Co.,Ltd.

EMC TEST REPORT

PRODUCT	**Smart POS system**
BRAND	**SUNMI**
MODEL	**T6900**
APPLICANT	**Shanghai Sunmi Technology Co.,Ltd.**
FCC ID	**2AH25T6900P2**
IC	**22621-T6900P2**
ISSUE DATE	**January 11, 2023**
STANDARD(S)	**FCC CFR47 Part 2, FCC CFR47 Part 15C, ANSI C63.10-2013.**

Prepared by: ***Li Liukai*** **Reviewed by:** ***Qin Yabin*** **Approved by:** ***Zhang Min***

CONTENTS

1 Summary of Test Report

1.1 Test Standard (s)

No.	Test Standard(s)	Title	Version
1	FCC CFR47 Part 2	Frequency allocations and radio treaty matters; general rules and regulations	2020/10/01
2	FCC CFR47 Part 15C	Radio Frequency Devices-Intentional Radiators	2020/10/01
3	ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
4	RSS-210	License-Exempt Radio Apparatus: Category I Equipment	Issue 10
5	RSS-Gen	General Requirements for Compliance of Radio Apparatus	Issue 5
NOTE: According to customer requirements, test and report using the latest version of the standard.			

1.2 Summary of Test Results

No.	Item(s)	Sub-clause of FCC Standard	Sub-clause of IC Standard	Verdicts for Single Item	Detaied Results
1	20 dB bandwidth	2.1049	RSS-Gen 6.7	Pass	See section 6.1
2	Frequency Stability	15.225(e)	RSS-210 B.6.b	Pass	See section 6.2
3	Radiated Emission	15.225 (a) (b) (c) (d) and 15.209	RSS-210 B.6.a (i , ii , iii , iv)	Pass	See section 6.3
4	Conducted Emissions	15.207	RSS-Gen 8.8	Pass	See section 6.4
5	Occupied bandwidth	N/A	RSS-Gen 6.7	Pass	See section 6.5

No.	Item(s)	Sub-clause of FCC Standard	Sub-clause of IC Standard	Verdicts for Single Item	Detaied Results

NOTE:
The T6900 manufactured by Shanghai Sunmi Technology Co.,Ltd. is a new product for testing.
There are five configurations S08aa (Fingerprint edition mainly supply) & S16aa (Fingerprint edition secondary supply) & S03aa (Standard edition mainly supply) & S06aa (Standard edition secondary supply) & S26aa (Scan edition mainly supply) and three configurations battery (BA02 & BB02 & BC02) in this project. Because the NFC modules in different configurations are the same, the radiation performance related to NFC is not affected, we only test S08aa (Fingerprint edition mainly supply) + BA02 and recorded the test results of the worst mode respectively in the report.
Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 1.3.
Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 4 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 1 of this test report.
Hardware Version Id Number (HVIN):
1)T6900P2 - 1:Configuration1-fingerprint
2)T6900P2 - 2:Configuration1-scanner
3)T6900P2 - 3:Configuration1-standard
4)T6900P2 - 4:Configuration2-fingerprint
5)T6900P2 - 5:Configuration2-standard

2 General Information of The Laboratory

2.1 Testing Laboratory

Lab Name	Industrial Internet Innovation Center (Shanghai) Co.,Ltd.
Address	Building 4, No. 766, Jingang Road, Pudong, Shanghai, China
Telephone	021-68866880
FCC Registration No.	958356
FCC Designation No.	CN1177
IC designation No.	CN0067

2.2 Laboratory Environmental Requirements

Temperature	15℃~35℃
Relative Humidity	25%RH~75%RH
Atmospheric Pressure	86kPa~106kPa
Supply Voltage	120V/60Hz

2.3 Project Information

Project Manager	Gao Hongning
Test Date	November 21, 2022 to November 23, 2022

3 General Information of The Customer

3.1 Applicant

Company	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China
Telephone	+86-17302160204

3.2 Manufacturer

Company	Shanghai Sunmi Technology Co.,Ltd.
Address	Room 505, No.388, Song Hu Road, Yang Pu District, Shanghai, China
Telephone	+86-17302160204

3.3 Factory

Company	N/A
Address	N/A

4 General Information of The Product

4.1 Product Description for Equipment under Test (EUT)

Product	Smart POS system
Model	T6900
Date of Receipt	September 30, 2022
EUT ID*	S08aa (Fingerprint edition mainly supply) S16aa (Fingerprint edition secondary supply) S03aa (Standard edition mainly supply) S06aa (Standard edition secondary supply) S26aa (Scan edition mainly supply)
SN/IMEI	869325026801002/869325026801010 869325026800780/869325026800798 869325026812009/869325026812017 869325026810920/869325026810938 862318060015875/862318060015883
Supported Radio Technology and Bands	GSM850/GSM900/GSM1800/GSM1900 WCDMA Band I/II/IV/V/VIII LTE Band 1/2/3/4/5/7/17/28/38/41 BT 4.2 WLAN 802.11b,g,n WLAN 802.11a,n GPS NFC
Hardware Version	B1691_MAIN_PCB
Software Version	SP6359A-20220922115332
Product Class	1
NOTE1：EUT ID is the internal identification code of the laboratory. NOTE2：Photographs of EUT are shown in ANNEX A of this test report.	

4.2 Description for Auxiliary Equipment (AE)

AE ID*	Description	Model	SN/Remark
CA01	Adapter	TPA-23A050200UU01	N/A
UA18	USB Cable	N/A	N/A
BA02	Battery	P2	Guangdong Fenghua New Energy Co,.Ltd.
AE1	Type-A Card	N/A	N/A
NOTE: *AE ID is the internal identification code of the laboratory.			

5 Test Configuration Information

5.1 Laboratory Environmental Conditions

5.1.1 Permanent Facilities

Semi-anechoic chamber SAC3-1 (9 m*8m*6.2m) & SAC3-2 (9.8m*6.7m*6.7m)	
Shielding effectiveness	0.014MHz ~1MHz, >60dB; 1MHz~1000MHz, >90dB.
Electrical insulation	> 2MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (SVSWR)	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

Shielded room	
Shielding effectiveness	0.014MHz~1MHz, >60dB; 1MHz~1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω

5.2 Decision of final test mode

The EUT was tested in conjunction with the accessories in Section 4.2. We tested all of the following test modes and selected the worst mode from the test results and recorded them in the report.

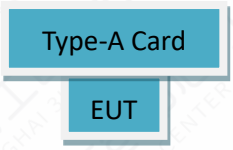
The test configuration modes are as the following:

Test Item	Test setup and operating modes
20 dB bandwidth	Mode 1: TX Mode + BA02
Frequency Stability	Mode 1: TX Mode + BA02
Radiated emission	Mode 1: TX Mode + BA02
Conducted Emissions	Mode 2: TX Mode + CA01 + UA18 + BA02
Occupied bandwidth	Mode 1: TX Mode + BA02
Note: N/A	

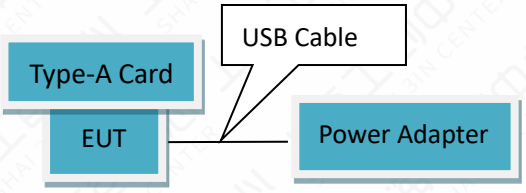
5.3 EUT System Operation

1. Connect the EUT with AE.
2. Setup the EUT according to the standard.
3. Start testing and monitoring the function.
4. TX mode: Enter working mode according to NFC transmission command. The EUT will transmit the NFC command continuously during the test, and will read the information from the Type A Card continuously.

5.4 EUT Connection Diagram of Test System



<Figure 5.4-1> Mode 1



<Figure 5.4-1> Mode 2

5.5 Test Equipment Utilized

No.	Name	Model	S/N	Manufacturer	Cal. Date	Cal. Interval
1	Test Receiver	ESCI	101235	R&S	2022-02-23	1 year
2	Test Receiver	ESU40	100307	R&S	2022-02-23	1 year
3	Trilog Antenna	VULB9163	VULB9163-515	Schwarzbeck	2022-03-11	1 year
4	Loop Antenna	AL-130R	121083	COM-POWER	2021-11-25	2 years
5	Temperature Box	B-TF-107C	201804107	Boyi	2022-10-17	1 year
6	EMI Test Software	EMC32 V10.35.02	N/A	R&S	N/A	N/A
7	Vector Signal Analyser	FSQ26	101091	R&S	2022-08-23	1 year
8	Climate chamber	B-TF-107C	201804107	Boyi	2022-06-30	1 year

5.6 Measurement Uncertainty

Item (s)	Uncertainty
20 dB bandwidth	60.8 Hz
Frequency Stability	60.8 Hz
Electric Field Strength of Fundamental Emissions	4.48 dB
Electric Field Radiated Emissions (Below 30MHz)	4.48 dB
Electric Field Radiated Emissions (Above 30MHz)	4.94 dB
Conducted Emissions	3.56 dB
Occupied bandwidth	60.8 Hz
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

6 Test Results

6.1 20dB Bandwidth

6.1.1 Measurement Methods

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

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

c. The bandwidth of the center frequency was measured with 200Hz RBW, 500Hz VBW and 14kHz span.

6.1.2 EUT Connection Diagram of Test System

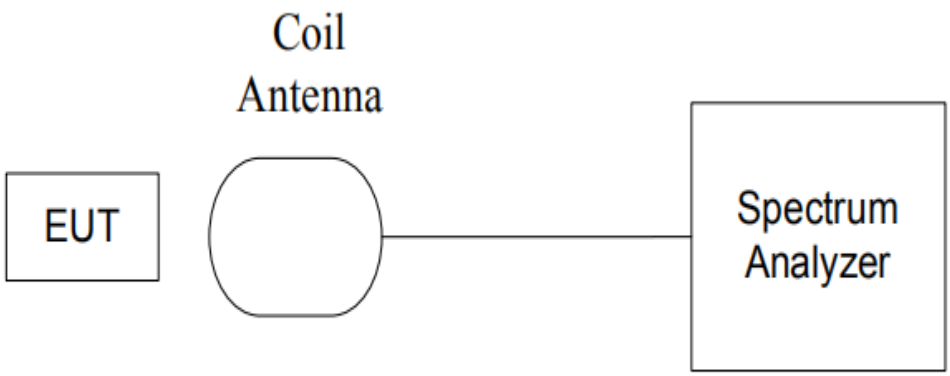


Figure 6.1.2-1 20dB Bandwidth Connection Diagram

6.1.3 Test Condition

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

EUT had been not connected to a travel adapter.

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

6.1.4 Limit/Criterion

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

6.1.5 Test environmental conditions

Temperature	24℃
Relative Humidity	52%RH
Atmospheric Pressure	101.7kPa

6.1.6 Test Results

Carrier frequency (MHz)	20dB Bandwidth (kHz)	Test Results	Conclusion
13.56	0.606	See Annex A.1-1	Pass

6.2 Frequency Stability

6.2.1 Measurement Methods

The transmitter output single 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.

6.2.2 EUT Connection Diagram of Test System

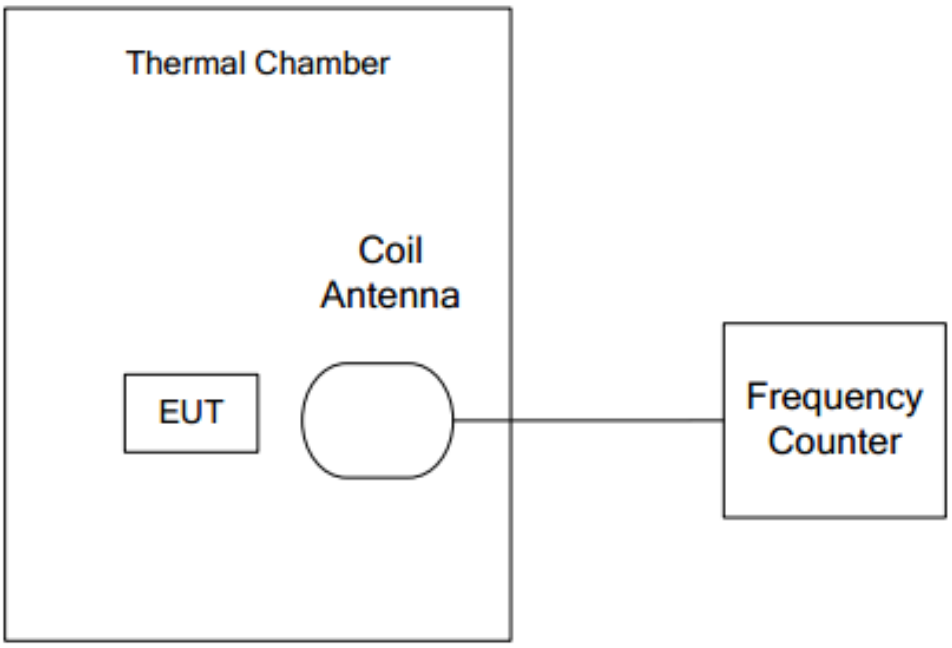


Figure 6.2.2-1 Frequency Stability Connection Diagram

6.2.3 Test Condition

The measurement of EUT is carried out under the transmit state of without modulation , EUT1 had been not connected to a travel adapter.

Operation Temperature: -20℃, -10℃, 0℃, 10℃, 20℃, 30℃, 40℃, 50℃.

Operation Voltage: Vmin=2.2V, Vmax=3.3V, and Tnom=3V.

6.2.4 Limit/Criterion

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

6.2.5 Test environmental conditions

Temperature	24℃
Relative Humidity	52%RH
Atmospheric Pressure	101.7kPa

6.2.6 Test Results

Temperature	Voltage	Frequency Error（MHz）	Frequency Error（%）
-20℃	Vnom	See Annex A.2-1	
-10℃	Vnom		
0℃	Vnom		
10℃	Vnom		
20℃	Vnom		
30℃	Vnom		
40℃	Vnom		
50℃	Vnom		
20℃	Vmin		
20℃	Vmax		

6.3 Radiated Emission

6.3.1 Electric Field Strength of Fundamental Emissions

6.3.1.1 Method of Measurement

a. The test set-up was made in accordance to the general provisions of ANSI C63.10-2013.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 antenna is 1 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. Both horizontal and vertical polarizations of the antenna were set during the measurement. 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.

b. The measurement bandwidth:

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

6.3.1.2 EUT Connection Diagram of Test System

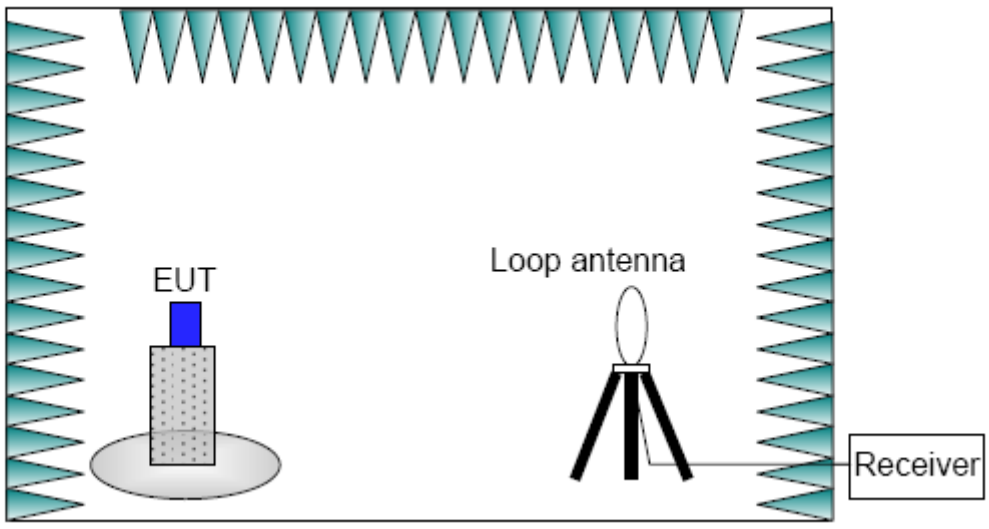


Figure 6.3.1.2-1Electric Field Strength of Fundamental Emissions Connection Diagram

6.3.1.3 Test Condition

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
12.56-14.56	10kHz/30kHz	AUTO

6.3.1.4 Limit/Criterion

Clause 15.225(a) the field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

Clause 15.225(b) within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

Clause 15.225(c) within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

Frequency Range (MHz)	E-field Strength Limit @30m (uV/m)	E-field Strength Limit @3m (dBuV/m)
13.560 ± 0.007	15848	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
Outside the band 13.110-14.010	Base on RSS-210 B.6.d, the limit of this range see section 6.3.2.4	
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) = 40log10(Measurement Distance / Specification Distance)		

6.3.1.5 Test environmental conditions

Temperature	23.4℃
Relative Humidity	59.1%RH
Atmospheric Pressure	100.2kPa

6.3.1.6 Test Results

Mode	Frequency (MHz)	Test Results	Verdicts
Mode 1: TX Mode	12.56-14.56	See Annex A.3.1-1	Pass

NOTE:

a. Abbreviations used in this clause: Pass—P; Fail—F; Not applicable—N/A

b. The result displayed take into account applicable antenna factors and cable losses.

6.3.2 Electric Field Radiated Emissions (Below 30MHz)

6.3.2.1 Method of Measurement

a. 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 center of the receiving antenna is 1 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. Both horizontal and vertical polarizations of the antenna were set during the measurement. 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.

b. The measurement bandwidth:

Frequency (MHz)	RBW / VBW
0.009-30	10 / 30kHz

6.3.2.2 EUT Connection Diagram of Test System

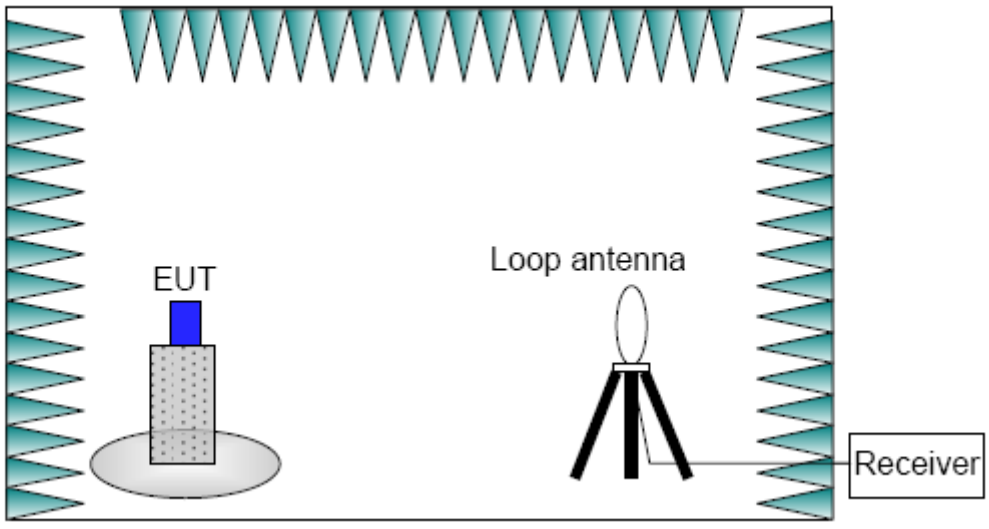


Figure 6.3.2.2-1 Electric Field Radiated Emissions (Below 30MHz) Connection Diagram

6.3.2.3 Test Condition

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
0.009-30	10kHz/30kHz	AUTO

6.3.2.4 Limit/Criterion

Frequency Range (MHz)	E-field Strength Limit (Uv/m)	E-field Strength Limit @3m (dBuV/m)
0.009-0490	2400/F (kHz) @300m	129-94
0.490-1.705	24000/F (kHz) @30m	74-63
1.705-30	30 @30m	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) = 40log10(Measurement Distance / Specification Distance) dBuA/m=dBuV/m / 120π Based on RSS-Gen Table 5, the ISED limit is the same as above.		

6.3.2.5 Test environmental conditions

Temperature	23.4℃
Relative Humidity	59.1%RH
Atmospheric Pressure	100.2kPa

6.3.2.6 Test Results

Mode	Frequency (MHz)	Test Results	Verdicts
Mode 1: TX Mode	0.009-30	See Annex A.3.2-1	Pass
NOTE: a. Abbreviations used in this clause: Pass—P; Fail—F; Not applicable—N/A b. The result displayed take into account applicable antenna factors and cable losses c. dBuV/m and dBuA/m can be converted to each other, so the test data of dBuV/m are reflected in the report			

6.3.3 Electric Field Radiated Emissions (Above 30MHz)

6.3.3.1 Method of Measurement

a. 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 center of the receiving antenna is 1 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. Both horizontal and vertical polarizations of the antenna were set during the measurement. 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.

b. The measurement bandwidth:

Frequency (MHz)	RBW / VBW
30-1000	120 kHz / 300kHz

6.3.3.2 EUT Connection Diagram of Test System

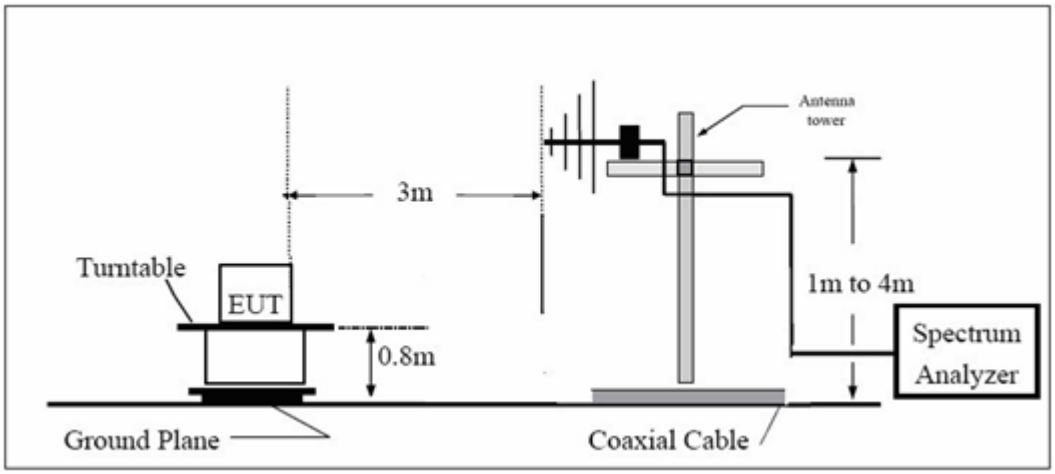


Figure 6.3.3.2-1 Electric Field Radiated Emissions (Above 30MHz) Connection Diagram

6.3.3.3 Test Condition

Frequency Range (MHz)	RBW/VBW	Sweep Time (s)
30-1000	120kHz/300kHz	AUTO

6.3.3.4 Limit/Criterion

Frequency Range (MHz)	Quasi-Peak (DbμV/m)	Peak (DbμV/m)	Average (DbμV/m)
30-88	40	N/A	N/A
88-216	43.5	N/A	N/A
216-960	46	N/A	N/A
Above 960	54	N/A	N/A
Above 1000	N/A	74	54

ISED Limit:

Frequency Range (MHz)	Field Strength (μV/m at 3 metres)	Field Strength (DbμV/m at 3 metres)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54
Note: dBuV/m = 20 log Uv/m		

6.3.3.5 Test environmental conditions

Temperature	23.4℃
Relative Humidity	59.1%RH
Atmospheric Pressure	100.2kPa

6.3.3.6 Test Results

Mode	Frequency (MHz)	Test Results	Verdicts
Mode 1: TX Mode	30-1000	See Annex A.3.3-1	Pass

NOTE:

a. Abbreviations used in this clause: Pass—P; Fail—F; Not applicable—N/A

b. The result displayed take into account applicable antenna factors and cable losses

c. QP detection is used in radiated emissions test, and the Duty Cycle of NFC main frequency signal is 100%.

6.4 Conducted Emissions

6.4.1 Reference

See Clause 6.2 of ANSI C63.10-2013

6.4.2 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. Tested in accordance with the procedures of ANSI C63.10-2013

6.4.3 Test Setup

The measurement bandwidth and Test Condition

Frequency Range (MHz)	RBW	Sweep Time (s)	Test Voltage
0.15-30	9 kHz	AUTO	120V/60Hz

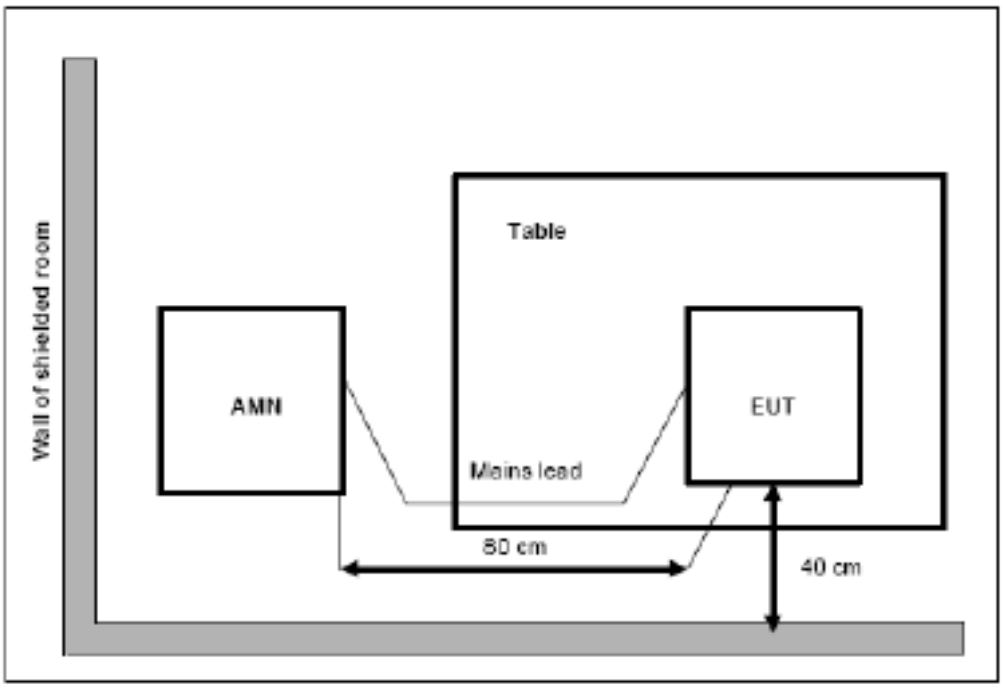


Figure 6.4.3-1 Conducted Emissions Connection Diagram

6.4.4 Limits

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency

Based on RSS-Gen Table 3, the ISED limit is the same as above.

6.4.5 Measurement Results

Mode	Frequency (MHz)	Test Results	Verdicts
Mode 2: TX Mode + CA01 + UA18 + BA02	0.009-30	See Annex A.4-1	Pass

NOTE:

a. Emission level (quasi-peak or Average peak) =Raw value by receiver + Corr(Insertion loss+ cable loss)

b. The raw value is used to calculate by software which is not shown in the sheet.

c. Margin=limit value – emission level.

d. L1 and N line is all have been tested , the result of them is synthesized in the above data diagram.

e. The frequency over the limits is the NFC main signal frequency.

6.5 Occupied bandwidth

6.5.1 Reference

See Clause 6.7 of RSS-Gen.

6.5.2 Measurement Methods

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

The following conditions shall be observed for measuring the occupied bandwidth:

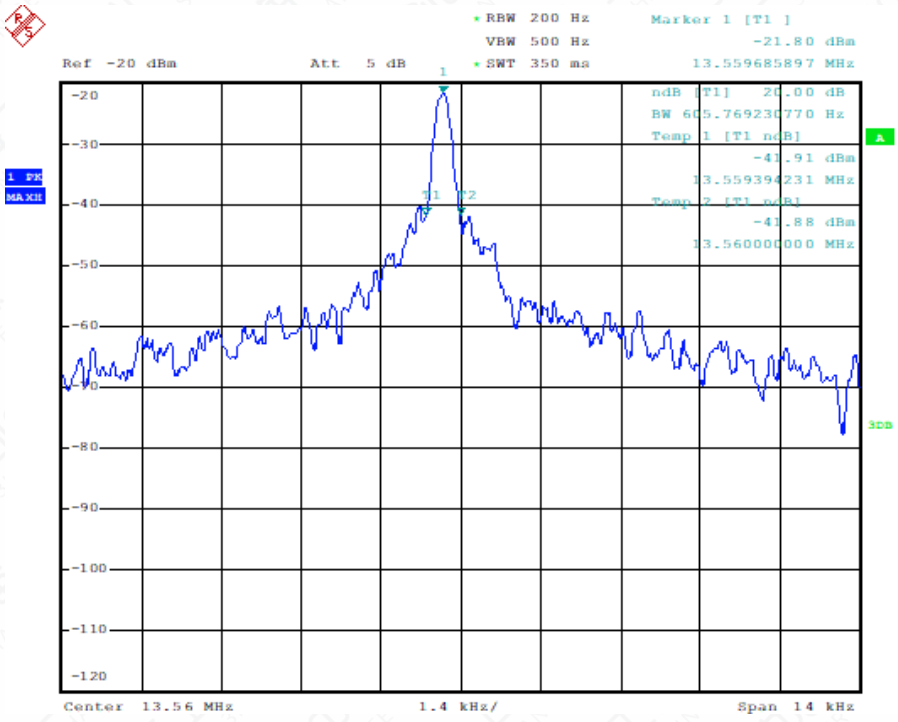
- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / x Db bandwidth if the device is not transmitting continuously.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x Db bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

6.5.3 Measurement Results

See Annex A.5-1

Annex A: Measurement Data



A.1-1 Mode 1 20Db Bandwidth

Temperature	Voltage	Frequency Error (MHz)			
		Startup	2Min Later	5Min Later	10Min Later
-20℃	Vnom	13.559685	13.559639	13.559685	13.559688
-10℃	Vnom	13.559691	13.559633	13.559685	13.559685
0℃	Vnom	13.559616	13.559629	13.559693	13.559617
10℃	Vnom	13.559677	13.559627	13.559631	13.559625
20℃	Vnom	13.559675	13.559683	13.559652	13.559624
30℃	Vnom	13.559672	13.559688	13.559655	13.559646
40℃	Vnom	13.559678	13.559642	13.559687	13.559633
50℃	Vnom	13.559689	13.559647	13.559645	13.559638
20℃	Vmin	13.559668	13.559657	13.559699	13.559667
20℃	Vmax	13.559677	13.559669	13.559626	13.559636
Temperature	Voltage	Frequency Error (%)			
-20℃	Vnom	-0.002	-0.003	-0.002	-0.002
-10℃	Vnom	-0.002	-0.003	-0.002	-0.002
0℃	Vnom	-0.003	-0.003	-0.002	-0.003
10℃	Vnom	-0.002	-0.003	-0.003	-0.003
20℃	Vnom	-0.002	-0.002	-0.003	-0.003
30℃	Vnom	-0.002	-0.002	-0.003	-0.003
40℃	Vnom	-0.002	-0.003	-0.002	-0.003
50℃	Vnom	-0.002	-0.003	-0.003	-0.003
20℃	Vmin	-0.002	-0.003	-0.002	-0.002
20℃	Vmax	-0.002	-0.002	-0.003	-0.003

A.2-1 Mode 1 Frequency Stability

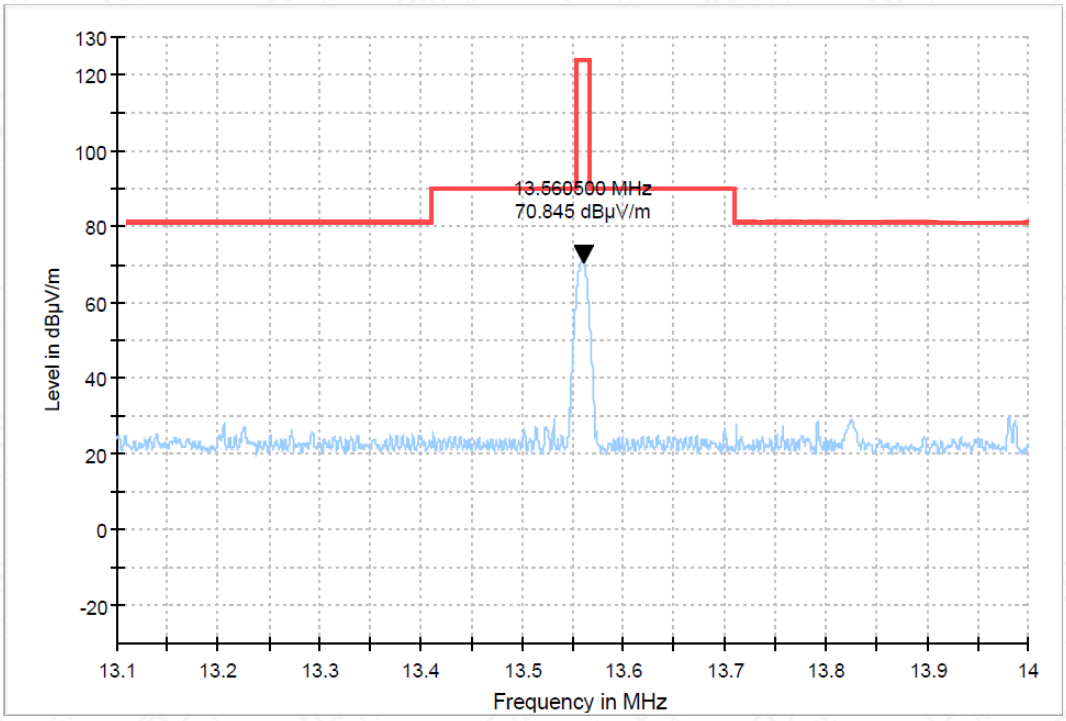


Figure A.3-1-1 Mode 1 Electric Field Strength of Fundamental Emissions

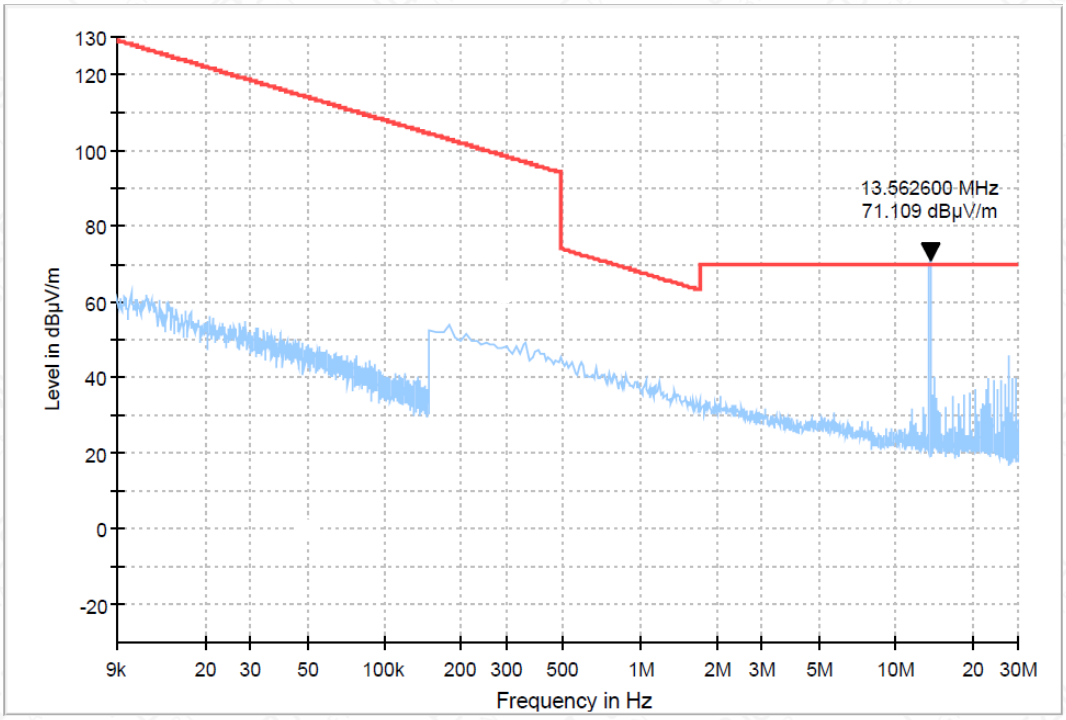


Figure A.3-2-1 Mode 1Electric Field Radiated Emissions (Below 30MHz)

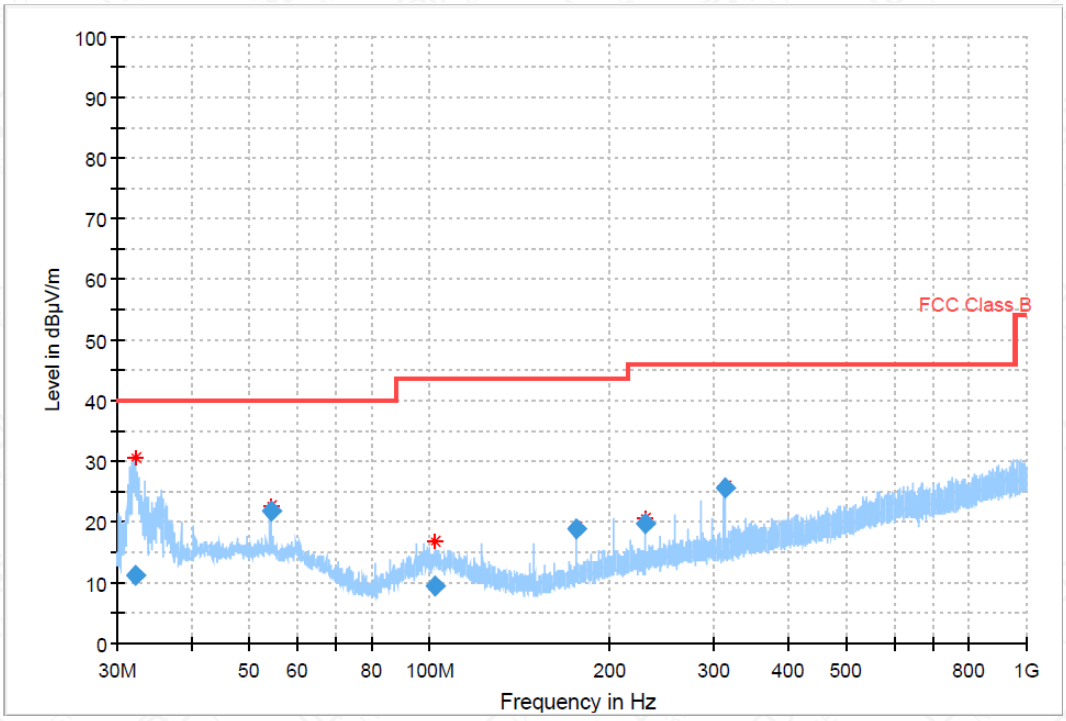


Figure A.3-3-1 Mode 1 Electric Field Radiated Emissions (Above 30MHz)

Frequency (MHz)	QuasiPeak (DbµV/m)	Limit (DbµV/m)	Margin (Db)	Height (cm)	Pol	Azimuth (deg)	Corr. (Db)
32.162403	11.32	40.00	28.68	100.0	V	243.0	-14.4
54.243979	21.68	40.00	18.32	100.0	V	280.0	-12.1
102.231640	9.39	43.50	34.11	212.0	V	208.0	-13.3
176.275779	18.81	43.50	24.69	175.0	H	14.0	-15.2
230.515589	19.68	46.00	26.32	121.0	H	9.0	-12.8
311.869776	25.57	46.00	20.43	100.0	H	21.0	-10.4

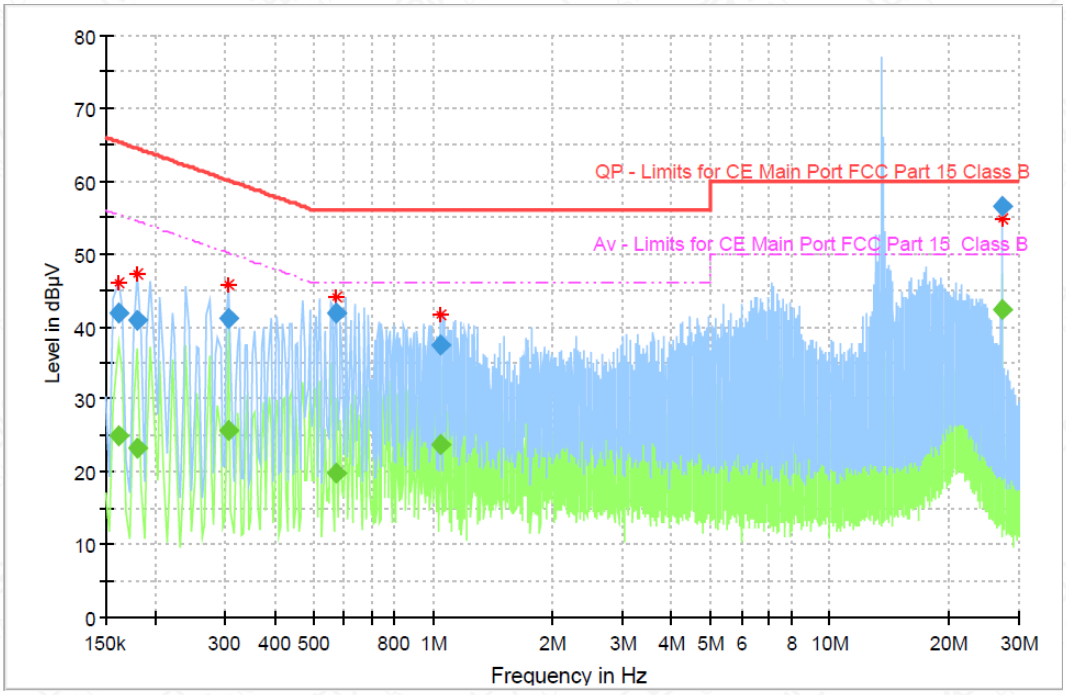


Figure A.4-1 Mode 2 Conducted Emissions

Note: The frequency over the limits is the NFC main signal frequency.

Frequency (MHz)	QuasiPeak (DbµV)	Average (DbµV)	Limit (DbµV)	Margin (Db)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (Db)
0.161194	---	24.90	55.40	30.50	15000	9.000	L1	ON	9.6
0.161194	41.95	---	65.40	23.46	15000	9.000	L1	ON	9.6
0.179850	---	23.15	54.49	31.35	15000	9.000	L1	ON	9.6
0.179850	40.75	---	64.49	23.74	15000	9.000	L1	ON	9.6
0.306713	---	25.69	50.06	24.37	15000	9.000	L1	ON	9.6
0.306713	41.11	---	60.06	18.95	15000	9.000	L1	ON	9.6
0.571631	---	19.91	46.00	26.09	15000	9.000	L1	ON	9.6
0.571631	41.76	---	56.00	14.24	15000	9.000	L1	ON	9.6
1.045500	---	23.80	46.00	22.20	15000	9.000	N	ON	9.6
1.045500	37.51	---	56.00	18.49	15000	9.000	N	ON	9.6
27.123206	---	42.23	50.00	7.77	15000	9.000	N	ON	10.1
27.123206	56.46	---	60.00	3.54	15000	9.000	N	ON	10.1

Center Freq. (MHz)	Threshold Level	f_L(MHz)	$f_{H(}$MHz)
13.55972	99% OBW	13.55970	13.55977

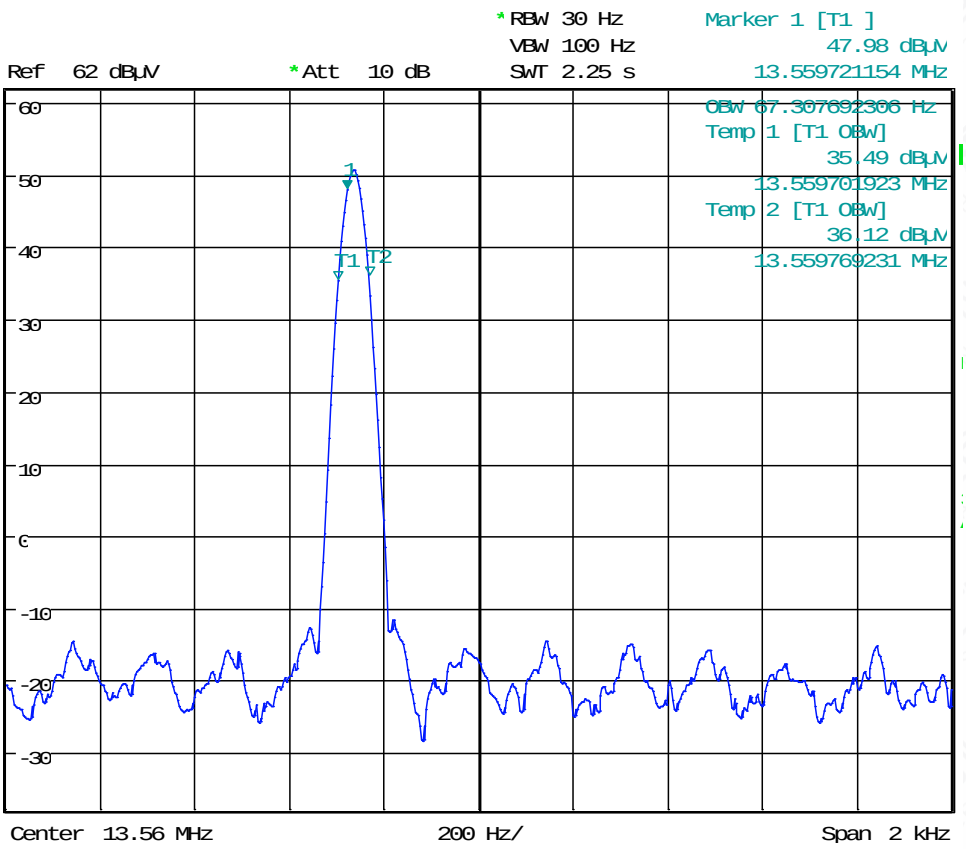


Figure A.5-1 Mode 1 Occupied bandwidth

Annex B: Revised History

Version	Revised Content
V00	Initial
V01	Update section 1.2&6
V02	Add section 1.2 note

Annex C: Accreditation Certificate

Accredited Laboratory

A2LA has accredited

INDUSTRIAL INTERNET INNOVATION CENTER (SHANGHAI) CO., LTD.

Shanghai, 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 12th day of April 2021.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3682.01
Valid to February 28, 2023

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