

TEST REPORT

Application No.: SUCR2509000915WM

Applicant: Guangdong OPPO Mobile Telecommunications Corp.,Ltd.

Address of Applicant: NO.18 HaiBin Road, Wusha Village, Chang'an Town, DongGuan City, Guangdong Province, P.R. China

Manufacturer: Guangdong OPPO Mobile Telecommunications Corp.,Ltd.

Address of Manufacturer: NO.18 HaiBin Road, Wusha Village, Chang'an Town, DongGuan City, Guangdong Province, P.R. China

Equipment Under Test (EUT):

EUT Description: Mobile Phone

Model No.: CPH2783, CPH2831

Trade Mark: OPPO

FCC ID: R9C-OP24361

Standard(s) : 47 CFR Part 15, Subpart C 15.225

Date of Receipt: 2025-09-15

Date of Test: 2025-10-21 to 2025-10-21

Date of Issue: 2025-10-28

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

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Revision Record			
Version	Description	Date	Remark
01	Original	2025-10-28	/

Authorized for issue by:				
Tested By		<i>Nature Shen</i>		
		Nature Shen/Project Engineer		
Approved By		<i>Cedar cheng</i>		
		Cedar Cheng /Reviewer		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.225	N/A	47 CFR Part 15, Subpart C 15.203	Customer Declaration

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2020) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
20dB Bandwidth		ANSI C63.10 (2020) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass
Emission Mask		ANSI C63.10 (2020) Section 6.4	47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)	Pass
Frequency tolerance		ANSI C63.10 (2020) Section 6.8	47 CFR Part 15, Subpart C 15.225(e)	Pass
Radiated Emissions (9kHz-30MHz)		ANSI C63.10 (2020) Section 6.4	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.10 (2020) Section 6.5	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass

Product Equality Declaration

According to the declaration from the applicant, the differences between CPH2783 and CPH2831 are listed below:

Model Name	Asia-Pacific Edition Model: CPH2783	Asia-Pacific Edition Model: CPH2831
Battery	BLPD79	BLPD65
Band	Initial	Same as Asia-Pacific Edition
Operate voltage	Maximum: 4.48V Nominal: 3.88V Minimum: 3.60V	Maximum: 4.53V Nominal: 3.92V Minimum: 3.60V
Adapter	15W,OP53CBEH, OP53CBUH, OP53CBYH,OP53CBAH,OP53CBTH	45W,VCB4HAEH,VCB4HAYH,VCB4HAUH,VCB4HATH,VCB4HAAH,VCB4JAEH,VCB4JAYH,VCB4JAUH,VCB4JAAH,VCB4JATH

Considering to the differences, pre-scans were performed on model CPH2783 and CPH2831, model CPH2831 was selected to perform the final test.

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4 General Information

4.1 Details of E.U.T.

Power supply:	3.88V
Operation Frequency:	13.56MHz
Modulation Type:	ASK

4.2 Environment Parameter

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	25	3.88V
Note: NV:Normal Voltage LV:Low Extreme Test Voltage HV:High Extreme Test Voltage NT:Normal Temperature LT:Low Extreme Test Temperature HT:High Extreme Test Temperature		

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.4 Measurement Uncertainty & Decision Rule

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	Duty cycle	$\pm 0.37\%$
3	Occupied Bandwidth	$\pm 3\%$
4	Conduction emission	$\pm 3.0\text{dB}$ (150kHz to 30MHz)
5	RF conducted power	$\pm 0.75\text{dB}$
6	RF power density	$\pm 2.84\text{dB}$
7	Conducted Spurious emissions	$\pm 0.75\text{dB}$
8	RF Radiated power	$\pm 2.6\text{dB}$ (30MHz-1GHz)
		$\pm 2.7\text{dB}$ (1GHz-18GHz)
9	Temperature test	$\pm 1^\circ\text{C}$
10	Humidity test	$\pm 3\%$
11	Supply voltages	$\pm 1\%$
12	Time	$\pm 3\%$
Remark: The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.		

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu)
Pilot Free Trade Zone

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 6336.01.

• FCC

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1312.

• ISED

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 27594

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals						
1	EMI Test Receive	R&S	ESR7	SUWI-01-10-01	1/15/2025	1/14/2026
2	LISN	R&S	ENV216	SUWI-01-19-03	5/8/2025	5/7/2026
3	LISN	Schwarzbeck	ENV216	SUWI-01-19-04	5/8/2025	5/7/2026
4	Test Software	Tonscend	JS32-CE 4.0.0.2	SUWI-02-09-05	N.C.R	N.C.R
RF Conducted Test						
1	Shielding Room	Brilliant-emc	N/A	SUWI-04-08-01	11/9/2022	11/8/2025
2	Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/20/2025	1/19/2026
3	Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-15	11/21/2024	11/20/2025
4	MXG Vector signal genitor	KEYSIGHT	N5182B	SUWI-01-38-01	1/15/2025	1/14/2026
5	Signal Generator	ROHDE&SCHWARZ	SMW200A	SUWI-01-07-08	3/27/2025	3/26/2026
6	Signal Generator	ROHDE&SCHWARZ	SMW100A	SUWI-01-08-01	1/16/2025	1/15/2026
7	MXG Vector Signal Generator	ROHDE&SCHWARZ	SMR20	SUWI-01-33-01	3/17/2025	3/16/2026
8	Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-13	5/8/2025	5/7/2026
9	Wideband Radio Communication Test Sttion	Anritsu	MT8000A	SUWI-01-34-02	8/25/2025	8/24/2026
10	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	8/25/2025	8/24/2026
11	Power meter	Anritsu	ML2495A	SUWI-01-31-01	8/25/2025	8/24/2026
12	Pulse power sensor	Anritsu	MA2411B	SUWI-01-32-01	8/25/2025	8/24/2026
13	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/15/2025	1/14/2026
14	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2/13/2025	2/12/2026
15	Temperature Chamber	GIANT FORCE	ICT-017-40-SP-SD	SUWI-01-13-02	5/7/2025	5/6/2026
16	Measurement Software	TST	TST 272 V2.02	SUWI-03-55-03	NCR	NCR
RF Radiated Test						
1	Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	6/3/2023	6/2/2026
2	Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	1/20/2025	1/19/2026
3	Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-09	11/21/2024	11/20/2025
4	Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	1/15/2025	1/14/2026
5	Signal Generator	ROHDE&SCHWARZ	SMW100A	SUWI-01-18-01	1/16/2025	1/15/2026
6	Receiving antenna	SCHWRZBECK MESS-ELEKTRONIK	VULB 9168	SUWI-01-11-04	9/10/2025	9/9/2027
7	Receiving antenna	SCHWRZBECK MESS-	BBHA 9120D	SUWI-01-11-02	5/7/2025	5/6/2027

		ELEKTRONIK				
8	Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9170	SUWI-01-11-03	5/7/2025	5/6/2027
9	Active Loop Antenna	SCHWRZBECK MESS- ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	5/7/2025	5/6/2027
10	Amplifier	Tonscend	TAP9K3G40	SUWI-01-14-01	1/16/2025	1/15/2026
11	Amplifier	Tonscend	TAP01018050	SUWI-01-14-02	1/16/2025	1/15/2026
12	Amplifier	Tonscend	TAP18040048	SUWI-01-14-03	1/20/2025	1/19/2026
13	Wideband Radio Communication Tester	Anritsu	MT8820C	SUWI-01-26-01	8/25/2025	8/24/2026
14	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	8/25/2025	8/24/2026
15	Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-09	8/26/2025	8/25/2026
16	Radio Communication Analyzer	StarPoint	SP9500E	SUWI-01-28-02	11/19/2024	11/18/2025
17	Signal Generator	ROHDE&SCHWARZ	SMB100A	SUWI-01-08-01	1/16/2025	1/15/2026
18	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/15/2025	1/14/2026
19	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2/13/2025	2/12/2026
20	Measurement Software	Tonscend	JS32-RE 4.0.0.0	SUWI-02-09-06	NCR	NCR

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is Loop antenna and no consideration of replacement.

Antenna location: Refer to Internal photos

7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2020) Section 6.2

Limit:

Frequency range (MHz)	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.

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

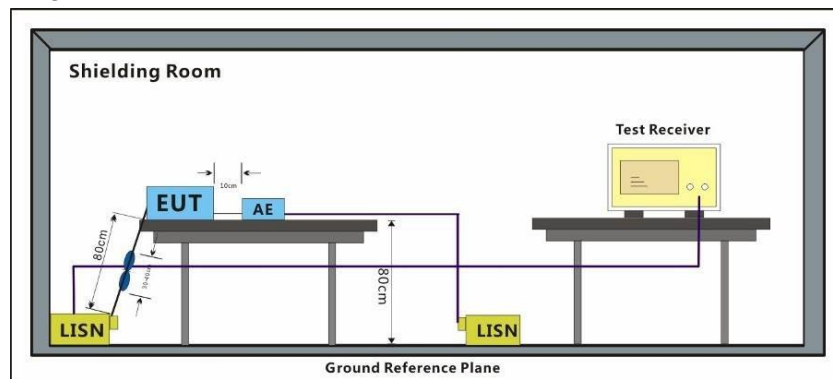
Humidity: 44 % RH

Atmospheric Pressure: 101 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	20	TX mode with modulation

7.1.3 Test Setup Diagram

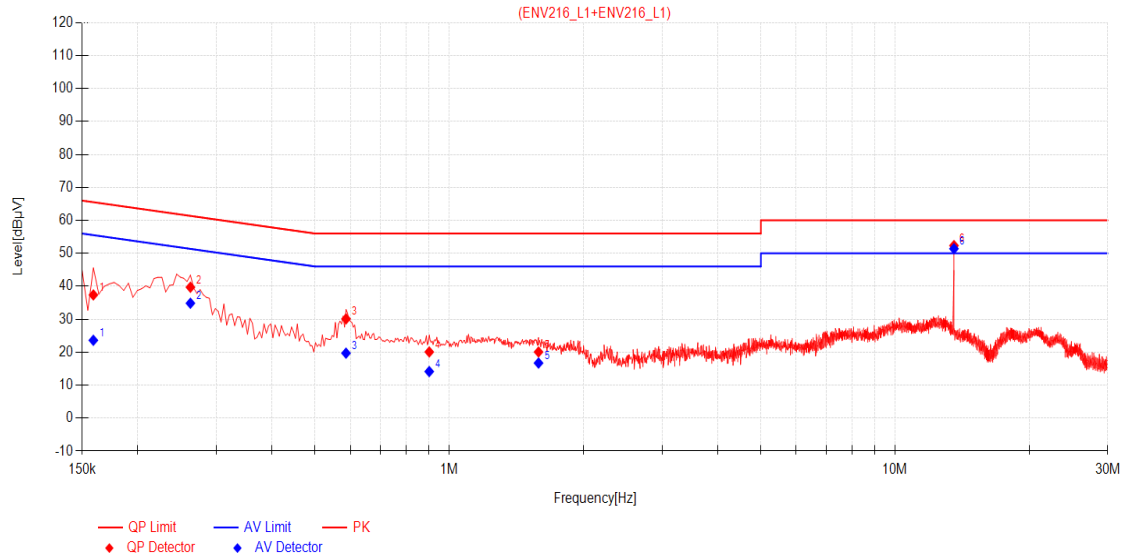


7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor

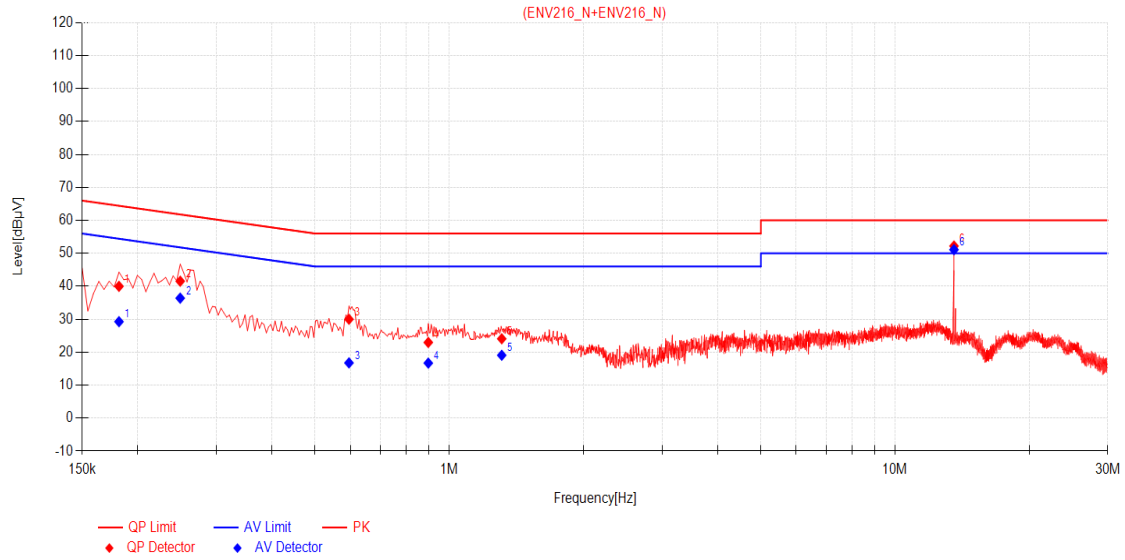
Test Mode: 20; Line: Live line



Final Data List

NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1590	9.96	27.42	37.38	65.52	28.14	13.65	23.61	55.52	31.91	PASS
2	0.2625	9.97	29.74	39.71	61.35	21.64	24.89	34.86	51.35	16.49	PASS
3	0.5865	9.93	20.19	30.12	56.00	25.88	9.78	19.71	46.00	26.29	PASS
4	0.9015	9.93	10.15	20.08	56.00	35.92	4.21	14.14	46.00	31.86	PASS
5	1.5855	9.93	10.15	20.08	56.00	35.92	6.78	16.71	46.00	29.29	PASS
6	13.5600	10.47	41.87	-	-	-	40.92	-	-	-	-

Test Mode: 20; Line: Neutral Line



Final Data List											
NO.	Frequency [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.1815	9.97	30.02	39.99	64.42	24.43	19.29	29.26	54.42	25.16	PASS
2	0.2490	9.98	31.56	41.54	61.79	20.25	26.42	36.40	51.79	15.39	PASS
3	0.5955	9.91	20.08	29.99	56.00	26.01	6.85	16.76	46.00	29.24	PASS
4	0.8970	9.90	13.07	22.97	56.00	33.03	6.80	16.70	46.00	29.30	PASS
5	1.3110	9.91	14.17	24.08	56.00	31.92	9.17	19.08	46.00	26.92	PASS
6	13.5600	10.62	41.59	-	-	-	40.48	-	-	-	-

7.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2020) Section 6.9

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

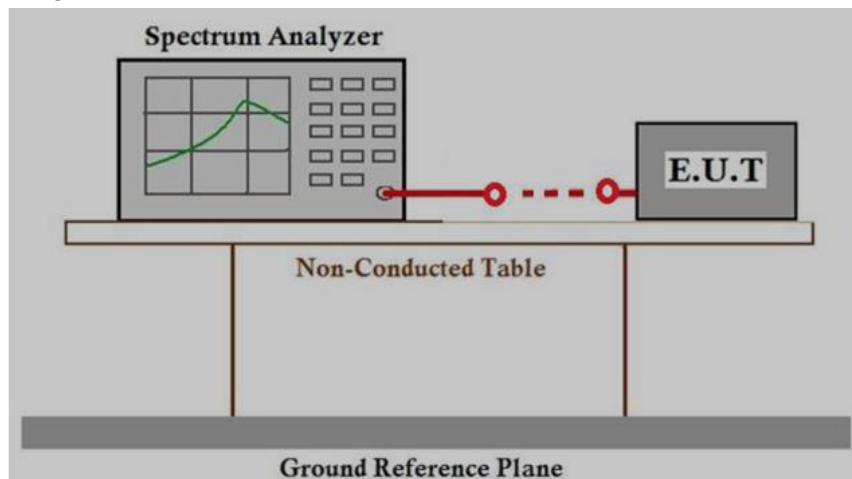
Humidity: 56 % RH

Atmospheric Pressure: 101 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	20	TX mode with modulation

7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data

The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector.

Please Refer to Appendix for Details

7.3 Emission Mask

Test Requirement 47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)

Test Method: ANSI C63.10 (2020) Section 6.4

Limit:

- (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.
- (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.
- (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.
- (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Below 30MHz

The limit at 30m test distance is below:

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

where

FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m
 FS_{max} is the measured field strength, expressed in dBμV/m
 d_{measure} is the distance of the measurement point from the EUT
 d_{limit} is the reference distance or the distance of the $\lambda/2\pi$ point

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 84dBuV/m at 30 meters.

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C

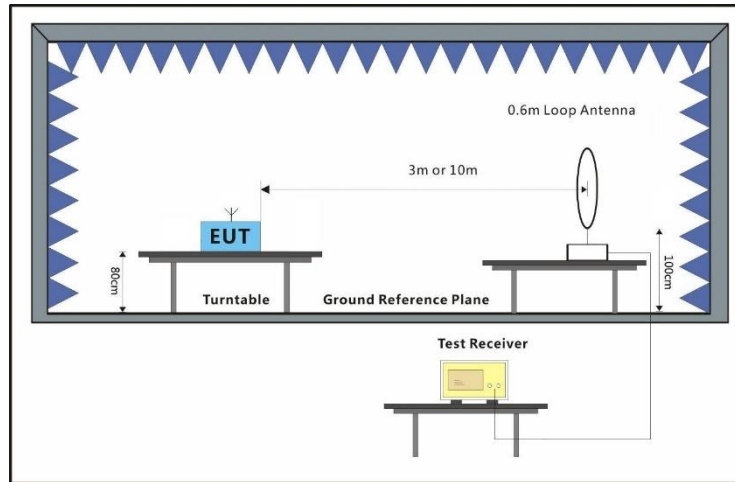
Humidity: 56 % RH

Atmospheric Pressure: 101 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	20	TX mode with modulation

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

Please Refer to Appendix for Details

7.4 Frequency tolerance

Test Requirement 47 CFR Part 15, Subpart C 15.225(e)

Test Method: ANSI C63.10 (2020) Section 6.8

Limit:

±0.01

7.4.1 E.U.T. Operation

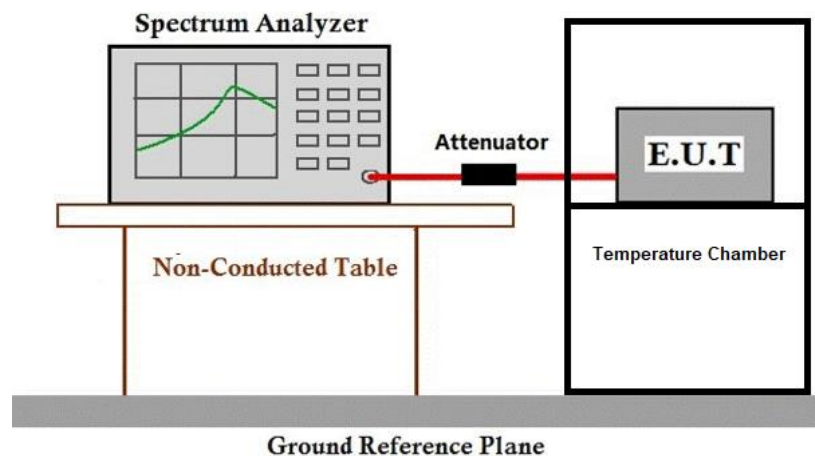
Operating Environment:

Temperature: 23 °C Humidity: 56 % RH Atmospheric Pressure: 101 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	20	TX mode with modulation

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

The EUT was placed in an environmental test chamber and powered such that control element received normal voltage and the transmitter provided maximum RF output.

Please Refer to Appendix for Details

7.5 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d) & 15.209

Test Method: ANSI C63.10 (2020) Section 6.4

Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30

Below 30MHz

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than $\lambda/2\pi$ and the limit distance is greater than $\lambda/2\pi$, the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the $\lambda/2\pi$ distance, and at a 20 dB/decade of distance rate beyond $\lambda/2\pi$. This shall be accomplished using Equation (2):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(near\ field)}/d_{(10m)}\} + 20\log\{d_{(30/300m)}/d_{(near\ field)}\} \quad (2)$$

If the single point measured is at a distance greater than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (3):

$$FS_{(10m)} = FS_{(30/300m)} + 20\log\{d_{(30/300m)}/d_{(10m)}\} \quad (3)$$

If both the single point and the limit distance are equal to or closer to the EUT than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (4):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(30/300m)}/d_{(10m)}\} \quad (4)$$

Remark:

$$d_{near\ field} = 47.77 / f_{MHz}$$

where f_{MHz} is the frequency of the emission being measured in MHz.

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

where

FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m
 FS_{max} is the measured field strength, expressed in dBμV/m
 d_{measure} is the distance of the measurement point from the EUT
 d_{limit} is the reference distance or the distance of the $\lambda/2\pi$ point

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

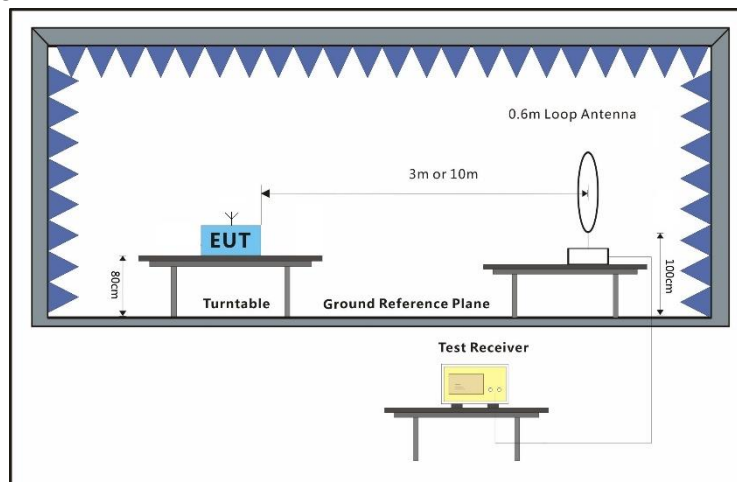
Humidity: 43 % RH

Atmospheric Pressure: 101 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	20	TX mode with modulation

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

Please Refer to Appendix for Details

7.6 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d) & 15.209

Test Method: ANSI C63.10 (2020) Section 6.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands above 1000 MHz. Radiated emission limits in these three bands (9-90kHz,110-490kHz and Above 1GHz) are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C

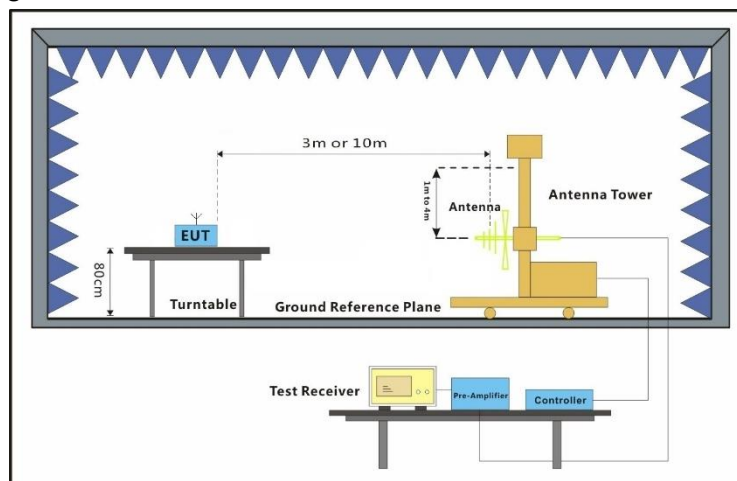
Humidity: 44 % RH

Atmospheric Pressure: 101 mbar

7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	20	TX mode with modulation

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Please Refer to Appendix for Details



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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SUCR2509000915WM

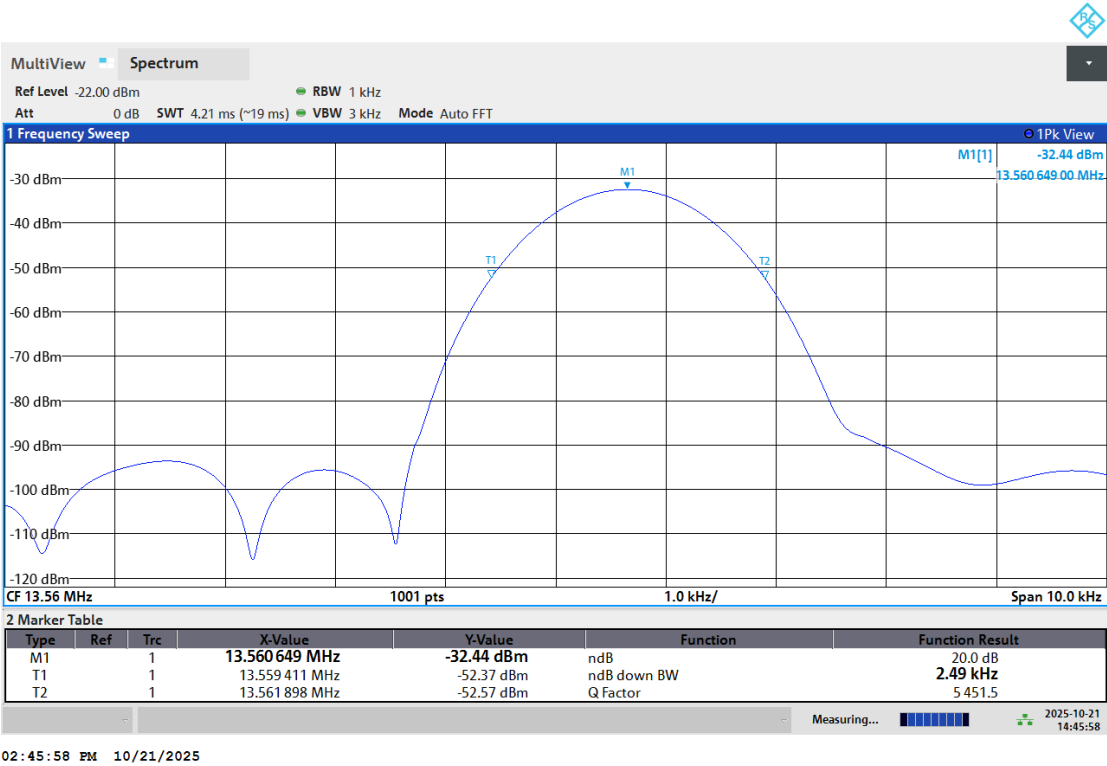
9 EUT Constructional Details (EUT Photos)

Refer to Appendix_Photographs of EUT Constructional Details for SUCR2509000915WM

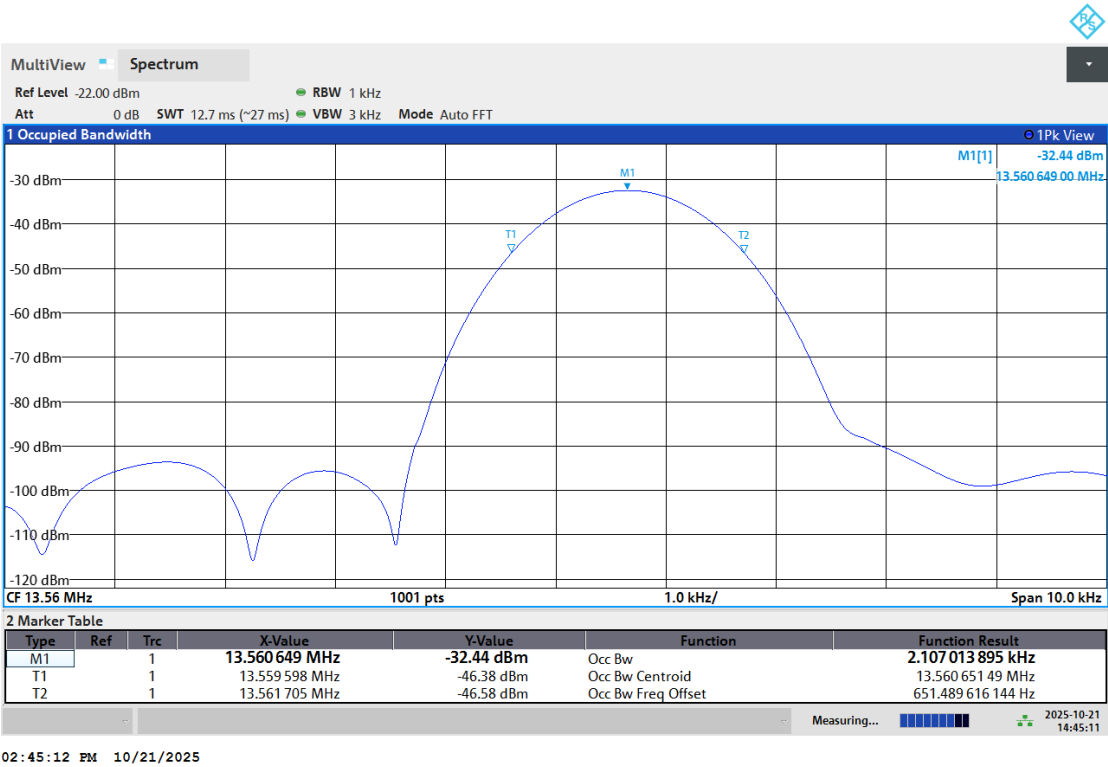
10 Appendix

10.1 20dB Bandwidth

20dB



99%



Note:

Because the measured signal is CW or CW-like adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

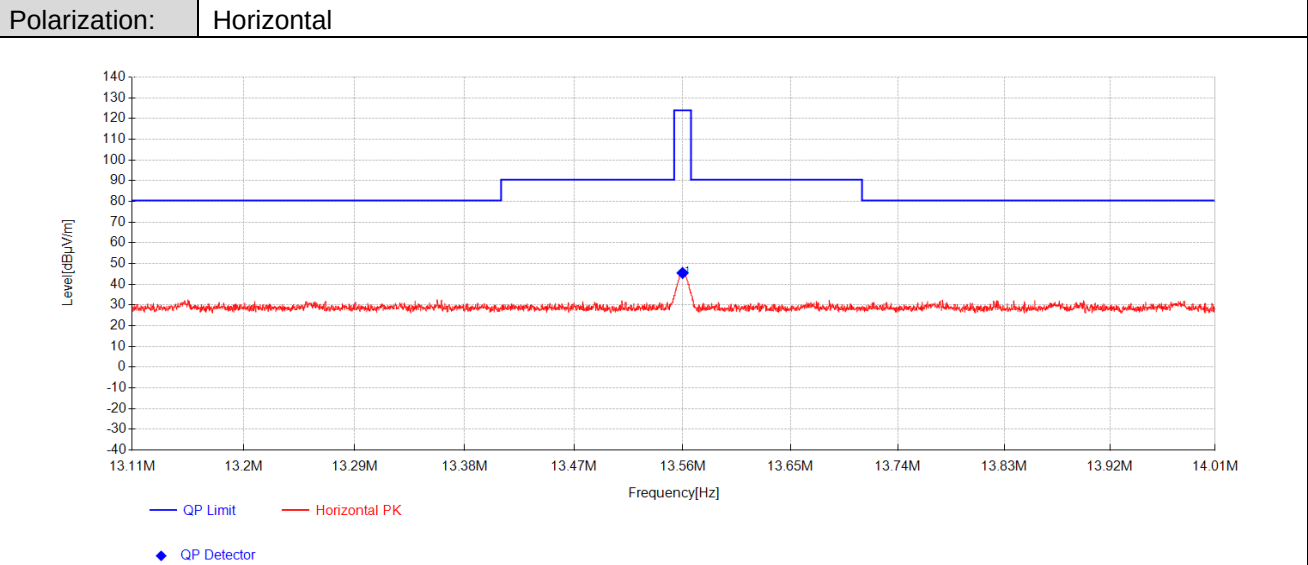
10.2 Frequency tolerance

Declared Frequency (MHz)		13.56MHz			
Startup					
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Frequency Tolerance (%)	Limit (%)	Result
50	3.85	13.55997	0.0003	±0.01	Pass
40		13.55995	0.0005		Pass
30		13.55993	0.0007		Pass
20		13.55996	0.0004		Pass
10		13.55995	0.0005		Pass
0		13.55997	0.0003		Pass
-10		13.55996	0.0004		Pass
-20		13.55994	0.0006		Pass
20		4.40	13.55997		0.0003
	3.60	13.55998	0.0002	Pass	

Declared Frequency (MHz)		13.56MHz			
2mins					
Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Frequency Tolerance (%)	Limit (%)	Result
50	3.85	13.55999	0.0001	±0.01	Pass
40		13.55999	0.0001		Pass
30		13.55997	0.0003		Pass
20		13.55996	0.0004		Pass
10		13.55998	0.0002		Pass
0		13.55996	0.0004		Pass
-10		13.55997	0.0003		Pass
-20		13.55995	0.0005		Pass
20	4.40	13.55996	0.0004		Pass
	3.60	13.55999	0.0001		Pass

10.3 Field Strength of Fundamental Emissions

NFC Emission Mask

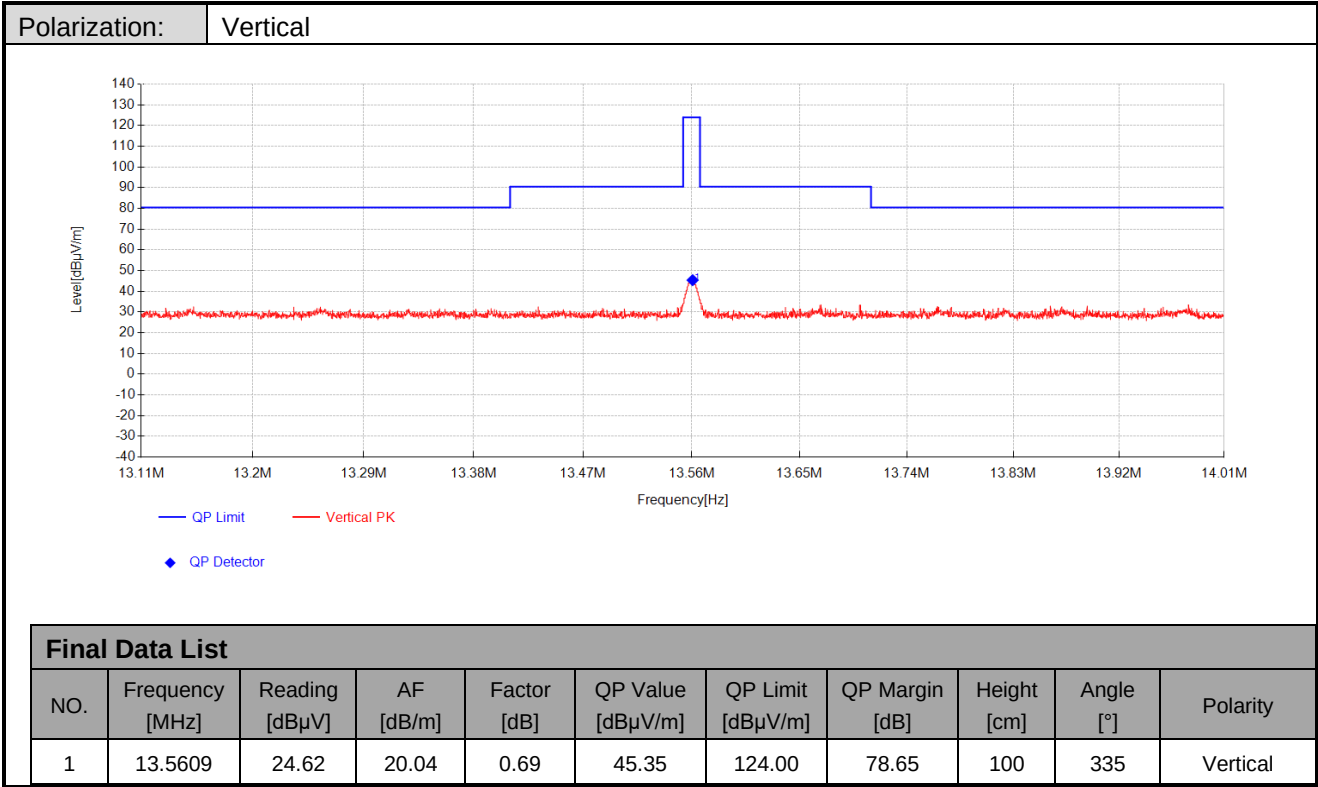


Final Data List

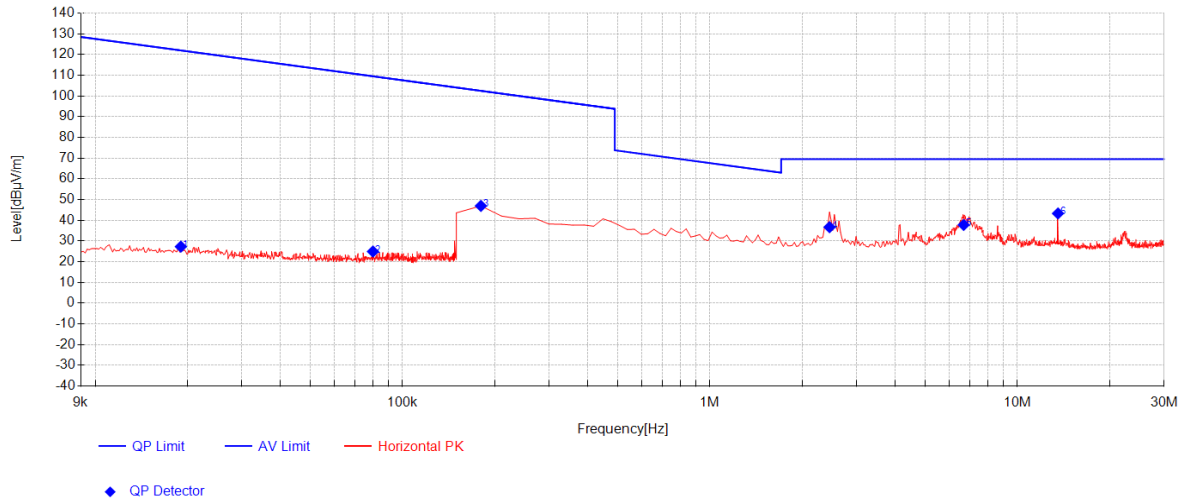
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	13.56	24.73	20.04	0.69	45.46	124.00	78.54	100	312	Horizontal

Remark:

1. The Quasi-Peak measurements were performed on the EUT.
2. Value = Reading + Antenna Factor + Factor.
3. Factor=Cable loss.

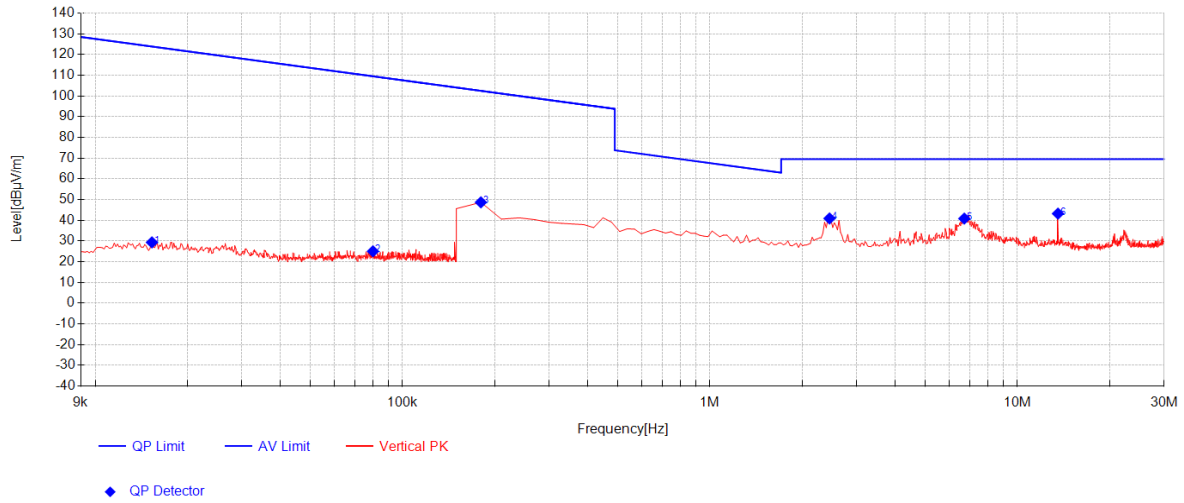


NFC-RSE



Final Data List

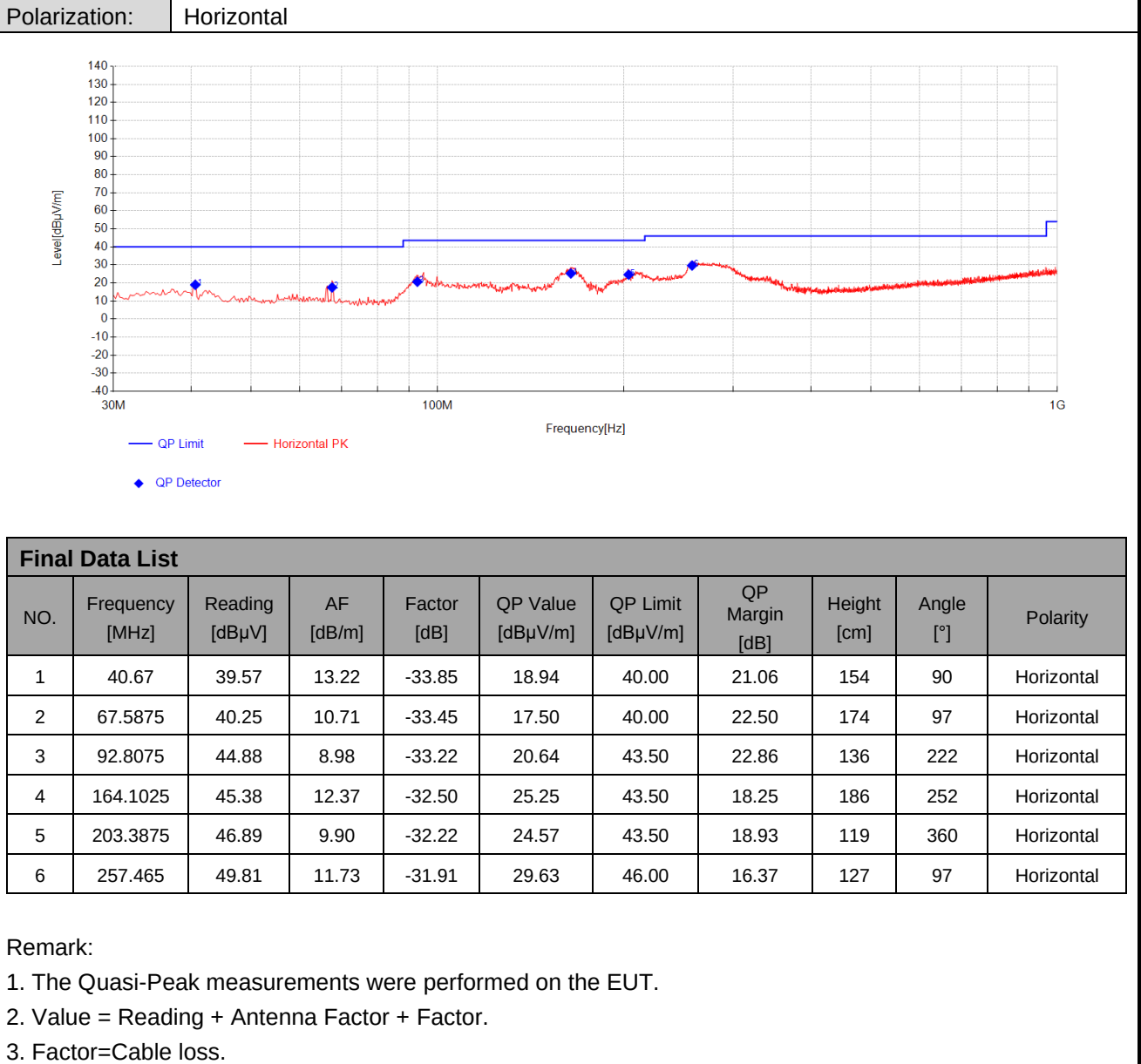
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
4	2.4484	16.23	19.96	0.48	36.66	69.54	32.88	100	207	Horizontal
5	6.6872	16.89	20.28	0.56	37.73	69.54	31.81	100	207	Horizontal
6	13.5526	22.56	20.04	0.69	43.29	69.54	26.25	100	296	Horizontal
NO.	Frequency [MHz]	AV Reading [dBμV]	AF [dB/m]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	0.019	7.12	19.70	0.43	27.25	122.02	94.77	100	309	Horizontal
2	0.0801	4.57	19.90	0.43	24.90	109.53	84.63	100	96	Horizontal
3	0.1798	26.59	19.91	0.43	46.93	102.51	55.58	100	358	Horizontal



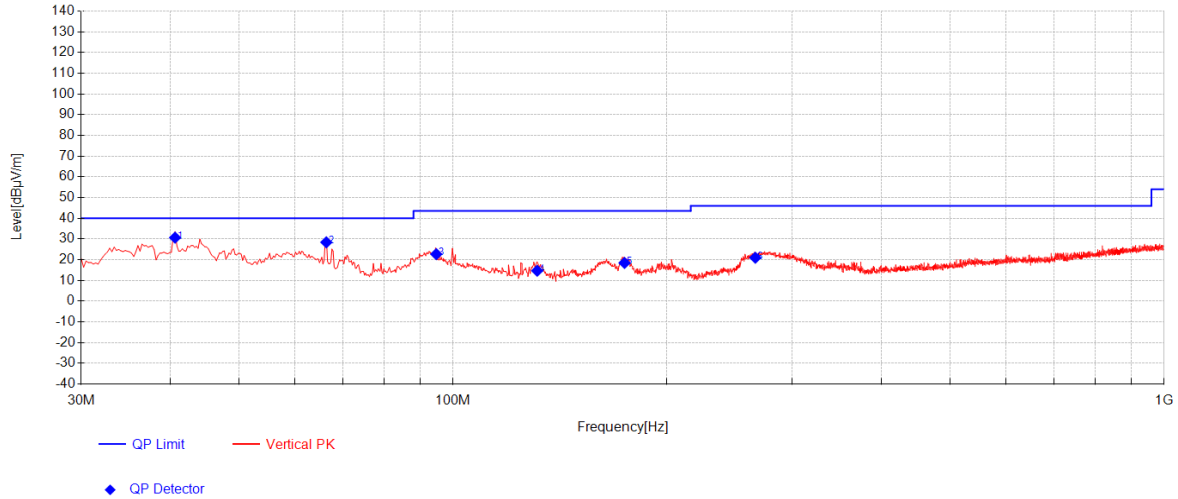
Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
4	2.4484	20.44	19.96	0.48	40.87	69.54	28.67	100	255	Vertical
5	6.717	19.96	20.29	0.56	40.80	69.54	28.74	100	84	Vertical
6	13.5526	22.47	20.04	0.69	43.20	69.54	26.34	100	289	Vertical
NO.	Frequency [MHz]	AV Reading [dBμV]	AF [dB/m]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	0.0153	9.18	19.70	0.43	29.31	123.90	94.59	100	234	Vertical
2	0.0801	4.68	19.90	0.43	25.01	109.53	84.52	100	222	Vertical
3	0.1798	28.31	19.91	0.43	48.65	102.51	53.86	100	186	Vertical

10.4 Radiated Spurious Emissions

NFC_RE



Polarization: Vertical



Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	AF [dB/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.67	51.27	13.22	-33.85	30.64	40.00	9.36	165	0	Vertical
2	66.375	50.89	10.96	-33.47	28.38	40.00	11.62	198	317	Vertical
3	94.7475	46.82	9.04	-33.20	22.67	43.50	20.83	182	296	Vertical
4	131.365	35.29	12.18	-32.83	14.64	43.50	28.86	177	110	Vertical
5	174.2875	39.52	11.30	-32.40	18.42	43.50	25.08	139	280	Vertical
6	266.195	40.85	11.92	-31.83	20.93	46.00	25.07	195	248	Vertical

Remark:

1. The Quasi-Peak measurements were performed on the EUT.
2. Value = Reading + Antenna Factor + Factor.
3. Factor=Cable loss.

- End of the Report -