REPORT No.: SZ21010176E01

TEST REPORT

APPLICANT	:	ZTE Corporation
PRODUCT NAME	:	WLAN Router
MODEL NAME	:	MC7010CA
BRAND NAME	:	ZTE
FCC ID	:	SRQ-MC7010CA
STANDARD(S)	:	47 CFR Part 15 Subpart B
RECEIPT DATE	:	2021-01-15
TEST DATE	:	2021-01-21 to 2021-02-03
ISSUE DATE	:	2021-03-15

Edited by: He sinuo

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DIRECTORY

Change History		
Version	Date	Reason for Change
1.0	2021-03-15	First edition

1. Technical Information

Note: Provide by applicant

1.1. Applicant and Manufacturer Information

Applicant:	ZTE Corporation
Applicant Address:	ZTE Plaza, Keji Road South, Shenzhen, China.
Manufacturer:	ZTE Corporation
Manufacturer Address:	ZTE Plaza, Keji Road South, Shenzhen, China.

1.2. Equipment Under Test (EUT) Description

Product Name:	WLAN Router
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	MC7010CAHW1.0
Software Version:	MC7010CAV1.1
Tx Frequency:	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 824MHz ~ 849 MHz LTE Band 29: N/A LTE Band 30:2305 MHz ~ 2315MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n66:1710 MHz ~ 1780 MHz 5G NR n71:663 MHz ~ 698 MHz 5G NR n78: 3300 MHz ~ 3800 MHz Bluetooth 5.0: 2402 MHz ~ 2480 MHz
Rx Frequency:	WCDMA Band II: 1930 MHz ~ 1990 MHz WCDMA BandIV:2110 MHz ~ 2155 MHz WCDMA Band V: 869 MHz ~ 894 MHz LTE Band 2: 1930 MHz ~ 1990 MHz

	LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 5: 869 MHz ~ 894 MHz LTE Band 7: 2620 MHz ~ 2690 MHz LTE Band 12: 729 MHz ~ 746 MHz LTE Band 13: 746 MHz ~ 756 MHz LTE Band 17: 734 MHz ~ 746 MHz LTE Band 25: 1930 MHz ~ 1995 MHz LTE Band 26: 869MHz ~ 894 MHz LTE Band 29:717MHz ~ 728MHz LTE Band 30:2350 MHz ~ 2360MHz LTE Band 66: 2110 MHz ~ 2180 MHz 5G NR n66:2110 MHz ~ 2180 MHz 5G NR n71: 617 MHz ~ 652 MHz 5G NR n78: 3300 MHz ~ 3800 MHz Bluetooth 5.0: 2402 MHz ~ 2480 MHz	
Ancillary Equipment:	**POE Adapter**	
	Brand Name:	ZTE
	Model No.:	POE-A4803
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	100-240V〜50/60Hz 0.5A
	Rated Output:	48V⎓0.31A
	Manufacturer:	ZTE Corporation

Note:

1. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.

2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination Remark
1	15.107	Conducted Emission	2021.01.21	Huang Zhiye	PASS	No deviation
2	15.109	Radiated Emission	2021.02.03	Yang Jie	PASS	No deviation

Note 1: Additions to, deviation, or exclusions from the method shall be judged in the “method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 2: When the test result is a critical value,we will use the measurement uncertainty give the judgment result based on the 95% risk level.

2.2. EUT Setup and Operating Conditions

Note: All of the following test modes are tested in all the test items.

Test Modes	
Mode 1 :	**WCDMA Band II Idle + Bluetooth Idle + POE Adapter + Working + SIM Card**
Mode 2 :	WCDMA Band IV Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 3 :	WCDMA Band V Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 4 :	LTE Band 2 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 5 :	LTE Band 4 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 6 :	LTE Band 5 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 7 :	LTE Band 12 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 8 :	LTE Band 13 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 9 :	LTE Band 17 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 10 :	LTE Band 25 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 11 :	LTE Band 26 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 12 :	LTE Band 66 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 13 :	NSA_2A_n66A Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 14 :	NSA_2A_n71A Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 15 :	NSA_2A_n78A Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 16 :	LTE Band 7 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 17 :	LTE Band 29 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Mode 18 :	LTE Band 30 Idle + Bluetooth Idle + POE Adapter + Working + SIM Card
Remark: The above test mode in boldface (Mode1) was the worst case of conducted emission and radiated emission test, only the test data of these modes were reported.	

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

3. 47 CFR Part 15B Requirements

3.1. Conducted Emission

3.1.1. Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

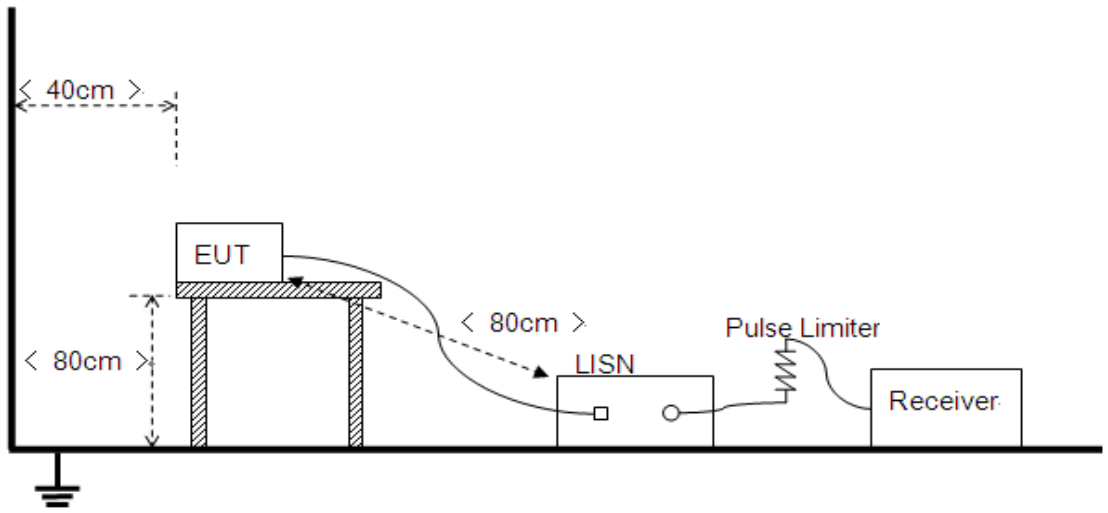
a) The limit subjects to the Class B digital device.

b) The lower limit shall apply at the band edges.

c) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.1.2. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



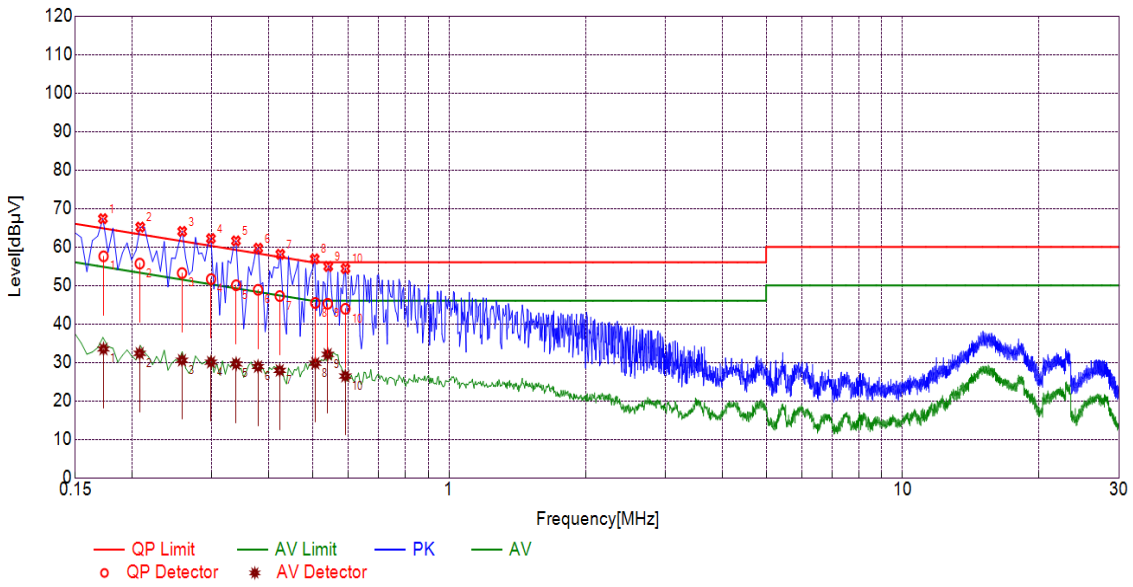
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument. A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

The power strip or extension cord has been investigated to make sure that the LISN integrity inma intained with respect to the impedance characteristics as prescribed in ANSI C63.4-2014 at Clause 4.3.

3.1.3. Test Result

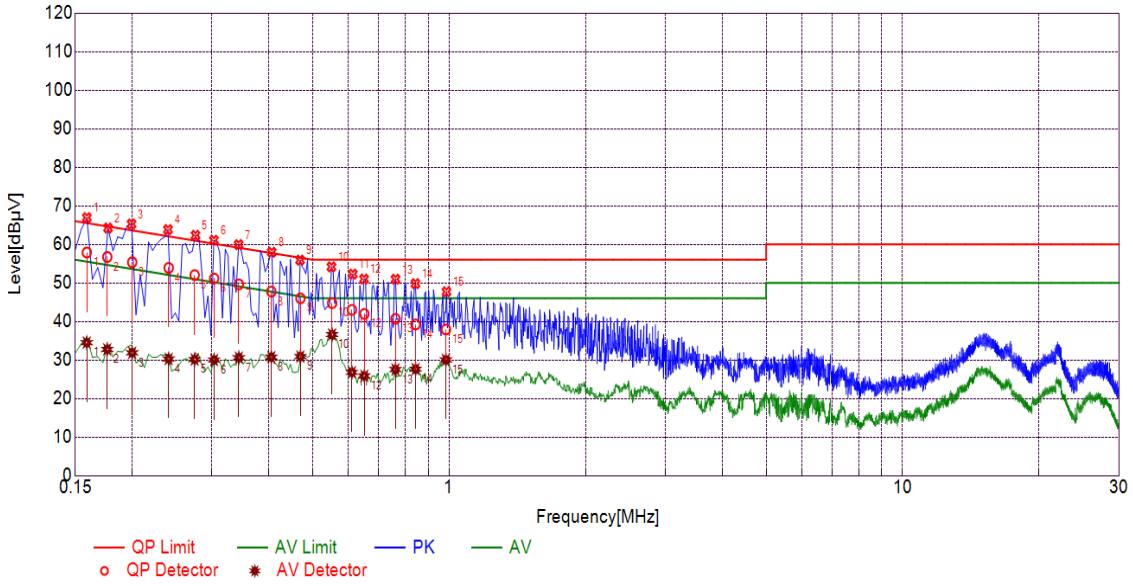
Set RBW=9 kHz, VBW=30 kHz.The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

A. Test Plot and Suspicious Points:



(Plot A:L Phase)

NO.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1730	57.57	33.46	64.82	54.82	Line	PASS
2	0.2079	55.68	32.35	63.29	53.29		PASS
3	0.2577	53.21	30.55	61.51	51.51		PASS
4	0.2987	51.64	30.06	60.28	50.28		PASS
5	0.3392	50.05	29.61	59.22	49.22		PASS
6	0.3791	48.87	28.91	58.30	48.30		PASS
7	0.4233	47.24	27.91	57.38	47.38		PASS
8	0.5070	45.45	29.77	56.00	46.00		PASS
9	0.5399	45.24	32.09	56.00	46.00		PASS
10	0.5906	43.93	26.44	56.00	46.00		PASS



(Plot B: N Phase)

NO.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1589	57.89	34.50	65.52	55.52	Neutral	PASS
2	0.1763	56.73	32.74	64.66	54.66		PASS
3	0.2001	55.36	31.87	63.61	53.61		PASS
4	0.2408	53.90	30.27	62.07	52.07		PASS
5	0.2748	52.04	30.12	60.97	50.97		PASS
6	0.3033	51.14	30.00	60.15	50.15		PASS
7	0.3439	49.62	30.59	59.11	49.11		PASS
8	0.4055	47.75	30.73	57.74	47.74		PASS
9	0.4701	46.00	30.89	56.51	46.51		PASS
10	0.5522	44.75	36.60	56.00	46.00		PASS
11	0.6106	43.02	26.80	56.00	46.00		PASS
12	0.6503	41.95	25.88	56.00	46.00		PASS
13	0.7618	40.68	27.53	56.00	46.00		PASS
14	0.8438	39.23	27.63	56.00	46.00		PASS
15	0.9840	37.92	30.02	56.00	46.00		PASS

3.2. Radiated Emission

3.2.1. Requirement

According to FCC section 15.109 (a), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency Range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	(μV/m)	(dBμV/m)
30.0 - 88.0	100	20log 100
88.0 - 216.0	150	20log 150
216.0 - 960.0	200	20log 200
Above 960.0	500	20log 500

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Note:

1) The tighter limit shall apply at the boundary between two frequency range.
2) Limitation expressed indBμV/m is calculated by 20log Emission Level(μV/m).

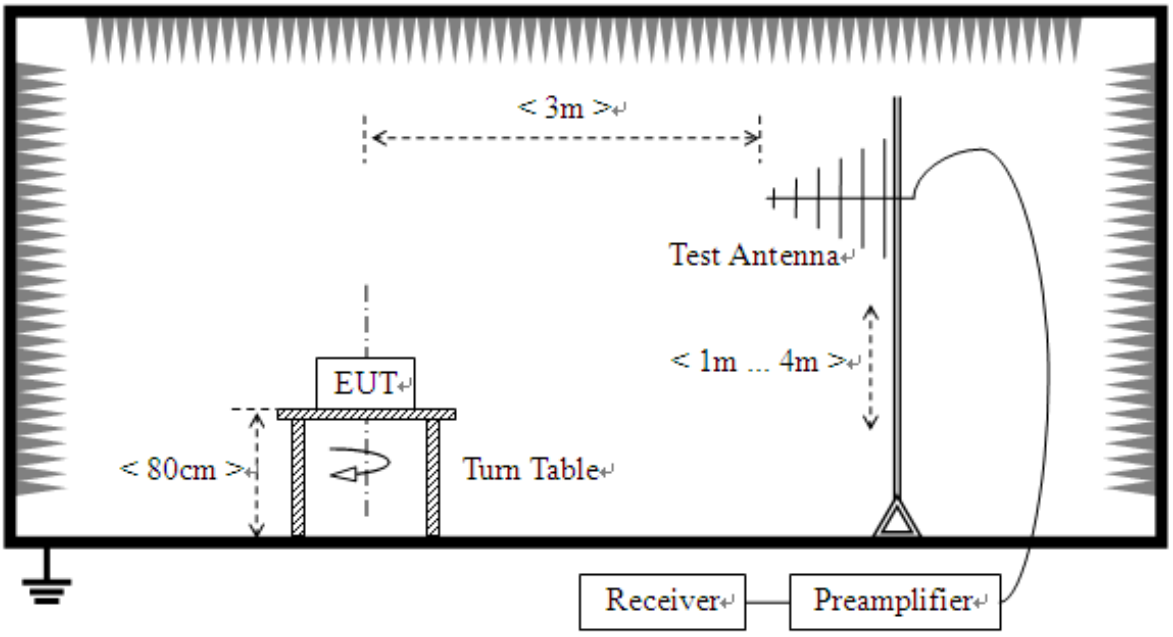
3.2.2. Frequency Range of Measurement

According to 15.33(b)(1), the frequency range of radiated measurement for the EUT is listed in the following table:

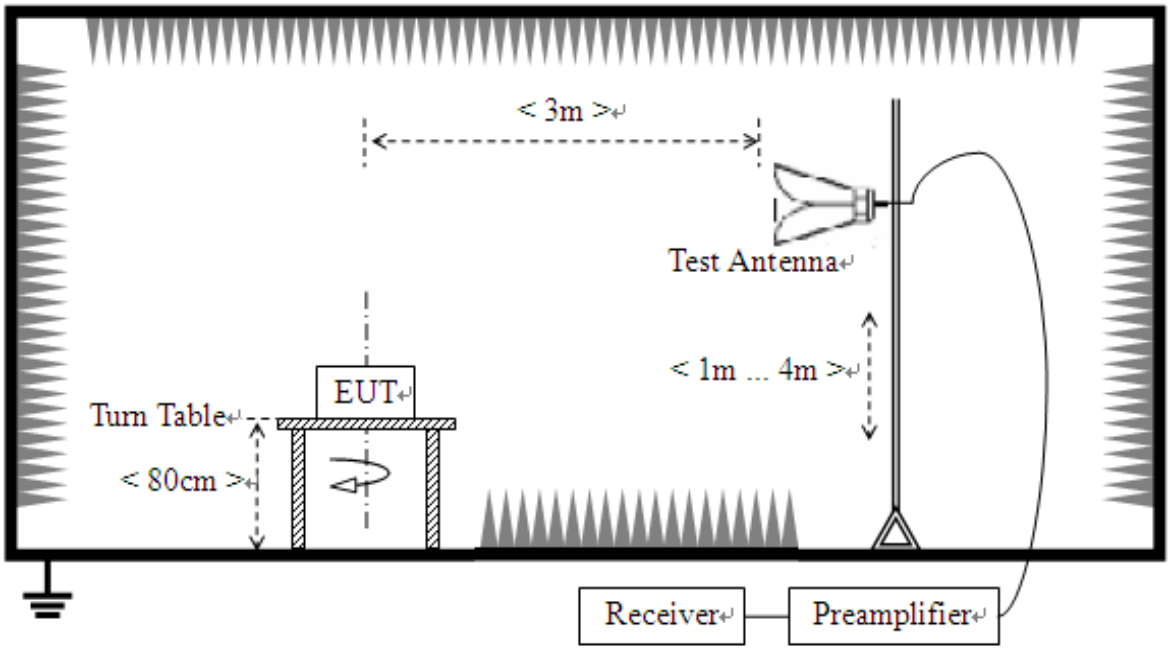
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705–108	1000.
108–500	2000.
500–1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

3.2.3. Test Setup

1) For radiated emissions from 30MHz to1GHz



2) For radiated emissions above 1GHz



The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on variable-height antenna master tower.

For the test Antenna:

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz)are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

For measurements below 1GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

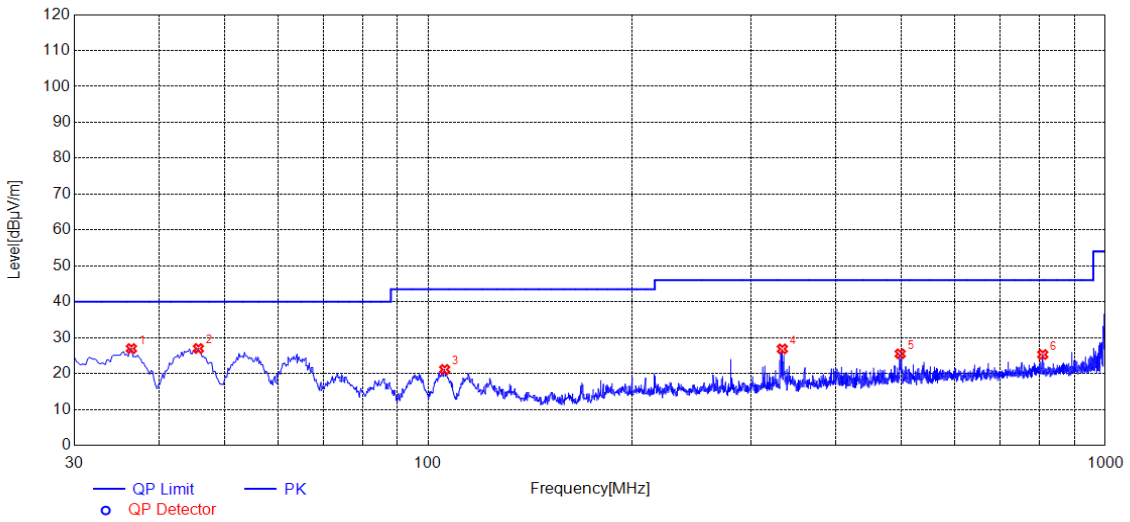
For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements and as applicable for average measurements.

3.2.4. Test Result

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

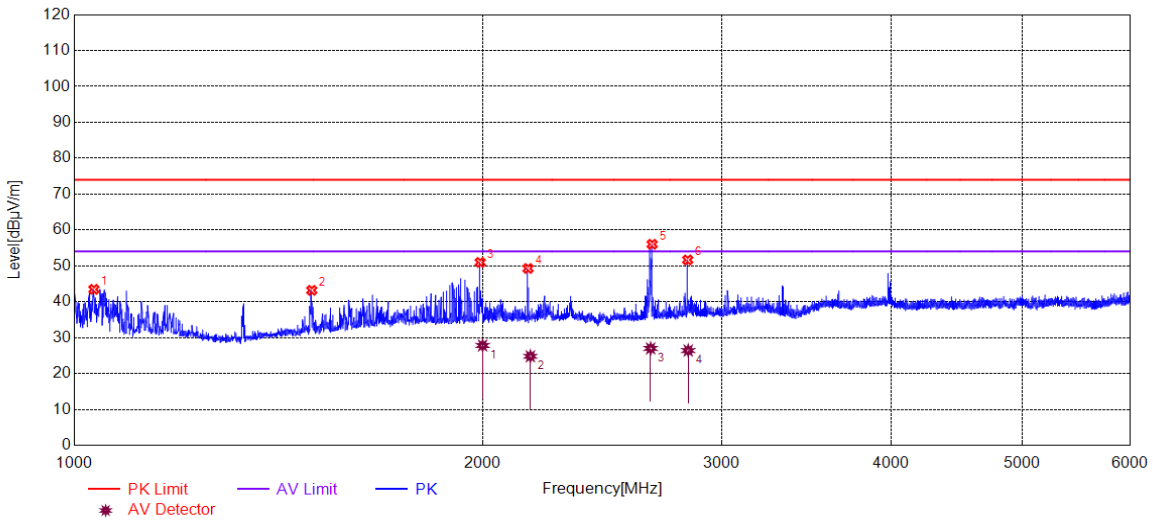
The amplitude of emissions which (6GHz-19GHz) are attenuated more than 20 dB below the permissible value need not be reported.

Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.



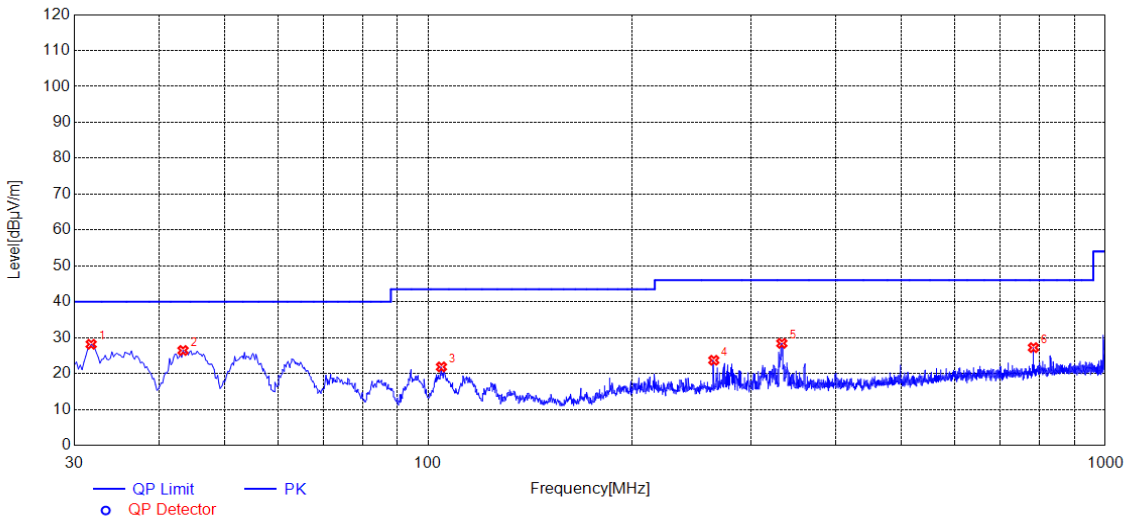
(Plot A: ANT-Vertical,30MHz - 1GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	36.4033	26.96	N.A	N.A	N.A	40.00	N.A	V	PASS
2	45.7171	26.98	N.A	N.A	N.A	40.00	N.A	V	PASS
3	105.6751	21.14	N.A	N.A	N.A	43.50	N.A	V	PASS
4	333.2827	26.86	N.A	N.A	N.A	46.00	N.A	V	PASS
5	497.6335	25.51	N.A	N.A	N.A	46.00	N.A	V	PASS
6	808.2897	25.31	N.A	N.A	N.A	46.00	N.A	V	PASS



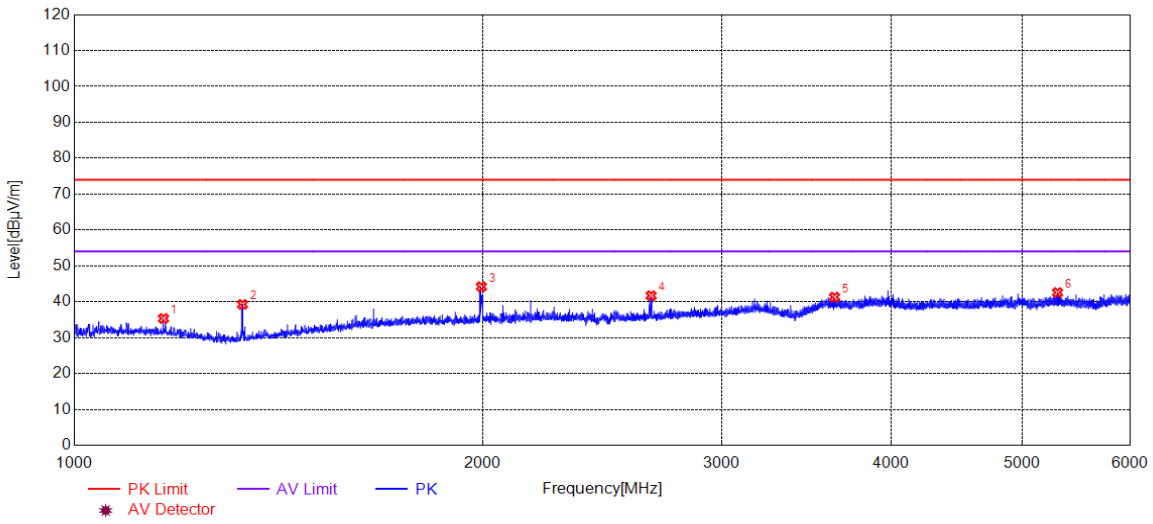
(Plot B: ANT-Vertical,1GHz - 6GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	1033.5034	43.46	N.A	N.A	74.00	N.A	54.00	V	PASS
2	1496.0496	43.19	N.A	N.A	74.00	N.A	54.00	V	PASS
3	1991.5992	50.97	N.A	27.81	74.00	N.A	54.00	V	PASS
4	2160.1160	49.28	N.A	24.80	74.00	N.A	54.00	V	PASS
5	2666.6667	56.02	N.A	26.99	74.00	N.A	54.00	V	PASS
6	2832.6833	51.66	N.A	26.42	74.00	N.A	54.00	V	PASS



(Plot C:ANT- Horizontal, 30MHz - 1GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	31.7463	28.16	N.A	N.A	N.A	40.00	N.A	H	PASS
2	43.3887	26.43	N.A	N.A	N.A	40.00	N.A	H	PASS
3	104.5109	21.85	N.A	N.A	N.A	43.50	N.A	H	PASS
4	264.0108	23.70	N.A	N.A	N.A	46.00	N.A	H	PASS
5	332.7005	28.40	N.A	N.A	N.A	46.00	N.A	H	PASS
6	783.0646	27.22	N.A	N.A	N.A	46.00	N.A	H	PASS



(Plot D:ANT- Horizontal, 1GHz - 6GHz)

No.	Fre. MHz	PK dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	1163.0163	35.34	N.A	N.A	74.00	N.A	54.00	H	PASS
2	1330.0330	39.27	N.A	N.A	74.00	N.A	54.00	H	PASS
3	1995.5996	44.21	N.A	N.A	74.00	N.A	54.00	H	PASS
4	2662.1662	41.70	N.A	N.A	74.00	N.A	54.00	H	PASS
5	3634.7635	41.30	N.A	N.A	74.00	N.A	54.00	H	PASS
6	5307.9308	42.57	N.A	N.A	74.00	N.A	54.00	H	PASS

Annex A Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	9kHz-150kHz	±3.3dB
	150kHz-30MHz	±2.8dB

Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	±5.06dB
	200MHz-1000MHz	±5.04dB
	1GHz-6GHz	±5.18dB
	6GHz-18GHz	±5.48dB

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Accreditation Certificate

Accredited Testing Laboratory:	The FCC designation number is CN1192. Test firm registration number is 226174. (Shenzhen Morlab Communications Technology Co., Ltd.)

4. Test Software Utilized

Model	Version Number	Producer
JS32-RE	Version 2.0.2.0	Tonscend
TS+ -[JS32-CE]	Version2.5.0.0	Tonscend

5. Test Equipments Utilized

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
MXE EMI Receiver	Agilent	N9038A	MY54130016	2020.07.21	2021.07.20
Test Receiver	R&S	ESPI	101052	2020.07.21	2021.07.20
LISN	Schwarzbeck	NSLK 8127	8127449	2020.03.26	2021.03.25
Pulse Limiter (10dB)	Schwarzbeck	VTSD 9561-F	VTSD 9561 F-B #206	2019.08.13	2022.08.12
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-519	2019.05.24	2022.05.23
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	01774	2019.07.29	2022.07.28
Test Antenna - Horn	Schwarzbeck	BBHA 9170	BBHA 9170 773#	2019.07.26	2022.07.25
Radiated Disturbance Preamplifier	rflight	S020180L3203	61171/61172	2020.07.21	2021.07.20
Radiated Disturbance Preamplifier	rflight	S10M100L3802	46732	2020.07.21	2021.07.20
Semi-Anechoic Chamber	CRT	9m*6m*6m	N/A	2020.01.06	2023.01.05

END OF REPORT