REPORT No. : SZ17040180E01

FCC TEST REPORT

APPLICANT	:	Shinano Kenshi Co., Ltd.
PRODUCT NAME	:	Plextalk Pocket
MODEL NAME	:	PTP1, PTP1/LINK
TRADE NAME	:	Plextalk
BRAND NAME	:	Plextor
FCC ID	:	WNU-PTP1B
STANDARD(S)	:	47 CFR Part 15 Subpart B
TEST DATE	:	2017-04-18 to 2017-04-25
ISSUE DATE	:	2017-04-26

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

MORLAB GROUP
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DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2017-04-26	First edition

Test Report Declaration

Applicant	Shinano Kenshi Co., Ltd.
Applicant Address	1078, Kami-Maruko, Ueda-Shi, Nagano-Ken, 386-0498, Japan
Manufacturer	Group Sense Mobile-Tech Limited
Manufacturer Address	Units 13-24, 2/F, Sino Industrial Plaza, 9 Kai Cheung Road, Kowloon Bay, Kowloon, Hong Kong
Product Name	Plextalk Pocket
Model Name	PTP1, PTP1/LINK
Brand Name	Plextor
HW Version	MP
SW Version	MP
Test Standards	47 CFR Part 15 Subpart B
Test Result	PASS

Tested by : Wang Dalong

Wang Dalong（Test Engineer）

Approved by : Andy Yeh

Andy Yeh（Technology Manager）

1. Technical Information

Note： Provided by applicant

1.1. Applicant Information

Company： Shinano Kenshi Co., Ltd.
Address： 1078, Kami-Maruko, Ueda-Shi, Nagano-Ken, 386-0498, Japan

1.2. Equipment under Test (EUT) Description

EUT Type:	Plextalk Pocket
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	MP
Software Version:	MP

Power supply:	**Battery**	
	Brand Name:	PLEXTOR
	Model No.:	PTP1
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	1430mAh
	Rated Voltage:	3.7V
	Charge Limit:	4.2V
Ancillary Equipment:	**AC Adapter**	
	Brand Name:	Ten Pao
	Model No.:	S012BEU0500180
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	～ 100-240V, 50/60Hz, 500mA
	Rated Output:	⎓ 5.0V,1.8A

NOTE:

1. There are two models of samples (PTP1 and PTP1/LINK). All the samples are tested with the EUT respectively, only the worst sample (PTP1) is recorded in this report.
2. The model PTP1 and model PTP1/LINK(IC: 7911A-PTP1A) are accordant in both hardware platform and software. Following is the highlighted items which are same in PTP1 and

PTP1/LINK

a. The number of PCB used in the product.

b. The PCB layout.

c. CPU.NAND Flash, Power management IC,USB transceiver and WIFI module

d. AC adaptor.

e. Accessories such as earphone and USB cable.

These two models only differ in application information, memory size and color of plastic Enclosure. The detail difference for PTP1, application is as below:

a. The new additional model name is: PTP1/LINK

b. The memory size for mobile DDR has been changed from 64MB to 128MB.The PCB layout is exactly the same, as the memory chip is pin-to-pin compatible.

c. The color of plastic enclosure has been changed.

3. The EUT is a Plextalk Pocket which supports WIFI (802.11b/g) band.
4. The EUT is equipped with a SD card slot, microphone port and a Mini-B USB port which can be connected to ancillary equipments.
5. 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	Result
1	15.107	Conducted Emission	2017.04.21	PASS
2	15.109	Radiated Emission	2017.04.23	PASS

NOTE: The tests were performed according to the method of measurements prescribed in ANSI C63.4-2014.

3. Test Conditions Setting

3.1. Test Mode

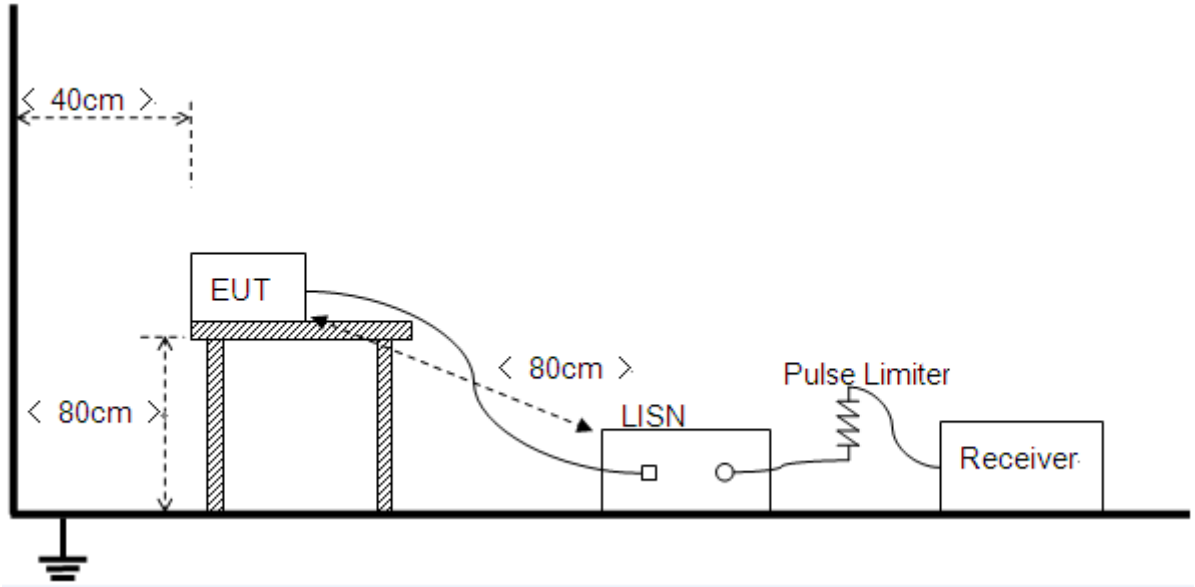
1	**The first test mode**
	The EUT configuration of the emission tests is EUT + Battery + SD Card + PC + Earphone. In this test mode, the EUT embedded with a SD Card was connected to a PC via the Mini-B USB port. During the measurement, the date was transmitted between the PC and the SD Card of the EUT.
2	**The second test mode**
	The EUT configuration of the emission tests is EUT + Battery + AC adapter + U-Disk + Earphone. In this test mode, the EUT was connected to the AC adapter and kept charging by the adapter. The EUT was connected to a U-Disk via the Mini-B USB port. During the measurement, the date was transmitted between the U-Disk and the EUT.
3	**The third test mode**
	The EUT configuration of the emission tests is EUT + Battery + AC adapter + SD Card + Microphone. In this test mode, the EUT was connected to the AC adapter and kept charging by the adapter. The EUT embedded with a SD Card was connected to a Microphone via the microphone port. During the measurement, the date was transmitted between the microphone and the SD Card of the EUT.

Note: All test modes are performed, only the worst case (the second) are recorded in this report.

3.2. Test Setup and Equipments List

3.2.1. Conducted Emission

A. Test Setup:



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.

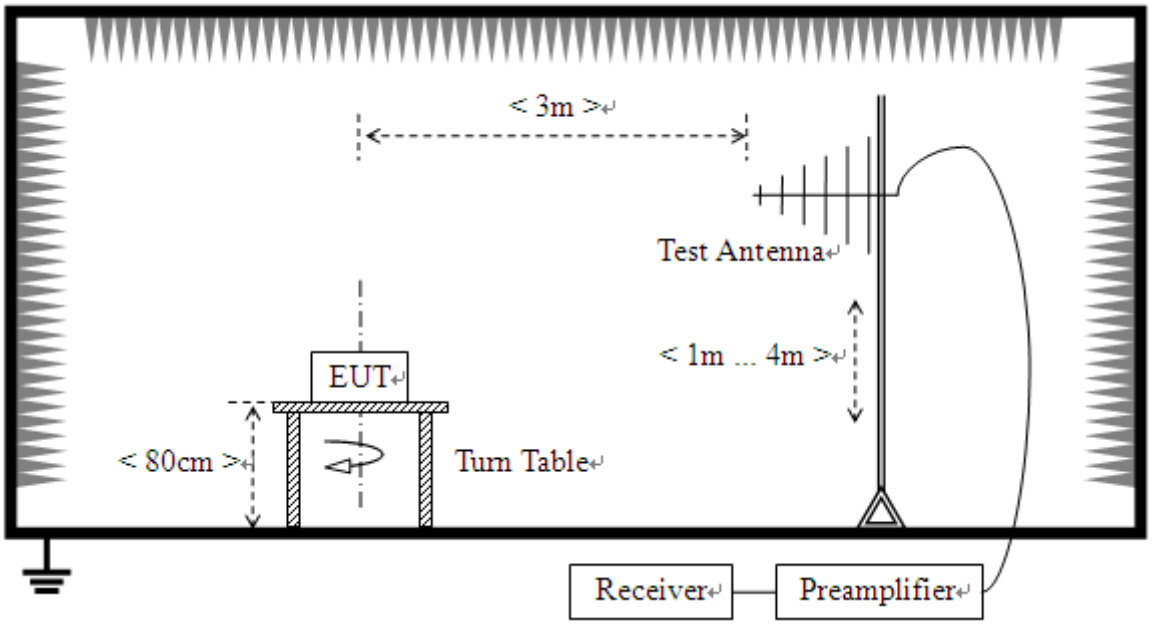
B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
Receiver	Narda	PMM 9010	595WX11007	2016.06.02	2017.06.01
LISN	Schwarzbeck	NSLK 8127	812744	2016.06.02	2017.06.01
Pulse Limiter (20dB)	VTSD	9561D	9537	2016.07.05	2017.07.04

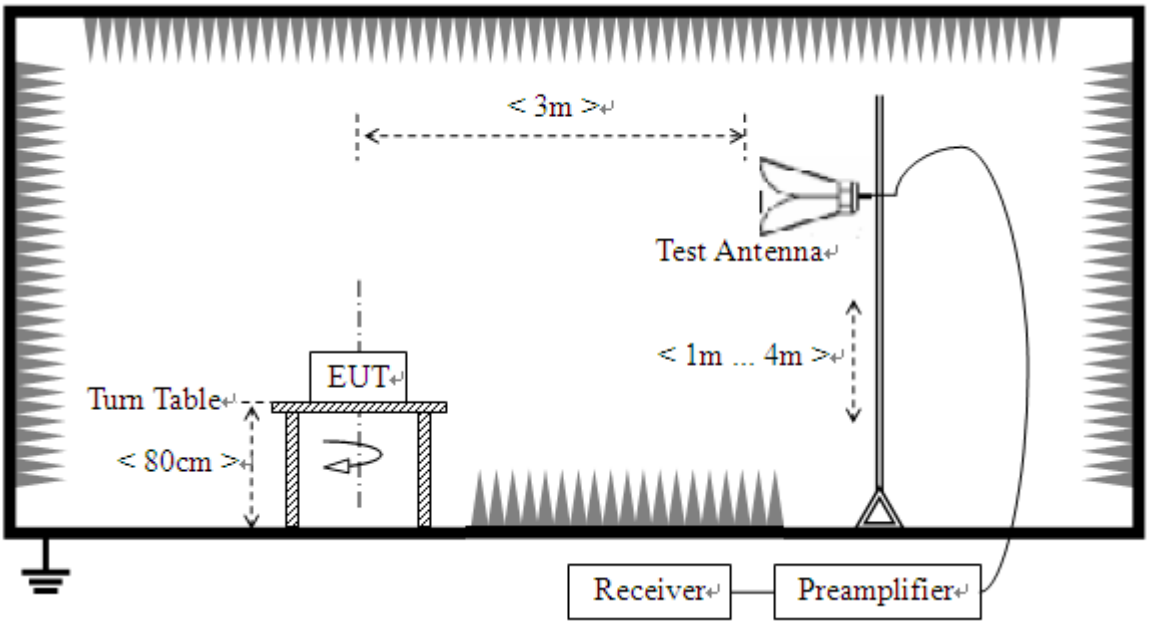
3.2.2. Radiated Emission

A. 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 theTest Antenna, which is mounted onavariable-height antenna master tower.

For the test Antenna:

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn TestAntenna (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.

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
MXE EMI Receiver	Agilent	N9038A	MY54130016	2016.06.03	2017.06.02
Semi-Anechoic Chamber	Changning	9m*6m*6m	N/A	2017.01.11	2018.01.10
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2016.12.09	2017.12.08
Test Antenna - Horn	Schwarzbeck	BBHA9120C	9120C-384	2016.07.05	2017.07.04

4. 47 CFR Part 15B Requirements

4.1. Conducted Emission

4.1.1. Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the ACpower line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in thefollowing 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.

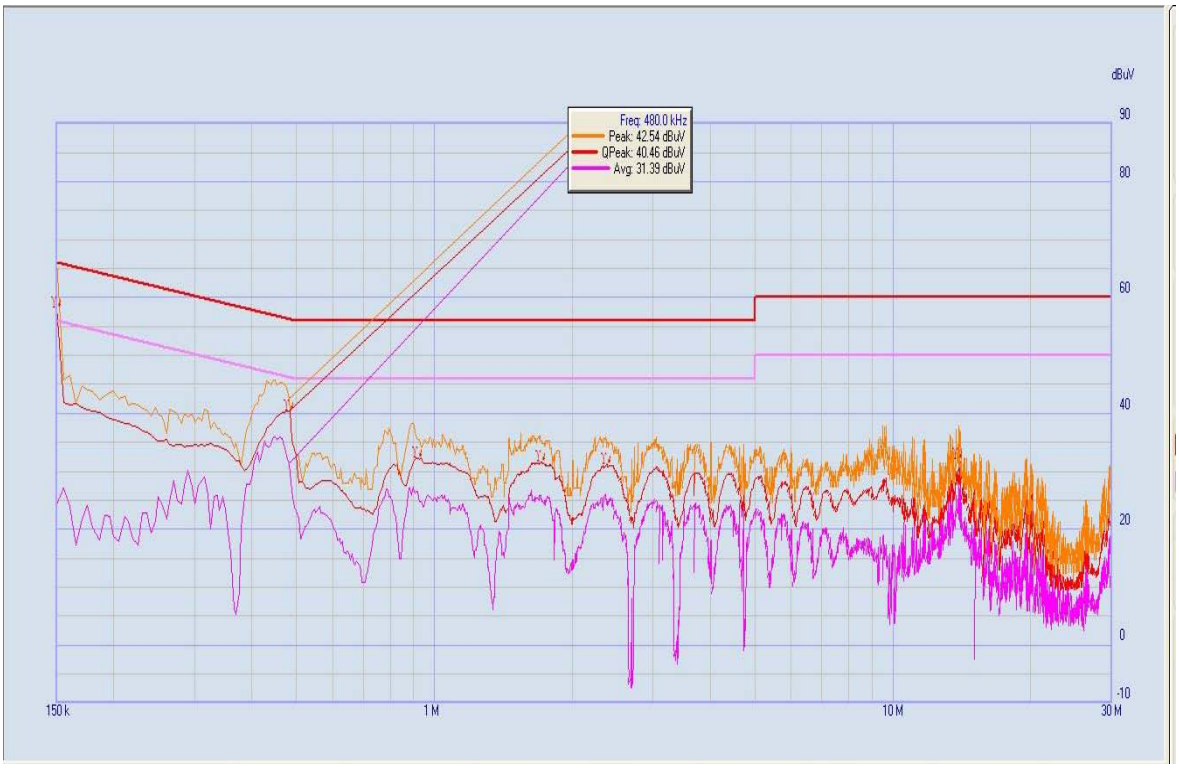
4.1.2. Test Description

See section 3.2.1 of this report.

4.1.3. Test Result

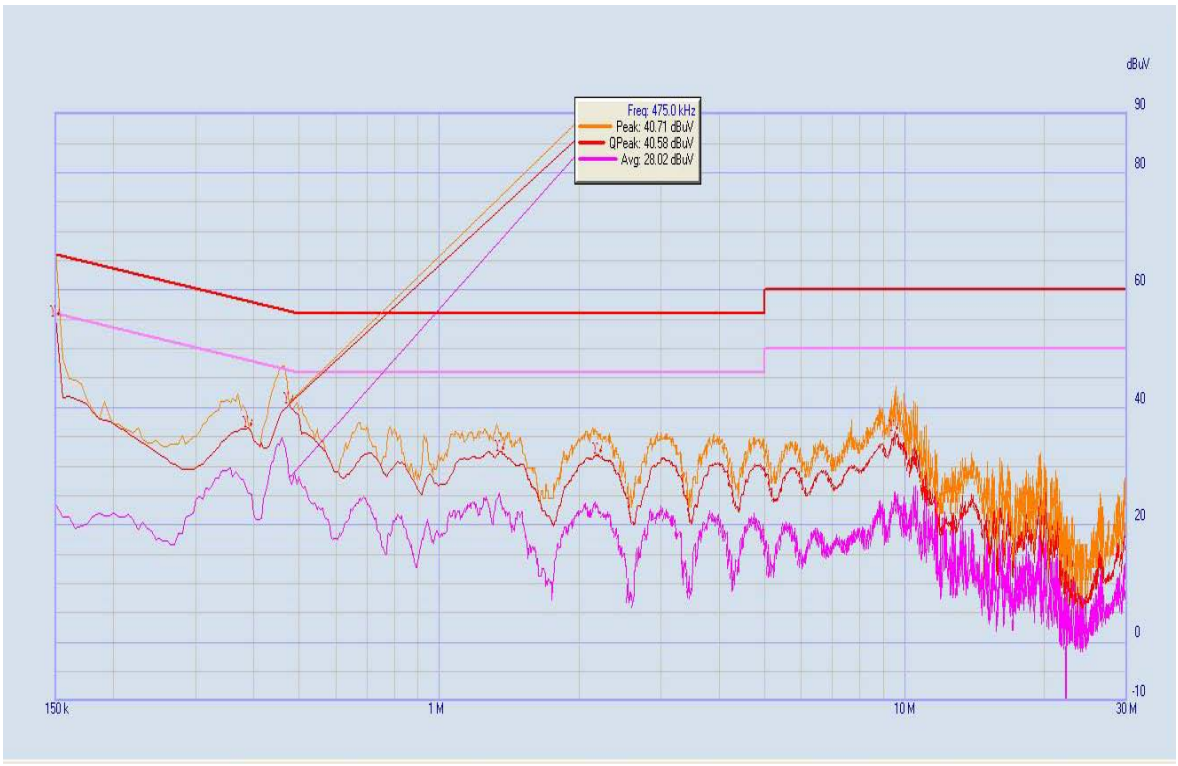
The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors.Tests for both L phase and N phase lines 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	0.15	58.17	24.31	66.00	56.00	Line	PASS
2	0.48	40.46	31.39	56.57	46.57		PASS
3	0.92	32.29	26.43	56.00	46.00		PASS
4	1.71	31.53	25.22	56.00	46.00		PASS
5	2.365	31.13	25.09	56.00	46.00		PASS
6	13.83	30.25	26.02	60.00	50.00		PASS



(Plot B: N Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	55.43	23.54	66.00	56.00	Neutral	PASS
2	0.39	36.47	25.43	59.14	49.14		PASS
3	0.475	40.58	28.02	56.71	46.71		PASS
4	1.35	32.42	24.56	56.00	46.00		PASS
5	2.19	31.98	22.40	56.00	46.00		PASS
6	9.49	35.50	25.24	60.00	50.00		PASS

Result: Pass

4.2. Radiated Emission

4.2.1. Requirement

According to FCC section 15.109 (a), the field strength of radiated emissions from unintentionalradiators 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 FCCsection 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 in dBμV/m is calculated by 20log Emission Level(μV/m).

4.2.2. Test Description

See section 3.2.2 of this report.

4.2.3. 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.

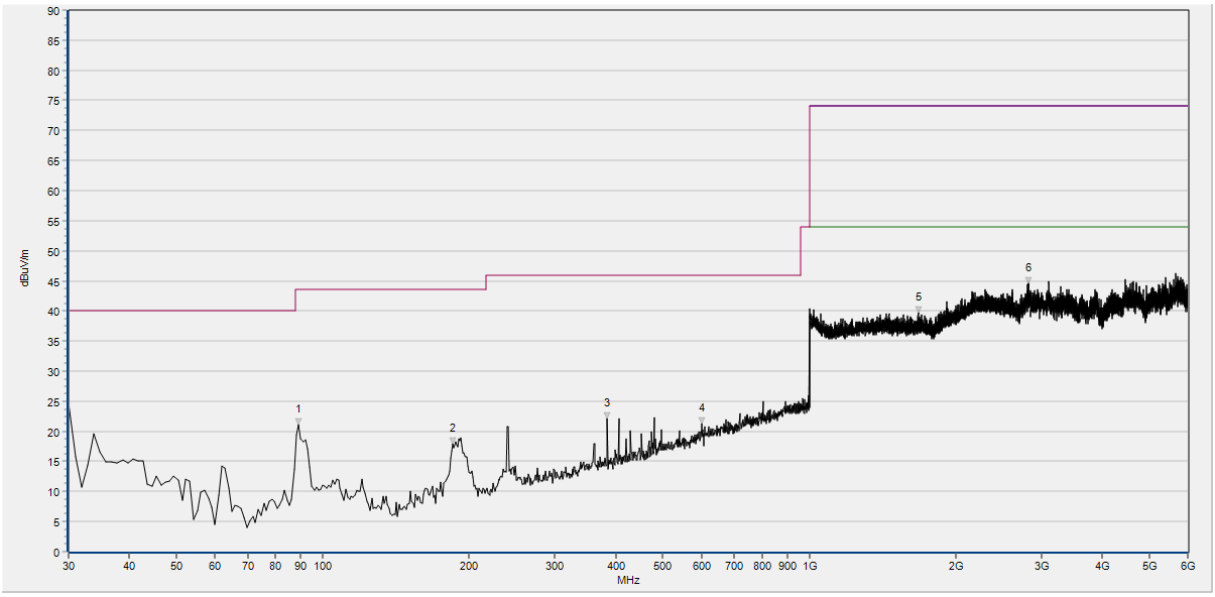
4.2.4. Test Result

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 spurious emissions (6GHz-12.5GHz) which are attenuated more than 20 dB below the permissible value need not be reported.

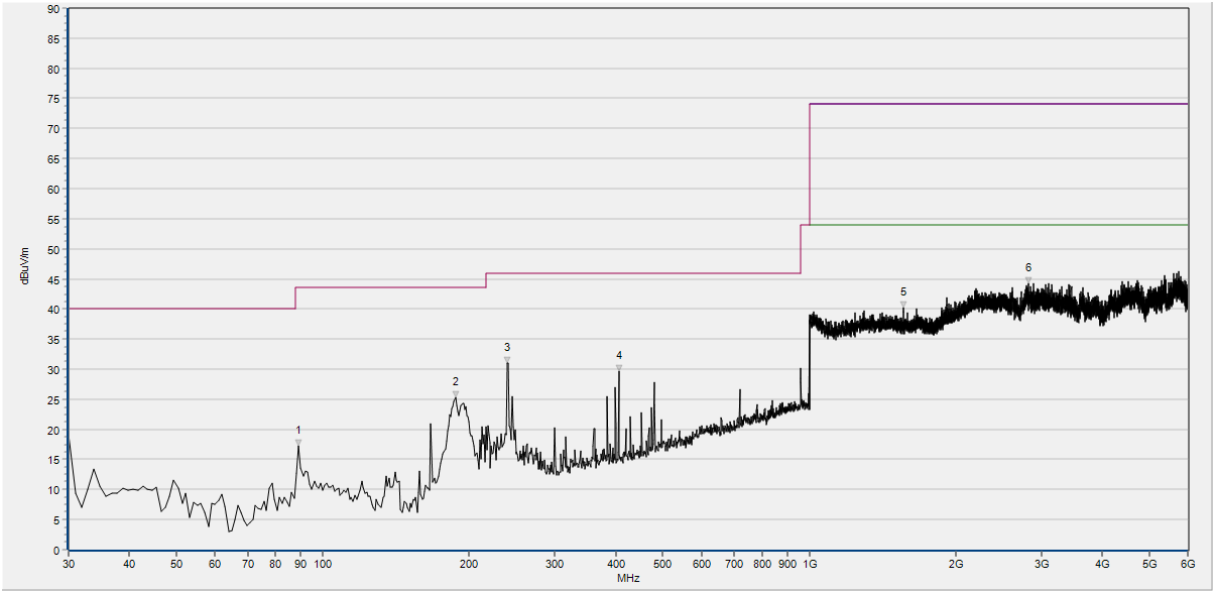
Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.

A. Test Plots and Suspicious Points:



(Plot A: 30MHz – 6GHz, Test Antenna Vertical)

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	89.170	N.A.	21.09	N.A.	N.A.	43.50	N.A.	V	PASS
2	185.200	N.A.	17.94	N.A.	N.A.	43.50	N.A.	V	PASS
3	384.050	N.A.	22.08	N.A.	N.A.	46.00	N.A.	V	PASS
4	601.330	N.A.	21.33	N.A.	N.A.	46.00	N.A.	V	PASS
5	1673.600	39.80	N.A.	33.21	74.00	N.A.	54.00	V	PASS
6	2816.320	44.53	N.A.	38.47	74.00	N.A.	54.00	V	PASS



(Plot B: 30MHz – 6GHz, Test Antenna Horizontal)

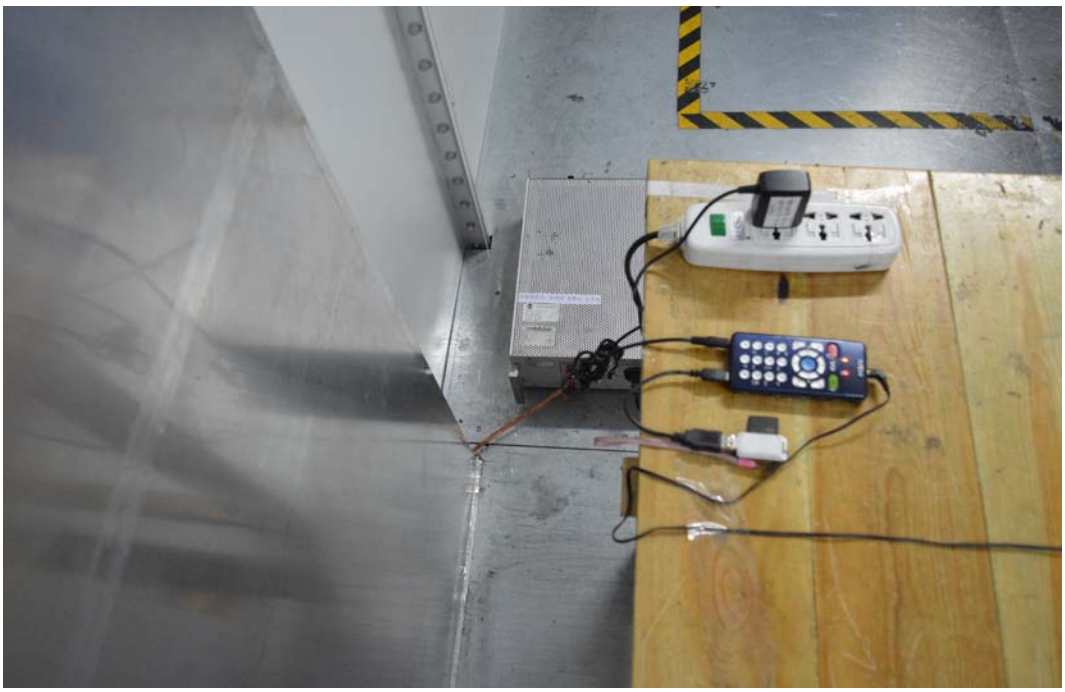
No.	Fre. MHz	Pk dBµV/m	QP dBµV/m	AV dBµV/m	Limit-PK dBµV/m	Limit-QP dBµV/m	Limit-AV dBµV/m	ANT	Verdict
1	89.170	N.A.	17.21	N.A.	N.A.	43.50	N.A.	H	PASS
2	187.140	N.A.	25.23	N.A.	N.A.	43.50	N.A.	H	PASS
3	239.520	N.A.	31.05	N.A.	N.A.	46.00	N.A.	H	PASS
4	406.360	N.A.	29.73	N.A.	N.A.	46.00	N.A.	H	PASS
5	1560.000	40.29	N.A.	34.51	74.00	N.A.	54.00	H	PASS
6	2818.880	44.24	N.A.	38.19	74.00	N.A.	54.00	H	PASS

Result: Pass

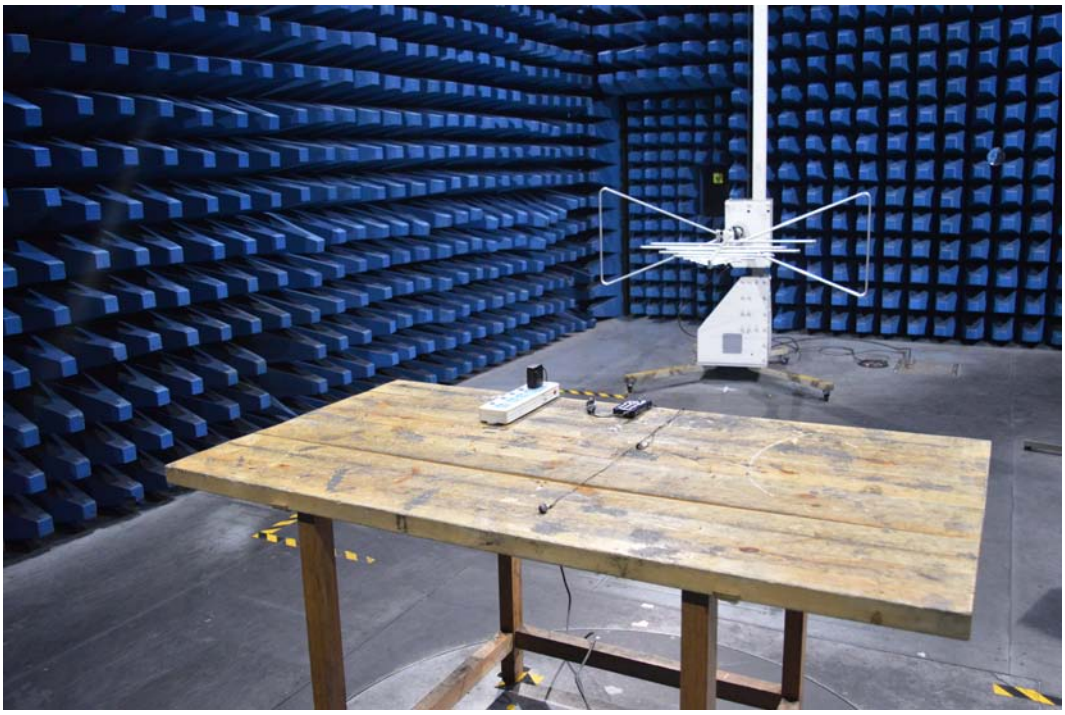
Annex A Test Setup Photos

1. Conducted emission main's port front view

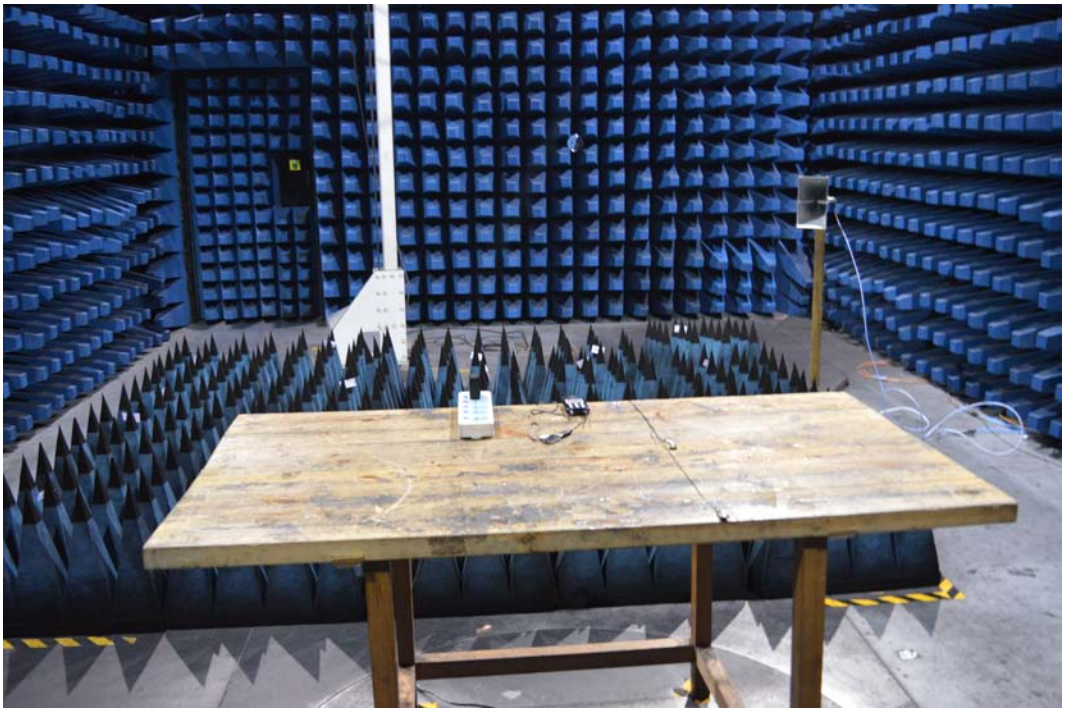
2. Conducted emission main's port side view



3. Radiated emission (30MHz-1GHz)



4. Radiated emission (above 1GHz)



Annex B 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:	±1.8dB
Uncertainty of Radiated Emission:	±3.1dB

Annex C Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
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 registration number is 695796.
(Shenzhen Morlab Communications Technology Co., Ltd.)

4. Test Environment Conditions

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

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

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