



# TEST REPORT

Applicant:	KYE SYSTEMS CORP.
Address:	No. 492, Chongxin Rd., Sanchong Dist., New Taipei City 24160, Taiwan (R.O.C).

Manufacturer or Supplier	Dongguan Kunying Computer Products Co., Ltd
Address	Baodun Industrial District, Houjie Town, Dongguan City, Guangdong Province, 523961 China
Product:	Mouse
Brand Name:	Genius
Model:	Micro Traveler 9000R
Additional Model & Model Difference	N/A
Date of tests:	Jun. 08, 2015 ~ Jul. 17, 2015

the tests have been carried out according to the requirements of the following standard:

# CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Breeze Jiang	Approved by Chris Chen
Project Engineer / EMC Department	Assistant Manager / EMC Department

Date: Jul. 17, 2015

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

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# **TABLE OF CONTENTS**

RI	ELEASI	E C	ONTROL RECORD	4
1	SUN	ИΜ	ARY OF TEST RESULTS	5
	2 ME	ASI	UREMENT UNCERTAINTY	5
3	GEN	NEF	RAL INFORMATION	6
	3.1 GE	NEI	RAL DESCRIPTION OF EUT	6
			RIPTION OF TEST MODES	
	3.3 GE	NEI	RAL DESCRIPTION OF APPLIED STANDARDS	8
	3.4 DE	SCI	RIPTION OF SUPPORT UNITS	8
4.	TES	ТТ	TYPES AND RESULTS	9
	4.1 CO	ND	UCTED EMISSION MEASUREMENT	9
	4.1.1	LI	MITS OF CONDUCTED EMISSION MEASUREMENT	9
	4.1.2	T	EST INSTRUMENTS	9
	4.1.3	T	EST PROCEDURES	10
	4.1.4	D	EVIATION FROM TEST STANDARD	10
	4.1.5	T	EST SETUP	11
	4.1.6	Е	UT OPERATING CONDITIONS	11
	4.1.7	T	EST RESULTS	12
	4.2 RAI	DIA	TED EMISSION MEASUREMENT	14
	4.2.	1	LIMITS OF RADIATED EMISSION MEASUREMENT	14
	4.2.	.2	TEST INSTRUMENTS	15
	4.2.	.3	TEST PROCEDURES	15
	4.2.	.4	DEVIATION FROM TEST STANDARD	16
	4.2.	.5	TEST SETUP	16
	4.2.	.6	EUT OPERATING CONDITIONS	16
	4.2.	.7	TEST RESULTS	17
	4.3 200	ВЕ	BANDWIDTH MEASUREMENT	22
	4.3.	1	LIMITS OF 20dB BANDWIDTH MEASUREMENT	22
	4.3.	2	TEST INSTRUMENTS	22
	4.3.	3	TEST PROCEDURE	22
	4.3.	4	DEVIATION FROM TEST STANDARD	23
	4.3.	5	TEST SETUP	23

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	4.3.6	EUT OPERATING CONDITIONS	23
	4.2.7	TEST RESULTS	23
5.	PHOT	OGRAPHS OF THE TEST CONFIGURATION	26
6.	APPEI	NDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE	
	EUT B	SY THE LAB	27

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# **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150608N006	Original release	Jul. 17, 2015

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# **SUMMARY OF TEST RESULTS**

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.249)							
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK				
§15.203	Antenna Requirement	PASS	No antenna connector is used				
§15.207 (a)	Conducted Emission	PASS	Compliant				
§15.205	Restricted Band of Operation	PASS	Compliant				
§15.209 §15.249(a)	Radiated Emission	PASS	Compliant				
§15.215(c)	20dB Bandwidth Test	PASS	Compliant				

# MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
	9KHz ~ 30MHz	2.74dB
Radiated emissions	30MHz ~ 1GHz	3.55dB
Radiated effilssions	1GHz ~ 18GHz	4.84dB
	18GHz ~ 40GHz	4.84dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

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# 3 GENERAL INFORMATION

# 3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mouse	
MODEL NO.	Micro Traveler 9000R	
FCC ID	FSUGMZLE	
NOMINAL VOLTAGE	DC 3.7V From Battery or DC5V frm USB Host Unit	
MODULATION TECHNOLOGY	GFSK	
OPERATING FREQUENCY	2408MHz ~ 2474MHz	
ANTENNA TYPE	Integral PCB Antenna, with 0dBi gain	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	

#### NOTE:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
- 3. Please refer to the EUT photo document (Reference No.: 150608N006) for detailed product photo.

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# 3.2 DESCRIPTION OF TEST MODES

EUT CONFIGURE	APPLICABLE TO				DESCRIPTION	
MODE	RE<1G	RE≥1G	PLC	BW	DESCRIPTION	
-			-	<b>√</b>	Powered by battery	
	√	$\checkmark$	<b>V</b>		Powered by USB Host Unit	

Where RE<1G: Radiated Emission below 1GHz RE≥1G: Radiated Emission above 1GHz PLC: Power Line Conducted Emission BW: 20db bandwidth

Following channel(s) was (were) selected for the test as listed below.

TESTED CHANNEL	TESTED FREQUENCY
Low	2408 MHz
Middle	2440 MHz
High	2474 MHz

Note: The more detailed channel, please refer to the product specifications.

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Page 7 of 27

# 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C, Section 15.249 ANSI C63.10-2009

All test items have been performed and recorded as per the above standards.

# 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook PC	DELL	Inspriron 14-3442	4Q3WB12	N/A
2	Notebook PC	Lenovo	E430	MP-0DN27	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line :Unshielded, Detachable 1.0m, DC Line :Unshielded, Detachable 1.8m
2	AC Line :Unshielded, Detachable 1.5m, DC Line :Unshielded, Detachable 1.8m

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Page 8 of 27

# 4. TEST TYPES AND RESULTS

#### 4.1 CONDUCTED EMISSION MEASUREMENT

# 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)			
	Quasi-peak	Average		
0.15 ~ 0.5	66 to 56	56 to 46		
0.5 ~ 5	56	46		
5 ~ 30	60	50		

NOTE: 1. The lower limit shall apply at the transition frequencies.

- The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
- 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

# 4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCS30	100340	May 11,15	May 10,16
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 11,15	May 10,16
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	May 11,15	May 10,16
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

# NOTE:

- 1. The test was performed in shielded room 553.
- 2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

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Page 9 of 27



# 4.1.3 TEST PROCEDURES

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit 20dB) were not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

# 4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

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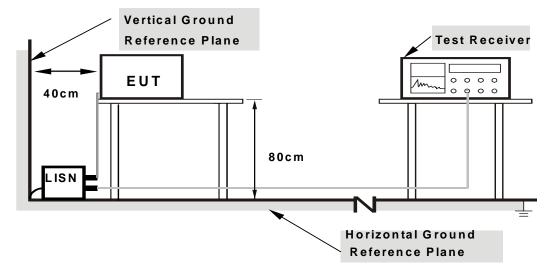
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Page 10 of 27



# 4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

# 4.1.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

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# Test Report No.: RF150608N006

# 4.1.7 TEST RESULTS

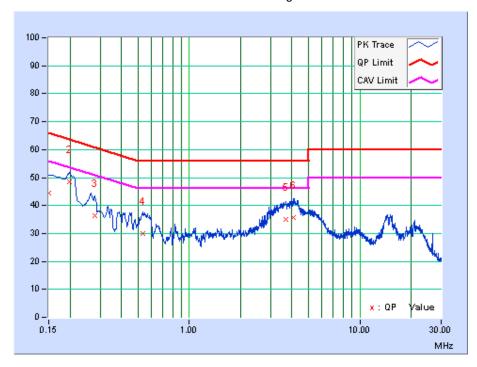
# **CONDUCTED WORST-CASE DATA: GFSK DH5**

PHASE	Line 1	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

No	No Freq. [MHz]		Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.78	34.70	20.43	44.48	30.21	66.00	56.00	-21.52	-25.79
2	0.19878	9.75	38.83	24.47	48.58	34.22	63.66	53.66	-15.08	-19.44
3	0.27825	9.78	26.54	14.70	36.32	24.48	60.87	50.87	-24.55	-26.39
4	0.53250	9.78	20.22	13.19	30.00	22.97	56.00	46.00	-26.00	-23.03
5	3.70050	9.85	25.26	18.55	35.11	28.40	56.00	46.00	-20.89	-17.60
6	4.05825	9.87	25.68	18.72	35.55	28.59	56.00	46.00	-20.45	-17.41

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

- 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
- 3. The emission levels of other frequencies were very low against the limit.
- 4. Margin value = Emission level Limit value
- 5. Correction factor = Insertion loss + Cable loss
- 6. Emission Level = Correction Factor + Reading Value.



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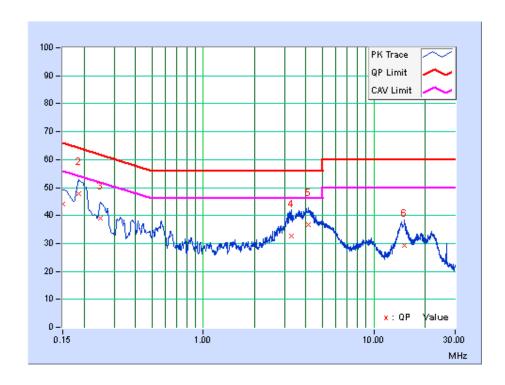
# Test Report No.: RF150608N006

PHASE	Neutral	6dB BANDWIDTH	9kHz
-------	---------	---------------	------

No Freq. [MHz]		Corr. Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)		
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.50	34.56	20.64	44.06	30.14	66.00	56.00	-21.94	-25.86
2	0.18608	9.51	38.21	21.84	47.72	31.35	64.21	54.21	-16.49	-22.86
3	0.24879	9.50	29.41	14.53	38.91	24.03	61.80	51.80	-22.88	-27.76
4	3.27750	9.56	23.24	15.78	32.80	25.34	56.00	46.00	-23.20	-20.66
5	4.11000	9.59	26.98	19.63	36.57	29.22	56.00	46.00	-19.43	-16.78
6	15.14400	9.95	19.51	7.81	29.46	17.76	60.00	50.00	-30.54	-32.24

**REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

- 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
- 3. The emission levels of other frequencies were very low against the limit.
- 4. Margin value = Emission level Limit value
- 5. Correction factor = Insertion loss + Cable loss
- 6. Emission Level = Correction Factor + Reading Value.



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#### .2 RADIATED EMISSION MEASUREMENT

#### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)		
0.009 ~ 0.490	2400/F(kHz)	300		
0.490 ~ 1.705	24000/F(kHz)	30		
1.705 ~ 30.0	30	30		
30 ~ 88	100	3		
88 ~ 216	150	3		
216 ~ 960	200	3		
Above 960	500	3		

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field strength of fundamental (milli-volts/meter)	Field strength of harmonics (micro-volts/meter)		
902-928 MHz	50	500		
2400-2483.5 MHz	50	500		
5725-5875 MHz	50	500		
24.0-24.25 GHz	250	2500		

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

#### NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

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#### Test Report No.: RF150608N006

#### **TEST INSTRUMENTS** 4.2..2

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E4446A	MY46180622	Apr. 29,15	Apr. 28,16
EMI Test Receiver	Rohde&Schwarz	ESVS10	841431/004	May 17,15	May 16,16
Loop antenna (9kHz~30MHz)	Daze	ZN30900A	0708	Dec. 22,14	Dec. 21,15
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 25, 14	Jul. 24, 15
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 30,14	May 29,16
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	Jan. 21,15	Jan. 20,16
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 04,15	Mar. 03, 16
Signal Amplifier	Agilent	8447D	2944A10488	Jun. 25,15	Jun. 24,16
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 13,15	May 12,16
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 20,14	Nov. 19,15
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Apr. 19,14	Apr. 18,16
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 27,14	Oct. 26,15
Test Software	ADT	ADT_RadiatedV7.6.15.9.2	N/A	N/A	N/A

#### NOTE:

- 1. The test was performed in 966 Chamber.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
- 3. The horn antenna are used only for the measurement of emission frequency above 1GHz if tested.
- 4. The FCC Site Registration No. is 502831.

#### 4.2..3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meters 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 is a broadband antenna, and its 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

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- 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

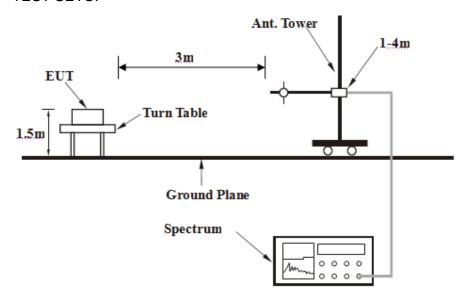
#### NOTE:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported.

# 4.2..4 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.2..5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

# 4.2..6 EUT OPERATING CONDITIONS

See item3.1.6

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# 4.2..7 TEST RESULTS

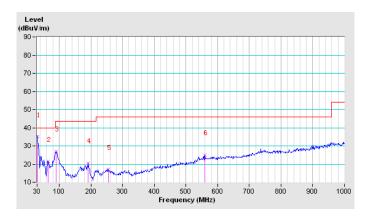
# **BELOW 1GHz WORST-CASE DATA**

CHANNEL	TX Middle Channel	DETECTOR	Ougai Pagis (OD)
FREQUENCY RANGE	30MHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)			
1	31.41	34.99	40.00	-5.01	100	0	48.23	-13.24			
2	65.14	21.39	40.00	-18.61	100	0	46.67	-25.28			
3	90.45	26.93	43.50	-16.57	100	0	48.10	-21.17			
4	191.67	20.58	43.50	-22.92	100	0	41.55	-20.97			
5	254.93	16.99	46.00	-29.01	100	0	33.19	-16.20			
6	559.99	24.86	46.00	-21.14	100	0	30.82	-5.96			

#### **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.



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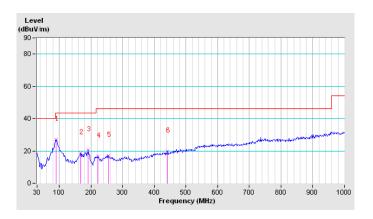


CHANNEL	TX Middle Channel	DETECTOR	Ougsi Poek (OP)
FREQUENCY RANGE	30MHz ~ 1GHz	FUNCTION	Quasi-Peak (QP)

	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	90.45	26.93	43.50	-16.57	100	0	48.10	-21.17
2	167.77	18.51	43.50	-24.99	100	0	38.36	-19.85
3	191.67	20.58	43.50	-22.92	100	0	41.55	-20.97
4	222.59	16.72	46.00	-29.28	100	0	36.27	-19.55
5	254.93	16.99	46.00	-29.01	100	0	33.19	-16.20
6	441.90	19.71	46.00	-26.29	100	0	30.45	-10.74

# **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.



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# **ABOVE 1GHz WORST-CASE DATA:**

CHANNEL	TX Low Channel	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY 8	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2400.00	65.4 PK	74.0	-8.6	1.03 H	11	64.99	0.41
2	2400.00	41.3 AV	54.0	-12.7	1.03 H	11	40.89	0.41
3	2408.00	102.6 PK	114.0	-11.4	1.03 H	11	102.16	0.44
4	2408.00	78.5 AV	94.0	-15.5	1.03 H	11	78.06	0.44
5	4816.00	66.8 PK	74.0	-7.2	1.01 H	62	60.24	6.56
6	4816.00	42.7 AV	54.0	-11.3	1.01 H	62	36.14	6.56
7	7224.00	64.5 PK	74.0	-9.5	1.00 H	127	53.70	10.80
8	7224.00	40.4 AV	54.0	-13.6	1.00 H	127	29.60	10.80
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2400.00	60.4 PK	74.0	-13.6	1.42 V	114	59.99	0.41
2	2400.00	36.3 AV	54.0	-17.7	1.42 V	114	35.89	0.41
3	2408.00	95.8 PK	114.0	-18.2	1.42 V	114	95.36	0.44
4	2408.00	71.7 AV	94.0	-22.3	1.42 V	114	71.26	0.44
5	4816.00	64.2 PK	74.0	-9.8	1.05 V	219	57.64	6.56
6	4816.00	40.1 AV	54.0	-13.9	1.05 V	219	33.54	6.56
7	7224.00	61.3 PK	74.0	-12.7	1.01 V	262	50.50	10.80
8	7224.00	37.2 AV	54.0	-16.8	1.01 V	262	26.40	10.80

# **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

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CHANNEL	TX Middle Channel	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2440.00	100.2 PK	114.0	-13.8	1.66 H	242	99.69	0.51
2	2440.00	76.1 AV	94.0	-17.9	1.66 H	242	75.59	0.51
3	4880.00	65.6 PK	74.0	-8.4	1.01 H	25	58.85	6.75
4	4880.00	41.5 AV	54.0	-12.5	1.01 H	25	34.75	6.75
5	7320.00	62.4 PK	74.0	-11.6	1.00 H	94	51.60	10.80
6	7320.00	38.3 AV	54.0	-15.7	1.00 H	94	27.50	10.80
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2440.00	96.4 PK	114.0	-17.6	1.32 V	299	95.89	0.51
2	2440.00	72.3 AV	94.0	-21.7	1.32 V	299	71.79	0.51
3	4880.00	67.9 PK	74.0	-6.1	1.02 V	316	61.15	6.75
4	4880.00	43.8 AV	54.0	-10.2	1.02 V	316	37.05	6.75
5	7320.00	63.4 PK	74.0	-10.6	1.00 V	204	52.60	10.80

#### **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

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CHANNEL	TX High Channel	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz	FUNCTION	Average (AV)

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2474.00	95.5 PK	114.0	-18.5	1.33 H	316	94.91	0.59
2	2474.00	71.4 AV	94.0	-22.6	1.33 H	316	70.81	0.59
3	2483.50	60.5 PK	74.0	-13.5	1.33 H	316	59.89	0.61
4	2483.50	36.4 AV	54.0	-17.6	1.33 H	316	35.79	0.61
5	4948.00	66.2 PK	74.0	-7.8	1.02 H	354	59.24	6.96
6	4948.00	42.1 AV	54.0	-11.9	1.02 H	354	35.14	6.96
7	7422.00	63.2 PK	74.0	-10.8	1.00 H	47	52.40	10.80
8	7422.00	39.1 AV	54.0	-14.9	1.00 H	47	28.30	10.80
		ANTENNA	POLARITY	& TEST D	STANCE: V	ERTICAL A	T 3 M	-
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2474.00	93.2 PK	114.0	-20.8	1.04 V	202	92.61	0.59
2	2474.00	69.1 AV	94.0	-24.9	1.04 V	202	68.51	0.59
3	2483.50	59.6 PK	74.0	-14.4	1.04 V	202	58.99	0.61
4	2483.50	35.5 AV	54.0	-18.5	1.04 V	202	34.89	0.61
5	4948.00	64.6 PK	74.0	-9.4	1.02 V	210	57.64	6.96
6	4948.00	40.5 AV	54.0	-13.5	1.02 V	210	33.54	6.96
7	7422.00	62.3 PK	74.0	-11.7	1.00 V	55	51.50	10.80

# **REMARKS:**

- 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.
- 4. Margin value = Emission level Limit value.

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Test Report No.: RF150608N006

#### 20dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

According to FCC 15.215(c), must be designed to ensure that the 20 dB bandwidth

of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

# 4.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer (10Hz–40GHz)	Rohde&Schwarz	FSV40	101003	Apr. 07,15	Apr. 06,16
Power Meter	Anritsu	ML2495A	1139001	Feb. 20,15	Feb. 19,16
Power Sensor	Anritsu	MA2411B	1126068	Feb. 20,15	Feb. 19,16
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 27,14	Oct. 26,15
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.04,14	Sep. 03,15
Oscilloscope	Agilent	DSO9254A	MY51260160	Oct. 17, 14	Oct. 16, 15
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 05,14	Nov. 04,15

#### NOTE:

- 1. The test was performed in RF Oven room.
- 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

# 4.3.3 TEST PROCEDURE

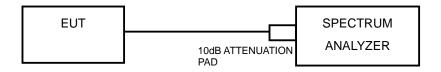
- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.



# 4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

# 4.3.5 TEST SETUP



# 4.3.6 EUT OPERATING CONDITIONS

- a) Turned on the power of all equipment.
- b) EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

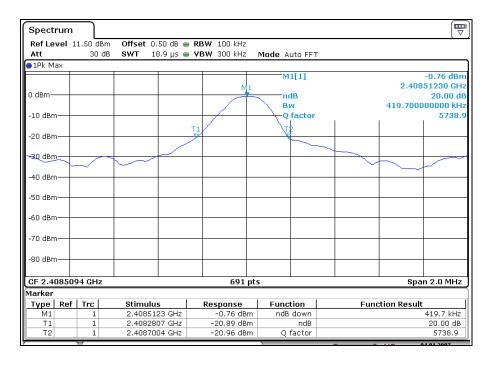
# 4.2.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
Low	2408	0.420
Middle	2440	0.385
High	2474	0.426

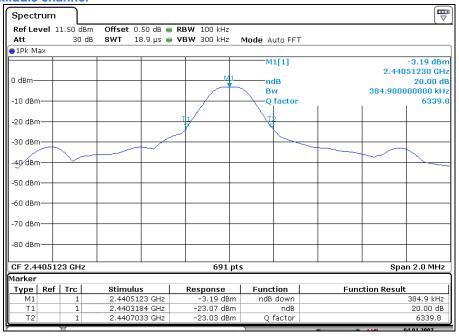
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#### **Test Data: Low channel**



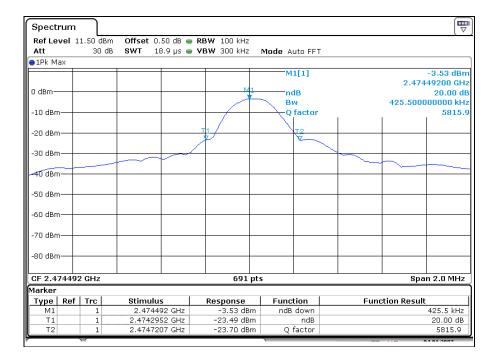
# **Test Data: Middle channel**



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# **Test Data: High channel**



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# 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

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Page 26 of 27



# 6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---

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Page 27 of 27