

FCC REPORT

Applicant: Zhejiang Feishen Vehicle Co., LTD.

Address of Applicant: North Lake Road Hardware Science And Technology Industry,
Yong Kang, ZheJiang China

Equipment Under Test (EUT)

Product Name: QUADTRANSMITTER

Model No.: FSH62834, FSH62835, FSH62836, FSH62837, FSH62838,
FSH62839, FSH62840

FCC ID: A6E-FSHTX

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2012

Date of sample receipt: April 09, 2013

Date of Test: April 10-18, 2013

Date of report issued: April 19, 2013

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

A circular logo for GTS Global Testing Services Co., Ltd. with the text 'GTS GLOBAL TESTING SERVICES CO., LTD.' around the perimeter. A handwritten signature in black ink is written across the logo.

Robinson Lo

Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

2 Version

Version No.	Date	Description
00	April 19, 2013	Original

Prepared By: Sam. Gao **Date:** April 19, 2013
Project Engineer

Check By: Hans. Hu **Date:** April 19, 2013
Reviewer

3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION.....	5
5.1 CLIENT INFORMATION	5
5.2 GENERAL DESCRIPTION OF EUT	5
5.3 TEST MODE	6
5.4 DESCRIPTION OF SUPPORT UNITS	6
5.5 TEST FACILITY.....	7
5.6 TEST LOCATION	7
5.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	7
6 TEST INSTRUMENTS LIST	8
7 TEST RESULTS AND MEASUREMENT DATA.....	9
7.1 ANTENNA REQUIREMENT:.....	9
7.2 RADIATED EMISSION METHOD	10
7.2.1 <i>Field Strength of The Fundamental Signal</i>	12
7.2.2 <i>Spurious emissions</i>	13
7.2.3 <i>Bandedge emissions</i>	17
7.3 20dB OCCUPY BANDWIDTH	18
8 TEST SETUP PHOTO	20
9 EUT CONSTRUCTIONAL DETAILS	21

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT complies with the essential requirements in the standard.

N/A: not applicable.

5 General Information

5.1 Client Information

Applicant:	Zhejiang Feishen Vehicle Co., LTD.
Address of Applicant:	North Lake Road Hardware Science And Technology Industry, Yong Kang, ZheJiang China
Manufacturer:	Zhejiang Feishen Vehicle Co., LTD.
Address of Manufacturer:	North Lake Road Hardware Science And Technology Industry, Yong Kang, ZheJiang China
Factory:	Zhejiang Feishen Vehicle Co., LTD.
Address of factory :	North Lake Road Hardware Science And Technology Industry, Yong Kang, ZheJiang China

5.2 General Description of EUT

Product Name:	QUADTRANSMITTER
Model No.:	FSH62834, FSH62835, FSH62836, FSH62837, FSH62838, FSH62839, FSH62840
Remark:	Only the Model No. FSH62834 was tested, since the electrical circuit design, PCB layout, Electrical Parts and Figure are identical to the basic model, except the outer decoration.
Operation Frequency:	2401.81MHz, 2410.81MHz, 2432.84MHz, 2459.84MHz, 2464.85MHz, 2474.87MHz
Channel numbers:	6
Modulation type:	GFSK
Antenna Type:	Integral
Antenna gain:	2 dBi
Power supply:	DC 3.7V

Operation Frequency each of channel					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2401.81MHz	3	2432.84MHz	5	2464.85MHz
2	2410.81MHz	4	2459.84MHz	6	2474.87MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2401.81MHz
The middle channel	2432.84MHz
The Highest channel	2474.87MHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: The EUT is battery powered, New batteries were used for all tests.</i>	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	86.53	92.49	90.24

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup":

Y axis (see the test setup photo)

5.4 Description of Support Units

N/A

5.5 Test Facility

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

- **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.

- **Industry Canada (IC)**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

5.7 Other Information Requested by the Customer

None.

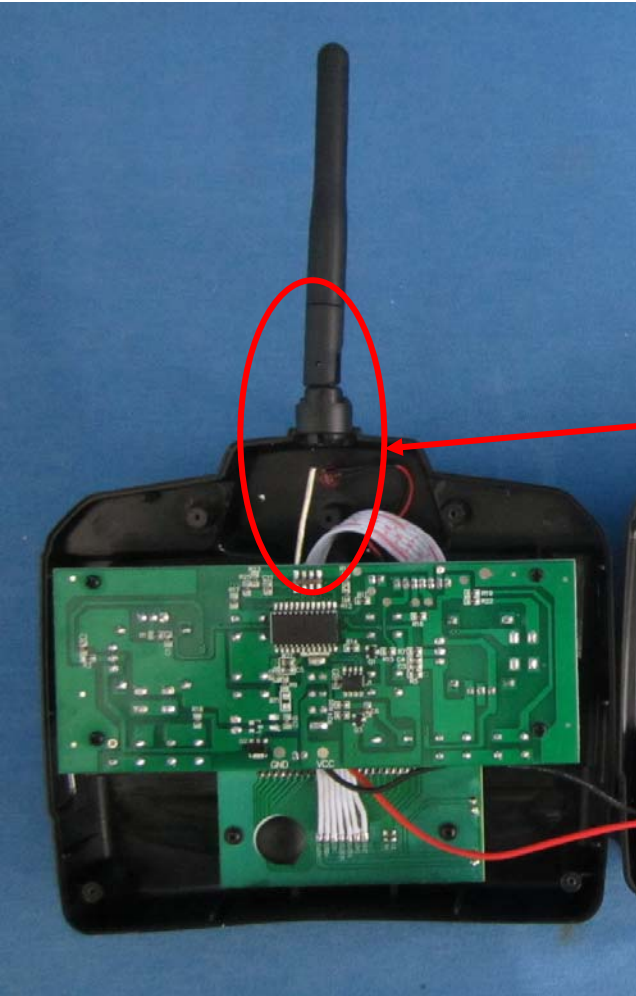
6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 29 2013	Mar. 28 2014
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Dec. 6, 2012	Dec. 5 2013
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 03 2012	Jul. 02 2013
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 24 2013	Feb. 23 2014
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 29 2012	June 28 2013
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 29 2013	Mar. 28 2014
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 30 2013	Mar. 29 2014
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 30 2013	Mar. 29 2014
11	Coaxial cable	GTS	N/A	GTS210	Mar. 30 2013	Mar. 29 2014
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 30 2013	Mar. 29 2014
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 03 2012	Jul. 02 2013
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 03 2012	Jul. 02 2013
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 29 2012	June 28 2013
16	Band filter	Amindeon	82346	GTS219	Mar. 30 2013	Mar. 29 2014

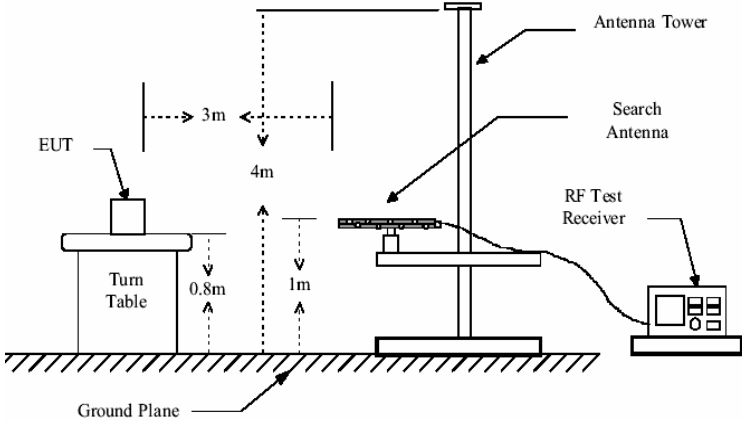
Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 08 2011	Sep. 07 2013
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 03 2012	Jul. 02 2013
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 03 2012	Jul. 02 2013
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 03 2012	Jul. 02 2013
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 03 2012	Jul. 02 2013
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 03 2012	Jul. 02 2013
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
<p>15.203 requirement:</p> <p>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.</p>	
<p>E.U.T Antenna:</p>	
<p><i>The antenna is Integral antenna, the best case gain of the antenna is 2dBi</i></p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>RF Antenna</p> </div> </div>	

7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	2400MHz-2483.5MHz	94.00		Average Value	
		114.00		Peak Value	
Limit: (Spurious Emissions)	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.00		Quasi-peak Value	
	88MHz-216MHz	43.50		Quasi-peak Value	
	216MHz-960MHz	46.00		Quasi-peak Value	
	960MHz-1GHz	54.00		Quasi-peak Value	
	Above 1GHz	54.00		Average Value	
		74.00		Peak Value	
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>				

	<p>The diagram illustrates the test setup. An EUT (Equipment Under Test) is placed on a turn table that is 0.8 meters above the ground. The turn table is rotated 360 degrees. The EUT is positioned 3 meters away from the antenna tower. The antenna tower is a variable-height structure with a horn antenna mounted on top. The antenna height is varied from 1 meter to 4 meters above the ground. The antenna is connected to a spectrum analyzer via an amplifier.</p>
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Pass</p>

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2401.81	89.60	27.58	5.39	30.18	92.39	114.00	-21.61	Horizontal
2401.81	89.70	27.58	5.39	30.18	92.49	114.00	-21.51	Vertical
2432.84	84.50	27.50	5.43	30.06	87.37	114.00	-26.63	Horizontal
2432.84	86.30	27.50	5.43	30.06	89.17	114.00	-24.83	Vertical
2474.87	86.89	27.52	5.47	29.99	89.89	114.00	-24.11	Horizontal
2474.87	84.59	27.52	5.47	29.99	87.59	114.00	-26.41	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2401.81	78.10	27.58	5.39	30.18	80.89	94.00	-13.11	Horizontal
2401.81	79.20	27.58	5.39	30.18	81.99	94.00	-12.01	Vertical
2432.84	74.80	27.50	5.43	30.06	77.67	94.00	-16.33	Horizontal
2432.84	74.30	27.50	5.43	30.06	77.17	94.00	-16.83	Vertical
2474.87	74.69	27.52	5.47	29.99	77.69	94.00	-16.31	Horizontal
2474.87	71.79	27.52	5.47	29.99	74.79	94.00	-19.21	Vertical

According to the follow transmitter output power (P_t) formula:

$$P_t = (E \times d)^2 / (30 \times g_t)$$

P_t =transmitter output power in watts

g_t =numeric gain of the transmitting antenna (unitless)

E=electric field strength in V/m

d= measurement distance in meters (m).

According to the above test data, $E_{max} = 92.49 \text{ dBuV/m} = 0.0421 \text{ V/m}$, $d = 3 \text{ m}$, $g_t = 1.58$

$$P_t = (E \times d)^2 / (30 \times g_t) = (0.099 \times 3)^2 / (30 \times 1.58) = 0.000336 \text{ W}$$

7.2.2 Spurious emissions

■ Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
46.02	39.66	16.56	0.73	32.00	24.95	40.00	-15.05	Vertical
105.64	40.03	15.38	1.24	31.79	24.86	43.50	-18.64	Vertical
216.02	39.50	14.12	1.93	32.15	23.40	46.00	-22.60	Vertical
304.61	40.51	16.14	2.38	32.16	26.87	46.00	-19.13	Vertical
482.22	39.40	18.13	3.23	31.61	29.15	46.00	-16.85	Vertical
721.73	39.10	22.10	4.17	31.22	34.15	46.00	-11.85	Vertical
45.54	38.09	16.56	0.72	32.00	23.37	40.00	-16.63	Horizontal
100.93	37.34	16.06	1.20	31.76	22.84	43.50	-20.66	Horizontal
183.20	39.98	13.00	1.75	32.09	22.64	43.50	-20.86	Horizontal
280.02	39.52	15.70	2.27	32.17	25.32	46.00	-20.68	Horizontal
416.18	39.08	17.39	2.93	31.83	27.57	46.00	-18.43	Horizontal
586.84	39.29	20.24	3.67	31.11	32.09	46.00	-13.91	Horizontal

■ Above 1GHz

Test channel:	Lowest channel
---------------	----------------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4803.62	26.73	31.78	8.60	24.20	42.91	74.00	-31.09	Vertical
7205.43	27.56	36.15	11.65	26.46	48.90	74.00	-25.10	Vertical
9607.24	20.76	37.95	14.14	25.45	47.40	74.00	-26.60	Vertical
12009.05	*					74.00		Vertical
14410.86	*					74.00		Vertical
4803.62	26.96	31.78	8.60	24.20	43.14	74.00	-30.86	Horizontal
7205.43	24.44	36.15	11.65	26.46	45.78	74.00	-28.22	Horizontal
9607.24	23.46	37.95	14.14	25.45	50.10	74.00	-23.90	Horizontal
12009.05	*					74.00		Horizontal
14410.86	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4803.62	16.00	31.78	8.60	24.20	32.18	54.00	-21.82	Vertical
7205.43	17.13	36.15	11.65	26.46	38.47	54.00	-15.53	Vertical
9607.24	10.13	37.95	14.14	25.45	36.77	54.00	-17.23	Vertical
12009.05	*					54.00		Vertical
14410.86	*					54.00		Vertical
4803.62	16.55	31.78	8.60	24.20	32.73	54.00	-21.27	Horizontal
7205.43	14.65	36.15	11.65	26.46	35.99	54.00	-18.01	Horizontal
9607.24	13.00	37.95	14.14	25.45	39.64	54.00	-14.36	Horizontal
12009.05	*					54.00		Horizontal
14410.86	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle channel
---------------	----------------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4865.68	26.53	31.83	8.64	24.12	42.88	74.00	-31.12	Vertical
7298.52	26.27	36.33	11.71	26.65	47.66	74.00	-26.34	Vertical
9731.36	23.05	38.27	14.23	25.38	50.17	74.00	-23.83	Vertical
12164.20	*					74.00		Vertical
14597.04	*					74.00		Vertical
4865.68	26.26	31.83	8.64	24.12	42.61	74.00	-31.39	Horizontal
7298.52	23.72	36.33	11.71	26.65	45.11	74.00	-28.89	Horizontal
9731.36	22.67	38.27	14.23	25.38	49.79	74.00	-24.21	Horizontal
12164.20	*					74.00		Horizontal
14597.04	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4865.68	16.17	31.83	8.64	24.12	32.52	54.00	-21.48	Vertical
7298.52	16.75	36.33	11.71	26.65	38.14	54.00	-15.86	Vertical
9731.36	13.45	38.27	14.23	25.38	40.57	54.00	-13.43	Vertical
12164.20	*					54.00		Vertical
14597.04	*					54.00		Vertical
4865.68	16.76	31.83	8.64	24.12	33.11	54.00	-20.89	Horizontal
7298.52	13.74	36.33	11.71	26.65	35.13	54.00	-18.87	Horizontal
9731.36	12.16	38.27	14.23	25.38	39.28	54.00	-14.72	Horizontal
12164.20	*					54.00		Horizontal
14597.04	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Highest channel
---------------	-----------------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4949.74	27.62	31.91	8.71	24.03	44.21	74.00	-29.79	Vertical
7424.61	27.37	36.56	11.79	27.03	48.69	74.00	-25.31	Vertical
9899.48	20.98	38.81	14.35	25.27	48.87	74.00	-25.13	Vertical
12374.35	*					74.00		Vertical
14849.22	*					74.00		Vertical
4949.74	27.41	31.91	8.71	24.03	44.00	74.00	-30.00	Horizontal
7424.61	25.14	36.56	11.79	27.03	46.46	74.00	-27.54	Horizontal
9899.48	21.06	38.81	14.35	25.27	48.95	74.00	-25.05	Horizontal
12374.35	*					74.00		Horizontal
14849.22	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4949.74	17.16	31.91	8.71	24.03	33.75	54.00	-20.25	Vertical
7424.61	17.40	36.56	11.79	27.03	38.72	54.00	-15.28	Vertical
9899.48	10.05	38.81	14.35	25.27	37.94	54.00	-16.06	Vertical
12374.35	*					54.00		Vertical
14849.22	*					54.00		Vertical
4949.74	17.46	31.91	8.71	24.03	34.05	54.00	-19.95	Horizontal
7424.61	14.65	36.56	11.79	27.03	35.97	54.00	-18.03	Horizontal
9899.48	11.47	38.81	14.35	25.27	39.36	54.00	-14.64	Horizontal
12374.35	*					54.00		Horizontal
14849.22	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

7.2.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
---------------	----------------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	46.65	27.91	5.30	30.37	49.49	74.00	-24.51	Horizontal
2390.00	47.48	27.59	5.38	30.18	50.27	74.00	-23.73	Horizontal
2400.00	54.35	27.58	5.39	30.18	57.14	74.00	-16.86	Horizontal
2310.00	46.86	27.91	5.30	30.37	49.70	74.00	-24.30	Vertical
2390.00	45.51	27.59	5.38	30.18	48.30	74.00	-25.70	Vertical
2400.00	55.00	27.58	5.39	30.18	57.79	74.00	-16.21	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	35.85	27.91	5.30	30.37	38.69	54.00	-15.31	Horizontal
2390.00	37.12	27.59	5.38	30.18	39.91	54.00	-14.09	Horizontal
2400.00	44.84	27.58	5.39	30.18	47.63	54.00	-6.37	Horizontal
2310.00	35.51	27.91	5.30	30.37	38.35	54.00	-15.65	Vertical
2390.00	35.13	27.59	5.38	30.18	37.92	54.00	-16.08	Vertical
2400.00	44.16	27.58	5.39	30.18	46.95	54.00	-7.05	Vertical

Test channel:	Highest channel
---------------	-----------------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	45.10	27.53	5.47	29.93	48.17	74.00	-25.83	Horizontal
2500.00	45.76	27.53	5.47	29.93	48.83	74.00	-25.17	Horizontal
2483.50	45.70	27.53	5.47	29.93	48.77	74.00	-25.23	Vertical
2500.00	43.56	27.55	5.49	29.93	46.67	74.00	-27.33	Vertical

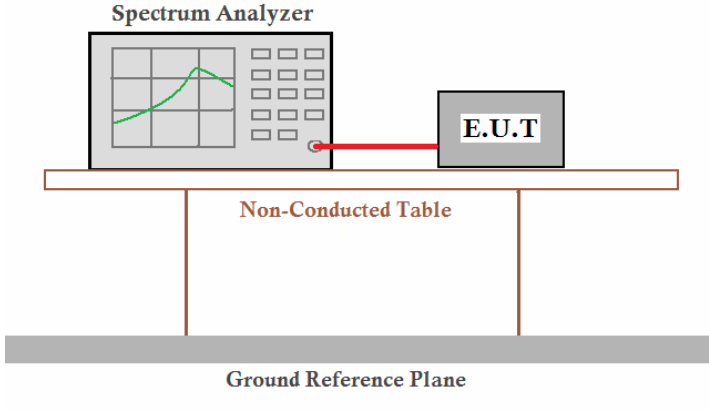
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2500.00	34.52	27.55	5.49	29.93	37.63	54.00	-16.37	Horizontal
2483.50	34.80	27.53	5.47	29.93	37.87	54.00	-16.13	Horizontal
2483.50	35.66	27.53	5.47	29.93	38.73	54.00	-15.27	Vertical
2500.00	33.16	27.55	5.49	29.93	36.27	54.00	-17.73	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

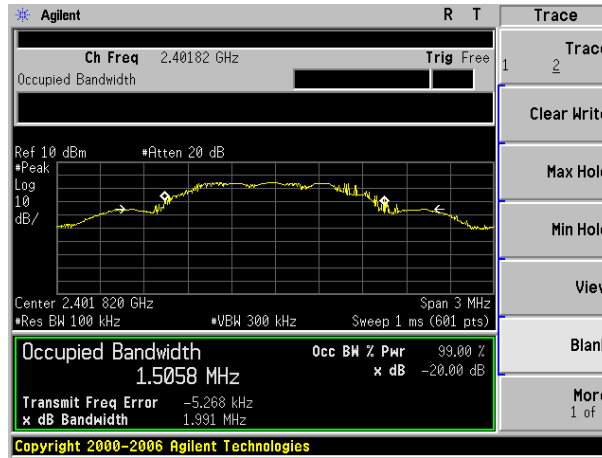
7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2003
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is positioned above a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

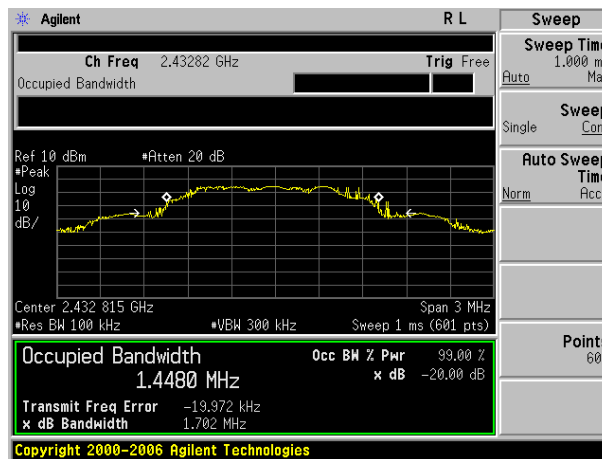
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.991	Pass
Middle	1.702	Pass
Highest	1.542	Pass

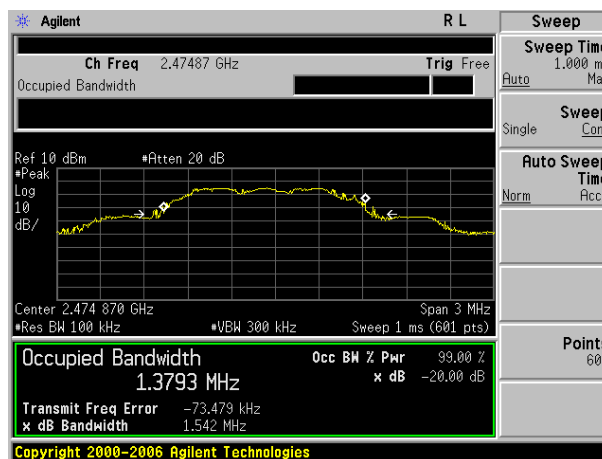
Test plot as follows:



Lowest channel



Middle channel



Highest channel