FCC REPORT

Applicant:	Radiolink Electronic Limited
Address of Applicant:	3/F, BLD2, FuGuo industrial park, KaiFeng North Road, MeiLin Shenzhen China

Equipment Under Test (EUT)

Product Name:	2.4G Digital Proportional R/C system
Model No.:	AT9
FCC ID:	U2BRL039AT9
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247:2013
Date of sample receipt:	October 23, 2014
Date of Test:	November 24-26, 2014
Date of report issued:	November 26, 2014
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*November 26, 2014*	*Original*

Prepared By: Sam. Gao ***Date:*** *November 26, 2014*

Project Engineer

Check By: hank. yan. ***Date:*** *November 26, 2014*

Reviewer

3 Contents

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

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

5 General Information

5.1 Client Information

Applicant:	Radiolink Electronic Limited
Address of Applicant:	3/F, BLD2, FuGuo industrial park, KaiFeng North Road, MeiLin Shenzhen China
Manufacturer:	Radiolink Electronic Limited
Address of Manufacturer:	3/F, BLD2, FuGuo industrial park, KaiFeng North Road, MeiLin Shenzhen China

5.2 General Description of EUT

Product Name:	2.4G Digital Proportional R/C system
Model No.:	AT9
Operation Frequency:	2409MHz ~2474MHz
Channel numbers:	32
Channel separation:	2MHz
Modulation technology:	GFSK
Antenna Type:	Integral Antenna
Antenna gain:	2.00dBi (declare by Applicant)
Power supply:	DC 12V (8*"AA" battery)

Operation Frequency each of channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2409.0MHz	9	2425.0MHz	17	2444.0MHz	25	2460.0MHz
2	2411.0MHz	10	2427.0MHz	18	2446.0MHz	26	2462.0MHz
3	2413.0MHz	11	2429.0MHz	19	2448.0MHz	27	2464.0MHz
4	2415.0MHz	12	2431.0MHz	20	2450.0MHz	28	2466.0MHz
5	2417.0MHz	13	2433.0MHz	21	2452.0MHz	29	2468.0MHz
6	2419.0MHz	14	2435.0MHz	22	2454.0MHz	30	2470.0MHz
7	2421.0MHz	15	2437.0MHz	23	2456.0MHz	31	2472.0MHz
8	2423.0MHz	16	2439.0MHz	24	2458.0MHz	32	2474.0MHz

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	2409MHz
The middle channel	2444MHz
The Highest channel	2474MHz

5.3 Test mode

Transmitting mode	Keep the EUT in transmitting mode.
Remark: During the test, the new battery was used.	

5.4 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 fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

● **Industry Canada (IC) —Registration No.: 9079A-2**

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-2, June 26, 2013.

5.5 Test Location

All other 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

5.6 Other Information Requested by the Customer

None.

5.7 Description of Support Units

None.

5.8 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 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS536	Nov. 19, 2014	Nov.18, 2015
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 05 2014	Jul. 04 2015
5	Loop Antenna	ZHINAN	ZN30900A	GTS534	Feb. 23 2014	Feb. 22 2015
6	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 23 2014	Feb. 22 2015
7	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	Jul. 05 2014	Jul. 04 2015
8	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 29 2013	Mar. 28 2015
9	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
10	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2013	Mar. 28 2015
11	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2013	Mar. 28 2015
12	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2013	Mar. 28 2015
13	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2013	Mar. 28 2015
14	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 05 2014	Jul. 04 2015
15	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 05 2014	Jul. 04 2015
16	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Jul. 05 2014	Jul. 04 2015
17	Band filter	Amindeon	82346	GTS219	Mar. 29 2013	Mar. 28 2015

6 Test results and Measurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

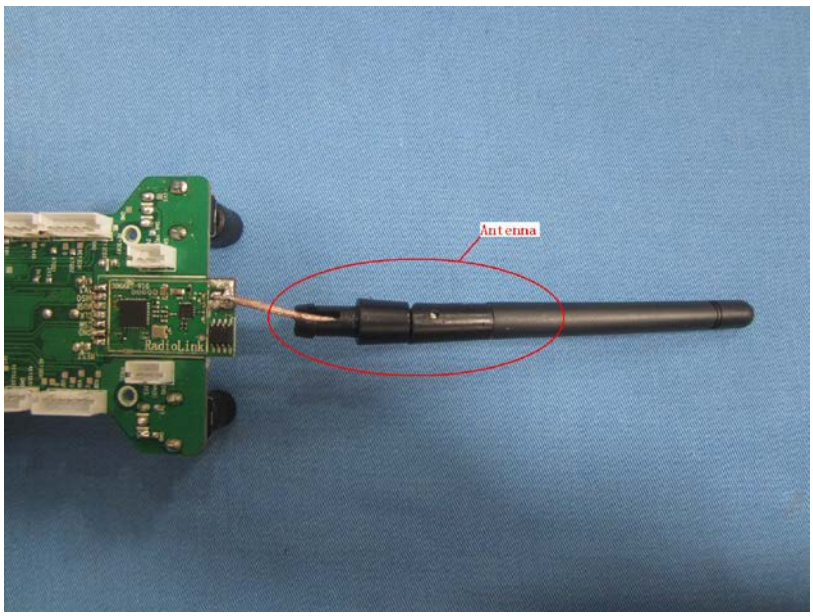
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit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

15.247(c) (1)(i) requirement:

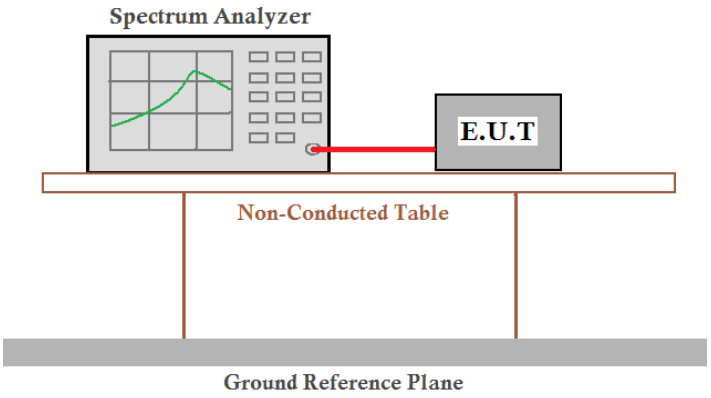
(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The antenna is integral Antenna, the best case gain of the antenna is 2dBi



6.2 Conducted Peak Output Power

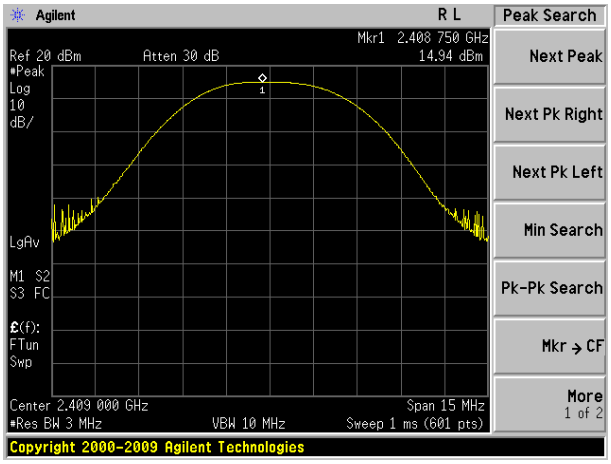
Test Requirement:	FCC Part15 C Section 15.247 (b)(1)
Test Method:	DA 00-705, ANSI C63.10:2009
Limit:	20.97dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

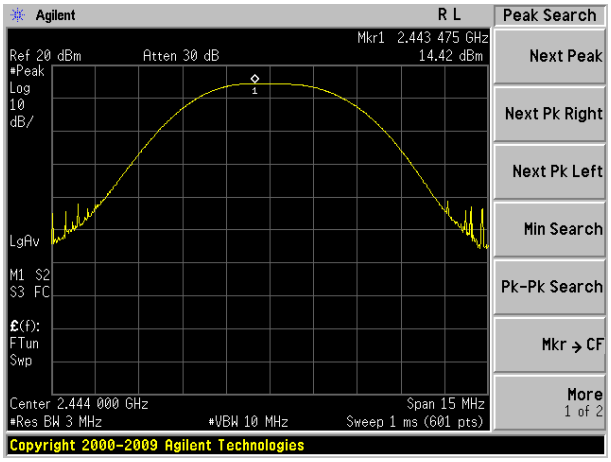
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	14.94	20.97	Pass
Middle	14.42		
Highest	14.97		

Test plot as follows:

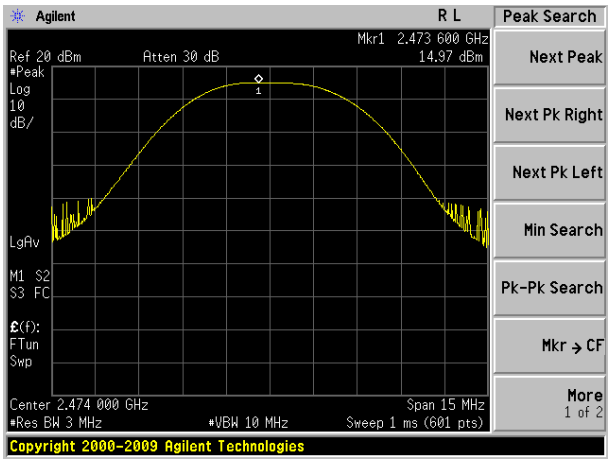
Test mode:	GFSK mode



Lowest channel

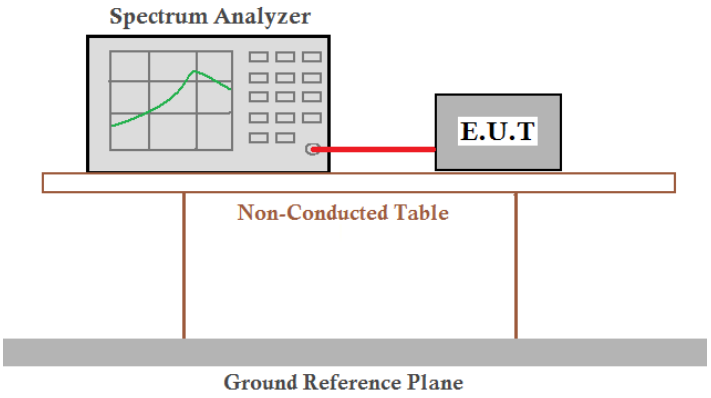


Middle channel



Highest channel

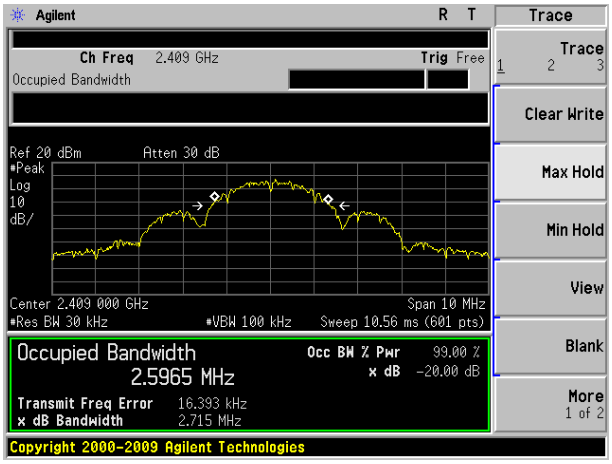
6.3 20dB Emission Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	DA 00-705, ANSI C63.10:2009
Limit:	N/A
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

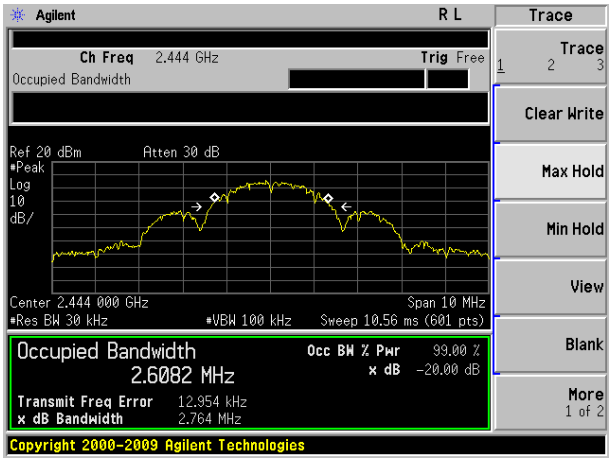
Measurement Data

Test channel	20dB Emission Bandwidth (MHz)	Result
Lowest	2.715	Pass
Middle	2.764	
Highest	2.744	

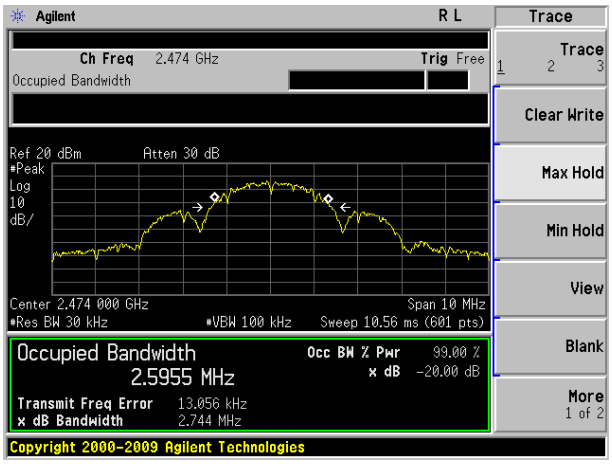
Test plot as follows:



Lowest channel

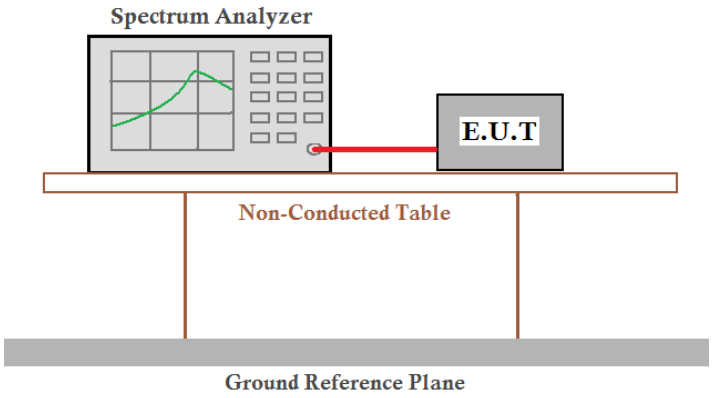


Middle channel



Highest channel

6.4 Carrier Frequencies Separation

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	DA 00-705, ANSI C63.10:2009
Receiver setup:	RBW=100KHz, VBW=300KHz, detector=Peak
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

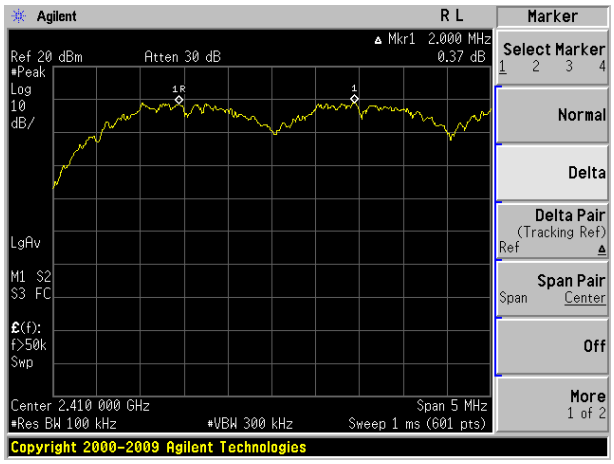
Measurement Data

Test channel	Carrier Frequencies Separation (MHz)	Limit (kHz)	Result
Lowest	2.0	*1843*	Pass
Middle	2.0	*1843*	Pass
Highest	2.0	*1843*	Pass

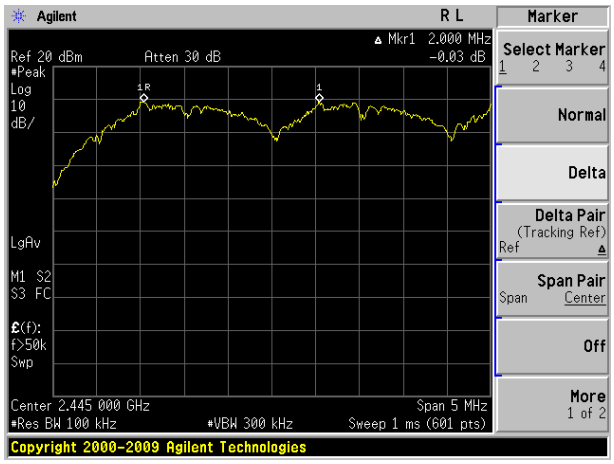
Note: According to section 5.3

Mode	*20dB bandwidth (kHz) (worse case)*	*Limit (kHz) (Carrier Frequencies Separation)*
GFSK	*2764*	*1843*

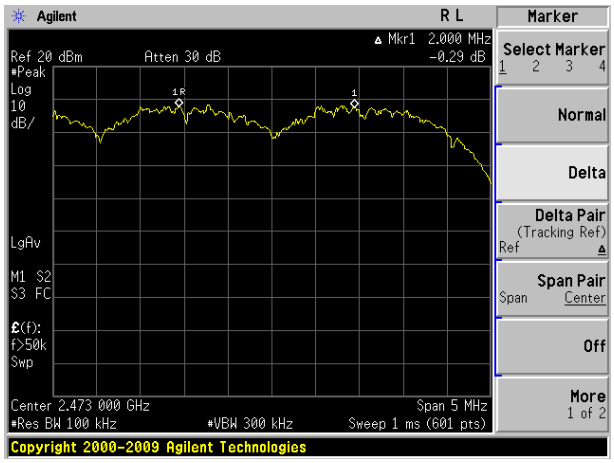
Test plot as follows:



Lowest channel

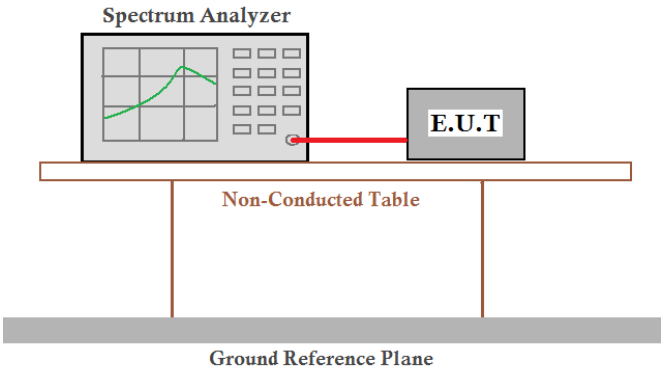


Middle channel



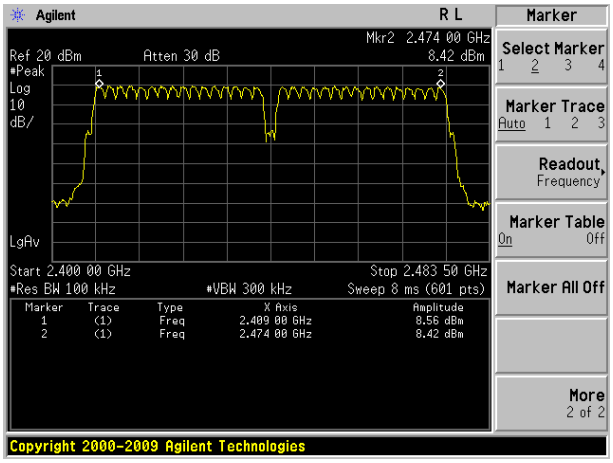
Highest channel

6.5 Hopping Channel Number

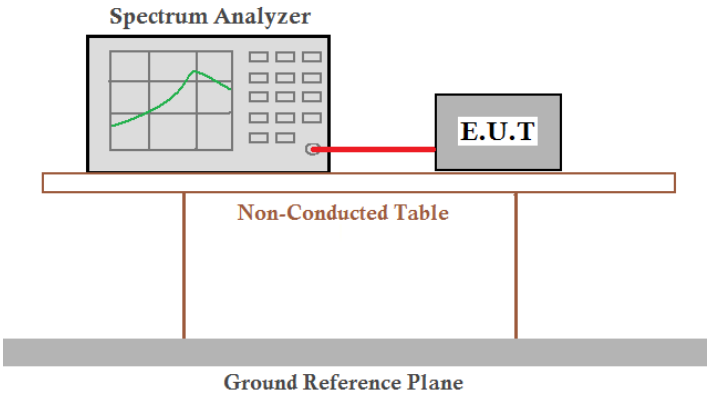
Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Method:	DA 00-705, ANSI C63.10:2009
Receiver setup:	RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data:

Hopping channel numbers	Limit	Result
32	15	Pass



6.6 Dwell Time

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Method:	DA 00-705, ANSI C63.10:2009
Receiver setup:	RBW=1MHz, VBW=1MHz, Span=0Hz, Detector=Peak
Limit:	0.4 Second
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

Frequency	Ton (ms)	Dwell time(ms)	Limit(ms)	Result
2.409GHz	2.017	77.453	400	Pass
2.444GHz	2.017	77.453	400	Pass
2.474GHz	2.025	77.760	400	Pass

The formula as below:

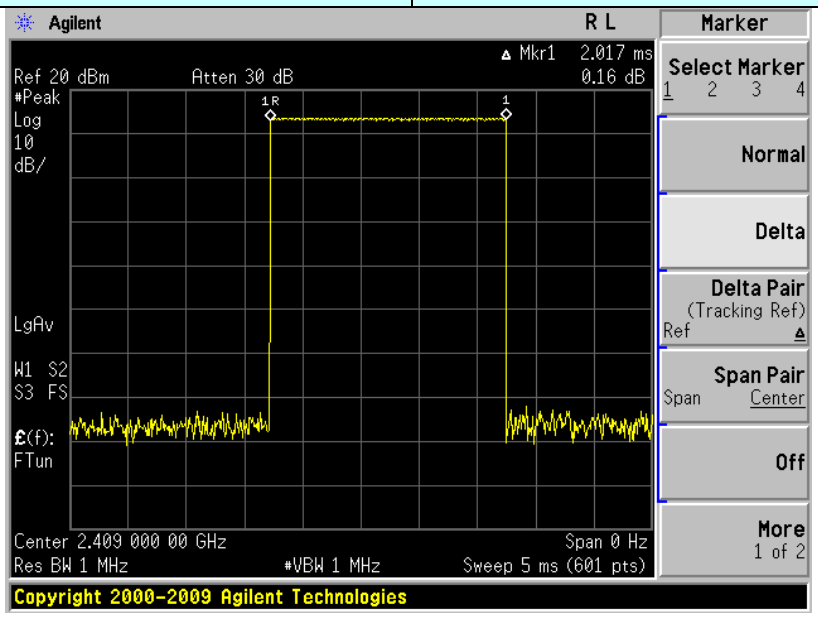
2409MHz: Dwell time = Ton * Ton times in 1s * 0.4s * channel numbers=2.017ms*3*0.4*32=77.453ms

2444MHz: Dwell time = Ton * Ton times in 1s * 0.4s * channel numbers=2.017ms*3*0.4*32=77.453ms

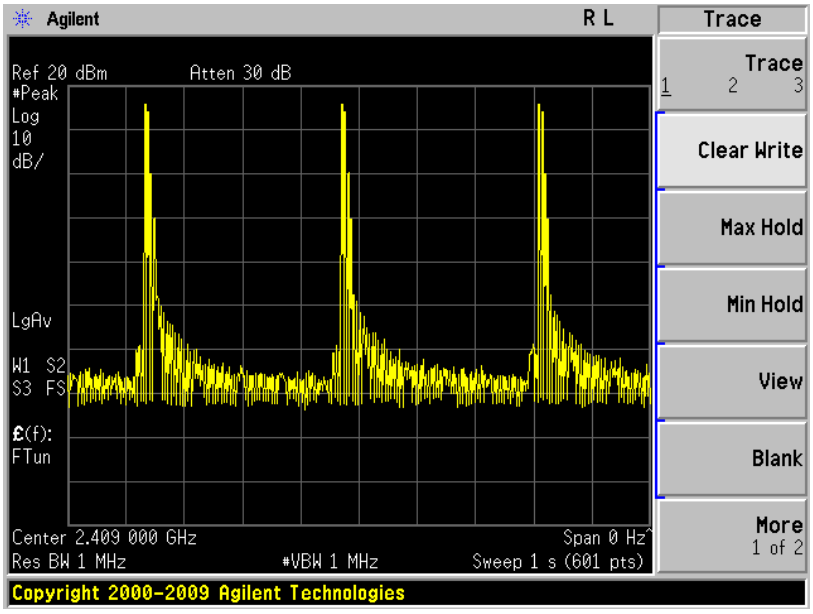
2474MHz: Dwell time = Ton * Ton times in 1s * 0.4s * channel numbers=2.025ms*3*0.4*32=77.760ms

Test plot as follows:

Frequency:	2409MHz

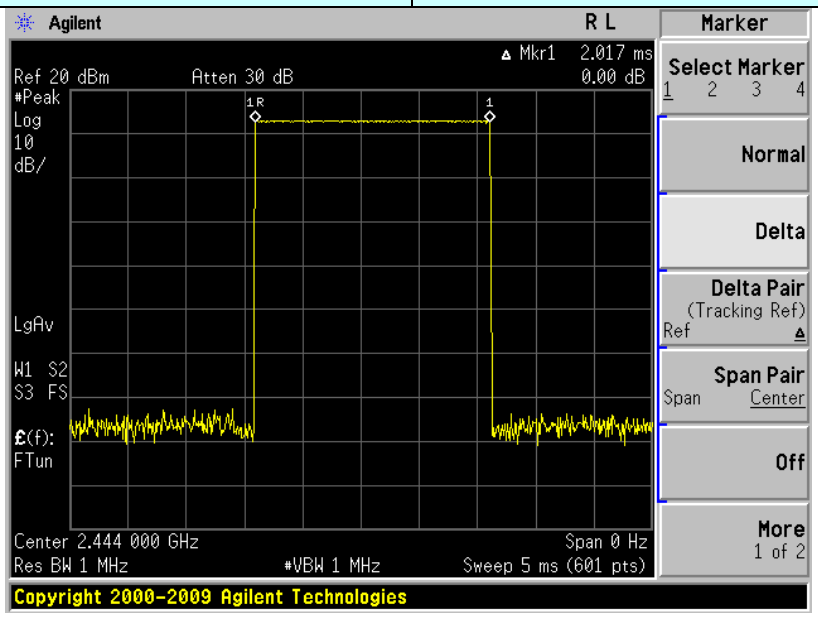


Ton

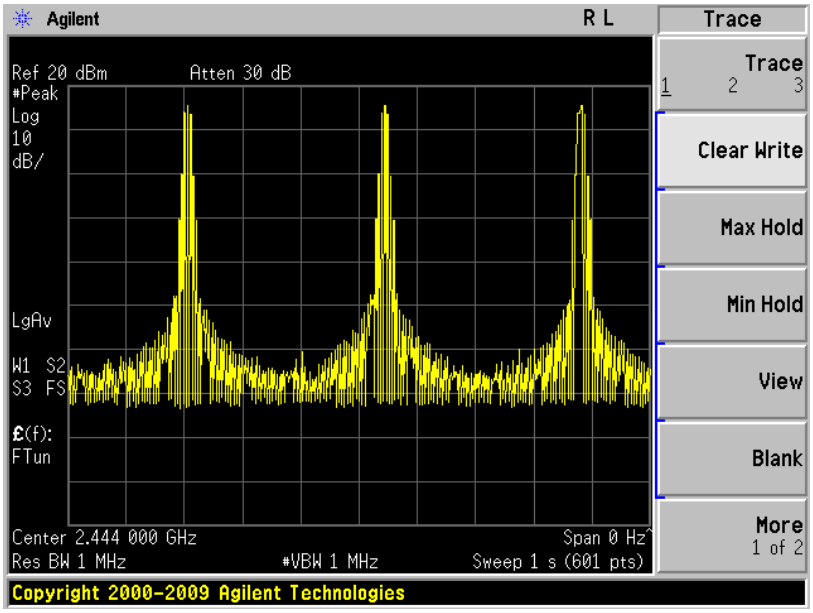


Ton times in 1s

Frequency:	2444MHz

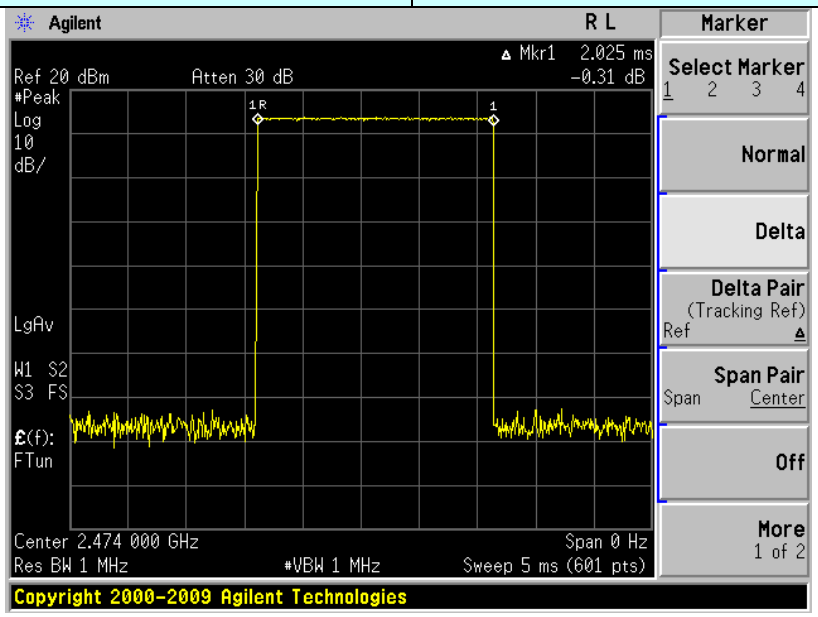


Ton

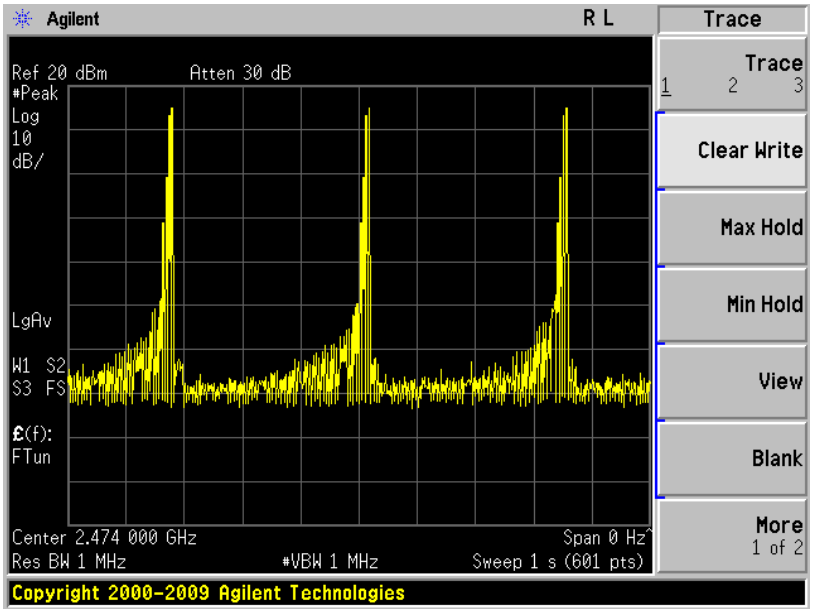


Ton times in 1s

Frequency:	2474MHz



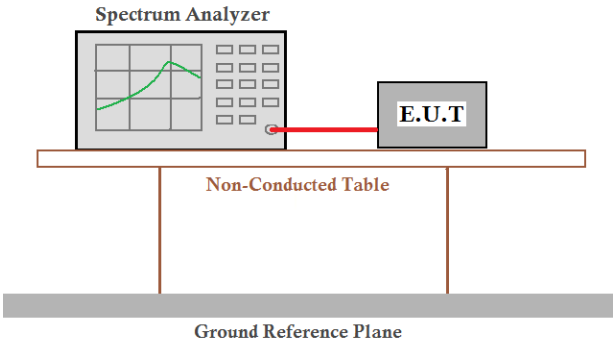
Ton



Ton times in 1s

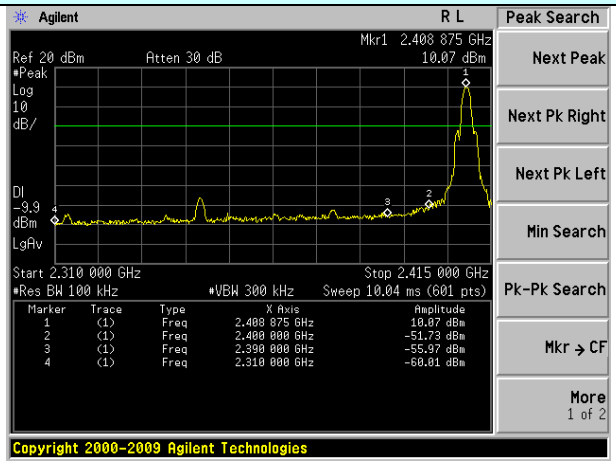
6.7 Band Edge

6.7.1 Conducted Emission Method

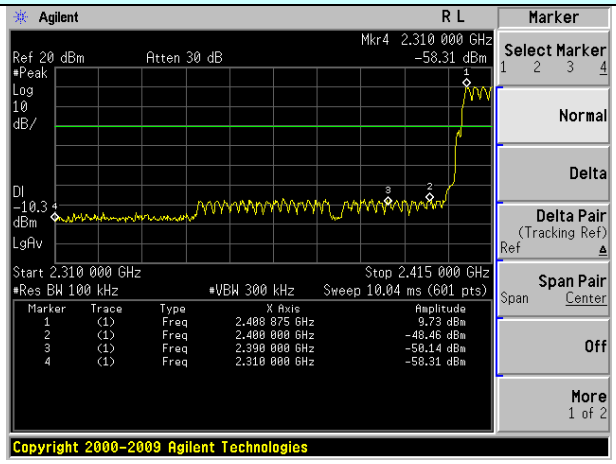
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	DA 00-705, ANSI C63.10:2009
Receiver setup:	RBW=100kHz, VBW=300kHz, Detector=Peak
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Test plot as follows:

Test channel:	Lowest channel

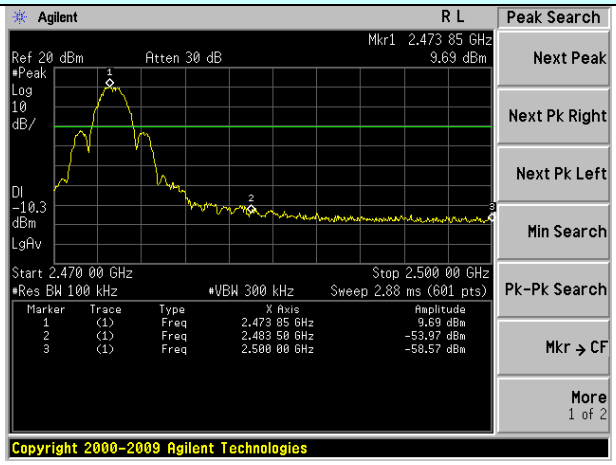


No-hopping mode

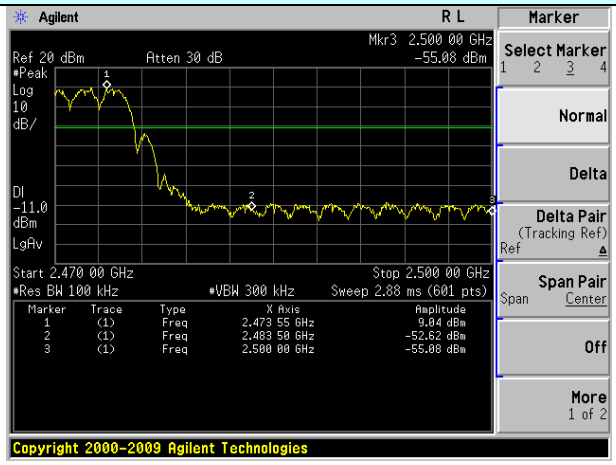


Hopping mode

Test channel:	Highest channel

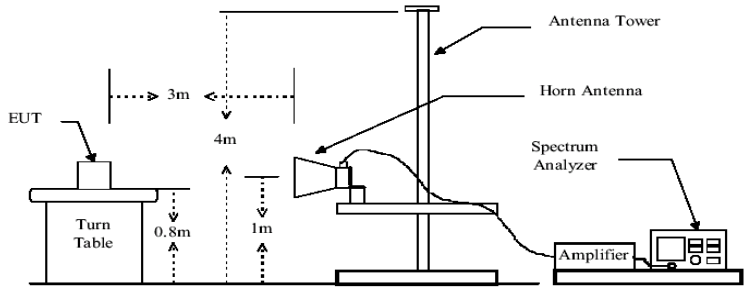


No-hopping mode



Hopping mode

6.7.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2009</td></tr>
<tr><td>Test Frequency Range:</td><td>All restriction band have been tested, and 2.3GHz to 2.5GHz band is the worse case</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 5.8 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

Test channel:	Lowest

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	52.46	27.91	5.30	30.37	55.30	74.00	-18.70	Horizontal
2390.00	53.65	27.59	5.38	30.18	56.44	74.00	-17.56	Horizontal
2400.00	54.15	27.58	5.39	30.18	56.94	74.00	-17.06	Horizontal
2310.00	53.91	27.91	5.30	30.37	56.75	74.00	-17.25	Vertical
2390.00	55.27	27.59	5.38	30.18	58.06	74.00	-15.94	Vertical
2400.00	55.44	27.58	5.39	30.18	58.23	74.00	-15.77	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	32.63	27.91	5.30	30.37	35.47	54.00	-18.53	Horizontal
2390.00	32.42	27.59	5.38	30.18	35.21	54.00	-18.79	Horizontal
2400.00	33.70	27.58	5.39	30.18	36.49	54.00	-17.51	Horizontal
2310.00	34.08	27.91	5.30	30.37	36.92	54.00	-17.08	Vertical
2390.00	34.04	27.59	5.38	30.18	36.83	54.00	-17.17	Vertical
2400.00	34.99	27.58	5.39	30.18	37.78	54.00	-16.22	Vertical

Test channel:	Highest

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	53.47	27.53	5.47	29.93	56.54	74.00	-17.46	Horizontal
2500.00	53.56	27.55	5.49	29.93	56.67	74.00	-17.33	Horizontal
2483.50	54.83	27.53	5.47	29.93	57.90	74.00	-16.10	Vertical
2500.00	54.98	27.55	5.49	29.93	58.09	74.00	-15.91	Vertical

Average value:

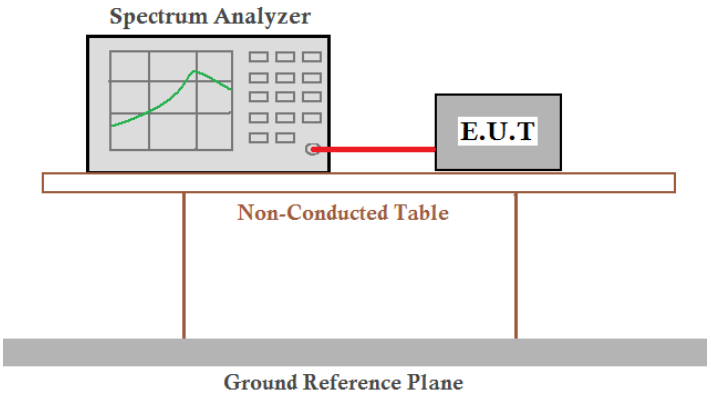
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.49	34.55	27.53	5.47	29.93	37.62	54.00	-16.38	Horizontal
2500.00	31.86	27.55	5.49	29.93	34.97	54.00	-19.03	Horizontal
2483.49	35.91	27.53	5.47	29.93	38.98	54.00	-15.02	Vertical
2500.00	33.28	27.55	5.49	29.93	36.39	54.00	-17.61	Vertical

Remark:

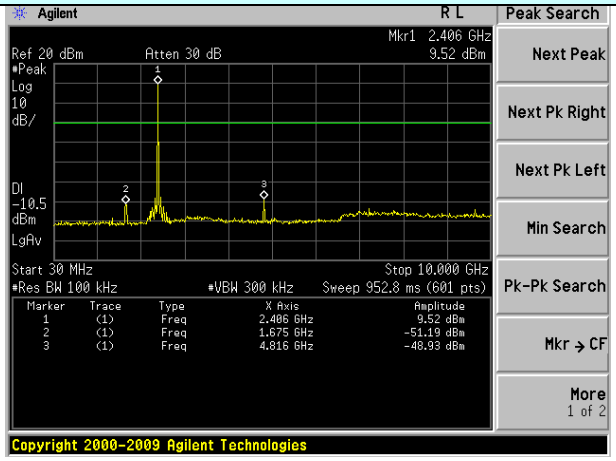
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.8 Spurious Emission

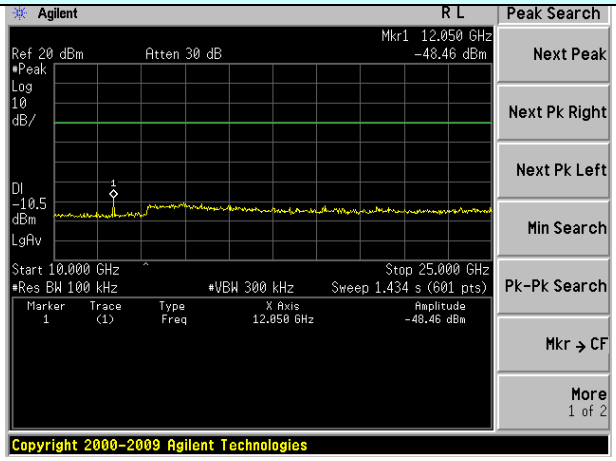
6.8.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Test channel:	Lowest channel

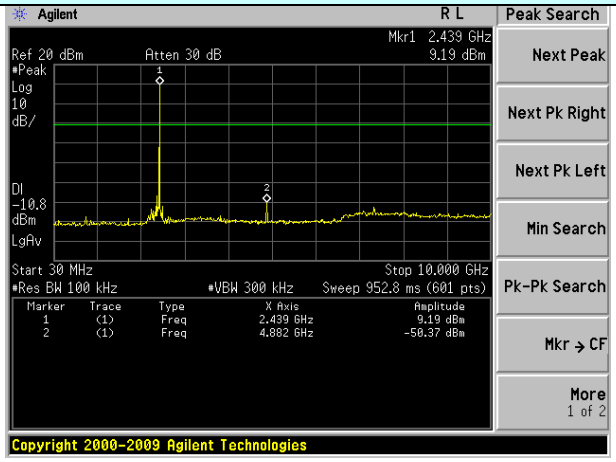


30MHz~10GHz

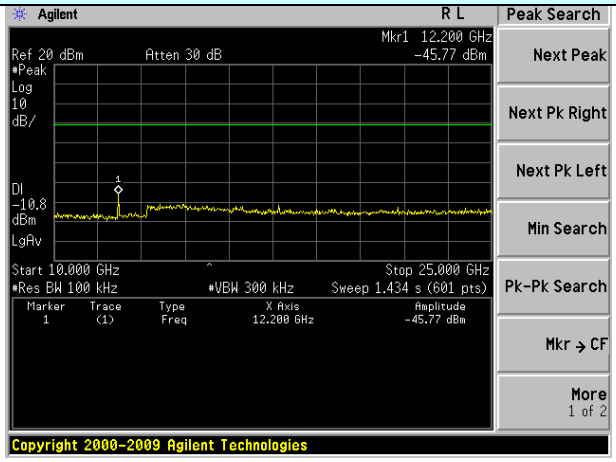


10GHz~25GHz

Test channel:	Middle channel

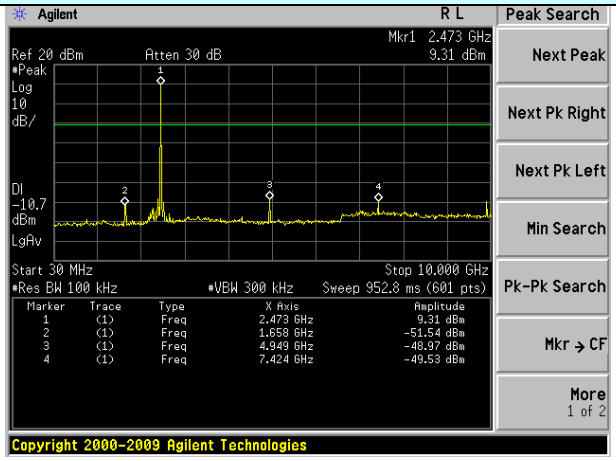


30MHz~10GHz

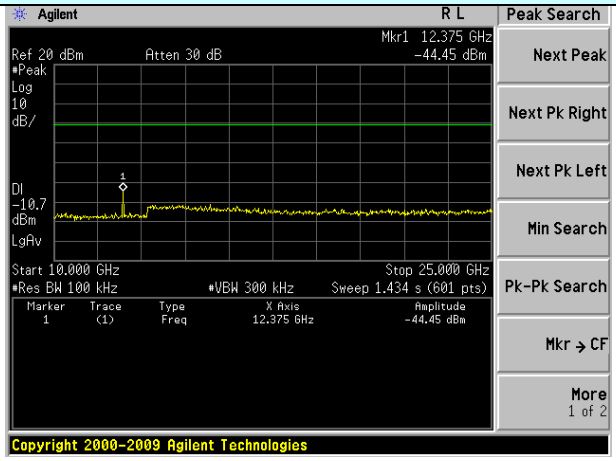


10GHz~25GHz

Test channel:	Highest channel



30MHz~10GHz



10GHz~25GHz

6.8.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10: 2009
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

Frequency	Detector	RBW	VBW	Value
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

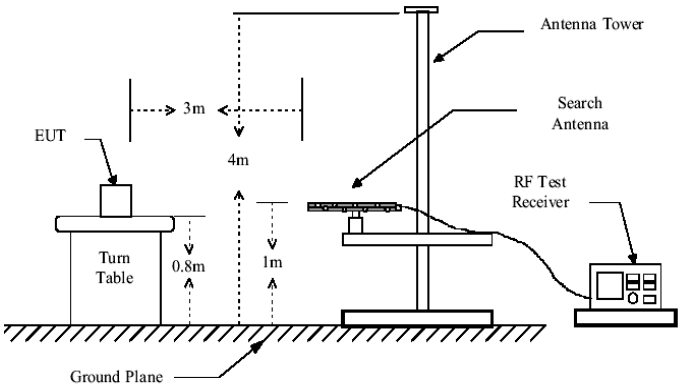
Limit:

(Field strength of the fundamental signal)

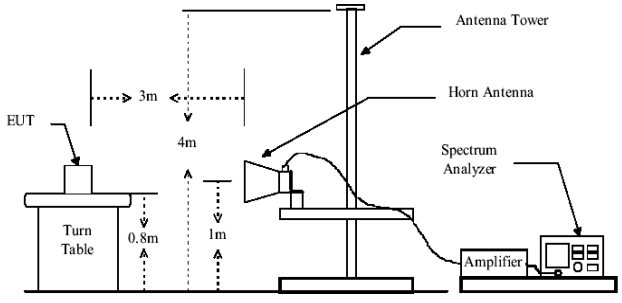
Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.00	Average Value
	114.00	Peak Value

Test setup:

Below 1GHz



Above 1GHz



Test Procedure:

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.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

2. The measured filed strength at frequencies below 30MHz are lower than the limit over 30dB. So the data isn't reported.

Measurement data:

■ **30MHz ~ 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
55.22	35.04	15.00	0.82	31.95	18.91	40.00	-21.09	Vertical
107.89	34.52	14.44	1.26	31.80	18.42	43.50	-25.08	Vertical
180.02	35.86	11.68	1.74	32.08	17.20	43.50	-26.30	Vertical
242.53	35.28	14.08	2.08	32.16	19.28	46.00	-26.72	Vertical
492.47	34.80	18.39	3.27	31.59	24.87	46.00	-21.13	Vertical
848.06	33.64	22.55	4.65	31.25	29.59	46.00	-16.41	Vertical
45.22	34.81	15.54	0.72	32.00	19.07	40.00	-20.93	Horizontal
101.64	36.07	15.02	1.21	31.77	20.53	43.50	-22.97	Horizontal
180.65	34.17	11.76	1.74	32.08	15.59	43.50	-27.91	Horizontal
282.99	36.83	14.73	2.28	32.17	21.67	46.00	-24.33	Horizontal
574.63	34.30	20.03	3.63	31.17	26.79	46.00	-19.21	Horizontal
787.85	34.30	21.92	4.41	31.31	29.32	46.00	-16.68	Horizontal

■ **Above 1GHz**

Test channel:	Lowest

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
4818.00	44.58	31.79	8.61	32.10	52.88	74.00	-21.12	Vertical
7227.00	45.00	36.19	11.66	31.99	60.86	74.00	-13.14	Vertical
9636.00	39.07	38.01	14.16	31.58	59.66	74.00	-14.34	Vertical
12045.00	35.28	39.05	15.05	35.57	53.81	74.00	-20.19	Vertical
4818.00	43.02	31.79	8.61	32.10	51.32	74.00	-22.68	Horizontal
7227.00	43.53	36.19	11.66	31.99	59.39	74.00	-14.61	Horizontal
9636.00	37.39	38.01	14.16	31.58	57.98	74.00	-16.02	Horizontal
12045.00	33.56	39.05	15.05	35.57	52.09	74.00	-21.91	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
4818.00	30.47	31.79	8.61	32.10	38.77	54.00	-15.23	Vertical
7227.00	30.55	36.19	11.66	31.99	46.41	54.00	-7.59	Vertical
9636.00	24.45	38.01	14.16	31.58	45.04	54.00	-8.96	Vertical
12045.00	20.54	39.05	15.05	35.57	39.07	54.00	-14.93	Vertical
4818.00	28.91	31.79	8.61	32.10	37.21	54.00	-16.79	Horizontal
7227.00	29.08	36.19	11.66	31.99	44.94	54.00	-9.06	Horizontal
9636.00	22.77	38.01	14.16	31.58	43.36	54.00	-10.64	Horizontal
12045.00	18.82	39.05	15.05	35.57	37.35	54.00	-16.65	Horizontal

Remark:

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

Test channel:	Middle

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
4882.00	44.92	31.85	8.67	32.12	53.32	74.00	-20.68	Vertical
7323.00	39.49	36.37	11.72	31.89	55.69	74.00	-18.31	Vertical
9764.00	36.49	38.35	14.25	31.62	57.47	74.00	-16.53	Vertical
12205.00	36.61	38.92	15.16	35.65	55.04	74.00	-18.96	Vertical
4882.00	43.36	31.85	8.67	32.12	51.76	74.00	-22.24	Horizontal
7323.00	38.02	36.37	11.72	31.89	54.22	74.00	-19.78	Horizontal
9764.00	34.81	38.35	14.25	31.62	55.79	74.00	-18.21	Horizontal
12205.00	34.89	38.92	15.16	35.65	53.32	74.00	-20.68	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
4882.00	30.64	31.85	8.67	32.12	39.04	54.00	-14.96	Vertical
7323.00	25.75	36.37	11.72	31.89	41.95	54.00	-12.05	Vertical
9764.00	22.40	38.35	14.25	31.62	43.38	54.00	-10.62	Vertical
12205.00	21.77	38.92	15.16	35.65	40.20	54.00	-13.80	Vertical
4882.00	29.08	31.85	8.67	32.12	37.48	54.00	-16.52	Horizontal
7323.00	24.28	36.37	11.72	31.89	40.48	54.00	-13.52	Horizontal
9764.00	20.72	38.35	14.25	31.62	41.70	54.00	-12.30	Horizontal
12205.00	20.05	38.92	15.16	35.65	38.48	54.00	-15.52	Horizontal

Remark:

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

Test channel:	Highest

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
4948.00	44.24	31.91	8.71	32.16	52.70	74.00	-21.30	Vertical
7422.00	40.64	36.56	11.77	31.80	57.17	74.00	-16.83	Vertical
9896.00	35.47	38.81	14.35	31.82	56.81	74.00	-17.19	Vertical
12050.00	33.81	39.05	15.05	35.57	52.34	74.00	-21.66	Vertical
4948.00	42.68	31.91	8.71	32.16	51.14	74.00	-22.86	Horizontal
7422.00	39.17	36.56	11.77	31.80	55.70	74.00	-18.30	Horizontal
9896.00	33.79	38.81	14.35	31.82	55.13	74.00	-18.87	Horizontal
12050.00	32.09	39.05	15.05	35.57	50.62	74.00	-23.38	Horizontal

Average value:

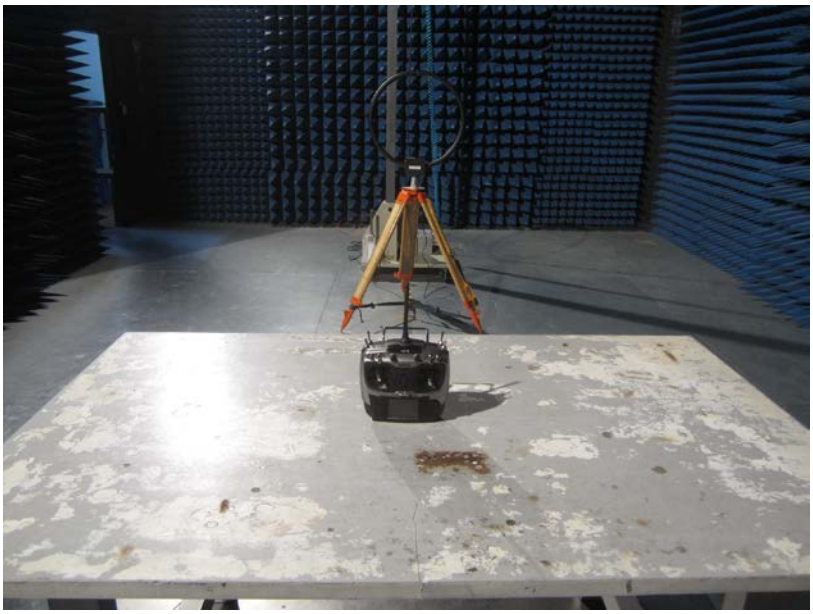
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4948.00	30.47	31.91	8.71	32.16	38.93	54.00	-15.07	Vertical
7422.00	25.65	36.56	11.77	31.80	42.18	54.00	-11.82	Vertical
9896.00	20.46	38.81	14.35	31.82	41.80	54.00	-12.20	Vertical
12050.00	18.64	39.05	15.05	35.57	37.17	54.00	-16.83	Vertical
4948.00	28.91	31.91	8.71	32.16	37.37	54.00	-16.63	Horizontal
7422.00	24.18	36.56	11.77	31.80	40.71	54.00	-13.29	Horizontal
9896.00	18.78	38.81	14.35	31.82	40.12	54.00	-13.88	Horizontal
12050.00	16.92	39.05	15.05	35.57	35.45	54.00	-18.55	Horizontal

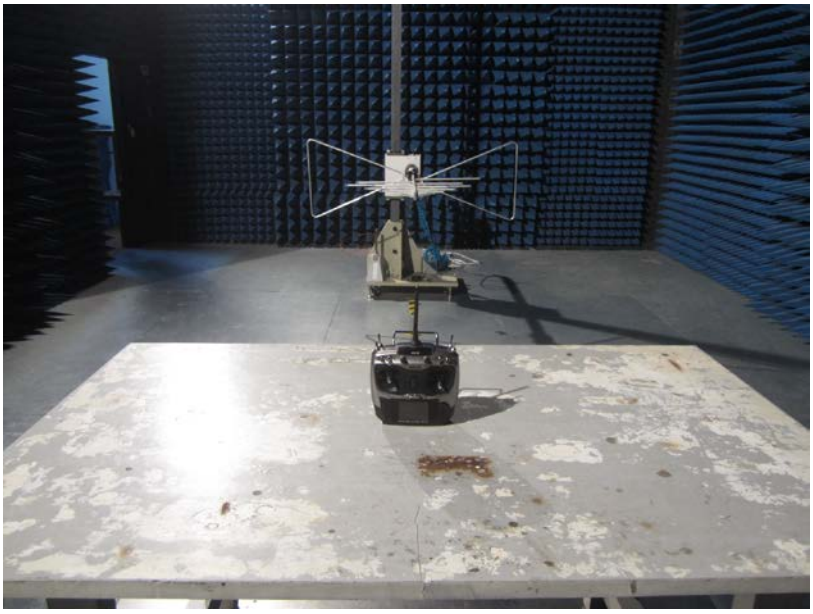
Remark:

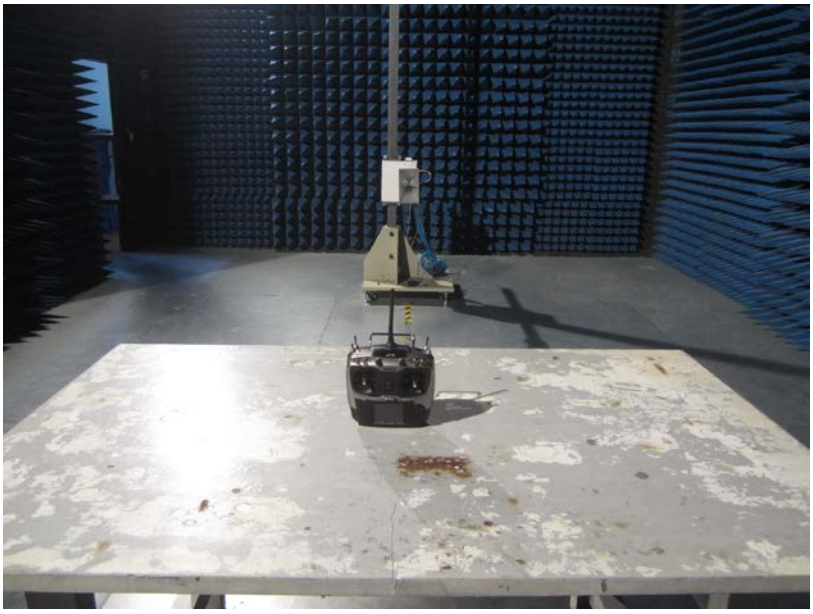
1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7 Test Setup Photo

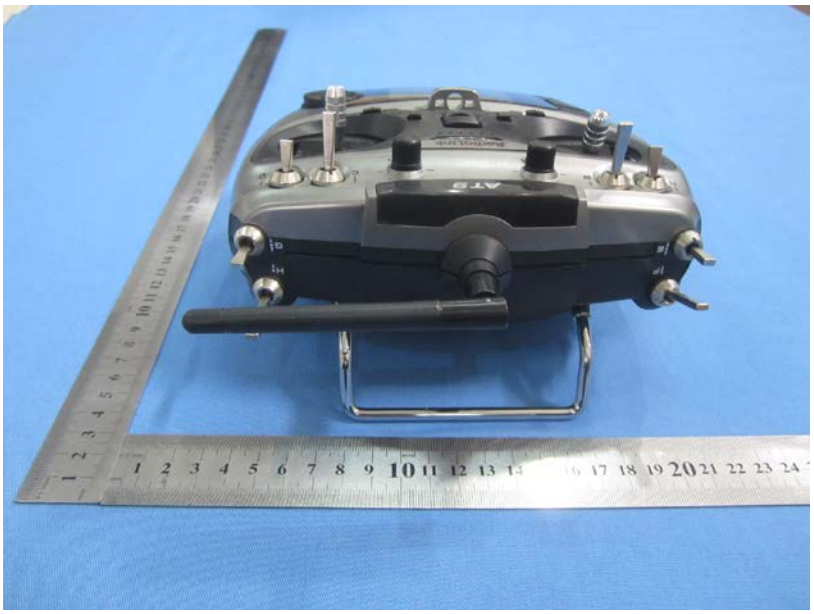
Radiated Emission

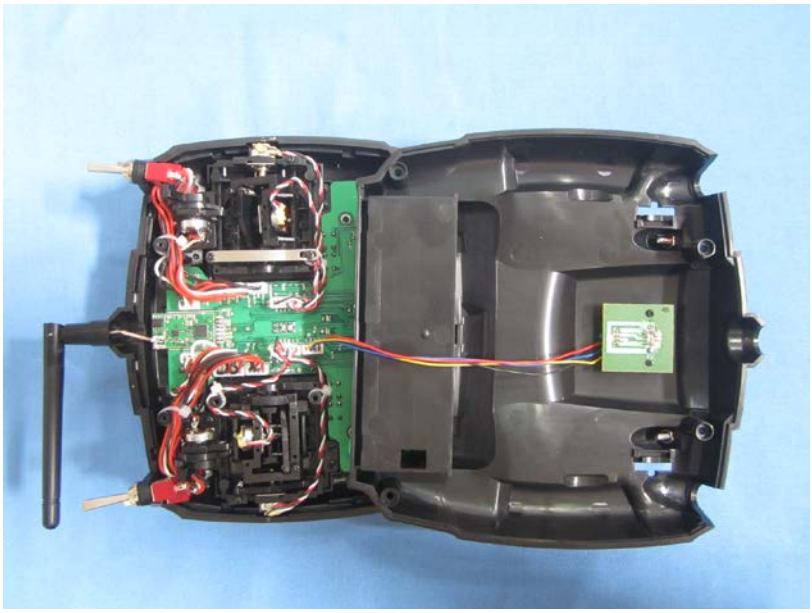


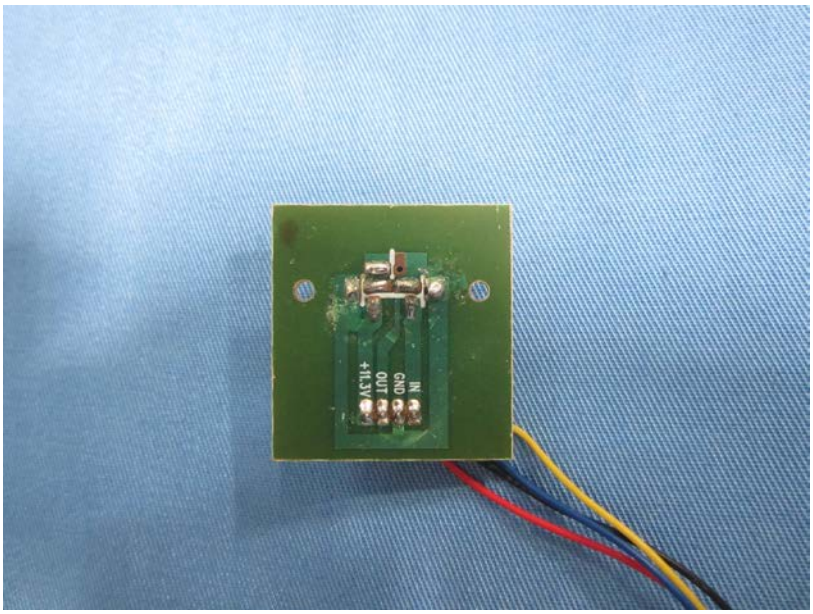




8 EUT Constructional Details



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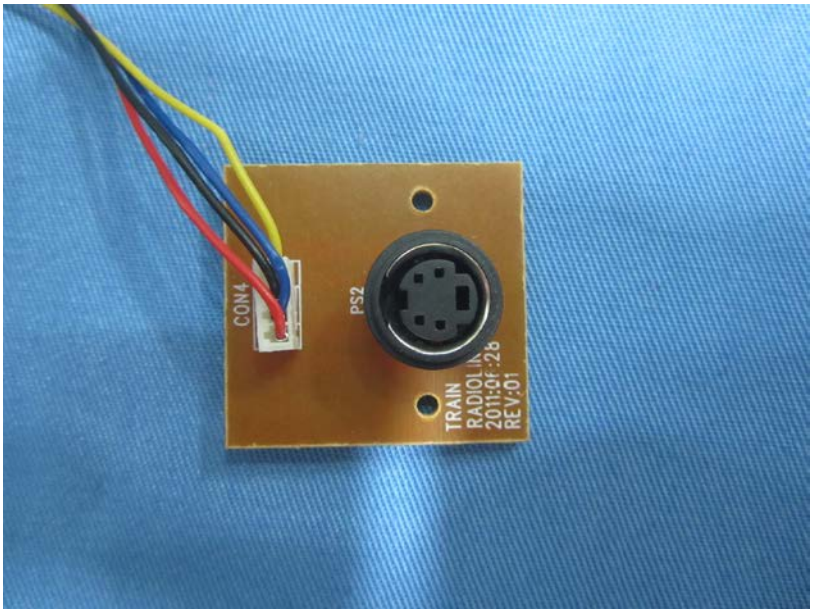
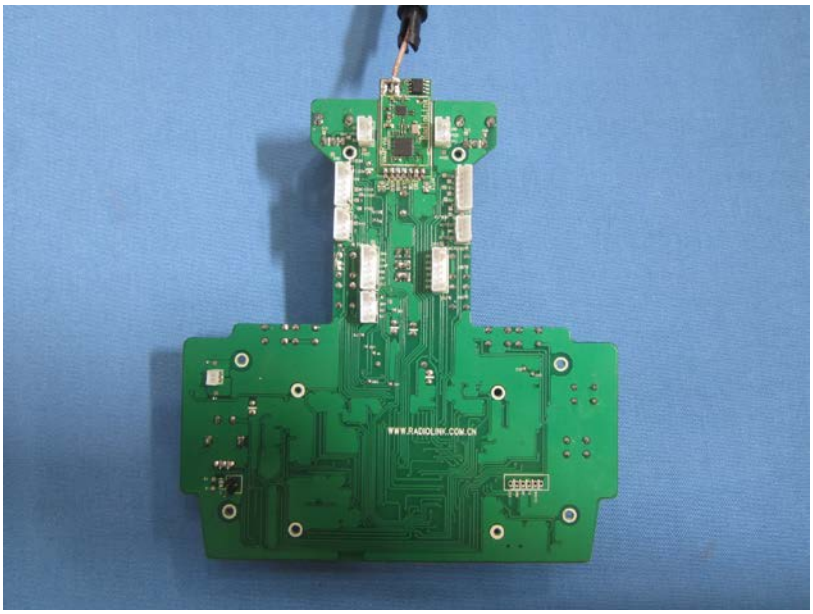
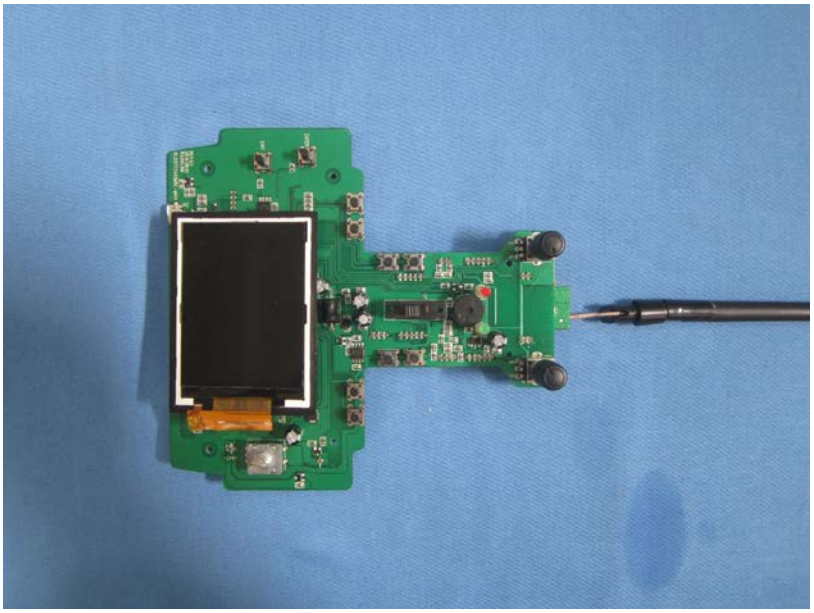
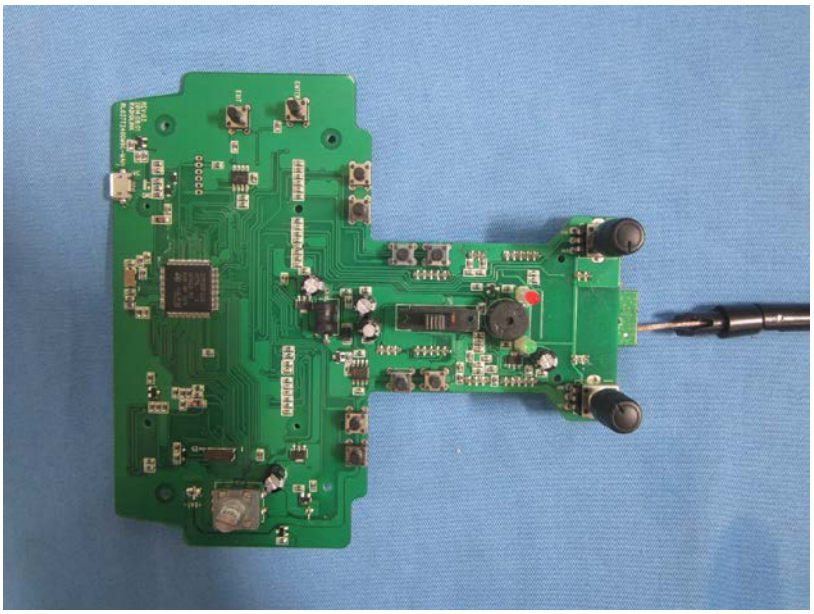
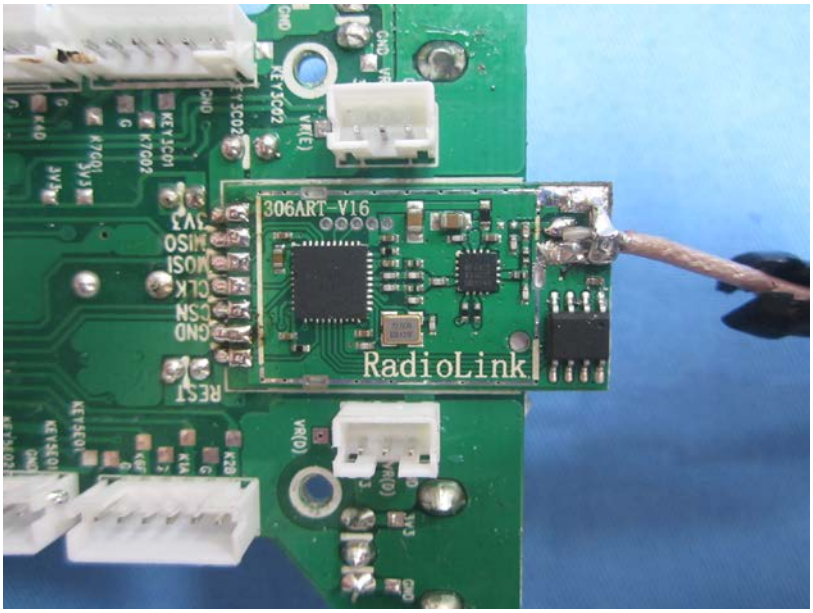
OUT
GND
IN


CON4
PS2
TRAIN
REV:01









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