

FCC REPORT

Applicant: Computime Limited

Address of Applicant: 17/F, Great Eagle Centre, 23 Harbour Road, Wanchai, Hong Kong

Equipment Under Test (EUT)

Product Name: 900MHz Radio Telemetry Module

Model No.: CTLM901

FCC ID: DI2CTLM901

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2010

Date of sample receipt: Feb. 21, 2012

Date of Test: Feb. 21 - 23, 2012

Date of report issued: Feb. 25, 2012

Test Result : PASS *

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

Authorized Signature:



Stephen Guo
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.

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2 Version

Version No.	Date	Description
00	Feb. 25, 2012	Original

Prepared By: Collin He **Date:** Feb. 25, 2012
Project Engineer

Check By: Hans.Hu **Date:** Feb. 25, 2012
Reviewer

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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	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Occupied Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Spurious Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

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

NA: not applicable.

5 General Information

5.1 Client Information

Applicant:	Computime Limited
Address of Applicant:	17/F, Great Eagle Centre, 23 Harbour Road, Wanchai, Hong Kong
Manufacturer:	Computime Limited
Address of Manufacturer/	17/F, Great Eagle Centre, 23 Harbour Road, Wanchai, Hong Kong
Factory:	Computime Electronics(Shenzhen) Company Limited
Address of Factory:	Computime Technology Park, DanZhuTou Cun, Buji, Longgang Region, Shenzhen, China

5.2 General Description of E.U.T.

Product Name:	900MHz Radio Telemetry Module
Model No.:	CTLM901
Operation Frequency:	906MHz – 924MHz
Channel numbers:	10
Channel separation:	2MHz
Modulation technology:	QPSK
Antenna Type:	Integral
Antenna gain:	-1dBi(declare by Applicant)
Power supply:	DC 3.3V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	906MHz	4	912MHz	7	918MHz	10	924MHz
2	908MHz	5	914MHz	8	920MHz		
3	910MHz	6	916MHz	9	922MHz		

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	906MHz
The middle channel	914MHz
The Highest channel	924MHz

5.3 Test mode

Transmitting mode	Keep the EUT in transmitting. Keep the EUT in continuous transmitting mode with MIMO enable.
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5.4 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none">• 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 out 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.
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5.5 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

5.6 Other Information Requested by the Customer

None.

5.7 Description of Support Units

None.

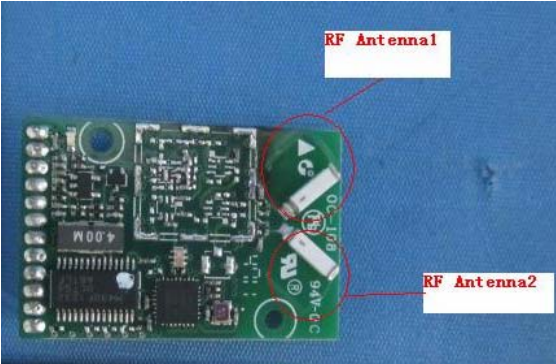
5.8 Test Instruments list

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. 30 2011	Mar. 29 2012
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 04 2011	Jul. 03 2012
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2011	Feb. 25 2012
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 30 2011	June 29 2012
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2011	Mar. 29 2012
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	Apr. 01 2011	Mar. 31 2012
9	Coaxial Cable	GTS	N/A	GTS211	Apr. 01 2011	Mar. 31 2012
10	Coaxial cable	GTS	N/A	GTS210	Apr. 01 2011	Mar. 31 2012
11	Coaxial Cable	GTS	N/A	GTS212	Apr. 01 2011	Mar. 31 2012
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 04 2011	Jul. 03 2012
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 04 2011	Jul. 03 2012
14	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 30 2011	June 29 2012
15	Band filter	Amindeon	82346	GTS219	June 30 2011	June 29 2012

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)	GTS252	Jul. 04 2011	Jul. 03 2012
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 04 2011	Jul. 03 2012
3	10dB Pulse Limit	Rohde & Schwarz	N/A	GTS224	Jul. 04 2011	Jul. 03 2012
4	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 04 2011	Jul. 03 2012
5	LISN	ETS-LINDGREN	3816/2	GTS232	Jul. 04 2011	Jul. 03 2012
6	Coaxial Cable	GTS	N/A	GTS227	Apr. 01 2011	Mar. 31 2012
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results and Measurement Data

6.1 Antenna requirement:

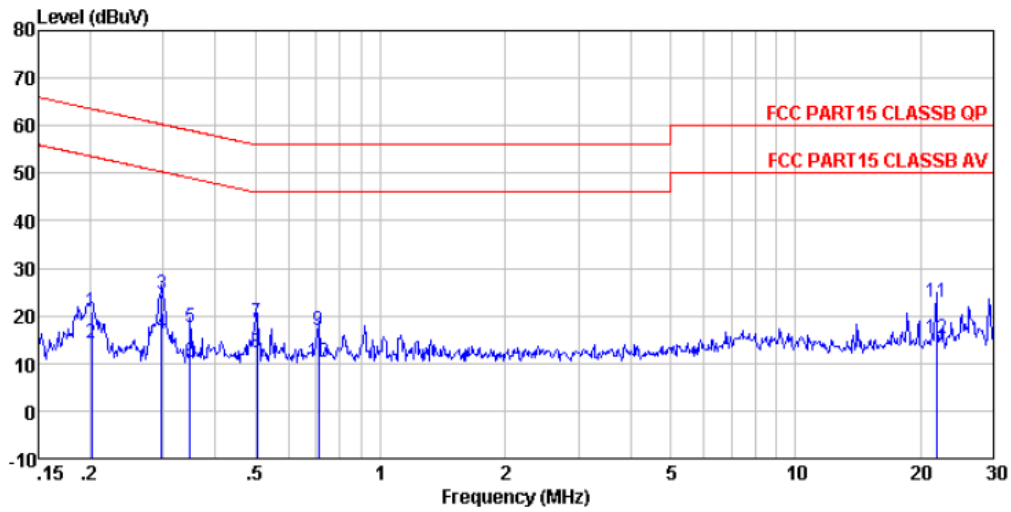
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
<p>15.203 requirement:</p> <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that 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>15.247(c) (1)(i) requirement:</p> <p>(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.</p>	
E.U.T Antenna:	
<p><i>The antenna is integral antenna, the best case gain of the antenna is -1dBi</i></p> 	

6.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.4:2003														
Test Frequency Range:	150KHz to 30MHz														
Class / Severity:	Class B														
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* Decreases with the logarithm of the frequency.</p>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test setup:	<p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test procedure:	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. 														
Test Instruments:	Refer to section 5.8 for details														
Test mode:	Refer to section 5.3 for details														
Test results:	Pass														

Measurement data:

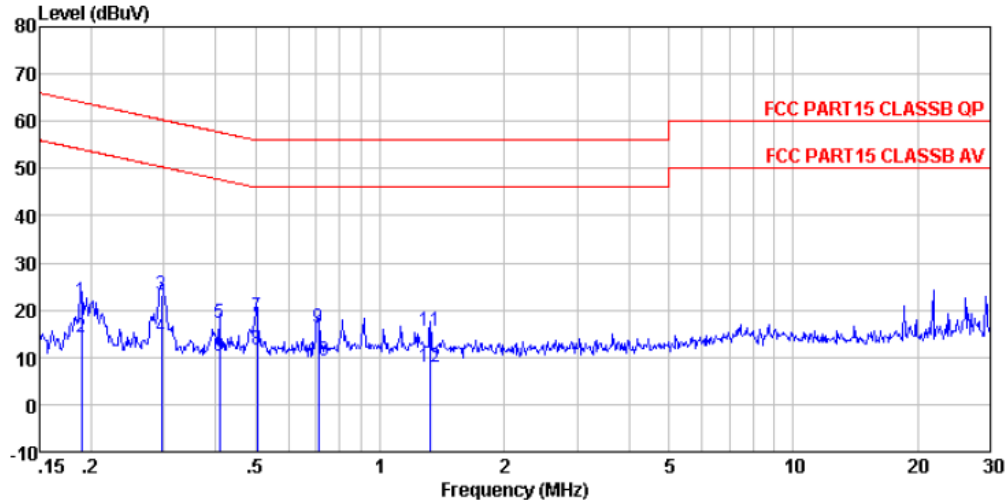
Line:



Condition : FCC PART15 CLASSB QP LISN(2011) LINE
 Job No. : 074RF
 Test Mode : Transmitting mode
 Test Engineer: Aarons

	Read Freq	LISN Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.202	20.25	0.66	0.10	21.01	63.54	-42.53	QP
2	0.202	13.57	0.66	0.10	14.33	53.54	-39.21	Average
3	0.297	23.73	0.61	0.10	24.44	60.32	-35.88	QP
4	0.297	15.68	0.61	0.10	16.39	50.32	-33.93	Average
5	0.348	16.79	0.59	0.10	17.48	59.00	-41.52	QP
6	0.348	9.54	0.59	0.10	10.23	49.00	-38.77	Average
7	0.505	18.06	0.55	0.10	18.71	56.00	-37.29	QP
8	0.505	11.58	0.55	0.10	12.23	46.00	-33.77	Average
9	0.708	16.26	0.52	0.10	16.88	56.00	-39.12	QP
10	0.708	9.57	0.52	0.10	10.19	46.00	-35.81	Average
11	21.830	22.63	0.14	0.21	22.98	60.00	-37.02	QP
12	21.830	14.79	0.14	0.21	15.14	50.00	-34.86	Average

Neutral:



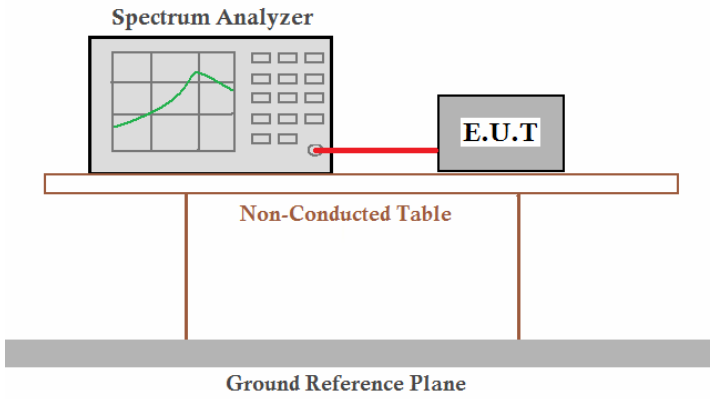
Condition : FCC PART15 CLASSB QP LISN(2011) NEUTRAL
 Job No. : 074RF
 Test Mode : Transmitting mode
 Test Engineer: Aarons

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.189	20.97	0.66	0.10	21.73	64.06	-42.33	QP
2	0.189	13.48	0.66	0.10	14.24	54.06	-39.82	Average
3	0.296	22.66	0.61	0.10	23.37	60.37	-37.00	QP
4	0.296	13.45	0.61	0.10	14.16	50.37	-36.21	Average
5	0.408	16.60	0.58	0.10	17.28	57.68	-40.40	QP
6	0.408	9.54	0.58	0.10	10.22	47.68	-37.46	Average
7	0.505	18.02	0.55	0.10	18.67	56.00	-37.33	QP
8	0.505	10.98	0.55	0.10	11.63	46.00	-34.37	Average
9	0.708	15.64	0.52	0.10	16.26	56.00	-39.74	QP
10	0.708	8.61	0.52	0.10	9.23	46.00	-36.77	Average
11	1.324	14.87	0.45	0.10	15.42	56.00	-40.58	QP
12	1.324	7.25	0.45	0.10	7.80	46.00	-38.20	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss

6.3 Conducted Peak Output Power

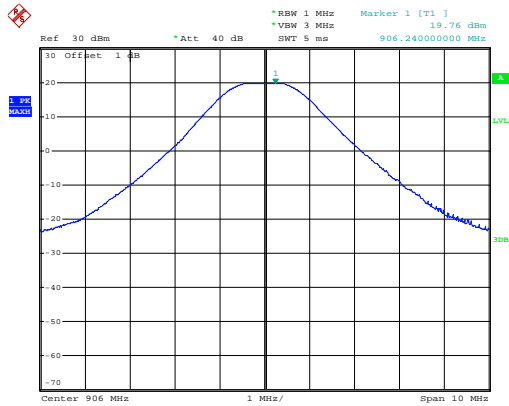
Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 Meas Guidance
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

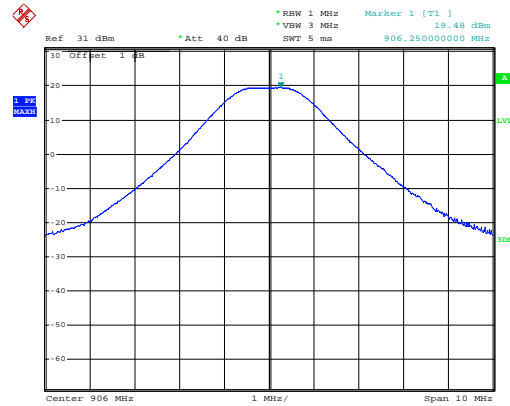
Test channel	Peak Output Power (dBm)		Total power (dBm)	Limit (dBm)	Result
	Antenna 1	Antenna 2			
Lowest	19.76	19.48	22.63	30.00	Pass
Middle	19.93	19.61	22.78		
Highest	20.08	19.83	22.97		

Test plot as follows:

Antenna 1	Antenna 2
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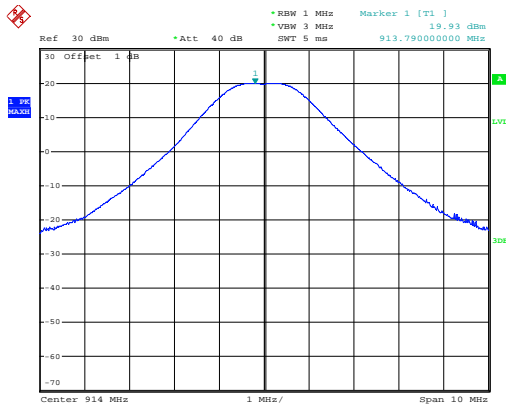


Date: 23.FEB.2012 09:53:11

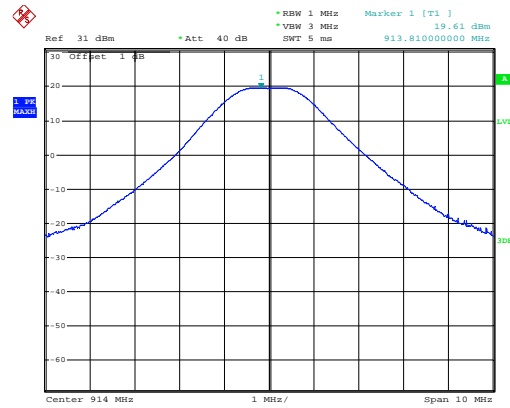


Date: 23.FEB.2012 09:44:19

Lowest channel

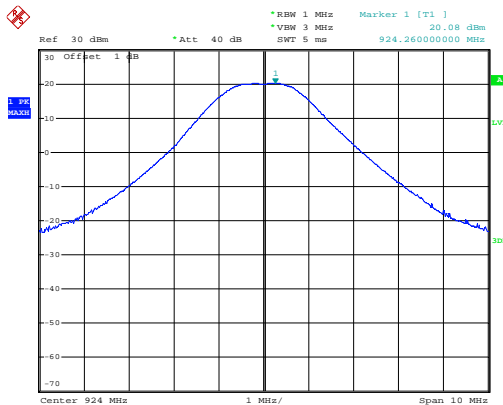


Date: 23.FEB.2012 09:57:07

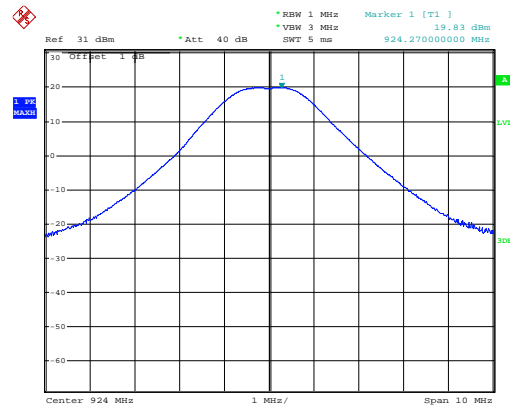


Date: 23.FEB.2012 09:14:32

Middle channel



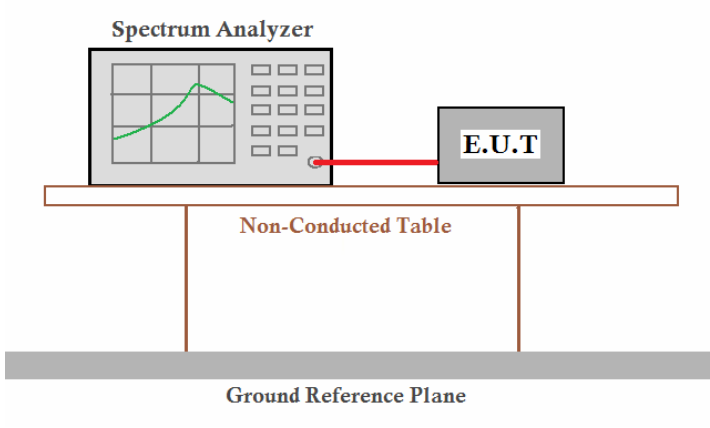
Date: 23.FEB.2012 10:01:05



Date: 23.FEB.2012 08:48:12

Highest channel

6.4 6dB Occupy Bandwidth

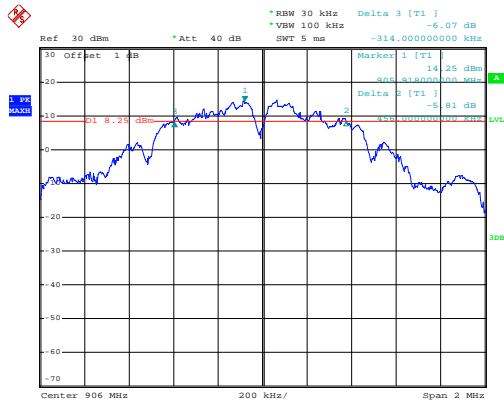
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 Meas Guidance
Limit:	>500KHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

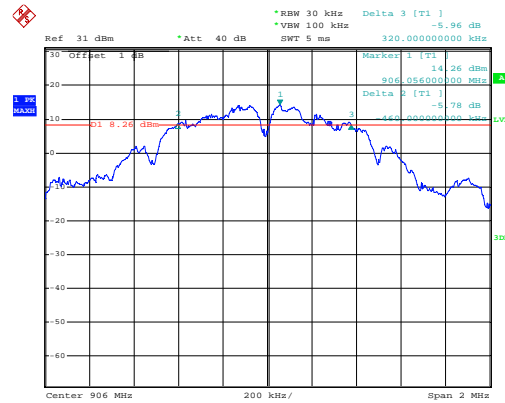
Test CH	6dB Occupy Bandwidth (KHz)		Limit(KHz)	Result
	Antenna 1	Antenna 2		
Lowest	770	780	>500	Pass
Middle	808	768		
Highest	764	764		

Test plot as follows:

Antenna 1	Antenna 2
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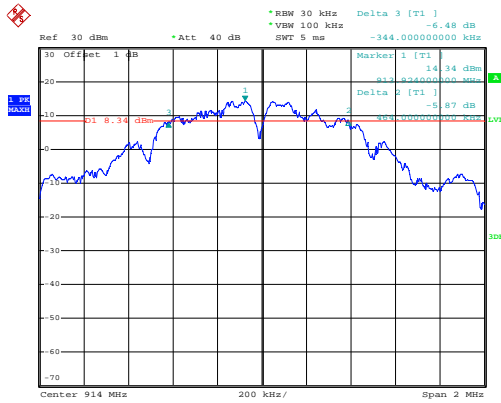


Date: 23.FEB.2012 09:54:11

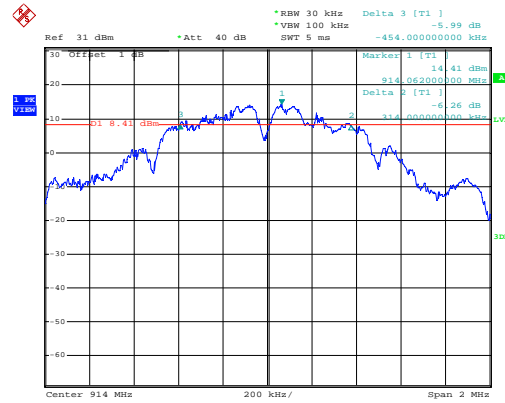


Date: 23.FEB.2012 09:47:14

Lowest channel

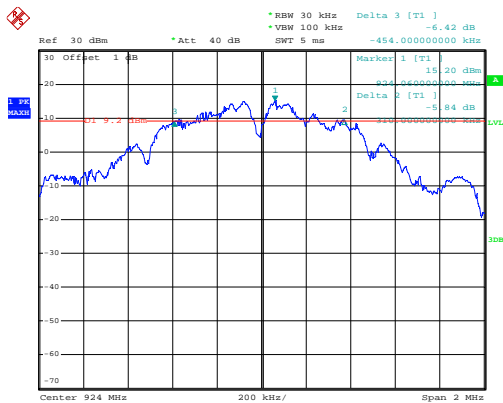


Date: 23.FEB.2012 09:58:08

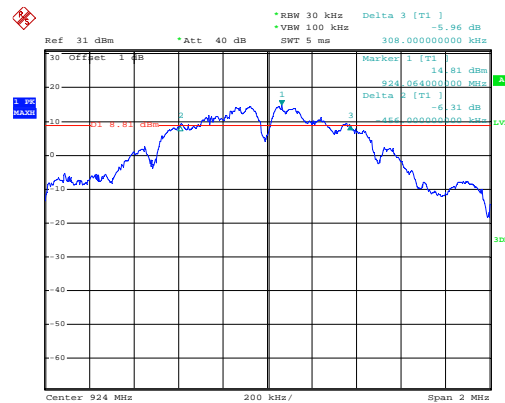


Date: 23.FEB.2012 09:15:24

Middle channel



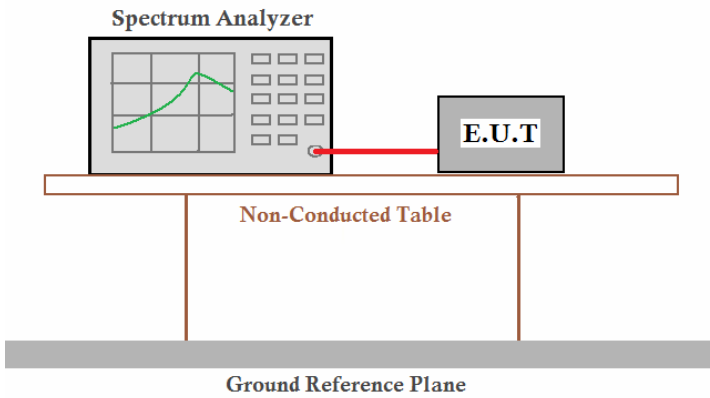
Date: 23.FEB.2012 10:02:08



Date: 23.FEB.2012 08:51:16

Highest channel

6.5 Power Spectral Density

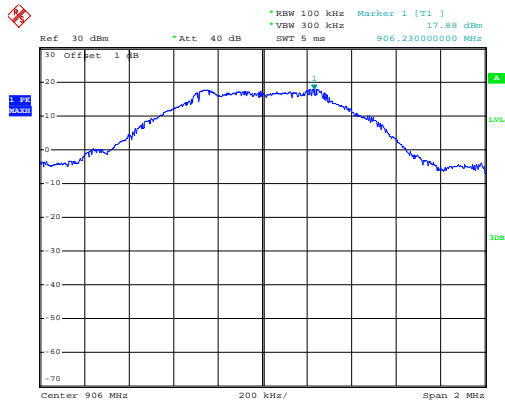
Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 Meas Guidance
Limit:	8dBm
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

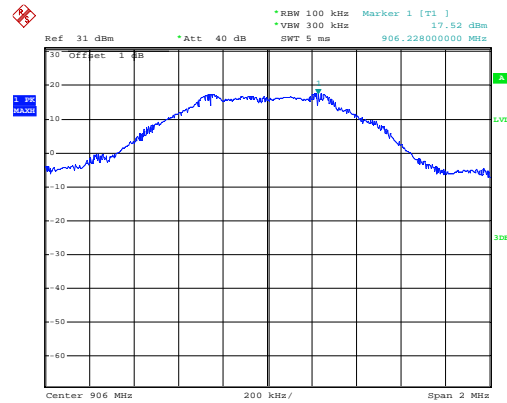
Test CH	Power Spectral Density (dBm@100KHz)			BWCF (dB)	Power spectral density (dBm@3KHz)	Limit(dBm)	Result
	Antenna 1	Antenna 2	Total				
Lowest	17.88	17.52	20.71	-15.20	5.51	8.00	Pass
Middle	18.02	17.69	20.87	-15.20	5.67		
Highest	18.25	17.90	21.09	-15.20	5.89		

Test plot as follows:

Antenna 1	Antenna 2
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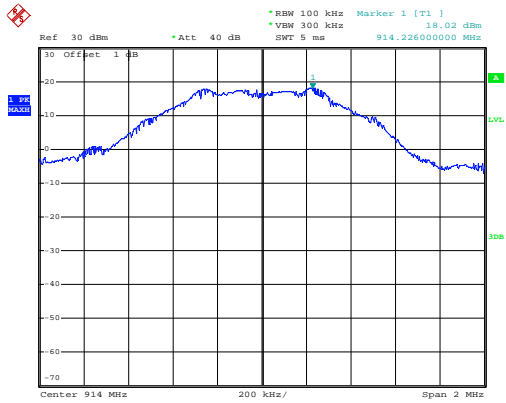


Date: 23.FEB.2012 09:55:18

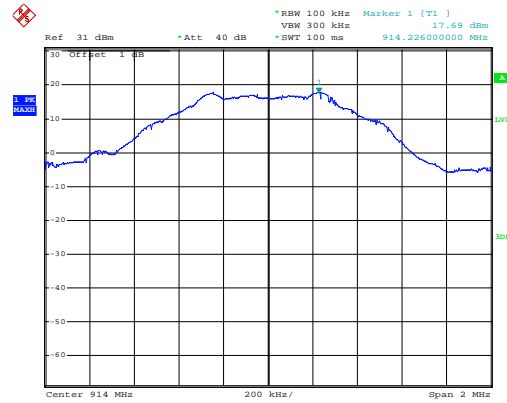


Date: 23.FEB.2012 09:49:37

Lowest channel

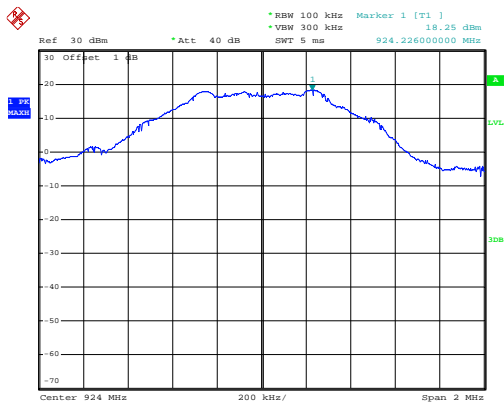


Date: 23.FEB.2012 09:59:13

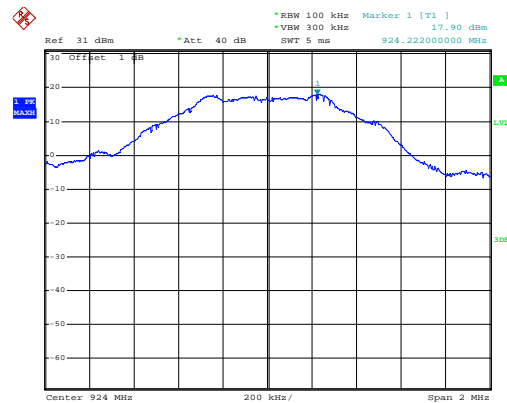


Date: 23.FEB.2012 09:17:47

Middle channel



Date: 23.FEB.2012 10:04:14

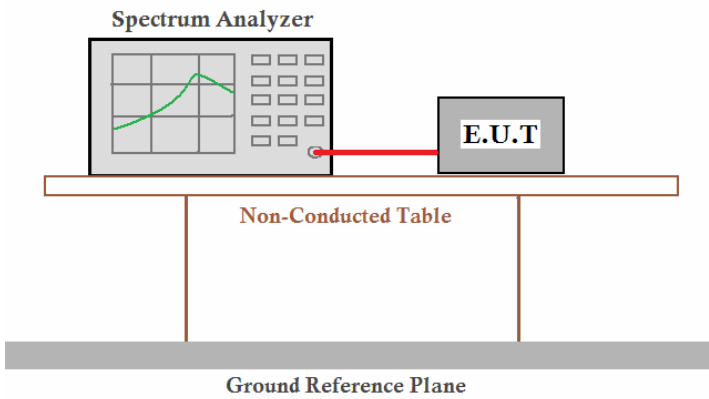


Date: 23.FEB.2012 08:47:17

Highest channel

6.6 Spurious Emission

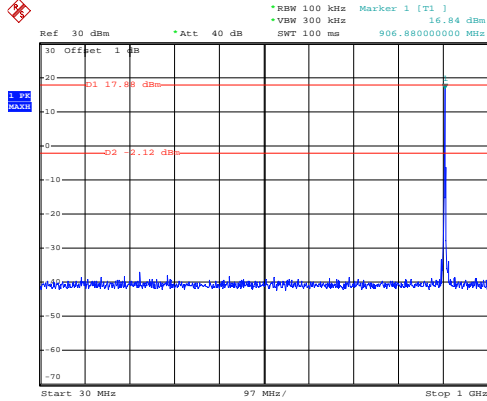
6.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 Meas Guidance
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:	 <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 supported by two vertical legs. Below the table is a Ground Reference Plane.</p>
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:

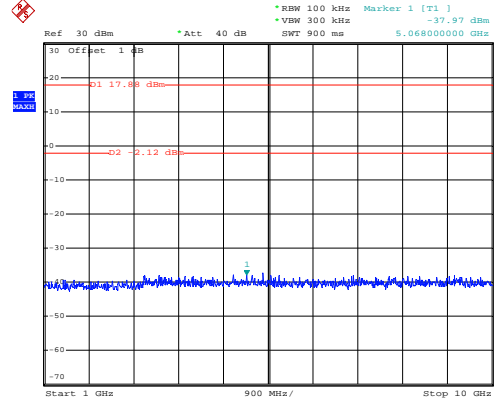
Antenna 1

Lowest channel



Date: 23.FEB.2012 09:56:09

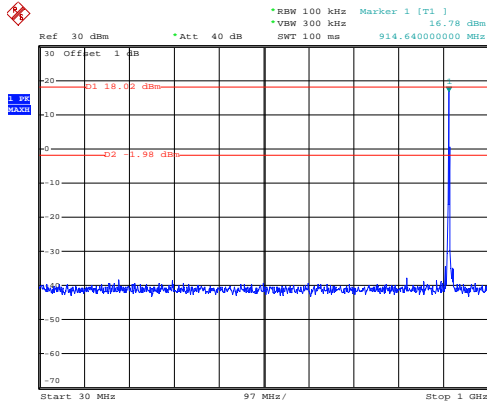
30MHz~1GHz



Date: 23.FEB.2012 09:56:25

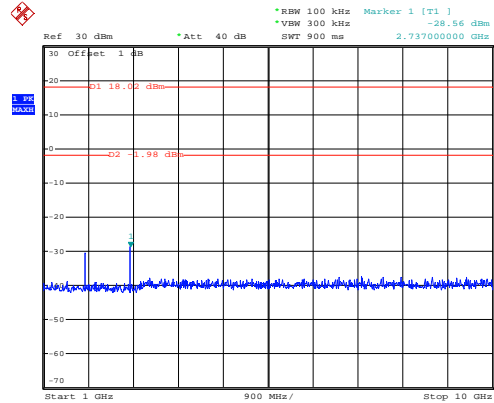
1GHz~10GHz

Middle channel



Date: 23.FEB.2012 09:59:52

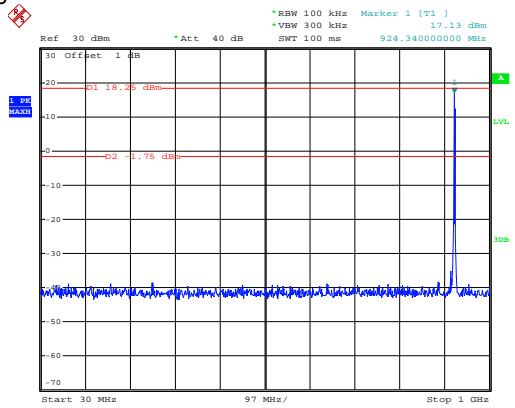
30MHz~1GHz



Date: 23.FEB.2012 10:00:15

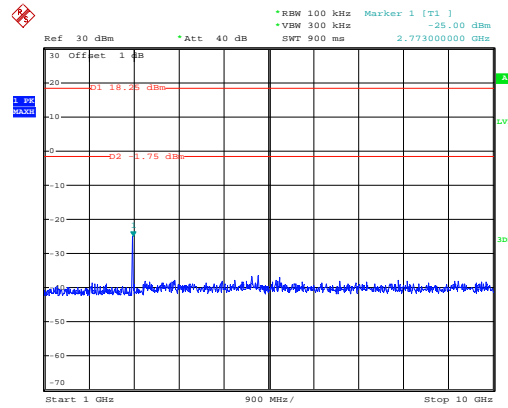
1GHz~10GHz

Highest channel



Date: 23.FEB.2012 10:13:29

30MHz~1GHz

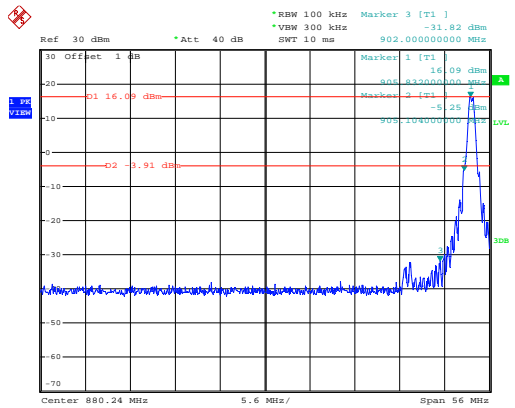


Date: 23.FEB.2012 10:13:16

1GHz~10GHz

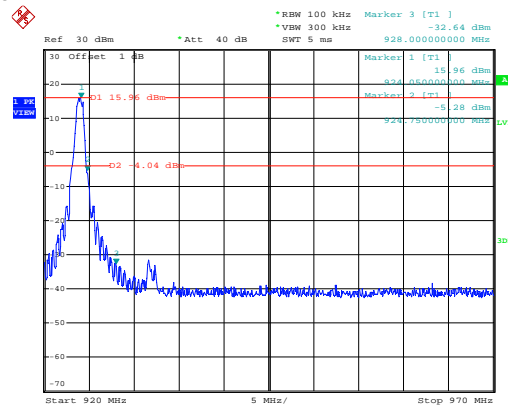
Band edge

Lowest channel



Date: 5.MAR.2012 07:11:15

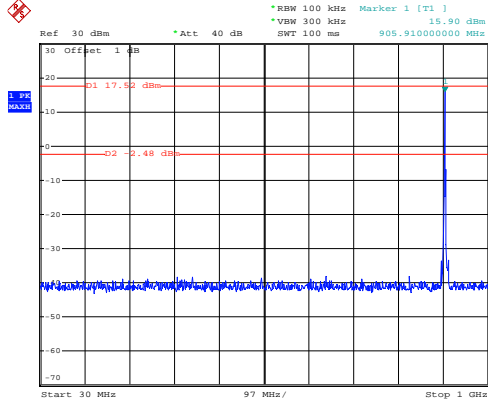
Highest channel



Date: 5.MAR.2012 07:12:42

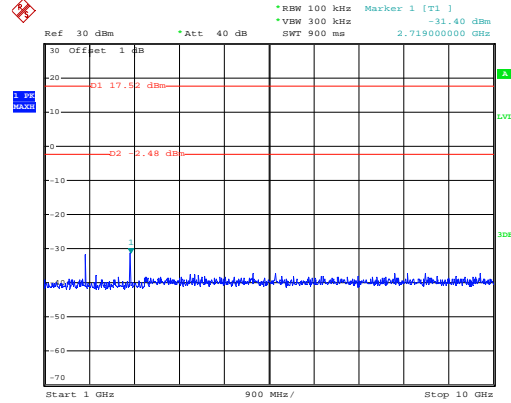
Antenna 2

Lowest channel



Date: 23.FEB.2012 09:51:25

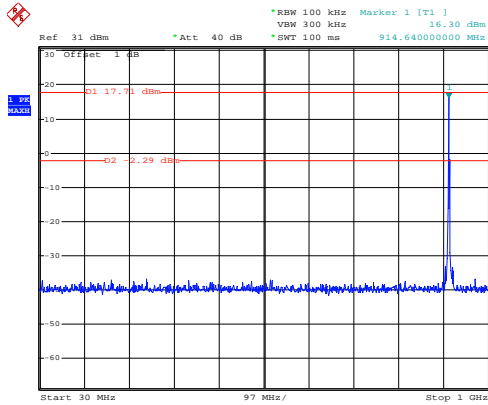
30MHz~1GHz



Date: 23.FEB.2012 09:51:50

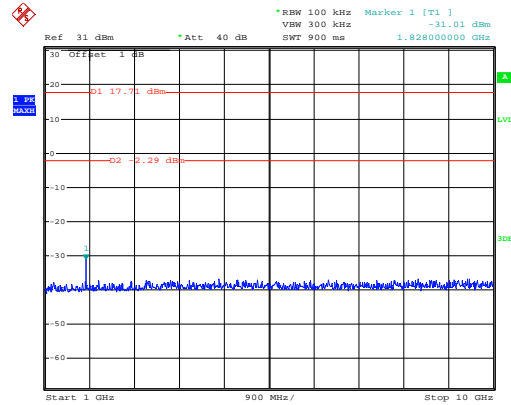
1GHz~10GHz

Middle channel



Date: 23.FEB.2012 09:42:21

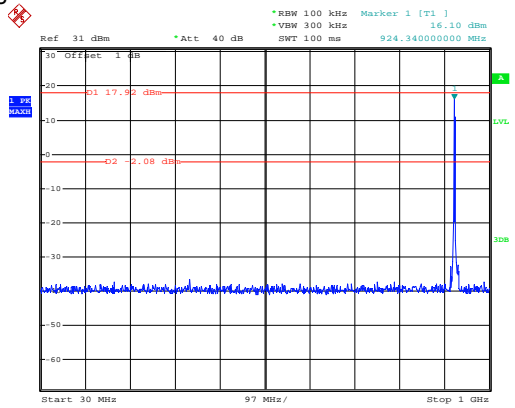
30MHz~1GHz



Date: 23.FEB.2012 09:43:14

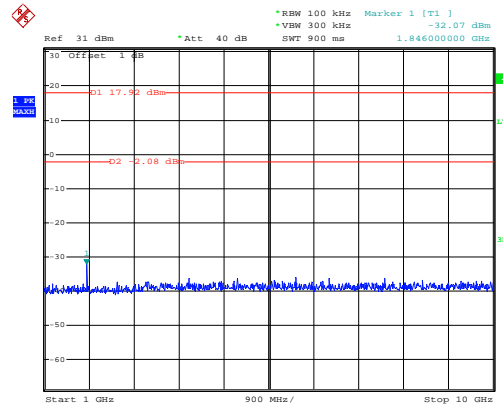
1GHz~10GHz

Highest channel



Date: 23.FEB.2012 09:13:00

30MHz~1GHz

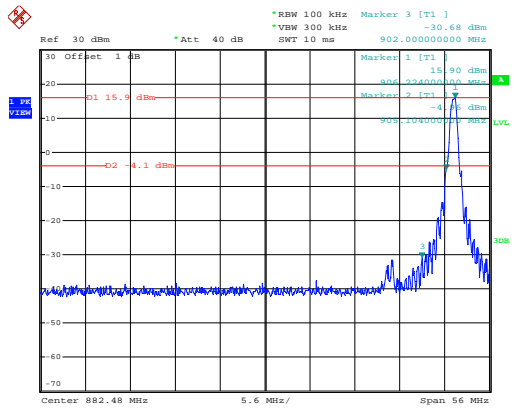


Date: 23.FEB.2012 09:13:33

1GHz~10GHz

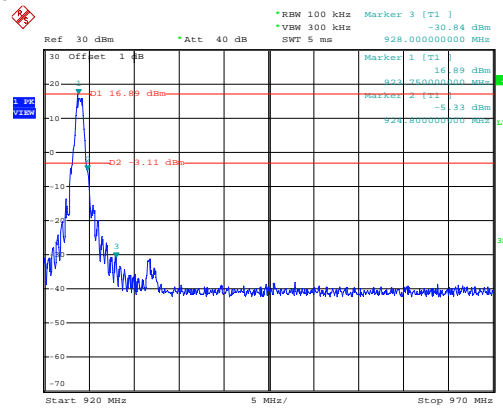
Band edge

Lowest channel



Date: 5.MAR.2012 07:20:33

Highest channel



Date: 5.MAR.2012 07:18:46

6.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	30MHz to 10GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Peak		1MHz	10Hz	Average Value	
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.0		Quasi-peak Value	
	88MHz-216MHz	43.5		Quasi-peak Value	
	216MHz-960MHz	46.0		Quasi-peak Value	
	Above 1GHz	54.0		Average Value	
74.0		Peak Value			
Test setup:	Below 1GHz				
Test setup:	Above 1GHz				

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

Remark:

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

■ **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
38.89	45.59	15.28	0.26	32.16	28.97	40.00	-11.03	Vertical
88.03	49.27	13.27	0.45	31.77	31.22	43.50	-12.28	Vertical
135.98	55.19	8.45	0.58	31.89	32.33	43.50	-11.17	Vertical
166.07	56.63	8.86	0.64	32.07	34.06	43.50	-9.44	Vertical
185.79	57.42	10.16	0.68	32.18	36.08	43.50	-7.42	Vertical
256.52	55.98	12.13	0.93	32.29	36.75	46.00	-9.25	Vertical
81.78	52.62	12.19	0.43	31.81	33.43	40.00	-6.57	Horizontal
88.03	52.56	13.27	0.45	31.77	34.51	43.50	-8.99	Horizontal
99.88	50.34	13.09	0.48	31.69	32.22	43.50	-11.28	Horizontal
183.84	56.29	10.00	0.67	32.17	34.79	43.50	-8.71	Horizontal
248.55	59.67	12.07	0.90	32.28	40.36	46.00	-5.64	Horizontal
304.61	54.30	13.11	1.09	32.30	36.20	46.00	-9.80	Horizontal

■ Above 1GHz

Test channel:	Lowest
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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
1812.00	64.96	25.35	3.32	34.67	58.96	74.00	-15.04	Vertical
2718.00	59.97	28.19	4.05	34.93	57.28	74.00	-16.72	Vertical
3624.00	44.54	29.19	4.97	35.19	43.51	74.00	-30.49	Vertical
4530.00	44.88	30.81	5.68	35.41	45.96	74.00	-28.04	Vertical
5436.00	45.19	31.95	6.25	35.41	47.98	74.00	-26.02	Vertical
6342.00	44.58	33.62	6.72	35.43	49.49	74.00	-24.51	Vertical
1812.00	65.99	25.35	3.32	34.67	59.99	74.00	-14.01	Horizontal
2718.00	47.32	28.19	4.05	34.93	44.63	74.00	-29.37	Horizontal
3624.00	44.45	29.19	4.97	35.19	43.42	74.00	-30.58	Horizontal
4530.00	46.03	30.81	5.68	35.41	47.11	74.00	-26.89	Horizontal
5436.00	45.42	31.95	6.25	35.41	48.21	74.00	-25.79	Horizontal
6342.00	46.43	33.62	6.72	35.43	51.34	74.00	-22.66	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
1812.00	54.43	25.35	3.32	34.67	48.43	54.00	-5.57	Vertical
2718.00	49.40	28.19	4.05	34.93	46.71	54.00	-7.29	Vertical
3624.00	33.93	29.19	4.97	35.19	32.90	54.00	-21.10	Vertical
4530.00	34.23	30.81	5.68	35.41	35.31	54.00	-18.69	Vertical
5436.00	34.50	31.95	6.25	35.41	37.29	54.00	-16.71	Vertical
6342.00	33.85	33.62	6.72	35.43	38.76	54.00	-15.24	Vertical
1812.00	56.36	25.35	3.32	34.67	50.49	54.00	-3.51	Horizontal
2718.00	36.96	28.19	4.05	34.93	34.27	54.00	-19.73	Horizontal
3624.00	33.96	29.19	4.97	35.19	32.93	54.00	-21.07	Horizontal
4530.00	35.41	30.81	5.68	35.41	36.49	54.00	-17.51	Horizontal
5436.00	34.67	31.95	6.25	35.41	37.46	54.00	-16.54	Horizontal
6342.00	35.55	33.62	6.72	35.43	40.46	54.00	-13.54	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
2. “**”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle
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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
1828.00	50.70	25.44	3.35	34.67	44.82	74.00	-29.18	Vertical
2742.00	56.83	28.26	4.07	34.93	54.23	74.00	-19.77	Vertical
3656.00	44.02	29.21	5.01	35.21	43.03	74.00	-30.97	Vertical
4570.00	44.92	30.92	5.70	35.42	46.12	74.00	-27.88	Vertical
5484.00	45.35	32.02	6.27	35.40	48.24	74.00	-25.76	Vertical
6398.00	45.07	33.92	6.74	35.39	50.34	74.00	-23.66	Vertical
1828.00	51.36	25.44	3.35	34.67	45.48	74.00	-28.52	Horizontal
2742.00	47.73	28.26	4.07	34.93	45.13	74.00	-28.87	Horizontal
3656.00	44.64	29.21	5.01	35.21	43.65	74.00	-30.35	Horizontal
4570.00	44.96	30.92	5.70	35.42	46.16	74.00	-27.84	Horizontal
5484.00	44.35	32.02	6.27	35.40	47.24	74.00	-26.76	Horizontal
6398.00	44.99	33.92	6.74	35.39	50.26	74.00	-23.74	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
1828.00	40.47	25.44	3.35	34.67	34.59	54.00	-19.41	Vertical
2742.00	46.56	28.26	4.07	34.93	43.96	54.00	-10.04	Vertical
3656.00	33.71	29.21	5.01	35.21	32.72	54.00	-21.28	Vertical
4570.00	34.57	30.92	5.70	35.42	35.77	54.00	-18.23	Vertical
5484.00	34.96	32.02	6.27	35.40	37.85	54.00	-16.15	Vertical
6398.00	34.64	33.92	6.74	35.39	39.91	54.00	-14.09	Vertical
1828.00	41.39	25.44	3.35	34.67	35.51	54.00	-18.49	Horizontal
2742.00	37.68	28.26	4.07	34.93	35.08	54.00	-18.92	Horizontal
3656.00	34.51	29.21	5.01	35.21	33.52	54.00	-20.48	Horizontal
4570.00	34.75	30.92	5.70	35.42	35.95	54.00	-18.05	Horizontal
5484.00	34.06	32.02	6.27	35.40	36.95	54.00	-17.05	Horizontal
6398.00	34.62	33.92	6.74	35.39	39.89	54.00	-14.11	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor*
2. *“**”, means this data is the too weak instrument of signal is unable to test.*

Test channel:	Highest
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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
1848.00	55.08	25.52	3.36	34.68	49.28	74.00	-24.72	Vertical
2772.00	60.72	28.31	4.12	34.94	58.21	74.00	-15.79	Vertical
3696.00	43.27	29.26	5.03	35.22	42.34	74.00	-31.66	Vertical
4620.00	44.58	31.08	5.75	35.43	45.98	74.00	-28.02	Vertical
5544.00	44.56	32.09	6.31	35.43	47.53	74.00	-26.47	Vertical
6468.00	46.15	34.28	6.78	35.33	51.88	74.00	-22.12	Vertical
1848.00	48.41	25.52	3.36	34.68	42.61	74.00	-31.39	Horizontal
2772.00	49.38	28.31	4.12	34.94	46.87	74.00	-27.13	Horizontal
3696.00	43.69	29.26	5.03	35.22	42.76	74.00	-31.24	Horizontal
4620.00	44.94	31.08	5.75	35.43	46.34	74.00	-27.66	Horizontal
5544.00	45.25	32.09	6.31	35.43	48.22	74.00	-25.78	Horizontal
6468.00	45.52	34.28	6.78	35.33	51.25	74.00	-22.75	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
1848.00	44.51	25.52	3.36	34.68	38.71	54.00	-15.29	Vertical
2772.00	50.10	28.31	4.12	34.94	47.59	54.00	-6.41	Vertical
3696.00	32.33	29.26	5.03	35.22	31.40	54.00	-22.60	Vertical
4620.00	33.86	31.08	5.75	35.43	35.26	54.00	-18.74	Vertical
5544.00	33.79	32.09	6.31	35.43	36.76	54.00	-17.24	Vertical
6468.00	35.33	34.28	6.78	35.33	41.06	54.00	-12.94	Vertical
1848.00	38.18	25.52	3.36	34.68	32.38	54.00	-21.62	Horizontal
2772.00	39.01	28.31	4.12	34.94	36.50	54.00	-17.50	Horizontal
3696.00	33.18	29.26	5.03	35.22	32.25	54.00	-21.75	Horizontal
4620.00	34.29	31.08	5.75	35.43	35.69	54.00	-18.31	Horizontal
5544.00	34.46	32.09	6.31	35.43	37.43	54.00	-16.57	Horizontal
6468.00	34.59	34.28	6.78	35.33	40.32	54.00	-13.68	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor*
2. *“**”, means this data is the too weak instrument of signal is unable to test.*