Test Report

Product Name	Car kit
Model No.	JBH-19
FCC ID.	UH6-JBH19

Applicant LITE-In Tech. Co., LTD

Address 4F., No.20, Lane 50, Sec. 3, Nangang Rd., Taipei 11510, Taiwan (R.O.C.)

Date of Receipt	2009/04/23
Issued Date	2009/05/11
Report No.	094405R-RFUSP33V01
Report Version	V1.0

Test Report Certification

Issued Date : 2009/05/11
Report No. : 094405R-RFUSP33V01

QuieTek

Product Name	:	Car kit
Applicant	:	LITE-In Tech. Co., LTD
Address	:	4F., No.20, Lane 50, Sec. 3, Nangang Rd., Taipei 11510, Taiwan (R.O.C.)
Manufacturer	:	LITE-In Tech. Co., LTD
Model No.	:	JBH-19
FCC ID.	:	UH6-JBH19
Rated Voltage	:	DC12V~DC24V
EUT Voltage	:	DC12V~DC24V
Trade Name	:	LITE-In
Applicable Standard	:	FCC 15 Subpart C Section 15.239: 2008
Test Result	:	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Carol Tsai

(Carol Tsai / Engineering Adm. Specialist)

Tested By : Sheena Huang

(Sheena Huang / Engineer)

Approved By : Roy Wang

(Roy Wang / Manager)

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1. General Information

1.1. EUT Description

Product Name	Car kit
Trade Name	LITE-In
Model No.	JBH-19
FCC ID.	UH6-JBH19
Frequency Range	88.3-107.7 MHz
Channel Number	195
Type of Modulation	FM
Channel Control	Auto

Component	
Remote Controller	1 Set
Audio Cable	Non-Shielded, 0.64m

Frequency of Each Channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	88.3 MHz	53	93.5 MHz	105	98.7 MHz	157	103.9 MHz
2	88.4 MHz	54	93.6 MHz	106	98.8 MHz	158	104.0 MHz
3	88.5 MHz	55	93.7 MHz	107	98.9 MHz	159	104.1 MHz
4	88.6 MHz	56	93.8 MHz	108	99.0 MHz	160	104.2 MHz
5	88.7 MHz	57	93.9 MHz	109	99.1 MHz	161	104.3 MHz
6	88.8 MHz	58	94.0 MHz	110	99.2 MHz	162	104.4 MHz
7	88.9 MHz	59	94.1 MHz	111	99.3 MHz	163	104.5 MHz
8	89.0 MHz	60	94.2 MHz	112	99.4 MHz	164	104.6 MHz
9	89.1 MHz	61	94.3 MHz	113	99.5 MHz	165	104.7 MHz
10	89.2 MHz	62	94.4 MHz	114	99.6 MHz	166	104.8 MHz
11	89.3 MHz	63	94.5 MHz	115	99.7 MHz	167	104.9 MHz
12	89.4 MHz	64	94.6 MHz	116	99.8 MHz	168	105.0 MHz
13	89.5 MHz	65	94.7 MHz	117	99.9 MHz	169	105.1 MHz
14	89.6 MHz	66	94.8 MHz	118	100.0 MHz	170	105.2 MHz
15	89.7 MHz	67	94.9 MHz	119	100.1 MHz	171	105.3 MHz
16	89.8 MHz	68	95.0 MHz	120	100.2 MHz	172	105.4 MHz
17	89.9 MHz	69	95.1 MHz	121	100.3 MHz	173	105.5 MHz
18	90.0 MHz	70	95.2 MHz	122	100.4 MHz	174	105.6 MHz
19	90.1 MHz	71	95.3 MHz	123	100.5 MHz	175	105.7 MHz
20	90.2 MHz	72	95.4 MHz	124	100.6 MHz	176	105.8 MHz
21	90.3 MHz	73	95.5 MHz	125	100.7 MHz	177	105.9 MHz
22	90.4 MHz	74	95.6 MHz	126	100.8 MHz	178	106.0 MHz
23	90.5 MHz	75	95.7 MHz	127	100.9 MHz	179	106.1 MHz
24	90.6 MHz	76	95.8 MHz	128	101.0 MHz	180	106.2 MHz
25	90.7 MHz	77	95.9 MHz	129	101.1 MHz	181	106.3 MHz
26	90.8 MHz	78	96.0 MHz	130	101.2 MHz	182	106.4 MHz
27	90.9 MHz	79	96.1 MHz	131	101.3 MHz	183	106.5 MHz
28	91.0 MHz	80	96.2 MHz	132	101.4 MHz	184	106.6 MHz
29	91.1 MHz	81	96.3 MHz	133	101.5 MHz	185	106.7 MHz
30	91.2 MHz	82	96.4 MHz	134	101.6 MHz	186	106.8 MHz
31	91.3 MHz	83	96.5 MHz	135	101.7 MHz	187	106.9 MHz
32	91.4 MHz	84	96.6 MHz	136	101.8 MHz	188	107.0 MHz
33	91.5 MHz	85	96.7 MHz	137	101.9 MHz	189	107.1 MHz
34	91.6 MHz	86	96.8 MHz	138	102.0 MHz	190	107.2 MHz
35	91.7 MHz	87	96.9 MHz	139	102.1 MHz	191	107.3 MHz
36	91.8 MHz	88	97.0 MHz	140	102.2 MHz	192	107.4 MHz
37	91.9 MHz	89	97.1 MHz	141	102.3 MHz	193	107.5 MHz
38	92.0 MHz	90	97.2 MHz	142	102.4 MHz	194	107.6 MHz
39	92.1 MHz	91	97.3 MHz	143	102.5 MHz	195	107.7 MHz
40	92.2 MHz	92	97.4 MHz	144	102.6 MHz		
41	92.3 MHz	93	97.5 MHz	145	102.7 MHz		
42	92.4 MHz	94	97.6 MHz	146	102.8 MHz		
43	92.5 MHz	95	97.7 MHz	147	102.9 MHz		
44	92.6 MHz	96	97.8 MHz	148	103.0 MHz		
45	92.7 MHz	97	97.9 MHz	149	103.1 MHz		
46	92.8 MHz	98	98.0 MHz	150	103.2 MHz		
47	92.9 MHz	99	98.1 MHz	151	103.3 MHz		
48	93.0 MHz	100	98.2 MHz	152	103.4 MHz		
49	93.1 MHz	101	98.3 MHz	153	103.5 MHz		
50	93.2 MHz	102	98.4 MHz	154	103.6 MHz		
51	93.3 MHz	103	98.5 MHz	155	103.7 MHz		
52	93.4 MHz	104	98.6 MHz	156	103.8 MHz		

Note:

1. This device is a Car kit with built-in FM transmitter.
2. These tests are conducted on a sample for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.239.
3. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 094405R-RFUSP37V02 under Declaration of Conformity.

1.3. Test Mode

QuieTek verified the construction and function in typical operation. All the test modes are performed in normal operation and are defined as:

Pre-Test Mode	
EMI	Mode 1: Transmit
Final Test Mode	
EMI	Mode 1: Transmit

Emission	Mode 1
Conducted Emission	No
Field Strength of Fundamental Emission	Yes
Radiated Emissions	Yes
Band Edge	Yes
Occupied Bandwidth	Yes
Antenna Requirements	No

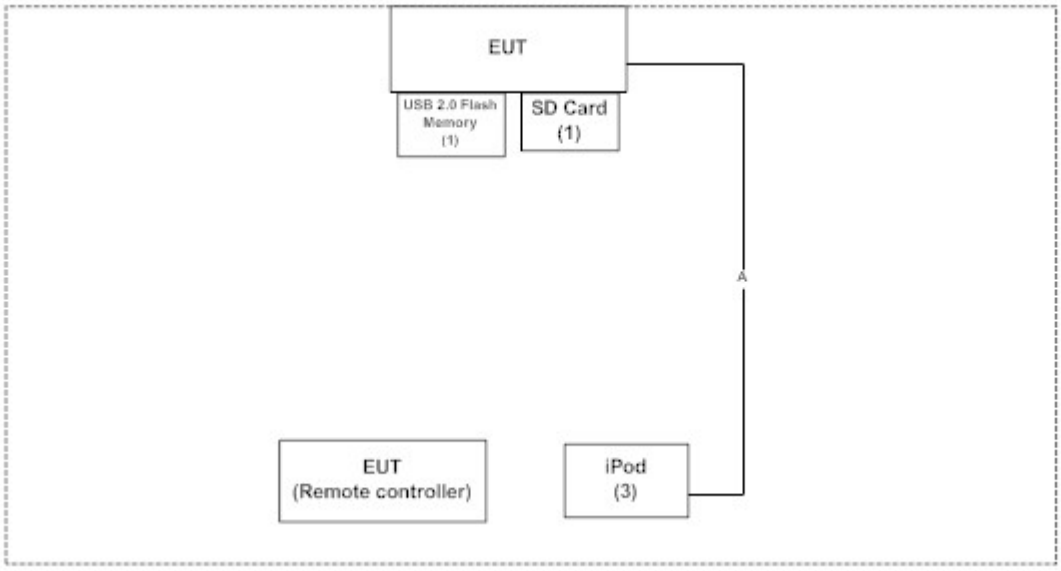
1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	SD Card	Transcend	TS512MSD80	160073-4664	DoC	--
2	USB 2.0 Flash Memory	TOSHIBA	74611927575NM8N	N/A	DoC	--
3	iPod	Apple	A1136	9C724G7MV9M	DoC	--

1.5. Configuration of tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Audio Cable	Non-Shielded, 0.64m

1.6. EUT Exercise Software

1	Setup the EUT as shown in Section 1.5.
2	Turn on the power of all equipment.
3	The EUT will start transmitting RF signals.
4	Verify that the EUT works properly.

1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15.239(b) Field Strength of Fundamental Emission	15 - 35	22
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15.239(c) Radiated Emissions	15 - 35	22
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15.239(c) Band Edge Emissions	15 - 35	22
Humidity (%RH)		25 - 75	55
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15.239(a) Occupied Bandwidth	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description:

January 24, 2005 File on
Federal Communications Commission
Laboratory Division
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 365520

Accredited by TAF
Accreditation Number: 1313
Effective through: December 27, 2010

Testing Laboratory 1313

Accredited by NVLAP
NVLAP Lab Code: 200347-0
Effective through: September 30, 2009

NVLAP Lab Code : 200347-0

Site Name: Quietek Corporation
Site Address: No.75-1, Wang-Yeh Valley, Yung-Hsing,
Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
TEL : 886-3-592-8858 / FAX : 886-3-592-8859
E-Mail : service@quietek.com

2. Field Strength of Fundamental Emission

2.1. Test Equipment

The following test equipments are used during the test:

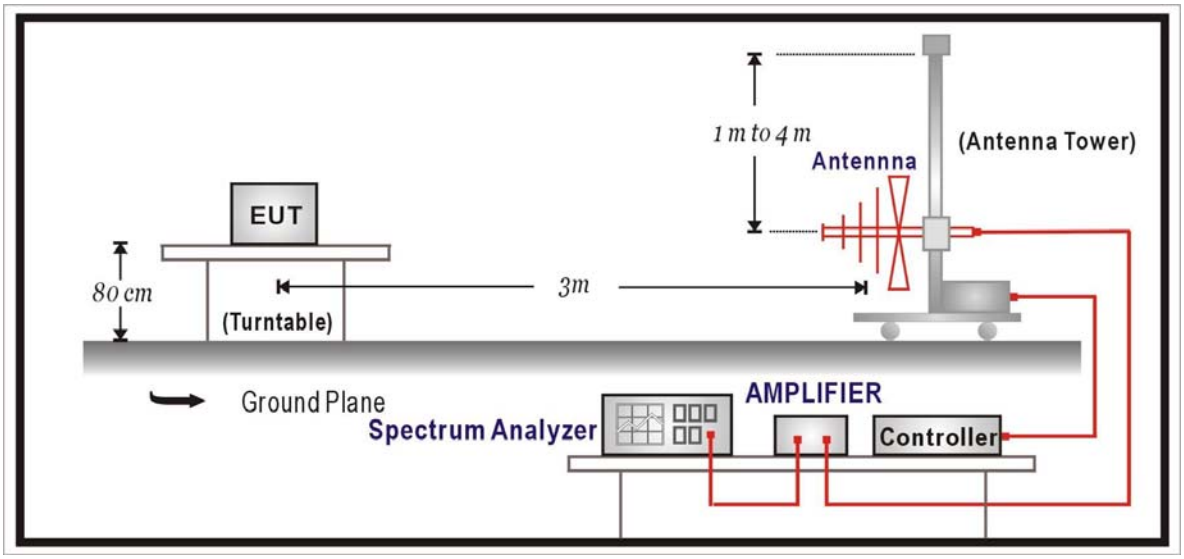
Radiated Emission / Site1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2895	2008/09/03
Horn Antenna	Electro Metrics	EM-6961	103325	2009/03/15
Pre-Amplifier	HP	8449B	3008A01123	2008/11/15
Pre-Amplifier	Quietek	AP-025C	N/A	N/A
Spectrum Analyzer	R & S	FSP40	100005	2008/08/25
Spectrum Analyzer	Advantest	R3162	120300649	2008/11/24
Test Receiver	R & S	ESCS 30	825442/017	2009/02/13

Note: 1. All instruments are calibrated every one year.
2. “N/A” Ca1.Date is used to Pre-test, not final test.

2.2. Test Setup

Under 1GHz Test Setup:



2.3. Limits

According to FCC Part 15.239 the field strength of emissions from intentional radiators operated under these frequency bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental		
	uV / meter	dBuV / meter (Average)	dBuV / meter Peak(Peak)
88-108	250	48	68

2.4. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.

The resolution bandwidth setting on the field strength meter is 100 kHz.

2.5. Test Specification

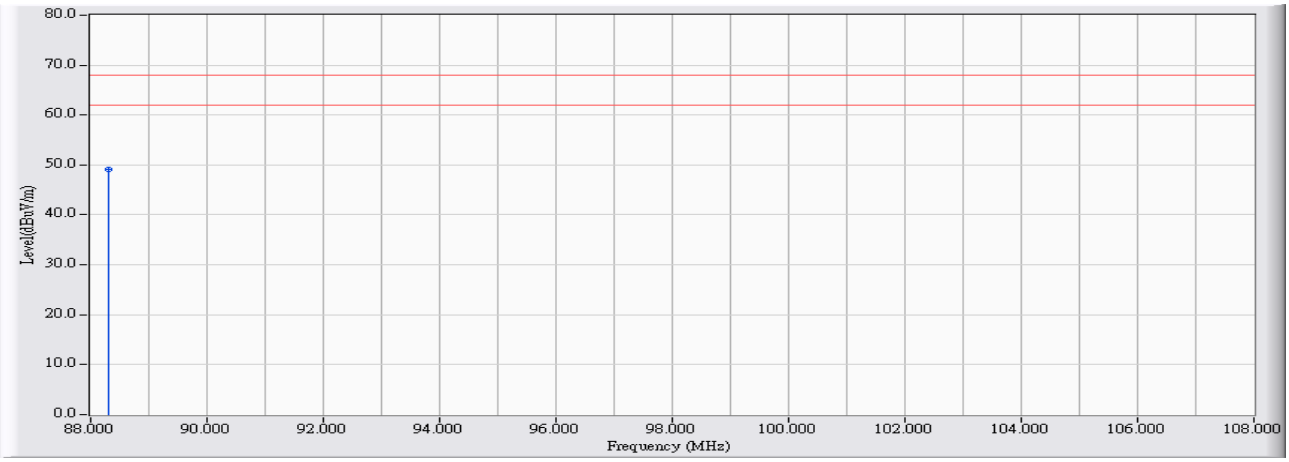
According to FCC Part 15 Subpart C Paragraph 15.239: 2008

2.6. Uncertainty

± 3.8 dB below 1GHz

2.7. Test Result

Site : Site 1	**Time : 2009/05/06 - 20:28**
Limit : FCC_SpartC_15.239_F_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 88.3MHz**

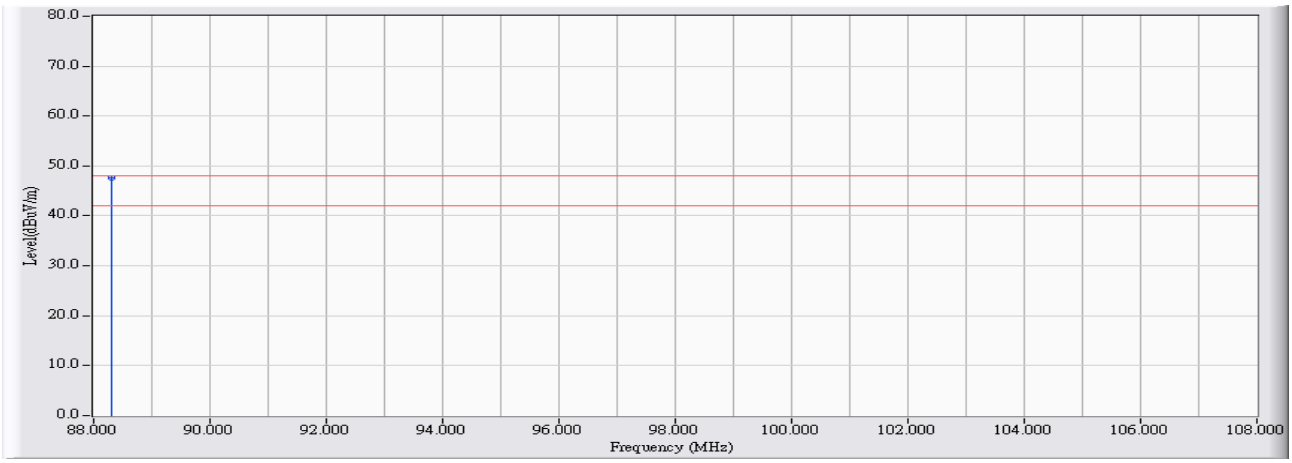


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	88.312	7.681	41.480	49.161	-18.789	67.950	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 21:11**
Limit : FCC_SpartC_15.239_F_03M_AV	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 88.3MHz**

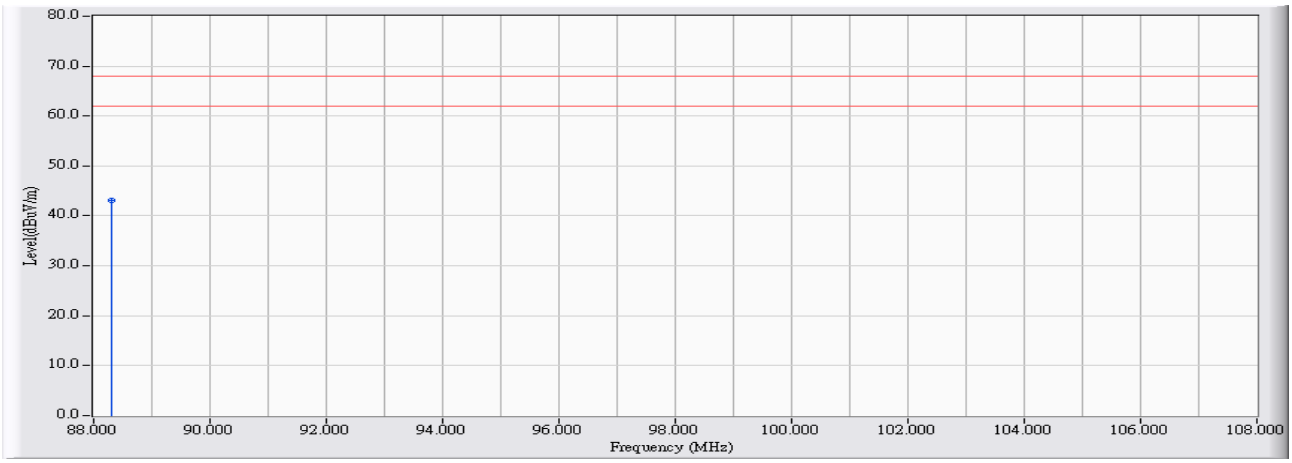


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	88.312	7.681	39.880	47.561	-0.389	47.950	Average

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 21:13**
Limit : FCC_SpartC_15.239_F_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 88.3MHz**

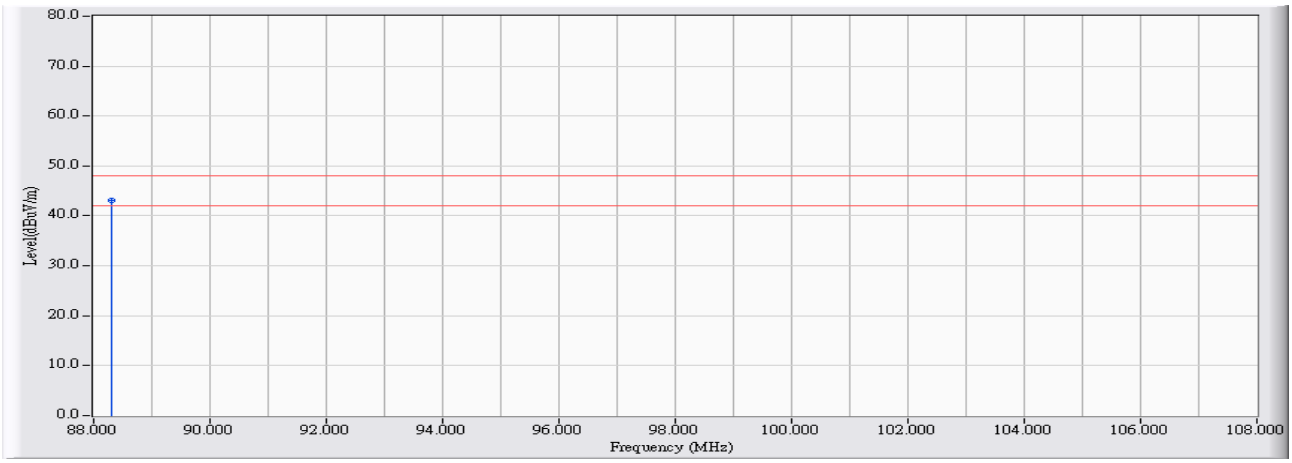


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	88.300	9.202	33.850	43.052	-24.898	67.950	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 21:13**
Limit : FCC_SpartC_15.239_F_03M_AV	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 88.3MHz**

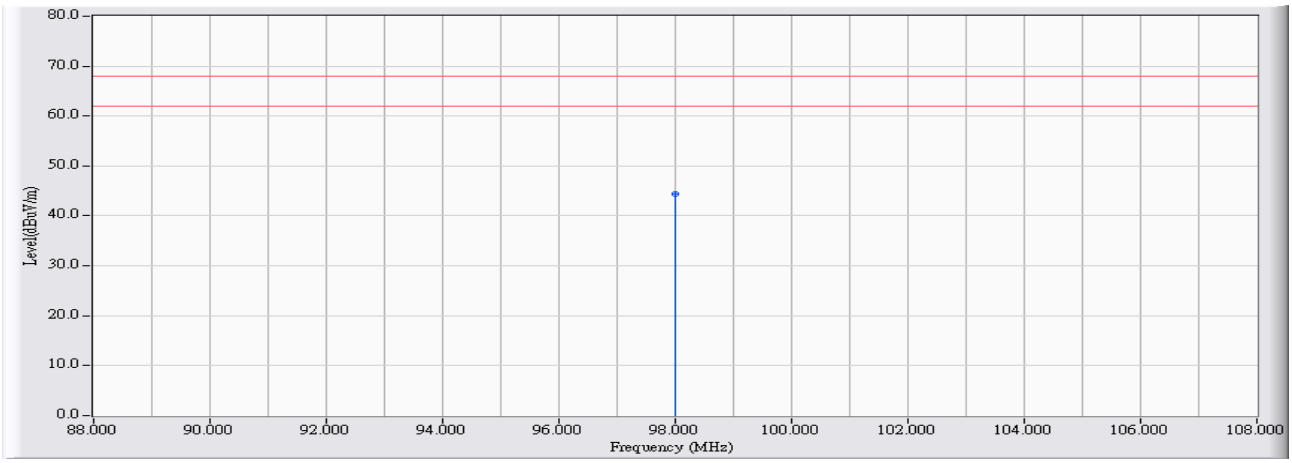


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	88.300	9.202	33.850	43.052	-4.898	47.950	Average

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:10**
Limit : FCC_SpartC_15.239_F_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 98MHz**

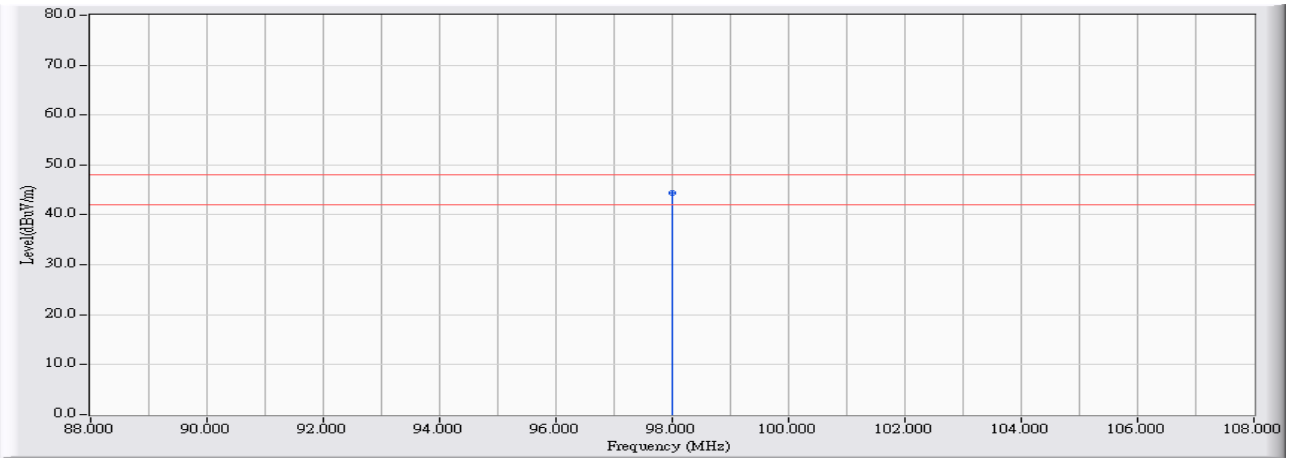


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	98.000	8.061	36.360	44.422	-23.528	67.950	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:11**
Limit : FCC_SpartC_15.239_F_03M_AV	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 98MHz**

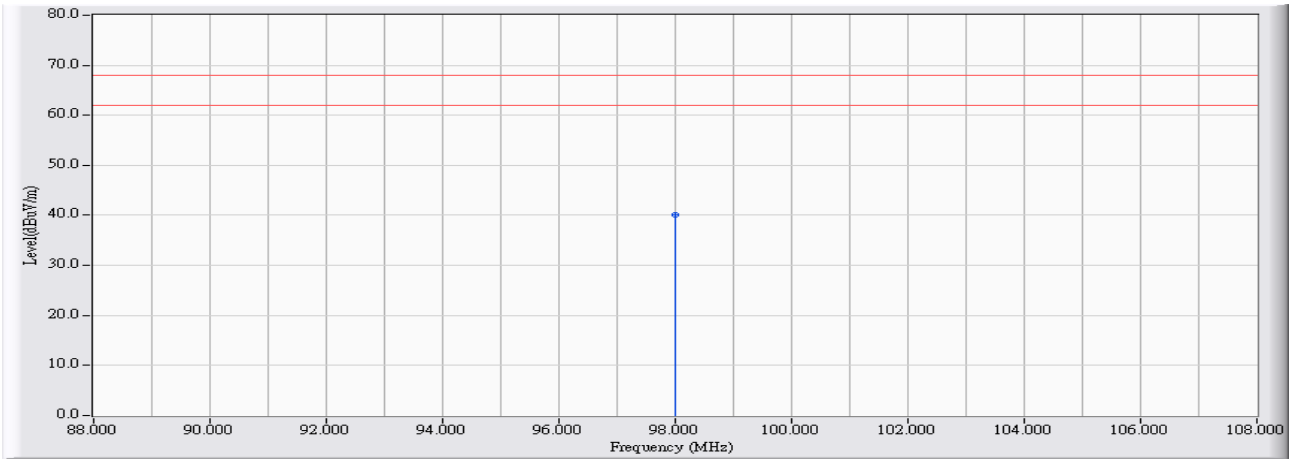


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	98.000	8.061	36.360	44.422	-3.528	47.950	Average

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:07**
Limit : FCC_SpartC_15.239_F_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 98MHz**

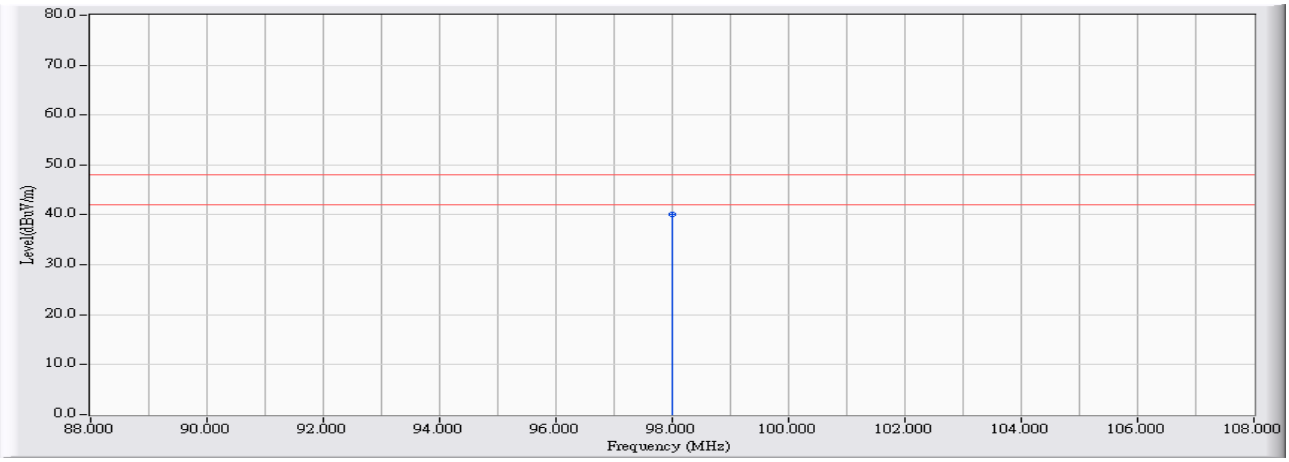


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	98.000	10.859	29.270	40.129	-27.821	67.950	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:07**
Limit : FCC_SpartC_15.239_F_03M_AV	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 98MHz**

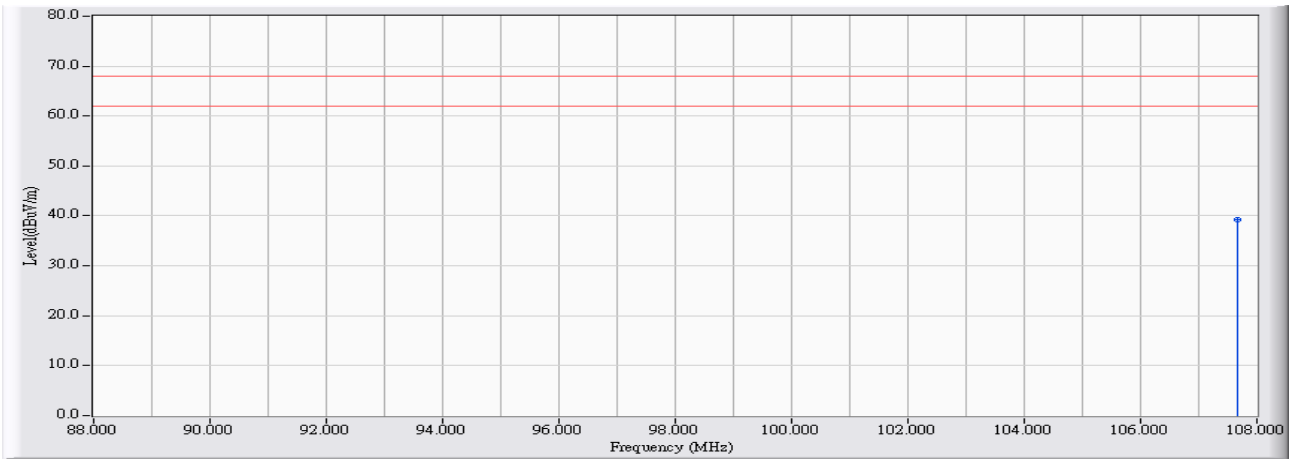


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	98.000	10.859	29.270	40.129	-7.821	47.950	Average

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:16**
Limit : FCC_SpartC_15.239_F_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 107.7MHz**

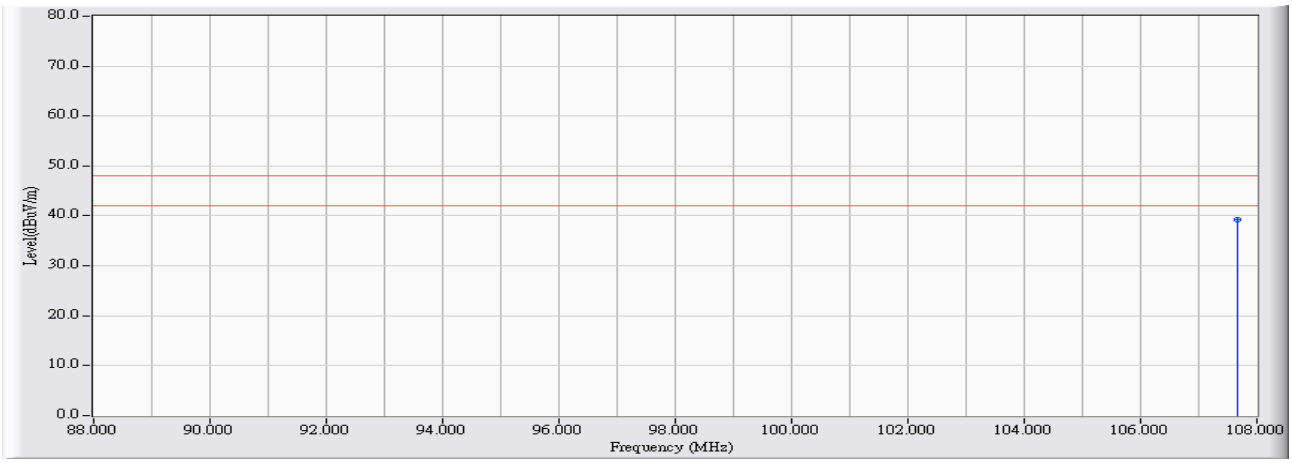


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	107.670	7.522	31.720	39.242	-28.708	67.950	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:16**
Limit : FCC_SpartC_15.239_F_03M_AV	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 107.7MHz**

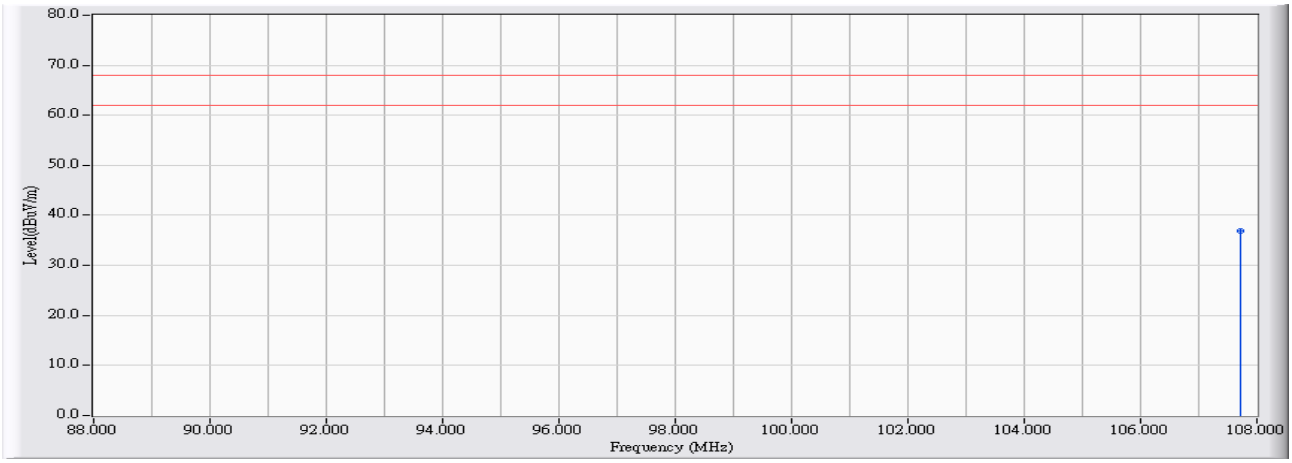


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	107.670	7.522	31.720	39.242	-8.708	47.950	Average

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:19**
Limit : FCC_SpartC_15.239_F_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 107.7MHz**

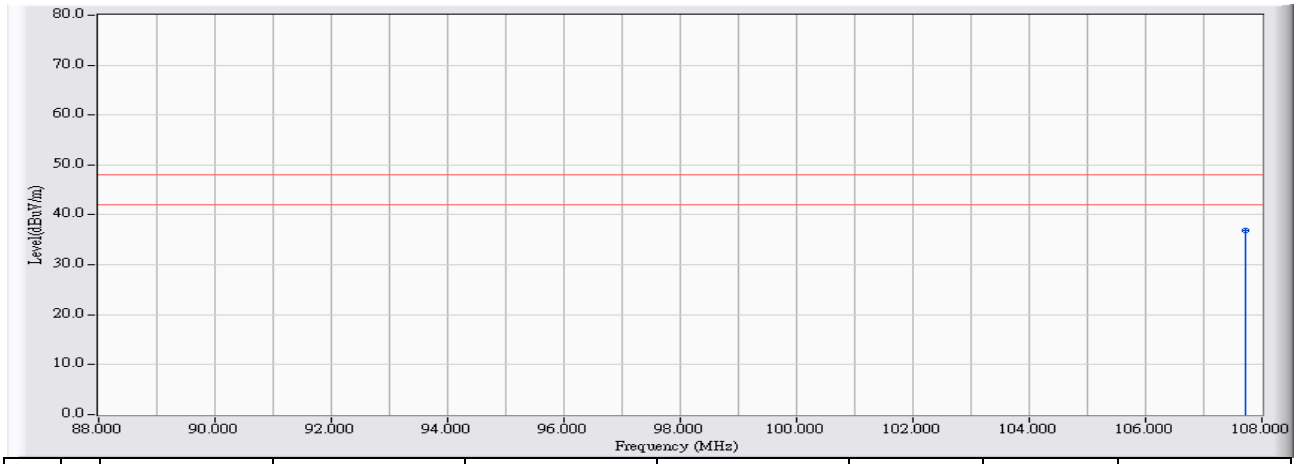


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	107.720	10.704	26.100	36.805	-31.145	67.950	PEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 20:20**
Limit : FCC_SpartC_15.239_F_03M_AV	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 107.7MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	107.720	10.704	26.100	36.805	-11.145	47.950	Average

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Radiated Emissions

3.1. Test Equipment

The following test equipments are used during the test:

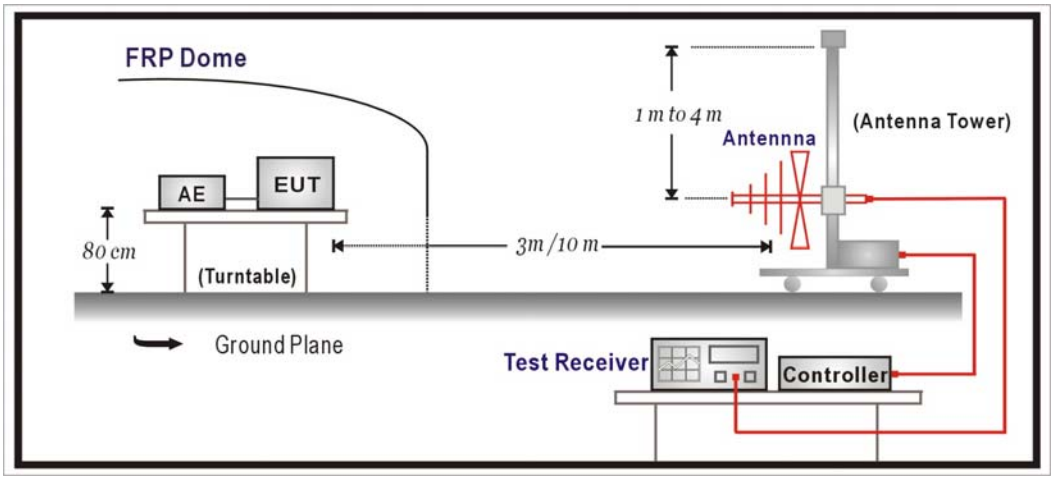
Radiated Emission / Site1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2895	2008/09/03
Horn Antenna	Electro Metrics	EM-6961	103325	2009/03/15
Pre-Amplifier	HP	8449B	3008A01123	2008/11/15
Pre-Amplifier	Quietek	AP-025C	N/A	N/A
Spectrum Analyzer	R & S	FSP40	100005	2008/08/25
Spectrum Analyzer	Advantest	R3162	120300649	2008/11/24
Test Receiver	R & S	ESCS 30	825442/017	2009/02/13

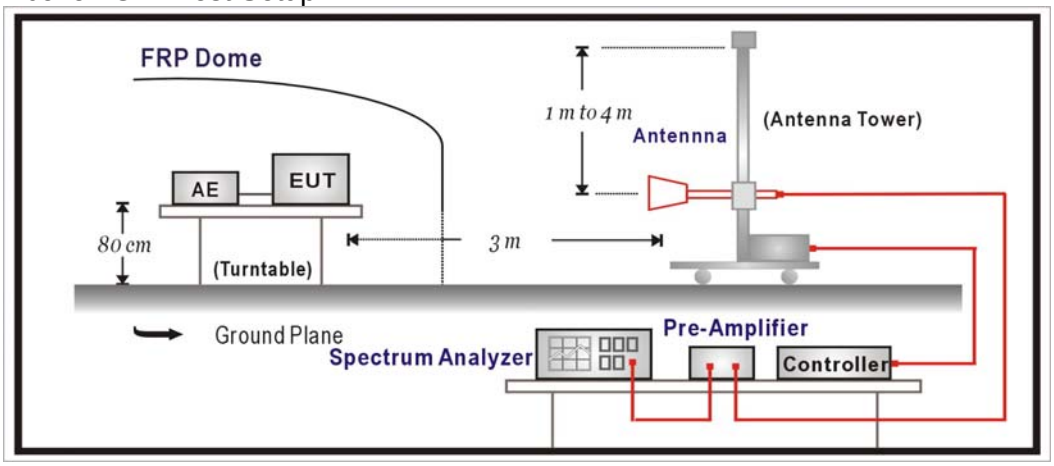
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.
2. “N/A” Ca1.Date is used to Pre-test, not final test.

3.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. Limits

FCC Part 15 Subpart C Paragraph 15.209 Limits			
Frequency MHz	uV/m	dBuV/m	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	See Remark[1]	300
0.490-1.705	24000/F(kHz)	See Remark[1]	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Remarks: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 100 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB beamwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The frequency range from 30MHz to 10th harminics is checked.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.239: 2008

3.6. Uncertainty

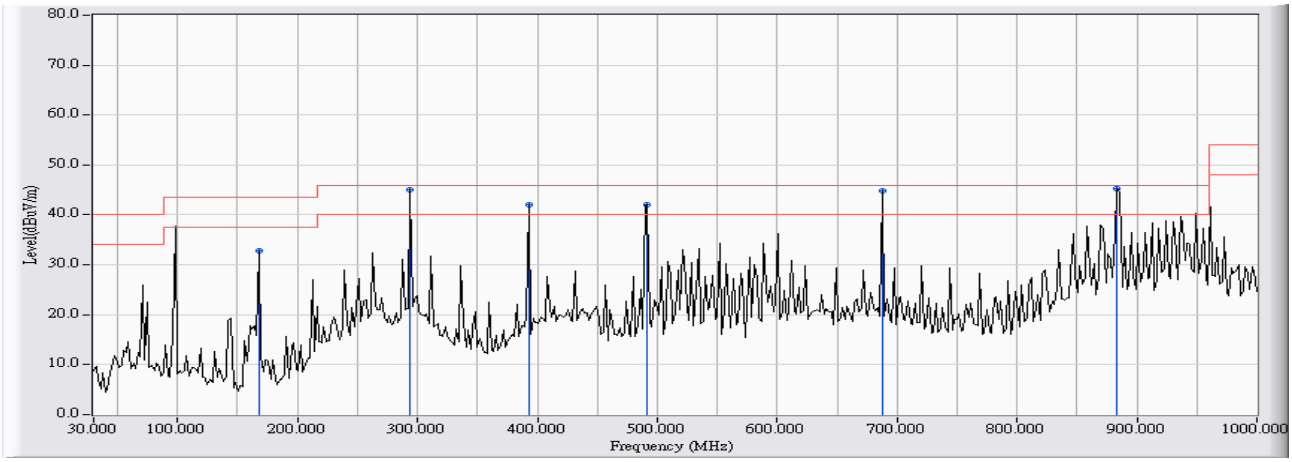
± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

3.7. Test Result

30MHz-1GHz Spurious

Site : Site 1	**Time : 2009/05/06 - 19:44**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 98MHz**

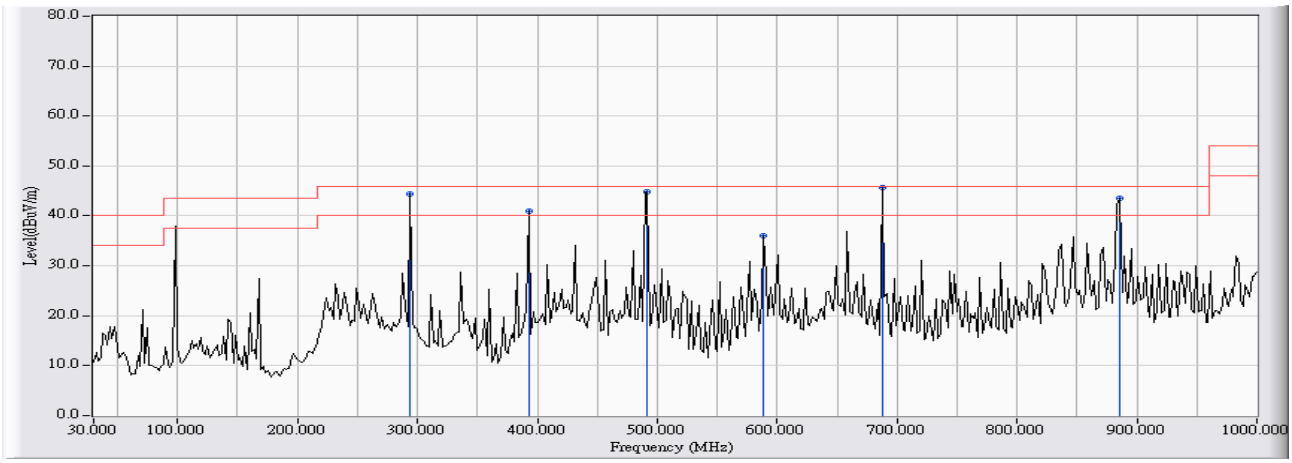


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		167.740	-20.134	52.915	32.781	-10.719	43.500	QUASIPEAK
2		293.840	-9.658	54.769	45.111	-0.889	46.000	QUASIPEAK
3		392.780	-9.466	51.575	42.108	-3.892	46.000	QUASIPEAK
4		491.720	-7.478	49.495	42.017	-3.983	46.000	QUASIPEAK
5		687.660	-3.437	48.324	44.887	-1.113	46.000	QUASIPEAK
6	*	883.600	-1.176	46.497	45.320	-0.680	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : Site 1	**Time : 2009/05/06 - 19:47**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 98MHz**



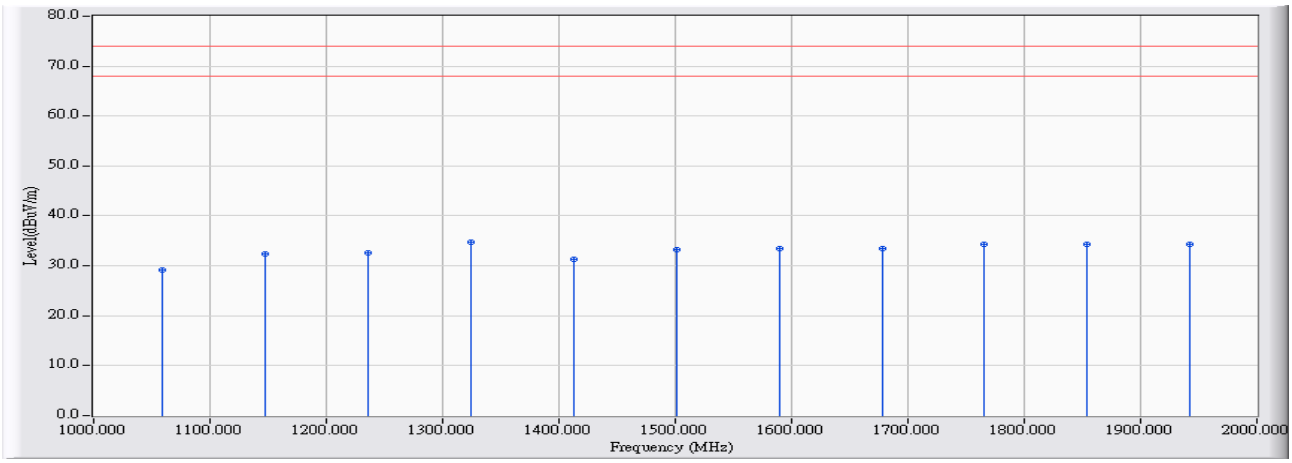
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		293.840	-13.555	58.020	44.465	-1.535	46.000	QUASIPEAK
2		392.780	-8.299	49.302	41.003	-4.997	46.000	QUASIPEAK
3		491.720	-5.703	50.550	44.847	-1.153	46.000	QUASIPEAK
4		588.720	-4.670	40.638	35.968	-10.032	46.000	QUASIPEAK
5	*	687.660	-6.982	52.750	45.767	-0.233	46.000	QUASIPEAK
6		885.540	-3.420	46.904	43.484	-2.516	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Harmonic & Spurious:

Site : Site 1	**Time : 2009/04/29 - 11:47**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_-18G(2009-0115) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : TX-88.3MHz**

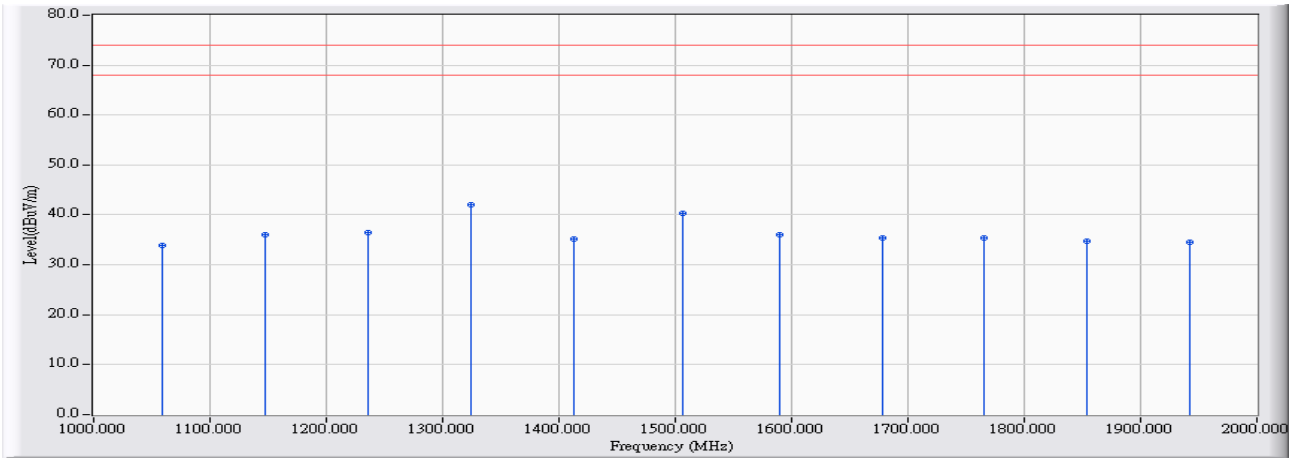


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		1059.600	-13.409	42.532	29.123	-44.877	74.000	54.00	PEAK
2		1147.900	-12.822	45.172	32.349	-41.651	74.000	54.00	PEAK
3		1236.200	-12.231	44.911	32.680	-41.320	74.000	54.00	PEAK
4	*	1324.500	-11.638	46.281	34.643	-39.357	74.000	54.00	PEAK
5		1412.800	-11.048	42.439	31.391	-42.609	74.000	54.00	PEAK
6		1501.100	-10.452	43.649	33.196	-40.804	74.000	54.00	PEAK
7		1589.400	-9.966	43.374	33.409	-40.591	74.000	54.00	PEAK
8		1677.700	-9.474	42.956	33.482	-40.518	74.000	54.00	PEAK
9		1766.000	-8.993	43.222	34.229	-39.771	74.000	54.00	PEAK
10		1854.300	-8.502	42.768	34.266	-39.734	74.000	54.00	PEAK
11		1942.600	-8.021	42.356	34.335	-39.665	74.000	54.00	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site 1	**Time : 2009/04/29 - 13:08**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_-18G(2009-0115) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : TX-88.3MHz**

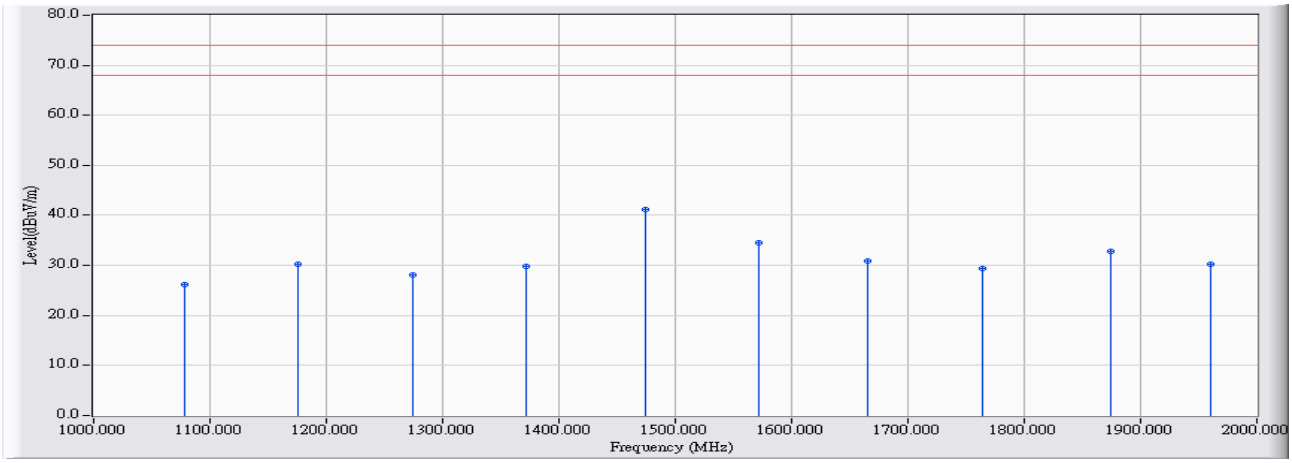


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		1059.600	-9.691	43.545	33.854	-40.146	74.000	54.00	PEAK
2		1147.900	-9.188	45.206	36.018	-37.982	74.000	54.00	PEAK
3		1236.200	-8.675	45.043	36.368	-37.632	74.000	54.00	PEAK
4	*	1324.500	-8.172	50.275	42.103	-31.897	74.000	54.00	PEAK
5		1412.800	-7.670	42.908	35.239	-38.761	74.000	54.00	PEAK
6		1506.000	-7.187	47.416	40.230	-33.770	74.000	54.00	PEAK
7		1589.400	-7.332	43.455	36.124	-37.876	74.000	54.00	PEAK
8		1677.700	-7.500	42.809	35.309	-38.691	74.000	54.00	PEAK
9		1766.000	-7.668	43.054	35.386	-38.614	74.000	54.00	PEAK
10		1854.300	-7.836	42.624	34.787	-39.213	74.000	54.00	PEAK
11		1942.600	-8.006	42.474	34.469	-39.531	74.000	54.00	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site 1	**Time : 2009/04/28 - 18:23**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_-18G(2009-0115) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : TX-98MHz**

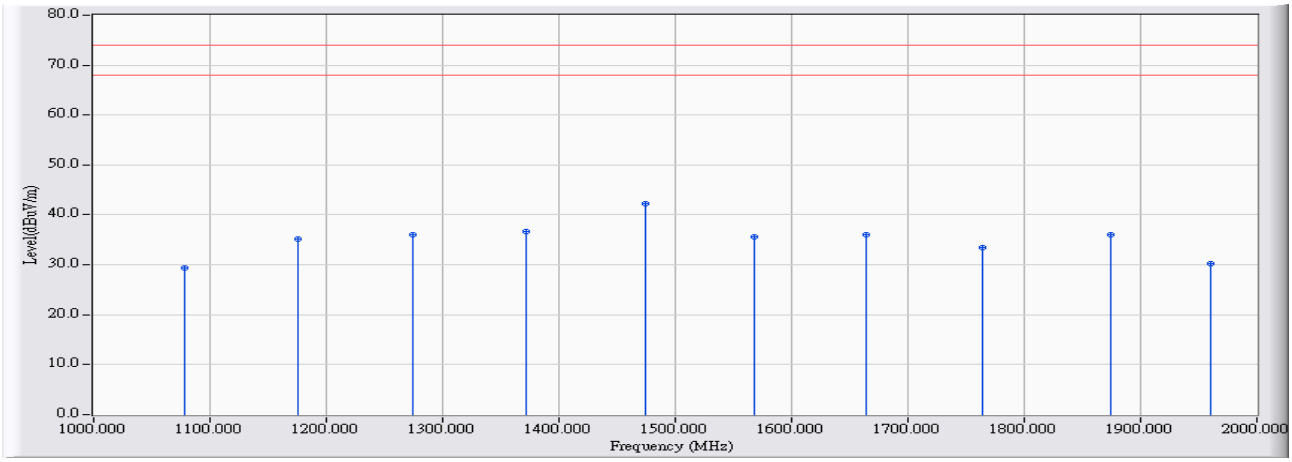


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		1078.000	-10.492	36.738	26.245	-47.755	74.000	54.00	PEAK
2		1176.000	-9.713	40.042	30.329	-43.671	74.000	54.00	PEAK
3		1274.000	-8.954	37.112	28.158	-45.842	74.000	54.00	PEAK
4		1372.000	-8.175	37.924	29.750	-44.250	74.000	54.00	PEAK
5	*	1474.000	-7.366	48.562	41.197	-32.803	74.000	54.00	PEAK
6		1572.000	-7.002	41.437	34.435	-39.565	74.000	54.00	PEAK
7		1666.000	-6.798	37.647	30.848	-43.152	74.000	54.00	PEAK
8		1764.000	-6.600	36.027	29.427	-44.573	74.000	54.00	PEAK
9		1874.000	-6.364	39.261	32.898	-41.102	74.000	54.00	PEAK
10		1960.000	-6.195	36.401	30.207	-43.793	74.000	54.00	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site 1	**Time : 2009/04/28 - 18:28**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_-18G(2009-0115) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : TX-98MHz**

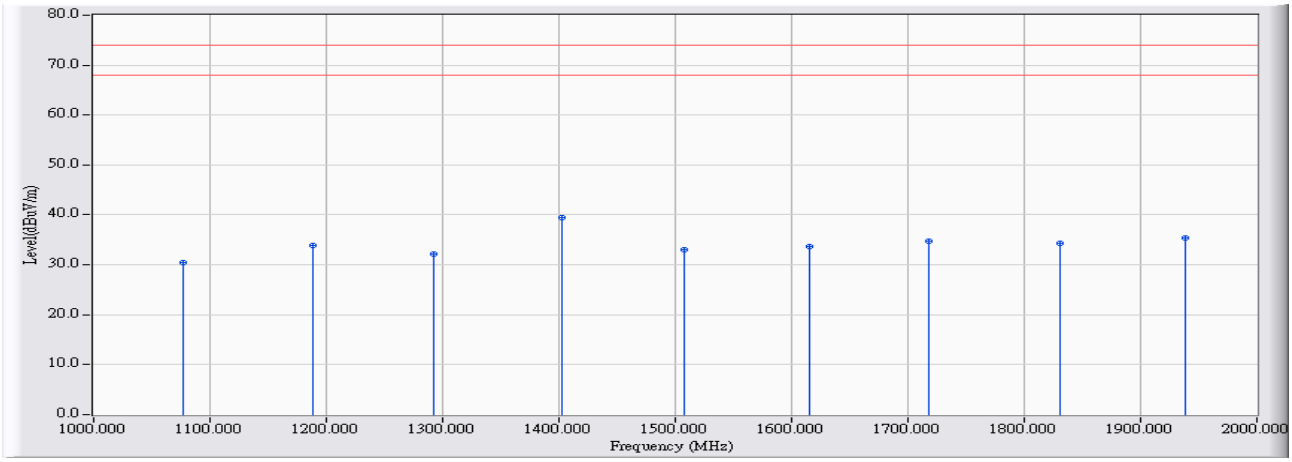


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		1078.000	-6.793	36.164	29.370	-44.630	74.000	54.00	PEAK
2		1176.000	-6.110	41.231	35.120	-38.880	74.000	54.00	PEAK
3		1274.000	-5.438	41.511	36.074	-37.926	74.000	54.00	PEAK
4		1372.000	-4.755	41.371	36.617	-37.383	74.000	54.00	PEAK
5	*	1474.000	-4.054	46.397	42.344	-31.656	74.000	54.00	PEAK
6		1568.000	-4.221	39.929	35.708	-38.292	74.000	54.00	PEAK
7		1664.000	-4.727	40.774	36.047	-37.953	74.000	54.00	PEAK
8		1764.000	-5.261	38.660	33.399	-40.601	74.000	54.00	PEAK
9		1874.000	-5.844	41.919	36.076	-37.924	74.000	54.00	PEAK
10		1960.000	-6.307	36.477	30.170	-43.830	74.000	54.00	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site 1	**Time : 2009/04/29 - 10:40**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_-18G(2009-0115) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : TX-107.7MHz**

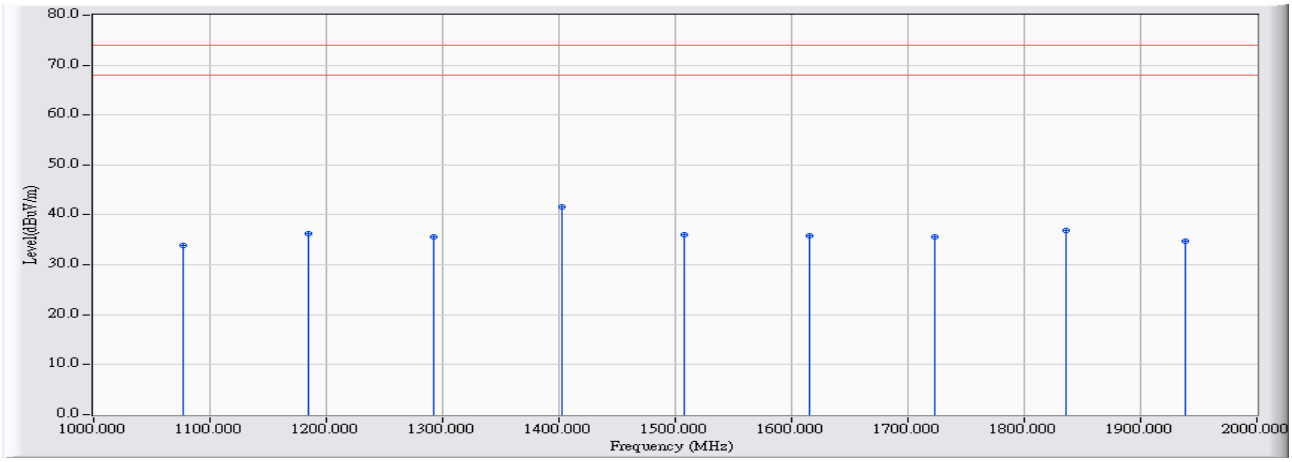


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		1077.000	-13.291	43.820	30.528	-43.472	74.000	54.00	PEAK
2		1188.000	-12.553	46.433	33.881	-40.119	74.000	54.00	PEAK
3		1292.400	-11.855	44.034	32.179	-41.821	74.000	54.00	PEAK
4	*	1402.000	-11.117	50.610	39.493	-34.507	74.000	54.00	PEAK
5		1507.800	-10.412	43.504	33.092	-40.908	74.000	54.00	PEAK
6		1615.500	-9.823	43.399	33.576	-40.424	74.000	54.00	PEAK
7		1718.000	-9.255	43.901	34.646	-39.354	74.000	54.00	PEAK
8		1830.900	-8.629	42.982	34.352	-39.648	74.000	54.00	PEAK
9		1938.600	-8.043	43.457	35.414	-38.586	74.000	54.00	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : Site 1	**Time : 2009/04/29 - 10:59**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : FCC_-18G(2009-0115) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : TX-107.7MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		1077.000	-9.591	43.495	33.903	-40.097	74.000	54.00	PEAK
2		1184.700	-8.979	45.137	36.159	-37.841	74.000	54.00	PEAK
3		1292.400	-8.355	43.960	35.605	-38.395	74.000	54.00	PEAK
4	*	1402.000	-7.731	49.290	41.559	-32.441	74.000	54.00	PEAK
5		1507.800	-7.184	43.140	35.957	-38.043	74.000	54.00	PEAK
6		1615.500	-7.381	43.183	35.802	-38.198	74.000	54.00	PEAK
7		1723.200	-7.587	43.222	35.636	-38.364	74.000	54.00	PEAK
8		1836.000	-7.801	44.724	36.922	-37.078	74.000	54.00	PEAK
9		1938.600	-7.998	42.847	34.849	-39.151	74.000	54.00	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

4. Band Edge

4.1. Test Equipment

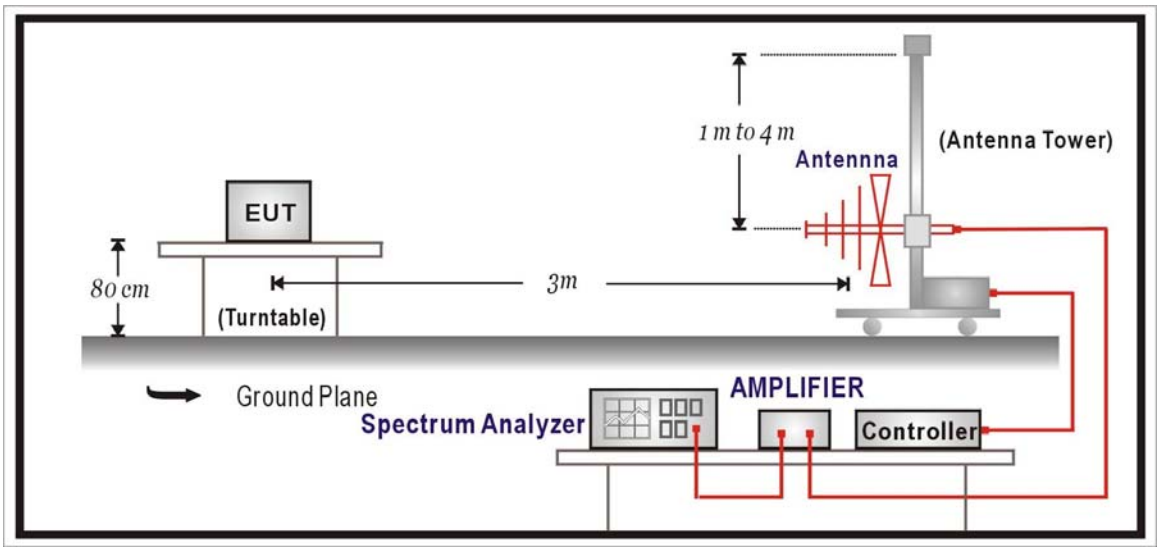
RF Radiated Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2008
2	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2009
3		Loop Antenna	R & S	HFH2-Z2 / 833799/004	Sep., 2008
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2008
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2008
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2008
7	No.1 OATS				Sep., 2008

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

2. Mark “X” test instruments are used to measure the final test results.

4.2. Test Setup

RF Radiated Measurement:



4.3. Limit

The field strength of any emissions radiated on any frequency outside of the specified 200 kHz band shall not exceed the general radiated emission limits in Section 15.209.

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

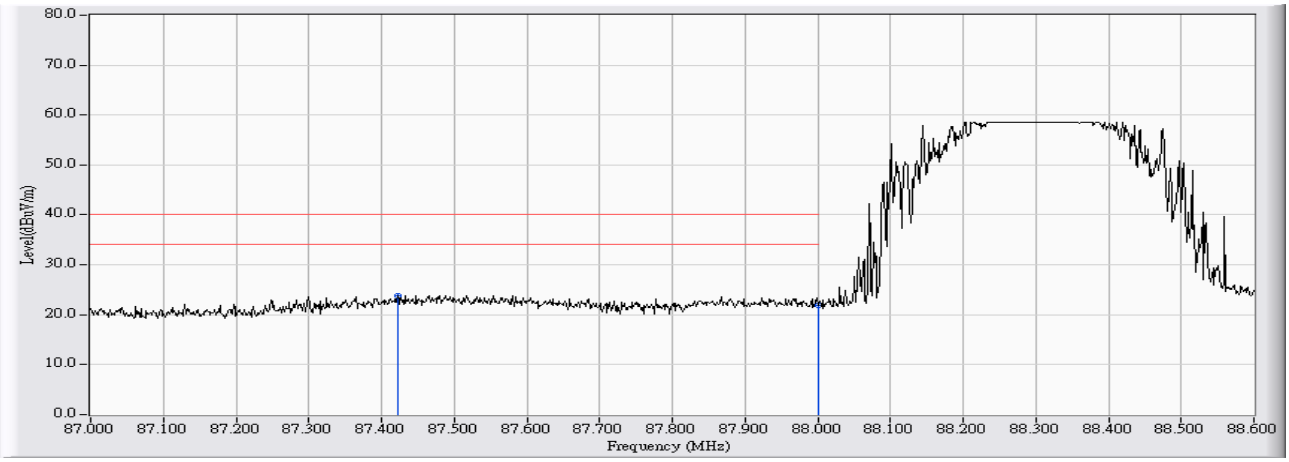
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.

4.5. Uncertainty

± 3.8 dB below 1GHz

4.6. Test Result

Site : Site1	**Time : 2009/04/28 - 20:31**
Limit : FCC_15.239_Bandedge_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 88.3MHz**

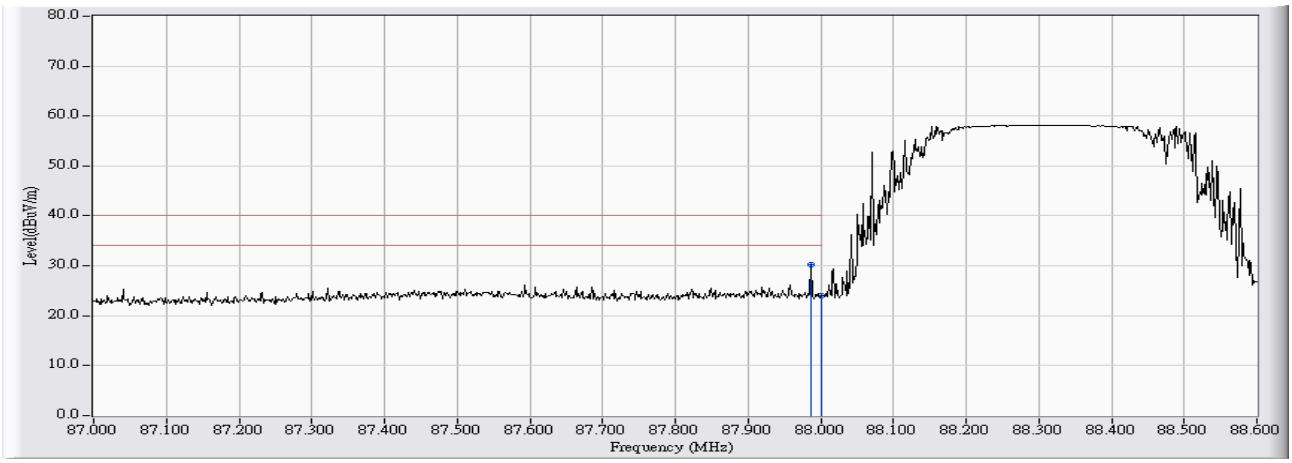


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	87.422	7.612	16.295	23.908	-16.092	40.000	PEAK
2		88.000	7.658	14.231	21.888	-18.112	40.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site1	**Time : 2009/04/28 - 20:44**
Limit : FCC_15.239_Bandedge_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 88.3MHz**

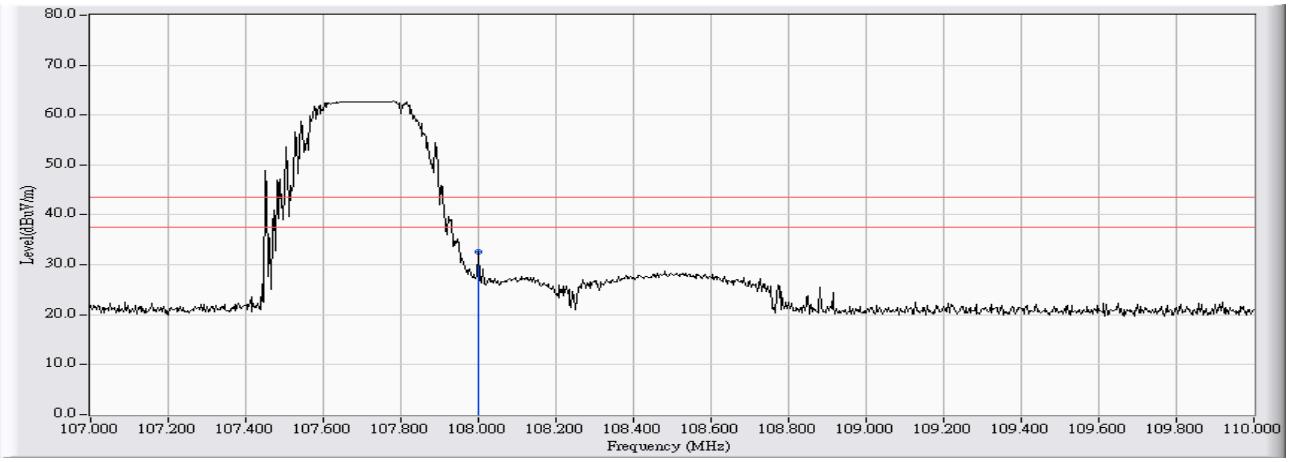


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	87.987	9.075	21.121	30.197	-9.803	40.000	PEAK
2		88.000	9.081	14.933	24.014	-15.986	40.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site1	**Time : 2009/04/28 - 21:24**
Limit : FCC_15.239_BANDEDGE(88-216)_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - HORIZONTAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 107.7MHz**

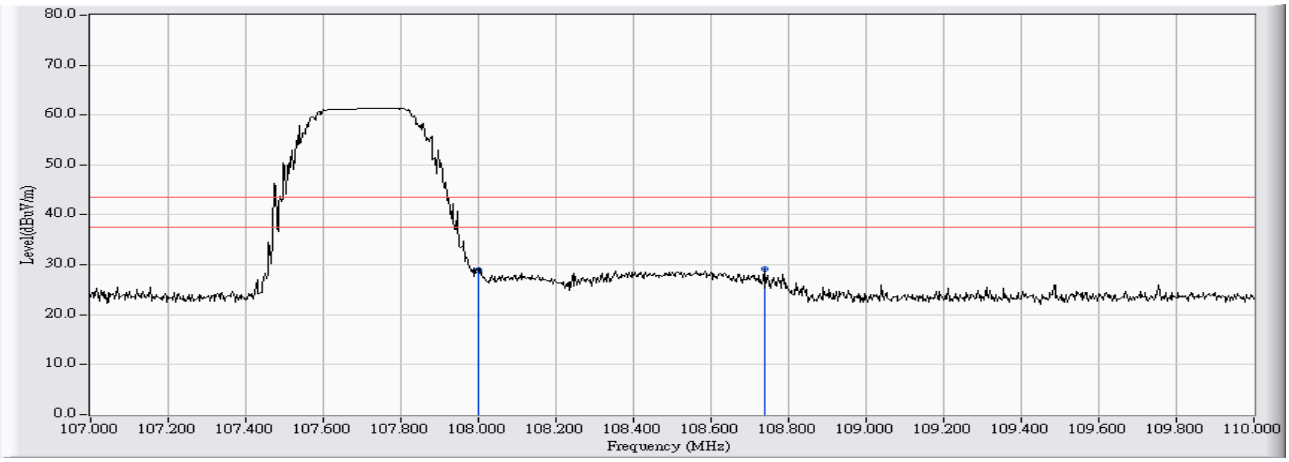


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	107.999	7.523	24.976	32.499	-11.001	43.500	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site1	**Time : 2009/04/28 - 21:17**
Limit : FCC_15.239_BANDEDGE(88-216)_03M_PK	**Margin : 6**
Probe : FCC_30-1G(2008-9) - VERTICAL	**Power : DC12V~DC24V**
EUT : Car kit	**Note : 107.7MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		108.000	10.731	18.157	28.888	-14.612	43.500	PEAK
2	*	108.737	10.801	18.354	29.155	-14.345	43.500	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

5. Occupied Bandwidth

5.1. Test Equipment

The following test equipments are used during the test:

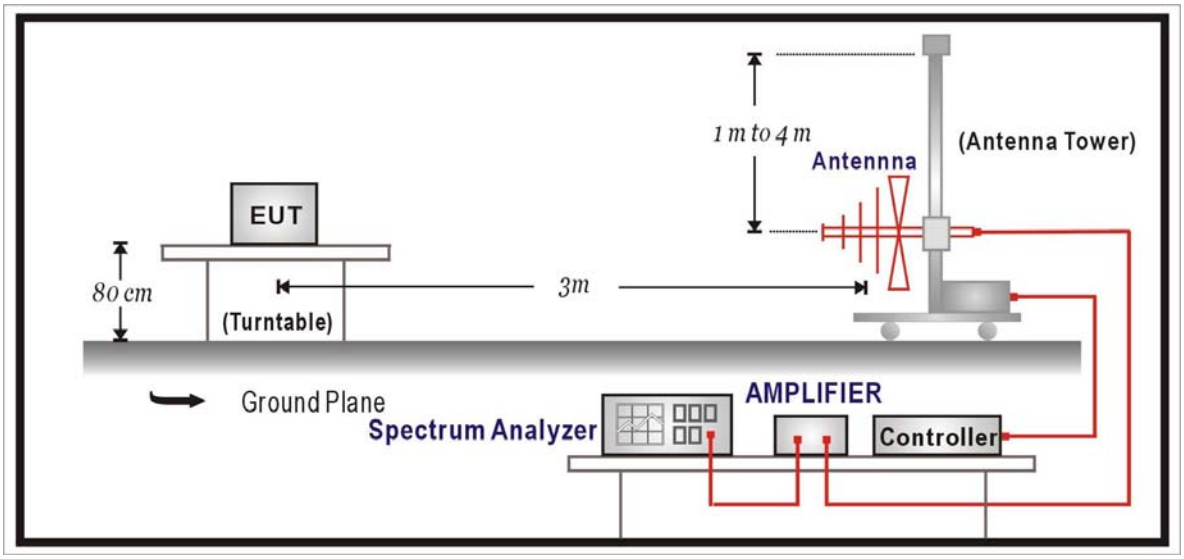
Radiated Emission / Site1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2895	2008/09/03
Horn Antenna	Electro Metrics	EM-6961	103325	2009/03/15
Pre-Amplifier	HP	8449B	3008A01123	2008/11/15
Pre-Amplifier	Quietek	AP-025C	N/A	N/A
Spectrum Analyzer	R & S	FSP40	100005	2008/08/25
Spectrum Analyzer	Advantest	R3162	120300649	2008/11/24
Test Receiver	R & S	ESCS 30	825442/017	2009/02/13

Note: 1. All instruments are calibrated every one year.
2. “N/A” Ca1.Date is used to Pre-test, not final test.

5.2. Test Setup

Under 1GHz Test Setup:



5.3. Limits

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency.

5.4. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated measurement.
The resolution bandwidth setting on the field strength meter is 10 kHz and video bandwidth is 30 kHz.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.239: 2008

5.6. Uncertainty

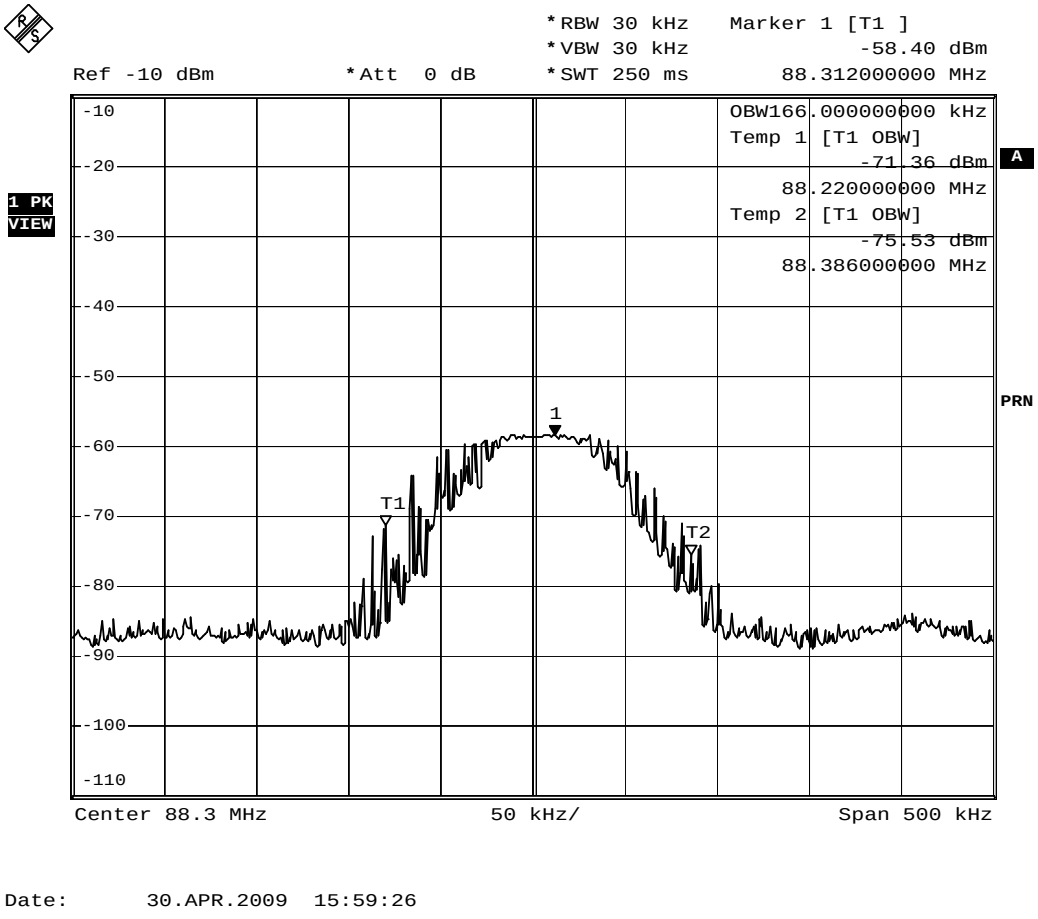
± 3.8 dB

5.7. Test Result

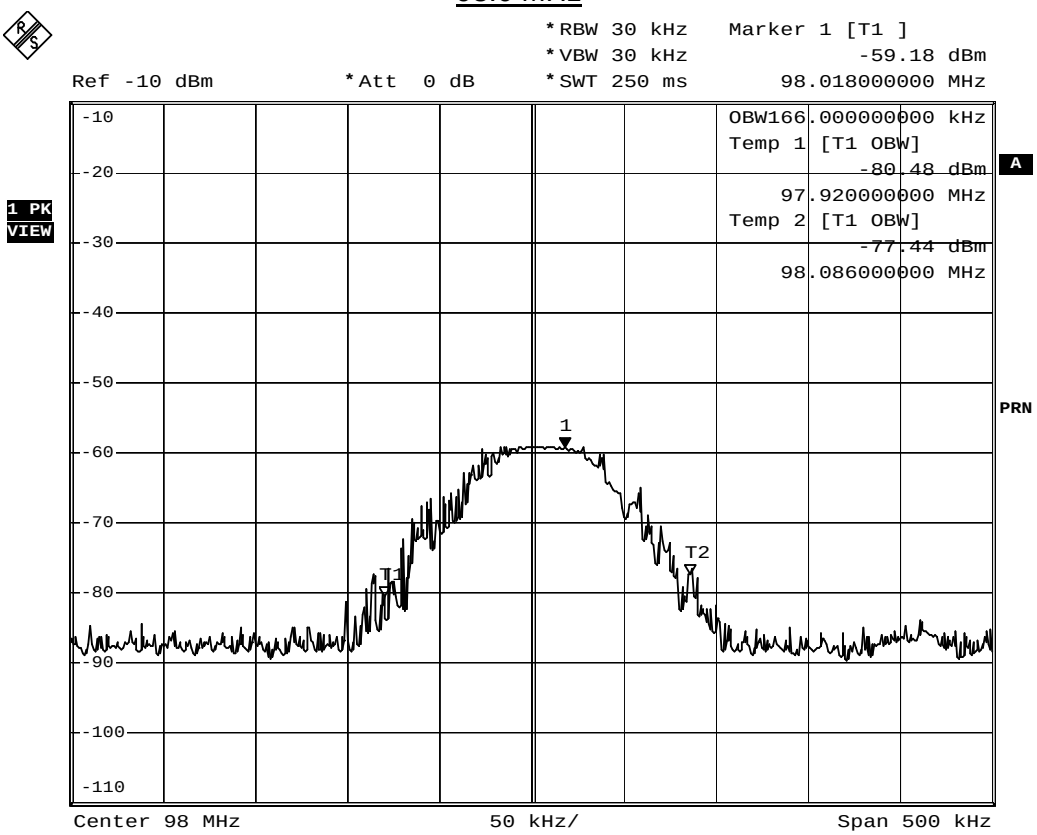
Product	Fire Alarm Transmitter		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit		
Date of Test	2009/04/30	Test Site	No.1 OATS

Frequency	99% OBW (kHz)	Frequency Range (MHz) FL > 88MHz	Frequency Range (MHz) FH < 108MHz	Test Result
88.3 MHz	166	88.22	---	Complies
98.0 MHz	166	---	---	Complies
107.7 MHz	166	---	107.79	Complies

88.3 MHz

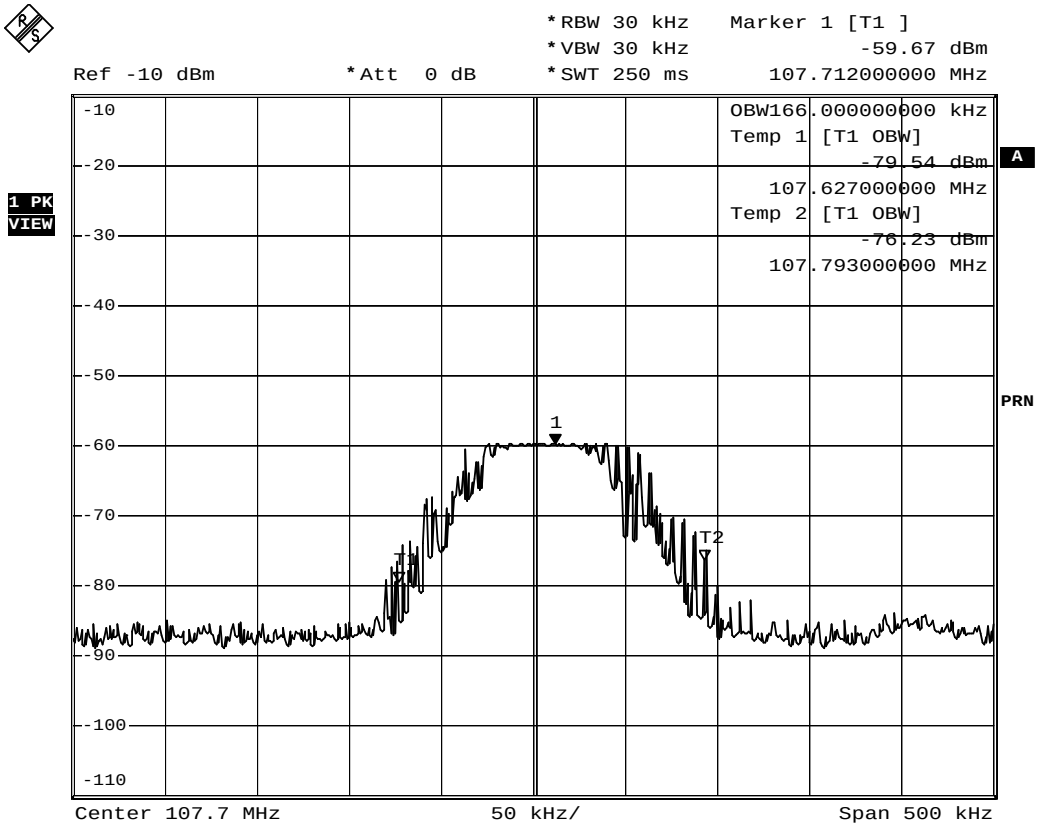


98.0 MHz



Date: 30.APR.2009 16:01:18

107.7 MHz



Date: 30.APR.2009 16:02:05

6. Antenna Requirement

6.1. Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other that furnished by the responsible party shall be used with the device.

6.2. Antenna Construction

The antenna is permanently mounted on PCB, no consideration of replacement.