



Test Report

Product Name : Portable Navigation Device

Model No. : PD-17

FCC ID : OW3PD-17

Applicant : Nokia Gmbh

Address : Rensingstrasse 15 Bochum D-44807 Germany

Date of Receipt : 2007/09/26

Issued Date : 2007/10/02

Report No. : 079194R-ITUSP02V02

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNLA, NVLAP, NIST or any agency of the Government.

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Test Report Certification

Issued Date : 2007/10/02
Report No. : 079194R-ITUSP02V02



Product Name : Portable Navigation Device
Applicant : Nokia Gmbh
Address : Rensingstrasse 15 Bochum D-44807 Germany
Manufacturer : Nokia Gmbh
Model No. : PD-17
EUT Voltage : DC 5V
Rated Voltage : Input: DC 12V-24V
Output: DC 5V
Trade Name : Nokia
Applicable Standard : FCC CFR Title 47 Part 15 Subpart B: 2005 Class B
CISPR 22: 2005,ANSI C63.4: 2003
Test Result : Complied
Performed Location : Quietek Corporation (Linkou Laboratory)
No.5-22,Ruei-Shu Valley, Ruei-Ping Tsuen Lin Kuo Shiang,
Taipei, 244 Taiwan, R.O.C.
TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

Documented By : 
(Engineering Adm. Specialist /
Rita Huang)

Reviewed By : 
(Engineer / Kent Chen)

Approved By : 
(Deputy Manager / Vincent Lin)

Laboratory Information

We , **QuietTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	: BSMI, DGT, CNLA
Germany	: TUV Rheinland
Norway	: Nemko, DNV
USA	: FCC, NVLAP
Japan	: VCCI

The related certificate for our laboratories about the test site and management system can be downloaded from QuietTek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>

The address and introduction of QuietTek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.

TEL:+886-3-592-8858 / FAX:+886-3-592-8859

E-Mail : service@quietek.com



LinKou Testing Laboratory :

No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.

TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789

E-Mail : service@quietek.com



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1. General Information

1.1. EUT Description

Product Name	Portable Navigation Device
Trade Name	Nokia
Model No.	PD-17

Component	
HW version	DVT2.2
SW version	1.0.32

1.2. Mode of Operation

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode
Mode 1: Configuration C: DUT + USB charge(vai PC)
Mode 2: Configuration B: DUT + Atech DC charger
Mode 3: Configuration B: DUT + JPC DC charger
Mode 4: Configuration A: DUT + Atech DC charger + Headset
Mode 5: Configuration A: DUT + JPC DC charger + Headset
Final Test Mode
Mode 1: Configuration C: DUT + USB charge(vai PC)
Mode 4: Configuration A: DUT + Atech DC-1001 + Headset (with Ext. GPS Ant.)
Mode 5: Configuration A: DUT + JPC DC-1001 + Headset (with Ext. GPS Ant.)

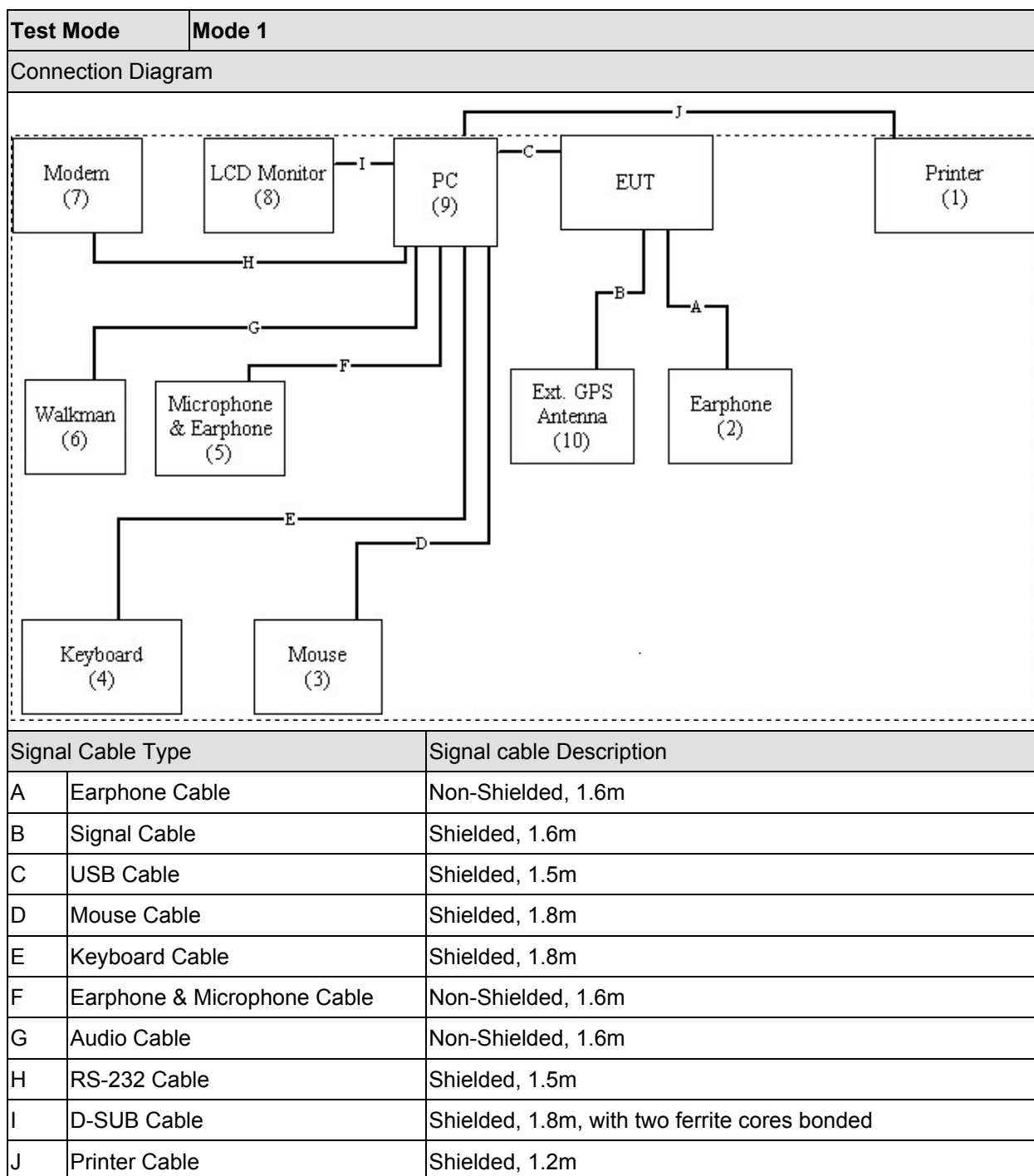
1.3. Tested System Details

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

Test Mode		Mode 1			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Printer	EPSON	StyLus C63	FAPY094256	Non-Shielded, 1.9m
2	Earphone	AIWA	N/A	N/A	N/A
3	Mouse	IBM	M-SAU-IBM6	23-029005	N/A
4	Keyboard	HP	SK-2506	C0008335816	N/A
5	Microphone & Earphone	PCHOME	N/A	N/A	N/A
6	Walkman	AIWA	HS-TA164	N/A	N/A
7	Modem	ACEEX	DM-1414	0102027536	Non-Shielded, 1.8m
8	LCD Monitor	CMV	CT-730D	FNC122F57CA1062	Non-Shielded, 1.8m
9	PC	COMPAQ	Evo D310	SG30801054	Non-Shielded, 1.8m
10	Ext. GPS Antenna	N/A	N/A	N/A	N/A

Test Mode		Mode 4 & Mode 5			
Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Earphone	AIWA	N/A	N/A	N/A
2	Ext. GPS Antenna	N/A	N/A	N/A	N/A

1.4. Configuration of Tested System



Test Mode		Mode 4 & Mode 5	
Connection Diagram			
<pre>graph TD; EUT[EUT] --- B[B] --- GPS[Ext. GPS Antenna (2)]; EUT --- A[A] --- Earphone[Earphone (1)];</pre>			
Signal Cable Type		Signal cable Description	
A	Earphone Cable	Non-Shielded, 1.6m	
B	Signal Cable	Shielded, 1.6m	

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	Boot the PC from Hard Disk.
4	EUT reads and writes data into and from Personal Computer.
5	EUT play MP3 Audio.
6	Repeat the above procedure (4) to (5).

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
☐ Deviations from the test standards as below description:

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart B: 2005 Class B ANSI C63.4: 2003,	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart B: 2005 Class B ANSI C63.4: 2003	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	836858/022	2007/02/12
LISN	R&S	ENV4200	833209/007	2007/07/13
LISN	R&S	ESH3-Z5	836679/020	2007/01/26
Pulse Limiter	R&S	ESH3-Z2	357.88.10.52	2007/09/04

Radiated Emission / Site3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2704	2007/09/15
Broadband Horn Antenna	Schwarzbeck	BBHA9170	208	2007/07/25
EMI Test Receiver	R&S	ESI 26	838786/004	2007/05/25
EMI Test Receiver	R&S	ESCS 30	838251/001	2007/03/22
Horn Antenna	Schwarzbeck	BBHA9120D	305	2007/08/10
Pre-Amplifier	QTK	N/A	N/A	2007/01/03
Pre-Amplifier	MITEQ	AMF-4D-18040 0-45-6P	925974	2007/01/03
Spectrum Analyzer	Advantest	R3162	101102468	2006/10/24

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

2.4. Test Environment

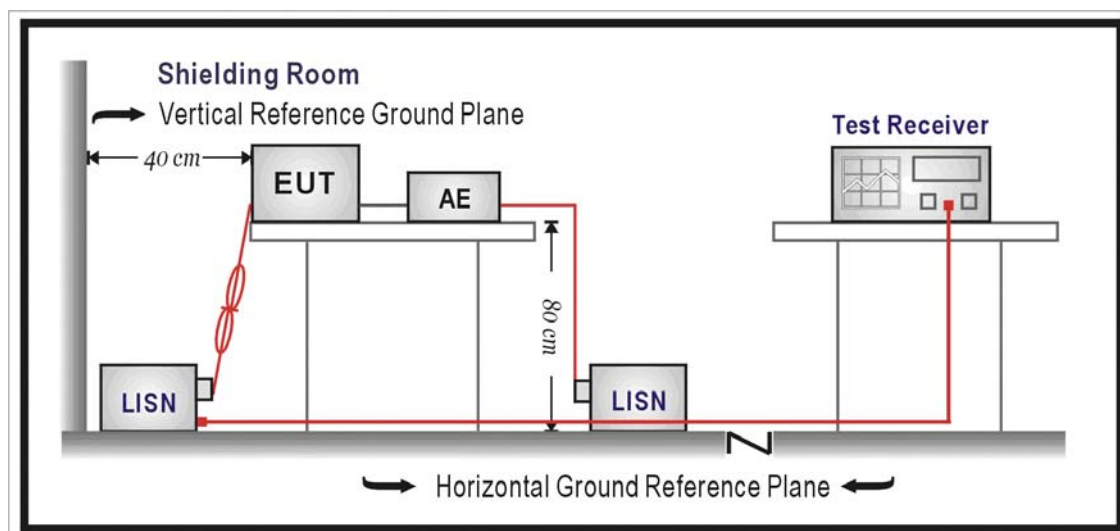
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

3.1. Test Specification

According to Standard : FCC Part 15 Subpart B, ANSI C63.4

3.2. Test Setup



3.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

3.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.

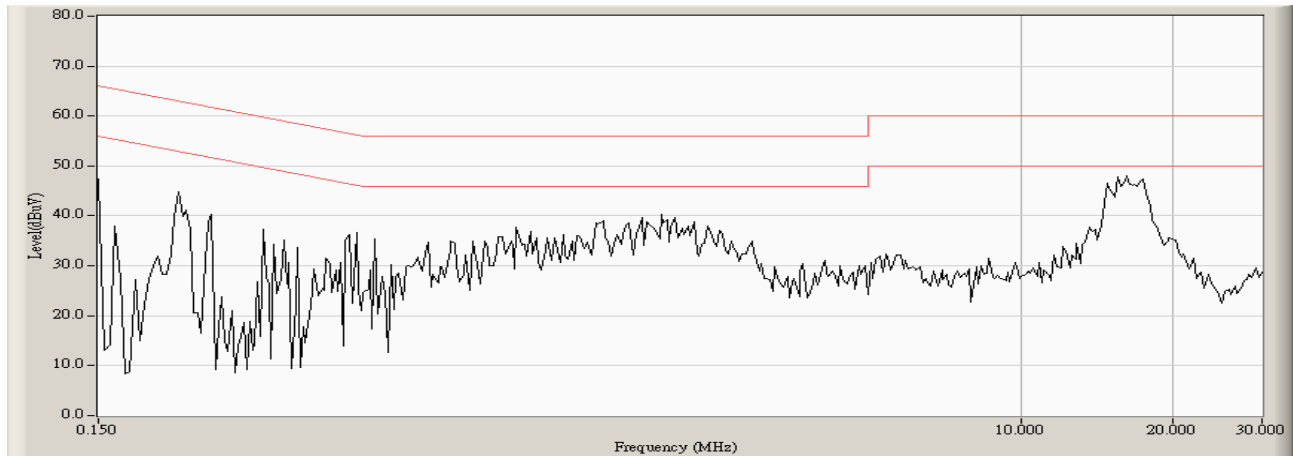
(Please refers to the block diagram of the test setup and photographs.)

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 on conducted measurement.

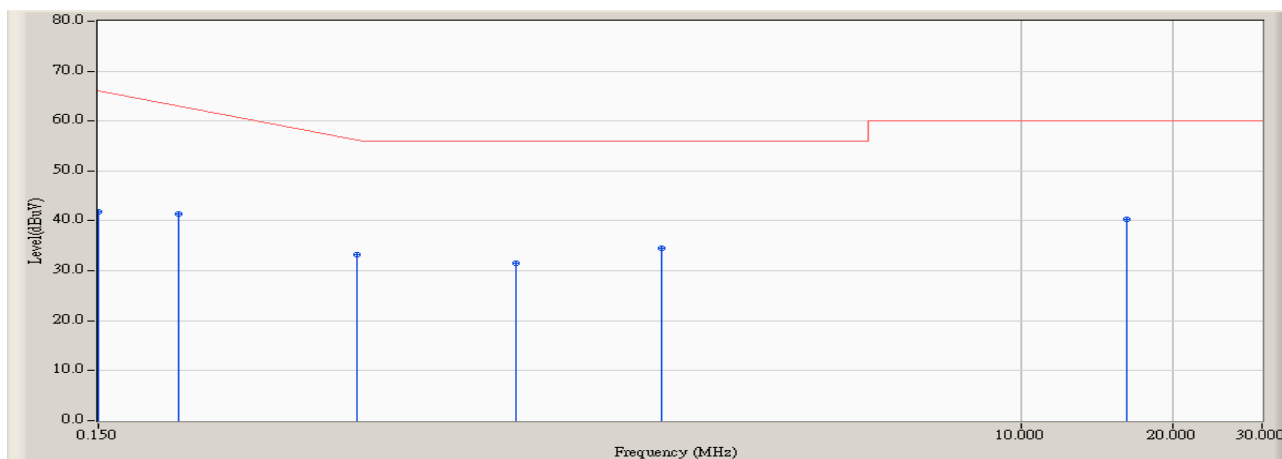
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Test Result

Site : SR-1	Time : 2007/09/28 - 05:19
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : by PC	Note : Mode 1



Site : SR-1	Time : 2007/09/28 - 05:20
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : by PC	Note : Mode 1

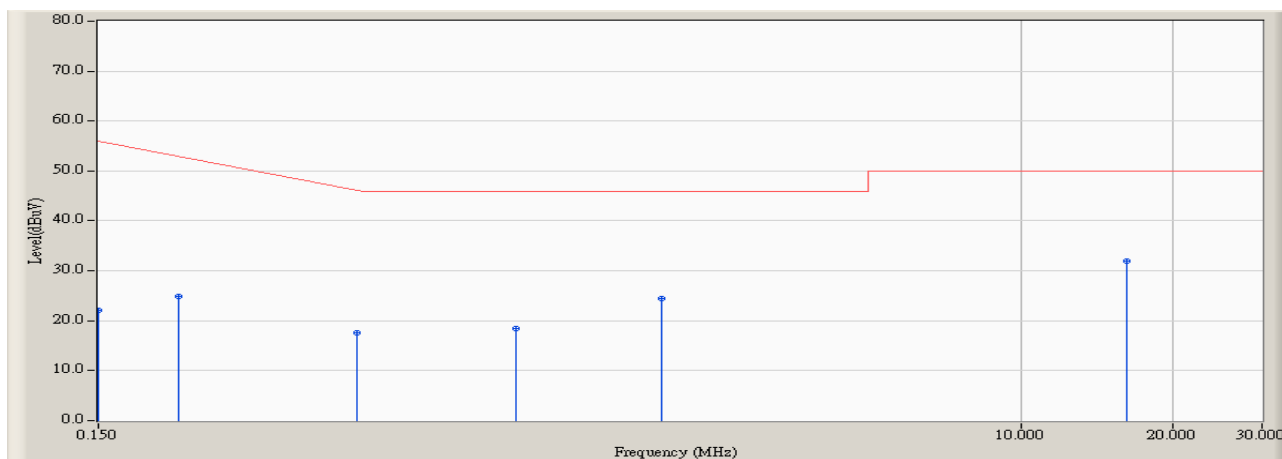


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	0.202	41.600	41.802	-24.198	66.000	QUASIPeAK
2		0.216	0.202	41.270	41.472	-22.642	64.114	QUASIPeAK
3		0.486	0.216	32.990	33.206	-23.194	56.400	QUASIPeAK
4		1.002	0.233	31.300	31.533	-24.467	56.000	QUASIPeAK
5		1.943	0.276	34.220	34.496	-21.504	56.000	QUASIPeAK
6	*	16.259	0.917	39.510	40.427	-19.573	60.000	QUASIPeAK

Note:

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

Site : SR-1	Time : 2007/09/28 - 05:20
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : by PC	Note : Mode 1

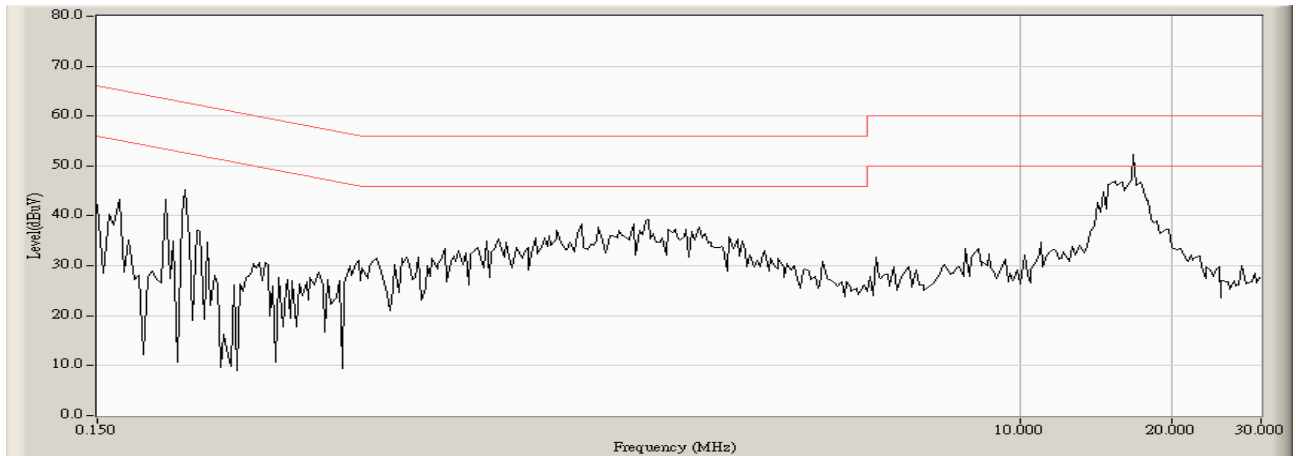


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	0.202	21.930	22.132	-33.868	56.000	AVERAGE
2		0.216	0.202	24.660	24.862	-29.252	54.114	AVERAGE
3		0.486	0.216	17.320	17.536	-28.864	46.400	AVERAGE
4		1.002	0.233	18.150	18.383	-27.617	46.000	AVERAGE
5		1.943	0.276	24.200	24.476	-21.524	46.000	AVERAGE
6	*	16.259	0.917	31.140	32.057	-17.943	50.000	AVERAGE

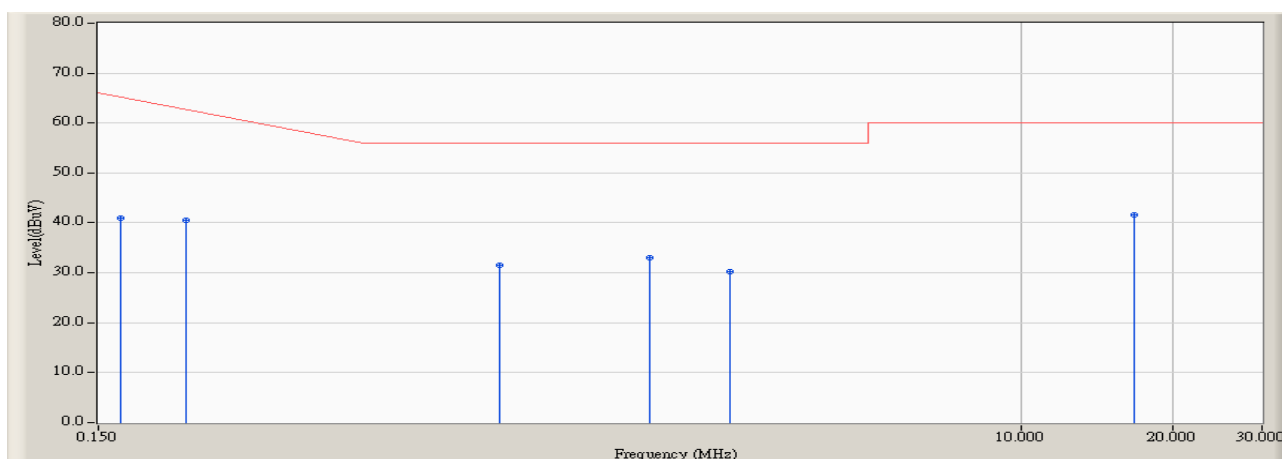
Note:

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

Site : SR-1	Time : 2007/09/28 - 05:21
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Portable Navigation Device	Probe : LISN-020(N) - Line2
Power : by PC	Note : Mode 1



Site : SR-1	Time : 2007/09/28 - 05:23
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) - Line2
Power : by PC	Note : Mode 1

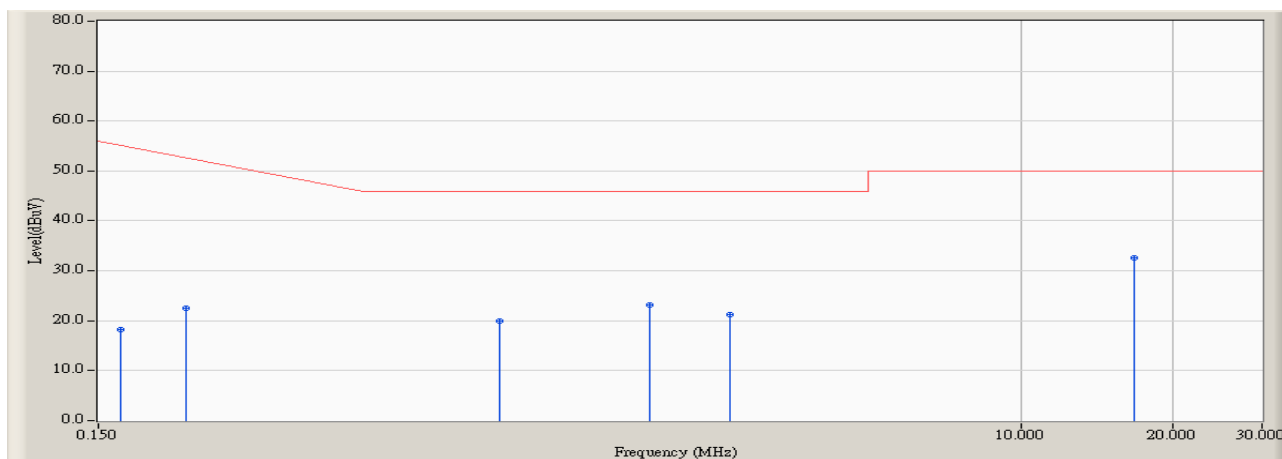


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	0.202	40.820	41.022	-24.521	65.543	QUASIPeAK
2		0.224	0.202	40.280	40.482	-23.404	63.886	QUASIPeAK
3		0.931	0.232	31.350	31.582	-24.418	56.000	QUASIPeAK
4		1.845	0.268	32.700	32.968	-23.032	56.000	QUASIPeAK
5		2.662	0.305	29.850	30.155	-25.845	56.000	QUASIPeAK
6	*	16.798	0.784	40.870	41.654	-18.346	60.000	QUASIPeAK

Note:

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

Site : SR-1	Time : 2007/09/28 - 05:23
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) - Line2
Power : by PC	Note : Mode 1

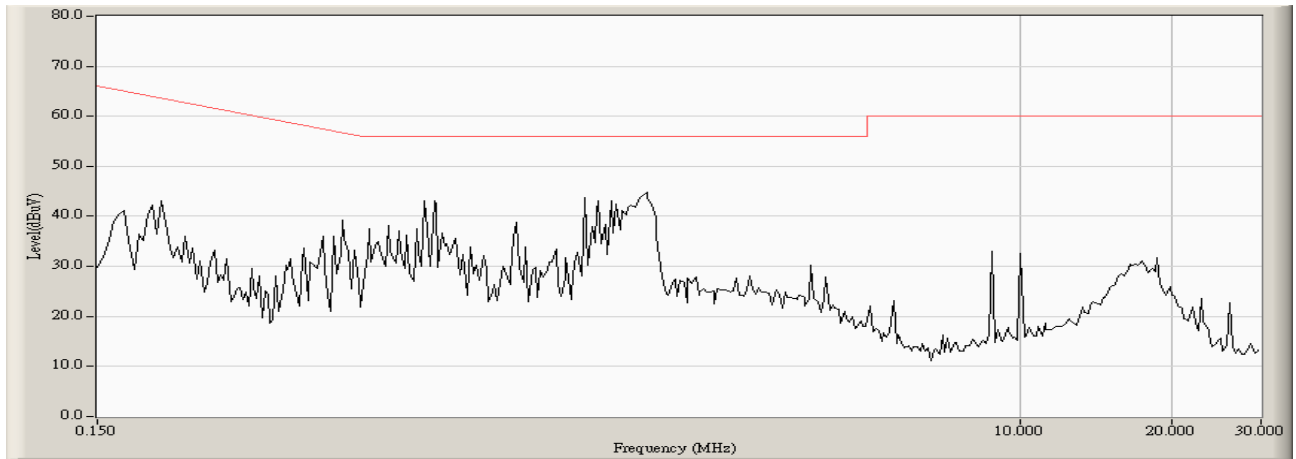


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	0.202	18.100	18.302	-37.241	55.543	AVERAGE
2		0.224	0.202	22.250	22.452	-31.434	53.886	AVERAGE
3		0.931	0.232	19.610	19.842	-26.158	46.000	AVERAGE
4		1.845	0.268	22.790	23.058	-22.942	46.000	AVERAGE
5		2.662	0.305	20.930	21.235	-24.765	46.000	AVERAGE
6	*	16.798	0.784	31.830	32.614	-17.386	50.000	AVERAGE

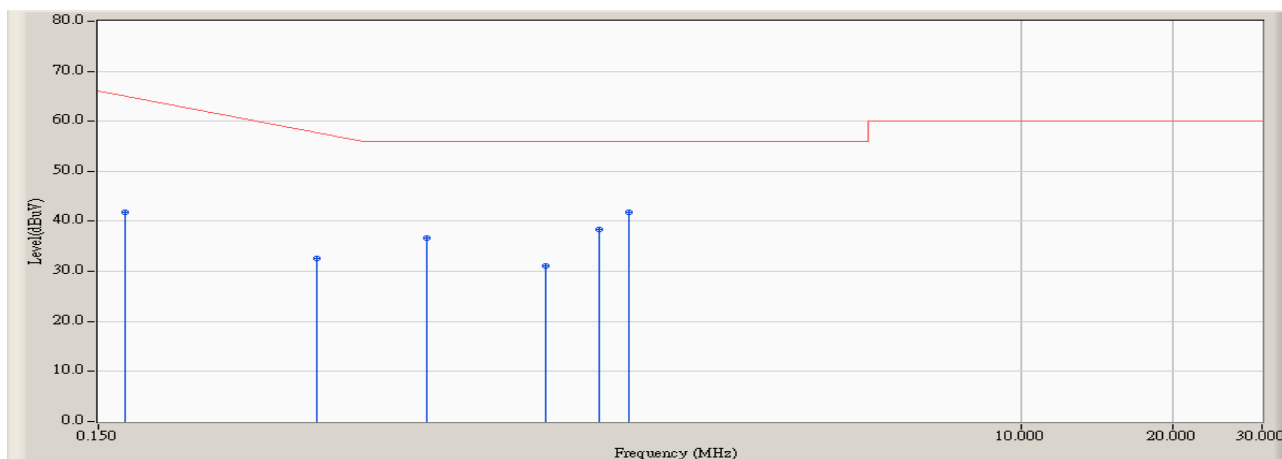
Note:

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

Site : SR-1	Time : 2007/09/28 - 18:04
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : DC Charger in	Note : Mode 4



Site : SR-1	Time : 2007/09/28 - 18:05
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : DC Charger in	Note : Mode 4

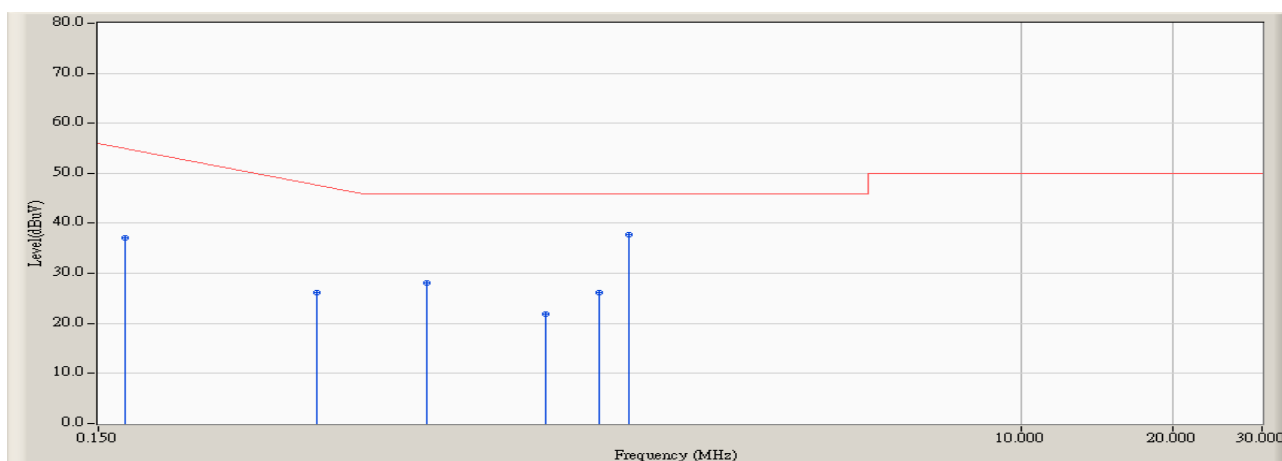


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.170	0.400	41.520	41.920	-23.509	65.429	QUASIPeAK
2		0.405	0.400	32.180	32.580	-26.134	58.714	QUASIPeAK
3		0.670	0.356	36.330	36.686	-19.314	56.000	QUASIPeAK
4		1.150	0.300	30.830	31.130	-24.870	56.000	QUASIPeAK
5		1.470	0.300	38.150	38.450	-17.550	56.000	QUASIPeAK
6	*	1.685	0.300	41.620	41.920	-14.080	56.000	QUASIPeAK

Note:

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

Site : SR-1	Time : 2007/09/28 - 18:05
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : DC Charger in	Note : Mode 4

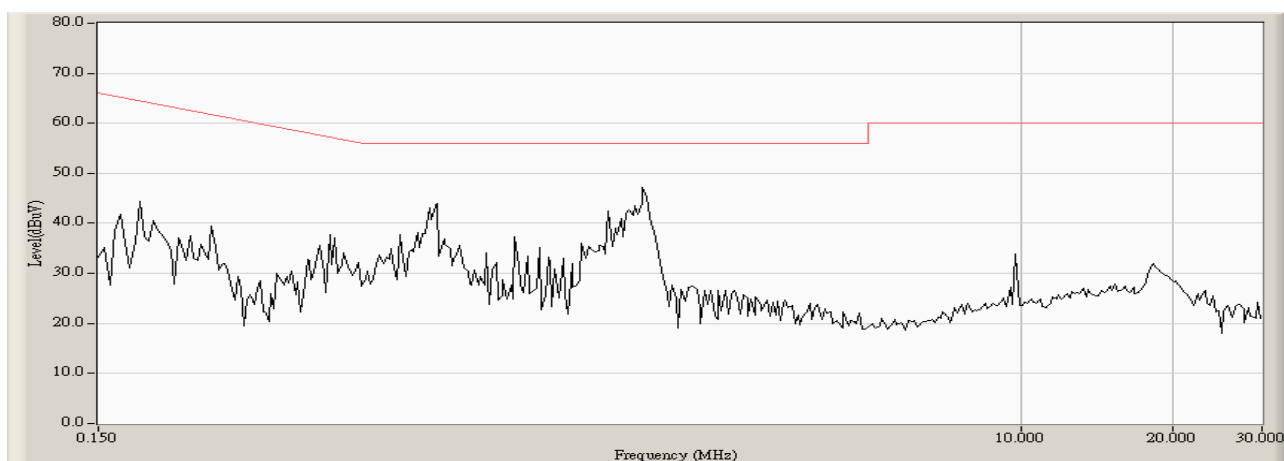


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.170	0.400	36.750	37.150	-18.279	55.429	AVERAGE
2		0.405	0.400	25.780	26.180	-22.534	48.714	AVERAGE
3		0.670	0.356	27.830	28.186	-17.814	46.000	AVERAGE
4		1.150	0.300	21.660	21.960	-24.040	46.000	AVERAGE
5		1.470	0.300	25.880	26.180	-19.820	46.000	AVERAGE
6	*	1.685	0.300	37.400	37.700	-8.300	46.000	AVERAGE

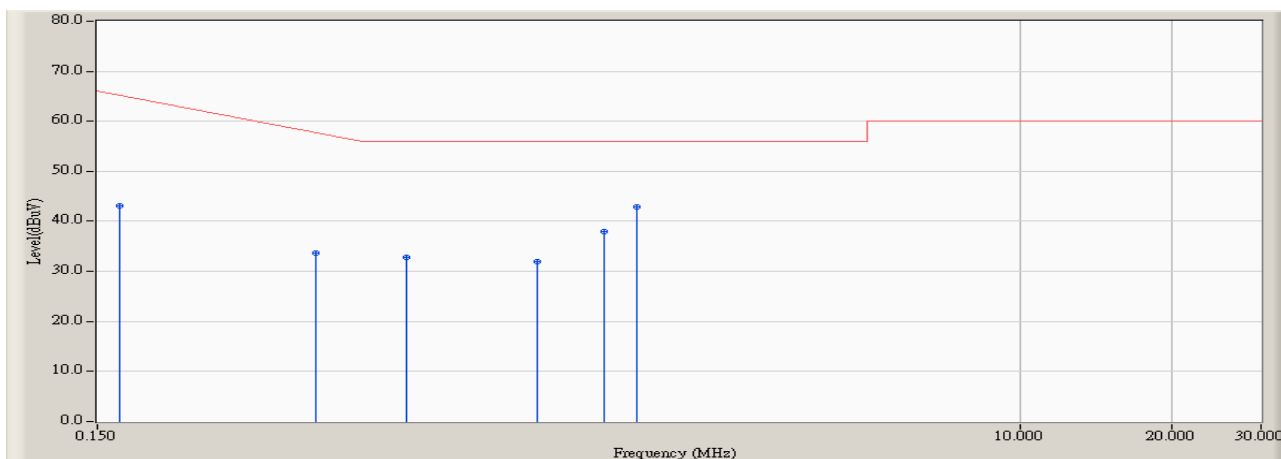
Note:

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

Site : SR-1	Time : 2007/09/28 - 18:07
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) – Line2
Power : DC Charger in	Note : Mode 4



Site : SR-1	Time : 2007/09/28 - 18:08
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) – Line2
Power : DC Charger in	Note : Mode 4

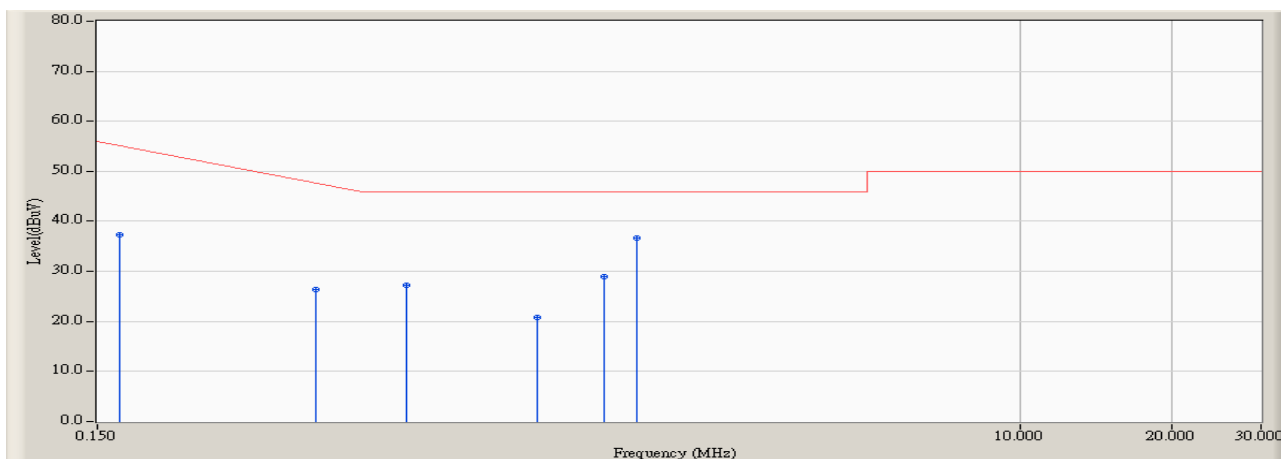


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	0.400	42.610	43.010	-22.533	65.543	QUASIPeAK
2		0.406	0.400	33.240	33.640	-25.046	58.686	QUASIPeAK
3		0.611	0.366	32.550	32.916	-23.084	56.000	QUASIPeAK
4		1.111	0.300	31.620	31.920	-24.080	56.000	QUASIPeAK
5		1.511	0.300	37.700	38.000	-18.000	56.000	QUASIPeAK
6	*	1.751	0.300	42.570	42.870	-13.130	56.000	QUASIPeAK

Note:

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

Site : SR-1	Time : 2007/09/28 - 18:08
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) – Line2
Power : DC Charger in	Note : Mode 4



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	0.400	36.900	37.300	-18.243	55.543	AVERAGE
2		0.406	0.400	25.930	26.330	-22.356	48.686	AVERAGE
3		0.611	0.366	26.960	27.326	-18.674	46.000	AVERAGE
4		1.111	0.300	20.520	20.820	-25.180	46.000	AVERAGE
5		1.511	0.300	28.600	28.900	-17.100	46.000	AVERAGE
6	*	1.751	0.300	36.380	36.680	-9.320	46.000	AVERAGE

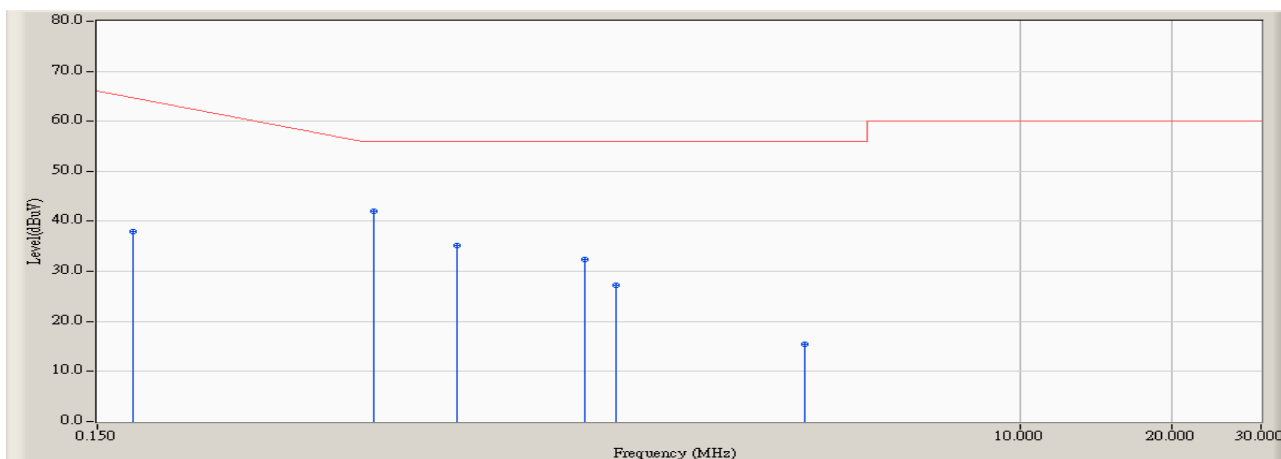
Note:

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

Site : SR-1	Time : 2007/09/28 - 16:27
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : DC Charger in	Note : Mode 5



Site : SR-1	Time : 2007/09/28 - 16:30
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : DC Charger in	Note : Mode 5

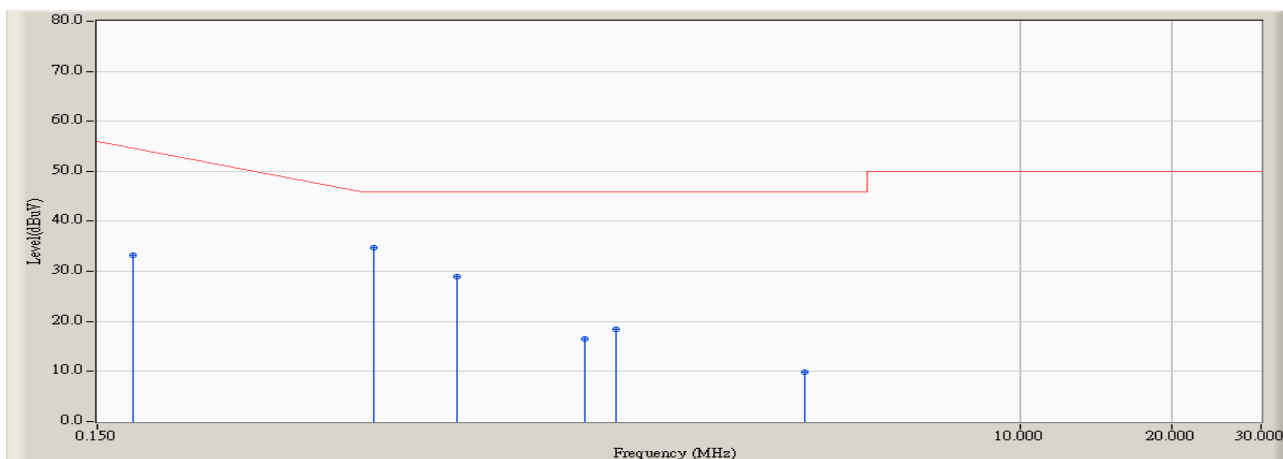


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.176	0.400	37.520	37.920	-27.337	65.257	QUASIPeAK
2	*	0.529	0.380	41.570	41.950	-14.050	56.000	QUASIPeAK
3		0.769	0.340	34.900	35.240	-20.760	56.000	QUASIPeAK
4		1.380	0.300	31.980	32.280	-23.720	56.000	QUASIPeAK
5		1.590	0.300	26.850	27.150	-28.850	56.000	QUASIPeAK
6		3.755	0.300	15.060	15.360	-40.640	56.000	QUASIPeAK

Note:

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

Site : SR-1	Time : 2007/09/28 - 16:30
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(L) - Line1
Power : DC Charger in	Note : Mode 5

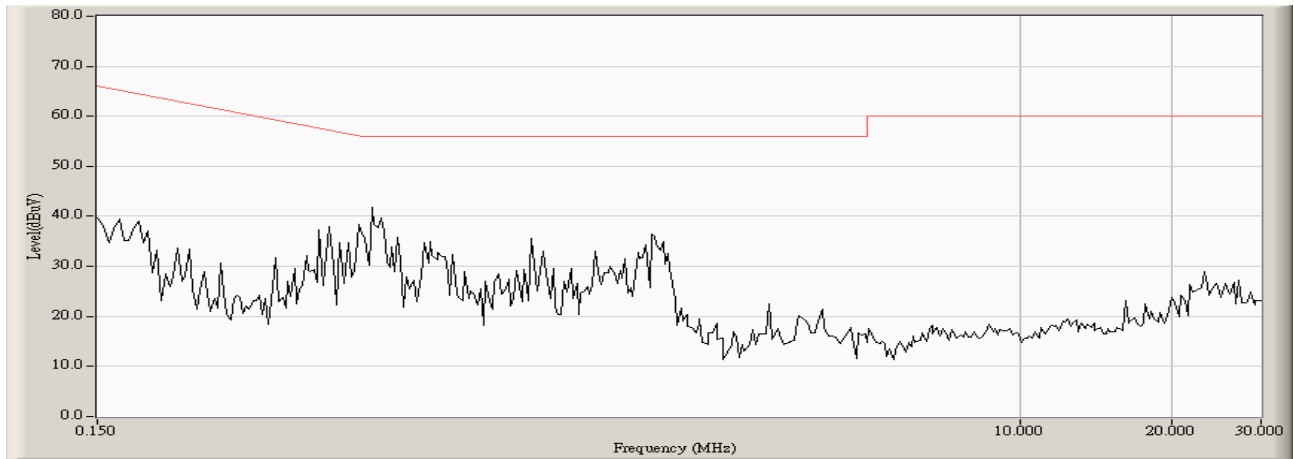


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.176	0.400	32.850	33.250	-22.007	55.257	AVERAGE
2	*	0.529	0.380	34.390	34.770	-11.230	46.000	AVERAGE
3		0.769	0.340	28.670	29.010	-16.990	46.000	AVERAGE
4		1.380	0.300	16.230	16.530	-29.470	46.000	AVERAGE
5		1.590	0.300	18.170	18.470	-27.530	46.000	AVERAGE
6		3.755	0.300	9.610	9.910	-36.090	46.000	AVERAGE

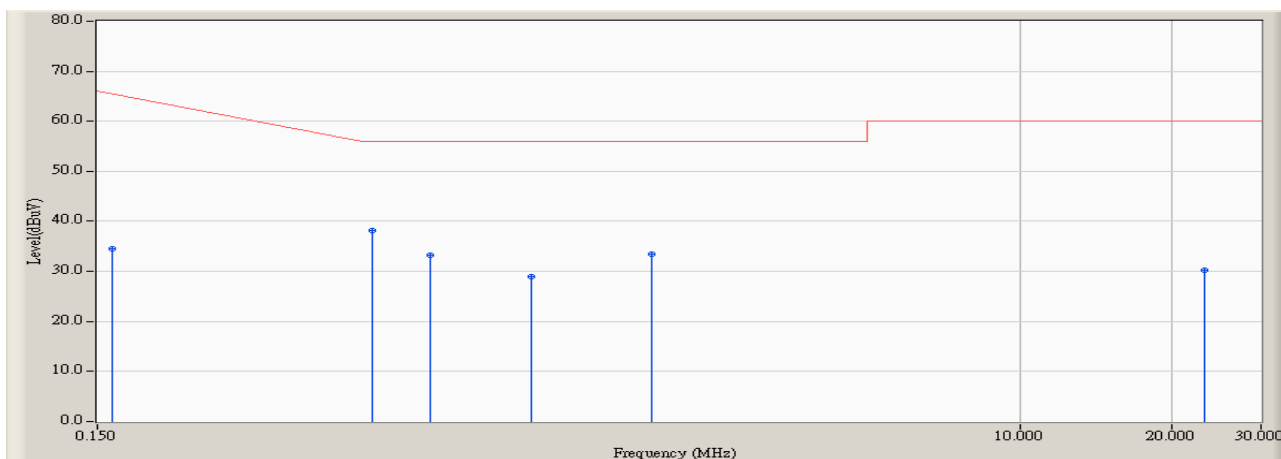
Note:

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

Site : SR-1	Time : 2007/09/28 - 16:32
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) - Line2
Power : DC Charger in	Note : Mode 5



Site : SR-1	Time : 2007/09/28 - 16:35
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) - Line2
Power : DC Charger in	Note : Mode 5

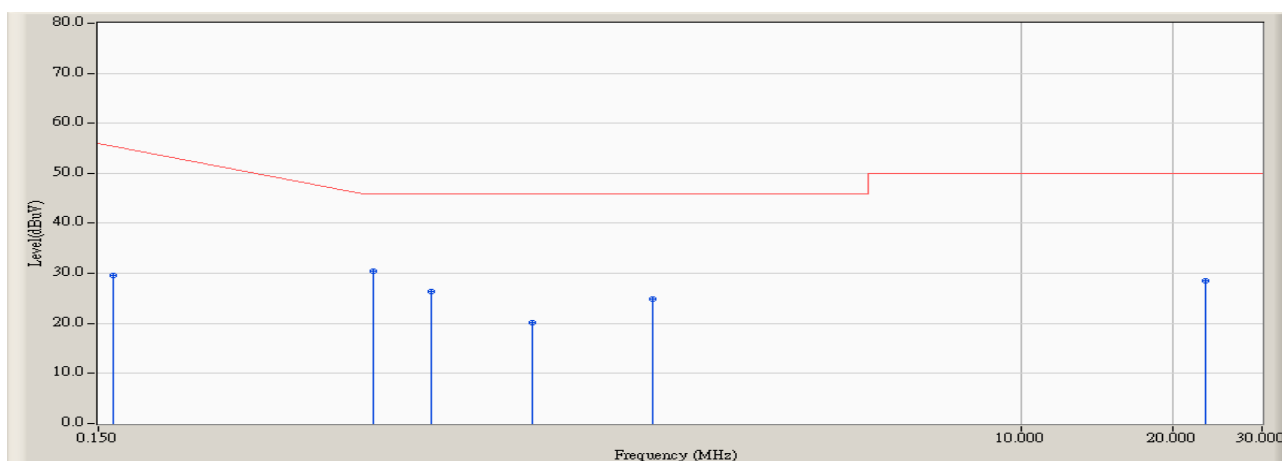


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.160	0.400	34.030	34.430	-31.284	65.714	QUASIPeAK
2	*	0.525	0.380	37.730	38.110	-17.890	56.000	QUASIPeAK
3		0.685	0.351	33.000	33.351	-22.649	56.000	QUASIPeAK
4		1.080	0.300	28.750	29.050	-26.950	56.000	QUASIPeAK
5		1.877	0.300	33.120	33.420	-22.580	56.000	QUASIPeAK
6		23.130	0.600	29.720	30.320	-29.680	60.000	QUASIPeAK

Note:

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

Site : SR-1	Time : 2007/09/28 - 16:35
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Portable Navigation Device	Probe : LISN-020(N) - Line2
Power : DC Charger in	Note : Mode 5



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.160	0.400	29.190	29.590	-26.124	55.714	AVERAGE
2	*	0.525	0.380	30.180	30.560	-15.440	46.000	AVERAGE
3		0.685	0.351	25.970	26.321	-19.679	46.000	AVERAGE
4		1.080	0.300	19.800	20.100	-25.900	46.000	AVERAGE
5		1.877	0.300	24.580	24.880	-21.120	46.000	AVERAGE
6		23.130	0.600	27.860	28.460	-21.540	50.000	AVERAGE

Note:

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

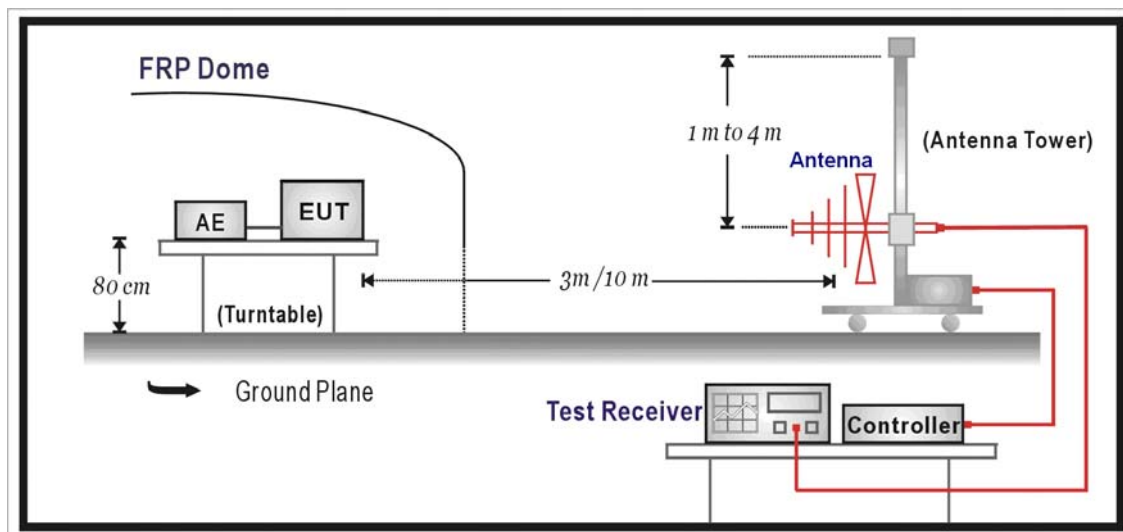
4. Radiated Emission

4.1. Test Specification

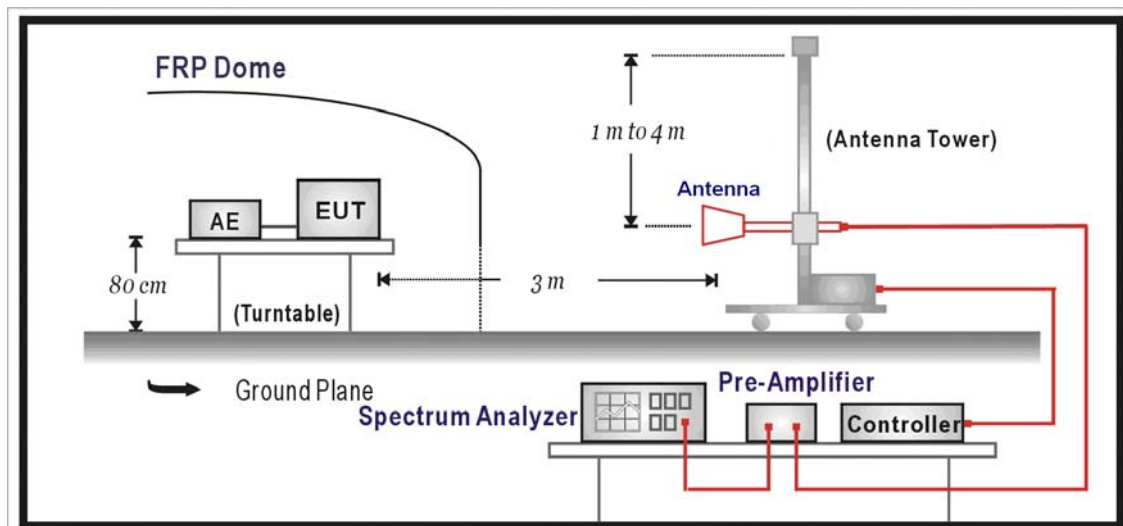
According to EMC Standard : FCC Part 15 Subpart B, ANSI C63.4

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Under 1GHz test shall not exceed the following value:

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Above 1GHz test shall not exceed the following value:

FCC Part 15 Subpart B Paragraph 15.109 Limits (dBuV/m)		
Frequency (MHz)	Distance (m)	dBuV/m
30-88	3	40
88-216	3	43.5
216-960	3	46
Above 960	3	54

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. 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. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

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 and 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 on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

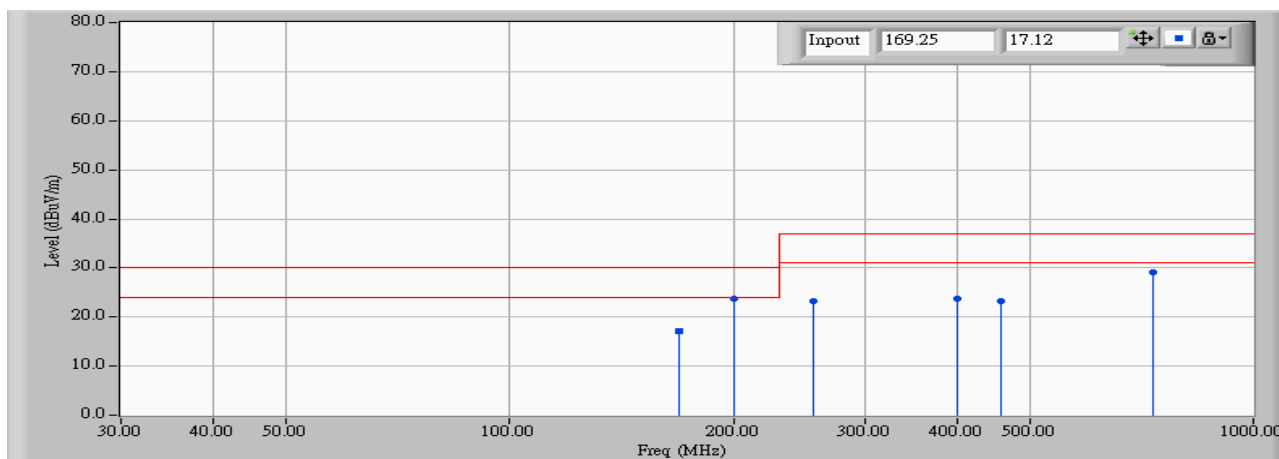
For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 kHz and above 1GHz is 1MHz.

4.5. Test Result

Site : OATS -3	Time : 2007/09/28 - 03:18
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Portable Navigation Device	Probe : LKANT_S3_2006_01 - HORIZONTAL
Power : by PC	Note : Mode 1

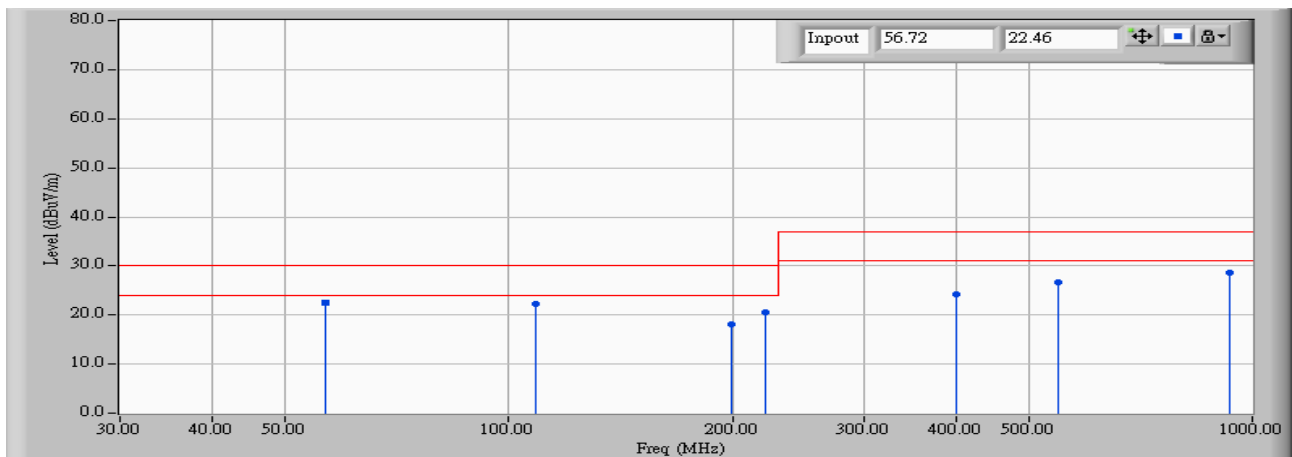


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		169.250	12.844	4.280	17.123	-12.877	30.000	QUASIPeAK
2	*	199.834	12.734	11.020	23.753	-6.247	30.000	QUASIPeAK
3		255.555	16.431	6.750	23.181	-13.819	37.000	QUASIPeAK
4		398.934	20.050	3.740	23.790	-13.210	37.000	QUASIPeAK
5		458.172	21.238	2.030	23.268	-13.732	37.000	QUASIPeAK
6		732.737	25.350	3.860	29.209	-7.791	37.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS -3	Time : 2007/09/28 - 02:51
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Portable Navigation Device	Probe : LKANT_S3_2006_01 - VERTICAL
Power : by PC	Note : Mode 1

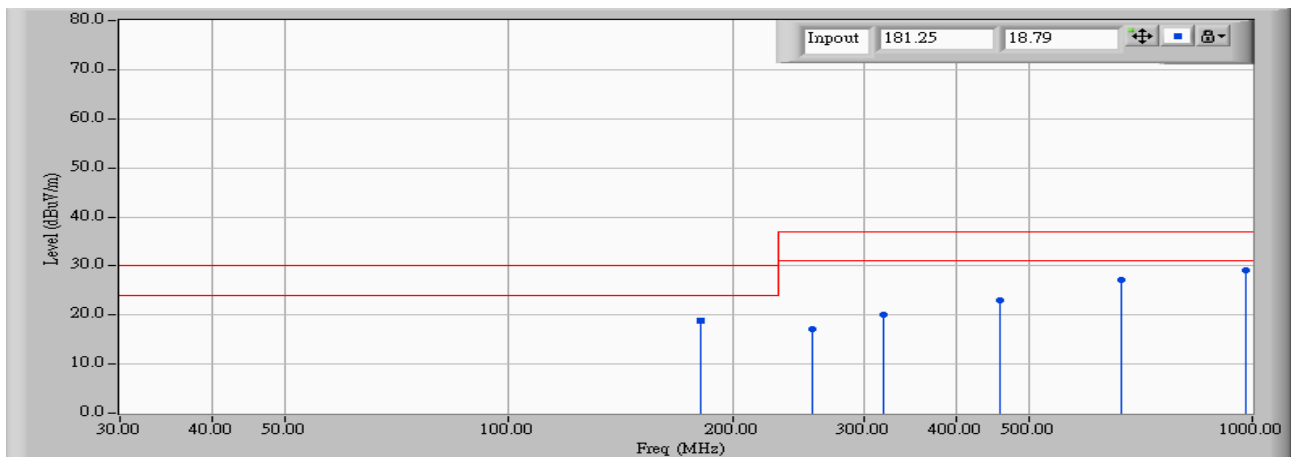


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	56.720	8.660	13.800	22.461	-7.539	30.000	QUASIPeAK
2		108.774	14.846	7.330	22.176	-7.824	30.000	QUASIPeAK
3		199.600	12.725	5.480	18.205	-11.795	30.000	QUASIPeAK
4		221.190	14.237	6.340	20.577	-9.423	30.000	QUASIPeAK
5		398.950	20.051	4.270	24.321	-12.679	37.000	QUASIPeAK
6		547.301	22.876	3.710	26.586	-10.414	37.000	QUASIPeAK
7		931.113	28.080	0.610	28.690	-8.310	37.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS -3	Time : 2007/09/28 - 04:14
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Portable Navigation Device	Probe : LKANT_S3_2006_01 - HORIZONTAL
Power : DC Charger in	Note : Mode 4

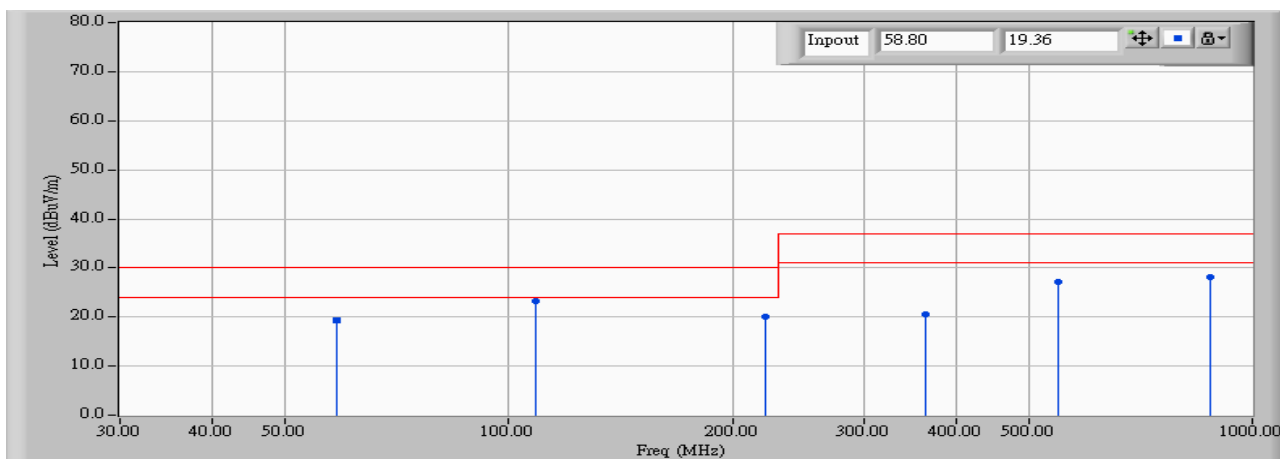


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	181.250	12.429	6.360	18.789	-11.211	30.000	QUASIPeAK
2	255.550	16.431	0.600	17.031	-19.969	37.000	QUASIPeAK
3	319.456	17.922	2.030	19.952	-17.048	37.000	QUASIPeAK
4	458.170	21.238	1.670	22.908	-14.092	37.000	QUASIPeAK
5	666.124	24.508	2.700	27.208	-9.792	37.000	QUASIPeAK
6	* 982.230	28.787	0.390	29.177	-7.823	37.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS -3	Time : 2007/09/28 - 04:02
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Portable Navigation Device	Probe : LKANT_S3_2006_01 - VERTICAL
Power : DC Charger in	Note : Mode 4

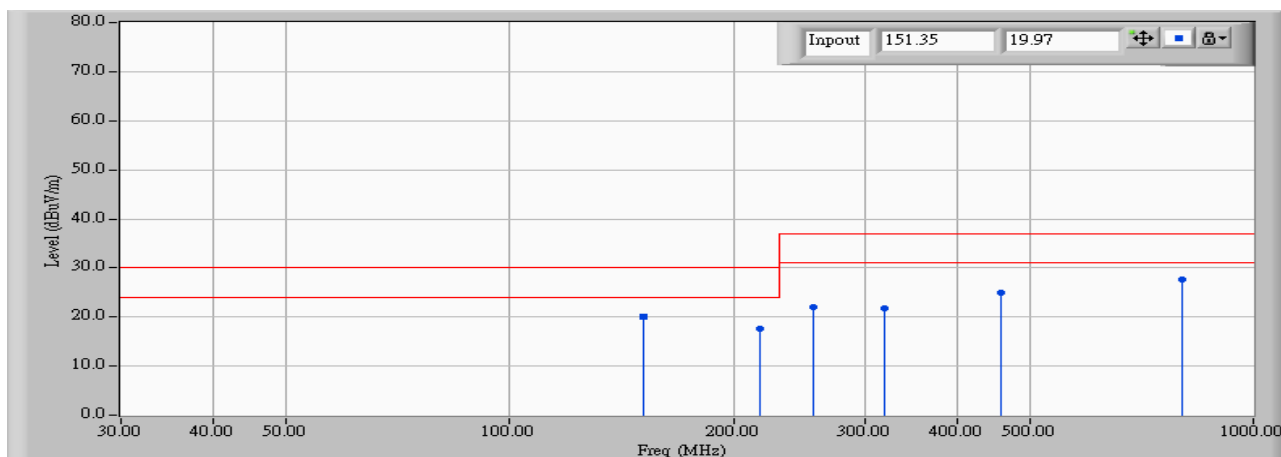


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		58.800	7.996	11.360	19.356	-10.644	30.000	QUASIPeAK
2	*	108.775	14.846	8.510	23.356	-6.644	30.000	QUASIPeAK
3		221.187	14.237	5.860	20.097	-9.903	30.000	QUASIPeAK
4		362.716	19.080	1.450	20.530	-16.470	37.000	QUASIPeAK
5		547.676	22.884	4.230	27.114	-9.886	37.000	QUASIPeAK
6		879.940	27.392	0.820	28.212	-8.788	37.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS -3	Time : 2007/09/28 - 04:43
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Portable Navigation Device	Probe : LKANT_S3_2006_01 - HORIZONTAL
Power : DC Charger in	Note : Mode 5

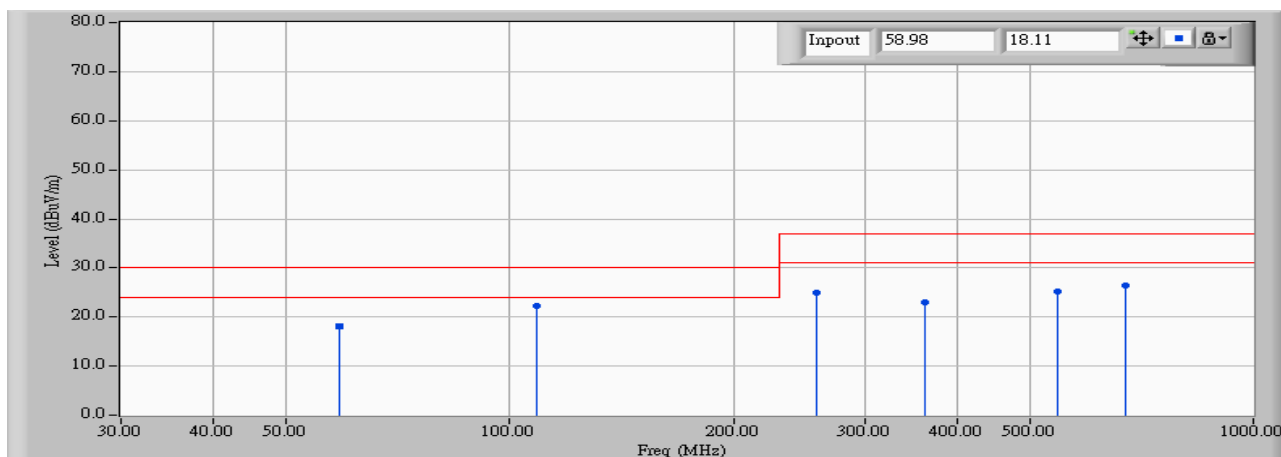


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		151.350	13.734	6.240	19.974	-10.026	30.000	QUASIPeAK
2		217.248	13.952	3.620	17.573	-12.427	30.000	QUASIPeAK
3		255.550	16.431	5.580	22.011	-14.989	37.000	QUASIPeAK
4		319.450	17.922	3.890	21.812	-15.188	37.000	QUASIPeAK
5		458.173	21.238	3.830	25.068	-11.932	37.000	QUASIPeAK
6	*	801.743	26.346	1.230	27.576	-9.424	37.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS -3	Time : 2007/09/28 - 04:33
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Portable Navigation Device	Probe : LKANT_S3_2006_01 - VERTICAL
Power : DC Charger in	Note : Mode 5



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		58.979	7.939	10.170	18.109	-11.891	30.000	QUASIPeAK
2	*	108.775	14.846	7.420	22.266	-7.734	30.000	QUASIPeAK
3		258.053	16.483	8.410	24.893	-12.107	37.000	QUASIPeAK
4		362.480	19.073	3.840	22.913	-14.087	37.000	QUASIPeAK
5		544.726	22.832	2.410	25.243	-11.757	37.000	QUASIPeAK
6		673.640	24.590	1.840	26.430	-10.570	37.000	QUASIPeAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

5. SECOND SOURCE LIST

PCBA BOM SECOND SOURCE		
Item	Specification	Brand
1	Flash ROM,K9F1208U0C-PCB0, 64M*8,42ns,48p,TSOP1,SAMSUNG,RoHS	Samsung
2	Flash ROM,K9F1208U0C-PCB0, 64M*8,42ns,48p,TSOP1,SAMSUNG,RoHS	Samsung
3	Flash ROM,SST39VF800A-70-4C-B3KE	SST
4	REG,S-1111B18MC-NYD-TFG, 1.8V,150mA,SOT23-5,Pb/F,RoHS	Seiko
5	SDRAM,HYB25L256160AF-7.5, 16M*16,7.5ns,54p,TFBGA,RoHS	Infineon (Qimonda)
6	Fuse,1.5A,50V, FCC32,152,1206, KAMAYA, RoHS	KAMAYA
ENGINE BOM SECOND SOURCE		
1	MIC+RUB,2.2K,1~10V,-42+-3dB, BLK,D6*2.7,TSOF6027L0423ZGF,NESSIE,RoHS	Nessie
2	Speaker,1W,8ohm,90+-3Db, 52.5*27.6*8.4, FYX2952A-01-C1-E1,BANG-TEC,RoHS	BANG-TEC