FCC Radio TEST Report

FCC ID: YXCDYNAMIC8

This report concerns (check one) : ■ **Original Grant** □ **Class II Change**

Report No.：	NTEK-2010NT0518001E
Product：	AllKit for iphone
Model No.：	DYNAMIC8-868, DYNAMIC8-868A
Applicant：	Shenzhen Dingchengchang Electronic Technology Co., Ltd
Address：	3F, Unit 1, Diamond Garden, Bulan Road, Shanglilang, Buji Town, Longgang District, Shenzhen, China
Issued by：	NTEK Testing Technology Co., Ltd
Lab Location：	3/F,Block B, Hua feng Technology & Business Building, Xin ‘an 6 Road, Bao an Center District, Shenzhen, China
Tel：	(86)-0755-29453021 Fax: (86)-0755-27667047

Date of Test:
Sept.11, 2010 ~ Sept.14, 2010
Date of Issue：
Sept. 15, 2010
Test Result：Pass
Standards: FCC Part 15 subpart C(15.239)

Testing Engineer	:	Jake wang
		(Jake Wang)
Technical Manager	:	Ada Li
		(Ada Li)
Authorized Signatory	:	Can Liu
		(Can Liu)

Table of Contents **Page**

1 . SUMMARY OF TEST RESULTS 3
1.1 TEST FACILITY 4
1.2 MEASUREMENT UNCERTAINTY 4
2 . GENERAL INFORMATION 5
2.1 GENERAL DESCRIPTION OF EUT 5
2.2 DESCRIPTION OF TEST CONDITIONS 6
2.3 DESCRIPTION OF SUPPORT UNITS 7
2.4 EQUIPMENTS LIST FOR ALL TEST ITEMS 8
3 . TEST RESULT 9
3.1 ANTENNA REQUIREMENT 9
3.1.1 STANDARD REQUIREMENT 9
3.1.2 EUT ANTENNA 9
3.2 CONDUCTED EMISSION MEASUREMENT 10
3.2.1 POWER LINE CONDUCTED EMISSION LIMITS 10
3.2.2 TEST PROCEDURE 11
3.2.3 DEVIATION FROM TEST STANDARD 11
3.2.4 TEST SETUP 11
3.2.5 TEST RESULTS 12
3.3 RADIATED EMISSION MEASUREMENT 13
3.3.1 RADIATED EMISSION LIMITS 13
3.3.2 TEST PROCEDURE 14
3.3.3 DEVIATION FROM TEST STANDARD 14
3.3.4 TEST SETUP 15
3.3.5 TEST RESULTS (BETWEEN 30 – 1000 MHz) 16
4 . BANDWIDTH TEST 19
4.1 LIMIT 19
4.2 TEST PROCEDURE 19
4.3 DEVIATION FROM STANDARD 19
4.4 TEST SETUP 19
4.5 TEST RESULTS 20
5 . EUT TEST PHOTO 22
ATTACHMENT PHOTOGRAPHS OF EUT 23

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15, Subpart C (15.239)			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	Note(1)
15.203	Antenna Requirement	Pass	
15.239	Radiated Spurious Emission	Pass	
15.239	Occupied Bandwidth	Pass	

NOTE:
(1) ” N/A” denotes test is not applicable in this Test Report.

1.1 TEST FACILITY

Asia Institute Technology (Dongguan) Limited
Add. : No.6 Binhe Road, Tianxin Village, Huangjiang, Dongguan, Guangdong, China.
FCC Registered No.: 248337

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)
C01	ANSI C63.4-2003	150 KHz ~ 30MHz	1.94

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)
OS-01	ANSI C63.4-2003	30MHz ~ 200MHz	V	2.93
		30MHz ~ 200MHz	H	2.86
		200MHz ~ 1,000MHz	V	3.86
		200MHz ~ 1,000MHz	H	3.94

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>AllKit for iphone</td></tr>
<tr><td>Brand Name</td><td>N/A</td></tr>
<tr><td>Model Name.</td><td>DYNAMIC8-868, DYNAMIC8-868A</td></tr>
<tr><td>OEM Brand/Model Name</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>Both model is totally identical,Just enclosure different.</td></tr>
<tr><td>Manufacturer</td><td>Shenzhen Dingchengchang Electronic Technology Co., Ltd</td></tr>
<tr><td>Manufacturer Address</td><td>3F, Unit 1, Diamond Garden, Bulan Road, Shanglilang, Buji Town, Longgang District, Shenzhen, China</td></tr>
<tr><td>Product Description</td><td>The EUT is a AllKit for iphone
<table>
<tr><td>Product Type</td><td>Low Power Communication Device Transmitter</td></tr>
<tr><td>Operation Frequency:</td><td>88.1-107.9MHz</td></tr>
<tr><td>Modulation Type:</td><td>FM</td></tr>
<tr><td>Number Of Channel</td><td>199CH.</td></tr>
<tr><td>Antenna Designation:</td><td>Printed antenna</td></tr>
<tr><td>Antenna Gain(Peak)</td><td>2.32 dBi</td></tr>
<tr><td>Output Power:</td><td>43.257 dBuV/m (AV Max.)</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an Control Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Channel List</td><td>N/A</td></tr>
<tr><td>Power Source</td><td>DC Voltage supplied from Battery</td></tr>
<tr><td>Power Rating</td><td>DC 12V</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

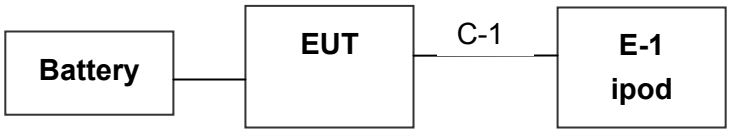
Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.2 DESCRIPTION OF TEST CONDITIONS

(1) EUT was tested in normal configuration (Please See following Block diagram)

1. Block diagram of EUT configuration



(2) E.U.T. test conditions:

15.31(e) :For intentional radiators, measurements of the variation of the input power or the adiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% ofthe nominal rated supply voltage. For battery operated equipment, theequipment tests shall be performed using a new battery.

(3) Test frequencies:

According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and. if required. reported for each band in which the device can be operated with the device operating at the number of fequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

.

(4) Frequency range of radiated measurements:

According to the 15.33,The test range will be upto the tenth harmonic of the highest fundamental frequency. During testing, the Ipod was actively playing music set to its maximum audio volume in order to generate the worst case emissions (e.g. to generate the maximum bandwidth during bandwidth test). No audio tones were used for testing. The tuning range of the EUT was manually verified and the conclusion is that it only works at selected channels within 88.1-107.9MHz, not below and not above this range.

2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	ipod	N/A	A1285	VOC	YM838NYL3QS	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	20cm	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.4 EQUIPMENTS LIST FOR ALL TEST ITEMS

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Due Date
1	Spectrum Analyzer	ADVANTEST	R3182	150900201	2011.04.16
2	EMI Measuring Receiver	Schaffner	SCR3501	235	2011.04.06
3	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2011.09.06
4	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2011.04.07
5	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2011.07.01
6	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	451	2011.07.14
7	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2011.09.06
8	EMI Test Receiver	R&S	ESCI	100124	2010.12.27
9	LISN	Kyoritsu	KNW-242	8-837-4	2011.04.06
10	LISN	Kyoritsu	KNW-407	8-1789-3	2011.04.06
11	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2010.09.06

3. TEST RESULT

3.1 ANTENNA REQUIREMENT

3.1.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

3.1.2 EUT ANTENNA

The EUT antenna is integral Antenna. It comply with the standard requirement.

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

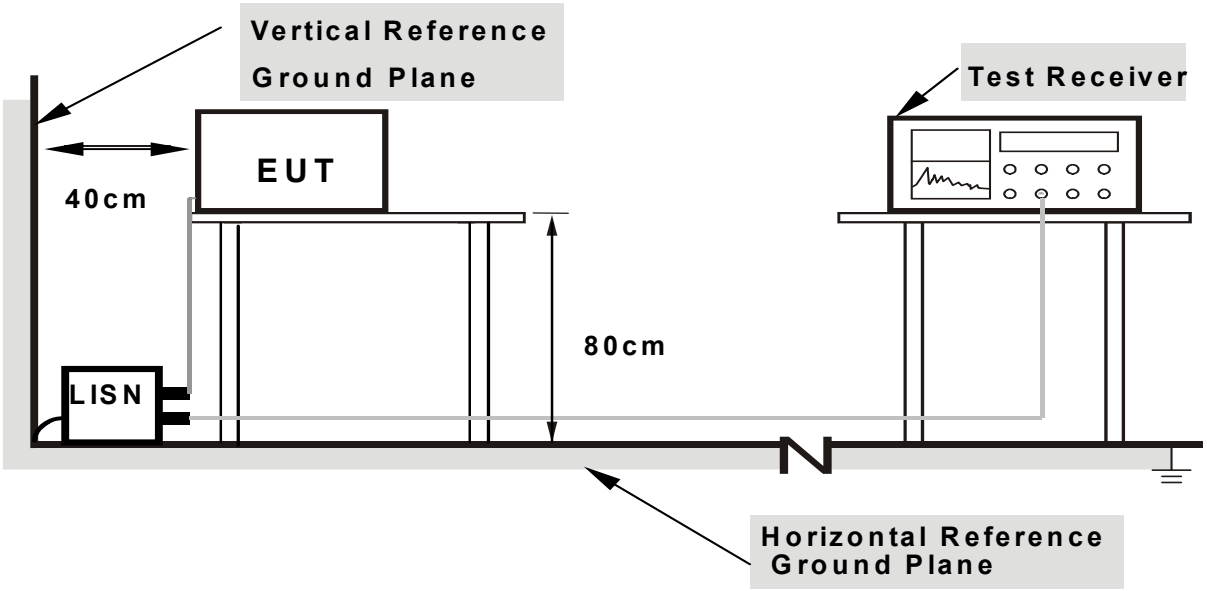
3.2.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 DEVIATION FROM TEST STANDARD

No deviation

3.2.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.2.5 TEST RESULTS

EUT：	AllKit for iphone	Model Name ：	DYNAMIC8-868
Temperature：	26 ℃	Relative Humidity：	53%
Pressure：	1010 hPa	Test Power ：	DC 12V
Test Mode ：	N/A - denotes test is not applicable in this test report		

Remark

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。

(2) Measuring frequency range from 150KHz to 30MHz.

(3) N/A - denotes test is not applicable in this test report

3.3 RADIATED EMISSION MEASUREMENT

3.3.1 RADIATED EMISSION LIMITS (FCC 15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note:

(1) The tighter limit applies at the band edges.

(2) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.239)

Frequency of Emission (MHz)	Field Strength of fundamental (dBμV/m)	
	Peak	Average
88-108	68	48

Notes:

(1) Fcc part15.239 (b) The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emissions apply.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.3.2 TEST PROCEDURE

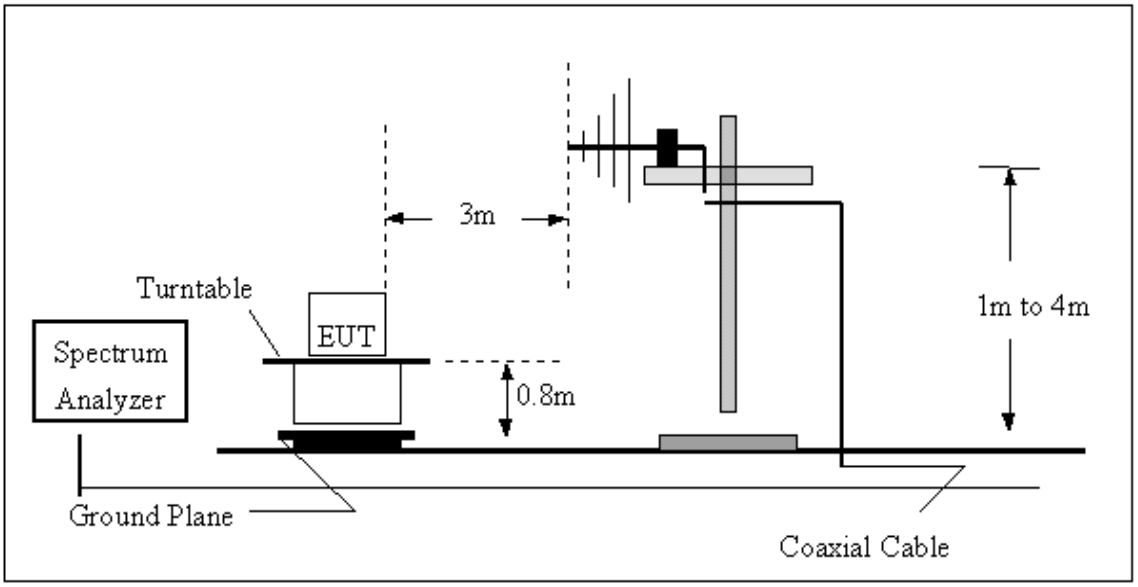
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement. performed pretest to three orthogonal axis.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3.3 DEVIATION FROM TEST STANDARD

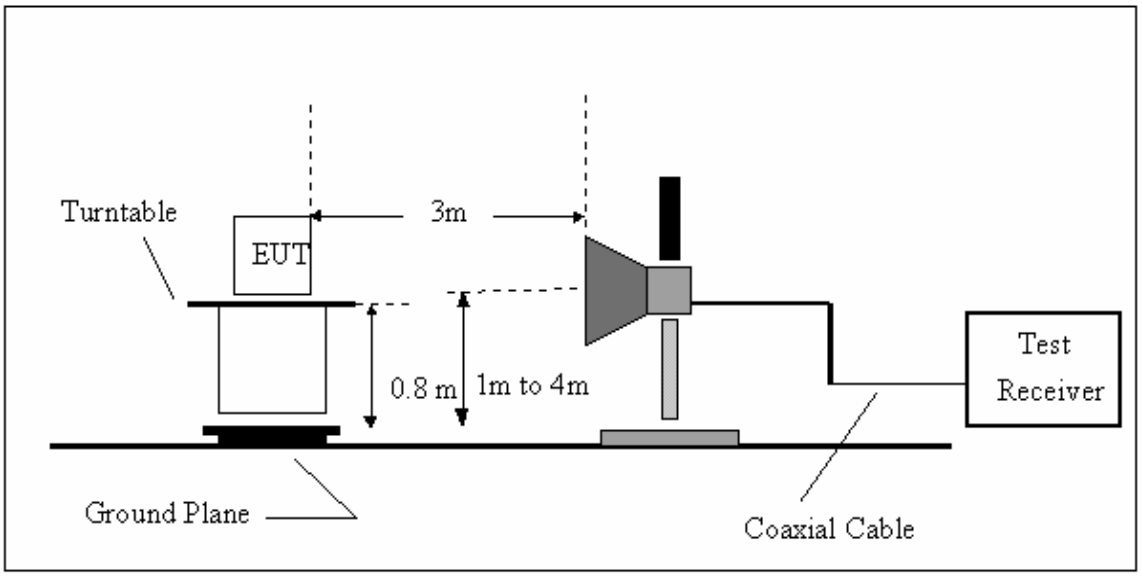
No deviation

3.3.4 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.3.5 TEST RESULTS (BETWEEN 30 – 1000 MHz)

EUT：	AllKit for iphone	Model Name ：	DYNAMIC8-868
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2010-9-11
Test Mode ：	88.1MHz	Polarization：	Vertical& Horizontal
Test Power ：	DC 12V		

(a) Antenna polarization: Horizontal

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
*88.100	11.057	31.000	42.057	-5.943	48.000	AVERAGE
88.100	11.057	46.991	58.048	-9.952	68.000	PEAK
230.790	14.660	6.335	20.995	-25.005	46.000	QUASIPEAK
263.770	15.920	2.896	18.816	-27.184	46.000	QUASIPEAK
323.910	17.820	4.094	21.914	-24.086	46.000	QUASIPEAK
705.120	26.590	11.438	38.028	-7.972	46.000	QUASIPEAK
952.470	29.960	3.783	33.743	-12.257	46.000	QUASIPEAK

(b) Antenna polarization: vertical

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
36.790	13.750	4.166	17.916	-22.084	40.000	QUASIPEAK
*88.100	11.057	32.200	43.257	-4.743	48.000	AVERAGE
88.100	11.057	48.613	59.670	-8.330	68.000	PEAK
255.040	15.630	5.064	20.694	-25.306	46.000	QUASIPEAK
704.150	26.580	7.214	33.794	-12.206	46.000	QUASIPEAK
940.830	30.070	2.324	32.394	-13.606	46.000	QUASIPEAK
952.470	29.960	2.627	32.587	-13.413	46.000	QUASIPEAK

Remark：

(1) '*' means the worst case
Measurement Level = Reading Level + Factor
Factor=Ant Factor + Cable Loss

(2) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission 。

(3) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

EUT：	AllKit for iphone	Model Name ：	DYNAMIC8-868
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date :	2010-9-11
Test Mode ：	98.1MHz	Polarization :	Vertical& Horizontal
Test Power ：	DC 12V		

(a) Antenna polarization: Horizontal

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
70.740	12.620	4.535	17.155	-22.845	40.000	QUASIPEAK
98.100	12.100	47.684	59.784	-8.216	68.000	PEAK
*98.100	12.123	30.600	42.723	-5.277	48.000	AVERAGE
182.290	15.140	3.825	18.965	-24.535	43.500	QUASIPEAK
293.840	16.940	2.769	19.709	-26.291	46.000	QUASIPEAK
363.680	18.820	1.417	20.237	-25.763	46.000	QUASIPEAK
783.690	28.280	12.103	40.383	-5.617	46.000	QUASIPEAK

(b) Antenna polarization: vertical

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
36.790	13.750	4.033	17.783	-22.217	40.000	QUASIPEAK
98.100	12.123	48.903	61.026	-6.974	68.000	PEAK
*98.100	12.123	30.300	42.423	-5.577	48.000	AVERAGE
251.160	15.510	4.024	19.534	-26.466	46.000	QUASIPEAK
286.080	16.740	5.345	22.085	-23.915	46.000	QUASIPEAK
363.680	18.820	4.135	22.955	-23.045	46.000	QUASIPEAK
783.690	28.280	6.274	34.554	-11.446	46.000	QUASIPEAK

Remark：

(1) '*' means the worst case
Measurement Level = Reading Level + Factor
Factor=Ant Factor + Cable Loss

(2) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission 。

(3) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

EUT：	AllKit for iphone	Model Name ：	DYNAMIC8-868
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date :	2010-9-11
Test Mode ：	88.1MHz	Polarization :	Vertical& Horizontal
Test Power ：	DC 12V		

(a) Antenna polarization: Horizontal

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
107.900	13.098	47.859	60.957	-7.043	68.000	PEAK
*107.900	13.098	29.600	42.698	-5.302	48.000	AVERAGE
198.780	13.570	1.360	14.930	-28.570	43.500	QUASIPEAK
227.880	14.490	6.042	20.532	-25.468	46.000	QUASIPEAK
322.940	17.780	1.706	19.486	-26.514	46.000	QUASIPEAK
483.960	22.020	4.939	26.959	-19.041	46.000	QUASIPEAK
863.230	29.100	9.234	38.334	-7.666	46.000	QUASIPEAK

(b) Antenna polarization: vertical

Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
36.790	13.750	4.986	18.736	-21.264	40.000	QUASIPEAK
107.900	13.098	46.984	60.082	-7.918	68.000	PEAK
*107.900	13.098	29.000	42.098	-5.902	48.000	AVERAGE
253.100	15.570	5.047	20.617	-25.383	46.000	QUASIPEAK
263.770	15.920	4.476	20.396	-25.604	46.000	QUASIPEAK
274.440	16.350	3.570	19.920	-26.080	46.000	QUASIPEAK
863.230	29.100	4.242	33.342	-12.658	46.000	QUASIPEAK

Remark：

(1) '*' means the worst case
Measurement Level = Reading Level + Factor
Factor=Ant Factor + Cable Loss

(2) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission 。

(3) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4. BANDWIDTH TEST

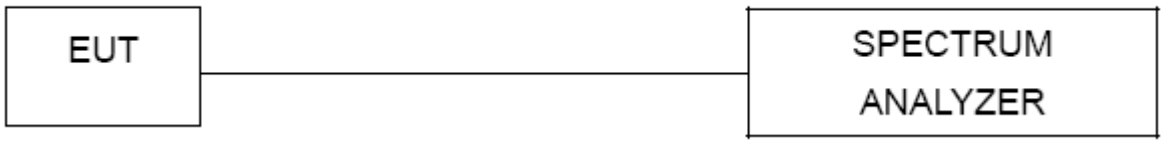
4.1 LIMIT
(a) Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200kHz band shall lie wholly within the frequency range of 88-108 MHz
4.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 10KHz, VBW≧RBW, Sweep time = Auto.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP

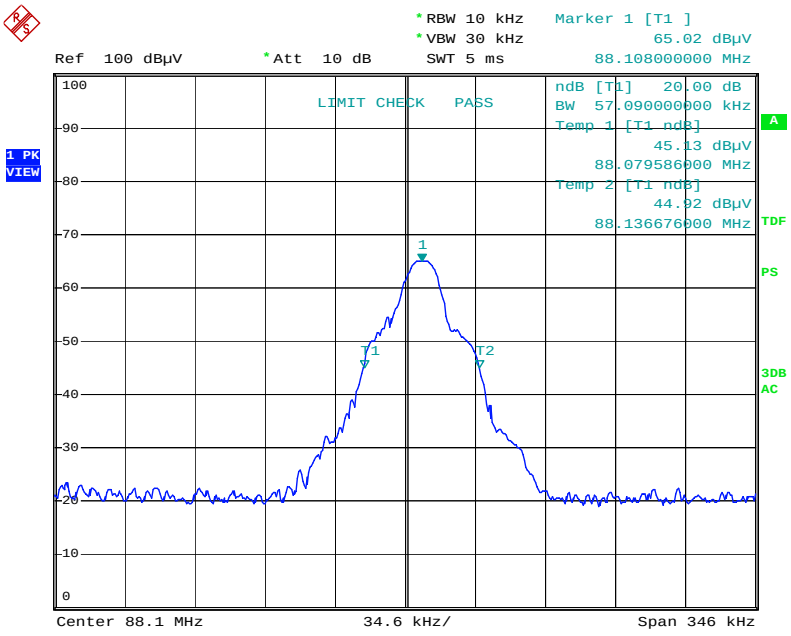


4.5 TEST RESULTS

EUT：	AllKit for iphone	Model Name ：	DYNAMIC8-868
Temperature：	26 ℃	Relative Humidity：	53%
Pressure：	1020 hPa	Test Power ：	DC 12V
Test Mode ：	TX		

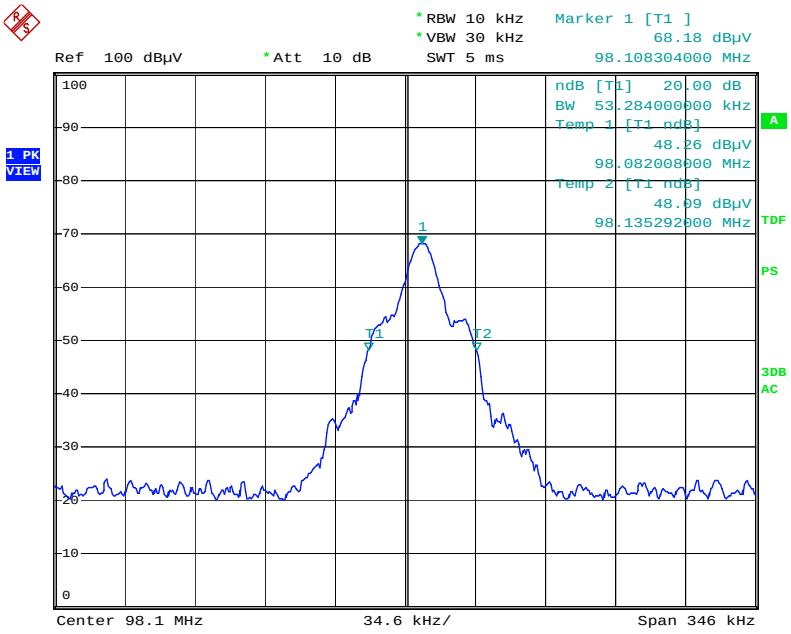
Test Channel	Frequency (MHz)	20 dBc Bandwidth (kHz)	Limit (kHz)
CH01	88.1	57.090	200
CH101	98.1	53.284	200
CH199	107.9	51.554	200

The Lowest Channel:88.1MHz



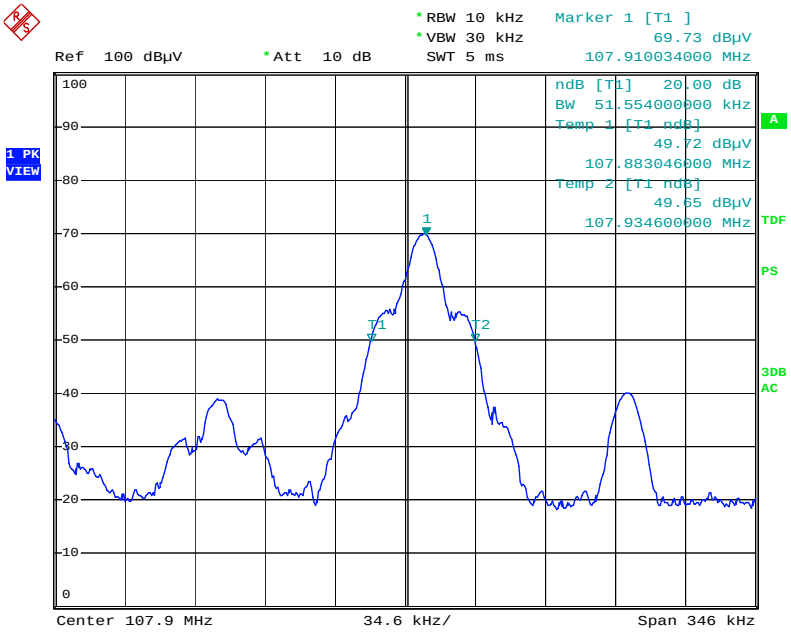
Date: 13.SEP.2010 17:10:10

The Middle Channel:98.1MHz



Date: 13.SEP.2010 17:13:29

The Highest Channel:107.9MHz



Date: 13.SEP.2010 17:15:58