Ke Mei Ou Laboratory Co., Ltd.

7A, Jiaxiangge, Jiahuixincheng, No.3027, Shennan Rd., Futian,
Shenzhen, Guangdong, P.R.China. Zip Code: 518033
Tel: + 86 755 83642690 Fax: + 86 755 83297077
www.kmolab.com

Ke Mei Ou Lab Corp.
FEDERAL COMMUNICATIONS COMMISSION
Registration Number: 125782
INDUSTRY CANADA
Registration Number: IC4986

FCC TEST REPORT

Under
FCC 15 Subpart C, Paragraph 15.239

Prepared For :

WANLIDA GROUP CO., LTD.

No. 618 JIAHE ROAD XIAMEN FUJIAN, CHINA

FCC ID: SMFMGX-0550
EUT: GPS
Model: MGX-0550

February 11, 2006

Report Type: Original Report
Test Engineer: Peter Lin
Test Date: January 22, 2006

Review By: _____ Apollo Liu / Manager

The test report consists 28 pages in total. It may be duplicated completely for legal use with the allowance of the applicant. It shall not be reproduced except in full, without the written approval of Ke Mei Ou Laboratory Corporation. The test result in the report only applied to the tested sample.

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1. General Information

1. 1 Notes

The test results of this report relate exclusively to the test item specified in 1.5. The KMO Lab does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the KMO Lab.

1. 2 Testing Laboratory

Ke Mei Ou Laboratory Co., Ltd.
7A, Jiaxiangge, Jiahuixincheng, No.3027, Shennan Rd., Futian, Shenzhen, Guangdong, P.R.China.
Tel: +86 755 83642690 Fax: +86 755 83297077
Email: kmo@kmolab.com
Internet: www.kmolab.com

Site on File with the Federal Communications Commission – United Sates
Registration Number: 125782
For 3 & 10 meter OATS

Site Listed with Industry Canada of Ottawa, Canada
Registration Number: IC4986
For 3 & 10 meter OATS

1. 3 Details of Applicant

Name : WANLIDA GROUP CO., LTD.
Address : No. 618 JIAHE ROAD XIAMEN FUJIAN, CHINA
Contact : Guiteng Wang / Engineer
Tel : +86 596 7653680
Fax : +86 596 7666248

1. 4 Application Details

Date of Receipt of Application	: January 16, 2006
Date of Receipt of Test Item	: January 16, 2006
Date of Test	: January 22~February 11, 2006

1. 5 Test Item

Manufacturer	: WANLIDA GROUP CO., LTD.
Address	: WANLIDA INDUSTRY ZONE, NANJING, FUJIAN, CHINA 363601
Brand Name	: N/A
Model No.	: MGX-0550
Description	: GPS

Additional Information

Frequency	: 95.1MHz~107.9MHz
Number of Channels	: N/A
Antenna	: Internal
Power Supply	: DC 12V
Operation Distance	: N/A
Resolution	: N/A

1. 6 Test Standards

FCC 15 Subpart C, Paragraph 15.239

Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

2. Technical Test

2. 1 Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.207	Conducted Test	PASS	Complies.
FCC Part 15 Subpart C Paragraph 15.239 Limit	Field Strength of Fundamental	PASS	Complies.
FCC Part 15, Subpart C Paragraph 15.239 Limit & Paragraph 15.209	Radiated Test	PASS	Complies.
FCC Part 15 Subpart C Paragraph 15.239 Limit	Measured Bandwidth	PASS	Complies.

2. 2 Antenna Requirement

A. Regulation

FCC section 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

B. Result

The EUT's antenna is a trace on the PCB. The EUT meets the requirements of this section.

3. EUT Modifications

No modification by Ke Mei Ou Laboratory Co., Ltd.

4. Conducted Power Line Test

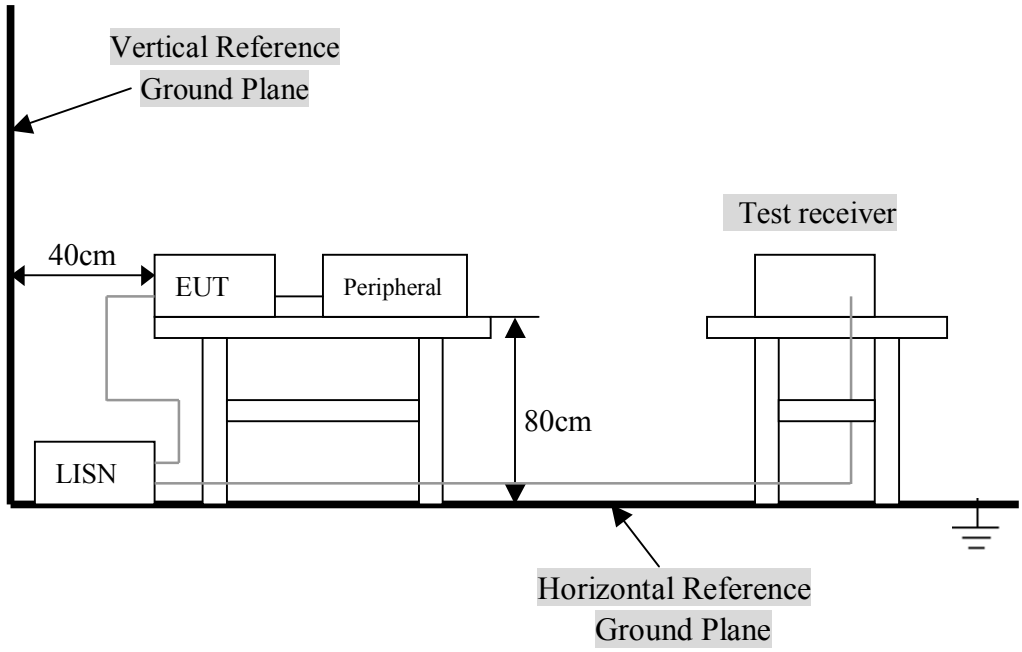
4. 1 Test Equipment

Please refer to Section 9 this report.

4. 2 Test Procedure

The EUT was tested according to ANSI C63.4 - 2003. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by section 5.1 of ANSI C63.4 - 2003. cables and peripherals were moved to find the maximum emission levels for each frequency.

4. 3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.

4. 4 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. EUT is the transmitter part of a FM transmitter. According to the specifications of the manufacturer, The EUT has been tested as an independent unit together with other necessary accessories or support units.
Three channels were provided to this EUT.

Channel	Frequency (MHz)
Low	95.1
Middle	101.5
High	107.9

Note: The channel low, middle, high were pre-tested. The channel high, worst case one, was chosen for radiated emission test.

The following support units or accessories were used to form a representative test configuration during the tests.

A. EUT

Device	Manufacturer	Model #	FCC ID
GPS	WANLIDA GROUP CO., LTD.	MGX-0550	SMFMGX-0550

B. Internal Devices

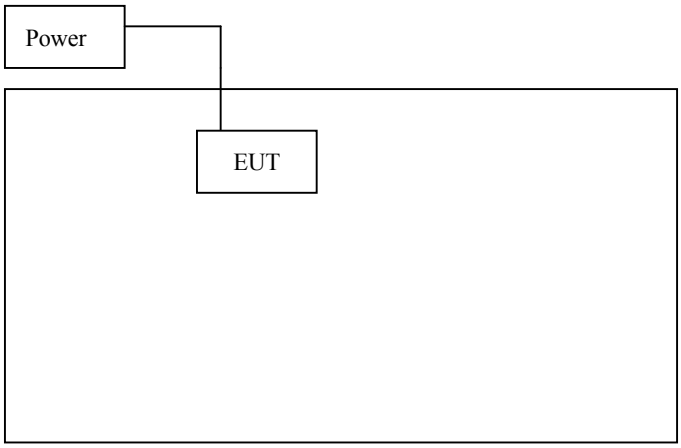
Device	Manufacturer	Model #	FCCID / DoC
N/A			

C. Peripherals

Device	Manufacturer	Model # Serial #	FCC ID/ DoC	Cable
N/A				

4. 5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 2003.
A. Setup the EUT and simulators as shown on follow.
B. Enable RF signal and confirm EUT active.
C. Modulate output capacity of EUT up to specification.



4. 6 Conducted Power Line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency Range (MHz)	**Class A QP/AV**	**Class B QP/AV**
0.15 – 0.5	79/66	66-56/56-46
0.5 – 5.0	73/60	56/46
5.0 - 30	73/60	60/50

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

4. 7 Conducted Power Line Test Result

Product	: GPS	Test Mode	: Channel High
Test Item	: Conducted Emission Data	Temperature	: 25 ℃
Test Voltage	: DC 12V (Power by Class 2 Adaptor)	Humidity	: 56%RH
Test Result	: **PASS**		

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All readings are quasi -peak values with a resolution bandwidth of 9 KHz.

- Temperature ： 26 ℃
- Humidity ： 53 % RH

EN55022 Class B							
Frequency (MHz)	**Emission (dBuV)**		**LINE/ NEUTRAL**	**Limit (dBuV)**		**Margin (dB)**	
	QP	**AV**		**QP**	**AV**	**QP**	**AV**
0.190	42.27	30.81	LINE	64.04	54.04	-21.77	-23.23
0.190	42.60	35.63	NEUTRAL	64.04	54.04	-21.44	-18.41
0.498	35.73	34.58	LINE	56.03	46.03	-20.30	-11.45
0.502	36.33	34.88	NEUTRAL	56.00	46.00	-19.67	-11.12
1.738	35.11	34.47	LINE	56.00	46.00	-20.89	-11.53
1.374	34.09	33.07	NEUTRAL	56.00	46.00	-21.91	-12.93

Note: NF = No Significant Peak was Found.

Note:

1.Uncertainty in conducted emission measured is <+/ -2dB.
2.The emission levels of other frequencies were very low against the limit.
3.All Reading Levels are Quasi-Peak and Average value.
4.Emission = Meter Reading + Factor; Factor = Insertion Loss + Cable Loss.
5.Margin Value = Emission Level - Limit Value.

Conducted Emission

EN55022

EUT: GPS; M/N: MGX-0550

Manufacturer: WANLIDA GROUP CO., LTD.

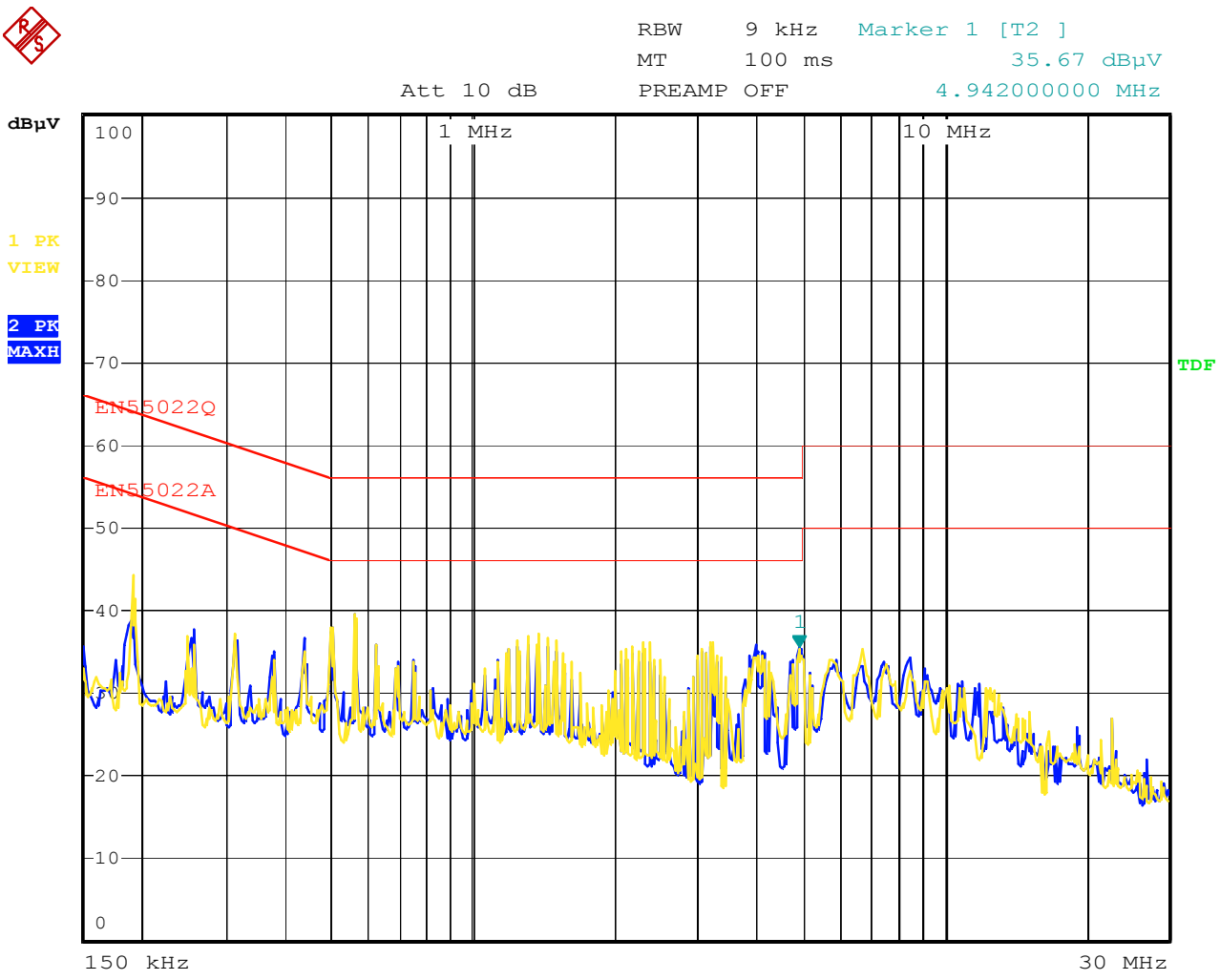
Operating Condition: Transmitter

Test Site: Ke Mei Ou Laboratory

Operator: Peter Lin

Test Specification: LINE&NEUTRAL

Comment:



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5. Radiated Emission Test

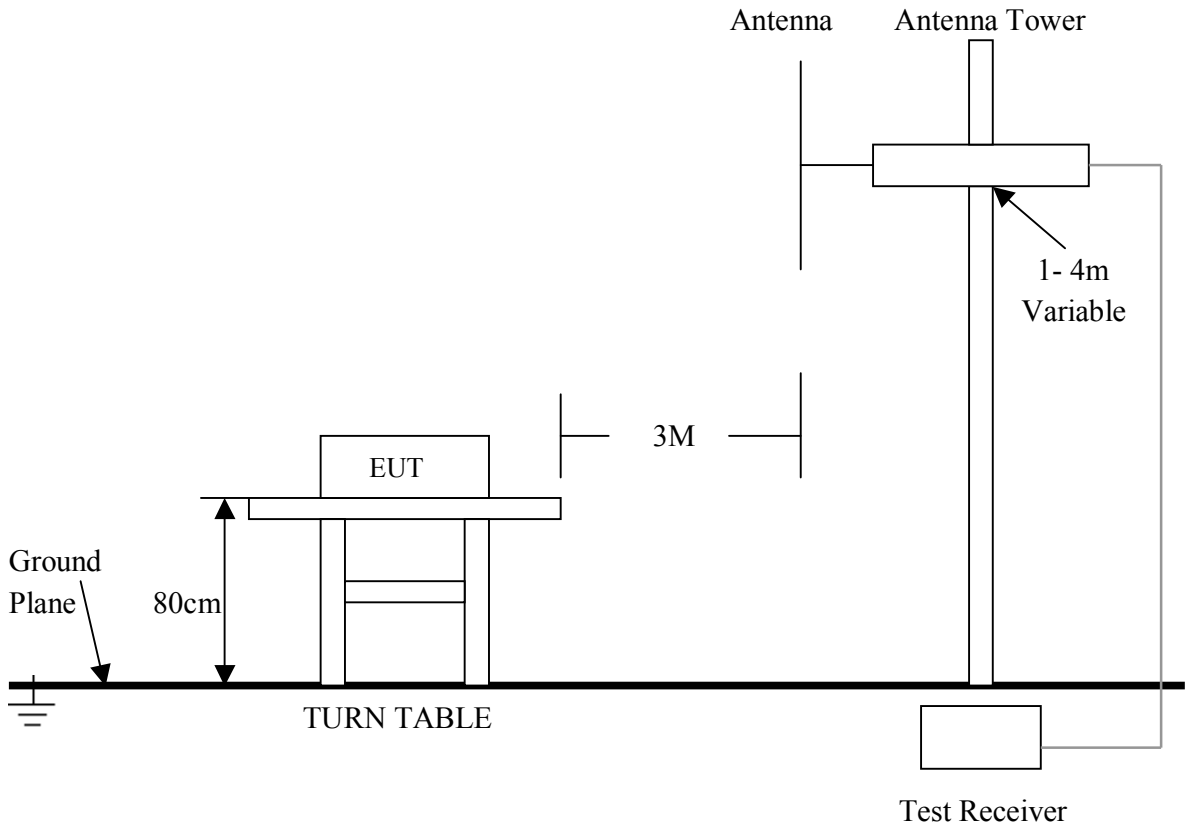
5. 1 Test Equipment

Please refer to Section 9 this report.

5. 2 Test Procedure

1. The EUT was tested according to ANSI C63.4 - 2003. The radiated test was performed at Ke Mei Ou Laboratory. This site is on file with the FCC laboratory division, Registration No. 125782.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
3. The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
4. The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
5. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
6. The antenna polarization : Vertical polarization and Horizontal polarization.

5. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing.

5. 4 Configuration of The EUT

Same as section 4 . 4 of this report

5. 5 EUT Operating Condition

Same as section 4 . 5 of this report.

5. 6 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below ：

A. FCC Part 15 Subpart C Paragraph 15.239 Limit

According to 15.239 the field strength of emission from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)	
	Peak (dBuV/m)	Average (dBuV/m)
88 to 108	67.96	47.96

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency (MHz)	Distance (m)	Field Strength (microvolts/m)
0.009 - 0.490	300	2400/F(kHz)
0.490 - 1.705	30	24000/F(kHz)
1.705 – 30.0	30	30
30 - 88	3	100
88 - 216	3	150
216 - 960	3	200
ABOVE 960	3	500

Note: As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

5. 7 Radiated Emission Test Result

A. Fundamental Radiated Emission Data

Product : GPS
Test Item : Fundamental Radiated Emission Data
Test Voltage : DC 12V (Power by Class 2 Adaptor)
Test Result : **PASS**
Test Mode : Channel Low
Temperature : 25 ℃
Humidity : 56%RH

Freq. (MHz)	Emission (dBuV/m) Peak	Average	HORIZ / VERT	Limits (dBuV/m) Peak	Average	Margin (dB) Peak	Average
95.100	49.56	47.61	HORIZ	67.96	47.96	-18.40	-0.35
95.100	48.11	44.41	VERT	67.96	47.96	-19.85	-3.55

Note: (1) PK= Peak, AV=Average.
(2) Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : GPS
Test Item : Fundamental Radiated Emission Data
Test Voltage : DC 12V (Power by Class 2 Adaptor)
Test Result : **PASS**
Test Mode : Channel Middle
Temperature : 25 ℃
Humidity : 56%RH

Freq. (MHz)	Emission (dBuV/m) Peak	Average	HORIZ / VERT	Limits (dBuV/m) Peak	Average	Margin (dB) Peak	Average
101.500	47.92	45.13	HORIZ	67.96	47.96	-20.04	-2.83
101.500	49.34	47.72	VERT	67.96	47.96	-18.62	-0.24

Note: (1) PK= Peak, AV=Average.
(2) Emission Level = Reading Level + Probe Factor + Cable Loss.

Product : GPS
Test Item : Fundamental Radiated Emission Data
Test Voltage : DC 12V (Power by Class 2 Adaptor)
Test Result : **PASS**
Test Mode : Channel High
Temperature : 25 ℃
Humidity : 56%RH

Freq. (MHz)	Emission (dBuV/m) Peak	Average	HORIZ / VERT	Limits (dBuV/m) Peak	Average	Margin (dB) Peak	Average
107.900	47.92	45.13	HORIZ	67.96	47.96	-20.04	-2.83
107.900	50.60	47.68	VERT	67.96	47.96	-17.36	-0.28

Note: (1) PK= Peak, AV=Average.
(2) Emission Level = Reading Level + Probe Factor + Cable Loss.

B. General Radiated Emission Data & Harmonics Radiated Emission Data

Product : Mobile DVD Player
Test Item : General Radiated Emission Data & Harmonics Radiated Emission Data
Test Voltage : DC 9.5V (Power by Class 2 Adaptor)
Test Result : **PASS**
Test Mode : Channel 1
Temperature : 25 ℃
Humidity : 56%RH

Freq. (MHz)	Emission (dBuV/m)	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
51.280	33.08	Horiz./	40.0	-6.92
40.600	38.12	Vert.	40.0	-1.88
60.280	36.70	Horiz./	40.0	-3.30
49.200	38.70	Vert.	40.0	-1.30
111.880	41.07	Horiz./	43.5	-2.43
121.520	42.13	Vert.	43.5	-1.37
147.440	40.64	Horiz./	43.5	-2.86
416.160	41.03	Vert.	46.0	-4.97
215.800	37.98	Horiz./	43.5	-5.52
215.800	40.50	Vert.	43.5	-3.00

Note: (1) All Reading Levels below 1GHz are Quasi-Peak, above are peak and average value.
(2) Emission Level = Reading Level + Probe Factor + Cable Loss.

6. Band Edge

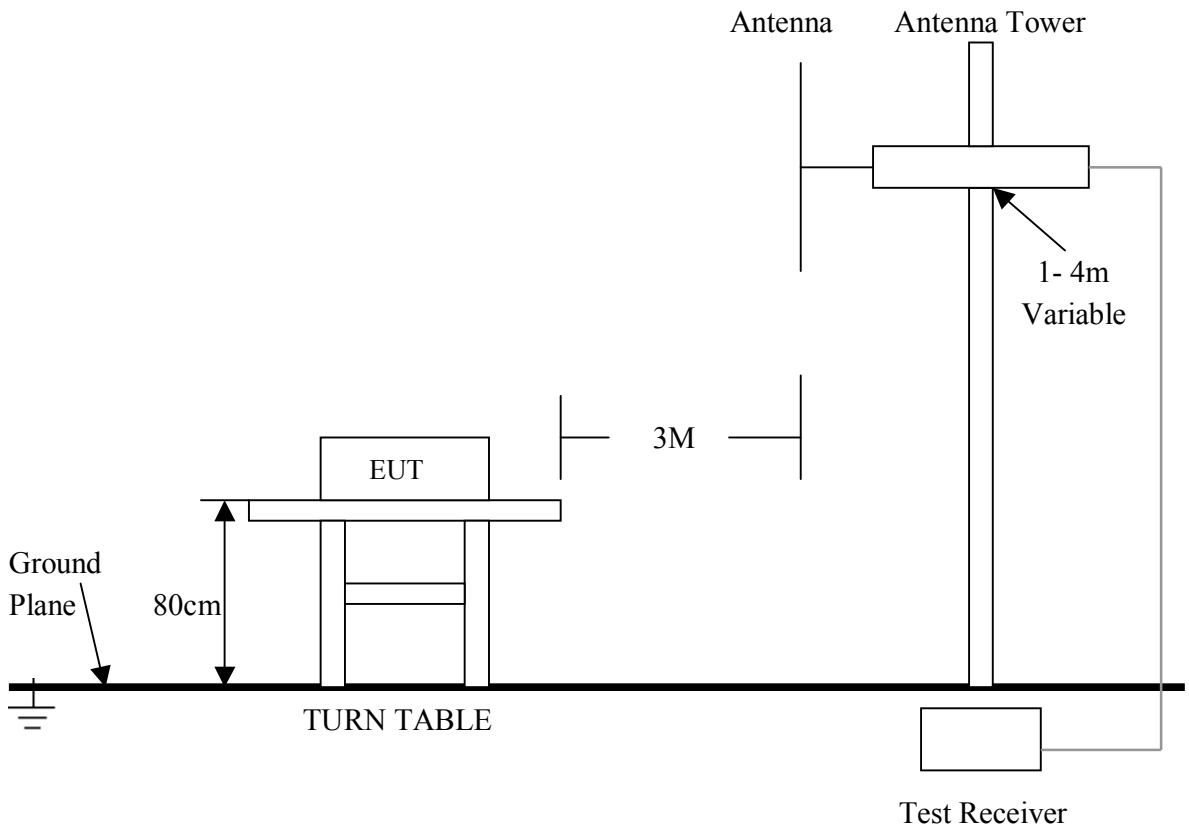
6. 1 Test Equipment

Please refer to Section 9 this report.

6. 2 Test Procedure

1. The EUT was tested according to ANSI C63.4 - 2003. The radiated test was performed at Ke Mei Ou Laboratory. This site is on file with the FCC laboratory division, Registration No. 125782.
2. The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
3. The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters.
4. The antenna high were varied from 1 m to 4 m high to find the maximum emission for each frequency.
5. The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement. The bandwidth below 30MHz setting on the field strength meter is 10 kHz, above 1GHz are 1 MHz.
6. Maximizing procedure was performed on the highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
7. The antenna polarization ： Vertical polarization and horizontal polarization.

6. 3 Radiated Test Setup



For the actual test configuration , please refer to the related items – Photos of Testing

6. 4 Configuration of The EUT

Same as section 4 . 4 of this report

6. 5 EUT Operating Condition

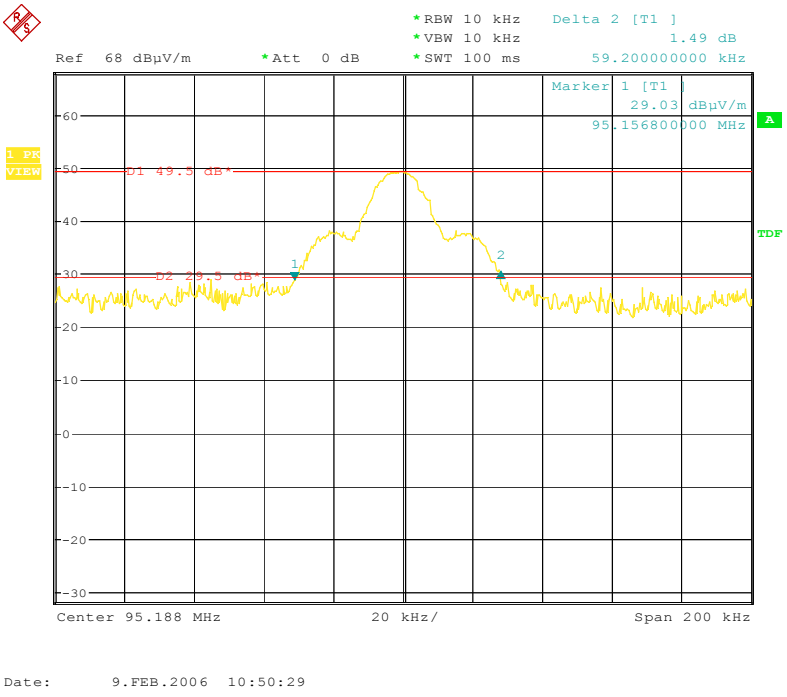
Same as section 4 . 5 of this report.

6. 6 Band Edge FCC 15.239 Limit

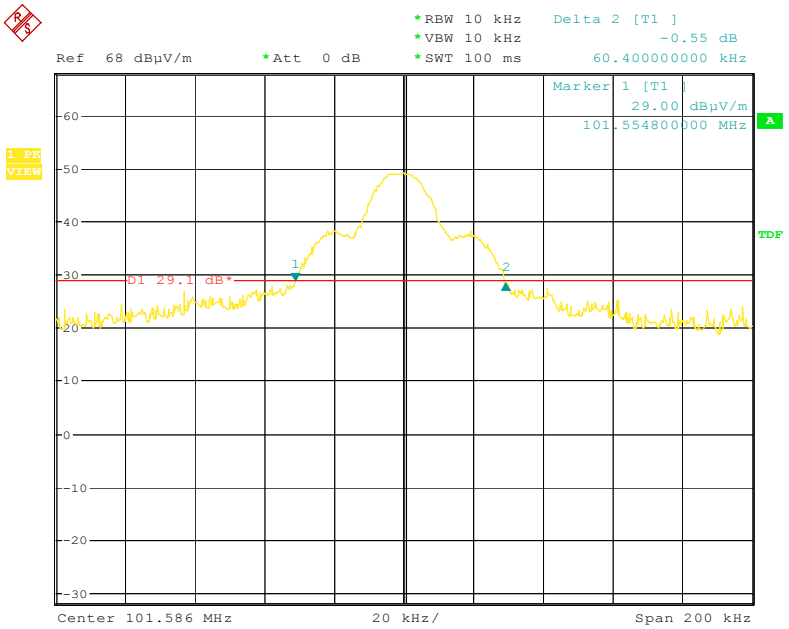
Emission from the intentional radiator shall be confined within a bands 200kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88 to 108 MHz.

6. 7 Band Edge Test Result

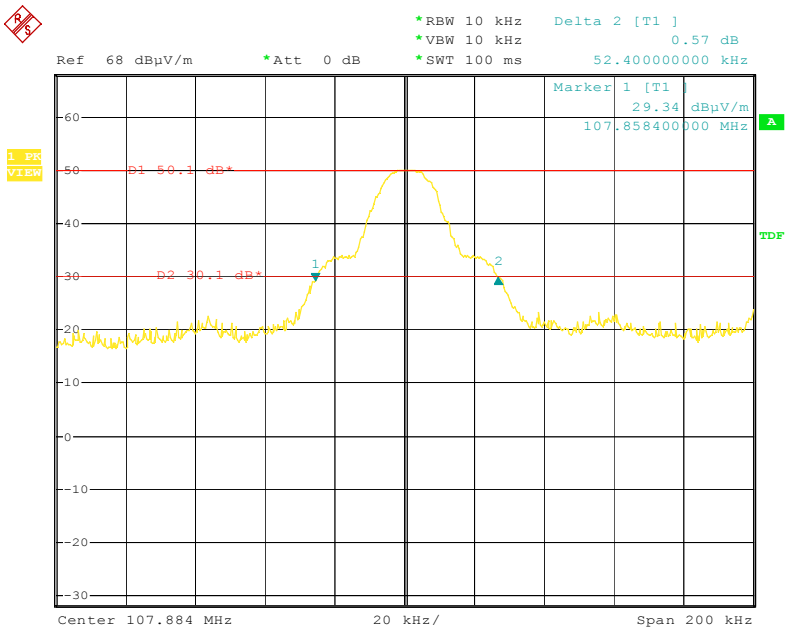
Product	: GPS	Test Mode	: Channel Low
Test Item	: Band Edge Data	Temperature	: 25 ℃
Test Voltage	: DC 12V (Power by Class 2 Adaptor)	Humidity	: 56%RH
Test Result	: **PASS**		



Product	: GPS	Test Mode	: Channel Middle
Test Item	: Band Edge Data	Temperature	: 25 ℃
Test Voltage	: DC 12V (Power by Class 2 Adaptor)	Humidity	: 56%RH
Test Result	: **PASS**		



Product	: GPS	Test Mode	: Channel High
Test Item	: Band Edge Data	Temperature	: 25 ℃
Test Voltage	: DC 12V (Power by Class 2 Adaptor)	Humidity	: 56%RH
Test Result	: **PASS**		



Note: (1) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.
(2) The average measurement was not performed when the peak measured data under the limit of average detection.

7. Photos of Testing

7. 1 EUT Test Photographs

Conducted emission test view

Radiated emission test view

7. 2 EUT Detailed Photographs

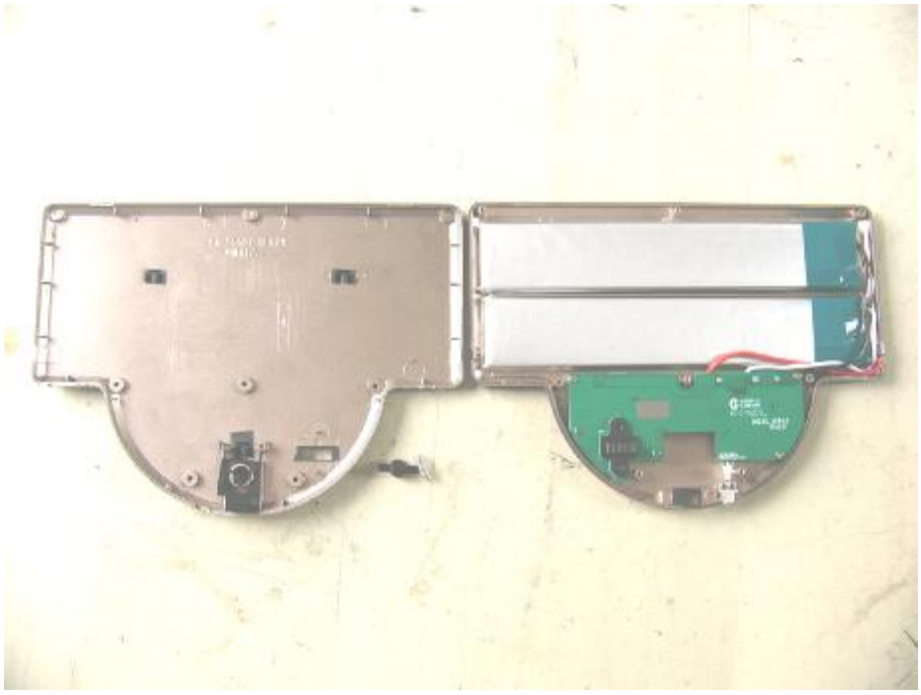
EUT top view

EUT bottom view

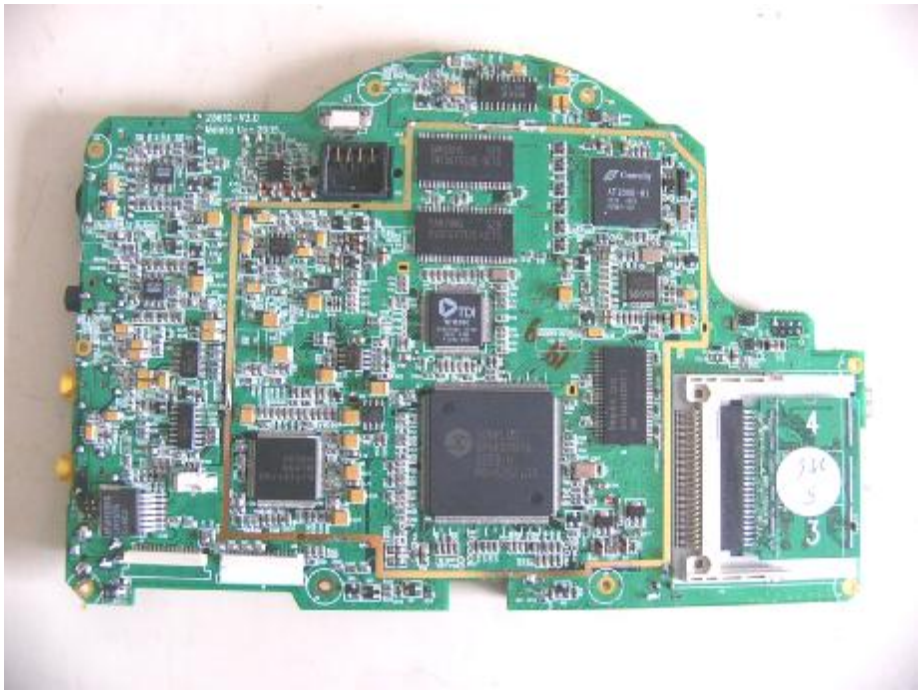

DC 12V IN
OUT
AV
IN
VOLUME


GPS
USB
SD

EUT inside whole view



Main board component side

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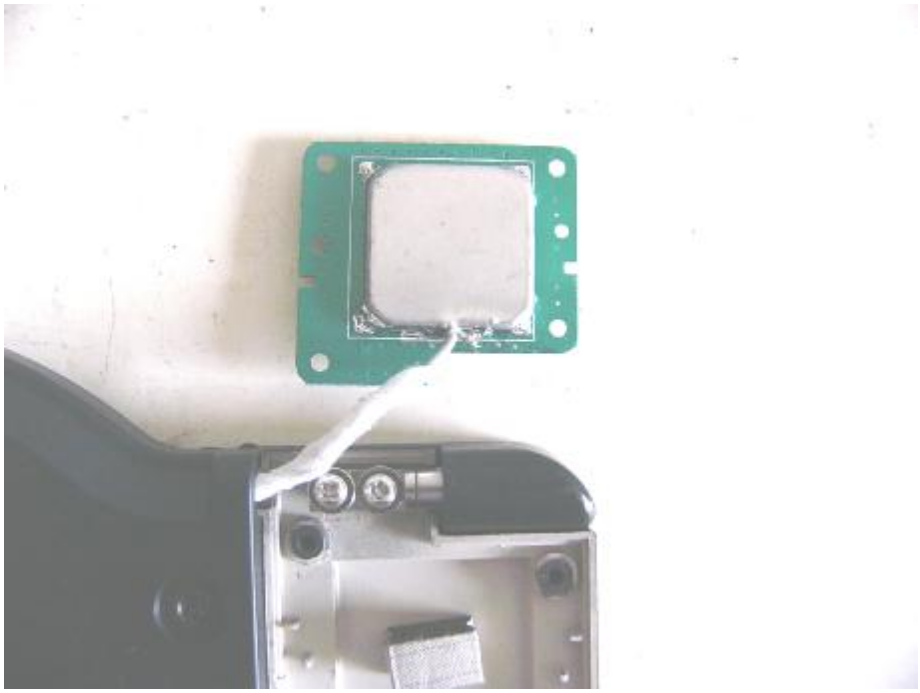
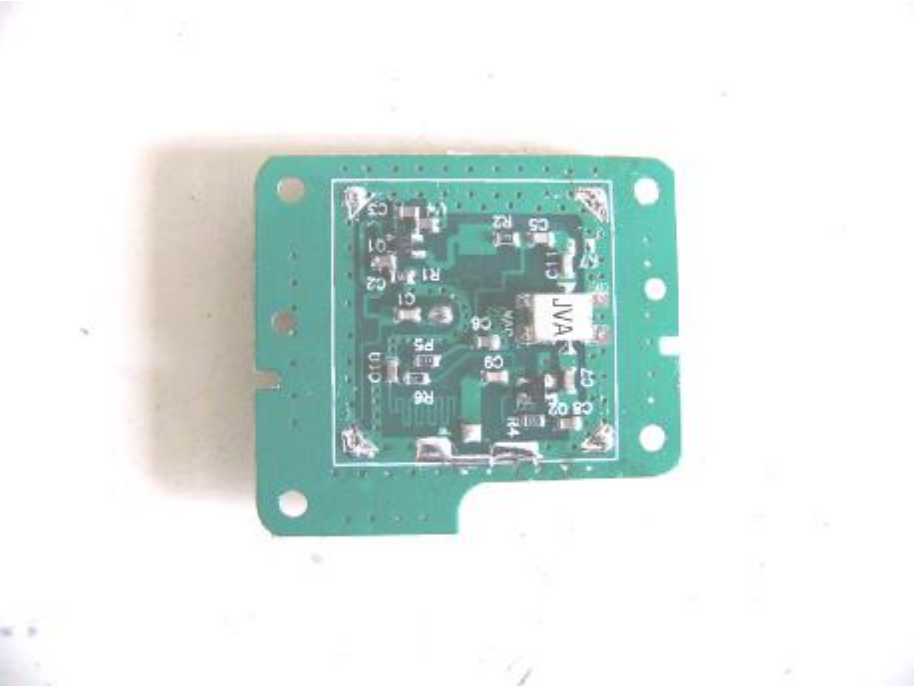
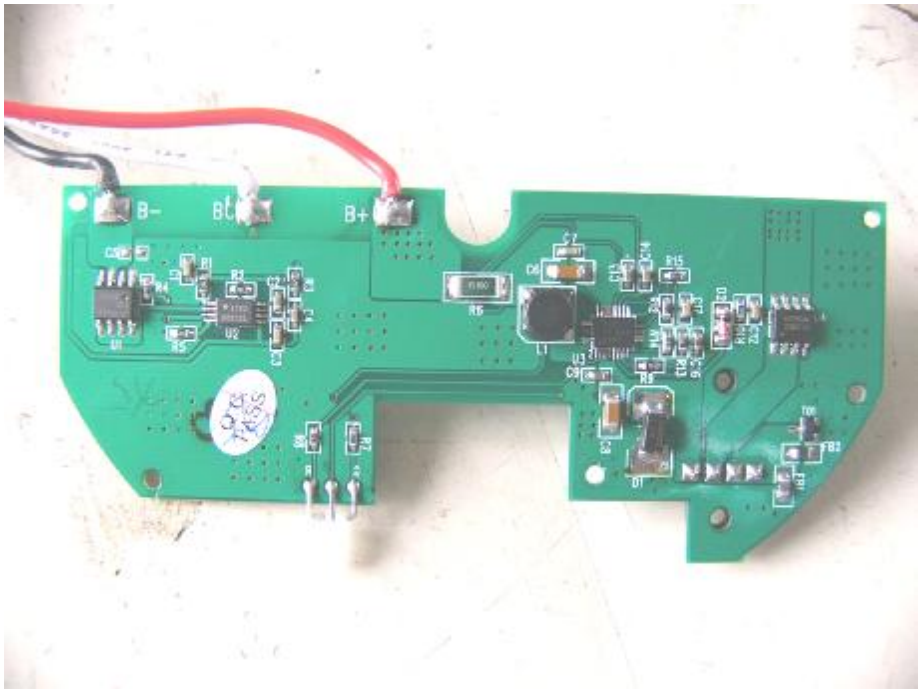


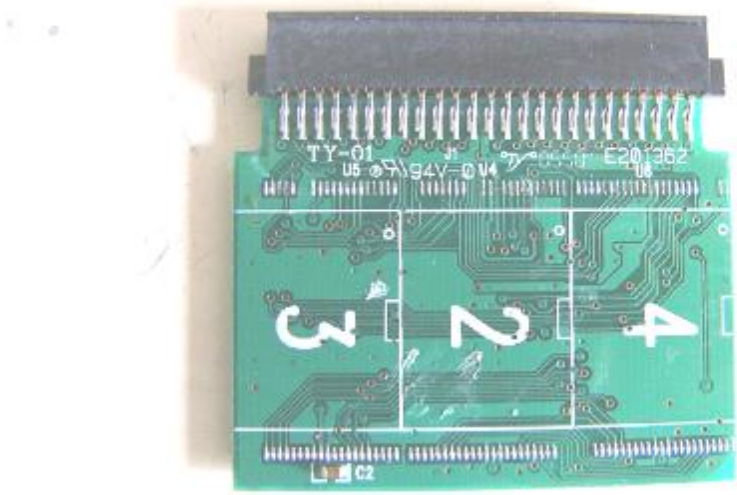


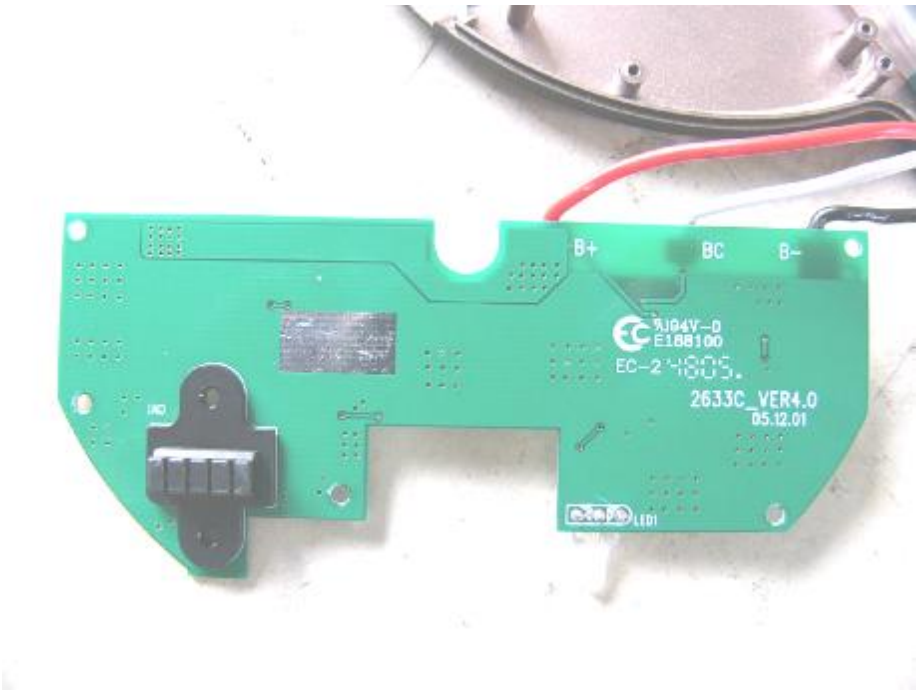

SAMSUNG 522
K9F2608U0M
PCB0
PHISON
PS3002T DD-G
0539
ML73L-010GEDO
2562CV2.1 05-09-24


Leadtek
X51001111449
Model:LR9548
MADE IN TAIWAN


B-
B+

Main board solder side




B+
BC
B-
94V-0
E188100
2633C_VER4.0
05.12.01

8. FCC ID Label

FCC ID: SMFMGX-0550

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Bottom View/Proposed FCC ID Label Location

9. Test Equipment

The following test equipments were used during the radiated & conducted emission test:

Equipment/ Facilities	Manufacturer	Model #	Serial No.	Date of Cal.	Due Date
Turntable	KMO	KSZ001T	200306	NCR	NCR
Antenna Tower	KMO	KSZ002AT	200307	NCR	NCR
OATS	KMO	KSZSITE001	N/A	July 06, 2005	July 06, 2006
EMI Test Receiver	Rohde & Schwarz	ESPI3	100180	Oct.18, 2005	Oct.18, 2006
Signal Generator	Rohde & Schwarz	SMT03	100059	Feb.10, 2006	Feb.10, 2007
Signal Generator	FLUKE	PM5418+Y/C	LO747012	Feb.10, 2006	Feb.10, 2007
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.10, 2006	Feb.10, 2007
Biconical Antenna	Rohde & Schwarz	HK116	EMC0502	Dec. 14,2005	Dec. 14,2006
Bilog Antenna	Chase	CBL6111C	2576	Feb.01, 2006	Feb.01, 2007
Ultra Broadband Antenna	Rohde & Schwarz	HL 562	100110	June.05, 2005	June.05, 2006
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct. 23,2005	Oct. 23, 2006
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct. 23,2005	Oct. 23, 2006
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
Absorbing Clamp	Rohde & Schwarz	MDS-21	N/A	Oct. 29,2005	Oct. 29,2006
KMO Shielded Room	KMO	KMO-001	N/A	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb. 27, 2005	Feb.27, 2006
AMN	Rohde & Schwarz	ESH3-Z5	100002	Feb.10, 2006	Feb.10, 2007
LISN	Kyoritsu	KNW-407	8-1441-8	Feb.10, 2006	Feb.10, 2007
EMI Test Receiver	Rohde & Schwarz	ESI26	838786/013	Feb.10, 2006	Feb.10, 2007
Bilog Antenna	Chase	CBL6112B	2591	Feb.10, 2006	Feb.10, 2007
Horn Antenna	Rohde & Schwarz	HF906	100014	Feb.10, 2006	Feb.10, 2007
Power Meter	Rohde & Schwarz	NRVD	100041	Feb.10, 2006	Feb.10, 2007
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb.10, 2006	Feb.10, 2007
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.10, 2006	Feb.10, 2007
SOHO Telephone Switching System	IKE	2000-108C	N/A	Feb.10, 2006	Feb.10, 2007
Temperature Chamber	TABAI	PSL-4GTW	N/A	Feb.10, 2006	Feb.10, 2007
3m Semi-Anechoic Chamber	Albatross Projects	9mX6mX6m	N/A	Feb.10, 2006	Feb.10, 2007