EMC TEST REPORT

For

3 CHANNELS MINI FM TRANSMITTER

Model Number: GPSP24 PSP-00774
FCC ID: TLJMDE3774068

Report Number **:** WT068000321

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory Guangdong EMC Compliance Test Center
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TEST REPORT DECLARATION

Applicant	:	Millennium Dragon Electronics LTD
Address	:	11/F1-B,Kim Tak Building,328-342A Nathan Road.Kowloon,HongKong,China
Manufacturer	:	Lan Yang Electronics Factory
Address	:	FL/3—4 , NO.168 XiJing Road, GuShu Village, XiXiang Town,Shenzhen
EUT Description	:	3 CHANNELS MINI FM TRANSMITTER
Model Number		GPSP24 PSP-00774
Model Difference		The difference of them is they applied to different markets
FCC ID Number		TLJMDE3774068

Test Standards:

FCC Part 15 15.239 :2005

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT.Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.239.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Tested by: _____ Date: _____
(Dewelly Yang)

Checked by: _____ Date: _____
(Louis Lin)

Approved by: _____ Date: _____
(Peter Lin)

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
Conducted Disturbance	15.207	N/A
Radiated disturbance	15.239	Pass
Occupied Bandwidth	15.239	Pass

2. GENERAL INFORMATION

2.1. Report information

2.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

2.1.2.The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:
China National Accreditation Committee for Laboratories (**CNAL**) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is L0579.

The Laboratory is listed in the United States of American Federal Communications Commission (**FCC**), and the registration number are **97379**(open area test site) and **274801**(semi anechoic chamber).
The Laboratory is listed in Voluntary Control Council for Interference by Information Technology Equipment (**VCCI**), and the registration number are **R-1974**(open area test site) , **R-1966**(semi anechoic chamber),**C-2117**(mains ports conducted interference measurement) and **T-180**(telecommunication ports conducted interference measurement).

The Laboratory is registered to perform emission tests with Industry Canada (**IC**), and the registration number is **IC4174**.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is **E2024086Z02**.
Measurement Uncertainty

2.3. Measurement Uncertainty

Conducted Disturbance : 9kHz~30MHz 3.5dB

Radiated Disturbance: 30MHz~1000MHz 4.5dB
1GHz~18GHz 4.6dB

3. PRODUCT DESCRIPTION

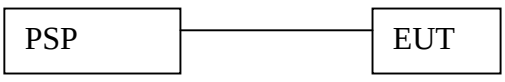
3.1. EUT Description

Description	:	3 CHANNELS MINI FM TRANSMITTER
Manufacturer	:	Lan Yang Electronics Factory
Model Number	:	GPSP24 PSP-00774
Input Power	:	DC 2.4V By PSP 45±5mA
Operate Frequency	:	88.1 , 88.5 , 88.9MHz
Modulation		Frequency Modulation
Antenna Designation	:	Non-User Replaceable (Fixed)

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: TLJMDE3774068 filing to comply with Section 15.239 of the FCC Part 15, Subpart C Rules. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure.

3.3. Block Diagram of EUT Configuration



3.4. Operating Condition of EUT

Mode 1:The Transmitter was operated in the normal operating mode.

3.5. Special Accessories

Not available for this EUT intended for grant.

3.6. Equipment Modifications

Not available for this EUT intended for grant.

3.7. Support Equipment List

PSP
M/N：PSP-1000
S/N: SJ0772703
Adapter: M/N: PSP-100
S/N:06031014021
Input:100-240V 0.3A 50/60Hz
Output:DC5V 2000mA
Manufacturer: Sony Computer Entertainment Inc

3.8. Test Conditions

Date of test：Mar.24,2006
Date of EUT Receive：Mar.20,2006
Temperature: 24 ℃
Relative Humidity: 53%

4. TEST EQUIPMENT USED

4.1. Test Equipment Used to Measure Conducted Disturbance

Table 2 Conducted Disturbance Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB2603	EMI Test Receiver	Rohde & Schwarz	ESCS30	Jan.28, 2006	1 Year
SB3321	AMN	Rohde & Schwarz	ESH2-Z5	Jan.28, 2006	1 Year
SB2585	AM/FM generator	Jung Jin	JSG-1101B	Jun.21, 2005	1 Year
SB3612	Audio generator	KENWOOD	AD-203D	Jun.21, 2005	1 Year

4.2. Test Equipment Used to Measure Radiated Disturbance and bandwidth

Table 3 Radiated Disturbance Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB3436	EMI Test Receiver	Rohde & Schwarz	ESI26	Jan.28, 2006	1 Year
SB3440	Bilog Antenna	Chase	CBL6112B	Jan.28, 2006	1 Year
SB2585	AM/FM generator	Jung Jin	JSG-1101B	Jun.21, 2005	1 Year
SB3612	Audio generator	KENWOOD	AD-203D	Jun.21, 2005	1 Year

5. CONDUCTED DISTURBANCE TEST

5.1. Test Standard and Limit

5.1.1.Test Standard

FCC Part 15:2005

5.1.2.Test Limit

Table 4 Conducted Disturbance Test Limit (Class B)

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

- Decreasing linearly with logarithm of the frequency
- The lower limit shall apply at the transition frequency.

5.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4-2003.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.The bandwidth of EMI test receiver is set at 9kHz.

5.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

5.4. Test Data

Table 2 Conducted Disturbance Test Data

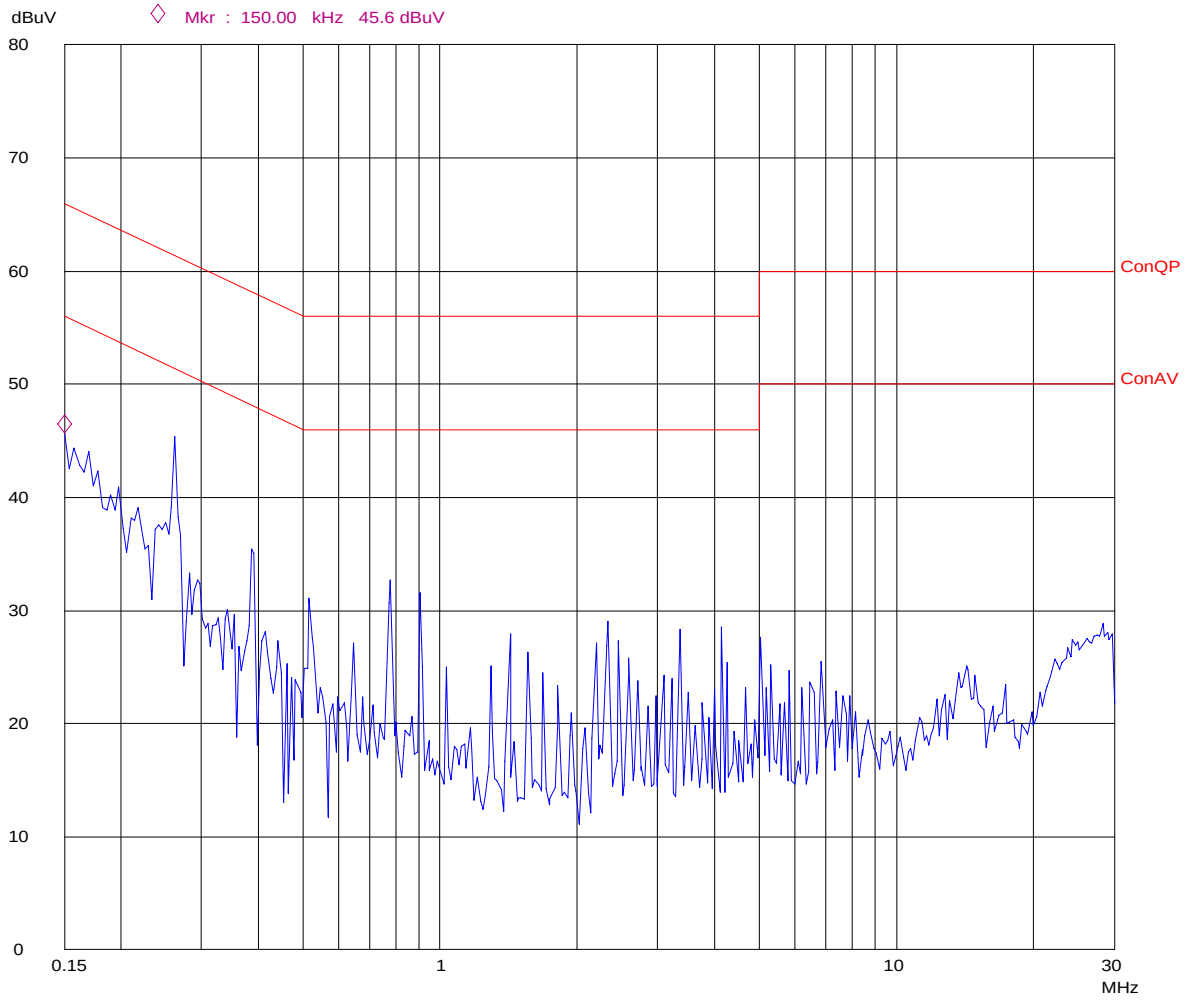
Mode No.: UX-GD7

Test Mode: 1 (AC230V/50Hz)

Line					Neutral				
Frequency (MHz)	Quasi-Peak		Average		Frequency (MHz)	Quasi-Peak		Average	
	Reading (dBμV)	Limit (dBμV)	Reading (dBμV)	Limit (dBμV)		Reading (dBμV)	Limit (dBμV)	Reading (dBμV)	Limit (dBμV)
0.150	38.6	66	11.2	56	0.150	39.6	66	13.4	56
0.256	45.4	61.5	29.5	51.5	0.258	42.6	61.5	36.7	51.5
0.388	34.5	58.1	26.5	48.1	0.518	33.1	56	32．7	46
0.775	32.5	56	30.5	46	0.776	33.2	56	32.0	46
0.905	29.1	56	25.8	46	1.295	32.2	56	30.0	46
2.326	26.5	56	22.5	46	2.200	29.7	56	26.9	46

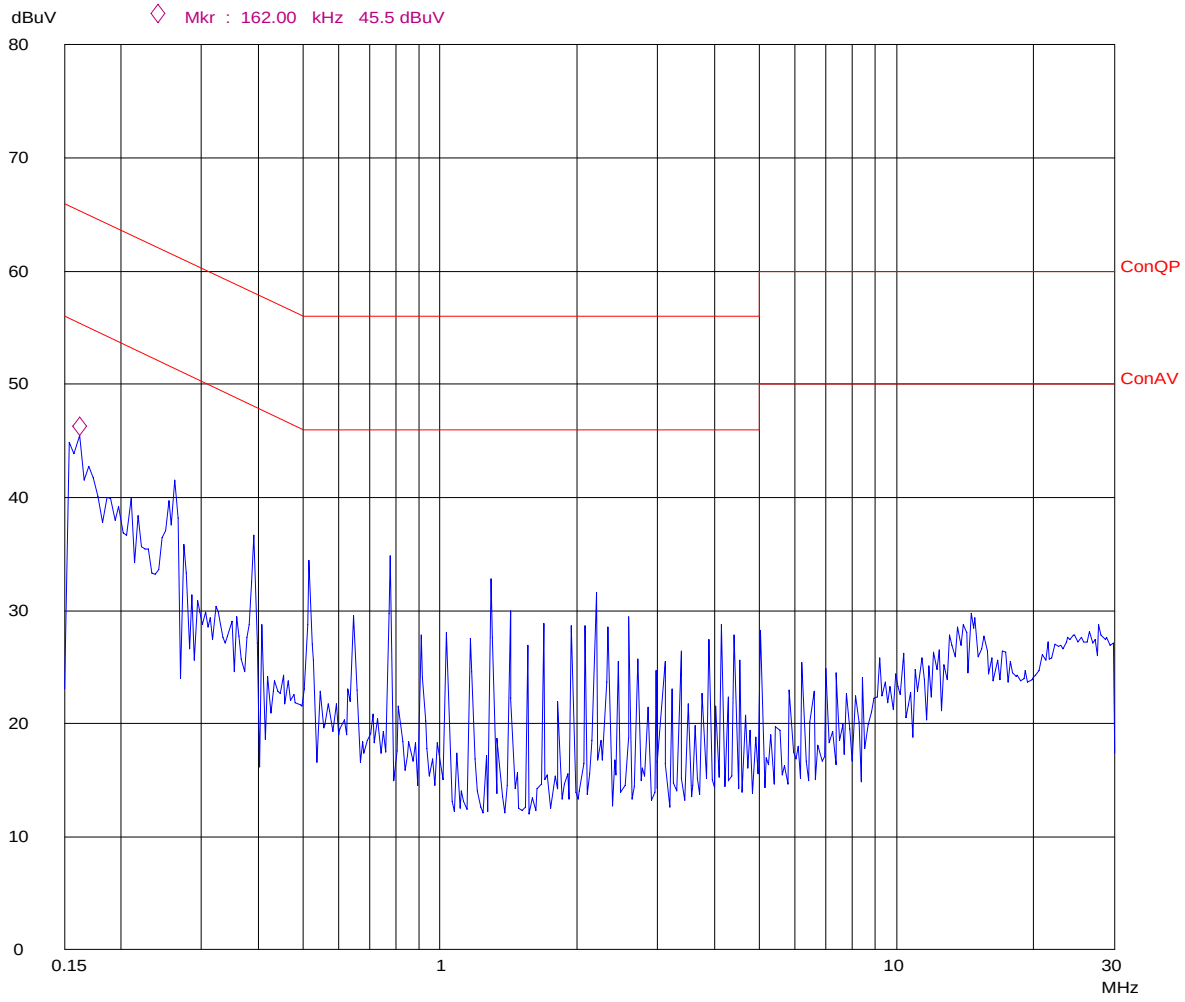
Conducted Disturbance

EUT:	M/N:GPSP24
Op Cond:	88.5MHz
Test Spec:	L
Comment:	AC 120V/60Hz



Conducted Disturbance

EUT:	M/N:GPSP24
Op Cond:	88.5MHz
Test Spec:	N
Comment:	AC 120V/60Hz



6. RADIATED DISTURBANCE TEST

6.1. Test Standard and Limit

6.1.1.Test Standard

FCC Part 15:2005

6.1.2.Test Limit

Table 5 Radiated Disturbance Test Limit (Class B)

FREQUENCY MHz	FIELD STRENGTHS LIMITS （μV/m)	FIELD STRENGTHS LIMITS dB (μV/m)
30 ~ 88	100	40.0
88 ~ 216	150	43.5
216 ~ 960	200	46.0
960 ~	500	54.0

* The lower limit shall apply at the transition frequency.
* The test distance is 3m.

6.2. Test Procedure

The EUT is 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. EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and13 of ANSI C63.4-2003.

6.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

6.4. Test Data

Emissions don’t show below are too low against the limits, the test curves are shown in the APPENDIX Ⅰ

Table 6 Radiated Disturbance Test Data (FCC Part15)

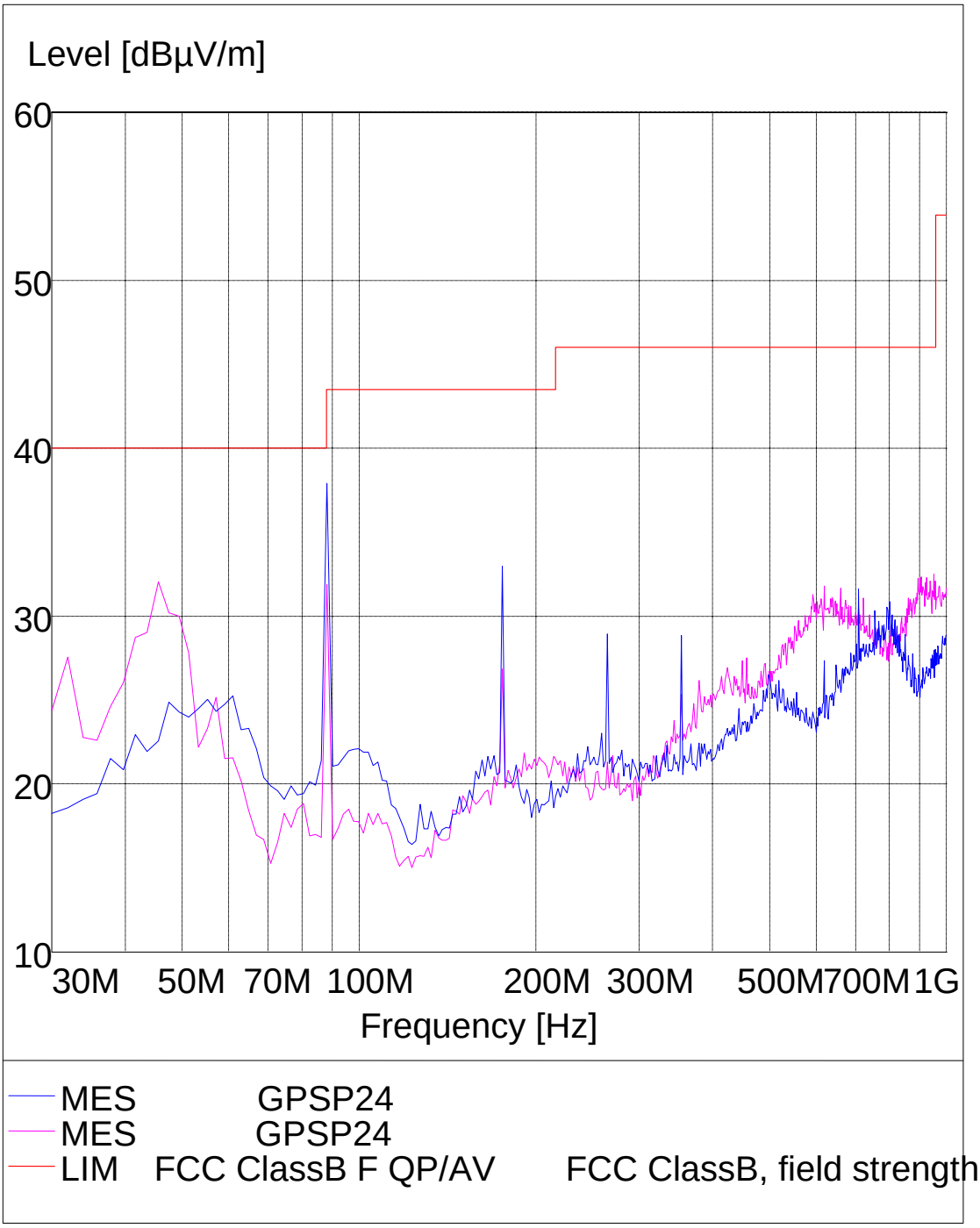
Model No.: GPSP24

Test Mode: 1

Frequency (MHz)	Polarization	Reading (dB μ V)	Cable Loss R1 (dB)	Cable Loss R2 (dB)	Antenna Factor (dB/m)	Level dB (μ V/m)	Limits dB (μ V/m)
88.508	H	26.1	0.6	0.7	10.3	37.7	48.0
197.016	H	20.0	0.8	1.6	9.9	32.3	46.0
265.524	H	12.6	0.9	1.7	13.7	28.9	46.0
354.032	H	9.5	1.2	2.0	15.5	28.5	46.0
45.500	V	10.2	1.1	1.7	13.5	26.5	46.0
88.508	V	13.9	0.6	0.7	10.3	31.8	48.0
197.016	V	14.2	0.8	1.6	9.9	26.5	46.0

Radiated emission

EUT: M/N: GPSP24
Operating Condition: ON
Operator:
Test Specification: Horizontal&Vertical
Comment: DC2.4V



7. OCCUPIED BANDWIDTH

7.1. Test Standard and Limit

7.1.1.Test Standard

FCC Part 15:2005

7.1.2.Test Limit

Table 7 Bandwidth Limit

	Limit（kHz）
Bandwidth	200

7.2. Test Procedure

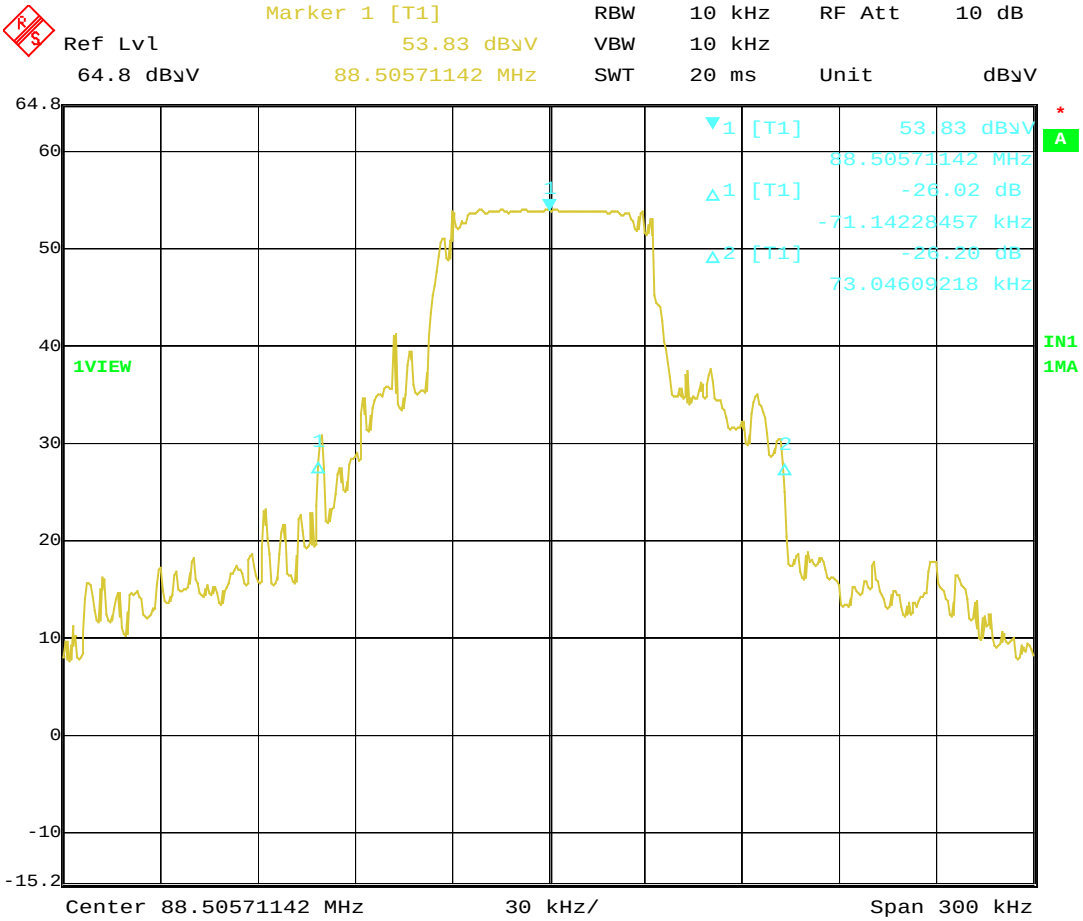
1.The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set EMI test receiver(ESIB26) Center Frequency = fundamental frequency, RBW, VBW= 10KHz, Span=300KHz.
4. Set EMI test receiver(ESIB26) Max hold. Mark peak, -26dB.

7.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

7.4. Test Data

26dB bandwidth = 144.19kHz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Ref Lvl
64.8 dBµV
53.83 dBµV
88.50571142 MHz
RBW 10 kHz
VBW 10 kHz
SWT 20 ms
RF Att 10 dB
Unit dBµV
1 [T1] 53.83 dBµV
88.50571142 MHz
Δ1 [T1] -26.02 dB
-71.14228457 kHz
Δ2 [T1] -26.20 dB
73.04609218 kHz
1VIEW
IN1
1MA
A
64.8
60
50
40
30
20
10
0
-10
-15.2
Center 88.50571142 MHz
30 kHz/
Span 300 kHz
Date: 28.MAR.2006 12:41:56