



JAPAN QUALITY ASSURANCE ORGANIZATION

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JQA File No. : 400-60881

Issue Date : June 5, 2007

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EMI TEST REPORT

JQA File No. : 400-60881

Model No. : MR2D2TX

Type of Equipment : Radio Controlled Toy
(Transmitter)

Regulations Applied : CFR 47 FCC Rules and Regulations Part 15

FCC ID : CVTMR2D2TX

Applicant : NIKKO CO., LTD.

Address : 1-7-14, Mizumoto, Katsushika-ku,
Tokyo 125-0032, Japan

Manufacturer : NIKKO ELECTRONICS BHD.

Address : PLOT 497 PRAI FREE TRADE ZONE, PARI INDUSTRIAL ESTATE,
13600 PRAI, PENANG, MALAYSIA

Received date of EUT : April 18, 2007

Test Result : Passed

Test results in this report are obtained in use of equipment that is traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan and National Institute of Information and Communications Technology (NICT) of Japan.

The test results only respond to the tested sample. This report should not be reproduced except in full, without the written approval of JQA EMC Engineering Dept. Testing Div.

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



NVLAP Lab Code : 200189-0

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1 DOCUMENTATION**1.1 TEST REGULATION**

FCC Rules and Regulations Part 15 Subpart A and C Intentional Radiators

Test procedure :

AC power line conducted emission, radiated emission, frequency stability and occupied bandwidth tests were performed according to the procedures in ANSI C63.4-2003.

1.2 GENERAL INFORMATION**1.2.1 Test facility :**

- 1) Test Facility located at EMC Engineering Dept. Testing Div. :
 - No.2 and 3 Anechoic Chambers(3 meters Site).
 - Shielded Enclosure.
- 2) EMC Engineering Dept. Testing Div. is accredited under the National Voluntary Laboratory accreditation Program for satisfactory compliance established in title 15, Part 285 Code of Federal Regulations.
NVLAP Lab Code : 200189-0

1.2.2 Description of the Equipment Under Test (EUT) :

- | | |
|--------------------------------------|--|
| 1) Type of Equipment | : Radio Controlled Toy
(Transmitter) |
| 2) Product Type | : Production |
| 3) Category | : Low Power Communication Device
Transmitter |
| 4) EUT Authorization | : Certification |
| 5) FCC ID | : CVTMR2D2TX |
| 6) Trade Name | : NIKKO HOME ELECTRONICS |
| 7) Model No. | : MR2D2TX |
| 8) Operating Frequency Range | : 27.145 MHz |
| 9) Highest Frequency Used in the EUT | : 27.145 MHz |
| 10) Serial No. | : None |
| 11) Date of Manufacture | : None |
| 12) Power Rating | : DC 5.0 - 6.3V(Supply from USB of PC)
The EUT was operated with the PC(Model:Compaq nx9000) that connected by USB cable.
This operational condition is mentioned in specifications. |
| 13) EUT Grounding | : None |

1.2.3 Definitions for symbols used in this test report :

- x - indicates that the listed condition, standard or equipment is applicable for this report.
- _____ - indicates that the listed condition, standard or equipment is not applicable for this report.

1.3 TEST CONDITION

1.3.1 The measurement of the AC Power Line Conducted Emission

 x - was performed in the following test site.

 - was not applicable.

Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

 x - Shielded Enclosure

 - Anechoic Chamber No. A (portable Type)

Used test instruments :

Type	Number of test instruments (Refer to Appendix)
Test Receiver	172
Spectrum Analyzer	14
Cable	42
AMN(for EUT)	34
AMN(for Peripheral)	N/A
Termination	N/A
Pulse Limiter	174

1.3.2 The measurement of the Radiated Emission(9 kHz - 30 MHz)

 x - was performed in the following test site.
 - was not applicable.

Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

 x - Anechoic Chamber No. A (3 meters)
 - Anechoic Chamber No. B (3 meters)

Validation of Site Attenuation :

1) Last Confirmed Date : N/A
2) Interval : N/A

Used test instruments :

Type	Number of test instruments (Refer to Appendix)
Test Receiver	11
Antenna	21
Cable	43

1.3.3 The measurement of the Radiated Emission(30 MHz - 1000 MHz)

 x - was performed in the following test site.
 - was not applicable.

Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

 x - Anechoic Chamber No. A (3 meters)
 - Anechoic Chamber No. B (3 meters)

Validation of Site Attenuation :

1) Last Confirmed Date :March, 2007
2) Interval :1 year

Used test instruments :

Type	Number of test instruments (Refer to Appendix)
Test Receiver	11
Antenna	167, 168
Cable	38
RF Amplifier	N/A

1.3.4 The measurement of the Radiated Emission(Above 1000 MHz)

- ☐ - was performed in the following test site.
☒ - was not applicable.

Test location :

Safety & EMC Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

- ☐ - Anechoic Chamber No. A (3 meters)
☐ - Anechoic Chamber No. B (3 meters)

Validation of Site Attenuation :

- 1) Last Confirmed Date :March, 2007
2) Interval :1 year

Used test instruments :

Type	Number of test instruments (Refer to Appendix)
Test Receiver	N/A
Spectrum Analyzer	N/A
Cable	N/A
Antenna	N/A
RF Amplifier	N/A
Band Reject Filter	N/A
High Pass Filter	N/A

1.3.5 The measurement of the Frequency Stability

☐ - was performed.
☒ - was not applicable.

Used test instruments :

Type	Number of test instruments (Refer to Appendix)
Frequency Counter	N/A
Oven	N/A
DC Power Supply	N/A

1.3.6 The measurement of the Occupied Bandwidth

☒ - was performed.
☐ - was not applicable.

Used test instruments :

Type	Number of test instruments (Refer to Appendix)
Test Receiver	13
Spectrum Analyzer	N/A
Cable	47
Antenna	22

1.4 EUT MODIFICATION / Deviation from Standard

1.4.1 EUT MODIFICATION

- x -No modifications were conducted by JQA to achieve compliance to Class B levels.
 -To achieve compliance to Class B levels, the following changes were made by JQA during the compliance test.

The modifications will be implemented in all production models of this equipment.

Applicant :

Date :

Typed Name :

Position :

Signatory : _____

1.4.2 Deviation from Standard:

- x - No deviations from the standard described in clause 1.1.
 - The following deviations were employed from the standard described in clause 1.1:

1.5 TEST RESULTS

AC Power Line Conducted Emission x - Applicable - NOT Applicable

The requirements are x - PASSED - NOT PASSED

Remarks :

Radiated Emission [§15.227] x - Applicable - NOT Applicable

The requirements are x - PASSED - NOT PASSED

Remarks:

Frequency Stability - Applicable x - NOT Applicable

The requirements are - PASSED - NOT PASSED

Remarks:

Occupied Bandwidth [§15.215(c)] x - Applicable - NOT Applicable

The requirements are x - PASSED - NOT PASSED

Remarks:

1.6 SUMMARY

General Remarks :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and C under the test configuration, as shown in clause 1.7 to 1.10. The conclusion for the test items which are required by the applied regulation is indicated under the test result.

Test Result :

The "as received" sample;

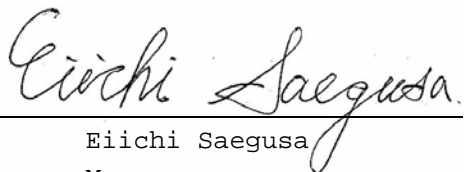
- x - fulfill the test requirements of the regulation mentioned on clause 1.1.
- fulfill the test requirements of the regulation mentioned on clause 1.1, but with certain qualifications.
- doesn't fulfill the test regulation mentioned on clause 1.1.

Begin of testing : April 18, 2007

End of testing : May 31, 2007

- JAPAN QUALITY ASSURANCE ORGANIZATION -
Approved by:

Signatories:
Issued by:



Eiichi Saegusa
Manager
Testing Division
JQA EMC Engineering Dept.



Shigeru Osawa
Assistant Manager
Testing Division
JQA EMC Engineering Dept.

1.7 TEST CONFIGURATION / OPERATION OF EUT**1.7.1 Test Configuration**

The equipment under test (EUT) consists of :

Symbol	Item	Manufacturer	Model No.	FCC ID	Serial No.
A	Radio Controlled Toy (Transmitter)	NIKKO ELECTRONICS BHD.	MR2D2TX	CVTMR2D2TX	None

The measurement was carried out with the following support equipment connected :

Symbol	Item	Manufacturer	Model No.	FCC ID/IC	Serial No.
B	Personal Computer	Hewlett-Packard	Compaq nx9000	N/A	CNF3500VF6
C	AC Adapter	Hewlett-Packard	PPP014S	N/A	-

Type of Cable :

Symbol	Description	Identification (Manufacturer etc.)	Connector Shielded YES / NO	Cable Shielded YES / NO	Ferrite Core	Length (m)
1	USB Cable	-	YES	YES	YES	1.95
2	DC Cable(For PC)	-	NO	NO	NO	1.80
3	AC Cable(For PC)	-	NO	NO	NO	1.80

1.7.2 Operating condition

Power supply Voltage : DC 5.0 - 6.3V(Supply from USB of PC)

The EUT was operated with the PC(Model:Compaq nx9000) that connected by USB cable.

The PC is connected with an exclusive AC Adaptor that supplied AC120V, 60Hz.

The tests have been carried out the following mode.

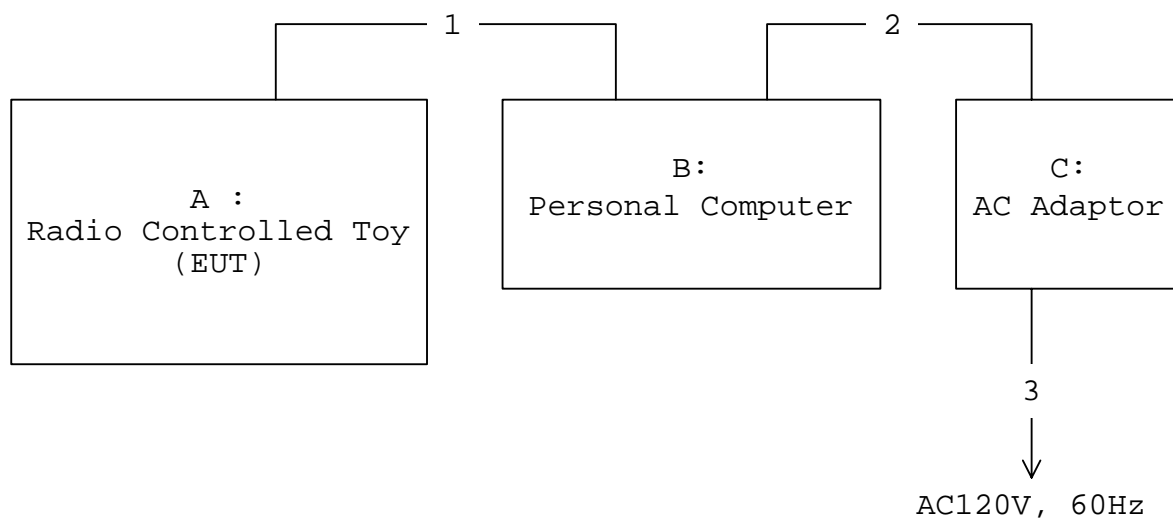
1) TX mode (27.145 MHz)

Used application to controlled : DTMFPlay(The software is original software.)

1.7.3 Generating and Operating frequency of EUT

27.145 MHz

1.8 EUT ARRANGEMENT (DRAWINGS)



1.9 PRELIMINARY TEST AND TEST-SETUP (DRAWINGS)

1.9.1 AC Power Line Conducted Emission (150 kHz - 30 MHz) :

According to description of ANSI C63.4-2003 sec.13.1.3.1, the AC power line preliminary conducted emissions measurements were carried out.

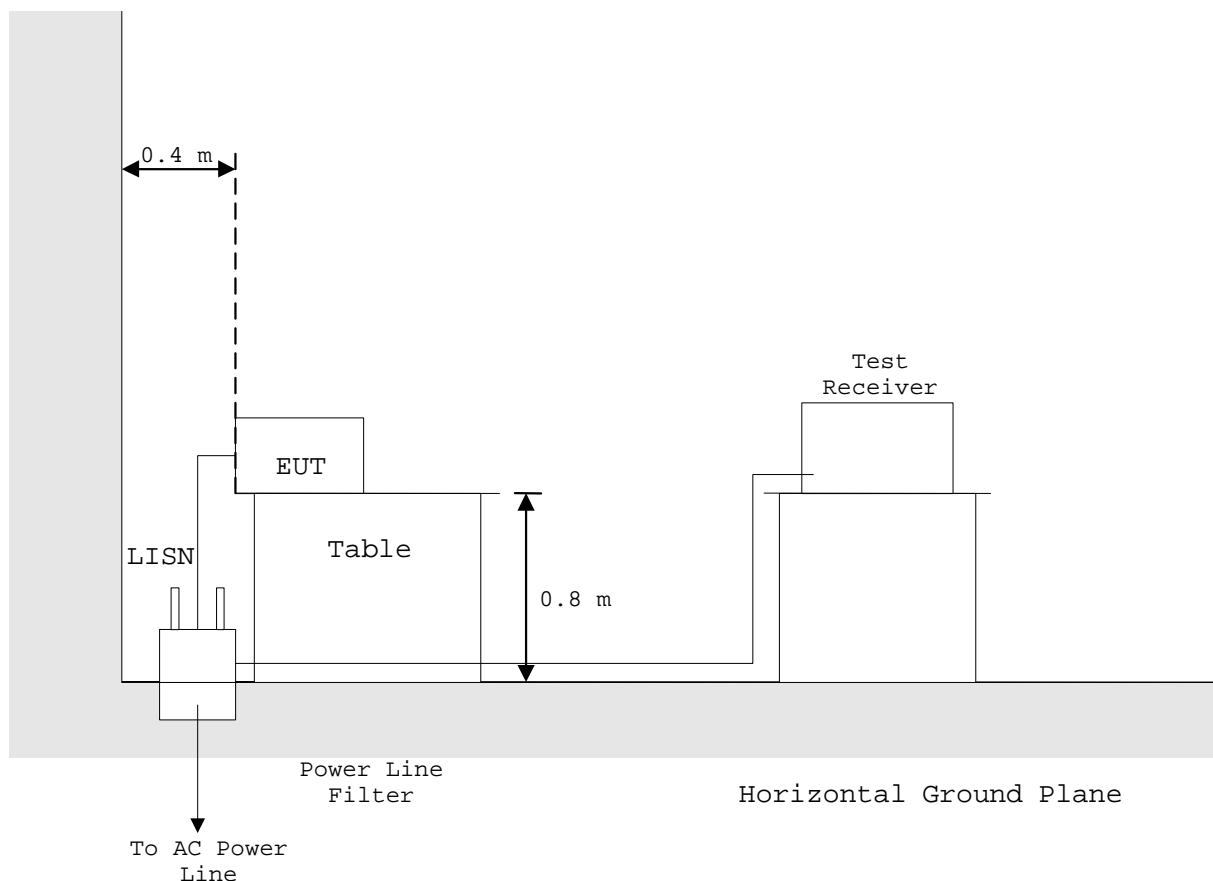
The preliminary conducted measurements were performed using the spectrum analyzer to observe the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for final AC power line conducted emissions measurements.

Shielded Enclosure

- Side View -

Vertical
Ground
Plane

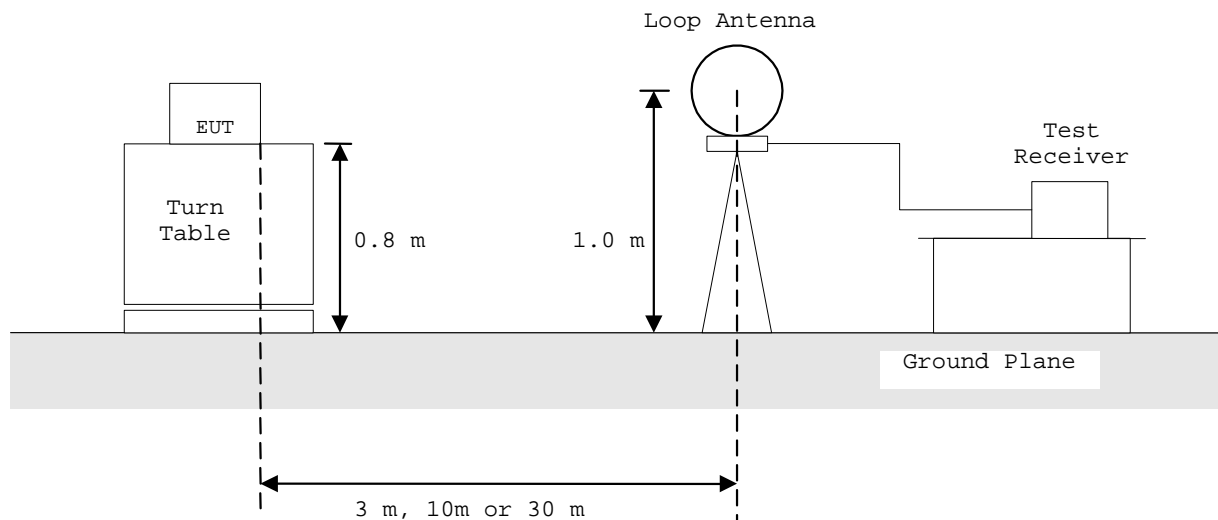


1.9.2 Radiated Emission (9 kHz - 30 MHz) :

According to description of ANSI C63.4-2003 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

- Side View -



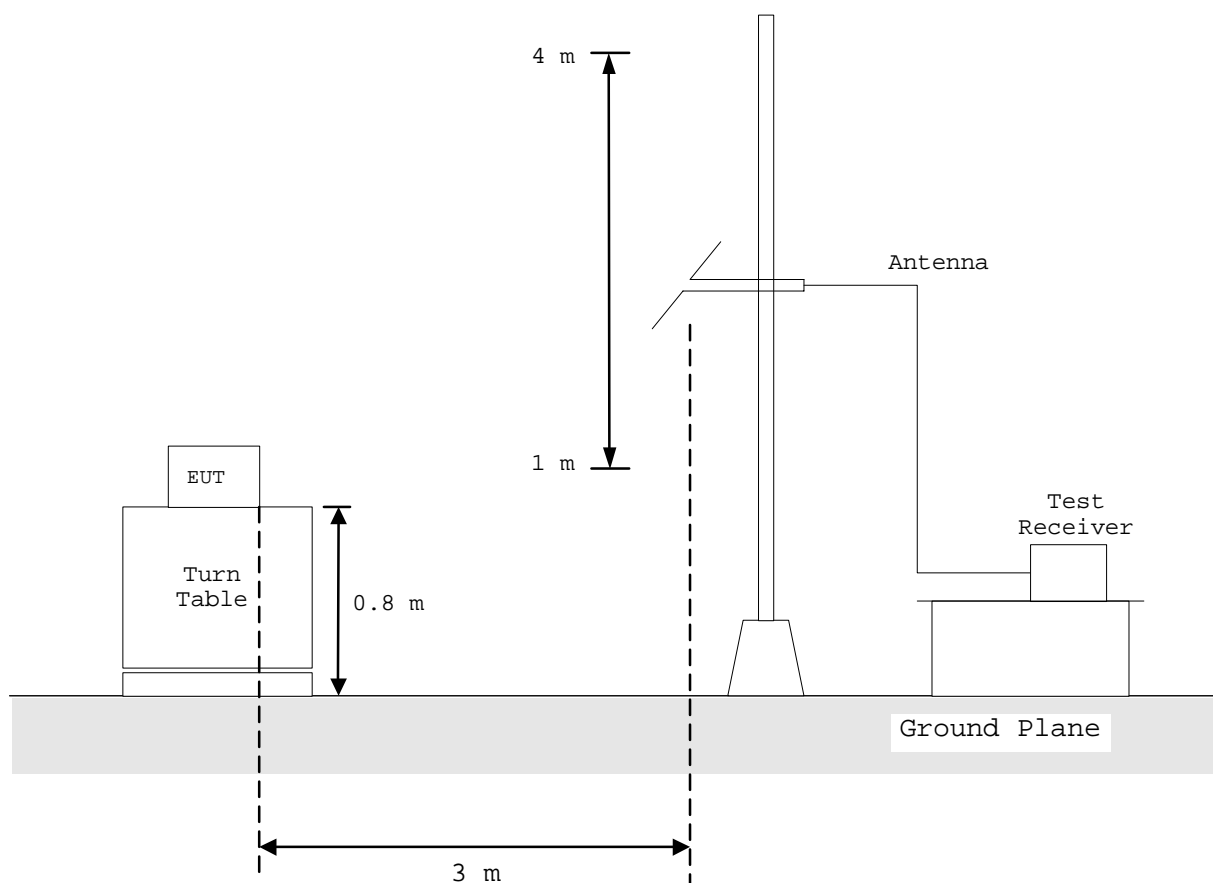
1.9.3 Radiated Emission (30 MHz - 1000 MHz) :

According to description of ANSI C63.4-2003 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

Anechoic Chamber

- Side View -



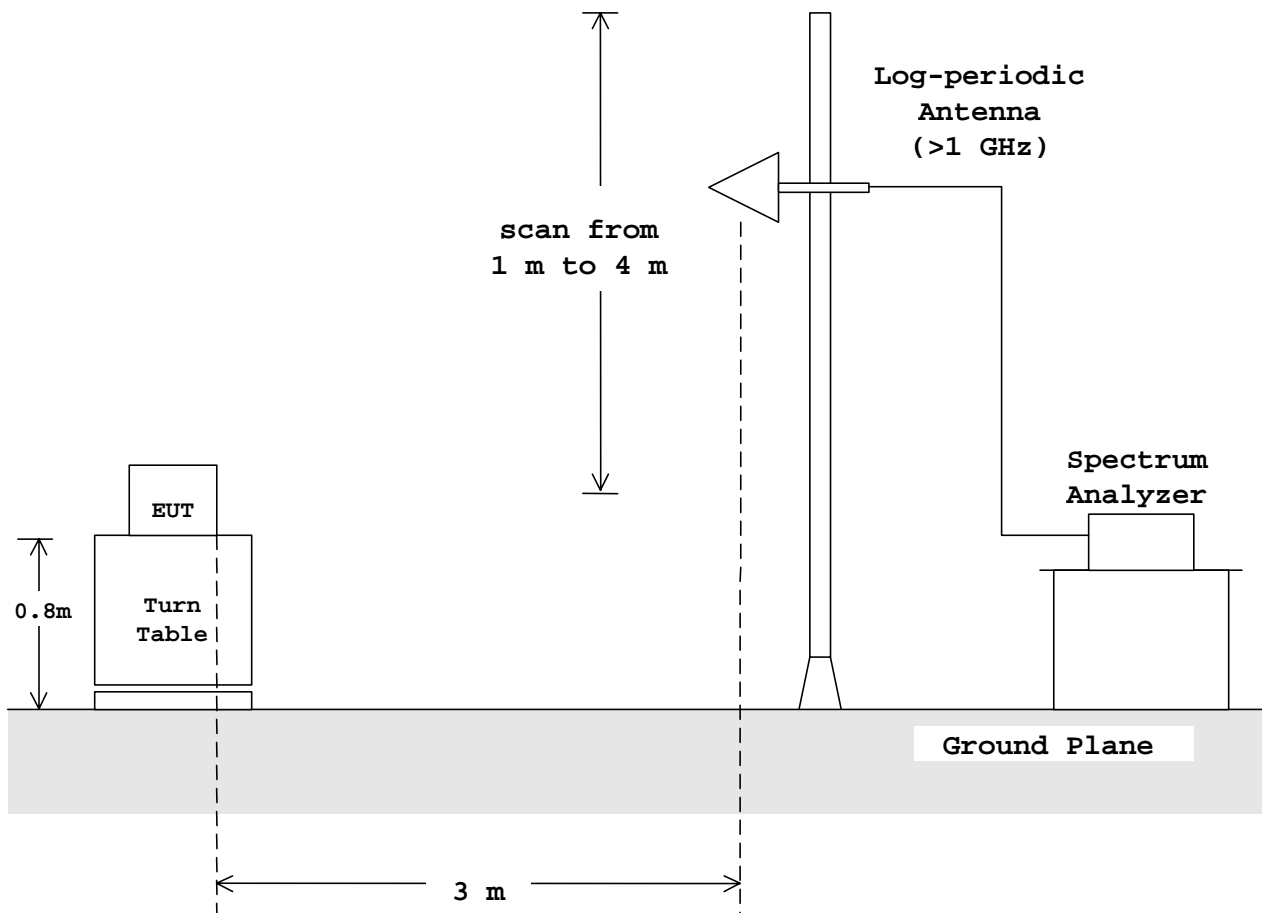
1.9.4 Radiated Emission (Above 1 GHz) :

According to description of ANSI C63.4-2003 sec.13.1.4.1, the preliminary radiated emissions measurements were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

Anechoic Chamber

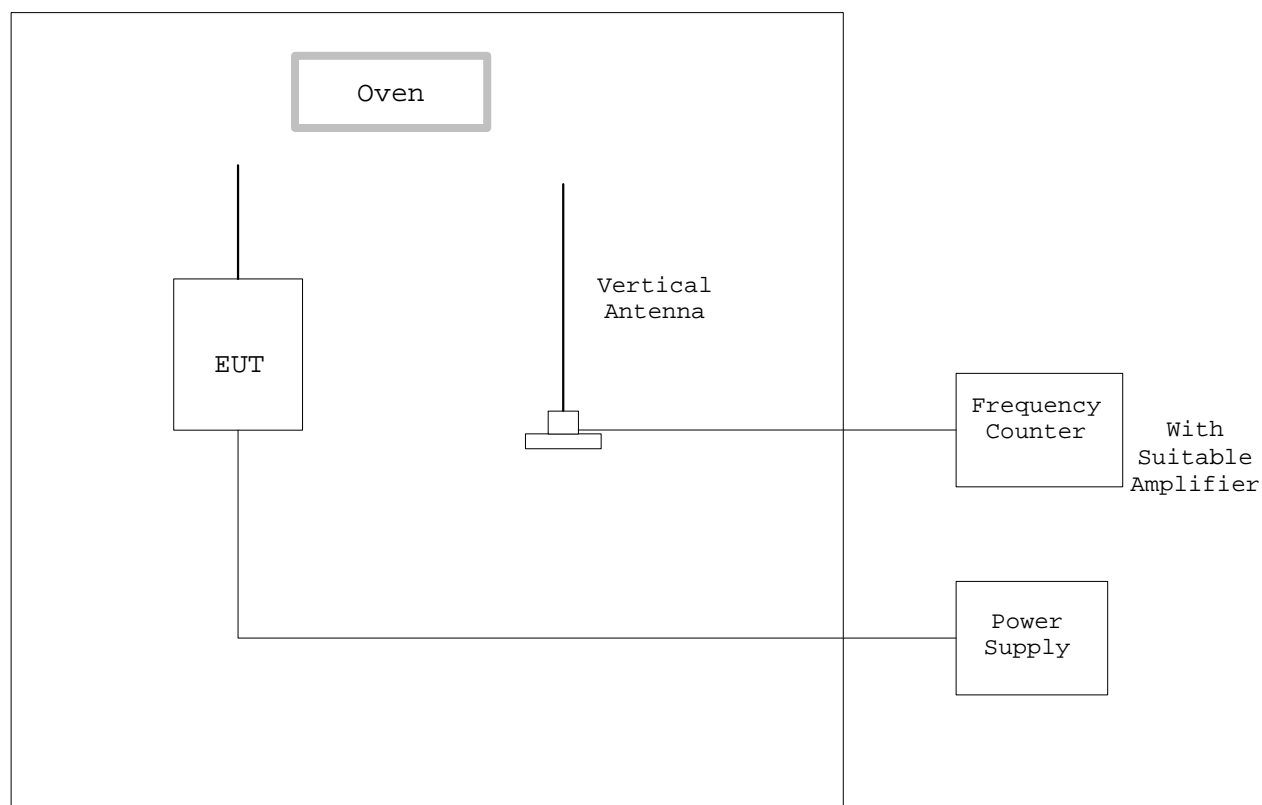
- Side View -



1.9.5 Frequency Stability :

According to description of ANSI C63.4-2003 sec.13.1.5 and sec.13.1.6, the frequency stability measurements were carried out. By using frequency counter with suitable RF amplifier, the carrier frequency of the transmitter under test was measured with a temperature variation of -20°C to $+50^{\circ}\text{C}$ at the normal supply voltage, and if required, with a variation in the primary voltage from 85 % to 115 % the rated supply voltage at the temperature of $+20^{\circ}\text{C}$.

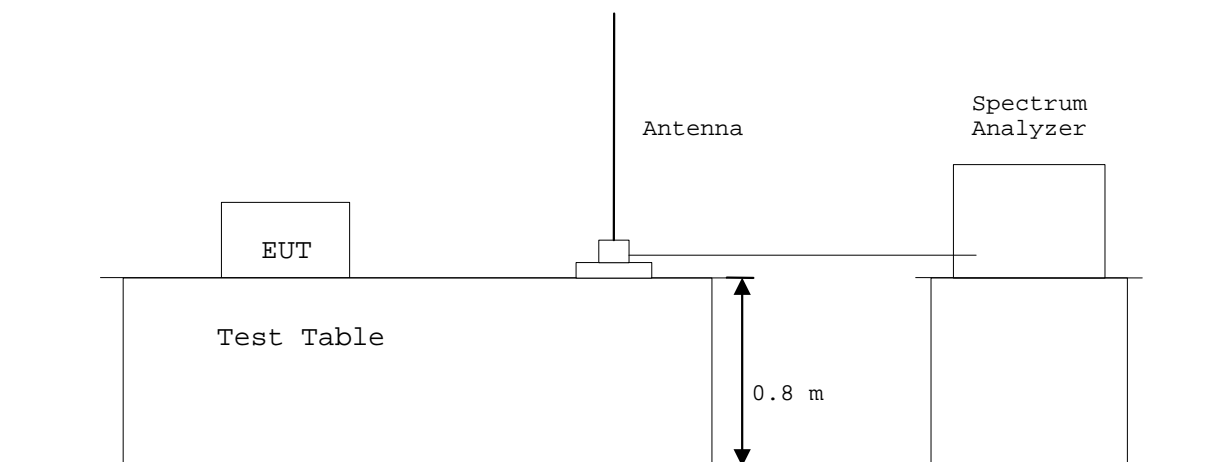
These measurements were carried out after allow sufficient time (approximately 1 hour) for the temperature of the chamber to stabilize.



1.9.6 Occupied Bandwidth :

According to description of ANSI C63.4-2003 sec.13.1.7, the occupied bandwidth measurements were carried out. By using a spectrum analyzer with a vertical antenna for picking up the signal, the measurements of the emission were made under the transmitting modes of the EUT.

The resolution bandwidth of spectrum analyzer was set to the value specified in sec.13.1.7.



1.10 TEST ARRANGEMENT (PHOTOGRAPHS)

PHOTOGRAPHS OF EUT CONFIGURATION FOR AC POWER LINE CONDUCTED EMISSIONS MEASUREMENT
Photograph present configuration



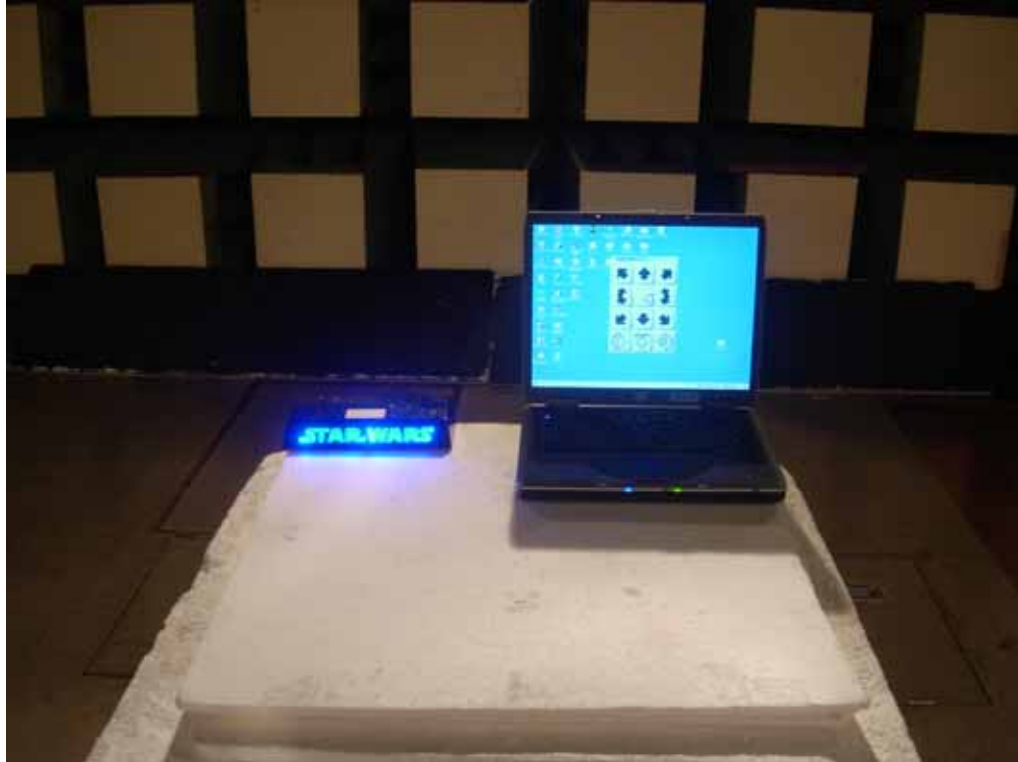
- Front View -



- Side View -

PHOTOGRAPHS OF EUT CONFIGURATION FOR RADIATED EMISSIONS MEASUREMENT

Photograph present configuration with maximum emission



- Front View -



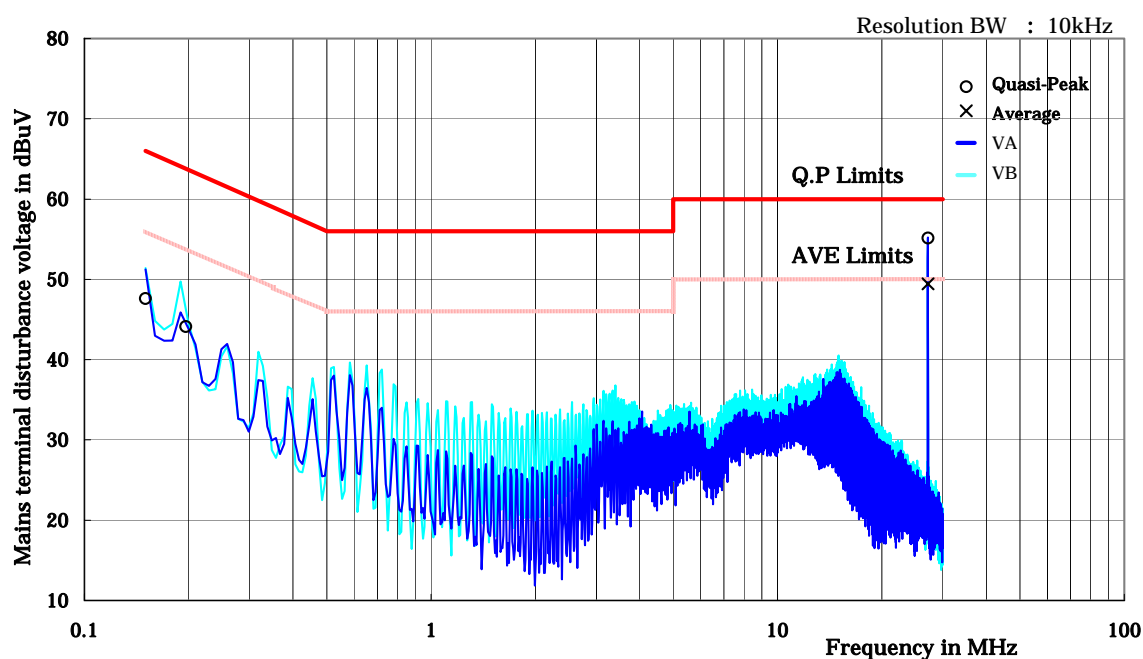
- Rear View -

2 TEST DATA

2.1 AC Power Line Conducted Emissions

Date : May 28, 2007

Temp. : 26 Humi. : 35%



Freq. [MHz]	Correctio Factor [dB]	Meter Reading [dBuV]				Limit [dBuV]		Result [dBuV]		Margin [dB]	
		VA		VB		QP	AV	QP	AV	QP	AV
0.15	0.3	47.3	-	46.8	-	66.0	56.0	47.6	-	18.4	-
0.196	0.2	42.7	-	43.9	-	63.8	53.8	44.1	-	19.6	-
27.15	0.6408	54.5	48.8	54.5	48.8	60.0	50.0	55.1	49.4	4.9	0.6

- Notes :
- 1) The spectrum was checked from 0.15 to 30.0 MHz.
 - 2) Measuring receiver setting ; Detector function
QP : CISPR Quasi-Peak ; AV : Average ,IF bandwidth : 9 kHz.
 - 3) VA : One end & grounded ; VB : The other end & grounded
 - 4) The symbol of '<' means 'or less' .
 - 5) The symbol of '>' means 'or greater' .
 - 6) The symbol of '-' means 'Not applicable' .
 - 7) Factor includes an artificial mains network factor and a cable (4.0 m) loss.
 - 8) A sample calculation was made at 0.15MHz
Factor + Meter Reading = 0.3 + 47.3 = 47.6dBuV

Tested by :

Katsunori Miura
 Katsunori Miura
 Testing Engineer

2.2 Radiated Emissions Measurement

Operating Frequency : 27.145 MHz
 Distance of Measurement : 3.0 meters

Date : May 31, 2007

Temp. : 23 °C Humi. : 48 %

Frequency (MHz)	P-A Factor (dB)	Antenna Factor (dB)	Polarization	Meter Reading (dBuV)			Limits (dBuV/m)		Emission Levels (dBuV/m)		Margins (dB)	
				QP	AV	Peak	QP/AV	Peak	QP/AV	Peak	QP/AV	Peak
27.16	0.0	21.5		-	34.9	45.2	80.0	100.0	56.4	66.7	23.6	33.3
48.02	0.0	15.4	V	17.8	-	-	40.0	-	33.2	-	6.8	-
54.03	0.0	13.5	V	3.0	-	-	40.0	-	16.5	-	23.5	-
60.02	0.0	11.9	V	17.1	-	-	40.0	-	29.0	-	11.0	-
72.03	0.0	10.3	V	18.9	-	-	40.0	-	29.2	-	10.8	-
84.03	0.0	11.0	V	15.5	-	-	40.0	-	26.5	-	13.5	-
92.38	0.0	12.6	V	12.2	-	-	43.5	-	24.8	-	18.7	-
96.04	0.0	13.3	V	11.7	-	-	43.5	-	25.0	-	18.5	-
108.04	0.0	15.6	V	13.6	-	-	43.5	-	29.2	-	14.3	-
120.03	0.0	17.1	H	8.6	-	-	43.5	-	25.7	-	17.8	-
132.05	0.0	18.2	V	8.7	-	-	43.5	-	26.9	-	16.6	-
144.04	0.0	18.9	V	5.3	-	-	43.5	-	24.2	-	19.3	-
156.06	0.0	19.5	H	3.3	-	-	43.5	-	22.8	-	20.7	-
168.05	0.0	20.1	H	3.5	-	-	43.5	-	23.6	-	19.9	-
180.05	0.0	20.6	H	4.6	-	-	43.5	-	25.2	-	18.3	-
192.05	0.0	21.0	H	7.4	-	-	43.5	-	28.4	-	15.1	-
199.88	0.0	21.1	H	11.2	-	-	43.5	-	32.3	-	11.2	-
204.06	0.0	21.2	H	8.4	-	-	43.5	-	29.6	-	13.9	-
210.02	0.0	21.3	V	3.0	-	-	43.5	-	24.3	-	19.2	-
216.07	0.0	21.4	H	6.0	-	-	46.0	-	27.4	-	18.6	-
228.06	0.0	21.5	H	5.0	-	-	46.0	-	26.5	-	19.5	-
240.08	0.0	21.7	H	13.8	-	-	46.0	-	35.5	-	10.5	-
252.03	0.0	22.0	H	3.4	-	-	46.0	-	25.4	-	20.6	-
266.53	0.0	22.7	H	15.0	-	-	46.0	-	37.7	-	8.3	-

Notes :

- 1) The spectrum was checked from 30 MHz to 1000 MHz.
- 2) The cable loss is included in the antenna factor.
- 3) The symbol of "<" means "or less".
- 4) The symbol of ">" means "or greater".
- 5) A sample calculation(QP/AV) was made at 27.16 (MHz).


$$PA + Af + Mr = 0 + 21.5 + 34.9 = 56.4 \text{ (dBuV/m)}$$

PA = Peak to Average Factor(P-A Factor)
 Af = Antenna Factor
 Mr = Meter Reading

6) Measuring Instrument Setting :

Detector function	Resolution Bandwidth	Video Bandwidth
Quasi-peak(QP)	120 kHz	-
Average(AV)	120 kHz	-
Peak	120 kHz	-

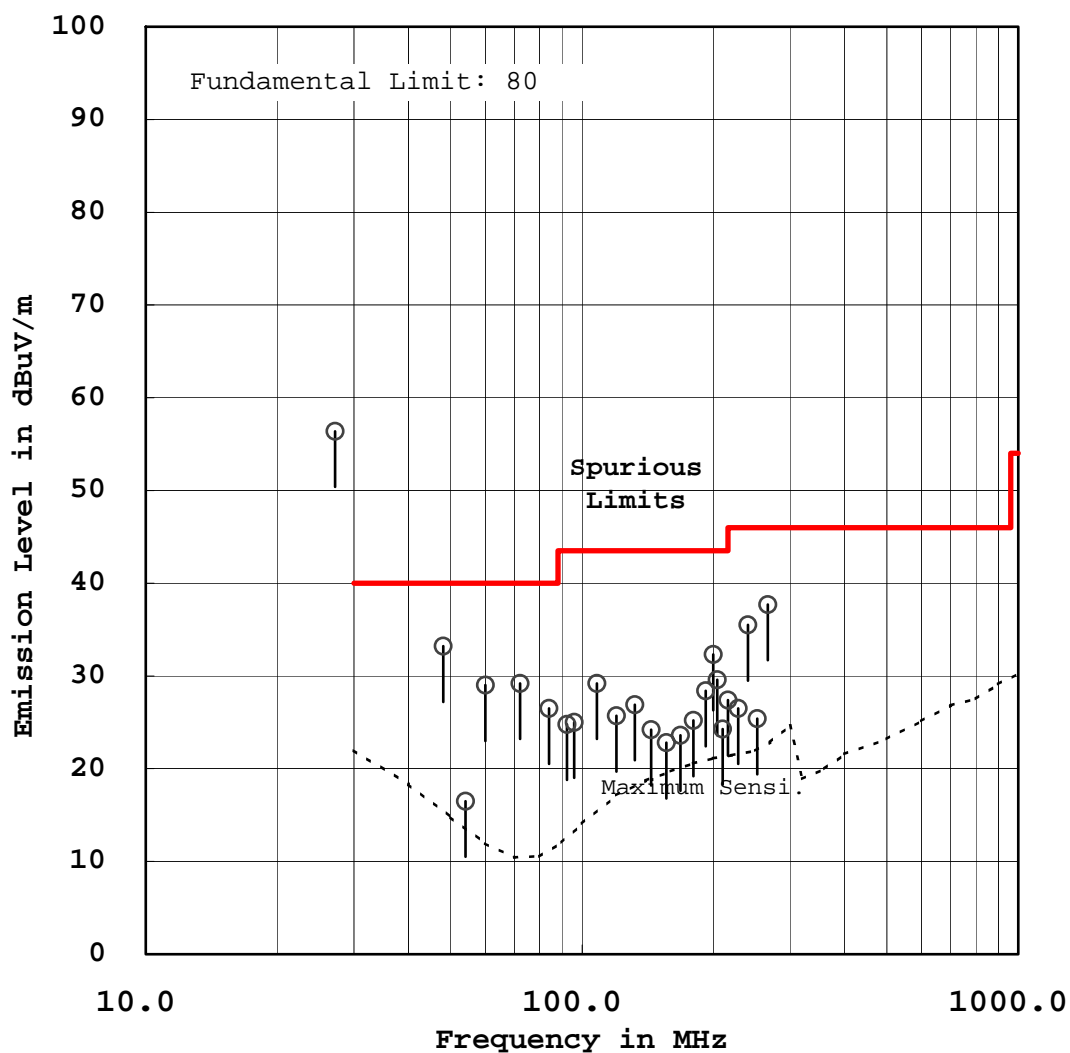
Tested by :


 Katsunori Miura
 Testing Engineer

RADIATED EMISSION MEASUREMENT

Model No. : MR2D2TX

Standard : CFR 47 FCC Rules Part 15 QP/AV
 Operating Frequency(MHz) : 27.145



2.3 Frequency Stability

Note : This test was not applicable.

2.4 Occupied Bandwidth Measurement

Date : May 31, 2007
 Temp.: 23 °C Humi.: 48 %

Measurements Results :

Refer to the attached graphs.

Note : The Modes of the EUT are command as follows.



Tested by :

K. Miura
 Katsunori Miura
 Testing Engineer

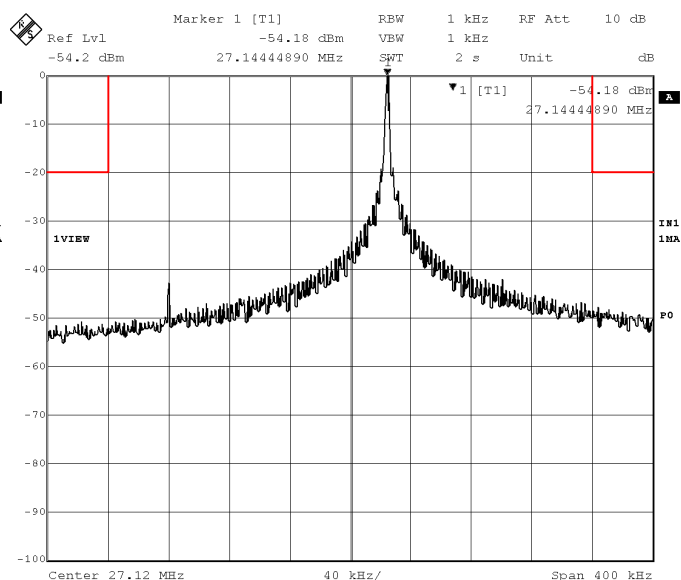
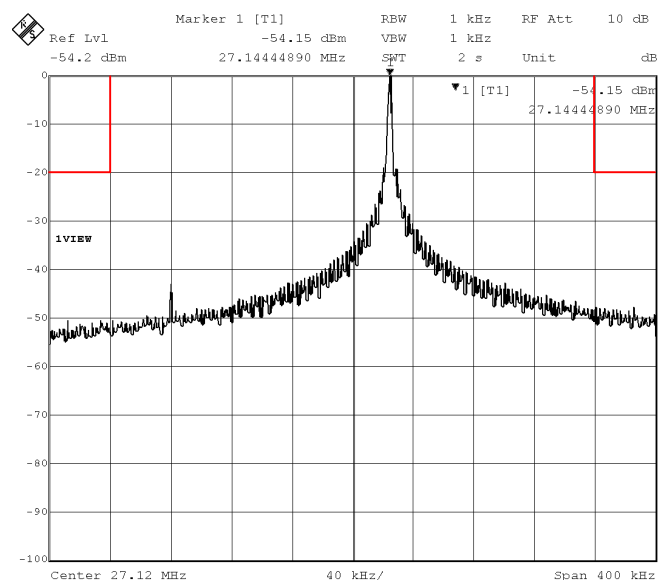
Emission Limitation

FCC ID : CVTMR2D2TX

Model : MR2D2TX

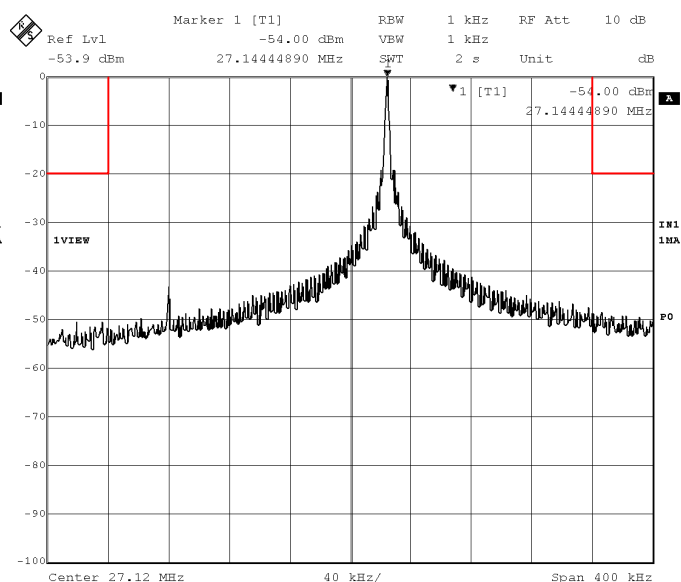
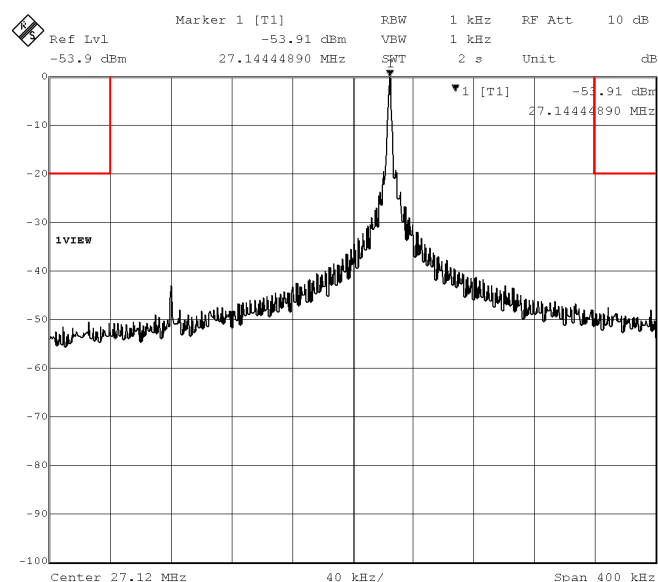
Mode of the EUT : 1

Mode of the EUT : 2



Mode of the EUT : 3

Mode of the EUT : 4



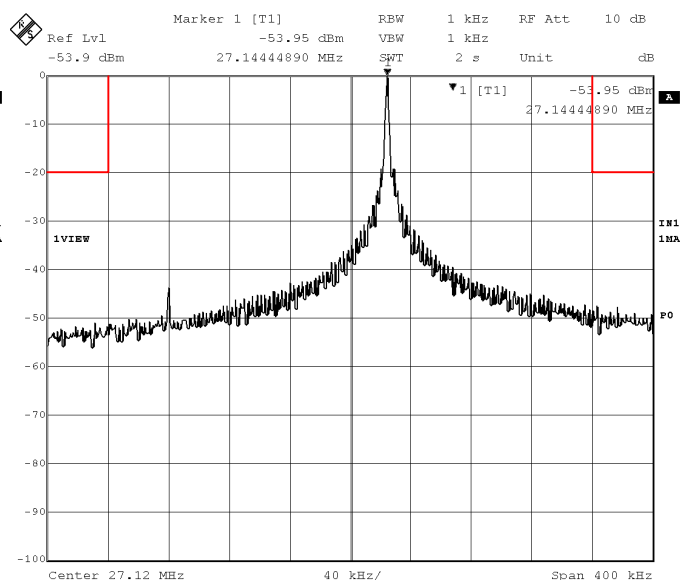
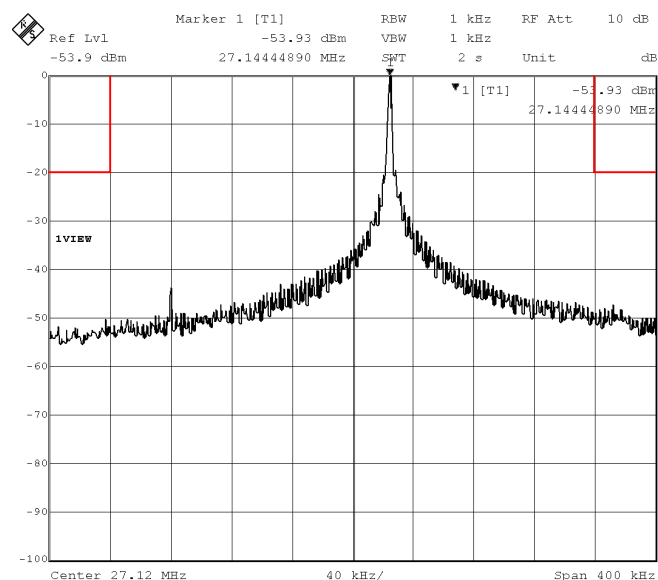
Emission Limitation

FCC ID : CVTMR2D2TX

Model : MR2D2TX

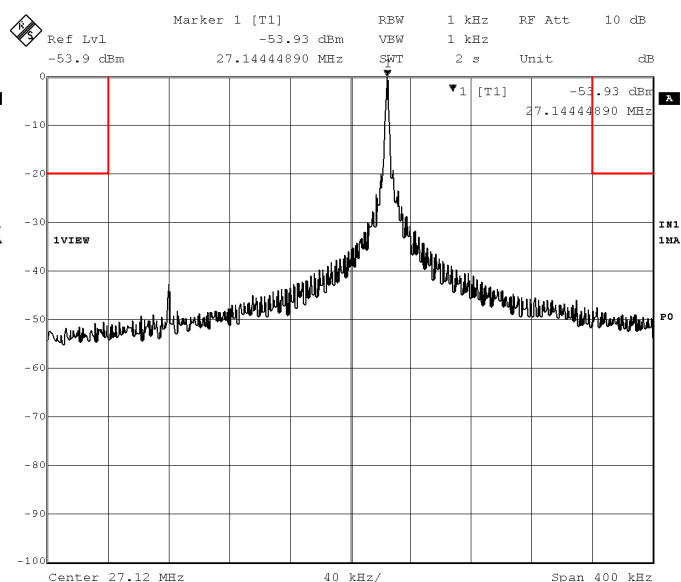
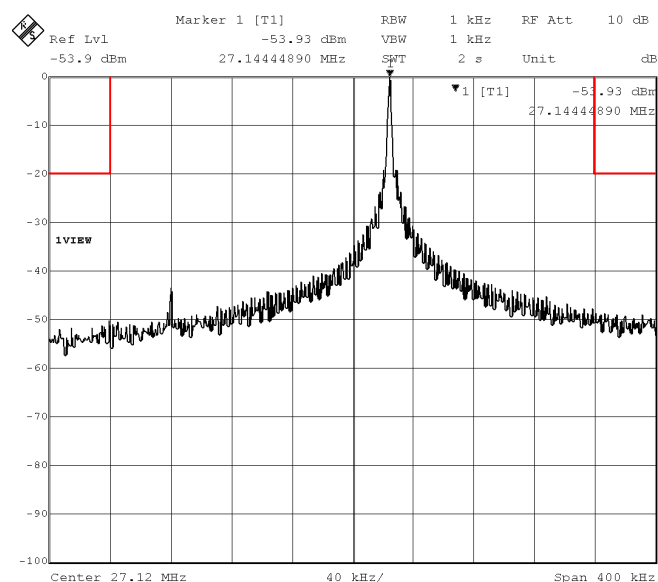
Mode of the EUT : 5

Mode of the EUT : 6



Mode of the EUT : 7

Mode of the EUT : 8



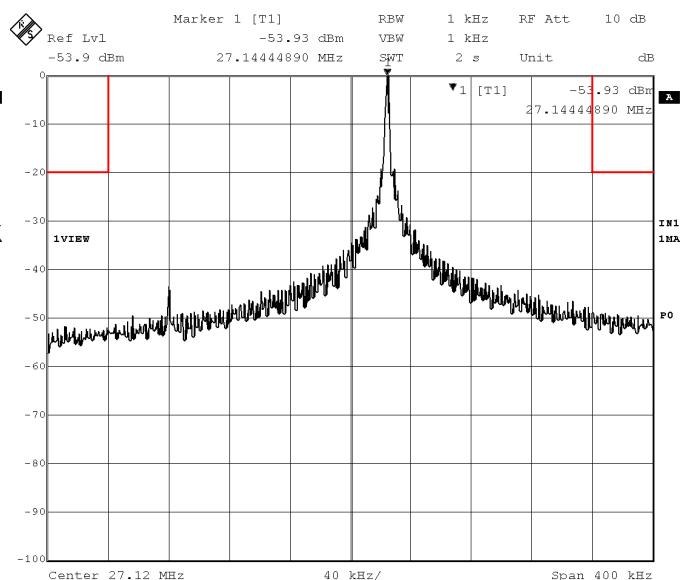
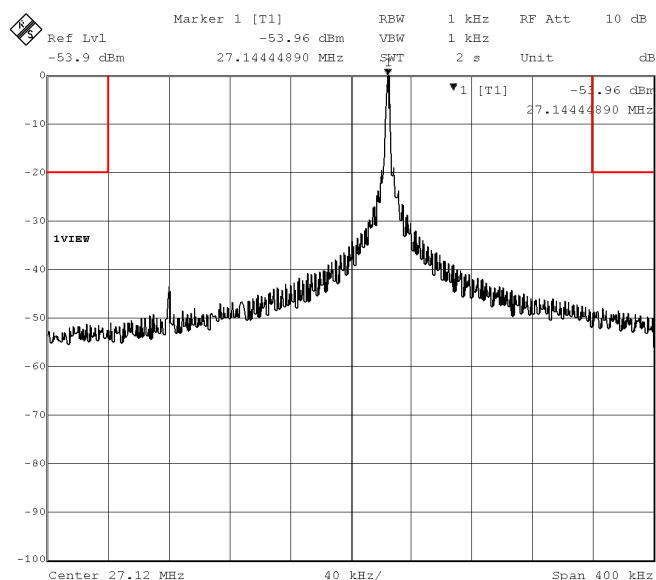
Emission Limitation

FCC ID : CVTMR2D2TX

Model : MR2D2TX

Mode of the EUT : 9

Mode of the EUT : 10





JQA File No. :400-60881
Model No. :MR2D2TX
Standard :CFR 47 FCC Rules Part 15

FCC ID :CVTMR2D2TX
Issue Date :June 5, 2007
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Appendix

Test Instruments List

31-May-2007

No	Type	Model	Manufacturer	Serial	ID	Last Cal.	Interval
<u>Test Facilities:</u>							
1	Anechoic Chamber A	-	TDK	-	800-01-502E0	Mar 2007	1 Year
2	Anechoic Chamber B	-	TDK	-	800-01-503E0	Mar 2007	1 Year
3	Shield Room A	-	TDK	-	800-01-501E0	-	-
4	Shield Room B	-	Ray Proof	-	800-01-010E0	-	-
5	Shield Room C	-	TDK	-	800-01-504E0	-	-
6	Shield Room D	-	Emerson	-	800-01-022E0	-	-
7	Shield Room E	-	TDK	-	800-01-505E0	-	-

Measuring Instruments:

10	Test Receiver	ESHS10	Rohde & Schwarz	835871/004	119-01-505E0	Apr 2007	1 Year
11	Test Receiver	ESVS10	Rohde & Schwarz	826148/002	119-03-504E0	Apr 2007	1 Year
12	Test Receiver	ESVS10	Rohde & Schwarz	832699/001	119-03-506E0	Apr 2007	1 Year
13	Test Receiver	ESI26	Rohde & Schwarz	100043	119-04-511E0	Aug 2006	1 Year
14	Spectrum Analyzer	R3182	Advantest	120600581	122-02-521E0	Mar 2007	1 Year
17	Spectrum Analyzer	8566B	Hewlett Packard	2747A05855	122-02-517E0	Apr 2007	1 Year
18	RF Pre-selector	85685A	Hewlett Packard	2901A00933	122-02-519E0	Apr 2007	1 Year
19	Spectrum Analyzer	R3132	Advantest	120500072	122-02-520E0	Sep 2006	1 Year
20	Spectrum Analyzer	R3132	Advantest	150400998	122-02-523E0	Jul 2006	1 Year
65	Power Meter	436A	Hewlett Packard	1725A01930	100-02-501E0	Apr 2007	1 Year
66	Power Sensor	8482A	Hewlett Packard	1551A01013	100-02-501E0	Apr 2007	1 Year
67	Power Sensor	8485A	Hewlett Packard	2942A08969	100-04-021E0	Apr 2007	1 Year
68	FM Linear Detector	MS61A	Anritsu	M77486	123-02-008E0	Oct 2006	1 Year
69	Level Meter	ML422C	Anritsu	M87571	114-02-501E0	Jun 2006	1 Year
70	Measuring Amplifier	2636	B & K	1614851	082-01-502E0	May 2007	1 Year
75	Frequency Counter	53131A	Hewlett Packard	3546A11807	102-02-075E0	May 2007	1 Year
83	FFT Analyzer	R9211C	Advantest	02020253	122-02-506E0	Jun 2006	1 Year
84	Noise Meter	MN-446	Meguro	53030478	082-01-144E0	Apr 2007	1 Year
86	Peak Power Analyzer	8990A/84815A	Hewlett Packard	3220A00486/ 3227A00118	100-02-016E0	Apr 2007	1 Year
163	Digital Oscilloscope	54502A	Hewlett Packard	2934A05573	121-02-502E0	May 2007	1 Year
165	Multimeter	VOAC7413	Iwatsu Electric	0267973	114-02-502E0	Apr 2007	1 Year
172	Test Receiver	ESCI	Rohde & Schwarz	100408	119-04-512E0	Sep 2006	1 Year

Antennas:

21	Loop Antenna	HFH2-Z2	Rohde & Schwarz	881058/62	119-05-033E0	Jun 2006	1 Year
22	Dipole Antenna	KBA-511	Kyoritsu	0-170-1	119-05-506E0	Oct 2006	1 Year
23	Dipole Antenna	KBA-511A	Kyoritsu	0-201-13	119-05-504E0	Oct 2006	1 Year
24	Dipole Antenna	KBA-611	Kyoritsu	0-147-14	119-05-507E0	Oct 2006	1 Year
25	Dipole Antenna	KBA-611	Kyoritsu	0-170-1	119-05-505E0	Oct 2006	1 Year
27	Biconical Antenna	BBA9106	Schwarzbeck	-	119-05-078E0	Nov 2006	1 Year
28	Log-periodic Antenna	UHALP9107	Schwarzbeck	-	119-05-079E0	Nov 2006	1 Year
30	Log-periodic Antenna	HL025	Rohde & Schwarz	340182/015	119-05-100E0	Jun 2006	1 Year
31	Horn Antenna	3115	EMC Test Systems	6442	119-05-514E0	Jan 2006	2 Year
32	Horn Antenna	3116	EMC Test Systems	2547	119-05-515E0	May 2005	2 Year
167	Biconical Antenna	BBA9106	Schwarzbeck	VHA91032325	119-05-520E0	May 2007	1 Year
168	Log-periodic Antenna	UHALP9108A	Schwarzbeck	0666	119-05-521E0	May 2007	1 Year
169	Biconical Antenna	BBA9106	Schwarzbeck	VHA91032399	119-05-522E0	May 2007	1 Year
170	Log-periodic Antenna	UHALP9108A	Schwarzbeck	0724	119-05-523E0	May 2007	1 Year

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No	Type	Model	Manufacturer	Serial	ID	Last Cal.	Interval
<u>Cables:</u>							
38	RF Cable	5D-2W	Fujikura	-	155-21-001E0	Feb 2007	1 Year
39	RF Cable	5D-2W	Fujikura	-	155-21-002E0	Feb 2007	1 Year
40	RF Cable	3D-2W	Fujikura	-	155-21-005E0	Apr 2007	1 Year
41	RF Cable	3D-2W	Fujikura	-	155-21-006E0	Apr 2007	1 Year
42	RF Cable	3D-2W	Fujikura	-	155-21-007E0	Apr 2007	1 Year
43	RF Cable	RG213/U	Rohde & Schwarz	-	155-21-010E0	Apr 2007	1 Year
44	RF Cable(10m)	S 04272B	Suhner	-	155-21-011E0	May 2007	1 Year
45	RF Cable(1.5m 18GHz)	S 04272B	Suhner	-	155-21-012E0	May 2007	1 Year
46	RF Cable(1m 18GHz)	SUCOFLEX	Suhner	-	155-21-013E0	May 2007	1 Year
47	RF Cable(1m N)	S 04272B	Suhner	-	155-21-015E0	Jun 2006	1 Year
48	RF Cable(1m 26GHz)	SUCOFLEX 104E	Suhner	14543/4E	155-21-016E0	Dec 2006	1 Year
49	RF Cable(4m 26GHz)	SUCOFLEX	Suhner	190630	155-21-017E0	Dec 2006	1 Year
50	RF Cable(10m)	F130-S1S1-394	MEGA PHASE	10510	155-21-018E0	Dec 2006	1 Year
51	RF Cable(5m)	3D-2W	Fujikura	-	155-21-009E0	Apr 2007	1 Year
52	RF Cable(7m)	RG223/U	Suhner	-	155-21-021E0	May 2007	1 Year
195	RF Cable(10m)	F130-S1S1-394	MEGA PHASE	20051	155-21-020E0	Apr 2007	1 Year
<u>Networks:</u>							
33	LISN	KNW-407	Kyoritsu	8-833-6	149-04-052E0	Apr 2007	1 Year
34	LISN	KNW-407	Kyoritsu	8-855-2	149-04-055E0	Apr 2007	1 Year
35	LISN	KNW-407	Kyoritsu	8-1130-6	149-04-062E0	Apr 2007	1 Year
36	LISN	KNW-242C	Kyoritsu	8-837-13	149-04-054E0	Apr 2007	1 Year
37	Absorbing Clamp	MDS21	Luthi	03293	119-06-506E0	Aug 2006	1 Year
164	LISN	KNW-403D	Kyoritsu	8-1474-3	149-04-059E0	Apr 2007	1 Year
173	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	-	156-01-501E0	Apr 2007	1 Year
174	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	-	156-01-502E0	Apr 2007	1 Year
175	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	-	156-01-503E0	Apr 2007	1 Year
194	High Impedance Probe	HP-2	JQA	001	149-06-503E0	Oct 2006	1 Year
<u>Amplifiers:</u>							
53	AF Amplifier	P-500L	Accuphase	BOY806	127-01-501E0	Feb 2007	1 Year
54	RF Amplifier	WJ-6882-814	Watkins-Johnson	0414	127-04-017E0	Jun 2006	1 Year
55	RF Amplifier	WJ-5315-556	Watkins-Johnson	106	127-04-006E0	Jun 2006	1 Year
56	RF Amplifier	WJ-5320-307	Watkins-Johnson	645	127-04-005E0	Jun 2006	1 Year
57	RF Amplifier	JS4-00102600-28-5A	MITEQ	669167	127-04-502E0	Apr 2007	1 Year
<u>Generators:</u>							
58	Function Generator	3325B	Hewlett Packard	2847A03284	118-08-124E0	Jul 2006	1 Year
59	Function Generator	VP-7422A	Matsushita Communication	050351E122	118-08-503E0	Jul 2006	1 Year
60	Signal Generator	8664A	Hewlett Packard	3035A00140	118-03-014E0	May 2007	1 Year
61	Signal Generator	8664A	Hewlett Packard	3438A00756	118-04-502E0	May 2007	1 Year
62	Signal Generator	6061A	Gigatronics	5130593	118-04-024E0	Mar 2007	1 Year

						31-May-2007	
No	Type	Model	Manufacturer	Serial	ID	Last Cal.	Interval
<u>Others:</u>							
63	Termination(50)	-	Suhner	-	154-06-501E0	Jan 2007	1 Year
64	Termination(50)	-	Suhner	-	154-06-502E0	Jan 2007	1 Year
71	Microphone	4134	B & K	1253497	147-01-502E0	May 2007	1 Year
72	Preamplifier	2639	B & K	1268763	127-01-504E0	-	-
73	Pistonphone	4220	B & K	1165008	147-02-501E0	Mar 2007	1 Year
74	Artificial Mouth	4227	B & K	1274869	-	-	-
76	Oven	-	Ohnishi	-	023-02-018E0	-	-
77	DC Power Supply	6628A	Hewlett Packard	3224A00284	072-05-503E0	Jun 2006	1 Year
78	Band RejectFilter	BRM12294	Micro-tronics	003	149-01-501E0	Jan 2007	1 Year
79	High Pass Filter	F-100-4000-5-R	RLC Electronics	0149	149-01-502E0	Feb 2007	1 Year
80	Attenuator	43KC-10	Anritsu	-	148-03-506E0	Feb 2007	1 Year
81	Attenuator	43KC-20	Anritsu	-	148-03-507E0	Feb 2007	1 Year
82	Attenuator	355D	Hewlett Packard	219-10782	148-03-065E0	Apr 2007	1 Year
85	RF Detector	75KC-50	Anritsu	305002	100-02-506E0	Jul 2006	1 Year