

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 74 SUBPART H REQUIREMENT**

OF

Wireless Microphone

MODEL No.: UHT-100

BRAND NAME: NADY, VOTEX

FCC ID: BEK9E3UHT

REPORT NO: ES100721125F

ISSUE DATE: August 30, 2010

Prepared for
Nady Systems Inc
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Prepared by
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VERIFICATION OF COMPLIANCE

Applicant:	Nady Systems Inc 6701 Bay Street Emeryville, CA 94608, U.S.A.
Product Description:	Wireless Microphone
Brand Name:	NADY, VOTEX
Model Number:	UHT-100
File Number:	ES100721125F
Date of Test:	August 03, 2010 to August 20, 2010

We hereby certify that:

The above equipment was tested by SHENZHEN EMTEK CO., LTD. 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 74 Subpart H.

The test results of this report relate only to the tested sample identified in this report.

Approved By



**David Lee / Q.A. Manager
SHENZHEN EMTEK CO., LTD.**

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1. GENERAL INFORMATION

1.1 Product Description

The Nady Systems Inc Model: UHT-100 (referred to as the EUT in this report). The EUT is a UHF Wireless Microphone designed as Low Power Auxiliary Stations for transmitting voice only. It is designed by may of utilizing the FM modulation achieves the system operating.

A major technical descriptions of EUT is described as following:

A). Frequency Tolerance: 0.00452%(0.005%)

B). Modulation: FM

C). Max. Deviation Range: $\pm 50\text{KHz}$ (Limit $<\pm 75\text{KHz}$)

D). Spurious Emissions: $<-55\text{dBc}$

E). RF Output Power: $<25\text{mW}$ (limit: 1W)

F). Frequency Adjustment: Automatic Channel Setting

G). Operation Frequency: 667.0MHz~696.7MHz (lower channel : 667.0, Middle channel: 682MHz, High channel: 696.7MHz.)

H). Power Supply: 1.5V (AA) $\times 2$

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	667	36	677.8	72	688.6
01	667.3	37	678.1	73	688.9
02	667.6	38	678.4	74	689.2
03	667.9	39	678.7	75	689.5
04	668.2	40	679	76	689.8
05	668.5	41	679.3	77	690.1
06	668.8	42	679.6	78	690.4
07	669.1	43	679.9	79	690.7
08	669.4	44	680.2	80	691
09	669.7	45	680.5	81	691.3
10	670	46	680.8	82	691.6
11	670.3	47	681.1	83	691.9
12	670.6	48	681.4	84	692.2
13	670.9	49	681.7	85	692.5
14	671.2	50	682	86	692.8
15	671.5	51	682.3	87	693.1
16	671.8	52	682.6	88	693.4
17	672.1	53	682.9	89	693.7
18	672.4	54	683.2	90	694
19	672.7	55	683.5	91	694.3
20	673	56	683.8	92	694.6
21	673.3	57	684.1	93	694.9
22	673.6	58	684.4	94	695.2
23	673.9	59	684.7	95	695.5
24	674.2	60	685	96	695.8
25	674.5	61	685.3	97	696.1
26	674.8	62	685.6	98	696.4
27	675.1	63	685.9	99	696.7
28	675.4	64	686.2		
29	675.7	65	686.5		
30	676	66	686.8		
31	676.3	67	687.1		
32	676.6	68	687.4		
33	676.9	69	687.7		
34	677.2	70	688		
35	677.5	71	688.3		

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: BEK9E3UHT filing to comply with FCC Part 74, Subpart H Rules.

1.3 Test Methodology

The radiated emission testing was performed according to the procedures of ANSI TIA/EIA 603 and FCC CFR 47 2.1046, 2.1047, 2.1051, 2.1053, 2.1055 and 2.1057

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description
EMC Lab.

: Accredited by CNAS, 2005.11.02
The certificate is valid until 2010.11
The Laboratory has been assessed and proved to be in compliance
with CNAS-CL01: 2006 (identical to ISO/IEC17025: 2005)
The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2008.3
The Laboratory has been assessed according to the requirements
ISO/IEC 17025.

Accredited by FCC, March 18, 2008
The Certificate Registration Number is 709623.

Accredited by Industry Canada, May 24, 2008
The Certificate Registration Number is 46405-4480.

Name of Firm
Site Location

: SHENZHEN EMTEK CO., LTD
: Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

2.3 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

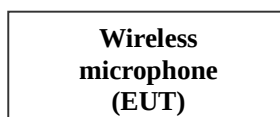


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
1.	Wireless Microphone	NADY,VOTEX	UHT-100	BEK9E3UHT	N/A	EUT

Note:

- (1) Unless otherwise denoted as EUT in 『Remark』 column , device(s) used in tested system is a support equipment.

3. Summary Of Test Results

FCC Rules	Description Of Test	Result
§ 74.861(e)-1, 2.1046(a)	RF Output Power	Compliant
§ Part 2 Section 2.1047(b), 74.861e(2)	Frequency Deviation	Compliant
2.1047(a)	Audio Frequency Response	Compliant
§ 74.861e(4), Part 2 Section 2.1055(a)(1)	Frequency Tolerance	Compliant
§ 74.861e(5), 2.1049(c) (1)	Operating Bandwidth	Compliant
§ 74.861(e)-6	Radiation Spurious Emission	Compliant

4. Description of test modes

The EUT (Wireless Microphone) has been tested under normal operating condition.

Three channels of EUT (the lowest channel, the middle channel and the highest channel) have been chosen for testing under Normal Operating condition. In this report, all the measured datum of the three channels have been reported. No software used to control the EUT for staying in continuous transmitting mode for testing.

1. For Bottom channel : 667.0MHz
2. For Middle channel : 682.0MHz
3. For Top channel: 696.7MHz

5. Maximum Transmitter Power

5.1 Provisions Applicable

According to FCC Part 74 Section 74.861 (e)-1 : The power of the measured unmodulated carrier power at the output of the transmitter power amplifier(antenna input power) may not exceed the following:

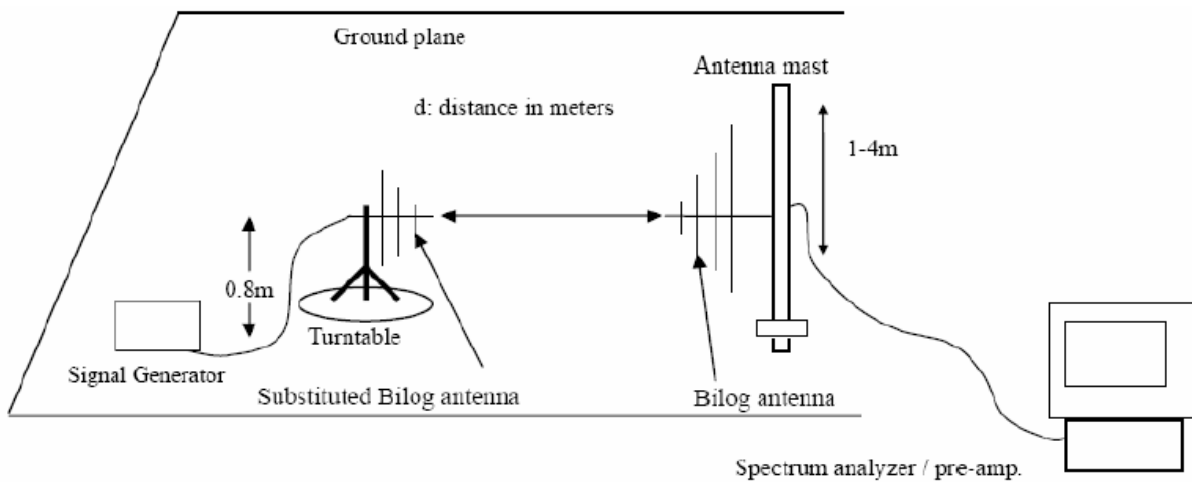
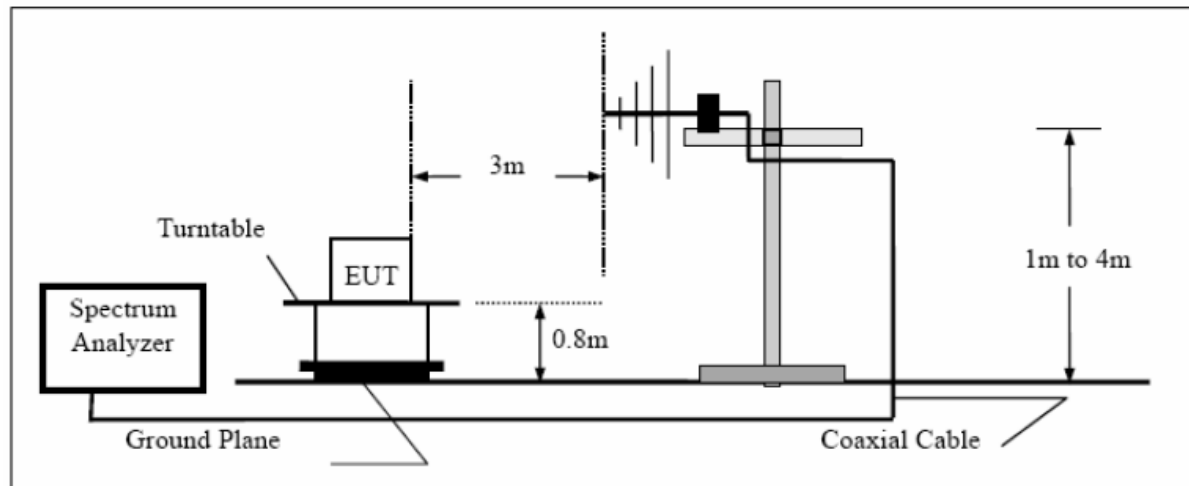
- 1) 54-72, 76-88, and 174-216 MHZ Bands: 50mW
- 2) 470-608 and 614-806 MHz bands: 250mW

5.2 Measurement Procedure

- 1). On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- 2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- 3). The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- 4). The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- 5). The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- 6). The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- 7). The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- 8). The maximum signal level detected by the measuring receiver shall be noted.
- 9). Replace the antenna with a proper Antenna (substitution antenna).
- 10). The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- 11). The substitution antenna shall be connected to a calibrated signal generator.
- 12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- 13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- 14). The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- 15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- 16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.
- 17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

5.3 Test SET-UP (Block Diagram of Configuration)

TEST SETUP OF SUBSTITUTION METHOD:



5.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2010	05/29/2011
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2010	05/29/2011
Pre-Amplifier	HP	8447D	2944A07999	05/29/2010	05/29/2011
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2010	05/29/2011
Loop Antenna	ARA	PLA-1030/B	1029	05/29/2010	05/29/2011

5.4 Measurement Result

The Output Power of Wireless Microphone

Operation Mode: King
Test Item: Output power
Test Result: PASS

Test Date : August 15, 2010
Temperature : 28 °C
Humidity : 65 %
Test By: Andy

The bottom channel -667.00MHz

Freq.	Ant.Pol.	Corrected power	Transmitter power	Limit
(MHz)	H/V	(dBm)	(mW)	(mW)
667.00	V	12.65	18.40	250
667.00	H	13.85	24.26	250

The Middle channel -682.00MHz

Freq.	Ant.Pol.	Corrected power	Transmitter power	Limit
(MHz)	H/V	(dBm)	(mW)	(mW)
682.00	V	12.57	18.07	250
682.00	H	13.52	22.53	250

The top channel -696.7MHz

Freq.	Ant.Pol.	Corrected power	Transmitter power	Limit
(MHz)	H/V	(dBm)	(mW)	(W)
696.70	V	12.25	16.78	250
696.70	H	13.04	20.14	250

Remark:

(1) Corrected Power (dBm) = SG O/P-Cable + Ant Gain

6. Modulation Characteristics

6.1 PROVISIONS APPLICABLE

a).According to CFR 47 section 2.1047(a), for Voice Modulation Communication Equipment, Acurve showing the frequency response of the audio modulating circuit over a range of 50Hz to 20kHz is submitted with this report.

b). Equipment which employs modulation limiting

A family of curves showing the percentage of modulation versus the modulation input voltage with sufficient information showing the modulation limiting capability throughout the range of modulation frequencies and input modulating signal levels employed.

6.2 MEASUREMENT METHOD

6.2.1 Modulation Limit

1). Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1KHz using this level as a reference (0dB) and vary the input level from -20 to +20dB. Record the frequency deviation obtained as a function of the input level.

2). Repeat step 1 with input frequency changing to 100Hz, 1KHz, 2.5KHz,, 10KHz,, and 15KHz in sequence.

6.2.2 Audio Frequency Response

1). Configure the EUT as shown in figure 1.

2). Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0 dB).

3). Vary the Audio frequency from 100 Hz to 30 KHz and record the frequency deviation.

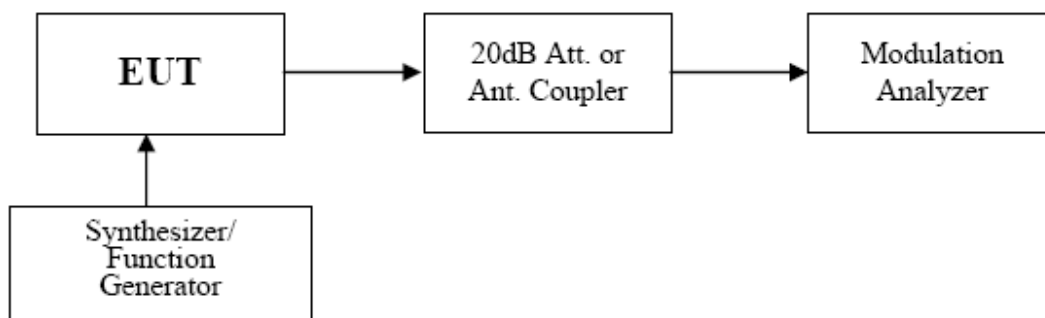


Figure 1: Modulation characteristic measurement configuration

6.3 Measurement instruments

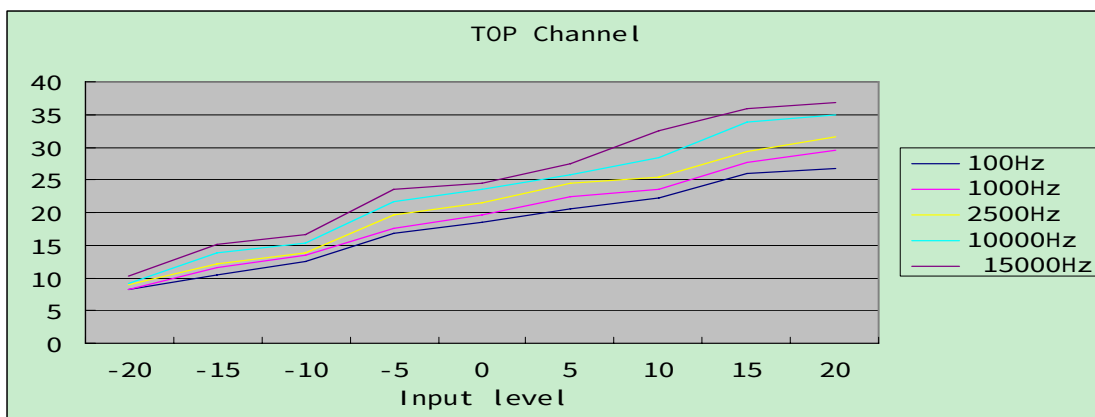
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2010	05/29/2011
Audio Signal Generator	HP	3325A	2561540502	05/29/2010	05/29/2011
Attenuator	MINI CIRCUITS	8920B	2484357000	05/29/2010	05/29/2011

6.4 Measurement Result

a). Modulation Limit:

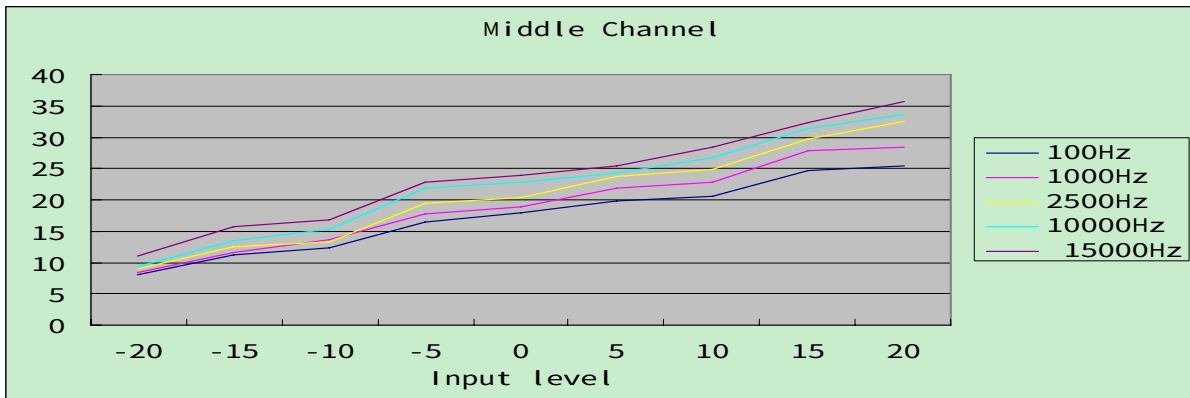
The top channel -696.7MHz

Modulation Level (dB)	Peak Freq. Deviation At 100Hz(KHz)	Peak Freq. Deviation At 1000Hz(KHz)	Peak Freq. Deviation At 2500Hz(KHz)	Peak Freq. Deviation At 10000Hz(KHz)	Peak Freq. Deviation At 15000Hz(KHz)
-20	8.16	8.25	8.92	9.25	10.29
-15	10.55	11.54	12.14	13.76	15.21
-10	12.54	13.47	13.78	15.25	16.57
-5	16.78	17.57	19.58	21.77	23.55
0	18.57	19.58	21.47	23.47	24.51
+5	20.48	22.46	24.48	25.77	27.47
+10	22.24	23.47	25.47	28.47	32.47
+15	25.89	27.58	29.27	33.87	35.87
+20	26.78	29.57	31.63	34.87	36.78



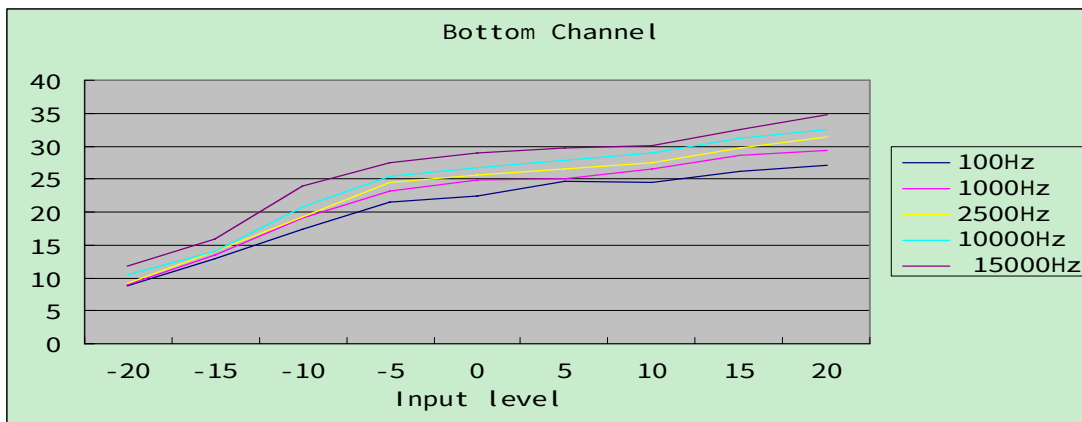
The middle channel -682.00MHz

Modulation Level (dB)	Peak Freq. Deviation At 100Hz(KHz)	Peak Freq. Deviation At 1000Hz(KHz)	Peak Freq. Deviation At 2500Hz(KHz)	Peak Freq. Deviation At 10000Hz(KHz)	Peak Freq. Deviation At 15000Hz(KHz)
-20	8.12	8.37	8.89	9.34	10.97
-15	11.21	11.67	12.53	13.48	15.74
-10	12.37	13.57	13.23	15.37	16.83
-5	16.53	17.84	19.37	21.94	22.76
0	17.88	18.89	20.33	22.73	23.93
+5	19.79	21.93	23.72	24.37	25.49
+10	20.48	22.89	24.89	26.78	28.47
+15	24.58	27.78	29.78	31.48	32.38
+20	25.47	28.47	32.61	33.64	35.61



The bottom channel -667.00MHz

Modulation Level (dB)	Peak Freq. Deviation At 100Hz(KHz)	Peak Freq. Deviation At 1000Hz(KHz)	Peak Freq. Deviation At 2500Hz(KHz)	Peak Freq. Deviation At 10000Hz(KHz)	Peak Freq. Deviation At 15000Hz(KHz)
-20	8.75	8.89	9.23	10.43	11.78
-15	12.85	13.45	13.98	14.08	15.81
-10	17.34	19.12	19.27	20.7	23.84
-5	21.5	23.17	24.57	25.35	27.55
0	22.46	24.89	25.68	26.69	28.91
+5	24.71	25.14	26.54	27.86	29.77
+10	24.55	26.45	27.4	28.97	30.14
+15	26.25	28.67	29.78	31.14	32.48
+20	27.14	29.4	31.48	32.47	34.78



b). Audio Frequency Response:**The top channel -696.7MHz**

Frequency(Hz)	Deviation(KHz)
100	3.15
200	3.89
300	4.25
400	4.89
500	5.10
600	5.20
700	5.48
800	6.05
900	6.20
1000	6.89
1200	7.12
1400	7.23
1600	7.52
1800	7.68
2000	7.98
2400	8.15
2800	8.21
3200	8.22
3600	8.63
4000	8.98
4500	9.10
5000	9.56
5500	9.64
6000	9.78
6500	9.89
7000	10.12
8000	10.18
9000	10.21
10000	10.34
12000	10.58
14000	10.06
16000	9.78
18000	9.42
20000	8.45
25000	8.10
30000	7.12

The middle channel -682.00MHz

Frequency(Hz)	Deviation(KHz)
100	3.21
200	3.98
300	4.24
400	4.84
500	5.12
600	5.25
700	5.94
800	6.24
900	6.35
1000	6.85
1200	7.13
1400	7.21
1600	7.52
1800	7.54
2000	7.84
2400	8.10
2800	8.15
3200	8.23
3600	8.57
4000	8.84
4500	9.25
5000	9.53
5500	9.67
6000	9.83
6500	9.97
7000	10.13
8000	10.19
9000	10.25
10000	10.34
12000	10.58
14000	10.21
16000	9.73
18000	9.44
20000	8.24
25000	8.12
30000	7.52

The bottom channel -667.00MHz

Frequency(Hz)	Deviation(KHz)
100	3.13
200	3.85
300	4.16
400	4.87
500	5.25
600	5.19
700	5.48
800	6.24
900	6.22
1000	6.87
1200	7.24
1400	7.35
1600	7.52
1800	7.63
2000	7.97
2400	8.15
2800	8.22
3200	8.53
3600	8.76
4000	8.92
4500	9.13
5000	9.58
5500	9.69
6000	9.77
6500	9.98
7000	10.12
8000	10.19
9000	10.29
10000	10.36
12000	10.51
14000	10.08
16000	9.77
18000	9.42
20000	8.46
25000	8.12
30000	7.14

7. Frequency Tolerance

7.1 Provisions Applicable

- a). According to FCC Part 2 Section 2.1055(a)(1), the frequency stability shall be measured with variation of ambient temperature from -30°C to $+50^{\circ}\text{C}$ centigrade.
- b). According to FCC Part 2 Section 2.1055(d)(2), for hand carried battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
- c). According to FCC Part 74 Section 74.861(e)-4, the frequency tolerance must be maintained within 0.005%.

7.2 Measurement Procedure

7.2.1 Frequency stability versus environmental temperature

- 1. Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
- 2. Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz. Record this frequency as reference frequency.
- 3. Set the temperature of chamber to 50°C . Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
- 4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured; Record all measured frequencies on each temperature step.

7.2.2 Frequency stability versus input voltage

- 1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15°C to 25°C . Otherwise, an environment chamber set for a temperature of 20°C shall be used. Install new battery in the EUT.
- 2. Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz. Record this frequency as reference frequency.
- 3. For battery operated only device, supply the EUT primary voltage at the operating end point, which is specified by manufacturer, and record the frequency.

7.3 Test Setup Block diagram(Block diagram of configuration)

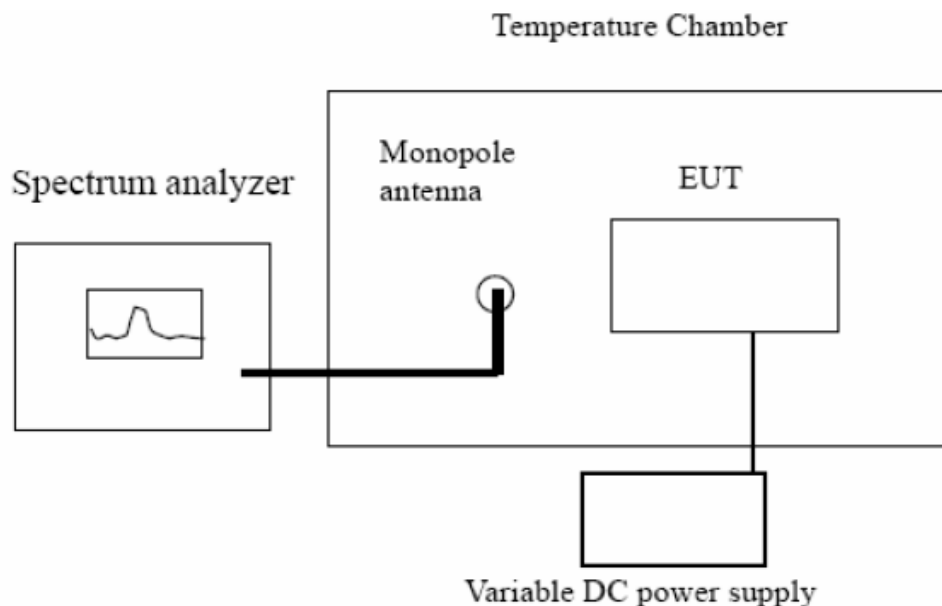


Figure 1

7.4 Test Equipment used:

EQUIPMENT TYPE	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Advantest Spectrum Analyzer	R3132	120901472	05/29/2010	05/29/2011
Shihin Temperature Chamber	BM50-CB	908	05/29/2010	05/29/2011
Huber+Suhner low loss cable	WYK-605	N/A	05/29/2010	05/29/2011
Monopole Antenna	N/A	N/A	05/29/2010	05/29/2011

7.5 Test Result

a. Frequency Stability versus input voltage(battery operation end point voltage is 2.7V)

Wireless Microphone	Reference Frequency (MHz)	Frequency Measured at end point voltage	Frequency Error (%)	Limit (%)
Top Channel	696.7	696.72735	0.00393	0.005
Middle Channel	682.0	682.0302	0.00443	0.005
Bottom Channel	667.0	667.03014	0.00452	0.005

b. Frequency stability versus ambient temperature

The top channel -696.7MHz

Reference Frequency: 696.70 MHz		Limit (%)±0.005%	
Environment Temperature(°C)	Power Supply	Frequency deviation measured with time Elapse(30 minutes)	
		(MHz)	%
50	New Battery	696.72103	0.00302
40	New Battery	696.71288	0.00185
30	New Battery	696.72735	0.00393
20	New Battery	696.71530	0.00220
10	New Battery	696.71350	0.00194
0	New Battery	696.72040	0.00293
-10	New Battery	696.71324	0.00190
-20	New Battery	696.71204	0.00173
-30	New Battery	696.72247	0.00323

The Middle channel –682.00MHz

Reference Frequency: 682.00MHz		Limit (%)±0.005%	
Environment Temperature(°C)	Power Supply	Frequency deviation measured with time Elapse(30 minutes)	
		(MHz)	%
50	New Battery	682.0212	0.00311
40	New Battery	682.0231	0.00339
30	New Battery	682.0302	0.00443
20	New Battery	682.0282	0.00413
10	New Battery	682.0263	0.00386
0	New Battery	682.0287	0.00421
-10	New Battery	682.0242	0.00355
-20	New Battery	682.0235	0.00345
-30	New Battery	682.02014	0.00295

The Bottom channel –667.00MHz

Reference Frequency: 667.00MHz		Limit (%)±0.005%	
Environment Temperature(°C)	Power Supply	Frequency deviation measured with time Elapse(30 minutes)	
		(MHz)	%
50	New Battery	667.0115	0.00172
40	New Battery	667.02231	0.00334
30	New Battery	667.03014	0.00452
20	New Battery	667.02407	0.00361
10	New Battery	667.0247	0.00370
0	New Battery	667.0269	0.00403
-10	New Battery	667.02657	0.00398
-20	New Battery	667.02324	0.00348
-30	New Battery	667.01947	0.00292

8. Emission Bandwidth

8.1 Provisions Applicable

The occupied bandwidth is that between the lower and upper limits of the signal where the mean power is 99% of the total mean power and measured under the following conditions:

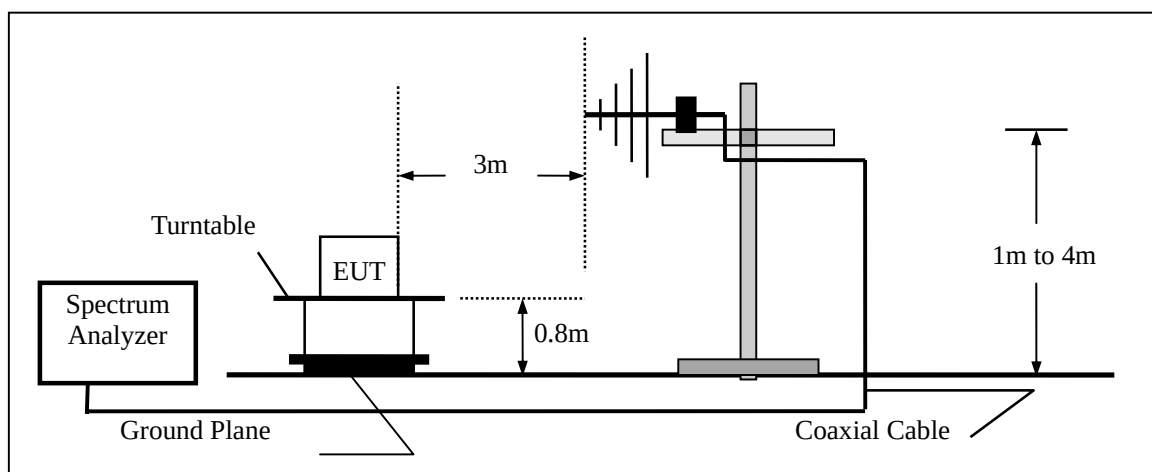
For lower power auxiliary station operating in the bands other than those allocated for TV broadcasting, the occupied bandwidth shall not be greater than that necessary for satisfactory transmission and emissions appearing on any discrete frequency outside the authorize band shall be attenuated $43+10\log_{10}(\text{mean output power, in watts})$ dB below the mean output power of the transmitting unit(device under test).

For lower power auxiliary stations operating in the bands allocated for TV broadcasting, any form of modulation may be used. A maximum of $\pm 75\text{kHz}$ is permitted when frequency modulation is use. The operating bandwidth shall not exceed 200kHz.

8.2 MEASUREMENT 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 SPA Center Frequency = fundamental frequency , RBW=3 KHz, VBW=10KHz, Span =200 KHz.
- 4). Set SPA Max hold. Mark peak, 99% power bandwidth.

8.3 TEST SETUP BLOCK DIAGRAM (Block Diagram of Configuration)



8.4 Measurement Equipment used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2010	05/29/2011
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2010	05/29/2011
Pre-Amplifier	HP	8447D	2944A07999	05/29/2010	05/29/2011
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2010	05/29/2011

8.5 Measurement Result:

The Occupied bandwidth's plot is presented on the following pager, which illustrates compliance with the rules.

Calculation of Necessary Bandwidth (Bn)

$B_n = 2M + 2KD$

M=Max.Modulation Frequency =15KHz

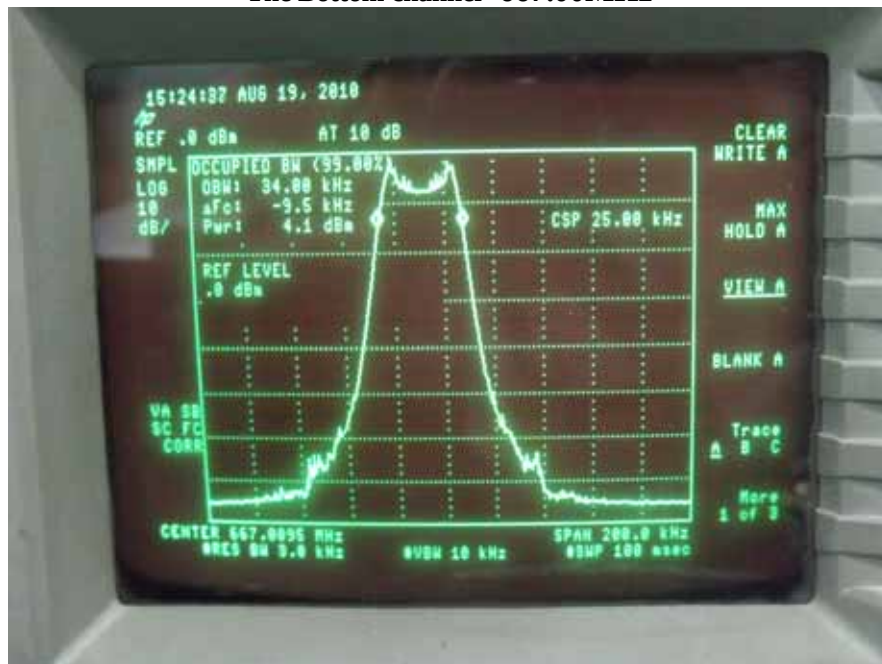
D=Peak Frequency Deviation=36.78KHz (Page 16).

K=1

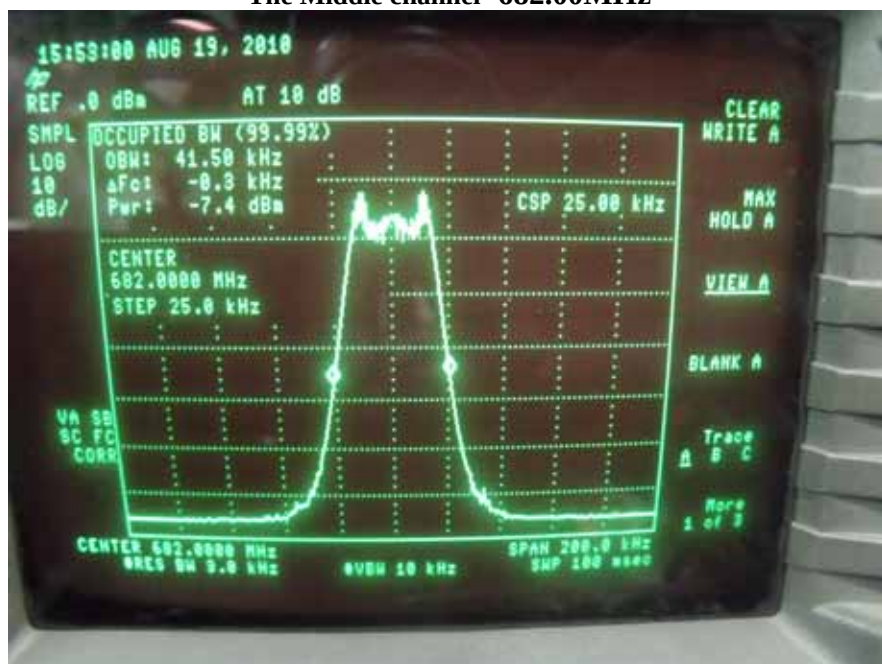
$B_n = 103.56\text{KHz}$

Refer to attached data chart

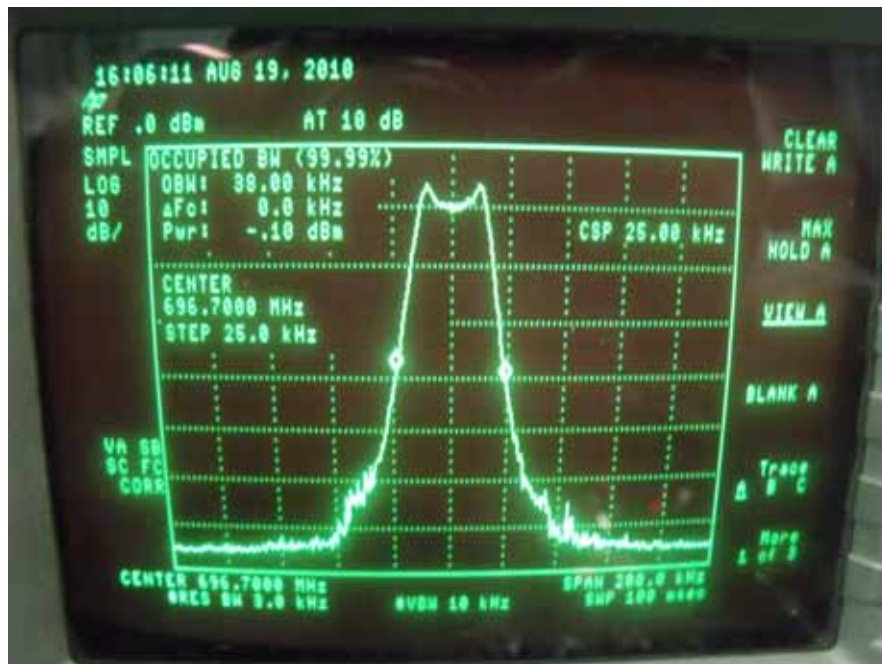
The Bottom channel -667.00MHz



The Middle channel -682.00MHz



The Top channel -696.7MHz



9. Unwanted Radiation

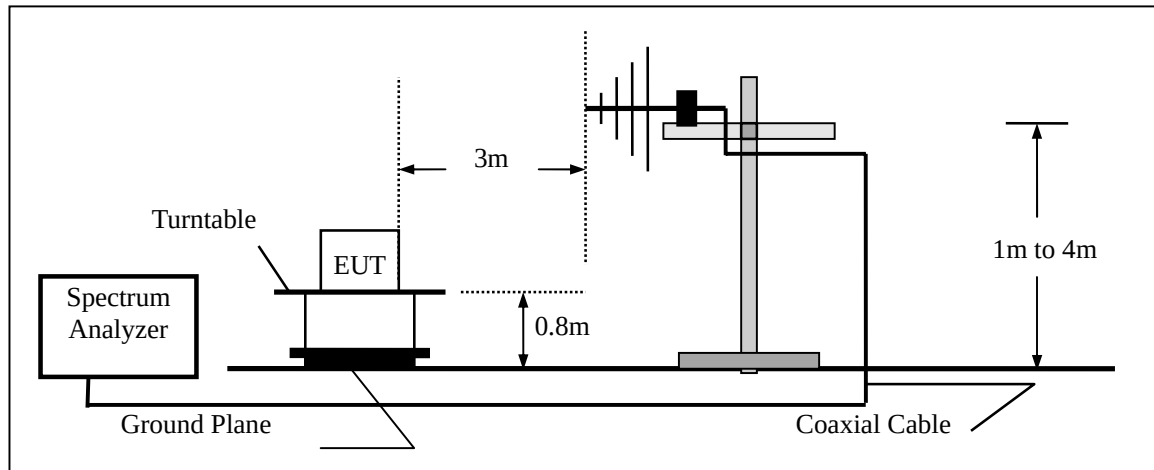
9.1 Provisions applicable

According to Section 74.861(d)-3, The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

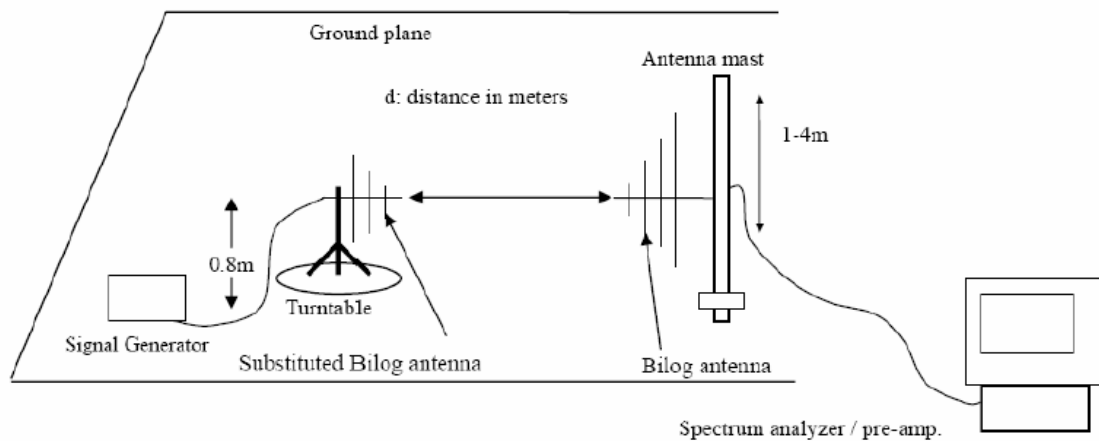
9.2 MEASUREMENT PROCEDURE

- 1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- 2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- 3). The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- 4). The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- 5). The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- 6). The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- 7). The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- 8). The maximum signal level detected by the measuring receiver shall be noted.
- 9). The measurement shall be repeated with the test antenna set to horizontal polarization.
- 10). Replace the antenna with a proper Antenna (substitution antenna).
- 11). The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- 12). The substitution antenna shall be connected to a calibrated signal generator.
- 13). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- 14). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- 15). The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- 16). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- 17). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

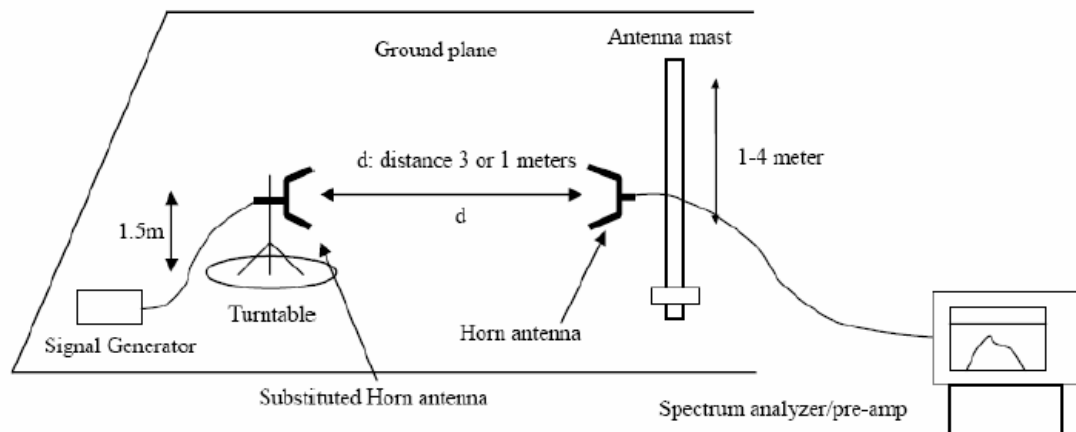
9.3 Test Setup Block Diagram(block diagram of configuration)



Radiation below 1GHz



Radiation above 1GHz



9.4 Measurement Equipment used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2010	05/29/2011
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2010	05/29/2011
Pre-Amplifier	HP	8447D	2944A07999	05/29/2010	05/29/2011
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2010	05/29/2011
Horn Antenna	ARA	DRG-118/A	105	05/29/2010	05/29/2011

9.5 Measurement Results:

Calculation: Limit(dBm)= EL-43-10log10(TP)

Notes: EL is the emission level of the output power expressed in dBm, in this application. The EL is 8.41dBm.

Limit(dBm)= 8.41-43-10log10(0.00693)=-13

Top Channel & Bottom Channel

Frequency (MHz)	Reading level (dBuV)	Antena Polarization	S.G (dBm)	Cable loss (dB)	Ant.Gain (dB)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
1328.2	23.35	V	-42.89	2.91	8.21	-31.77	-13	-18.77
1328.2	24.36	H	-39.1	2.91	8.21	-27.98	-13	-14.98
2001.23	25.57	V	-40.45	2.98	10.15	-27.32	-13	-14.32
2001.23	23.14	H	-43.1	2.98	10.15	-29.97	-13	-16.97
3331.06	39.24	V	-32.4	3.24	12.03	-17.13	-13	-4.13
3331.15	38.47	H	-33.89	3.24	12.03	-18.62	-13	-5.62
*	*						-13	

Note: * means the output power of all the spurious frequency is at least 20dB down to the limit.

APPENDIX 1

PHOTOGRAPHS OF SET UP

