

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

OF

FM-Transmitter

MODEL No.: MT150

FCC ID: S7JMT150

REPORT NO: E0811027F

ISSUE DATE: November 25, 2008

Prepared for

SHENZHEN YIFANG DIGITAL TECHNOLOGY CO., LTD.

**Building NO.23, Fifth Region, Baiwangxin Industrial Park, Songbai Rd., Nanshan,
Shenzhen, 518108, China**

Prepared by

SHENZHEN EMTEK CO., LTD

**Bldg 69, Majialong Industry Zone, Nanshan District,
Shenzhen, Guangdong, China**

TEL: 86-755-26954280

FAX: 86-755-26954282

VERIFICATION OF COMPLIANCE

Applicant:	SHENZHEN YIFANG DIGITAL TECHNOLOGY CO., LTD. Building NO.23, Fifth Region, Baiwangxin Industrial Park, Songbai Rd., Nanshan, Shenzhen, 518108,China
Product Description:	FM-Transmitter
Brand Name:	N/A
Model Number:	MT150
Serial Number:	N/A
File Number:	E0811027F
Date of Test:	November 19, 2008 to November 24, 2008

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 15.239.

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.

Table of Contents

1.	GENERAL INFORMATION.....	4
1.1	Product Description.....	4
1.2	Related Submittal(s) / Grant (s).....	4
1.3	Test Methodology	4
1.4	Special Accessories	4
1.5	Equipment Modifications	4
1.6	Test Facility	5
2.	System Test Configuration.....	6
2.1	EUT Configuration.....	6
2.2	EUT Exercise	6
2.3	Test Procedure.....	6
2.4	Limitation	6
2.5	Configuration of Tested System.....	8
3.	Summary Of Test Results.....	9
4.	Description of test modes.....	9
5.	Radiated Emission Test	10
5.1	Measurement Procedure	10
5.2	Test SET-UP (Block Diagram of Configuration).....	11
5.3	Measurement Equipment Used:	12
5.4	Measurement Result.....	12
5.5	Radiation Measurement Photos.....	21
6.	Occupied Bandwidth.....	22
6.1	Measurement Procedure	22
6.2	Test SET-UP (Block Diagram of Configuration).....	22
6.3	Measurement Equipment Used:	22
6.4	Measurement Results:	22

1. GENERAL INFORMATION

1.1 Product Description

The SHENZHEN YIFANG DIGITAL TECHNOLOGY CO., LTD. Model: MT150 (referred to as the EUT in this report). The EUT is a FM-Transmitter; The actual tuning Controls can be manually adjusted to from 88.1 MHz to 88.7MHz and from 107.3MHz to 107.9MHz .

A major technical descriptions of EUT is described as following:

- A). Operation Frequency: 88.1MHz, 88.3MHz, 88.5MHz, 88.7MHz,
107.3MHz, 107.5MHz, 107.7MHz, 107.9MHz
- B). Antenna Designation: Internal
- C). Power Supply: DC12V

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: S7JMT150 filing to comply with Section 15.239 of the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

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 Guangzhou, 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 : SHENZHEN EMTEK CO., LTD
Site Location : 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 88.1MHz~107.9MHz.

2.3 Test Procedure

2.3.1 Conducted Emissions (Not apply in the report)

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 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**.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. 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 13.1.4.1 of ANSI C63.4-2003.

2.4 Limitation

(1) Radiated Emission

- (b) The field strength of any emissions within the permitted 200kHz band shall not exceed 250 microvolts/meter at 3 meters, The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.
- (c) The field strength of any emissions radiated on any frequency outside of the specified 200Khz band shall not exceed the general radiated emission limits in Section 15.209.

Remark: The limit for average field strength dBuv/m for the fundamental frequency=48.0 dBuv/m.
And the limit for peak field strength dBuv/m for the fundamental frequency=68.0 dBuv/m.

Intentional Radiators general limit).as below.

Frequency (MHz)	Field strength $\mu\text{V/m}$	Distance(m)	Field strength at 3m $\text{dB}\mu\text{V/m}$
1.705-30	30	30	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

(2) Occupied Bandwidth

- (a) Emissions from the intentional radiator shall be confined within a band 200kHz wide centered on the operation frequency; The 200kHz band shall lie wholly within the frequency range of 88.1-88.7MHz and 107.3~107.9MHz.

2.5 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.	FM-Transmitter	Yifang	MT150	S7JMT150	N/A	<i>EUT</i>
2.	iPod player	Apple	A1136	N/A	N/A	

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
§ 15.239	Radiated Emission	Compliant
§ 15.239	Bandwidth Test	Compliant

4. Description of test modes

The EUT (FM-Transmitter) has been tested under normal operating condition.

Four channels of EUT (two channels of 88.1~88.7MHz, two channels of 107.3~107.9MHz) have been chosen for testing under Normal Operating condition. In this report, all the measured datum of the four channels have been reported. No software used to control the EUT for staying in continuous transmitting mode for testing.

1. For first channel 88.1MHz
2. For second channel 88.7MHz
3. For third channel: 107.3MHz
4. For fourth channel: 107.9MHz

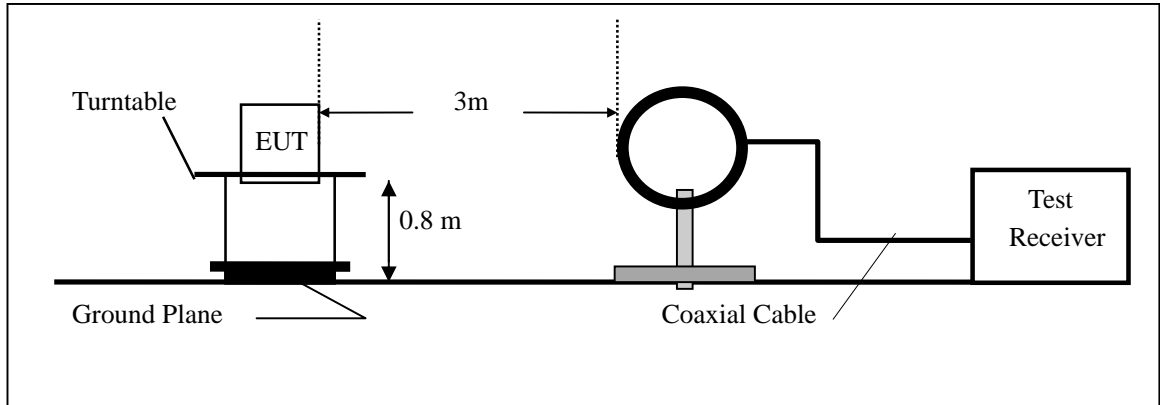
5. Radiated Emission Test

5.1 Measurement Procedure

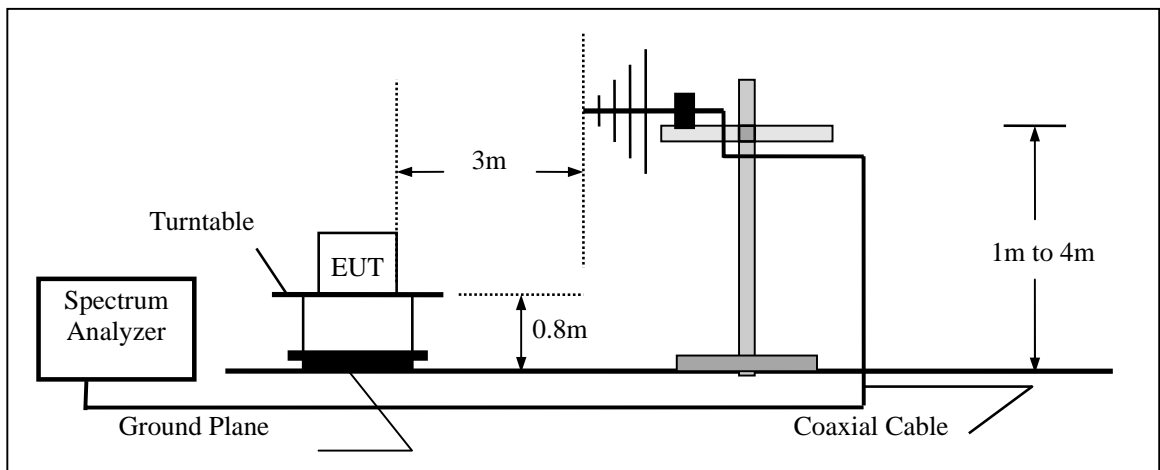
- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



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



5.3 Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2008	05/29/2009
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2008	05/29/2009
Pre-Amplifier	HP	8447D	2944A07999	05/29/2008	05/29/2009
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2008	05/29/2009
Loop Antenna	ARA	PLA-1030/B	1029	05/29/2008	05/29/2009

5.4 Measurement Result

A. Fundamental and Harmonics Radiated Emission Data

Operation Mode:	Transmitting Mode	Test Date :	November 19, 2008
Test Item:	Radiated Emission Data	Temperature :	28 °C
Fundamental Frequency:	First channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
88.100	V	47.10	68.00	-20.90	Peak
176.200	V	28.45	43.50	-15.05	Peak
264.300	V	24.26	46.00	-21.74	Peak
352.400	V	27.50	46.00	-18.50	Peak
440.500	V	31.04	46.00	-14.96	Peak
528.600	V	34.22	46.00	-11.78	Peak
616.700	V	34.21	46.00	-11.79	Peak
704.800	V	30.34	46.00	-15.66	Peak
792.900	V	25.21	46.00	-20.79	Peak
881.000	V	28.82	46.00	-17.18	Peak
88.100	H	41.2	68.00	-26.80	Peak
176.200	H	28.48	43.50	-15.02	Peak
264.300	H	26.35	46.00	-19.65	Peak
352.400	H	30.23	46.00	-15.77	Peak
440.500	H	32.23	46.00	-13.77	Peak
528.600	H	28.56	46.00	-17.44	Peak
616.700	H	25.33	46.00	-20.67	Peak
704.800	H	24.76	46.00	-21.24	Peak

792.900	H	32.11	46.00	-13.89	Peak
881.000	H	25.43	46.00	-20.57	Peak

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.239

Note: (1) All Readings are Peak Value.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: Transmitting Mode Test Date : November 19, 2008
 Test Item: Radiated Emission Data Temperature : 28 °C
 Fundamental Frequency: Second channel Humidity : 65 %
 Test Result: PASS Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
88.700	V	45.30	68.00	-22.70	Peak
177.400	V	30.17	43.50	-13.33	Peak
266.100	V	28.54	46.00	-17.46	Peak
354.800	V	30.22	46.00	-15.78	Peak
443.500	V	26.65	46.00	-19.35	Peak
532.200	V	28.72	46.00	-17.28	Peak
620.900	V	30.34	46.00	-15.66	Peak
709.600	V	28.48	46.00	-17.52	Peak
798.300	V	30.76	46.00	-15.24	Peak
887.000	V	25.54	46.00	-20.46	Peak
88.700	H	43.14	68.00	-24.86	Peak
177.400	H	28.48	43.50	-15.02	Peak
266.100	H	29.73	46.00	-16.27	Peak
354.800	H	31.42	46.00	-14.58	Peak
443.500	H	30.54	46.00	-15.46	Peak
532.200	H	26.34	46.00	-19.66	Peak
620.900	H	25.89	46.00	-20.11	Peak
709.600	H	27.13	46.00	-18.87	Peak
798.300	H	30.65	46.00	-15.35	Peak
887.000	H	27.71	46.00	-18.29	Peak

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.239

- Note:**
- (1) All Readings are Peak Value.
 - (2) Emission Level= Reading Level+Probe Factor +Cable Loss
 - (3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: Transmitting Mode Test Date : November 19, 2008
 Test Item: Radiated Emission Data Temperature : 28 °C
 Fundamental Frequency: Third channel Humidity : 65 %
 Test Result: PASS Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
107.300	V	44.60	68.00	-23.40	Peak
214.600	V	31.41	43.50	-12.09	Peak
321.900	V	30.67	46.00	-15.33	Peak
429.200	V	32.51	46.00	-13.49	Peak
536.500	V	28.36	46.00	-17.64	Peak
643.800	V	25.27	46.00	-20.73	Peak
751.100	V	29.65	46.00	-16.35	Peak
858.400	V	30.24	46.00	-15.76	Peak
965.700	V	30.23	54.00	-23.77	Peak
1073.000	V	31.61	54.00	-22.39	Peak
107.300	H	44.52	68.00	-23.48	Peak
214.600	H	30.12	43.50	-13.38	Peak
321.900	H	31.45	46.00	-14.55	Peak
429.200	H	29.67	46.00	-16.33	Peak
536.500	H	27.21	46.00	-18.79	Peak
643.800	H	29.33	46.00	-16.67	Peak
751.100	H	24.67	46.00	-21.33	Peak
858.400	H	30.25	46.00	-15.75	Peak
965.700	H	28.76	54.00	-25.24	Peak
1073.000	H	32.65	54.00	-21.35	Peak

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.239

- Note:** (1) All Readings are Peak Value.
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss
 (3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode: Transmitting Mode Test Date : November 19, 2008
 Test Item: Radiated Emission Data Temperature : 28 °C
 Fundamental Frequency: Fourth channel Humidity : 65 %
 Test Result: PASS Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
107.900	V	46.60	68.00	-22.40	Peak
215.800	V	28.43	43.50	-15.07	Peak
323.700	V	29.31	46.00	-16.69	Peak
431.600	V	32.19	46.00	-13.81	Peak
539.500	V	28.76	46.00	-17.24	Peak
647.400	V	25.65	46.00	-20.35	Peak
755.300	V	30.54	46.00	-15.46	Peak
863.200	V	29.56	46.00	-16.44	Peak
971.100	V	28.56	54.00	-25.44	Peak
1079.000	V	27.91	54.00	-26.09	Peak
107.900	H	44.23	68.00	-23.77	Peak
215.800	H	30.02	43.50	-13.48	Peak
323.700	H	30.12	46.00	-15.88	Peak
431.600	H	28.65	46.00	-17.35	Peak
539.500	H	30.55	46.00	-15.45	Peak
647.400	H	29.43	46.00	-16.57	Peak
755.300	H	28.23	46.00	-17.77	Peak
863.200	H	29.10	46.00	-16.90	Peak
971.100	H	30.29	54.00	-23.71	Peak
1079.000	H	26.55	54.00	-27.45	Peak

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.239

- Note:** (1) All Readings are Peak Value.
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss
 (3) The average measurement was not performed when the peak measured data under the limit of average detection.

B. Out of Band Radiated Measurement Result

Operation Mode:	Transmitting Mode	Test Date :	November 19, 2008
Test Item:	Spurious Emission Data	Temperature :	28 °C
Fundamental Frequency:	First channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
35.82	V	28.96	40.00	-11.04	Peak
158.74	V	30.14	43.50	-13.36	Peak
254.79	V	28.55	46.00	-17.45	Peak
382.92	V	31.43	46.00	-14.57	Peak
574.35	V	29.41	46.00	-16.59	Peak
735.02	V	29.20	46.00	-16.80	Peak
42.82	H	28.25	40.00	-11.75	Peak
90.82	H	29.78	43.50	-13.72	Peak
352.93	H	30.58	46.00	-15.42	Peak
420.86	H	30.82	46.00	-15.18	Peak
620.35	H	28.21	46.00	-17.79	Peak
724.46	H	32.10	46.00	-13.90	Peak

Note: (1) All Readings are Peak Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209.

Operation Mode: Transmitting Mode Test Date : November 19, 2008
 Test Item: Spurious Emission Data Temperature : 28 °C
 Fundamental Frequency: Second channel Humidity : 65 %
 Test Result: PASS Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
41.43	V	27.56	40.00	-12.44	Peak
124.82	V	31.42	43.50	-12.08	Peak
185.04	V	25.32	43.50	-18.18	Peak
298.82	V	32.14	46.00	-13.86	Peak
472.52	V	28.36	46.00	-17.64	Peak
839.65	V	32.78	46.00	-13.22	Peak
38.72	H	29.54	40.00	-10.46	Peak
120.45	H	28.47	43.50	-15.03	Peak
289.27	H	31.45	46.00	-14.55	Peak
458.93	H	27.68	46.00	-18.32	Peak
520.54	H	25.67	46.00	-20.33	Peak
807.93	H	31.54	46.00	-14.46	Peak

Note: (1) All Readings are Peak Value.
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss
 (3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209.

Operation Mode:	Transmitting Mode	Test Date :	November 19, 2008
Test Item:	Spurious Emission Data	Temperature :	28 °C
Fundamental Frequency:	Third channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
38.67	V	28.12	40.00	-11.88	Peak
135.41	V	30.33	43.50	-13.17	Peak
250.30	V	28.23	46.00	-17.77	Peak
420.85	V	29.54	46.00	-16.46	Peak
620.41	V	25.34	46.00	-20.66	Peak
752.04	V	30.47	46.00	-15.53	Peak
36.85	H	27.25	40.00	-12.75	Peak
130.47	H	28.23	43.50	-15.27	Peak
275.20	H	32.56	46.00	-13.44	Peak
392.52	H	28.32	46.00	-17.68	Peak
652.07	H	30.43	46.00	-15.57	Peak
820.85	H	30.31	46.00	-15.69	Peak

Note: (1) All Readings are Peak Value.
 (2) Emission Level= Reading Level+Probe Factor +Cable Loss
 (3) The average measurement was not performed when the peak measured data under the limit of average detection.

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.209.

5.5 Radiation Measurement Photos



6. Occupied Bandwidth

6.1 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 = 10KHz, ,VBW= 30KHz
5. Set SPA Max hold. Mark peak.

Note: The EUT can be connected to iPod Player. The input signal of EUT is controlled by iPod Player. So the volume control of iPod Player was set to maximum during the test. It means that the test was performed with the maximum audio input.

6.2 Test SET-UP (Block Diagram of Configuration)

Same as 4.2 Radiated Emission Measurement.

6.3 Measurement Equipment Used:

Same as 4.2 Radiated Emission Measurement.

6.4 Measurement Results:

The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209.

Refer to attached data chart.

Band Width Test Data

