243 Jubug-Ri,Yangji-Myeon, Yongin-Si, Gyeonggi-Do, Korea 449-822
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http://www.ltalab.com

Dates of Tests: NOV 22 ~ 24, 2006
Dates of Retest: Mar 02, 2007
Test Report S/N: LR500110611A
Test Site : LTA CO., LTD.

CERTIFICATIO OF COMPLIANCE

FCC ID. **T76N700D**

APPLICANT **FUSIONSOFT Co.,Ltd.**

FCC Classification	**:**	**Low Power Communication Device Transmitter**
Manufacturing Description	**:**	**Multimedia Navigation**
Manufacturer	**:**	**FUSIONSOFT Co.,Ltd.**
Model name	**:**	**odd-i N700D**
Test Device Serial No.:	**:**	**Identical prototype**
Rule Part(s)	**:**	**FCC Part 15.239 Subpart C; ANSI C-63.4-2003**
Frequency Range	**:**	**88.1 MHz ~ 107.9MHz**
Data of issue	**:**	**November 27, 2006**
Data of reissue	**:**	**March 2, 2007**

This test report is issued under the authority of:

Dong –Min JUNG, Technical Manager

The test was supervised by:

Kyung-Taek LEE, Test Engineer

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. This report must not be used by the applicant to claim product endorsement by any agency.

NVLAP LAB Code.: 200723-0

TABLE OF CONTENTS

1. General information's

1-1 Test Performed

Company name	:	LTA Co., Ltd.
Address	:	243, Jubug-ri,Yangji-Myeon,Youngin-Si, Kyunggi-Do, Korea. 449-822
Web site	:	http://www.ltalab.com
E-mail	:	chahn@ltalab.com
Telephone	:	+82-31-323-6008
Facsimile		+82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competent of calibration and testing laboratory".

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2007-09-30	ECT accredited Lab.
RRL	KOREA	KR0049	2007-07-13	EMC accredited Lab.
FCC	U.S.A	610755	2008-03-28	FCC filing
VCCI	JAPAN	R2133, C2307	2008-06-22	VCCI registration
IC	CANADA	IC5799	2008-04-23	IC filing

2. Information's about test item

2-1 Client & Manufacturer

Company name	:	FUSIONSOFT Co., Ltd
Address	:	Fusion Building 969-7,Dongcheon-Dong,Buk-Gu,Daegu,Korea
TEL / FAX	:	+82-53-609-7243/ +82-53-326-8049

2-2 Equipment Under Test (EUT)

Trade name	:	Multimedia Navigation
FCC ID	:	T76N700D
Model name	:	odd-i N700D
Serial number	:	Identical prototype
Date of receipt	:	November 16, 2006
EUT condition	:	Pre-production, not damaged
Antenna type	:	Wire Antenna, Length = 7cm
Frequency Range	:	88.1 ~ 107.9 MHz in 0.1MHz increments
Operator Selection of Operating Frequency:		Manual Switch
Power Source	:	12VDC

2-3 Tested frequency & signal

		LOW	MID	HIGH
1	**Frequency (MHz)**	88.1	98.0	107.9
2	**Audio signal:**	This device has three input source model: SD memory card, Hard disk drive and Audio input. We tested only under the module of audio input and hard disk drive. The device audio input source from maximum audio input for the tested. Test report is recorded the worst mode data (Hard disk drive mode)		

2-5 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
iPod	A1199	6U642NYSVQ5	Apple
Resister Jig	LTA001	-	LTA

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Status (note 1)
15.239	Field Strength of Fundamental and Emissions within permitted band.	< 250 uV @ 3m	C
15.239	Occupied channel bandwidth	< 200kHz	C
15.209	Radiated Emission	< FCC 15.209 limits	C
15.207	AC Conducted Emissions	< FCC 15.207 limits	NA / Note2
15.203	Antenna Requirement	-	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: It is not need to test this requirement, because the EUT shall be operated by car battery

Note 3: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

FCC Parts 15.239; ANSI C-63.4-2003

3.2 Transmitter requirements

3.2.1 Field Strength of Fundamental and Emissions within permitted band.

Procedure:

The field strength of emissions from intentional radiators operated within the bands 88 ~108MHz was measured in accordance with FCC Part §15.239. The test set-up was made according to ANSI C 63.4:2003.

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in an OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Span = 1 MHz

RBW = 120 kHz

VBW = 300 kHz

Trace = max hold

Sweep = auto

Detector function = Peak & Average

Measurement Data: Complies

Operating Condition: Transmit the audio signal (modulated signal)

Frequency (MHz)	Pol. (H/V)	Read Level (dBuV/m)		C.F (dB)	Result Level (dBuV/m)		Limit (dBuV/m)		Margin (dB)	
		PK	AV		PK	AV	PK	AV	PK	AV
88.1	**H**	**62**	**60.3**	**-16.25**	**45.75**	**44.05**	**68**	**48**	**22.25**	**3.95**
88.1	**V**	**64.7**	**62.9**	**-16.25**	**48.45**	**46.65**	**68**	**48**	**19.55**	**1.35**
98	**H**	**61.2**	**59.3**	**-15.07**	**46.13**	**44.23**	**68**	**48**	**21.87**	**3.77**
98	**V**	**63.3**	**61.2**	**-15.07**	**48.23**	**46.13**	**68**	**48**	**19.77**	**1.87**
107.9	**H**	**60.4**	**58.2**	**-14.14**	**46.26**	**44.06**	**68**	**48**	**21.74**	**3.94**
107.9	**V**	**60.9**	**59.1**	**-14.14**	**46.76**	**44.96**	**68**	**48**	**21.24**	**3.04**

Note 1: Field Strength Calculation

C.F = Antenna Factor + Cable Loss - Preamp Factor

Margin = Limit - Level

Minimum Standard: FCC Part 15.239

The maximum Field Strength authorized within 200kHz is 250 uV/m@3m

3.2.2 Radiated Emissions

Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 30 MHz ~ 10th harmonic.

RBW = 100 kHz (30MHz ~ 1 GHz) VBW ≥ RBW

= 1 MHz (1 GHz ~ 10th harmonic)

Span = 100 MHz Detector function = peak

Trace = max hold Sweep = auto

Measurement Data: **Complies**

Minimum Standard: FCC Part 15.209(a)

Frequency (MHz)	Limit (uV/m) @ 3m
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Frequency: 88.1MHz

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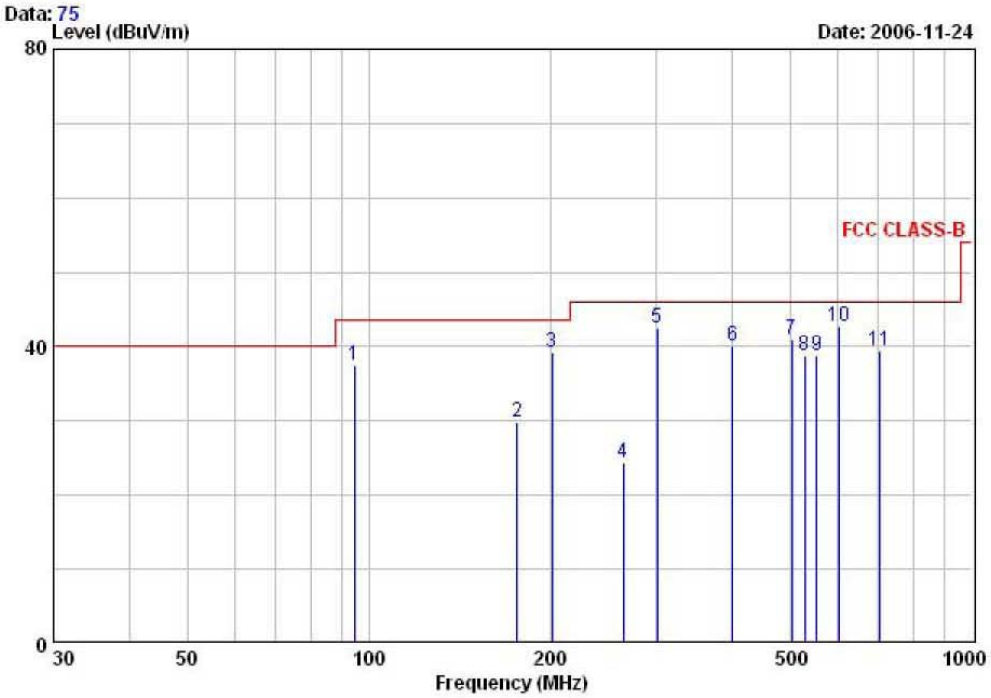
EUT/Model No.: odd-i N700D Temp/Humi: 10 / 48

Test Mode : Continuous Tx (88.1MHz) Tested by: K.T.LEE



	Freq MHz	Reading(QP) dBuV	C.F dB	Result(QP) dBuV/m	Limit dBuV/m	Margin dB	Height cm	Polarity
1	94.76	52.90	-15.48	37.42	43.50	6.08	250	HORIZONTAL
2	176.03	41.80	-11.99	29.81	43.50	13.69	100	VERTICAL
3	201.39	53.40	-14.16	39.24	43.50	4.26	200	HORIZONTAL
4	264.12	36.15	-11.66	24.49	46.00	21.51	100	VERTICAL
5	300.37	52.90	-10.44	42.46	46.00	3.54	301	HORIZONTAL
6	400.43	47.60	-7.52	40.08	46.00	5.92	100	HORIZONTAL
7	502.94	46.20	-5.15	41.05	46.00	4.95	100	VERTICAL
8	528.25	43.50	-4.75	38.75	46.00	7.25	100	HORIZONTAL
9	552.88	43.10	-4.21	38.89	46.00	7.11	100	HORIZONTAL
10	601.43	45.70	-2.96	42.74	46.00	3.26	100	VERTICAL
11	704.23	39.90	-0.41	39.49	46.00	6.51	100	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Frequency: 98.0MHz

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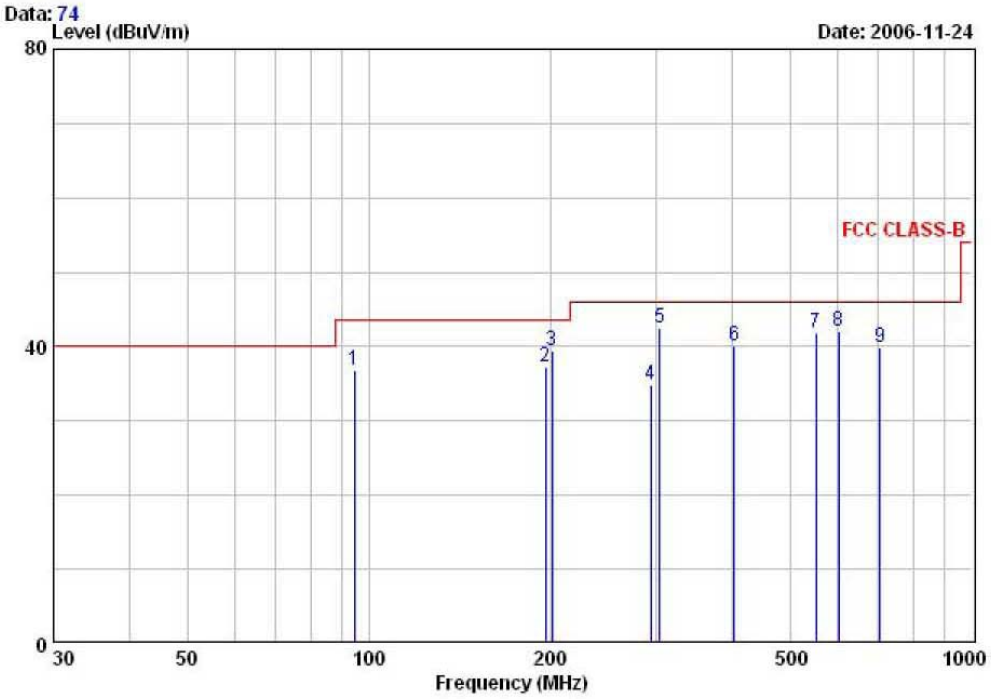
EUT/Model No.: odd-i N700D Temp/Humi: 8 / 45

Test Mode : Continuous Tx (98.0MHz) Tested by: K.T.LEE



	Freq MHz	Reading(QP) dBuV	C.F dB	Result(QP) dBuV/m	Limit dBuV/m	Margin dB	Height cm	Polarity
1	94.76	52.40	-15.48	36.92	43.50	6.58	223	HORIZONTAL
2	196.20	51.30	-13.97	37.33	43.50	6.17	100	VERTICAL
3	201.39	53.70	-14.16	39.54	43.50	3.96	189	HORIZONTAL
4	293.70	45.39	-10.61	34.78	46.00	11.22	100	VERTICAL
5	303.54	52.80	-10.34	42.46	46.00	3.54	188	HORIZONTAL
6	403.25	47.60	-7.45	40.15	46.00	5.85	100	HORIZONTAL
7	550.95	46.20	-4.26	41.94	46.00	4.06	133	HORIZONTAL
8	601.43	45.00	-2.96	42.04	46.00	3.96	100	VERTICAL
9	704.23	40.20	-0.41	39.79	46.00	6.21	100	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Frequency: 107.9MHz

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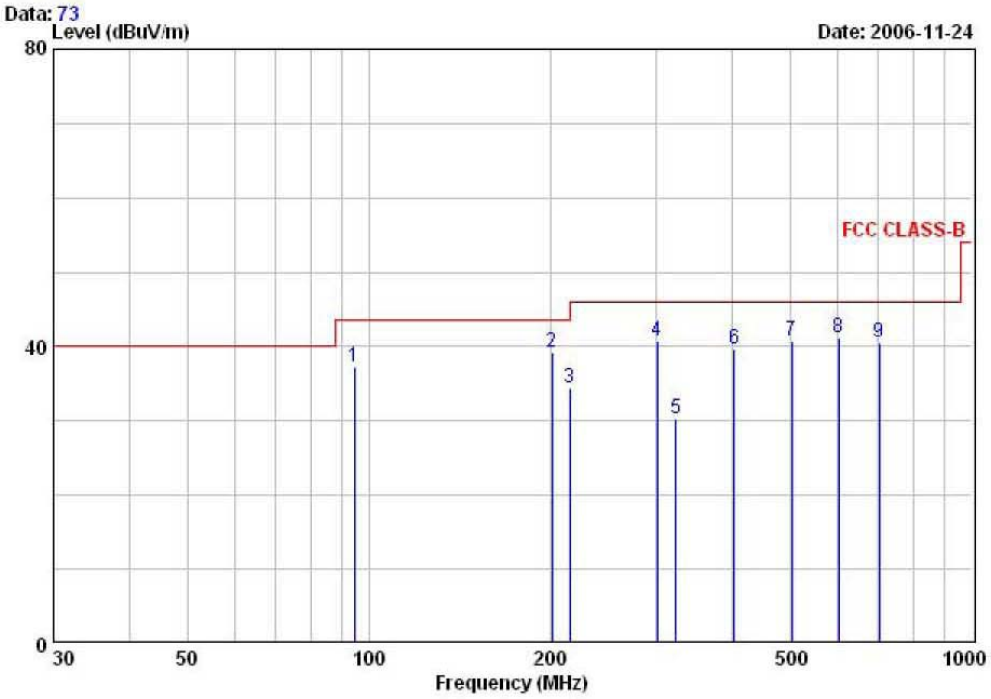
EUT/Model No.: odd-i N700D Temp/Humi: 8 / 45

Test Mode : Continuous Tx (107.9MHz) Tested by: K.T.LEE



	Freq MHz	Reading(QP) dBuV	C.F dB	Result(QP) dBuV/m	Limit dBuV/m	Margin dB	Height cm	Polarity
1	94.76	52.70	-15.48	37.22	43.50	6.28	250	HORIZONTAL
2	201.39	53.40	-14.16	39.24	43.50	4.26	201	HORIZONTAL
3	215.64	48.20	-13.72	34.48	43.50	9.02	100	VERTICAL
4	300.37	51.20	-10.44	40.76	46.00	5.24	143	HORIZONTAL
5	323.41	40.12	-9.71	30.41	46.00	15.59	100	VERTICAL
6	403.25	47.20	-7.45	39.75	46.00	6.25	103	HORIZONTAL
7	502.94	46.00	-5.15	40.85	46.00	5.15	100	VERTICAL
8	601.43	44.20	-2.96	41.24	46.00	4.76	100	VERTICAL
9	701.76	41.10	-0.49	40.61	46.00	5.39	100	VERTICAL

Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

3.2.3 AC Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Measurement Data: **Not Applicable**

- It is not need to test this requirement, because the EUT shall be operated by car battery

Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

3.2.4 20dB Bandwidth & Occupied Bandwidth

Procedure:

The channel Bandwidth is defined as the minimum declared bandwidth within which the transmitter's necessary bandwidth can be contained. The transmitter was adjusted to work at the selected channels. The Channel BW was measured at an amplitude level reduced from the reference level by the 20dB.

Occupied Bandwidth was measured as shown in the below.

The EUT was placed on a 0.8m high wooden table. An antenna was placed near the EUT and measurements of frequencies were recorded for reference during final measurements. Measurements were performed with the EUT rotated 360 degrees to determine worst-case orientation for maximum emissions.

→

The spectrum analyzer is set to:

Frequency Range = 88 ~ 108MHz

RBW = 10 kHz VBW = 30 kHz

Trace = max hold Detector function = Peak

Sweep = auto Span = 200 kHz

Operating Condition: Transmit the maximum audio signal (modulation)

we played a song from the iPod with the maximum audio input.

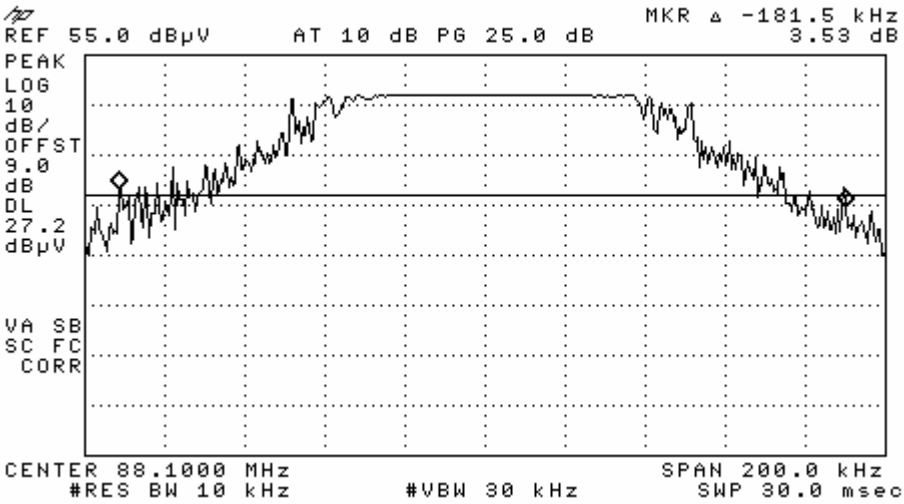
Measurement Data: **Complies**

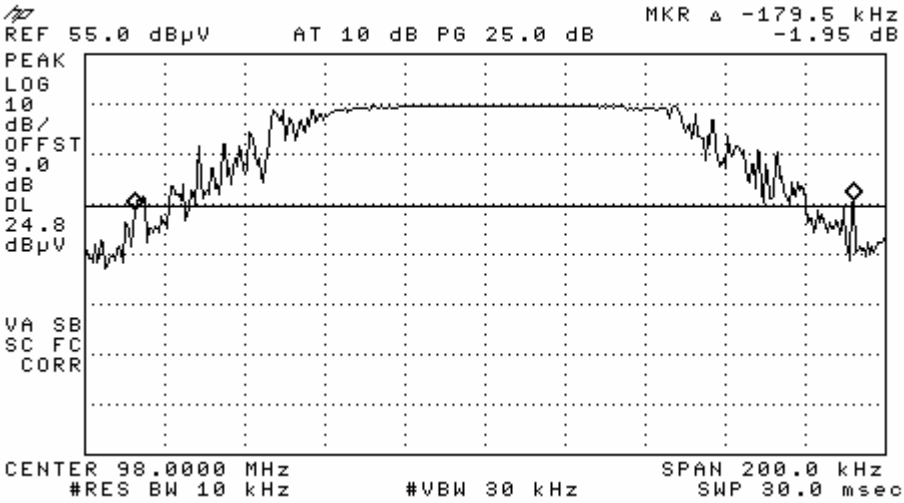
Refer to the next page.

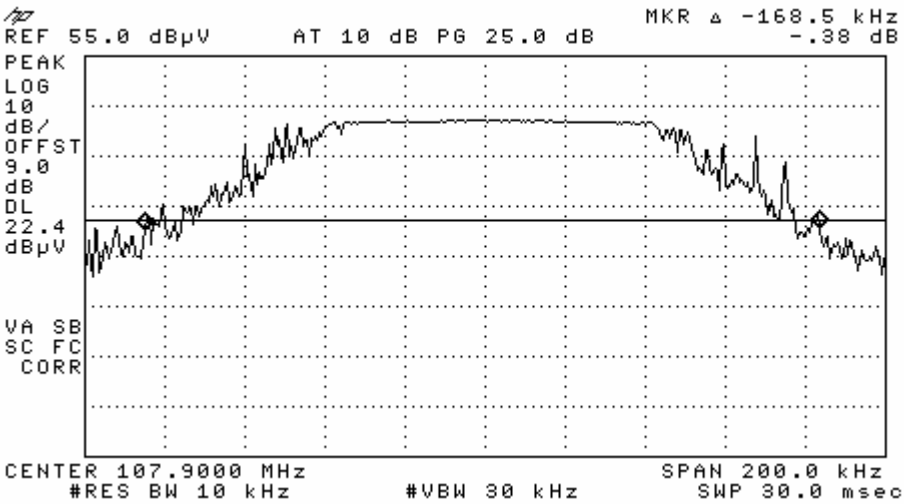
Minimum Standard:

Occupied Bandwidth < 200kHz.

20 dB Occupied Bandwidth







3.2.5 Antenna Requirement

Define:

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the applicant can be used with the device. The use of permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with this requirement.

--- The antenna Type: PCB Wire antenna

--- Refer to the Internal Photograph

APPENDIX

TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Next Cal. Date
1	Spectrum Analyzer	8594E	3649A03649	HP	Mar-07
2	Signal Generater	8657A	3430U02049	HP	Dec-07
3	Attenuator (3dB)	8491A	37822	HP	Nov-07
4	Attenuator (3dB)	8491A	28881	HP	Nov-07
5	EMI Test Receiver	ESVD	843748/001	R&S	Jan-08
6	LISN	KNW-407	8-1430-1	Kyoritsu	Jan-08
7	Two-Line V-Network	ESH3-Z5	893045/017	R&S	Jan-08
8	RF Amplifier	8447D	2949A02670	HP	Jan-08
9	RF Amplifier	8447D	2439A09058	HP	Jan-08
10	RF Amplifier	8449B	3008A02126	HP	Jun-07
11	Test Receiver	ESHS10	828404009	R&S	Jan-08
12	TRILOG Antenna	VULB 9160	9160-3172	SCHWARZBECK	Feb-07
13	Log.-Per. Antenna	VULP 9118	9118 A 401	SCHWARZBECK	Feb-08
14	Biconical Antenna	BBA 9106	VHA 9103-2315	SCHWARZBECK	Feb-08
15	Horn Antenna	3115	00055005	ETS LINDGREN	Jun-07
16	Horn Antenna	BBHA 9120D	0499	Schwarzbeck	Jun-07
17	Dipole Antenna	VHA9103	2116	Schwarzbeck	Nov-07
18	Dipole Antenna	VHA9103	2117	Schwarzbeck	Nov-07
19	Dipole Antenna	UHA9105	2261	Schwarzbeck	Nov-07
20	Dipole Antenna	UHA9105	2262	Schwarzbeck	Nov-07
21	Spectrum Analyzer	8591E	3649A05888	HP	Jan-08
22	Spectrum Analyzer	8563E	3425A02505	HP	Jan-08
23	Hygro-Thermograph	THB-36	0041557-01	ISUZU	Feb-08
24	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	Jun-07
25	RF Switch	MP59B	6200414971	ANRITSU	Jun-07
26	RF Switch	MP59B	6200438565	ANRITSU	Jun-07
27	Power Divider	11636A	6243	HP	Nov-07
28	DC Power Supply	6622A	3448A03079	HP	Oct-07
29	Attenuator (30dB)	11636A	6243	HP	Nov-07
30	Attenuator (10dB)	8491A	63196	HP	Nov-07
31	Power Meter	EPM-441A	GB32481702	HP	Apr-07
32	Power Sensor	8481A	2702A64048	HP	Apr-07
33	Audio Analyzer	8903B	3729A18901	HP	Nov-07
34	Modulation Analyzer	8901B	3749A05878	HP	Nov-07
35	TEMP & HUMIDITY Chamber	YJ-500	L05022	JinYoung Tech	Oct-07